City of Louisville
COLORADO • SINCE 1878

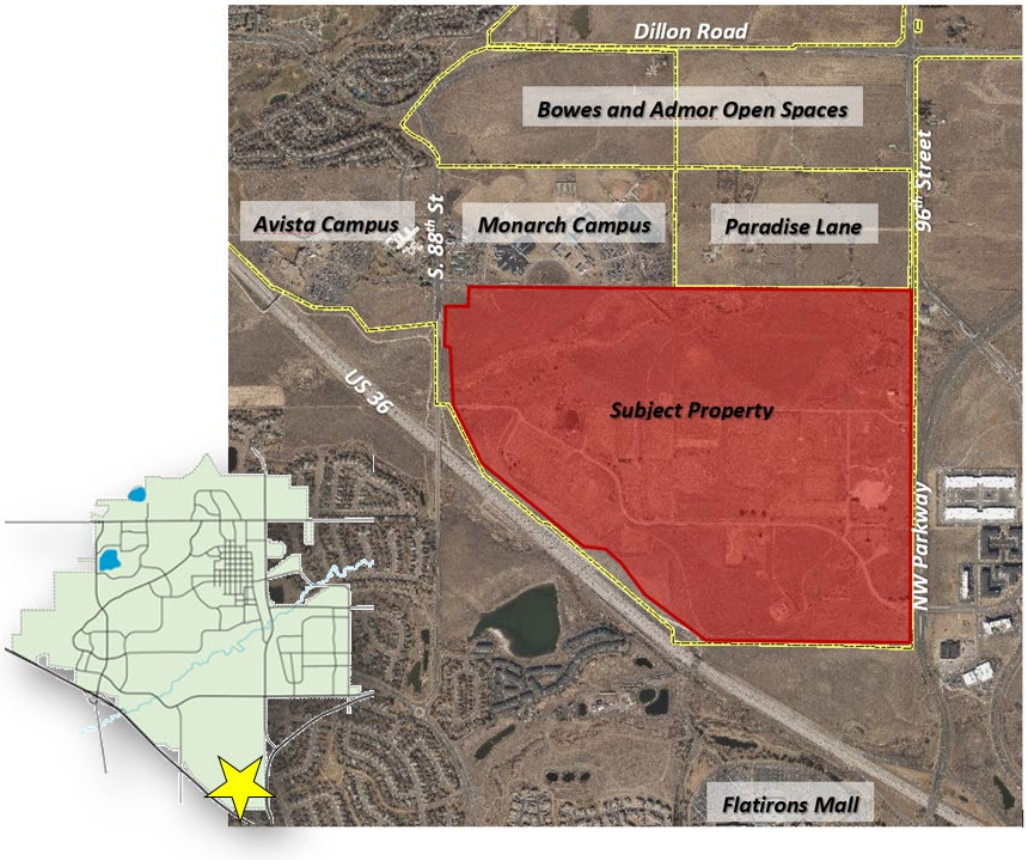
CITY COUNCIL COMMUNICATION
AGENDA ITEM 8B

SUBJECT: **RECOMMENDING APPROVAL OF RESOLUTION NO. 38, SERIES 2024 - THE RETAIL RIDGE FILING NO. 1 FINAL SUBDIVISION PLAT**

DATE: **AUGUST 20, 2024**

PRESENTED BY: **ROB ZUCCARO, AICP, COMMUNITY DEVELOPMENT DIRECTOR**

VICINITY MAP:



SUMMARY:
The applicant requests approval of a final subdivision plat for the development of the 389-acre Redtail Ridge property. The proposal is to develop the property with the land uses and standards established by the ConocoPhillips Campus General Development Plan (GDP) that the City approved in 2010. The development is anticipated to include a mix of hospital, medical office, light industrial, commercial, and office uses. The final subdivision plat creates lots, tracts, rights of way, and easements to enable development of the property. Future development proposal will be approved through the City's Planned Unit Development (PUD) review process. The following associated agreements are also under consideration with the final plat approval, or as a follow-up condition of approval:

- *Subdivision Improvement and Development Agreement (SIA):* (Attachment No. 2d) The SIA outlines the requirements for the developer to construct public infrastructure, such as roads, trails, and water and sewer lines. The City's standard SIA requires a financial surety in the form of a letter of credit from the developer that the City can use to complete the infrastructure if the developer defaults on the agreement. Instead of providing a letter of credit, the applicant's proposal is to use bond proceeds from the Redtail Ridge Metro District, which would be deposited in escrow and overseen by an escrow agent. The escrow funds would be drawn upon by the Metro District to pay for the infrastructure as it is installed and would also serve as the City's financial surety. The SIA also includes development commitments made by the applicant, including:
    - Compliance provisions with the sustainability commitments
    - Contribution for a future sewer line serving the park and public safety facility public land dedications
    - Prohibition on rodenticides for prairie dog control during the construction of public infrastructure
    - Compliance provisions with the adopted Transportation Demand Management Plan

- *Agreement Regarding Water Rights Dedications and Wastewater Treatment System Upgrades:* (Attachment No. 2e) This agreement requires the developer to cover City costs to make upgrades to the City's Wastewater Treatment Plant that are needed to accommodate the development. The agreement also addresses the transfer of water rights from the developer to the City and tap fee credits related to the transfer of water rights, existing water and sewer taps from previous development on the property, and credits related to some of the wastewater treatment plant upgrades funded by the developer.

- *Operation and Maintenance Agreement:* (Attachment No. 2f) The agreement is between the City and the Redtail Ridge Metro District and establishes maintenance responsibilities and standards for the District related to public infrastructure. The District will maintain all landscaping within the street right of way and stormwater detention ponds within dedicated open space tracts.

- *Shared Maintenance Agreement between the City of Louisville, the City and County of Broomfield and the Northwest Parkway Authority:* This agreement outlines routine and capital maintenance responsibilities for transportation infrastructure improvements that cross jurisdictional lines. The final drafting of this agreement is in process and will need to be adopted by each of the three jurisdictions as a separate action from the final plat approval.

- *Agreement for the Acquisition of the Paradise Lane Properties and Conservation Easement:* This acquisition agreement will be between the City, Boulder County, and the developer for the acquisition of approximately 47 acres of land around

Paradise Lane, located in unincorporated Boulder County. This land is included in the proposed public land dedications as part of the final plat and would be designated for open space and agricultural uses. The intent is for the land to be dedicated to Boulder County and the City would hold a conservation easement on the property. The final drafting of the acquisition agreement and conservation easement is in process and will need to adopted separate actions by Boulder County and the City. The SIA includes a requirement for the land to be transferred to Boulder County within one year following final plat approval, after which the City would have the option to take ownership of the property.

Preliminary Plat Approval

The City Council conditionally approved the preliminary plat by Resolution 80, Series 2023, on February 20, 2024 (Attachment No. 3). The municipal code requires approval of a preliminary plat as part of the subdivision process for all unplatted property in the City. The approval included several conditions, listed below in italics, followed by the status of each condition.

1. *Prior to the City Council hearing on the final plat, the applicant shall provide approval from the NW Parkway Authority for the Campus Drive alignment.*

At their July 29, 2024 meeting, the NW Parkway Authority Board approved an agreement with the developer addressing the Campus Drive alignment and other required roadway capacity and transportation improvements planned in the Parkway's right of way as part of this development proposal (Attachment No. 2l). The agreement is undergoing final edits by the Authority's staff and attorney.

2. *Prior to the City Council hearing on the final plat, the applicant shall address all outstanding Public Works comments on the Traffic and Mobility Study.*

The applicant has revised the Traffic and Mobility Study to address Public Works comments (see Attachment No. 2g for the updated Traffic and Mobility Study).

3. *The final plat application will include a current agreement with the Boulder Valley School District regarding support for the right of way acquisition for Campus Drive.*

The applicant has provided a new resolution from the Boulder Valley School District renewing and extending their previous approval of the Campus Drive improvements (see Attachment No. 2h for the updated resolution).

4. *Amend the Planned Community Zone District Zoning Agreement for the ConocoPhillips Colorado Campus General Development Plan to not allow site grading for a period of four months after February 20, 2024.*

The City Council approved an amendment to the PCZD Zoning Agreement at their March 19, 2024, meeting. The final signed agreement is included as Attachment No. 6.

5. *The final plat application shall include a detailed plan for a safe street crossing for students crossing Campus Drive from the south trail running through City parks and open space properties connecting to the Monarch K-12 Campus.*

The applicant has revised the plans to include an underpass at this location rather than an enhanced surface crossing.

The proposal includes the public dedication of several tracts of land to the City for a park, open spaces, trails, and a public safety facility. The public dedication area totals 139.01 acres (92.15 acres within the project boundaries and 46.86 acres north of the project in unincorporated Boulder County surrounding Paradise Lane). Additionally, the applicant proposes dedicating 15.76 acres of private open space that would be maintained by the Redtail Ridge Metro District.

Application materials are combined as Attachment Nos. 2a-2t. Minimum standards for the content of the application are outlined in the Louisville Municipal Code (LMC) Sec. 16.12.090. Staff finds that all applicable information for the final plat review has been provided.

BACKGROUND:

Property History

The subject property is the former location of StorageTek Corporation. StorageTek established the original campus on 310 acres in Unincorporated Boulder County. The City subsequently annexed the 310-acre campus in 1978. The StorageTek campus included approximately 1.6 million sq. ft. of building area at full build-out.

ConocoPhillips acquired the property in 2008 and completed the demolition of the StorageTek campus in 2009 to facilitate a new research campus. In 2009, ConocoPhillips petitioned the City to annex 80 acres of land adjacent to the 310-acre campus and requested the rezoning of the entire property to Planned Community Zone District – Commercial (PCZD-C).

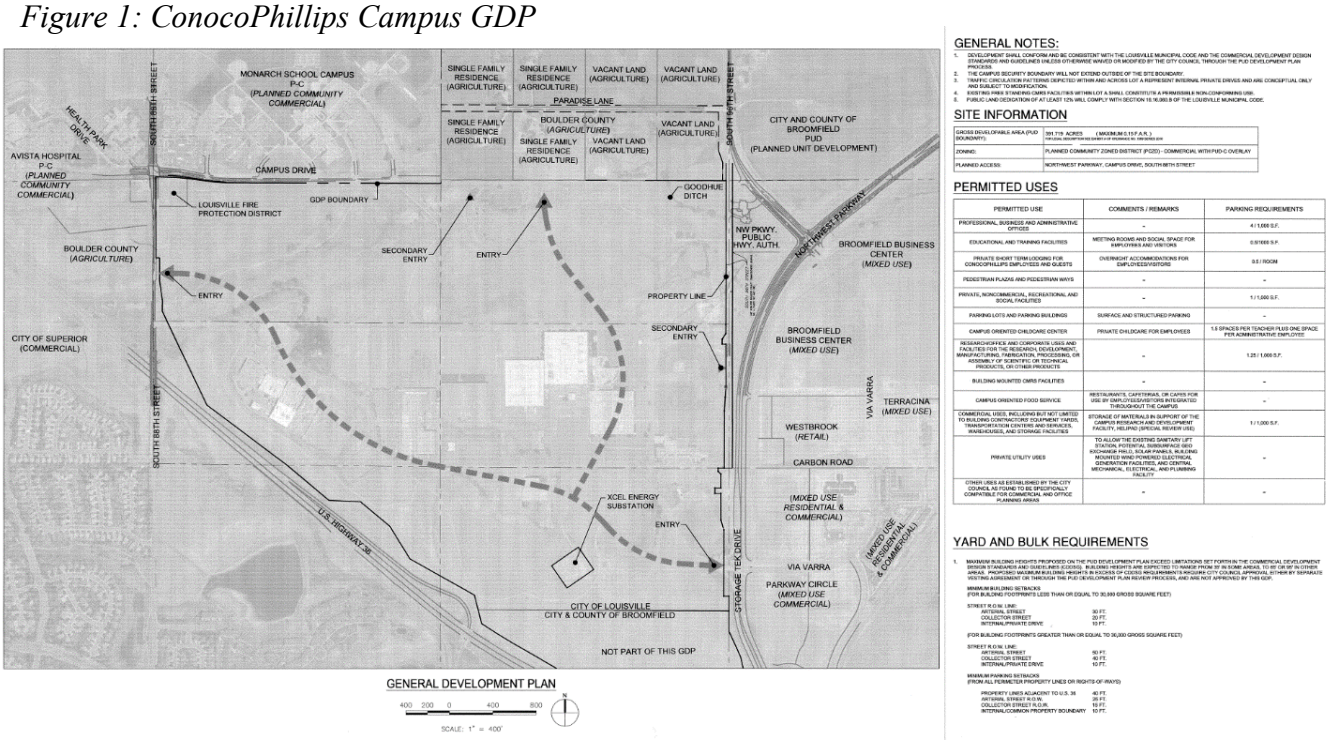
In 2010, the City approved a General Development Plan (GDP), Zoning Agreement, Preliminary Subdivision Plat, and Preliminary Planned Unit Development (PUD) for the ConocoPhillips development (see Attachment Nos. 3-5). The GDP included an approximately 2.5 million sq. ft. development cap, set allowed land uses, established setbacks, parking standards, and required a minimum public land dedication of 12%, matching the minimum code requirement.

The preliminary PUD outlined a more specific public land dedication proposal that included 38.92 acres of public land dedication within the development and a commitment

to dedication of an additional 20 acres of preserved land in Boulder County, north of the site around Paradise Lane. The plans also included clustering the development parcels towards the center of the property, leaving 222 acres of private open space. The preliminary PUD allowed development up to 5 stories and 65 feet in height, with one subarea allowing a four story, 95-foot-tall building. The development was intended to be a research campus for ConocoPhillips, which later abandoned its development plans due to a corporate restructuring.

While the preliminary PUD and Subdivision Plat have expired, the 2010 ConocoPhillips Campus GDP and the Zoning Agreement do not expire and govern development of the property.

Figure 1: ConocoPhillips Campus GDP



An application for a revised GDP (Redtail Ridge) received City Council approval on September 21, 2021. The Redtail Ridge GDP includes a mix of commercial and industrial development with a total development cap of 3 million square feet, 93 acres of public land dedication, adoption of a transportation demand management (TDM) plan, and adoption of a Sustainability Commitment Plan with requirements for building to Leadership in Energy and Environmental Design (LEED) standards, building all-electric for certain types of development, and providing a minimum of 3 megawatts of on-site photovoltaic capacity.

A petition was filed for a referendum on the City Council's approval of the Redtail Ridge GDP. An election was held on April 19, 2022, in which the voters overturned the Council's

approval of the ordinance, resulting in the 2010 ConocoPhillips Campus GDP remaining as the governing development plan for the property.

Metropolitan District Approval

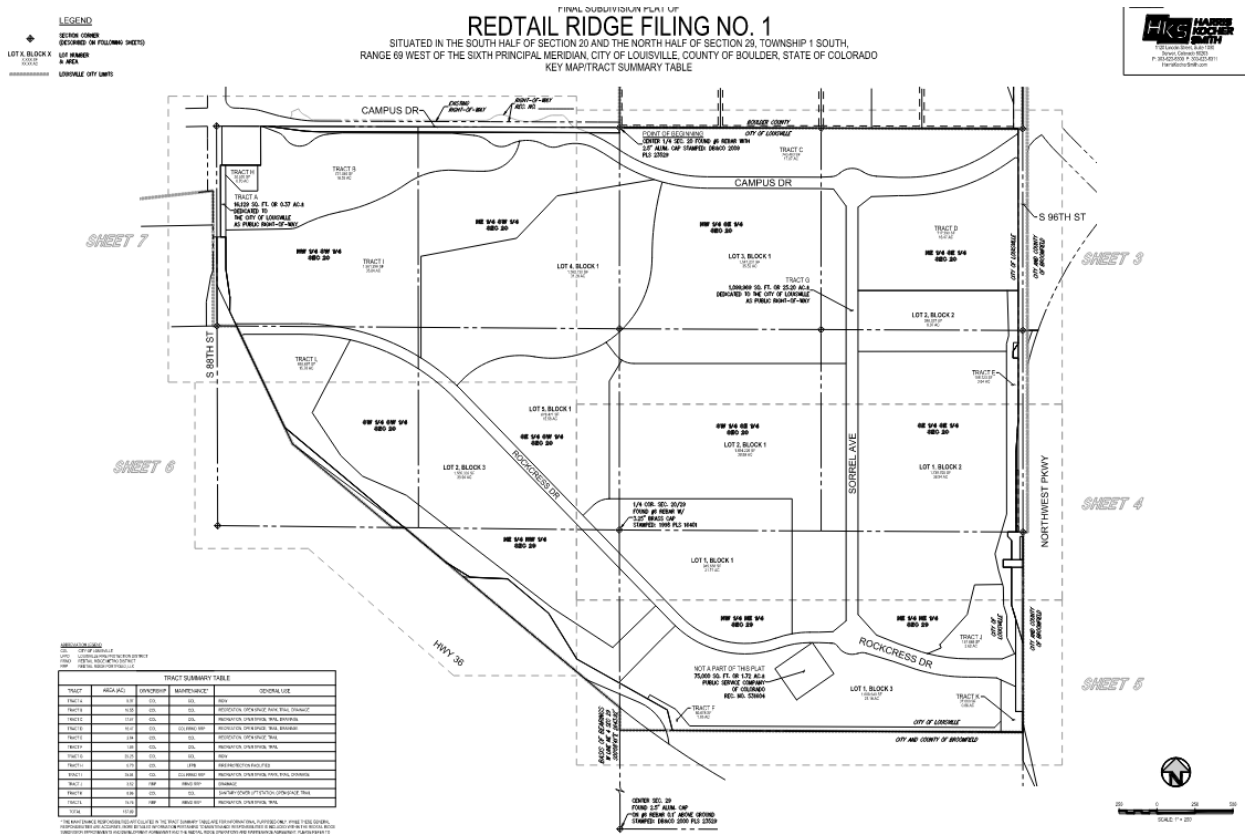
In February 2021, the City Council conditionally approved service plans for the Redtail Ridge Metropolitan (Metro) District Nos. 1-4. The four districts are intended to finance public infrastructure for the Redtail Ridge development and provide ongoing services within the development boundaries, including landscaping maintenance within public rights of way and transportation demand management programming. The Metro Districts could assess a property tax levy of up to 60 mills, with the debt mill levy capped at 50 mills. The additional 10 mills are reserved for operations and maintenance, which would include landscaping maintenance within street rights of way and programs such as the proposed transportation demand management plan.

The City's service plan approval included a condition that the Districts may not impose any mills, issue debt, or collect fees until the project is consistent with the Comprehensive Plan and that the applicant seek an amendment to the service plan at the time of final plat, and that the final plat and service plan infrastructure cost estimates match. The Redtail Ridge Metro District has requested an amendment to the service plan, which is being presented with this application but as a separate agenda item.

PROPOSAL:

The proposed subdivision creates a series of lots and blocks for development, road rights of way, utility easements, and private road access easements. The development is intended to include a mix of hospital, medical office, light industrial, commercial, and office uses. It is important to note that the subdivision plat process does not establish the allowed uses or development standards. Such standards are established by the 2010 GDP. Avista Hospital recently announced an interest in moving its 88th Street hospital campus (100 Health Park Drive) to this location.

Figure 2: Final Plat Map



Public Land Dedications and Other Open Space Dedications

The City requires a public land dedication, or equivalent value through cash-in-lieu, at the time of final subdivision plat approval to meet a public purpose, such as parks, open space, schools, or any other public purpose determined by the City (LMC Sec. 16.16.060). The minimum requirement for public land dedication for commercial development is 12% of the gross project area. The dedication must be "designed and intended to reasonably relate to the needs created or contributed to by the subdivision development within the City."

Based on a previous annexation agreement, an approximately 81-acre portion of the property is exempt from the public land dedication requirement (see Attachment No. 9, Section 14 of Annexation Agreement). The minimum public land dedication requirement for the remaining 309 acres is 37.1 acres of public use.

The public land dedication proposal totals 139.01 acres, or 45% of the 309 acres subject to the public land dedication requirement, far exceeding the minimum amount required under City code. In addition, the 46.86 acres of public land dedication around Paradise Lane in Unincorporated Boulder County provides contiguous open space between the Admor Open Space to the north and Tract C of the Redtail plat, that is designated for open space (see Figure 5 below). Staff anticipates that this land would be owned by the County, with the City holding a conservation easement on the property.

The Open Space dedication on Tract C also meets the requirements for a buffer between development on the subject property and development on Paradise Lane in Boulder County under the Intergovernmental Agreement, Southeast Boulder County, South 96th Street, Dillon Road, and US 287 Area Comprehensive Development Plan (see Attachment No. 10, Exhibit A to Agreement, Section 4.17).

Figure 3: Public Land Dedication Summary

	Purpose	Acres
Tract B	Park	16.55
Tract C	Open Space	17.07
Tract D	Open Space	16.5
Tract E	Trail	3.64
Tract F	Trail	1.85
Tract H	Public Safety	0.7
Tract I	Open Space	35.84
Paradise Ln	Open Space	46.86
Grant Total		139.01

The applicant also proposes a 15.76-acre tract of land within the subdivision as privately maintained common open space, which is located on the southwest side of the subdivision (Tract L). This tract would ensure maintenance of the large berm that parallels US 36, providing a visual buffer between the development and the highway.

A 40.1-acre conservation easement is planned south of the project in the City and County of Broomfield, adding to the preserved open space land in and around the development. The conservation easement is not yet dedicated, but a commitment to do so within one year is included in the SIA. The Intergovernmental Agreement, Southeast Boulder County, South 96th Street, Dillon Road, and US 287 Area Comprehensive Development Plan also limits the parcel to private open space with Broomfield agreeing to acquire a conservation easement (see Attachment No. 10, Exhibit A to Agreement, Section 4.11). The City and County of Broomfield submitted a letter supporting the one-year deadline to dedicate the conservation easement (Attachment No. 24)

Figure 4: Public Land Dedication Map

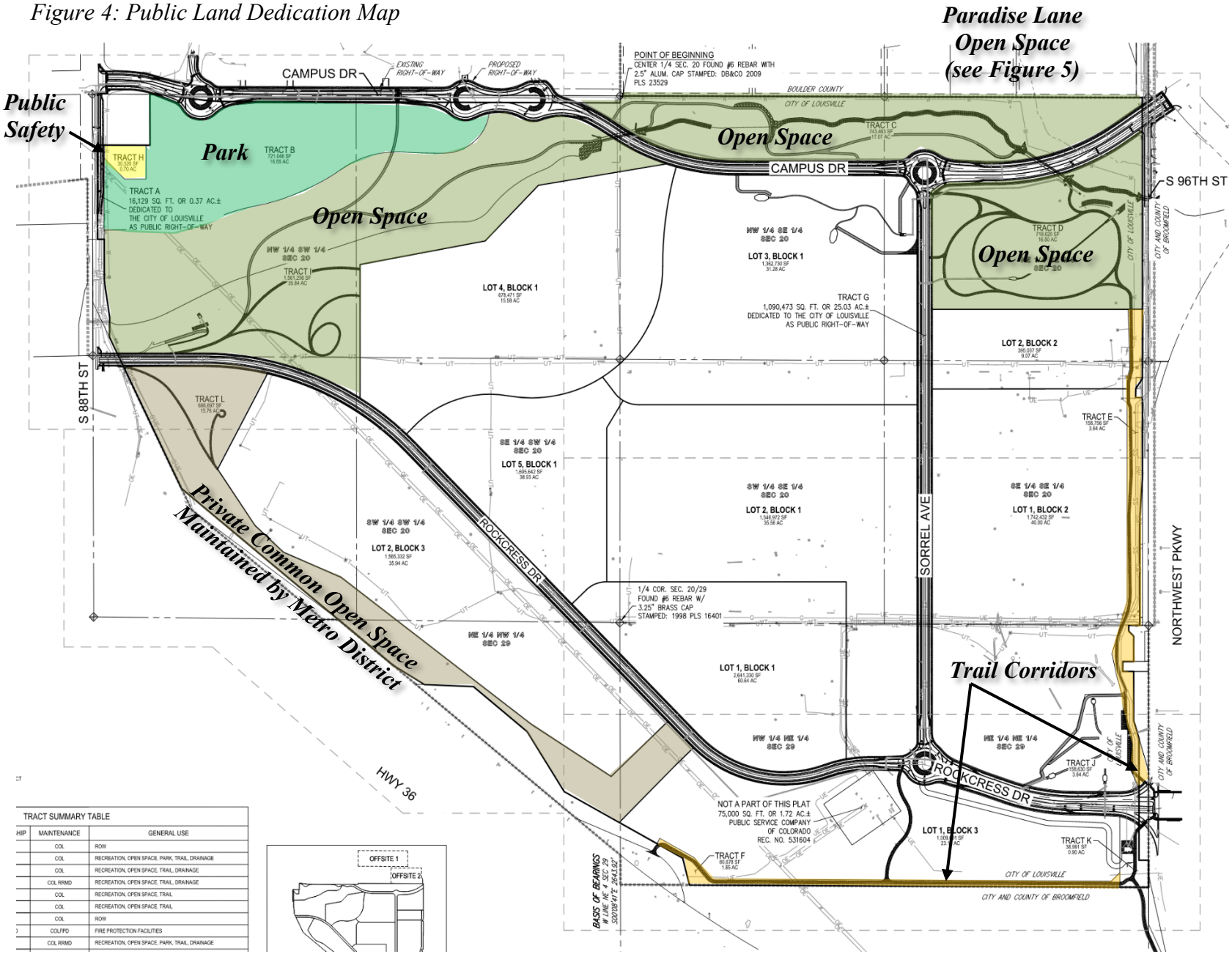


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Figure 5: Paradise Lane Public Land Dedication

The grand total of public land dedication areas, common open space, and the City and Council of Broomfield conservation easement is 194.7 acres.

Road and Trail Network

The proposal includes an extension of Campus drive from its current terminus to 96th Street, a new public east-west road connecting 88th Street to Northwest Parkway (Rockcress Drive), a north-south road, connecting Campus Drive to Rockcress Drive (Sorrel Avenue), and a series of private roads. Campus Drive would include four lanes east of Sorrell Avenue and two lanes west of Sorrell Avenue and would include on-street bike lanes and separated multi-use paths. Rockcress Drive would include four lanes east of Sorrell Avenue and two lanes west of Sorrell Avenue. Rockcress Drive would also include on-street bike lanes and off-street multi-use paths and Sorrel Avenue would include on-street bike lanes and sidewalks.

Figure 6 below shows the street layout and trail and sidewalk layout. Following the preliminary plat approval, a new underpass was added connecting the Monarch School

Campus to the open space trail. The open space trail was also changed from a soft surface trail to hard surface so that it could be plowed during the winter to maintain the intended school route. An overpass across NW Parkway south of the 96th Street intersection was also added, with connecting trails into the City's open space and Campus Drive. This is also seen as a school route enhancement from the Broomfield neighborhoods to the east and meets the requirement of the NW Parkway Authority to remove the pedestrian street crossing at the 96th Street and NW Parkway intersection.

Regional trail connections would be made between the US 36 regional trail to the project, connections to the Rock Creek trail system through an existing underpass located south of the project in Broomfield, and potential regional connections to the north of the project and the Coal Creek trail system.

Figure 6: Trail and Street Layout

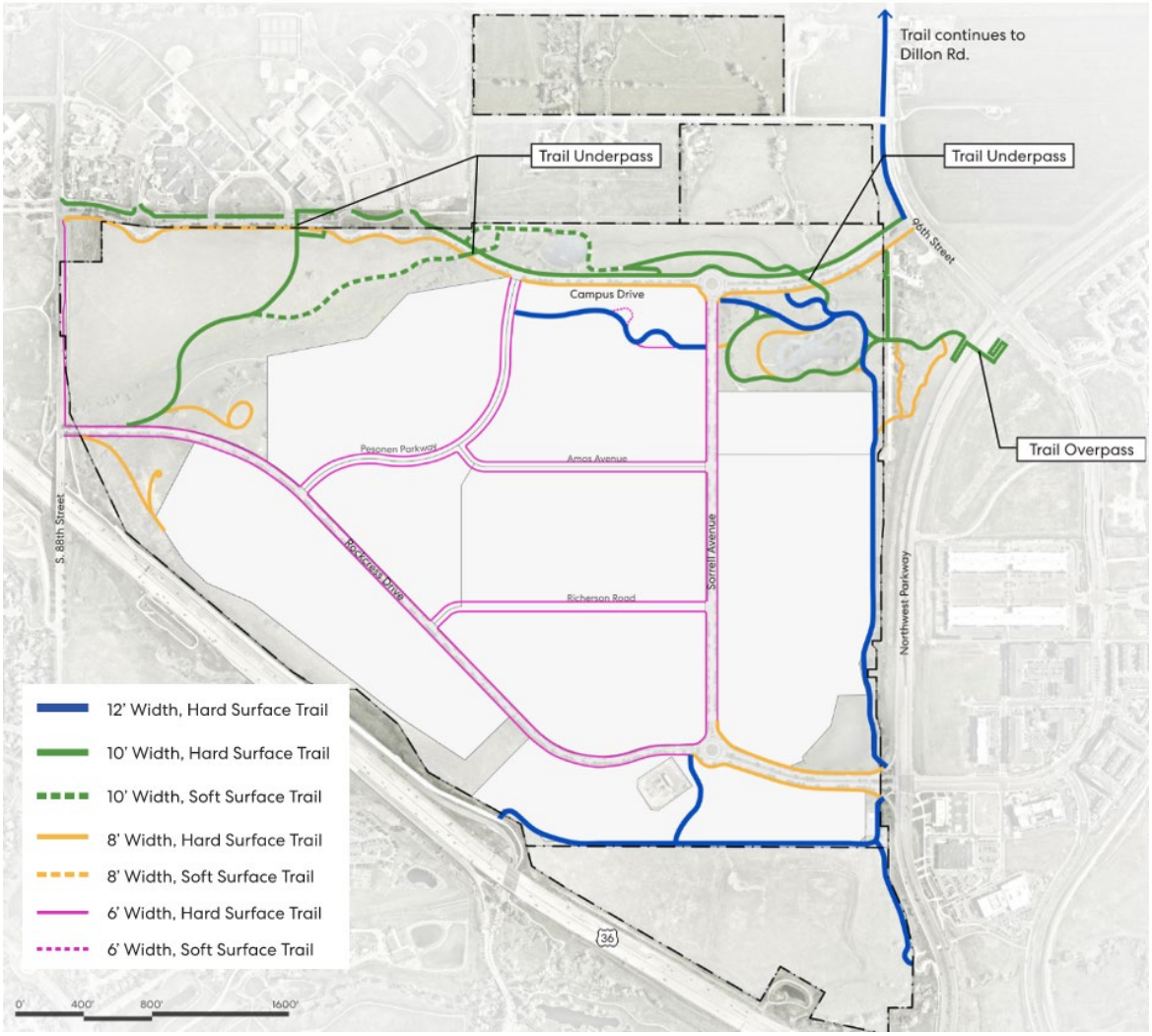


Figure 7: Campus Drive Underpass at Monarch School Campus

Figure 8: Campus Drive Underpass and Drainage Culvert

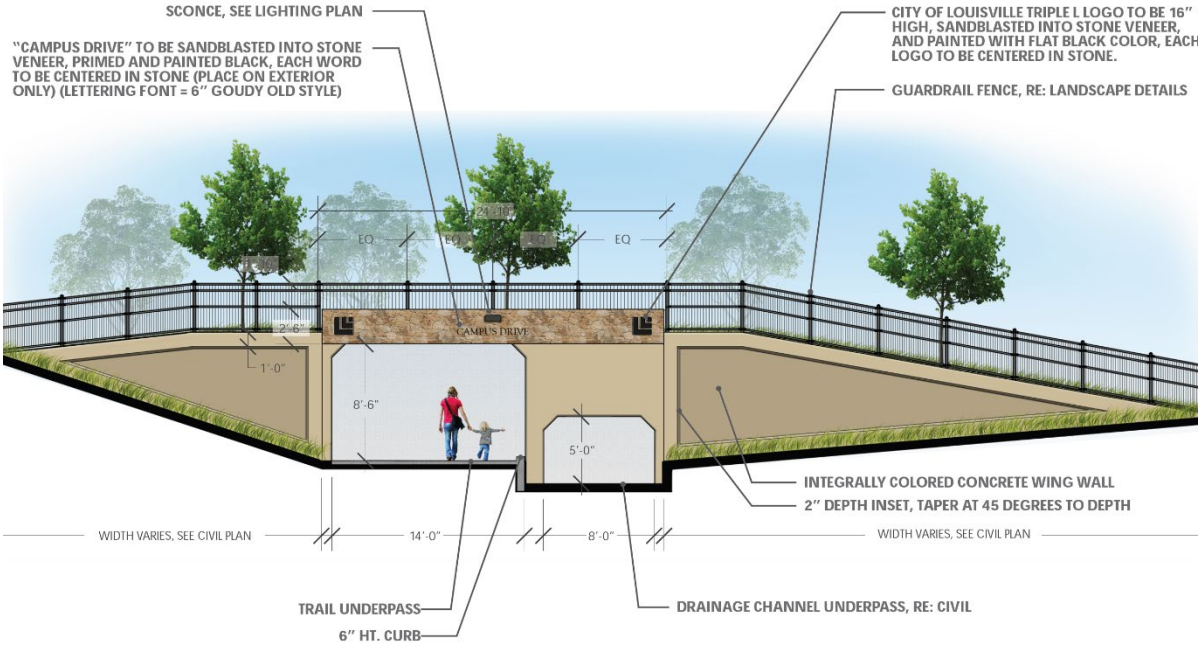


Figure 9: Streetscape Illustration

Part of the Campus Drive improvements would also include relocating a portion of the Goodhue Ditch. This relocation and establishment of a new easement have not yet been approved by the Goodhue Ditch and Reservoir Company's Board, but work has progressed on preliminary engineering and construction requirements and reimbursements. Staff recommends that finalization of the agreement between the applicant and the Goodhue Ditch and Reservoir Company be conditions of recording the final plat. A letter on the status of the Goodhue Ditch and Reservoir Company's review is included as Attachment No. 11.

Traffic Analysis

The attached Redtail Ridge Traffic and Mobility Study, dated July 30, 2024, evaluates level of service on the internal and regional road network at different phases of the project build out (see Attachment No. 2g). At full build out, the Study estimates a total of 21,285 additional daily vehicle trips. The Study anticipates that around 75% of the trips would to/from US 36 or NW Parkway. Approximately 15% of the traffic would be to/from 96th Street, 5% to/from Interlocken Loop, 3% to/from McCaslin Boulevard, and 2% to/from 88th Street.

Figure 10: Estimated Trip Distribution

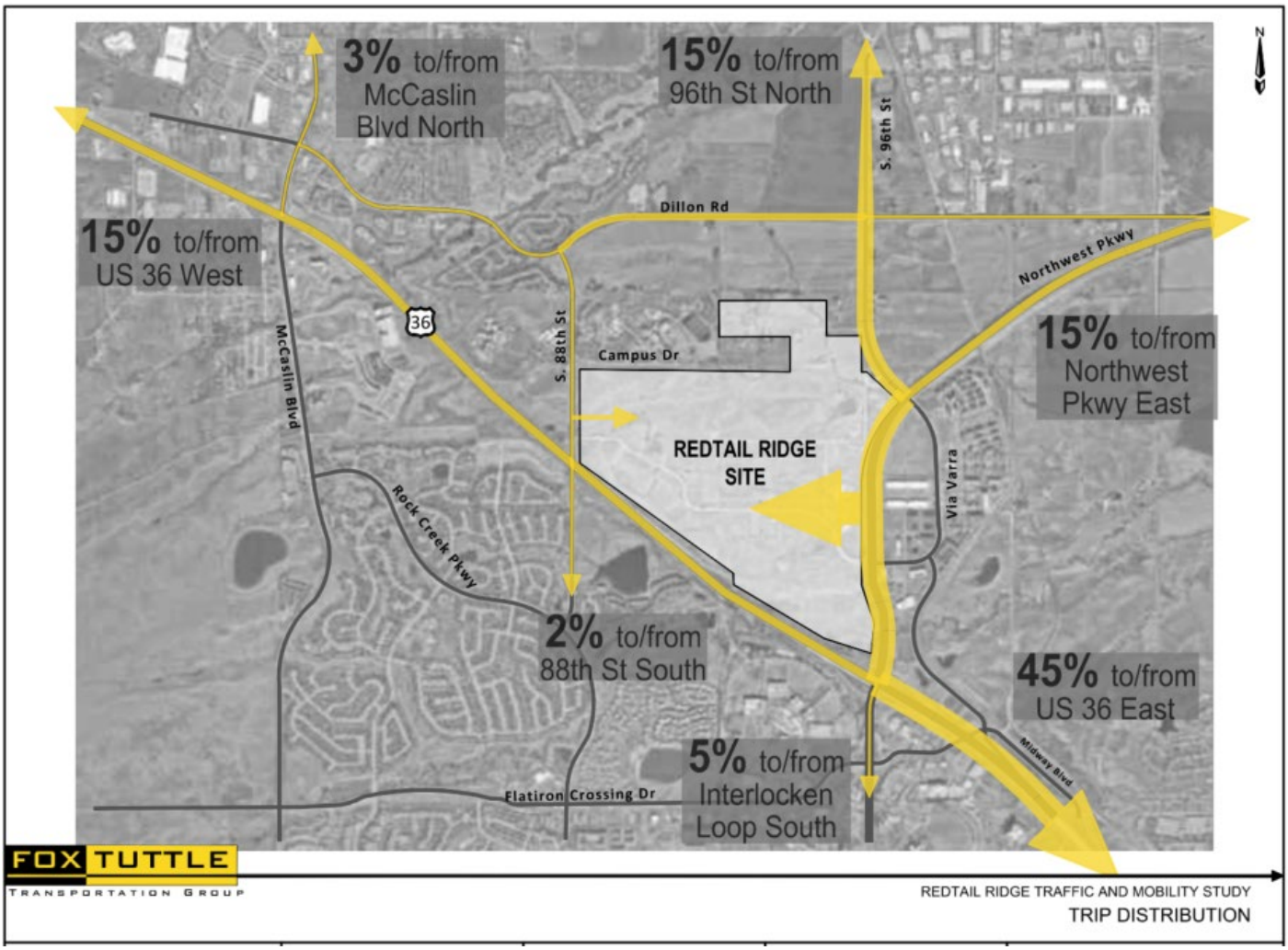


Figure 11: Estimated Vehicular Trip Generation

Table 11. Trip Generation Summary

	Land Use	Size	Unit	Non-SOV	Internal Capture	Net Reduction Factor	Average Weekday Trips Rate	Average Weekday Trips Total	Weekday AM Peak Hour Trips Rate	Weekday AM Peak Hour Trips Total	Weekday AM Peak Hour Trips In	Weekday AM Peak Hour Trips Out	Weekday PM Peak Hour Trips Rate	Weekday PM Peak Hour Trips Total	Weekday PM Peak Hour Trips In	Weekday PM Peak Hour Trips Out
Phase 1 (2025)	#130 Industrial Park	509.26	KSF	**12%**	**3%**	85%	*	1,868	0.4	174	141	33	0.4	174	37	137
	#760 Research and Development Center (Life Science + Amenity)	300.0	KSF	**12%**	**3%**	85%	**	2,695	1.03	264	216	48	0.98	251	40	211
	#140 Manufacturing (GMP)	598.94	KSF	**12%**	**3%**	85%	*****	2,100	******	320	243	77	0.74	378	117	261
		######	**KSF**			**Subtotal**		**6,663**		**758**	**600**	**158**		**803**	**194**	**609**
Phase 2 (2030)	#820 Shopping Center	14.0	KSF	**12%**	**75%**	22%	37.75	116	0.94	3	2	1	3.81	12	6	6
	#130 Industrial Park	118.8	KSF	**12%**	**3%**	85%	*	877	0.4	41	33	8	0.40	41	9	32
	#710 General Office Building	90	KSF	**12%**	**3%**	85%	**	818	***	95	82	13	****	88	14	74
	#760 Research and Development Center	264.00	KSF	**12%**	**3%**	85%	**	2,397	1.03	232	190	42	0.98	221	35	186
	#610 Hospital	160.0	BEDS	**12%**	**3%**	85%	22.32	3,048	1.79	244	176	68	1.69	231	76	155
	#720 Medical-Dental Office Bldg	150.0	KSF	**12%**	**3%**	85%	36.00	4,609	***	296	234	62	3.93	503	151	352
		921.80	**KSF**			**Subtotal**		**12,037**		**911**	**717**	**194**		**1,096**	**291**	**805**
Ph 3 (2040)	#710 General Office Building	270.0	KSF	**12%**	**3%**	85%	**	2,374	***	239	206	33	****	250	40	210
		270.00	**KSF**			**Subtotal**		**2,585**		**239**	**206**	**33**		**250**	**40**	**210**
						Full Buildout Total		**21,285**		**1,908**	**1,523**	**385**		**2,149**	**525**	**1,624**

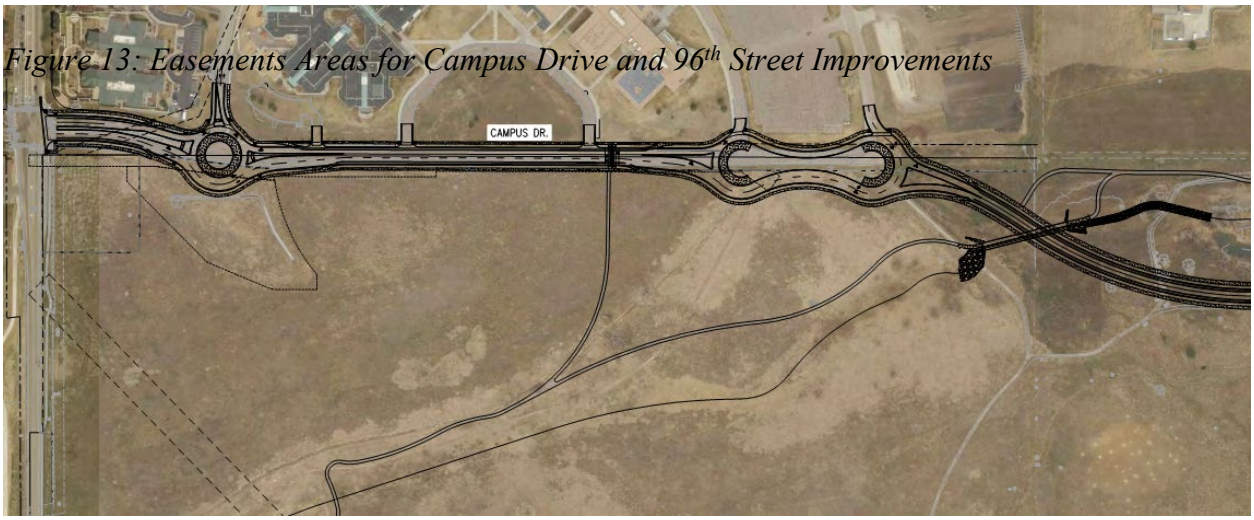
Figure 12: Campus Drive Alignment South of Monarch Campus

The study also provides recommendations on road capacity improvements needed to maintain adequate level of service (LOS). LOS is used to evaluate how an intersection operates based on delay at the intersection. LOS is assigned a "grade" from A to F based on delays at the intersections. Based on this analysis, the study recommends specific roadway and intersection capacity improvement that are needed to ensure adequate LOS above an F for each phase of development. City engineering staff and a third-party transportation engineer hired by the City have reviewed the study and support the findings and recommended transportation improvements outlined in the study.

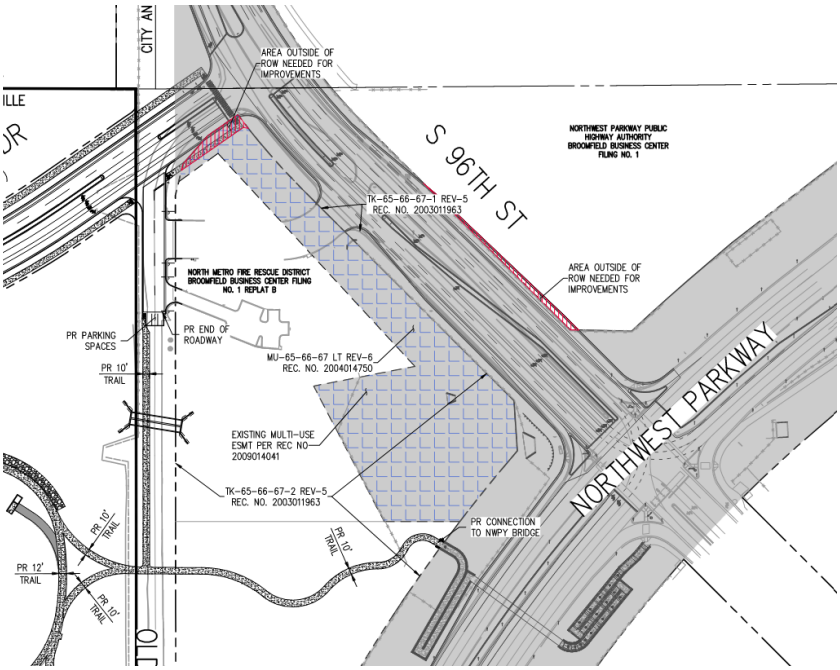
Prior to reaching full build out, expansions will be needed at the NW Parkway and US 36 interchange to maintain adequate level of service. The study notes that the interchange would fail in 2040 with background traffic alone. The study does not commit to specific improvements at these intersections due to a lack of clarity on future expansion plans for NW Parkway.

Implementation of the transportation improvements noted in the Study requires acquisition of right of way from Boulder Valley School District for the expansion of Campus Drive. The applicant has provided a resolution from the Boulder Valley School District in support of the right of way acquisition (Attachment No. 2h).

Figure 13: Easements Areas for Campus Drive and 96th Street Improvements



A portion of the North Metro Fire District (NMFD) property located in Broomfield and property owned by NW Parkway Authority is needed to facilitate the planned Campus Drive connection to 96th Street and expansion of the 96th Street and the NW Parkway Intersection. The NMFD property has an access easement granted to NW Parkway Authority that allows the improvements without dedication of right of way (Attachment Nos. 2i and 2j). The NMFD has also provided a letter of support of the project (Attachment No. k).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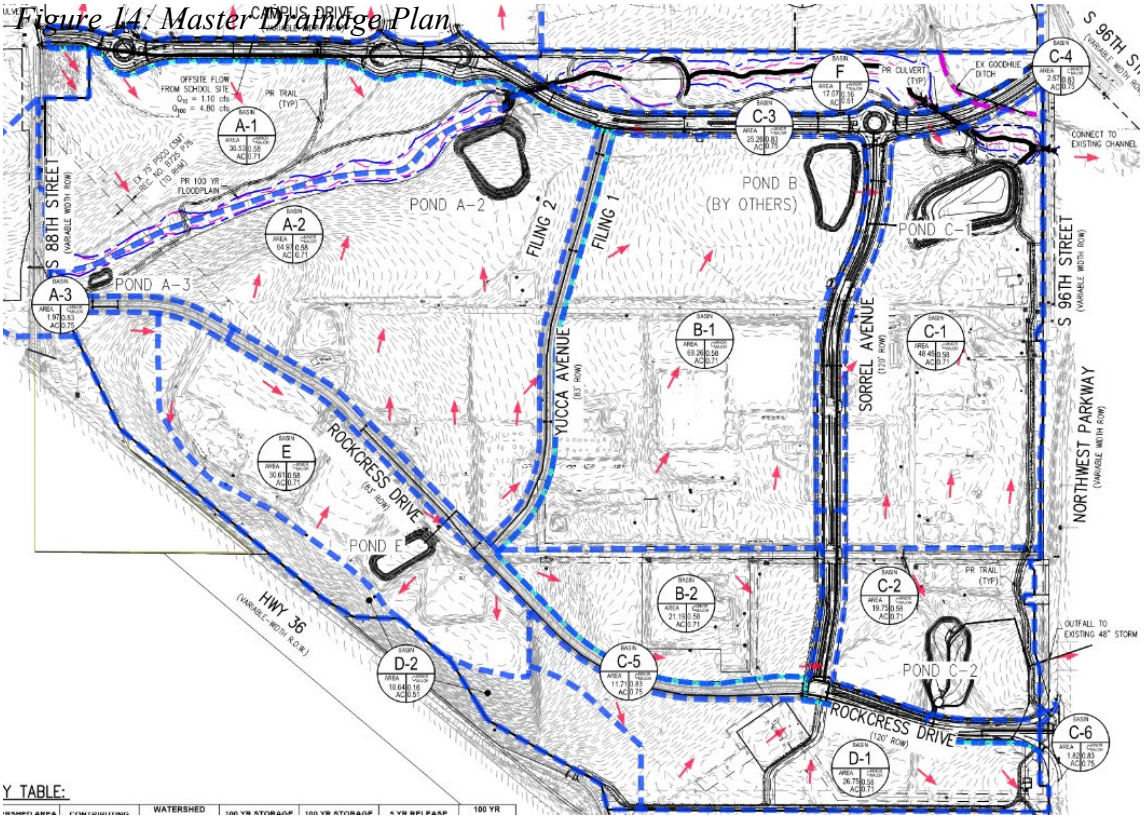
JR
AREA OUTSIDE OF ROW NEEDED FOR IMPROVEMENTS
S 96TH ST
NORTHWEST PARKWAY PUBLIC HIGHWAY AUTHORITY BROOMFIELD BUSINESS CENTER FILING NO. 1
TK-65-66-67-1 REV-5 REC. NO. 2003011963
NORTH METRO FIRE RESCUE DISTRICT BROOMFIELD BUSINESS CENTER FILING NO. 1 REPLAT B
AREA OUTSIDE OF ROW NEEDED FOR IMPROVEMENTS
PR PARKING SPACES
PR END OF ROADWAY
PR 10' TRAIL
MU-65-66-67 LT REV-6 REC. NO. 2004014750
EXISTING MULTI-USE ESMT PER REC NO 2009014041
NORTHWEST PARKWAY
TK-65-66-67-2 REV-5 REC. NO. 2003011963
PR CONNECTION TO NWPY BRIDGE
PR 10' TRAIL
PR 12' TRAIL
PR 10' TRAIL
PR 10' TRAIL
J10

Drainage

The proposal requires drainage improvements to route stormwater flows to the appropriate drainageway. Approximately 3.5 miles of new storm sewer will be required to discharge the storm flow to drainageway I near the northeast corner of the site. Drainageway I will require updates along its length in the form of channel armoring and culverts to convey the estimated storm flows. In addition, each property is required to install storm water best management practices to meet the requirements of Mile High Flood District and the City's municipal storm permit when they develop. There are currently six regional detention ponds identified in the master drainage report that will serve the stormwater management demands of the development. Additional detention ponds or best management practices may be required as future PUD level developments considered if the current design does not provide adequate capacity.

Figure 14: Master Drainage Plan



Water and Wastewater Utility

To service potable water to development, approximately three miles of new potable water distribution pipeline is required. This pipeline will be added to the mid-zone which is served from both the Sid Copeland Water Treatment Plant (WTP) and Howard Berry WTP. In addition, a new pressure reducing valve will be required to connect with the low pressure zone.

To collect wastewater from the new development, an additional three miles of gravity mains will be required to convey wastewater to a sewer lift station that would be located

on Tract K of the plat and dedicated to the City. This lift station will boost the wastewater through a three mile force main to discharge to an existing sanitary sewer upstream of the Wastewater Treatment Facility. In addition, the wastewater treatment facility will require an expansion as the facility cannot treat the additional wastewater volume from the development. The SIA and a separate agreement will address funding and at what stage of development the expansion is required for any additional development can take place.

Transportation Demand Management

Section 3.4 of the 2010 Zoning Agreement requires submittal of a Transportation Demand Management (TDM) Plan as part of the final plat, and that such TDM Plan cover the entire property and all phases of development. The applicant submitted a Transportation Demand Management (TDM) Plan as Attachment No. 2r. The plan identifies strategies to reduce vehicle trips and promote other transportation modes, such as transit and biking. The plan identifies the possibility of shuttle services, transit passes for employees and a TDM coordinator hired by the Metro District as potential strategies. The SIA includes a commitment for each development to provide a site-specific TDM to be reviewed as part of the PUD approval process.

Sustainability Plan and Commitments

The applicant is proposing a series of sustainability commitments as part of the development, which are included in the SIA. There are 30 total commitments, including Leadership in Energy and Environmental Design (LEED) certification for all buildings in the development and a minimum of 2.54 MW of solar electric generation for the project. Each of these commitments will be verified during the PUD and development process.

Sustainability Commitments

Figure 15: Sustainability Commitments Summary

SECTION	#	COMMITMENT	VALIDATION
Community	1	Wayfinding	Fitwel
	2	Crop Share Drop Off	Fitwel
	3	Building Operational Guidelines	Fitwel
	4	Comprehensive Composting	LEED
	5	Emergency Preparedness Plan	Fitwel
	6	Public Art	Fitwel
Energy & Carbon	7	LEED Certification for all buildings	LEED
	8	Idle Reduction	Fitwel
	9	Optimize Energy Performance	LEED
	10	Renewable Energy Production Min. 2.6 MW Solar Garden	LEED
	11	Heat Island Reduction	Fitwel
	12	Advanced Energy Metering	LEED
Site Development & Water	13	Open Space	LEED
	14	Walking Trail	Fitwel
	15	Light Pollution Mitigation	Fitwel
	16	Restorative Garden	Fitwel
	17	Indoor Water Use	LEED
	18	Outdoor Water Use	LEED
Transportation & Mobility	19	Pedestrian Network	Fitwel
	20	Green Vehicles	Fitwel
	21	Safe Street Infrastructure	Fitwel
	22	Transit Access	Fitwel
	23	Bicycle Parking	Fitwel
	24	Universal Accessibility	Fitwel
Health	25	Outdoor Fitness Area	Fitwel
	26	Bike Lanes	Fitwel
	27	Minimum IAQ Performance	LEED
	28	Outdoor Space Amenities	Fitwel
	29	Air Quality Testing	Fitwel
	30	Tobacco and Smoke-Free Outdoor Spaces	Fitwel

ANALYSIS:

LMC Section 16.12.075 outlines three standards for the approval of final plats. Each standard is listed below, followed by a staff discussion and recommendations. In addition, this code section notes that the City

Council may consider implementation of use, height, area, bulk requirements, or restrictions if such restrictions do not violate the zoning code.

Sec. 16.12.075. Action on preliminary and final plats.

A. In deciding whether to approve, approve with modifications, or deny a preliminary plat or a final plat, the planning commission and city council shall be guided by the following standards:

1. Whether the plat conforms to all of the requirements of this title;

2. Whether approval of the plat will be consistent with the city's comprehensive plan, applicable zoning requirements, and other applicable federal, state and city laws;

3. Whether the proposed subdivision will promote the purposes set forth in section 16.04.020 of this Code and comply with the standards set forth in chapter 16.16 of this Code and this title.

B. Nothing in this title is intended to limit the authority of the planning commission granted pursuant to C.R.S. § 31-23-215(2) to impose use, height, area, or bulk requirements or restrictions governing buildings and premises within a subdivision, so long as such requirements and restrictions do not authorize violation of the city zoning ordinance, and the city council shall have the same authority.

Sec. 16.12.075.A.1. Whether the plat conforms to all of the requirements of Title 16, Subdivisions

Staff has coordinated the review of the application with City departments, including Public Works, Parks, Recreation and Open Space, Police, and the Louisville Fire District, as well as with utilities and referral agencies. Staff conditionally finds the application to be in conformance with the requirements of Title 16. The full list of conditions is summarized in the staff recommendation section below.

Sec. 16.12.075.A.2. Whether approval of the plat will be consistent with the city's comprehensive plan, applicable zoning requirements, and other applicable federal, state and city laws

The Redtail Ridge development is designated as a Rural Special District under the Comprehensive Plan. The plan includes the following statement about the property:

The Phillips 66 Rural Special District is located in the southern portion of the City and is currently vacant. The land in this location is a unique subarea of

the City which contains vital community facilities that provide critical services to the City and also presents a unique regional development opportunity. Due to the isolated nature of this special district, it is somewhat self-contained. However, the district will remain connected to the region through US 36 and to the rest of Louisville through pedestrian and bicycle trails.

The Comprehensive Plan notes that each district should have a unique mix of land uses, and calls out the following as specifically allowed in the districts: retail, office, industrial, and institutional uses.

The policy on density for Rural Districts includes a Floor Area Ratio maximum of 0.25 and notes building heights are limited to three stories, but additional height may be permitted if structures are clustered, located out of public view shed, and buffered by surrounding topography and open space.

Staff finds the application is in compliance with the applicable Comprehensive Plan policies related to density, height and land uses and the purpose and intent of the Comprehensive Plan. The overall project density under the 2010 ConocoPhillips GDP, which limits density to approximately 2.54 million sq. ft., which is below the 0.25 FAR density standard in the Comprehensive Plan. The Comprehensive Plan FAR policy would support approximately 2.9 million sq. ft. of development based on the net land area after deducting out public land dedication and road rights of way areas.

The final plat does not address allowed building heights, which would be determined through the Planned Unit Development review process. Under the City's Commercial Development Design Standards and Guidelines (CDDSG), building height is limited to 35 feet, and 42 feet to the top of any rooftop mechanical screening.

Staff finds that the following Special District policies are also relevant to the proposal.

Special District Policies

1. *Articulate and define Special Districts' specific character expectations in customized general development plans adopted by City Council.*

2. *Create walkable special districts that are connected to the rest of the City through sidewalks and pedestrian and bicycle paths.*

3. *Encourage internal services which meet the daily needs of the people working in the district.*

Development within final plat boundaries is subject to the 2010 ConocoPhillips Campus GDP. The purpose of a GDP is to establish the character of development within the district and it sets certain underlying zoning standards for development

of the property. The GDP requires development in the district to be in compliance with the CDDSG, even if developed as an industrial use, unless specific provisions are waived through the PUD process. The GDP also specifies building setbacks and includes a note about anticipated building heights ranging up to 65 feet or 95 feet, recognizing these heights are subject to approval of waivers through a PUD process. Those heights were consistent with the 2010 ConocoPhillips Campus Preliminary PUD, which is now expired.

The 2010 GDP designates the property as Commercial and includes a Permitted Uses Table and parking standards by permitted use. Although this use table was originally intended to accommodate the ConocoPhillips campus as a single-user development, the GDP does not restrict development to a single user and the permitted uses can be applied to multiple users within the platted development lots. One of the listed permitted uses is broadly stated as Commercial Uses, which allows any use noted in LMC Sec. 17.72.090. With the broad allowance of commercial uses under the GDP, development can be facilitated to provide internal services to those working or visiting the development.

The application also includes implementation of a complete-street network consistent with the City's Transportation Master Plan that includes on-street bike lanes, multi-use paths and furthers completion of regional trail connections.

To address questions about compliance with state and federal wildlife regulations that will need to be met as part of the development, the applicant provided a summary memo from ERO Resource Corporation (Attachment 2s).

Sec. 16.12.075.A.3. Whether the proposed subdivision will promote the purposes set forth in Section 16.04.020 of this Code and comply with the standards set forth in Chapter 16.16 of this Code and Title 16, Subdivisions

Subdivision Purpose
The following are the 19 specific purpose statements in the LMC for subdivisions followed by staff discussion.

Sec. 16.04.020 Purpose

A. To promote the health, safety, convenience, order, prosperity and welfare of the present and future inhabitants of the city;

The proposal is consistent with the Comprehensive Plan policies and zoning for the development, ensuring development meets this purpose.

B. To provide for the proper arrangement of streets in relation to existing or planned streets and to the comprehensive plan;

The proposal would complete the Campus Drive extension to 96th Street, would significantly reduce congestion at Dillion and 88th Street and 88th Street and Campus during school days and improve emergency safety and access to the school. Rockcress Drive will connect to both 88th Street and 96th Street and Sorrel Avenue connects Rockcress Drive to Campus Drive, providing the backbone street network for the development.

C. To provide for adequate and convenient open spaces for motor vehicle, pedestrian and bicycle traffic, utilities, access of firefighting apparatus, civil defense, recreation, and sites for schools, educational facilities, and related structures;

The proposed internal road network, trails, and off-site road improvements insure adequate vehicular and multi-modal circulation throughout the development and regionally, and is consistent with the Transportation Master Plan. The Fire District has reviewed the proposal for access, and the public land dedication includes a parcel for a future fire station if needed.

D. To promote orderly growth and to provide for the harmonious development of the city in accordance with its comprehensive plan;

The proposal is consistent with Comprehensive Plan policies for this district, as previously discussed.

E. To provide for adequate light, air and privacy and to secure safety from fire, flood and other danger;

The proposal does not include any development in a regulated floodplain and will implement minimum setbacks and the development standards of the 2010 ConocoPhillips Campus GDP and the City's CDDSG.

F. To avoid congestion of population and to provide for the proper distribution of population and supportive land uses;

The proposal is to create a major employment center with a mix of commercial uses. There is no residential development allowed under the approved GDP; thus the development will need to accommodate a significant amount of in commuting by workers and visitors.

G. To ensure that public facilities and services are available and will have sufficient capacity to serve the development;

The development includes an SIA that outlines requirements for the developer to install and upgrade public infrastructure, including road capacity improvements, water and sewer main line infrastructure, and sewer facility expansion. The applicant is proposing several provisions in the SIA that are different than the City's standard template for an SIA, including how the financial surety for the improvements is made. A separate section below provides a more in depth discussion and analysis of the SIA.

H. To protect the character and the social and economic stability of all parts of the city;

Character of the development will be defined by the GDP and CDDSG standards and reviewed through the City's PUD process, ensuring development meets the city's expectations for the character of the development. The project will also provide a major employment center for the City and region and is anticipated to increase tax revenue for the City, lending the economic stability of the City.

I. To conserve and enhance the value of land throughout the city and the value of buildings and improvements upon the land;

The proposed development will include a high-quality and multi-modal streetscape consistent with City policy, along with design and use standards consistent with City policies.

J. To minimize the conflicts among the uses of land and buildings placed on the land;

The public land dedications create a buffer of open space and parks between the Monarch School Campus and residential development, north and northwest of the property.

K. To provide for the safe and efficient circulation of traffic throughout the city, the avoidance of congestion in the streets and highways and along pedestrian and bikeways;

The proposed development includes a multi-modal road and trail system within the development, improves regional trail connectivity, and makes regional vehicular capacity improvements outside the subdivision. These improvements also include direct off-street trail connections to the Monarch School Campus, leading to safer and more convenient non-vehicular school routes.

L. To provide reasonable standards in order to further the orderly layout of land and to ensure proper legal descriptions and monumenting of subdivided land;

The subdivision plat includes an orderly and logical layout of blocks, lots and streets and will create property legal descriptions and boundary monuments for each lot.

M. To mitigate the pollution of air, streams and ponds, assure the adequacy of drainage facilities, safeguard the water table, and encourage the wise use and management of the natural environment;

The proposal includes a drainage report and plan and stormwater management plan for the development. The transportation network meets the City's Transportation Master Plan policies to support multi-modal development that will help reduce traffic congestion and pollution. Further, the development is required to implement and Transportation Demand Management Plan that will also help reduce vehicular congestion and air pollution.

N. To preserve and enhance to the extent reasonably possible the natural beauty and topography of the city and areas of historical or archeological importance and to ensure appropriate development with regard to such natural, historical and archaeological sites and features;

The location of the park and open space public land dedications are intended to cover previously undeveloped areas of the property and natural drainage ways that include the most valuable habitat on the property. The open space and public land dedication land areas also significantly exceed the minimum public land dedication areas required under municipal code, the 2010 ConocoPhillips Campus GDP, or the 2010 ConocoPhillips Campus PUD.

O. To regulate the use of land within the city on the basis of the impact thereof on the community or surrounding areas;

The proposed preliminary plat is consistent with allowed land uses and design standards in the approved GDP and Comprehensive Plan policy for the district. The project will be buffered from residential and school developments to the north by parks and open space and will be below development densities allowed on property to the east of the project located in the City and County of Broomfield.

P. To regulate the location of activities and developments which may result in significant changes in population density;

The development will be a regional employment center but will not include any new residential development.

Q. To provide for phased development of services and facilities;

The project provides land dedications for a future park and public safety facility, which could include a fire station and police annex. The City would develop these facilities at a future date. Without residential development, demand on other city services, such as recreation and library services, would be limited. The City would maintain a trail system within the development that could be used for transportation and recreation for the employees and visitors of the development as well as city residents. Utility upgrades, including a sewer lift station, and sewer plant expansion would be needed and paid for the development.

R. To help assure that growth bears a reasonable share of the costs thereof; and

The SIA will require that the developer install all required public infrastructure for the project, including roads, right of way landscaping, trails, water and sewer main lines, and sewer plant infrastructure. The City will also collect water tap fees for future developments, and currently has a commercial development impact fee for transportation improvements. The metro district has committed to maintaining all landscaping within public rights of way and the City would maintain hardscapes and all trails, including the two proposed underpasses. The city would collect water and sewer fees, property tax, use tax, and potentially sales tax revenue over time that would offset the City's increased costs to maintain the new infrastructure.

S. To otherwise plan for and regulate the use of land so as to provide planned and orderly use of land and protection of the environment in a manner consistent with constitutional rights.

The preliminary and final plat provides for a planned and orderly layout of the development that enable development of the land consistent with allowed zoning regulations.

Subdivision Design Standards.
LMC Chapter 16.16 includes several sections of design standards for subdivisions. The following includes a staff discussion of compliance with each section.

Section 16.16.010 – General Design and Construction Standards

This section of the design standards requires conformance with the Comprehensive Plan, addresses travel modes, preservation of natural features, establishment of community facilities, and orderly phasing of development.

As discussed in previous sections of this memo, the proposed development is designated as the Phillips 66 Rural Special District and staff finds the proposal is consistent with Comprehensive Plan policy for this district. Staff also finds that the proposal is consistent with Transportation Master Plan policy and provides a

complete-street concept with on-street bike lanes, multi-use paths and furthers completion of regional trail connections. The plans includes land dedications for parks and open space lands over previously undeveloped areas of the property and on portions of the property with drainage and vegetation and lend the areas to wildlife habitat.

Section 16.16.020 – Site Considerations

This section speaks to not developing certain lands that may endanger health, life or property, leaving drainage areas in a natural state. The proposed preliminary and final plat includes development on appropriate areas of the property that can safely and efficiently accommodate the development. The public land dedication for park and open space uses covers larger parts of the planned surface drainage infrastructure and would be kept in a natural state.

Section 16.16.030 – Streets, Alleys, Easements

This section provides specific design standards that must be met unless modified through the subdivision approval process. Staff finds that the streets and easements are laid out according to these design standards and other city codes and policies.

Section 16.16.040 – Blocks

This section requires block length and widths to match the intended use and be at least 400 feet in length and not more than 1,320 feet in length. With the private road network, block lengths meet this standard.

Section 16.16.050 – Lots

This section addresses dimensional lot standards and road frontage requirements. The proposed lot layout meets the standards.

Section 16.16.060 – Public Sites and Dedications

This section requires a minimum of 12% of the gross land area in the subdivision to be dedicated for public purposes. As previously noted, an approximate 80 acres portion of the property is exempt from public land dedication through a previous annexation agreement. The minimum public land dedication requirement is 37.1 acres. The proposal for public land is 3.7 x the minimum at 139.01 acres. The Parks and Public Landscaping Advisory Board (PPLAB) and the Open Space Advisory Board (OSAB) both reviewed the public land dedication proposal and voted in support. These recommendations are discussed in more detail below. The OSAB recommendation includes several conditions, but these conditions do not impact the acreage or layout of the dedication.

The proposal also includes Tract L, which would establish a 15.76-acre "private common open space." Under the City's definition, this is open space land has little or no improvements, and is typically maintained by an owners association or other entity. In this case, the Redtail Ridge Metro District would maintain Tract L. Preservation of Tract L also ensures the current berm along US 36 would be maintained, providing a visual buffer to the proposed development.

Sec. 17.08.085. - Common open space.

Common open space means a tract, parcel or area of land, an area of water, or a combination of both land and water which does not include streets, alleys, driveways, parks, off-street parking and loading areas, or public open space and other facilities dedicated to the city for public use. Common open space shall be substantially free of structures, but may contain such improvements that are approved as part of a planned unit development and are appropriate for the recreation of residents of a planned unit development

SUBDIVSION IMPROVEMENT AGREEMENT (SIA) ANALYSIS:

The City's Subdivision Code requires a subdivider to be responsible for "having improvements installed, paid for and finally accepted by the City. Guarantees are required of the subdivider in order to meet this standard." LMC Sec. 16.20.060. The form of guarantee furnished by a subdivider must be acceptable to the City, "to assure the installation of all required public improvements in an approved manner and in a reasonable period of time." LMC Sec. 16.12.100.A.

Typically, the subdivider meets these Code requirements by providing the City a letter of credit ("LOC") in an amount that is 115% of the estimated construction costs of the improvements, which the City holds until the improvements are completed and inspected, at which time the LOC is reduced to 15% of the construction costs for the warranty period until the improvements are again inspected and accepted by the City.

The Subdivider for this application has requested the City Council allow the Redtail Ridge Metropolitan District ("the District") to furnish the improvement guarantee for this subdivision rather than the "Subdivider" (Redtail Ridge Portfolio, LLC), and has proposed the District be a party to the Subdivision Improvements and Development Agreement (the "SIA").

Additionally, the Subdivider and District have requested the City Council accept the following deviations from the City's standard practice with regard to SIAs:

- The guarantee required by the Code would be bond proceeds deposited with an escrow agent, so not held by the City.
- The amount of bond proceeds deposited with the escrow agent (defined in the SIA as the "Improvement Guarantee Amount") would be 105% of the improvement costs, rather than the City's standard of 115%. So there would only be a 5% contingency. SIA Sec. 1.11(b).
- The City typically holds the full amount of the improvement guarantee until "Construction Acceptance" of the public improvements, at which point the improvement guarantee is reduced to 15% for the warranty period. This SIA would allow the improvement guarantee funds to be used to pay construction costs.
- Under the Escrow Agreement (SIA Exhibit E), disbursements from the escrow account to pay improvement costs are not limited to the amount that was included in the estimate, so if construction costs escalate (or if the estimates prove to be lower than actual costs for any other reason), the amount disbursed can spend down the Improvement Guarantee Amount. To address this, a District Engineer is to provide the City with monthly reports detailing the improvements yet to be constructed and the cost of those improvements, and if less than 105% of that amount is in the escrow account, the Subdivider and/or District are required to deposit additional funds.
- The Subdivider and District are also requesting the City Council approve a Warranty Guarantee of 5%, rather than the City's standard 15%, which would be held by the City until the City grants final acceptance of the improvements. This would be either cash, a letter of credit, or "any other form of Guarantee or security as may be acceptable to the City." SIA Sec. 1.11(e)(iii). Staff is not aware of what this "any other form" would be, but the SIA does not require the City to accept it during the warranty period. If the City were to need to access funds during the warranty period to make repairs, it would need to rely on the limited funds provided by the 5% Warranty Guarantee.
- Section 10.16 of the SIA contains "Lender Protection Provisions." Generally, these provide that Subdivider's lenders will receive a copy of any breach notice issued by the City; allows (but does not require) lenders to step in and cure SIA breaches; and recognizes permitted transfers of the property that may occur during a foreclosure proceeding. The City would be notified if any lender initiates foreclosure proceedings, and a lender's right to cure a breach will not prevent the City from taking action to assert its rights under the SIA (including the right to finish

construction of improvements, if that is what the City determines is reasonable or necessary under the circumstances).

- Lenders may request (in connection with a foreclosure or otherwise) the City provide an estoppel certificate or other written document memorializing these lender provisions, which Section 10.16.3 of the SIA authorizes be executed by the City Manager or Finance Director unless the City Manager and/or Finance Director believe the requested document should be reviewed and approved by the City Council. The intent here is that any request that alters or modifies in any way the terms or conditions of the SIA would be approved by the City Council as an amendment to the SIA, not the City Manager or Finance Director.

The SIA also contains in Section 9.0 "Additional Subdivider Commitments" concerning additional open space, LEED certification and solar, the 88th Street sewer line, prairie dog control measures, and implementation of the traffic demand management ("TDM") plan**.**

PARKS AND PUBLIC LANDSCAPE ADVIORY BOARD REVIEW:
The Parks and Public Landscaping Advisory Board (PPLAB) reviewed the proposal on May 5, 2022 (see Attachment No. 12 for minutes). PPLAB voted unanimously to approve the proposal.

OPEN SPACE ADVISORY BOARD:
The Open Space Advisory Board (OSAB) reviewed the proposal on May 11, 2022, and continued the review to June 8, 2022 (see Attachment Nos 13 and 14 for minutes). OSAB voted unanimously to approve the proposal with the following conditions:

1. A legal commitment by the developer to rehabilitate and dedicate the 47.4 acres in Boulder County (Paradise Lane properties) for jointly managed Louisville and Boulder County Open Space.

2. The developers must follow the current city standards for underpasses consistent with the McCaslin Underpass at Harper Lake.

3. OSAB participation in the PUD review process.

4. The developers and city continue to work on creating safe trails and the possible addition of a 3rd underpass.

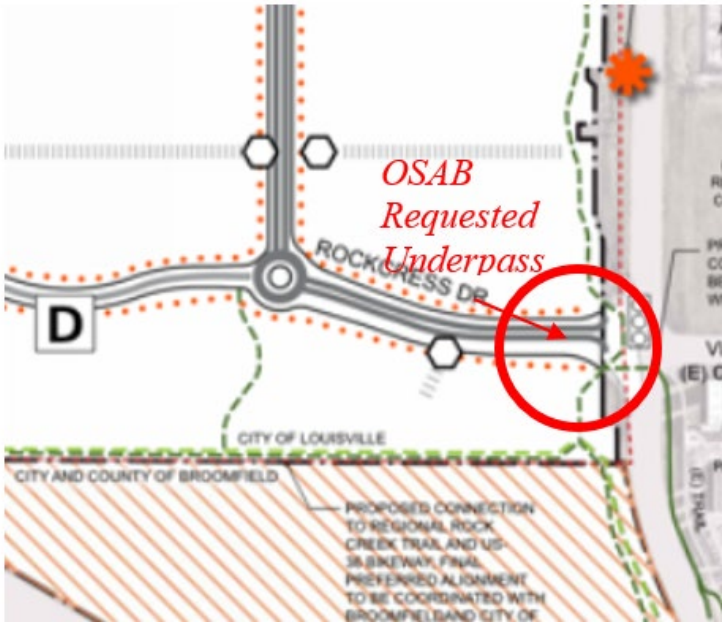
Staff has initiated the process with Boulder County for a purchase agreement and conservation easement for the Paradise Lane Properties. The SIA includes a commitment to complete the transfer of the property to Boulder County within one year, and the City would hold a conservation easement. If the property does not transfer to the County within one year, the City may take fee-simple ownership.

The application has provided construction documents and renderings of the underpass design showing consistency with the major design elements desired by the City (Attachment No. 2n)

Under LMC Sec. 4.02040, OSAB is tasked with reviewing and providing comments to the Planning Commission on any development proposals immediately adjacent to or materially impacting open space lands. There is also a new ordinance that will be presenting to Council later this year clarifying and expanding OSAB's role in development review that would also confirm their review of future PUDs.

The recommendation for the third underpass was for the location where the proposed off-street trail crosses Rockcress Drive at the Rockcress Drive and Northwest Parkway intersection. The applicant has notified staff that they do not intend to modify their application to add this third underpass.

Figure 14: OSAB Recommendation for 3rd Underpass Location



PLANNING COMMISSION:

The Planning Commission held a public hearing starting on August 11, 2022, that was continued to future meetings multiple times prior to a final vote on December 8, 2022. The minutes from each meeting are attached (see Attachment Nos. 15 – 20). The links to each meeting video are provided below. The Commission voted 3-2 to adopt a resolution recommending denial of the Redtail Ridge Filing No. 1 subdivision. The resolution is included as Attachment No. 21, and adopted findings are copied below.

Planning Commission Adopted Findings for Denial:

1. *The Planning Commission finds that the application from Sterling Bay (the "Applicant") for approval of the Redtail Ridge Filing No. 1 Preliminary and Final Subdivision Plat (the "Application") does not comply with LMC Sec. 16.16.010.D. and E., which states that natural features and vegetation must be preserved to the extent possible and a need for additional open space may be based on vegetation and the type and density of the propose development. The Applicant has not demonstrated that the proposed subdivision adequately preserves natural features, wildlife habitat and vegetation of the property. Previously undeveloped areas on the northern portion of the property include natural vegetation that could be further preserved as public or private open space with clustering of the development lots to the south.*

2. *The Planning Commission finds that the Application does not comply with LMC Sec. 16.04.020.K, which states the purpose of a subdivision is to avoid traffic congestion, based on the following:*

    1. *According to the traffic study submitted with the Application, the US 36 and Northwest Parkway interchange reaches a Level of Service F and would need modified by the year 2027-2028 to provide additional vehicular capacity to accommodate the proposed subdivision. The Application does not include proposals for mitigation, road capacity work, or contribution to future road capacity work for the interchange, nor are future improvements planned at this time.*

    2. *The Application does not include a commitment from Northwest Parkway Authority for the acquisition of right of way needed to construct road capacity improvements included in the traffic study as needed to mitigate traffic congestion.*

3. *The Planning Commission finds that the Application does not comply with LMC Sec. 16.16.040 concerning block length, as some blocks proposed in the Application exceed the maximum length of 1,320 feet. Although the Applicant requested a modification pursuant to LMC Chapter 16.24 to allow longer block lengths, the Commission does not find that there are unique physical or topographical circumstances or conditions to justify the modification. Maintaining prescribed block lengths is necessary to ensure an adequate and convenient transportation system to serve the proposed subdivision.*

4. *The Planning Commission finds that the Application does not comply with LMC Sec. 16.16.020.B, which states that drainage areas should be left in a natural state to the greatest extent possible. The Applicant has not demonstrated that grading of drainage areas within public opens spaces has been limited to the greatest extent possible.*

5. *The Planning Commission finds that the Application does not comply with the 2010 ConocPhillips Campus General Development Plan (GDP). The type and character of the development proposed with the Application is not consistent with the GDP and the street network does not comply with the street network shown on the GDP because it is proposed as publically dedicated roads rather than private roads*.

The applicant has provided a response to the Commission's findings, which is included as Attachment No. 2t.

- August 11, 2022 Planning Commission Hearing
  - Starting at 41:51 www.youtube.com/watch?v=-YDgTXfTZbs&t=2516s
- September 8, 2022 Planning Commission Hearing
  - Starting at 10:38 www.youtube.com/watch?v=DLElDnB9Qf4&t=639s
- September 22, 2022 Planning Commission Hearing
  - Starting 6:52 www.youtube.com/watch?v=nIIpL8KBJI8&t=412s
- October 13, 2022 Planning Commission Hearing
  - Starting at 8:55 www.youtube.com/watch?v=EbnB1R-3PD4&t=535s
- November 10, 2022 Planning Commission Hearing
  - Starting at 11:50 www.youtube.com/watch?v=r5egq6uEqkM&t=710s
- December 8, 2022, Planning Commission Hearing
  - Starting at 3:03 www.youtube.com/watch?v=wU8y5csUZLc&t=183s

The Planning Commission reviewed a combined preliminary and final plat application, which was at the request of the applicant. The applicant has since agreed to separate the preliminary and final applications.

PUBLIC COMMENTS:
Public comments received by staff prior to the February 20. 2024 approval of the preliminary plat are included as Attachment No. 22.

Public comments received by staff after the February 20. 2024 approval of the preliminary plat are included as Attachment No. 23.

STAFF RECOMMENDATION:
Staff recommends approval of Resolution 38, Series 2024, approving the Redtail Ridge Filing No. 1 Final Plat with the following conditions:

1. Prior to issuance of construction documents for the roadway improvements, the *Shared Maintenance Agreement between the City of Louisville, City and County of Broomfield and Northwest Parkway Authority* will be finalized and adopted by each jurisdiction.
2. Prior to recording the plat, the applicant shall provide a final schedule of improvements and engineering cost estimates in Exhibits B and C to the SIA that shall be approved by the City Engineer.
3. Prior to recording the plat, the applicant shall add a new Section 4.3 to the SIA that states the following:
   Maintenance Obligations.
   Surface Repairs within Exclusive City of Louisville Easements. The obligation of the City to repair or replace landscaping, irrigation, pavement, sidewalk, curb/gutter, and private subdivision signage improvements within the City's exclusive easements that are damaged by the City in connection with its operation or maintenance of water main, City-owned portion of water services, sanitary sewer, and storm sewer shall be limited to the repair or replacement of the damaged portion of said improvements to an equal or better condition than the condition existing immediately prior to the damage by the City, except that damaged landscaping may be replaced with materials of like size, type and maturity as when originally installed, except that any damaged landscape, irrigation, concrete flatwork, planters, structures and other surface improvements shall be repaired by the Subdivider and the City shall have no responsibility for repair or replacement of any damaged landscape, irrigation, concrete flatwork, planter
4. Prior to recording the plat, the City Engineer shall approve the water rights credit amount noted in Section 8.3 of the SIA.
5. Prior to recording the plat, the City Engineer shall approve the cost estimate and Exhibit I for the sanitary sewer extension to the parks parcel and the applicant shall revise Section 9.3 to reflect that there shall be a cash payment to the City reflecting 2/3 of the cost of the new sanitary sewer line that shall be held by the City until the improvements are constructed.
6. Prior to recording the plat, the applicant shall add a Section 9.6 to the SIA providing for reimbursement to the City for widening 96th Street to four lanes north of Dillon Road equal to 14% of the cost of the improvements.
7. Prior to recording the plat, the SIA and Escrow Agreement, Agreement Regarding Water Rights Dedications and Wastewater Treatment System Upgrades, and Operations and Maintenance Agreement shall be completed and fully executed.
8. Prior to recording the plat, the applicant shall provide a public access easement from BVSD for the underpass access ramp that extends beyond the dedicated right of way.
9. Prior to recording the plat, the applicant shall provide the required easement and completed agreement with the Goodhue Ditch and Reservoir Company addressing the relocation of the Goodhue Ditch.

10. Prior to recording the plat, the applicant shall provide warranty deeds, title insurance, and legal descriptions that shall be approved by the City Attorney and City Engineer for the dedication of all public tracts on the plat and for the Campus Drive right of way dedication from the BVSD.

ATTACHMENTS:

1. Resolution 38, Series 2024
2. Application Materials
   a) Application Form
   b) Application Letter
   c) Final Plat
   d) Subdivision Improvement and Development Agreement
   e) Agreement Regarding Water Rights Dedications and Wastewater Treatment System Upgrades
   f) Metro District Operations and Maintenance Agreement
   g) Traffic and Mobility Study
   h) BVSD Resolution
   i) NW Parkway Easement and Improvement Area
   j) NW Parkway Access Deed
   k) North Metro Fire District Letter of Support
   l) NW Parkway Agreement with Metro District
   m) Trail Width Exhibit
   n) Underpass Plans and Illustrations
   o) Streetscape Illustrations
   p) NW Parkway Overpass Plans
   q) Open Space Seeding and Restoration Plans
   r) TDM Plan
   s) Natural Resource Assessment Summary Memo
   t) Planning Commission Findings Response
3. City Council Resolution 80, Series 2023 Approving Preliminary Plat
4. ConocoPhillips Campus GDP
5. ConocoPhillips Colorado Campus GDP Planned Community Zone District Zoning Agreement
6. 1st Amendment to the ConocoPhillips Colorado Campus GDP Planned Community Zone District Zoning Agreement
7. ConocoPhillips Campus Preliminary Plat
8. ConocoPhillips Campus Preliminary PUD
9. 1981 Storage Tech Corp Annexation Agreement
10. Intergovernmental Agreement, Southeast Boulder County, South 96th Street, Dillon Road, and US 287 Area Comprehensive Development Plan
11. Goodhue Ditch and Reservoir Company Status Letter
12. May 5, 2022 PPLAB Minutes
13. May 11, 2022 OSAB Minutes
14. June 8, 2022 OSAB Minutes

15. August 11, 2022 Planning Commission Minutes
16. September 8, 2022 Planning Commission Minutes
17. September 22, 2022 Planning Commission Minutes
18. October 13, 2022 Planning Commission Minutes
19. November 10, 2022 Planning Commission Minutes
20. December 8, 2022 Planning Commission Minutes
21. Planning Commission Resolution Recommending Denial
22. Links to Public Comments:
    a. December 5, 2023 Council Meeting
    b. February 6, 2024 Council Meeting
    c. February 20, 2024 Council Meeting
    d. Received after February 20, 2024
23. City and County of Broomfield Letter on Conservation Easement
24. Staff Presentation

STRATEGIC PLAN IMPACT:

☐	**Financial Stewardship & Asset Management**	☐	**Reliable Core Services**
☒	**Vibrant Economic Climate**	☐	**Quality Programs & Amenities**
☐	**Engaged Community**	☐	**Healthy Workforce**
☐	**Supportive Technology**	☐	**Collaborative Regional Partner**

RESOLUTION NO. 38
SERIES 2024

A RESOLUTION RECOMMENDING APPROVAL OF THE REDTAIL RIDGE FILING NO. 1 FINAL SUBDIVISION PLAT

WHEREAS, on April 6, 2010, by Ordinance 1569, Series 2010 (Reception No. 03284515), the City rezoned the property known as the ConocoPhillips Campus property to Planned Community Zone District – Commercial (PCZD-C), approved the ConocoPhillips Campus General Development Plan (Reception No. 3088779), and on April 20, 2010 executed the ConocoPhillips Colorado Campus General Development Plan Planned Community Zone District Zoning Agreement (Reception No. 03284516; and

WHEREAS, the applicant, Sterling Bay, has submitted to the City a proposal for a final plat titled Redtail Ridge Filing No. 1 to develop the ConocoPhillips Campus property as a commercial development consistent with the ConocoPhillips Campus General Development Plan; and

WHEREAS, the City Council approved Resolution 80 Series 2023 on February 20, 2024, approving the Redtail Ridge Preliminary Subdivision Plat with conditions, and finds that all conditions of approval have been satisfactorily met; and

WHEREAS, City staff has reviewed the application and found that, with staff's recommending conditions, and based on the findings in staff's August 20, 2024 staff report, that the application for a final plat meets the requirements of Louisville Municipal Code Title 16 – Subdivisions, including the standards of approval listed in Louisville Municipal Code Sec. 16.12.075, and meets the policies and standards of the Comprehensive Plan; and

WHEREAS, the Planning Commission has considered the application at duly noticed public hearings on August 11, 2022, September 8, 2022, September 22, 2022, October 13, 2022, November 10, 2022, and December 8, 2022, where evidence and testimony where entered into the record, and where the Commission adopted Resolution 13, 2022 recommending to the City Council denial of the application.

NOW THEREFORE, BE IT RESOLVED that the City Council of the City of Louisville, Colorado does hereby approve the Redtail Ridge Filing No. 1 Final Subdivision Plat, with the following conditions:

1. Prior to issuance of construction documents for the roadway improvements, the *Shared Maintenance Agreement between the City of Louisville, City and County of Broomfield and Northwest Parkway Authority* will be finalized and adopted by each jurisdiction.
2. Prior to recording the plat, the applicant shall provide a final schedule of improvements and engineering cost estimates in Exhibits B and C to the SIA that shall be approved by the City Engineer.
3. Prior to recording the plat, the applicant shall add a new Section 4.3 that states the following:
   Maintenance Obligations.

Surface Repairs within Exclusive City of Louisville Easements. The obligation of the City to repair or replace landscaping, irrigation, pavement, sidewalk, curb/gutter, and private subdivision signage improvements within the City's exclusive easements that are damaged by the City in connection with its operation or maintenance of water main, City-owned portion of water services, sanitary sewer, and storm sewer shall be limited to the repair or replacement of the damaged portion of said improvements to an equal or better condition than the condition existing immediately prior to the damage by the City, except that damaged landscaping may be replaced with materials of like size, type and maturity as when originally installed, except that any damaged landscape, irrigation, concrete flatwork, planters, structures and other surface improvements shall be repaired by the Subdivider and the City shall have no responsibility for repair or replacement of any damaged landscape, irrigation, concrete flatwork, planter

4. Prior to recording the plat, the City Engineer shall approve the water rights credit amount noted in Section 8.3 of the SIA.
5. Prior to recording the plat, the City Engineer shall approve the cost estimate and Exhibit I for the sanitary sewer extension to the parks parcel and the applicant shall revise Section 9.3 to reflect that there shall be a cash payment to the City reflecting 2/3 of the cost of the new sanitary sewer line that shall be held by the City until the improvements are constructed.
6. Prior to recording the plat, the applicant shall add a Section 9.6 to the SIA providing for reimbursement to the City for widening 96th Street to four lanes north of Dillon Road equal to 14% of the cost of the improvements.
7. Prior to recording the plat, the SIA and Escrow Agreement, Agreement Regarding Water Rights Dedications and Wastewater Treatment System Upgrades, and Operations and Maintenance Agreement shall be completed and fully executed.
8. Prior to recording the plat, the applicant shall provide a public access easement from BVSD for the underpass access ramp that extends beyond the dedicated right of way.
9. Prior to recording the plat, the applicant shall provide the required easement and completed agreement with the Goodhue Ditch and Reservoir Company addressing the relocation of the Goodhue Ditch.
10. Prior to recording the plat, the applicant shall provide warranty deeds, title insurance, and legal descriptions that shall be approved by the City Attorney and City Engineer for the dedication of all public tracts on the plat and for the Campus Drive right of way dedication from the BVSD.

PASSED AND ADOPTED this ___ day of _____, 2024.

By: _____
Christopher M. Leh, Mayor

Attest: _____
Genny Kline, Interim City Clerk

City of Louisville
COLORADO • SINCE 1878

Community Development

749 Main Street • Louisville CO 80027 • 303.335.4592 • www.louisvilleco.gov

ELECTRONIC LAND USE HEARING REQUEST

CASE NO. _____

APPLICANT INFORMATION

Firm: Sterling Bay
Contact: Rodney Richerson
Address: 100 Bayview, Suite 250
Newport Beach, CA 92660
Mailing Address: 100 Bayview, Suite 250
Newport Beach, CA 92660
Telephone: 949-422-0005
Fax: N/A
Email: rricherson@sterlingbay.com

OWNER INFORMATION

Firm: Redtail Ridge Portfolio, LLC
Contact: Rodney Richerson
Address: 100 Bayview, Suite 250
Newport Beach, CA 92660
Mailing Address: 100 Bayview, Suite 355
Newport Beach, CA 92660
Telephone: 949-422-0005
Fax: N/A
Email: rricherson@sterlingbay.com

REPRESENTATIVE INFORMATION

Firm: Sterling Bay
Contact: Rodney Richerson / Evan Pesonen
Address: 100 Bayview, Suite 250
Newport Beach, CA 92660
Mailing Address: 100 Bayview, Suite 250
Newport Beach, CA 92660
Telephone: 949-422-0005
Fax: N/A
Email: rricherson@steringbay.com / epesonen@sterlingbay.com

PROPERTY INFORMATION

Common Address: Redtail Ridge
Legal Description: Lot _____ Blk _____
Subdivision _____
Area: 20,691,000 Sq. Ft.

TYPE (S) OF APPLICATION

- ☐ Annexation
- ☐ Zoning
- ☐ Preliminary Subdivision Plat
- ■ Final Subdivision Plat
- ☐ Minor Subdivision Plat
- ☐ Preliminary Planned Unit Development (PUD)
- ☐ Final PUD
- ☐ Amended PUD
- ☐ Administrative PUD Amendment
- ☐ Special Review Use (SRU)
- ☐ SRU Amendment
- ☐ SRU Administrative Review
- ☐ Temporary Use Permit: _____
- ☐ CMRS Facility: _____
- ☐ Other: (easement / right-of-way; floodplain; variance; vested right; 1041 permit; oil / gas production permit)

I hereby request the public hearing(s) on this application be scheduled to be conducted by Electronic Participation in accordance with the attached Resolution No. 30, Series 2020, as adopted by the City Council on April 7, 2020, and in accordance with Resolution No. 38, Series 2020, as adopted by City Council on June 2, 2020 if such hearing(s) can be scheduled during a time period when in-person meetings are not being held due to a health epidemic or pandemic. I acknowledge that holding a quasi-judicial hearing by Electronic Participation may present certain legal risks and involves an area of legal uncertainty, and that having this application heard at a meeting held by Electronic Participation is optional and undertaken at my own risk. I also understand that in-person meetings are preferred for quasi-judicial hearings, and that even if electronic hearing(s) are scheduled, this application will be heard at an in-person meeting if in person meetings have resumed by the scheduled hearing date(s). I further agree to defend and indemnify the City of Louisville in any action that may arise out of, or in connection with, conducting the hearing by Electronic Participation.

SIGNATURES & DATE

Applicant: Rodney Richerson
Print: Rodney Richerson
Owner: Redtail Ridge Portfolio, LLC
Print: _____
Representative: _____
Print: _____

CITY STAFF USE ONLY

- ☐ Electronic Hearing Approved: _____
- ☐ Date(s) of Hearing(s): _____

Sterling Bay | West, LLC
100 Bayview, Suite 250
Newport Beach, California,
92660

March 8, 2024

Mr. Rob Zuccaro
Planning and Building Safety Director
City of Louisville
749 Main St
Louisville, CO 80027
Sent via email: RZuccaro@LouisvilleCo.gov

RE: Redtail Ridge Filing No. 1 Final Subdivision Plat

Dear Mr. Zuccaro,

On behalf of Sterling Bay ("Developer" or "Applicant"), thank you for the opportunity to present our final subdivision plat for Redtail Ridge. For this submittal, we are providing all documents required for a final subdivision plat in addition to other documents. This letter shall serve as part of our written request as may be required or anticipated under the Louisville Municipal Code.

Description of Submittal Documents

As part of the final subdivision plat submittal, we have included the following draft documents for your review:

A. Final Subdivision Plat Application
B. Final Subdivision Plat
C. Subdivision Improvements and Development Agreement
D. Amended and Restated Service Plan
E. Operations & Maintenance Agreement
F. Master Traffic Study (updated 10-26-2023)
G. Traffic Demand Management Plan (updated 03-08-2024)
H. Internal Intersection Memo addressing Public Works Comments
I. Goodhue Ditch Agreement (Latest Draft)

The submittal documents can be found in the link below:

Redtail Ridge Final Plat Submittal Documents

Sterling Bay | West, LLC
100 Bayview, Suite 250
Newport Beach, California,
92660

Thank you and your team for your continued efforts towards completing the final subdivision plat for Redtail Ridge. We look forward to presenting to City Council and answering any questions they may have.

Respectfully,
STERLING BAY

Evan Pesonen
Vice President – Asset Management and Acquisitions

NO CHANGES ARE TO BE MADE TO THIS DRAWING WITHOUT WRITTEN PERMISSION OF HARRIS KOCHER SMITH

FINAL SUBDIVISION PLAT OF

REDTAIL RIDGE FILING NO. 1

SITUATED IN THE SOUTH HALF OF SECTION 20 AND THE NORTH HALF OF SECTION 29, TOWNSHIP 1 SOUTH, RANGE 69 WEST OF THE SIXTH PRINCIPAL MERIDIAN, CITY OF LOUISVILLE, COUNTY OF BOULDER, STATE OF COLORADO

COVER

PREPARED BY:
HARRIS KOCHER SMITH
1120 Lincoln Street, Suite 1000
Denver, Colorado 80203
P: 303-623-6300 F: 303-623-6311
HarrisKocherSmith.com

LEGAL DESCRIPTION AND DEDICATION:

KNOW ALL MEN BY THESE PRESENTS, THAT THE UNDERSIGNED BEING THE OWNERS OF A TRACT OF LAND SITUATED IN THE SOUTH HALF OF SECTION 20 AND THE NORTH HALF OF SECTION 29, TOWNSHIP 1 SOUTH, RANGE 69 WEST OF THE SIXTH PRINCIPAL MERIDIAN, CITY OF LOUISVILLE, COUNTY OF BOULDER, STATE OF COLORADO, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE CENTER QUARTER CORNER OF SAID SECTION 20;
THENCE SOUTH 89°48'50" EAST ALONG THE NORTH LINE OF THE SOUTHEAST QUARTER OF SAID SECTION 20, A DISTANCE OF 2,625.59 FEET;
THENCE SOUTH 00°02'13" EAST ALONG A LINE PARALLEL WITH AND 30 FEET WEST OF THE EAST LINE OF THE NORTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SAID SECTION 20, A DISTANCE OF 1,326.76 FEET TO A POINT ON THE SOUTH LINE OF THE NORTH HALF OF SAID SOUTHEAST QUARTER;
THENCE SOUTH 00°02'35" EAST ALONG A LINE PARALLEL WITH AND 30 FEET WEST OF THE EAST LINE OF THE SOUTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SAID SECTION 20, A DISTANCE OF 85.45 FEET TO THE NORTH CORNER OF PARCEL TK-71-2 DESCRIBED AT RECEPTION NO. 2386686 IN THE RECORDS OF BOULDER COUNTY;
THENCE ALONG THE PERIMETER OF SAID PARCEL THE FOLLOWING THREE (3) COURSES:
1) SOUTH 33°27'26" WEST, A DISTANCE OF 60.64 FEET;
2) SOUTH 01°40'28" WEST, A DISTANCE OF 45.12 FEET;
3) SOUTH 89°19'32" EAST, A DISTANCE OF 34.84 FEET TO A POINT 30 FEET WEST OF SAID EAST LINE;
THENCE SOUTH 00°02'35" EAST ALONG A LINE PARALLEL WITH AND 30 FEET WEST OF SAID EAST LINE, A DISTANCE OF 404.28 FEET TO A POINT OF NON-TANGENT CURVATURE AT THE NORTH CORNER OF PARCEL TK-71 DESCRIBED AT RECEPTION NO. 2309730 IN THE RECORDS OF BOULDER COUNTY;
THENCE ALONG THE PERIMETER OF SAID PARCEL THE FOLLOWING THREE (3) COURSES:
1) ALONG THE ARC OF SAID CURVE TO THE LEFT AN ARC LENGTH OF 86.28 FEET, SAID CURVE HAVING A RADIUS OF 2,441.83 FEET, A CENTRAL ANGLE OF 02°01'28", AND A CHORD WHICH BEARS SOUTH 04°26'27" WEST A CHORD DISTANCE OF 86.27 FEET;
2) SOUTH 03°25'43" WEST, A DISTANCE OF 124.37 FEET;
3) SOUTH 00°02'35" EAST AND ALONG THE WEST LINE OF PARCEL TK-71-1 DESCRIBED AT RECEPTION NO. 2309730 IN THE RECORDS OF BOULDER COUNTY, A DISTANCE OF 529.71 FEET TO A POINT ON THE SOUTH LINE OF THE SAID SOUTHEAST QUARTER AND A POINT ON THE NORTH LINE OF PARCEL 12 AS DESCRIBED AT RECEPTION NO. 1560711 IN THE RECORDS OF BOULDER COUNTY;
THENCE ALONG THE PERIMETER OF SAID PARCEL 12 THE FOLLOWING FOUR (4) COURSES:
1) NORTH 89°42'42" WEST, A DISTANCE OF 55.73 FEET;
2) SOUTH 00°00'35" WEST, A DISTANCE OF 30.02 FEET;
3) SOUTH 44°51'26" EAST, A DISTANCE OF 35.44 FEET;
4) SOUTH 00°00'35" WEST, A DISTANCE OF 127.21 FEET TO A POINT ON THE NORTH LINE OF THAT PARCEL DESCRIBED AT RECEPTION NO. 520800 IN THE RECORDS OF BOULDER COUNTY;
THENCE ALONG THE PERIMETER OF SAID PARCEL THE FOLLOWING THREE (3) COURSES:
1) NORTH 89°59'25" WEST, A DISTANCE OF 55.00 FEET;
2) SOUTH 00°00'35" WEST, A DISTANCE OF 50.00 FEET;
3) SOUTH 89°59'25" EAST, A DISTANCE OF 55.00 FEET TO THE NORTHWEST CORNER OF PARCEL 10 AS DESCRIBED AT RECEPTION NO. 1560711 IN THE RECORDS OF BOULDER COUNTY;
THENCE ALONG THE PERIMETER OF SAID PARCEL 10 THE FOLLOWING TWO (2) COURSES:
1) SOUTH 00°00'35" WEST ALONG THE WEST LINE OF SAID PARCEL AND ALONG A LINE PARALLEL WITH AND 75 FEET WEST OF THE SAID EAST LINE, A DISTANCE OF 247.79 FEET;
2) SOUTH 16°40'03" EAST ALONG THE SOUTHEASTERLY LINE OF SAID PARCEL, A DISTANCE OF 93.77 FEET TO THE NORTH CORNER OF PARCEL TK-75 DESCRIBED AT RECEPTION NO. 2309730 IN THE RECORDS OF BOULDER COUNTY;
THENCE SOUTH 00°00'35" WEST ALONG A LINE PARALLEL WITH THE EAST LINE OF SAID SECTION 29 AND ALONG THE WEST LINE OF SAID TK-75, A DISTANCE OF 611.12 FEET;
THENCE SOUTH 89°48'45" EAST ALONG THE SOUTH LINE OF SAID TK-75, A DISTANCE OF 48.09 FEET TO A POINT ON THE EAST LINE OF THE NORTHEAST QUARTER OF SAID SECTION 29;
THENCE SOUTH 00°00'35" WEST ALONG SAID EAST LINE, A DISTANCE OF 136.13 FEET TO A POINT ON THE SOUTH LINE OF THE NORTH HALF OF THE NORTHEAST QUARTER OF SAID SECTION 29;
THENCE NORTH 89°42'42" WEST ALONG SAID SOUTH LINE, A DISTANCE OF 2,308.62 FEET TO A POINT ON THE NORTHEAST LINE OF THE LAND CONVEYED TO THE CITY OF BROOMFIELD BY GIFT DEED RECORDED AT RECEPTION NO. 2013403 IN THE RECORDS OF BOULDER COUNTY;
THENCE ALONG THE PERIMETER OF SAID PARCEL THE FOLLOWING FIVE (5) COURSES:
1) NORTH 14°13'32" WEST, A DISTANCE OF 140.04 FEET;
2) NORTH 60°44'04" WEST, A DISTANCE OF 682.66 FEET;
3) NORTH 31°43'59" WEST, A DISTANCE OF 355.27 FEET;
4) NORTH 50°04'57" WEST, A DISTANCE OF 351.37 FEET;
5) NORTH 87°28'56" WEST, A DISTANCE OF 246.66 FEET TO THE EASTERN CORNER OF PARCEL 32B AS DESCRIBED BY SPECIAL WARRANTY DEED RECORDED AT RECEPTION NO. 3411796 IN THE RECORDS OF BOULDER COUNTY;
THENCE NORTH 58°29'24" WEST ALONG THE NORTHEASTERLY LINE OF SAID PARCEL, A DISTANCE OF 186.70 FEET TO A POINT ON THE RIGHT-OF-WAY OF HIGHWAY 36;
THENCE NORTH 50°07'12" WEST ALONG SAID RIGHT-OF-WAY, A DISTANCE OF 356.68 FEET TO A POINT ON THE SOUTH LINE OF THE SOUTHWEST QUARTER OF SAID SECTION 20 AND THE SOUTH CORNER OF PARCEL 32A OF SAID SPECIAL WARRANTY DEED;
THENCE CONTINUING NORTH 50°07'12" WEST ALONG THE NORTHEAST LINE OF SAID PARCEL 32A, A DISTANCE OF 1,028.45 FEET TO A POINT ON THE EAST LINE OF THAT PARCEL DESCRIBED AT BOOK 880, PAGE 98 IN THE RECORDS OF BOULDER COUNTY;
THENCE NORTH 25°26'59" WEST ALONG SAID EAST LINE AND ALONG THE EAST LINE OF THAT PARCEL DESCRIBED AT BOOK 878, PAGE 503, A DISTANCE OF 842.57 TO THE SOUTH CORNER OF THAT PARCEL DESCRIBED AT RECEPTION NO. 1989419 IN THE RECORDS OF BOULDER COUNTY;
THENCE ALONG THE PERIMETER OF SAID PARCEL THE FOLLOWING FOUR (4) COURSES:
1) NORTH 00°54'00" EAST, A DISTANCE OF 95.53 FEET;
2) NORTH 08°22'46" WEST, A DISTANCE OF 184.53 FEET;
3) NORTH 00°09'09" WEST ALONG A LINE PARALLEL WITH THE WEST LINE OF THE SOUTHWEST QUARTER OF SAID SECTION 20, A DISTANCE OF 213.70 FEET;
4) SOUTH 89°50'51" WEST, A DISTANCE OF 34.06 FEET TO A POINT 25.00 FEET EAST OF THE WEST LINE OF SAID SOUTHWEST QUARTER;
THENCE NORTH 00°09'09" WEST ALONG A LINE PARALLEL WITH AND 25 FEET FROM THE SAID WEST LINE, A DISTANCE OF 473.64 FEET TO A POINT ON THE SOUTH LINE OF THAT PARCEL DESCRIBED AT RECEPTION NO. 1819920 IN THE RECORDS OF BOULDER COUNTY EXTENDED WESTERLY;
THENCE SOUTH 89°48'38" EAST ALONG SAID SOUTH LINE AND SAID SOUTH LINE EXTENDED, A DISTANCE OF 265.23 FEET TO THE SOUTHEAST CORNER OF SAID PARCEL;
THENCE NORTH 00°09'09" WEST ALONG THE EAST LINE OF SAID PARCEL, A DISTANCE OF 256.00 FEET TO A POINT ON THE SOUTH RIGHT-OF-WAY LINE OF CAMPUS DRIVE AS DEDICATED BY LOUISVILLE CAMPUS RECORDED AT RECEPTION NO. 1669751;
THENCE ALONG SAID SOUTH LINE THE FOLLOWING FOUR (4) COURSES:
1) SOUTH 89°48'38" EAST ALONG SAID NORTH LINE, A DISTANCE OF 50.02 FEET;
2) SOUTH 82°25'28" EAST, A DISTANCE OF 202.23 FEET TO A POINT OF NON-TANGENT CURVATURE;
3) ALONG THE ARC OF SAID CURVE TO THE LEFT AN ARC LENGTH OF 139.86 FEET, SAID CURVE HAVING A RADIUS OF 1,085.00 FEET, A CENTRAL ANGLE OF 07°23'09", AND A CHORD WHICH BEARS SOUTH 86°07'04" EAST A CHORD DISTANCE OF 139.77 FEET;
4) SOUTH 89°48'38" EAST, A DISTANCE OF 1,975.05 FEET TO A POINT ON THE EAST LINE SAID SOUTHWEST QUARTER;
THENCE NORTH 00°02'50" EAST ALONG SAID EAST LINE, A DISTANCE OF 35.00 FEET TO THE **POINT OF BEGINNING**;

EXCEPTING THEREFROM THAT PARCEL DESCRIBED BY DEED RECORDED AT RECEPTION NO. 531604 IN THE RECORDS OF BOULDER COUNTY;

SAID PARCEL CONTAINS 16,949,252 SQUARE FEET OR 389.10 ACRES, MORE OR LESS;

HAS LAID OUT, SUBDIVIDED AND PLATTED SAID LAND AS PER DRAWING HEREON CONTAINED UNDER THE NAME AND STYLE OF REDTAIL RIDGE FILING NO. 1, A SUBDIVISION OF A PART OF THE CITY OF LOUISVILLE, COUNTY OF BOULDER, STATE OF COLORADO, AND BY THESE PRESENTS DO HEREBY DEDICATE TO THE CITY OF LOUISVILLE THE STREETS, AVENUES, TRACTS A THROUGH L, INCLUSIVE, AND TRACT K AS SHOWN ON THE ACCOMPANYING PLAT FOR THE PUBLIC USE THEREOF FOREVER AND DOES FURTHER DEDICATE TO THE USE OF THE CITY OF LOUISVILLE AND ALL SERVING PUBLIC UTILITIES THOSE PORTIONS OF SAID REAL PROPERTY WHICH ARE SO DESIGNATED AS EASEMENTS AS SHOWN. IT IS EXPRESSLY UNDERSTOOD AND AGREED BY THE UNDERSIGNED THAT ALL EXPENSES AND COSTS INVOLVED IN CONSTRUCTING AND INSTALLING SANITARY SEWER WORKS AND LINES, WATER SYSTEM WORKS AND LINES, GAS SERVICE LINES, ELECTRICAL SERVICE WORKS AND LINES, LANDSCAPING, CURBS, GUTTERS, STREET PAVEMENT, SIDEWALKS, AND OTHER SUCH UTILITIES AND SERVICES SHALL BE GUARANTEED AND PAID FOR BY THE SUBDIVIDER OR ARRANGEMENTS MADE BY THE SUBDIVIDER THEREOF WHICH ARE APPROVED BY THE CITY OF LOUISVILLE, COLORADO, AND SUCH SUMS SHALL NOT BE PAID BY THE CITY OF LOUISVILLE, AND THAT ANY ITEM SO CONSTRUCTED OR INSTALLED WHEN ACCEPTED BY THE CITY OF LOUISVILLE SHALL BECOME THE SOLE PROPERTY OF SAID CITY OF LOUISVILLE, COLORADO, EXCEPT PRIVATE ROADWAY CURBS, QUITTER AND PAVEMENT AND ITEMS OWNED BY MUNICIPALITY FRANCHISED UTILITIES, OTHER SERVING PUBLIC ENTITIES, AND/OR CENTURYLINK, WHICH WHEN CONSTRUCTED OR INSTALLED SHALL REMAIN AND/OR BECOME THE PROPERTY OF SUCH MUNICIPALITY FRANCHISED UTILITIES, OTHER SERVING PUBLIC ENTITIES, AND/OR CENTURYLINK AND SHALL NOT BECOME THE PROPERTY OF THE CITY OF LOUISVILLE, COLORADO.

OWNER:

REDTAIL RIDGE PORTFOLIO, LLC

_____
SIGNATURE

BY: _____

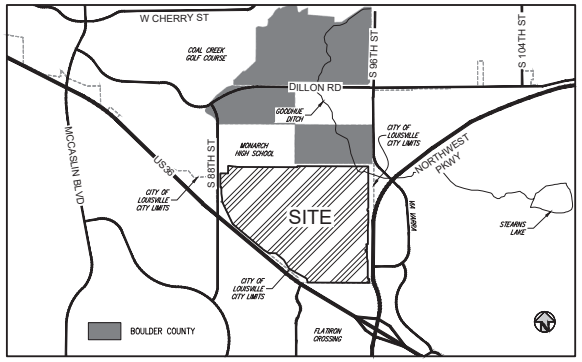
AS: _____ OF REDTAIL RIDGE PORTFOLIO, LLC

SUBSCRIBED AND SWORN TO BEFORE ME THIS ____ DAY OF _____, 20___, BY _____ AS _____
OF REDTAIL RIDGE PORTFOLIO, LLC

WITNESS MY HAND AND OFFICIAL SEAL.

_____
NOTARY PUBLIC

MY COMMISSION EXPIRES _____



VICINITY MAP
SCALE: 1" = 2,000'

NOTES:

1. THIS SURVEY DOES NOT CONSTITUTE A TITLE SEARCH BY HARRIS KOCHER SMITH TO DETERMINE OWNERSHIP OR EASEMENTS OF RECORD. FOR ALL INFORMATION REGARDING EASEMENTS, RIGHTS-OF-WAY AND TITLE OF RECORD, HARRIS KOCHER SMITH RELIED UPON COMMITMENT FOR TITLE INSURANCE, COMMITMENT NO. 2200003078981 ISSUED BY STEWART TITLE GUARANTY COMPANY, AND HAVING AN EFFECTIVE DATE OF MAY 15, 2023 AT 5:30 P.M.
2. NOTICE: ACCORDING TO COLORADO LAW YOU MUST COMMENCE ANY LEGAL ACTION BASED UPON ANY DEFECT IN THIS SURVEY WITHIN THREE YEARS AFTER YOU FIRST DISCOVER SUCH DEFECT. IN NO EVENT MAY ANY ACTION BASED UPON ANY DEFECT IN THIS SURVEY BE COMMENCED MORE THAN TEN YEARS FROM THE DATE OF THE CERTIFICATION SHOWN HEREON.
3. BASIS OF BEARINGS: BEARINGS ARE BASED ON THE WEST LINE OF THE NORTHEAST QUARTER OF SECTION 29, TOWNSHIP 1 SOUTH, RANGE 69 WEST OF THE 6TH PRINCIPAL MERIDIAN ASSUMED AS BEARING SOUTH 00°08'41" EAST. SAID LINE BEING MONUMENTED AT THE NORTH QUARTER CORNER OF SAID SECTION BY A #6 REBAR WITH A 3.25" BRASS CAP STAMPED "1998 PLS 16401", AND BEING MONUMENTED AT THE CENTER QUARTER CORNER BY A #6 REBAR WITH A 2.5" ALUMINUM CAP 0.1' ABOVE GROUND STAMPED "DB&CO 2000 PLS 23529".
4. SUBJECT PROPERTY FALLS WITHIN ZONE X OF THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAP, MAP NO. 08013C0584K, DATED AUGUST 15, 2019. ZONE X IS DEFINED AS AREAS DETERMINED TO BE OUTSIDE THE 0.2-PERCENT ANNUAL CHANCE FLOODPLAIN.
5. UPON AND AFTER RECORDATION OF THIS PLAT, THIS PLAT SHALL SUPERSEDE AND REPLACE ALL SUBDIVISION PLATS PREVIOUSLY FILED OF RECORD WITH RESPECT TO THE PROPERTY DESCRIBED IN THIS PLAT, INCLUDING BUT NOT LIMITED TO STORAGETEK BUILDING SIX SUBDIVISION RECORDED WITH THE BOULDER COUNTY CLERK AND RECORDER AT RECEPTION NO. 717095, WITH THE LEGAL EFFECT THAT ALL SUCH PREVIOUSLY RECORDED PLATS SHALL BE CONSIDERED VOID AND OF NO FURTHER LEGAL AFFECT AS APPLIED TO THE PROPERTY DESCRIBED IN THIS PLAT, AND THAT THE PROPERTY DESCRIBED IN THIS PLAT SHALL BE CONCLUSIVELY RELEASED FROM THE ENCUMBRANCE OF ALL SUCH RECORDED PLATS UPON AND AFTER RECORDATION OF THIS PLAT.
6. THE LINEAR UNITS FOR THIS SURVEY ARE U.S. SURVEY FEET.
7. THE SURVEYED PROPERTY IS SUBJECT TO THE TERMS, PROVISIONS, COVENANTS, CONDITIONS, RESTRICTIONS, OBLIGATIONS AND RESERVATIONS CONTAINED IN THE RECORDED DOCUMENTS IN THE TITLE COMMITMENT AS REFERENCED IN NOTE 1.
8. A 2' WIDE SURFACE MAINTENANCE EASEMENT RUNNING PARALLEL TO ALL PUBLIC RIGHT-OF-WAY LINES FOR SORRELL DRIVE, CAMPUS DRIVE AND ROCKCROSS DRIVE AND EXTENDING INTO ANY ADJACENT PARCEL NOT BEING CONVEYED TO THE CITY OF LOUISVILLE ARE HEREBY GRANTED TO THE CITY OF LOUISVILLE. SAID 2' SURFACE MAINTENANCE EASEMENTS ARE INTENDED TO ALLOW THE CITY OF LOUISVILLE ADEQUATE SPACE BEHIND ANY IMPROVEMENTS LOCATED WITHIN THE RIGHT-OF-WAY FOR ROUTINE MAINTENANCE AND REPAIRS BY THE CITY OF LOUISVILLE OR THEIR AUTHORIZED DESIGNEE.
9. THE CITY OF LOUISVILLE IS GRANTED A 10' SURFACE MAINTENANCE EASEMENT WHERE ACCESS IS REASONABLY AVAILABLE BEYOND THE EXCLUSIVE UTILITY EASEMENTS GRANTED TO THE CITY BY THIS PLAT. THE 10' MAINTENANCE ACCESS EASEMENT SHALL BE ALLOWED ON EITHER SIDE OF THE EXCLUSIVE UTILITY EASEMENT, OR 5' ON EACH SIDE OF THE EXCLUSIVE UTILITY EASEMENT, IN EITHER CASE THIS EASEMENT IS NOT MEANT TO RESTRICT BUILDING OR IMPROVEMENTS ALLOWED WITHIN THE PUD, BUT INSTEAD ALLOW ACCESS WHERE REASONABLY AVAILABLE ON SITE. MINIMUM SURFACE DISTURBANCE IS ALLOWED BY THE CITY'S USE WITHIN THIS EASEMENT.
10. EXCLUSIVE CITY UTILITY EASEMENTS ARE HEREBY GRANTED TO THE CITY OF LOUISVILLE, AS SHOWN ON THIS PLAT, SOLELY FOR THE PURPOSE OF CONSTRUCTING, MAINTAINING, REPAIRING, REPLACING, INSPECTING AND OPERATING WATER AND SANITARY SEWER MAINS AND STORM SEWER FACILITIES, TRANSMISSION, DISTRIBUTION AND SERVICE LINES AND APPURTENANCES, TOGETHER WITH A RIGHT OF ACCESS, ON, ALONG AND IN ALL OF THE EASEMENTS, AS MAY BE NECESSARY TO ACCOMPLISH THE INTENDED PURPOSES OF THE EASEMENT. THESE EASEMENTS SHALL BE EXCLUSIVE, HOWEVER UTILITIES MAY CROSS THE EXCLUSIVE EASEMENTS AT SUBSTANTIALLY 90 DEGREES. THE CITY SHALL MAINTAIN ALL WATER AND SANITARY SEWER IMPROVEMENTS INSTALLED IN THE EASEMENT IN GOOD AND WORKING CONDITION. NOTWITHSTANDING THE FOREGOING, THE UNDERLYING PROPERTY OWNER RETAINS THE RIGHT TO USE THE SURFACE OF THE AREAS WITHIN WHICH THE WATER AND SANITARY SEWER EASEMENTS ARE DEPICTED FOR PARKING LOTS, SIDEWALKS, ROADS, DRIVEWAYS AND DRIVE AISLES, CURBS, AND OTHER SIMILAR HARDSCAPE USES PROVIDED SUCH SIMILAR USES DO NOT MATERIALLY INTERFERE WITH THE CITY'S USE OF SUCH AREAS AS WATER AND SANITARY SEWER EASEMENTS.
11. THE FIELD WORK FOR THIS SURVEY WAS CONDUCTED ON FEBRUARY 28, 2019.

SHEET INDEX

SHEET 1	COVER
SHEET 2	KEY MAP/TRACT SUMMARY TABLE
SHEET 3	PLAT SHEET
SHEET 4	PLAT SHEET
SHEET 5	PLAT SHEET/EASEMENT DETAILS 'A' & 'B'
SHEET 6	PLAT SHEET
SHEET 7	PLAT SHEET/EASEMENT DETAIL 'C'
SHEET 8	LINE & CURVE TABLES/EASEMENT DETAIL 'D'

PLANNING COMMISSION CERTIFICATE:

APPROVED THIS _____ DAY OF _____, 20_____ BY THE PLANNING COMMISSION OF THE CITY OF LOUISVILLE, COLORADO.

RESOLUTION NO. _____, SERIES _____

CITY COUNCIL CERTIFICATE:

APPROVED THIS _____ DAY OF _____, 20_____ BY THE CITY COUNCIL OF THE CITY OF LOUISVILLE, COLORADO.

RESOLUTION NO. _____, SERIES _____

_____
MAYOR SIGNATURE

_____
CITY CLERK SIGNATURE

SURVEYOR'S CERTIFICATE:

I, AARON MURPHY, A DULY LICENSED PROFESSIONAL LAND SURVEYOR IN THE STATE OF COLORADO, DO HEREBY CERTIFY THAT THIS PLAT OF **REDTAIL RIDGE FILING NO. 1** TRULY AND CORRECTLY REPRESENTS THE RESULTS OF A SURVEY MADE UNDER MY SUPERVISION AND HAS BEEN PERFORMED IN ACCORDANCE WITH COLORADO STATE LAW.

_____
AARON MURPHY, PLS NO. 38162

FOR AND ON BEHALF OF
HARRIS KOCHER SMITH
1120 LINCOLN STREET, SUITE 1000
DENVER, CO 80203
PHONE: 303-623-6300

LENDERS CONSENT:

THE UNDERSIGNED _____, AS THE BENEFICIARY OF A DEED OF TRUST (OR IDENTIFY OTHER MORTGAGE INSTRUMENT OR AGREEMENT CREATING SECURITY INTEREST) WHICH CONSTITUTES A LIEN UPON THE DECLARANT'S PROPERTY, RECORDED ON _____ AT RECEPTION NO. _____, BOULDER COUNTY CLERK AND RECORDER, CONSENTS TO THE DEDICATION OF THE STREETS, ALLEYS, ROADS, EASEMENTS, TRACTS, AND OTHER PUBLIC USES, AS SHOWN ON THIS PLAT, AND FOREVER RELEASES SAID REAL PROPERTY INTERESTS, AS AND TO THE EXTENT DEDICATED, FROM THE LIEN CREATED BY SAID INSTRUMENT AND SUBORDINATES SUCH LIEN TO THIS PLAT.

_____
NAME OF BENEFICIARY

_____ _____ DATE: _____
SIGNATURE

_____ ADDRESS: _____
TITLE

STATE OF COLORADO)
ss.
COUNTY OF BOULDER)

THE FOREGOING MORTGAGEE'S CONSENT WAS ACKNOWLEDGED BEFORE ME THIS _____ DAY OF _____, 20___, BY _____.

MY COMMISSION EXPIRES _____

_____
NOTARY PUBLIC

LEGEND

▲	SET #5 REBAR W/ 1.25" BLUE PLASTIC CAP PLS 38162	LOT X, BLOCK X (X,XXX SF / XX.XX AC) — LOT NUMBER, BLOCK & AREA
⊙	FOUND MONUMENT AS DESCRIBED	D.E. = DRAINAGE EASEMENT HEREBY GRANTED
◇	FOUND BARE #5 REBAR	E.C.U.E. = EXCLUSIVE CITY UTILITY EASEMENT HEREBY GRANTED
△	FOUND #5 REBAR W/ ALUM. CAP PUNCHED THROUGH TOP	G.D.E. = GOODHUE DITCH & RESERVOIR COMPANY EASEMENT
		D.U.E. = DRY UTILITY EASEMENT HEREBY GRANTED
⊙	FOUND ILLEGIBLE 1.5" ALUM. CAP ON #5 REBAR	S.M.E. = SURFACE MAINTENANCE EASEMENT HEREBY GRANTED
◈	FOUND 2.5" ALUM. CAP PLS 28657 ON #5 REBAR	R.O.W. = RIGHT-OF-WAY
		CoL = CITY OF LOUISVILLE
▲	FOUND 3.5" ALUM. CAP CDOT ROW MARKER ON #6 REBAR PLS 24961	CCOB = CITY AND COUNTY OF BROOMFIELD
▲	FOUND 3.5" ALUM. CAP CDOT ROW MARKER ON #6 REBAR PLS 24942	CDOT = COLORADO DEPARTMENT OF TRANSPORTATION
		NPPHA = NORTHWEST PARKWAY PUBLIC HIGHWAY AUTHORITY
●	FOUND #5 REBAR W/ 1.25" BLUE PLASTIC CAP PLS 38162	PSCO = PUBLIC SERVICE COMPANY OF COLORADO
		RRMD = REDTAIL RIDGE METROPOLITAN DISTRICT
◆	FOUND MAG NAIL W/ 1" BRASS TAG PLS 38162	RRP = REDTAIL RIDGE PORTFOLIO, LLC
⊕	SECTION CORNER	PORTION OF EASEMENT TO BE VACATED BY SEPARATE INSTRUMENT
		LOUISVILLE CITY LIMITS

CLERK & RECORDER'S CERTIFICATE:

STATE OF COLORADO)
ss.
COUNTY OF BOULDER)

I HEREBY CERTIFY THAT THIS INSTRUMENT WAS FILED FOR RECORD IN MY OFFICE AT_____ (A.M./P.M.)

THIS_____ DAY OF_____ A.D., 20_____

AT RECEPTION NO._____

_____
CLERK AND RECORDER

_____
DEPUTY

ISSUE DATE: 04-05-2021	PROJECT #: 190108
DATE	COMMENTS
04-29-2022	PER CITY COMMENTS
07-01-2022	PER CITY COMMENTS
03-06-2024	PER CITY COMMENTS
06-18-2024	PER CITY COMMENTS
06-26-2024	PSCO EASEMENT MODIFICATIONS
07-18-2024	ROW MODIFICATIONS
08-08-2024	TRACT TABLE REVISION

PROJECT NUMBER: 190108

FILEPATH: R:\2019\190108.BRIDGES AT LOUISVILLE\DRAWINGS\LAYOUT 1\COVER.DWG
PLOTTED: Wednesday, August 14, 2024 at 08:20:00 AM by Jordan Kiser
PLOTTED BY: Jordan Kiser

NO CHANGES ARE TO BE MADE TO THIS DRAWING WITHOUT WRITTEN PERMISSION OF HARRIS KOCHER SMITH

FINAL SUBDIVISION PLAT OF

REDTAIL RIDGE FILING NO. 1

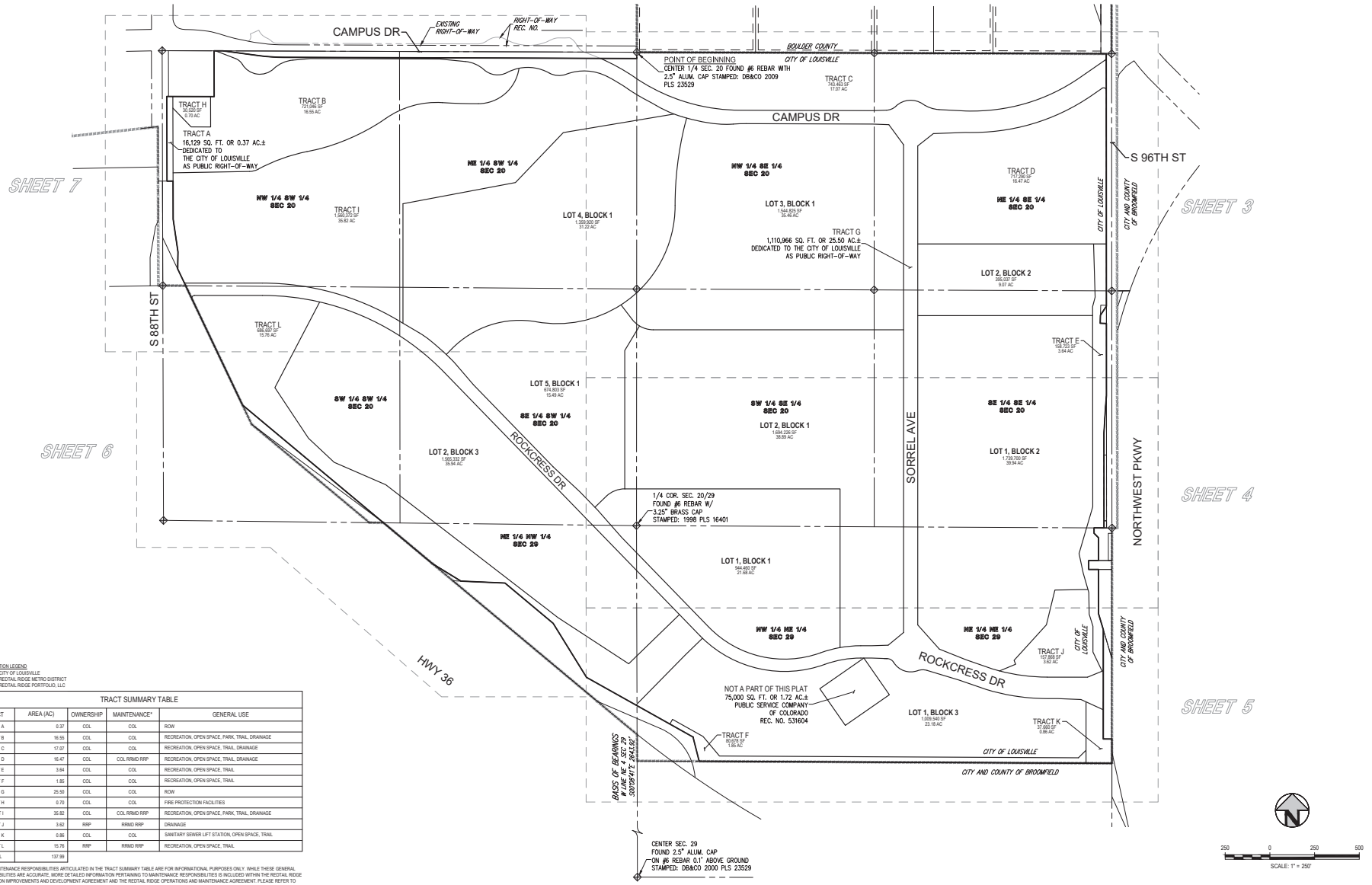
SITUATED IN THE SOUTH HALF OF SECTION 20 AND THE NORTH HALF OF SECTION 29, TOWNSHIP 1 SOUTH, RANGE 69 WEST OF THE SIXTH PRINCIPAL MERIDIAN, CITY OF LOUISVILLE, COUNTY OF BOULDER, STATE OF COLORADO

KEY MAP/TRACT SUMMARY TABLE

PREPARED BY:
HARRIS KOCHER SMITH
1120 Lincoln Street, Suite 1000
Denver, Colorado 80203
P: 303-623-6300 F: 303-623-6311
HarrisKocherSmith.com

LEGEND

- SECTION CORNER (DESCRIBED ON FOLLOWING SHEETS)
- LOT X, BLOCK X / XXXX SF / XX.XX AC — LOT NUMBER & AREA
- LOUISVILLE CITY LIMITS



ABBREVIATION LEGEND

COL	CITY OF LOUISVILLE
RRMD	REDTAIL RIDGE METRO DISTRICT
RRP	REDTAIL RIDGE PORTFOLIO, LLC

TRACT SUMMARY TABLE

TRACT	AREA (AC)	OWNERSHIP	MAINTENANCE*	GENERAL USE
TRACT A	0.37	COL	COL	ROW
TRACT B	16.55	COL	COL	RECREATION, OPEN SPACE, PARK, TRAIL, DRAINAGE
TRACT C	17.07	COL	COL	RECREATION, OPEN SPACE, TRAIL, DRAINAGE
TRACT D	16.47	COL	COL RRMD RRP	RECREATION, OPEN SPACE, TRAIL, DRAINAGE
TRACT E	3.64	COL	COL	RECREATION, OPEN SPACE, TRAIL
TRACT F	1.85	COL	COL	RECREATION, OPEN SPACE, TRAIL
TRACT G	25.50	COL	COL	ROW
TRACT H	0.70	COL	COL	FIRE PROTECTION FACILITIES
TRACT I	35.82	COL	COL RRMD RRP	RECREATION, OPEN SPACE, PARK, TRAIL, DRAINAGE
TRACT J	3.62	RRP	RRMD RRP	DRAINAGE
TRACT K	0.86	COL	COL	SANITARY SEWER LIFT STATION, OPEN SPACE, TRAIL
TRACT L	15.76	RRP	RRMD RRP	RECREATION, OPEN SPACE, TRAIL
TOTAL	137.99			

* THE MAINTENANCE RESPONSIBILITIES ARTICULATED IN THE TRACT SUMMARY TABLE ARE FOR INFORMATIONAL PURPOSES ONLY. WHILE THESE GENERAL RESPONSIBILITIES ARE ACCURATE, MORE DETAILED INFORMATION PERTAINING TO MAINTENANCE RESPONSIBILITIES IS INCLUDED WITHIN THE REDTAIL RIDGE SUBDIVISION IMPROVEMENTS AND DEVELOPMENT AGREEMENT AND THE REDTAIL RIDGE OPERATIONS AND MAINTENANCE AGREEMENT. PLEASE REFER TO THESE DOCUMENTS FOR ADDITIONAL DETAIL PERTAINING TO MAINTENANCE RESPONSIBILITIES.

250 0 250 500
SCALE: 1" = 250'

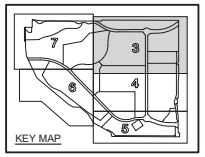
PROJECT NUMBER: 190108

FINAL SUBDIVISION PLAT OF

REDTAIL RIDGE FILING NO. 1

SITUATED IN THE SOUTH HALF OF SECTION 20 AND THE NORTH HALF OF SECTION 29, TOWNSHIP 1 SOUTH, RANGE 69 WEST OF THE SIXTH PRINCIPAL MERIDIAN, CITY OF LOUISVILLE, COUNTY OF BOULDER, STATE OF COLORADO

PLAT SHEET



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HarrisKocherSmith.com

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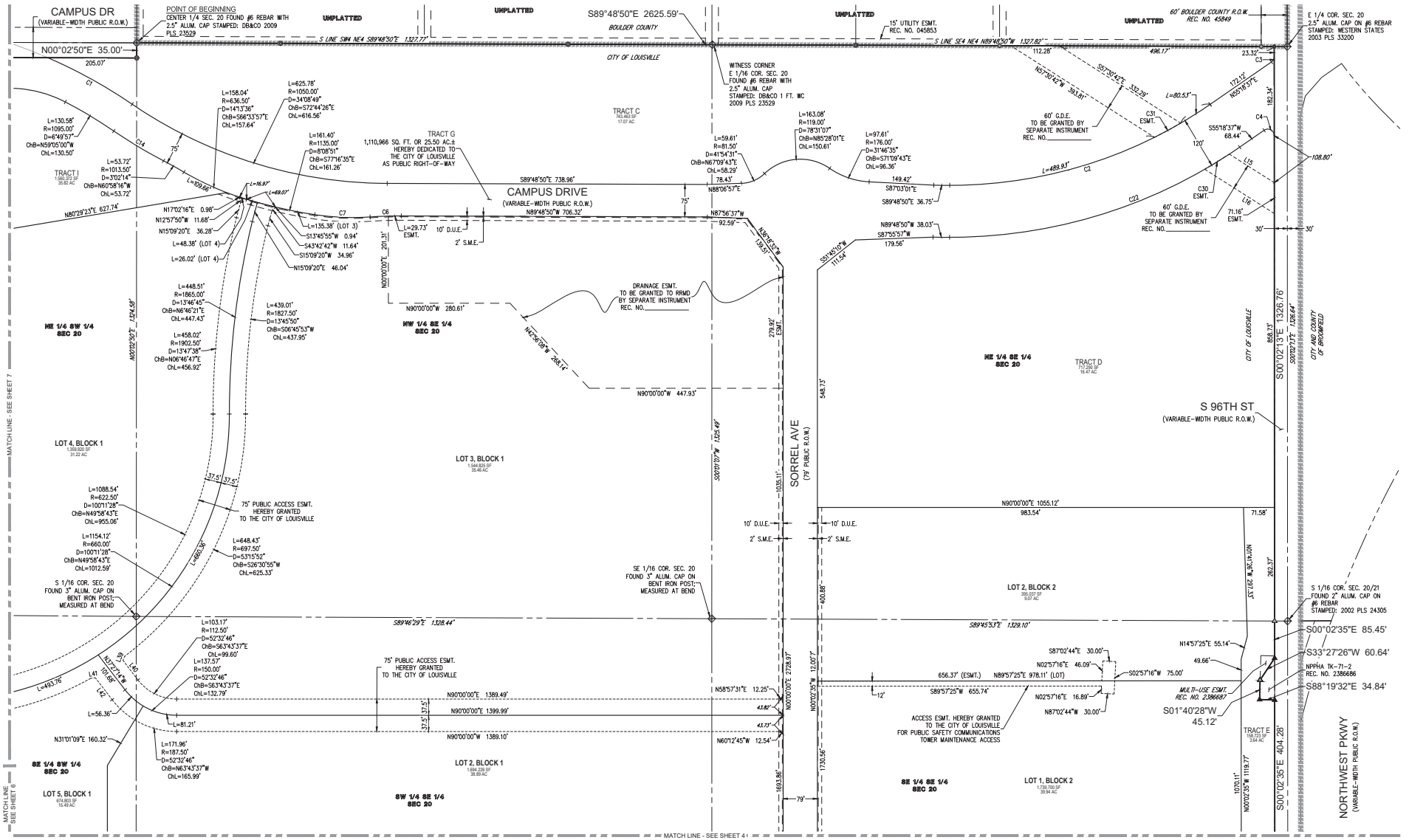

FINAL SUBDIVISION PLAT OF

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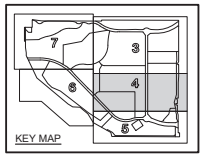
SITUATED IN THE SOUTH HALF OF SECTION 20 AND THE NORTH HALF OF SECTION 29, TOWNSHIP 1 SOUTH,
RANGE 69 WEST OF THE SIXTH PRINCIPAL MERIDIAN, CITY OF LOUISVILLE, COUNTY OF BOULDER, STATE OF COLORADO
PLAT SHEET



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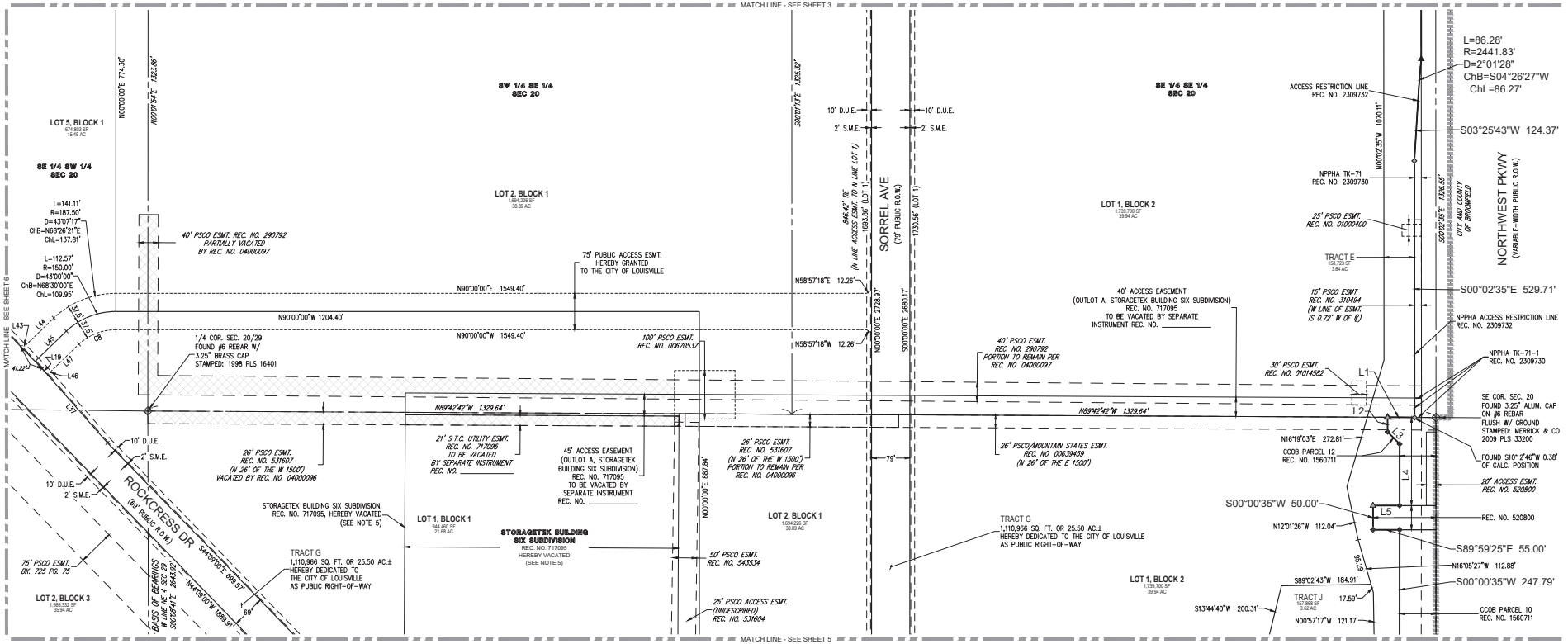

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PROJECT NUMBER: 190108

FINAL SUBDIVISION PLAT OF

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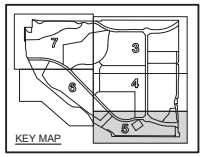
RANGE 69 WEST OF THE SIXTH PRINCIPAL MERIDIAN, CITY OF LOUISVILLE, COUNTY OF BOULDER, STATE OF COLORADO
PLAT SHEET/EASEMENT DETAILS 'A' & 'B'



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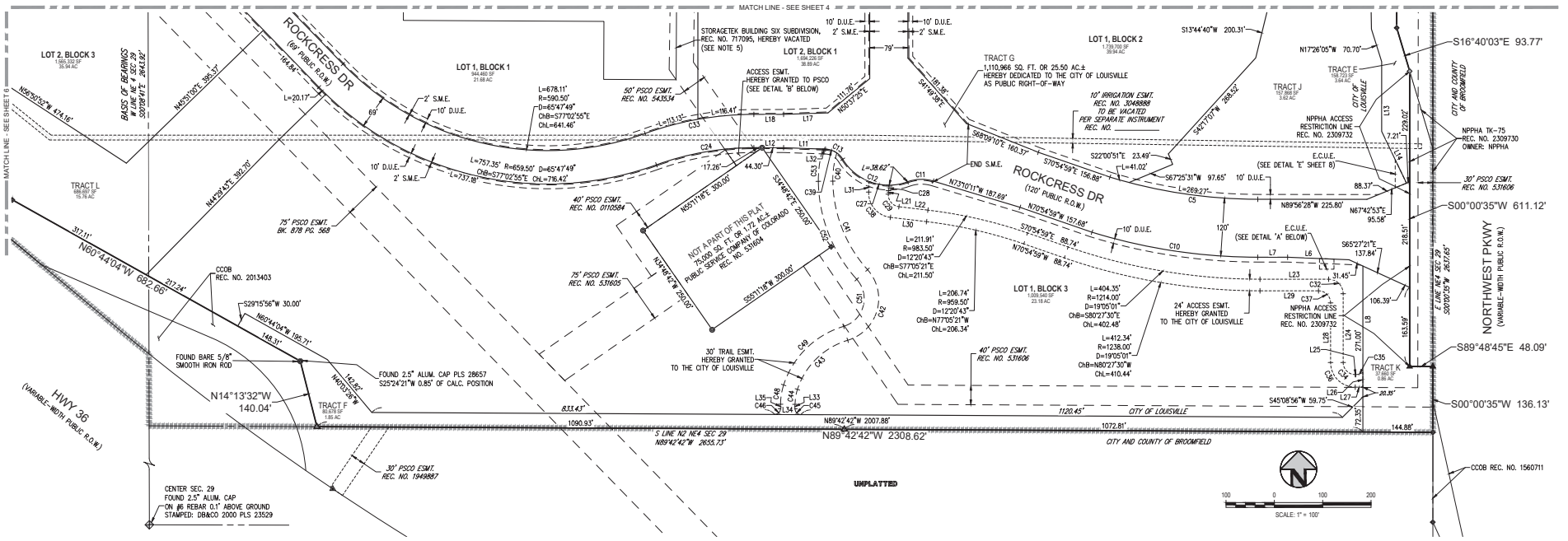
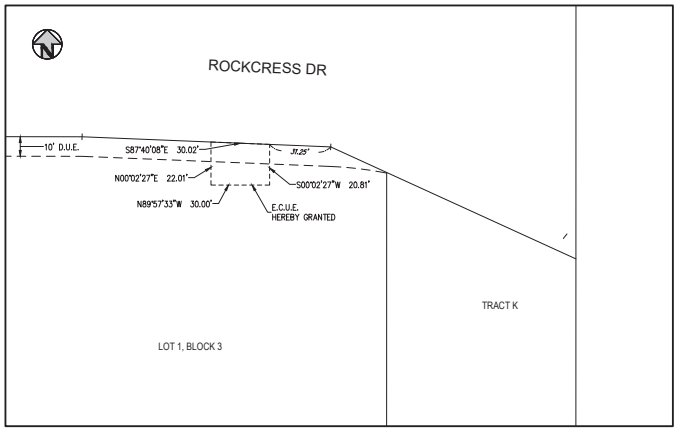
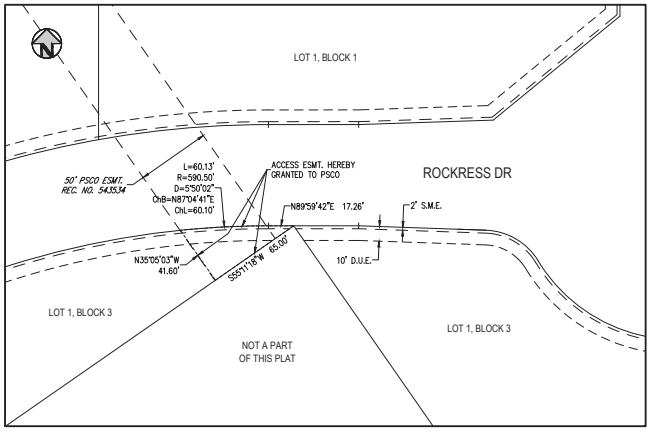




DETAIL 'A'
SCALE: 1" = 30'



DETAIL 'B'
SCALE: 1" = 40'

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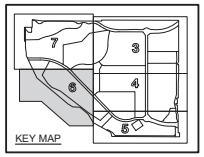
DATE: 10/21/2020 4:40:42 PM BY: DOUG MILLER

PROJECT NUMBER: 190108

FINAL SUBDIVISION PLAT OF

REDTAIL RIDGE FILING NO. 1

SITUATED IN THE SOUTH HALF OF SECTION 20 AND THE NORTH HALF OF SECTION 29, TOWNSHIP 1 SOUTH,
RANGE 69 WEST OF THE SIXTH PRINCIPAL MERIDIAN, CITY OF LOUISVILLE, COUNTY OF BOULDER, STATE OF COLORADO
PLAT SHEET



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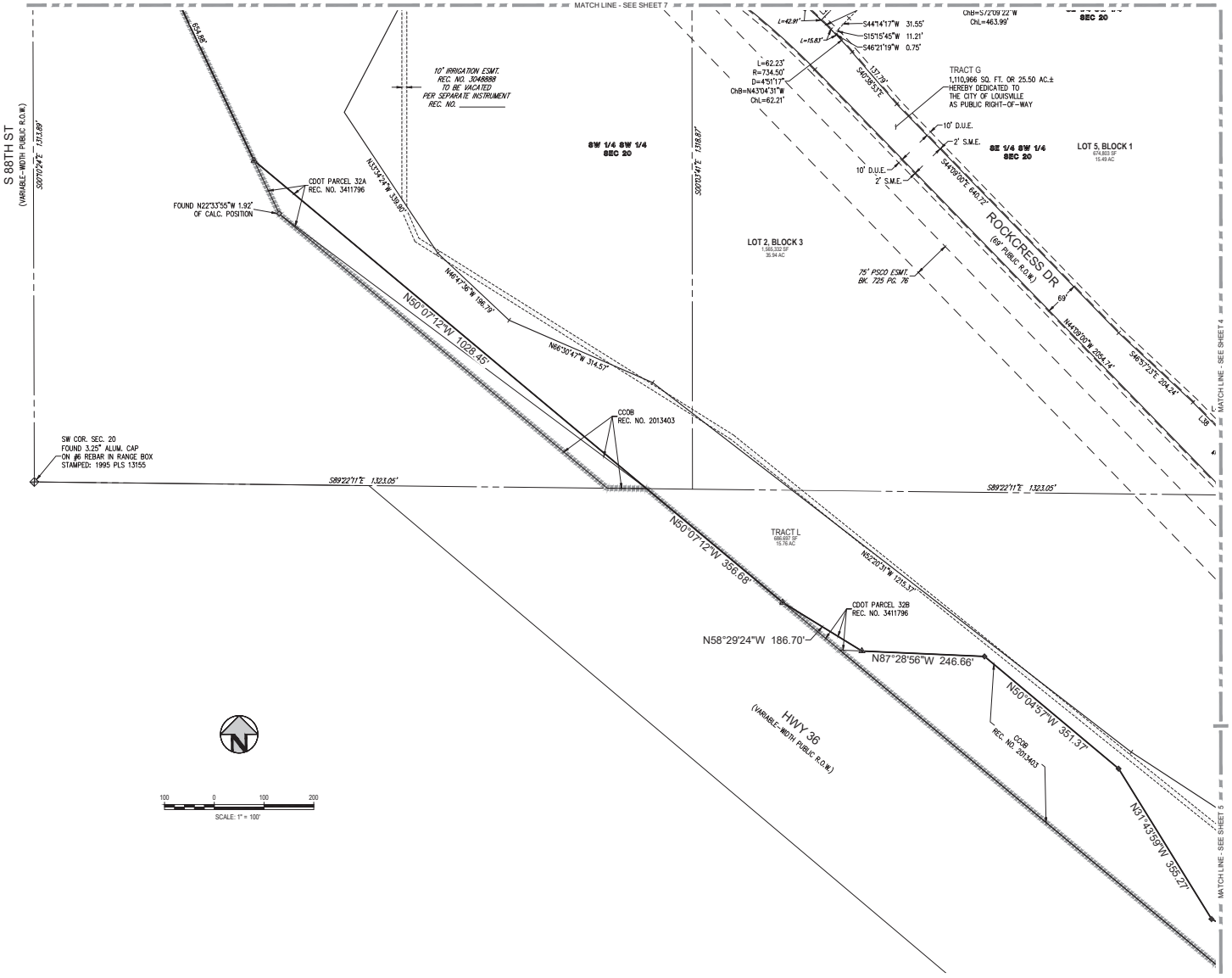


PROJECT NUMBER: 190108

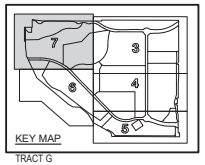
FINAL SUBDIVISION PLAT OF

REDTAIL RIDGE FILING NO. 1

SITUATED IN THE SOUTH HALF OF SECTION 20 AND THE NORTH HALF OF SECTION 29, TOWNSHIP 1 SOUTH,
RANGE 69 WEST OF THE SIXTH PRINCIPAL MERIDIAN, CITY OF LOUISVILLE, COUNTY OF BOULDER, STATE OF COLORADO

PLAT SHEET

DETAIL 'C'
1" = 10'



KEY MAP

PREPARED BY:

HARRIS KOCHER SMITH

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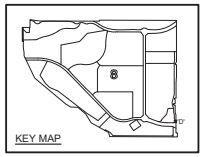
LINE & CURVE TABLES/EASEMENT DETAIL 'D'



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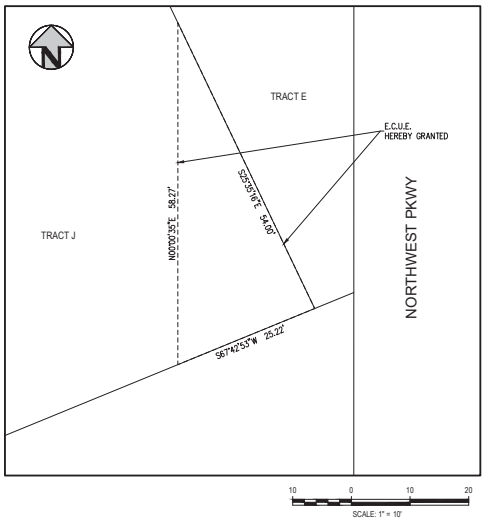
CURVE TABLE					
CURVE	RADIUS	DELTA	LENGTH	CHORD BEARING	CHORD
C1	1170.00'	10°53'44"	222.49'	S61°06'53"E	222.15'
C2	1050.00'	34°52'33"	639.13'	N72°44'53"E	629.31'
C3	15.00'	55°20'51"	14.49'	N27°38'12"E	13.93'
C4	15.00'	124°39'10"	32.63'	N62°21'48"W	26.57'
C5	1050.00'	16°55'55"	310.29'	S81°28'31"E	309.16'
C6	1013.50'	4°03'56"	71.92'	S88°09'12"W	71.90'
C7	586.50'	12°31'46"	128.26'	S87°36'54"E	128.00'
C8	112.50'	42°49'19"	84.08'	S68°35'20"W	82.14'
C10	1170.00'	17°02'32"	348.01'	N81°25'12"W	346.72'
C11	83.50'	37°05'08"	54.05'	S88°17'15"W	53.11'
C12	111.50'	78°59'15"	153.71'	N70°45'42"W	141.83'
C13	43.50'	56°44'14"	43.08'	N59°38'11"W	41.34'
C14	1125.00'	6°49'30"	134.01'	N59°04'46"W	133.93'
C15	245.50'	57°13'43"	245.21'	N89°24'17"W	235.15'
C16	181.50'	36°20'19"	115.11'	N66°09'50"W	113.19'
C17	113.50'	101°55'25"	201.91'	N82°10'12"W	176.32'
C18	81.50'	37°38'17"	53.54'	N50°01'38"W	52.58'
C19	15.00'	18°48'26"	4.92'	N80°24'26"W	4.90'
C20	361.50'	2°09'26"	13.61'	N69°55'30"W	13.61'
C22	1170.00'	34°52'33"	712.18'	S72°44'53"W	701.23'
C24	590.50'	19°56'31"	205.53'	S80°01'26"W	204.49'
C25	1484.50'	30°37'43"	793.57'	N74°41'26"W	784.16'
C27	111.50'	21°56'42"	42.71'	S79°26'13"E	42.45'
C28	65.00'	10°10'50"	11.55'	S07°36'32"W	11.53'
C29	25.00'	85°46'50"	37.43'	S40°22'18"E	34.03'
C30	1170.00'	3°15'57"	66.69'	N58°21'14"E	66.68'
C31	1050.00'	3°44'50"	68.67'	S61°34'41"W	68.66'
C32	30.00'	90°00'00"	47.12'	S45°00'00"E	42.43'
C33	659.50'	19°56'31"	229.54'	S80°01'26"W	228.38'
C34	25.00'	90°00'00"	39.27'	S45°00'00"E	35.36'
C35	25.00'	36°22'20"	15.87'	N71°48'50"E	15.61'
C36	51.00'	90°00'00"	80.11'	N45°00'00"W	72.12'
C37	25.00'	90°00'00"	39.27'	N45°00'00"W	35.36'
C38	51.00'	85°14'12"	75.87'	N40°38'37"W	69.07'
C39	43.50'	32°58'32"	25.04'	S71°31'02"E	24.69'
C40	192.00'	17°40'02"	59.20'	S08°03'44"W	58.97'
C41	279.27'	41°14'54"	201.05'	S21°23'44"E	196.74'
C42	89.82'	115°22'23"	180.87'	S15°40'01"W	151.82'
C43	156.35'	55°27'28"	151.34'	S45°37'29"W	145.50'
C44	102.05'	17°36'27"	31.36'	S09°05'31"W	31.24'
C45	12.00'	90°00'00"	18.85'	S44°42'42"E	16.97'
C46	12.00'	90°00'00"	18.85'	N45°17'18"E	16.97'
C48	132.05'	17°36'27"	40.58'	N09°05'31"E	40.42'
C49	186.35'	55°27'28"	180.37'	N45°37'29"E	173.42'
C51	59.82'	115°22'23"	120.46'	N15°40'01"E	101.11'
C52	309.27'	41°14'54"	222.65'	N21°23'44"W	217.87'
C53	222.00'	17°28'43"	67.72'	N07°58'04"E	67.46'
C56	1494.50'	5°48'16"	151.40'	N48°24'17"W	151.33'
C57	484.50'	8°04'09"	68.23'	N55°20'30"W	68.18'

LINE TABLE		
LINE	BEARING	LENGTH
L1	N89°42'42"W	55.73'
L2	S00°00'35"W	30.02'
L3	S44°51'26"E	35.44'
L4	S00°00'35"W	127.21'
L5	N89°59'25"W	55.00'
L6	N87°40'08"W	127.24'
L7	N89°56'28"W	61.81'
L8	N00°00'35"E	343.35'
L9	N68°50'46"W	102.75'
L10	S89°48'38"E	34.06'
L11	N88°00'18"W	86.72'
L12	S89°59'42"W	61.55'
L13	N00°00'35"E	144.24'
L14	N25°35'16"W	118.81'
L15	S57°30'42"E	123.02'
L16	N57°30'42"W	190.37'
L17	N88°05'36"E	91.79'
L18	N89°59'42"E	61.57'
L19	N41°20'38"W	21.27'
L20	N44°14'17"E	41.99'
L21	S02°31'07"W	7.24'
L22	S83°15'43"E	60.35'
L23	N90°00'00"E	142.06'
L24	S00°00'00"E	142.43'
L25	N90°00'00"E	0.97'
L26	S00°00'35"W	30.88'
L27	N90°00'00"W	15.79'
L28	N00°00'00"E	123.44'
L29	N90°00'00"W	121.06'
L30	N83°15'43"W	75.33'
L31	N01°58'29"E	22.05'
L32	S88°00'18"E	5.50'
L33	S00°17'18"W	9.23'
L34	N89°42'42"W	54.00'
L35	N00°17'18"E	9.23'
L36	S59°22'35"E	107.45'
L37	S41°20'38"E	204.24'
L38	S44°09'00"E	141.69'
L39	S22°43'14"W	10.20'
L40	S37°27'14"E	56.96'
L41	S82°24'43"W	10.94'
L42	N37°27'14"W	63.84'
L43	N76°54'28"E	11.09'
L44	N45°50'51"E	79.75'
L45	N45°51'00"E	89.89'
L46	S17°37'55"W	9.93'
L47	S45°51'00"W	79.59'

DETAIL 'D'
SCALE: 1" = 10'



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PROJECT NUMBER: 190108

REDTAIL RIDGE SUBDIVISION
IMPROVEMENTS AND DEVELOPMENT AGREEMENT

THIS REDTAIL RIDGE SUBDIVISION IMPROVEMENTS AND DEVELOPMENT AGREEMENT ("Agreement") is made and entered into this _____ day of _____, 2024 ("Effective Date"), by and between the **CITY OF LOUISVILLE**, a Colorado home rule municipal corporation, in the County of Boulder, State of Colorado ("City"), **REDTAIL RIDGE PORTFOLIO, LLC**, a Delaware limited liability company ("Subdivider"), and the **REDTAIL RIDGE METROPOLITAN DISTRICT**, a Colorado special district ("District") (individually, each a "Party" and collectively the "Parties").

WHEREAS, Subdivider is the owner and subdivider of the property legally described on **Exhibit A** attached hereto and incorporated herein by this reference (the "Property") within the Final Subdivision Plat of Redtail Ridge Filing 1 (the "Plat" or "Subdivision"), which final form of the Plat has been reviewed by the Planning Commission and approved by the City Council of the City by City Council Resolution _____, Series 20__ (the "Resolution") and recorded with the Boulder County Clerk and Recorder on _____ at Reception No. _____; and

WHEREAS, Section 16.12.100(B) of the City of Louisville Municipal Code (the "LMC") requires that Subdivider enter into a subdivision agreement with the City relative to public improvements required by the City related to the subdivision of land; and

WHEREAS, Pursuant to the service plan for the District, submitted by the Subdivider and approved by the City on February 18, 2020, as may be amended from time to time (the "Service Plan"), the District exists for the purpose of designing, acquiring, constructing, installing, financing, operating and maintaining certain street, traffic and safety controls, water, sanitation, storm water, parks and recreation, television relay and translation, and transportation improvements and providing certain services to the Property which is coterminous with the service area covered by the Service Plan for the District.

WHEREAS, the Service Plan sets forth the public improvements which the District has the authority to provide, which public improvements, include, but are not limited to, the improvements listed on the Schedule of Improvements attached as **Exhibit B** (the "Improvements"); and

WHEREAS, contemporaneously with execution of this Agreement, the District is separately contracting with the Northwest Parkway Public Highway Authority ("Northwest

Parkway") to construct outside the City's municipal limits various additional off-site traffic improvements in the Northwest Parkway right-of-way pursuant to that certain Agreement By And Between The Northwest Parkway Public Highway Authority, Northwest Parkway LLC And Redtail Ridge Metropolitan District Regarding Capital Improvements Planning, Construction, And Maintenance (the "Northwest Parkway IGA"); and

WHEREAS, commencing on February 6, 2024, and continuing on February 20, 2024, the City Council conducted a noticed public hearing concerning a preliminary subdivision plat for the Property;

WHEREAS, pursuant to this Agreement, the Parties desire to set forth their respective rights and obligations relative to the initial design, construction, completion and future maintenance of the Improvements, together with a security mechanism to financially guarantee the completion of the Improvements, together with Subdivider's additional commitments to the City in connection with future development of the Property.

NOW, THEREFORE, in consideration of the foregoing, the Parties hereto promise, covenant and agree as follows:

1.0 GENERAL CONDITIONS

1.1 Subdivision Obligation; Scope of Agreement. Pursuant to its Service Plan approved by the City at the request of Subdivider for the purpose of providing public improvements, including the Improvements, the District will finance, design and construct the Improvements as provided herein. For clarity, the Improvements for purposes of this Agreement are defined as those improvements to be specifically dedicated to the public as delineated on **Exhibit B**, attached hereto and incorporated herein. If the District does not have sufficient funds to complete the construction of the Improvements, the Subdivider shall be responsible for the completion of the construction of the Improvements as provided herein and more specifically in the "Escrow Agreement" defined below and attached hereto as **Exhibit E**. To that end, Subdivider and the District shall be jointly liable for performance of the covenants set forth herein. This Agreement is intended to apply to development of the Property as described herein (the "Project"). The City shall also have the further right, pursuant to applicable LMC provisions, to require a separate subdivision and/or development agreement as a condition of approval of any further subdivision plat or planned unit development ("PUD") plan approval beyond the scope of the

Project contemplated by this Agreement and to withhold any building permits for any property within such further subdivision or development until the required subdivision and/or development agreement is executed. This Agreement hereby supersedes and replaces in its entirety that certain Subdivision Agreement among the City of Louisville, Storage Technology Corporation and California Devices, Inc., recorded with the Boulder County Clerk and Recorder, Colorado, as Instrument No. 1774601 on February 24, 1998, and such agreement is hereinafter of no further force or effect.

1.2 Engineering Services. Subdivider and the District agree to furnish, at their expense, all necessary engineering services relating to the design and construction of the Improvements itemized on the Schedule of Improvements attached as **Exhibit B**. Said engineering services shall be performed by or under the supervision of a Registered Professional Engineer or Registered Land Surveyor, or other professionals as appropriate, licensed by the State of Colorado, and in accordance with applicable Colorado law and shall conform to the City's standards and criteria for public improvements as established pursuant to the LMC as of the date of submittal to the City.

1.3 Construction Standards and Completion Deadline.

(a) Subdivider and the District shall cause all Improvements to be constructed in accordance with this Agreement. All Improvements shall be constructed in accordance with (i) the plans and specifications approved in writing by the City for such Improvements ("Approved Plans"), (ii) the Plat, and (iii) the City's adopted construction specifications applicable at the time of construction plan approval. City approval of a building permit for an Improvement will be granted only after receipt of the required Improvement Guarantee (as defined below in **Section 1.11(b)**); provided, however, while the issuance of an overlot grading permit shall be required for the commencement of grading as provided below, receipt of the Improvement Guarantee shall not be required for the issuance of such overlot grading permit. The effectiveness of Approved Plans will continue for three (3) years from the date of the City's Public Works Department's ("Public Works") approval of the Improvements included in such Approved Plans ("Public Works Approval"), or so long as previously commenced construction based on such Approved Plans is continuing. Public Works Approval shall be in the form of an approval letter from Public Works ("Commencement Approval Letter"). In the event that Subdivider or the District desire to commence any construction work based on Approved Plans after such three (3)-year period,

Subdivider or the District shall resubmit the subject construction plans to the City for reexamination for compliance with standards and criteria for public improvements adopted under the LMC and in effect for the City as of the date of such reexamination, and the City may require that Subdivider or the District modify the construction plans to comply with City standards and specifications that are in effect at the time of resubmittal.

(b) Construction of Improvements shall be commenced in a timely manner following issuance of the Commencement Approval Letter therefor and shall be completed, and Construction Acceptance requested, by no later than **August 31, 2028**. Upon commencement of construction of any of the Improvements, the approvals therefor shall remain in effect pending completion of such Improvements so long as: (i) construction by District or Subdivider of such Improvements is not abandoned and (ii) the Improvement Guarantee (defined below) required by this Agreement remains in place to guarantee completion of the same. Construction Acceptance shall be requested for the Improvements in accordance with **Section 1.6**, below.

1.4 Development Coordination. Unless specifically provided in this Agreement to the contrary, all submittals to the City or approvals required of the City in connection with this Agreement shall be submitted to or rendered by the City Manager, or his or her designee, who shall have general responsibility for coordinating development with Subdivider or the District.

1.5 Construction Document Submission and Approval. Subdivider or the District shall furnish to the City complete construction drawings for all Improvements and obtain Approved Plans prior to commencing any construction work thereon. Provided, however, that Subdivider may apply for an early grading permit in accordance with that Planned Community Zone District Zoning Agreement dated April 20, 2010, and recorded with the Boulder County Clerk and Recorder on January 25, 2013, at Reception No. 03284516 (the "PCZD Agreement"), as amended by that First Amendment to Planned Community Zone District Zoning Agreement dated March 19, 2024 and recorded with the Boulder County Clerk and Recorder on August 12, 2024 at Reception No. 04056680. Said approval or disapproval of construction drawings shall be based upon the standards and criteria for public improvements as established and approved by the City, and the City shall notify Subdivider and the District of any deficiencies, which must be corrected prior to approval of the Approved Plans. All deficiencies shall be corrected and said drawings

shall become Approved Plans prior to commencement of construction of the Improvements shown on the Approved Plans.

1.6 Inspections, Construction Acceptance and Warranty.

(a) No later than thirty (30) days after any Improvements are completed, Subdivider or the District shall request inspection by the City, which request shall be in writing and either delivered to the City Department of Public Works, 749 Main Street, Louisville, CO 80027 in the same manner as notices required under **Section 10.6** below or emailed to the City's Public Works Director. City shall respond to such requests for inspection within a reasonable period of time, and provide Subdivider and District with written notice of approval of the completion of such Improvement (the "Inspection Approval", which approval shall not constitute Construction Acceptance as set forth below), or notice to Subdivider and the District of any reasonable repairs, replacements, construction, or other work required before Inspection Approval can be issued by the City. If Subdivider or the District does not request this inspection within thirty (30) days of completion of such improvements, the City may conduct the inspection without the approval of Subdivider or the District and provide written notice to Subdivider and the District of any reasonable repairs, replacements, construction, or other work required. In addition to other information requested by the City, Subdivider or the District shall provide "as-built" drawings in electronic file format reasonably acceptable to the City and a certified statement of construction costs for such improvements no later than thirty (30) days after the Improvements are completed. The certification shall be signed by an officer, member or agent on behalf of Subdivider or the District representing that amounts stated are the actual costs incurred.

(b) If Subdivider or the District has not completed any Improvements on or before the completion deadline set forth in **Section 1.3(b),** or within such other time period as may be permitted by **Section 10.7**, below, then (30) days after Subdivider's and the District's receipt of written notice from the City that the City intends to exercise its rights to secure performance of such Improvements, the City may, to the extent such Improvements have not been completed during such 30 day period, exercise its rights to secure performance as provided in **Section 10.1** of this Agreement. If the Improvements completed are satisfactory, the City Council shall, by resolution, grant "Construction Acceptance," after which the Subdivider and the District shall provide a two (2)-year warranty to the City for the Improvements (the "Warranty Period"), and the

same shall be subject to "Final Acceptance" as set forth below in **Sections 1.7 and 1.8** and other applicable provisions herein. If the Improvements are unsatisfactory, the City shall provide written notice within a reasonable time to Subdivider and the District of any reasonable repairs, replacements, construction, or other work required to receive Construction Acceptance. Subdivider or the District shall then complete all needed repairs, replacements, construction, or other work within sixty (60) days of said notice, weather permitting, subject to **Section 10.7**, below. After Subdivider or the District completes the repairs, replacements, construction, or other work required, Subdivider and the District shall request the City to re-inspect such work to determine if Construction Acceptance can be granted. If Subdivider or the District does not complete the repairs, replacements, construction, or other work required within sixty (60) days of said notice (subject to **Section 10.7**, below), then sixty (60) days (subject to **Section 10.7**, below) after Subdivider's and the District's receipt of written notice from the City, the City may exercise its rights to secure performance as provided in **Section 10.1** of this Agreement. The City reserves the right to schedule re-inspections at mutually agreeable times, depending upon the scope of deficiencies.

(c) Building permits within the Subdivision may be issued by the Building Division prior to the City's issuance of Construction Acceptance of the Improvements if the City's Building Official and Fire Marshall determine that there is adequate water supply, emergency access, and address marking for building sites for the same in existence for life-safety purposes.

(d) Except as otherwise provided herein, no certificates of occupancy within the Subdivision may be issued until after issuance of Construction Acceptance. Upon request by the Subdivider, the City will grant an exception for issuance of certificates of occupancy prior to Construction Acceptance if all necessary public improvements needed to serve the parcel subject to the certificate of occupancy request have been completed or received Inspection Acceptance and the Subdivider is not in breach of any provision of this Agreement after notice and opportunity to cure.

1.7 Warranty, Maintenance, Repair, and Replacement of Improvements Pre-Final Acceptance.

(a) During the Warranty Period, while the City shall assume responsibility for those items of maintenance, repair and replacement assumed by the City under the Operation and

Maintenance Agreement among Subdivider, District and the City dated _____, 2024, Subdivider or the District shall, at their own expense, take or cause to be taken all other actions reasonable and necessary to generally maintain all other Improvements required by this Agreement in a condition acceptable to the City until conclusion of the Warranty Period or as otherwise required by this Agreement or other related agreements between the Parties. During the Warranty Period, Subdivider or the District shall also, at their own expense, take or cause their respective contractor(s) to take all actions reasonable and necessary to make all needed repairs or replacements which, in the reasonable opinion of the City, and consistent with all applicable LMC requirements, shall become necessary to obtain Final Acceptance of the Improvements at the end of the Warranty Period.

(b) As it relates to the Warranty Period and Final Acceptance of dedicated public lands and open spaces, the Parties acknowledge that restoration of native species can require three to five years to determine stand establishment. Early successful species (such as summer and winter annuals) should be expected to occupy the area before the desired native perennial stand dominates. Subdivider shall perform seasonal reviews, in the spring and fall, (1) to determine the status of native reestablishment and status of noxious weed control; and (2) provide a seasonal management plan of action to the Parks, Recreation, and Open Space Department. Successful establishment is defined by the percentage of desired grass species compared to weedy annual broadleaf species (which usually requires no less than three years). A successful stand of native grasses is defined as being at a 75% establishment rate and/or having a desirable vegetation cover equal to or greater than the surrounding plant cover. Final Acceptance of revegetation within dedicated land will occur once reestablishment rates and/or desirable vegetation cover is present, as determined by the City; provided, however, that to the extent Final Acceptance is extended for such revegetation hereunder beyond the two year Warranty Period for other Improvements, the City shall only retain such portion of the Warranty Guarantee as equals 5% of the cost of the revegetation which has not achieved the 75% establishment rate, as determined by the City in consultation with the Subdivider. The extended Warranty Period hereunder shall not exceed three years beyond the two-year Warranty Period for all other Improvements. Any extended Warranty Period hereunder and the determination of the vegetation in issue shall be documented in a landscaping deferral agreement.

(c) If within thirty (30) days (subject to **Section 10.7**, below) after Subdivider's and the District's receipt of written notice from the City requesting such maintenance, repairs or replacements, (unless the City in writing consents to a longer cure period in the event cure cannot be reasonably effected within the 30-day period), Subdivider or the District has not completed such maintenance, repairs or replacements, the City may exercise its rights to secure performance as provided in **Section 10.1** of this Agreement and pursuant to the Escrow Agreement, following written notice to Subdivider and District.

1.8 Final Acceptance. At least sixty (60) days before the expiration of the Warranty Period, or as soon thereafter as weather permits, Subdivider or the District shall request by written notice to the City a Final Acceptance inspection. The City shall inspect the Improvements and shall notify Subdivider and the District in writing of any deficiencies and necessary repairs within fourteen (14) calendar days of such inspection. After Subdivider or the District have corrected all deficiencies and made all repairs identified in said written notice to the satisfaction of the City, the City Council shall, by resolution, grant Final Acceptance. If Subdivider or the District do not correct all deficiencies and make repairs identified in said inspection to the City's reasonable satisfaction within thirty (30) days after receipt of said notice, weather permitting (and subject to extension pursuant to the provisions of **Section 10.7** below), (unless the City in writing consents to a longer cure period in the event cure cannot be reasonably effected within the 30-day period), the City may, following written notice to the Subdivider and the District, exercise its rights to secure performance as is provided in **Section 10.1** of this Agreement as more fully specified in the Escrow Agreement. If any mechanic's liens have been filed with respect to the Improvements, the City may retain all or a portion of the Improvement Guarantee up to the amount of such liens if Subdivider or the District has not obtained a release of such liens within thirty (30) days of notice from the City of the same (unless the City in writing consents to a longer cure period in the event release of or bonding around such liens cannot be reasonably effected within the 30-day period). If Subdivider or the District fails to have the Improvements finally accepted within three (3) years of the date of the issuance of Construction Acceptance (subject to extension pursuant to the provisions of **Section 1.7(b),** above and **Section 10.7** below), then Subdivider or the District shall be in default of this Agreement and the City may exercise its rights under **Section 10.1** of this Agreement and the Escrow Agreement (30) days after Subdivider's and the District's receipt of

written notice of default from the City (to the extent such default notice notifies Subdivider and the District that the City intends to exercise its rights under **Section 10.1** of this Agreement).

1.9 Reimbursement to City. To the extent that the Subdivider and the District fail to do so in accordance with this Agreement, the City may proceed to complete construction, repairs, replacements, or other work associated with Improvements pursuant to **Sections 1.6, 1.7, 1.8, or 10.1,** of this Agreement, and subject to and consistent with the terms of the Escrow Agreement, with funds other than the applicable Improvement Guarantee after Subdivider's and the District's receipt of written notice of default from the City as required herein and expiration of any applicable cure period(s). Subdivider or the District shall reimburse the City within thirty (30) days after receipt of written demand and supporting documentation from the City for any reasonable funds so utilized by the City in connection with the Improvements. If Subdivider and the District fail to so reimburse the City, then (30) days after Subdivider's and the District's receipt of written notice from the City, Subdivider and the District shall be in default of the Agreement and the City may exercise its rights under **Section 10.1** of this Agreement.

1.10 Testing and Inspection.

(a) Subdivider and/or the District shall employ, at their own expense, a licensed and registered testing company, previously approved by the City in writing, to perform all testing of materials or construction that may be reasonably required by the City, including but not limited to compaction testing for embankment fills, structural backfills, pipe bedding, trench backfills, subgrades, road base course and asphalt, and concrete strength testing, and shall furnish copies of test results, together with maps clearly indicating the horizontal and vertical test locations, to the City on a timely basis for City review and approval no less than fifteen (15) days prior to commencement or continuation, as applicable, of that particular Improvement. All utility trench compaction test, concrete compressive strength test and subgrade density test results along with mapping indicating the approximate location of all tests shall be submitted to and approved by the City's Public Works Department prior to street paving. In addition, at all times during said construction, but at reasonable times agreed to in advance by the Parties, the City shall have access to inspect the materials and workmanship of said construction, determine the progress of the work, and determine compliance of the work with Approved Plans and the City's construction regulations, and all materials and work not materially conforming to Approved Plans and

specifications shall be reasonably repaired or removed and replaced at Subdivider's or the District's expense so as to materially conform to Approved Plans. A representative of the City's Public Works Department, Engineering Division shall be present to inspect any pressure leakage testing of potable water lines conducted by Subdivider or the District, and Subdivider or the District shall reimburse the City for the City's reasonable costs for a testing laboratory to conduct bacteriological tests of the potable water lines after Subdivider or the District has disinfected said lines according to the City's construction regulations. The Subdivider and the District shall be responsible for, and shall promptly pay upon receipt of invoices therefor, all reasonable costs incurred by the City for necessary independent contractor inspection services for acceptance and warranty inspections. Such obligation shall be limited to inspections conducted prior to Final Acceptance. At the request of the Subdivider, and provided that the Subdivider or the District shall be responsible for all costs of the same, the City agrees to employ or otherwise contract with a full-time inspector dedicated to this Project to help ensure that all required City inspections can occur timely as construction progresses.

(b) All work shown on Approved Plans requires inspection by the City's Public Works Department, Engineering Division. Inspectors shall not direct changes to Approved Plans in the field; rather, any material changes to Approved Plans shall require written approval by the City Engineer, Subdivider and the District. In the event of any dispute as to whether a material change in Approved Plans is necessary, construction respecting such work at issue shall not proceed until such dispute is resolved by written approval of the City Engineer, Subdivider and the District. Inspection services are provided Monday through Friday, except legal holidays, from 8:00 a.m. to 4:00 p.m., November 1 through March 31, and from 7:00 a.m. to 5:00 p.m., April 1 through October 31. During the hours listed above, inspections shall be scheduled a minimum of 24 hours in advance with the Engineering Division. Requests for inspection services beyond the hours listed above shall be submitted a minimum of 48 hours in advance to the Director of Public Works for approval. All requests for afterhours inspection services shall be made on a form provided by the Engineering Division. If the request is approved, Subdivider or the District shall reimburse the City for all direct costs of the afterhours inspection services performed by the Engineering Division (which shall be in addition to any costs required to be paid under **Section 1.10(a)**, above). If the request is denied, the work shall not proceed after the hours listed above.

1.11 Improvement Guarantee.

(a) Except as may otherwise be expressly provided in this Agreement, Subdivider or the District shall install and pay for all Improvements listed on **Exhibit B**.

(b) The total preliminary estimated cost for labor and materials to complete those Improvements to be secured pursuant to this Agreement is **$57,984,302.66** according to the preliminary Engineer's Cost Estimate included in **Exhibit C**. Prior to the issuance of the first permit for construction of any of the Improvements (other than overlot grading permit), the District Engineer, as defined in the Escrow Agreement, shall certify to the District and the City the final estimated cost to complete the Improvements pursuant to the DE Cost Certification pursuant to the Escrow Agreement, which shall be provided to the City for review. Upon approval of such certified amount by the City, and prior to the issuance of any building permits for the Project (other than overlot grading permit), Subdivider and/or the District shall submit to the City a financial guarantee to secure completion of the Improvements in the amount of one hundred five percent (105%) of said certified estimated cost to complete the Improvements (the "Improvement Guarantee Amount"), in the form of escrowed Bond (as such term is defined in **Section 1.11(d)** below) funds (the "Improvement Guarantee"). Based on the preliminary estimated cost of the Improvements under Exhibit C, the Improvement Guarantee Amount is estimated to be **$60,883,518**. The Bond funds shall be escrowed pursuant to an escrow agreement substantially in the form attached as **Exhibit E** ("Escrow Agreement"). In the event the amount of the Bond funds is less than the Improvement Guarantee Amount (the "Initial Construction Funding Shortfall"), Subdivider shall provide either a letter of credit or a cash deposit to fund the Initial Construction Funding Shortfall, or any combination of the two options, as more fully described in the Escrow Agreement. The Parties acknowledge that the Bond proceeds are posted by the District to secure the obligations of the District to complete the Improvements and the obligations of the Subdivider pursuant to Section 16.12.100 of the LMC. The Parties further acknowledge that, in accordance with the Escrow Agreement and the review and approval rights for disbursements thereunder, the Improvement Guarantee shall be drawn upon monthly by the District to pay for construction of the Improvements. For avoidance of doubt, the amount of escrowed funds held as the Improvement Guarantee will be reduced on a monthly basis in accordance with the Escrow Agreement as payment is made based on approved draws. At the present time, the Improvements are anticipated to be constructed in a single construction phase. If the Subdivider later determines

to propose a phasing plan, such plan shall be subject to review and approval of an amendment to this Agreement by City Council.

(c) No building permits for the Project shall be issued and construction of Improvements shall not be commenced until the City has received the required Improvement Guarantee for the Improvements, excepting any early grading otherwise permitted by the City pursuant to **Section 1.5** above.

(d) The Parties acknowledge that the Improvements are to be funded substantially through the District's issuance of bonds (the "Bonds"), which Bonds may not be issued until the City issues final approval of the Plat. On or after the date that such final approval issues, upon reasonable request, the City agrees to cooperate in good faith with Subdivider, the District and their respective agents in providing evidence of final approval of the Plat.

(e) Except with regard to authorized disbursements of funds pursuant to the Escrow Agreement, or partial releases of security that may otherwise be approved by the City pursuant to this Agreement, the Improvement Guarantee shall not be released until Construction Acceptance of the Improvements granted by the City. Following Construction Acceptance for all Improvements, the Escrow Agreement shall be released and terminated in accordance with the Escrow Agreement. As more fully described in the Escrow Agreement, the warranty obligations of Subdivider and District hereunder shall, after Construction Acceptance be secured by the "Warranty Guarantee" in the form of any one of the following, or in any combination of one or more of the following that, in the aggregate, covers the "Warranty Guarantee Amount" in the amount of five percent (5%) of the cost of the Improvements under Warranty:

(i) a letter of credit, which shall remain in place and be held by the City until Final Acceptance of the Improvements and which letter of credit shall be substantially in the form attached as **Exhibit D** (provided, however, that the City shall not unreasonably withhold its consent to modifications to the **Exhibit D** form required by the issuer thereof to the extent the same do not materially alter the rights and benefits to the City as otherwise provided in **Exhibit D)**; or

(ii) a cash deposit with the City, which may be in the form of Bond funds or funds from the Subdivider; or

(iii) Any other form of Guarantee or security as may be acceptable to the City.

(f) Upon Final Acceptance of the Improvements by the City, the Warranty Guarantee shall be released to the Subdivider or the District, as appropriate.

(g) Subject to Subdivider's and District's rights to notice and opportunity to cure and the provisions of **Section 10.7**, below, in addition to any other remedies it may have, the City may, at any time prior to Final Acceptance and upon ten (10) business days prior written notice to Subdivider and the District (pursuant to **Section 10.1**), draw on the Improvement Guarantee or the Warranty Guarantee in accordance with the terms and conditions of the Escrow Agreement, as applicable, if Subdivider or the District fails to extend or replace any such Improvement Guarantee or Warranty Guarantee at least forty-five (45) days prior to expiration of such Improvement or Warranty Guarantee. Except to the extent the City draws on the Improvement Guarantee or Warranty Guarantee to correct deficiencies and complete some or all Improvements as provided in this Agreement and the Escrow Agreement, any portion of the Improvement Guarantee or Warranty Guarantee not utilized in correcting the deficiencies and/or completing Improvements shall be released or returned to Subdivider or District within thirty (30) days of Final Acceptance.

(h) In the event that the Improvement Guarantee or Warranty Guarantee expires or, to the extent that the Improvement Guarantee or Warranty Guarantee is in the form of a letter of credit, the letter of credit fails to meet the requirements of this Agreement in any way, the entity issuing such letter of credit becomes non-qualifying, then the City shall furnish written notice to Subdivider and the District of the condition, and within sixty (60) days of receipt of such notice, Subdivider and the District shall provide the City with a substituted qualifying Improvement Guarantee. If the cost to complete the Improvements set forth in a District Engineer Cost Certification, as defined in the Escrow Agreement, exceeds the Bond funds available under the Escrow Agreement ("Funding Deficiency"), the District or Subdivider shall, within twenty (20) days following a written request from the City, augment the deposits made pursuant to the Escrow Agreement as necessary to bring the security into compliance with the requirements of this **Section 1.11** and the Escrow Agreement. If such an Improvement Guarantee or Warranty Guarantee is not submitted or maintained for the Subdivision as required herein past the applicable notice and cure

periods and the provisions of **Section 10.7** of this Agreement, then Subdivider and the District shall be in default of this Agreement and subject to the provisions of **Section 10.1** of this Agreement, which may include the suspension of development activities by the City for the Subdivision, including, but not limited to, the issuance of building permits and certificates of occupancy for structures within the Subdivision owned or controlled by Subdivider or the District, excepting any development within a PUD or similar site approval approved subsequent to this Agreement that is the subject of a separate development or improvements agreement with the City.

1.12 Indemnification and Release of Liability.

Subdivider agrees to indemnify and hold harmless the City, its officers, employees, agents, consultants, contractors, subcontractors, representatives and servants (collectively, "City Parties"), and to pay any and all judgments rendered, or settlements reached, against any City Party on account of any third-party suit, action, claim or other liability (collectively, "Claims") caused by, arising from, or on account of acts or omissions by Subdivider or the District, or their respective officers, employees, agents, consultants, contractors, subcontractors, representatives and servants (collectively, "Subdivider Parties") under the terms of this Agreement, and to pay to the City Parties their reasonable expenses, including, but not limited to, reasonable attorney's fees and reasonable expert witness fees, incurred in defending any such Claim; provided, however, that Subdivider's indemnity obligations shall not apply to the extent said suit, action or claim (a) results from (i) any act or omission by any City Party, (ii) the breach by the City of its obligations under this Agreement beyond any applicable notice and cure period, or (iii) Subdivider's or the District's compliance with any requirement imposed by any City Party; or (b) is for consequential damages, lost profits, speculative damages or punitive damages. Said obligation of Subdivider and the District, with respect to the construction of the Improvements, shall be limited to Claims based upon conduct prior to Final Acceptance by the City of the Improvements. Subdivider and the District acknowledge that the City's issuance of the Approved Plans is done in furtherance of the general public's health, safety and welfare and that no immunity is waived and no specific relationship with, or duty of care to, Subdivider, the District, or third parties is assumed by such review approval.

1.13 Insurance; OSHA. Subdivider or the District shall, through contract requirements and other normal means, furnish to the City proof thereof that all employees and contractors

engaged in the construction of Improvements are covered by adequate Workers Compensation Insurance and Public Liability Insurance, and shall require the faithful compliance with all provisions of the Federal Occupational Safety and Health Act (OSHA).

1.14 Dedication of Improvements to Public Use. Upon the granting of Final Acceptance as set forth in **Section 1.8**, the water lines, streets, curbs, gutters, sidewalks, storm sewer system, sanitary sewer system, and restored public lands, trails, and landscaping that are part of the Improvements shall all be deemed dedicated to the City for the public use as required by the City's subdivision regulations and as set forth in the resolution to be adopted by the City Council pursuant to **Section 1.8**. To the extent that the District will be maintaining designated improvements located upon City-owned property or within City street rights-of-way, the City shall be deemed hereunder to have granted a license to the District for access to the same for maintenance purposes. The District's maintenance obligations shall be subject to that certain Operation and Maintenance Agreement by and between the City, the District and the Subdivider that is being entered into contemporaneously with this Agreement (the "Operation and Maintenance Agreement"). Any improvements required to be constructed by this Agreement that will not be owned or maintained by the City shall be maintained as set forth in the Operation and Maintenance Agreement.

2.0 CONSTRUCTION OF IMPROVEMENTS

2.1 Rights-of-way, Easements and Permits. Before the City may approve construction plans for any Improvements, unless already established or dedicated to the City per the Final Plat, Subdivider or the District shall acquire at their own expense and convey or dedicate to the City, or cause to be dedicated or conveyed to the City, as the City shall reasonably determine, any such additional land, rights-of-way and easements, both on-site and off-site, necessary for construction of the Improvements and connection of utilities serving the Subdivision as shown on the applicable construction plans.

2.2 Construction. The City hereby grants to Subdivider and the District a temporary, revocable license for the construction and installation by Subdivider or the District of the Improvements required hereunder within publicly dedicated rights–of-way and/or other City-owned land upon which any Improvements are to be located, as shown on the Approved Plans. Subdivider or the District shall provide the Public Works Department, Engineering Division with certified electronic as-built plans in PDF and CAD format upon Construction Acceptance of the

applicable Improvement, electronic files of such plans, and other documents as required by the City. These documents shall show "as-built" locations of Improvements. The construction license provided for in this **Section 2.2** shall be in addition the licenses for maintenance set forth in the Operation and Maintenance Agreement.

2.3 Utility Coordination and Installation. Subdivider or the District shall be responsible for coordination of and payment for installation of on-site and off-site electric, streetlights, natural gas, telephone, cable and other dry utilities required to serve the Subdivision. All such utilities shall be placed underground to the extent required by the LMC and the Approved Plans. Below and above ground dry utility locations within rights-of-way, utility easements, and public property require approval of the Public Works Department prior to construction.

2.4 Surveying Monumentation. Property corners of all property dedicated to the City and other serving public utilities, parcels subject to license agreements, and all private property located within the Subdivision, shall be monumented to Colorado professional land survey standards. All existing aliquot corners shall be preserved or re-established to finish grade.

3.0 STREET AND PUBLIC TRAIL IMPROVEMENTS

3.1 Definitions. For the purposes of this Agreement (a) "street improvements" shall be defined to include, where applicable, but shall not be limited to, all improvements within the right of way such as sub-base preparation, road base, asphalt, concrete, seal coat, curb and gutter, medians, entryways, underground utilities, sidewalks, street shoulders, bicycle paths, traffic signs, street lighting, street name signs, landscaping, restoration and reseeding of public lands, and drainage improvements, and (b) "trail improvements" shall be defined to include, where applicable, but shall not be limited to, all improvements within public rights-of-way, public lands, or public trail easements necessary for construction of such improvements as shown on the Approved Plans by the City prior to construction.

3.2 Street Improvements. All Improvements constituting street improvements shall be constructed and installed by Subdivider or the District pursuant to this Agreement and Approved Plans, with the construction of Campus Drive being prioritized. All Improvements constituting street improvements shall be completed and receive Construction Acceptance by the deadline set forth in **Section 1.3(b)**, except to the extent such deadline is extended pursuant to **Section 10.7**, below, or otherwise by further agreement among the Parties. Street improvements other than

curbs, gutters, walks and signs, shall not be installed until all utility lines to be placed within the associated street right-of-way have been completely installed, including individual lot service lines leading in from the main to the property line.

3.3 Public Trail & Sidewalk Installation. Subdivider or the District shall install, at their own expense, Improvements constituting public trail improvements. The Improvements constituting public trail improvements and public sidewalks shall be completed and Subdivider or the District shall submit for Construction Acceptance by the deadline set forth in **Section 1.3(b),** except to the extent such deadline is extended pursuant to **Section 10.7**, below, or otherwise by further written agreement among the Parties.

3.4 Street Signs, Traffic Signs and Striping. Subdivider or the District shall install, at their own expense, signs and striping on collector and arterial streets constituting Improvements in a manner reasonably approved by the City and in accordance with the Model Traffic Code, as from time to time amended, and other applicable legal requirements.

3.5 Regional Traffic Improvements. In addition to construction of the improvements required by the Northwest Parkway IGA, Subdivider and the District agree to construct, or fund the construction of, certain additional off-site, regional traffic improvements listed and shown on **Exhibit B**, which include improvements to the intersection of 88th Street and Campus Drive and to 96th Street north of the Project. Nothing in this Agreement shall be interpreted as a waiver by Subdivider or District, or a prohibition on Subdivider or District, from applying for and obtaining a credit against transportation capital facilities in accordance with Section 3.18.050 of the LMC.

4.0 PUBLIC USE DEDICATION AND LANDSCAPING

4.1 Public Use Dedication.

(a) The Subdivider shall dedicate those road rights-of-way, easements, and other dedications shown on the Plat by acceptable dedication language on the Plat. The property to be dedicated shall be free and clear of liens, taxes, and encumbrances, except for ad valorem real property taxes for the calendar year of conveyance and thereafter, but subject to all prior easements, rights-of-way, reservations, restrictions, or other title burdens of record, including, as to any dedication that is in the form of an easement, existing deeds of trust to the extent that the

applicable lender agrees to subordinate such deeds of trust to any such easement, or those easements and rights-of-way that would be readily apparent from a physical inspection.

(b) At the time the Plat is presented to the City for recording, the Subdivider shall deliver executed deed(s) to the City conveying those lands within the Property boundary on **Exhibit F** attached hereto and incorporated herein by reference (labeled as Tracts B, C, D, E, F, K and I). Said conveyance(s) shall be by Special Warranty Deed in form and substance reasonably satisfactory to the City Attorney. The Subdivider shall, at Subdivider's expense, furnish a commitment for title insurance on the property for all lands conveyed to the City. The property shall be free and clear of liens, taxes, and encumbrances, except for ad valorem real property taxes for the calendar year of conveyance and thereafter, but subject to all easements, right-of-way, reservations, restrictions, or other title burdens of record, or those easements and rights-of-way that would be readily apparent from a physical inspection. The Subdivider shall, at its expense, cause a title policy in conformance herewith to be delivered to the City at the time of conveyance with owners title insurance coverage insuring the real property conveyed to the City hereunder.

(c) The Subdivider specifically represents that, to the best of its knowledge, as of the date of dedication, all portions of the Subdivision dedicated to the City associated with this development are in compliance with all environmental protection and anti-pollution laws, rules, regulations, orders, and requirements, including solid waste requirements, as defined by the US Environmental Protection Agency Regulations at 40 C.F.R., Part 261, and that, to the best of Subdivider's knowledge, such portions of the property as are dedicated to the City pursuant to this development, are in compliance with all such requirements pertaining to the disposal or existence in or on such dedicated property of any hazardous substances, pollutants, or contaminants, as defined by the Comprehensive Environmental Response Compensation and Liability Act of 1980, as amended, and regulations promulgated thereunder. The Subdivider does hereby indemnify and hold harmless the City from any liability whatsoever that may be imposed upon the City by any governmental authority, pertaining to the disposal of hazardous substances, pollutants or contaminants, and cleanup necessitated by leaking underground storage tanks, excavation and/or backfill of hazardous substances, pollutants or contaminants, or environmental cleanup responsibilities of any nature whatsoever on, of or related to any property dedicated to the City pursuant to this development. The Subdivider further agrees to indemnify and hold harmless the City from any claims or actions based directly, indirectly or in any manner on any of the

aforementioned environmental risks brought against the City by third parties arising as a result of the dedication of portions of the Property to the City pursuant to this development. Notwithstanding the foregoing, said indemnification obligations set forth in this **Section 4.1(c)** shall not extend to (i) claims, actions or other liability arising as a result of any hazardous substance, pollutants or contaminants (A) generated or deposited by the City, its agents or representatives, upon portions of the property dedicated to the City pursuant to this development, or (B) generated at, or deposited on, the property dedicated to the City after such property was so dedicated to the City, or (ii) any claim for consequential damages, lost profits, speculative damages or punitive damages.

4.2 Landscaping. For the portions of the public lands and rights-of-way that will be landscaped and/or irrigated, Subdivider or the District shall furnish to the City complete final landscape and irrigation plans and obtain approval by the City Manager or the Manager's designee prior to commencement of construction of the applicable Improvements. Subdivider or the District shall then construct landscape and irrigation improvements for such Improvements as required in Subdivider's or the District's landscape and irrigation plans approved by the City.

5.0 WATER MAINS; SEWER LINES; DRAINAGE

5.1 Specifications. All water mains, lines, facilities and appurtenances thereto constituting Improvements shall be constructed and installed by Subdivider pursuant to Approved Plans and this Agreement, including both on-site and off-site improvements. In accordance with the Operation and Maintenance Agreement, all water, sewer and drainage lines will be dedicated to, and maintained by, the City following Construction Acceptance, subject to the Warranty Period.

5.2 Sewer Specifications. All sanitary and storm sewer mains, lines, lift stations, facilities and appurtenances thereto constituting Improvements shall be constructed and installed by Subdivider pursuant to Approved Plans and this Agreement, including both on-site and off-site improvements. Subdivider is responsible at its sole cost and expense for obtaining from the State of Colorado any and all permits and approvals necessary for the Improvements constituting onsite wastewater treatment or collection facilities listed on **Exhibit B**.

5.3 Drainage Improvements.

(a) Improvements for drainage within the Subdivision shall be constructed by Subdivider or the District in accordance with Approved Plans. No building permits for a given subdivided lot shall be issued until the City approves drainage improvement plans in writing for such subdivided lot. The City shall timely issue its written approval or disapproval of such plans not later than in accordance with standard City processing times. Subdivider or the District shall provide temporary erosion control during grading until drainage improvements are installed.

(b) Any material changes from Approved Plans with respect to grade elevation or storm drainage facility configuration that occur as a result of construction of buildings and/or other development of lots, whether by Subdivider or other parties, shall require the approval of the City Manager. The City may withhold the issuance of building permits and certificates of occupancy with respect to the affected buildings and/or development lots until the City Manager has approved any such requested changes as being accepted for the safe and efficient delivery of storm drainage water. Subdivider and the District shall not have responsibility for changes made to any individual parcel by the individual parcel owner after the conveyance of such parcel to such successor owner.

(c) Pursuant to the Operation and Maintenance Agreement, the District shall also be responsible at its expense for construction and all future maintenance of the permanent stormwater facility within Tract D.

6.0 OTHER IMPROVEMENTS

6.1 Streetlights. The total cost of street light installation constituting Improvements shall be Subdivider's or the District's obligation. Subdivider or the District shall cause, at its own expense, Public Service Company of Colorado (dba Xcel Energy) to install all required street lighting pursuant to approved plans and specifications concurrently with the streets on which they are located; provided, however, the costs of dry utilities to be installed by Xcel or other utility providers is not required to be included in the Improvement Guarantee.

6.2 Public Safety Parcel. Subdivider agrees to contribute toward the development of a fire station and police annex to service the Subdivision by dedicating land for these purposes as shown on **Exhibit F** and labelled as Tract H. For the avoidance of doubt, Subdivider's obligation

under this Section is solely to dedicate land or an easement for these facilities and not to construct or fund the construction of the same.

6.3 Trash, Debris, Mud; Security. Subdivider and the District agree that, during construction of the Improvements, Subdivider and the District shall take any and all steps necessary to control trash, debris, and wind or water erosion in the Subdivision in compliance with all applicable laws, regulations, and codes for the Subdivision. If the City determines that said trash, debris, or wind or water erosion causes damage or injury or creates a nuisance, Subdivider and the District agree to abate said nuisance and/or to correct any damage or injury within seven (7) working days after notification by City, subject to **Section 10.7** below. If Subdivider and the District do not timely abate said nuisance or if an emergency situation exists, to be determined by the City in its reasonable discretion, the City may reasonably abate the nuisance and/or correct any damage or injury without further notice to Subdivider and the District at Subdivider's reasonable expense. Subdivider and the District also agree to use commercially reasonable efforts to prevent the transfer of mud or debris from the construction site onto public rights of way and to use commercially reasonable efforts to promptly remove such mud and debris from public rights of way after notification by the City. If Subdivider and the District do not abate, or if an emergency exists, following notice to Subdivider and the District, the City may abate at Subdivider's or the District's reasonable expense. Subdivider and the District at their expense and as directed by the City in writing shall take appropriate measures to secure public-dedicated areas against public entry until such time as the City determines such areas are to be opened to public use.

6.4 Operation of Construction Equipment.

The operation of construction equipment for the purpose of grading or constructing either surface improvements or underground utilities, either public or private, shall be prohibited between the hours of 8:00 p.m. and 7:00 a.m. on weekdays and 4:00 p.m. and 8:00 a.m. on legal holidays and weekends. Upon written request from Subdivider or the District, the hours of operations may be altered by the Director of Public Works.

7.0 MAINTENANCE RESPONSIBILITIES FOLLOWING FINAL ACCEPTANCE

7.1 Allocation of Responsibility. Notwithstanding anything to the contrary within this Agreement, ownership and maintenance of the on-site Improvements after Final Acceptance shall be allocated between the District and the City in accordance with the Operation and Maintenance Agreement.

7.2 City Remedies. If Subdivider or the District fails to adequately maintain any Improvement as to which either will retain maintenance responsibility and, within fourteen (14) days after the date of written notice from City, fails to correct the maintenance problem, or fails to begin to clean, cure or correct such problem within fourteen (14) days if such problem cannot be reasonably cleaned, cured or corrected within fourteen (14) days, and fails to diligently prosecute such cleaning, cure or correction to completion, then the City may do so at Subdivider's or the District's reasonable expense, as applicable, and the City, its employees, agents and contactors shall have the right to enter, over, through and across the land upon which such facilities are located for purposes of exercising the City's rights hereunder at reasonable times. Notwithstanding the foregoing, the City may, in the event of an emergency, as determined by the City in its reasonable discretion, clean, cure or correct any damage or condition caused by Subdivider's or the District's failure to adequately maintain an Improvement. Subdivider or the District shall reimburse the City for the reasonable cost of such maintenance. Subdivider and the District further agree that the City may also pursue any and all other remedies available at law or in equity for the cost of corrective or maintenance action taken by the City pursuant to this **Section 7.2**. All of the time periods set forth in this Section are subject to the provisions of **Section 10.7**, below.

8.0 WATER RIGHTS DEDICATIONS, WASTEWATER TREATMENT SYSTEM IMPROVEMENTS, AND TAP FEE CREDITS

8.1 Subdivider's Water Shares. Subdivider is the owner of one and three-fortieths (1.075) shares of capital stock in the South Boulder and Coal Creek Irrigation Ditch Company, one and three-fortieths (1.075) shares of capital stock in the South Boulder and Coal Creek First Extension Irrigation Ditch, thirty (30) shares of capital stock in the Goodhue Ditch and Reservoir Company, and two (2) shares of capital stock in the Farmer's Reservoir and Irrigation Company ("Subdivider's Water Rights").

8.2 City Right to Accept Water Dedication. Pursuant to Chapter 13.12 of the LMC, under certain circumstances, the City may accept a dedication of water rights in lieu of a property owner's payment of water tap fees required for the issuance of a water tap permit.

8.3 City Acceptance. Pursuant to Section 13.12.040(E) of the LMC, the City will accept the dedication of Subdivider's Water Rights in lieu of Subdivider's payment of $1,187,600.00 toward water tap fees for the Project.

8.4 Redtail Upgrades. Subdivider shall also be responsible for funding the City's construction of additional public wastewater system improvements (the "Redtail Upgrades"), pursuant to and subject to the terms and conditions of a separate Cost-Sharing Agreement that is being entered into by the City and the Subdivider contemporaneously with this Agreement ("Wastewater Agreement"). The Redtail Upgrades include off-site wastewater treatment facility modifications, including that portion of the sewer main running from the Subdivision's on-site lift station to the off-site wastewater treatment facility which is off-site. Consistent with the provisions of the Wastewater Agreement, the City may withhold certificates of occupancy for buildings under construction within the Project until adequate wastewater capacity is available therefor within the City's existing wastewater system or the improvements to create additional capacity under the Wastewater Agreement have been completed.

8.5 Tap Fee Credit. In consideration of the Subdivider's dedication of Subdivider's Water Rights, and Subdivider's or the District's funding of the Redtail Upgrades in accordance with the Wastewater Agreement, Subdivider shall be entitled to a credit (the "Tap Fee Credit") for water tap fees, irrigation tap fees and sewer tap fees, which expressly includes the existing six inch (6") water meter for Campus Drive (collectively, the "Tap Fees"), that would ordinarily be charged by the City in connection with the development of the Property under the LMC. Tap fees shall be collected by the City with each building permit issued within the Property and the full amount of the tap fee shall be remitted to the Subdivider until such time as the Tap Fee Credit has been repaid in full. Subdivider acknowledges the City will collect and remit tap fees to Subdivider as a convenience to Subdivider and there is no guarantee or other assurance made by the City to Subdivider that tap fees will become due or actually be received by the City. The City shall not under any circumstances be responsible for making any monetary contributions toward repayment of the Tap Fee Credit.

8.6 Escrowed Tap Fees. To the extent the City collects any Tap Fees prior to such time that Subdivider is entitled to a Tap Fee Credit under the terms of this Agreement, the City agrees to hold such Tap Fees in escrow (the "Escrowed Tap Fees"). Upon payments to the City for the costs of construction of the Redtail Upgrades pursuant to the Wastewater Agreement, Subdivider or Subdivider's designated successor(s), as applicable, shall be entitled to request a draw of funds from the Escrowed Tap Fees in an amount commensurate with the payments to the City for the estimated cost of construction of the Redtail Upgrades. Except as otherwise permitted pursuant to the provisions of **Section 10.4** and/or **Section 10.16** below, this right to reimbursement is not assignable, and no interest shall be paid on the reimbursement amount hereunder.

9.0 ADDITIONAL SUBDIVIDER COMMITMENTS

9.1 Additional Open Space. In addition to the public use dedications to the City shown on the Final Plat, the Subdivider shall dedicate:

(a) in fee, lands north of the Property to Boulder County with the City holding a conservation easement for the property, as shown on **Exhibit F**, and labeled as Dedicated Land 1 and Dedicated Land 2, according to such terms as may reasonably be required by Boulder County and City of Louisville, In the event an agreement for dedication to Boulder County cannot be reached within one year of the date hereof, the City shall accept dedication of the Dedicated Land 1 and Dedicated Land 2 labeled property, in a form acceptable to the City; and,

(b) a conservation easement over lands south of the Property to the City and County of Broomfield, as shown on **Exhibit G**, and labeled as Conservation Easement, according to such terms as may reasonably be required by the City and County of Broomfield. Subdivider agrees to use good faith commercially reasonable efforts to reach final agreement on the terms of the conservation easement with the City and County of Broomfield within one year from the effective date hereof.

9.2 LEED Certification and Solar. All buildings within the Project will achieve LEED Silver certification or better, except for parcels/lots specific for healthcare use. The Project will also include a minimum of 1W per building square footage for a minimum of 2.54MWof solar power generation, and Fitwel campus certification. Solar will principally be through on-site rooftop installation of distributed solar; however, ground-mounted parking canopy installation and off-site installation within the Project boundaries may be used depending on the site and the user.

Notwithstanding the above, in association with individual PUD applications or other applications for private building improvements within the Project, Subdivider or its successors and assigns may seek a hardship exception to the foregoing to allow provision of such solar energy capacity through newly developed solar facilities outside the boundaries of the Project (the intent being that provision of solar energy from outside the Project boundaries shall not be from previously subscribed or utilized capacity of existing solar energy gardens or other similar existing facilities). Any determination of hardship, such as the limitations on installation location set forth above either limit the square footage of the proposed building improvements or limit the ability to install solar power generation in amounts equal to the proposed pro rata allocation to a given lot or PUD within the Property, shall be made by the City Council as part of such PUD or other application. The Subdivider's sustainability commitments are more fully set forth on attached **Exhibit H**. Compliance with the commitments shall be verified through the Planned Unit Development and building permit processes and certified prior to issuance of certificates of occupancy for any new development. The commitments set forth in this **Section 9.2** and **Exhibit H** shall not be required of Avista Hospital (or any of its affiliates), and the Subdivider's commitments hereunder, including without limitation, 1W per building square footage of solar power generation (with a limit of 2.54 million square feet of floor area allowed by the ConocoPhillips General Development Plan), shall be reduced pro rata by the gross square feet of development rights acquired by Avista Hospital or any of its affiliates. By way of example for clarity, in the event Avista Hospital acquires 400,000 square feet of floor area for hospital and health care related operations, Subdivider's obligation to provide 2.54MW of solar power generation shall be reduced to 2.16MW of solar power generation.

9.3 88th Street Sewer Line. In conjunction with future improvements by the city in Subdivider-dedicated open space of required new sanitary sewer line along 88th street and within the Campus Drive roadway, as shown in **Exhibit I**, Subdivider agrees to participate in the cost therefor in an amount equal to an estimated amount of **$111,144.00**, as more fully set forth in **Exhibit C** regarding "cash in lieu" payments by Subdivider to the City. Such sewer line funding will be provided pursuant to a cost-sharing agreement. The Parties acknowledge that design of the same as denoted on **Exhibit I** is still preliminary.

9.4 Prairie Dog Control Measures. During construction of the Improvements hereunder, reasonable efforts will be made to relocate prairie dogs before lethal control measures are undertaken. Acceptable methods for lethal control shall be limited to those using carbon

monoxide gas (fumigants). No other means of lethal control such as shooting, poison bait, zinc phosphide (an oral toxicant), or aluminum phosphide (a fumigant) shall be used. Relocation and lethal control operations shall be done by a commercial exterminator with a valid State permit.

9.5 Traffic Demand Management Plan. The Owner has provided the City with a comprehensive traffic demand management plan, the Redtail Ridge Transportation Demand Management Plan dated March 08, 2024 ("TDM"). The TDM covers the entire Property and all anticipated phases of development of the Property. The TDM details the improvements, programs and strategies the Subdivider will implement in its development and use of the Property to reduce vehicle trips, manage transportation demands, and encourage the use of alternative modes of transportation. Subdivider's adoption of the TDM plan is in addition to compliance with applicable procedures, standards and criteria set forth in the Louisville Municipal Code. Each PUD request shall detail how the development proposed in such PUD will meet the applicable minimum commitments of the TDM and will detail how such PUD will, to the extent applicable to such PUD, achieve the applicable goals of the TDM. The City and owner of such property subject to the PUD may agree on alternative methods based on best available technology and industry accepted best practices as long as the original intended commitments of the TDM are met. The Parties acknowledge and agree that the TDM may be modified without the same constituting a modification of this Agreement.

10.0 MISCELLANEOUS TERMS

10.1 Breach of Agreement. In the event that Subdivider or the District should fail to timely comply with any of the terms, conditions, covenants and undertakings of this Agreement, and if such noncompliance is not cured and brought into compliance within thirty (30) days of written notice of breach to Subdivider and the District by the City, unless the City in writing consents to a longer cure period, in the event cure cannot be reasonably effected within the 30-day period, then following ten (10) business days written notice to Subdivider and the District, the City may, as more specifically provided in the Escrow Agreement, draw upon the Improvement Guarantee or Warranty Guarantee, as appropriate, and complete some or all of the Improvements at Subdivider's or the District's expense. Subdivider's or the District's expense shall be limited to the reasonable costs incurred by the City, as defined herein. Notice by the City to Subdivider and

the District will specify the conditions of default. In the event that no Improvement Guarantee has been posted or the Improvement Guarantee has been exhausted or is insufficient for which the default has occurred beyond the applicable cure period, then the City has the right to begin work on the applicable Improvement at the expense of Subdivider, which amounts shall be reimbursed by Subdivider pursuant to **Section 1.9** of this Agreement. If the City determines in its reasonable discretion that an emergency exists, such that the applicable Improvement must be completed in less than seven (7) days, the City may immediately draw upon the Improvement Guarantee, if available, and may complete the applicable Improvement at Subdivider's expense even if the Improvement Guarantee is not available; in such event, the City shall use its best efforts to notify Subdivider at the earliest practical date and time. The City may also, during any notice and/or cure period and until completion of the applicable Improvement or other performance required under this Agreement and stated in the default notice, withhold any additional building permits, certificates of occupancy, or provision of new utilities fixtures or services for structures within the Subdivision owned or controlled by Subdivider or the District, excepting as to any property within the Subdivision that is subject to a separate development or improvement agreement approved pursuant to a PUD approval subsequent to this Agreement. Nothing herein shall be construed to limit the City from pursuing any other remedy at law or in equity which may be appropriate under City, state, or federal law. Failure to timely complete construction of an Improvement which is due in whole or in part to inclement weather or other Force Majeure shall not be considered a breach of this Agreement. Any reasonable costs incurred by the City, including, but not limited to, administrative costs and attorney's fees, in pursuit of any remedies due to the breach by Subdivider or the District shall be the responsibility of Subdivider and the District. The City may deduct these costs from the Improvement Guarantee. The City shall send to the District every notice sent to Subdivider required by this Agreement at the same time such notice is sent to Subdivider. To the extent the foregoing provisions of Section 10.1, or any other remedies under this Agreement relating to the Improvement Guarantee, Warranty Guaranty or the escrowed funds serving as security for the same, are inconsistent with the provisions of the Escrow Agreement, the provisions of the Escrow Agreement shall control.

10.2 Recording of Agreement. The City shall record this Agreement at Subdivider's expense immediately upon execution hereof in the office of the Clerk and Recorder, County of

Boulder, State of Colorado, and the City shall retain the recorded Agreement but provide a copy of the same to Subdivider and the District promptly following such recording.

10.3 Binding Effect of Agreement. This Agreement shall run with the land included within the boundaries of the Subdivision and shall inure to the benefit of and be binding upon the successors and assigns of the Parties hereto, including, without limitation, any District.

10.4 Assignment, Delegation and Notice. With the City's approval, the Subdivider has formed the Redtail Ridge Metropolitan District (the "District") for various purposes including the planning, design, acquisition, construction, installation, relocation, redevelopment and financing of public improvements associated with the Subdivision. The Subdivider's obligations pursuant to this Agreement, or any part of this Agreement, may be delegated by the Subdivider to the District, provided that any such delegation(s) shall not operate to relieve the Subdivider of its obligations to the City pursuant to this Agreement. Subdivider may also, with prior approval by the City, not to be unreasonably withheld, assign Subdivider's obligations to the City pursuant to this Agreement to a successor developer that expressly agrees to be bound by all Subdivider's obligations pursuant to this Agreement. Subdivider shall provide to the City written notice of any assignment or delegation of any of the Subdivider's obligations under this Agreement. Subdivider and any successor developer shall, until written City approval of the proposed assignment, be jointly and severally liable for the obligations of Subdivider under this Agreement, but upon such City written approval, Subdivider shall be released from the obligations governed by such written approval. The City may require as part of any such approval that the successor developer execute its consent to such assignment to be bound by specified terms and conditions hereof and/or of applicable provisions of the Plat and any other applicable documents The City shall utilize its best efforts to respond to any approval request pursuant to this **Section 10.4** within thirty (30) days following receipt of the request. For clarity, the hypothecation by Subdivider or any successor thereof of any portion of the Property to one or more lenders, shall be permitted hereunder.

10.5 Modification and Waiver. No modification of the terms of this Agreement shall be valid unless in writing and executed with the same formality as this Agreement, and no waiver of the breach of the provisions of any section of this Agreement shall be construed as a waiver of any subsequent breach of the same section or any other sections which are contained herein.

Modifications shall be recorded but a lack of recordation shall not affect their validity as between the Parties.

10.6 Addresses for Notice. Any notice or communication required or permitted hereunder shall be given in writing and shall be personally delivered, or sent by United States mail, postage prepaid, registered or certified mail, return receipt requested, addressed as follows:

To District:	Redtail Ridge Metropolitan District c/o McGeady Becher P.C. 450 E. 17th Avenue, Suite 400 Denver, CO 80203-1254 Phone: 303-592-4380 Email: legalnotices@specialdistrictlaw.com
To the Subdivider:	Redtail Ridge Portfolio, LLC c/o Sterling Bay 333 N. Green St., Suite 1100 Chicago, IL 60607 Attn: Andrew Gloor
With a copy to:	Redtail Ridge Portfolio, LLC c/o Sterling Bay 100 Bayview, Suite 250 Newport Beach, CA 92660 Attn: Rodney Richerson Email: rricherson@sterlingbay.com
And with a copy in all instances via email to:	legalnotices@sterlingbay.com
With additional copies to:	Greenberg Traurig, LLP 18565 Jamboree Road, Suite 500 Irvine, CA 92612 Attn: Bruce Fischer Phone: 949-732-6670 Email: fischerb@gtlaw.com and Holland & Hart LLP 1800 Broadway, Suite 300 Boulder, CO 80302 Attn: J. Marcus Painter and Mark E. Hamilton Email: mpainter@hollandhart.com mehamilton@hollandhart.com

To City:	City of Louisville 749 Main Street Louisville, CO 80027 Attn: City Manager
With a copy to:	City of Louisville 749 Main Street Louisville, CO 80027 Attn: City Attorney
With a copy in all instances via email to:	kathleen@kellypc.com

or to such other address or the attention of such other person(s) as hereafter designated in writing by the applicable parties in conformance with this procedure. Notices shall be effective upon mailing or personal delivery in compliance with this paragraph.

10.7 Force Majeure. Whenever Subdivider or the District is required to commence, continue, or complete construction, maintenance, repair, or replacement of an Improvement or is required to comply with any other requirements by an agreed upon deadline in this Agreement, Subdivider or the District shall be granted a day-for-day extension of time for the period during which performance cannot as a practical matter, be completed in a timely manner due to acts of God or any circumstance beyond the reasonable control of Subdivider or the District, including but not limited to adverse weather, flood, fires, war, unavoidable casualties, epidemic, pandemic (including the Covid-19 pandemic), quarantine, civil commotion, breakdown of communication facilities, breakdown of web host, breakdown of internet service provider, natural catastrophes, governmental acts or omissions, government delays, changes in laws or regulations, national strikes, fire, explosion, or generalized lack of availability of materials or energy ("Force Majeure"). For avoidance of doubt, the provisions of this **Section 10.7** shall apply to the performance by the Subdivider and/or the District of all obligations under this Agreement, whether or not this Section is expressly referenced in the provision requiring such performance.

10.8 Approvals. Whenever approval or acceptance of a matter is required or requested of the City pursuant to any provisions of this Agreement, the City shall act reasonably in responding to such matter, and approvals shall not be unreasonably withheld, conditioned or

delayed. If the City withholds any consent or approval, the City shall deliver to the Subdivider and the District a written statement giving the reasons therefor.

10.9 Previous Agreements. All previous written and recorded agreements between the Parties, their successors, and assigns, shall remain in full force and effect; provided, however, this Agreement shall control in the event of any direct conflict with the provisions of such prior agreements with respect to the subject matter hereof.

10.10 Title and Authority. Subdivider warrants to the City that it is the record owner for the property within the Subdivision or is acting in accordance with the currently valid and unrevoked power of attorney of the record owner hereto attached. Each of the undersigned warrants to have full power and authority to enter into this Agreement and to render this Agreement a valid and binding obligation of the entity for which it is signing.

10.11 Severability. This Agreement is to be governed and construed according to the laws of the State of Colorado. In the event that upon request of Subdivider or any agent thereof, any provision of this Agreement is held to be violative of the City, state, or federal laws and hereby rendered unenforceable, the remainder shall not be affected thereby.

10.12 Agreement Status after Final Acceptance. Upon Final Acceptance by City of all Improvements and compliance by Subdivider and the District with all terms and conditions of this Agreement, and upon the City's fulfillment of all its obligations in this Agreement, and provided that no Claim is pending relating to this Agreement between the Parties, then the provisions of this Agreement shall no longer be in effect; provided, however, the provisions of **Sections 1.12, 4.1(c), 9.1, 9.2, 9.3 and 9.5** shall continue in effect and be binding upon and constitute ongoing project requirements of all future owners of land within the Subdivision; provided, however, Subdivider and District retain and do not waive any defenses, including without limitation, expiration of applicable statutes of limitation or statutes of repose which may bar claims brought against the City for which indemnification is sought under **Section 1.12**. Within thirty (30) days following the Subdivider's or the District's written request, the City agrees to execute and record a reasonable termination or release of this Agreement at Subdivider's or the District's request upon such occurrence.

10.13 Further Assurances. Each Party will, whenever as reasonably requested to do so by the other Party, execute, acknowledge and deliver, or cause to be executed, acknowledged and

delivered, any and all such further documents and do any and all other acts as may be necessary to carry out the intent and purpose of this Agreement.

10.14 No Third-Party Rights. This Agreement is for the sole and exclusive benefit of the Parties and their respective successors and permitted assigns, and no third party other than a permitted assignee of the City, Subdivider or the District, or a lender pursuant to the terms and provisions of **Section 10.16** below, is contemplated to or shall have any rights hereunder.

10.15 Estoppel Letters. The City agrees that it will, at any time and from time to time, within thirty (30) days following receipt of a written request from Subdivider, the District, or any independent third party who is a proposed or existing lender, seller or purchaser of property within the Subdivision, execute, acknowledge and deliver to the party making such request, a statement certifying (and as to the language in clause vi below, agreeing to): (i) that this Agreement has not been modified, supplemented, or amended and is in full force and effect (or if there have been any such modifications, supplements or amendments, reference to the same will be made); (ii) that to the best of the City's knowledge and belief, the obligations of the Subdivider and the District hereunder requiring performance prior to the time of the request, have been performed in compliance with this Agreement (or, if there has been default in such performance, reference to the same will be made); (iii) such things as may be requested regarding the Approved Plans; (iv) as to the amount, if any, that has been drawn under the Improvement Guarantee; (v) as to such other things as may be reasonably requested regarding the status of this Agreement and the covenants and conditions set forth in this Agreement, and (vi) as to the lender protection provisions set forth in **Section 10.16** below. Prior to or at the time the City delivers any such statement, the party making such request shall pay to the City its reasonable costs and attorneys' fees incurred in preparing, executing and delivering such statement.

10.16 Lender Protection Provisions.

10.16.1 General Lender Protections. City acknowledges that the lenders (individually, a "Mortgagee," and, collectively, "Mortgagees") providing financing for the development of all or portions of the Project may, from time to time, require certain interpretations and confirmation of rights with respect to this Agreement, and City agrees upon request, from time to time, to meet with Subdivider and the District and representatives of such Mortgagees to negotiate in good faith any such request for

interpretation or supplement. City will not unreasonably withhold its consent to any such requested interpretation or confirmation of rights with respect to this Agreement provided such interpretation or confirmation is consistent with the intent and purposes of this Agreement. In furtherance of the foregoing, and notwithstanding anything stated to the contrary in this Agreement, any Mortgagee of the Project shall, at the minimum, be entitled to the following rights and privileges, as well as the rights and privileges set forth in **Sections 10.16.2 and 10.16.3** below:

(a) Default under Agreement Does Not Impair Lien of any Mortgage. Neither entering into this Agreement nor a breach of this Agreement by a Mortgagee shall defeat, render invalid, diminish or impair the lien of any deed of trust encumbering all or portions of the Project made in good faith and for value, unless otherwise required by law.

(b) Request for Notices of Default by Mortgagee. The Mortgagee of any deed of trust encumbering the Project, or any part thereof, which Mortgagee has submitted a request in writing to the City in the manner specified herein for giving notices, shall be entitled to receive written notification from City of any default by Subdivider and/or the District in the performance of such party's obligations under this Agreement in the manner expressly set forth below provided that such Mortgagee, in such written request for notice of any such default by Subdivider and/or District, agrees to provide City with written notice of the recording against the Property, or any portion thereof, of any statutory notice of default in connection with the commencement of a foreclosure proceeding under the terms of such Mortgagee's deed of trust.

10.16.2. Specific Lender Protection Provisions.

(a) Notices to Mortgagees; Mortgagee's Right to Cure.

(i) Notices to Mortgagees. City shall send to each Mortgagee which has provided City written notice of its name and address, in the manner provided for in **Section 10.16.1(b)** above, a true, correct

and complete copy of any written notice sent to Subdivider and/or the District, as applicable, of a default by either of such parties under this Agreement at the same time as and whenever any such notice of default shall be given by City to Subdivider and/or the District, addressed to such Mortgagee at the address last furnished to City by such Mortgagee. Subdivider and the District each irrevocably directs that City accept, and City agrees to accept, performance and compliance by any such Mortgagee (or its agent) of any term, covenant, agreement, provision, condition or limitation on Subdivider's and/or the District's part to be kept, observed or performed hereunder with the same force and effect as though kept, observed or performed by Subdivider and/or the District, provided that such performance and/or compliance is made in accordance with the provisions set forth below in this **Section 10.16.2.**

(ii) Mortgagee's Right to Cure. Notwithstanding anything stated to the contrary in this Agreement, the City shall not, except as otherwise provided below in this **Section 10.16.2(a)(ii)**, be entitled to exercise any of its rights under this Agreement arising from a default or breach of this Agreement by Subdivider and/or the District until and unless:

(1) written notice of any such default or breach has been delivered to all Mortgagees in accordance with the provisions of Section 10.16.2(a)(i) above,

(2) with respect to a default or breach that is curable solely by the payment of money, (a) Subdivider and/or the District have failed to cure such default or breach within any of Subdivider's and/or District's, as applicable, notice and cure periods set forth in Section 10.1 of this Agreement or set forth elsewhere in this

Agreement, and (b) Mortgagees have failed to cure such default within ninety (90) days following receipt of written notice of such default or breach; provided, however, such ninety (90) day cure period in favor of Mortgagees shall only be applicable to the extent one or more Mortgagees notifies the City in writing, no more than thirty (30) days following their receipt of written notice from the City of any such default or breach, that such Mortgagee(s) intend(s) to diligently exercise its remedies (which may include the filing of a motion for the appointment of a receiver for the Property) under its loan documents against the Subdivider arising from such breach or default by Subdivider and/or the District, and

(3) with respect to a default or breach that is not curable solely by the payment of money, (a) Subdivider and/or District have failed to cure such default or breach within any of Subdivider's and/or the District's notice and cure periods set forth in Section 10.1 of this Agreement or set forth elsewhere in this Agreement, and (b) Mortgagees have failed to cure such default within ninety (90) days following receipt of written notice from the City of such default or breach; provided, however, such ninety (90) day cure period in favor of Mortgagees shall only be applicable to the extent one or more Mortgagees notifies the City in writing, no more than thirty (30) days following their receipt of written notice of any such default or breach, that such Mortgagee intends to diligently exercise its remedies (which may include the filing of a motion for the appointment of a receiver for the Property) under its loan documents against the Subdivider arising from such breach or default by Subdivider and/or the District.

It is expressly understood and agreed that no Mortgagee shall have any obligation hereunder to cure or complete any cure of any breach or default by Subdivider

and/or the District hereunder. In addition, and notwithstanding the foregoing provisions of this Section 10.16.2(a)(ii), City shall have the right to exercise its Interim Remedies, defined below, notwithstanding that Mortgagees' cure rights under Sections 10.16.2((a)(ii)(2)(b) and/or 10.16.2(a)(ii)(3)(b) may not have expired, but only until such time as any Mortgagee has cured any such breach or default within the time periods provided for cure under such sections.

"Interim Remedies" shall mean, in the event of a breach or default by Subdivider and/or District under this Agreement, and the failure of either Subdivider or District to cure any such breach or default within the notice and cure periods provided for under **Section 10.1** of this Agreement, or elsewhere in this Agreement, the City's rights under **Section 10.1** of this Agreement to draw upon the Improvement Guarantee or Warranty Guarantee, as appropriate, and complete some or all of the Improvements at Subdivider's or the District's expense.

(b) Permitted Transfers to Mortgagee.

(i) Notwithstanding anything stated to the contrary in this Agreement, the following transfers shall be permitted and shall not require the approval or consent of City:

(1) A transfer of all or portions of the Project (and the concurrent transfer to any Mortgagee (or an affiliate of any Mortgagee) of Subdivider's rights under this Agreement with respect to the portion of the Project being transferred) at a foreclosure sale under a deed of trust, whether pursuant to the power of sale contained therein or a judicial foreclosure decree, or by an assignment in lieu of foreclosure; provided, however, in connection with the transfer of Subdivider's rights under this Agreement to any Mortgagee (or any affiliate of any Mortgagee), the transferee shall not be entitled to exercise any of the rights of the "Developer"

hereunder until and unless such assignee assumes in writing Developer's obligations under this Agreement pursuant to documentation acceptable to the City, or

(2) Any subsequent transfer to a Qualified Transferee (defined below) by a Mortgagee (or its affiliate if the Mortgagee or its affiliate is the purchaser at such foreclosure sale or under such deed in lieu of foreclosure) with respect to the portion of the Project transferred under clause (1) above, and the concurrent transfer of the Subdivider's rights under this Agreement with respect to the portion of the Project being transferred under this clause (2), provided, however, in connection with any such transfer to a Qualified Transferee of any Mortgagee's (or its affiliates) rights under this Agreement, such Qualified Transferee shall not be entitled to exercise any of the rights of the Subdivider hereunder until and unless such Qualified Transferee assumes in writing Subdivider's obligations under this Agreement pursuant to documentation acceptable to the City;

(ii) Any transferee arising from any transfer of rights under this Agreement permitted above shall be liable to perform the obligations of Subdivider under this Agreement only to the extent it has expressly assumed in writing Subdivider's obligations under this Agreement and only so long as such transferee holds title to the such portion of the Project so transferred, provided that upon any such conveyance of title, such transferee's transferee expressly assumes and agrees to perform all of the obligations of this Agreement first arising after the date of such conveyance as to the portion of the Project so conveyed.

(iii) Following the transfer, if any, described in **Section 10.16.2(b)(i)** above, all non-curable defaults existing under this Agreement

prior to such transfer shall be deemed waived as against such transferees without further notice or action of any party to the extent, and only to the extent, that the failure to cure any such non-curable default does not impair the City's rights under this Agreement in any material respect.

(c) Rights of Mezzanine Lender. Any lender that makes a loan to Subdivider, or to any entity holding an interest in Subdivider, direct or indirect, that is secured by a pledge of equity interests in Subdivider, direct or indirect, shall be entitled to all of the rights and remedies under this **Section 10.16**. that are afforded to a Mortgagee under this Agreement, (i) provided that Subdivider shall have provided to City written notice setting forth the name and address of any such lender, and (ii) except that such rights and remedies shall be subject and subordinate to the rights of any Mortgagee, and shall not impair any of the rights and remedies afforded any Mortgagee, hereunder.

10.16.3 Obligations of Mortgagee Under Agreement. Any Mortgagee who comes into possession of all or portions of the Project pursuant to foreclosure of the deed of trust, or deed in lieu of such foreclosure, shall take title to such portion of the Project subject to the terms of this Agreement. Notwithstanding any other provision of this Agreement to the contrary, no Mortgagee shall have an obligation or duty under this Agreement to perform any of Subdivider's or the District's obligations or other affirmative covenants hereunder, or to guarantee such performance unless, and until, any such Mortgagee assumes the Subdivider's obligations under this Agreement pursuant to documentation acceptable to City; provided, however, that to the extent that any covenant to be performed by Subdivider or the District is a condition precedent to the performance of a covenant by City, the performance thereof shall continue to be a condition precedent to City's performance hereunder.

The foregoing rights of any Mortgagee and other parties provided for above shall, at the request of any Mortgagee, be further memorialized in an estoppel certificate (or other written documentation requested by City) delivered by the City in accordance with the

provisions of **Section 10.15 above,** which may be approved and executed by the City Manager or City Finance Manager without further review or approval by the Louisville City Council, unless the City Manager and/or City Finance Director believe that the execution and delivery of the same requires further review and approval by the Louisville City Council.

10.17 Conflicting Provisions. The provisions of the Escrow Agreement shall prevail and control in the event there is a conflict or inconsistency between the provisions of the Escrow Agreement and this Agreement. The provisions of the Wastewater Agreement shall prevail and control in the event there is a conflict or inconsistency between the provisions of the Wastewater Agreement and this Agreement.

[*Signatures Appear on the Following Pages*]

IN WITNESS WHEREOF, the Parties have executed this Agreement as of the Effective Date.

CITY OF LOUISVILLE

By:_____
Christopher M. Leh, Mayor

ATTEST:

By:_____
Meredyth Muth, City Clerk

SUBDIVIDER:

REDTAIL RIDGE PORTFOLIO, LLC,
a Delaware limited liability company

By:_____
Andrew Gloor, Authorized Signatory

ACKNOWLEDGMENT

STATE OF _____)
) ss.
COUNTY OF _____)

The above and foregoing signature of Andrew Gloor, as Authorized Signatory of Redtail Ridge Portfolio, LLC, was subscribed and sworn to before me this _____ day of _____, 2024.

Witness my hand and official seal.

My commission expires:_____

_____
Notary Public

DISTRICT:

REDTAIL RIDGE METROPOLITAN DISTRICT,
a Colorado special district

By:_____
Title:_____
Printed Name:_____

ACKNOWLEDGMENT

STATE OF COLORADO)
) ss.
COUNTY OF BOULDER)

The above and foregoing signature of _____, as _____ of the Redtail Ridge Metropolitan District, was subscribed and sworn to before me this _____ day of _____, 20__.

Witness my hand and official seal.

My commission expires:_____

_____
Notary Public

EXHIBITS:

A. Legal Description.
B. Schedule of Improvements
C. Engineer's Cost Estimate.
D. Letter of Credit Required Form.
E. Escrow Agreement Form.
F. Public Land Dedications.
G. Broomfield Conservation Easement.
H. Sustainability Commitments.
I. Park Sanitary Sewer Connection Agreement

EXHIBIT A
LEGAL DESCRIPTION

EXHIBIT A - LEGAL DESCRIPTION AND DEDICATION

KNOW ALL MEN BY THESE PRESENTS, THAT THE UNDERSIGNED BEING THE OWNERS OF A TRACT OF LAND SITUATED IN THE SOUTH HALF OF SECTION 20 AND THE NORTH HALF OF SECTION 29, TOWNSHIP 1 SOUTH, RANGE 69 WEST OF THE SIXTH PRINCIPAL MERIDIAN, CITY OF LOUISVILLE, COUNTY OF BOULDER, STATE OF COLORADO, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE CENTER QUARTER CORNER OF SAID SECTION 20;
THENCE SOUTH 89°48'50" EAST ALONG THE NORTH LINE OF THE SOUTHEAST QUARTER OF SAID SECTION 20, A DISTANCE OF 2,625.59 FEET;
THENCE SOUTH 00°02'13" EAST ALONG A LINE PARALLEL WITH AND 30 FEET WEST OF THE EAST LINE OF THE NORTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SAID SECTION 20, A DISTANCE OF 1,326.76 FEET TO A POINT ON THE SOUTH LINE OF THE NORTH HALF OF SAID SOUTHEAST QUARTER;
THENCE SOUTH 00°02'35" EAST ALONG A LINE PARALLEL WITH AND 30 FEET WEST OF THE EAST LINE OF THE SOUTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SAID SECTION 20, A DISTANCE OF 85.45 FEET TO THE NORTH CORNER OF PARCEL TK-71-2 DESCRIBED AT RECEPTION NO. 2386686 IN THE RECORDS OF BOULDER COUNTY;
THENCE ALONG THE PERIMETER OF SAID PARCEL THE FOLLOWING THREE (3) COURSES:
1) SOUTH 33°27'26" WEST, A DISTANCE OF 60.64 FEET;
2) SOUTH 01°40'28" WEST, A DISTANCE OF 45.12 FEET;
3) SOUTH 88°19'32" EAST, A DISTANCE OF 34.84 FEET TO A POINT 30 FEET WEST OF SAID EAST LINE;
THENCE SOUTH 00°02'35" EAST ALONG A LINE PARALLEL WITH AND 30 FEET WEST OF SAID EAST LINE, A DISTANCE OF 404.28 FEET TO A POINT OF NON-TANGENT CURVATURE AT THE NORTH CORNER OF PARCEL TK-71 DESCRIBED AT RECEPTION NO. 2309730 IN THE RECORDS OF BOULDER COUNTY;
THENCE ALONG THE PERIMETER OF SAID PARCEL THE FOLLOWING THREE (3) COURSES:
1) ALONG THE ARC OF SAID CURVE TO THE LEFT AN ARC LENGTH OF 86.28 FEET, SAID CURVE HAVING A RADIUS OF 2,441.83 FEET, A CENTRAL ANGLE OF 02°01'28", AND A CHORD WHICH BEARS SOUTH 04°26'27" WEST A CHORD DISTANCE OF 86.27 FEET;
2) SOUTH 03°25'43" WEST, A DISTANCE OF 124.37 FEET;
3) SOUTH 00°02'35" EAST AND ALONG THE WEST LINE OF PARCEL TK-71-1 DESCRIBED AT RECEPTION NO. 2309730 IN THE RECORDS OF BOULDER COUNTY, A DISTANCE OF 529.71 FEET TO A POINT ON THE SOUTH LINE OF THE SAID SOUTHEAST QUARTER AND A POINT ON THE NORTH LINE OF PARCEL 12 AS DESCRIBED AT RECEPTION NO. 1560711 IN THE RECORDS OF BOULDER COUNTY;

THENCE ALONG THE PERIMETER OF SAID PARCEL 12 THE FOLLOWING FOUR (4) COURSES:
1) NORTH 89°42'42" WEST, A DISTANCE OF 55.73 FEET;
2) SOUTH 00°00'35" WEST, A DISTANCE OF 30.02 FEET;
3) SOUTH 44°51'26" EAST, A DISTANCE OF 35.44 FEET;
4) SOUTH 00°00'35" WEST, A DISTANCE OF 127.21 FEET TO A POINT ON THE NORTH LINE OF THAT PARCEL DESCRIBED AT RECEPTION NO. 520800 IN THE RECORDS OF BOULDER COUNTY;
THENCE ALONG THE PERIMETER OF SAID PARCEL THE FOLLOWING THREE (3) COURSES:
1) NORTH 89°59'25" WEST, A DISTANCE OF 55.00 FEET;
2) SOUTH 00°00'35" WEST, A DISTANCE OF 50.00 FEET;
3) SOUTH 89°59'25" EAST, A DISTANCE OF 55.00 FEET TO THE NORTHWEST CORNER OF PARCEL 10 AS DESCRIBED AT RECEPTION NO. 1560711 IN THE RECORDS OF BOULDER COUNTY;
THENCE ALONG THE PERIMETER OF SAID PARCEL 10 THE FOLLOWING TWO (2) COURSES:
1) SOUTH 00°00'35" WEST ALONG THE WEST LINE OF SAID PARCEL AND ALONG A LINE PARALLEL WITH AND 75 FEET WEST OF THE SAID EAST LINE, A DISTANCE OF 247.79 FEET;
2) SOUTH 16°40'03" EAST ALONG THE SOUTHEASTERLY LINE OF SAID PARCEL, A DISTANCE OF 93.77 FEET TO THE NORTH CORNER OF PARCEL TK-75 DESCRIBED AT RECEPTION NO. 2309730 IN THE RECORDS OF BOULDER COUNTY;
THENCE SOUTH 00°00'35" WEST ALONG A LINE PARALLEL WITH THE EAST LINE OF SAID SECTION 29 AND ALONG THE WEST LINE OF SAID TK-75, A DISTANCE OF 611.12 FEET;
THENCE SOUTH 89°48'45" EAST ALONG THE SOUTH LINE OF SAID TK-75, A DISTANCE OF 48.09 FEET TO A POINT ON THE EAST LINE OF THE NORTHEAST QUARTER OF SAID SECTION 29;
THENCE SOUTH 00°00'35" WEST ALONG SAID EAST LINE, A DISTANCE OF 136.13 FEET TO A POINT ON THE SOUTH LINE OF THE NORTH HALF OF THE NORTHEAST QUARTER OF SAID SECTION 29;
THENCE NORTH 89°42'42" WEST ALONG SAID SOUTH LINE, A DISTANCE OF 2,308.62 FEET TO A POINT ON THE NORTHEAST LINE OF THE LAND CONVEYED TO THE CITY OF BROOMFIELD BY GIFT DEED RECORDED AT RECEPTION NO. 2013403 IN THE RECORDS OF BOULDER COUNTY;
THENCE ALONG THE PERIMETER OF SAID PARCEL THE FOLLOWING FIVE (5) COURSES:
1) NORTH 14°13'32" WEST, A DISTANCE OF 140.04 FEET;
2) NORTH 60°44'04" WEST, A DISTANCE OF 682.66 FEET;
3) NORTH 31°43'59" WEST, A DISTANCE OF 355.27 FEET;
4) NORTH 50°04'57" WEST, A DISTANCE OF 351.37 FEET;
5) NORTH 87°28'56" WEST, A DISTANCE OF 246.66 FEET TO THE EASTERN CORNER OF PARCEL 32B AS DESCRIBED BY SPECIAL WARRANTY DEED

RECORDED AT RECEPTION NO. 3411796 IN THE RECORDS OF BOULDER COUNTY;
THENCE NORTH 58°29'24" WEST ALONG THE NORTHEASTERLY LINE OF SAID PARCEL, A DISTANCE OF 186.70 FEET TO A POINT ON THE RIGHT-OF-WAY OF HIGHWAY 36;
THENCE NORTH 50°07'12" WEST ALONG SAID RIGHT-OF-WAY, A DISTANCE OF 356.68 FEET TO A POINT ON THE SOUTH LINE OF THE SOUTHWEST QUARTER OF SAID SECTION 20 AND THE SOUTH CORNER OF PARCEL 32A OF SAID SPECIAL WARRANTY DEED;
THENCE CONTINUING NORTH 50°07'12" WEST ALONG THE NORTHEAST LINE OF SAID PARCEL 32A, A DISTANCE OF 1,028.45 FEET TO A POINT ON THE EAST LINE OF THAT PARCEL DESCRIBED AT BOOK 880, PAGE 98 IN THE RECORDS OF BOULDER COUNTY;
THENCE NORTH 25°26'59" WEST ALONG SAID EAST LINE AND ALONG THE EAST LINE OF THAT PARCEL DESCRIBED AT BOOK 878, PAGE 503, A DISTANCE OF 842.57 TO THE SOUTH CORNER OF THAT PARCEL DESCRIBED AT RECEPTION NO. 1989419 IN THE RECORDS OF BOULDER COUNTY;
THENCE ALONG THE PERIMETER OF SAID PARCEL THE FOLLOWING FOUR (4) COURSES:
1) NORTH 00°54'00" EAST, A DISTANCE OF 95.53 FEET;
2) NORTH 08°22'46" WEST, A DISTANCE OF 184.53 FEET;
3) NORTH 00°09'09" WEST ALONG A LINE PARALLEL WITH THE WEST LINE OF THE SOUTHWEST QUARTER OF SAID SECTION 20, A DISTANCE OF 213.70 FEET;
4) SOUTH 89°50'51" WEST, A DISTANCE OF 34.06 FEET TO A POINT 25.00 FEET EAST OF THE WEST LINE OF SAID SOUTHWEST QUARTER;
THENCE NORTH 00°09'09" WEST ALONG A LINE PARALLEL WITH AND 25 FEET FROM THE SAID WEST LINE, A DISTANCE OF 473.64 FEET TO A POINT ON THE SOUTH LINE OF THAT PARCEL DESCRIBED AT RECEPTION NO. 1819920 IN THE RECORDS OF BOULDER COUNTY EXTENDED WESTERLY;
THENCE SOUTH 89°48'38" EAST ALONG SAID SOUTH LINE AND SAID SOUTH LINE EXTENDED, A DISTANCE OF 265.23 FEET TO THE SOUTHEAST CORNER OF SAID PARCEL;
THENCE NORTH 00°09'09" WEST ALONG THE EAST LINE OF SAID PARCEL, A DISTANCE OF 256.00 FEET TO A POINT ON THE SOUTH RIGHT-OF-WAY LINE OF CAMPUS DRIVE AS DEDICATED BY LOUISVILLE CAMPUS RECORDED AT RECEPTION NO. 1669751;
THENCE ALONG SAID SOUTH LINE THE FOLLOWING FOUR (4) COURSES:
1) SOUTH 89°48'38" EAST ALONG SAID NORTH LINE, A DISTANCE OF 50.02 FEET;
2) SOUTH 82°25'28" EAST, A DISTANCE OF 202.23 FEET TO A POINT OF NON-TANGENT CURVATURE;
3) ALONG THE ARC OF SAID CURVE TO THE LEFT AN ARC LENGTH OF 139.86 FEET, SAID CURVE HAVING A RADIUS OF 1,085.00 FEET, A CENTRAL ANGLE OF 07°23'09", AND A CHORD WHICH BEARS SOUTH 86°07'04" EAST A CHORD DISTANCE OF 139.77 FEET;
4) SOUTH 89°48'38" EAST, A DISTANCE OF 1,975.05 FEET TO A POINT ON THE EAST LINE SAID SOUTHWEST QUARTER;

THENCE NORTH 00°02'50" EAST ALONG SAID EAST LINE, A DISTANCE OF 35.00 FEET TO THE POINT OF BEGINNING;

EXCEPTING THEREFROM THAT PARCEL DESCRIBED BY DEED RECORDED AT RECEPTION NO. 531604 IN THE RECORDS OF BOULDER COUNTY;

SAID PARCEL CONTAINS 16,949,252 SQUARE FEET OR 389.10 ACRES, MORE OR LESS;

HAS LAID OUT, SUBDIVIDED AND PLATTED SAID LAND AS PER DRAWING HEREON CONTAINED UNDER THE NAME AND STYLE OF REDTAIL RIDGE FILING NO. 1, A SUBDIVISION OF A PART OF THE CITY OF LOUISVILLE, COUNTY OF BOULDER, STATE OF COLORADO, AND BY THESE PRESENTS DO HEREBY DEDICATE TO THE CITY OF LOUISVILLE AND THE PUBLIC, THE INGRESS-EGRESS AND FIRE LANE EASEMENTS, AND DOES FURTHER DEDICATE TO THE CITY THE EXCLUSIVE CITY OF LOUISVILLE UTILITY EASEMENTS AS SHOWN ON THE ACCOMPANYING PLAT FOR THE PROVISION OF CITY UTILITY LINES AND SERVICES, AND DOES FURTHER DEDICATE TO THE CITY OF LOUISVILLE THOSE PORTIONS OF SAID REAL PROPERTY WHICH ARE SO DESIGNATED AS EASEMENTS AND RIGHT-OF-WAYS FOR THE CONSTRUCTION, INSTALLATION, OPERATION, MAINTENANCE, REPAIR AND REPLACEMENT FOR ALL SERVICES, INCLUDING WITHOUT LIMITING THE GENERALITY OF THE FOREGOING, TELEPHONE AND ELECTRIC LINES, WORKS, POLES AND UNDERGROUND CABLES, GAS PIPELINES, WATER PIPELINES, SANITARY SEWER LINES, STREET LIGHTS, CULVERTS, HYDRANTS, DRAINAGE DITCHES AND DRAINS AND ALL APPURTENANCES THERETO, IT BEING EXPRESSLY UNDERSTOOD AND AGREED BY THE UNDERSIGNED THAT ALL EXPENSES AND COSTS INVOLVED IN CONSTRUCTING AND INSTALLING SANITARY SEWER SYSTEM WORKS AND LINES, GAS SERVICE LINES, ELECTRICAL SERVICE WORKS AND LINES, STORM SEWERS AND DRAINS, STREET LIGHTING, GRADING AND LANDSCAPING, CURBS, GUTTERS, STREET PAVEMENT, SIDEWALKS AND OTHER SUCH UTILITIES AND SERVICES SHALL BE GUARANTEED AND PAID FOR BY THE SUBDIVIDER OR ARRANGEMENTS MADE BY THE SUBDIVIDER THEREOF WHICH ARE APPROVED BY THE CITY OF LOUISVILLE, COLORADO, AND SUCH SUMS SHALL NOT BE PAID BY THE CITY OF LOUISVILLE, COLORADO, PROVIDED, HOWEVER, THE SUBDIVIDER MAY BE ENTITLED TO REIMBURSEMENT OR FEE CREDITS AS SUCH ARE APPROVED BY THE CITY OF LOUISVILLE, COLORADO AND THAT ANY ITEM SO CONSTRUCTED OR INSTALLED WHEN ACCEPTED BY THE CITY OF LOUISVILLE, COLORADO, SHALL BECOME THE SOLE PROPERTY OF SAID CITY OF LOUISVILLE, COLORADO, EXCEPT PRIVATE ROADWAY CURBS, GUTTER AND PAVEMENT AND ITEMS OWNED BY MUNICIPALLY FRANCHISED UTILITIES WHICH WHEN CONSTRUCTED OR INSTALLED, SHALL REMAIN THE PROPERTY OF THE OWNER AND SHALL NOT BECOME THE PROPERTY OF THE CITY OF LOUISVILLE, COLORADO.

EXHIBIT B
SCHEDULE OF IMPROVEMENTS

Exhibit B

August 13, 2024

Schedule of Public Improvements

A. Construct Campus Drive from 88th Street to 96th Street, including a roundabout entry into the BVSD campus, a "peanut" roundabout entry into the BVSD campus, a roundabout at the intersection of Campus Drive and Sorrel Avenue and a pedestrian crossing of Campus Drive for the BVSD campus. Improvements to include all grading, over-excavation, paving, curb & gutter, sidewalk, street light installation, striping, signage, sanitary sewer installation, storm sewer installation, potable water installation, irrigation and landscaping pursuant to the Approved Plans.

B. Construct Sorrel Avenue from Rockcress Drive north to Campus Drive, including roundabouts at both the Rockcress/Sorrel and Campus/Sorrel intersections. Improvements to include all grading, over-excavation, paving, curb & gutter, sidewalk, street light installation, striping, signage, sanitary sewer installation, storm sewer installation, potable water installation, irrigation and landscaping pursuant to the Approved Plans.

C. Construct Rockcress Drive from 88th Street to the Northwest Parkway, including a roundabout at the intersection of Rockcress Drive and Sorrel Avenue. Improvements to include all grading, over-excavation, paving, curb & gutter, sidewalk, street light installation, striping, signage, sanitary sewer installation, storm sewer installation, potable water installation, irrigation and landscaping pursuant to the Approved Plans.

D. Construct internal roadways between Rockcress Drive, Sorrel Avenue and Campus Drive. Improvements to include all grading, over-excavation, paving, curb & gutter, sidewalk, street light installation, striping, signage, sanitary sewer installation, storm sewer installation, potable water installation, irrigation and landscaping pursuant to the Approved Plans.

E. Construct new sanitary sewer lift station including wet well, dry well and equipment pursuant to the Approved Plans.

F. Construct roughly two miles of dual 8" diameter sanitary sewer force main from the proposed lift station at the southwest intersection of Rockcress Drive and Northwest Parkway north, along Old 96th Street and 96th Street to approximately the intersection of County Road and Bella Vista Drive (just north).

G. Construct all internal paths, both hard surface and soft surface, pursuant to the Approved Plans, as well as three (3) underpasses under Campus Drive. All three underpasses shall accommodate bike/pedestrian traffic, and the two eastern underpasses also convey stormwater. Public Improvements shall also include the seeding and restoration of all disturbed areas within the Public Land Dedication parcels (see Exhibit I).

- Off-Site Roadway Improvements
- COL Dedicated Roadways
- Internal Roadways
- Improvements Subject to NWPA-RRMD IGA
- RRMD financial contribution only based on Redtail Ridge 14% traffic contribution

RRMD: Redtail Ridge Metro District
NWPA: Northwest Parkway Authority
IGA: Intergovernmental Agreement
COL: City of Louisville

Note: This Schedule of Public Improvements is intended to provide a general scope of the improvement commitments. The Approved Construction Documents for Redtail Ridge provide additional detail and shall govern in the case of any discrepancy between this schedule and the Approved CD's.

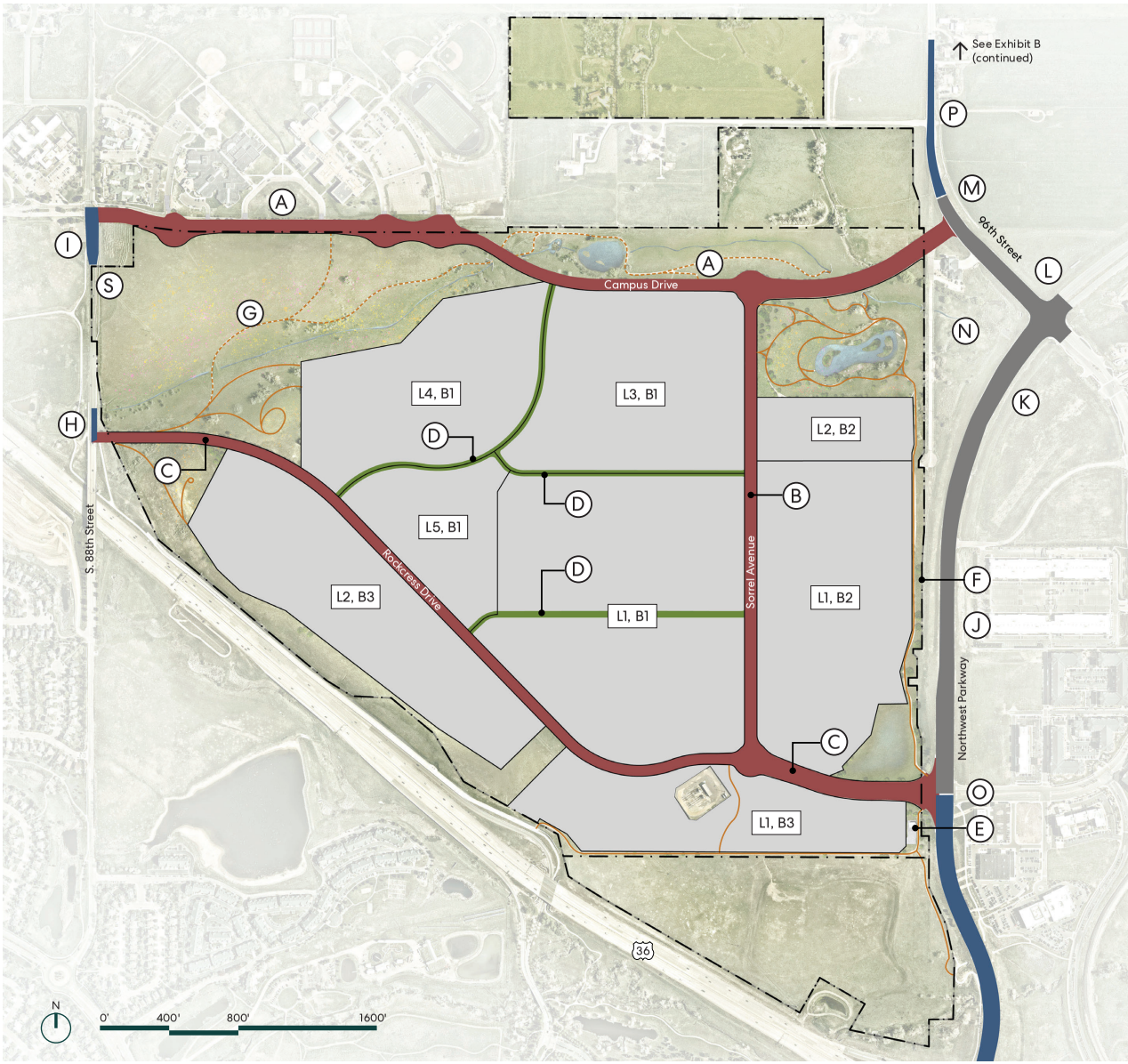

Exhibit B

August 13, 2024

Schedule of Public Improvements (cont.)

H. Construct new left-turn lane from southbound 88th Street to eastbound Rockcress Drive.

I. Construct new right-turn lane from northbound 88th Street to eastbound Campus Drive.

J. Construct a third southbound through lane on the Northwest Parkway from 96th Street to U.S. 36. The third southbound lane will be constructed on the western most edge of the existing Parkway and extend from 96th Street south and tie into the existing turn-lane to westbound Highway 36.

K. Eliminate the existing at grade pedestrian/bicycle crossings at the 96th Street and Northwest Parkway intersection and construct a new grade separated pedestrian/bicycle crossing (bridge) at/near the 96th Street intersection.

L. Construct a third eastbound left-turn lane from eastbound 96th Street to northbound Northwest Parkway and construct one new receiving lane on northbound Northwest Parkway within the existing center median to receive the additional lane of traffic. Construct a third left-turn lane from northbound Northwest Parkway to westbound 96th Street.

M. Construct traffic signal and intersection improvements at 96th Street and Campus Drive (currently Old 96th Street and S. 96th Street intersection). Campus Drive and S. 96th Street intersection to include the following lane configurations:

- Three northbound through lanes on 96th Street
- Two dedicated left turn lanes from northbound 96th Street to westbound Campus Drive
- Two southbound through lanes on 96th
- One dedicated right turn lane from southbound 96th Street to westbound Campus Drive
- Two dedicated left turn lanes from eastbound Campus Drive to northbound 96th Street.
- One dedicated right turn lane from eastbound Campus Drive to southbound 96th Street

N. Contribute in up to $500,000 towards design and improvements for the NWPA Varra Park obligation.

O. Construct two eastbound left turn lanes from Tape Drive (being renamed Rockcress Drive) to northbound Northwest Parkway.

P. The reconstruction and widening of S. 96th Street from the Northwest Parkway north to Dillon Road. The 96th Street cross section varies depending on turn lane configurations, however the cross section will include four receiving lanes from the Northwest Parkway to 96th, which tapers down to three through lanes through the intersection of 96th and Campus, and then tapers down to two lanes north of Campus. The two northbound lanes will continue to Dillon Road. Two southbound lanes will be constructed from Dillon Road south to the Northwest Parkway.

Q. Adjust signal timing at 96th Street and Dillon Road and add left-turn lane from eastbound Dillon Road to northbound 96th Street and add left-turn lane from westbound Dillon Road to southbound 96th Street.

R. Participate financially towards 96th Street improvements from Dillon Road north to County Road. Construction to be completed by the City or others. Financial contribution to be based upon Redtail Ridge's traffic contribution for the subject stretch of 96th, which has been estimated within the Redtail Ridge Traffic and Mobility Study to be 14%. See Exhibit C for the Engineer's Estimate of Costs for these improvements.

S. Contribute financially towards the extension of sanitary sewer in 88th Street. The sanitary sewer is being extended from an existing location roughly 330 feet north of Campus Drive, to a terminus roughly 100 feet east of the southwest corner of Tract H. Said contribution is to be 66.7% of the estimated cost for these improvements which has been included in the Engineer's Estimate of Costs attached as Exhibit C.

Off-Site Roadway Improvements

COL Dedicated Roadways

Internal Roadways

Improvements Subject to NWPA-RRMD IGA

RRMD financial contribution only based on Redtail Ridge 14% traffic contribution

EXHIBIT C
ENGINEER'S COST ESTIMATE

HARRIS KOCHER SMITH
DENVER • DALLAS/FORT WORTH

EXHIBIT C
ENGINEER'S OPINION OF PROBABLE COSTS
8/13/2024

1.00 ON-SITE EARTHWORK					
Item No.	Description	Quantity	Unit	Unit Cost	Total
1.01	Earthwork (Cut-to-Fill)	918,786	CY	$ 4.50	$ 4,134,538.80
1.02	Clear and Grub	225	AC	$ 312.00	$ 70,106.40
1.03	Strip and Stockpile Topsoil (4" Assumed)	120,839	CY	$ 3.15	$ 380,641.80
1.04	Replace Topsoil	120,839	CY	$ 2.25	$ 271,887.00
				SUBTOTAL: ON-SITE EARTHWORK	**$ 4,857,174.00**

2.00 GRAVITY SANITARY SEWER					
Item No.	Description	Quantity	Unit	Unit Cost	Total
2.01	4' Manholes	27	EA	$ 7,000.00	$ 189,000.00
2.02	12" PVC Pipe	6,737	LF	$ 150.00	$ 1,010,550.00
				SUBTOTAL: GRAVITY SANITARY SEWER	**$ 1,199,550.00**

3.00 SANITARY SEWER FORCE MAIN AND LIFT STATION					
Item No.	Description	Quantity	Unit	Unit Cost	Total
3.01	5' Manholes	1	EA	$ 8,800.00	$ 8,800.00
3.02	8" 11.25° Bend	9	EA	$ 1,400.00	$ 12,600.00
3.03	8" 22.5° Bend	6	EA	$ 1,400.00	$ 8,400.00
3.04	8" 45° Bend	27	EA	$ 1,400.00	$ 37,800.00
3.05	Air & Vacuum Valve	6	EA	$ 10,000.00	$ 60,000.00
3.06	Blowoff Valve	12	EA	$ 10,000.00	$ 120,000.00
3.07	8" PVC Pipe	23,644	LF	$ 115.00	$ 2,719,048.50
3.08	8" PVC Pipe - Coal Creek Boring	300	LF	$ 132.00	$ 39,600.00
3.09	21" PVC Pipe	120	LF	$ 250.00	$ 30,000.00
3.10	2" Conduit and Pull Boxes	11,822	LF	$ 12.00	$ 141,864.00
3.11	Force Main Indicator Posts	20	EA	$ 10.00	$ 200.00
3.12	Force Main Locate Wire and Testing	23,944	LF	$ 4.00	$ 95,776.00
3.13	Sanitary Lift Station w/ Controls	1	LS	$ 4,000,000.00	$ 4,000,000.00
3.14	Sanitary Lift Station Water Service	1	LS	$ 2,500.00	$ 2,500.00
3.15	Sanitary Lift Station Landscaping	1	LS	$ 5,000.00	$ 5,000.00
3.16	Traffic Control	60	DAY	$ 2,000.00	$ 120,000.00
3.17	Trenching, Existing Roadway Demo, and Replacement	4,765	SY	$ 700.00	$ 3,335,329.90
				SUBTOTAL: SANITARY SEWER FORCE MAIN AND LIFT STATION	**$ 10,736,918.40**

4.00 POTABLE WATER MAIN					
	Description	Quantity	Unit	Unit Cost	Total
4.01	6" Gate Valve	6	EA	$ 6,000.00	$ 36,000.00
4.02	8" Gate Valve	7	EA	$ 8,000.00	$ 56,000.00
4.03	8" Line Valve	6	EA	$ 8,000.00	$ 48,000.00
4.04	12" Gate Valve	16	EA	$ 12,000.00	$ 192,000.00
4.05	12" Line Valve	10	EA	$ 12,000.00	$ 120,000.00
4.06	Fire Hydrant Assembly	6	EA	$ 10,000.00	$ 60,000.00
4.07	12" 90° Bend	2	EA	$ 1,800.00	$ 3,600.00
4.08	12" 45° Bend	57	EA	$ 1,800.00	$ 102,600.00
4.09	12" 22.5° Bend	3	EA	$ 1,800.00	$ 5,400.00
4.10	12" 11.25° Bend	28	EA	$ 1,800.00	$ 50,400.00
4.11	8" 22.5° Bend	6	EA	$ 1,400.00	$ 8,400.00
4.12	8" 11.25° Bend	2	EA	$ 1,400.00	$ 2,800.00
4.13	8" 45° Bend	12	EA	$ 1,400.00	$ 16,800.00
4.14	8"x6" Tee	1	EA	$ 2,250.00	$ 2,250.00
4.15	8"x8" Tee	1	EA	$ 2,500.00	$ 2,500.00
4.16	12"x12" Swivel Tee	8	EA	$ 3,000.00	$ 24,000.00
4.17	12"x6" Swivel Tee	5	EA	$ 2,700.00	$ 13,500.00
4.18	12"x8" Reducer	3	EA	$ 2,200.00	$ 6,600.00
4.19	12" Plug	1	EA	$ 1,500.00	$ 1,500.00
4.20	2" Meter	1	EA	$ 5,000.00	$ 5,000.00
4.21	Air Vacuum Valve	8	EA	$ 7,500.00	$ 60,000.00
4.22	Air Release Valve	1	EA	$ 7,500.00	$ 7,500.00
4.25	6" PVC	532	LF	$ 75.00	$ 39,918.00
4.26	12" PVC	13,543	LF	$ 150.00	$ 2,031,402.00
4.27	8" PVC	1,624	LF	$ 120.00	$ 194,878.80
4.28	6" DIP	1,948	LF	$ 150.00	$ 292,140.00
4.29	3" DIP per Test Station Detail	848	LF	$ 120.00	$ 101,760.00
4.30	2" PVC for Irrigation Meter Connecton	4	LF	$ 55.00	$ 198.00
4.31	Water System Testing	19	LF	$ 5,000.00	$ 95,000.00
				SUBTOTAL: POTABLE WATER MAIN	**$ 3,580,146.80**

5.00 ON-SITE STORM SEWER AND DRAINAGE WAY					
Item No.	Description	Quantity	Unit	Unit Cost	Total
5.01	5' Type R Inlet	19	EA	$ 8,000.00	$ 152,000.00
5.02	10' Type R Inlet	15	EA	$ 10,000.00	$ 150,000.00
5.03	Type C Inlet	1	EA	$ 5,000.00	$ 5,000.00
5.04	4' Manholes	17	EA	$ 7,000.00	$ 119,000.00
5.05	5' Manholes	7	EA	$ 8,800.00	$ 61,600.00

5.06	CDOT 5' Box Manhole	14	EA	$ 10,000.00	$ 140,000.00
5.07	6' Manholes	19	EA	$ 19,000.00	$ 361,000.00
5.08	CDOT 6' Box Manhole	3	EA	$ 12,000.00	$ 36,000.00
5.09	7' Manholes	3	EA	$ 12,000.00	$ 36,000.00
5.10	8' Manholes	1	EA	$ 14,000.00	$ 14,000.00
5.11	18" FES	2	EA	$ 3,000.00	$ 6,000.00
5.12	30" FES	2	EA	$ 4,000.00	$ 8,000.00
5.13	42" FES	1	EA	$ 5,000.00	$ 5,000.00
5.14	48" FES	1	EA	$ 5,500.00	$ 5,500.00
5.15	54" FES W/ Trash Rack	2	EA	$ 6,500.00	$ 13,000.00
5.16	ABS Barracuda WQ Device	2	EA	$ 10,000.00	$ 20,000.00
5.17	Drainageway Cross Section Grading	1	LS	$ 100,000.00	$ 100,000.00
5.18	Drainageway Drop Structures	3	EA	$ 10,000.00	$ 30,000.00
5.19	30"x19" HERCP	52	LF	$ 250.00	$ 13,000.00
5.20	45"x29" HERCP	97	LF	$ 320.00	$ 31,040.00
5.21	53"x34" HERCP	176	LF	$ 340.00	$ 59,840.00
5.22	60"x38" HERCP	239	LF	$ 360.00	$ 86,040.00
5.23	54" RCP	1,868	LF	$ 400.00	$ 747,120.00
5.24	48" RCP	3,662	LF	$ 350.00	$ 1,281,668.85
5.25	42" RCP	145	LF	$ 310.00	$ 45,099.27
5.26	36" RCP	1,974	LF	$ 240.00	$ 473,844.48
5.27	30" RCP	1,114	LF	$ 215.00	$ 239,469.15
5.28	18" RCP	2,302	LF	$ 125.00	$ 287,740.00
5.29	15" RCP	151	LF	$ 115.00	$ 17,365.00
5.30	10'x8' RCBC	1	LS	$ 1,312,500.00	$ 1,312,500.00
5.31	8'x5' RCBC	1	LS	$ 687,500.00	$ 687,500.00
5.32	7'x5' Concrete Box C	1	LS	$ 687,500.00	$ 687,500.00
5.33	Rip Rap	6,664	SY	$ 75.00	$ 499,800.00
5.34	Pond B (Forebay, Outlet, Trickle Channel, etc.)	1	LS	$ 312,000.00	$ 312,000.00
5.35	Pond C1 (Forebay, Outlet, Trickle Channel, etc.)	1	LS	$ 312,000.00	$ 312,000.00
5.36	Pond C2 (Forebay, Outlet, Trickle Channel, etc.)	1	LS	$ 312,000.00	$ 312,000.00
	SUBTOTAL: ON-SITE STORM SEWER				**$ 8,667,626.75**

6.00 ON-SITE STORM WATER MANAGEMENT AND EROSION CONTROL

Item No.	Description	Quantity	Unit	Unit Cost	Total
	Initial				
6.01	Vehicle Tracking Control	4	EA	$ 2,000.00	$ 8,000.00
6.02	Temporary Stream Crossing	13	EA	$ 1,000.00	$ 13,000.00
6.03	Check Dam	25	EA	$ 2,000.00	$ 50,000.00
6.04	Culvert Protection	31	EA	$ 1,000.00	$ 31,000.00
6.05	Construction Trailer	2	EA	$ 20,000.00	$ 40,000.00
6.06	Concrete Washout Area	2	EA	$ 200.00	$ 400.00
6.07	Inlet Protection	61	EA	$ 400.00	$ 24,400.00
6.08	Rock Sock	271	EA	$ 35.00	$ 9,485.00
6.09	Sediment Control Log	3,558	LF	$ 4.00	$ 14,232.00
6.10	Silt Fence	69,685	LF	$ 4.00	$ 278,740.00
6.11	Construction Fence	480	LF	$ 4.00	$ 1,920.00
6.12	Temporary Sediment Basin	11	AC	$ 2,000.00	$ 22,200.00
6.13	Stabilized Staging Area	1,000	SY	$ 4.00	$ 4,000.00
6.14	Demo	1	LS	$ 30,000.00	$ 30,000.00
6.15	Seeding and Mulching	1,253,567	SY	$ 0.15	$ 188,035.06
	SUBTOTAL: ON-SITE STORM WATER MANAGEMENT AND EROSION CONTROL				**$ 715,412.06**

7.00 ON-SITE ROADWAYS

Item No.	Description	Quantity	Unit	Unit Cost	Total
7.01	Street Signs	131	EA	$ 250.00	$ 32,750.00
7.02	Pedestrian Ramps	66	EA	$ 5,000.00	$ 330,000.00
7.03	Drain Pans	7	EA	$ 2,700.00	$ 18,900.00
7.04	Misc. Roadway markings (direction arrows, bike lane, etc.)	96	EA	$ 375.00	$ 36,000.00
7.05	Striping	71,897	LF	$ 1.25	$ 89,870.63
7.06	Striping - Crosswalk Markings	843	LF	$ 20.00	$ 16,860.00
7.07	Curb and Gutter - Vertical Catch	40,685	LF	$ 50.00	$ 2,034,256.00
7.08	Curb and Gutter - Mountable	2,865	LF	$ 50.00	$ 143,226.00
7.09	Concrete Sidewalks	236,737	SF	$ 9.38	$ 2,220,589.50
7.10	Soft Trails Full Section	89,039	SF	$ 6.00	$ 534,235.38
7.11	Hard Trails Full Section	190,401	SF	$ 12.00	$ 2,284,815.84
7.12	Hot Mix Asphalt	74,307	SY	$ 40.00	$ 2,972,281.20
7.13	Concrete Drive	2,722	SY	$ 60.00	$ 163,315.20
7.14	Over excavation and Recompaction for Roadway and Sidewalk	217,187	CY	$ 4.50	$ 977,339.47
7.15	Dry Utility Sleeving - 2"	7,040	LF	$ 28.00	$ 197,120.00
7.16	Dry Utility Sleeving - 4"	776	LF	$ 36.00	$ 27,936.00

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EXHIBIT C
ENGINEER'S OPINION OF PROBABLE COSTS
8/13/2024

7.17	Dry Utility Sleeving - 8"	774	LF	$ 45.00	$ 34,830.00
7.18	S. 88th Street and Campus Drive Intersection Signal Improvements	1	LS	$ 519,850.00	$ 519,850.00
7.19	S. 96th Street and Campus Drive Intersection Signal Improvements	1	LS	$ 3,250,000.00	$ 3,250,000.00
7.20	Rockcress Dr and Northwest Parkway Intersection Signal Improvements	1	LS	$ 519,850.00	$ 519,850.00
				SUBTOTAL: ON-SITE ROADWAYS	**$ 16,404,025.21**

8.00 VARRA DITCH IMPROVEMENTS

Item No.	Description	Quantity	Unit	Unit Cost	Total
8.01	18" PVC Pipe	6,075	LF	$ 125.00	$ 759,372.50
8.02	4' Manholes	13	EA	$ 7,000.00	$ 91,000.00
8.03	18" FES	1	EA	$ 3,000.00	$ 3,000.00
				SUBTOTAL: VARRA DITCH IMPROVEMENTS	**$ 853,372.50**

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EXHIBIT C
ENGINEER'S OPINION OF PROBABLE COSTS
8/13/2024

9.00 ON-SITE ROW LANDSCAPING					
Item No.	Description	Quantity	Unit	Unit Cost	Total
9.01	6' Evergreen Trees	29	EA	$ 650.00	$ 18,850.00
9.02	3" Deciduous Trees	110	EA	$ 1,100.00	$ 121,000.00
9.03	2" Deciduous Trees	340	EA	$ 700.00	$ 238,000.00
9.04	6' Ornamental Trees	16	EA	$ 650.00	$ 10,400.00
9.05	5 Gallon Deciduous Shrubs	1,973	EA	$ 54.00	$ 106,542.00
9.06	5 Gallon Evergreen Shrubs	588	EA	$ 69.00	$ 40,572.00
9.07	5 Gallon Native Grasses	723	EA	$ 40.00	$ 28,920.00
9.08	1 Gallon Perennials	1,570	EA	$ 22.00	$ 34,540.00
9.09	1 Gallon Native Grasses	4,057	EA	$ 22.00	$ 89,254.00
9.10	Gabion Accent Walls	370	LF	$ 225.00	$ 83,250.00
9.11	Soil Prep/Fine Grade	130,568	SY	$ 1.15	$ 150,153.20
9.12	Redtail Ridge Native Seed Mix/Hydromulch	304,097	SY	$ 0.10	$ 30,409.65
9.13	Irrigation System	377,027	SF	$ 1.50	$ 565,540.50
9.14	Landscape Boulders	182	TON	$ 320.00	$ 58,320.00
9.15	Plant Bed Mulch	684	CY	$ 135.00	$ 92,340.00
9.16	Monumentation	1	LS	$ 110,000.00	$ 110,000.00
9.17	Plant Bed Mulch (4-inch depth)	184	CY	$ 700.00	$ 128,800.00
9.18	Spade Cut Edge	560	LF	$ 54.00	$ 30,240.00
				SUBTOTAL: ON-SITE ROW LANDSCAPING	**$ 1,937,131.35**

10.0 SOUTH 96TH STREET AND NORTHWEST PARKWAY STORM STORM SEWER					
Item No.	Description	Quantity	Unit	Unit Cost	Total
10.01	5' Type R Inlet	1	EA	$ 8,000.00	$ 8,000.00
10.02	10' Type R Inlet	6	EA	$ 10,000.00	$ 60,000.00
10.03	15' Type R Inlet	7	EA	$ 15,000.00	$ 105,000.00
10.04	4' Manholes	10	EA	$ 7,000.00	$ 70,000.00
10.05	18" FES	2	EA	$ 2,000.00	$ 4,000.00
10.06	ABS Barracuda WQ Device	2	EA	$ 10,000.00	$ 20,000.00
10.07	24" RCP	355	LF	$ 150.00	$ 53,259.59
10.08	18" RCP	1,981	LF	$ 125.00	$ 247,652.66
				SUBTOTAL: OFF-SITE STORM SEWER	**$ 567,912.25**

11.0 SOUTH 96TH STREET ROADWAY IMPROVEMENTS					
Item No.	Description	Quantity	Unit	Unit Cost	Total
11.01	Street Signs	15	EA	$ 250.00	$ 3,750.00
11.02	Pedestrian Ramps	2	EA	$ 5,000.00	$ 10,000.00
11.03	Drain Pans	4	EA	$ 2,700.00	$ 10,800.00
11.04	Misc. Roadway markings (direction arrows, bike lane, etc.)	38	EA	$ 375.00	$ 14,250.00
11.05	Striping	34,211	LF	$ 1.25	$ 42,764.14
11.06	Curb and Gutter - Vertical Catch	6,880	LF	$ 50.00	$ 344,000.00
11.07	Curb and Gutter - Vertical Spill	3,213	LF	$ 50.00	$ 160,650.00
11.08	Concrete Sidewalks and Trails	2,812	SF	$ 9.38	$ 26,376.56
11.09	Hot Mix Asphalt	31,986	SY	$ 40.00	$ 1,279,440.00
11.10	Handrail	107	LF	$ 110.00	$ 11,790.90
11.11	Dry Utility Sleeving - 2"	7,121	LF	$ 28.00	$ 199,388.00
11.12	Dry Utility Sleeving - 4"	776	LF	$ 36.00	$ 27,936.00
11.13	Dry Utility Sleeving - 8"	774	LF	$ 45.00	$ 34,830.00
11.14	Traffic Control	60	DAY	$ 5,000.00	$ 300,000.00
11.15	Over excavation and Recompaction for Roadway and Sidewalk	47,219	CY	$ 4.50	$ 212,487.00
11.16	S. 96th Street and Northwest Parkway Intersection Signal Improvements	1	LS	$ 2,800,000.00	$ 2,800,000.00
11.17	S. 96th Street and W. Dillon Road Intersection Signal Improvements	1	LS	$ 2,800,000.00	$ 2,800,000.00
				SUBTOTAL: SOUTH 96TH STREET IMPROVEMENTS	**$ 8,278,462.60**

12.0 SOUTH 96TH STREET AND NORTHWEST PARKWAY STORMWATER MANAGEMENT AND EROSION CONTROL					
Item No.	Description	Quantity	Unit	Unit Cost	Total
12.01	Vehicle Tracking Control	2	EA	$ 2,000.00	$ 4,000.00
12.02	Surface Roughening	47,418	SY	$ 2.00	$ 94,836.19
12.03	Sediment Control Log	233	LF	$ 4.00	$ 932.00
12.04	Silt Fence	15,845	LF	$ 4.00	$ 63,380.40
12.05	Construction Fence	1,142	LF	$ 4.00	$ 4,569.28
12.06	Culvert Protection	2	EA	$ 1,000.00	$ 2,000.00
12.07	Inlet Protection	14	EA	$ 400.00	$ 5,600.00
12.08	Rock Sock	103	EA	$ 35.00	$ 3,605.00
12.09	Outlet Protection	6	EA	$ 1,000.00	$ 6,000.00
12.10	Seeding and Mulching	10,986	SY	$ 0.15	$ 1,647.87
				SUBTOTAL: OFFSITE STORMWATER MANAGEMENT AND EROSION CONTROL	**$ 186,570.74**

HARRIS KOCHER SMITH
DENVER • DALLAS/FORT WORTH

EXHIBIT C
ENGINEER'S OPINION OF PROBABLE COSTS
8/13/2024

REDTAIL RIDGE FILING 1 - SUMMARY OF OPINION OF PROBABLE COSTS		
1.00 ON-SITE EARTHWORK	$	4,857,174.00
2.00 GRAVITY SANITARY SEWER	$	1,199,550.00
3.00 SANITARY SEWER FORCE MAIN AND LIFT STATION	$	10,736,918.40
4.00 POTABLE WATER MAIN	$	3,580,146.80
5.00 ON-SITE STORM SEWER AND DRAINAGE WAY	$	8,667,626.75
6.00 ON-SITE STORM WATER MANAGEMENT AND EROSION CONTROL	$	715,412.06
7.00 ON-SITE ROADWAYS	$	16,404,025.21
8.00 VARRA DITCH IMPROVEMENTS	$	853,372.50
9.00 ON-SITE ROW LANDSCAPING	$	1,937,131.35
10.0 SOUTH 96TH STREET AND NORTHWEST PARKWAY STORM STORM SEWER	$	567,912.25
11.0 SOUTH 96TH STREET ROADWAY IMPROVEMENTS	$	8,278,462.60
12.0 SOUTH 96TH STREET AND NORTHWEST PARKWAY STORMWATER MANAGEMEN	$	186,570.74
TOTAL OPINION OF PROBABLE COSTS	**$**	**57,984,302.66**

Notes:

1. This opinion of probable costs has been prepared using the best available data known to the engineer at the time the opinion of probable cost was prepared and is provided for informational purposes only. It is not a guarantee of project costs.
2. Landscape quantities and unit costs were provided by the landscape architects
3. Existing topsoil is assumed to be 4" thick over the entire site. All areas disturbed are assumed to be stripped of topsoil. All topsoil stockpiled is assumed to be redi stributed across the site.
4. Construction requiring traffic control is assumed to take 60 days.
5. Cost Sharing Breakdowns included in separate exhibit

HARRIS KOCHER SMITH
DENVER • DALLAS/FORT WORTH

REDTAIL RIDGE - CASH IN LIEU
ENGINEER'S OPINION OF PROBABLE COSTS
8/13/2024

1.00 88TH SANITARY SEWER CONNECTION FOR FUTURE PARK					
Item No.	Description	Quantity	Unit	Unit Cost	Total
1.01	4' Manholes	5	EA	$ 7,000.00	$ 35,000.00
1.02	8" PVC Pipe	1,160	LF	$ 115.00	$ 133,400.00
				SUBTOTAL:	**$ 168,400.00**
				REDTAIL RIDGE CONTRIBUTION	**$ 111,144.00**

2.00 96TH EXTENTION NORTH OF DILLION ROAD					
Item No.	Description	Quantity	Unit	Unit Cost	Total
2.01	Erosion Control	1	LS	$ 110,000.00	$ 110,000.00
2.02	Asphalt Demo	2,933	SY	$ 6.00	$ 17,598.00
2.03	Traffic Ddelineator Demo	11	EA	$ 800.00	$ 8,800.00
2.04	Sign Reset	12	EA	$ 350.00	$ 4,200.00
2.05	Post Demo	5	EA	$ 350.00	$ 1,750.00
2.06	18" RCP	1,000	LF	$ 125.00	$ 125,000.00
2.07	4' Manholes	3	EA	$ 7,000.00	$ 21,000.00
2.08	Inlet Structures	3	EA	$ 10,000.00	$ 30,000.00
2.09	Roadway Excavation	21,511	CY	$ 18.00	$ 387,198.00
2.10	Roadway Export	6,812	CY	$ 34.00	$ 231,608.00
2.11	Roadway Subgrade Prep	12,907	SY	$ 3.50	$ 45,174.50
2.11	Geofabric	12,907	SY	$ 6.00	$ 77,442.00
2.12	Roadway Base (Assume 10")	6,633	TON	$ 32.00	$ 212,256.00
2.13	Curb and Gutter	5,280	LF	$ 27.00	$ 142,560.00
2.14	Access Ramps	14	EA	$ 2,750.00	$ 38,500.00
2.15	Structures / walls	75	CY	$ 3,000.00	$ 225,000.00
2.16	Asphalt Paving (Assume 9")	12,907	SY	$ 50.00	$ 645,350.00
2.17	Adjust MH/Valves	35	EA	$ 700.00	$ 24,500.00
2.18	Striping	26,300	LF	$ 2.75	$ 72,325.00
2.19	Signage	75	EA	$ 450.00	$ 33,750.00
2.20	Traffic Control/Phasing	1	LS	$ 450,000.00	$ 450,000.00
2.21	Seeding/Mulch	2	AC	$ 6,000.00	$ 11,400.00
2.22	Landscaping	1	LS	$ 50,000.00	$ 50,000.00
2.23	General Conditions	1	LS	$ 825,000.00	$ 825,000.00
				SUBTOTAL:	**$ 3,790,411.50**
				REDTAIL RIDGE CONTRIBUTION	**$ 530,657.61**

HARRIS KOCHER SMITH
DENVER • DALLAS/FORT WORTH

REDTAIL RIDGE - CASH IN LIEU
ENGINEER'S OPINION OF PROBABLE COSTS
8/13/2024

REDTAIL RIDGE FILING 1 - SUMMARY OF OPINION OF PROBABLE COSTS		
1.00 88TH SANITARY SEWER CONNECTION FOR FUTURE PARK	$	111,144.00
2.00 96TH EXTENTION NORTH OF DILLION ROAD	$	530,657.61
TOTAL OPINION OF PROBABLE COSTS	**$**	**641,801.61**

Notes:

1. This opinion of probable costs has been prepared using the best available data known to the engineer at the time the opinion of probable cost was prepared and is provided for informational purposes only. It is not a guarantee of project costs.
2. Landscape quantities and unit costs were provided by the landscape architects
4. Construction requiring traffic control is assumed to take 60 days.
5. Cost Sharing Breakdowns included in separate exhibit

EXHIBIT D
LETTER OF CREDIT REQUIRED FORM

IRREVOCABLE LETTER OF CREDIT FORM

[date of Letter of Credit - the date the credit is opened]

City of Louisville
749 Main Street
Louisville, CO 80027

Attn: Director of Planning

We hereby issue our Irrevocable Letter of Credit Number in your favor for the account of _____, in an amount not to exceed _____ effective immediately and expiring at our counters on (except November 1 - March 1) or any extended expiration date as indicated below.

Funds under this Letter of Credit are available for payment by sight, by presentation of your sight draft(s) substantially in the form of Exhibit "1" accompanied by your written certificate substantially in the form of Exhibit "2."

Partial and multiple drawings are permitted.

This Letter of Credit will automatically be extended for a period of sixty (60) days from the present or any future expiration date unless we notify you in writing by certified mail forty-five (45) days prior to any expiration date that we elect not to renew this Letter of Credit for any additional period.

This Letter of Credit will not be reduced in amount except upon receipt of written notification from the City Manager authorizing such reduction. Upon receipt of such written notification, the bank shall reduce this Letter of Credit by the dollar amount specified in the notice from the City.

We hereby engage with you that all drawings in conformity with terms and conditions of the Letter of Credit will be duly honored upon presentation to our counters on or before any expiration date as indicated above.

All bank charges, including any advising bank charges, are to be charged to (account party's name). If a demand for payment by you hereunder does not, in any instance, conform to the terms and conditions of this Letter of Credit, the bank shall give the City written notice, and send copy of this notice by FAX to the City of Louisville (Attn: City Manager), within three business days of presentment of any nonconforming draft that the purported negotiation was not effective in accordance with the terms and conditions of the Letter of Credit, stating with particularity the reasons therefor. The bank will hold all documents at the bank for the City, or send them to the City, at the City's option. Any such nonconforming demand may be corrected and resubmitted within three (3) business days of receipt of the bank's mailed notice of nonconformity. A resubmittal will be deemed to have been presented to the bank on the date of the original demand for payment.

We are a current member of (FDIC) (FSLIC).

This credit is subject to the 2007 Uniform Customs and Practice for Documentary Credits, ICC publication number 600.

This Irrevocable Letter of Credit sets forth in full the terms of our undertaking and such undertaking shall not in any way be modified, amended or amplified by reference to any document or instrument referred to herein or in which the Irrevocable Letter of Credit relates and any such reference shall not be deemed to incorporate herein by reference any document or instrument.

Sincerely,

(Bank)

EXHIBIT 1 TO LETTER OF CREDIT FORM

DRAFT FOR PAYMENT DRAWN UNDER

_____

IRREVOCABLE LETTER OF CREDIT NO._____

DATE:_____, 20___.

_____

PAY TO: The account of the City of Louisville, Colorado, Account

No. _____, at _____,

Colorado, THE SUM OF _____DOLLARS

($_____._____).

CITY OF LOUISVILLE, COLORADO

By:_____
City Clerk

EXHIBIT 2 TO LETTER OF CREDIT FORM

To: _____
_____
_____

CERTIFICATE FOR PAYMENT

The undersigned, a duly appointed officer of the City of Louisville, Colorado (the "**City**"), hereby certifies to _____ (the "**Bank**"), with reference to the Bank's Irrevocable Letter of Credit No. _____ (the "**Letter of Credit**"), issued by the Bank in favor of the City, that:

(1) The undersigned is the City Clerk for the City.

(2) The City is authorized to make a drawing under the Letter of Credit.

(3) The amount which is due and payable from the Letter of Credit is _____, and the amount of the sight draft accompanying this certificate does not exceed such amount.

IN WITNESS WHEREOF, the undersigned has executed and delivered this certificate as of the _____ day of _____, 20___.

CITY OF LOUISVILLE, COLORADO

By:_____
City Clerk

EXHIBIT E
ESCROW AGREEMENT FORM

SUBDIVISION IMPROVEMENT GUARANTEE ESCROW AGREEMENT

This **SUBDIVISION IMPROVEMENT GUARANTEE ESCROW AGREEMENT** (this "**Agreement**") is made and entered into by and between **Redtail Ridge Metropolitan District** (formerly known as Redtail Ridge Metropolitan District No. 3), a quasi-municipal corporation and political subdivision of the State of Colorado (the "**District**"), **Redtail Ridge Portfolio, LLC**, a Delaware limited liability company (the "**Subdivider**"), the **City of Louisville**, a municipal corporation of the State of Colorado (the "**City**"), and **(BANK TO BE INSERTED HERE THAT IS SERVING AS THE TRUSTEE IN THE DISTRICT'S BOND ISSUANCE _ BANK, N.A.** (the "**Escrow Agent**") (individually, each a "**Party**" and collectively the "**Parties**").

RECITALS

A. The Subdivider owns property within a project located in the City of Louisville, Boulder County, Colorado, commonly known as Redtail Ridge (the "**Property**").

B. Pursuant to the Amended and Restated Service Plan for the District, approved by the City on _____, 2024 and as may be amended from time to time, the District exists for the purpose of designing, acquiring, constructing, installing, financing, operating and maintaining certain street, traffic and safety controls, water, sanitation, storm water, parks and recreation, television relay and translation, and transportation improvements and providing certain services to the Property which is coterminous with the service area covered by the Service Plan for the District (the "**Service Plan**").

C. The Final Subdivision Plat of Redtail Ridge Filing 1 was approved by the City on _____, ___, 2024 (the "**Plat**").

D. The City also approved on _____, 2024 the Redtail Ridge Subdivision Improvements and Development Agreement to which the Subdivider, the District and the City are a party (the "**SIA**").

E. The SIA includes a description and estimates of the costs, of the improvements required to be constructed thereunder (the "**Improvements**").

F. A description of the Improvements and the estimated costs of constructing the Improvements ("**Improvement Costs**") is set forth in the Engineers Cost Estimate (the "**Engineers Cost Estimate**") attached hereto as **Exhibit A** and incorporated herein by this reference.

G. The City acknowledges that the obligation of the Subdivider and the District, as set forth in the SIA, to post the Improvement Guarantee and the Warranty Guarantee, each as defined below, is being met by the execution of and compliance with the terms and conditions of this Agreement by the Subdivider and the District.

H. Consistent with the SIA requirements, this Agreement requires the deposit of Bond Proceeds For Construction Costs, defined below, posting of a letter of credit or deposit of cash advanced by the Subdivider, or combination thereof, to assure funding is available in an

amount equal to one hundred and five percent (105%) of the amount set forth as the Cost to Complete the Improvements in the DE Cost Certification, defined below, provided at the time the provision of the Improvement Guarantee, defined below, and prior to the issuance of the first permit for construction of any of the Improvements, other than overlot grading permit, to secure completion of all of the Improvements (the " **Improvement Guarantee Amount**") (collectively any deposited Bond Proceeds For Construction Costs, letter of credit, or deposited cash deposit by the Subdivider will be referred to herein as the "**Improvement Guarantee**").

I. Consistent with the SIA requirements, this Agreement requires the deposit with the City of Bond Proceeds For Warranty Guarantee, defined below, posting of a letter of credit or deposit of cash advanced by the Subdivider with the City, or combination thereof, to assure funding is available, in an amount equal to five percent (5%) of the Improvement Costs incurred by the District in the construction of the Improvements through the date of Construction Acceptance, as set for in the DE Cost Certification (the "**Warranty Guarantee Amount**") to secure completion of the warranty work (collectively any deposited Bond Proceeds For Warranty Guarantee, posted letter of credit or deposit of cash advanced by the Subdivider to the City or any other form of Guarantee or security as may be acceptable to the City will be referred to herein as the "**Warranty Guarantee**").

J. The District has funds available from the issuance of Bonds that it will deposit pursuant to the terms of this Agreement to be used for the construction of the Improvements (the "**Bond Proceeds For Construction Costs**").

K. If the Bond Proceeds For Construction Costs to be deposited are less than the Improvement Guarantee Amount for the Improvements (the "**Initial Construction Funding Shortfall**") the Subdivider shall provide a combination of a letter of credit and cash deposit which, in aggregate, shall equal the Initial Construction Funding Shortfall (collectively any letter of credit or cash to be deposited by the Subdivider will be referred to herein as the "**Subdivider Construction Advance**").

L. If the Bond Proceeds For Constructions Costs to be deposited for the Improvements is equal to or greater than the Improvement Guarantee Amount for such Improvements, no Subdivider Construction Advance will be required.

M. The District has funds available from the issuance of Bonds that it will provide to the City at the time of Construction Acceptance pursuant to the terms of this Agreement to fund the Warranty Guarantee (the "**Bond Proceeds For Warranty Guarantee**").

N. If the Bond Proceeds For Warranty Guarantee to be provided to the City at the time of Construction Acceptance are less than the Warranty Guarantee Amount for the Improvements (the "**Warranty Funding Shortfall**") the Subdivider shall provide a letter of credit, cash or guaranty of an affiliate of the Subdivider in a form acceptable to the City Manager and the City Finance Director, or any combination thereof, which, in the aggregate, shall equal the Warranty Funding Shortfall (collectively any letter of credit, cash or guaranty to be deposited by the Subdivider will be referred to herein as the "**Subdivider Warranty Advance**").

O. If the Bond Proceeds For Warranty Guarantee to be provided to the City at the time of Construction Acceptance for the Improvements is equal to or greater than the Warranty Guarantee Amount for the Improvements, no Subdivider Warranty Advance will be required.

P. The Bond Proceeds For Construction Costs and the Subdivider Construction Advance shall make up the Improvement Guarantee Amount required by the SIA to assure there is sufficient funds for the construction and completion of the Improvements.

Q. The Bond Proceeds For Warranty Guarantee and the Subdivider Warranty Advance shall make up the Warranty Guarantee Amount required by the SIA to be provided to the City at the time of Construction Acceptance to assure there are sufficient funds through the Warranty Period.

R. The Bond Proceeds For Construction Costs and the Bond Proceeds for Warranty Guarantee shall collectively be referred to as the "**Bond Proceeds**."

S. The Subdivider Construction Advance and the Subdivider Warranty Advance shall collectively be referred to as the **"Subdivider Advance**."

T. The District will deliver the Bond Proceeds to the Escrow Agent to be held and disbursed in accordance with this Agreement for the Improvement Guarantee Amount.

U. The Subdivider will deliver the Subdivider Advance, if required, to the Escrow Agent to be held and drawn upon in accordance with this Agreement for the Improvement Guarantee Amount.

V. Pursuant to this Agreement, the Parties desire to set forth their respective rights and obligations relative to the Escrow Fund and the holding and disbursement of funds from the Bond Proceeds and the Subdivider Advance and the provision of the Warranty Guarantee to the City.

NOW, THEREFORE, in consideration of the foregoing and the respective agreements of the Parties contained herein, the Parties agree as follows:

COVENANTS AND AGREEMENTS

1. **Definitions**. All capitalized terms used, but not defined, in this Agreement shall have the definitions set forth in the SIA, and the following capitalized terms shall have the meanings ascribed to the same as set forth below:

(a) **AE Cost Certification:** shall have the meaning set forth in Section 3(b)(i)(4).

(b) **Bonds:** shall have the meaning set forth in the SIA.

(c) **Bond Proceeds:** shall have the meaning set forth in Recital R.

(d) **Bond Proceeds For Construction Costs:** shall have the meaning set forth in Recital J.

(e) **Bond Proceeds For Warranty Guarantee:** shall have the meaning set forth in Recital M.

(f) **City Response Period:** shall have the meaning set forth in Section 3(a).

(g) **Complete Draw Request Dispute Notice:** shall have the meaning set forth in Section 3(b)(iii)(2)(b).

(h) **Construction Funding Deficiency Amount:** shall have the meaning set forth in Section 2(d).

(i) **DE Cost Certification:** shall have the meaning set forth in Section 3(b)(i)(4).

(j) **District Engineer:** shall have the meaning set forth in Section 3(b)(i)(4).

(k) **District Costs:** shall have the meaning set forth in Section 3(b)(i)(4).

(l) **Draw Request:** shall have the meaning set forth in Section 3(b)(i).

(m) **Draw Request Pre-Submittal Package:** shall have the meaning set forth in Section 3(a).

(n) **Engineers Cost Estimate:** shall have the meaning set forth in Recital F.

(o) **Escrow Fund:** shall have the meaning set forth in Section 2.

(p) **Improvements:** shall have the meaning set forth in Recital E.

(q) **Improvement Costs:** shall have the meaning set forth in Recital F.

(r) **Improvement Guarantee:** shall have the meaning set forth in Recital H.

(s) **Improvement Guarantee Amount:** shall have the meaning set forth in Recital H.

(t) **Initial Construction Funding Shortfall:** shall have the meaning set forth in Recital K.

(u) **Partial Draw Request Dispute Notice:** shall have the meaning set forth in Section 3(b)(iii)(2)(a).

(v) **Plat:** shall have the meaning set forth in Recital C.

(w) **Property:** shall have the meaning set forth in Recital A.

(x) **Service Plan:** shall have the meaning set forth in Recital B.

(y) **SIA:** shall have the meaning set forth in Recital D.

(z) **SIA Default Notice:** shall have the meaning set forth in Section 3(b)(iii)(3).

(aa) **Subdivider Advance:** shall have the meaning set forth in Recital S.

(bb) **Subdivider Construction Advance:** shall have the meaning set forth in Recital K.

(cc) **Subdivider Warranty Advance:** shall have the meaning set forth in Recital N.

(dd) **Supporting Documentation:** shall have the meaning set forth in Section 3(a).

(ee) **Termination Notice:** shall have the meaning set forth in Section 4(a).

(ff) **Termination Upon Default:** shall have the meaning set forth in Section 3(b)(iii)(3)(a).

(gg) **Warranty Funding Shortfall:** shall have the meaning set forth in Recital N.

(hh) **Warranty Guarantee:** shall have the meaning set forth in Recital I.

(ii) **Warranty Guarantee Amount:** shall have the meaning set forth in Recital I.

2. **Escrow Fund**. The Escrow Agent shall establish the escrow fund in an interest bearing account pursuant to the written direction of the District into which all Bond Proceeds and all funds from the Subdivider Advance provided pursuant to the terms of this Agreement shall be deposited (the "**Escrow Fund**").

(a) The District will deliver the Bond Proceeds in an amount equal to one hundred and five percent (105%) of the cost to complete the Improvements set forth in the DE Cost Certification provided with the delivery of the Bond proceeds to the Escrow Agent and the Escrow Agent will deposit the Bond Proceeds in the Escrow Fund and distribute the Bond Proceeds from time to time to the District for payment of costs incurred in the design and construction of the Improvements in accordance with this Agreement.

(b) The Subdivider will deliver the Subdivider Advance provided pursuant to the terms of this Agreement to the Escrow Agent and the Escrow Agent will be entitled to make draws thereunder and deposit any draws into the Escrow Fund, all in accordance with this Agreement.

(c) All references to the amounts in the Escrow Fund are deemed to include any interest earned on amounts held on deposit in the Escrow Fund.

(d) At any time prior to Construction Acceptance the cost to complete contained in a DE Cost Certification exceeds the remaining amount of Bond Proceeds For Construction Costs in the Escrow Fund, plus interest earned and the Subdivider Construction Advance, if any, plus interest earned (the "**Construction Funding Deficiency Amount**"), the District shall, within ten (10) days following the City's written request, deposit, and if the District does not have funds to so deposit, the Subdivider shall deposit on the District's behalf, into the Escrow Fund, an amount equal to the Construction Funding Deficiency Amount and such amount deposited will be included within the definition of a Subdivider Construction Advance.

3. **Disbursements From the Escrow Fund**. The Escrow Agent will make disbursements from the Escrow Fund as follows:

(a) Prior to submittal by the District of a Draw Request to the Escrow Agent the District will submit the Draw Request, with a copy of the DE Cost Certification and the AE Cost Certification and all related contracts and invoices ("**Supporting Documentation**"), to the City (the "**Draw Request Pre-Submittal Package**"). The City shall have six (6) business days from the receipt of a Draw Request Pre-Submittal Package (the "**City Response Period**") to deliver a Partial Draw Request Dispute Notice or a Complete Draw Request Dispute Notice to the District, the Subdivider and the Escrow Agent, in which event the provisions of Section 3(b)(iii)(2) below shall be applicable. If the City fails to timely deliver a Partial Request Dispute Notice or Complete Draw Request Dispute Notice as provided above, the District shall be entitled to submit a Draw Request in accordance with the provisions of Section 3(b)(i) below.

(b) If the City fails to deliver a Partial Draw Request Dispute Notice or a Complete Draw Request Dispute Notice to the District, the Subdivider or the Escrow Agent prior to the expiration of the City Response Period, the District may submit requests for the release of funds on deposit in the Escrow Fund as follows:

(i) Submission and Payment. The District shall submit written requests for release of funds from the Escrow Fund (each, a "**Draw Request**") to the Escrow Agent for the payment of costs from the Escrow Fund based on the costs set out in the Engineers Cost Estimate and otherwise in compliance with the SIA. The Draw Request shall be provided on a business day and no more frequently than once each month. Each Draw Request shall generally take the form of and contain the information set out in **Exhibit B** attached hereto, and shall include, at a minimum, the following information:

(1) Reference to the underlying construction contract, the SIA, or other basis for payment and provide a description of the work performed for which payment is being requested.

(2) The total amount of the requested funds.

(3) Detail of the total amount of progress payments on the construction and other applicable contracts executed for the Improvements, all payments made

toward the same prior to the date of the Draw Request, including copies of lien waivers and the amount that will be outstanding after payment of the Draw Request.

(4) The District's engineer shall be an independent licensed engineer experienced in the design and construction of public improvements (the "**District Engineer**"). Certification by the District Engineer that all costs to be paid pursuant to the Draw Request constitute eligible costs and estimates of the percentage of total completion of the Improvements and the cost to complete the Improvements ("**DE Cost Certification**"). In addition to the DE Cost Certification, the District's independent accountant may certify certain costs for accounting or legal services related to the Improvement Costs contained within a Draw Request ("**AE Cost Certification**"). The DE Cost Certification and the AE Cost Certification will identify which of the costs contained in the respective certification for the Improvements are eligible for payment by the District ("**District Costs**").

(ii) Upon receipt of a Draw Request signed by the District and the Subdivider in accordance with this Section, the Escrow Agent shall make disbursement of the authorized amount of funds to the District within two (2) business days. The Escrow Agent will first use the Bond Proceeds in the Escrow Fund for disbursement for payment of District Costs and will draw on the Subdivider Construction Advance for disbursement for payment of any District Costs to be funded after all of the Bond Proceeds have been disbursed. Upon receipt of written direction executed by the District and the Subdivider the Escrow Agent can use the Subdivider Construction Advance prior to the use of Bond Proceeds for disbursement for payment of District Costs. The Escrow Agent may conclusively rely as to the completeness and accuracy of all statements in the Draw Request if the Draw Request is signed by the District and the Escrow Agent, in good faith, believes the Draw Request is genuine. The Escrow Agent shall not be required to make any independent investigation in connection therewith.

(iii) Disbursement by the Escrow Agent.

(1) During the term of this Agreement, Escrow Agent shall hold and disburse the Escrow Funds in accordance with the terms and provisions of this Agreement.

(2) If the City delivers written notice to the Escrow Agent of a dispute during the City Response Period, Escrow Agent will proceed as follows:

a) If the written notice identifies an objection to the payment of less than all of a Draw Request, the written notice will specify the amount of the Improvement Costs that are the subject of the dispute (the "**Partial Draw Request Dispute Notice**"), in which event:

i) The Escrow Agent will proceed to make disbursement of the amounts in the Draw Request that are not the subject of the Partial Draw Request Dispute Notice.

ii) The Escrow Agent will not make disbursement of the amounts that are the subject of the Partial Draw Request Dispute Notice

until it receives a written instruction from the District, the City and the Subdivider that the disbursement that is the subject of a Partial Draw Request Notice may be made.

b) If the written notice identifies an objection to the payment of all of a Draw Request the written notice will specify that it is an objection to the payment of all of a Draw Request ("**Complete Draw Request Dispute Notice**"), in which event:

i) The Escrow Agent will not make disbursement of any of the amounts that are the subject of the Complete Draw Request Dispute Notice until it receives a written instruction from the District, the City and the Subdivider that the disbursement that is the subject of a Complete Draw Request Notice can be made.

(3) If the City determines that there is a breach of the SIA that has not been cured within the cure periods under the SIA and the City determines to exercise its rights to proceed to complete the Improvements under, and in accordance with, the terms of the SIA, the City will deliver a written notice of such determination to the Escrow Agent, the District and the Subdivider (the "**SIA Default Notice**"), in which event:

a) Within ten (10) business days (but in no event no less than five (5) business days) following receipt of the SIA Default Notice, the Escrow Agent shall, subject to the provisions of Section 3(b)(iii)(8) below, and provided the City notifies the District and the Subdivider in writing of its intentions, deliver the funds from the Escrow Fund to the City and shall transmit the letter(s) of credit, if any and other Subdivider Advance, if any, to the City. Upon delivery of the Escrow Funds and the letter(s) of credit, if any and other Subdivider Advance, if any, to the City, the Escrow Agent shall be discharged from any obligation in connection with this Agreement and the escrow required hereunder shall terminate ("**Termination Upon Default**").

b) The City agrees it will use the Bond Proceeds received from the Escrow Agent for completion of the Improvements not otherwise completed as set forth in the SIA. The City also agrees it will use any draws it makes on the letter(s) of credit, if any and any other Subdivider Advance, if any, to complete the Improvements not otherwise completed as set forth in the SIA.

(4) The Escrow Agent may act in reliance upon any written instrument or signature which it, in good faith, believes to be genuine, and may assume the validity and accuracy of any statement or assertion contained in such written instrument.

(5) The Escrow Agent shall execute and deliver all forms required by Federal, State and other governmental agencies relative to the Escrow Funds.

(6) The Escrow Agent shall not remit any moneys on deposit in the Escrow Fund to the District except to pay or reimburse eligible costs of the Improvements and upon compliance with the Draw Request process set forth herein.

(7) The Escrow Agent shall provide written notice to the District, the Subdivider and the City when the amount of funds on deposit plus any undrawn

amount on the aggregate of the any letter(s) of credit or other Subdivider Advance is less than Fifty Thousand Dollars ($50,000).

(8) Notwithstanding anything stated to the contrary in this section or elsewhere in this Agreement and so long as the Escrow Agent has not received written notice from the City that the District or the Subdivider are in default under this Agreement, the Escrow Agent shall not remit any funds on deposit in the Escrow Fund to the City, nor transmit a letter of credit or other Subdivider Advance to the City, if the Escrow Agent receives a written direction from Subdivider to hold the same until directed otherwise in writing by both Subdivider and the District.

4. **Termination of Escrow**. The escrow established under this Agreement shall terminate as follows:

(a) Upon Construction Acceptance of the Improvements by the City in accordance with the SIA, the City, the District and the Subdivider shall deliver to the Escrow Agent a written notice stating the Construction Acceptance has occurred and the Agreement can be terminated, which termination notice will also include confirmation as to whether the Warranty Guarantee has been provided to the City pursuant to the SIA (the "**Termination Notice**").

(b) If the Termination Notice includes confirmation that the City has received the Warranty Guarantee as required under the SIA and this Escrow Agreement, the Escrow Agent shall, no later than 2 business days after receipt of the Termination Notice, release to the District any remaining Escrow Funds and release to the Subdivider the letter(s) of credit, if any, and other Subdivider Advance, if any.

(c) If the Termination Notice does not include confirmation the City has received the Warranty Guarantee as required under the SIA and this Escrow Agreement, the Escrow Agent shall, no later than 2 business days after receipt of the Termination Notice, and upon no less than one (1) business days' prior written notice to the District and to Subdivider, release the funds remaining in the Escrow Fund to the City, if any, and will release the letter(s) of credit, if any and other Subdivider Advance, if any, to the City.

(d) Upon delivery to the City of the Warranty Guarantee as required under the SIA and this Escrow Agreement, the City shall release the funds to the District and the letter(s) of credit and other Subdivider Advance, if any, to the Subdivider pursuant to the terms of the SIA that the City holds, if in excess of the Warranty Guarantee Amount.

(e) The Termination Upon Default shall occur only as set forth in Section 3(b)(iii)(3)(a) above.

5. **Notices**. All notices, demands, requests or other communications to be sent by one Party to the other hereunder or required by law shall be in writing and shall be deemed to have been validly given or served by delivery of same in person to the addressee or by courier delivery via Federal Express or other nationally recognized overnight air courier service, by electronically-confirmed email transmission, or by depositing same in the United States mail, postage prepaid, addressed as follows:

To District:	Redtail Ridge Metropolitan District c/o McGeady Becher P.C. 450 E. 17th Avenue, Suite 400 Denver, CO 80203-1254 Phone: 303-592-4380 Email: legalnotices@specialdistrictlaw.com
To the Subdivider:	Redtail Ridge Portfolio, LLC c/o Sterling Bay 333 N. Green St., Suite 1100 Chicago, IL 60607 Attn: Andrew Gloor
With a copy to:	Redtail Ridge Portfolio, LLC c/o Sterling Bay 100 Bayview, Suite 250 Newport Beach, CA 92660 Attn: Rodney Richerson Email: rricherson@sterlingbay.com
And with a copy in all instances via email to:	legalnotices@sterlingbay.com
With additional copies to:	Greenberg Traurig, LLP 18565 Jamboree Road, Suite 500 Irvine, CA 92612 Attn: Bruce Fischer Phone: 949-732-6670 Email: fischerb@gtlaw.com and Holland & Hart LLP 1800 Broadway, Suite 300 Boulder, CO 80302 Attn: J. Marcus Painter and Mark E. Hamilton Email: mpainter@hollandhart.com mehamilton@hollandhart.com
To City:	City of Louisville 749 Main Street Louisville, CO 80027 Attn: City Manager

With a copy to: City of Louisville
749 Main Street
Louisville, CO 80027
Attn: City Attorney

With a copy in all instances via email to: kathleen@kellypc.com

To Escrow Agent: **BANK TO BE INSERTED HERE THAT IS SERVING AS THE TRUSTEE IN THE DISTRICT'S BOND ISSUANCE**
Attn: _____
Email: _____

6. **Incorporation of Recitals.** The Recitals to this Agreement are incorporated herein by this reference.

7. **Customary Escrow Agent Provisions**. Customary Escrow Agent Provisions will be attached hereto as Exhibit C and upon attachment are incorporated herein by this reference.

8. **Governing Law and Venue**. This Agreement shall be governed and construed under the laws of the State of Colorado and any enforcement of this Agreement by the Parties shall be instituted in the Boulder County District Court.

9. **Default and Remedies**. Upon any default by any Party, the non-defaulting Party shall be entitled to exercise all remedies available at law or in equity, including specific performance and/or monetary damages. In the event of any litigation, arbitration or other proceeding to enforce the terms, covenants or conditions hereof, the prevailing party in such litigation, arbitration or other proceeding shall be entitled to obtain as part of its judgment or award its reasonable attorneys' fees.

10. **Assignment and Delegation**. The Parties may not assign their rights or delegate their duties under this Agreement, in whole or in part, without the prior written consent of the other Parties, such consent not to be unreasonably withheld or delayed. Any purported assignment or delegation without such consent shall be void.

11. **Parties Interested Herein**. Nothing expressed or implied in this Agreement is intended or shall be construed to confer upon, or to give to, any person other than the District, the Subdivider, and the City any right, remedy, or claim under or by reason of this Agreement or any covenants, terms, conditions, or provisions thereof, and all the covenants, terms, conditions, and provisions in this Agreement by and on behalf of the District, the Subdivider, and the City shall be for the sole and exclusive benefit of the District, the Subdivider, and the City.

(a) The City and the District acknowledge and agree that, notwithstanding anything stated to the contrary in this Agreement, the obligations of the Subdivider under this

Agreement are only intended to, and shall only, bind the Subdivider, and are not intended to, and shall not, run with the Property or be binding on any successors or assigns of the Subdivider.

12. **Severability**. If any covenant, term, condition, or provision under this Agreement shall, for any reason, be held to be invalid or unenforceable, the invalidity or unenforceability of such covenant, term, condition, or provision shall not affect any other provision contained herein, the intention being that such provisions are severable.

13. **Amendment**. This Agreement may be amended from time to time by agreement between the Parties hereto; provided, however, that no amendment, modification, or alteration of the terms or provisions hereof shall be binding upon the Parties unless the same is in writing and duly executed by the Parties hereto.

14. **Estoppel Certificate**. Within twenty (20) days after receipt of a written request by the Subdivider, the District and the City shall execute and deliver to the Subdivider (and upon written request by the Subdivider, deliver to the Subdivider's investors and lenders) a written estoppel certificate (in a form prepared by the Subdivider and reasonably approved by the District and the City) as to the status of this Agreement, the existence of any defaults under this Agreement, any amounts owed to, or owed by the Subdivider and any other information reasonably requested by the Subdivider, its investors and/or its lenders.

15. **Counterparts, Electronic Signatures, and Electronic Records**. This Agreement may be executed in counterparts, each of which shall be deemed to be an original, but all of which shall together constitute one and the samebelow document. Facsimile signatures shall be accepted as originals. The Parties consent to the use of electronic signatures by any Party hereto. This Agreement, and any other documents requiring a signature, may be signed electronically by each Party in the manner specified by that Party. The Parties agree not to deny the legal effect or enforceability of this Agreement solely because it is in electronic form or because an electronic record was used in its formation. The Parties agree not to object to the admissibility of this Agreement in the form of an electronic record, a paper copy of an electronic document, or a paper copy of a document bearing an electronic signature, on the grounds that it is an electronic record or electronic signature or that is not in its original form or is not an original.

16. **Mortgagee Protections**. Notwithstanding anything stated to the contrary herein, any Mortgagee (as such term is defined in the SIA) of Subdivider shall be entitled to all of the rights and protections afforded a Mortgagee under Section 10.16 of the SIA and such provisions shall be incorporated by reference into this Agreement and, therefore, any Mortgagee of Subdivider shall be entitled to such protections under the terms of this Agreement.

17. **Conflicting Provisions**. The provisions of this Agreement shall prevail and control in the event there is a conflict or inconsistency between the provisions of the SIA and this Agreement.

SIGNATURE PAGES FOLLOW

[SIGNATURE PAGE 1 TO SUBDIVISION IMPROVEMENT GUARANTEE ESCROW AGREEMENT]

IN WITNESS WHEREOF, the Parties have executed this Agreement as of the day and year first set forth above.

DISTRICT:
REDTAIL RIDGE METROPOLITAN DISTRICT, a quasi-municipal corporation and political subdivision of the State of Colorado

By: _____
President

ATTEST:

By: _____
Secretary

SUBDIVIDER:
REDTAIL RIDGE PORTFOLIO, LLC, a Delaware limited liability company

By: _____

Name: _____

Title: _____

[SIGNATURE PAGE 2 TO SUBDIVISION IMPROVEMENT GUARANTEE ESCROW AGREEMENT]

CITY:
CITY OF LOUISVILLE, COLORADO, a municipal corporation of the State of Colorado

By: _____

Name: _____

Title: Mayor

ATTEST:

By: _____
City Clerk

BANK TO BE INSERTED HERE THAT IS SERVING AS THE TRUSTEE IN THE DISTRICT'S BOND ISSUANCE

By: _____
Authorized Signatory

EXHIBIT A

ENGINEERS COST ESTIMATE

HARRIS KOCHER SMITH
DENVER • DALLAS/FORT WORTH

ENGINEER'S OPINION OF PROBABLE COSTS
8/13/2024

1.00 ON-SITE EARTHWORK					
Item No.	Description	Quantity	Unit	Unit Cost	Total
1.01	Earthwork (Cut-to-Fill)	918,786	CY	$ 4.50	$ 4,134,538.80
1.02	Clear and Grub	225	AC	$ 312.00	$ 70,106.40
1.03	Strip and Stockpile Topsoil (4" Assumed)	120,839	CY	$ 3.15	$ 380,641.80
1.04	Replace Topsoil	120,839	CY	$ 2.25	$ 271,887.00
				SUBTOTAL: ON-SITE EARTHWORK	$ 4,857,174.00

2.00 GRAVITY SANITARY SEWER					
Item No.	Description	Quantity	Unit	Unit Cost	Total
2.01	4' Manholes	27	EA	$ 7,000.00	$ 189,000.00
2.02	12" PVC Pipe	6,737	LF	$ 150.00	$ 1,010,550.00
				SUBTOTAL: GRAVITY SANITARY SEWER	$ 1,199,550.00

3.00 SANITARY SEWER FORCE MAIN AND LIFT STATION					
Item No.	Description	Quantity	Unit	Unit Cost	Total
3.01	5' Manholes	1	EA	$ 8,800.00	$ 8,800.00
3.02	8" 11.25° Bend	9	EA	$ 1,400.00	$ 12,600.00
3.03	8" 22.5° Bend	6	EA	$ 1,400.00	$ 8,400.00
3.04	8" 45° Bend	27	EA	$ 1,400.00	$ 37,800.00
3.05	Air & Vacuum Valve	6	EA	$ 10,000.00	$ 60,000.00
3.06	Blowoff Valve	12	EA	$ 10,000.00	$ 120,000.00
3.07	8" PVC Pipe	23,644	LF	$ 115.00	$ 2,719,048.50
3.08	8" PVC Pipe - Coal Creek Boring	300	LF	$ 132.00	$ 39,600.00
3.09	21" PVC Pipe	120	LF	$ 250.00	$ 30,000.00
3.10	2" Conduit and Pull Boxes	11,822	LF	$ 12.00	$ 141,864.00
3.11	Force Main Indicator Posts	20	EA	$ 10.00	$ 200.00
3.12	Force Main Locate Wire and Testing	23,944	LF	$ 4.00	$ 95,776.00
3.13	Sanitary Lift Station w/ Controls	1	LS	$ 4,000,000.00	$ 4,000,000.00
3.14	Sanitary Lift Station Water Service	1	LS	$ 2,500.00	$ 2,500.00
3.15	Sanitary Lift Station Landscaping	1	LS	$ 5,000.00	$ 5,000.00
3.16	Traffic Control	60	DAY	$ 2,000.00	$ 120,000.00
3.17	Trenching, Existing Roadway Demo, and Replacement	4,765	SY	$ 700.00	$ 3,335,329.90
				SUBTOTAL: SANITARY SEWER FORCE MAIN AND LIFT STATION	$ 10,736,918.40

4.00 POTABLE WATER MAIN					
	Description	Quantity	Unit	Unit Cost	Total
4.01	6" Gate Valve	6	EA	$ 6,000.00	$ 36,000.00
4.02	8" Gate Valve	7	EA	$ 8,000.00	$ 56,000.00
4.03	8" Line Valve	6	EA	$ 8,000.00	$ 48,000.00
4.04	12" Gate Valve	16	EA	$ 12,000.00	$ 192,000.00
4.05	12" Line Valve	10	EA	$ 12,000.00	$ 120,000.00
4.06	Fire Hydrant Assembly	6	EA	$ 10,000.00	$ 60,000.00
4.07	12" 90° Bend	2	EA	$ 1,800.00	$ 3,600.00
4.08	12" 45° Bend	57	EA	$ 1,800.00	$ 102,600.00
4.09	12" 22.5° Bend	3	EA	$ 1,800.00	$ 5,400.00
4.10	12" 11.25° Bend	28	EA	$ 1,800.00	$ 50,400.00
4.11	8" 22.5° Bend	6	EA	$ 1,400.00	$ 8,400.00
4.12	8" 11.25° Bend	2	EA	$ 1,400.00	$ 2,800.00
4.13	8" 45° Bend	12	EA	$ 1,400.00	$ 16,800.00
4.14	8"x6" Tee	1	EA	$ 2,250.00	$ 2,250.00
4.15	8"x8" Tee	1	EA	$ 2,500.00	$ 2,500.00
4.16	12"x12" Swivel Tee	8	EA	$ 3,000.00	$ 24,000.00
4.17	12"x6" Swivel Tee	5	EA	$ 2,700.00	$ 13,500.00
4.18	12"x8" Reducer	3	EA	$ 2,200.00	$ 6,600.00
4.19	12" Plug	1	EA	$ 1,500.00	$ 1,500.00
4.20	2" Meter	1	EA	$ 5,000.00	$ 5,000.00
4.21	Air Vacuum Valve	8	EA	$ 7,500.00	$ 60,000.00
4.22	Air Release Valve	1	EA	$ 7,500.00	$ 7,500.00
4.25	6" PVC	532	LF	$ 75.00	$ 39,918.00
4.26	12" PVC	13,543	LF	$ 150.00	$ 2,031,402.00
4.27	8" PVC	1,624	LF	$ 120.00	$ 194,878.80
4.28	6" DIP	1,948	LF	$ 150.00	$ 292,140.00
4.29	3" DIP per Test Station Detail	848	LF	$ 120.00	$ 101,760.00
4.30	2" PVC for Irrigation Meter Connecton	4	LF	$ 55.00	$ 198.00
4.31	Water System Testing	19	LF	$ 5,000.00	$ 95,000.00
				SUBTOTAL: POTABLE WATER MAIN	$ 3,580,146.80

5.00 ON-SITE STORM SEWER AND DRAINAGE WAY					
Item No.	Description	Quantity	Unit	Unit Cost	Total
5.01	5' Type R Inlet	19	EA	$ 8,000.00	$ 152,000.00
5.02	10' Type R Inlet	15	EA	$ 10,000.00	$ 150,000.00
5.03	Type C Inlet	1	EA	$ 5,000.00	$ 5,000.00
5.04	4' Manholes	17	EA	$ 7,000.00	$ 119,000.00
5.05	5' Manholes	7	EA	$ 8,800.00	$ 61,600.00

5.06	CDOT 5' Box Manhole	14	EA	$ 10,000.00	$ 140,000.00
5.07	6' Manholes	19	EA	$ 19,000.00	$ 361,000.00
5.08	CDOT 6' Box Manhole	3	EA	$ 12,000.00	$ 36,000.00
5.09	7' Manholes	3	EA	$ 12,000.00	$ 36,000.00
5.10	8' Manholes	1	EA	$ 14,000.00	$ 14,000.00
5.11	18" FES	2	EA	$ 3,000.00	$ 6,000.00
5.12	30" FES	2	EA	$ 4,000.00	$ 8,000.00
5.13	42" FES	1	EA	$ 5,000.00	$ 5,000.00
5.14	48" FES	1	EA	$ 5,500.00	$ 5,500.00
5.15	54" FES W/ Trash Rack	2	EA	$ 6,500.00	$ 13,000.00
5.16	ABS Barracuda WQ Device	2	EA	$ 10,000.00	$ 20,000.00
5.17	Drainageway Cross Section Grading	1	LS	$ 100,000.00	$ 100,000.00
5.18	Drainageway Drop Structures	3	EA	$ 10,000.00	$ 30,000.00
5.19	30"x19" HERCP	52	LF	$ 250.00	$ 13,000.00
5.20	45"x29" HERCP	97	LF	$ 320.00	$ 31,040.00
5.21	53"x34" HERCP	176	LF	$ 340.00	$ 59,840.00
5.22	60"x38" HERCP	239	LF	$ 360.00	$ 86,040.00
5.23	54" RCP	1,868	LF	$ 400.00	$ 747,120.00
5.24	48" RCP	3,662	LF	$ 350.00	$ 1,281,668.85
5.25	42" RCP	145	LF	$ 310.00	$ 45,099.27
5.26	36" RCP	1,974	LF	$ 240.00	$ 473,844.48
5.27	30" RCP	1,114	LF	$ 215.00	$ 239,469.15
5.28	18" RCP	2,302	LF	$ 125.00	$ 287,740.00
5.29	15" RCP	151	LF	$ 115.00	$ 17,365.00
5.30	10'x8' RCBC	1	LS	$ 1,312,500.00	$ 1,312,500.00
5.31	8'x5' RCBC	1	LS	$ 687,500.00	$ 687,500.00
5.32	7'x5' Concrete Box C	1	LS	$ 687,500.00	$ 687,500.00
5.33	Rip Rap	6,664	SY	$ 75.00	$ 499,800.00
5.34	Pond B (Forebay, Outlet, Trickle Channel, etc.)	1	LS	$ 312,000.00	$ 312,000.00
5.35	Pond C1 (Forebay, Outlet, Trickle Channel, etc.)	1	LS	$ 312,000.00	$ 312,000.00
5.36	Pond C2 (Forebay, Outlet, Trickle Channel, etc.)	1	LS	$ 312,000.00	$ 312,000.00
	SUBTOTAL: ON-SITE STORM SEWER				**$ 8,667,626.75**

6.00 ON-SITE STORM WATER MANAGEMENT AND EROSION CONTROL

Item No.	Description	Quantity	Unit	Unit Cost	Total
	Initial				
6.01	Vehicle Tracking Control	4	EA	$ 2,000.00	$ 8,000.00
6.02	Temporary Stream Crossing	13	EA	$ 1,000.00	$ 13,000.00
6.03	Check Dam	25	EA	$ 2,000.00	$ 50,000.00
6.04	Culvert Protection	31	EA	$ 1,000.00	$ 31,000.00
6.05	Construction Trailer	2	EA	$ 20,000.00	$ 40,000.00
6.06	Concrete Washout Area	2	EA	$ 200.00	$ 400.00
6.07	Inlet Protection	61	EA	$ 400.00	$ 24,400.00
6.08	Rock Sock	271	EA	$ 35.00	$ 9,485.00
6.09	Sediment Control Log	3,558	LF	$ 4.00	$ 14,232.00
6.10	Silt Fence	69,685	LF	$ 4.00	$ 278,740.00
6.11	Construction Fence	480	LF	$ 4.00	$ 1,920.00
6.12	Temporary Sediment Basin	11	AC	$ 2,000.00	$ 22,200.00
6.13	Stabilized Staging Area	1,000	SY	$ 4.00	$ 4,000.00
6.14	Demo	1	LS	$ 30,000.00	$ 30,000.00
6.15	Seeding and Mulching	1,253,567	SY	$ 0.15	$ 188,035.06
	SUBTOTAL: ON-SITE STORM WATER MANAGEMENT AND EROSION CONTROL				**$ 715,412.06**

7.00 ON-SITE ROADWAYS

Item No.	Description	Quantity	Unit	Unit Cost	Total
7.01	Street Signs	131	EA	$ 250.00	$ 32,750.00
7.02	Pedestrian Ramps	66	EA	$ 5,000.00	$ 330,000.00
7.03	Drain Pans	7	EA	$ 2,700.00	$ 18,900.00
7.04	Misc. Roadway markings (direction arrows, bike lane, etc.)	96	EA	$ 375.00	$ 36,000.00
7.05	Striping	71,897	LF	$ 1.25	$ 89,870.63
7.06	Striping - Crosswalk Markings	843	LF	$ 20.00	$ 16,860.00
7.07	Curb and Gutter - Vertical Catch	40,685	LF	$ 50.00	$ 2,034,256.00
7.08	Curb and Gutter - Mountable	2,865	LF	$ 50.00	$ 143,226.00
7.09	Concrete Sidewalks	236,737	SF	$ 9.38	$ 2,220,589.50
7.10	Soft Trails Full Section	89,039	SF	$ 6.00	$ 534,235.38
7.11	Hard Trails Full Section	190,401	SF	$ 12.00	$ 2,284,815.84
7.12	Hot Mix Asphalt	74,307	SY	$ 40.00	$ 2,972,281.20
7.13	Concrete Drive	2,722	SY	$ 60.00	$ 163,315.20
7.14	Over excavation and Recompaction for Roadway and Sidewalk	217,187	CY	$ 4.50	$ 977,339.47
7.15	Dry Utility Sleeving - 2"	7,040	LF	$ 28.00	$ 197,120.00
7.16	Dry Utility Sleeving - 4"	776	LF	$ 36.00	$ 27,936.00

HARRIS KOCHER SMITH
DENVER • DALLAS/FORT WORTH

ENGINEER'S OPINION OF PROBABLE COSTS
8/13/2024

7.17	Dry Utility Sleeving - 8"	774	LF	$ 45.00	$ 34,830.00
7.18	S. 88th Street and Campus Drive Intersection Signal Improvements	1	LS	$ 519,850.00	$ 519,850.00
7.19	S. 96th Street and Campus Drive Intersection Signal Improvements	1	LS	$ 3,250,000.00	$ 3,250,000.00
7.20	Rockcress Dr and Northwest Parkway Intersection Signal Improvements	1	LS	$ 519,850.00	$ 519,850.00
				SUBTOTAL: ON-SITE ROADWAYS	**$ 16,404,025.21**

8.00 VARRA DITCH IMPROVEMENTS

Item No.	Description	Quantity	Unit	Unit Cost	Total
8.01	18" PVC Pipe	6,075	LF	$ 125.00	$ 759,372.50
8.02	4' Manholes	13	EA	$ 7,000.00	$ 91,000.00
8.03	18" FES	1	EA	$ 3,000.00	$ 3,000.00
				SUBTOTAL: VARRA DITCH IMPROVEMENTS	**$ 853,372.50**

HARRIS KOCHER SMITH
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ENGINEER'S OPINION OF PROBABLE COSTS
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9.00 ON-SITE ROW LANDSCAPING					
Item No.	Description	Quantity	Unit	Unit Cost	Total
9.01	6' Evergreen Trees	29	EA	$ 650.00	$ 18,850.00
9.02	3" Deciduous Trees	110	EA	$ 1,100.00	$ 121,000.00
9.03	2" Deciduous Trees	340	EA	$ 700.00	$ 238,000.00
9.04	6' Ornamental Trees	16	EA	$ 650.00	$ 10,400.00
9.05	5 Gallon Deciduous Shrubs	1,973	EA	$ 54.00	$ 106,542.00
9.06	5 Gallon Evergreen Shrubs	588	EA	$ 69.00	$ 40,572.00
9.07	5 Gallon Native Grasses	723	EA	$ 40.00	$ 28,920.00
9.08	1 Gallon Perennials	1,570	EA	$ 22.00	$ 34,540.00
9.09	1 Gallon Native Grasses	4,057	EA	$ 22.00	$ 89,254.00
9.10	Gabion Accent Walls	370	LF	$ 225.00	$ 83,250.00
9.11	Soil Prep/Fine Grade	130,568	SY	$ 1.15	$ 150,153.20
9.12	Redtail Ridge Native Seed Mix/Hydromulch	304,097	SY	$ 0.10	$ 30,409.65
9.13	Irrigation System	377,027	SF	$ 1.50	$ 565,540.50
9.14	Landscape Boulders	182	TON	$ 320.00	$ 58,320.00
9.15	Plant Bed Mulch	684	CY	$ 135.00	$ 92,340.00
9.16	Monumentation	1	LS	$ 110,000.00	$ 110,000.00
9.17	Plant Bed Mulch (4-inch depth)	184	CY	$ 700.00	$ 128,800.00
9.18	Spade Cut Edge	560	LF	$ 54.00	$ 30,240.00
				SUBTOTAL: ON-SITE ROW LANDSCAPING	**$ 1,937,131.35**

10.0 SOUTH 96TH STREET AND NORTHWEST PARKWAY STORM STORM SEWER					
Item No.	Description	Quantity	Unit	Unit Cost	Total
10.01	5' Type R Inlet	1	EA	$ 8,000.00	$ 8,000.00
10.02	10' Type R Inlet	6	EA	$ 10,000.00	$ 60,000.00
10.03	15' Type R Inlet	7	EA	$ 15,000.00	$ 105,000.00
10.04	4' Manholes	10	EA	$ 7,000.00	$ 70,000.00
10.05	18" FES	2	EA	$ 2,000.00	$ 4,000.00
10.06	ABS Barracuda WQ Device	2	EA	$ 10,000.00	$ 20,000.00
10.07	24" RCP	355	LF	$ 150.00	$ 53,259.59
10.08	18" RCP	1,981	LF	$ 125.00	$ 247,652.66
				SUBTOTAL: OFF-SITE STORM SEWER	**$ 567,912.25**

11.0 SOUTH 96TH STREET ROADWAY IMPROVEMENTS					
Item No.	Description	Quantity	Unit	Unit Cost	Total
11.01	Street Signs	15	EA	$ 250.00	$ 3,750.00
11.02	Pedestrian Ramps	2	EA	$ 5,000.00	$ 10,000.00
11.03	Drain Pans	4	EA	$ 2,700.00	$ 10,800.00
11.04	Misc. Roadway markings (direction arrows, bike lane, etc.)	38	EA	$ 375.00	$ 14,250.00
11.05	Striping	34,211	LF	$ 1.25	$ 42,764.14
11.06	Curb and Gutter - Vertical Catch	6,880	LF	$ 50.00	$ 344,000.00
11.07	Curb and Gutter - Vertical Spill	3,213	LF	$ 50.00	$ 160,650.00
11.08	Concrete Sidewalks and Trails	2,812	SF	$ 9.38	$ 26,376.56
11.09	Hot Mix Asphalt	31,986	SY	$ 40.00	$ 1,279,440.00
11.10	Handrail	107	LF	$ 110.00	$ 11,790.90
11.11	Dry Utility Sleeving - 2"	7,121	LF	$ 28.00	$ 199,388.00
11.12	Dry Utility Sleeving - 4"	776	LF	$ 36.00	$ 27,936.00
11.13	Dry Utility Sleeving - 8"	774	LF	$ 45.00	$ 34,830.00
11.14	Traffic Control	60	DAY	$ 5,000.00	$ 300,000.00
11.15	Over excavation and Recompaction for Roadway and Sidewalk	47,219	CY	$ 4.50	$ 212,487.00
11.16	S. 96th Street and Northwest Parkway Intersection Signal Improvements	1	LS	$ 2,800,000.00	$ 2,800,000.00
11.17	S. 96th Street and W. Dillon Road Intersection Signal Improvements	1	LS	$ 2,800,000.00	$ 2,800,000.00
				SUBTOTAL: SOUTH 96TH STREET IMPROVEMENTS	**$ 8,278,462.60**

12.0 SOUTH 96TH STREET AND NORTHWEST PARKWAY STORMWATER MANAGEMENT AND EROSION CONTROL					
Item No.	Description	Quantity	Unit	Unit Cost	Total
12.01	Vehicle Tracking Control	2	EA	$ 2,000.00	$ 4,000.00
12.02	Surface Roughening	47,418	SY	$ 2.00	$ 94,836.19
12.03	Sediment Control Log	233	LF	$ 4.00	$ 932.00
12.04	Silt Fence	15,845	LF	$ 4.00	$ 63,380.40
12.05	Construction Fence	1,142	LF	$ 4.00	$ 4,569.28
12.06	Culvert Protection	2	EA	$ 1,000.00	$ 2,000.00
12.07	Inlet Protection	14	EA	$ 400.00	$ 5,600.00
12.08	Rock Sock	103	EA	$ 35.00	$ 3,605.00
12.09	Outlet Protection	6	EA	$ 1,000.00	$ 6,000.00
12.10	Seeding and Mulching	10,986	SY	$ 0.15	$ 1,647.87
				SUBTOTAL: OFFSITE STORMWATER MANAGEMENT AND EROSION CONTROL	**$ 186,570.74**

HARRIS KOCHER SMITH
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ENGINEER'S OPINION OF PROBABLE COSTS
8/13/2024

REDTAIL RIDGE FILING 1 - SUMMARY OF OPINION OF PROBABLE COSTS		
1.00 ON-SITE EARTHWORK	$	4,857,174.00
2.00 GRAVITY SANITARY SEWER	$	1,199,550.00
3.00 SANITARY SEWER FORCE MAIN AND LIFT STATION	$	10,736,918.40
4.00 POTABLE WATER MAIN	$	3,580,146.80
5.00 ON-SITE STORM SEWER AND DRAINAGE WAY	$	8,667,626.75
6.00 ON-SITE STORM WATER MANAGEMENT AND EROSION CONTROL	$	715,412.06
7.00 ON-SITE ROADWAYS	$	16,404,025.21
8.00 VARRA DITCH IMPROVEMENTS	$	853,372.50
9.00 ON-SITE ROW LANDSCAPING	$	1,937,131.35
10.0 SOUTH 96TH STREET AND NORTHWEST PARKWAY STORM STORM SEWER	$	567,912.25
11.0 SOUTH 96TH STREET ROADWAY IMPROVEMENTS	$	8,278,462.60
12.0 SOUTH 96TH STREET AND NORTHWEST PARKWAY STORMWATER MANAGEMEN	$	186,570.74
TOTAL OPINION OF PROBABLE COSTS	**$**	**57,984,302.66**

Notes:

1. This opinion of probable costs has been prepared using the best available data known to the engineer at the time the opinion of probable cost was prepared and is provided for informational purposes only. It is not a guarantee of project costs.
2. Landscape quantities and unit costs were provided by the landscape architects
3. Existing topsoil is assumed to be 4" thick over the entire site. All areas disturbed are assumed to be stripped of topsoil. All topsoil stockpiled is assumed to be redi stributed across the site.
4. Construction requiring traffic control is assumed to take 60 days.
5. Cost Sharing Breakdowns included in separate exhibit

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REDTAIL RIDGE - CASH IN LIEU
ENGINEER'S OPINION OF PROBABLE COSTS
8/13/2024

1.00 88TH SANITARY SEWER CONNECTION FOR FUTURE PARK					
Item No.	Description	Quantity	Unit	Unit Cost	Total
1.01	4' Manholes	5	EA	$ 7,000.00	$ 35,000.00
1.02	8" PVC Pipe	1,160	LF	$ 115.00	$ 133,400.00
				SUBTOTAL:	**$ 168,400.00**
				REDTAIL RIDGE CONTRIBUTION	**$ 111,144.00**

2.00 96TH EXTENTION NORTH OF DILLION ROAD					
Item No.	Description	Quantity	Unit	Unit Cost	Total
2.01	Erosion Control	1	LS	$ 110,000.00	$ 110,000.00
2.02	Asphalt Demo	2,933	SY	$ 6.00	$ 17,598.00
2.03	Traffic Ddelineator Demo	11	EA	$ 800.00	$ 8,800.00
2.04	Sign Reset	12	EA	$ 350.00	$ 4,200.00
2.05	Post Demo	5	EA	$ 350.00	$ 1,750.00
2.06	18" RCP	1,000	LF	$ 125.00	$ 125,000.00
2.07	4' Manholes	3	EA	$ 7,000.00	$ 21,000.00
2.08	Inlet Structures	3	EA	$ 10,000.00	$ 30,000.00
2.09	Roadway Excavation	21,511	CY	$ 18.00	$ 387,198.00
2.10	Roadway Export	6,812	CY	$ 34.00	$ 231,608.00
2.11	Roadway Subgrade Prep	12,907	SY	$ 3.50	$ 45,174.50
2.11	Geofabric	12,907	SY	$ 6.00	$ 77,442.00
2.12	Roadway Base (Assume 10")	6,633	TON	$ 32.00	$ 212,256.00
2.13	Curb and Gutter	5,280	LF	$ 27.00	$ 142,560.00
2.14	Access Ramps	14	EA	$ 2,750.00	$ 38,500.00
2.15	Structures / walls	75	CY	$ 3,000.00	$ 225,000.00
2.16	Asphalt Paving (Assume 9")	12,907	SY	$ 50.00	$ 645,350.00
2.17	Adjust MH/Valves	35	EA	$ 700.00	$ 24,500.00
2.18	Striping	26,300	LF	$ 2.75	$ 72,325.00
2.19	Signage	75	EA	$ 450.00	$ 33,750.00
2.20	Traffic Control/Phasing	1	LS	$ 450,000.00	$ 450,000.00
2.21	Seeding/Mulch	2	AC	$ 6,000.00	$ 11,400.00
2.22	Landscaping	1	LS	$ 50,000.00	$ 50,000.00
2.23	General Conditions	1	LS	$ 825,000.00	$ 825,000.00
				SUBTOTAL:	**$ 3,790,411.50**
				REDTAIL RIDGE CONTRIBUTION	**$ 530,657.61**

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REDTAIL RIDGE - CASH IN LIEU
ENGINEER'S OPINION OF PROBABLE COSTS
8/13/2024

REDTAIL RIDGE FILING 1 - SUMMARY OF OPINION OF PROBABLE COSTS		
1.00 88TH SANITARY SEWER CONNECTION FOR FUTURE PARK	$	111,144.00
2.00 96TH EXTENTION NORTH OF DILLION ROAD	$	530,657.61
TOTAL OPINION OF PROBABLE COSTS	**$**	**641,801.61**

Notes:

1. This opinion of probable costs has been prepared using the best available data known to the engineer at the time the opinion of probable cost was prepared and is provided for informational purposes only. It is not a guarantee of project costs.
2. Landscape quantities and unit costs were provided by the landscape architects
4. Construction requiring traffic control is assumed to take 60 days.
5. Cost Sharing Breakdowns included in separate exhibit

EXHIBIT B

DRAW REQUEST FORM

For

SUBDIVISION IMPROVEMENT GUARANTEE ESCROW AGREEMENT

(Form of Draw Request)

Draw Request No. ____

The undersigned District President (capitalized terms used herein shall have the meanings ascribed thereto by the above Indenture) hereby makes a requisition from the Escrow Fund held by "_____" as Escrow Agent under the Indenture, and in support thereof states:

1. The amount to be paid or reimbursed pursuant hereto is $_____, which is a total of the DE Cost Certification No. ___ and the AE Cost Certification No. ___.

2. The name and address of the person, firm, or corporation to whom payment is due is as follows:

_____

3. The amount to be paid or reimbursed pursuant hereto shall be transmitted by the Escrow Agent to the District (wire transfer or other transmission instructions for transition of funds to the District) for payment by the District of the persons, firms or corporations listed in Paragraph 2 above as follows:

_____

4. The above payment obligations have been or will be properly incurred, is or will be a proper charge against the Escrow Fund and will be used solely for the payment of Improvement Costs as determined to be eligible for payment in DE Cost Certification No. ___ and AE Cost Certification No. __.

5. The amounts to be paid or reimbursed pursuant to this Draw Request have not been the subject of any previous Draw Request.

6. To the best knowledge of the undersigned, no Event of Default has occurred and is continuing under the Subdivision Improvement and Guarantee Escrow Agreement.

7. With respect to the disbursement of funds by the Escrow Agent from the Escrow Fund pursuant to this Draw Request, on behalf of the District, the undersigned District Representative or District President hereby: (a) certifies that the District has reviewed the wire instructions set forth in this Draw Request, and confirms that, to the best of the District's knowledge, such wire instructions are accurate; (b) agrees that, to the extent permitted by law, the

District will indemnify and hold harmless the Escrow Agent from and against any and all claims, demands, losses, liabilities, and expenses sustained, including, without limitation, attorney fees, arising directly or indirectly from the Escrow Agent's disbursement of funds from the Escrow Fund in accordance with this Draw Request and the wiring instructions provided herein; and (iii) agrees that the District will not seek recourse from the Escrow Agent as a result of losses incurred by the District arising from the Escrow Agent's disbursement of funds in accordance with this Draw Request.

IN WITNESS WHEREOF, I have hereunto set my hand this ____ day of _____, 20__.

_____
District President as to Paragraphs 1-7

_____

District Accountant as to Paragraphs 1 through 5

EXHIBIT C

CUSTOMARY ESCROW AGENT PROVISIONS

EXHIBIT F
PUBLIC LAND DEDICATIONS

Exhibit F

Public Lands and ROW Dedication

Public Use Dedication Chart

TRACT	AREA (ACRES)	OWNERSHIP	GENERAL USE
B	16.55	COL	Recreation, park, trail, drainage
C	17.07	COL	Recreation, open space, trail, drainage
D	16.50	COL	Recreation, open space, trail, stormwater management
E	3.64	COL	Recreation, open space, trail
F	1.85	COL	Recreation, open space, trail
H	0.70	COL	Public Safety
I	35.84	COL	Recreation, open space, park, trail, drainage
K	0.90	COL	Sanitary sewer lift station, trail
Dedicated Land 1	28.86	BC	Recreation, open space, trail
Dedicated Land 2	18.00	BC	Recreation, open space, trail
	139.91		

BC: Boulder County

COL: City of Louisville

COLFPD: City of Louisville Fire Protection District

Note: All offsite open spaces to be deeded with conservation easements dedicated to COL

- Pump Station
- Park
- Fire Protection District
- Dedicated Land
- Dedicated Open Space
- Private Common Open Space
- Dedicated Right-of-Way

EXHIBIT G
BROOMFIELD CONSERATION EASEMENT AREA

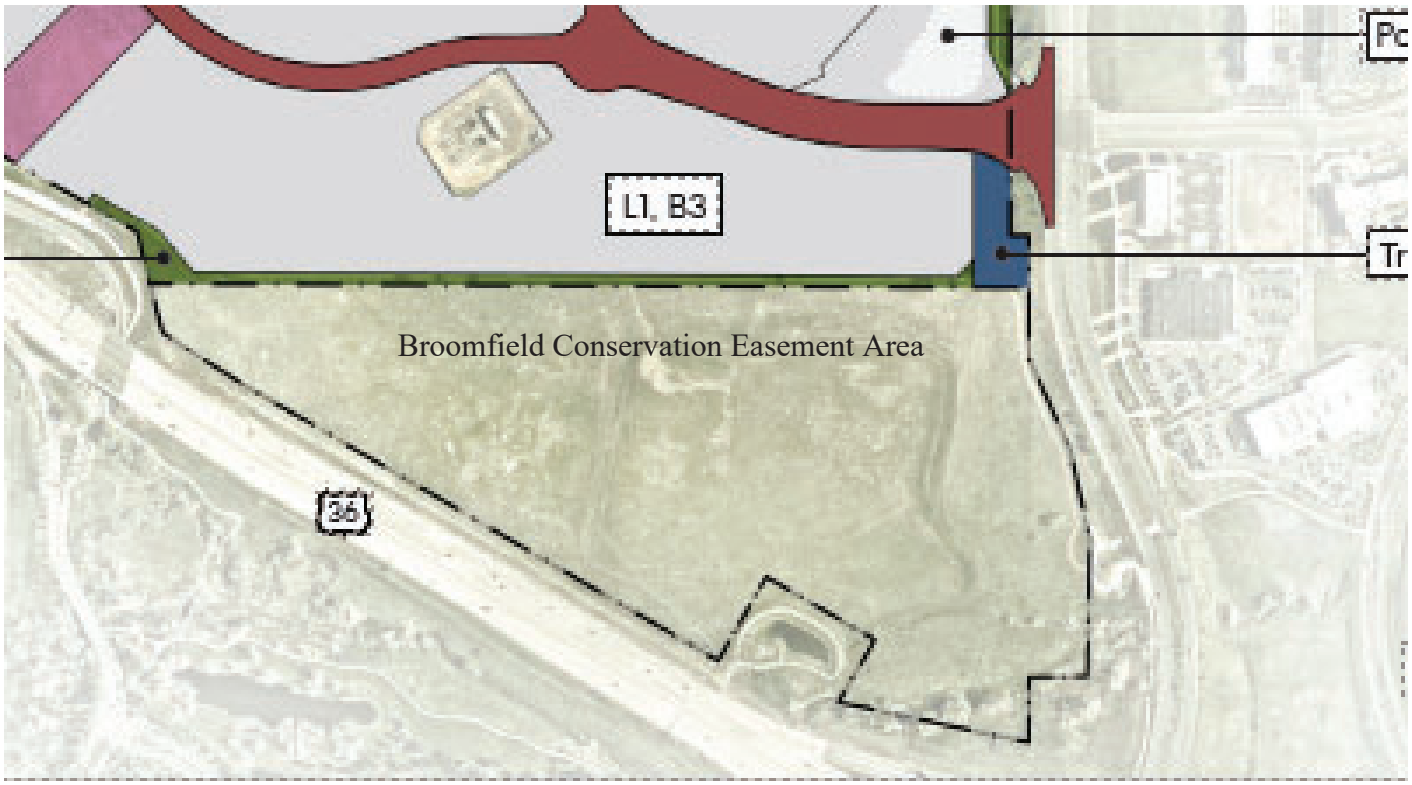


EXHIBIT H
SUSTAINABILITY COMMITMENTS

	#	CURRENT COMMITMENT	VALIDATION	DETAILED REQUIREMENTS
Community	1	2.6: Wayfinding	Fitwel	Include wayfinding within the project boundary that: 1. provides directions to a minimum of three qualifying amenities located within the project boundary. 2. provides directions to a minimum of two qualifying amenities located within a 1/2 mile walking distance from a site entrance. 3. outlines walking distances to identified qualifying amenities. 4. is located within 100 feet or 30 meters of all the following: a main entrance of each building, all site entrances, all on-site outdoor areas.
	2	10.4: Crop Share Drop-Off	Fitwel	Provide access to a minimum of one drop-off point designated for qualifying crop share or other fresh food delivery programs that is: 1. publicized to all regular occupants. 2. free to all regular occupants. 3. open during workplace work hours. 4. located within a 1/2-mile or an 800-meter walking route from all regularly occupied buildings. Qualifying crop share or other fresh food delivery programs: 1. provide access to fresh fruits and vegetables. 2. are scheduled to operate: – during workplace work hours. – a minimum of one day a week during workplace work days. – a minimum of five months of the year, or for the maximum growing season of the region.
	3	5.5: Building Operational Guidelines	Fitwel	Establish building operational guidelines that: 1. recommend the implementation of the following: – a tobacco- and smoke-free policy for all indoor areas. – an Indoor Air Quality (IAQ) policy that is as rigorous as the Fitwel Indoor Air Quality Standard (found at www.fitwel.org/fitwel-standards). – conducting IAQ testing at least once a year. – ventilating areas with chemicals use and storage separately for all indoor building areas. – an Integrated Pest Management (IPM) policy for all indoor building areas that is as rigorous as the Fitwel Integrated Pest Management Standard (found at www.fitwel.org/fitwel-standards). – a Green Purchasing policy for all indoor building areas that is as rigorous as the Fitwel building Green Purchasing policy, found under the Fitwel Building Policies tab. 2. are shared with occupants through one of the following: – tenant leases (for multi-tenant projects only) – tenant manual (for multi-tenant projects only) – digital communication, such as a website or digital application.
	4	SSpc: Comprehensive Composting	LEED	Provide composting infrastructure to meet the needs of the entire project. Select one of the following: Option 1. Regular compost collection and offsite processing Provide organic waste receptacles and regular organic waste collection. Option 2. Onsite compost processing Provide organic waste collection receptacles and onsite compost unit(s) for onsite storage and processing.
	5	12.1: Emergency Preparedness Plan	Fitwel	Adopt a jurisdiction or district-wide emergency response plan or implement a comprehensive on-site emergency preparedness plan that: – identifies a minimum of one potential emergency scenario for the site context/geography (eg, biological events, storms, extreme weather events, fire, flooding, utility disruption). – outlines protective actions for each of the potential emergency scenario(s) identified (eg, evacuation, sheltering, shelter-in-place, lockdown, backup generators). – recommends emergency supplies that will be kept within the project boundary for each of the potential emergency scenarios identified. – outlines a framework for site-wide communication of proper precautions, available resources, and emergency notification. – outlines recurring trainings, drills, or emergency exercises. – establishes an emergency response team(s). – is publicized to all regular occupants.
	6	7.1: Public Art	Fitwel	One Include a minimum of one permanent public artwork that: 1. is located in a minimum of one of the following spaces: – park or plazas – transit stops – outside a main building entrance – site entrance – on a building exterior visible to regular occupants. 2. is viewable by all regular occupants. 3. is executed by a local or regional artist. of public art by local artist
	7	LEED Certification for all buildings	LEED	Hold 10ksf - some small / accessory buildings may be developed

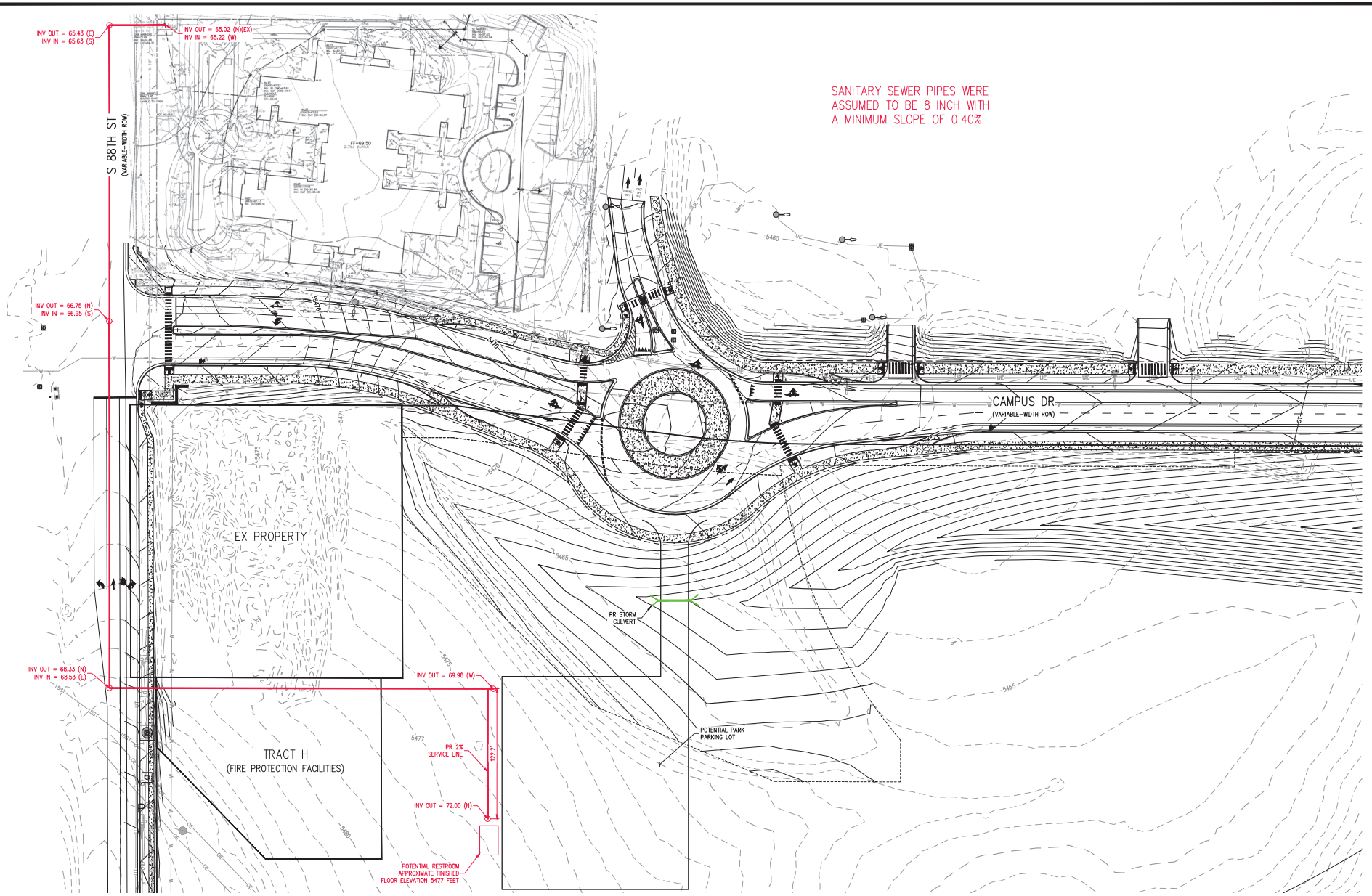
Energy & Carbon	8	6.5: Idle Reduction	Fitwel	Establish and implement an idle reduction policy that: 1. includes a maximum allowable idle time of 3 minutes, excluding: – legally authorized emergency motor vehicles – necessary operation (e.g., bus idling to deliver passengers; maintenance vehicles who rely on primary engine power). 2. applies to all vehicles entering the project boundary, both personal and commercial. 3. incorporates idle reduction signage in all designated loading areas within the project boundary. 4. establishes a protocol for reporting offenses. 5. is shared with all tenants through one of the following (for multi-tenant projects only): – tenant leases – tenant manuals.
	9	EA: Optimize Energy Performance	LEED	IECC 2021 is exceeded by Louisville Municipal Code Establish an energy performance target no later than the schematic design phase. The target must be established as kBtu per square foot-year (kWh per square meter-year) of source energy use. Choose one of the options below: Option 1. Whole-building energy simulation Option 2. Prescriptive compliance: ASHRAE Advanced Energy Design Guide
	10	EA: Renewable Energy Production	LEED	Use the building's annual energy cost, calculated in EA Prerequisite Minimum Energy Performance, if Option 1 was pursued; otherwise use the U.S. Department of Energy's Commercial Buildings Energy Consumption Survey (CBECS) database to estimate energy use and cost. The use of solar gardens or community renewable energy systems is allowed if both of the following requirements are met. The project owns the system or has signed a lease agreement for a period of at least 10 years. The system is located with the same utility service area as the facility claiming the use. Credit is based on the percentage of ownership or percentage of use assigned in the lease agreement.
	11	6.2: Heat Island Mitigation	Fitwel	Implement qualifying heat island mitigation practices on a minimum of 51% all structures, open spaces, and paved infrastructure. Qualifying heat island mitigation practices include: – non-paved natural surfaces on pathways walkways, such as wood, dirt, grass, etc. – green roofs – green walls – high albedo surfaces on roofs and paved pathways, roadways, and parking areas, including white roofs and light-colored concrete – reflective shading devices over paved areas such as parking areas, sidewalks, or pedestrian plazas – vegetation coverage on roofs and paved pathways, roadways, and parking areas – preservation or creation of green open space, such as parks – heat-resistant construction materials
	12	EA: Advanced Energy Metering	LEED	Install meters for future tenant spaces so that tenants will be capable of independently metering energy consumption (electricity, chilled water, etc.) for all systems dedicated to their space. Provide a sufficient number of meters to capture total tenant energy use with a minimum of one meter per energy source per floor. Install advanced energy metering for all base building energy sources used by the building.The advanced energy metering must have the following characteristics. Meters must be permanently installed, record at intervals of one hour or less, and transmit data to a remote location. Electricity meters must record both consumption and demand. Whole-building electricity meters should record the power factor, if appropriate. The data collection system must use a local area network, building automation system, wireless network, or comparable communication infrastructure. The system must be capable of storing all meter data for at least 36 months. The data must be remotely accessible. All meters in the system must be capable of reporting hourly, daily, monthly, and annual energy use.
	13	SSc: Open Space	LEED	Provide outdoor space greater than or equal to 30% of the total site area (including building footprint). A minimum of 25% of that outdoor space must be vegetated (turf grass does not count as vegetation) or have overhead vegetated canopy. The outdoor space must be physically accessible and be one or more of the following: a pedestrian-oriented paving or turf area with physical site elements that accommodate outdoor social activities; a recreation-oriented paving or turf area with physical site elements that encourage physical activity; a garden space with a diversity of vegetation types and species that provide opportunities for year-round visual interest; a garden space dedicated to community gardens or urban food production; preserved or created habitat that meets the criteria of SS Credit Site Development—Protect or Restore Habitat and also includes elements of human interaction.
	14	3.4: Walking Trail	Fitwel	Include a qualifying outdoor walking trail that is free of charge, is min. of 1/4-mile long, shielded from other functions and located within a 1/2-mile walking route from all regularly occupied buildings.

Site Development & Water	15	6.3: Light Pollution Mitigation	Fitwel	Include a minimum of two of the following light pollution mitigation practices: 1. include light shields on all outdoor light fixtures. 2. install lighting motion sensors on pathway and walkway lighting. 3. require tenants to implement strategies to reduce light pollution from interior spaces. 4. schedule outdoor cleaning during daylight hours.
	16	3.6: Restorative Garden	Fitwel	Include a qualifying outdoor restorative garden that is: 1. free of charge to all regular occupants 2. located within 1/2 mile walking distance of all regularly occupied buildings 3. includes natural, restorative elements (eg, vegetation, water features, or water bodies), 4. includes a minimum of one of the following amenities: *(seating, water feature, shelter from the elements, walking path)* 4. shielded from congested area 5. positioned away from major noise sources.
	17	WEp: Indoor Water Use Reduction	LEED	1. Reduce aggregate water consumption by 20% from the baseline 2. Eligible fixtures to be WaterSense labeled
	18	WEc: Outdoor Water Use Reduction	LEED	Reduce outdoor water use through one of the following options. Nonvegetated surfaces, such as permeable or impermeable pavement, should be excluded from landscape area calculations. Athletic fields and playgrounds (if vegetated) and food gardens may be included or excluded at the project team's discretion. Option 1. No irrigation required Show that the landscape does not require a permanent irrigation system beyond a maximum two-year establishment period. OR Option 2. Reduced irrigation Reduce the project's landscape water requirement (LWR) by at least 50% from the calculated baseline for the site's peak watering month. Reductions must first be achieved through plant species selection and irrigation system efficiency as calculated in the Environmental Protection Agency (EPA) WaterSense Water Budget Tool. Additional reductions beyond 30% may be achieved using any combination of efficiency, alternative water sources, and smart scheduling technologies.
& Mobility	19	1.3: Pedestrian Network	Fitwel	Provide a comprehensive pedestrian network on-site that includes: 1. pedestrian crossings at all street intersections. 2. sidewalks or designated pedestrian pathways between main entrances of all buildings, outdoor amenities, main building entrances and outdoor amenities.
	20	LTc: Green Vehicles	LEED	Designate 5% of all parking spaces used by the project as preferred parking for green vehicles. Clearly identify and enforce for sole use by green vehicles. Distribute preferred parking spaces proportionally among various parking sections (e.g. between short-term and long-term spaces). Green vehicles must achieve a minimum green score of 45 on the American Council for an Energy Efficient Economy (ACEEE) annual vehicle rating guide. A discounted parking rate of at least 20% for green vehicles is an acceptable substitute for preferred parking spaces. The discounted rate must be publicly posted at the entrance of the parking area and permanently available to every qualifying vehicle. In addition to preferred parking for green vehicles, meet one of the following two options for alternative-fuel fueling stations: Option 1. Electric vehicle charging Install electrical vehicle supply equipment (EVSE) in 2% of all parking spaces used by the project. Clearly identify and reserve these spaces for the sole use by plug-in electric vehicles. Parking spaces that include EVSE must be provided separate from and in addition to preferred parking spaces for green vehicles. The EVSE must: Provide a Level 2 charging capacity (208 – 240 volts) or greater. Comply with the relevant regional or local standard for electrical connectors, such as SAE Surface Vehicle Recommended Practice J1772, SAE Electric Vehicle Conductive Charge Coupler or IEC 62196 of the International Electrotechnical Commission for projects outside the U.S. Be networked or internet addressable and be capable of participating in a demand-response program or time-of-use pricing to encourage off-peak charging. OR Option 2. Liquid, gas, or battery facilities Install liquid or gas alternative fuel fueling facilities or a battery switching station capable of refueling a number of vehicles per day equal to at least 2% of all parking spaces.
	21	11.1: Safe Street Infrastructure	Fitwel	Include safe street infrastructure elements from a minimum of two of the qualifying categories that: 1. are located on a minimum of 51% of street intersections within the project. 2. are located on a minimum of 51% of mid-block crossings within the project. Qualifying safe street infrastructure categories are: – traffic controls (pedestrian, bicycle and motor vehicle signs, road markers, and signaling devices placed alongside roads, highways, and other public areas) – road design calming elements (narrowing streets and traffic lanes, widening sidewalks, incorporating traffic circles and roundabouts, adding diagonal parking spots alongside traffic lanes, and changing one way streets to two way streets) – pedestrian visibility (raised crosswalks, signalized crosswalks, curb extensions, pedestrian medians)

Transportation	22	1.1: Transit Access	Fitwel	Metro District will provide a free, dedicated shuttle service that is connected to a transit stop (Flatiron RTD) - also proposing Ecopass. Connect the project to public transit by identifying a minimum of one transit stop that meets one of the following: – is located within a 1/2 mile or 800 meters walking distance of at least one entrance to the project. – is located within the project boundary. – is connected to a dedicated shuttle service that is free to all regular occupants.
	23	2.5: Bicycle Parking	Fitwel	Include a minimum of one shared bicycle station or dockless bicycle hub within the project boundary that is accessible free of charge to all regular occupants. Include bicycle parking that: 1. is located within the project boundary. 2. is free of charge to all regular occupants. 3. is covered from the elements. 4. is secured from theft. 5. is located in a minimum of one of the following locations: – near shared bicycle stations or hubs – in a common open space – at pedestrian routes and pathways – in parking areas. 6. is provided for a minimum of 2.5% of regular occupants.
	24	2.1: Universal Accessibility	Fitwel	Provide qualifying universally accessible entrances and pathways at all of the following areas within the project: – all sidewalks – route to a transit stop if located on-site or within a 1/2 mile or 800 meters walking distance from a site entrance – all main entrances to buildings – outdoor amenities and open space(s) – street crossings. Qualifying universally accessible entrances and pathways meet the following: – are free of obstacles that may impede or cause difficulties for those with physical disabilities, such as impeding trees, planting pots, bike racks, steps, or other barriers. – include adjoining ramps and sloped access in the event of stairs or steps to all main entrances of buildings. – include curb cuts and warning strips at street crossings
	25	3.5: Outdoor Fitness Area	FItwel	Include a qualifying outdoor fitness area that: 1. is free of charge to all regular occupants. 2. is accessible a minimum of 12 hours a day. 3. is a space specifically designed for sport and exercise that includes a minimum of one of the following: – sports fields or courts, such as basketball courts, baseball fields, football fields, or soccer fields – outdoor fitness equipment such as outdoor stationary bicycles, air walkers or sit-up boards – secured mobile fitness equipment such as free-weights, yoga mats, other exercise equipment. 4. is located within a 1/2-mile or 800-meter walking route from all regularly occupied buildings. Regularly occupied buildings are buildings where occupants work, including: – commercial buildings – industrial buildings – retail buildings
	26	2.3: Bike Lanes	FItwel	Include bicycle lanes or pathways that: 1. are separated from traffic and marked as designated bicycle lanes through color coding or material selection. 2. are a minimum of 1 mile or 1600 meters long in one direction. 3. if provided on-site, meet a minimum of two of the following: – connect to an off-site network of bicycle lanes or pathways – connect the main project entrances to a minimum of one other function on-site (common areas, outdoor areas, building entrances or designated bicycle parking) – traverse the project. 4. if provided off-site, are directly connected to the project.

Health	27	EQp: Minimum IAQ Performance	LEED	Meet the requirements for both ventilation and monitoring. **Ventilation** **Mechanically ventilated spaces** : ASHRAE Standard 62.1–2010 **Naturally ventilated spaces** : For naturally ventilated spaces (and for mixed-mode systems when the mechanical ventilation is inactivated), determine the minimum outdoor air opening and space configuration requirements using the natural ventilation procedure from ASHRAE Standard 62.1–2010 or a local equivalent, whichever is more stringent. Confirm that natural ventilation is an effective strategy for the project by following the flow diagram in the Chartered Institution of Building Services Engineers (CIBSE) Applications Manual AM10, March 2005, Natural Ventilation in Nondomestic Buildings, Figure 2.8, and meet the requirements of ASHRAE Standard 62.1–2010, Section 4, or a local equivalent, whichever is more stringent. **Monitoring** **Mechanically ventilated spaces** : For variable air volume systems, provide a direct outdoor airflow measurement device capable of measuring the minimum outdoor air intake flow. This device must measure the minimum outdoor air intake flow with an accuracy of +/–10% of the design minimum outdoor airflow rate, as defined by the ventilation requirements above. An alarm must indicate when the outdoor airflow value varies by 15% or more from the outdoor airflow setpoint. For constant-volume systems, balance outdoor airflow to the design minimum outdoor airflow rate defined by ASHRAE Standard 62.1–2010 (with errata), or higher. Install a current transducer on the supply fan, an airflow switch, or similar monitoring device. **Naturally ventilated spaces** For naturally ventilated spaces (and for mixed-mode systems when the mechanical ventilation is inactivated), comply with at least one of the following strategies. Provide a direct exhaust airflow measurement device capable of measuring the exhaust airflow. This device must measure the exhaust airflow with an accuracy of +/–10% of the design minimum exhaust airflow rate. An alarm must indicate when airflow values vary by 15% or more from the
	28	3.1: Outdoor Space Amenities	Fitwel	Include a minimum of one outdoor space amenity within the project boundary that: 1. is free of charge to all regular occupants. 2. includes one of the following elements: – tables and chairs – pedestrian pathways – water features – open lawn areas. 3. is located within a 1/2 mile or 800 meter walking distance of all regularly occupied buildings.
	29	6.7: Air Quality Testing	Fitwel	Conduct outdoor air quality testing that: 1. tests the air quality in the following outdoor areas: – near building mechanical and exhaust areas. – parking areas. – outdoor common areas. 2. tests for the following: – ozone – carbon monoxide – VOCs. 3. tests the air twice a year.
	30	3.8: Tobacco and Smoke-Free Outdoor Spaces	Fitwel	Entryway system, CO2 monitoring options Establish and implement a tobacco- and smoke-free policy that: 1. is applied to all outdoor areas. 2. prohibits the use of all forms of smoking, tobacco use, and unregulated nicotine products 3. prohibits the inclusion of designated smoking areas within the project boundary. 4. is shared with all tenants through tenant leases or manuals

EXHIBIT I
PARK SANITARY SEWER CONNECTION AGREEMENT



REDTAIL RIDGE - PARK SANITARY SEWER CONNECTION EXHIBIT

HARRIS KOCHER SMITH
1120 Lincoln Street, Suite 1000
Denver, Colorado 80203
P: 303.623.6300 F: 303.623.6311
HarrisKocherSmith.com

SCALE: 1" = 40'

AGREEMENT REGARDING WATER RIGHTS DEDICATION AND WASTEWATER TREATMENT SYSTEM UPGRADES

THIS COST-SHARING AGREEMENT ("Agreement") is made as of this ____ day of , 2024 [NTD: update to Council approval date] (the "Effective Date"), by and between the **CITY OF LOUISVILLE**, a Colorado home rule municipal corporation, acting by and through the City of Louisville Water and Wastewater Activity Enterprise (the "City"), and **REDTAIL RIDGE PORTFOLIO, LLC**, a Delaware limited liability company (the "Developer"). The City and the Developer may be referred to herein individually as a "Party" or collectively as the "Parties."

RECITALS

A. WHEREAS, the City is the owner and operator of sewer and water utilities ("the City's Utilities"), including the City of Louisville Wastewater Treatment Plant ("WWTP").

B. WHEREAS, the City intends to construct certain upgrades to the WWTP consisting of, but not necessarily limited to the following (the upgrades described in this Recital B and its subparagraphs are collectively referred to herein as the "City Upgrades"):

i. Construction of a new Waste Activated Sludge (WAS) storage facility with one (1) storage tank, an electrical/blower room, a pump/pipe gallery, and an associated site piping to convey stored WAS to the Rotary Drum Thickeners (RDT) or aerobic digesters, and installation of miscellaneous internal process and air piping;

ii. Improvements to the Thickening Building, including the replacement of the existing sump pumps, and installation of miscellaneous related piping and chemical feed systems;

iii. Improvements to the Dewatering Building, including the installation of a new centrifuge and support frame, a new horizontal truck loading conveyor, the expansion of the truck loading building, and the replacement of the main electrical service panel, as well as the installation of miscellaneous related piping and chemical feed systems; and the installation of electrical wiring, motor control centers, programmable logic controllers, instrumentation, HVAC, process piping and valves, and completion of all associated site work related to these City Upgrades.

C. WHEREAS, the City has entered into a construction contract (the "Construction Contract") with Aslan Construction, Inc. ("Aslan") to construct the City Upgrades as a Construction Manager at Risk (the "CMAR").

D. WHEREAS, the City has engaged JVA, Inc. ("JVA") to serve as the engineer-of-record for preconstruction services in connection with the City Upgrades, and may contract with JVA or another consultant to serve as the City's representative during construction of the City Upgrades.

E. WHEREAS, Developer is the owner of a 390.013-acre parcel located in southeastern Louisville known as the ConocoPhillips Campus (the "Property"), which property is subject to ConocoPhillips Campus General Development Plan (the "GDP"), approved by Ordinance No. 1569, Series 2010, and that certain Planned Community Zone District Zoning Agreement for the GDP, by and between the City and Developer's predecessor, ConocoPhillips Company, dated April 20, 2010 ("PCZD Agreement").

F. WHEREAS, the Developer has requested approval of a subdivision application relative to the proposed "Redtail Ridge" Development regarding the Property (the "Development").

G. WHEREAS, it has been determined that additional public sewer infrastructure will be required at the WWTP site in order for the City to provide sanitary sewer service to the Property for the Development, which may include, but may not be limited to the following:

i. a new lift station;

ii. waste activated sludge (WAS) storage and pumping;

iii. increased capacity of the rotary drum thickener and dewatering equipment;

iv. an aeration basin and secondary clarifier;

v. a digester;

vi. site civil engineering, including grading, paving, storm water control, utility design, piping, and irrigation system modifications;

vii. electrical and control system infrastructure;

viii. landscape architecture; and

ix. onsite stormwater system modifications.

These additional sewer improvements are collectively referred to below as the "Redtail Upgrades."

H. WHEREAS, this Agreement is intended to allow the City to construct the Redtail Upgrades, at the Developer's sole cost and expense, so that the Developer can develop the Property in accordance with its pending subdivision application.

I. WHEREAS, Redtail Ridge Development, LLC, an affiliate of Developer, has previously engaged Dewberry Engineering, Inc. ("Dewberry"), pursuant to a written agreement (the "Dewberry Agreement") to act as the engineer-of-record ("EOR") for the design of the Redtail Upgrades and to provide contract administration services during the construction phase of the Redtail Upgrades.

J. WHEREAS, on February 18, 2020, by Resolution No. 14, Series 2020, the City Council conditionally approved service plans (the "Service Plans") for the Redtail Ridge Metropolitan District Nos. 1-4 (the "Districts").

K. WHEREAS, District No. 3 has since changed its name to "Redtail Ridge Metropolitan District" (hereinafter the "RRMD") pursuant to the Order Granting Petition for Name Change granted by the District Court and recorded with the Clerk and Recorder of Boulder County on September 13, 2022 at Reception No. 02980811.

L. WHEREAS, on February 20, 2024, by Resolution No. 80, Series 2023, the City Council conditionally approved the preliminary plats for the Development.

M. WHEREAS, relative to its pending subdivision application, the Developer intends to seek the City's approval of an amended and restated service plan for RRMD (the "Amended and Restated Service Plan"), which, if approved by the City, would authorize RRMD to finance, design, construct and/or maintain certain improvements, including the Redtail Upgrades.

N. WHEREAS, in view of the foregoing Recitals, the Parties desire to set forth their mutual understandings regarding (a) the obligations of the Developer to pay for all costs and expenses related to the Redtail Upgrades; (b) the obligation of the City to construct the Redtail Upgrades, contemporaneously with the City Upgrades (or, if not contemporaneous, then in a linear but still reasonably expeditious manner), if the Developer's subdivision application is approved.

O. WHEREAS, Developer is the owner of one and three-fortieths (1.075) shares of capital stock in the South Boulder and Coal Creek Irrigation Ditch, one and three-fortieths (1.075) shares of capital stock in the South Boulder and Coal Creek Frist Extension Irrigation Ditch, and thirty (30) shares of capital stock in the Goodhue Ditch and Reservoir Company ("Developer's Water Rights").

P. WHEREAS, Pursuant to Chapter 13.12 of the City of Louisville Municipal Code (the "Code"), under certain circumstances, the City may accept a dedication of water rights in lieu of a property owner's payment of water tap fees required for the issuance of a water tap permit.

WHEREAS, Pursuant to Section 13.12.040(E) of the Code, the City will consider accepting the dedication of Developer's Water Rights in lieu of Developer's payment of all or a portion of the water tap fees required for the Development.

NOW, THEREFORE, for and in consideration of the recitals, promises and covenants contained herein, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Developer and the City agree as follows:

AGREEMENT

I. Contracting for the Redtail Upgrades.

A. Upon the Parties' mutual execution of this Agreement following the City's approval of the Developer's subdivision application and the Amended and Restated Service Plan, which approvals are in no way guaranteed, the City shall negotiate with Aslan such amendments or change orders, or both, to the Construction Contract to include construction of the Redtail Upgrades.

B. The City agrees to allow the Developer an opportunity to review and offer revision to drafts of the proposed contract amendments, change orders, and addenda to the Construction Contract so that the Construction Contract also provides for the construction of the Redtail Upgrades and, as to the Redtail Upgrades, the right to approve the final, amended version of the Construction Contract as it relates to the Redtail Upgrades and any change orders the cost of which exceed the City Contingency (defined below), which approvals shall not be unreasonably withheld. The City agrees that the Construction Contract, as amended, shall contain the following provisions: (1) specification of Dewberry as the EOR for the Redtail Upgrades; (2) addition of the Developer and RRMD as intended third-party beneficiaries under the Construction Contract so that the Developer and RRMD will each have the right to enforce the Construction Contract, provided that such rights may only be exercised after Substantial Completion (as hereinafter defined) of the City Upgrades and such rights shall be specifically limited to: (i) recovering, divesting, or "clawing-back" any payments by the City to Aslan for the Redtail Upgrades not made in accordance with the Construction Contract, (ii) recovering damages suffered by the Developer for delays for which Aslan is responsible under the Construction Contract, and (iii) pursuing claims against Aslan and/or its surety under the performance and/or payment bonds to be provided by Aslan to the City in connection with the Redtail Upgrades, and provided further the City shall not be required to participate in Developer's pursuit of any remedies against Aslan; and (3) performance and payment bonds for the Redtail Upgrades.

II. Design Approval; Early Procurement of Long-Lead-Time Items.

A. Developer shall prepare final design plans respecting the Redtail Upgrades in conformance with the standards and criteria established in Colorado Department of Public Health & Environment ("CDPHE") Permit No. CO0023078 (the "Permit") and all other applicable CDPHE and City requirements ("Final Design"). Developer shall obtain City approval of the Final Design of the Redtail Upgrades prior to the commencement of construction of the Redtail Upgrades. In addition, the Developer and the City will cooperate and each use commercially reasonable efforts to obtain CDPHE's timely approval of the same.

B. Developer shall also be responsible, at its cost, for revising the Final Design as necessary to achieve City and CDPHE approval. Developer acknowledges that the City's review and approval of the Final Design is done in furtherance of the general public's health, safety and welfare and that no immunity is waived and no specific relationship with, or duty of care to, the Developer or third parties is assumed by such review or approval.

C. The Developer may proceed to procure materials and/or equipment for the Redtail Upgrades, at the sole risk and expense of the Developer, prior to obtaining the approvals contemplated by this Section II. Without limiting the generality of the foregoing, the City agrees that the Developer may engage Aslan under a pre- construction or similar agreement to advise the Developer on such considerations as cost and scheduling, constructability, material selection and availability, and early procurement in connection with the Redtail Upgrades.

III. Design Standards; Payment of Construction Costs.

A. If requested by the City, the Developer agrees to enter into an amendment to the Dewberry Agreement for purposes of making the City an intended third-party beneficiary of the same, provided that in such case the Developer shall remain liable for all payments to Dewberry for services performed under the Dewberry Agreement.

B. Following the City's final approval of the Developer's subdivision application for the Development, the approval of which is in no way guaranteed, Developer shall enter into one or more subdivision or other improvements agreements with the City, as required by the Louisville Municipal Code, respecting the Redtail Upgrades and other public improvements necessitated by the Development ("Subdivision Agreement"), pursuant to which the Developer shall agree that Dewberry shall be obligated under the Dewberry Agreement to perform its design services under the Dewberry Agreement safely and in accordance with the standard of care, skill, and diligence provided by a professional consultant in performance of similar services, and such that the Final Design of the Redtail Upgrades shall be free of negligent defects and deficiencies (the "Design Standards"). The Design Standards under the Dewberry Agreement shall remain in effect for six (6) years from the date of Substantial Completion of the Redtail Upgrades. Notwithstanding the foregoing, the Developer shall remain liable for all costs payable to Dewberry for services performed or to be performed under the Dewberry Agreement or for any costs incurred by the City in connection with the City's future direct retention of Dewberry with regard to the construction administration regarding the Redtail Upgrades. Further, Developer agrees to indemnify, defend, and hold the City harmless (collectively, "Developer's Indemnity Obligations") from and against any claim, demand, cause of action, charge, judgment, damage, liability, cost or expense (including, without limitation, attorneys' fees and legal costs) arising out of or in connection with the Developer's or Dewberry's failure to perform their respective obligations under the Dewberry Agreement (the "Claims"); provided, however, notwithstanding the foregoing, Developer's Indemnity Obligations shall expressly exclude, and shall not apply to, (i) any Claims arising from the City's negligence or willful misconduct, and (ii) any Claims for consequential damages, special damages, lost profits, incidental damages and punitive and/or exemplary damages.

C. Following: (i) the approval and recordation of the Final Plat and the Subdivision Improvement Agreement for the Development; (ii) the City's approval of the Amended and Restated Service Plan for RRMD; (iii) the City's amendment of the Construction Contract for the Redtail Upgrades; (iv) the Developer's approval of the City's Construction Payment Request (as defined herein; and (v) the Developer's procurement of funding in an amount sufficient to cover the cost of the estimated construction costs of the Redtail Upgrades (which may be sourced from any combination of bond financing by the RRMD, construction financing and/or investor funds), the Developer and/or RRMD shall provide to the City for deposit into a City-administered

account within the City's wastewater enterprise fund that is used solely for purposes of the Redtail Upgrades and tracking of Redtail funds separate from other City funds in the wastewater enterprise account (the "Restricted Account") an amount sufficient to pay for all estimated construction costs of the Redtail Upgrades. At least thirty (30) days, but no more than ninety (90) days, prior to the anticipated date of commencement for the construction of the Redtail Upgrades, or at such other time as the Parties may otherwise agree, the City shall send to the Developer a request for payment of the estimated design, administration, and construction costs for the Redtail Upgrades (hereinafter, the "Construction Payment Request"). Such Construction Payment Request shall include, but shall not necessarily be limited to, Aslan's stipulated sum and/or guaranteed maximum price (GMP) proposal for construction of the Redtail Upgrades, plus a five percent (5%) contingency (the "City Contingency"), and also include the following:

i. the estimated cost of any contract administration services to be provided to the City by Dewberry during construction of the Redtail Upgrades;

ii. the estimated cost of the City's representative during the construction phase for the Redtail Upgrades;

iii. an itemized list of any other known costs that the City anticipates incurring during the construction phase for the Redtail Upgrades; and

iv. any other proposed or supplementary terms and conditions applicable to the performance of the Redtail Upgrades.

D. The City shall exclude from the Construction Payment Request any costs relating to the City Upgrades. To the extent that the services or work of any consultant or contractor of the City includes both the City Upgrades and the Redtail Upgrades, then the City shall determine how the costs of such services or work shall be apportioned to reflect the extent the costs of such services or work pertained to the Redtail Upgrades. The Developer shall have fourteen (14) calendar days to approve or reject the Construction Payment Request. The City shall respond to any questions by the Developer for clarification or further information regarding the cost and schedule estimates provided.

E. Provided the Developer approves the Construction Payment Request, the Developer shall deposit the total amount stated therein into the Restricted Account (the "Construction Payment Deposit"). Notwithstanding the foregoing, or the inclusion of the City Contingency in the Construction Payment Request, the City agrees that the Developer may provide a letter of credit in lieu of paying cash or certified funds, for the City Contingency. Conditioned upon the Developer's deposit of the total amount of the Construction Payment Request into the Restricted Account (provided that a letter of credit or other acceptable security may be provided to the City for the City Contingency), and provided further that CDPHE has issued the necessary permit(s) for the construction of the Redtail Upgrades, the City shall issue a "notice to proceed" under the Construction Contract causing Aslan to commence construction of the Redtail Upgrades. The Parties acknowledge and agree that, notwithstanding anything in this Agreement to the contrary, construction will not commence on the Redtail Upgrades unless and until such time as Developer has made the Construction Payment Deposit to the City, including the City Contingency.

F. During construction of the Redtail Upgrades, the City will disburse funds from the Restricted Account as needed to pay project-related costs for the Redtail Upgrades. Concurrent with each disbursement, the City or its designee shall also provide copies of invoices, receipts, pay applications or requisitions, and other documentation of the costs the City has received and for which the City is disbursing funds from the Restricted Account. In addition, the City shall indicate the amount of funds remaining in the Restricted Account, and shall provide a summary of any requested and approved change orders to the Construction Contract, an estimate of any additional funds necessary (subject to Developer's approval of the same to the extent of the change order amounts, if any, in the aggregate exceed the City Contingency, such approval not to be unreasonably withheld) to achieve Substantial Completion of the Redtail Upgrades, and the amount (if any) which Developer is required to fund (subject to Developer's approval of the same to the extent of the change order amounts, if any, in the aggregate exceed the City Contingency, such approval not to be unreasonably withheld) to the Restricted Account so that funding for the Redtail Upgrades is not depleted. The Developer shall then have fourteen (14) calendar days from their receipt of such estimate from the City to deposit any required additional funds into the Restricted Account. For the sake of clarity, the Developer shall only be required to fund into the Restricted Account amounts which the City has a legal obligation to pay third-parties associated with the Redtail Upgrades, and not any amounts for which the City's legal obligation has not been established (such as change order requests of Aslan that have not been approved or authorized by the City or Developer, if applicable); likewise, the City may, but shall not be required to, utilize funds, including the City Contingency funds, already in the Restricted Account to pay the costs of any approved change orders, prior to the Developer's deposit of such additional amount(s) into the Restricted Account. The Parties intend, however, that the Restricted Account shall be periodically replenished by the Developer (subject to the approval of the Developer, not to be unreasonably withheld), as the City will not make advance (or "out-of-pocket") expenditures toward the design and construction of the Redtail Upgrades.

IV. Sequence of Work. The City shall construct the Redtail Upgrades in the manner that achieves completion of the Redtail Upgrades in the most economical and timely manner, while not delaying, interfering with, overriding, reducing performance, taking priority over, or hindering the City Upgrades or other City operations.

V. Payments by RRMD. The City agrees that, so long as the Amended and Restated Service Plan ("Service Plan") has been approved, and to the extent permitted by the Service Plan and applicable law, and notwithstanding anything stated to the contrary herein (including, without limitation, the provisions of Section III.F, above, RRMD, on Developer's behalf, may issue any payments, deposits, and/or letters of credit required by this Agreement to the City, as applicable, solely or in combination with any payments or other security furnished by the Developer, and such payments or other security from RRMD shall be in full satisfaction of the Developer's obligations hereunder, it being expressly understood that the City makes no statement as to, and disclaims any responsibility for, the legality of any act or omission of RRMD in connection with this Agreement, and further provided the City shall not be required to look to the RRMD or any other entity or person not a party to this Agreement to meet any obligation of this Agreement or to cure any default of this Agreement.

VI. Construction Administration. The City shall use reasonable efforts to enforce the Construction Contract in relation to the Redtail Upgrades, unless the Construction Contract

otherwise grants Developer such right. The City shall keep the Developer informed as to the progress of the Redtail Upgrades, shall allow the Developer (or its designee) to accompany City personnel to observe the work in progress, and shall provide, at the Developer's cost, on a timely basis copies of all documentation affecting the Redtail Upgrades to the Developer (including, but not limited to, field observation reports, test results, requests for information, proposed change orders, applications for payment, progress reports, and formal notices or claims). The City will not intentionally waive, release, limit or negate any rights and remedies of the Developer or RRMD under the Construction Contract in relation to the Redtail Upgrades without prior notice to and approval by the Developer and RRMD, which approvals shall not be unreasonably withheld.

VII. Adjustments and Dedication.

A. Substantial Completion Adjustment. Upon Substantial Completion of the Redtail Upgrades, the City shall be authorized to place into service and otherwise operate the WWTP upgrades, including the Redtail Upgrades, and the City or its designee shall send an accounting to the Developer and RRMD of the total costs incurred by the City for the design, administration, and construction for the Redtail Upgrades, and an estimate of costs attributable to "punch list" items necessary to achieve Final Completion of the Redtail Upgrades (if any) but only to the extent beyond the retainage withheld by the City from Aslan, with backup documentation substantiating such costs. If the total costs are more than amounts previously funded by the Developer, then the Developer shall have fourteen (14) calendar days following written notice from the City to pay the difference to the City for deposit into the Restricted Account. If the total costs are less than amounts previously funded by the Developer, including any unused amounts of the City Contingency, then the City shall have twenty-one (21) calendar days to refund the difference to the Developer, less any costs attributable to items necessary to achieve Final Completion (defined below) of the Redtail Upgrades, as estimated by the City. As used in this Section, the term "Substantial Completion" shall mean the date included on the "Substantial Completion Form" executed by the City in the form attached hereto as Exhibit ____, indicating the City's initial acceptance of the Redtail Upgrades, and the commencement of applicable contractor warranty periods under the Construction Contract.

B. Final Completion Adjustment. Upon Final Completion of the Redtail Upgrades, the City shall send a final accounting to the Developer of the total costs incurred by the City during the period of time between Substantial Completion and Final Completion, with backup documentation substantiating such costs. If the total costs are more than amounts previously funded by the Developer, then the Developer shall have fourteen (14) calendar days to pay the difference to the City. If the total costs are less than amounts previously funded by the Developer, then the City shall have twenty-one (21) calendar days to refund the difference to the Developer. As used in this Section, "Final Completion" means the date, after Substantial Completion, included on the Final Completion executed by the City in the form of Exhibit ___ attached hereto, indicating the City's final acceptance of the Redtail Upgrades, when all items have been completed, and all other obligations for the Redtail Upgrades have been satisfied, with the exception of warranties.

C. Dedication. Upon Final Completion, as indicated by the Final Completion Form delivered by the City to the Developer, Developer shall be deemed to have dedicated to the City,

and the City shall be deemed to own, the Redtail Upgrades without the necessity of further action of the Parties. Upon the City's request, Developer agrees to execute any documentation as may be necessary to evidence the City's sole and exclusive ownership of the Redtail Upgrades, such as a bill of sale, in form and substance satisfactory to City and Developer.

VIII. Public Financing/Reimbursement. Nothing herein shall prohibit the Developer or RRMD from recouping amounts paid to the City or deposited into the Restricted Account by the Developer or RRMD under this Agreement pursuant and subject to the terms and conditions of the Amended and Restated Service Plan for RRMD, as applicable.

IX. Tap Fee Credits.

A. Existing Potable Water System Tap Credits (6-inch). The existing water service tap credits to the Redtail property that Developer is entitled to due to pre-existing water service by the City to the property (hereinafter "Existing Water Tap Credits") will be calculated at such time as tap fees become due by operation of the Code, and shall be applied to the Developer's total tap fee liability to the City in accordance with the Code and applicable City resolutions, rules, and regulations. The Existing Water Tap Credits will be 41.67 ¾-inch equivalents, which credits may be applied to indoor domestic water system tap fees otherwise payable to the City in connection with development of the Redtail project upon Developer's request and upon City approval.

B. Existing Sanitary Sewer System Tap Credits. The Developer shall also be entitled to a similar credit against future tap fees otherwise payable to the City for sanitary sewer service to the Redtail project ("Sewer Tap Fee Credits"). The Sewer Tap Fee Credits will be applied congruently to the Existing Water Tap Credits.

C. Sewer System Upgrade Credit. In consideration of the Developer's commitment to fund the Redtail Upgrades, the Redtail Project shall also be entitled to an additional monetary credit against future sewer tap fees ("Sewer System Upgrade Credit), which credit will be calculated at such time as sewer tap fees become due for future development of the Redtail Project by operation of the Code, provided that this Sewer System Upgrade Credit and shall be applied only to reduce that portion of the City's sewer tap fees that have been established to recover an equitable portion of the value of the City's wastewater infrastructure required to meet new demand (the "Facility or Infrastructure Investment Fees") charged by the City when approving new sewer service connections, all in accordance with the Code and applicable City resolutions, rules, and regulations.

D. Remainder. Subject to the credits to which Developer is entitled as provided in Sections VII.A VII.B and VII.C above, Developer shall pay all water and sewer tap fees due or which may become due under the Code and ensuing fee resolutions, which shall be calculated at such time as payment becomes due under the Code in accordance with then-current water and sewer tap fee rates.

E. Water and Sewer Rates. There shall be no reduction in monthly water or sewer usage rates applicable to the Development as prescribed by the Code and ensuing fee resolutions, as may be amended from time to time.

X. Water Rights Dedication.

A. Dedication. Pursuant to Section 13.12.040(E) of the Code, the City hereby accepts the dedication of certain historical water rights associated with the Redtail project property ("Developer's Water Rights"), conditioned upon the City Council's approval of one or more PUDs for this development (the "Dedication"). Should PUD be approved, then within twenty (20) days of such approval, Developer shall fully comply with Section 13.12.040(E) of the Code to effect the Dedication, and do all other things necessary to transfer the Developer's Water Rights to the City free and clear of all conditions or contractual clauses, outstanding assessments, liens or encumbrances, for final City acceptance. Upon the City's acceptance of the Dedication, should that occur, the Dedication will be applied to offset a portion of water tap fees required for the Development in accordance with the Code.

B. Water Resource Credits. Should the Dedication occur as provided in Section X.A. above, and in accordance with the Code, Developer will be granted three (3) Water Resource Credits, the value of which will be calculated at such time as water tap fees become due by operation of the Code, which Water Resource Credits will be applied only to reduce the Proposed Water Resource fee component of water tap fees applicable to the Development.

XI. Term. The term of this Agreement commences on the Effective Date, and shall continue in full force and effect until the Redtail Upgrades are completed and finally accepted by the City, all water rights Dedications are made, and all tap fees paid, unless this Agreement is earlier terminated as provided herein or expressly amended or superseded by the terms of any applicable Subdivision Agreement(s). All provisions of this Agreement intended to protect the City from any risk associated with the Redtail Upgrades, including without limitation, Developer's indemnification, defense, release, warranty, and (unpaid) payment obligations, and the City's liability protections, all of which shall survive the termination of this Agreement.

XII. Enforcement.

A. Default. Each and every term and condition hereof shall be deemed to be a material element of this Agreement. In the event Developer should fail or refuse to perform its obligations according to the terms of this Agreement, and if such noncompliance is not cured and brought into compliance within thirty (30) days of written notice of breach of Developer by the City, Developer may be declared in default to the extent it fails to cure such failure within thirty (30) days (or such additional time as is necessary to the extent such failure is curable, but can't be cured within such thirty (30) day period, as determined by the City) following City's written notice of such failure is delivered to Developer.

B. Jurisdiction and Venue; Enforcement. This Agreement shall be deemed entered into in Boulder County, Colorado, and shall be governed by and interpreted under the laws of the State of Colorado. Any action arising out of, in connection with, or relating to this Agreement shall be filed in the courts of Boulder County or the federal district court for the District of Colorado, and in no other court. Developer hereby waives its right to challenge the personal jurisdiction of the courts of Boulder County and the federal district court for the District of Colorado over it. Notwithstanding the foregoing, to the extent that any such dispute involves

claims by or against Aslan, the Parties mutually consent to resolution of the same pursuant to the alternative dispute resolution provisions set forth in the Construction Contract.

C. Remedies. The Parties' remedies under this Agreement are cumulative, and either Party's election to pursue one remedy instead of an alternative, shall not preclude such Party from pursuing the alternative thereafter. The parties understand and agree that the Redtail Upgrades would not be necessary but for the buildout of the Development, and the Developer recognizes and acquiesces to the jurisdiction and the power of the City to impose the restrictions and conditions required of the Developer in this Agreement, joins in the imposition of them, and agrees to perform each and every one of them. Therefore, subject to the Developer's reservation of the right to seek specific performance of this Agreement and/or to seek to recover any excess funds that may remain in the Restricted Account following Final Completion, the Developer, or any person or entity who may claim through the Developer, shall not attempt to hold or hold the City, or its officers or employees, liable for monetary damages of any kind in connection with the Redtail Upgrades, this Agreement, the requests for qualifications (RFQ) issued by the City in connection with the City Upgrades and the Redtail Upgrades, the Construction Contract, final GMP, or any other document or City act or omission related to the subject matter hereof, including but not limited to damages for delays caused by the City in connection with the completion of the Redtail Upgrades, excepting only damages that arise directly from the intentional misconduct or willful and wanton conduct of the City, its officers, or employees; provided that, Developer expressly acknowledges that in the event that funds deposited by Developer as required under this Agreement are depleted, the City will cause all work on the Redtail Upgrades to cease until such time as such funds are replenished, which may give rise to increased costs and longer construction timelines relative to the Redtail Upgrades, and agrees that the City's exercise of such remedy shall not constitute intentional misconduct or willful and wanton conduct. Developer agrees to not challenge or dispute, in court or otherwise, the legality or validity of any of Developer's financial obligations under this Agreement, and agrees to cooperate with the City to defend the legality or validity of any of Developer's financial obligations under this Agreement against third party challenges. The Developer hereby waives, releases, holds harmless, and forever discharges the City from any liability with respect to the Developer's financial obligations hereunder. The foregoing shall not be deemed to affect any rights the Developer may have against other parties other than the City under common law, as a third-party beneficiary of the Construction Contract, or as party to or third party beneficiary of any and all design or construction administration contracts related to the Redtail Upgrades. Similarly, subject to the City's reservation of the right to seek specific performance of this Agreement (including the payment by Developer to the City of all amounts expressly required to be funded by the Developer to the City for the Redtail Upgrades), the City, or any person or entity who may claim through the City, shall not attempt to hold or hold the Developer, or its officers or employees or agents, liable for monetary damages of any kind in connection with the Redtail Upgrades, this Agreement, the RFQ/P and its attachments, the Construction Contract, final GMP, or any other document or Developer act or omission related to the subject matter hereof.

XIII. Subsequent Agreements. No subsequent agreement related to the Development shall be deemed to amend this Agreement except as specifically set forth in an amendment to this

Agreement that expressly amends this Agreement by reference to this Agreement's title and Effective Date.

XIV. Miscellaneous.

A. Approvals Not Guaranteed. Nothing in this Agreement shall be construed as obligating the City to approve any application required for the development of the Property, all of which applications will be reviewed, processed, approved, approved with conditions, or denied in accordance with applicable requirements and criteria of the Louisville Municipal Code.

B. Binding Effect. This Agreement shall extend to, be binding upon, and inure to the benefit of the parties hereto and the successors, grantees and assigns of the respective parties hereto; provided, however, notwithstanding anything stated to the contrary in this Agreement, the obligations of the Developer under this Agreement are only intended to, and shall only, bind the Developer, and are not intended to, and shall not, run with the Property or be binding on any successors or assigns of the Developer.

C. Assent to Form. By executing this Agreement, Developer waives all rights Developer may have concerning any defects in the form or substance of this Agreement; the formalities by which it is executed; the power of the City to impose conditions on Developer as set forth herein; and the procedures, substance, and forms of this Agreement's adoption.

D. Integration, Amendment and Waiver. This Agreement represents the entire Agreement between the parties and there are no oral or collateral agreements or understandings. This Agreement may be amended only by an instrument in writing signed by the parties. No waiver of a breach or default of the provisions of any section of this Agreement shall be construed as a waiver of any subsequent breach or default of the same section or any other section of this Agreement.

E. Notice. All notices, demands, requests, consents, approvals, offers, statements, and other instruments or communications required or permitted to be given hereunder shall be in writing and shall be deemed to be effective upon hand delivery, upon electronic mail (e-mail) receipt, or seventy-two (72) hours after mailing by registered or certified mail, return receipt requested, postage prepaid, addressed as follows:

If to Developer: Redtail Ridge Portfolio, LLC
c/o Sterling Bay
333 N. Green St., Suite 1100
Chicago, IL 60607
Attn: Andrew Gloor

With a copy to:

Sterling Bay
100 Bayview, Suite 250,
Newport Beach, CA 92660

Attn: Evan Pesonen

With a copy in all instances via email to:

Sterling Bay
Attn: Andrew Gloor
email: legalnotices@sterlingbay.com

And:

Bruce Fischer, Esq.
Greenberg Traurig, LLP
18565 Jamboree Road, Suite 500
Irvine, CA 92612
Email: fischerb@gtlaw.com

And:

J. Marcus Painter, Esq.
Mark E. Hamilton, Esq.
Holland & Hart LLP
1800 Broadway, Suite 300
Boulder, CO 80302
Email: mpainter@hollandhart.com
mehamilton@hollandhart.com

If to the City: City Manager
City of Louisville
749 Main Street
Louisville, CO 80027
e-mail: _____

F. No Waiver of Governmental Immunity. In executing this Agreement, the City in no way waives or intends to waive the limitations on liability which are provided to the City and its employees under the Colorado Governmental Immunity Act, C.R.S. § 24-10-101 et seq. ("CGIA"). The parties likewise acknowledge that RRMD's performance of any of the Developer's obligations hereunder shall not operate to waive any limitations on liability which are provided to RRMD pursuant to the CGIA.

G. Assignment. Developer shall not assign or delegate this Agreement or any portion thereof, or any monies due or to become due hereunder, without the City's prior written consent, which will not be unreasonably withheld. Developer and any successor shall, until written City approval of the proposed transfer of title and delegation of obligations, be jointly and severally liable for the obligations of Developer under this Agreement. Any assignment or delegation in violation of this Section shall be voidable in the City's discretion. Notwithstanding the foregoing, Developer shall have the right, from time to time, to collaterally assign its interests in this Agreement to its lenders, as additional collateral security for any financing obtained by

Developer for the Development in order to enforce this Agreement if the Developer as borrower defaults and, in connection therewith, City shall enter into such agreements as may be reasonable required by Developer's lenders from time to time to effectuate such collateral assignment.

H. Third-Party Beneficiaries. RRMD, and any lender of Developer, is an express third-party beneficiary of this Agreement. Except for the foregoing, it is expressly understood and agreed that enforcement of the terms and conditions of this Agreement, and all rights of action relating to such enforcement, shall be strictly reserved to the City and Developer, and nothing contained in this Agreement shall give or allow any such claim or right of action by any other third party on this Agreement. Except for RRMD, any lender of Developer or any assignee approved by the City pursuant to Section XII(G) above, it is the express intention of the parties that any person other than the City or Developer receiving benefits under this Agreement shall be deemed to be an incidental beneficiary only.

I. No Partnership or Joint Venture. The parties to this Agreement are not partners or joint venturers with each other and nothing herein shall be construed to make them partners or joint venturers or impose any liability as such on either of them.

J. Authority to Bind. Each of the persons signing below on behalf of any party hereby represents and warrants that such person is signing with full and complete authority to bind the party on whose behalf such person is signing, to each and every term of this Agreement.

K. Future Approvals; Contingencies. The Parties recognize and agree that, although this Agreement contemplates potential future construction of the Redtail Upgrades, unless and until the City has issued all requisite subdivision approvals for the Development, and approval of the Amended and Restated Service Plan, all payments by the Developer or RRMD to the City or deposits to the Restricted Account hereunder (excepting any refundable security deposits) shall be at the risk of the Developer, and nothing herein shall be deemed to require the City to approve the Development or the Amended and Restated Service Plan, both of which shall be processed by the City as required by and according to the City's Municipal Code. Conversely, nothing herein shall obligate the Developer or the City to remit payments to the City for construction of the Redtail Upgrades or related City Contingency unless and until the final subdivision plat for the Redtail Ridge subdivision and the Amended and Restated Service Plan for RRMD are fully and finally approved by the City, and the other conditions set forth in Section III.C. above have been satisfied, including expiration of the periods for any related referendum or C.R.C.P. 106challenges following such approvals, or final resolution of the same.

L. Cooperation. Each party agrees to cooperate fully with the other party and to execute and deliver such further documents, certificates, agreements and instruments and to take such other actions as may be reasonably necessary to carry out the intent and purposes of this Agreement.

M. Delegation. The City may designate any administrative tasks required of the City under this Agreement to an appropriate designee, including but not limited to JVA, Aslan, or an alternative construction administrator, provided the City shall remain responsible for overseeing the completion of the administrative task as required under this Agreement. "Administrative

tasks" include, without limitation, tasks related to invoicing, noticing, and preparation of backup documentation substantiating costs.

N. Estoppel Certificate. Within thirty (30) days following the written request by any Party hereto, the other Party hereto shall execute and deliver to the requesting Party an estoppel certificate certifying (i) whether or not any default exists under this Agreement, (ii) that this Agreement remains in full force and effect, (iii) whether this Agreement has been amended and/or modified in any respect, (iv) the amount of funds then on deposit in the Restricted Account, and (v) such other things that any Party may reasonably request.

O. Reimbursement of City Expenses. Developer acknowledges that Developer's request to enter into this Agreement and its request for the City to coordinate and provide for construction of the Redtail Upgrades has placed a significant burden on City resources and has been undertaken on Developer's behalf in furtherance of Developer fulfilling its obligations to provide necessary public improvements to serve the Development. Developer agrees that, within fourteen (14) days following mutual execution of this Agreement by the Parties, Developer shall reimburse the City in full for all fees and expenses incurred by the City for its attorneys and consultants in connection with this Agreement, and shall also promptly pay all such fees and expenses submitted to the Developer by the City thereafter, subject to Developer's approval.. Failure by the Developer to pay such fees shall be considered a breach of this Agreement and the City may declare Developer to be in default if Developer fails to pay such fees within ten (10) business days following Developer's receipt of a written demand from the City to pay the same.

P. Approvals. Whenever consent, determination, approval, or acceptance of a matter is required or requested of the City or Redtail pursuant to any provisions of this Agreement, the City or Redtail, as applicable, shall act reasonably in responding to such matter, and the same shall not be unreasonably withheld, conditioned or delayed. If either Party withholds any consent, determination, approval, or acceptance, such Party shall deliver to the other Party a written statement giving the reasons therefor.

[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK – SIGNATURE PAGES TO FOLLOW]

IN WITNESS WHEREOF, the parties have executed this Agreement in duplicate originals on the day and year first written above.

CITY OF LOUISVILLE, COLORADO

By:_____
Christopher M. Leh, Mayor

ATTEST:

_____
Meredyth Muth, City Clerk

DEVELOPER:

REDTAIL RIDGE PORTFOLIO, LLC

By: _____

Name: _____

Title: _____

ACKNOWLEDGMENT

STATE OF _____)
) ss.
COUNTY OF _____)

The foregoing instrument was acknowledged before me this _____ day of _____, 20__, by_____, as _____ of Redtail Ridge Portfolio, LLC.

Witness my hand and official seal.

My commission expires on: _____

(S E A L)

_____
Notary Public

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McGEADY BECHER P.C.
August 15, 2024

OPERATION AND MAINTENANCE AGREEMENT

This **OPERATION AND MAINTENANCE AGREEMENT** (this "**Agreement**") is made and entered into by and between **Redtail Ridge Metropolitan District** (formerly known as Redtail Ridge Metropolitan District No. 3), a quasi-municipal corporation and political subdivision of the State of Colorado (the "**District**"), **Redtail Ridge Portfolio, LLC**, a Delaware limited liability company (the "**Developer**"), and the **City of Louisville**, a municipal corporation of the State of Colorado (the "**City**"), (individually, each a "**Party**" and collectively the "**Parties**").

RECITALS

A. The Developer owns property within a project located in the City of Louisville, Boulder County, Colorado, commonly known as Redtail Ridge (the "**Property**").

B. Pursuant to the service plans for the District, Redtail Ridge Metropolitan District No. 1, Redtail Ridge Metropolitan District No. 2, and Redtail Ridge Metropolitan District No. 4 (the "**Districts**") approved by the City on February 18, 2020, as may be amended from time to time (the "**Service Plans**"), the Districts exist for the purpose of designing, acquiring, constructing, installing, financing, operating and maintaining certain street, traffic and safety controls, water, sanitation, storm water, parks and recreation, television relay and translation, and transportation improvements and providing certain services to the service area covered by the Service Plans for the Districts (the "**Service Area**").

C. The Amended and Restated Service Plans for the Districts were approved by the City Council of the City of Louisville ("**City Council**") on _____, 2024, (the "**Service Plans**") and require the execution of this Agreement prior to the Districts issuing any debt.

D. For purposes of this Agreement the definition of the "**Operations and Maintenance Expenses**" as set forth on **Exhibit A** and incorporated herein by this reference ("**Exhibit A**") includes:

a. the ongoing operations and maintenance expenses for the District Public Improvements, defined in Paragraph 3 below, not accepted for ownership, operations and maintenance by another governmental entity,

b. the ongoing operations and maintenance expenses for the Public Improvements on dedicated rights of way, parcels or tracts accepted for ownership by the City (the "**Premises**"), that are not accepted for operations and maintenance by the City ("**COL Public Improvements**") as designated and set forth on **Exhibit B** and incorporated herein by this reference ("**Exhibit B**"), and

c. the funding of the TDM, defined below, and the administrative expenses for all of the Districts.

E. Each of the Districts will impose an Operations Mill Levy not to exceed ten (10) mills (the "**Operations Mill Levy**") and will remit the revenue from the Operations Mill Levy imposition to the District to fund the Operations and Maintenance Expenses.

F. The District intends to construct the District Public Improvements and provide certain services to benefit properties within its boundaries and the Service Area (the "**District Services**").

G. The District Services will benefit the Property.

H. The City Council approved the final Subdivision Plat by Resolution No. ____, on _____, 2024 ("**Final Plat**").

I. The executed Intergovernmental Agreements between the City and each of the Districts is an exhibit to their respective Service Plans and commits each of the Districts, as part of its transportation services, to work with the City to establish a program for providing transportation demand management services to include, for example, TDM coordination and eco passes ("**Service Plan IGAs**").

J. A Transportation Demand Management Plan ("**TDM**") was approved by the City Council on _____, 2024, and an excerpt of the TDM, summarizing the timeline for implementing recommended TDM strategies, is attached hereto as **Exhibit C** and is incorporated herein by this reference ("**Exhibit C**").

K. On _____, 2024, the District, the Developer, and the City entered into a Subdivision Improvements and Development Agreement (the "**SIA**") which includes requirements for the District to install and upgrade certain public improvements, including roads, right of way landscaping and trails, water and sewer main line infrastructure, and wastewater facility expansion (the "**Public Improvements**").

L. The SIA and Final Plat, as both may be amended from time to time, establish, in part, the location and maintenance obligations of the Public Improvements as shown on **Exhibit B**.

M. It is necessary for the District to be able to pay the ongoing Operations and Maintenance Expenses.

N. Until the assessed valuation of the Districts increases in aggregate to equal or exceed $140,000,000, the imposition of the Operations Mill Levy will not produce revenue sufficient to fund the Operations and Maintenance Expenses.

O. In order to enable the District to provide District Services until the District has sufficient revenues to do so, the Developer is willing to advance funds to the District for Operations and Maintenance Expenses pursuant to the terms of a Multi-Year Operation Funding Agreement, which may be amended from time to time (the "**OFA**").

P. The Service Plans authorize the repayment of amounts advanced for Operations and Maintenance Expenses, together with interest thereon, by the Districts.

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Q. The City is willing to grant a license to the District as provided herein, so the District can access the Premises upon the terms and conditions hereof for purposes of providing operations and maintenance of the COL Public Improvements located on the Premises.

R. The City and the District are authorized by Section 29-1-203, C.R.S. to enter into cooperative agreements for the sharing of costs, imposition of taxes, or incurring of debt, if such agreements are authorized by each party thereto with the approval of its legislative body.

S. The District and the City have determined it to be in their best interests to enter into this Agreement.

T. The Parties enter into this Agreement to:

a. establish the proposed maintenance responsibility for the District Public Improvements,

b. establish the proposed maintenance responsibility for the COL Public Improvements,

c. grant the license to the District for purposes of access to perform maintenance of the COL Public Improvements,

d. outline the District's TDM, and

e. summarize the Developer's commitment to fund any operating shortfall, which the District will agree to reimburse the Developer in the future, from excess operating revenues.

NOW, THEREFORE, in consideration of the foregoing and the respective agreements of the Parties contained herein, the Parties agree as follows:

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COVENANTS AND AGREEMENTS

1. **Incorporation of Recitals**. The Recitals set forth above are all incorporated herein by this reference.

2. **Maintenance Obligations of the District for the COL Public Improvements on the Premises**. During the Maintenance Term, defined in Section 18 below, the District shall be responsible at its sole cost and expense for the following obligations with respect to the COL Public Improvements on the Premises:

(a) The District shall provide all labor, tools, supervision, supplies, materials, equipment and any and all other items necessary to maintain the Premises and the COL Public Improvements in accordance with the maintenance service standards set forth in **Exhibit D**, attached hereto and incorporated herein by reference (the "**Maintenance Service Standards"**), including performance of the specific maintenance tasks and obligations as noted on said **Exhibit D**, in order to maintain the COL Public Improvements in commercially reasonable condition and repair.

(b) The District acknowledges tap fees for water service to the Premises must be paid. If such tap fees have not previously been paid by the Developer in cash or by the application of a tap fee credit (which tap fee credit to be applied only at the request of and in the sole discretion of the Developer) then the District shall pay tap fees for water service to the Premises, set up water service accounts and timely pay all charges for water used in connection with the construction, installation, operation, maintenance, repair and replacement of the COL Public Improvements. Water service accounts shall be established at the time required by the City's utility ordinances, rules, regulations and policies, and accounts for water service for the perpetual irrigation of the COL Public Improvements shall be set up in the name of the District, if applicable, no later than the date of Construction Acceptance (as defined in the SIA).

(c) The District shall take such actions as necessary to maintain the COL Public Improvements in a commercially reasonable condition at all times. The District, and its agents, employees and contractors shall comply at all times with: (i) the ordinances, resolutions, rules, and regulations of the City; (ii) the terms, conditions and requirements of all approved PUD Plans; and (iii) the terms and conditions of this Agreement.

(d) After Construction Acceptance of the COL Public Improvements, maintenance contractors or managers from the District will, if requested by the City, meet a minimum of once a year with the City at the Premises to inspect the Premises and review the District's compliance with its maintenance obligations.

(e) The District shall comply with the following additional obligations with respect to all stormwater detention and conveyance facilities located on the Premises (the "**Stormwater Facilities**"), and all associated stormwater best management practices for the COL Public Improvements (the "**BMPs**"):

(i) The District, at its sole expense, shall adequately maintain all Stormwater Facilities and BMPs to ensure they function properly under the conditions for which they were designed. This obligation includes without limitation maintenance of all pipes and channels built to convey stormwater, as well as maintenance of all structures, improvements, and vegetation provided to control the quantity and quality of the Stormwater Facilities and BMP's described in the Maintenance Service Standards. Adequate maintenance is defined as actions which ensure that all Stormwater Facilities and BMPs function as designed as determined by the City and includes, without limitation, that the District shall undertake mowing and trimming, weed control, and litter and graffiti removal in accordance with the Maintenance Service Standards, and the requirements of the City ordinances. The District shall ensure that all maintenance activities comply with the applicable City standards and all other applicable local, state, and federal laws and regulations, including without limitation those pertaining to confined space and waste disposal methods.

(ii) The District, at its sole expense, shall periodically inspect any detention pond on the Premises ("**Detention Pond**") and Stormwater Facilities to ensure the Stormwater Facilities and BMPs function properly under the conditions for which they were designed. Inspections shall be performed at least once every six months and shall cover all Stormwater Facilities.

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(iii) After each inspection, the District shall submit to the City an inspection report in a form required by the City. The current version of such form is set forth in **Exhibit E**, attached hereto and incorporated by reference ("**Exhibit E**"), and such form is subject to change from time-to-time (the "**Inspection Report**"). The Inspection Report shall cover all Stormwater Facilities and consist of a concise summary of inspection dates and findings, remedial actions taken, how the actions were completed and who performed them, any problems encountered, and any required follow-up actions such as any maintenance, repair or replacement. Inspection Reports shall be submitted at least once every six months to the City at the address set forth in Section 6, below. The City shall give written notice of any changes to the Inspection Report being requested by the City at least thirty (30) days prior to the submittal due date.

(iv) Except in the event of an emergency, the District shall obtain written approval from the City prior to performing any alterations or modifications to any Stormwater Facilities. The District shall submit to the City any proposed alteration or modification to the Premises and the City shall use reasonable efforts to respond with its approval or reasons for rejection within thirty (30) days thereafter. If the City does not respond within thirty (30) days therefore, the City will be deemed to have approved the proposed alteration or modification.

(f) The City hereby grants to the District, its agents, employees and contractors a non-exclusive, revocable license to enter into, over, across, under and upon the Premises during the Maintenance Term for the purpose of access, ingress, egress and all activities related to the construction, installation, operation, maintenance, repair and replacement of the COL Public Improvements (the "**License**"). In the event the City terminates the License prior to the end of the Maintenance Term, the District and the Developer will be relieved of any and all of their respective obligations under this Section 2.

(i) Except as specifically allowed by the SIA or other written approval of the City, the District shall not place on the Premises any structures or other items other than the CO Public Improvements and shall not expand, or add to any structures or other items on the Premises other than the COL Public Improvements without the prior written approval of the City.

(ii) The District understands that the License granted hereunder is granted subject to all easements and other interests of record applicable to the Premises. The District is solely responsible for coordinating its activities within the Premises with all holders of such franchise agreements, easements and other interests.

(iii) The District agrees it does not have or claim, and shall not at any time in the future have or claim, any ownership interest or estate in the Premises, or any other interest in real property included in the Premises, other than the License, by virtue of this Agreement or by virtue of its occupancy or use of the Premises.

(g) In the exercise of rights and obligations pursuant to this Section, the District shall use commercially reasonable efforts to avoid any damage or interference with any City installations, structures, utilities, or improvements on, under, or adjacent to the Premises ("**City Facilities**"). Unless due to the negligence or misconduct of the City, its agents, officers

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and/or employees, the District shall at its expense restore any City Facilities damaged by its activities permitted hereunder to the condition that existed immediately prior to the commencement of such activities.

(h) In the exercise of its reserved rights, the City agrees to use commercially reasonable efforts to not obstruct, remove or alter the Detention Pond or any Stormwater Facilities in a manner that would result in a reduction in the capacity of the Detention Pond or the Stormwater Facilities.

(i) The District agrees and acknowledges the Premises are public areas open to the public and that nothing herein gives the District the right to restrict or exclude any person or entity from the Premises. If the District needs to close the Premises for a period of more than eight (8) hours to perform maintenance obligations, it shall provide fourteen (14) days prior written notice of the need for closure ("**Maintenance Closure Notice**") and it shall use commercially reasonable efforts to first obtain the City's prior written approval to such closure, which approval the City may grant or deny within its reasonable discretion and shall use reasonable efforts to respond within ten (10) business days of receipt of the Maintenance Closure Notice. If the City does not respond in writing to the District within the ten (10) day period, the City will be deemed to have approved the closure.

(i) If the District needs to close the Premises for a period of more than eight (8) hours for public safety reasons, it shall provide eight (8) days prior written notice to the City of the need for the closure ("**Public Safety Closure Notice**") and it shall use commercially reasonable efforts to first obtain the City's prior written approval to such closure, which approval the City may grant or deny within its reasonable discretion and shall use reasonable efforts to respond within seven (7) days of receipt of the request. If the City does not respond in writing to the District within seven (7) days of the receipt of the Public Safety Closure Notice, the City will be deemed to have approved the closure.

(j) If the District fails to comply with its obligations relating to the Premises, such noncompliance shall constitute a breach under Section 9 of this Agreement. The City, in addition to any other remedy available to it for breach, shall have the right but not the obligation to take such measures as it determines necessary to bring the Premises into compliance following the expiration of the Cure Period or Extended Cure Period, both as defined in Section 9 of this Agreement, and the reasonable cost of any such measures shall be paid by the District.

(i) Further, if the District fails to comply with its obligations to maintain the COL Public Improvements following the expiration of the Cure Period or Extended Cure Period, if applicable, the City shall have the right, pursuant to C.R.S. § 24-67-105(c), as from time to time amended, to maintain the COL Public Improvements and assess the reasonable costs thereof upon the District, in accordance with said Section.

(ii) For purposes of this Agreement, the District agrees the Premises required to be maintained by the District constitute "common open space" as defined in C.R.S. § 24-67-103(1), as amended from time to time.

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(iii) The City shall also have the right to the remedy of injunctive relief to compel performance of the obligations of this Section of this Agreement after the expiration of the Cure Period or the Extended Cure Period, if applicable. All remedies of the City shall be cumulative and the exercise of one remedy shall not preclude the City from pursuing other remedies for the same breach or any other breach of the same section or any other sections of this Agreement.

(k) The City reserves the right to use and occupy the Premises for any purpose of the City provided the City's use and occupancy does not interfere with the District's obligations hereunder. The District, for itself, its successors and assigns, hereby releases the City, its officers and employees from any and all claims of damage or liability for any disturbance of or damage to the Premises resulting from the City's use of the Premises, excepting only liability arising from negligence or misconduct by the City, its agents, officers and/or employees (collectively, "**City Parties**").

(l) The City shall have no responsibility, liability, or obligation with respect to the safety or security of any personal property of the District placed or located on, at, or in the Premises, other than any damage thereto resulting from the negligence or misconduct of any City Party, it being acknowledged and understood by the District that the safety and security of any such property is the sole responsibility and risk of the District except as otherwise provided herein.

(i) The District shall procure and maintain, and cause each of its subcontractors performing work on the Premises to procure and maintain, the minimum insurance coverages listed below. All coverages shall be maintained to cover all liability, claims, demands, and other obligations pursuant to this Section of this Agreement. In the case of any claims-made policy, the necessary retroactive dates and extended reporting periods shall be procured to maintain such coverage.

(1) Workers' Compensation insurance to cover obligations imposed by the Workers' Compensation Act of Colorado and any other applicable laws for any employee engaged in any activity on the Premises under the employ or at the instance of the District, its agents or contractors (collectively, "**District Parties**").

(2) General Liability insurance with minimum combined single limits of ONE MILLION DOLLARS ($1,000,000) each occurrence and TWO MILLION DOLLARS ($2,000,000) aggregate.

(3) Comprehensive Automobile Liability insurance with minimum combined single limits for bodily injury and property damage of not less than FIVE HUNDRED THOUSAND DOLLARS ($500,000) per person in any one occurrence and ONE MILLION DOLLARS ($1,000,000) for two or more persons in any one occurrence, and auto property damage insurance of at least FIFTY THOUSAND DOLLARS ($50,000) per occurrence, with respect to each of the District's owned, hired or non-owned vehicles assigned to or used in any activities at the Premises or permitted under this Agreement.

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(4) The policies required above, except for the Workers' Compensation insurance, shall be endorsed to include the City, and its officers and employees, as additional insureds with primary coverage as respect the City, its officers and its employees, and shall contain a severability of interests provision. Every policy required above shall be primary insurance, and any insurance carried by the City Parties, shall be in excess and not contributory insurance to that provided by the District. The additional insured endorsement for the Comprehensive General Liability insurance required above shall not contain any exclusion for bodily injury or property damage arising from completed operations. The Insurance holder shall be solely responsible for any deductible losses under each of the policies required above.

(5) Certificates of insurance shall be completed by the insurance holder's insurance agent as evidence that policies providing the required coverages, conditions, and minimum limits are in full force and effect, and shall be subject to review and approval by the City. Each certificate shall provide that the coverages afforded under the policies shall not be cancelled, terminated or materially changed until at least thirty (30) days prior written notice has been given to the City. If the words "endeavor to" appear in the portion of the certificate addressing cancellation, the insurance holder shall use commercially reasonable efforts to have those words stricken from the certificate by the agent(s) completing the certificate. The City reserves the right to request and receive a certified copy of any policy.

(6) Failure on the part of the District to procure and maintain and to cause its subcontractors to procure or maintain policies providing the required coverages, conditions, and minimum limits shall constitute a material breach of the District's obligations hereunder, for which the City may, after the Cure Period, immediately terminate or limit the District's rights hereunder, or at is discretion may procure or renew any such policy or any extended reporting period thereto and may pay any and all premiums in connection therewith, and all monies so paid by the City shall be repaid by the District to the City upon demand.

(ii) Except for liability resulting from any City Party's negligence or misconduct, the District shall be solely responsible for all damages to persons or property which may in whole or part be caused by any District Party, or which may result or arise in whole or part from their activities on the Premises, and the District will indemnify and hold harmless the City Parties, from any and all liability, damage, loss, cost or expense, including but not limited to reasonable attorney's fees (collectively, "**Claims**"), which a City Party may suffer as a result of any and all Claims made or brought against them by any third party, and which arise either in whole or in part from, or are in any way connected with, the District's activities within the Premises, or with this Section of this Agreement or the rights and obligations of the District hereunder. Except for liability resulting from any District Party's negligence or misconduct, the City shall be solely responsible for all damages to persons or property which may in whole or part be caused by the negligence or misconduct of any City Party, and City will indemnify and hold harmless the District Parties from any and all Claims made or brought against them by any third party, and which arise either in whole or in part from, or are in any way connected with, any City Party's negligence or misconduct. By demanding this right to indemnification, the City and the District in no way waive or intend to waive the limitations on liability or other protections which are provided to the District and the City and its employees under the Colorado Governmental Immunity Act, C.R.S. § 24-10-101 et seq.

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3. **Maintenance Obligations of the District for the District Public Improvements**. The District will be responsible for maintenance obligations, in addition to those maintenance obligations provided for above for the COL Public Improvements, as follows:

(a) The District shall provide all labor, tools, supervision, supplies, materials, equipment, and any and all other items necessary to maintain Tract L set forth on **Exhibit B** (the "**District Public Improvements**") to the Maintenance Service Standards set forth on **Exhibit D**; and

(b) The implementation of the TDM.

(c) Nothing in this Agreement is intended by the Parties to modify in any way the obligations of the District, the Developer, and the City as set forth in the SIA or any future subdivision improvement agreements entered into by the District, the Developer, and the City or any of the rules, regulations or procedures of the City with regard to the construction or acceptance of public improvements.

4. **Acknowledgement of Anticipated Shortfalls**. Under its current financial forecast of increases in assessed valuation due to growth, and expenditures for Operations and Maintenance Expenses, the District anticipates annual shortfalls in revenues available for Operations and Maintenance Expenses to be incurred for fiscal year 2024 and in each fiscal year thereafter until its assessed valuation equals or exceeds $140,000,000. For the purposes of this Agreement, the difference between the Annual Budget Amount (defined below) and the Operations Revenue (defined below) shall be the "**Shortfall Amount**."

5. **Required Operations and Maintenance Mill Levy and Shortfall Amount**. Each of the Districts shall impose on a yearly basis the Operations Mill Levy, to be remitted to the District together with the specific ownership taxes generated as a result of the Operations Mill Levy (the "**Operations Revenue**") to fund the Operations and Maintenance Expenses. The District will determine the amount required to fund the annual Operations and Maintenances Expenses for the next budget year (the "**Annual Budget Amount**") and shall deliver to the Developer, by October 15 of each year beginning in 2024 for the next budget year the Annual Budget Amount, the anticipated Operations Revenue for that budget year and the Shortfall Amount for that budget year.

(a) Payment of Shortfall. The Developer shall advance funds necessary to the District to fund the Operations and Maintenance Expenses on a periodic basis as needed from the date of this Agreement through the year in which the certified assessed valuation for the next tax collection year equals or exceeds $140,000,000.

(b) The "**Annual Shortfall Amount**" shall be the shortfall amount budgeted by the District for each fiscal year as set forth above.

(c) Repayment. The District agrees that it is its intention to repay the amounts the Developer has advanced or directly paid pursuant to the OFA, to the extent it has funds available from the imposition of its taxes, fees, rates, tolls, penalties and charges, and from any other revenue legally available, after the payment of its annual debt service obligations and

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annual operations, maintenance and administrative expenses, which repayment is subject to annual budget and appropriation.

(d) Term/Repose Under the OFA. Any obligation of Developer to advance funds will expire upon advance to the District of amounts sufficient to pay expenses incurred from the date of this Agreement through the date the certified assessed valuation of the District equals or exceeds $140,000,000.

6. **Notices**. All notices, demands, requests or other communications to be sent by one Party to the other hereunder or required by law shall be in writing and shall be deemed to have been validly given or served by delivery of same in person to the addressee or by courier delivery via FedEx or other nationally recognized overnight air courier service, by electronically-confirmed email transmission, or by depositing same in the United States mail, postage prepaid, addressed as follows:

To the District:	Redtail Ridge Metropolitan District c/o McGeady Becher P.C. 450 East 17th Avenue, Suite 400 Denver, CO 80203-1254 Phone: 303-592-4380 Email: legalnotices@specialdistrictlaw.com
To the Developer:	Redtail Ridge Portfolio, LLC c/o Sterling Bay 333 N. Green St., Suite 1100 Chicago, IL 60607 Attn: Andrew Gloor
With a copy to:	Redtail Ridge Portfolio, LLC c/o Sterling Bay 100 Bayview, Suite 250 Newport Beach, CA 92660 Attn: Rodney Richerson Email: rricherson@sterlingbay.com
And with a copy in all instances via email to:	legalnotices@sterlingbay.com
With additional copies to:	Greenberg Traurig, LLP 18565 Jamboree Road, Suite 500 Irvine, CA 92612 Attention: Bruce Fischer Phone: 949-732-6670 Email: fischerb@gtlaw.com and

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	Holland & Hart LLP 1800 Broadway, Suite 300 Boulder, CO 80302 Attn: J. Marcus Painter and Mark E. Hamilton Telephone: 303-473-2700 E-mail: mpainter@hollandhart.com; mehamilton@hollandhart.com
To the City:	City of Louisville 749 Main Street Louisville, CO 80027 Attention: City Manager
With a copy to:	City of Louisville 749 Main Street Louisville, CO 80027 Attention: City Attorney
With a copy in all instances via email to:	kathleen@kellypc.com

All notices, demands, requests or other communications shall be effective upon such personal delivery, one (1) business day after being deposited with FedEx or other nationally recognized overnight air courier service, on the date of transmission if sent by electronically-confirmed email transmission, or three (3) business days after deposit in the United States mail. By giving the other Party hereto at least ten (10) days' written notice thereof in accordance with the provisions hereof, each of the Parties shall have the right from time to time to change its address or contact information.

7. **Assignment**. The Parties shall not assign any of its rights or delegate any of its duties hereunder to any person or entity, except for an affiliate. Any purported assignment or delegation in violation of the provisions hereof shall be void and ineffectual.

8. **Parties Interested Herein**. Nothing expressed or implied in this Agreement is intended or shall be construed to confer upon, or to give to, any person other than the District, the Developer, and the City any right, remedy, or claim under or by reason of this Agreement or any covenants, terms, conditions, or provisions thereof, and all the covenants, terms, conditions, and provisions in this Agreement by and on behalf of the District, the Developer, and the City shall be for the sole and exclusive benefit of the District, the Developer, and the City.

The City and the District acknowledge and agree that, notwithstanding anything stated to the contrary in this Agreement, the obligations of the Developer under this Agreement are only intended to, and shall only, bind the Developer, and are not intended to, and shall not, run with the Property or be binding on any successors or assigns of the Developer.

9. **Event of Default**. Notwithstanding any other provision of this Agreement, if any Party fails in the performance of any covenant in this Agreement and such default continues for

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thirty (30) days after written notice specifying such default and requiring the same to be remedied is given by a non-defaulting Party to the defaulting Party (the "**Cure Period**") an event of default ("**Event of Default**") under this Agreement will be deemed to have occurred. If such Event of Default is not of a type which can be cured within the Cure Period and the defaulting Party gives written notice to the non-defaulting Party within the Cure Period that it is actively and diligently pursuing such cure, the defaulting Party shall have a reasonable period of time given the nature of the default following the end of the Cure Period to cure such default, provided that such defaulting Party is at all times within such additional time period actively and diligently pursuing such cure in good faith (the "**Extended Cure Period**").

10. **Default/Remedies**. If an Event of Default occurs and after expiration of the Cure Period, or if applicable, the Extended Cure Period, the non-defaulting Party shall be entitled to exercise all remedies available at law or in equity. In the event of any litigation, arbitration or other proceeding to enforce the terms, covenants or conditions hereof, the prevailing Party in such proceeding shall obtain as part of its judgment or award its reasonable attorneys' fees.

11. **Governing Law and Jurisdiction**. This Agreement shall be governed and construed under the laws of the State of Colorado. Venue for any legal action relating to this Agreement shall be exclusive to the State District Court in and for the County of Boulder, Colorado.

12. **Police Powers Retained**. Nothing contained in this Agreement shall constitute or be interpreted as a repeal of the City's ordinances or resolutions, or as a waiver of the City's legislative, governmental, or police powers to promote and protect the health, safety, and welfare of the City and its inhabitants.

13. **Inurement**. Each of the terms, covenants and conditions hereof shall be binding upon and inure to the benefit of the Parties hereto and their respective permitted successors and assigns.

14. **Integration**. This Agreement constitutes the entire agreement between the Parties with respect to the matters addressed herein. All prior discussions and negotiations regarding the subject matter hereof are merged herein.

15. **Severability**. If any covenant, term, condition, or provision under this Agreement shall, for any reason, be held to be invalid or unenforceable, the invalidity or unenforceability of such covenant, term, condition, or provision shall not affect any other provision contained herein, the intention being that such provisions are severable.

16. **Counterparts**. This Agreement may be executed in one or more counterparts, each of which shall constitute an original and all of which shall constitute one and the same document.

17. **Paragraph Headings**. Paragraph headings are inserted for convenience of reference only.

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18. **Term**. This Agreement shall be effective _____, 20____ and shall remain in effect, together with the License granted hereunder, until terminated in writing by resolution of the City Council of the City (the "**Maintenance Term**").

19. **Amendment**. This Agreement may be amended from time to time by agreement between the Parties hereto; provided, however, that no amendment, modification, or alteration of the terms or provisions hereof shall be binding upon the Parties unless the same is in writing and duly executed by the Parties hereto. Such amendments shall not be deemed a material modification requiring a Service Plan Amendment.

20. **Estoppel Certificate**. Within twenty (20) days after receipt of a written request by the Developer, the District and the City shall execute and deliver to the Developer (and upon written request by the Developer, deliver to the Developer's investors and lenders) a written estoppel certificate (in a form prepared by the Developer and reasonably approved by the District and the City) as to the status of this Agreement, the existence of any defaults under this Agreement, any amounts owed to, or owed by the Developer, under this Agreement, whether the certified assessed valuation equals or exceeds $140,000,000 (such that the Developer is no longer obligated to pay any Annual Shortfall Amount), and any other information reasonably requested by the Developer, its investors and/or its lenders.

[SIGNATURE PAGE FOLLOWS]

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[SIGNATURE PAGE TO OPERATION AND MAINTENANCE AGREEMENT]

IN WITNESS WHEREOF, the Parties have executed this Agreement as of the day and year first set forth above.

DISTRICT:
REDTAIL RIDGE METROPOLITAN DISTRICT, a quasi-municipal corporation and political subdivision of the State of Colorado

By: _____
President

ATTEST:

By: _____
Secretary

DEVELOPER:
REDTAIL RIDGE PORTFOLIO, LLC, a Delaware limited liability company

By: _____

Name: _____

Title: _____

CITY:
CITY OF LOUISVILLE, COLORADO, a municipal corporation of the State of Colorado

By: _____

Name: _____

Title: Mayor

ATTEST:

By: _____
City Clerk

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EXHIBIT A

OPERATIONS AND MAINTENANCE EXPENSES

Redtail Ridge

	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
REVENUES:										
Category **Description**	**Total**	**Total**	**Total**	**Total**	**Total**	**Total**	**Total**	**Total**	**Total**	**Total**
Revenue Available for Ops	-	-	-	37,387	435,951	917,300	1,236,060	1,321,357	1,434,632	1,515,648
Developer Advance	90,000	200,000	340,000	510,000	145,000	-	-	-	-	-
TOTAL REVENUES	**90,000**	**200,000**	**340,000**	**547,387**	**580,951**	**917,300**	**1,236,060**	**1,321,357**	**1,434,632**	**1,515,648**
EXPENDITURES:										
Category **Description**	**Total**	**Total**	**Total**	**Total**	**Total**	**Total**	**Total**	**Total**	**Total**	**Total**
General & Administrative										
Accounting	20,000	20,000	25,000	25,000	25,000	30,000	30,000	30,000	30,000	30,000
Audit	2,500	5,000	5,000	5,000	5,000	5,000	7,500	7,500	7,500	7,500
County Treasurer's Fees	750	1,500	1,500	1,500	1,500	1,500	2,250	2,250	2,250	2,250
Dues and Licenses	750	1,500	1,500	1,500	1,500	1,500	2,250	2,250	2,250	2,250
Insurance and Bonds	5,000	5,000	5,000	5,000	5,000	7,500	7,500	7,500	9,000	9,000
District Management	25,000	25,000	30,000	30,000	30,000	37,500	37,500	37,500	40,000	40,000
Legal Services	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	37,500	37,500
Election Expense	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	3,750	3,750
Annual Review Fee	1,750	3,500	3,500	3,500	3,500	3,500	5,250	5,250	5,250	5,250
Allowance/Contingency	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000
TOTAL G&A	**87,250**	**93,000**	**103,000**	**103,000**	**103,000**	**118,000**	**123,750**	**123,750**	**142,500**	**142,500**
Other Expenses										
TDM										
Shuttles to Transit - Contribution ONLY	-	-	-	75,000	75,000	75,000	75,000	75,000	75,000	75,000
EcoPasses	-	18,000	27,000	36,000	45,000	54,000	63,000	72,000	81,000	90,000
TDM Coordinator	-	25,000	50,000	100,000	100,000	110,000	110,000	110,000	120,000	120,000
Walk and Bike Month	-	-	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000
Guaranteed Ride Home Program	-	-	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500
Orientation Packets	-	-	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500
Plan Evaluation	-	-	2,500	-	-	-	-	-	-	-
Maintenance Costs										
Roadways	-	28,500	58,000	90,000	120,000	155,000	157,000	160,000	163,000	167,000
Landscaping	-	27,000	55,000	85,000	75,000	95,000	99,000	102,000	105,000	108,000
Stormwater Management	-	6,500	14,000	20,000	28,000	35,000	37,000	39,000	41,000	43,000
TOTAL OTHER EXPENSES	-	**105,000**	**236,500**	**436,000**	**473,000**	**554,000**	**571,000**	**588,000**	**615,000**	**633,000**
GRAND TOTAL EXPENSES	**87,250**	**198,000**	**339,500**	**539,000**	**576,000**	**672,000**	**694,750**	**711,750**	**757,500**	**775,500**

EXHIBIT B

LOCATION AND MAINTENANCE OBLIGATIONS OF THE PUBLIC IMPROVEMENTS

Landscape Maintenance Responsibilities

- Areas with Permanent Irrigation
- By RRMD / Developer
- City of Louisville (COL)
- Redtail Ridge Metropolitan District (RRMD)

Notes:

A. Tract L shall be maintained primarily with native and natural vegetation but may contain limited improvements to enhance its use and functionality as Common Open Space, such as utility easements/ corridors, detention and water quality ponds, signage, trails, ponds, benches, storm water improvements, limited landscaping and irrigation, split rail wood fencing limited to four feet in height, landscape walls, small trash receptacles, grills, and picnic areas. Streets, drive aisles and parking areas shall not be permitted within Common Open space areas.

B. Temporary irrigation not shown

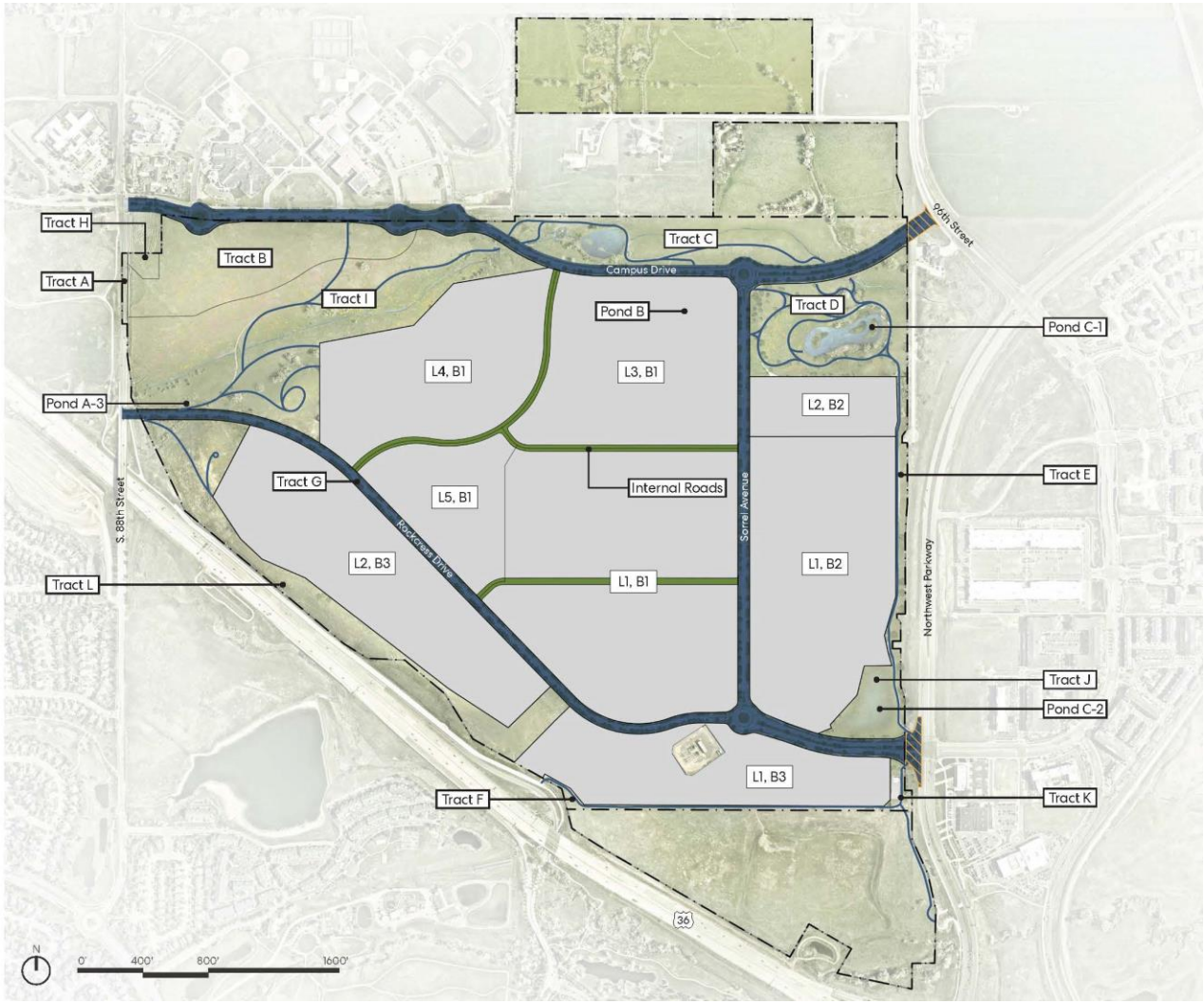
C. Within Tract D, RRMD to maintain Pond C-1 along with the adjacent landscaping up to the inside edge of the path which circumnavigates the pond. COL shall maintain the actual path along with all areas outside of the circumnavigating path.

D. All irrigation lines and appurtenances being installed pursuant to this agreement to be owned and maintained by RRMD

E. RRMD shall be responsible for right-of-way irrigation and maintenance for Sorrel, Campus and Rockcress right-of-way from the outside edge of sidewalk on one side of the roadway to the outside edge of sidewalk on the opposite side of the roadway. The typical right-of-way cross-section results in a small 1' to 2' wide strip in between the outside edge of sidewalk and the right-of-way line. Unless otherwise indicated, the irrigation and maintenance of this strip shall be the responsibility of the adjacent property owner.

F. Along the eastern edge of Tract J, L1/B2 and L2/B2, RRMD/Developer to maintain the landscaping within Tract E which is located west of the path within Tract E. COL shall maintain the path within Tract E as well as all landscaping east of the path.

Roadway & Trail Maintenance Responsibilities



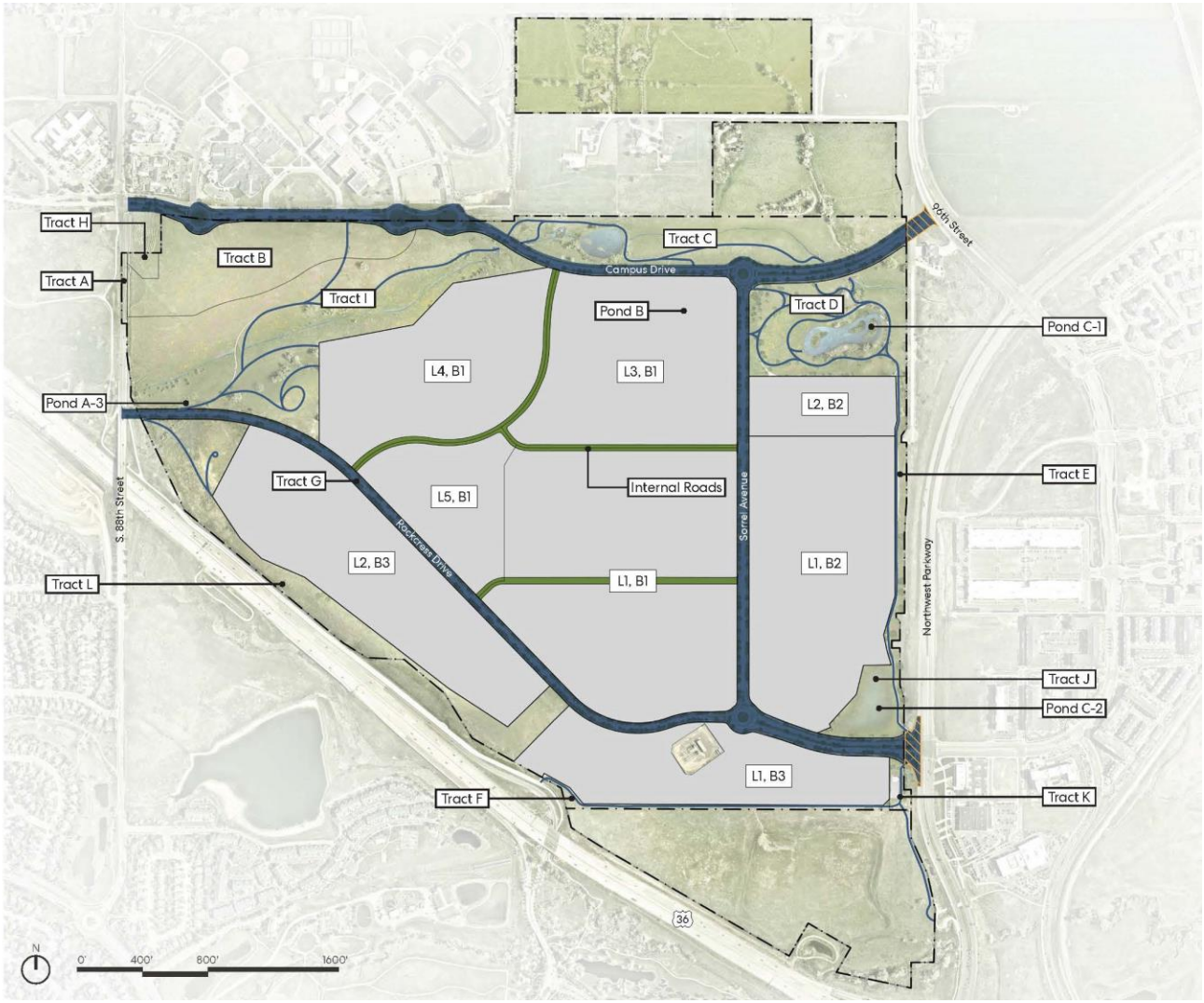
Note: To include sidewalks, walkways, and hardscapes.

To be defined per IGA between COL, City and County of Broomfield & Northwest Parkway Authority

City of Louisville (COL)

Redtail Ridge Metropolitan District

Snow Removal Responsibilities



To be defined per IGA between COL, City and County of Broomfield & Northwest Parkway Authority

City of Louisville (COL)

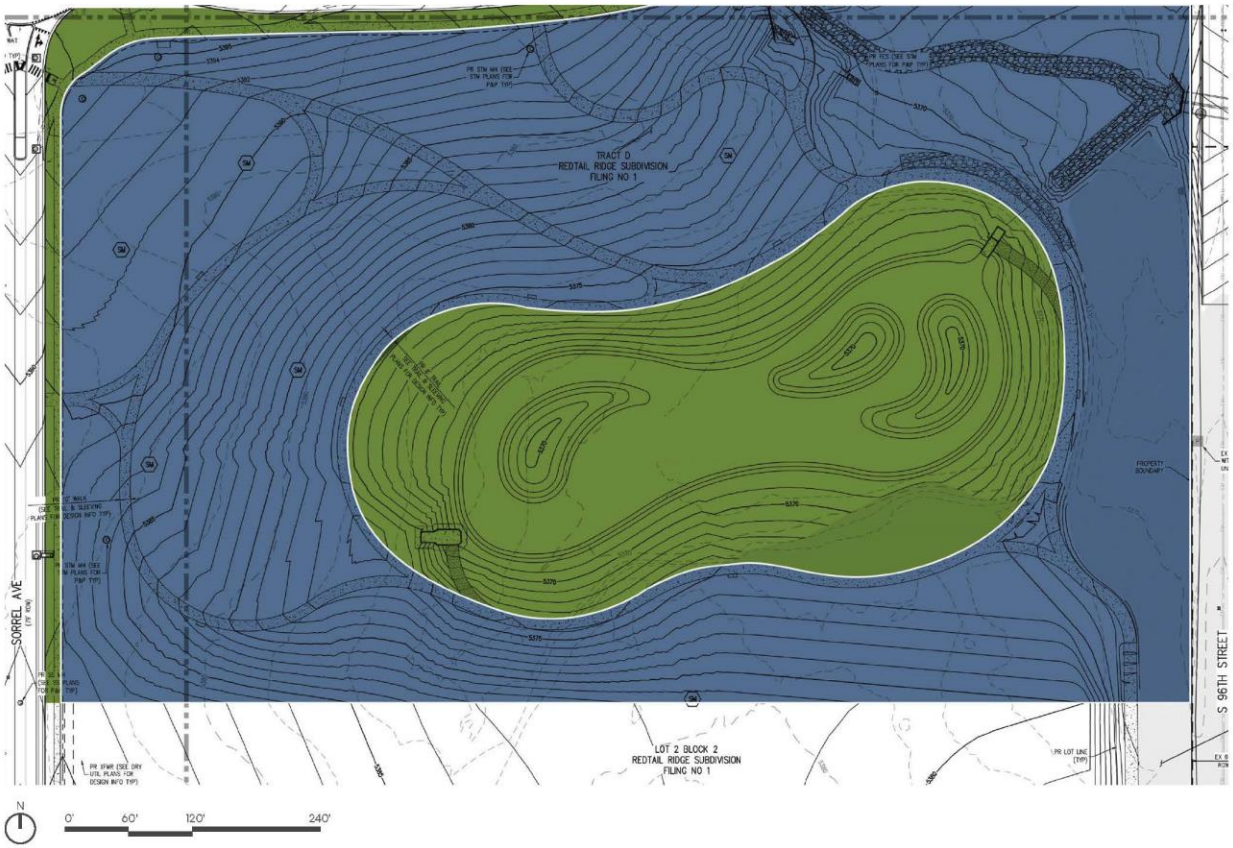
Redtail Ridge Metropolitan District

Wet Utility & Stormwater Management Maintenance Responsibilities

City of Louisville

Redtail Ridge Metropolitan District

Wet Utility & Stormwater Management Maintenance Responsibilities - Tract D



Note: RRMD is responsible for maintaining all piping, pond structures, and outfalls associated with the pond in Tract D.

City of Louisville

Redtail Ridge Metropolitan District

EXHIBIT C

EXCERPT FROM TRANSPORTATION DEMAND MANAGEMENT PLAN

The District will manage the funding, operations, and maintenance of the TDM plan. A summation of the timeline for implementing recommended TDM strategies at different Phases of development is provided in **Table 2**. Only TDM Strategies with one-time or annual costs are included.

Table 2: Redtail Ridge TDM Plan Funding and Timeline Summation

TDM Strategy	*Timeline and Frequency*	*Amount*
Develop shuttle service	Metro District to contribute a one-time allocation for the planning and implementation of the shuttle service as a condition of Phase I occupancy permits.	Metro District paid through public RFP
Proportional yearly operational costs for shuttle service	Metro District to secure fees from property owners and/or leasees for annual allocation of proportional share of shuttle service operation. Fees provided to whomever is managing the shuttle service.	$75,000/Year
Employee EcoPasses upfront	Metro District to provide one-time allocation to secure employee EcoPasses, through Master Contract with RTD, for all employee in the initial, Phase 1. Fees paid directly to RTD.	$18,000
Long-term Employee EcoPasses	Metro District to secure funds to pay for EcoPasses through an RTD Master Contract fees in subsequent years.	$75,000/Year
Hire TDM Coordinator	Metro District to secure and maintain TDM Coordinator services	$100,000 annually - Metro District fees

EXHIBIT D

MAINTENANCE SERVICE STANDARDS

All maintenance of COL Public Improvements on the Premises shall be conducted according to current City of Louisville standards and include but not limit to the following.

1. Turf Mowing and Trimming

    a. Turf areas are to be mowed and trimmed weekly during the growing season or as needed to maintain an even, well-groomed appearance. Turf grass should be kept at a height of approximately three inches.

    b. The use of mulching mowers is encouraged. Excessive clippings that accumulate on the turf must be removed and disposed of off-site.

    c. All mowing equipment shall be equipped with sharp blades so as not to tear, but cleanly cut the blades of grass.

    d. Rotary walk-behind or riding mowers are required for mowing. Mowers and trimmers must be operated in a safe and orderly manner.

    e. Turf shall be cut in a professional manner so as not to scalp turf or leave uncut areas.

    f. Care shall be taken to prevent discharge of grass clippings into the storm drains or onto any paved surfaces such as streets, sidewalks, driveways, or adjacent properties. Any material so discharged shall be removed immediately.

    g. All trash and litter shall be removed from the site prior to initiating any mowing of the turf areas. Trash and litter shall be hauled from site.

    h. All trimming shall be done using a string trimmer.

    i. All trimming must be accomplished concurrently with the mowing operation and done at the same height as the adjacent turf.

    j. Special care shall be taken while trimming so as not to inflict damage to the bark of trees, fence posts or boards, signs, etc.

2. Turf Edging

    a. All sidewalks, curbs, walkways and other hard surfaces will be mechanically edged using a metal blade as necessary in order to maintain a well-groomed appearance. All material dislodged by edging will be removed from site.

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3. Turf Aeration

a. Common turf areas shall be aerated once in the spring and once in the fall. Each aeration shall be done in a cross type pattern (two different directions) with a commercial type aerator having a plug depth set at six inches (6").

4. Native Grass Maintenance

a. Monitoring

1. Native seed areas shall be observed and monitored on a regular basis as part of regular maintenance visits.

b. Weed Control

1. Noxious weeds, as defined by the Colorado Department of Agriculture, shall be monitored and removed or killed during the spring and fall. This includes noxious weeds with classifications List A, B, C and Watch species.

2. Contractor must contact the City of Louisville Open Parks Superintendent and receive approval prior to any herbicide applications on the property. Contractor will be required to provide the name of targeted weed species, pesticide name(s), species location maps, and proposed rate(s) for treatment.

3. All herbicide applications are subject to the City of Louisville regulations and limitations in place at time of application. Approval for use of all herbicides must be obtained from the City of Louisville Parks Superintendent prior to application.

4. Precautions shall be taken to keep persons away from herbicide treated areas until the area is safe for entry.

(1) Flagging shall be placed prior to any application. Each flag shall include the company name, phone number, time and date of application, and chemical applied. Flags shall be placed at all entrances and other highly visible areas throughout the site and shall be removed as soon as the area is safe for entry.

5. All chemicals shall be used in accordance with label directions and the manufacturer's recommended handling methods. All governmental and industry recommendations and regulations apply.

6. All pesticide applications shall be performed under the direction of a licensed applicator by the State of Colorado Department of Agriculture and in accordance with the Colorado Pesticide

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Applicator's Act. All City regulations and best management practices apply.

(1) It is the contractor's responsibility to identify and properly notify any person listed on the Registry of Pesticide Sensitive Persons whose property abuts that on which the application is scheduled before any pesticide application is performed.

(2) The contractor assumes full and complete responsibility for any damage or death cause to non-target plants in the maintenance areas or adjacent properties and for any adverse effects caused by pesticide applications.

7. Broadleaf weeds shall be eradicated using chemical or manual methods to prevent the spread of weeds in Spring and Fall. A minimum of 1 herbicide application is expected on an annual basis for native areas. Herbicide applications must be preapproved by the City of Louisville Parks Superintendent and are subject to City Regulations in place at the time of application.

8. Spot seeding and over-seeding of areas shall occur as bare spots develop, greater than 2'x2', particularly after mowing and herbicide applications. The specified seed mix shall be doubled when broadcast seeding, and installation should ensure proper soil to seed contact during application.

c. Native Grass Mowing

1. In the case of excessive weeds in a native grass area, mechanical and/or chemical eradication of the weeds should occur prior to weeds going to seed.

2. Any shortgrass mix that will maintain a height of approximately 30" or less, excluding trail edges, is not intended to receive routine mowing. If a thicker stand of grass is desired, one seasonal mowing that is not bagged shall occur in the fall after the native grasses have seeded out.

d. Trail Edge Mowing.

1. Walkways or tails adjacent to native grass areas can be mechanically mowed and edged (if concrete). Beauty bands, and mowing of native grass adjacent to walkways and trails *should be mowed and trimmed at a minimum of twice per year during the growing season or as needed. Mowing shall occur at a width of three to four and a height of four to six inches. Depending on the season, more cuts may be needed to maintain an even height not greater than 12" high.*

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(1) The use of mulching mowers is encouraged. Excessive clippings that accumulate on the turf must be removed and disposed of off-site.

(2) All mowing equipment shall be equipped with sharp blades so as not to tear , but cleanly cut the blades of grass.

(3) Rotary walk-behind or riding mowers are required for mowing. Mowers and trimmers must be operated in a safe and orderly manner and each piece of equipment should have a fire extinguisher.

(4) All trimming shall be done using a string trimmer.

e. Clippings.

1. Care shall be taken to prevent discharge of grass clippings into the storm drains or onto any paved surfaces such as streets, sidewalks/trails, driveways, or adjacent properties. Any material so discharged shall be removed immediately.

f. Irrigation.

1. Native grass shall not receive supplemental irrigation water after an area has been deemed as established. Large areas of reseeding that occur, in excess of 50 SF, may require limited supplement irrigation to reestablish this seed area.

5. <u>General Weed Control</u>

a. Suckers are classified as weeds. Adventitious sucker growth from trees in tree wells shall be removed weekly using pruning shears. Shears will be sterilized with isopropyl alcohol or an approved disinfectant between cuts. Chemically treating suckers is not allowed.

b. Weeds shall be removed or killed as the weeds emerge in the following areas: native grass areas, turf areas, shrub beds, mulched areas (wood and rock), sidewalks and pattern concrete.

c. Weeds shall be removed if they are larger than two inches (2") in height or diameter and disposed of off-site.

d. Trees wells will be sprayed a minimum of three (3) times during the growth season with herbicide approved prior to application by the City of Louisville Parks Superintendent, with the exception of the following areas:

1. Trees located in or in close proximity to native wildflower areas

2. Trees located in naturalized native grass areas

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3. Trees located in shrub beds with groundcover or other plant material that will effectively cover under the tree canopy

e. Precautions shall be taken to keep persons away from herbicide treated areas until the area is safe for entry. Herbicide applications shall be made at times when citizen presence is minimal.

f. Pesticide flagging will be placed prior to an application which will include the company name, phone number, time and date of application and chemical applied on each flag. Flags shall be placed at all entrances and other highly visible areas throughout the site and will be removed as soon as the area is safe for entry.

g. All chemicals shall be used in accordance with label directions and the manufacturer's recommended handling methods. All governmental and industry recommendations and regulations apply.

h. Broadleaf treatment of weeds on turf shall occur but not to exceed two (2) times per growing season.

i. All pesticide applications must be performed under the direction of a licensed applicator by the State of Colorado Department of Agriculture and in accordance with the Colorado Pesticide Applicator's Act. All City regulations and best management practices apply.

1. It is the contractor's responsibility to identify and properly notify any person listed on the Registry of Pesticide Sensitive Person whose property abuts that on which the application is scheduled before any pesticide application is performed.

2. The contractor assumes full and complete responsibility for any undesirable plant kill or plant damage on the maintenance areas or adjacent property and for any adverse effects caused by pesticide applications.

3. All pesticides recommended for use and all application of pesticides must be reported to the Parks Superintendent.

6. Litter

a. All hand litter and other debris shall be picked up in accordance to the mowing frequency. Litter and debris shall be picked up prior to mowing and hauled from the site. Trash shall also be removed from native grass areas, shrub beds, landscaped areas, mulched areas and sidewalks.

b. Pet pick-up dispensers are to be restocked weekly or as needed.

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7. Turf Fertilizing

a. Fertilization applications shall be performed once in the spring after the aeration has been performed and once in the fall after the aeration has been performed. The formulation and application rate will be determined by a soil test. Fertilizer should be a slow release type.

b. If the fertilizer contains iron it must be removed from all concrete surfaces to avoid staining.

c. The fertilizer formulation and application rate must be reported to the Parks Superintendent.

8. Irrigation

a. Irrigation systems intended for temporary establishment shall be physically disconnected from permanent system and not returned to service unless authorized by the City.

b. It is expected that the systems will be energized in the spring and winterized in the fall. Heads shall be adjusted as needed, breaks repaired timely to prevent any interruptions in the watering cycles for all landscaping. During spring startup, each irrigation hydrozone shall be physically inspected to ensure proper system operation and no major system leaks.

c. Routine maintenance on the system components shall occur weekly.

d. Heads must be adjusted for optimal coverage, and overspray on roadways and pedestrian walks should be minimized. Nozzles are to be free of debris and valves are to be functioning properly.

e. Any replacement parts must be of the same brand, model number and nozzle size.

f. Backflows must be tested yearly by a certified tester. Test documentation must be completed and submitted to the City.

g. Appropriate watering practices must be followed for each specific type of plant material and turf species. Day watering is only allowed for grass and native seed establishment.

h. Use of a rain sensor is required. Irrigation must be turned off during a rain event. A rain event is defined as an event in which accumulation exceeds two-tenths of an inch (.2") of water in a twenty-four hour period.

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9. Pruning

a. All trees, shrubs and plant material shall be maintained to ensure the health, vigor and aesthetic appearance according to accepted horticultural practices.

b. Shrub growth shall be maintained in accordance with present space limitations but natural growth and appearance shall be maintained.

c. Damaged trees or those that constitute health or safety hazards shall be pruned immediately.

d. Tree pruning shall include sidewalk and street clearance, as well as maintain sight visibility clearance requirements.

e. All tree pruning shall be conducted by a certified arborist.

f. Questions or disputes regarding pruning shall be referred to the City Forester and his/her decision will prevail.

10. Mulching

a. Manicured landscape areas containing mulch will be kept at a depth of four inches to discourage the growth of any plant material deemed undesirable.

b. Naturalized landscape areas that utilize mulch for initial establishment shall have the option of discontinuing the use of mulch if a suitable stand of native grass, or groundcover has been established to avoid areas of bare earth and discourage weed establishment.

11. Annual Flower Beds

a. Annual flower beds will have the soil turned once a year in the fall before new flowers are planted.

b. All flowers will be dead headed on an as need basis.

12. Site Amenities

a. Inspections should occur weekly and reports made available upon request.

b. General care and upkeep shall occur as needed for site amenities such as: pet pick-up dispensers, etc.

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13. Graffiti

a. Graffiti shall be removed within forty-eight hours from all surfaces such as: walkways, hard surfaces, benches, tables, boulders, retaining walls, signage, lighting, fencing, etc.

b. All materials and processes used in removal shall be non-injurious to surfaces and adjacent property. If repainting is required, appropriate surface preparation shall be made on painted surfaces. Paint applied shall be the exact shade of color as existing paint.

14. Sidewalks, Walkways, and Hardscapes

a. Sidewalks, walkways and hardscapes shall be swept and/or blown weekly or as needed to keep free from debris. All litter shall be picked up and removed.

b. All expansion joints and cracks shall be kept weed free at all times.

c. Any accumulation of snow shall be removed from all concrete walkways. Snow or ice must be removed within twenty-four hours from the last accretion of such snow or ice per City Ordinance.

15. Piping and Structures

a. Provide pipe jetting and debris and silt removal as needed and as directed by the City. Piping shall not have a restriction greater than 20% based on depth.

16. The Stormwater Facilities include various ponds, wetlands areas and related BMPs (the "**Aquatic Areas**"). The District and the City acknowledge that the standards for the maintenance of the Aquatic Areas are set forth in Addendum 1 attached hereto and incorporated herein by this reference. (the "**Aquatic Maintenance Standards**"). The District agrees it will maintain the Aquatic Areas to the Aquatic Maintenance Standards.

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ADDENDUM 1

Pond Management Plan

Redtail Ridge

Prepared by: Kristin Oles

Restoration Ecology Project Manager

High Plains Environmental Center

7/23/24

Wetlands, whether natural or human-made, are some of the most productive ecosystems in the world and are able to support high levels of biodiversity. According to the United Nations, wetlands cover only 6% of Earth's surface but 40% of all plant and animal species life or breed in wetlands. Half of federally threatened and endangered species in the U.S. are dependent on wetlands. Wetlands in the Redtail Ridge development include stormwater ponds, stormwater conveyances, old stock ponds, and some natural creeks. Construction in this development offers the opportunity to improve the habitat quality and ecological function of both existing and newly created wetlands on the site. This management plan provides recommendations for improvements and maintenance of ponds specifically.

Planting Design

Existing ponds currently support mature native cottonwood (*Populus deltoides*) and peachleaf willow (*Salix amygdaloides*) trees. Because of the tremendous habitat value provided by mature trees, a selection of these trees will be preserved and protected from the grading and construction process. Additional trees will be planted around the ponds to provide future overstory habitat around the ponds.

A multi-layered understory of native shrubs will be planted beneath new and existing trees. This will diversify the plant community and provide habitat for more species of wildlife. Increased plant diversity also improves the resiliency to disturbance and climatic variation. In the case of stormwater ponds that serve as essential infrastructure, a diverse and healthy ecosystem also makes the ponds easier to maintain.

Woody plantings will be clustered to create areas of protection and cover from weather and from human contact. Providing cover and concentrating human activity in limited areas allows both humans and wildlife to benefit from the ponds.

A native grass seed mix will be used in all other open areas around the ponds. The grass species will be diverse, including warm- and cool-season species, taller and shorter stature grasses, and different moisture preferences to ensure that there are appropriate grass species for any possible habitat type around the pond.

Installation

Weed control

Prior to installation, noxious weeds and other invasive plant species should be treated with the appropriate herbicide. Noxious weeds observed on site include common teasel (*Dipsacus* spp.), diffuse knapweed (*Centaurea diffusa*), musk thistle (*Carduus nutans*), Russian olive tree (*Elaeagnus angustifolia*), and Scotch thistle (*Onopordum acanthium*). Noxious weeds and undesirable species should be treated using an appropriate herbicide following the chemical label and all applicable regulations.

The City of Louisville discontinued the use of herbicides containing glyphosate or 2,4-D on their properties in 2020, so those two chemicals should be avoided in any areas to be deeded to the city. The herbicide Milestone (aminopyralid) works particularly well on all of the previously mentioned weeds except for Russian olive. For Russian olive removal, a cut-stump treatment with Garlon 3A (aquatic-safe triclopyr) is effective.

Seeding

Seed should be applied by seed drill or by hydroseeding. Seed drill is preferred whenever possible because it provides better soil contact for the seeds and can improve germination rates. Hydroseeding can be used in any areas drill-seeding equipment cannot access. Seed mix tags and seeding equipment should be inspected prior to seeding to ensure the correct mix is being installed correctly.

Weed control should be limited to mechanical methods in the first growing season when the grass seedlings are particularly vulnerable, even to broadleaf-specific herbicides. Annual weeds tend to be the dominant problem in newly-seeded areas, so mowing should be timed to limit seed production for the different annual weeds.

In the second growing season, herbicide can be used to treat weeds and seeded areas should not be mowed so that grasses are allowed to grow as much as possible. Grass growth will depend on whether the area has irrigation, on temperatures and precipitation, and on the level of competition with weeds.

Planting

Planting locations for shrubs and trees should be confirmed after evaluating site conditions. Each species has different water requirements and placement should be based on the actual water levels in the pond. Trees and shrubs should receive drip irrigation to aid in establishment.

Maintenance

Weed Control

The end goal for the pond design is to establish a self-sufficient plant community that is able to resist weed invasions with minimal human intervention. As seeded and planted areas grow in, levels of weed pressure and types of weed species will transition and will require different management strategies. Annual variation in precipitation and temperatures also affects weed growth. Because of these variables, both near- and long-term weed management must be an adaptive process that can respond to actual site conditions. Weed management must also integrate multiple modes of control, including chemical (herbicide), mechanical (mowing), and cultural (remove beneficial conditions), to ensure effective and sustainable long-term control.

Generally, weeds can be grouped by their lifespans (i.e. annual, biennial, perennial). Control of annual weeds should focus on preventing seed production since individual plants do not survive more than one year. This can be done with a combination of chemical and mechanical control, but the timing is very important. Many annual weed species will respond to early mowing by producing flowers (and seeds) lower down on the plant. Mowing must be timed to remove the plants when their flowers are well-developed in order to minimize the chance of seed production.

Biennial weeds (e.g. musk thistle and common mullein) often grow as a low rosette in their first year and herbicide treatments can work well at this stage. Once biennial weeds begin to flower, it is very likely that they are reaching the end of their life cycle. Herbicides can still be effective at early flowering (always consult the herbicide label for specific usage guidelines), but the goal should be to prevent seed production. Large-scale infestations can be mowed. In small infestations, it is feasible to cut and dispose of flower stalks to fully remove any seeds. Plants can also be cut at the root with a shovel in small infestations.

Perennial weeds (e.g. Canada thistle) are best managed with chemical and cultural control: herbicides are used to control the weeds while revegetation with desirable plants prevents the weeds from returning. Many perennial weeds, including Canada thistle and bindweed (*Convolvulus arvensis*), are difficult to fully eradicate with just herbicide. The most effective long-term strategy is to establish a healthy native plant community that will out-compete non-native species. Herbicide is a good tool to give native species a “head start” over the weeds.

Even after the native plant community is fully established, regular weed control will be part of the annual maintenance of all natural areas at Redtail Ridge, including ponds. Nearby sources of weed seeds will always be present and disturbance is a common occurrence in developed areas.

Tree and Shrub Maintenance

In a pond setting, trees and shrubs are largely left alone. Initially, trees and shrubs should receive drip irrigation to help them establish strong root systems. Once established, these plants may spread or die off depending on the pond and climate conditions year to year, just as they would in a natural pond. Evaluating planting locations on site at the time of planting will increase the likelihood that these plants are planted in their preferred conditions. Trees and shrubs in these ponds are not intended to receive regular maintenance like in traditional landscapes. They will exist as a part of an ecosystem that will fluctuate as conditions change.

Stormwater Function and Water Depth

Ponds have been designed to receive and move stormwater under various conditions. Some ponds will empty quickly and some will hold some water at all times depending on their intended function and design. Natural wetlands are also highly variable environments and the plants chosen in the planting design are adapted to changing water levels and soil saturation. The plant community is also very diverse, which makes the entire wetland ecosystem much more resilient to change.

While stormwater structures should be maintained regularly to ensure they function correctly, the rest of the pond should require very little (if any) regular maintenance. Invasive species should be monitored and controlled as necessary. Trees adjacent to walkways should be monitored for safety and pruned as necessary. But once the initial plantings are all established, it is expected that the plant community will shift (both in physical locations and species composition) over time as it would in a natural pond.

EXHIBIT E

INSPECTION FORM

City of Louisville Colorado

DETENTION BASIN (DB)
INSPECTION FORM

Date:_____

Subdivision/Business Name: Inspector:

Subdivision/Business Address:

Weather: _____

Date of Last Rainfall:_____ Amount: Inches

Property Classification: Residential Multi Family Commercial Other:_____
(Circle One)

Reason for Inspection: Routine Complaint After Significant Rainfall Event
(Circle One)

INSPECTION SCORING - For each facility inspection item, insert one of the following scores:
0 = No deficiencies identified
1 = Monitor (potential for future problem)
2 = Routine maintenance required
3 =Immediate repair necessary
N/A = Not applicable

FEATURES

1.) Inflow Points
- ____Riprap Displaced
- ____Erosion Present/Outfall Undercut
- ____Sediment Accumulation
- ____Structural Damage (pipe, end-section, etc.)
- ____Woody Growth/Weeds Present

2.) Forebay
- ____Sediment/Debris Accumulation
- ____Concrete Cracking/Failing
- Drain Pipe/Wier Clogged (not draining)
- ____Wier/Drain Pipe Damage

3.) Trickle Channel (Low-flow)
- ____Sediment/Debris Accumulation
- ____Concrete/Riprap Damage
- ____Woody Growth/Weeds Present
- ____Erosion Outside Channel

4.) Bottom Stage (Micro-Pool)
- ____Sediment/Debris Accumulation
- ____Woody Growth/Weeds Present
- ____Bank Erosion
- Mosquitoes/Algae Treatment
- ____Petroleum/Chemical Sheen

5.) Outlet Works
- ____Trash Rack/Well Screen Clogged
- ____Structural Damage (concrete,steel,subgrade)
- ____Orifice Plate(s) Missing/Not Secure
- ____Manhole Access (cover, steps, etc.)
- ____Woody Growth/Weeds Present

6.) Emergency Spillway
- ___ Riprap Displaced
- ____Erosion Present
- ____Woody Growth/Weeds Present
- ____Obstruction/Debris

7.) Upper Stage (Dry Storage)
- ____Vegetation Sparse
- ____Woody Growth/Undesirable Vegetation
- ____Standing Water/Boggy Areas
- ____Sediment Accumulation
- ____Erosion (banks and bottom)
- ____Trash/Debris
- ____Maintenance Access

8.) Miscellaneous
- ____Encroachment in Easement Area
- ____Graffiti/Vandalism
- ____Public Hazards
- ____Burrowing Animals/Pests
- ____Other

Inspection Summary / Additional Comments _____

OVERALL FACILITY RATING (Circle One)
0 = No Deficiencies Identified
1 = Monitor (potential for future problem exists)
2 = Routine Maintenance Required
3 = Immediate Repair Necessary

This inspection form shall be kept a minimum of 3 years and made available to the City of Louisville upon request.

Redtail Ridge

Traffic and Mobility Study

Updated Date: July 30, 2024

Submitted To:
Sterling Bay
5910 Pacific Center Blvd, Suite 200
San Diego, CA 92121

Submitted By:
Fox Tuttle Transportation Group, LLC
1580 Logan Street, 6th Floor
Denver, CO 80203

FOX TUTTLE

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Executive Summary

The purpose of this study is to evaluate potential traffic and mobility projects within and around the proposed Redtail Ridge development. The project site is generally bounded by S. 88th Street to the west, Campus Drive to the north, S. 96th Street/Northwest Parkway to the east and US 36 to the south. The proposed development is anticipated to be completed by Year 2035 over multiple phases and includes industrial space, life science space, good manufacturing practice (GMP) space, general office space, research and development space, a hospital, medical office space, and retail. The total square footage of Redtail Ridge will equate to 2,600,000 square feet (sq. ft.). The project plans to extend Campus Drive from the current end point to 96th Street, just north of the existing fire station. Internally, a number of roadways will be constructed for access and circulation. Accounting for anticipated non-single occupancy vehicle (non-SOV) trips and internal capture trip reduction, the full build out of the project site is estimated to generate approximately 21,285 daily, 1,908 AM peak hour, and 2,149 PM peak hour trips. In addition to the vehicular facilities, Redtail Ridge will include several on-street and off-street pedestrian and bicyclist amenities that will circulate the entire site and connect to external sidewalks, multi-use trails, and bike lanes. The purpose of this study is to identify what and when improvements are triggered and does not assign responsibility for implementation. The study provides data for agencies to determine which intersections and roadways may need enhancements in the future and provides an approximate timeline based on anticipated growth; it does not obligate implementation.

Current Study Area Traffic and Safety Conditions

Current conditions have been evaluated based on traffic counts collected in January 2023, while schools were in session. The analysis can be summarized as follows:

- AM Peak Hour
    - All study intersections operate acceptably overall (LOS D or better).
    - Individual movements operate at LOS E at Dillon Road/McCaslin Boulevard, Dillon Road/S. 96th Street, S. 88th Street/Campus Drive and Northwest Parkway/Rockcress Drive/Via Varra.
    - No queuing or capacity issues are present.
- PM Peak Hour
    - Only the intersection of Northwest Parkway at S. 96th Street/Via Varra operates overall at LOS E due to high delay for the northbound left-turn movement.
    - Some movements operate at LOS E at S. 88th Street/Campus Drive, Northwest Parkway/S. 96th Street/Via Varra, and Northwest Parkway/Rockcress Drive/Via Varra.

- No immediate mitigation measures are required to address current operational deficiencies in the study area.

The roadways around the project site are currently designed to optimize motor vehicle travel during peak times at speeds that present challenges for non-motorized travelers. Based on information provided in the City of Louisville *Transportation Master Plan* (TMP), four (4) existing study intersections near the Redtail Ridge project were identified as high crash locations, with three (3) of these intersections have documented bicycle crashes. The Dillon Road/S. 88th Street intersection has the highest number of bicycle crashes in the City of Louisville.

Background Improvements (without Redtail Ridge)

Previous studies recommended the extension of Campus Drive between S. 88th Street and S. 96th Street to better distribute traffic in the area. Additionally, corridor studies have identified the need to widen S. 88th Street, Dillon Road, and S. 96th Street from two-lane roadways to four-lane roadways. The City of Louisville's *TMP* recommends building more Great/Complete streets citywide, which will include the listed roadways.

Other improvements required by background traffic in the area include:

- **Dillon Road/S. 88th Street** – add 2nd westbound left-turn lane.
- **S. 88th Street/Campus Drive** – add 2nd northbound through lane and extend northbound right-turn lane storage to a minimum of 500 feet.
- **Dillon Road/S. 96th Street** – add eastbound/westbound dual left-turn lanes.
- **Northwest Parkway/S. 96th Street/Via Varra** - add 3rd northbound left-turn lane and modify southbound right-turn lane.
- Optimize signal timing as vehicular traffic increases, multi-modal traffic increases, and travel patterns change.

Long-Term Background Improvements (without Redtail Ridge)

In addition to the improvements listed above, some long-term improvements have been identified as potential needs but have not been defined specifically:

- **Northwest Parkway/US 36 interchange** – the South Ramps are expected to be at capacity with Year 2040 background traffic volumes. Additional capacity is needed to accommodate the projected traffic volumes without and with the project site trips. The additional capacity will likely

require that the bridge be widened. A coordinated study among agencies should occur to begin to look at interchange concepts.

Redtail Ridge Project-Triggered Improvements

The improvements listed below are recommended to accommodate the development of Redtail Ridge. In addition to safety and improving traffic operations, these improvements are also designed to reduce crashes and improve operations for the adjacent Monarch school campus.

- **Extend Campus Drive** from where it dead ends east of S. 88th Street to S. 96th Street. Include multi-modal facilities. This will reduce some traffic on Dillon Road and 88th Street within the study area.

- **S. 96th Street/Campus Drive (new intersection)** construct two northbound left-turn lanes, one southbound right-turn lane, two eastbound left-turn lanes, and one eastbound right-turn lane.

    - Provide three (3) northbound through lanes that extend from the Northwest Parkway/S. 96th Street/Via Varra intersection through the Campus Drive intersection. The three northbound through lanes will merge to two through lanes north of Campus Drive.

- **Northwest Parkway/Rockcress Drive/Via Varra** modify the eastbound approach to include two left-turn lanes, one through lane, and one right-turn lane.

- **Rockcress Drive** construct as a four-lane roadway between Northwest Parkway and Sorrel Avenue and narrow to two-lane roadway to S. 88th Street. It is planned this roadway will be phased. Include on-street bike lanes and sidewalks.

- **Sorrel Avenue** construct as two-lane roadway with a center left-turn lane. Include on-street bike lanes and sidewalks.

- **Internal Collector Roadways** construct as two-lane roadway. Include on-street bike lanes and sidewalks.

- **Campus Drive/Sorrel Avenue** construct as a multi-lane roundabout.

- **Rockcress Drive/Sorrel Avenue** construct as a multi-lane roundabout.

- **Internal intersections on Sorrel Avenue** construct with left-turn lanes on Sorrel Avenue.

- **Internal intersections on Rockcress Drive and Collector Roadways** construct with shared lanes since auxiliary lanes are not warranted.

The Redtail Ridge project team plans to implement Great/Complete Street design treatments on internal roadways and intersection as consistent with the City's TMP policies. Such streets and intersections will be designed and operated to be safe and accessible for all users, regardless of ability, age, or mode. Most importantly, Great/Complete Streets have been shown to reduce conflicts that lead to crashes.

In addition to the improvements listed above, some long-term improvements have been identified as potential needs but have not been defined specifically:

- **Northwest Parkway between S. 96th Street/Via Varra and US 36** – continue coordination with Northwest Parkway Authority, City of Louisville, and City and County of Broomfield to study the future corridor needs and most appropriate design. The Northwest Parkway intersections at 96th Street/Via Varra and at Rockcress Drive/Via Varra are anticipated to be near/at capacity by Year 2040 with the project trips.

    - One option is to add a third southbound through lane on Northwest Parkway from northeast of the 96th Street/Via Varra intersection to the US 36 interchange. The Denver Regional Council of Governments (DRCOG) has included additional capacity on Northwest Parkway in this area between 2020 and 2029 in the 2050 Metro Vision Regional Transportation Plan, but the exact nature of capacity improvements has not been determined at this time.

    - Additional study is needed to determine the optimal design for this corridor to accommodate the future needs and if/how the corridor will tie into the future US 36 interchange design, Jefferson Parkway, grade separated interchanges, etc. As proposed, Redtail Ridge does not preclude future improvements within Northwest Parkway right-of-way.

A summary of the recommended improvements and estimated year the improvement is needed is illustrated in **Figure E1** and summarized in **Table E.1**.

Next Steps

- Additional study and concept development are needed for the Northwest Parkway corridor and at the US 36 interchange with municipal partners.

- After the Filing 1 Plat submittal, vertical developers will be required to submit PUD documents prior to construction, including traffic conformance letters. The PUD documents will identify if/when traffic signals at the internal intersections are projected to be warranted as well as signal timing modifications/adjustments needed to the study intersections. In addition, the vertical developers will be required to submit building specific Travel Demand Management (TDM) Plans. The projected non-

single occupancy vehicle (non-SOV) goals will be evaluated and adjusted as needed to reach goals. The Metro District will monitor the plan's effectiveness and make changes as needed to reach goals.

Background (without Redtail Ridge)

Project (with Redtail Ridge)

Dillon Rd. [S. 88th St. to 96th St.]
Monitor operations and safety as volumes are anticipated to exceed 20,000 vpd (2035 and 2040). Consider widening to four-lanes.

Dillon Rd. at S. 88th St.
Restripe 2nd WB left-turn lane (2025)

S. 88th St. [Dillon Rd. to Campus Dr.]
Monitor operations and safety as traffic increases. Consider widening to four-lanes.

S. 88th St. at Campus Drive
Construct a second NB thru lane, begin approx. 500 ft. south of Campus Drive (2025)

Extend the NB right-turn lane to provide a minimum of 500 ft. of storage (2025)

S. 88th St. at Rockcress Dr.
Construct a SB Left-turn (2030)

Side-Street Stop-Control (2030)

Sorrel Ave.
Construct as two-lane roadway with 10' center left turn lane (2025)

Campus Dr.
Extend east to S. 96th St. (2025)

Rockcress Dr. [West of Sorrel Ave.]
Construct as two-lane roadways (2030)

Rockcress Dr. [West of NWP]
Construct as four-lane roadway (2025)

S. 96th St. [1/2 mile north of Dillon Rd.]
Widen to a four-lane roadway (2040)

S. 96th St. at Dillon Rd.
Construct dual EB and WB left-turn lanes (2025)

S. 96th St. [NWP to Dillon Rd.]
Widen to a four-lane roadway (2025)

S. 96th St. at Campus Dr.
Construct with dual NB left-turn lanes, SB right-turn lane, dual EB left-turn lanes, and one EB right-turn lane (2025)

Signalize (2025)

NWP at S. 96th St.
Construct 3rd NB left-turn lane and adjust SB right-turn lane and receiving lanes (2025)

Capacity improvements on NWP (2040+)

Northwest Parkway (NWP)
Capacity improvements needed (2040)

Construct 3rd SB thru lane approaching and through Rockcress Dr. (2040)

NWP at Rockcress Dr.
Modify EB with one left-turn lane, one thru lane, and one right-turn lane (2025)

Remove the split phasing on EB/WB (2025)

NWP at US 36 Interchange
Further study to determine appropriate interchange design for additional capacity (2040)

FOX TUTTLE TRANSPORTATION GROUP

REDTAIL RIDGE TRAFFIC AND MOBILITY STUDY

RECOMMENDED IMPROVEMENTS

FT Project #	19055	Original Scale	NTS	Date	07/12/2024	Drawn by	SKK	Figure #	E1

Table E.1 – Improvement Phasing Summary

Roadway or Intersection*	Mitigation	Trigger Timeline						Percent of Redtail Ridge Traffic
		Background (Non-Project Related)			Redtail Ridge Project			
		2025	2030	2040	Phase 1 - 2025	Phase 2 - 2030	Phase 3 - 2035	
S. 88th Street	Consider widening to 4-lanes (Dillon Rd to Campus Dr)	★						9%
S. 96th Street	Widen to 4-lanes (Dillon Rd to NW Pkwy)	★						11%
	Widen to 4-lanes (1/2 mile north of Dillon Rd)			★				14%
Dillon Road	Monitor operations and safety as volumes are anticipated to exceed 20,000 vpd (2035). Consider widening to 4-lanes (S. 88th St. to S. 96th St.) (2040).			★				4%
Northwest Pkwy	Add 3rd Southbound through lane (S. 96th St. to US 36 Interchange)						★	7%
Campus Drive	Extension to S. 96th Street				★			95%
Rockcress Drive	Construct as two-lane road (NWP to N-S Internal Collector)				★			100%
	Extend to S. 88th Street					★		100%
Sorrel Avenue	Construct as a two-lane road with center left-turn lane				★			100%
Internal Collectors	Construct as two-lane roads				★			100%
#10. Dillon Road at S. 88th Street	Restripe 2nd WB left-turn lane	★						0%
#15. Dillon Road at S. 96th Street	Construct dual EB left-turn lanes	★						0%
	Construct dual WB left-turn lanes	★						4%
#20. S. 88th Street at Campus Drive	Construct 2nd NB thru lane (begin approx. 500 feet south of Campus Drive)	★						23%
	Extend NB right-turn lane (500 feet)	★						3%
#22. S. 88th Street at Rockcress Drive	Construct as side-street stop-controlled, full movement					★		8%
	Construct one SB left-turn lane					★		100%
#23. S. 96th Street at Campus Drive	Construct dual NB left-turn lanes				★			64%
	Construct SB right-turn lane				★			39%
	Construct dual EB left-turn lanes				★			62%
	Construct one EB right-turn lane				★			100%
	Signalize				★			20%
#25. Northwest Parkway at S. 96th Street / Via Varra	Construct 3rd NB left-turn lane	★						4%
	Capacity improvements on NWP			★				8%

***The purpose of this traffic study is to identify what and when improvements are triggered and does not assign responsibility. The study provides data for municipalities to determine which intersections and roadways may need enhancements in the future and provides an approximate timeline based on anticipated growth; it does not obligate implementation.*

Roadway or Intersection*	Mitigation	Trigger Timeline						Percent of Redtail Ridge Traffic
		Background (Non-Project Related)			Redtail Ridge Project			
		2025	2030	2040	Phase 1 - 2025	Phase 2 - 2030	Phase 3 - 2035	
#30. Northwest Parkway at Rockcress Drive / Via Varra	Modify EB with two left-turn lanes, one thru lane, and one right-turn lane				★			100%
	Remove the split phase on EB/WB				★			100%
#35 & #40. Northwest Parkway at US 36 Interchange	New Interchange			★				19%
#101. Campus Drive at N-S Internal Collector	Implement Side-Street Stop-Control				★			100%
	Construct WB left-turn lane				★			100%
#102. Campus Drive at Sorrel Avenue	Construct as Multi-Lane Roundabout				★			65%
#103 & #104. Rockcress Drive at Internal Collectors	Implement Side-Street Stop-Control				★			100%
#105. Rockcress Drive at Sorrel Avenue	Construct as Multi-Lane Roundabout				★			100%
#106 & #107. Sorrel Avenue at E-W Internal Collectors	Implement Side-Street Stop-Control				★			100%
	Implement All-Way Stop					★		100%
	Construct NB left-turn lane				★			100%
	Construct SB left-turn lane					★		100%
#108. N-S Internal Collector at E-W Internal Collector (North)	Implement Side-Street Stop-Control				★			100%
#205. Sorrel Avenue at PUD 2 Access E	Implement Side-Street Stop-Control				★			100%

**Note: numbering denotes intersection locations and match to the intersection numbers within the level-of-service and queue tables, as well as on the figures.*

***The purpose of this traffic study is to identify what and when improvements are triggered and does not assign responsibility. The study provides data for municipalities to determine which intersections and roadways may need enhancements in the future and provides an approximate timeline based on anticipated growth; it does not obligate implementation.*

REDTAIL RIDGE

TRAFFIC AND MOBILITY STUDY

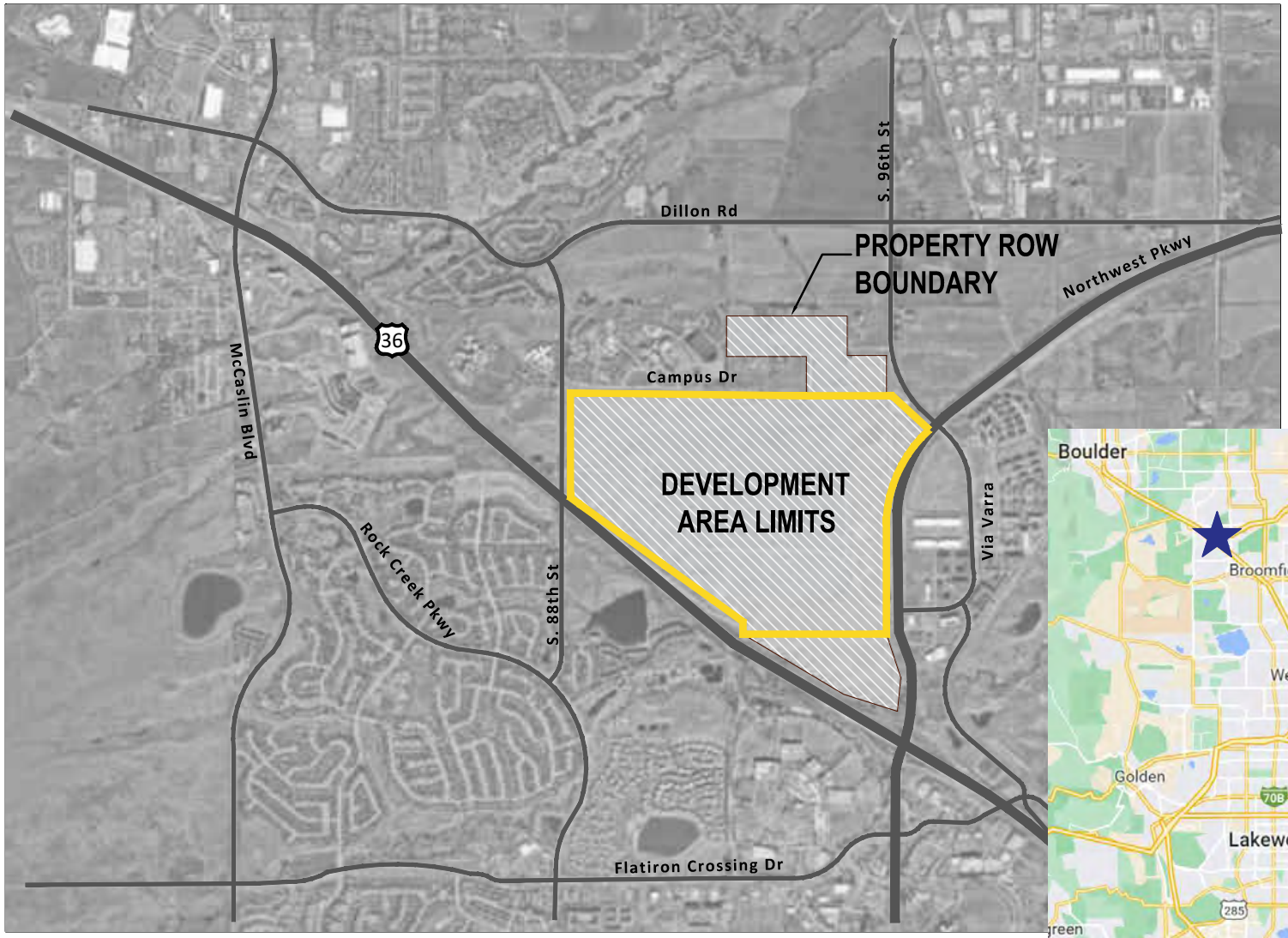
1.0 Introduction

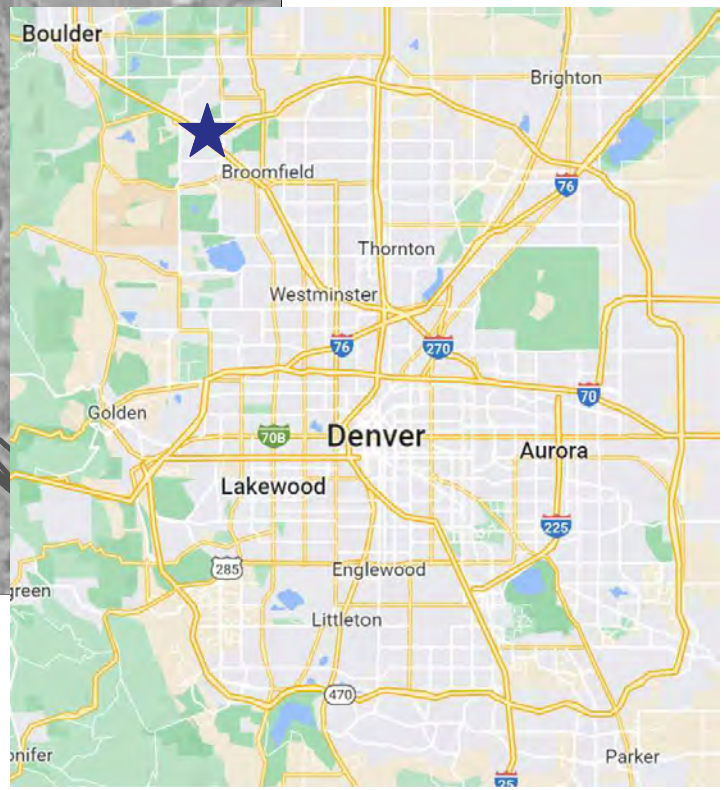
The Fox Tuttle Transportation Group has prepared this traffic and mobility study for the proposed development of the land bounded by S. 88th Street to the west, Campus Drive to the north, S. 96th Street/Northwest Parkway to the east and US 36 to the south (see **Figure 1:** Vicinity Map). The development is known as "Redtail Ridge" and proposes to develop a mix of general office, life science, research and development, industrial, medical facilities, and retail uses.

The project area is currently vacant, but prior to being sold to Sun Microsystems in 2005, Storage Tek headquarters and production plant was located on the project site. Storage Tek consisted of approximately 1,700,000 square feet of building area. In 2008, ConocoPhillips purchased the property and demolished the buildings in 2009. This area has since been vacant but has recently been acquired by Sterling Bay, hence the latest master plan for Redtail Ridge.

When Storage Tek was fully active in the late 1990's, approximately 4,000 employees worked on the campus and the campus generated approximately 12,400 vehicles per day (vpd), 1,600 vehicles per hour (vph) during the AM peak and 1,400 vph during the PM peak. The site was served by two (2) access points along the former privately owned/maintained Tape Drive which intersects with S. 88th Street to the west and Northwest Parkway to the east, and an access on Disc Drive from S. 96th Avenue. Currently there are barricades blocking vehicles from accessing Tape Drive on both the west and east sides of the property. The previous Tape Drive accesses are to be repurposed for a new internal roadway called Rockcress Drive.

The purpose of this study is to assist in identifying traffic and mobility improvements within the study area as a result of each phase of this project. The traffic study evaluates peak hour intersection operations and roadway conditions in the study area with and without the project generated traffic. The information contained in this study is anticipated to be used by the City staff in identifying any intersection or roadway deficiencies and potential improvements for each scenario. This study focuses on the weekday AM and PM peak hours, which represent the periods of highest trip generation for the proposed uses and of adjacent street traffic.





FOX TUTTLE
TRANSPORTATION GROUP

REDTAIL RIDGE TRAFFIC AND MOBILITY STUDY

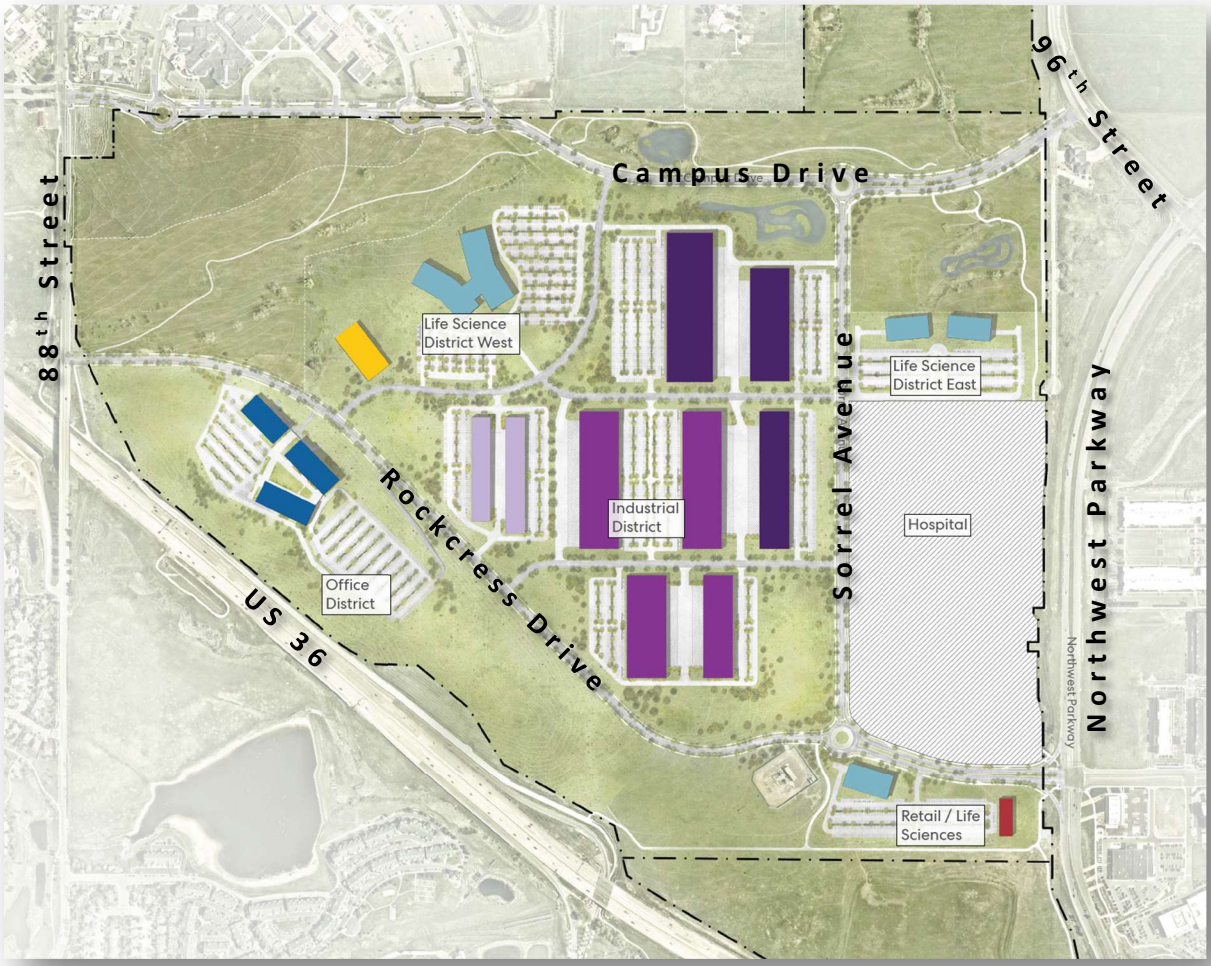
VICINITY MAP

FT Project #	19055	Original Scale	NTS	Date	02/15/2023	Drawn by	MAR	Figure #	1

2.0 Project Description

A concept showing the preliminary proposed internal roadway network, proposed access to the external network, and the development areas is provided in **Figure 2.**

Figure 2. Proposed Land Use and Internal Roadways



While subject to change, the proposed land use type/size and estimated timeframe for when each phase will be completed and fully occupied is summarized below in **Table 1**:

Table 1. Summary of Land Uses and Sizes by Phase

Land Use Type	Phase 1 By Year 2025	Phase 2 By Year 2030	Phase 3 By Year 2035	Total
Industrial	509,260 sq. ft.	118,800 sq. ft.	-	*628,060 sq. ft.*
Life Science & Amenity Bldg.	300,000 sq. ft.	-	-	*300,000 sq. ft.*
Good Manufacturing Practice (GMP)	598,940 sq. ft.	-	-	*598,940 sq. ft.*
General Office	-	90,000 sq. ft.	270,000 sq. ft.	*360,000 sq. ft.*
Research and Development Center	-	264,000 sq. ft.	-	*264,000 sq. ft.*
Retail Services	-	14,000 sq. ft.	-	*14,000 sq. ft.*
Hospital	-	285,000 sq. ft.	-	*285,000 sq. ft.*
Medical/Dental Office	-	150,000 sq. ft.	-	*150,000 sq. ft.*
Total	**1,408,200 sq. ft.**	**921,800 sq. ft.**	**270,000 sq. ft.**	***2,600,000 sq. ft.***

The Redtail Ridge project will include two (2) new east-west roadway connections between 88th Street and 96th Street/Northwest Parkway. The first phase, prior to Year 2025, will include the extension of Campus Drive from the current dead end near Monarch High School (approximately 2,200 feet east of S. 88th Street) to 96th Street. This new connection will serve traffic generated by the proposed development, as well as existing traffic currently traveling along 88th Street and Dillon Road. The existing intersection of 88th Street/Campus Drive is full-movement and signalized. With the Campus Drive extension, a new full-movement signalized intersection is proposed on S. 96th Street at the northeast corner of the site, which will be near where Old 96th Street/Disc Drive currently intersects as a 3/4 movement access.

The first phase will also include construction of Rockcress Drive from Northwest Parkway to midway in the project site, which will be extended to S. 88th Street within the second phase (prior to Year 2030). This will be an additional east-west connection through the area. The existing intersection on Northwest

Parkway will remain full movement and signalized. The future intersection on S. 88th Street is planned to be full movement and side-street stop-controlled with the appropriate auxiliary lanes.

This study evaluates Year 2025, Year 2030, and Year 2040 with and without the project. A summary of the scenarios that were evaluated in this study are shown in **Table 2.** Note that while detailed traffic analysis was not completed for Year 2035, the development phasing was utilized to estimate the timeline for when improvements would be needed.

Table 2. Evaluation Scenarios Summary

Scenario	Background Traffic	Phase 1 Development Traffic	Phase 2 Development Traffic	Phase 3 (Build Out) Development Traffic	Campus Drive Extension	Rockcress Drive Extension
Existing	✓					
Year 2025 Background	✓					
Year 2025 Background + Project Trips	✓	✓			✓	
Year 2030 Background	✓					
Year 2030 Background + Project Trips	✓	✓	✓		✓	✓
Year 2040 Background	✓					
Year 2040 Background + Project Trips	✓	✓	✓	✓	✓	✓

3.0 Previous Studies

There have been numerous traffic, corridor, and multimodal studies conducted in recent years within or near the study area that were reviewed in preparation of the Redtail Ridge evaluation and included in the future assumptions. An overview of the studies is provided in the **Appendix**. The following studies were reviewed, and pertinent information was included in the Redtail Ridge analysis:

1. *88th Street/Campus Drive Traffic Evaluation.* FHU, May 2018.
2. *Dillon Road Corridor Study*. FHU, June 2018.
3. *96th and Dillon Commercial Development.* LSC, January 2020.

4. *Morgan Ranch – Downtown Superior Traffic Impact Analysis*. November 2019.
5. *Level 1 Traffic and Revenue Study Jefferson Parkway*. SDM Smith, April 2018.
6. *City of Louisville Transportation Master Plan.* Adopted October 2019.
7. *Boulder County Transportation Master Plan*. February 2020.
8. *DRCOG Active Transportation Plan*. 2017.
9. *Mobility Choice Blueprint*. Denver Metro Chamber, DRCOG, CDOT, and RTD, February 2019.
10. *RTD First and Last Mile Strategic Plan*. Spring 2019.
11. *RTD Northwest Area Mobility Study*. 2019.
12. *ConocoPhillips Campus Traffic Impact Study*. 2010.
13. *Parkway Circle South Retail Development Traffic Impact Study*. December 2016.
14. *Louisville Industrial Park Traffic Impact Analysis.* LSC, January 2020.

Each of these studies included forecasts for future vehicular and multimodal demand with recommendations for intersection and roadway improvements to accommodate the anticipated future growth. The key considerations from previous studies are as follows:

- **Extend Campus Drive** east to connect to S. 96th Street as a two-lane roadway to reduce congestion along S. 88th Street and Dillon Road (studies 1, 2, 3).
- Include dual northbound left-turn lanes and a free-flow southbound right-turn deceleration lane at the **S. 96th Street/Campus Drive intersection** (studies 5, 13).
- **Maintain two-lanes on Dillon Road** through Year 2040 and **widen to a four-lane roadway** when capacity is exceeded (studies 2, 3).
- **Include trip volumes from adjacent developments** in background scenarios (studies 4, 13, 14).
- **Possible Northwest Parkway extension** and anticipated improvements, including an interchange at 96th Street and possible future frontage road network (study 5).
- **Widen 96th Street** to a four- or five-lane cross-section since it is a key corridor within Boulder County (study 6, 7).

- **Leverage the transit opportunities** to encourage multimodal travel due to close proximity to local and regional transit services. This includes the possible future Bus Rapid Transit (BRT) service on S. 96th Street (studies 6, 8, 9, 10).

- **Consider including bike share stations** to connect to other stations at McCaslin Station, Avista Hospital, the Colorado Technology Center (CTC), Downtown, DELO, and Kestrel (studies 8, 9).

- **Include local multimodal facilities** that connect to the regional network, transit services, and support active transportation corridors (S. 96th Street/State Highway 42 from Broomfield to Longmont is identified as a regional active transportation corridor) (study 6, 8, 10, 11).

- **Develop incentives** to improve ride hailing and ridesharing operations and encouraging shared use of driverless automated vehicles (study 9).

4.0 Study Considerations

4.1 Data Collection

Intersection turning movement and daily traffic volumes were collected in January 2023 in the study area when school was in session on the Monarch school campus. The existing traffic volumes are illustrated on **Figure 3.** The existing intersection geometry and traffic control are also shown on this figure. Signal-related information for the existing intersections were provided by the City of Louisville and Broomfield and updated based on video observations to reflect current field operations. Count data sheets are provided in the **Appendix**.

4.2 Evaluation Methodology

The traffic operations analysis addressed the signalized and unsignalized intersection operations using the procedures and methodologies set forth by the *Highway Capacity Manual (HCM)*[1]. Existing peak hour factors were applied to the intersections for the existing scenarios. Study intersections were evaluated using Synchro (version 11) software.

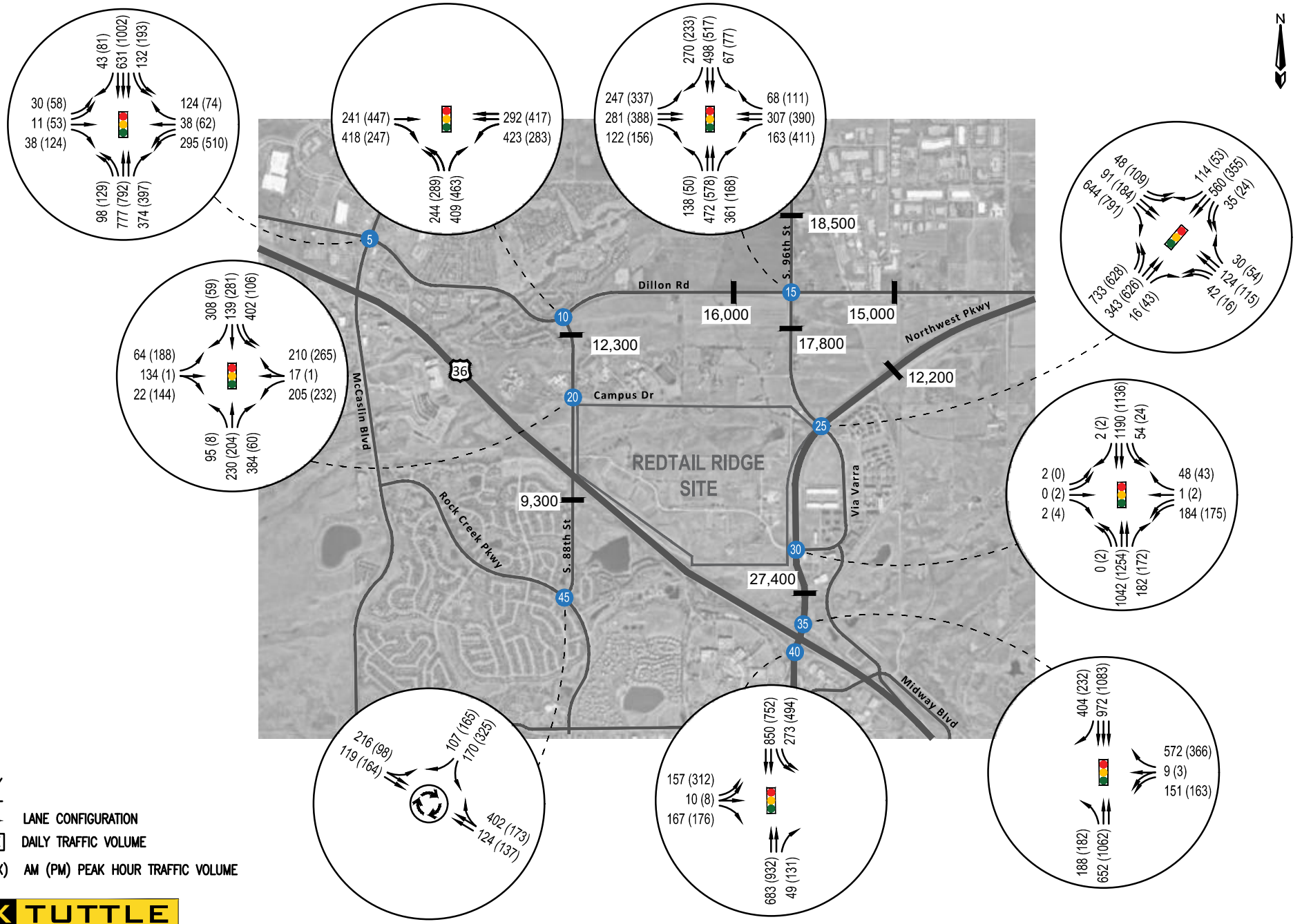
[1] Highway Capacity Manual, Highway Research Board Special Report 209, Transportation Research Board, National Research Council, 2010 and 6th Edition (2016).

4.3 Level of Service Definitions

A Level of Service analysis was conducted to determine the existing and future performance of the study area intersection and to determine the most appropriate traffic control device and need for auxiliary lanes for the study intersections.

To measure and describe the operational status of the study intersections, transportation engineers and planners commonly use a grading system referred to as "Level of Service" (LOS) that is defined by the *HCM*. LOS characterizes the operational conditions of an intersection's traffic flow, ranging from LOS A (indicating very good, free flow operations) and LOS F (indicating congested and sometimes oversaturated conditions). These grades represent the perspective of drivers and are an indication of the comfort and convenience associated with traveling through the intersections. The intersection LOS is represented as a delay in seconds per vehicle for the intersection as a whole and for each turning movement. A more detailed discussion of LOS methodology is contained in the **Appendix** for reference.

Typically, LOS A through C is considered to be good for the overall intersection operations and the desired standard for overall intersection performance is LOS D or better. Individual movements may be allowed to fall to LOS E or F depending on the circumstances, such as a low-volume, side-street approach to an arterial where signal warrants are not met, or a protected-only, signalized left-turn movement where safety is prioritized over operational efficiency.



KEY

- LANE CONFIGURATION
- X,XXX DAILY TRAFFIC VOLUME
- XX (XX) AM (PM) PEAK HOUR TRAFFIC VOLUME

FOX TUTTLE
TRANSPORTATION GROUP

REDTAIL RIDGE TRAFFIC AND MOBILITY STUDY

YEAR 2023 EXISTING TRAFFIC VOLUMES

FT Project #	19055	Original Scale	NTS	Date	02/15/2023	Drawn by	MAR	Figure #	3

4.4 Safety for all Modes of Travel

Safety is an important factor for transportation planning and infrastructure investments. Intersections are key areas where a significant number of conflicts between people and vehicles can occur. The actual and perceived safety of an intersection or a corridor can greatly impact people's desire to utilize certain routes, particularly for those on foot or on bike. Safety in relation to schools is also a key factor in mobility and health. Monarch K-8 and Monarch High School, while accessible with trails and sidewalks, are located along corridors with higher travel speeds and volumes which pose potential risks. The roadways around the site are currently designed to optimize motor vehicle travel during peak times at speeds that present challenges for non-motorized travelers.

High Crash Locations

Four (4) existing arterial intersections near the Redtail Ridge project were identified as high crash locations in the City of Louisville TMP, including the intersections of:

1. Dillon Road/S. 88th Street
2. Dillon Road/S. 96th Street
3. S. 88th Street/Campus Drive
4. Northwest Parkway/S. 96th Street/Via Varra

These intersections are shown on **Figure 4**. Additionally, three (3) of the locations have documented bicycle crashes. The Dillon Road/S. 88th Street intersection has the highest number of bicycle crashes in the City of Louisville.

The City of Louisville's TMP recommends a series of infrastructure, maintenance and training programs designed to reduce crashes for all roadway users. Likewise, the TMP recommends building more "Great/Complete" streets citywide.

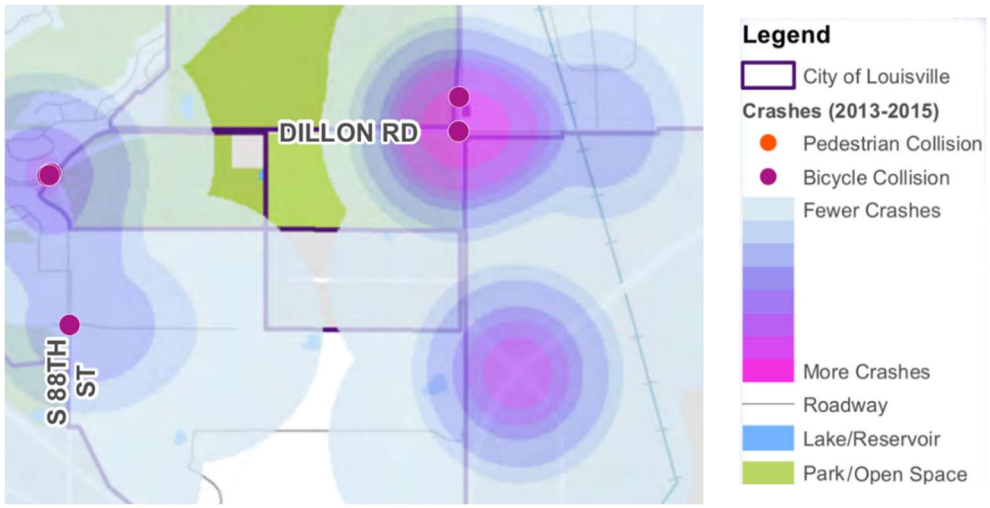


Figure 4. High Crash Locations (Source: City of Louisville Transportation Master Plan)

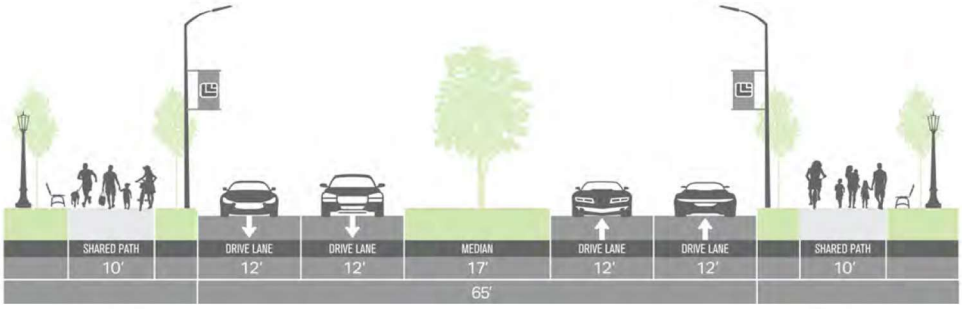
Great/Complete Street Design

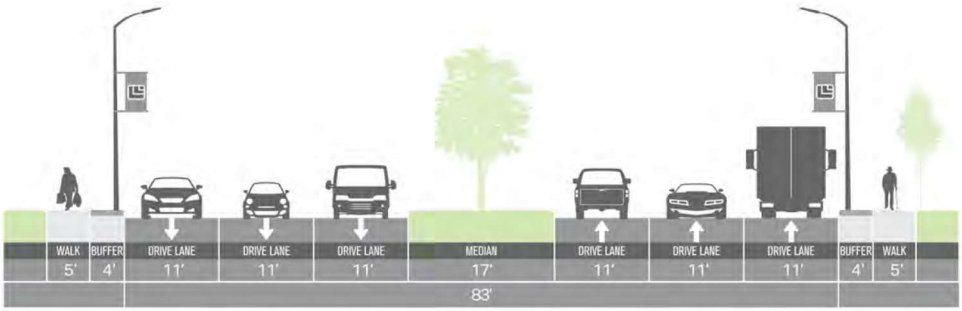
Great/Complete Streets include adding treatment such as detached sidewalks, landscaping, protected bikeways, and travel dimensions that support driving speeds at or below the speed limits (see **Figure 5** below, Figure 4.2 in the TMP). Great/Complete Streets have been shown to reduce conflicts that lead to crashes in research conducted by the Institute of Transportation Engineers (ITE) and the Federal Highway Administration (FHWA).

It is recommended that Great/Complete Street design treatments be implemented on S. 88th Street, Dillon Road, and S. 96th Street corridors and intersections consistent with the TMP's policies. Such streets and intersections will be designed and operated to be safe and accessible for all users, regardless of ability, age, or mode. These corridors and intersections will make Louisville a more livable place, increase comfort and safety for pedestrian and bicyclists, improve first and last mile access to transit, reduce congestion and improve air quality.

Figure 5. Great/Complete Street Graphic from the City of Louisville's TMP

	Walking	Biking	Transit	Driving
Optimize	Wide sidewalks/ trail, roadway buffer, enhanced amenities	Protected or buffered bike lanes, separated trail	Signal timing preference for transit, lane use priority, enhanced stop and shelter amenities	Additional lanes, enhanced signal timing, no shared ROW
Prioritize	Wider sidewalks/trail, roadway buffer	Bike lanes/trail, neighborhood bikeway treatments	Bus stop with shelter, coordinated pedestrian/ bike access	Enhanced signal timing, turn lanes
Accommodate	5' minimum sidewalks with ADA curb ramps	Bike route/shared facility	ADA accessible bus stop	Vehicle access to destinations





5.0 Existing Conditions

5.1 Roadways

The study area boundaries were established based on conversations with City staff. The existing study area street network consists of arterial and collector roadways as well as a US Highway. The primary public roadways that serve the project site are discussed in the following text.

US 36 is a freeway that connects Denver and Boulder from I-25 in Denver to Table Mesa Drive in Boulder. Near the study area, US 36 has two general purpose lanes in both directions and there is an Express Lane in each direction, alongside the general-purpose lanes. There are three (3) interchange accesses near the project area, at McCaslin Boulevard which was reconstructed to a Diverging Diamond Interchange in Year 2016, at Northwest Parkway/Interlocken Loop, which is diamond interchange, and there are two half diamond interchanges with one on either side of the Northwest Parkway/Interlocken Loop interchange. The RTD's Flatiron Flyer BRT service that connects Denver, Boulder, and other cities operates along the US 36 corridor. US 36 currently serves approximately 89,000 vpd west of the McCaslin Boulevard interchange and approximately 84,000 vpd east of the Northwest Parkway/Interlocken Loop interchange. The posted speed limit along this segment of US 36 is 65 miles per hour (mph).

Northwest Parkway is a four-lane divided highway under the jurisdiction of the City and County of Broomfield south of S. 96th Street. Northeast of S. 96th Street, Northwest Parkway becomes a toll road and freeway section with no at-grade intersection access. The roadway section consists of two travel lanes in each direction with a raised center median. Northwest Parkway currently serves approximately 26,700 vpd north of US 36 and 12,200 vpd northeast of S. 96th Street. The posted speed limit is 45 mph within the study area.

Dillon Road is a four-lane divided arterial roadway west of S. 88th Street and transitions to a two-lane undivided rural roadway east of S. 88th Street. Dillon Road is an east-west street that provides a direct connection between McCaslin Boulevard (to the west) and the Northwest Parkway (to the east) where it makes connections via interchange ramp terminals at US 287. While east of S. 88th Street, Dillon Road is a two-lane roadway, at the S. 88th Street and S. 96th Street intersections a second through lane is added in each direction to increase vehicular capacity through the intersections. The extra through lanes merge to one lane as motorists proceed away from these intersections, except that Dillon Road continues to have a second through lane to the west of S. 88th Street. Dillon Road currently serves approximately 16,000 vpd west of S. 96th Street and approximately 15,000 vpd east of S. 96th Street. There are existing on-street bike lanes striped on Dillon Road. The posted speed limit is 35 mph west of S. 88th Street and 45 mph east of S. 88th Street within the study area.

McCaslin Boulevard is a six-lane divided roadway within the study area, but transitions to a four-lane divided roadway to the north at Via Appia and to the south, south of the US 36 interchange. McCaslin Boulevard provides north-south connectivity between South Boulder Road and 120th Avenue. Between US 36 and Dillon Road, McCaslin Boulevard serves approximately 33,900 vpd whereas north of Dillon Road McCaslin Boulevard serves approximately 22,300 vpd. There are existing on-street bike lanes striped on McCaslin Boulevard. The posted speed limit is 35 mph.

South 88th Street is a two-lane roadway that provides north-south connectivity between Rock Creek Parkway in the Town of Superior and Dillon Road in the City of Louisville. It provides access opportunities for the Monarch K-8 and High Schools via Campus Drive and to medical facilities along Health Park Drive. S. 88th Street has a grade-separated bridge crossing of US 36 to the south of Campus Drive. There are existing on-street bike lanes striped on S. 88th Street north of Campus Drive. S. 88th Street currently serves approximately 12,300 vpd between Dillon Road and St. Andrews Lane. The posted speed limit along S. 88th Street is 35 mph; however, the speed limit is reduced to 20 mph three (3) times per day during school activity hours.

S. 96th Street is a two-lane undivided roadway through most of the study area. S. 96th Street provides direct access to the Northwest Parkway to the south. To the north, S. 96th street continues past South Boulder Road with access to downtown Louisville before transitioning into N. 95th Street and continuing to the City of Longmont. Like the eastbound/westbound directions of Dillon Road, S. 96th Street also widens to two through lanes in each direction at Dillon Road to provide extra capacity through the existing signalized intersection. There are existing on-street bike lanes striped on S. 96th Street within the study area. S. 96th Street currently serves approximately 17,800 vpd south of Dillon Road and approximately 16,500 vpd north of Dillon Road. The posted speed limit is 40 mph within the study area.

5.2 Intersections

The study area includes nine existing intersections that are listed below with the current traffic control. These intersections were analyzed for existing and future years with and without the project trips:

- Dillon Road and McCaslin Boulevard [signalized]
- Dillon Road and S. 88th Street [signalized]
- Dillon Road and S. 96th Street [signalized]
- S. 88th Street and Campus Drive [signalized]
- S. 88th Street and Rock Creek Parkway [multi-lane roundabout]
- Northwest Parkway and S. 96th Street/Via Varra [signalized]
- Northwest Parkway and Rockcress Drive/Via Varra [signalized]

- Northwest Parkway and US 36 Westbound/North Ramps [signalized]
- Northwest Parkway and US 36 Eastbound/South Ramps [signalized]

The existing lane configuration at each of the study locations is illustrated on **Figure 3.** Additional site-access intersections were analyzed for the scenarios with the addition of project-added traffic. It should be noted that the PM peak hour does not coincide with when Monarch schools end (K-8 ends at 3:05 PM and the High School ends at 3:30 PM).

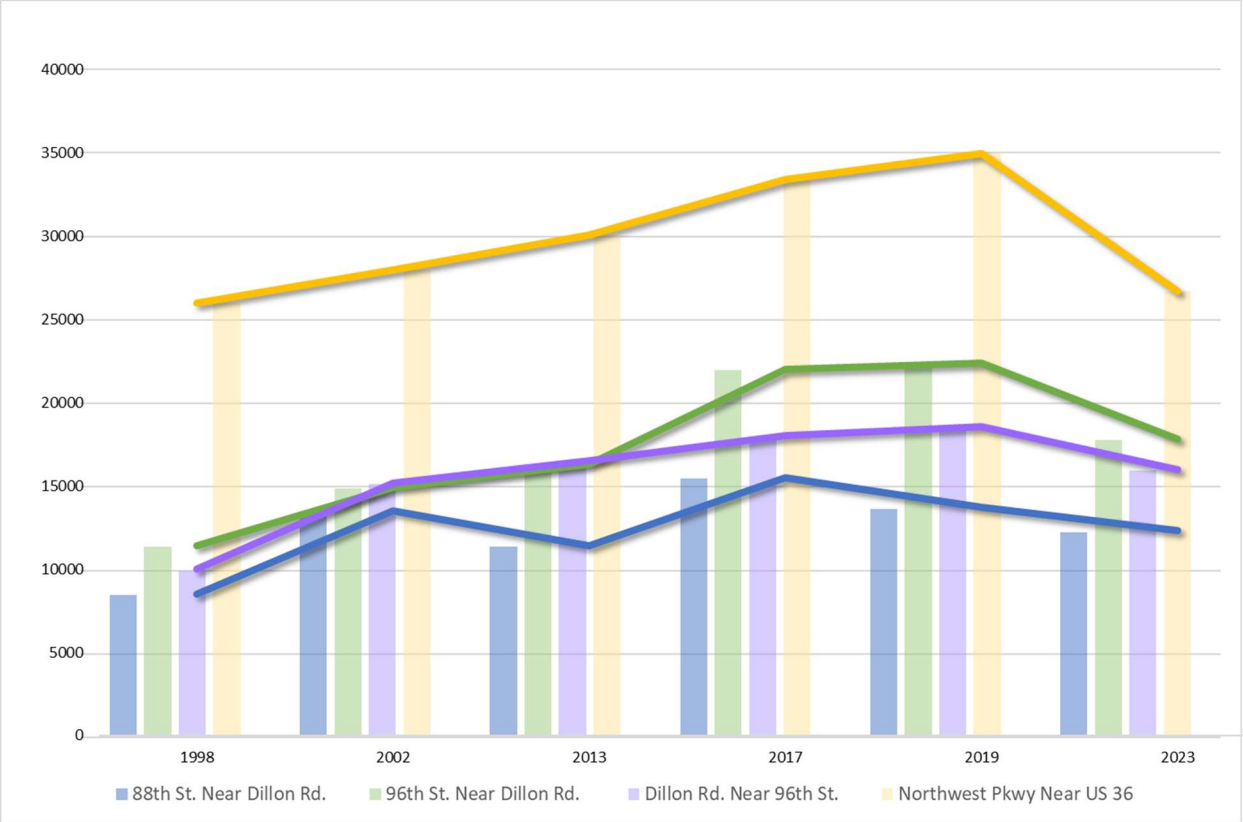
5.3 Traffic Changes Since Storage Tek Closure

Many changes have taken place in the Redtail Ridge project area since Storage Tek was an active campus in the late 1990's. The Town of Superior implemented their Comprehensive Plan that included new single-family residential neighborhoods and a mixed-use town center. The City and County of Broomfield constructed a major regional shopping center at Flatiron Crossing and a mix of uses along the eastern side of what is now the Northwest Parkway and Interlocken Loop. The City of Louisville also added new uses to the Colorado Technology Center. Also, over this timeline the number of open enrollment students attending Monarch K-8 and Monarch High School, who are not provided school bus services, has remained consistent at almost 40% of the student body at Monarch High School (approximately 700 students) and 25% at Monarch K8 (approximately 75 students). All these changes over the past 18 years since the Storage Tek property closed have utilized the vehicle capacity historically used by traffic generated from Storage Tek on the S. 88th Street, Dillon Road, and S. 96th Street corridors.

The historic volumes and trends for each corridor on **Figure 6** show what has occurred in the area since the Storage Tek site was vacated in the early 2000's. The corridors of S. 88th Street, Dillon Road, and S. 96th Street corridors were reaching capacity in Year 2019; however, since the COVID-19 pandemic traffic volumes have been reduced and capacity has become available for future development.

Planning level daily capacity estimates for two-lane roadways with turn lanes range from 16,000 to 18,000 vpd. Increased capacity at the Dillon Road/ S. 96th Street intersection and the limited number of access locations on these corridors are reasons that these segments can accommodate between 22,000 and 24,000 vpd. If additional conflict points are added to the corridors, the capacity will likely decrease. National best practices indicate that it is typical to widen a two lane road to four lanes once volumes exceed around 20,000 vpd.

Figure 6. Volume Trends on Study Roadways



5.4 Traffic Pattern Changes Due to COVID-19

The COVID-19 pandemic shifted traffic patterns as habits and uses have changed in response to disruptions from business as usual. Many companies have permanently adopted greater flexibility for employees even as offices and businesses are reopened. Increased telework and flexible hours have reduced the magnitude of travel demand during peak hours, instead resulting in less traffic more evenly spread travel throughout the day. Nearly three (3) years after the beginning of the pandemic, these changes have persisted and can be expected to represent long-term trends.

Traffic count data collected in January 2023 captures the enduring impact of COVID-19 on travel after patterns have normalized. Compared to count data collected in 2019, AM and PM peak hour traffic volumes have been reduced by an average of 17% overall within the study area.

5.5 Walking in the Project Area

Most of the existing sidewalk and multi-use path network near the Redtail Ridge project is in the S. 88th Street corridor. This is due to the open lands that mostly front Dillon Road and S. 96th Street in the study

area. The S. 88th Street sidewalks and multi-use paths connect the Monarch school campus to neighborhoods in Louisville and Superior. There is an existing underpass under S. 88th Street just south of Dillon Road. This underpass connects the Monarch school campus to the sidewalks on Dillon Road west of S. 88th Street. There are missing sidewalk and trail connections along S. 88th Street, Dillon Road, and S. 96th Street, with an example shown in **Figure 7**.

It is anticipated that the demand to complete the sidewalk and multi-use path network between the CTC Campus, Redtail Ridge, Monarch school campus, residential areas, and retail centers will be increasingly important in the future as the TMP priorities are implemented. Specifically, new sidewalks and pathways will be necessary given future plans for shared ride mobility and BRT near Dillon Road and in the S. 96th Street corridor.

Figure 7. Coal Creek Regional Trail Informal Connection

The southeast corner of the Redtail Ridge site has an existing underpass that connects under Northwest Parkway (a photo of the underpass is shown in **Figure 8**). This connects sidewalks and multi-use pathways on the westside of Northwest Parkway to the new Broomfield sidewalk network on the eastside of Northwest Parkway. This underpass is also a critical part of the future walking connections to the Rock Creek and Broomfield Trails.

Figure 8. Northwest Parkway Multi-Use Path Underpass

5.6 Bicycling in the Project Area

The Redtail Ridge site is located at the confluence of many off-street trails and on-street bicycle lanes. The Coal Creek Trail, Rock Creek Trail and the US 36

Bikeway are located within a short bike ride (5 minutes or less than one mile) of the project site.

S. 88th Street, Dillon Road, and S. 96th Street currently have on-street bicycle lanes that provide connections to the Coal/Rock Creek Regional Trails and the US 36 Bikeway. The City of Boulder is located within a 6-mile bike ride on the US 36 Bikeway and the RTD US 36 and East Flatiron Station is located within a one-mile bike ride of the project site. Each intersection in the study area has approaches and departures that have accommodations for people on bicycles. The S. 88th Street underpass provides access to the Monarch school campus from Dillon Road.

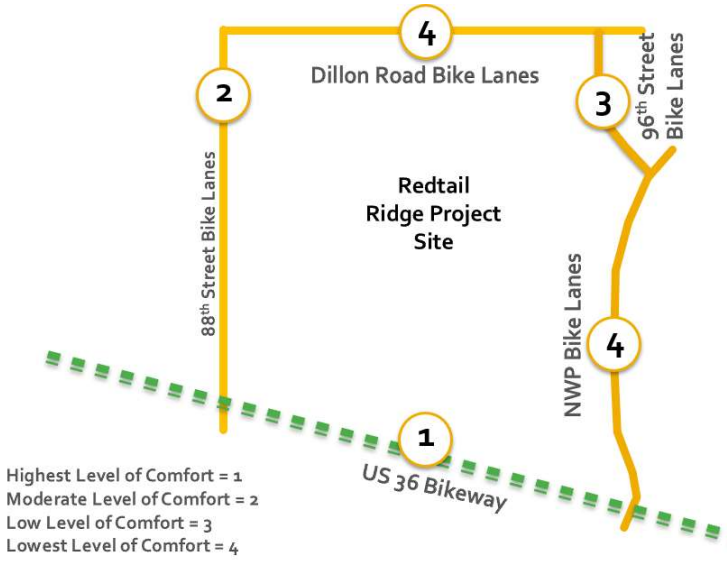


Figure 9. Existing Bicycle Level of Comfort (Source: City of Louisville Transportation Master Plan)

The City of Louisville TMP evaluated the corridors of S. 88th Street, Dillon Road, and S. 96th Street and the critical intersections for the level of bicycling comfort. A map summarizing the results of the bicycle level of comfort results in illustrated in **Figure 9**.

Based on the TMP analysis, the current design of the corridors and intersections have a high level of stress. This appears to be correlated to the high number of crashes that were shown **Section 4.4**. The high posted speed limits in these corridors and significant peak hour traffic volumes also contribute to the low level of comfort people experience.

The City plans for future implementation of Great/Complete Street design treatments for the S. 88th Street, Dillon Road, and S. 96th Street corridors and intersections consistent with the TMP's policies. This includes the installing protected bike lanes, multi-use pathways, and intersection treatments throughout the project site and connect to the adjacent arterial roadways, which will provide greater opportunity and protection for all skill levels. Implementation on the public roadways by the City will be subject to public input, topographic limitations, right of way availability, conflicts with utilities and accesses, and construction costs.

A later section of this study includes additional details on implementing lower stress bicycle networks in the S. 88th Street, Dillon Road, and S. 96th Street corridors that would connect to the US 36 Bikeway and the Coal/Rock Creek Regional Trails.

5.7 Transit Access in the Study Area

The Redtail Ridge site is located within one (1) mile of the RTD US 36 and East Flatiron Station. This station is serviced by the Flatiron Flyer (Routes FF1 and FF2) and the Sky Ride service to DEN (Route AB). The station has an underpass under US 36 and is connected to a network of first and final mile destinations. There are approximately 265 parking spaces and eight (8) bike racks at the station. This station is connected to the project site via the Northwest Parkway underpass described in in the prior sections.

The Flatiron Flyer BRT system provides fast and efficient service between Boulder and Denver. Buses are available at the US 36 and East Flatiron Station every 15 minutes during peak and every 30 minutes off peak (on average). Large air conditioned and air ride over the road coaches can serve approximately 50 passengers per vehicle. There is capacity for six (6) to eight (8) bikes on board depending on luggage and other passenger storage needs. The buses are equipped with charging for mobile devices. The vehicles travel in the High Occupancy Vehicle (HOV) lanes on US 36 and I-25. The trip between the US 36 and East Flatiron Station and Denver Union Station is 28 minutes. The trip between downtown Boulder and the US 36 and East Flatiron Station is 23 minutes. Route AB provides transit services to Denver International Airport (DEN) is available every 30 minutes during most hours of the day. Large air conditioned and air ride over the road coaches can serve approximately 50 passengers per vehicle also service this route. The trip between DEN and the US 36 and East Flatiron Station is 34 minutes via the Northwest Parkway.

Although not public transit, the BVSD operates many school buses in the project area to serve the Monarch school campus. The school buses only have one access point to the Monarch campus via S. 88th Street. The school buses provide transportation to students for school, field trips, and after school activities year-round.

5.8 Transportation Demand Management

A transportation demand management (TDM) plan has been developed for the Redtail Ridge development. The TDM plan includes strategies to reduce mode share of single-occupant vehicles and increase usage of public transportation and active modes such as walking and bicycling. Strategies are described in detail in a separate report, titled *Redtail Ridge Transportation Demand Management Plan.*

5.9 Existing Intersection Capacity Analysis

The existing volumes, lane configuration, and traffic control are illustrated on **Figure 3**. The results of the LOS calculations for the intersections are summarized in **Table 3.** A detailed table with LOS by movement and 95th percentile queues by lane as well as the intersection LOS worksheets are included in **Appendix A (Table A.1 and A.2)**. **Results of the existing intersection capacity analysis indicate that the majority of the study intersections operate at LOS D or better in both peak hours.**

Table 3. Existing Overall Level of Service Summary

No.	Intersection	Traffic Control	Overall Intersection LOS	
			AM Peak Hour	PM Peak Hour
5	Dillon Road/McCaslin Boulevard	Signal	C	C
10	Dillon Road/S. 88th Street	Signal	B	B
15	Dillon Road/S. 96th Street	Signal	C	D
20	S. 88th Street/Campus Drive	Signal	C	D
25	Northwest Parkway/S. 96th Street/Via Varra	Signal	C	**E**
30	Northwest Parkway/Rockcress Drive/Via Varra	Signal	B	B
35	Northwest Parkway/US 36 North Ramps (WB)	Signal	A	A
40	Northwest Parkway/US 36 South Ramps (EB)	Signal	B	C
45	S. 88th Street/Rock Creek Parkway	Roundabout	A (A)	A (A)

Note: Level of service for unsignalized intersections is listed as Overall (Worst Movement).

The following study intersections currently operate overall at LOS E/F or have movements that operate at LOS E/F or having queuing issues during one or both peak hours:

- ***#5. Dillon Road and McCaslin Boulevard:*** During the AM peak hour, the eastbound through, northbound left-turn, and southbound left-turn movements currently operate at LOS E. No significant queuing issues were observed in the field or in the traffic analysis reports.

  Recommendations: No mitigation measures recommended. The northbound/southbound through movements are prioritized over the eastbound/westbound approaches and the left-turn movements. These delays are typical of side-street or left-turn movements on arterial roadways.

- ***#15. Dillon Road and S. 96th Street:*** During the AM peak hour, the southbound right-turn currently operates at LOS E due to the high volume of turning vehicles (nearly 300 vph). The 95th percentile queues were calculated to be maintained with the existing storage lengths.

  Recommendations: No mitigation measures recommended.

- ***#20. S. 88th Street and Campus Drive:*** During the AM peak hour, the eastbound through/right-turn lane currently operates at LOS E. During the PM peak hour, the westbound left-turn movement currently operates at LOS E. This intersection is the only access to the Monarch school campus and the adjacent medical campus. During peak school times, southbound queues on S. 88th Street extend back to Dillon Road, impacting traffic operations at the signal. It was also observed that drivers will turn into the medical campus to then become an eastbound through vehicle to get to the schools.

  Recommendations: No mitigation measures recommended.

- ***#25. Northwest Parkway and S. 96th Street/Via Varra:*** During the PM peak hour, the intersection currently operates overall at LOS E due to the delay experienced on the northbound left-turn movement (LOS F). The 95th percentile queues within the existing turn lanes are currently maintained within the existing storage lengths.

  Recommendations: No mitigation measures recommended. Currently there are dual northbound left-turn lanes on Northwest Parkway. The southbound right-turn is a free movement and turns into a third through lane (acceleration lane) on S. 96th Street. Three (3) lanes merge into one (1) northbound through lane on S. 96th Street approximately 600 feet north of the intersection. This merge will occasional queue back and cause inefficiencies at the Northwest Parkway intersection.

- ***#30. Northwest Parkway and Rockcress Drive/Via Varra:*** Although this intersection operate overall at LOS B in both peak hours, there are several side-street movements that currently operate at LOS E in one peak period. During the AM peak hour, the eastbound left-turn, westbound left-turn, and the westbound right-turn movements operate at LOS E. During the PM peak hour, the eastbound through movement operates at LOS E. No significant queuing issues were observed in the field or in the traffic analysis.

  Recommendations: No mitigation measures recommended. The northbound/southbound through movements are prioritized over the eastbound/westbound approaches and the left-turn movements. The volumes on the eastbound approach are less than 10 vph since Rockcress Drive is closed for public access; therefore, these are likely vehicles turning around or mistakenly turned onto the closed roadway.

As previously mentioned, earlier studies have recommended the extension of Campus Drive to S. 96th Street to address the existing issues. The Campus Drive extension is evaluated as part of the Year 2025 with project scenario. The right-of-way for the Campus Drive extension is located on the Redtail Ridge property. Under background conditions, where the Campus Drive extension is not assumed, mitigation options are provided to address the existing/future background capacity issues without the Campus Drive extension.

6.0 Future Background Conditions (without Redtail Ridge)

6.1 Annual Growth Factor and Future Volume Methodology

In order to forecast the future peak hour traffic volumes, background traffic growth assumptions were estimated based on a review of various resources: historical traffic volumes, DRCOG 2050 regional model projections, and planned development projects in the study area.

A comparison of the DRCOG base-year 2020 vs. 2050 projections show annual growth of approximately one-half percent (0.5%) along the study roadways, except along Northwest Parkway, which is anticipated to have an annual growth rate of approximately 2.0%. A review of the assumed projected socio-economic data within the traffic analysis zones (TAZ) where the project is proposed indicates that DRCOG did anticipate that this area would redevelop. Therefore, the background growth rates from DRCOG data represent project traffic forecast to the study roadway network and the traffic volume generated by Redtail Ridge needs to be factored out of the DRCOG forecasts.

There are three (3) planned development projects (bulleted below) in the study area (see section **3.0 Previous Studies** for additional information). Trips generated by these three (3) developments were added to the study intersections in addition to the general background growth rate:

1. **Parkway Circle:** Majority of the Parkway Circle development has already been built out. This area has a mix of residential, retail, and office type uses that generate a high percent of internal capture and trips that can be made walking/biking or taking transit. Most remaining construction in the area is lower-density residential than already constructed. To estimate future traffic volumes generated by this development, vehicles currently entering/exiting the east approaches at the Northwest Parkway/S. 96th Street/Via Varra and Northwest Parkway/ Rockcress Drive/Via Varra intersections were increased by a factor of 1.25. The traffic volumes were then proportionally distributed to the study roadway network based on existing travel patterns.

2. **St. Louis Parish:** The trip generation estimates from the *Louisville Industrial Park Traffic Impact Analysis* (LSC, January 2020) were included in the background forecasts. The industrial/commercial uses were assumed to be operating in the short-term and were included in the Year 2025 background traffic forecasts. The full buildout of the site including the church and school, was assumed to be completed after Year 2030 and those trips were included in the Year 2040 background traffic forecasts. The *Louisville Industrial Park Traffic Impact Analysis* identified an expansion of Dillon Road to four lanes, as well as adding second eastbound and westbound left turn lanes at the intersection of Dillon Road and S. 96th Street.

3. **Morgan Ranch:** Trips provided in the *Morgan Ranch – Downtown Superior Traffic Impact Analysis*. (November 2019) were included in the background forecasts. This project is anticipated to utilize the new 88th Street / Promenade Boulevard intersection and travel through the study intersections. The development trips were included in the Year 2025 background traffic forecasts. Promenade Boulevard is substantially complete to 88th Street, however, was not open to traffic when data was collected in January 2023.

Based on a review of the historical traffic volume trends, the projected future traffic forecasts, and the known planned developments, the projected traffic growth from the DRCOG model was adjusted to account for known developments. The DRCOG model includes the listed planned developments in the

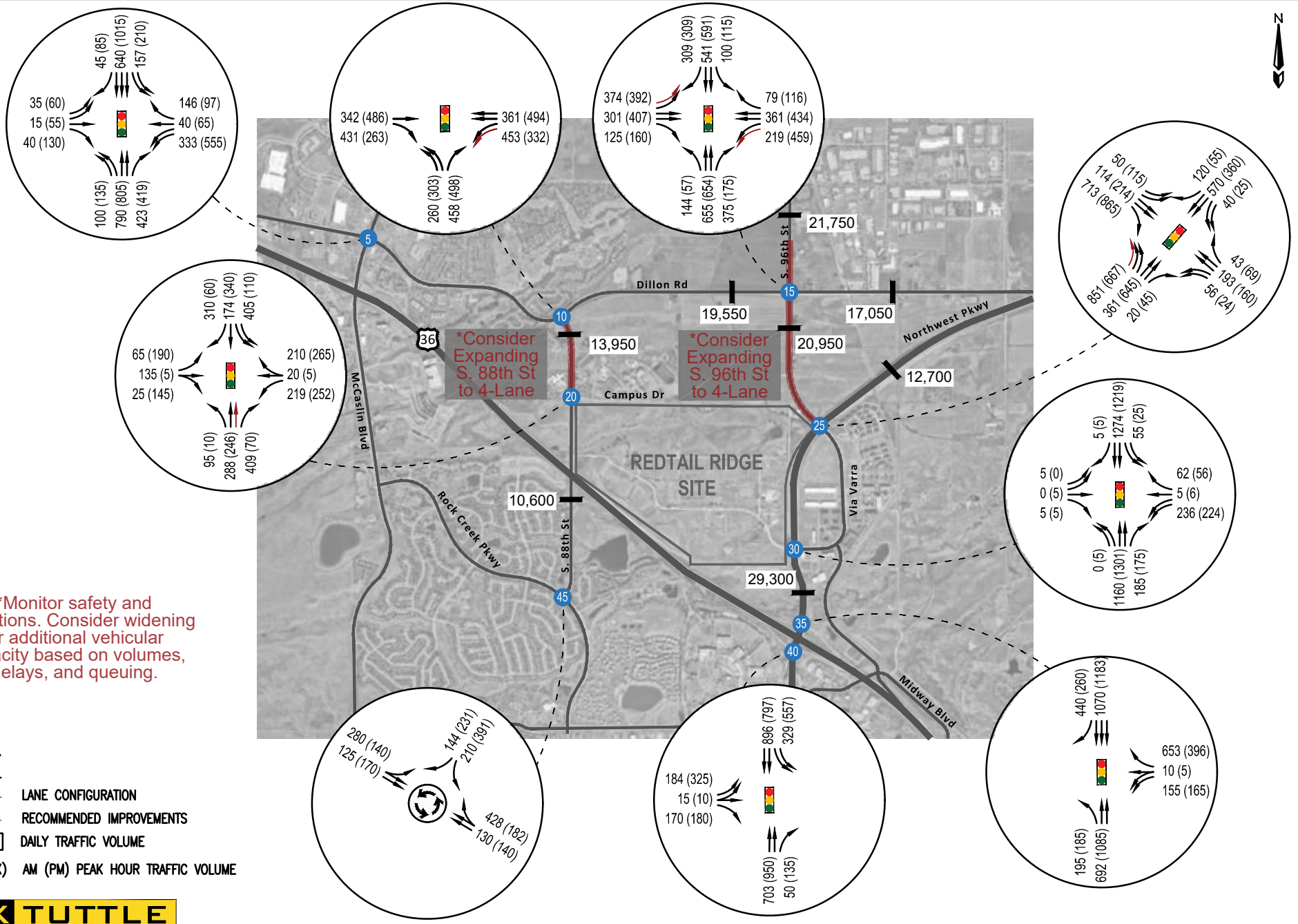
vicinity of the project, and therefore accounts for those developments in the predicted growth rate. The known development trips were removed from the DRCOG growth rate for a background growth rate of 0.55% annually. Known development trips were added on top of this background growth rate to obtain background traffic volumes.

Through trips on Northwest Parkway are predicted to increase at a higher rate than other trips in the study area. Northwest Parkway serves more regional trips than other roadways in the study area, with a higher predicted annual growth rate. DRCOG predicts annual growth closer to 2.0% on Northwest Parkway. The background through volumes on Northwest Parkway were increased to achieve a total growth rate of 2.0%.

The resultant background traffic volumes for Year 2025, Year 2030, and Year 2040 are provided in **Figure 10, Figure 11**, and **Figure 12**.

It should be noted that there are background improvements identified to reduce delays, congestion, and queueing within the study area. The purpose of this traffic study is to identify when improvements are triggered and does not assign responsibility. The study provides data for agencies to determine which intersections and roadways may need enhancements in the future and provides an approximate timeline based on anticipated growth; it does not obligate implementation.

It is important to note that while the Year 2040 background traffic forecasts do not assume the Jefferson Parkway extension, if that project is constructed prior to Year 2040 it would increase traffic volumes along Northwest Parkway at the intersections between S. 96th Street and US 36 from what was projected for this study. As noted in the *Level 1 Traffic and Revenue Study Jefferson Parkway* report, with the Jefferson Parkway extension the project may rebuild the Northwest Parkway/Interlocken Loop corridor between S. 96th Street and SH 128. Under the Northwest Parkway extension scenario, Northwest Parkway may be reconstructed to separate toll and local traffic which would include constructing new interchanges and a frontage road system to accommodate local traffic. The need to increase capacity on Northwest Parkway independent of Redtail Ridge was also identified in the DRCOG Metro Vision Regional Transportation Plan. At this time, no design or concepts have been completed for this segment of Northwest Parkway. Based on preliminary descriptions of possible improvements, Redtail Ridge will not impede future improvements to Northwest Parkway.



*Monitor safety and operations. Consider widening for additional vehicular capacity based on volumes, delays, and queuing.

KEY

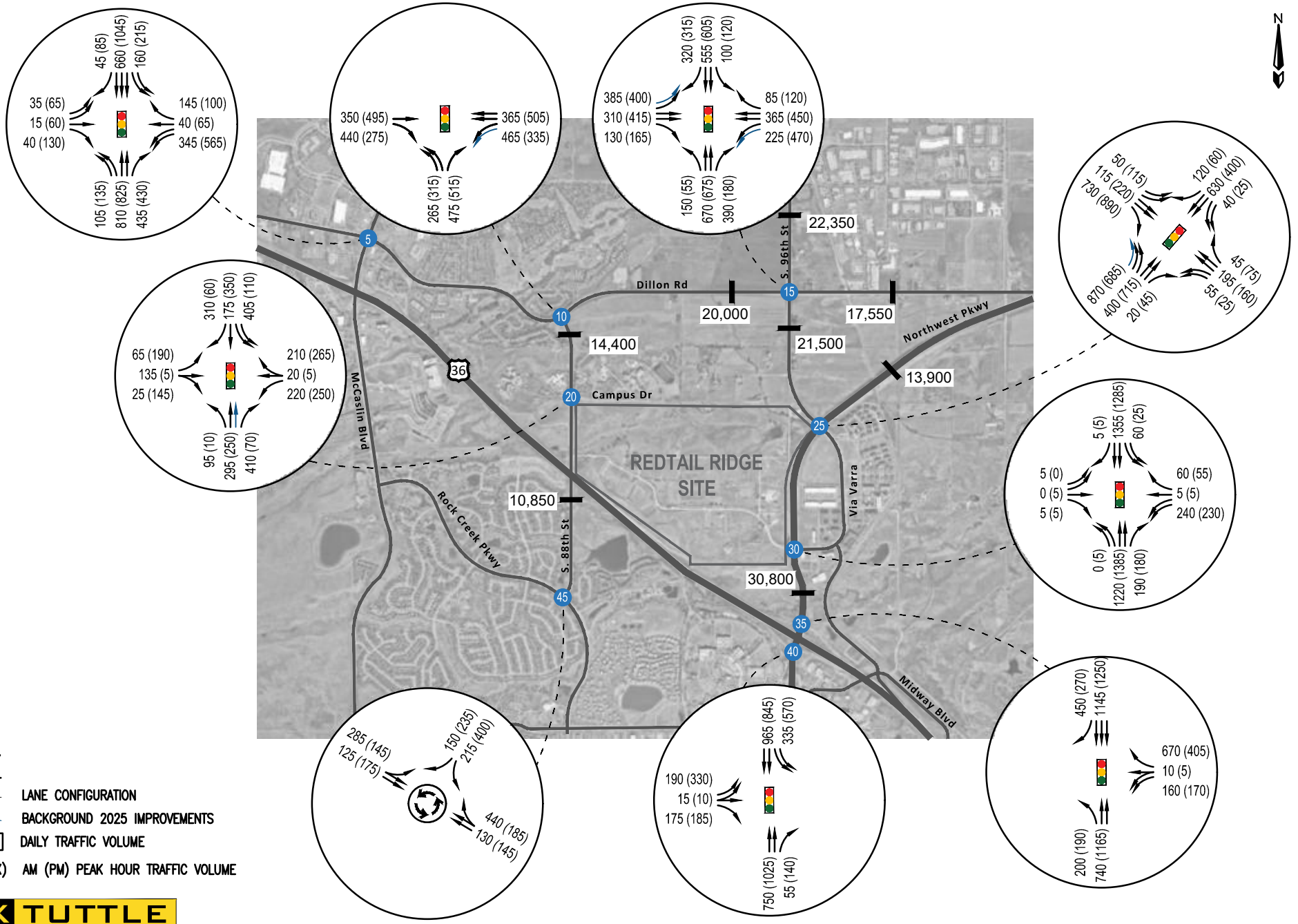
- LANE CONFIGURATION
- RECOMMENDED IMPROVEMENTS
- X,XXX DAILY TRAFFIC VOLUME
- XX (XX) AM (PM) PEAK HOUR TRAFFIC VOLUME

FOX TUTTLE TRANSPORTATION GROUP

REDTAIL RIDGE TRAFFIC AND MOBILITY STUDY

YEAR 2025 BACKGROUND (WITHOUT REDTAIL RIDGE) TRAFFIC VOLUMES

FT Project #	19055	Original Scale	NTS	Date	07/12/2024	Drawn by	SKK	Figure #	10



KEY

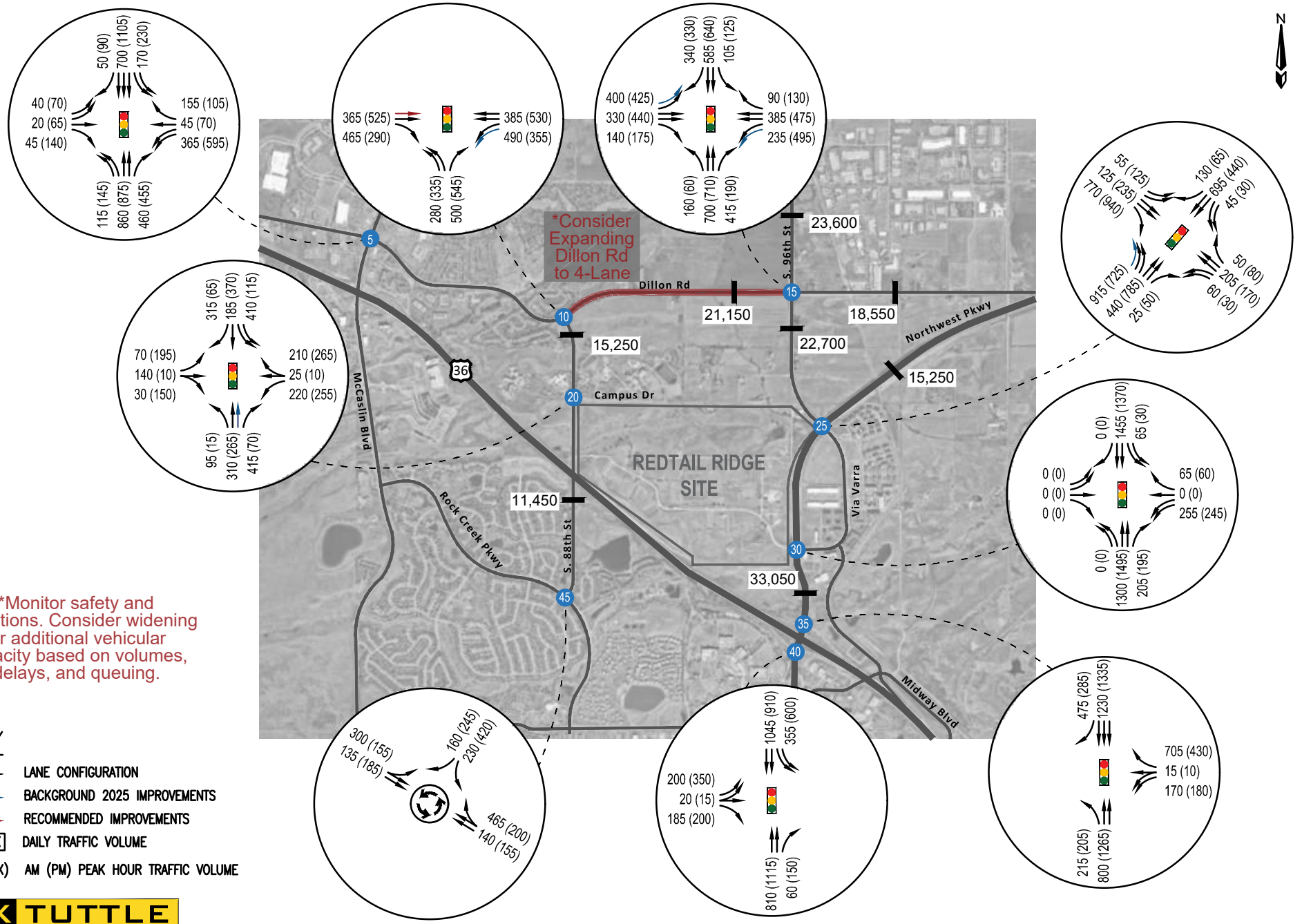
- LANE CONFIGURATION
- BACKGROUND 2025 IMPROVEMENTS
- X,XXX DAILY TRAFFIC VOLUME
- XX (XX) AM (PM) PEAK HOUR TRAFFIC VOLUME

FOX TUTTLE TRANSPORTATION GROUP

REDTAIL RIDGE TRAFFIC AND MOBILITY STUDY

YEAR 2030 BACKGROUND (WITHOUT REDTAIL RIDGE) TRAFFIC VOLUMES

FT Project #	19055	Original Scale	NTS	Date	10/04/2023	Drawn by	SKK	Figure #	11



FOX TUTTLE
TRANSPORTATION GROUP

REDTAIL RIDGE TRAFFIC AND MOBILITY STUDY

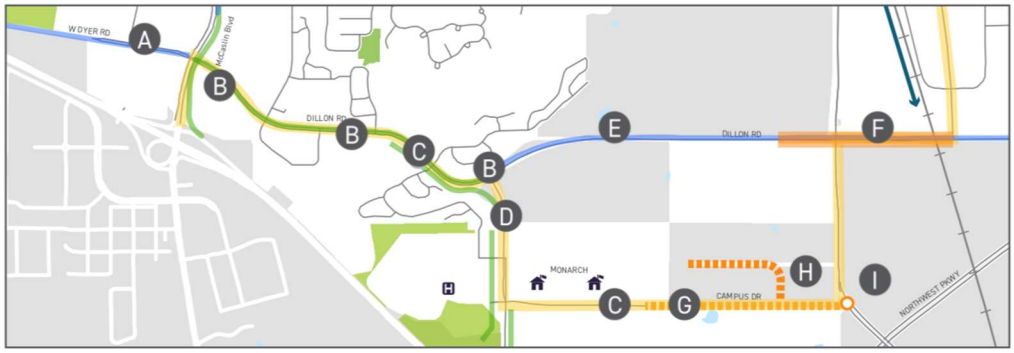
YEAR 2040 BACKGROUND (WITHOUT REDTAIL RIDGE) TRAFFIC VOLUMES

FT Project #	19055	Original Scale	NTS	Date	07/12/2024	Drawn by	SKK	Figure #	12

6.2 Future Multimodal Network Assumptions

The future multimodal network improvements around Redtail Ridge project were outlined in the *City of Louisville TMP* and shown in **Figure 13.** They include a series of bike lanes, transit stops, underpasses, and multiuse trail connections.

Figure 13. Future Multimodal Network Identified in the City of Louisville TMP



A Bicycle facility connecting Dillon Rd to the US 36 bikeway

B New underpasses at proposed locations along Dillon Road

C Trail connections to provide increased access to the schools and hospital

D Proposed future transit connecting McCaslin Station to the hospital, schools, and CTC

E On-street shoulder bikeway improvements

F Dillon Road capacity improvements to improve intersection operations

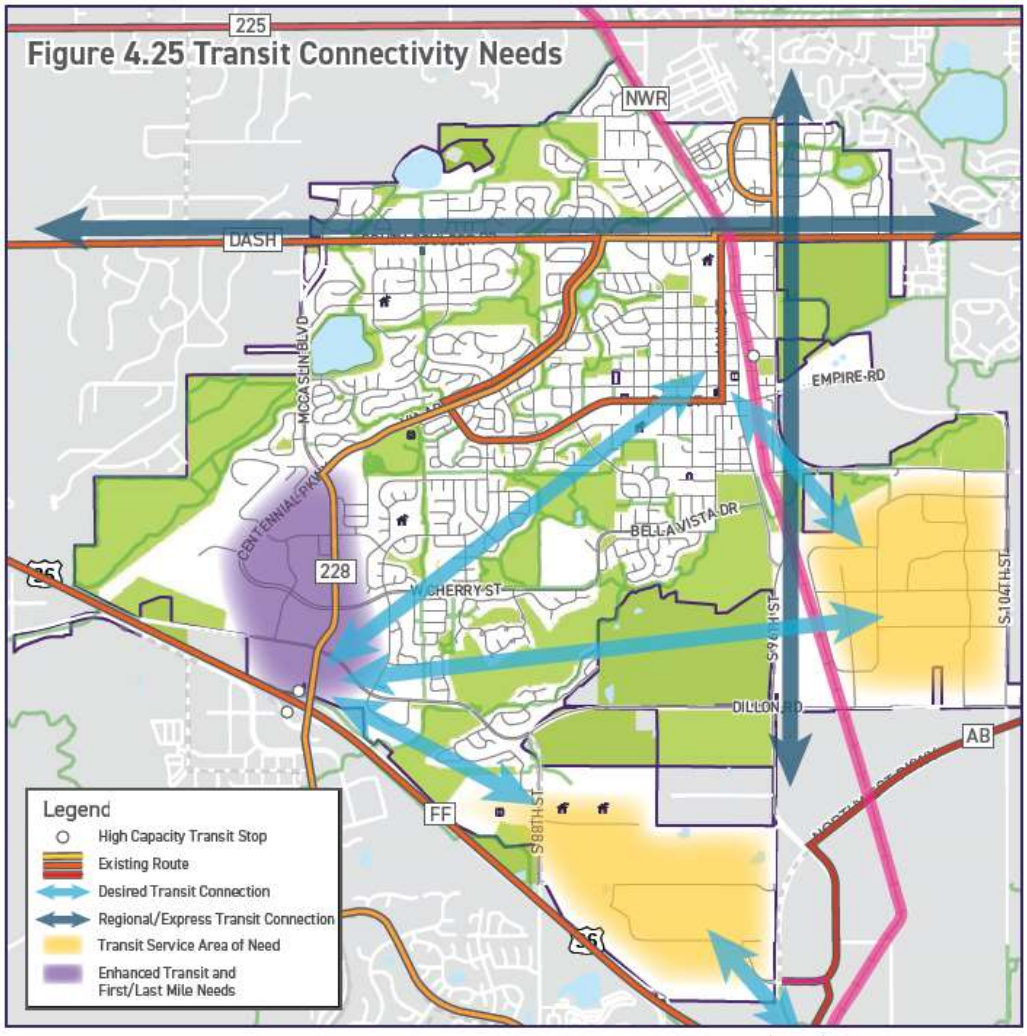
G Campus Drive Extension to improve school circulation and improve emergency access

H Paradise Lane realignment to eliminate intersection at S 96th Street. (*Note: Paradise Lane is on County property).

I New signal at Campus Drive and S 96th Street near fire house

The City's TMP also recommends a partnership with the business community to provide a shuttle circulator that connects employment areas to regional transit, retail, and other destinations. CTC, Centennial Valley, and Redtail Ridge were identified as service areas for the route. The transit network also includes BRT service in the S. 96th street corridor and two (2) Northwest Rail station within a mile of Redtail Ridge (see **Figure 14**). The Northwest Rail stations are planned to be located near the CTC and at the Flatiron and US 36 Park-n-Ride.

Figure 14. Future Transit Network Identified in the City of Louisville TMP



The City has been having discussions with RTD about a new local route that would serve the project site. The new route would require approval from RTD and grant funding. This project should support the development of that route and promote connections between Redtail Ridge and Downtown Louisville, McCaslin Station, CTC, and the Flatiron and US 36 Park-n-Ride. In addition, the project should include determining the feasibility of adding a stop for the Flatiron Flyer BRT to the west of Northwest Parkway on the project site.

Table 4 provides a summary of the assumed multimodal network under background conditions. This table only assumes what would occur in the future without additional support from the Redtail Ridge project. The recommendations for an expanded multimodal network and TDM programs with the Redtail Ridge project can be found in **Section 7.0** of this study.

Table 4. Future Multimodal Network Assumption Summary

Corridor	Bike Lanes	Multi-Use Pathways	Sidewalks	Bus Lanes
S. 88th Street (US 36 to Dillon Road)	buffered or protected	westside or eastside	westside and eastside	none
Dillon Road (S. 88th to S. 96th Street)	buffered or protected	northside	northside and southside	none
S. 96th Street (Northwest Parkway to Front Street)	buffered or protected	westside	westside and eastside	yes
Northwest Parkway (S. 96th Street to US 36)	none	eastside	eastside	shoulder running

6.3 Year 2025 Background Intersection Capacity Analysis

The study intersections were evaluated to determine baseline operations for the Year 2025 and to identify any capacity constraints associated with background traffic in the short-term scenario. The background volumes, lane configuration, and traffic control are illustrated on **Figure 10**.

The LOS criteria discussed previously was applied to the study intersections to determine the travel conditions with the Year 2025 background scenario. The results of the LOS calculations for the intersections are summarized in **Table 5**. The detailed results of the LOS calculations for the intersections and all movements are summarized in **Table A.1** in **Appendix A.** The 95th percentile queues by movement are included in **Appendix A (Table A.2).** The intersection LOS and queuing report worksheets are attached in the **Appendix**. Note that signal timing was assumed to be optimized at the study intersections. **Results of the Year 2025 background intersection capacity analysis indicate that the majority of the study intersections operate at LOS D or better in both peak hours.**

Table 5. Year 2025 Background Conditions Level of Service Summary

No.	Intersection	Traffic Control	Overall Intersection LOS	
			AM Peak Hour	PM Peak Hour
5	Dillon Road/McCaslin Boulevard	Signal	C	C
10	Dillon Road/S. 88th Street	Signal	C	B
15	Dillon Road/S. 96th Street	Signal	D	D
20	S. 88th Street/Campus Drive	Signal	D	D
25	Northwest Parkway/S. 96th Street/Via Varra	Signal	**E**	**F**
30	Northwest Parkway/Rockcress Drive/Via Varra	Signal	C	B
35	Northwest Parkway/US 36 North Ramps (WB)	Signal	A	A
40	Northwest Parkway/US 36 South Ramps (EB)	Signal	B	C
45	S. 88th Street/Rock Creek Parkway	Roundabout	A (A)	A (A)

Note: Level of service for unsignalized intersections is listed as Overall (Worst Movement).

The following study intersections currently operate overall at LOS E/F or have movements that operate at LOS E/F or having queuing issues during the one of both peak hours:

- ***#5. Dillon Road and McCaslin Boulevard:*** Similar to the existing conditions, the eastbound through, northbound left-turn, and southbound left-turn movements currently operate at LOS E during the AM peak hour. No significant queuing issues were observed in the field or in the traffic analysis reports.

  Recommendations: No mitigation measures recommended.

- ***#15. Dillon Road and S. 96th Street:*** During the AM peak hour, the southbound right-turn was estimated to begin to operate at LOS F due to the high volume of turning vehicles (over 300 vph). During the PM peak hour, the northbound through movement was estimated to operate at LOS E. The 95th percentile queues were calculated to be maintained with the existing storage lengths.

  Recommendations: No mitigation measures recommended.

- ***#20. S. 88th Street and Campus Drive:*** During the AM peak hour, the eastbound through/right-turn lane was estimated to continue to operate at LOS E. During the PM peak hour, the westbound left-turn movement was estimated to begin to operate at LOS F.

  Recommendations: Based on roadway capacity thresholds being exceeded, it is recommended that S. 88th Street be widened to four-lanes between Campus Drive and Dillon Road. At the intersection of S. 88th Street and Campus Drive, this would include a second northbound through lane. In addition, signal timing should be adjusted to accommodate the additional volumes and capacity. With these

improvements, the intersection was calculated to operate overall at LOS C in both peak hours with all movements operating at LOS D or better.

- ***#25. Northwest Parkway and S. 96th Street/Via Varra:*** During the AM peak hour, this signalized intersection was estimated to begin to operate overall at LOS E due to the additional delay on the northbound left-turn movement. During the PM peak hour, the intersection was estimated to begin to operate overall at LOS F due to increased delay experienced on the northbound left-turn movement (LOS F). The 95th percentile queues within the existing turn lanes are currently maintained within the existing storage lengths.

  Recommendations: Based on roadway capacity thresholds being exceeded, it is recommended that S. 96th Street be widened to four-lanes west of Northwest Parkway. At the intersection of Northwest Parkway and S. 96th Street/Via Varra, it is recommended a third northbound left-turn lane be constructed. This would require the elimination of the existing southbound right-turn acceleration lane; therefore, consider adding an overlap phase for the southbound right-turn. With these recommendations, the intersection was calculated to improve to overall at LOS D in the AM peak hour and LOS C in the PM peak hour with all movements operating at LOS D or better.

- ***#30. Northwest Parkway and Rockcress Drive/Via Varra:*** During the AM peak hour, the westbound left-turn and right-turn movements were estimated to operate at LOS F due to limited green time. During the PM peak hour, the eastbound through and westbound left-turn movements were estimated to operate at LOS E. No significant queuing issues shown in the traffic analysis.

  Recommendations: Adjust the signal timing in both peak hours. In the AM peak period consider adding four (4) seconds to the westbound phases which would be taken from the northbound/southbound through phase. This would improve the side-street movements to LOS D. In the PM peak period consider adding two (2) seconds to the westbound phases which would be taken from the northbound/southbound through phase. This improves the westbound left-turn to LOS D and the eastbound through movement would remain the same (less than five vehicles).

Based on the roadway capacity thresholds, the following improvements are recommended to be implemented in Year 2025 background:

- **Widen S. 88th Street** between Dillon Road and Campus Drive to a four-lane roadway. This provides the opportunity for the following mitigation measures at the impacted intersections:
  - ***#10. Dillon Road/S. 88th Street*** modify the westbound approach to include a 2nd left-turn lane.
  - ***#20. S. 88th Street/Campus Drive*** extend the northbound right-turn lane to provide a minimum of 500 feet of storage. Construct a second northbound through lane that begins approximately 500 feet south of Campus Drive.

- Even with the recommended improvements at the S. 88th Street intersections, it is still anticipated there will be congested during the Monarch school campus arrival/departure peak periods. However, these improvements will significantly reduce queues and delay to non-school related traffic traveling through the study network. Generally, it is considered acceptable for queuing/delay issues to occur near intersections adjacent to a school during a school's arrival/departure peak periods, since the congestion occurs for a relatively short period of time.

- **Widen S. 96th Street** between Dillon Road and Northwest Parkway to a four-lane roadway. This provides the opportunity for the following mitigation measures at the impacted intersections:
  - ***#15. Dillon Road/S. 96th Street*** construct dual eastbound and westbound left-turn lanes.
  - ***#25. Northwest Parkway/S. 96th Street/Via Varra*** construct triple northbound left-turns, modify the southbound free right-turn movement to no longer have an acceleration lane, and modify the northwest approach on S. 96th Street to allow for three receiving lanes.

Previous studies have identified the Campus Drive extension as a future improvement to mitigate traffic operational issues at the Dillon Road/S. 88th Street and S. 88th Street/Campus Drive intersections. However, the Campus Drive extension is located on the project property and based on conversations with City staff, this improvement would only be constructed as part of a development project. Therefore, it was not considered to mitigate background conditions.

The study intersections were evaluated with the recommended improvements listed above. **Table 6** provides the overall intersection level of service with the recommended improvements that indicate all study intersections will operate at LOS D or better. The recommended geometric improvements are shown with red arrows on **Figure 10**. The intersection LOS and queuing report worksheets are attached in the **Appendix**. Detailed tables with LOS and 95th percentile queues by movement are included in the **Appendix A (Tables A.3 and A.4)**.

Table 6. Year 2025 Background Conditions Level of Service Summary (Improvements)

No.	Intersection with Recommended Improvements	Traffic Control	Overall Intersection LOS	
			AM Peak Hour	PM Peak Hour
10	Dillon Road/S. 88th Street	Signal	B	B
15	Dillon Road/S. 96th Street	Signal	C	C
20	S. 88th Street/Campus Drive	Signal	C	C
25	Northwest Parkway/S. 96th Street/Via Varra	Signal	D	C
30	Northwest Parkway/Rockcress Drive/Via Varra	Signal	B	B

6.4 Year 2030 Background Intersection Capacity Analysis

The study intersections were evaluated to determine baseline operations for the Year 2030 and to identify any capacity constraints associated with anticipated mid-term background conditions. The background volumes, lane configuration, and traffic control are illustrated on **Figure 11**. Mitigation measures recommended in Year 2025 background were assumed to be implemented by Year 2030 and included in the analysis.

The LOS criteria discussed previously was applied to the study intersections to determine the travel conditions with the Year 2030 background volumes. The results of the LOS calculations for the intersections are summarized in **Table 7**. The intersection LOS and queuing report worksheets are attached in the **Appendix**. Note that signal timing was assumed to be optimized at the study intersections.

Detailed tables with LOS and 95th percentile queues by movement are included in the **Appendix A (Tables A.1 and A.2)**. **Results of the Year 2030 background intersection capacity analysis indicate that all of the study intersections operate at LOS D or better in both peak hours.**

Table 7. Year 2030 Background Conditions Level of Service Summary

No.	Intersection	Traffic Control	Overall Intersection LOS	
			AM Peak Hour	PM Peak Hour
5	Dillon Road/McCaslin Boulevard	Signal	C	C
10	Dillon Road/S. 88th Street	Signal	B	B
15	Dillon Road/S. 96th Street	Signal	C	C
20	S. 88th Street/Campus Drive	Signal	C	C
25	Northwest Parkway/S. 96th Street/Via Varra	Signal	D	C
30	Northwest Parkway/Rockcress Drive/Via Varra	Signal	B	B
35	Northwest Parkway/US 36 North Ramps (WB)	Signal	A	A
40	Northwest Parkway/US 36 South Ramps (EB)	Signal	B	C
45	S. 88th Street/Rock Creek Parkway	Roundabout	A (B)	A (A)

Note: Level of service for unsignalized intersections is listed as Overall (Worst Movement).

While the **Dillon Road at McCaslin Boulevard (#5)** intersection is expected to operate overall at LOS C in both peak periods, the same movements that operated at LOS E in the in AM peak hour will continue to experience delays (eastbound through, northbound left-turn, and southbound left-turn). The eastbound through movement at **Northwest Parkway and Rockcress Drive/Via Varra (#30)** was estimated to continue to operate at LOS E in the PM peak hour with the intersection operating overall at LOS B.

While continued congestion is expected to occur near the Monarch school campus during school peak times, the queues/delays were acceptable. No other significant queuing issues are anticipated.

6.5 Year 2040 Background Intersection Capacity Analysis

The study intersections were evaluated to determine baseline operations for the Year 2040 background scenario and to identify any capacity constraints associated with background condition in a long-term buildout scenario. The background volumes, lane configuration, and traffic control are illustrated on **Figure 12.** Note that peak hour factors were updated to 0.92 for movements that were not associated with the school traffic or those with an existing value higher than 0.92. This is because the increase in volumes is anticipated to spread traffic over the hour. Mitigation measures recommended in previous background scenarios were assumed to be implemented by Year 2040 and included in the analysis.

The LOS criteria discussed previously was applied to the study intersections to determine the travel conditions with the long-term background scenario. The results of the LOS calculations for the intersections are summarized in **Table 8.** Detailed tables with LOS and 95th percentile queues by movement are included in the **Appendix A (Tables A.1 and A.2).** The intersection LOS worksheets are attached in the **Appendix**. **Results of the Year 2040 background intersection capacity analysis indicate that all of the study intersections operate at LOS D or better in both peak hours.**

Table 8. Year 2040 Background Conditions Level of Service Summary

No.	Intersection	Traffic Control	Overall Intersection LOS	
			AM Peak Hour	PM Peak Hour
5	Dillon Road/McCaslin Boulevard	Signal	C	C
10	Dillon Road/S. 88th Street	Signal	B	B
15	Dillon Road/S. 96th Street	Signal	C	C
20	S. 88th Street/Campus Drive	Signal	C	D
25	Northwest Parkway/S. 96th Street/Via Varra	Signal	C	C
30	Northwest Parkway/Rockcress Drive/Via Varra	Signal	B	B
35	Northwest Parkway/US 36 North Ramps (WB)	Signal	A	A
40	Northwest Parkway/US 36 South Ramps (EB)	Signal	B	C
45	S. 88th Street/Rock Creek Parkway	Roundabout	A (A)	A (A)

Note: Level of service for unsignalized intersections is listed as Overall (Worst Movement).

Based on the roadway capacity thresholds, the following improvements are recommended to be implemented in Year 2040 background:

- Monitor the volumes, congestion, and safety on Dillon Road to determine if two lanes are sufficient for daily volumes exceeding 20,000 vpd. If desired, Widen Dillon Road between S. 88th

Street and S. 96th Street to a four-lane roadway. This will improve the poor lane utilization at the intersection with S. 96th Street. This provides the opportunity for the following mitigation measures at the impacted intersections:

- ***#10. Dillon Road/S. 88th Street*** modify the eastbound approach to include a 2nd through lane.

- **Widen S. 96th Street** to a four-lane roadway north of Dillon Road. As noted in **Section 3.0 (Previous Studies)**, there are other studies that analyzed the S. 96th Street corridor. Traffic volume projections indicate the need to expand S. 96th Street to a four-lane roadway to the north, through the SH 42 intersection. The Louisville Industrial Park/St. Louis Parish development on the northeast corner of S. 96th Street and Dillon Road has already expanded S. 96th Street to four lanes adjacent to that property.

The study intersections were evaluated with the recommended improvements listed above. **Table 9** provides the overall intersection level of service with the recommended improvements. The recommended geometric improvements are shown with red arrows on **Figure 12**. Detailed tables with LOS and 95th percentile queues by movement are included in the **Appendix A (Tables A.3 and A.4)**.

Table 9. Year 2040 Background Conditions Level of Service Summary (Improvements)

No.	Intersection with Recommended Improvements	Traffic Control	Overall Intersection LOS	
			AM Peak Hour	PM Peak Hour
10	Dillon Road/S. 88th Street	Signal	B	B

7.0 Proposed Development Traffic with Redtail Ridge

7.1 Proposed Internal Roadway Network

Campus Drive Extension

Construction of the Campus Drive extension is proposed to coincide with the opening of the first vertical development of Redtail Ridge. Once extended, Campus Drive will connect from where it dead ends (approximately 2,200 feet east of S. 88th Street) to S. 96th Street. This will provide an alternative route for traffic generated by the Monarch school campus; it will also serve as a primary access to/from the Redtail Ridge development as shown in **Figure 2**.

In addition to serving traffic to/from the Monarch school campus, Campus Drive is anticipated to be utilized by the residents living in the Rock Creek subdivision and as an alternative route to Dillon Road. It should be noted that the Centennial Peaks Hospital/Avista Family Life Center medical facilities are planning to be relocated to a parcel within Redtail Ridge. With the project the hospital traffic will be rerouted from the existing location to the new site.

To estimate the number of drivers that will change their route to use Campus Drive, existing travel patterns were reviewed, and a travel time analysis was performed. The primary movements that are anticipated to most likely shift from their current route to Campus Drive are the northbound right-turn and westbound left-turn movements at the Dillon Road/S. 88th Street intersection.

Vehicles that are traveling from south of the S. 88th Street/Campus Drive intersection to Northwest Parkway are anticipated to use the Campus Drive extension once it is constructed, since this is expected to be a faster route than Dillon Road. When looking at travel time to/from the Dillon Road/S. 96th Street intersection to the Monarch school campus, the travel distance for vehicles using the S. 96th Street/Campus Drive intersection versus the S. 88th Street/Campus Drive intersection is approximately 25% fewer. The travel distance for vehicles destined to/from the hospital is approximately the same.

Based on current travel patterns, it is estimated that approximately 75% of vehicles currently making a northbound right-turn and westbound left-turn movements at the Dillon Road/S. 88th Street intersection would reroute to use Campus Drive during the AM peak hour. During the PM peak hour, it is estimated that 50% of vehicles currently utilizing these movements would reroute to use Campus Drive.

The travel conditions of the Campus Drive extension to the existing traffic volumes during the AM and PM peak hours are illustrated on **Figure 15**.

The Campus Drive concept layout near the Monarch school campus is shown in **Figure 16**. Campus Drive is proposed to be a four-lane roadway with roundabouts at the K-8 access, the High School access (peanut

roundabout), and Street B. The project team has met with BVSD on three (3) occasions to discuss the proposed roundabout and has received positive feedback on the proposed layout. A follow-up study is planned to evaluate the Campus Drive at the K-8 and High School intersection design in more detail.

In addition to studying the AM peak hour which coincides with the school arrival peak period, additional data will need to be collected for the afternoon peak period which coincides with the school departure period. Observations will also be conducted to evaluate the internal operations and current queues so that recommendations can be provided to BVSD to improve the internal operations.

Rockcress Drive

Redtail Ridge is planning to construct Rockcress Drive incrementally and is expected to be fully constructed prior to Year 2030. Like Campus Drive, this two-lane roadway will also be a new connection between S. 88th Street and Northwest Parkway. With the first phase of Redtail Ridge, Rockcress Drive is planned to be constructed from Northwest Parkway to the west to the approximate midpoint of the site. The future connection at S. 88th Street is anticipated to be in the same location as the Tape Drive access.

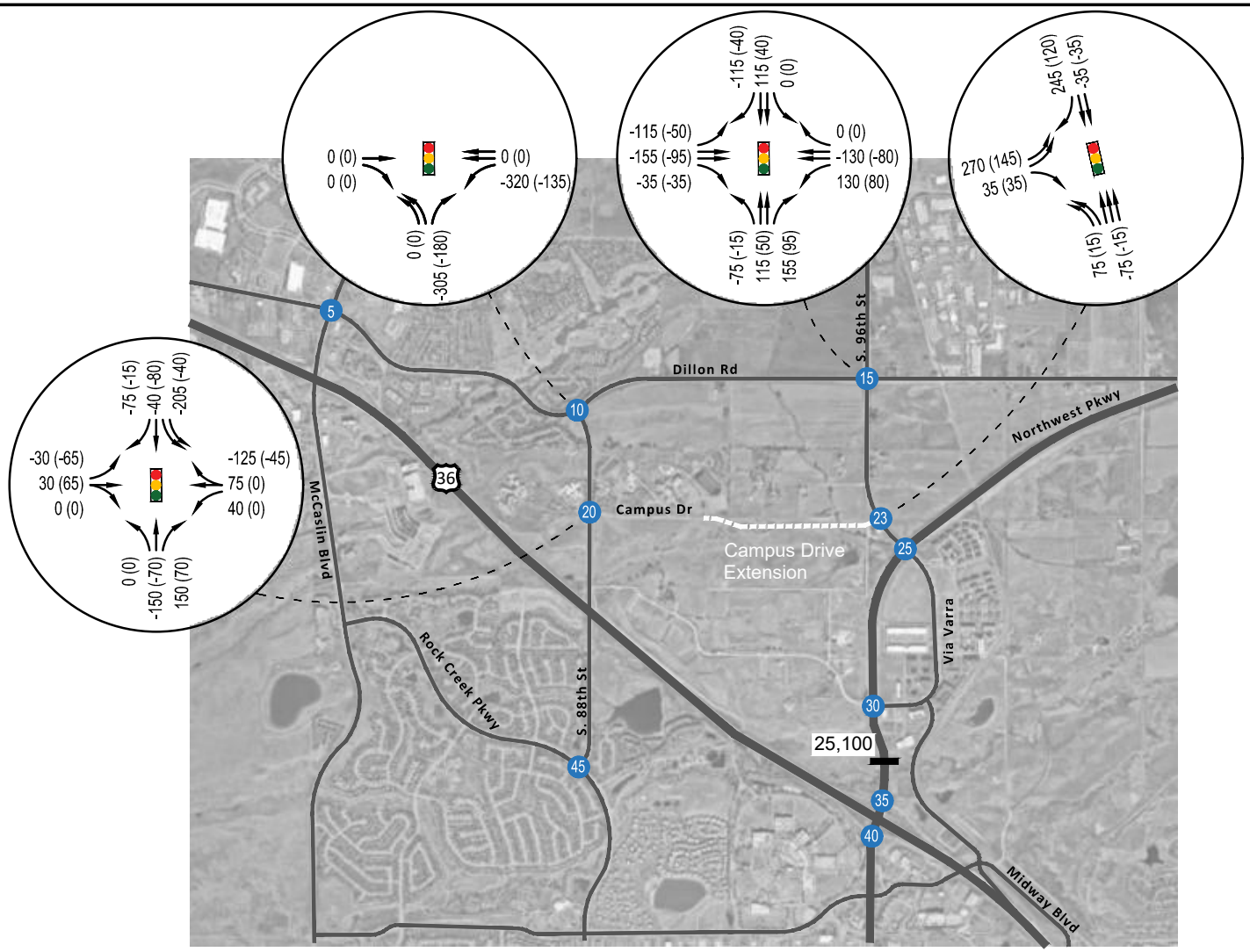
Consideration was given to the likelihood of existing/background vehicles rerouting to use Rockcress Drive from their current route. However, based on this review, few non-project related vehicles are anticipated to use Rockcress Drive to connect between S. 88th Street and Northwest Parkway.

Sorrel Avenue

The primary north-south roadway within Redtail Ridge will connect Campus Drive to Rockcress Drive, approximately 750 feet west of Northwest Parkway, and named Sorrel Avenue. This two-lane roadway will provide access to other internal collectors and driveways. It is proposed that the intersections at either end be constructed as roundabouts.

Internal Collectors

Three (3) internal roadways will be constructed within Redtail Ridge, in addition to those listed above. These two-lane roadways will provide direction access to the driveways, parking lots, loading areas, and circulation through the site. There is planned to be one north-south roadway between Campus Drive and Rockcress Drive at the west end of the site and then two east-west roadways connecting Sorrel Avenue to the north-south collector.



KEY

- LANE CONFIGURATION
- X,XXX DAILY TRAFFIC VOLUME
- XX (XX) AM (PM) PEAK HOUR TRIP VOLUME CHANGE FROM EXISTING

***Note: Traffic volume shifts are only shown for the study intersections impacted by the Campus Drive extenion*

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CAMPUS DRIVE EXTENSION TRAFFIC PATTERN CHANGES (EXISTING VOLUMES)

FT Project #	19055	Original Scale	NTS	Date	02/15/2023	Drawn by	MAR	Figure #	15

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REDTAIL RIDGE TRAFFIC AND MOBILITY STUDY

CAMPUS DRIVE LAYOUT FOR MONARCH SCHOOL CAMPUS ACCESSES

FT Project #	19055	Original Scale	NTS	Date	02/15/2023	Drawn by	MAR	Figure #	16

7.2 Proposed Multimodal Network

The Redtail Ridge project will be built over the next 10 years. During this time major shifts in transportation mobility and regional transportation project completion are expected to take place. Transit projects such Northwest Rail, SH 42 BRT, and the RTD local circulator will potentially be operating before Year 2040. In addition, enhancements, and construction of complete streets on S. 88th Street, Dillon Road, and S. 96th Street, as well as the new connections within the project on Campus Drive, Rockcress Drive, and Sorrel Avenue, will be a major part of the multimodal transformation in Louisville. As outlined in the policy documents in the background section of this report, these corridors will serve many more travelers and modes in the future. The transformations will use the current right-of-way to move more people using safe, reliable, connected, and sustainable transportation options.

The enhanced-future multimodal network in the area is shown in **Table 10**. Additional details regarding at-grade signalized crossings, underpasses, trail connections, transit stops, shared ride mobility, and other multimodal infrastructure on the Redtail Ridge site will be detailed as this project continues ahead in the PUD process.

Table 10. Enhanced-Future Multimodal Network Assumptions

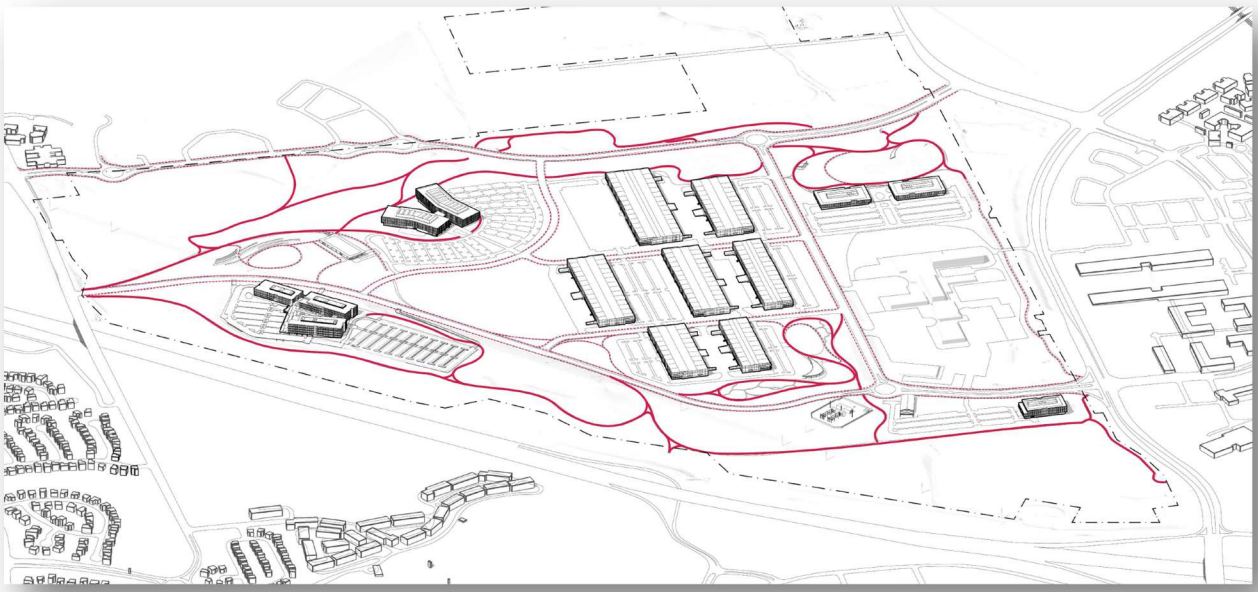
Corridor	Bike Lanes	Multi-use pathways	Sidewalks	Bus Lanes
Campus Drive (S. 88th Street to S. 96th Street)	buffered or protected	southside	northside	none
Rockcress Drive (S. 88th Street to Northwest Parkway)	buffered or protected	none	northside and southside	none
Sorrel Avenue (Campus Drive to Rockcress Drive)	buffered or protected	none	eastside and westside	none

** Expanded future multimodal network will include on-site improvements with connections to City multi-modal facilities, existing or future.*

The conceptual multimodal trail network for the Redtail Ridge project area is also illustrated in **Figure 17**. As shown in the graphic, the project proposes to provide multimodal connections through the project site, giving users more route options to travel through the area. Redtail Ridge will install sidewalks on both sides of the internal roadways, along Campus Drive, and along the west side of Northwest Parkway. In addition, the internal roadways will have on-street bike lanes in both directions.

Redtail Ridge has also agreed to construct a pedestrian and bicycle grade-separated crossing across Northwest Parkway in lieu of the existing at-grade crossing at the intersection of S. 96th Street and Northwest Parkway.

Figure 17. Enhanced Redtail Ridge Conceptual Trail Network



**Note: conceptual multimodal trail network shown in red.*

7.3 Travel Demand Management Strategies

Transportation Demand Management (TDM) refers to activities that help people use the transportation system more efficiently, while reducing traffic congestion, vehicle emissions and fuel consumption. TDM activities help get the most out of transportation infrastructure and services by making lower-cost, higher-efficiency transportation options easier to use and more readily available.

TDM activities include such options as eliminating or shortening trips, changing the mode of travel, or changing the time of day a trip is made, as well as actions that increase transportation system efficiency

through carpooling, vanpooling, transit, bicycling and walking. TDM strategies also include employer-based programs such as alternative work schedules, which can shift demand away from peak travel times, and telework, which can reduce the need for trips entirely.

The Redtail Ridge project has developed a TDM Plan under a separate document. The programs listed in the TDM Plan are provided at this time as possible tools given where the project stands in the GDP process. Future submittals can provide additional information when additional details on land uses, tenants and funding is known. It is recommended that the Metro District partner with a local expert in transportation management solutions to help facilitate these programs.

Note that all vertical developers in the project will be required to submit a customized TDM for their building identifying what programs will be implemented to meet the non-SOV goals of the project. Periodic surveys will be conducted to evaluate the TDM program effectiveness and adjustments will be made, if needed, to reach the project non-SOV goals.

7.4 External Non-Single Occupant Vehicle (Non-SOV) Trips

Non-single occupant vehicles (non-SOV) trips are trips that originate from outside the site or are being made from the site to external destinations. These trips are made by people who bicycle, carpool, vanpool, used shared ride mobility services and/or ride transit. As previously reference, based on the *American Community Survey US Census Data*, the mixed-use development sites in the US 36 corridor currently have 25% to 30% non-SOV trips coming to/from the sites daily. In addition, this project reviewed mode share and trip generation data for other large-scale developments in the Denver Metro area as well as trip generation studies to estimate non-SOV percentages anticipated for this project area. A summary of the findings and references are provided in the **Appendix**.

The non-SOV goals for this project are to have 25% or more non-SOV trips, which is achievable based on the current conditions and proposed TDM programs. However, based on feedback provided by City staff, to provide a more conservative analysis, a lower non-SOV reduction was assumed for the trip generation and traffic analysis for this study.

A non-SOV of 12% was assumed for all of the land uses within the proposed development, including the retail, industrial park, and office space. This accounts for employees/visitors /customers who walk, bicycle, carpool, vanpool, use shared ride mobility services and/or use transit.

It is assumed that some of the planned regional mobility plans for this area will be constructed/implemented by the time this project is built-out and that these projects will further reduce the non-SOV trips for the project and background trips to the study area (such as Northwest Rail, NAMS BRT corridors, complete streets in the 88th Street, Dillon Road, and 96th Street corridor).

7.5 Trip Generation

A trip generation analysis was performed to determine the traffic characteristics for the project. Trip rates contained in the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 11th Edition*[2] were applied to estimate the traffic for the proposed land uses. ITE trip generation rates for "Industrial Park" (#130), "Manufacturing" (#140), "Hospital" (#610), "General Office Building" (#710), "Medical-Dental Office Building" (#720), "Research and Development Center" (#760), and "Shopping Center" (#820) were utilized for the industrial, office, and retail uses, respectively. Specific land uses and tenants for the office and retail spaces are unknown currently. It is anticipated that the retail uses will be designed to support the industrial and office development.

The ITE *Trip Generation Handbook (Volume 3)* provides recommendations for when to use the average rate versus the equation (fitted curve) when estimated trips for land use codes. Based on this review, land use codes where the equation has a R^2 value of at least 0.75 was used to determine what land use codes the equation was utilized versus the average rate to estimate the trip generation estimates before reductions were applied. The proposed project is expected to experience mostly new trips, also known as 'primary trips', as well as pass-by trips, multi-use trips, and non-auto trips which are discussed below:

Primary Trips. These trips are made specifically to visit the site and are considered "new" trips. Primary trips would not have been made if the proposed project did not exist. Therefore, this is the only trip type that increases the total number of trips made on a regional basis.

Multi-Use (Internal) Trips. These internal trips occur from one land use or building to another within the site boundaries. For example, an office patron may also use a retail store or restaurant in one vehicular visit to the site. Multi-use or multi-purpose trips typically do not affect the exterior site access points, nor add any additional traffic volumes to the adjacent street network. For this project it is projected that the small retail uses on the site will be focused on serving the office and industrial employees of the project and most (75% estimated) of the trips accessing them will be on-site or internal trips. The other end of these internal trips were attributed to the office and industrial employees and resulted in a 3% reduction for those uses. Based on this approach, the multi-use factors applied for this project were assumed to be 3% for the industrial and office uses and 75% for the retail uses**.**

Non-SOV Trips. These trips originate from outside the site that may be completed by walking, bicycling, carpooling, shared ride mobility, or riding transit. The 12% non-SOV assumption identified in **Section 7.4** were applied to the trip generation estimates.

[2] Trip Generation 11th Edition, Institute of Transportation Engineers, 2021.

As shown in **Table 11**, with the assumptions listed above, the project site is expected to generate approximately 6,663 daily, 758 AM peak hour, and 803 PM peak hour external trips by Year 2025. At full build out the project site is expected to generate approximately 21,285 daily, 1,908 AM peak hour, and 2,149 PM peak hour external trips.

Table 11. Trip Generation Summary

	Land Use	Size	Unit	Non-SOV	Internal Capture	Net Reduction Factor	Average Weekday Trips Rate	Average Weekday Trips Total	Weekday AM Peak Hour Trips Rate	Weekday AM Peak Hour Trips Total	Weekday AM Peak Hour Trips In	Weekday AM Peak Hour Trips Out	Weekday PM Peak Hour Trips Rate	Weekday PM Peak Hour Trips Total	Weekday PM Peak Hour Trips In	Weekday PM Peak Hour Trips Out
Phase 1 (2025)	#130 Industrial Park	509.26	KSF	**12%**	**3%**	85%	*	1,868	0.4	174	141	33	0.4	174	37	137
	#760 Research and Development Center (Life Science + Amenity)	300.0	KSF	**12%**	**3%**	85%	**	2,695	1.03	264	216	48	0.98	251	40	211
	#140 Manufacturing (GMP)	598.94	KSF	**12%**	**3%**	85%	*****	2,100	******	320	243	77	0.74	378	117	261
		######	**KSF**			**Subtotal**		**6,663**		**758**	**600**	**158**		**803**	**194**	**609**
Phase 2 (2030)	#820 Shopping Center	14.0	KSF	**12%**	**75%**	22%	37.75	116	0.94	3	2	1	3.81	12	6	6
	#130 Industrial Park	118.8	KSF	**12%**	**3%**	85%	*	877	0.4	41	33	8	0.40	41	9	32
	#710 General Office Building	90	KSF	**12%**	**3%**	85%	**	818	***	95	82	13	****	88	14	74
	#760 Research and Development Center	264.00	KSF	**12%**	**3%**	85%	**	2,397	1.03	232	190	42	0.98	221	35	186
	#610 Hospital	160.0	BEDS	**12%**	**3%**	85%	22.32	3,048	1.79	244	176	68	1.69	231	76	155
	#720 Medical-Dental Office Bldg	150.0	KSF	**12%**	**3%**	85%	36.00	4,609	***	296	234	62	3.93	503	151	352
		921.80	**KSF**			**Subtotal**		**12,037**		**911**	**717**	**194**		**1,096**	**291**	**805**
Ph 3 (2040)	#710 General Office Building	270.0	KSF	**12%**	**3%**	85%	**	2,374	***	239	206	33	****	250	40	210
		270.00	**KSF**			**Subtotal**		**2,585**		**239**	**206**	**33**		**250**	**40**	**210**
						Full Buildout Total		**21,285**		**1,908**	**1,523**	**385**		**2,149**	**525**	**1,624**

* ITE Equation: EXP(0.52*LN(X) *** ITE Equation: (0.94*X+ 26.49) ***** ITE Equation 3.77*X+201.98
** ITE Equation: EXP(0.97*LN(X **** ITE Equation EXP(0.95*LN(X) ****** ITE Equation 0.61*X+9.54

7.6 Trip Distribution and Assignment

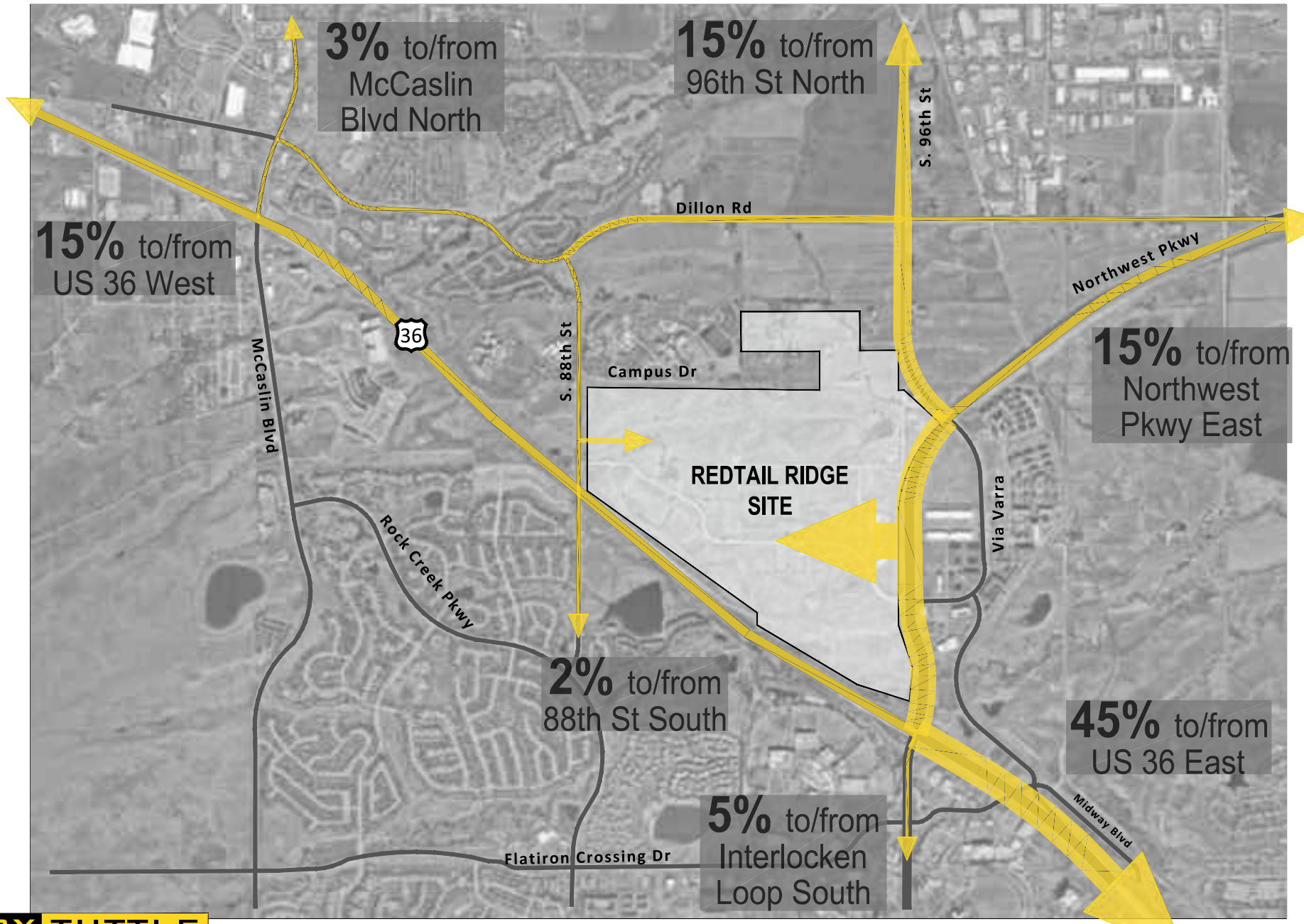
To develop the trip distribution for the proposed development, available traffic count and travel pattern data was reviewed. The proposed land uses for the project site were also taken into consideration which suggests that traffic generated to/from the project site is expected to utilize the regional transportation system, with a smaller percent of the trips generated by the local system. Therefore, most vehicles are expected to use the regional routes (such as US 36, Northwest Parkway, and S. 96th Street to the north) and few vehicles are expected to use local roads. Travel routes/patterns were reviewed to determine how vehicles are expected to access the site and what route is likely to be fastest for vehicles to use to

get to Boulder and Denver, but also communities to the south such as Arvada, Golden, Wheat Ridge, Westminster, etc.

In addition to available traffic/travel pattern information, data available from the StreetLight Data Company was reviewed for the offices in CTC. StreetLight collects mobility data on vehicle trips that can be used to analyze trip origin-destination, trip travel time/route, and trip purpose; this data was used to determine the trip distribution for existing traffic entering/exiting the offices in CTC. This data provided a baseline for where existing office trips in the study area have origins/destinations.

Taking into consideration the factors listed above, the trip distribution was developed for the development traffic entering/exiting the project site and is summarized in **Figure 18**. It is important to note that this trip distribution was evaluated by the City as well as their third-party consultant who used the DRCOG Year 2040/2050 travel demand model for comparison purposes. Based on their review, the trip generation estimates shown in **Figure 18** were found to be acceptable.

Using these distribution assumptions, the projected site traffic was assigned to the study area roadway network for the weekday AM and PM peak hours. The site-generated traffic for Year 2025, Year 2030, and Year 2040 are shown on **Figure 19, Figure 20,** and **Figure 21**, respectively.



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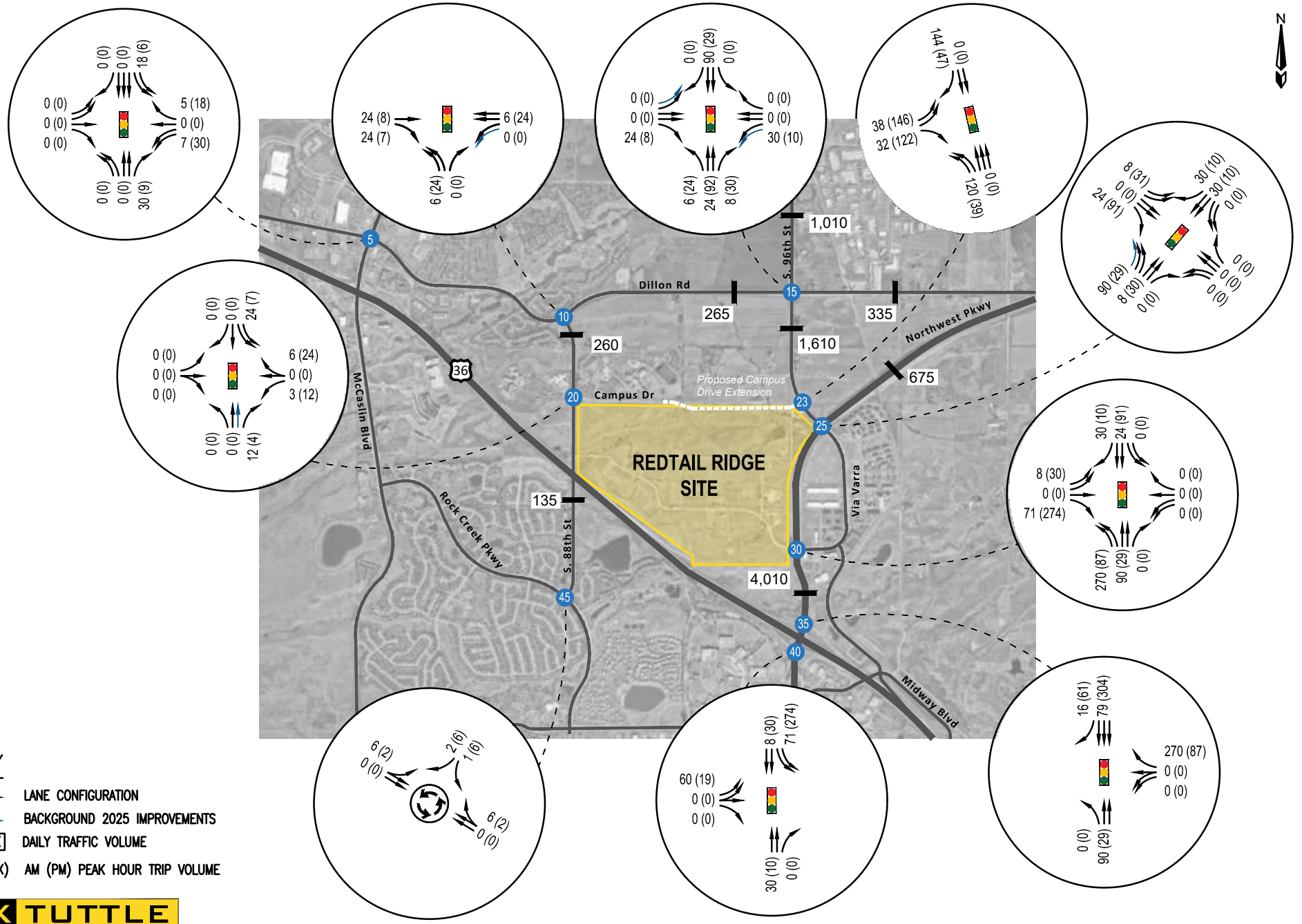
TRIP DISTRIBUTION

FT Project #	19055	Original Scale	NTS	Date	02/15/2023	Drawn by	MAR	Figure #	18



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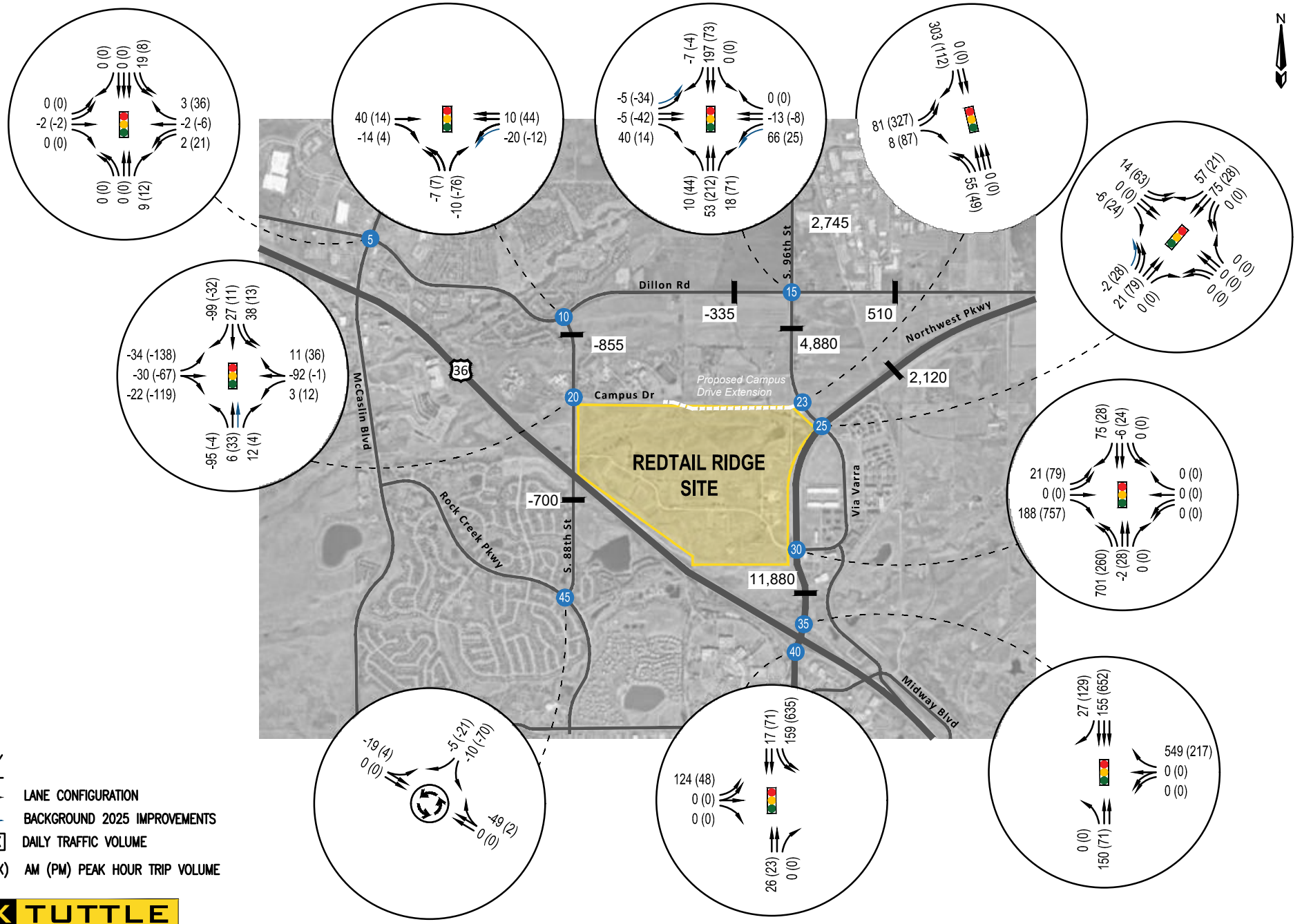
REDTAIL RIDGE TRAFFIC AND MOBILITY STUDY

REDTAIL RIDGE SITE-GENERATED TRIP VOLUMES - PRIOR TO YEAR 2025

FT Project #	19055	Original Scale	NTS	Date	10/04/2023	Drawn by	SKK	Figure #	19



KEY

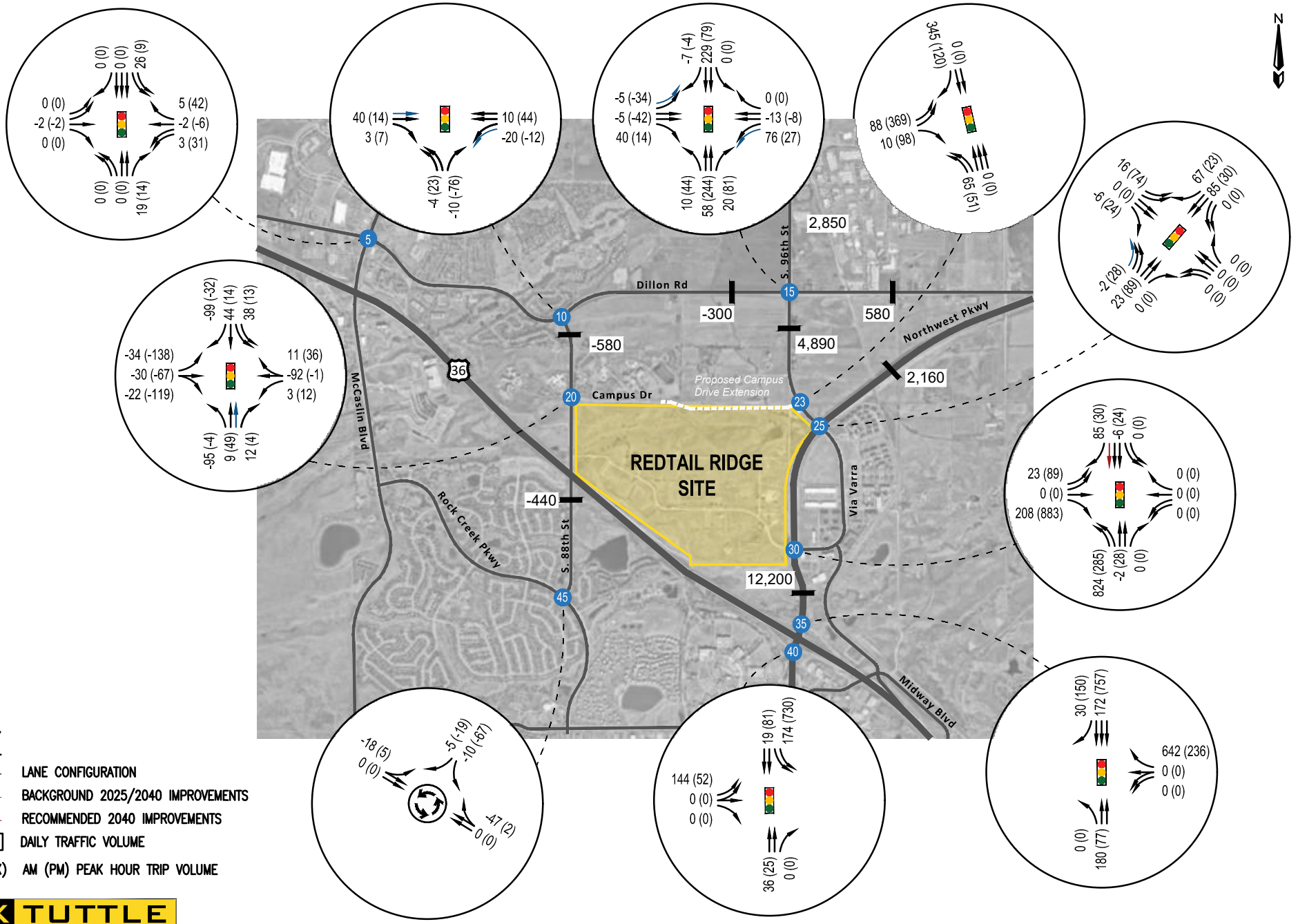
- LANE CONFIGURATION
- BACKGROUND 2025 IMPROVEMENTS
- X,XXX DAILY TRAFFIC VOLUME
- XX (XX) AM (PM) PEAK HOUR TRIP VOLUME

FOX TUTTLE TRANSPORTATION GROUP

REDTAIL RIDGE TRAFFIC AND MOBILITY STUDY

REDTAIL RIDGE SITE-GENERATED TRIP VOLUMES - PRIOR TO YEAR 2030

FT Project #	19055	Original Scale	NTS	Date	10/04/2023	Drawn by	SKK	Figure #	20



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REDTAIL RIDGE TRAFFIC AND MOBILITY STUDY

REDTAIL RIDGE SITE-GENERATED TRIP VOLUMES - PRIOR TO YEAR 2040

FT Project #	19055	Original Scale	NTS	Date	10/04/2023	Drawn by	SKK	Figure #	21

8.0 Future Conditions + Redtail Ridge Traffic

This section evaluates the anticipated future traffic operations with the project trips. This section discusses travel conditions associated with the addition of development trips to the Year 2025 conditions.

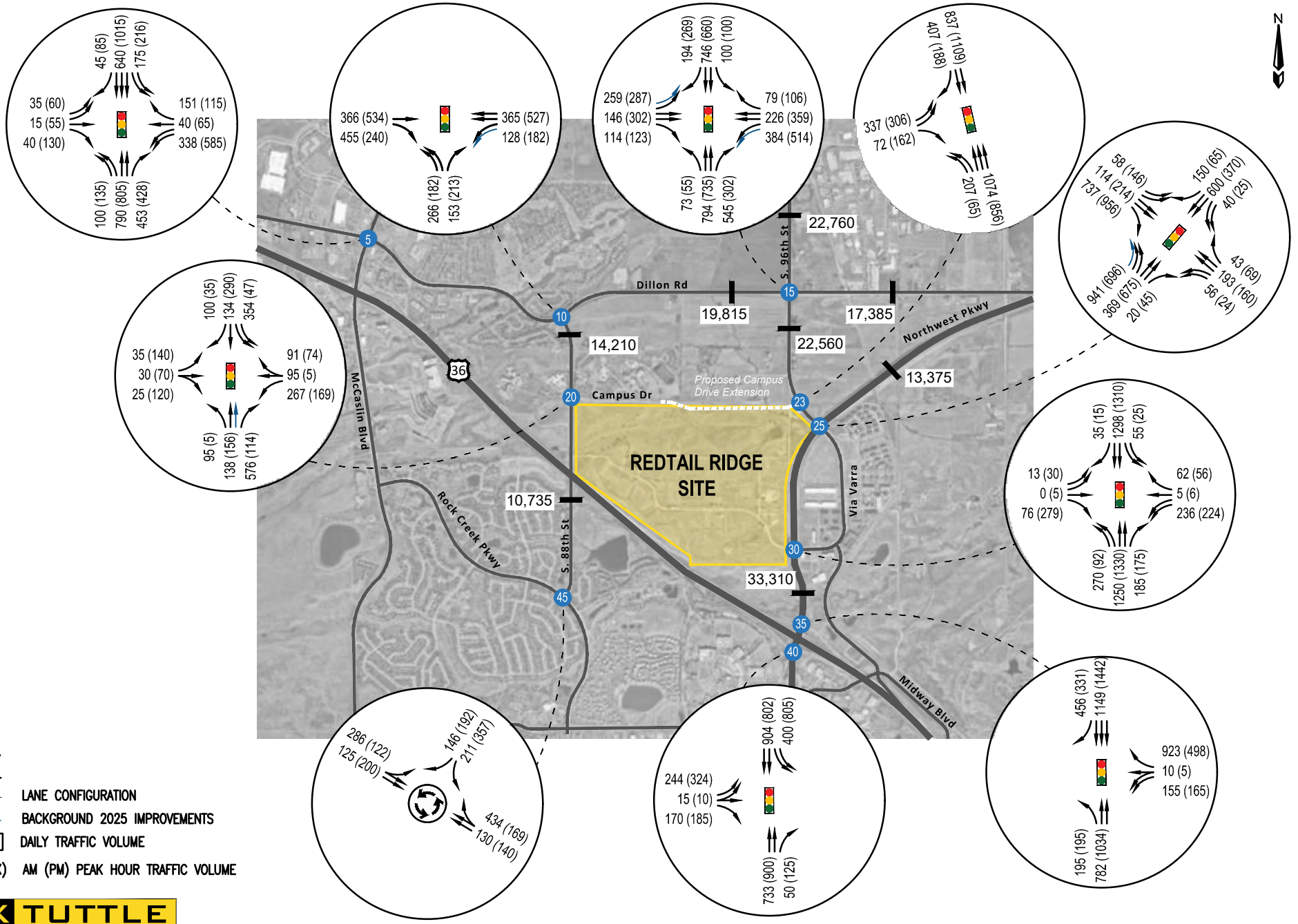
8.1 Year 2025 Background + Project Intersection Capacity Analysis

The improvements identified under Year 2025 background conditions were not assumed, since the Campus Drive extension could potentially reduce the need for some of the improvements. The following assumptions were implemented for Year 2025 Background + Project scenario:

- Extend Campus Drive to S. 96th Street.
- Construct Rockcress Drive from Northwest Parkway to Sorrel Ave.
- Construct Sorrel Avenue and internal collector roads.
- Construct and signalize the new full movement intersection of S. 96th Street/Campus Drive. Include one southbound right-turn lane, dual northbound left-turn lanes, dual eastbound left-turn lanes, and one eastbound right-turn lane (consistent with previous study recommendations).
- Modify the intersection of Northwest Parkway/ Rockcress Drive/Via Varra to replace the existing dual eastbound left-turn lanes with a single eastbound left-turn lane to better align with the proposed Rockcress Drive alignment to the west. Remove the split phasing for eastbound and westbound and replaced with a protected+permitted left-turn phase and through phase.
- Optimize signal timing at all the study intersections.

The projected site-generated traffic was added to the Year 2025 background study area traffic volumes, which assumes travel pattern shifts for existing/background traffic due to the Campus Drive extension. The resultant traffic volumes are illustrated on **Figure 22**.

The results of the LOS calculations for the intersections are summarized in **Table 12**. Detailed tables with LOS and 95th percentile queues by movement and comparison to background are available in **Appendix A (Tables A.5 and A.6).** The intersection LOS worksheets are also included in the **Appendix**. **The project trips will have minimal impacts to the majority of the existing study intersections.** The redirected traffic to Campus Drive reduces delays at several intersections. The Redtail Ridge project has the most significant impacts to the intersections of Northwest Parkway at Rockcress Drive and Northwest Parkway at S. 96th Street/Via Varra. **The internal intersections were found to operate at LOS B or better for both peak periods.**



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REDTAIL RIDGE TRAFFIC AND MOBILITY STUDY

YEAR 2025 BACKGROUND + REDTAIL RIDGE (PHASE 1) TRAFFIC VOLUMES

FT Project #	19055	Original Scale	NTS	Date	07/12/2024	Drawn by	SKK	Figure #	22

Table 12. Year 2025 + Project Conditions Level of Service Summary

No.	Intersection	Traffic Control	Background + Project Overall Intersection LOS		Background Intersection Overall LOS	
			AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
5	Dillon Road/McCaslin Boulevard	Signal	C	C	C	C
10	Dillon Road/S. 88th Street	Signal	B	B	C	B
15	Dillon Road/S. 96th Street	Signal	C	C	D	D
20	S. 88th Street/Campus Drive	Signal	C	D	D	D
23	S. 96th Street/Campus Drive	Signal	C	C	-	-
25	Northwest Parkway/S. 96th Street/Via Varra	Signal	F	F	E	F
30	Northwest Parkway/Rockcress Drive/Via Varra	Signal	C	C	C	B
35	Northwest Parkway/US 36 North Ramps (WB)	Signal	A	A	A	A
40	Northwest Parkway/US 36 South Ramps (EB)	Signal	B	D	B	C
45	S. 88th Street/Rock Creek Parkway	Roundabout	A (A)	A (A)	A (A)	A (A)
101	Campus Drive/North-South Collector	Side-Street Stop	A (B)	A (B)	-	-
102	Campus Drive/Sorrel Avenue	Roundabout	A (A)	A (A)	-	-
103	Rockcress Drive/North-South Collector	Side-Street Stop	A (A)	A (A)	-	-
104	Rockcress Drive/East-West Collector (South)	Side-Street Stop	A (A)	A (A)	-	-
105	Rockcress Drive/Sorrel Avenue	Roundabout	A (A)	A (A)	-	-
106	Sorrel Avenue/East-West Collector (South)	All-Way Stop	A (A)	A (A)	-	-
107	Sorrel Avenue/East-West Collector (North)	All-Way Stop	A (A)	A (A)	-	-
108	N-S Collector/ E-W Collector (North)	Side-Street Stop	A (A)	A (A)	-	-
205	Sorrel Avenue/PUD 2 Access E	Side-Street Stop	A (A)	A (A)	-	-

Note: Level of service for unsignalized intersections is listed as Overall (Worst Movement).

Additional lane geometry/traffic control recommendations for internal roadways are included in a later section: **Section 9.0 (Internal Intersection Analysis)**. This scenario was also evaluated with the recommended improvements from the Year 2025 background scenario (illustrated in **Figure 22**), including widening S. 88th Street; widening S. 96th Street; adding a second westbound left-turn lane at Dillon Road/S. 88th Street; adding a second northbound through lane at S. 88th Street/Campus Drive; adding second eastbound and westbound left-turns at S. 96th Street/Dillon Road; and adding third northbound left-turn lane at Northwest Parkway/S. 96th Street.

It is recommended that additional green time be provided to the southbound left-turn at the Northwest Parkway and US 36 South Ramp (Eastbound) during the PM peak period to reduce the delay and queue.

The results of the LOS calculations for the intersections with the recommended improvements are summarized in **Table 13.** Detailed tables with LOS and 95th percentile queue by movement as well as the intersection LOS worksheets are included in the **Appendix A (Tables A.5 and A.6)**.

Table 13. Year 2025 Background + Project Conditions Level of Service Summary (Improvements)

No.	Intersection	Traffic Control	Overall Intersection LOS	
			AM Peak Hour	PM Peak Hour
10	Dillon Road/S. 88th Street	Signal	B	A
15	Dillon Road/S. 96th Street	Signal	C	C
20	S. 88th Street/Campus Drive	Signal	C	C
25	Northwest Parkway/S. 96th Street/Via Varra	Signal	D	C
40	Northwest Parkway/US 36 South Ramps (EB)	Signal	N/A	C

Note: Level of service for unsignalized intersections is listed as Overall (Worst Movement).

8.2 Year 2030 Background + Project Intersection Capacity Analysis

This section discusses travel conditions associated with the addition of development trips to the Year 2030 background conditions and the resultant traffic volumes are illustrated on **Figure 23**. The following assumptions were implemented for Year 2030 Background + Project scenario:

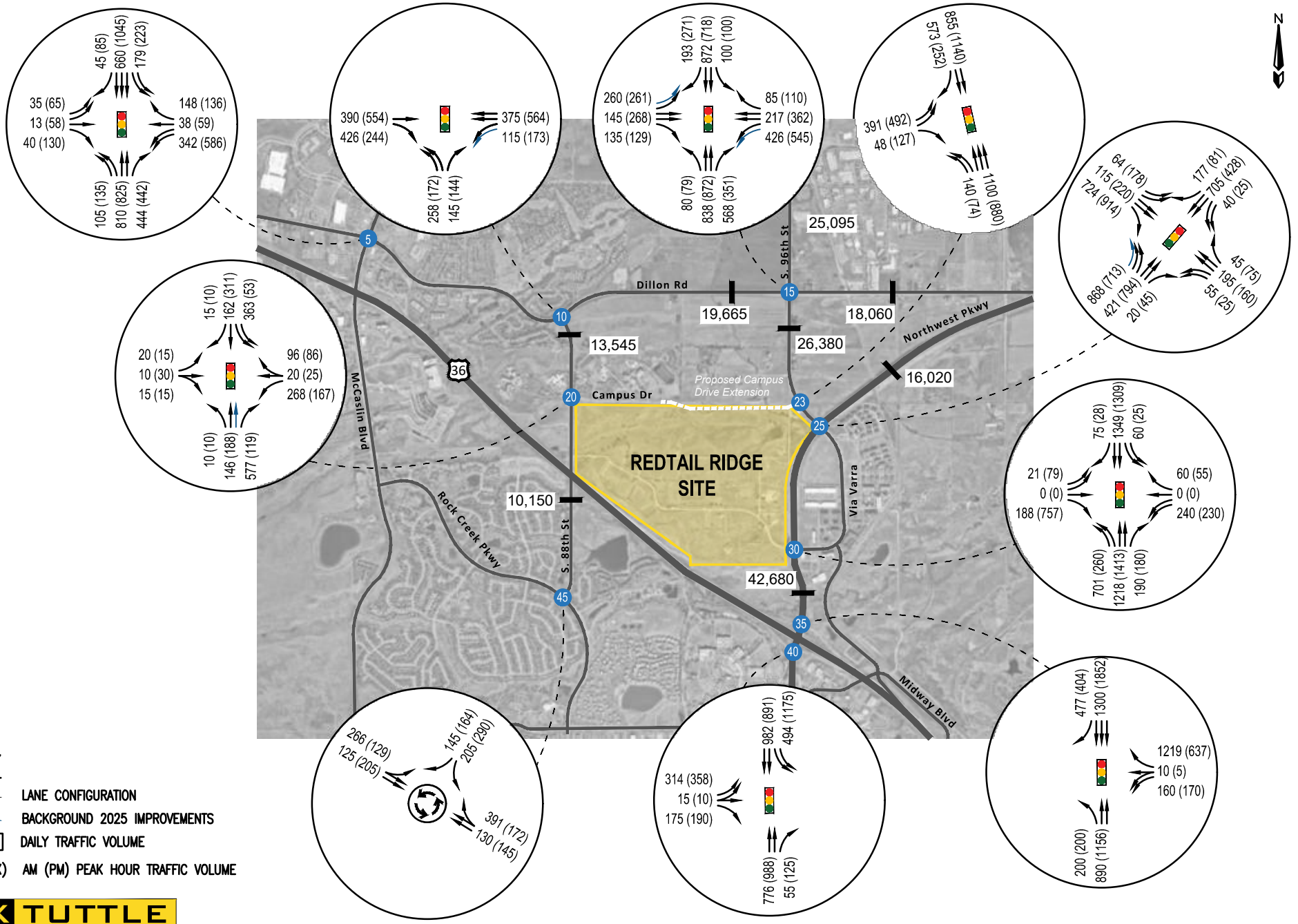
- Improvements identified in Year 2025 background + project, plus:
- Extend Rockcress Drive to S. 88th Street
- Add overlap phase for southbound right-turn at S. 96th Street/Campus Drive
- Optimize signal timing at all the study intersections.

The results of the LOS calculations for the intersections are summarized in **Table 14**. Detailed tables with LOS and 95th percentile queues by movement and compared to eh background scenario is available in **Appendix A (Tables A.5 and A.6).** The intersection LOS worksheets are also included in the **Appendix**. **Majority of the study intersections were estimated to operate similarly to the background scenario at overall LOS D or better.**

Table 14. Year 2030 + Project Conditions Level of Service Summary

No.	Intersection	Traffic Control	Background + Project Overall Intersection LOS		Background Intersection Overall LOS	
			AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
5	Dillon Road/McCaslin Boulevard	Signal	C	C	C	C
10	Dillon Road/S. 88th Street	Signal	B	B	B	B
15	Dillon Road/S. 96th Street	Signal	D	D	C	C
20	S. 88th Street/Campus Drive	Signal	C	C	C	C
22	S. 88th Street/Rockcress Drive	Side-Street Stop	A (C)	A (B)	-	-
23	S. 96th Street/Campus Drive	Signal	B	C	-	-
25	Northwest Parkway/S. 96th Street/Via Varra	Signal	D	D	D	C
30	Northwest Parkway/Rockcress Drive/Via Varra	Signal	D	D	B	B
35	Northwest Parkway/US 36 North Ramps (WB)	Signal	A	A	A	A
40	Northwest Parkway/US 36 South Ramps (EB)	Signal	C	**F**	B	C
45	S. 88th Street/Rock Creek Parkway	Roundabout	A (A)	A (A)	A (B)	A (A)
101	Campus Drive/North-South Collector	Side-Street Stop	A (B)	A (B)	-	-
102	Campus Drive/Sorrel Avenue	Roundabout	A (A)	A (A)	-	-
103	Rockcress Drive/North-South Collector	Side-Street Stop	A (B)	A (B)	-	-
104	Rockcress Drive/East-West Collector (South)	Side-Street Stop	A (A)	A (B)	-	-
105	Rockcress Drive/Sorrel Avenue	Roundabout	A (A)	A (A)	-	-
106	Sorrel Avenue/East-West Collector (South)	All-Way Stop	A (C)	A (C)	-	-
107	Sorrel Avenue/East-West Collector (North)	All-Way Stop	A (B)	A (B)	-	-
108	N-S Collector/ E-W Collector (North)	Side-Street Stop	A (A)	A (A)	-	-
205	Sorrel Avenue/PUD 2 Access E	Side-Street Stop	A (B)	A (B)	-	-

Note: Level of service for unsignalized intersections is listed as Overall (Worst Movement).



KEY

- LANE CONFIGURATION
- BACKGROUND 2025 IMPROVEMENTS
- X,XXX DAILY TRAFFIC VOLUME
- XX (XX) AM (PM) PEAK HOUR TRAFFIC VOLUME

FOX TUTTLE TRANSPORTATION GROUP

REDTAIL RIDGE TRAFFIC AND MOBILITY STUDY

YEAR 2030 BACKGROUND + REDTAIL RIDGE (PHASE 1 & 2) TRAFFIC VOLUMES

FT Project #	19055	Original Scale	NTS	Date	10/04/2023	Drawn by	SKK	Figure #	23

Under Year 2030 background + project conditions, the following intersections were calculated to begin to have movements that operate at LOS E/F:

- ***#30. Northwest Parkway and Rockcress Drive/Via Varra:*** During both peak hours, the northbound left-turn movement was estimated to operate at LOS F due to high turning volume and limited green time. No significant queuing issues were shown in the traffic analysis.

  Recommendations: No mitigation measures recommended. The delay is under the cycle length so it is anticipated there will not be cycle failure and the 95th percentile queues were shown to be maintained within the storage length.

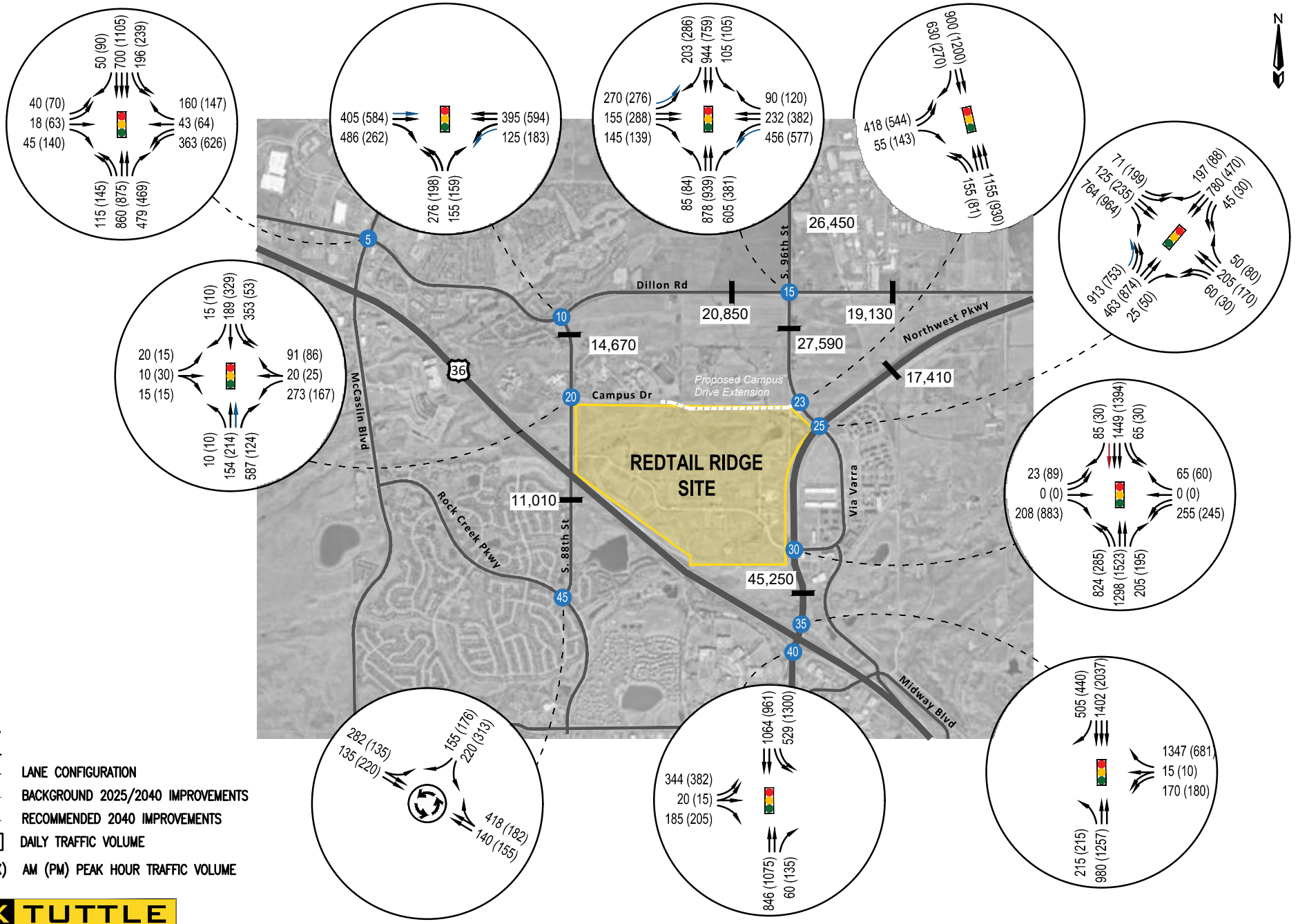
- ***#40. Northwest Parkway and US 36 South Ramps (Eastbound):*** During the PM peak hour, this signalized intersection was estimated to operate at LOS F due to the added volume on the southbound left-turn lane. Delay is estimated to be up to five (5) minutes.

  Recommendations: As noted under the background conditions, due to the unknowns of future roadway plans within this area (including both Northwest Parkway Extension and Jefferson Parkway), no specific mitigation is recommended. Additional capacity is needed to accommodate the forecasted traffic volumes with and without the Redtail Ridge trips, which will likely require the bridge to be widened. Additional study/analysis is planned at the interchange to determine the optimal design to meet the future needs through a regional process included in the DRCOG 2050 2050 Metro Vision Regional Transportation Plan. With a new design that increases capacity, this interchange should operate acceptably in the future.

8.3 Year 2040 Background + Project Intersection Capacity Analysis

This section discusses travel conditions associated with the full build out of the proposed development in the long-term scenario (Year 2040). The projected site-generated traffic was added to the Year 2040 background study area traffic volumes and are illustrated on **Figure 24**. The following assumptions were recommended in Year 2040 background (without Redtail Ridge) and assumed to be implemented for Year 2040 Background + Project scenario:

- Improvements identified in Year 2030 background + project, plus:
- Widen Dillon Road and S. 96th Street to be four-lane roadways as presented in Year 2040 background
- Optimize signal timing at all the study intersections.



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REDTAIL RIDGE TRAFFIC AND MOBILITY STUDY

YEAR 2040 BACKGROUND + REDTAIL RIDGE (FULL BUILDOUT) TRAFFIC VOLUMES

FT Project #	19055	Original Scale	NTS	Date	10/04/2023	Drawn by	SKK	Figure #	24

The results of the LOS calculations for the intersections are summarized in **Table 15**. Detailed tables with LOS and 95th percentile queues by movement and compared to the background scenario are available in **Appendix A (Tables A.5 and A.6).** The intersection LOS worksheets are also included in the **Appendix**. **Majority of the study intersections were estimated to operate similarly to the background scenario at overall LOS D or better.**

Table 15. Year 2040 + Project Conditions Level of Service Summary

No.	Intersection	Traffic Control	Background + Project Overall Intersection LOS		Background Intersection Overall LOS	
			AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
5	Dillon Road/McCaslin Boulevard	Signal	C	C	C	C
10	Dillon Road/S. 88th Street	Signal	B	B	B	B
15	Dillon Road/S. 96th Street	Signal	D	D	C	C
20	S. 88th Street/Campus Drive	Signal	C	C	C	D
22	S. 88th Street/Rockcress Drive	Side-Street Stop	A (C)	A (B)	-	-
23	S. 96th Street/Campus Drive	Signal	B	C	-	-
25	Northwest Parkway/S. 96th Street/Via Varra	Signal	C	C	C	C
30	Northwest Parkway/Rockcress Drive/Via Varra	Signal	**E**	**E**	B	B
35	Northwest Parkway/US 36 North Ramps (WB)	Signal	A	A	A	A
40	Northwest Parkway/US 36 South Ramps (EB)	Signal	C	**F**	B	C
45	S. 88th Street/Rock Creek Parkway	Roundabout	A (A)	A (A)	A (A)	A (A)
101	Campus Drive/North-South Collector	Side-Street Stop	A (B)	A (B)	-	-
102	Campus Drive/Sorrel Avenue	Roundabout	A (B)	A (B)	-	-
103	Rockcress Drive/North-South Collector	Side-Street Stop	A (B)	A (B)	-	-
104	Rockcress Drive/East-West Collector (South)	Side-Street Stop	A (B)	A (B)	-	-
105	Rockcress Drive/Sorrel Avenue	Roundabout	A (A)	A (A)	-	-
106	Sorrel Avenue/East-West Collector (South)	All-Way Stop	B (C)	B (C)	-	-
107	Sorrel Avenue/East-West Collector (North)	All-Way Stop	A (B)	A (B)	-	-
108	N-S Collector/ E-W Collector (North)	Side-Street Stop	A (A)	A (A)	-	-
205	Sorrel Avenue/PUD 2 Access E	Side-Street Stop	A (B)	A (B)	-	-

Note: Level of service for unsignalized intersections is listed as Overall (Worst Movement).

With the additional traffic associated with the full buildout of Redtail Ridge, the following intersections were calculated to begin to operate overall at LOS E/F or have movements that operate at LOS E/F:

- ***#15. Dillon Road and S. 96th Street:*** During the PM peak hour, the northbound through movement was estimated to begin to operate at LOS E due to high turning volume and limited green time. No significant queuing issues were shown in the traffic analysis.

  Recommendations: Adjust signal timing as appropriate.

- ***#20. S. 88th Street and Campus Drive:*** During the AM peak hour, the westbound left-turn movement was estimated to begin to operate at LOS E as experienced in the existing conditions due to high turning volume and limited green time.

  Recommendations: Adjust signal timing as appropriate.

- ***#30. Northwest Parkway and Rockcress Drive/Via Varra:*** In both peak hours, this signalized intersection was estimated to begin to operate at LOS E due to the added delay on the northbound left-turn lane and opposing southbound through lane. Each of these signal phases impacts the other. During the morning peak hour, the northbound left-turn queue was calculated to exceed the storage length.

  Recommendations: Construct a third southbound through lane on Northwest Parkway to reduce the delay on this movement and to reallocate green time to the northbound left-turn phase. Adjustments to the signal timing alone will not improve the overall intersection delay and northbound already includes two turn lanes. With the additional capacity, it was estimated that this intersection will improve to LOS D overall. The northbound left-turn will continue to operate at LOS F in both peak periods but is not expected to experience cycle failure and queues are not expected to exceed the storage length. Note that Redtail Ridge trips are only seven (7) percent of the total traffic on southbound Northwest Parkway.

- ***#40. Northwest Parkway and US 36 South Ramps (Eastbound):*** During the PM peak hour, this signalized intersection was estimated to operate at LOS F due to the added volume on the eastbound left-turn lane and southbound left-turn lane. Delay on the southbound left-turn was estimated to be just over six (6) minutes.

  Recommendations: As identified and discussed in the background (without project) scenario, additional capacity is needed at the US 36/Northwest Parkway interchange with and without Redtail Ridge traffic; no specific mitigation is recommended. Additional study/analysis is planned at the interchange to determine the optimal design to meet the future needs on Northwest Parkway and US 36 through a regional process as identified in the DRCOG 2050 Metro Vision Regional Transportation Plan.

The Year 2040 background + project conditions were evaluated with the improvements to Northwest Parkway. The results of the LOS calculations for the intersections are summarized in **Table 16.** A summary table with LOS and 95th percentile queue by movement in **Appendix A (Tables A.5 and A.6).** The intersection LOS worksheets are also included in the **Appendix**. **Results of the peak hour intersection capacity analysis indicate that with the recommended capacity improvements all study intersections are expected to operate at an overall LOS D or better during the AM and PM peak hours.**

Table 16. Year 2040 + Project Conditions Level of Service Summary (Improvements)

No.	Intersection	Traffic Control	Overall Intersection LOS	
			AM Peak Hour	PM Peak Hour
10	Dillon Road/S. 88th Street	Signal	B	A
30	Northwest Parkway/Rockcress Drive/Via Varra	Signal	D	D

The Jefferson Parkway study has identified the potential need for a grade separated intersection at Northwest Parkway and S. 96th Street/Via Varra, however, there are uncertainties to if/when that project would occur. Additional study should be conducted along the Northwest Parkway corridor between S. 96th Street and US 36 in conjunction with the planned improvements at the US 36 interchange to determine how capacity can be increased under future conditions. Key stakeholders include CDOT, Northwest Parkway, the City of Louisville, City and County of Broomfield, and Jefferson Parkway Public Highway Authority.

9.0 Internal Intersection Analysis

Fox Tuttle Transportation Group has worked with the Redtail Ridge team to design an internal roadway network that can accommodate the full buildout of the project trips safely and efficiently. The internal roadway consists of the Campus Drive extension to S. 96th Street, construction of Rockcress Drive between S. 88th Street and Northwest Parkway, as well as construction of Sorrel Avenue between Campus Drive and Rockcress Drive and other internal collector roadways.

- **Campus Drive**: recommended to be a three-lane roadway between S. 88th Street and the Monarch High School eastern roundabout and a four-lane roadway between Sorrel Avenue and S. 96th Street, the section between the Monarch High School eastern roundabout and Sorrel Avenue is anticipated to operated acceptably as a two-lane roadway. Roundabout access is recommended

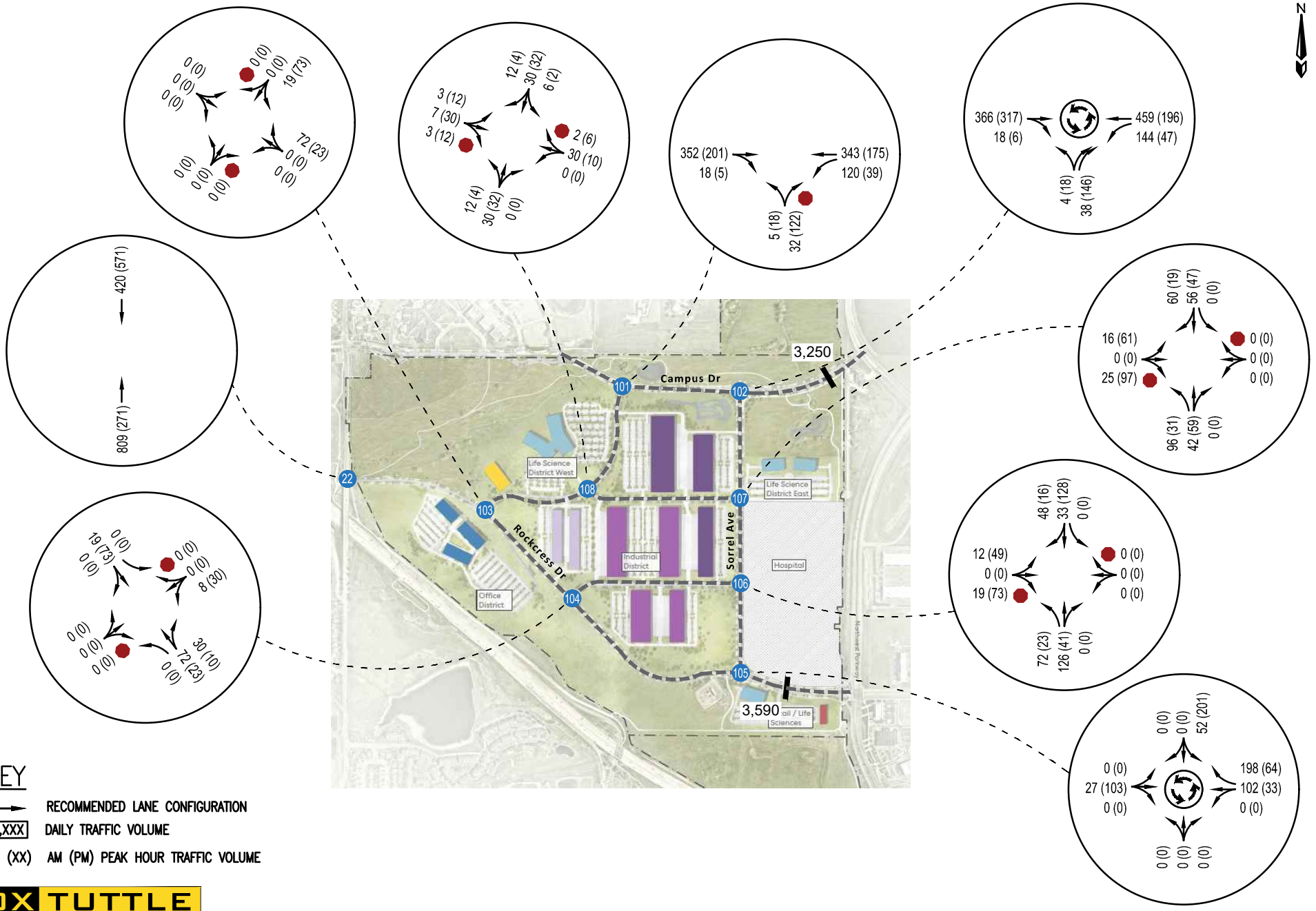
at the Monarch school campus to the K-8 and High School main accesses as well as at Sorrel Avenue.

- **Rockcress Drive**: recommended to be a four-lane roadway between Sorrel Avenue and Northwest Parkway and to transition to two-lane collector west of Sorrel Avenue. The Sorrel Avenue intersection is recommended to be a roundabout.
- **Sorrel Avenue:** recommended to be a two-lane roadway; the driveway accesses and internal intersections are expected to operate acceptably as unsignalized.
- **Sorrel Avenue at Internal Collector Intersections:** recommended to be all-way stop controlled at the two accesses into the hospital for acceptable operations. Warrants for all-way stop control at these two intersections are included in the **Appendix**.
- **Access intersections on Rockcress Drive, Sorrel Avenue, and Internal Collectors**: there will be several driveways along the internal roadways into the parking areas and loading docks of the development. It is recommended that the access be minimized and cross-access aligned to reduce friction and improve safety for all roadway users.
- **Multi-modal facilities:** recommended to include on-street buffered bike lanes on internal roadways and sidewalks on both sides of the roadways that link to each building within the site and connect to external facilities.

Trips for Phase 1 are shown in **Figure 25** and trips volumes for Phase 2 are shown in **Figure 26**. Projected Year 2040 background + project (full build out) conditions traffic volumes are shown in **Figure 27** for Campus Drive at Sorrel Avenue and the internal roadways. The recommended intersection geometrics and traffic control for full build out conditions are shown on this figure. Recommended turn lane and taper lengths are shown in **Figure 28** and **Figure 29. All internal intersections and access locations are anticipated to operate at LOS C or better during the AM and PM peak hours and there were no queuing issues identified.** The intersection capacity reports are provided in the **Appendix**. Note that access locations will continue to be analyzed and refined through the PUD process.

The proposed cross section for internal local streets was designed to provide a high degree of access and comfortable multimodal travel, as shown in **Figure 30**. Internal local roadways are all proposed to have one travel lane per direction, a buffered bicycle lane in each direction, and detached 5-foot sidewalks on both sides of the street separated from the roadway by an 8-foot landscape buffer. Vehicle volumes on internal roadways are expected to be below 2,500 vpd. Turning volumes and opposing through volume, under the full buildout scenario, do not justify the addition of dedicated turn lanes at access points to individual lots.

The proposed cross section of the two-lane section of Rockcress Drive (west of Sorrel Avenue) is shown in **Figure 31**. The proposed cross section of Sorrel Avenue is shown in **Figure 32**. Both Rockcress Drive and Sorrel Avenue will have buffered bike lanes and detached sidewalks for comfortable multimodal travel.



KEY

→ RECOMMENDED LANE CONFIGURATION

[X,XXX] DAILY TRAFFIC VOLUME

XX (XX) AM (PM) PEAK HOUR TRAFFIC VOLUME

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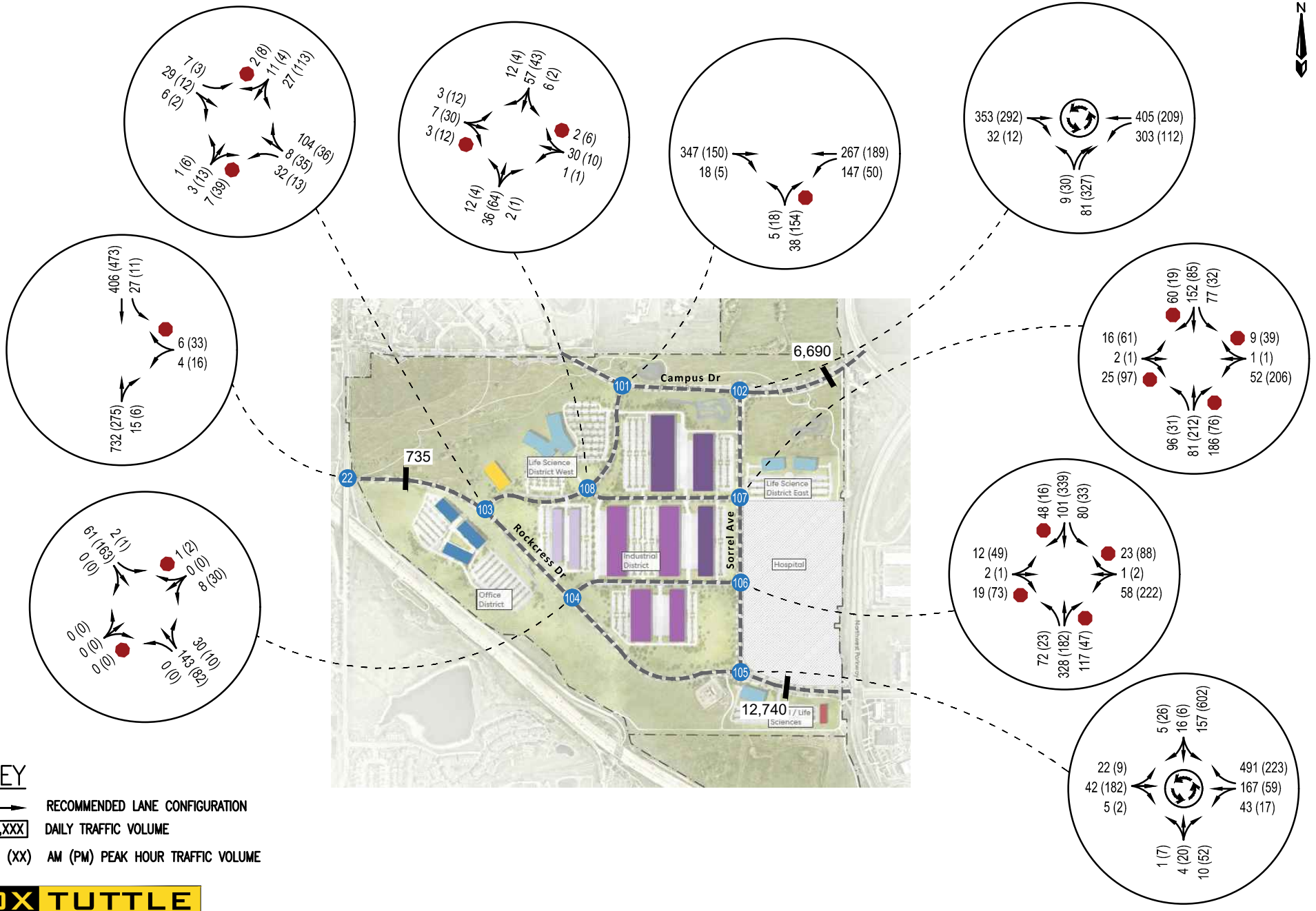
REDTAIL RIDGE TRAFFIC AND MOBILITY STUDY

YEAR 2025 BACKGROUND + REDTAIL RIDGE (PHASE 1) TRAFFIC VOLUMES [INTERNAL INTERSECTIONS]

FT Project #	19055	Original Scale	NTS	Date	07/17/2024	Drawn by	SKK	Figure #	25



KEY

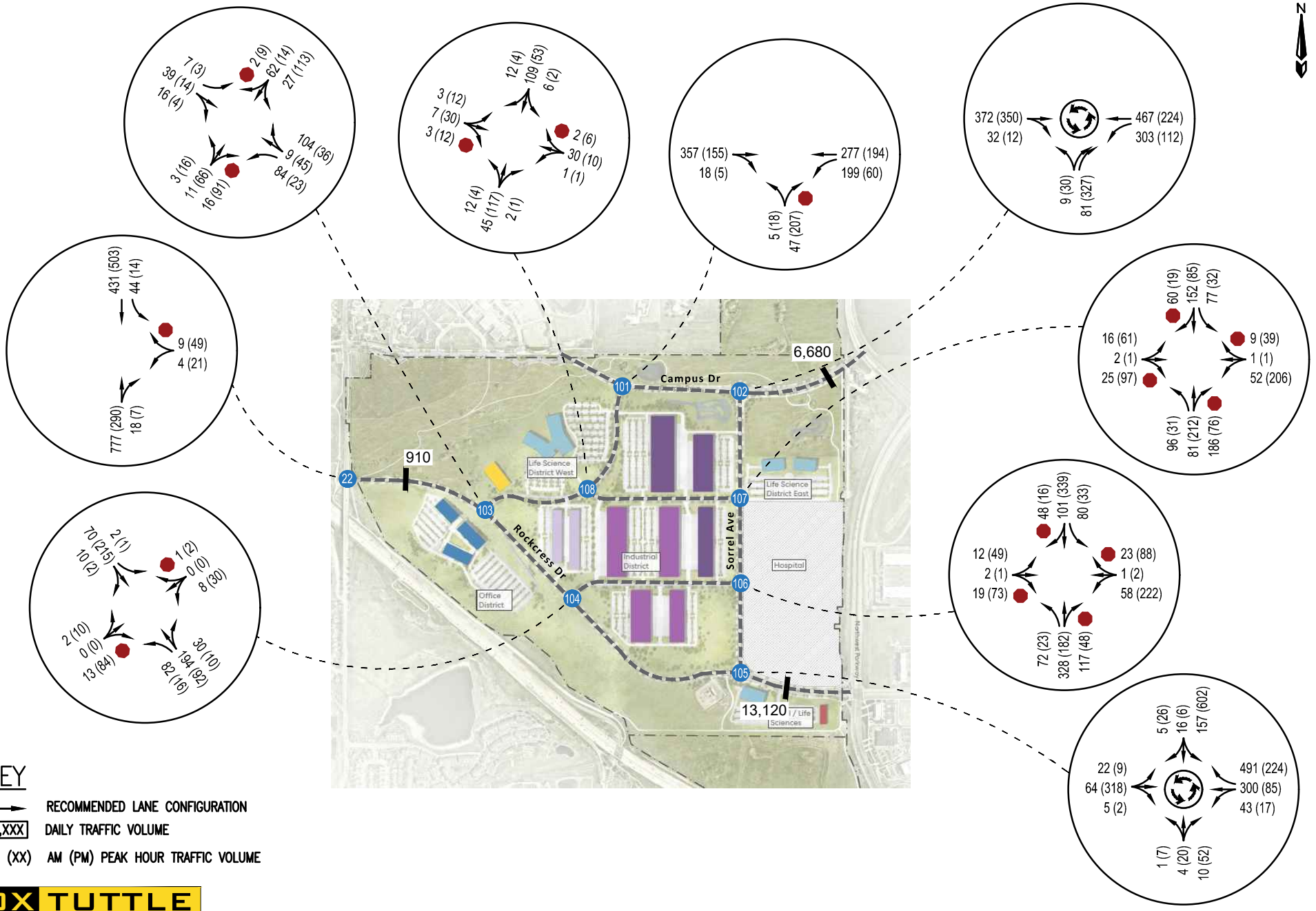
- RECOMMENDED LANE CONFIGURATION
- X,XXX DAILY TRAFFIC VOLUME
- XX (XX) AM (PM) PEAK HOUR TRAFFIC VOLUME

FOX TUTTLE TRANSPORTATION GROUP

REDTAIL RIDGE TRAFFIC AND MOBILITY STUDY

YEAR 2030 BACKGROUND + REDTAIL RIDGE (PHASE 1 & 2) TRAFFIC VOLUMES [INTERNAL INTERSECTIONS]

FT Project #	19055	Original Scale	NTS	Date	07/17/2024	Drawn by	SKK	Figure #	26



KEY

- → RECOMMENDED LANE CONFIGURATION
- [X,XXX] DAILY TRAFFIC VOLUME
- XX (XX) AM (PM) PEAK HOUR TRAFFIC VOLUME

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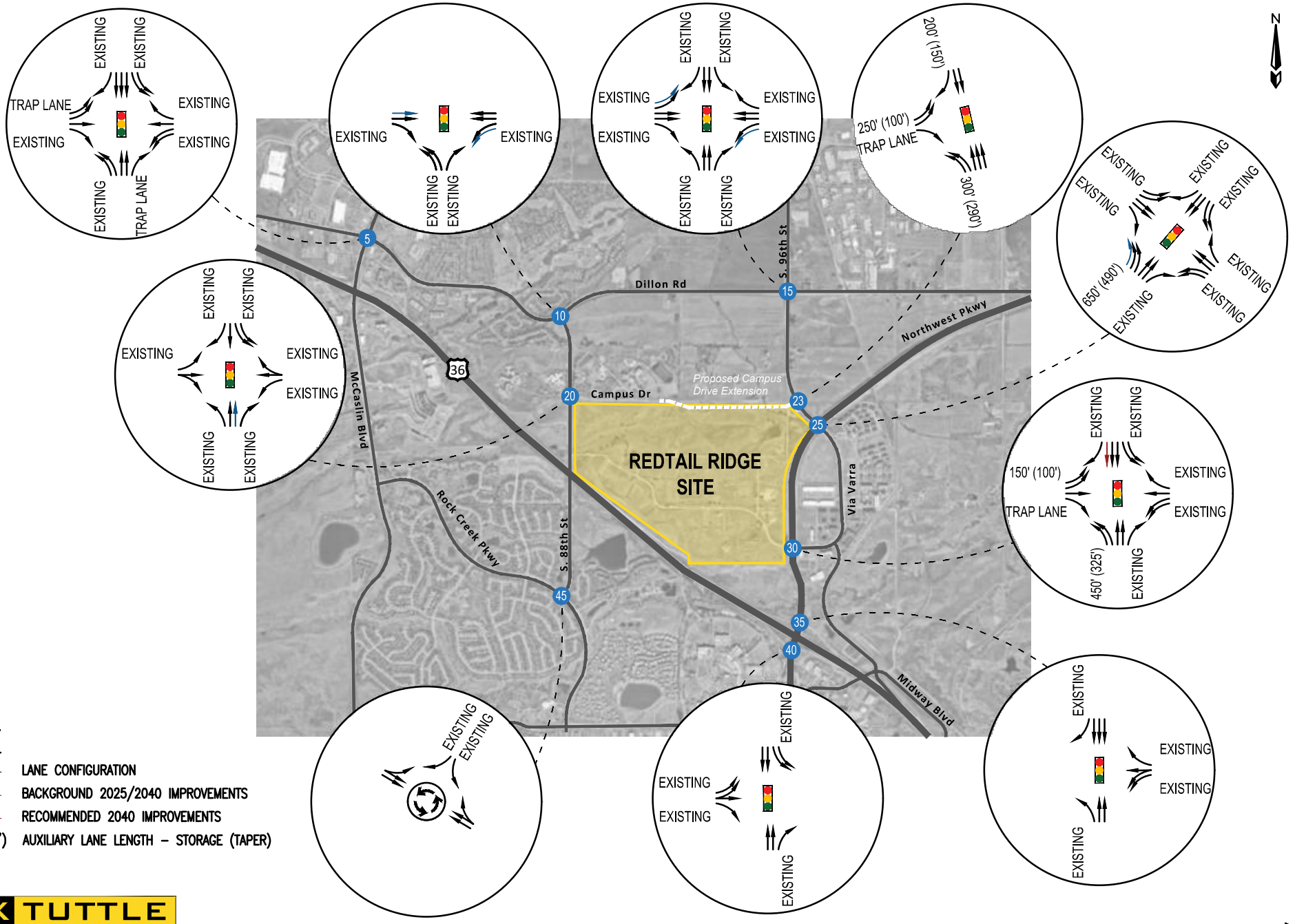
REDTAIL RIDGE TRAFFIC AND MOBILITY STUDY

YEAR 2040 BACKGROUND + REDTAIL RIDGE (FULL BUILDOUT) TRAFFIC VOLUMES [INTERNAL INTERSECTIONS]

FT Project #	19055	Original Scale	NTS	Date	07/17/2024	Drawn by	SKK	Figure #	27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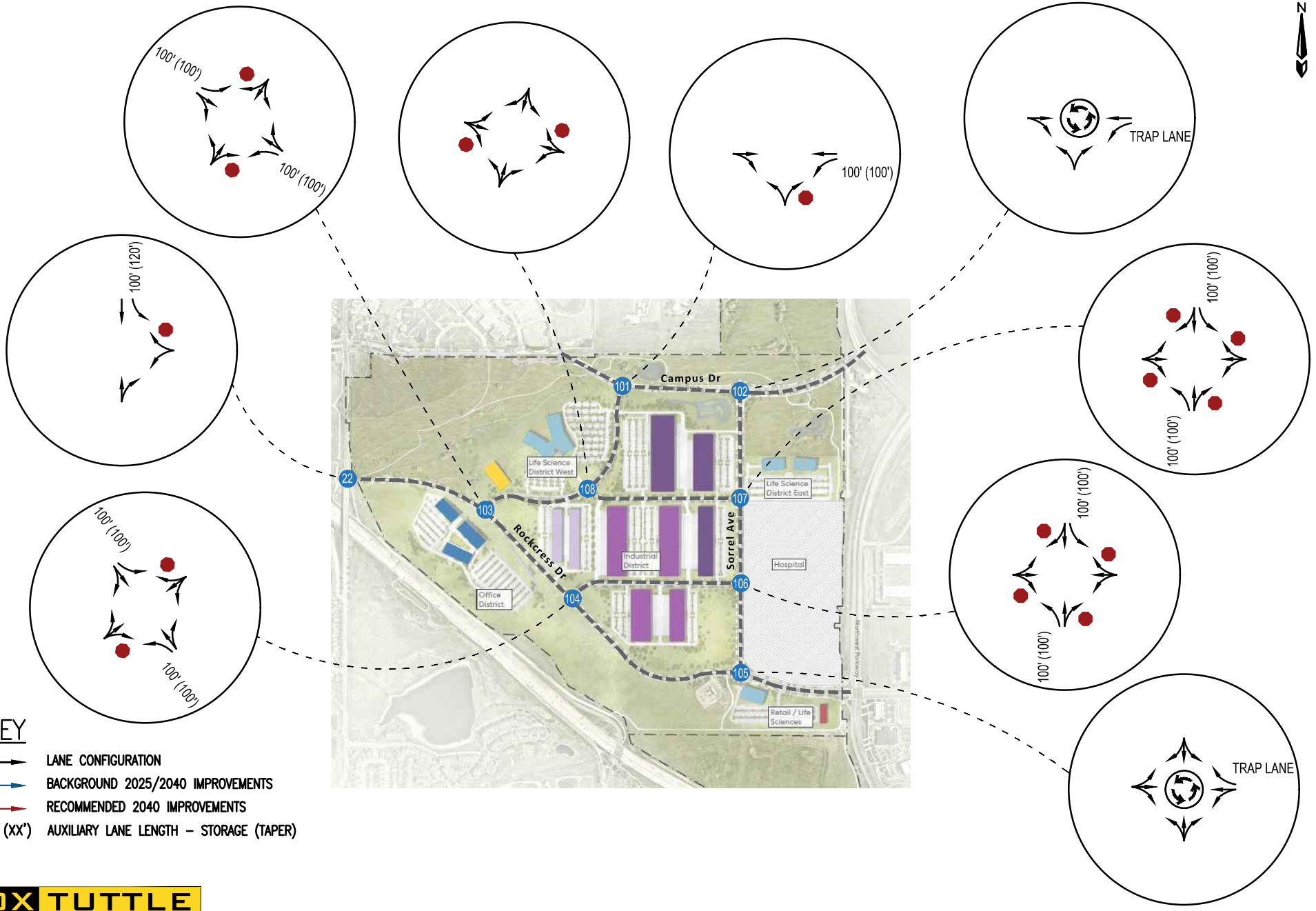

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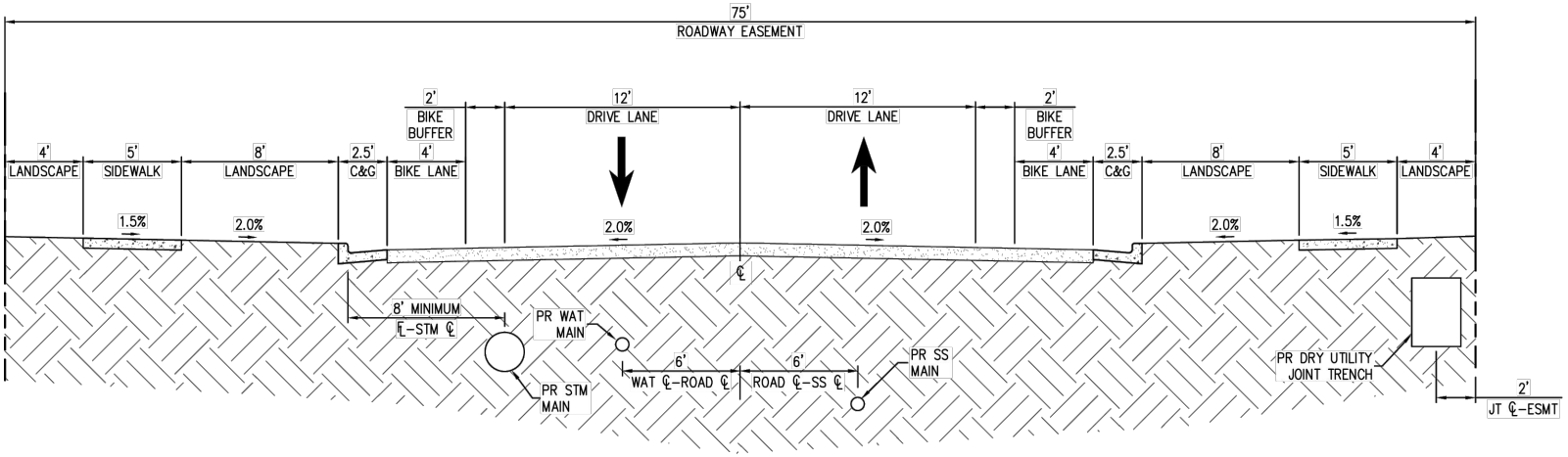
REDTAIL RIDGE TRAFFIC AND MOBILITY STUDY

INTERNAL TURN LANE DESIGN

FT Project #	19055	Original Scale	NTS	Date	07/17/2024	Drawn by	SKK	Figure #	29



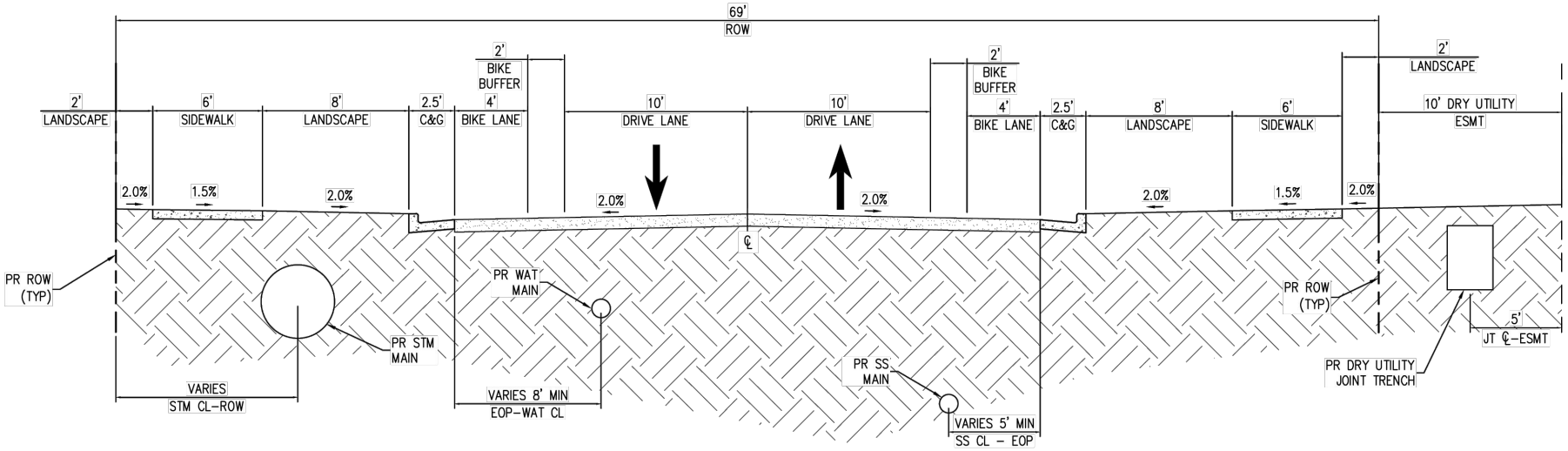
**Note: This conceptual cross section is shown for reference only. Final roadway plans are shown in the plat documentation.

FOX TUTTLE
TRANSPORTATION GROUP

REDTAIL RIDGE TRAFFIC AND MOBILITY STUDY

INTERNAL LOCAL ROADWAY CROSS SECTION

FT Project #	19055	Original Scale	NTS	Date	07/15/2024	Drawn by	SKK	Figure #	30



ROCKCRESS DRIVE TYPICAL CROSS SECTION – LOOKING NORTHWEST

**Note: This conceptual cross section is shown for reference only. Final roadway plans are shown in the plat documentation.

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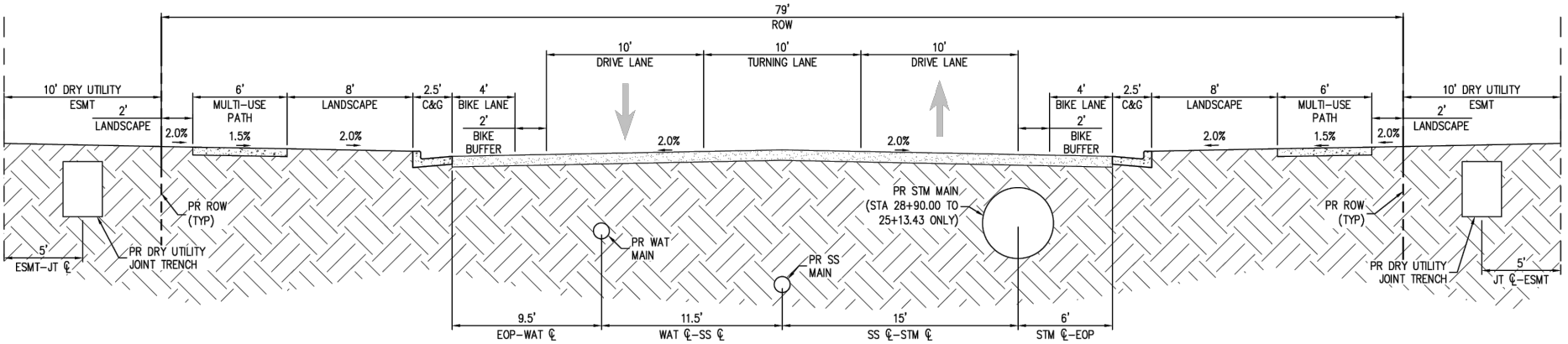
REDTAIL RIDGE TRAFFIC AND MOBILITY STUDY

ROCKCRESS DRIVE TWO-LANE CROSS SECTION

FT Project #	19055	Original Scale	NTS	Date	07/15/2024	Drawn by	SKK	Figure #	31



SORREL AVE TYPICAL CROSS SECTION – LOOKING NORTH

STATIONS: 3+21.31 TO 28+90.00

**Note: This conceptual cross section is shown for reference only. Final roadway plans are shown in the plat documentation.

FOX TUTTLE TRANSPORTATION GROUP

REDTAIL RIDGE TRAFFIC AND MOBILITY STUDY

SORREL AVENUE CROSS SECTION

FT Project #	19055	Original Scale	NTS	Date	07/15/2024	Drawn by	SKK	Figure #	32

10.0 Queuing Analysis

A queuing analysis was performed to determine if the 95th percentile queues would be accommodated by the existing and proposed storage lengths and if any of the queues would impact an upstream intersection/access. The 95th percentile queues for each existing and future scenario as calculated by Synchro (assuming each vehicle utilizes 25 feet of space) are detailed in the tables of the **Appendix**.

It should be noted that the 95th percentile queue length is a theoretical queue that is 1.65 standard deviations above the average queue length. In theory, the 95th percentile queue would be exceeded 5% of the time based on the average queue length, but it is also possible that a queue this long may not occur. **The analysis resulted in all queues being maintained within the existing and proposed storage lengths.**

S. 96th Street/Campus Drive Influence on Fire Station Access

Additional analysis was conducted for the fire station access near the future intersection of S. 96th Street/Campus Drive to determine the anticipated queuing, provided storage lengths, and impact of the fire station access. On S. 96th Street there is approximately 730 feet between the northbound stop line at Campus Drive and the southbound stop line at Northwest Parkway. It is proposed that the dual southbound left-turns at Northwest Parkway remain, and one northbound left-turn lane be constructed at Campus Drive.

The **southeast-bound left-turns on S. 96th Street at Northwest Parkway** will have a total of 480 feet of storage (inside lane with 160 feet and outside lane with 320 feet) and taper length of 130 feet. The 95th percentile queue was estimated to be up to 100 feet with full buildout of Redtail Ridge and completion of recommended improvements. **Based on the queuing analysis, the southeast-bound left-turn storage at S. 96th Street and Northwest Parkway is adequate to accommodate the 95th percentile queue at full buildout.**

The **northbound left-turn lane at Campus Drive** is proposed to have a total of 630 feet of storage. The 95th percentile queue was estimated to be up to 100 feet with full buildout of Redtail Ridge and completion of recommended improvements. **Based on the queuing analysis, the northbound left-turn storage at S. 96th Street and Campus Drive is adequate to accommodate the 95th percentile queue at full buildout.**

The existing fire station has one access on S. 96th Street, approximately 165 feet from the northbound stop line at the future Campus Drive intersection. The existing median has a break for exiting emergency vehicles that is approximately 28 feet. There is a second break in the median for entering emergency vehicles with a width of 32 feet. If the access on 96th Street remains, it is proposed that "Do Not Block" pavement markings will be needed for the northbound approach, including in the northbound left-turn

lane. **It is recommended that the "Do Not Block" box on S. 96th Street be no longer than 65 feet to continue to be able to accommodate the estimated 95th percentile queue.** This area is wider than the existing median break, but the design would need to be approved by the fire department.

With the Campus Drive Extension, a new T-intersection will be created on S. 96th Street. The **eastbound approach (Campus Drive)** is proposed to provide two left-turn lanes and one right-turn lane. The inside left-turn lane is proposed to extend 450 feet and the outside left-turn lane will be the striped for 450 feet but is one of the through lanes on Campus Drive that will end at S. 96th Street (total of 950 feet of storage). The right-turn lane is the second through lane that ends at S. 96th Street. The 95th percentile queue for the eastbound left-turn movement was estimated to be up to 250 feet with full buildout of Redtail Ridge and completion of recommended improvements. **Based on the queuing analysis, the eastbound left-turn storage at S. 96th Street and Campus Drive is adequate to accommodate the 95th percentile queue at full buildout.**

There is potential for the fire station will have access on Campus Drive approximately 100 feet west of the eastbound stop line at 96th Street. The proposed break in the median is approximately 100 feet. **It is recommended that the "Do Not Block" box on Campus Drive be no longer than 100 feet to continue to be able to accommodate the estimated 95th percentile queue and match the proposed break in the median.** This area is wider than the existing median break on 96th Street, but the design would need to be approved by the fire department.

11.0 Crash Reduction and Vision Zero

The crash analysis completed in the City of Louisville TMP, also shown in **Section 3.0** of this study, documents the crash trends in the Redtail Ridge study area. As a result of the high crash locations, the TMP outlined priorities to work toward reducing all crashes in the City. The term "Vision Zero" encapsulates the concept of providing safe and complete roadways for all users with a goal of reducing all crashes, specifically fatal and life threating crashes.

The Redtail Ridge design team is proposing to enhance the TMP Vision Zero recommendations with the internal connectivity and roadway design. The intersection and multimodal improvements recommended in this study will accelerate the City's progress toward Vision Zero and provide safe travel as new residents, visitors and employees travel to and from Redtail Ridge. A specific overview of the recommended projects that could work toward Vision Zero are outlined below.

- **Extension of Campus Drive east to S. 96th Street** would provide a secondary route to/from the Monarch school campus and alternative route to Dillon Road. This would provide redundant access for emergency services and redistribute AM peak traffic to new intersections with enhanced safety features outlined below.
- Each of the intersections in the study area was evaluated in this study with **future changes to signal timing and vehicle storage to reduce crashes**. Providing safe clearance times and adequate storage will work toward Vision Zero goals in the S. 88th Street, Dillon Road, and S. 96th Street corridors.
- The intersections in this study utilized **best practices for pedestrian signal timing** at intersections. This includes walk phases that allow adequate time for seniors and children to cross streets. Additional protection is possible if City staff and the community would be willing to accept additional travel time delay during peak AM travel conditions. We look forward to finding the right balance that works toward Vision Zero goals.
- The bicycle network in this study recommends going beyond the TMP recommendations by **building a network of buffered and protected bikeways** in the S. 88th Street, S. 96th Street, and Dillon Road corridors as well as through the currently inaccessible project site. This would include intersection treatments that protect people on bicycles from turning movements when they are waiting for signals.

The design team will continue to apply Vision Zero best practices as additional site plan details are prepared during the PUD process. This includes the use of traffic calming features, properly sized lane widths, roundabouts, speed limits, and signage that works toward the City of Louisville's TMP safety goals.

12.0 Improvement Phasing

A summary of improvements recommended in this report at the study intersections and segments is provided in **Table 17** for both with and without project conditions. The estimated timeline for when the improvement is needed/triggered is also noted in the summary table.

Table 17. Improvement Phasing Summary

Roadway or Intersection	Mitigation	Trigger Timeline						Percent of Redtail Ridge Traffic
		Background (Non-Project Related)			Redtail Ridge Project			
		2025	2030	2040	Phase 1	Phase 2	Phase 3	
S. 88th Street	Widen to 4-lanes (Dillon Rd to Campus Dr)	★						9%
S. 96th Street	Widen to 4-lanes (Dillon Rd to NW Pkwy)	★						11%
	Widen to 4-lanes (1/2 mile north of Dillon Rd)			★				14%
Dillon Road	Widen to 4-lanes (S. 88th St to S. 96th St)			★				4%
Northwest Pkwy	Add 3rd Southbound through lane (S. 96th St. to US 36 Interchange)						★	7%
Campus Drive	Extension to S. 96th Street				★			95%
Rockcress Drive	Construct as two-lane road (NWP to N-S Internal Collector)				★			100%
	Extend to S. 88th Street					★		100%
Sorrel Avenue	Construct as a two-lane road with center left-turn lane				★			100%
Internal Collectors	Construct as two-lane roads				★			100%
#10. Dillon Road at S. 88th Street	Restripe 2nd WB left-turn lane	★						0%
#15. Dillon Road at S. 96th Street	Construct dual EB left-turn lanes	★						0%
	Construct dual WB left-turn lanes	★						4%
#20. S. 88th Street at Campus Drive	Construct 2nd NB thru lane (begin approx. 500 feet south of Campus Drive)	★						23%
	Extend NB right-turn lane (500 feet)	★						3%
#22. S. 88th Street at Rockcress Drive	Construct as side-street stop-controlled, with full movement					★		8%
	Construct one SB left-turn lane					★		100%
#23. S. 96th Street at Campus Drive	Construct dual NB left-turn lanes				★			64%
	Construct SB right-turn lane				★			39%
	Construct dual EB left-turn lanes				★			62%
	Construct one EB right-turn lane				★			100%
	Signalize				★			20%
#25. Northwest Parkway at S. 96th Street / Via Varra	Construct 3rd NB left-turn lane	★						4%
	Capacity improvements on NWP			★				8%

Roadway or Intersection	Mitigation	Trigger Timeline						Percent of Redtail Ridge Traffic
		Background (Non-Project Related)			Redtail Ridge Project			
		2025	2030	2040	Phase 1	Phase 2	Phase 3	
#30. Northwest Parkway at Rockcress Drive / Via Varra	Modify EB with one left-turn lane, one thru lane, and one right-turn lane				★			100%
	Remove the split phase on EB/WB				★			100%
#35 & #40. Northwest Parkway at US 36 Interchange	New Interchange			★				19%
#101. Campus Drive at N-S Internal Collector	Implement Side-Street Stop-Control				★			100%
	Construct WB left-turn lane				★			100%
#102. Campus Drive at Sorrel Avenue	Construct as Multi-Lane Roundabout				★			65%
#103 & #104. Rockcress Drive at Internal Collectors	Implement Side-Street Stop-Control				★			100%
#105. Rockcress Drive at Sorrel Avenue	Construct as Multi-Lane Roundabout				★			100%
#106 & #107. Sorrel Avenue at E-W Internal Collectors	Implement Side-Street Stop-Control				★			100%
	Implement All-Way Stop					★		100%
	Construct NB left-turn lane				★			100%
	Construct SB left-turn lane					★		100%
#108. N-S Internal Collector at E-W Internal Collector (North)	Implement Side-Street Stop-Control				★			100%
#205. Sorrel Avenue at PUD 2 Access E	Implement Side-Street Stop-Control				★			100%

***The purpose of this traffic study is to identify what and when improvements are triggered and does not assign responsibility. The study provides data for municipalities to determine which intersections and roadways may need enhancements in the future and provides an approximate timeline based on anticipated growth; it does not obligate implementation.*

Table 17 includes a number of potential improvements to roadway segments and intersections that the City of Louisville should monitor over time as area traffic increases, including:

- The need to widen Dillon Road to four lanes between S. 88th Street and S. 96th Street as volumes approach and exceed 20,000 vpd
- The need to widen S. 96th Street from south of Dillon Road to SH 42

The City will also want to monitor potential improvements to the Northwest Parkway between 96th Street and US 36, and potential implementation of the Jefferson Parkway.

13.0 Next Steps

After the Filing 1 plat submittal, vertical developers will be required to submit PUD documents prior to construction, including traffic conformance letters. The PUD documents will identify if/when traffic signals at the internal intersections are projected to be warranted as well as signal timing modifications/adjustments needed to the study intersections. In addition, the vertical developers will be required to submit building specific Travel Demand Management (TDM) Plans. The projected non-single occupancy vehicle (non-SOV) goals will be evaluated and adjusted as needed to reach goals. The Metro District will monitor the plans effectiveness and make changes as needed to reach goals.

MEMORANDUM

To: City of Louisville

From: Cassie Slade, PE, PTOE and Scott Kilgore, PE

Date: August 1, 2024

Project: Redtail Ridge – Louisville, Colorado

Subject: Supplemental Analysis for Background Improvements

The Fox Tuttle Transportation Group completed the *Redtail Ridge Traffic Impact Study*[1] (TIS) with a comprehensive analysis of traffic generation and proposed improvements with the Redtail Ridge project. This memorandum provides a sensitivity analysis of traffic operations in the study area without any of the identified background improvements.

Sensitivity Analysis Without Background Mitigation

Several engineering and planning studies have been completed in this area, including Louisville's Transportation Master Plan (TMP) and each has identified a number of needed infrastructure improvements based on anticipated future travel demand patterns locally and regionally. Refer to Section 3.0 for a brief summary of the key infrastructure needs discussed in previous studies and refer to Appendix B for more detail on the review of each study. The Redtail Ridge traffic study has reviewed the need for these improvements and included them in the background scenarios (no Redtail Ridge) when warranted by delay, queueing, volume, and capacity. As listed in the TMP, there are some of the improvements that are planned by the City, independent of the Redtail Ridge project. Other improvements are not currently in the City's plan and the traffic study does not obligate the construction of mitigating measures. The traffic study provides the timeline of when these would be triggered and how it would enhance the roadway users' experience.

As requested by the City, the following sensitivity analysis was provided to demonstrate how traffic operations in the study area may function under two new scenarios:

[1] *Redtail Ridge Traffic Impact Study*. Fox Tuttle Transportation Group. July 2024.

a) If background improvements are not implemented when anticipated to be triggered and existing infrastructure remains the same into the future.
b) If only the committed improvements by Redtail Ridge are implemented.

Future Intersection Operations

A comparison of intersection delays and LOS in future years for the listed scenarios are shown in Table I.1. This table provides the results of the capacity analysis for background scenarios (no Redtail Ridge) and no implementation of background mitigation measures. Additionally, the table compares the background scenario to the proposed construction of Redtail Ridge development and implementation of their committed improvements.

Note that only the intersections that had previously been identified to need background improvements and those that have Redtail Ridge committed improvements are included in **Table 1** for simplicity. **Table 2** shows the estimated 95th percentile queues by movement for future years without any background improvements and including only Redtail Ridge improvements.

Background Scenario (without Redtail Ridge) and without Background Improvements

This scenario assumes the existing roadway network remains the same and no improvements are implemented. The analysis indicated that all of the study area intersections operate acceptably overall except for the intersection of Northwest Parkway and 96th Street. The following intersections have movements that were estimated to operate at LOS E or LOS F in the future:

- **#10. Dillon Road & 88th Street:**
    - ***Eastbound through*** was estimated to begin to operate at LOS E in the AM peak hour in Year 2025. The delays on this movement were shown to increase with additional background growth and by Year 2040 it was estimated to operate at LOS F with cycle failure. The 95th percentile queue for this movement was calculated to extend up to 584 feet in the future.
    - ***Westbound Left-Turn*** was estimated to operate at LOS C or better in existing and future scenarios; however, the 95th percentile queue begins extending beyon the existing storage length in Year 2025.
- **#15. Dillon Road & 96th Street:**
    - ***Eastbound Left-Turn and Westbound Left-Turn*** were estimated to begin to operate at LOS E during the PM peak hour in Year 2040. Without the additional street grid within Redtail Ridge, balancing the high number of turning vehicles at the intersection results in higher

delays being experienced. The 95th percentile queue for the eastbound left-turn movement was calculated to extend up to 424 feet in Year 2040 which is beyond the existing storage length. The 95th percentile queue for the westbound left-turn movement was calculated to extend up to 487 feet in Year 2040 which is beyond the existing storage length.

- ***Northbound Through*** was calculated to begin operating at LOS E during the PM peak hour in Year 2025. The delay increases over time and the letter grade remains LOS E into Year 2040. The 95th percentile queue for this movement was calculated to extend up to 483 feet in the future.

- ***Southbound Right-Turn*** was estimated to begin operating at LOS F during the AM peak hour in Year 2025 and the delay continues into the future with cycle failure beginning to occur in Year 2030. The 95th percentile queue for this movement was calculated to extend up to 91 feet in the future, which is contained within the existing storage length.

- **#20. 88th Street & Campus Drive:**

  - ***Eastbound Through/Right-Turn*** was estimated to operate similarly to the existing conditions with LOS E in the morning peak hour, likely associated with school traffic. It was observed that parents make a southbound right-turn to then travel eastbound through the intersections towards the school. The green time allocated for the eastbound phase is limited based on the traffic demand for other higher volume movements at this intersection.

  - ***Westbound Left-Turn*** was estimated to begin to operate at LOS F during the PM peak hour in Year 2025. This intersection experiences high delays related to school traffic, and it is anticipated the delays will increase over time without the extension of Campus Drive to 96th Street by the Redtail Ridge development. The 95th percentile queue was calculated to exceed the existing storage length in the current conditions, which will continue into the future.

  - ***Northbound Through*** was estimated to begin to operate at LOS E during the AM peak hour in Year 2040. The 95th percentile queue for this movement was calculated to extend up to 464 feet in the future.

- **#25. Northwest Parkway & 96th Street/Via Varra:**

  - ***Overall,*** this intersection was calculated to operate currently at LOS C in the AM peak hour and LOS E in the PM peak hour. With additional background growth, it was estimated that

in Year 2025 the AM peak hour will begin to operate at LOS E and degrade to LOS F in Year 2040. During the PM peak hour, the overall intersection will begin to operate at LOS F in Year 2025. This is primarily related to the extensive delays on the northbound left-turn movement.

- ***Northbound Left-Turn (NWP to 96th Street)*** was estimated to operate similarly to the existing conditions with LOS F in the PM peak hour that will continue into the future. The analysis indicated that the AM peak hour will begin to experience LOS F in Year 2025 due to increased background volume. Many drivers are required to wait for more than one signal cycle to clear the intersection (cycle failure). In the future, operations for the northbound left-turn become even worse with increasing demand. The 95th percentile queue for this movement was calculated to extend up to 312 feet in the future, which is contained within the existing storage length.

- **#30. Northwest Parkway & Via Varra (Rockcress):**

  - ***Westbound Left-Turn*** was estimated to degrade from LOS E in existing conditions to LOS F in Year 2025 during the morning peak hour. During the evening peak hour, this movement was estimated to begin operating at LOS E. High delays are the result of very little green time being given to the westbound approach due to split phase timing on the side street. The 95th percentile queue for this movement was calculated to extend up to 157 feet in the future, which is contained within the existing storage length.

  - ***Westbound Right-Turn*** was estimated to begin to operate at LOS F in the AM peak hour. These delays are anticipated to be related to the limited green time on the side street. The delay may be overstated by the traffic model assumes every vehicle stops before turning into the existing right-turn acceleration lane.

Build Redtail Ridge Development and Implement Committed Improvements

With the added Redtail Ridge trips and implementation of the committed infrastructure improvements, **overall intersection operations were estimated to improve** compared to the future Year 2040 background scenario without any background mitigation measures. The committed Redtail Ridge infrastructure improvements will be completed with Phase 1 and include:

- **Campus Drive:** Extend from existing dead-end to S. 96th Street as a two-lane roadway.

- **Rockcress Drive:** Construct as a two-lane road (NWP to S. 88th Street).

- **Sorrel Avenue:** Construct as a two-lane road with a center left-turn lane from Campus Drive to Rockcress Drive.

- **Northwest Parkway:** Add 3rd Southbound through lane (S. 96th Street to US 36 Interchange).

- **#22. S. 88th Street at Rockcress Drive:** Construct as side-street stop-controlled, full movement. Add one southbound left-turn lane on S. 88th Street.

- **#23. S. 96th Street at Campus Drive:** Signalize. Construct new intersection with two northbound left-turn lanes, one southbound right-turn lane, two eastbound left-turn lanes, and one eastbound right-turn lane.

- **#25. Northwest Parkway at S. 96th Street / Via Varra:** Construct 3rd northbound left-turn lane (NWP to 96th Street).

- **#30. Northwest Parkway at Rockcress Drive / Via Varra:** Modify the eastbound approach with one left-turn lane, one through lane, and one right-turn lane. Remove the split phasing for eastbound and westbound movements.

The implementation of the committed Redtail Ridge infrastructure improvements was found to improve the following intersections or movements that were estimated to be below LOS D in the background, no improvement scenario:

- **#10. Dillon Road & S. 88th Street:**

    - ***Eastbound Through*** was calculated to upgrade in the AM peak hour to LOS C in Year 2025 and LOS D in Year 2040 from LOS E and F, respectively.

    - ***Westbound Left-Turn*** 95th percentile queue was calculated to be reduced to be maintained within the existing storage.

- **#15. Dillon Road & 96th Street:**

    - ***Southbound Right-Turn*** was estimated to upgrade to LOS C from LOS F during the AM peak hour for all future years.

    - ***Northbound Through*** was calculated to upgrade to LOS D from LOS E during the PM peak hour in Year 2025. This movement's performance will be the same as the background scenario with LOS E during the PM peak hour in Year 2030 and Year 2040.

- ***Eastbound Left-Turn*** was estimated to upgrade to LOS D from LOS E during the PM peak hour in Year 2040. The 95th percentile queue was calculated to reduce to 215 feet in Year 2040 and be maintained in the existing storage length.

- ***Westbound Left-Turn*** was estimated to upgrade to LOS D from LOS E during the PM peak hour in Year 2040. The 95th percentile queue was calculated to increase to 587 feet in Year 2040 and continue to exceed the existing storage length.

- **#20. 88th Street & Campus Drive:**

  - ***Eastbound Through/Right-Turn*** was estimated to upgrade to LOS D from LOS E during the AM peak hour for all future years. This is likely related to a reduction in school traffic through this intersection.

  - ***Westbound Left-Turn***, in Year 2025, was estimated to upgrade to LOS C in both peak periods from LOS D and LOS F, respectively. In Year 2030, westbound left-turn was estimated to upgrade to LOS C in both peak hours from LOS E and LOS F, respectively. The 95th percentile queue was calculated to continue to exceed the existing storage length similarly to the current and background conditions in the AM peak hour.

  - ***Northbound Through*** was estimated to upgrade to LOS C from LOS E during the AM peak hour in Year 2040. The 95th percentile queue was calculated to be reduced to 203 feet in the future (reduction of 261 feet)

- **#25. Northwest Parkway & 96th Street/Via Varra:**

  - ***Overall***, this intersection was calculated to upgrade to LOS D in the AM peak hour and LOS C in the PM peak hour from LOS E and LOS F, respectively, in Year 2025. In Year 2030, both peak hours were estimated to upgrade to LOS D from LOS E and LOS F, respectively. In Year 2040, both peak hours were estimated to upgrade to LOS C from LOS F.

  - ***Northbound Left-Turn (NWP to 96th Street)*** was calculated to upgrade to LOS E in the AM peak hour and LOS D in the PM peak hour from LOS F and LOS E, respectively. In Year 2030 and Year 2040, northbound left-turn was estimated to upgrade to LOS D in both peak periods from LOS F.

- **#30. Northwest Parkway & Via Varra (Rockcress):**

    - ***Westbound Left-Turn*** was calculated to upgrade to LOS C in the AM peak hour and LOS D in the PM peak hour from LOS F and LOS E, respectively. In Year 2030 and Year 2040, was estimated to upgrade to LOS D in both peak periods from LOS F and LOS E, respectively.

    - ***Westbound Right-Turn*** was estimated to upgrade to LOS C from LOS F in the AM peak hour. In Year 2030 and Year 2040, westbound right-turn was estimated to upgrade to LOS D in both peak periods from LOS F.

As mentioned, the committed Redtail Ridge infrastructure improvements will add capacity to the study intersections and reduce delays and queueing. The analysis indicated that there will be only three (3) movements that are anticipated to operate at LOS E or F with the additional Redtail Ridge generated traffic:

- **#15. Dillon Road & 96th Street:**

    - ***Northbound Through*** was estimated to operate at LOS E int eh PM peak hour in Year 2030 with similar delay in the background, no improvement scenario. Delay for this movement is less than the signal cycle length, indicating there is not cycle failure.

      Recommendation: No further mitigation measures are recommended.

- **#20. 88th Street & Campus Drive:**

    - ***Westbound Left-Turn*** was estimated to operate at LOS E during the AM peak hour in Year 2040. The 95th percentile queue is estimated to continue to exceed the existing storage length similarly to the existing and background scenarios.

      Recommendation: Altering the signal timing could be explored to reduce delays and queues on the westbound left-turn movement. The exclusive pedestrian phase could be removed in favor of more traditional phasing at the intersection but the balance between pedestrian comfort and vehicle operations at the intersection should be considered since this is the primary intersection for students to cross at a signalized intersection on 88th Street.

- **#30. Northwest Parkway & Via Varra (Rockcress):**

    - ***Northbound Left-Turn*** was estimated to operate at LOS F in the AM and PM peak hours in Year 2030 and Year 2040 due to the high volume destined for Redtail Ridge and limited green time. High delay is typical for protected-only left-turn movements. The 95th percentile queue fits within the planned storage length.

Summary of Sensitivity Analysis

In summary, the delays and queues at the study intersections will continue to increase into the future especially if infrastructure mitigation measures are not implemented. The committed improvements by Redtail Ridge will significantly improve the performance of study intersections. There are still some significant delays and queues at certain intersections that may need to be monitored as the area grows.

The improvements that were identified to be triggered in background conditions in the Redtail Ridge traffic study are still recommended to be considered in the future to enhance the performance of intersections and roadways within the study area. The widening of Dillon Road and 88th Street may not have a direct impact on the study intersections since the intersections have additional lanes, but the widening will benefit the travel time on these corridors and provide additional vehicular capacity where daily and/or hourly volumes exceed the typical threshold for a two-lane roadway.

/CRS

Attachments:

Table 1: Peak Hour Level of Service for Supplemental Analysis
Table 2: 95th Percentile Queuing Summary for Supplemental Analysis
Intersection Capacity Worksheets

Table 1 - Peak Hour Level of Service for Supplemental Analysis

Intersection and Lanes Groups	Existing (Year 2023)				Year 2025 Bkgrd (No Redtail Ridge) No Bkgd Mitigation Measures				Year 2025 Build (With Redtail Ridge) Only Redtail Committed Improvements				Year 2030 Bkgrd (No Redtail Ridge) No Bkgd Mitigation Measures				Year 2030 Build (With Redtail Ridge) Only Redtail Committed Improvements				Year 2040 Bkgd (No Redtail Ridge) No Bkgd Mitigation Measures				Year 2040 Build (With Redtail Ridge) Only Redtail Committed Improvements			
	AM Peak		PM Peak		AM Peak		PM Peak		AM Peak		PM Peak		AM Peak		PM Peak		AM Peak		PM Peak		AM Peak		PM Peak		AM Peak		PM Peak	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Signalized Control																												
10. Dillon Road and 88th Street	**18**	**B**	**12**	**B**	**26**	**C**	**15**	**B**	**16**	**B**	**11**	**B**	**30**	**C**	**17**	**B**	**18**	**B**	**11**	**B**	**41**	**D**	**21**	**C**	**20**	**C**	**12**	**B**
Eastbound Through	*26*	*C*	*20*	*B*	*55*	**E**	*33*	*C*	*21*	*C*	*16*	*B*	*72*	**E**	*37*	*D*	*19*	*B*	*16*	*B*	*>120*	**F**	*53*	*D*	*36*	*D*	*17*	*B*
Eastbound Right	*13*	*B*	*8*	*A*	*22*	*C*	*13*	*B*	*9*	*A*	*6*	*A*	*23*	*C*	*14*	*B*	*7*	*A*	*6*	*A*	*26*	*C*	*16*	*B*	*8*	*A*	*6*	*A*
Westbound Left	*15*	*B*	*9*	*A*	*32*	*C*	*13*	*B*	*10*	*A*	*8*	*A*	*38*	*D*	*16*	*B*	*10*	*A*	*8*	*A*	*35*	*D*	*25*	*C*	*20*	*C*	*8*	*A*
Westbound Through	*8*	*A*	*6*	*A*	*9*	*A*	*6*	*A*	*9*	*A*	*5*	*A*	*10*	*A*	*6*	*A*	*9*	*A*	*5*	*A*	*11*	*B*	*7*	*A*	*18*	*B*	*5*	*A*
Northbound Left	*51*	*D*	*44*	*D*	*49*	*D*	*44*	*D*	*36*	*D*	*43*	*D*	*48*	*D*	*44*	*D*	*49*	*D*	*43*	*D*	*47*	*D*	*44*	*D*	*31*	*C*	*43*	*D*
Northbound Right	*1*	*A*	*1*	*A*	*1*	*A*	*1*	*A*	*0*	*A*	*0*	*A*	*1*	*A*	*1*	*A*	*0*	*A*	*0*	*A*	*1*	*A*	*1*	*A*	*0*	*A*	*0*	*A*
15. Dillon Road and 96th Street	**33**	**C**	**37**	**D**	**44**	**D**	**43**	**D**	**40**	**D**	**41**	**D**	**46**	**D**	**45**	**D**	**39**	**D**	**45**	**D**	**52**	**D**	**51**	**D**	**39**	**D**	**48**	**D**
Eastbound Left	*22*	*C*	*26*	*C*	*32*	*C*	*39*	*D*	*33*	*C*	*31*	*C*	*35*	*D*	*45*	*D*	*27*	*C*	*37*	*D*	*44*	*D*	*67*	**E**	*28*	*C*	*37*	*D*
Eastbound Through	*28*	*C*	*33*	*C*	*30*	*C*	*36*	*D*	*43*	*D*	*43*	*D*	*31*	*C*	*36*	*D*	*35*	*D*	*49*	*D*	*32*	*C*	*37*	*D*	*36*	*D*	*50*	*D*
Eastbound Right	*28*	*C*	*34*	*C*	*30*	*C*	*37*	*D*	*46*	*D*	*45*	*D*	*31*	*C*	*38*	*D*	*40*	*D*	*54*	*D*	*33*	*C*	*38*	*D*	*40*	*D*	*53*	*D*
Westbound Left	*22*	*C*	*26*	*C*	*24*	*C*	*38*	*D*	*30*	*C*	*34*	*C*	*25*	*C*	*43*	*D*	*34*	*C*	*44*	*D*	*25*	*C*	*60*	**E**	*33*	*C*	*48*	*D*
Westbound Through	*31*	*C*	*33*	*C*	*37*	*D*	*37*	*D*	*36*	*D*	*35*	*D*	*38*	*D*	*38*	*D*	*31*	*C*	*38*	*D*	*39*	*D*	*38*	*D*	*31*	*C*	*35*	*D*
Westbound Right	*28*	*C*	*32*	*C*	*33*	*C*	*35*	*D*	*35*	*C*	*34*	*C*	*34*	*C*	*36*	*D*	*31*	*C*	*37*	*D*	*34*	*C*	*36*	*D*	*32*	*C*	*34*	*C*
Northbound Left	*28*	*C*	*35*	*C*	*36*	*D*	*37*	*D*	*34*	*C*	*35*	*D*	*39*	*D*	*37*	*D*	*40*	*D*	*34*	*C*	*45*	*D*	*38*	*D*	*32*	*C*	*36*	*D*
Northbound Through	*30*	*C*	*48*	*D*	*40*	*D*	*56*	**E**	*47*	*D*	*53*	*D*	*41*	*D*	*58*	**E**	*43*	*D*	*57*	**E**	*41*	*D*	*62*	**E**	*45*	*D*	*62*	**E**
Northbound Right	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*
Southbound Left	*28*	*C*	*35*	*C*	*32*	*C*	*37*	*D*	*34*	*C*	*38*	*D*	*32*	*C*	*39*	*D*	*33*	*C*	*43*	*D*	*32*	*C*	*42*	*D*	*31*	*C*	*51*	*D*
Southbound Through	*38*	*D*	*44*	*D*	*45*	*D*	*47*	*D*	*45*	*D*	*46*	*D*	*46*	*D*	*47*	*D*	*50*	*D*	*47*	*D*	*48*	*D*	*48*	*D*	*48*	*D*	*49*	*D*
Southbound Right	*59*	**E**	*46*	*D*	*108*	**F**	*54*	*D*	*27*	*C*	*25*	*C*	*>120*	**F**	*54*	*D*	*24*	*C*	*25*	*C*	*>120*	**F**	*57*	**E**	*21*	*C*	*27*	*C*
20. 88th Street and Campus Drive	**33**	**C**	**36**	**D**	**36**	**D**	**40**	**D**	**30**	**C**	**33**	**C**	**37**	**D**	**39**	**D**	**24**	**C**	**26**	**C**	**40**	**D**	**44**	**D**	**25**	**C**	**26**	**C**
Eastbound Left	*35*	*C*	*44*	*D*	*35*	*D*	*44*	*D*	*38*	*D*	*28*	*C*	*35*	*D*	*44*	*D*	*43*	*D*	*37*	*D*	*36*	*D*	*50*	*D*	*42*	*D*	*38*	*D*
Eastbound Through+Right	*57*	**E**	*42*	*D*	*60*	**E**	*42*	*D*	*43*	*D*	*52*	*D*	*60*	**E**	*42*	*D*	*46*	*D*	*42*	*D*	*67*	**E**	*39*	*D*	*45*	*D*	*43*	*D*
Westbound Left	*35*	*C*	*63*	**E**	*40*	*D*	*81*	**F**	*30*	*C*	*29*	*C*	*41*	*D*	*78*	**E**	*54*	*D*	*25*	*C*	*44*	*D*	*84*	**F**	*64*	**E**	*24*	*C*
Westbound Through+Right	*38*	*D*	*43*	*D*	*41*	*D*	*43*	*D*	*53*	*D*	*32*	*C*	*41*	*D*	*43*	*D*	*37*	*D*	*30*	*C*	*49*	*D*	*52*	*D*	*36*	*D*	*29*	*C*
Northbound Left	*26*	*C*	*20*	*B*	*26*	*C*	*20*	*B*	*23*	*C*	*26*	*C*	*26*	*C*	*20*	*B*	*20*	*C*	*21*	*C*	*26*	*C*	*23*	*C*	*20*	*B*	*21*	*C*
Northbound Through	*42*	*D*	*26*	*C*	*51*	*D*	*28*	*C*	*33*	*C*	*31*	*C*	*52*	*D*	*28*	*C*	*24*	*C*	*27*	*C*	*56*	**E**	*34*	*C*	*23*	*C*	*27*	*C*
Northbound Right	*24*	*C*	*12*	*B*	*25*	*C*	*12*	*B*	*21*	*C*	*17*	*B*	*26*	*C*	*12*	*B*	*16*	*B*	*12*	*B*	*26*	*C*	*15*	*B*	*16*	*B*	*12*	*B*
Southbound Left	*24*	*C*	*14*	*B*	*29*	*C*	*15*	*B*	*20*	*C*	*21*	*C*	*29*	*C*	*15*	*B*	*14*	*B*	*17*	*B*	*32*	*C*	*19*	*B*	*13*	*B*	*18*	*B*
Southbound Through	*31*	*C*	*22*	*C*	*32*	*C*	*25*	*C*	*29*	*C*	*32*	*C*	*32*	*C*	*25*	*C*	*17*	*B*	*28*	*C*	*24*	*C*	*33*	*C*	*17*	*B*	*28*	*C*
Southbound Right	*30*	*C*	*17*	*B*	*30*	*C*	*18*	*B*	*26*	*C*	*24*	*C*	*30*	*C*	*18*	*B*	*14*	*B*	*20*	*B*	*30*	*C*	*22*	*C*	*14*	*B*	*20*	*C*

Table 1 - Peak Hour Level of Service for Supplement Analysis

Intersection and Lanes Groups	Existing (Year 2023)				Year 2025 Bkgrd (No Redtail Ridge) No Bkgd Mitigation Measures				Year 2025 Build (With Redtail Ridge) Only Redtail Committed Improvements				Year 2030 Bkgrd (No Redtail Ridge) No Bkgd Mitigation Measures				Year 2030 Build (With Redtail Ridge) Only Redtail Committed Improvements				Year 2040 Bkgd (No Redtail Ridge) No Bkgd Mitigation Measures				Year 2040 Build (With Redtail Ridge) Only Redtail Committed Improvements			
	AM Peak		PM Peak		AM Peak		PM Peak		AM Peak		PM Peak		AM Peak		PM Peak		AM Peak		PM Peak		AM Peak		PM Peak		AM Peak		PM Peak	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
25. Northwest Parkway and 96th Street/Via Varra	**25**	**C**	**77**	**E**	**73**	**E**	**91**	**F**	**38**	**D**	**34**	**C**	**77**	**E**	**95**	**F**	**36**	**D**	**35**	**D**	**90**	**F**	**108**	**F**	**31**	**C**	**29**	**C**
Eastbound Left - 96th Street	*45*	*D*	*45*	*D*	*45*	*D*	*44*	*D*	*46*	*D*	*44*	*D*	*45*	*D*	*44*	*D*	*46*	*D*	*45*	*D*	*45*	*D*	*43*	*D*	*46*	*D*	*45*	*D*
Eastbound Through - 96th Street	*47*	*D*	*47*	*D*	*48*	*D*	*46*	*D*	*47*	*D*	*46*	*D*	*48*	*D*	*46*	*D*	*47*	*D*	*46*	*D*	*47*	*D*	*46*	*D*	*47*	*D*	*46*	*D*
Eastbound Right - 96th Street	*5*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*
Westbound Left - Via Varra	*42*	*D*	*45*	*D*	*43*	*D*	*44*	*D*	*43*	*D*	*44*	*D*	*43*	*D*	*44*	*D*	*43*	*D*	*44*	*D*	*43*	*D*	*44*	*D*	*43*	*D*	*44*	*D*
Westbound Through - Via Varra	*44*	*D*	*49*	*D*	*53*	*D*	*49*	*D*	*53*	*D*	*49*	*D*	*53*	*D*	*49*	*D*	*53*	*D*	*49*	*D*	*54*	*D*	*50*	*D*	*52*	*D*	*49*	*D*
Westbound Right - Via Varra	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*
Northbound Left - NWP	*34*	*C*	*>120*	*F*	*>120*	*F*	*>120*	*F*	*47*	*D*	*48*	*D*	*>120*	*F*	*>120*	*F*	*40*	*D*	*52*	*D*	*>120*	*F*	*>120*	*F*	*39*	*D*	*41*	*D*
Northbound Through - NWP	*4*	*A*	*9*	*A*	*9*	*A*	*11*	*B*	*9*	*A*	*11*	*B*	*9*	*A*	*11*	*B*	*9*	*A*	*12*	*B*	*10*	*A*	*12*	*B*	*9*	*A*	*11*	*B*
Northbound Right - NWP	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*
Southbound Left - NWP	*46*	*D*	*51*	*D*	*52*	*D*	*51*	*D*	*52*	*D*	*51*	*D*	*52*	*D*	*51*	*D*	*52*	*D*	*51*	*D*	*52*	*D*	*51*	*D*	*51*	*D*	*51*	*D*
Southbound Through - NWP	*51*	*D*	*24*	*C*	*37*	*D*	*26*	*C*	*35*	*C*	*26*	*C*	*41*	*D*	*27*	*C*	*39*	*D*	*27*	*C*	*52*	*D*	*28*	*C*	*25*	*C*	*20*	*B*
Southbound Right - NWP	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*23*	*C*	*18*	*B*	*0*	*A*	*0*	*A*	*23*	*C*	*18*	*B*	*0*	*A*	*0*	*A*	*18*	*B*	*13*	*B*
30. Northwest Parkway and Via Varra (Rockcress)	**14**	**B**	**13**	**B**	**20**	**C**	**16**	**B**	**24**	**C**	**23**	**C**	**20**	**C**	**16**	**B**	**42**	**D**	**52**	**D**	**20**	**B**	**12**	**B**	**39**	**D**	**41**	**D**
Eastbound Left	*57*	*E*	*0*	*A*	*52*	*D*	*0*	*A*	*40*	*D*	*42*	*D*	*52*	*D*	*0*	*A*	*41*	*D*	*42*	*D*	*0*	*A*	*0*	*A*	*41*	*D*	*42*	*D*
Eastbound Through	*0*	*A*	*78*	*E*	*0*	*A*	*64*	*E*	*41*	*D*	*46*	*D*	*52*	*D*	*64*	*E*	*47*	*D*	*46*	*D*	*0*	*A*	*0*	*A*	*46*	*D*	*46*	*D*
Eastbound Right	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*
Westbound Left	*66*	*E*	*51*	*D*	*117*	*F*	*56*	*E*	*35*	*C*	*41*	*D*	*>120*	*F*	*56*	*E*	*40*	*D*	*41*	*D*	*>120*	*F*	*57*	*E*	*40*	*D*	*41*	*D*
Westbound Through	*44*	*D*	*43*	*D*	*44*	*D*	*42*	*D*	*33*	*C*	*42*	*D*	*44*	*D*	*41*	*D*	*42*	*D*	*42*	*D*	*0*	*A*	*0*	*A*	*42*	*D*	*42*	*D*
Westbound Right	*63*	*E*	*47*	*D*	*100*	*F*	*46*	*D*	*22*	*C*	*47*	*D*	*93*	*F*	*45*	*D*	*52*	*D*	*46*	*D*	*112*	*F*	*45*	*D*	*46*	*D*	*46*	*D*
Northbound Left	*0*	*A*	*52*	*D*	*0*	*A*	*50*	*D*	*50*	*D*	*52*	*D*	*0*	*A*	*50*	*D*	*96*	*F*	*117*	*F*	*0*	*A*	*0*	*A*	*89*	*F*	*91*	*F*
Northbound Through	*9*	*A*	*9*	*A*	*10*	*B*	*11*	*B*	*22*	*C*	*13*	*B*	*11*	*B*	*12*	*B*	*15*	*B*	*14*	*B*	*8*	*A*	*9*	*A*	*15*	*B*	*15*	*B*
Northbound Right	*7*	*A*	*6*	*A*	*7*	*A*	*7*	*A*	*4*	*A*	*9*	*A*	*7*	*A*	*7*	*A*	*10*	*A*	*9*	*A*	*5*	*A*	*5*	*A*	*10*	*A*	*9*	*A*
Southbound Left	*49*	*D*	*51*	*D*	*49*	*D*	*51*	*D*	*40*	*D*	*51*	*D*	*49*	*D*	*51*	*D*	*49*	*D*	*51*	*D*	*49*	*D*	*50*	*D*	*49*	*D*	*51*	*D*
Southbound Through	*6*	*A*	*8*	*A*	*6*	*A*	*10*	*B*	*21*	*C*	*22*	*C*	*7*	*A*	*11*	*B*	*41*	*D*	*54*	*D*	*4*	*A*	*5*	*A*	*31*	*C*	*35*	*C*
Southbound Right	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*

Note: Delay represented in average seconds per vehicle.
Note: Under conditions with improvements, level of service results are only provided for intersections with recommended improvements.

Table 2 - 95th Percentile Queuing Summary for Supplemental Analysis

Intersection and Lane Groups	Storage Length	Existing (Year 2023)		Year 2025 Bkgrd (No Redtail Ridge) No Bkgd Mitigation Measures		Year 2025 Build (With Redtail Ridge) Only Redtail Committed		Year 2030 Bkgrd (No Redtail Ridge) No Bkgd Mitigation Measures		Year 2030 Build (With Redtail Ridge) Only Redtail Committed		Year 2040 Bkgrd (No Redtail Ridge) No Bkgd Mitigation Measures		Year 2040 Build (With Redtail Ridge) Only Redtail Committed	
		AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
10. Dillon Road and 88th Street		*Signalized*		*Signalized*		*Signalized*		*Signalized*		*Signalized*		*Signalized*		*Signalized*	
Eastbound Through	-	286'	399'	489'	521'	417'	420'	505'	536'	378'	434'	534'	584'	392'	476'
Eastbound Right	270'	35'	13'	36'	15'	36'	10'	36'	21'	29'	10'	37'	33'	32'	19'
Westbound Left	400'	305'	125'	**470'**	195'	96'	69'	**539'**	218'	78'	65'	**578'**	328'	87'	70'
Westbound Through	-	88'	83'	108'	101'	122'	93'	110'	104'	113'	99'	116'	113'	124'	108'
Northbound Left	-	142'	132'	151'	137'	145'	92'	157'	142'	151'	87'	176'	148'	185'	98'
Northbound Right	200'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'
15. Dillon Road and 96th Street		*Signalized*		*Signalized*		*Signalized*		*Signalized*		*Signalized*		*Signalized*		*Signalized*	
Eastbound Left	415'	174'	257'	328'	333'	223'	218'	354'	347'	184'	210'	408'	**424'**	195'	215'
Eastbound Through	-	133'	192'	148'	205'	103'	175'	152'	210'	79'	160'	162'	223'	84'	171'
Eastbound Right	415'	35'	39'	37'	39'	43'	42'	38'	40'	39'	44'	38'	40'	49'	65'
Westbound Left	425'	118'	327'	159'	373'	364'	**445'**	163'	405'	339'	**522'**	171'	**487'**	375'	**587'**
Westbound Through	-	146'	206'	172'	235'	125'	191'	175'	244'	100'	197'	183'	258'	111'	199'
Westbound Right	425'	10'	32'	19'	33'	31'	32'	24'	34'	23'	33'	28'	34'	28'	47'
Northbound Left	350'	113'	58'	117'	64'	76'	63'	122'	63'	69'	80'	129'	67'	82'	91'
Northbound Through	-	227'	350'	335'	410'	469'	453'	344'	433'	411'	535'	364'	483'	435'	606'
Northbound Right	325'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'
Southbound Left	335'	65'	85'	90'	119'	106'	107'	90'	128'	93'	118'	95'	135'	112'	159'
Southbound Through	-	264'	304'	289'	355'	455'	387'	297'	364'	485'	423'	315'	390'	511'	457'
Southbound Right	350'	19'	67'	24'	76'	12'	69'	36'	76'	14'	87'	60'	79'	39'	91'
20. 88th Street and Campus Drive		*Signalized*		*Signalized*		*Signalized*		*Signalized*		*Signalized*		*Signalized*		*Signalized*	
Eastbound Left	150'	90'	211'	90'	214'	55'	151'	90'	214'	37'	26'	97'	227'	37'	26'
Eastbound Through+Right	-	201'	0'	205'	0'	60'	165'	205'	0'	24'	55'	214'	0'	24'	55'
Westbound Left	240'	**306'**	**292'**	**346'**	**275'**	**370'**	188'	**349'**	**271'**	**365'**	183'	**372'**	**336'**	**476'**	183'
Westbound Through+Right	-	0'	0'	7'	0'	173'	0'	7'	0'	26'	36'	49'	0'	25'	36'
Northbound Left	190'	110'	15'	110'	17'	115'	12'	110'	17'	19'	17'	110'	23'	20'	18'
Northbound Through	-	305'	260'	413'	316'	189'	201'	430'	320'	186'	231'	464'	342'	203'	271'
Northbound Right	190'	8'	8'	77'	15'	14'	8'	88'	15'	0'	8'	109'	15'	0'	7'
Southbound Left	400'	197'	58'	207'	59'	177'	31'	215'	59'	165'	32'	239'	62'	167'	33'
Southbound Through	-	186'	361'	230'	488'	183'	410'	230'	512'	187'	445'	244'	564'	227'	480'
Southbound Right	215'	3'	0'	3'	0'	0'	0'	3'	0'	0'	0'	2'	0'	0'	0'

Table 2 - 95th Percentile Queuing Summary for Supplemental Analysis

Intersection and Lane Groups	Storage Length	Existing (Year 2023)		Year 2025 Bkgrd (No Redtail Ridge) No Bkgd Mitigation Measures		Year 2025 Build (With Redtail Ridge) Only Redtail Committed		Year 2030 Bkgrd (No Redtail Ridge) No Bkgd Mitigation Measures		Year 2030 Build (With Redtail Ridge) Only Redtail Committed		Year 2040 Bkgrd (No Redtail Ridge) No Bkgd Mitigation Measures		Year 2040 Build (With Redtail Ridge) Only Redtail Committed	
		AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
25. Northwest Parkway and 96th Street/Via Varra		*Signalized*		*Signalized*		*Signalized*		*Signalized*		*Signalized*		*Signalized*		*Signalized*	
Eastbound Left - 96th Street	370'	36'	60'	40'	61'	50'	75'	36'	61'	43'	89'	38'	65'	46'	97'
Eastbound Through - 96th Street	-	58'	98'	69'	111'	86'	111'	70'	113'	70'	113'	74'	119'	75'	119'
Eastbound Right - 96th Street	400'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'
Westbound Left - Via Varra	265'	303'	13'	38'	18'	47'	18'	38'	19'	38'	19'	40'	21'	40'	24'
Westbound Through - Via Varra	-	71'	68'	104'	88'	133'	88'	106'	89'	106'	89'	112'	94'	111'	93'
Westbound Right - Via Varra	250'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'
Northbound Left - NWP	725'	196'	201'	236'	219'	313'	151'	270'	229'	184'	159'	312'	254'	212'	185'
Northbound Through - NWP	-	29'	88'	98'	92'	104'	104'	38'	100'	47'	134'	47'	158'	37'	80'
Northbound Right - NWP	320'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'
Southbound Left - NWP	500'	26'	21'	28'	22'	35'	22'	28'	22'	28'	22'	31'	24'	34'	26'
Southbound Through - NWP	-	247'	156'	264'	159'	292'	163'	284'	176'	356'	189'	349'	194'	375'	194'
Southbound Right - NWP	500'	0'	0'	50'	0'	69'	0'	0'	0'	68'	6'	0'	0'	73'	9'
30. Northwest Parkway and Via Varra (Rockcress)		*Signalized*		*Signalized*		*Signalized*		*Signalized*		*Signalized*		*Signalized*		*Signalized*	
Eastbound Left	130'	3'	0'	6'	0'	21'	39'	6'	13'	13'	40'	0'	0'	14'	45'
Eastbound Through	-	0'	7'	0'	13'	14'	13'	0'	0'	10'	13'	0'	0'	4'	13'
Eastbound Right	200'	0'	0'	0'	0'	0'	176'	0'	0'	0'	671'	0'	0'	0'	0'
Westbound Left	520'	107'	96'	157'	124'	93'	102'	161'	132'	104'	104'	121'	121'	110'	110'
Westbound Through	-	4'	7'	10'	14'	13'	14'	10'	12'	9'	13'	0'	0'	9'	13'
Westbound Right	520'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'
Northbound Left	450'	0'	2'	0'	4'	124'	41'	0'	5'	389'	86'	0'	0'	425'	89'
Northbound Through	-	283'	323'	315'	345'	371'	355'	336'	382'	338'	413'	337'	428'	352'	464'
Northbound Right	250'	25'	13'	12'	12'	29'	13'	11'	16'	5'	15'	3'	27'	5'	16'
Southbound Left	660'	27'	19'	26'	20'	41'	20'	26'	20'	28'	21'	27'	23'	41'	20'
Southbound Through	-	127'	194'	140'	225'	471'	522'	137'	234'	590'	672'	118'	151'	413'	430'
Southbound Right	600'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'

Note: Queues in **blue** exceed available storage capacity.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	398	484	566	501	419	526
v/c Ratio	0.72	0.46	0.81	0.21	0.70	0.34
Control Delay	47.3	2.9	32.0	8.9	54.0	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.3	2.9	32.0	8.9	54.0	0.6
Queue Length 50th (ft)	263	0	265	60	157	0
Queue Length 95th (ft)	#489	36	#470	108	151	0
Internal Link Dist (ft)	1510			466	307	
Turn Bay Length (ft)			400		200	200
Base Capacity (vph)	549	1041	698	2352	601	1568
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.46	0.81	0.21	0.70	0.34

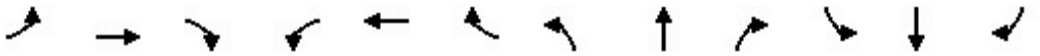
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	342	431	453	361	260	458
Future Volume (vph)	342	431	453	361	260	458
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	5.0	6.0	6.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	0.97	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1845	1568	1752	3505	3400	1568
Flt Permitted	1.00	1.00	0.18	1.00	0.95	1.00
Satd. Flow (perm)	1845	1568	337	3505	3400	1568
Peak-hour factor, PHF	0.86	0.89	0.80	0.72	0.62	0.87
Adj. Flow (vph)	398	484	566	501	419	526
RTOR Reduction (vph)	0	270	0	0	0	0
Lane Group Flow (vph)	398	214	566	501	419	526
Confl. Peds. (#/hr)					9	
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%
Turn Type	NA	pm+ov	pm+pt	NA	Prot	Free
Protected Phases	2	4	1	6	4	
Permitted Phases		2	6			Free
Actuated Green, G (s)	31.8	53.0	76.6	76.6	21.2	120.0
Effective Green, g (s)	31.8	53.0	76.6	76.6	21.2	120.0
Actuated g/C Ratio	0.27	0.44	0.64	0.64	0.18	1.00
Clearance Time (s)	6.0	6.0	5.0	6.0	6.0	
Vehicle Extension (s)	3.1	2.0	2.0	3.1	2.0	
Lane Grp Cap (vph)	488	692	684	2237	600	1568
v/s Ratio Prot	0.22	0.05	c0.27	0.14	c0.12	
v/s Ratio Perm		0.08	c0.25			c0.34
v/c Ratio	0.82	0.31	0.83	0.22	0.70	0.34
Uniform Delay, d1	41.4	21.7	24.4	9.2	46.4	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	14.0	0.1	7.8	0.2	2.9	0.6
Delay (s)	55.3	21.8	32.2	9.4	49.3	0.6
Level of Service	E	C	C	A	D	A
Approach Delay (s)	36.9			21.5	22.2	
Approach LOS	D			C	C	

Intersection Summary			
HCM 2000 Control Delay	26.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	65.6%	ICU Level of Service	C
Analysis Period (min)	15		

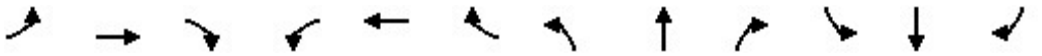
c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	398	363	152	264	523	98	232	697	412	119	608	418
v/c Ratio	0.84	0.31	0.24	0.52	0.52	0.18	0.74	0.70	0.26	0.47	0.69	0.60
Control Delay	37.3	31.9	6.1	21.9	37.8	4.5	39.2	42.8	0.4	28.7	45.6	8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.3	31.9	6.1	21.9	37.8	4.5	39.2	42.8	0.4	28.7	45.6	8.2
Queue Length 50th (ft)	192	111	0	117	180	0	119	251	0	57	227	8
Queue Length 95th (ft)	#328	148	37	159	172	19	117	335	0	90	289	24
Internal Link Dist (ft)		605			645			489			691	
Turn Bay Length (ft)	415		415	420		420	330		330	335		335
Base Capacity (vph)	482	1159	621	585	1002	532	329	998	1583	339	879	698
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.83	0.31	0.24	0.45	0.52	0.18	0.71	0.70	0.26	0.35	0.69	0.60

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	374	301	125	219	361	79	144	655	375	100	541	309
Future Volume (veh/h)	374	301	125	219	361	79	144	655	375	100	541	309
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1841	1841	1841	1870	1870	1870	1885	1885	1885
Adj Flow Rate, veh/h	398	363	152	264	523	98	232	697	0	119	608	418
Peak Hour Factor	0.94	0.83	0.82	0.83	0.69	0.81	0.62	0.94	0.91	0.84	0.89	0.74
Percent Heavy Veh, %	1	1	1	4	4	4	2	2	2	1	1	1
Cap, veh/h	494	1193	532	501	1009	450	310	1038		268	882	393
Arrive On Green	0.17	0.33	0.33	0.12	0.29	0.29	0.11	0.29	0.00	0.07	0.25	0.25
Sat Flow, veh/h	1795	3582	1598	1753	3497	1560	1781	3554	1585	1795	3582	1598
Grp Volume(v), veh/h	398	363	152	264	523	98	232	697	0	119	608	418
Grp Sat Flow(s),veh/h/ln	1795	1791	1598	1753	1749	1560	1781	1777	1585	1795	1791	1598
Q Serve(g_s), s	17.7	8.9	8.3	12.3	14.7	5.6	11.0	20.3	0.0	5.8	18.2	29.0
Cycle Q Clear(g_c), s	17.7	8.9	8.3	12.3	14.7	5.6	11.0	20.3	0.0	5.8	18.2	29.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	494	1193	532	501	1009	450	310	1038		268	882	393
V/C Ratio(X)	0.81	0.30	0.29	0.53	0.52	0.22	0.75	0.67		0.44	0.69	1.06
Avail Cap(c_a), veh/h	498	1193	532	583	1009	450	338	1038		380	882	393
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.4	29.2	29.0	24.1	35.1	31.8	29.4	36.7	0.0	31.0	40.3	44.4
Incr Delay (d2), s/veh	8.7	0.7	1.3	0.3	1.9	1.1	6.9	3.5	0.0	0.4	4.4	63.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.4	3.9	3.3	5.0	6.5	2.2	5.2	9.1	0.0	2.5	8.3	18.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.0	29.8	30.3	24.4	37.0	32.9	36.3	40.2	0.0	31.5	44.7	107.5
LnGrp LOS	C	C	C	C	D	C	D	D		C	D	F
Approach Vol, veh/h		913			885			929			1145	
Approach Delay, s/veh		30.9			32.8			39.2			66.3	
Approach LOS		C			C			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.5	45.2	12.7	40.4	24.7	40.0	18.1	35.0
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0
Max Green Setting (Gmax), s	20.0	34.0	15.0	29.0	20.0	34.0	15.0	29.0
Max Q Clear Time (g_c+I1), s	14.3	10.9	7.8	22.3	19.7	16.7	13.0	31.0
Green Ext Time (p_c), s	0.2	2.8	0.1	2.4	0.0	3.5	0.1	0.0

Intersection Summary	
HCM 6th Ctrl Delay	43.8
HCM 6th LOS	D

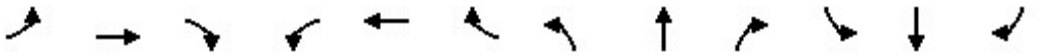
Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	73	282	249	413	112	384	545	526	235	431
v/c Ratio	0.32	0.84	0.75	0.74	0.24	0.75	0.60	0.73	0.38	0.53
Control Delay	30.4	66.2	43.6	27.8	21.4	48.2	8.2	28.0	34.0	6.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.4	66.2	43.6	27.8	21.4	48.2	8.2	28.0	34.0	6.3
Queue Length 50th (ft)	29	171	109	114	37	219	35	97	109	0
Queue Length 95th (ft)	90	205	#346	7	110	#413	77	#207	230	3
Internal Link Dist (ft)		538		1696		1320			1541	
Turn Bay Length (ft)	125		210		170		170	400		200
Base Capacity (vph)	336	334	330	561	572	509	915	719	616	812
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.84	0.75	0.74	0.20	0.75	0.60	0.73	0.38	0.53

Intersection Summary

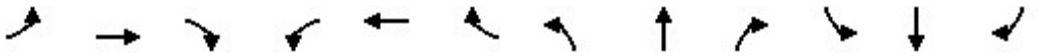
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	65	135	25	219	20	210	95	288	409	405	174	310
Future Volume (vph)	65	135	25	219	20	210	95	288	409	405	174	310
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0		5.0	6.0		5.0	6.0	5.0	5.0	6.0	6.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	0.97	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.98		1.00	1.00	0.99	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.87		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1786	1849		1703	1524		1770	1863	1565	3431	1863	1583
Flt Permitted	0.24	1.00		0.22	1.00		0.61	1.00	1.00	0.20	1.00	1.00
Satd. Flow (perm)	450	1849		386	1524		1141	1863	1565	729	1863	1583
Peak-hour factor, PHF	0.89	0.54	0.79	0.88	0.39	0.58	0.85	0.75	0.75	0.77	0.74	0.72
Adj. Flow (vph)	73	250	32	249	51	362	112	384	545	526	235	431
RTOR Reduction (vph)	0	3	0	0	163	0	0	0	263	0	0	294
Lane Group Flow (vph)	73	279	0	249	250	0	112	384	282	526	235	137
Confl. Peds. (#/hr)	2					2			8	8		
Heavy Vehicles (%)	1%	1%	1%	6%	6%	6%	2%	2%	2%	2%	2%	2%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	pm+ov	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	27.8	20.5		40.8	28.5		38.7	29.6	44.9	49.9	35.8	35.8
Effective Green, g (s)	27.8	20.5		40.8	28.5		38.7	29.6	44.9	49.9	35.8	35.8
Actuated g/C Ratio	0.25	0.18		0.36	0.25		0.34	0.26	0.40	0.44	0.32	0.32
Clearance Time (s)	5.0	6.0		5.0	6.0		5.0	6.0	5.0	5.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.5	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	197	336		318	385		442	489	623	689	591	502
v/s Ratio Prot	0.02	0.15		c0.11	0.16		0.02	0.21	0.06	c0.10	0.13	
v/s Ratio Perm	0.07			c0.18			0.07		0.12	c0.23		0.09
v/c Ratio	0.37	0.83		0.78	0.65		0.25	0.79	0.45	0.76	0.40	0.27
Uniform Delay, d1	33.9	44.4		28.4	37.6		25.9	38.6	24.9	23.5	30.0	28.7
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	15.5		11.9	3.8		0.2	12.0	0.5	5.0	2.0	1.3
Delay (s)	35.1	59.9		40.2	41.4		26.2	50.6	25.4	28.5	32.0	30.1
Level of Service	D	E		D	D		C	D	C	C	C	C
Approach Delay (s)		54.8			41.0			34.8			29.8	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	36.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	112.7	Sum of lost time (s)	26.5
Intersection Capacity Utilization	65.8%	ICU Level of Service	C
Analysis Period (min)	15		

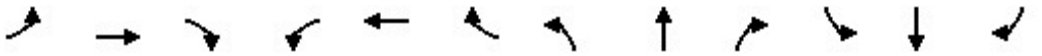
c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	57	137	1426	64	235	53	1373	430	29	63	781	133
v/c Ratio	0.25	0.59	0.90	0.17	0.62	0.03	1.11	0.21	0.02	0.30	0.93	0.08
Control Delay	46.3	55.7	9.8	41.2	49.8	0.0	87.0	4.8	0.0	48.6	55.9	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.3	55.7	9.8	41.2	49.8	0.0	87.0	4.8	0.0	48.6	55.9	0.1
Queue Length 50th (ft)	18	45	0	19	75	0	~531	21	0	20	256	0
Queue Length 95th (ft)	36	69	0	39	105	0	247	34	m0	28	253	0
Internal Link Dist (ft)		741			1037			943			877	
Turn Bay Length (ft)	280		250	180		180	700			600		600
Base Capacity (vph)	343	353	1583	380	391	1568	1242	2011	1568	215	841	1568
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.39	0.90	0.17	0.60	0.03	1.11	0.21	0.02	0.29	0.93	0.08

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	114	713	56	193	43	851	361	20	40	570	120
Future Volume (veh/h)	50	114	713	56	193	43	851	361	20	40	570	120
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	57	137	0	64	235	0	1373	430	0	63	781	0
Peak Hour Factor	0.88	0.83	0.50	0.88	0.82	0.81	0.62	0.84	0.68	0.63	0.73	0.90
Percent Heavy Veh, %	2	2	2	3	3	3	3	3	3	3	3	3
Cap, veh/h	201	206		300	309		1166	2155		113	1038	
Arrive On Green	0.06	0.06	0.00	0.09	0.09	0.00	0.34	0.61	0.00	0.03	0.29	0.00
Sat Flow, veh/h	3456	3554	1585	3428	3526	1572	3428	3526	1572	3428	3526	1572
Grp Volume(v), veh/h	57	137	0	64	235	0	1373	430	0	63	781	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1714	1763	1572	1714	1763	1572	1714	1763	1572
Q Serve(g_s), s	1.6	3.8	0.0	1.7	6.5	0.0	34.0	5.4	0.0	1.8	20.1	0.0
Cycle Q Clear(g_c), s	1.6	3.8	0.0	1.7	6.5	0.0	34.0	5.4	0.0	1.8	20.1	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	201	206		300	309		1166	2155		113	1038	
V/C Ratio(X)	0.28	0.66		0.21	0.76		1.18	0.20		0.56	0.75	
Avail Cap(c_a), veh/h	346	355		343	353		1166	2155		206	1038	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	45.1	46.1	0.0	42.4	44.6	0.0	33.0	8.6	0.0	47.6	32.0	0.0
Incr Delay (d2), s/veh	0.3	1.4	0.0	0.4	8.2	0.0	89.2	0.2	0.0	4.2	5.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	1.7	0.0	0.7	3.2	0.0	27.5	1.8	0.0	0.8	8.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.4	47.5	0.0	42.8	52.8	0.0	122.2	8.8	0.0	51.8	37.0	0.0
LnGrp LOS	D	D		D	D		F	A		D	D	
Approach Vol, veh/h		194			299			1803			844	
Approach Delay, s/veh		46.9			50.7			95.2			38.1	
Approach LOS		D			D			F			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.3	67.1		10.8	40.0	35.4		13.8				
Change Period (Y+Rc), s	5.0	6.0		5.0	6.0	6.0		5.0				
Max Green Setting (Gmax), s	6.0	53.0		10.0	34.0	24.0		10.0				
Max Q Clear Time (g_c+I1), s	3.8	7.4		5.8	36.0	22.1		8.5				
Green Ext Time (p_c), s	0.0	2.8		0.1	0.0	0.9		0.2				

Intersection Summary		
HCM 6th Ctrl Delay	72.6	
HCM 6th LOS	E	

Notes

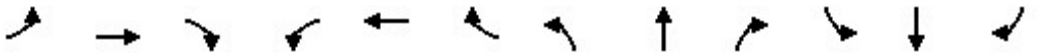
User approved pedestrian interval to be less than phase max green.

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	10	20	251	20	98	1381	195	70	1313	10
v/c Ratio	0.05	0.01	0.54	0.08	0.26	0.62	0.18	0.34	0.52	0.01
Control Delay	44.2	0.0	46.2	40.2	1.7	11.1	1.2	50.2	4.5	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.2	0.0	46.2	40.2	1.7	11.1	1.2	50.2	4.5	0.0
Queue Length 50th (ft)	3	0	76	11	0	262	11	23	100	0
Queue Length 95th (ft)	6	0	#157	10	0	315	12	m26	m140	m0
Internal Link Dist (ft)				679		647			2055	
Turn Bay Length (ft)	125	125	250		500		250	550		550
Base Capacity (vph)	277	1599	467	253	375	2221	1065	215	2511	1568
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.01	0.54	0.08	0.26	0.62	0.18	0.33	0.52	0.01

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	0	5	236	5	62	0	1160	185	55	1274	5
Future Volume (veh/h)	5	0	5	236	5	62	0	1160	185	55	1274	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	10	0	0	251	20	98	0	1381	195	70	1313	0
Peak Hour Factor	0.50	0.25	0.25	0.94	0.25	0.63	0.25	0.84	0.95	0.79	0.97	0.50
Percent Heavy Veh, %	1	1	1	3	3	3	3	3	3	3	3	3
Cap, veh/h	42	23		240	130	110	3	2339	1043	118	2601	
Arrive On Green	0.01	0.00	0.00	0.07	0.07	0.07	0.00	0.66	0.66	0.03	0.74	0.00
Sat Flow, veh/h	3483	1885	1598	3428	1856	1572	3428	3526	1572	3428	3526	1572
Grp Volume(v), veh/h	10	0	0	251	20	98	0	1381	195	70	1313	0
Grp Sat Flow(s),veh/h/ln	1742	1885	1598	1714	1856	1572	1714	1763	1572	1714	1763	1572
Q Serve(g_s), s	0.3	0.0	0.0	7.0	1.0	6.2	0.0	21.7	4.8	2.0	15.6	0.0
Cycle Q Clear(g_c), s	0.3	0.0	0.0	7.0	1.0	6.2	0.0	21.7	4.8	2.0	15.6	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	42	23		240	130	110	3	2339	1043	118	2601	
V/C Ratio(X)	0.24	0.00		1.05	0.15	0.89	0.00	0.59	0.19	0.59	0.50	
Avail Cap(c_a), veh/h	279	151		240	130	110	549	2339	1043	206	2601	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	48.9	0.0	0.0	46.5	43.7	46.1	0.0	9.3	6.5	47.6	5.5	0.0
Incr Delay (d2), s/veh	3.4	0.0	0.0	70.6	0.7	53.4	0.0	1.1	0.4	1.8	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.0	5.3	0.5	4.0	0.0	6.9	1.4	0.9	4.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.3	0.0	0.0	117.1	44.4	99.5	0.0	10.4	6.9	49.3	6.2	0.0
LnGrp LOS	D	A		F	D	F	A	B	A	D	A	
Approach Vol, veh/h		10			369			1576			1383	
Approach Delay, s/veh		52.3			108.5			10.0			8.4	
Approach LOS		D			F			A			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.4	72.3		7.2	0.0	79.8		13.0				
Change Period (Y+Rc), s	4.0	6.0		6.0	4.0	6.0		6.0				
Max Green Setting (Gmax), s	6.0	57.0		8.0	16.0	47.0		7.0				
Max Q Clear Time (g_c+I1), s	4.0	23.7		2.3	0.0	17.6		9.0				
Green Ext Time (p_c), s	0.0	13.2		0.0	0.0	10.8		0.0				

Intersection Summary	
HCM 6th Ctrl Delay	20.3
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	534	337	373	618	312	732
v/c Ratio	0.67	0.33	0.59	0.24	0.67	0.46
Control Delay	29.8	1.8	12.3	5.5	48.0	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.8	1.8	12.3	5.5	48.0	0.9
Queue Length 50th (ft)	249	1	60	53	98	0
Queue Length 95th (ft)	#521	15	195	101	137	0
Internal Link Dist (ft)	1510			466	307	
Turn Bay Length (ft)			400		200	200
Base Capacity (vph)	794	1202	629	2597	970	1599
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.67	0.28	0.59	0.24	0.32	0.46

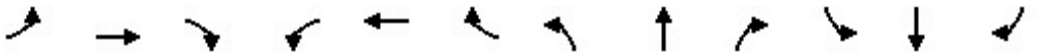
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	486	263	332	494	303	498
Future Volume (vph)	486	263	332	494	303	498
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	5.0	6.0	6.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	0.97	1.00
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1845	1553	1787	3574	3467	1599
Flt Permitted	1.00	1.00	0.20	1.00	0.95	1.00
Satd. Flow (perm)	1845	1553	385	3574	3467	1599
Peak-hour factor, PHF	0.91	0.78	0.89	0.80	0.97	0.68
Adj. Flow (vph)	534	337	373	618	312	732
RTOR Reduction (vph)	0	158	0	0	0	0
Lane Group Flow (vph)	534	179	373	618	312	732
Confl. Peds. (#/hr)		1			33	
Heavy Vehicles (%)	3%	3%	1%	1%	1%	1%
Turn Type	NA	pm+ov	pm+pt	NA	Prot	Free
Protected Phases	2	4	1	6	4	
Permitted Phases		2	6			Free
Actuated Green, G (s)	39.1	52.6	68.7	68.7	13.5	100.0
Effective Green, g (s)	39.1	52.6	68.7	68.7	13.5	100.0
Actuated g/C Ratio	0.39	0.53	0.69	0.69	0.14	1.00
Clearance Time (s)	6.0	6.0	5.0	6.0	6.0	
Vehicle Extension (s)	3.1	2.0	2.0	3.1	2.0	
Lane Grp Cap (vph)	721	816	609	2455	468	1599
v/s Ratio Prot	c0.29	0.03	c0.15	0.17	c0.09	
v/s Ratio Perm		0.09	0.27			c0.46
v/c Ratio	0.74	0.22	0.61	0.25	0.67	0.46
Uniform Delay, d1	26.1	12.7	11.5	5.9	41.1	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.7	0.0	1.3	0.2	2.8	0.9
Delay (s)	32.8	12.7	12.8	6.2	43.9	0.9
Level of Service	C	B	B	A	D	A
Approach Delay (s)	25.1			8.7	13.8	
Approach LOS	C			A	B	

Intersection Summary			
HCM 2000 Control Delay	15.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	67.0%	ICU Level of Service	C
Analysis Period (min)	15		

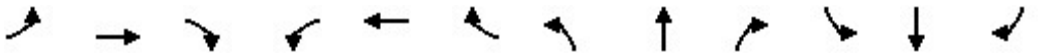
c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	484	420	195	499	505	145	83	735	192	147	664	322
v/c Ratio	0.90	0.36	0.30	0.86	0.44	0.24	0.37	0.82	0.12	0.68	0.69	0.48
Control Delay	42.4	36.9	5.8	37.8	38.4	6.2	32.8	57.6	0.2	45.6	49.1	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.4	36.9	5.8	37.8	38.4	6.2	32.8	57.6	0.2	45.6	49.1	6.7
Queue Length 50th (ft)	260	151	0	271	187	0	48	328	0	88	279	0
Queue Length 95th (ft)	#333	205	39	#373	235	33	64	410	0	119	355	76
Internal Link Dist (ft)		605			645			489			691	
Turn Bay Length (ft)	415		415	420		420	330		330	335		335
Base Capacity (vph)	546	1151	646	589	1142	602	304	891	1599	254	965	665
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.89	0.36	0.30	0.85	0.44	0.24	0.27	0.82	0.12	0.58	0.69	0.48

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	392	407	160	459	434	116	57	654	175	115	591	309
Future Volume (veh/h)	392	407	160	459	434	116	57	654	175	115	591	309
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1885	1885	1885	1870	1870	1870
Adj Flow Rate, veh/h	484	420	195	499	505	145	83	735	0	147	664	322
Peak Hour Factor	0.81	0.97	0.82	0.92	0.86	0.80	0.69	0.89	0.91	0.78	0.89	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	1	1	1	2	2	2
Cap, veh/h	550	1157	516	573	1157	510	203	901		229	994	443
Arrive On Green	0.18	0.33	0.33	0.18	0.33	0.33	0.05	0.25	0.00	0.08	0.28	0.28
Sat Flow, veh/h	1781	3554	1585	1781	3554	1565	1795	3582	1598	1781	3554	1585
Grp Volume(v), veh/h	484	420	195	499	505	145	83	735	0	147	664	322
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1565	1795	1791	1598	1781	1777	1585
Q Serve(g_s), s	24.7	12.2	12.8	25.0	15.1	9.3	4.6	26.1	0.0	8.1	22.4	24.8
Cycle Q Clear(g_c), s	24.7	12.2	12.8	25.0	15.1	9.3	4.6	26.1	0.0	8.1	22.4	24.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	550	1157	516	573	1157	510	203	901		229	994	443
V/C Ratio(X)	0.88	0.36	0.38	0.87	0.44	0.28	0.41	0.82		0.64	0.67	0.73
Avail Cap(c_a), veh/h	550	1157	516	573	1157	510	318	901		293	994	443
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.4	34.9	35.0	24.4	35.8	33.9	36.4	47.6	0.0	36.2	43.1	44.0
Incr Delay (d2), s/veh	14.7	0.9	2.1	13.2	1.2	1.4	0.5	8.1	0.0	1.2	3.6	10.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.4	5.4	5.2	12.7	6.7	3.7	2.0	12.5	0.0	3.5	10.2	10.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.2	35.7	37.2	37.6	37.0	35.3	36.8	55.7	0.0	37.3	46.7	54.0
LnGrp LOS	D	D	D	D	D	D	D	E		D	D	D
Approach Vol, veh/h		1099			1149			818			1133	
Approach Delay, s/veh		37.5			37.1			53.8			47.5	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	30.0	50.0	15.1	40.0	30.0	50.0	11.3	43.8
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0
Max Green Setting (Gmax), s	25.0	44.0	15.0	34.0	25.0	44.0	15.0	34.0
Max Q Clear Time (g_c+I1), s	27.0	14.8	10.1	28.1	26.7	17.1	6.6	26.8
Green Ext Time (p_c), s	0.0	3.5	0.1	2.3	0.0	4.0	0.0	3.1

Intersection Summary	
HCM 6th Ctrl Delay	43.3
HCM 6th LOS	D

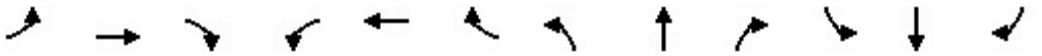
Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	284	220	355	378	20	324	106	117	395	77
v/c Ratio	0.72	0.63	0.91	0.80	0.05	0.52	0.12	0.15	0.50	0.11
Control Delay	38.5	16.1	56.3	19.8	20.0	32.7	5.1	17.6	27.8	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.5	16.1	56.3	19.8	20.0	32.7	5.1	17.6	27.8	0.3
Queue Length 50th (ft)	108	5	142	9	4	122	1	13	115	0
Queue Length 95th (ft)	214	0	#275	0	17	316	15	59	#488	0
Internal Link Dist (ft)		538		1696		1320			1541	
Turn Bay Length (ft)	125		210		170		170	400		200
Base Capacity (vph)	395	511	391	606	563	619	850	997	790	733
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.43	0.91	0.62	0.04	0.52	0.12	0.12	0.50	0.11

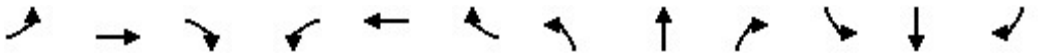
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	190	5	145	252	5	265	10	246	70	110	340	60
Future Volume (vph)	190	5	145	252	5	265	10	246	70	110	340	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0		5.0	6.0		5.0	6.0	5.0	5.0	6.0	6.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	0.97	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.93		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.86		1.00	0.86		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1763	1596		1752	1475		1770	1863	1558	3387	1845	1531
Flt Permitted	0.43	1.00		0.43	1.00		0.45	1.00	1.00	0.38	1.00	1.00
Satd. Flow (perm)	807	1596		802	1475		833	1863	1558	1341	1845	1531
Peak-hour factor, PHF	0.67	0.50	0.69	0.71	0.25	0.74	0.50	0.76	0.66	0.94	0.86	0.78
Adj. Flow (vph)	284	10	210	355	20	358	20	324	106	117	395	77
RTOR Reduction (vph)	0	190	0	0	324	0	0	0	50	0	0	46
Lane Group Flow (vph)	284	30	0	355	54	0	20	324	56	117	395	31
Confl. Peds. (#/hr)	10					10			19	19		
Confl. Bikes (#/hr)												4
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	2%	2%	2%	3%	3%	3%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	pm+ov	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	24.9	9.2		24.9	9.2		36.2	33.9	49.6	46.4	39.1	39.1
Effective Green, g (s)	24.9	9.2		24.9	9.2		36.2	33.9	49.6	46.4	39.1	39.1
Actuated g/C Ratio	0.26	0.09		0.26	0.09		0.37	0.35	0.51	0.48	0.40	0.40
Clearance Time (s)	5.0	6.0		5.0	6.0		5.0	6.0	5.0	5.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.5	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	359	150		357	139		331	647	791	794	739	613
v/s Ratio Prot	0.13	0.02		c0.16	0.04		0.00	0.17	0.01	c0.01	c0.21	
v/s Ratio Perm	0.07			c0.09			0.02		0.02	0.06		0.02
v/c Ratio	0.79	0.20		0.99	0.39		0.06	0.50	0.07	0.15	0.53	0.05
Uniform Delay, d1	32.4	40.8		34.8	41.5		19.7	25.2	12.2	14.8	22.3	17.9
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	11.3	0.7		45.9	1.8		0.1	2.8	0.0	0.1	2.8	0.2
Delay (s)	43.7	41.5		80.7	43.3		19.7	27.9	12.3	14.9	25.1	18.0
Level of Service	D	D		F	D		B	C	B	B	C	B
Approach Delay (s)		42.7			61.4			23.9			22.1	
Approach LOS		D			E			C			C	

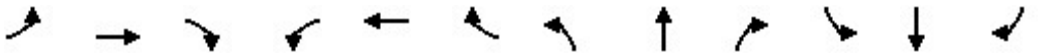
Intersection Summary			
HCM 2000 Control Delay	39.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	97.6	Sum of lost time (s)	26.5
Intersection Capacity Utilization	67.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	116	225	1042	40	182	88	1334	896	66	32	439	58
v/c Ratio	0.37	0.70	0.65	0.11	0.49	0.06	1.11	0.43	0.04	0.15	0.51	0.04
Control Delay	45.6	56.0	2.1	40.4	46.7	0.1	92.5	9.7	0.0	46.2	35.4	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.6	56.0	2.1	40.4	46.7	0.1	92.5	9.7	0.0	46.2	35.4	0.0
Queue Length 50th (ft)	36	74	0	12	58	0	~514	134	0	10	127	0
Queue Length 95th (ft)	61	111	0	18	88	0	219	92	0	22	159	0
Internal Link Dist (ft)		741			1037			943			877	
Turn Bay Length (ft)	280		250	180		180	700			600		600
Base Capacity (vph)	520	536	1599	379	391	1599	1203	2069	1599	215	857	1599
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.42	0.65	0.11	0.47	0.06	1.11	0.43	0.04	0.15	0.51	0.04

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	115	214	865	24	160	69	667	645	45	25	360	55
Future Volume (veh/h)	115	214	865	24	160	69	667	645	45	25	360	55
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	116	225	0	40	182	0	1334	896	0	32	439	0
Peak Hour Factor	0.99	0.95	0.83	0.60	0.88	0.78	0.50	0.72	0.68	0.78	0.82	0.95
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	289	298		253	260		1010	2187		82	1197	
Arrive On Green	0.08	0.08	0.00	0.07	0.07	0.00	0.29	0.61	0.00	0.02	0.33	0.00
Sat Flow, veh/h	3483	3582	1598	3483	3582	1598	3483	3582	1598	3483	3582	1598
Grp Volume(v), veh/h	116	225	0	40	182	0	1334	896	0	32	439	0
Grp Sat Flow(s),veh/h/ln	1742	1791	1598	1742	1791	1598	1742	1791	1598	1742	1791	1598
Q Serve(g_s), s	3.2	6.1	0.0	1.1	5.0	0.0	29.0	13.0	0.0	0.9	9.3	0.0
Cycle Q Clear(g_c), s	3.2	6.1	0.0	1.1	5.0	0.0	29.0	13.0	0.0	0.9	9.3	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	289	298		253	260		1010	2187		82	1197	
V/C Ratio(X)	0.40	0.76		0.16	0.70		1.32	0.41		0.39	0.37	
Avail Cap(c_a), veh/h	522	537		348	358		1010	2187		209	1197	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	43.5	44.9	0.0	43.5	45.3	0.0	35.5	10.1	0.0	48.1	25.3	0.0
Incr Delay (d2), s/veh	0.3	1.5	0.0	0.3	3.6	0.0	151.3	0.6	0.0	3.0	0.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	2.7	0.0	0.5	2.3	0.0	32.7	4.5	0.0	0.4	3.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.8	46.3	0.0	43.8	48.9	0.0	186.8	10.7	0.0	51.1	26.1	0.0
LnGrp LOS	D	D		D	D		F	B		D	C	
Approach Vol, veh/h		341			222			2230			471	
Approach Delay, s/veh		45.5			48.0			116.0			27.8	
Approach LOS		D			D			F			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.4	67.1		13.3	35.0	39.4		12.3				
Change Period (Y+Rc), s	5.0	6.0		5.0	6.0	6.0		5.0				
Max Green Setting (Gmax), s	6.0	48.0		15.0	29.0	24.0		10.0				
Max Q Clear Time (g_c+I1), s	2.9	15.0		8.1	31.0	11.3		7.0				
Green Ext Time (p_c), s	0.0	6.6		0.2	0.0	2.1		0.3				

Intersection Summary		
HCM 6th Ctrl Delay	91.3	
HCM 6th LOS	F	

Notes

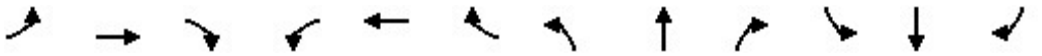
User approved pedestrian interval to be less than phase max green.

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	10	5	252	12	67	20	1399	194	43	1257	10
v/c Ratio	0.08	0.00	0.61	0.05	0.19	0.09	0.58	0.17	0.22	0.51	0.01
Control Delay	44.8	0.0	48.8	39.7	1.2	52.2	6.8	1.1	50.4	7.2	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.8	0.0	48.8	39.7	1.2	52.2	6.8	1.1	50.4	7.2	0.0
Queue Length 50th (ft)	6	0	78	7	0	6	52	1	13	96	0
Queue Length 95th (ft)	13	0	#124	14	0	4	345	12	20	225	m0
Internal Link Dist (ft)	697			679			647			2055	
Turn Bay Length (ft)		125	250		500	455		250	550		550
Base Capacity (vph)	152	1615	414	224	354	554	2398	1136	274	2444	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.00	0.61	0.05	0.19	0.04	0.58	0.17	0.16	0.51	0.01

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	5	5	224	6	56	5	1301	175	25	1219	5
Future Volume (veh/h)	0	5	5	224	6	56	5	1301	175	25	1219	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1885	1885	1885	1885	1885	1885	1870	1870	1870
Adj Flow Rate, veh/h	0	10	0	252	12	67	20	1399	194	43	1257	0
Peak Hour Factor	0.25	0.50	1.00	0.89	0.50	0.83	0.25	0.93	0.90	0.58	0.97	0.50
Percent Heavy Veh, %	0	0	0	1	1	1	1	1	1	2	2	2
Cap, veh/h	43	23		321	174	147	74	2339	1043	78	2325	
Arrive On Green	0.00	0.01	0.00	0.09	0.09	0.09	0.02	0.65	0.65	0.02	0.65	0.00
Sat Flow, veh/h	3510	1900	1610	3483	1885	1598	3483	3582	1598	3456	3554	1585
Grp Volume(v), veh/h	0	10	0	252	12	67	20	1399	194	43	1257	0
Grp Sat Flow(s),veh/h/ln	1755	1900	1610	1742	1885	1598	1742	1791	1598	1728	1777	1585
Q Serve(g_s), s	0.0	0.5	0.0	7.1	0.6	4.0	0.6	22.2	4.8	1.2	18.9	0.0
Cycle Q Clear(g_c), s	0.0	0.5	0.0	7.1	0.6	4.0	0.6	22.2	4.8	1.2	18.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	43	23		321	174	147	74	2339	1043	78	2325	
V/C Ratio(X)	0.00	0.43		0.78	0.07	0.45	0.27	0.60	0.19	0.55	0.54	
Avail Cap(c_a), veh/h	281	152		348	189	160	557	2339	1043	276	2325	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	49.1	0.0	44.4	41.5	43.0	48.2	9.9	6.9	48.4	9.2	0.0
Incr Delay (d2), s/veh	0.0	14.8	0.0	10.8	0.2	2.6	1.9	1.1	0.4	2.2	0.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.3	0.0	3.5	0.3	1.7	0.3	7.4	1.5	0.5	6.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	63.8	0.0	55.2	41.7	45.6	50.1	11.0	7.2	50.6	10.2	0.0
LnGrp LOS	A	E		E	D	D	D	B	A	D	B	
Approach Vol, veh/h		10			331			1613			1300	
Approach Delay, s/veh		63.8			52.8			11.0			11.5	
Approach LOS		E			D			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.3	71.3		7.2	6.1	71.4		15.2				
Change Period (Y+Rc), s	4.0	6.0		6.0	4.0	6.0		6.0				
Max Green Setting (Gmax), s	8.0	52.0		8.0	16.0	44.0		10.0				
Max Q Clear Time (g_c+I1), s	3.2	24.2		2.5	2.6	20.9		9.1				
Green Ext Time (p_c), s	0.0	12.4		0.0	0.0	9.2		0.1				

Intersection Summary			
HCM 6th Ctrl Delay		15.6	
HCM 6th LOS		B	

Notes

User approved pedestrian interval to be less than phase max green.

Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	411	511	160	507	434	176
v/c Ratio	0.53	0.42	0.32	0.24	0.71	0.11
Control Delay	23.5	2.0	11.1	9.8	39.6	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.5	2.0	11.1	9.8	39.6	0.1
Queue Length 50th (ft)	114	0	22	41	87	0
Queue Length 95th (ft)	#417	36	96	122	145	0
Internal Link Dist (ft)	1510			466	307	
Turn Bay Length (ft)			400		200	200
Base Capacity (vph)	777	1221	890	3031	610	1568
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.42	0.18	0.17	0.71	0.11

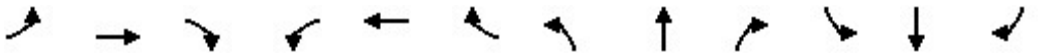
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	366	455	128	365	269	153
Future Volume (vph)	366	455	128	365	269	153
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	5.0	6.0	6.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	0.97	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1845	1568	1752	3505	3400	1568
Flt Permitted	1.00	1.00	0.34	1.00	0.95	1.00
Satd. Flow (perm)	1845	1568	624	3505	3400	1568
Peak-hour factor, PHF	0.89	0.89	0.80	0.72	0.62	0.87
Adj. Flow (vph)	411	511	160	507	434	176
RTOR Reduction (vph)	0	217	0	0	0	0
Lane Group Flow (vph)	411	294	160	507	434	176
Confl. Peds. (#/hr)					9	
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%
Turn Type	NA	pm+ov	pm+pt	NA	Prot	Free
Protected Phases	2	4	1	6	4	
Permitted Phases		2	6			Free
Actuated Green, G (s)	32.5	46.2	45.4	45.4	13.7	80.3
Effective Green, g (s)	32.5	46.2	45.4	45.4	13.7	80.3
Actuated g/C Ratio	0.40	0.58	0.57	0.57	0.17	1.00
Clearance Time (s)	6.0	6.0	5.0	6.0	6.0	
Vehicle Extension (s)	3.1	2.0	2.0	3.1	2.0	
Lane Grp Cap (vph)	746	902	463	1981	580	1568
v/s Ratio Prot	c0.22	0.06	c0.03	0.14	c0.13	
v/s Ratio Perm		0.13	0.16			c0.11
v/c Ratio	0.55	0.33	0.35	0.26	0.75	0.11
Uniform Delay, d1	18.3	8.9	9.6	8.9	31.7	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.9	0.1	0.2	0.1	4.6	0.1
Delay (s)	21.2	9.0	9.8	8.9	36.3	0.1
Level of Service	C	A	A	A	D	A
Approach Delay (s)	14.4			9.1	25.8	
Approach LOS	B			A	C	

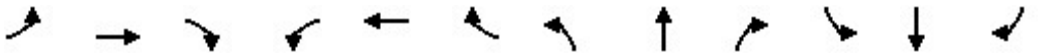
Intersection Summary			
HCM 2000 Control Delay	16.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	80.3	Sum of lost time (s)	22.0
Intersection Capacity Utilization	48.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	276	176	139	463	328	98	118	845	599	119	838	266
v/c Ratio	0.58	0.20	0.28	0.70	0.28	0.17	0.55	0.73	0.38	0.56	0.71	0.29
Control Delay	29.1	46.0	8.6	32.1	37.0	6.9	35.9	48.1	0.7	36.1	47.6	3.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.1	46.0	8.6	32.1	37.0	6.9	35.9	48.1	0.7	36.1	47.6	3.0
Queue Length 50th (ft)	155	71	0	300	123	0	68	381	0	69	376	0
Queue Length 95th (ft)	223	103	43	364	125	31	76	469	0	106	455	12
Internal Link Dist (ft)		605			645			562			691	
Turn Bay Length (ft)	415		415	420		420	330		330	335		335
Base Capacity (vph)	510	885	500	689	1164	586	230	1163	1583	230	1174	941
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.20	0.28	0.67	0.28	0.17	0.51	0.73	0.38	0.52	0.71	0.28

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	259	146	114	384	226	79	73	794	545	100	746	194
Future Volume (veh/h)	259	146	114	384	226	79	73	794	545	100	746	194
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1841	1841	1841	1870	1870	1870	1885	1885	1885
Adj Flow Rate, veh/h	276	176	139	463	328	98	118	845	0	119	838	266
Peak Hour Factor	0.94	0.83	0.82	0.83	0.69	0.81	0.62	0.94	0.91	0.84	0.89	0.73
Percent Heavy Veh, %	1	1	1	4	4	4	2	2	2	1	1	1
Cap, veh/h	525	922	411	639	1176	525	215	1171		231	1180	728
Arrive On Green	0.13	0.26	0.26	0.21	0.34	0.34	0.06	0.33	0.00	0.06	0.33	0.33
Sat Flow, veh/h	1795	3582	1598	1753	3497	1560	1781	3554	1585	1795	3582	1598
Grp Volume(v), veh/h	276	176	139	463	328	98	118	845	0	119	838	266
Grp Sat Flow(s),veh/h/ln	1795	1791	1598	1753	1749	1560	1781	1777	1585	1795	1791	1598
Q Serve(g_s), s	16.3	5.6	10.3	27.4	10.0	6.5	6.3	30.5	0.0	6.3	29.8	15.8
Cycle Q Clear(g_c), s	16.3	5.6	10.3	27.4	10.0	6.5	6.3	30.5	0.0	6.3	29.8	15.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	525	922	411	639	1176	525	215	1171		231	1180	728
V/C Ratio(X)	0.53	0.19	0.34	0.73	0.28	0.19	0.55	0.72		0.52	0.71	0.37
Avail Cap(c_a), veh/h	545	922	411	724	1176	525	248	1171		264	1180	728
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.7	42.3	44.0	27.5	35.4	34.2	33.3	43.0	0.0	33.3	42.8	25.9
Incr Delay (d2), s/veh	0.3	0.5	2.2	2.5	0.6	0.8	0.8	3.9	0.0	0.7	3.6	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.2	2.6	4.3	11.8	4.4	2.6	2.8	13.8	0.0	2.8	13.6	6.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.1	42.7	46.2	30.0	36.0	35.0	34.2	46.8	0.0	33.9	46.4	27.3
LnGrp LOS	C	D	D	C	D	D	C	D		C	D	C
Approach Vol, veh/h		591			889			963			1223	
Approach Delay, s/veh		39.0			32.8			45.3			41.0	
Approach LOS		D			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	34.9	43.5	13.3	54.0	23.4	55.0	13.3	54.0
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0
Max Green Setting (Gmax), s	37.0	32.0	11.0	48.0	20.0	49.0	11.0	48.0
Max Q Clear Time (g_c+I1), s	29.4	12.3	8.3	32.5	18.3	12.0	8.3	31.8
Green Ext Time (p_c), s	0.5	1.4	0.0	5.0	0.1	2.5	0.0	5.9

Intersection Summary	
HCM 6th Ctrl Delay	39.8
HCM 6th LOS	D

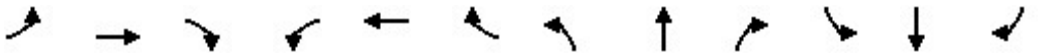
Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	39	88	303	401	108	184	768	460	181	139
v/c Ratio	0.16	0.35	0.63	0.83	0.21	0.35	0.68	0.44	0.30	0.22
Control Delay	27.3	38.5	34.4	50.2	21.1	35.8	6.3	21.0	32.8	3.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.3	38.5	34.4	50.2	21.1	35.8	6.3	21.0	32.8	3.3
Queue Length 50th (ft)	14	37	128	217	34	88	12	81	80	0
Queue Length 95th (ft)	55	60	#370	173	115	189	14	177	183	0
Internal Link Dist (ft)		538		1917		2380			851	
Turn Bay Length (ft)	125				170		170	400		200
Base Capacity (vph)	301	383	481	485	627	527	1136	1107	601	633
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.23	0.63	0.83	0.17	0.35	0.68	0.42	0.30	0.22

Intersection Summary

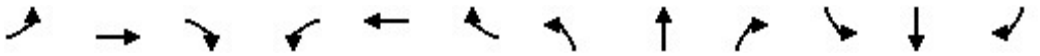
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	30	25	267	95	91	95	138	576	354	134	100
Future Volume (vph)	35	30	25	267	95	91	95	138	576	354	134	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0		5.0	6.0		5.0	6.0	5.0	5.0	6.0	6.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	0.97	1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.99	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.95		1.00	0.94		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1787	1760		1701	1687		1770	1863	1567	3422	1863	1583
Flt Permitted	0.48	1.00		0.50	1.00		0.64	1.00	1.00	0.51	1.00	1.00
Satd. Flow (perm)	904	1760		899	1687		1198	1863	1567	1834	1863	1583
Peak-hour factor, PHF	0.89	0.54	0.79	0.88	0.39	0.58	0.88	0.75	0.75	0.77	0.74	0.72
Adj. Flow (vph)	39	56	32	303	244	157	108	184	768	460	181	139
RTOR Reduction (vph)	0	16	0	0	15	0	0	0	396	0	0	96
Lane Group Flow (vph)	39	72	0	303	386	0	108	184	372	460	181	43
Confl. Peds. (#/hr)			2	2					8	8		
Heavy Vehicles (%)	1%	1%	1%	6%	6%	6%	2%	2%	2%	2%	2%	2%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	pm+ov	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	17.1	12.7		37.1	27.7		37.2	28.2	47.6	45.0	32.1	32.1
Effective Green, g (s)	17.1	12.7		37.1	27.7		37.2	28.2	47.6	45.0	32.1	32.1
Actuated g/C Ratio	0.16	0.12		0.35	0.26		0.35	0.27	0.45	0.43	0.31	0.31
Clearance Time (s)	5.0	6.0		5.0	6.0		5.0	6.0	5.0	5.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.5	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	184	213		466	445		474	501	711	982	570	484
v/s Ratio Prot	0.01	0.04		c0.12	c0.23		0.02	0.10	c0.10	c0.06	0.10	
v/s Ratio Perm	0.03			0.11			0.06		0.14	0.14		0.03
v/c Ratio	0.21	0.34		0.65	0.87		0.23	0.37	0.52	0.47	0.32	0.09
Uniform Delay, d1	37.5	42.2		26.8	36.8		23.2	31.1	20.5	20.0	27.9	25.9
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	0.9		3.2	16.1		0.2	2.1	0.7	0.4	1.5	0.4
Delay (s)	38.1	43.2		30.0	52.8		23.4	33.1	21.2	20.3	29.4	26.3
Level of Service	D	D		C	D		C	C	C	C	C	C
Approach Delay (s)		41.6			43.0			23.5			23.5	
Approach LOS		D			D			C			C	

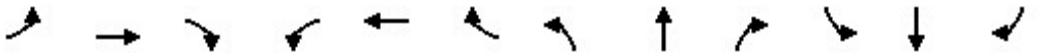
Intersection Summary			
HCM 2000 Control Delay	29.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	104.8	Sum of lost time (s)	26.5
Intersection Capacity Utilization	64.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	66	137	1474	64	235	53	1518	439	29	63	822	167
v/c Ratio	0.33	0.66	0.93	0.18	0.65	0.03	0.90	0.20	0.02	0.33	0.72	0.23
Control Delay	62.1	74.4	12.5	54.1	65.1	0.0	48.8	11.0	0.0	63.8	43.0	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.1	74.4	12.5	54.1	65.1	0.0	48.8	11.0	0.0	63.8	43.0	9.0
Queue Length 50th (ft)	27	60	0	25	101	0	416	81	0	26	332	30
Queue Length 95th (ft)	50	86	0	47	133	0	313	104	0	35	292	69
Internal Link Dist (ft)		741			1037			943			877	
Turn Bay Length (ft)	280		250	180		180	700			600		600
Base Capacity (vph)	316	326	1583	356	367	1568	1694	2249	1568	195	1216	786
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.42	0.93	0.18	0.64	0.03	0.90	0.20	0.02	0.32	0.68	0.21

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	58	114	737	56	193	43	941	369	20	40	600	150
Future Volume (veh/h)	58	114	737	56	193	43	941	369	20	40	600	150
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	66	137	0	64	235	0	1518	439	0	63	822	167
Peak Hour Factor	0.88	0.83	0.50	0.88	0.82	0.81	0.62	0.84	0.68	0.63	0.73	0.90
Percent Heavy Veh, %	2	2	2	3	3	3	3	3	3	3	3	3
Cap, veh/h	186	191		283	291		1495	2368		104	1390	705
Arrive On Green	0.05	0.05	0.00	0.08	0.08	0.00	0.30	0.67	0.00	0.03	0.39	0.39
Sat Flow, veh/h	3456	3554	1585	3428	3526	1572	4983	3526	1572	3428	3526	1572
Grp Volume(v), veh/h	66	137	0	64	235	0	1518	439	0	63	822	167
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1714	1763	1572	1661	1763	1572	1714	1763	1572
Q Serve(g_s), s	2.4	4.9	0.0	2.3	8.5	0.0	39.0	6.1	0.0	2.4	23.9	8.5
Cycle Q Clear(g_c), s	2.4	4.9	0.0	2.3	8.5	0.0	39.0	6.1	0.0	2.4	23.9	8.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	186	191		283	291		1495	2368		104	1390	705
V/C Ratio(X)	0.35	0.72		0.23	0.81		1.02	0.19		0.61	0.59	0.24
Avail Cap(c_a), veh/h	319	328		316	325		1495	2368		185	1390	705
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.87	0.87	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.3	60.5	0.0	55.7	58.6	0.0	45.5	8.0	0.0	62.3	31.1	22.2
Incr Delay (d2), s/veh	0.4	1.6	0.0	0.4	12.7	0.0	27.2	0.2	0.0	5.6	1.9	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	2.2	0.0	1.0	4.3	0.0	19.2	2.1	0.0	1.1	10.2	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.7	62.2	0.0	56.1	71.3	0.0	72.7	8.2	0.0	67.9	33.0	22.9
LnGrp LOS	E	E		E	E		F	A		E	C	C
Approach Vol, veh/h		203			299			1957			1052	
Approach Delay, s/veh		61.4			68.0			58.2			33.5	
Approach LOS		E			E			E			C	

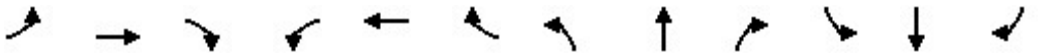
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.9	93.3		12.0	45.0	57.3		15.7				
Change Period (Y+Rc), s	5.0	6.0		5.0	6.0	6.0		5.0				
Max Green Setting (Gmax), s	7.0	78.0		12.0	39.0	45.0		12.0				
Max Q Clear Time (g_c+I1), s	4.4	8.1		6.9	41.0	25.9		10.5				
Green Ext Time (p_c), s	0.0	2.9		0.1	0.0	5.6		0.2				

Intersection Summary		
HCM 6th Ctrl Delay		51.8
HCM 6th LOS		D

Notes

User approved pedestrian interval to be less than phase max green.

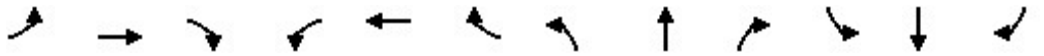
Unsignalized Delay for [NBR, EBR, WBR] is excluded from calculations of the approach delay and intersection delay.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	14	5	83	251	5	98	314	1488	195	70	1338	38
v/c Ratio	0.07	0.04	0.27	0.50	0.01	0.21	0.66	0.71	0.19	0.62	0.81	0.02
Control Delay	26.5	39.4	2.1	33.0	30.6	1.0	44.0	16.8	2.0	67.2	26.5	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.5	39.4	2.1	33.0	30.6	1.0	44.0	16.8	2.0	67.2	26.5	0.0
Queue Length 50th (ft)	6	3	0	60	2	0	87	323	0	20	356	0
Queue Length 95th (ft)	21	14	0	93	13	0	124	371	29	#41	#471	0
Internal Link Dist (ft)		527			679			676			2055	
Turn Bay Length (ft)	125			250		500	455		250	550		550
Base Capacity (vph)	201	190	352	504	380	491	480	2082	1010	113	1655	1568
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.03	0.24	0.50	0.01	0.20	0.65	0.71	0.19	0.62	0.81	0.02

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	5	76	236	5	62	270	1250	185	55	1298	35
Future Volume (veh/h)	13	5	76	236	5	62	270	1250	185	55	1298	35
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	14	5	0	251	5	98	314	1488	195	70	1338	0
Peak Hour Factor	0.92	0.92	0.92	0.94	0.92	0.63	0.86	0.84	0.95	0.79	0.97	0.92
Percent Heavy Veh, %	0	0	0	3	3	3	3	3	3	3	3	3
Cap, veh/h	179	101		604	265	224	387	1841	821	235	1764	
Arrive On Green	0.02	0.05	0.00	0.09	0.14	0.14	0.11	0.52	0.52	0.07	0.50	0.00
Sat Flow, veh/h	1810	1900	1610	3428	1856	1572	3428	3526	1572	3428	3526	1572
Grp Volume(v), veh/h	14	5	0	251	5	98	314	1488	195	70	1338	0
Grp Sat Flow(s),veh/h/ln	1810	1900	1610	1714	1856	1572	1714	1763	1572	1714	1763	1572
Q Serve(g_s), s	0.7	0.2	0.0	5.9	0.2	3.9	8.0	31.4	3.2	1.7	27.5	0.0
Cycle Q Clear(g_c), s	0.7	0.2	0.0	5.9	0.2	3.9	8.0	31.4	3.2	1.7	27.5	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	179	101		604	265	224	387	1841	821	235	1764	
V/C Ratio(X)	0.08	0.05		0.42	0.02	0.44	0.81	0.81	0.24	0.30	0.76	
Avail Cap(c_a), veh/h	250	190		640	265	224	419	1841	821	235	1764	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	39.3	40.5	0.0	33.9	33.2	20.6	39.0	17.8	3.3	39.8	18.1	0.0
Incr Delay (d2), s/veh	0.2	0.2	0.0	0.6	0.0	1.6	10.8	3.9	0.7	0.3	3.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.1	0.0	2.5	0.1	2.0	3.8	11.8	2.0	0.7	10.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.5	40.7	0.0	34.5	33.2	22.2	49.8	21.7	4.0	40.1	21.2	0.0
LnGrp LOS	D	D		C	C	C	D	C	A	D	C	
Approach Vol, veh/h		19			354			1997			1408	
Approach Delay, s/veh		39.8			31.1			24.4			22.2	
Approach LOS		D			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.2	53.0	14.1	10.8	14.2	51.0	6.0	18.8
Change Period (Y+Rc), s	6.0	* 6	6.0	6.0	4.0	6.0	4.5	6.0
Max Green Setting (Gmax), s	3.0	* 47	9.0	9.0	11.0	39.0	5.0	9.0
Max Q Clear Time (g_c+I1), s	3.7	33.4	7.9	2.2	10.0	29.5	2.7	5.9
Green Ext Time (p_c), s	0.0	8.7	0.1	0.0	0.1	5.7	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	24.3
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

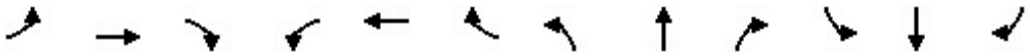
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	587	308	204	659	188	313
v/c Ratio	0.53	0.24	0.37	0.24	0.50	0.20
Control Delay	15.7	1.0	5.7	4.4	46.8	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.7	1.0	5.7	4.4	46.8	0.3
Queue Length 50th (ft)	184	0	24	47	59	0
Queue Length 95th (ft)	420	10	69	93	92	0
Internal Link Dist (ft)	1510			466	307	
Turn Bay Length (ft)			400		200	200
Base Capacity (vph)	1111	1477	603	2694	970	1599
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.21	0.34	0.24	0.19	0.20

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	534	240	182	527	182	213
Future Volume (vph)	534	240	182	527	182	213
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	5.0	6.0	6.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	0.97	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1845	1568	1787	3574	3467	1599
Flt Permitted	1.00	1.00	0.30	1.00	0.95	1.00
Satd. Flow (perm)	1845	1568	560	3574	3467	1599
Peak-hour factor, PHF	0.91	0.78	0.89	0.80	0.97	0.68
Adj. Flow (vph)	587	308	204	659	188	313
RTOR Reduction (vph)	0	101	0	0	0	0
Lane Group Flow (vph)	587	207	204	659	188	313
Confl. Peds. (#/hr)					12	
Heavy Vehicles (%)	3%	3%	1%	1%	1%	1%
Turn Type	NA	pm+ov	pm+pt	NA	Prot	Free
Protected Phases	2	4	1	6	4	
Permitted Phases		2	6			Free
Actuated Green, G (s)	56.3	67.1	71.4	71.4	10.8	100.0
Effective Green, g (s)	56.3	67.1	71.4	71.4	10.8	100.0
Actuated g/C Ratio	0.56	0.67	0.71	0.71	0.11	1.00
Clearance Time (s)	6.0	6.0	5.0	6.0	6.0	
Vehicle Extension (s)	3.1	2.0	2.0	3.1	2.0	
Lane Grp Cap (vph)	1038	1052	523	2551	374	1599
v/s Ratio Prot	c0.32	0.02	c0.04	0.18	c0.05	
v/s Ratio Perm		0.11	0.24			c0.20
v/c Ratio	0.57	0.20	0.39	0.26	0.50	0.20
Uniform Delay, d1	14.0	6.2	7.3	5.0	42.1	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.2	0.0	0.2	0.2	0.4	0.3
Delay (s)	16.2	6.3	7.5	5.3	42.5	0.3
Level of Service	B	A	A	A	D	A
Approach Delay (s)	12.8			5.8	16.1	
Approach LOS	B			A	B	

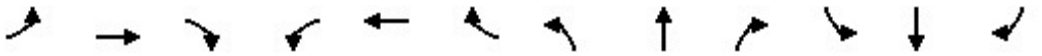
Intersection Summary			
HCM 2000 Control Delay	10.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	60.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	354	311	150	559	417	133	80	826	332	128	742	280
v/c Ratio	0.71	0.37	0.30	0.85	0.35	0.21	0.41	0.82	0.21	0.68	0.69	0.31
Control Delay	29.4	45.4	8.3	35.7	35.5	6.1	33.4	53.3	0.3	47.0	46.1	4.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.4	45.4	8.3	35.7	35.5	6.1	33.4	53.3	0.3	47.0	46.1	4.8
Queue Length 50th (ft)	178	122	0	329	145	0	44	359	0	72	303	21
Queue Length 95th (ft)	218	175	42	445	191	32	63	453	0	107	387	69
Internal Link Dist (ft)		605			645			562			691	
Turn Bay Length (ft)	415		415	420		420	330		330	335		335
Base Capacity (vph)	561	851	494	700	1186	619	202	1013	1599	195	1073	952
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.37	0.30	0.80	0.35	0.21	0.40	0.82	0.21	0.66	0.69	0.29

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	287	302	123	514	359	106	55	735	302	100	660	269
Future Volume (veh/h)	287	302	123	514	359	106	55	735	302	100	660	269
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1885	1885	1885	1870	1870	1870
Adj Flow Rate, veh/h	354	311	150	559	417	132	80	826	0	128	742	280
Peak Hour Factor	0.81	0.97	0.82	0.92	0.86	0.80	0.69	0.89	0.91	0.78	0.89	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	1	1	1	2	2	2
Cap, veh/h	549	884	394	652	1175	524	197	1004		212	1071	735
Arrive On Green	0.16	0.25	0.25	0.24	0.33	0.33	0.04	0.28	0.00	0.06	0.30	0.30
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1795	3582	1598	1781	3554	1585
Grp Volume(v), veh/h	354	311	150	559	417	132	80	826	0	128	742	280
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1795	1791	1598	1781	1777	1585
Q Serve(g_s), s	19.9	9.8	10.7	30.6	12.1	8.3	4.3	29.3	0.0	6.9	25.1	15.7
Cycle Q Clear(g_c), s	19.9	9.8	10.7	30.6	12.1	8.3	4.3	29.3	0.0	6.9	25.1	15.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	549	884	394	652	1175	524	197	1004		212	1071	735
V/C Ratio(X)	0.64	0.35	0.38	0.86	0.35	0.25	0.41	0.82		0.61	0.69	0.38
Avail Cap(c_a), veh/h	588	884	394	728	1175	524	210	1004		227	1071	735
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.5	42.1	42.4	25.3	34.5	33.2	34.6	45.8	0.0	35.3	42.0	23.8
Incr Delay (d2), s/veh	1.6	1.1	2.8	8.4	0.8	1.2	0.5	7.6	0.0	2.6	3.7	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.7	4.4	4.5	14.1	5.4	3.3	1.9	13.9	0.0	3.1	11.4	6.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.0	43.2	45.2	33.7	35.4	34.4	35.1	53.4	0.0	37.9	45.7	25.3
LnGrp LOS	C	D	D	C	D	C	D	D		D	D	C
Approach Vol, veh/h		815			1108			906			1150	
Approach Delay, s/veh		38.3			34.4			51.8			39.8	
Approach LOS		D			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	38.2	39.8	13.8	44.1	27.1	51.0	11.0	47.0
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0
Max Green Setting (Gmax), s	39.0	31.0	10.0	38.0	25.0	45.0	7.0	41.0
Max Q Clear Time (g_c+I1), s	32.6	12.7	8.9	31.3	21.9	14.1	6.3	27.1
Green Ext Time (p_c), s	0.6	2.3	0.0	2.9	0.2	3.3	0.0	4.9

Intersection Summary	
HCM 6th Ctrl Delay	40.7
HCM 6th LOS	D

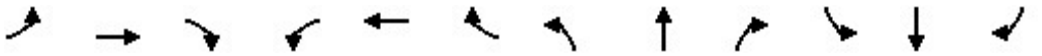
Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	209	314	238	120	10	205	173	50	337	45
v/c Ratio	0.41	0.77	0.61	0.25	0.03	0.39	0.21	0.06	0.51	0.07
Control Delay	24.3	47.0	30.3	13.2	24.2	34.6	4.2	22.3	31.4	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.3	47.0	30.3	13.2	24.2	34.6	4.2	22.3	31.4	0.2
Queue Length 50th (ft)	71	148	83	9	3	93	0	8	135	0
Queue Length 95th (ft)	151	165	#188	0	12	201	8	31	#410	0
Internal Link Dist (ft)		538		1917		2380			851	
Turn Bay Length (ft)	125				170		170	400		200
Base Capacity (vph)	611	409	387	477	475	531	805	941	667	656
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.34	0.77	0.61	0.25	0.02	0.39	0.21	0.05	0.51	0.07

Intersection Summary

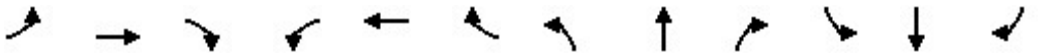
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	140	70	120	169	5	74	5	156	114	47	290	35
Future Volume (vph)	140	70	120	169	5	74	5	156	114	47	290	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0		5.0	6.0		5.0	6.0	5.0	5.0	6.0	6.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	0.97	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.98		1.00	1.00	0.99	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.92		1.00	0.88		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1767	1708		1752	1582		1770	1863	1565	3389	1845	1568
Flt Permitted	0.68	1.00		0.23	1.00		0.45	1.00	1.00	0.49	1.00	1.00
Satd. Flow (perm)	1264	1708		421	1582		842	1863	1565	1753	1845	1568
Peak-hour factor, PHF	0.67	0.50	0.69	0.71	0.25	0.74	0.50	0.76	0.66	0.94	0.86	0.78
Adj. Flow (vph)	209	140	174	238	20	100	10	205	173	50	337	45
RTOR Reduction (vph)	0	31	0	0	76	0	0	0	96	0	0	30
Lane Group Flow (vph)	209	283	0	238	44	0	10	205	77	50	337	15
Confl. Peds. (#/hr)	2					2			8	8		
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	2%	2%	2%	3%	3%	3%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	pm+ov	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	33.8	21.6		40.4	24.9		32.0	31.0	46.5	40.4	35.2	35.2
Effective Green, g (s)	33.8	21.6		40.4	24.9		32.0	31.0	46.5	40.4	35.2	35.2
Actuated g/C Ratio	0.32	0.21		0.38	0.24		0.30	0.30	0.44	0.38	0.34	0.34
Clearance Time (s)	5.0	6.0		5.0	6.0		5.0	6.0	5.0	5.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.5	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	465	351		358	375		265	550	693	755	618	525
v/s Ratio Prot	0.05	c0.17		c0.10	0.03		0.00	0.11	0.02	c0.00	c0.18	
v/s Ratio Perm	0.09			0.16			0.01		0.03	0.02		0.01
v/c Ratio	0.45	0.81		0.66	0.12		0.04	0.37	0.11	0.07	0.55	0.03
Uniform Delay, d1	27.4	39.7		24.4	31.4		25.7	29.3	17.1	20.5	28.4	23.4
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	12.7		4.6	0.1		0.0	1.9	0.1	0.0	3.4	0.1
Delay (s)	28.1	52.4		29.0	31.6		25.7	31.2	17.2	20.5	31.8	23.5
Level of Service	C	D		C	C		C	C	B	C	C	C
Approach Delay (s)		42.7			29.8			24.8			29.6	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	32.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	26.5
Intersection Capacity Utilization	54.7%	ICU Level of Service	A
Analysis Period (min)	15		

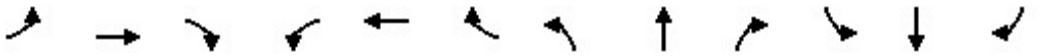
c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	147	225	1152	40	182	88	1392	938	66	32	451	68
v/c Ratio	0.47	0.70	0.72	0.11	0.49	0.06	0.89	0.45	0.04	0.15	0.46	0.09
Control Delay	47.8	56.0	2.8	40.4	46.7	0.1	40.2	9.2	0.0	46.2	32.8	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.8	56.0	2.8	40.4	46.7	0.1	40.2	9.2	0.0	46.2	32.8	0.2
Queue Length 50th (ft)	46	74	0	12	58	0	230	92	0	10	130	0
Queue Length 95th (ft)	75	111	0	18	88	0	151	104	m0	22	163	0
Internal Link Dist (ft)		741			1037			943			877	
Turn Bay Length (ft)	280		250	180		180	700			600		600
Base Capacity (vph)	520	536	1599	379	391	1599	1566	2069	1599	215	989	851
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.42	0.72	0.11	0.47	0.06	0.89	0.45	0.04	0.15	0.46	0.08

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	146	214	956	24	160	69	696	675	45	25	370	65
Future Volume (veh/h)	146	214	956	24	160	69	696	675	45	25	370	65
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	147	225	0	40	182	0	1392	938	0	32	451	68
Peak Hour Factor	0.99	0.95	0.83	0.60	0.88	0.78	0.50	0.72	0.68	0.78	0.82	0.95
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	290	298		253	260		1467	2188		82	1199	668
Arrive On Green	0.08	0.08	0.00	0.07	0.07	0.00	0.29	0.61	0.00	0.02	0.33	0.33
Sat Flow, veh/h	3483	3582	1598	3483	3582	1598	5063	3582	1598	3483	3582	1598
Grp Volume(v), veh/h	147	225	0	40	182	0	1392	938	0	32	451	68
Grp Sat Flow(s),veh/h/ln	1742	1791	1598	1742	1791	1598	1688	1791	1598	1742	1791	1598
Q Serve(g_s), s	4.0	6.1	0.0	1.1	5.0	0.0	26.9	13.8	0.0	0.9	9.6	2.6
Cycle Q Clear(g_c), s	4.0	6.1	0.0	1.1	5.0	0.0	26.9	13.8	0.0	0.9	9.6	2.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	290	298		253	260		1467	2188		82	1199	668
V/C Ratio(X)	0.51	0.76		0.16	0.70		0.95	0.43		0.39	0.38	0.10
Avail Cap(c_a), veh/h	522	537		348	358		1468	2188		209	1199	668
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.79	0.79	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.9	44.9	0.0	43.5	45.3	0.0	34.8	10.3	0.0	48.1	25.3	17.7
Incr Delay (d2), s/veh	0.4	1.2	0.0	0.3	3.6	0.0	13.1	0.6	0.0	3.0	0.9	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	2.7	0.0	0.5	2.3	0.0	12.1	4.8	0.0	0.4	4.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.3	46.0	0.0	43.8	48.9	0.0	47.9	10.9	0.0	51.1	26.2	18.0
LnGrp LOS	D	D		D	D		D	B		D	C	B
Approach Vol, veh/h		372			222			2330			551	
Approach Delay, s/veh		45.3			48.0			33.0			26.7	
Approach LOS		D			D			C			C	

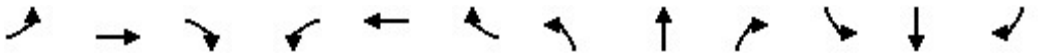
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.4	67.1		13.3	35.0	39.5		12.2				
Change Period (Y+Rc), s	5.0	6.0		5.0	6.0	6.0		5.0				
Max Green Setting (Gmax), s	6.0	48.0		15.0	29.0	24.0		10.0				
Max Q Clear Time (g_c+I1), s	2.9	15.8		8.1	28.9	11.6		7.0				
Green Ext Time (p_c), s	0.0	6.9		0.2	0.0	2.3		0.3				

Intersection Summary		
HCM 6th Ctrl Delay	34.3	
HCM 6th LOS	C	

Notes

User approved pedestrian interval to be less than phase max green.

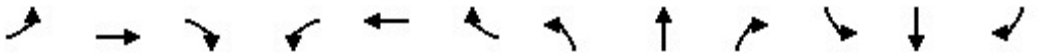
Unsignalized Delay for [NBR, EBR, WBR] is excluded from calculations of the approach delay and intersection delay.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	40	10	279	252	12	67	368	1430	194	43	1351	30
v/c Ratio	0.16	0.06	0.85	0.47	0.04	0.17	0.75	0.68	0.19	0.23	0.82	0.02
Control Delay	31.5	42.6	36.0	34.8	41.8	0.9	51.5	11.7	1.8	52.9	23.1	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.5	42.6	36.0	34.8	41.8	0.9	51.5	11.7	1.8	52.9	23.1	0.0
Queue Length 50th (ft)	20	6	41	68	7	0	108	239	0	14	419	0
Queue Length 95th (ft)	39	13	#176	102	14	0	41	355	13	m20	522	m0
Internal Link Dist (ft)		527			679			676			2055	
Turn Bay Length (ft)	125			250		500	455		250	550		550
Base Capacity (vph)	282	171	338	537	277	393	520	2094	1017	205	1642	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.06	0.83	0.47	0.04	0.17	0.71	0.68	0.19	0.21	0.82	0.02

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	5	279	224	6	56	92	1330	175	25	1310	15
Future Volume (veh/h)	30	5	279	224	6	56	92	1330	175	25	1310	15
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1885	1885	1885	1885	1885	1885	1870	1870	1870
Adj Flow Rate, veh/h	40	10	0	252	12	67	368	1430	194	43	1351	0
Peak Hour Factor	0.75	0.50	1.00	0.89	0.50	0.83	0.25	0.93	0.90	0.58	0.97	0.50
Percent Heavy Veh, %	0	0	0	1	1	1	1	1	1	2	2	2
Cap, veh/h	228	92		569	163	138	442	2225	992	78	1837	
Arrive On Green	0.05	0.05	0.00	0.09	0.09	0.09	0.13	0.62	0.62	0.02	0.52	0.00
Sat Flow, veh/h	1810	1900	1610	3483	1885	1598	3483	3582	1598	3456	3554	1585
Grp Volume(v), veh/h	40	10	0	252	12	67	368	1430	194	43	1351	0
Grp Sat Flow(s),veh/h/ln	1810	1900	1610	1742	1885	1598	1742	1791	1598	1728	1777	1585
Q Serve(g_s), s	2.0	0.5	0.0	6.7	0.6	4.0	10.3	25.2	5.2	1.2	29.6	0.0
Cycle Q Clear(g_c), s	2.0	0.5	0.0	6.7	0.6	4.0	10.3	25.2	5.2	1.2	29.6	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	228	92		569	163	138	442	2225	992	78	1837	
V/C Ratio(X)	0.18	0.11		0.44	0.07	0.49	0.83	0.64	0.20	0.55	0.74	
Avail Cap(c_a), veh/h	300	171		577	170	144	522	2225	992	207	1837	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	41.5	45.5	0.0	40.2	42.0	43.6	42.6	11.9	8.2	48.4	18.8	0.0
Incr Delay (d2), s/veh	0.4	0.6	0.0	0.7	0.2	3.2	9.7	1.4	0.4	2.2	2.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.3	0.0	2.9	0.3	1.7	4.9	8.7	1.8	0.5	11.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.0	46.1	0.0	40.9	42.2	46.7	52.3	13.4	8.6	50.6	21.5	0.0
LnGrp LOS	D	D		D	D	D	D	B	A	D	C	
Approach Vol, veh/h		50			331			1992			1394	
Approach Delay, s/veh		42.8			42.1			20.1			22.4	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.3	68.1	14.8	10.9	16.7	57.7	11.0	14.6
Change Period (Y+Rc), s	4.0	6.0	6.0	6.0	4.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	6.0	54.0	9.0	9.0	15.0	45.0	9.0	9.0
Max Q Clear Time (g_c+I1), s	3.2	27.2	8.7	2.5	12.3	31.6	4.0	6.0
Green Ext Time (p_c), s	0.0	12.5	0.0	0.0	0.4	7.4	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	23.2
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	407	494	581	507	427	546
v/c Ratio	0.81	0.48	0.84	0.22	0.69	0.35
Control Delay	55.1	3.0	39.3	9.1	53.0	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.1	3.0	39.3	9.1	53.0	0.6
Queue Length 50th (ft)	279	0	324	62	159	0
Queue Length 95th (ft)	#505	36	#539	110	#157	0
Internal Link Dist (ft)	1510			466	307	
Turn Bay Length (ft)			400		200	200
Base Capacity (vph)	501	1025	690	2331	621	1568
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.81	0.48	0.84	0.22	0.69	0.35

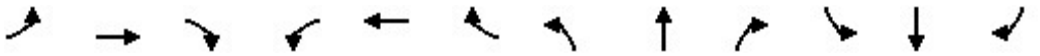
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	350	440	465	365	265	475
Future Volume (vph)	350	440	465	365	265	475
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	5.0	6.0	6.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	0.97	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1845	1568	1752	3505	3400	1568
Flt Permitted	1.00	1.00	0.12	1.00	0.95	1.00
Satd. Flow (perm)	1845	1568	230	3505	3400	1568
Peak-hour factor, PHF	0.86	0.89	0.80	0.72	0.62	0.87
Adj. Flow (vph)	407	494	581	507	427	546
RTOR Reduction (vph)	0	286	0	0	0	0
Lane Group Flow (vph)	407	208	581	507	427	546
Confl. Peds. (#/hr)					9	
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%
Turn Type	NA	pm+ov	pm+pt	NA	Prot	Free
Protected Phases	2	4	1	6	4	
Permitted Phases		2	6			Free
Actuated Green, G (s)	28.7	50.6	75.9	75.9	21.9	120.0
Effective Green, g (s)	28.7	50.6	75.9	75.9	21.9	120.0
Actuated g/C Ratio	0.24	0.42	0.63	0.63	0.18	1.00
Clearance Time (s)	6.0	6.0	5.0	6.0	6.0	
Vehicle Extension (s)	3.1	2.0	2.0	3.1	2.0	
Lane Grp Cap (vph)	441	661	680	2216	620	1568
v/s Ratio Prot	0.22	0.06	c0.30	0.14	c0.13	
v/s Ratio Perm		0.08	c0.24			c0.35
v/c Ratio	0.92	0.32	0.85	0.23	0.69	0.35
Uniform Delay, d1	44.6	23.1	28.5	9.5	45.9	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	27.3	0.1	9.9	0.2	2.5	0.6
Delay (s)	71.9	23.2	38.3	9.7	48.4	0.6
Level of Service	E	C	D	A	D	A
Approach Delay (s)	45.2			25.0	21.6	
Approach LOS	D			C	C	

Intersection Summary			
HCM 2000 Control Delay	30.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	66.7%	ICU Level of Service	C
Analysis Period (min)	15		

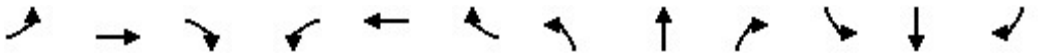
c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	410	373	159	271	529	105	242	713	429	119	624	432
v/c Ratio	0.87	0.32	0.26	0.53	0.53	0.20	0.78	0.71	0.27	0.48	0.71	0.62
Control Delay	40.8	32.3	6.0	22.3	38.2	5.4	42.8	43.3	0.4	29.1	46.5	9.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.8	32.3	6.0	22.3	38.2	5.4	42.8	43.3	0.4	29.1	46.5	9.7
Queue Length 50th (ft)	200	114	0	120	182	0	125	258	0	57	234	20
Queue Length 95th (ft)	#354	152	38	163	174	24	122	344	0	90	297	36
Internal Link Dist (ft)		605			645			489			691	
Turn Bay Length (ft)	415		415	420		420	330		330	335		335
Base Capacity (vph)	477	1152	623	579	996	529	321	1002	1583	333	874	693
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.86	0.32	0.26	0.47	0.53	0.20	0.75	0.71	0.27	0.36	0.71	0.62

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	385	310	130	225	365	85	150	670	390	100	555	320
Future Volume (veh/h)	385	310	130	225	365	85	150	670	390	100	555	320
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1841	1841	1841	1870	1870	1870	1885	1885	1885
Adj Flow Rate, veh/h	410	373	159	271	529	105	242	713	0	119	624	432
Peak Hour Factor	0.94	0.83	0.82	0.83	0.69	0.81	0.62	0.94	0.91	0.84	0.89	0.74
Percent Heavy Veh, %	1	1	1	4	4	4	2	2	2	1	1	1
Cap, veh/h	491	1179	526	497	1002	447	311	1046		265	875	390
Arrive On Green	0.17	0.33	0.33	0.13	0.29	0.29	0.12	0.29	0.00	0.07	0.24	0.24
Sat Flow, veh/h	1795	3582	1598	1753	3497	1560	1781	3554	1585	1795	3582	1598
Grp Volume(v), veh/h	410	373	159	271	529	105	242	713	0	119	624	432
Grp Sat Flow(s),veh/h/ln	1795	1791	1598	1753	1749	1560	1781	1777	1585	1795	1791	1598
Q Serve(g_s), s	18.6	9.3	8.8	12.8	15.1	6.1	11.6	21.0	0.0	5.8	18.9	29.0
Cycle Q Clear(g_c), s	18.6	9.3	8.8	12.8	15.1	6.1	11.6	21.0	0.0	5.8	18.9	29.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	491	1179	526	497	1002	447	311	1046		265	875	390
V/C Ratio(X)	0.84	0.32	0.30	0.55	0.53	0.23	0.78	0.68		0.45	0.71	1.11
Avail Cap(c_a), veh/h	491	1179	526	572	1002	447	331	1046		375	875	390
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.0	29.8	29.7	24.3	35.6	32.4	29.8	37.0	0.0	31.4	41.0	44.8
Incr Delay (d2), s/veh	11.3	0.7	1.5	0.3	2.0	1.2	9.3	3.6	0.0	0.4	4.9	77.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.1	4.1	3.5	5.2	6.6	2.4	5.6	9.4	0.0	2.5	8.7	19.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.3	30.5	31.1	24.7	37.6	33.6	39.1	40.5	0.0	31.9	46.0	122.4
LnGrp LOS	D	C	C	C	D	C	D	D		C	D	F
Approach Vol, veh/h		942			905			955			1175	
Approach Delay, s/veh		32.7			33.3			40.2			72.6	
Approach LOS		C			C			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.9	45.1	12.7	40.9	25.0	40.0	18.7	35.0
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0
Max Green Setting (Gmax), s	20.0	34.0	15.0	29.0	20.0	34.0	15.0	29.0
Max Q Clear Time (g_c+I1), s	14.8	11.3	7.8	23.0	20.6	17.1	13.6	31.0
Green Ext Time (p_c), s	0.2	2.9	0.1	2.3	0.0	3.5	0.1	0.0

Intersection Summary	
HCM 6th Ctrl Delay	46.4
HCM 6th LOS	D

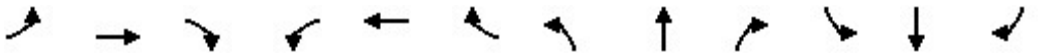
Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	73	282	250	413	112	393	547	526	236	431
v/c Ratio	0.32	0.84	0.76	0.74	0.24	0.77	0.60	0.75	0.38	0.53
Control Delay	30.4	66.2	43.8	27.8	21.4	49.2	8.7	28.6	34.1	6.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.4	66.2	43.8	27.8	21.4	49.2	8.7	28.6	34.1	6.3
Queue Length 50th (ft)	29	171	110	114	37	225	39	97	109	0
Queue Length 95th (ft)	90	205	#349	7	110	#430	88	#215	230	3
Internal Link Dist (ft)		538		1696		1320			1541	
Turn Bay Length (ft)	125		210		170		170	400		200
Base Capacity (vph)	336	334	330	561	572	509	910	706	616	812
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.84	0.76	0.74	0.20	0.77	0.60	0.75	0.38	0.53

Intersection Summary

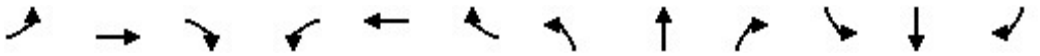
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	65	135	25	220	20	210	95	295	410	405	175	310
Future Volume (vph)	65	135	25	220	20	210	95	295	410	405	175	310
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0		5.0	6.0		5.0	6.0	5.0	5.0	6.0	6.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	0.97	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.98		1.00	1.00	0.99	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.87		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1786	1849		1703	1524		1770	1863	1565	3431	1863	1583
Flt Permitted	0.24	1.00		0.22	1.00		0.61	1.00	1.00	0.19	1.00	1.00
Satd. Flow (perm)	450	1849		386	1524		1140	1863	1565	685	1863	1583
Peak-hour factor, PHF	0.89	0.54	0.79	0.88	0.39	0.58	0.85	0.75	0.75	0.77	0.74	0.72
Adj. Flow (vph)	73	250	32	250	51	362	112	393	547	526	236	431
RTOR Reduction (vph)	0	3	0	0	163	0	0	0	258	0	0	294
Lane Group Flow (vph)	73	279	0	250	250	0	112	393	289	526	236	137
Confl. Peds. (#/hr)	2					2			8	8		
Heavy Vehicles (%)	1%	1%	1%	6%	6%	6%	2%	2%	2%	2%	2%	2%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	pm+ov	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	27.8	20.5		40.8	28.5		38.7	29.6	44.9	49.9	35.8	35.8
Effective Green, g (s)	27.8	20.5		40.8	28.5		38.7	29.6	44.9	49.9	35.8	35.8
Actuated g/C Ratio	0.25	0.18		0.36	0.25		0.34	0.26	0.40	0.44	0.32	0.32
Clearance Time (s)	5.0	6.0		5.0	6.0		5.0	6.0	5.0	5.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.5	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	197	336		318	385		442	489	623	676	591	502
v/s Ratio Prot	0.02	0.15		c0.11	0.16		0.02	0.21	0.06	c0.11	0.13	
v/s Ratio Perm	0.07			c0.18			0.07		0.12	c0.24		0.09
v/c Ratio	0.37	0.83		0.79	0.65		0.25	0.80	0.46	0.78	0.40	0.27
Uniform Delay, d1	33.9	44.4		28.4	37.6		25.9	38.8	25.0	23.7	30.0	28.7
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	15.5		12.1	3.8		0.2	13.1	0.5	5.6	2.0	1.3
Delay (s)	35.1	59.9		40.5	41.4		26.2	52.0	25.6	29.3	32.1	30.1
Level of Service	D	E		D	D		C	D	C	C	C	C
Approach Delay (s)		54.8			41.0			35.5			30.1	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	36.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	112.7	Sum of lost time (s)	26.5
Intersection Capacity Utilization	66.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



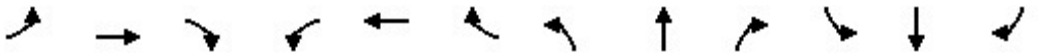
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	57	139	1460	63	238	56	1403	476	29	63	863	133
v/c Ratio	0.25	0.60	0.92	0.17	0.62	0.04	1.13	0.24	0.02	0.30	1.03	0.08
Control Delay	46.3	56.0	11.8	41.2	49.9	0.0	97.4	4.9	0.0	48.6	76.2	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.3	56.0	11.8	41.2	49.9	0.0	97.4	4.9	0.0	48.6	76.2	0.1
Queue Length 50th (ft)	18	46	0	19	76	0	~540	23	0	20	~310	0
Queue Length 95th (ft)	36	70	0	38	106	0	270	38	m0	28	#284	0
Internal Link Dist (ft)		741			1037			943			877	
Turn Bay Length (ft)	280		250	180		180	700			600		600
Base Capacity (vph)	343	353	1583	381	393	1568	1239	2009	1568	215	841	1568
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.39	0.92	0.17	0.61	0.04	1.13	0.24	0.02	0.29	1.03	0.08

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	115	730	55	195	45	870	400	20	40	630	120
Future Volume (veh/h)	50	115	730	55	195	45	870	400	20	40	630	120
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	57	139	0	62	238	0	1403	476	0	63	863	0
Peak Hour Factor	0.88	0.83	0.50	0.88	0.82	0.81	0.62	0.84	0.68	0.63	0.73	0.90
Percent Heavy Veh, %	2	2	2	3	3	3	3	3	3	3	3	3
Cap, veh/h	203	208		303	311		1166	2150		113	1033	
Arrive On Green	0.06	0.06	0.00	0.09	0.09	0.00	0.34	0.61	0.00	0.03	0.29	0.00
Sat Flow, veh/h	3456	3554	1585	3428	3526	1572	3428	3526	1572	3428	3526	1572
Grp Volume(v), veh/h	57	139	0	62	238	0	1403	476	0	63	863	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1714	1763	1572	1714	1763	1572	1714	1763	1572
Q Serve(g_s), s	1.6	3.8	0.0	1.7	6.6	0.0	34.0	6.1	0.0	1.8	22.9	0.0
Cycle Q Clear(g_c), s	1.6	3.8	0.0	1.7	6.6	0.0	34.0	6.1	0.0	1.8	22.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	203	208		303	311		1166	2150		113	1033	
V/C Ratio(X)	0.28	0.67		0.20	0.76		1.20	0.22		0.56	0.84	
Avail Cap(c_a), veh/h	346	355		343	353		1166	2150		206	1033	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	45.0	46.1	0.0	42.3	44.6	0.0	33.0	8.8	0.0	47.6	33.1	0.0
Incr Delay (d2), s/veh	0.3	1.4	0.0	0.3	8.5	0.0	100.0	0.2	0.0	4.2	8.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	1.7	0.0	0.7	3.2	0.0	29.2	2.1	0.0	0.8	10.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.3	47.5	0.0	42.7	53.1	0.0	133.0	9.0	0.0	51.8	41.1	0.0
LnGrp LOS	D	D		D	D		F	A		D	D	
Approach Vol, veh/h		196			300			1879			926	
Approach Delay, s/veh		46.9			50.9			101.6			41.8	
Approach LOS		D			D			F			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.3	67.0		10.9	40.0	35.3		13.8				
Change Period (Y+Rc), s	5.0	6.0		5.0	6.0	6.0		5.0				
Max Green Setting (Gmax), s	6.0	53.0		10.0	34.0	24.0		10.0				
Max Q Clear Time (g_c+I1), s	3.8	8.1		5.8	36.0	24.9		8.6				
Green Ext Time (p_c), s	0.0	3.1		0.1	0.0	0.0		0.2				

Intersection Summary			
HCM 6th Ctrl Delay		77.0	
HCM 6th LOS		E	

Notes

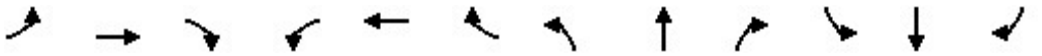
User approved pedestrian interval to be less than phase max green.

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	10	20	255	20	95	1452	200	76	1397	10
v/c Ratio	0.05	0.01	0.54	0.08	0.25	0.66	0.19	0.37	0.56	0.01
Control Delay	44.2	0.0	46.0	40.0	1.6	11.8	1.2	49.8	4.5	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.2	0.0	46.0	40.0	1.6	11.8	1.2	49.8	4.5	0.0
Queue Length 50th (ft)	3	0	77	11	0	287	12	25	105	0
Queue Length 95th (ft)	6	0	#161	10	0	336	11	m26	m137	m0
Internal Link Dist (ft)				679		647			2055	
Turn Bay Length (ft)	125	125	250		500		250	550		550
Base Capacity (vph)	277	1599	476	258	379	2208	1062	217	2502	1568
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.01	0.54	0.08	0.25	0.66	0.19	0.35	0.56	0.01

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	0	5	240	5	60	0	1220	190	60	1355	5
Future Volume (veh/h)	5	0	5	240	5	60	0	1220	190	60	1355	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	10	0	0	255	20	95	0	1452	200	76	1397	0
Peak Hour Factor	0.50	0.25	0.25	0.94	0.25	0.63	0.25	0.84	0.95	0.79	0.97	0.50
Percent Heavy Veh, %	1	1	1	3	3	3	3	3	3	3	3	3
Cap, veh/h	42	23		240	130	110	3	2330	1039	126	2601	
Arrive On Green	0.01	0.00	0.00	0.07	0.07	0.07	0.00	0.66	0.66	0.04	0.74	0.00
Sat Flow, veh/h	3483	1885	1598	3428	1856	1572	3428	3526	1572	3428	3526	1572
Grp Volume(v), veh/h	10	0	0	255	20	95	0	1452	200	76	1397	0
Grp Sat Flow(s),veh/h/ln	1742	1885	1598	1714	1856	1572	1714	1763	1572	1714	1763	1572
Q Serve(g_s), s	0.3	0.0	0.0	7.0	1.0	6.0	0.0	23.7	4.9	2.2	17.2	0.0
Cycle Q Clear(g_c), s	0.3	0.0	0.0	7.0	1.0	6.0	0.0	23.7	4.9	2.2	17.2	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	42	23		240	130	110	3	2330	1039	126	2601	
V/C Ratio(X)	0.24	0.00		1.06	0.15	0.86	0.00	0.62	0.19	0.60	0.54	
Avail Cap(c_a), veh/h	279	151		240	130	110	549	2330	1039	206	2601	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	48.9	0.0	0.0	46.5	43.7	46.0	0.0	9.8	6.6	47.4	5.7	0.0
Incr Delay (d2), s/veh	3.4	0.0	0.0	75.6	0.7	46.7	0.0	1.3	0.4	1.7	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.0	5.5	0.5	3.7	0.0	7.7	1.5	0.9	4.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.3	0.0	0.0	122.1	44.4	92.8	0.0	11.0	7.0	49.1	6.5	0.0
LnGrp LOS	D	A		F	D	F	A	B	A	D	A	
Approach Vol, veh/h		10			370			1652			1473	
Approach Delay, s/veh		52.3			110.4			10.5			8.7	
Approach LOS		D			F			B			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.7	72.1		7.2	0.0	79.8		13.0				
Change Period (Y+Rc), s	4.0	6.0		6.0	4.0	6.0		6.0				
Max Green Setting (Gmax), s	6.0	57.0		8.0	16.0	47.0		7.0				
Max Q Clear Time (g_c+I1), s	4.2	25.7		2.3	0.0	19.2		9.0				
Green Ext Time (p_c), s	0.0	13.8		0.0	0.0	11.5		0.0				

Intersection Summary	
HCM 6th Ctrl Delay	20.4
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	544	353	376	631	325	757
v/c Ratio	0.71	0.35	0.61	0.24	0.68	0.47
Control Delay	32.0	2.3	15.0	5.6	48.1	1.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.0	2.3	15.0	5.6	48.1	1.0
Queue Length 50th (ft)	264	7	80	55	103	0
Queue Length 95th (ft)	#536	21	218	104	142	0
Internal Link Dist (ft)	1510			466	307	
Turn Bay Length (ft)			400		200	200
Base Capacity (vph)	765	1179	621	2586	970	1599
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.30	0.61	0.24	0.34	0.47

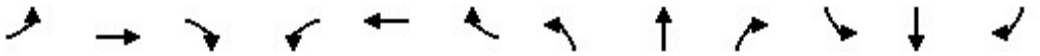
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	495	275	335	505	315	515
Future Volume (vph)	495	275	335	505	315	515
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	5.0	6.0	6.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	0.97	1.00
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1845	1553	1787	3574	3467	1599
Flt Permitted	1.00	1.00	0.18	1.00	0.95	1.00
Satd. Flow (perm)	1845	1553	335	3574	3467	1599
Peak-hour factor, PHF	0.91	0.78	0.89	0.80	0.97	0.68
Adj. Flow (vph)	544	353	376	631	325	757
RTOR Reduction (vph)	0	157	0	0	0	0
Lane Group Flow (vph)	544	196	376	631	325	757
Confl. Peds. (#/hr)		1			33	
Heavy Vehicles (%)	3%	3%	1%	1%	1%	1%
Turn Type	NA	pm+ov	pm+pt	NA	Prot	Free
Protected Phases	2	4	1	6	4	
Permitted Phases		2	6			Free
Actuated Green, G (s)	37.5	51.3	68.4	68.4	13.8	100.0
Effective Green, g (s)	37.5	51.3	68.4	68.4	13.8	100.0
Actuated g/C Ratio	0.38	0.51	0.68	0.68	0.14	1.00
Clearance Time (s)	6.0	6.0	5.0	6.0	6.0	
Vehicle Extension (s)	3.1	2.0	2.0	3.1	2.0	
Lane Grp Cap (vph)	691	796	605	2444	478	1599
v/s Ratio Prot	c0.29	0.03	c0.16	0.18	c0.09	
v/s Ratio Perm		0.09	0.26			c0.47
v/c Ratio	0.79	0.25	0.62	0.26	0.68	0.47
Uniform Delay, d1	27.7	13.6	14.1	6.1	41.0	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.8	0.1	1.4	0.3	3.0	1.0
Delay (s)	36.5	13.6	15.5	6.3	44.0	1.0
Level of Service	D	B	B	A	D	A
Approach Delay (s)	27.5			9.8	13.9	
Approach LOS	C			A	B	

Intersection Summary			
HCM 2000 Control Delay	16.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	67.8%	ICU Level of Service	C
Analysis Period (min)	15		

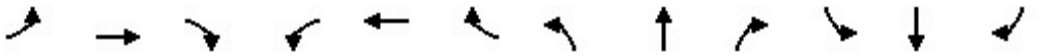
c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	494	428	201	511	523	150	80	758	198	154	680	328
v/c Ratio	0.93	0.37	0.31	0.89	0.46	0.25	0.37	0.86	0.12	0.73	0.70	0.49
Control Delay	47.1	37.3	5.8	41.1	39.1	6.2	32.9	60.1	0.2	50.7	49.4	6.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.1	37.3	5.8	41.1	39.1	6.2	32.9	60.1	0.2	50.7	49.4	6.6
Queue Length 50th (ft)	270	155	0	283	196	0	46	343	0	93	287	0
Queue Length 95th (ft)	#347	210	40	#405	244	34	63	#433	0	128	364	76
Internal Link Dist (ft)		605			645			489			691	
Turn Bay Length (ft)	415		415	420		420	330		330	335		335
Base Capacity (vph)	534	1146	648	582	1135	603	300	886	1599	246	972	673
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.93	0.37	0.31	0.88	0.46	0.25	0.27	0.86	0.12	0.63	0.70	0.49

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	400	415	165	470	450	120	55	675	180	120	605	315
Future Volume (veh/h)	400	415	165	470	450	120	55	675	180	120	605	315
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1885	1885	1885	1870	1870	1870
Adj Flow Rate, veh/h	494	428	201	511	523	150	80	758	0	154	680	328
Peak Hour Factor	0.81	0.97	0.82	0.92	0.86	0.80	0.69	0.89	0.91	0.78	0.89	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	1	1	1	2	2	2
Cap, veh/h	541	1154	515	567	1154	508	199	899		227	1006	449
Arrive On Green	0.18	0.32	0.32	0.18	0.32	0.32	0.05	0.25	0.00	0.08	0.28	0.28
Sat Flow, veh/h	1781	3554	1585	1781	3554	1565	1795	3582	1598	1781	3554	1585
Grp Volume(v), veh/h	494	428	201	511	523	150	80	758	0	154	680	328
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1565	1795	1791	1598	1781	1777	1585
Q Serve(g_s), s	25.0	12.5	13.3	25.0	15.8	9.7	4.4	27.3	0.0	8.5	23.0	25.4
Cycle Q Clear(g_c), s	25.0	12.5	13.3	25.0	15.8	9.7	4.4	27.3	0.0	8.5	23.0	25.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	541	1154	515	567	1154	508	199	899		227	1006	449
V/C Ratio(X)	0.91	0.37	0.39	0.90	0.45	0.30	0.40	0.84		0.68	0.68	0.73
Avail Cap(c_a), veh/h	541	1154	515	567	1154	508	316	899		285	1006	449
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.6	35.1	35.4	25.7	36.2	34.2	36.6	48.2	0.0	36.3	43.1	43.9
Incr Delay (d2), s/veh	19.6	0.9	2.2	17.2	1.3	1.5	0.5	9.5	0.0	2.5	3.6	10.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.4	5.6	5.4	13.7	7.0	3.9	2.0	13.1	0.0	3.8	10.4	11.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.2	36.1	37.6	42.9	37.5	35.7	37.1	57.8	0.0	38.8	46.7	54.0
LnGrp LOS	D	D	D	D	D	D	D	E		D	D	D
Approach Vol, veh/h		1123			1184			838			1162	
Approach Delay, s/veh		40.4			39.6			55.8			47.7	
Approach LOS		D			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	30.0	50.0	15.5	40.0	30.0	50.0	11.2	44.4
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0
Max Green Setting (Gmax), s	25.0	44.0	15.0	34.0	25.0	44.0	15.0	34.0
Max Q Clear Time (g_c+I1), s	27.0	15.3	10.5	29.3	27.0	17.8	6.4	27.4
Green Ext Time (p_c), s	0.0	3.6	0.1	2.0	0.0	4.1	0.0	3.0

Intersection Summary	
HCM 6th Ctrl Delay	45.1
HCM 6th LOS	D

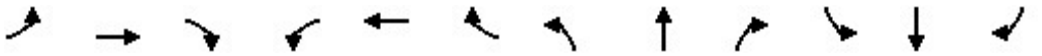
Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	284	220	352	378	20	329	106	117	407	77
v/c Ratio	0.72	0.63	0.90	0.80	0.05	0.53	0.12	0.15	0.52	0.11
Control Delay	38.5	16.1	55.1	19.8	20.0	32.8	5.2	17.6	28.0	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.5	16.1	55.1	19.8	20.0	32.8	5.2	17.6	28.0	0.3
Queue Length 50th (ft)	108	5	140	9	4	124	1	13	119	0
Queue Length 95th (ft)	214	0	#271	0	17	320	15	59	#512	0
Internal Link Dist (ft)		538		1696		1320			1541	
Turn Bay Length (ft)	125		210		170		170	400		200
Base Capacity (vph)	395	511	391	606	554	619	849	992	790	733
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.43	0.90	0.62	0.04	0.53	0.12	0.12	0.52	0.11

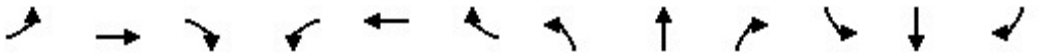
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	190	5	145	250	5	265	10	250	70	110	350	60
Future Volume (vph)	190	5	145	250	5	265	10	250	70	110	350	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0		5.0	6.0		5.0	6.0	5.0	5.0	6.0	6.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	0.97	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.93		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.86		1.00	0.86		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1763	1596		1752	1475		1770	1863	1558	3387	1845	1531
Flt Permitted	0.43	1.00		0.43	1.00		0.43	1.00	1.00	0.37	1.00	1.00
Satd. Flow (perm)	807	1596		802	1475		805	1863	1558	1321	1845	1531
Peak-hour factor, PHF	0.67	0.50	0.69	0.71	0.25	0.74	0.50	0.76	0.66	0.94	0.86	0.78
Adj. Flow (vph)	284	10	210	352	20	358	20	329	106	117	407	77
RTOR Reduction (vph)	0	190	0	0	324	0	0	0	49	0	0	46
Lane Group Flow (vph)	284	30	0	352	54	0	20	329	57	117	407	31
Confl. Peds. (#/hr)	10					10			19	19		
Confl. Bikes (#/hr)												4
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	2%	2%	2%	3%	3%	3%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	pm+ov	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	24.9	9.2		24.9	9.2		36.2	33.9	49.6	46.4	39.1	39.1
Effective Green, g (s)	24.9	9.2		24.9	9.2		36.2	33.9	49.6	46.4	39.1	39.1
Actuated g/C Ratio	0.26	0.09		0.26	0.09		0.37	0.35	0.51	0.48	0.40	0.40
Clearance Time (s)	5.0	6.0		5.0	6.0		5.0	6.0	5.0	5.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.5	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	359	150		357	139		321	647	791	786	739	613
v/s Ratio Prot	0.13	0.02		c0.16	0.04		0.00	0.18	0.01	c0.01	c0.22	
v/s Ratio Perm	0.07			c0.09			0.02		0.02	0.06		0.02
v/c Ratio	0.79	0.20		0.99	0.39		0.06	0.51	0.07	0.15	0.55	0.05
Uniform Delay, d1	32.4	40.8		34.7	41.5		19.7	25.2	12.3	14.9	22.5	17.9
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	11.3	0.7		43.5	1.8		0.1	2.8	0.0	0.1	2.9	0.2
Delay (s)	43.7	41.5		78.2	43.3		19.8	28.1	12.3	15.0	25.4	18.0
Level of Service	D	D		E	D		B	C	B	B	C	B
Approach Delay (s)		42.7			60.1			24.0			22.5	
Approach LOS		D			E			C			C	

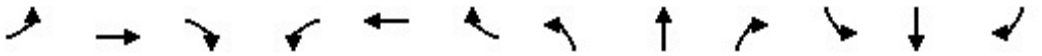
Intersection Summary			
HCM 2000 Control Delay	39.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	97.6	Sum of lost time (s)	26.5
Intersection Capacity Utilization	68.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	116	232	1072	42	182	96	1370	993	66	32	488	63
v/c Ratio	0.37	0.71	0.67	0.12	0.50	0.06	1.14	0.48	0.04	0.15	0.57	0.04
Control Delay	45.2	56.0	2.3	40.6	46.8	0.1	105.9	10.0	0.0	46.2	36.5	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.2	56.0	2.3	40.6	46.8	0.1	105.9	10.0	0.0	46.2	36.5	0.1
Queue Length 50th (ft)	36	76	0	12	58	0	~543	156	0	10	144	0
Queue Length 95th (ft)	61	113	0	19	89	0	229	100	0	22	176	0
Internal Link Dist (ft)		741			1037			943			877	
Turn Bay Length (ft)	280		250	180		180	700			600		600
Base Capacity (vph)	520	536	1599	377	389	1599	1198	2063	1599	215	857	1599
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.43	0.67	0.11	0.47	0.06	1.14	0.48	0.04	0.15	0.57	0.04

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	115	220	890	25	160	75	685	715	45	25	400	60
Future Volume (veh/h)	115	220	890	25	160	75	685	715	45	25	400	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	116	232	0	42	182	0	1370	993	0	32	488	0
Peak Hour Factor	0.99	0.95	0.83	0.60	0.88	0.78	0.50	0.72	0.68	0.78	0.82	0.95
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	296	305		253	260		1010	2180		82	1190	
Arrive On Green	0.09	0.09	0.00	0.07	0.07	0.00	0.29	0.61	0.00	0.02	0.33	0.00
Sat Flow, veh/h	3483	3582	1598	3483	3582	1598	3483	3582	1598	3483	3582	1598
Grp Volume(v), veh/h	116	232	0	42	182	0	1370	993	0	32	488	0
Grp Sat Flow(s),veh/h/ln	1742	1791	1598	1742	1791	1598	1742	1791	1598	1742	1791	1598
Q Serve(g_s), s	3.2	6.3	0.0	1.1	5.0	0.0	29.0	15.0	0.0	0.9	10.5	0.0
Cycle Q Clear(g_c), s	3.2	6.3	0.0	1.1	5.0	0.0	29.0	15.0	0.0	0.9	10.5	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	296	305		253	260		1010	2180		82	1190	
V/C Ratio(X)	0.39	0.76		0.17	0.70		1.36	0.46		0.39	0.41	
Avail Cap(c_a), veh/h	522	537		348	358		1010	2180		209	1190	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	43.3	44.8	0.0	43.5	45.3	0.0	35.5	10.6	0.0	48.1	25.8	0.0
Incr Delay (d2), s/veh	0.3	1.5	0.0	0.3	3.6	0.0	166.9	0.7	0.0	3.0	1.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	2.8	0.0	0.5	2.3	0.0	34.9	5.2	0.0	0.4	4.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.6	46.2	0.0	43.8	48.9	0.0	202.4	11.3	0.0	51.1	26.9	0.0
LnGrp LOS	D	D		D	D		F	B		D	C	
Approach Vol, veh/h		348			224			2363			520	
Approach Delay, s/veh		45.4			47.9			122.1			28.4	
Approach LOS		D			D			F			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.4	66.9		13.5	35.0	39.2		12.3				
Change Period (Y+Rc), s	5.0	6.0		5.0	6.0	6.0		5.0				
Max Green Setting (Gmax), s	6.0	48.0		15.0	29.0	24.0		10.0				
Max Q Clear Time (g_c+I1), s	2.9	17.0		8.3	31.0	12.5		7.0				
Green Ext Time (p_c), s	0.0	7.4		0.2	0.0	2.2		0.3				

Intersection Summary		
HCM 6th Ctrl Delay	95.4	
HCM 6th LOS	F	

Notes

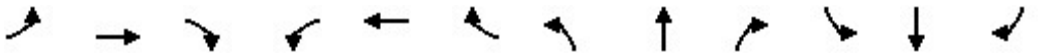
User approved pedestrian interval to be less than phase max green.

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	10	5	258	10	66	20	1489	200	43	1325	10
v/c Ratio	0.08	0.00	0.62	0.04	0.19	0.09	0.62	0.18	0.22	0.54	0.01
Control Delay	44.8	0.0	48.8	39.4	1.1	51.0	8.0	1.5	50.3	7.3	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.8	0.0	48.8	39.4	1.1	51.0	8.0	1.5	50.3	7.3	0.0
Queue Length 50th (ft)	6	0	80	6	0	6	55	0	14	101	0
Queue Length 95th (ft)	13	0	#132	12	0	5	382	16	20	234	m0
Internal Link Dist (ft)	697			679			647			2055	
Turn Bay Length (ft)		125	250		500	455		250	550		550
Base Capacity (vph)	152	1615	419	227	356	554	2393	1136	274	2438	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.00	0.62	0.04	0.19	0.04	0.62	0.18	0.16	0.54	0.01

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	5	5	230	5	55	5	1385	180	25	1285	5
Future Volume (veh/h)	0	5	5	230	5	55	5	1385	180	25	1285	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1885	1885	1885	1885	1885	1885	1870	1870	1870
Adj Flow Rate, veh/h	0	10	0	258	10	66	20	1489	200	43	1325	0
Peak Hour Factor	0.25	0.50	1.00	0.89	0.50	0.83	0.25	0.93	0.90	0.58	0.97	0.50
Percent Heavy Veh, %	0	0	0	1	1	1	1	1	1	2	2	2
Cap, veh/h	43	23		326	177	150	74	2334	1041	78	2320	
Arrive On Green	0.00	0.01	0.00	0.09	0.09	0.09	0.02	0.65	0.65	0.02	0.65	0.00
Sat Flow, veh/h	3510	1900	1610	3483	1885	1598	3483	3582	1598	3456	3554	1585
Grp Volume(v), veh/h	0	10	0	258	10	66	20	1489	200	43	1325	0
Grp Sat Flow(s),veh/h/ln	1755	1900	1610	1742	1885	1598	1742	1791	1598	1728	1777	1585
Q Serve(g_s), s	0.0	0.5	0.0	7.3	0.5	3.9	0.6	24.8	5.0	1.2	20.6	0.0
Cycle Q Clear(g_c), s	0.0	0.5	0.0	7.3	0.5	3.9	0.6	24.8	5.0	1.2	20.6	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	43	23		326	177	150	74	2334	1041	78	2320	
V/C Ratio(X)	0.00	0.43		0.79	0.06	0.44	0.27	0.64	0.19	0.55	0.57	
Avail Cap(c_a), veh/h	281	152		348	189	160	557	2334	1041	276	2320	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	49.1	0.0	44.4	41.3	42.8	48.2	10.4	6.9	48.4	9.6	0.0
Incr Delay (d2), s/veh	0.0	14.8	0.0	11.4	0.2	2.4	1.9	1.3	0.4	2.2	1.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.3	0.0	3.6	0.2	1.6	0.3	8.3	1.5	0.5	6.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	63.8	0.0	55.8	41.4	45.3	50.1	11.7	7.4	50.6	10.6	0.0
LnGrp LOS	A	E		E	D	D	D	B	A	D	B	
Approach Vol, veh/h		10			334			1709			1368	
Approach Delay, s/veh		63.8			53.3			11.7			11.9	
Approach LOS		E			D			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.3	71.2		7.2	6.1	71.3		15.4				
Change Period (Y+Rc), s	4.0	6.0		6.0	4.0	6.0		6.0				
Max Green Setting (Gmax), s	8.0	52.0		8.0	16.0	44.0		10.0				
Max Q Clear Time (g_c+I1), s	3.2	26.8		2.5	2.6	22.6		9.3				
Green Ext Time (p_c), s	0.0	12.8		0.0	0.0	9.5		0.1				

Intersection Summary			
HCM 6th Ctrl Delay		16.0	
HCM 6th LOS		B	

Notes

User approved pedestrian interval to be less than phase max green.

Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

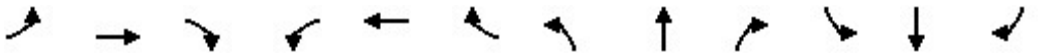
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	438	479	144	521	416	167
v/c Ratio	0.42	0.36	0.26	0.22	0.70	0.11
Control Delay	18.9	1.4	9.3	8.8	54.3	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.9	1.4	9.3	8.8	54.3	0.1
Queue Length 50th (ft)	162	0	30	63	156	0
Queue Length 95th (ft)	378	29	78	113	151	0
Internal Link Dist (ft)	1510			466	307	
Turn Bay Length (ft)			400		200	200
Base Capacity (vph)	1039	1326	771	2359	594	1568
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.36	0.19	0.22	0.70	0.11

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	390	426	115	375	258	145
Future Volume (vph)	390	426	115	375	258	145
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	5.0	6.0	6.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	0.97	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1845	1568	1752	3505	3400	1568
Flt Permitted	1.00	1.00	0.38	1.00	0.95	1.00
Satd. Flow (perm)	1845	1568	704	3505	3400	1568
Peak-hour factor, PHF	0.89	0.89	0.80	0.72	0.62	0.87
Adj. Flow (vph)	438	479	144	521	416	167
RTOR Reduction (vph)	0	141	0	0	0	0
Lane Group Flow (vph)	438	338	144	521	416	167
Confl. Peds. (#/hr)					9	
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%
Turn Type	NA	pm+ov	pm+pt	NA	Prot	Free
Protected Phases	2	4	1	6	4	
Permitted Phases		2	6			Free
Actuated Green, G (s)	63.7	84.7	76.8	76.8	21.0	120.0
Effective Green, g (s)	63.7	84.7	76.8	76.8	21.0	120.0
Actuated g/C Ratio	0.53	0.71	0.64	0.64	0.18	1.00
Clearance Time (s)	6.0	6.0	5.0	6.0	6.0	
Vehicle Extension (s)	3.1	2.0	2.0	3.1	2.0	
Lane Grp Cap (vph)	979	1106	521	2243	595	1568
v/s Ratio Prot	c0.24	0.05	c0.02	0.15	c0.12	
v/s Ratio Perm		0.16	0.16			c0.11
v/c Ratio	0.45	0.31	0.28	0.23	0.70	0.11
Uniform Delay, d1	17.3	6.6	9.9	9.1	46.5	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.5	0.1	0.1	0.2	2.9	0.1
Delay (s)	18.8	6.7	10.0	9.4	49.4	0.1
Level of Service	B	A	B	A	D	A
Approach Delay (s)	12.5			9.5	35.3	
Approach LOS	B			A	D	

Intersection Summary			
HCM 2000 Control Delay	17.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	49.4%	ICU Level of Service	A
Analysis Period (min)	15		

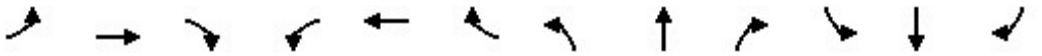
c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	277	175	165	513	314	105	129	891	624	119	980	264
v/c Ratio	0.56	0.19	0.31	0.80	0.28	0.18	0.77	0.79	0.39	0.71	0.89	0.29
Control Delay	23.8	35.3	6.8	33.2	30.8	4.8	53.8	43.4	0.7	47.5	50.2	2.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.8	35.3	6.8	33.2	30.8	4.8	53.8	43.4	0.7	47.5	50.2	2.9
Queue Length 50th (ft)	123	55	0	273	95	0	62	330	0	57	380	0
Queue Length 95th (ft)	184	79	39	339	100	23	69	411	0	#93	#485	14
Internal Link Dist (ft)		605			645			562			691	
Turn Bay Length (ft)	415		415	420		420	330		330	335		335
Base Capacity (vph)	521	927	537	641	1140	589	167	1125	1583	168	1106	923
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.19	0.31	0.80	0.28	0.18	0.77	0.79	0.39	0.71	0.89	0.29

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	260	145	135	426	217	85	80	838	568	100	872	193
Future Volume (veh/h)	260	145	135	426	217	85	80	838	568	100	872	193
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1841	1841	1841	1870	1870	1870	1885	1885	1885
Adj Flow Rate, veh/h	277	175	165	513	314	105	129	891	0	119	980	264
Peak Hour Factor	0.94	0.83	0.82	0.83	0.69	0.81	0.62	0.94	0.91	0.84	0.89	0.73
Percent Heavy Veh, %	1	1	1	4	4	4	2	2	2	1	1	1
Cap, veh/h	539	925	413	622	1124	501	185	1125		205	1104	698
Arrive On Green	0.13	0.26	0.26	0.19	0.32	0.32	0.06	0.32	0.00	0.05	0.31	0.31
Sat Flow, veh/h	1795	3582	1598	1753	3497	1560	1781	3554	1585	1795	3582	1598
Grp Volume(v), veh/h	277	175	165	513	314	105	129	891	0	119	980	264
Grp Sat Flow(s),veh/h/ln	1795	1791	1598	1753	1749	1560	1781	1777	1585	1795	1791	1598
Q Serve(g_s), s	13.4	4.6	10.3	23.0	8.0	5.9	5.9	27.4	0.0	5.5	31.3	13.4
Cycle Q Clear(g_c), s	13.4	4.6	10.3	23.0	8.0	5.9	5.9	27.4	0.0	5.5	31.3	13.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	539	925	413	622	1124	501	185	1125		205	1104	698
V/C Ratio(X)	0.51	0.19	0.40	0.83	0.28	0.21	0.70	0.79		0.58	0.89	0.38
Avail Cap(c_a), veh/h	547	925	413	622	1124	501	185	1125		205	1104	698
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.7	34.7	36.8	25.6	30.4	29.6	31.2	37.4	0.0	30.0	39.5	22.8
Incr Delay (d2), s/veh	0.3	0.5	2.9	8.4	0.6	0.9	9.2	5.7	0.0	2.7	10.6	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	2.0	4.3	12.0	3.5	2.3	2.9	12.4	0.0	2.4	14.9	5.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.0	35.2	39.7	34.0	31.0	30.6	40.4	43.1	0.0	32.8	50.1	24.3
LnGrp LOS	C	D	D	C	C	C	D	D		C	D	C
Approach Vol, veh/h		617			932			1020			1363	
Approach Delay, s/veh		32.7			32.6			42.8			43.6	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	28.0	37.0	11.0	44.0	20.4	44.6	12.0	43.0
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0
Max Green Setting (Gmax), s	23.0	31.0	6.0	38.0	16.0	38.0	7.0	37.0
Max Q Clear Time (g_c+I1), s	25.0	12.3	7.5	29.4	15.4	10.0	7.9	33.3
Green Ext Time (p_c), s	0.0	1.5	0.0	3.7	0.0	2.4	0.0	2.4

Intersection Summary	
HCM 6th Ctrl Delay	39.1
HCM 6th LOS	D

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	22	38	305	217	11	195	769	471	219	21
v/c Ratio	0.10	0.23	0.82	0.53	0.02	0.31	0.65	0.38	0.23	0.02
Control Delay	29.9	32.2	49.3	25.4	18.7	29.3	4.6	15.5	19.4	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.9	32.2	49.3	25.4	18.7	29.3	4.6	15.5	19.4	0.1
Queue Length 50th (ft)	8	9	128	44	2	74	0	61	56	0
Queue Length 95th (ft)	37	24	#365	26	19	186	0	165	187	0
Internal Link Dist (ft)		538		1917		1338			851	
Turn Bay Length (ft)	125		210		170		170	400		200
Base Capacity (vph)	432	430	372	468	721	631	1192	1313	965	887
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.09	0.82	0.46	0.02	0.31	0.65	0.36	0.23	0.02

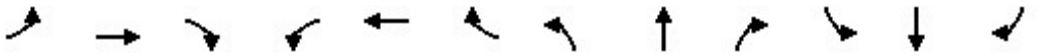
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	10	15	268	20	96	10	146	577	363	162	15
Future Volume (vph)	20	10	15	268	20	96	10	146	577	363	162	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0		5.0	6.0		5.0	6.0	5.0	5.0	6.0	6.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	0.97	1.00	1.00
Frpb, ped/bikes	1.00	0.98		1.00	1.00		1.00	1.00	0.99	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.93		1.00	0.89		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1787	1706		1701	1587		1770	1863	1565	3424	1863	1583
Flt Permitted	0.80	1.00		0.40	1.00		0.62	1.00	1.00	0.53	1.00	1.00
Satd. Flow (perm)	1505	1706		716	1587		1157	1863	1565	1895	1863	1583
Peak-hour factor, PHF	0.89	0.54	0.79	0.88	0.39	0.58	0.88	0.75	0.75	0.77	0.74	0.72
Adj. Flow (vph)	22	19	19	305	51	166	11	195	769	471	219	21
RTOR Reduction (vph)	0	18	0	0	81	0	0	0	376	0	0	11
Lane Group Flow (vph)	22	20	0	305	136	0	11	195	393	471	219	10
Confl. Peds. (#/hr)			2	2					8	8		
Heavy Vehicles (%)	1%	1%	1%	6%	6%	6%	2%	2%	2%	2%	2%	2%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	pm+ov	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	7.5	5.0		25.9	18.4		35.3	34.4	50.3	51.3	45.4	45.4
Effective Green, g (s)	7.5	5.0		25.9	18.4		35.3	34.4	50.3	51.3	45.4	45.4
Actuated g/C Ratio	0.08	0.05		0.26	0.19		0.36	0.35	0.51	0.52	0.46	0.46
Clearance Time (s)	5.0	6.0		5.0	6.0		5.0	6.0	5.0	5.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.5	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	121	86		347	296		420	651	799	1172	859	730
v/s Ratio Prot	0.00	0.01		c0.14	0.09		0.00	0.10	c0.08	c0.05	0.12	
v/s Ratio Perm	0.01			c0.09			0.01		0.17	0.16		0.01
v/c Ratio	0.18	0.23		0.88	0.46		0.03	0.30	0.49	0.40	0.25	0.01
Uniform Delay, d1	42.5	44.9		32.7	35.6		20.4	23.2	15.7	13.4	16.2	14.4
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	1.4		21.4	1.1		0.0	1.2	0.5	0.2	0.7	0.0
Delay (s)	43.2	46.2		54.1	36.7		20.4	24.4	16.2	13.6	16.9	14.4
Level of Service	D	D		D	D		C	C	B	B	B	B
Approach Delay (s)		45.1			46.9			17.9			14.6	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	24.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	98.4	Sum of lost time (s)	26.5
Intersection Capacity Utilization	65.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



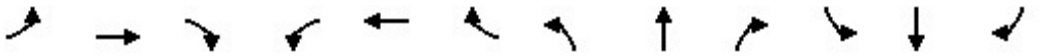
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	73	139	1448	63	238	56	1400	501	29	63	966	197
v/c Ratio	0.32	0.60	0.91	0.17	0.62	0.04	0.88	0.25	0.02	0.30	0.97	0.27
Control Delay	47.7	56.0	11.0	41.2	49.9	0.0	42.6	6.4	0.0	48.6	59.6	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.7	56.0	11.0	41.2	49.9	0.0	42.6	6.4	0.0	48.6	59.6	7.8
Queue Length 50th (ft)	23	46	0	19	76	0	235	35	0	20	~355	22
Queue Length 95th (ft)	43	70	0	38	106	0	184	47	m0	28	#356	68
Internal Link Dist (ft)		741			1037			943			877	
Turn Bay Length (ft)	280		250	180		180	700			600		600
Base Capacity (vph)	343	353	1583	381	393	1568	1680	2009	1568	215	997	775
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.39	0.91	0.17	0.61	0.04	0.83	0.25	0.02	0.29	0.97	0.25

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	64	115	724	55	195	45	868	421	20	40	705	177
Future Volume (veh/h)	64	115	724	55	195	45	868	421	20	40	705	177
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	73	139	0	62	238	0	1400	501	0	63	966	197
Peak Hour Factor	0.88	0.83	0.50	0.88	0.82	0.81	0.62	0.84	0.68	0.63	0.73	0.90
Percent Heavy Veh, %	2	2	2	3	3	3	3	3	3	3	3	3
Cap, veh/h	203	209		303	311		1536	2150		113	1145	603
Arrive On Green	0.06	0.06	0.00	0.09	0.09	0.00	0.31	0.61	0.00	0.03	0.32	0.32
Sat Flow, veh/h	3456	3554	1585	3428	3526	1572	4983	3526	1572	3428	3526	1572
Grp Volume(v), veh/h	73	139	0	62	238	0	1400	501	0	63	966	197
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1714	1763	1572	1661	1763	1572	1714	1763	1572
Q Serve(g_s), s	2.0	3.8	0.0	1.7	6.6	0.0	27.0	6.5	0.0	1.8	25.5	8.8
Cycle Q Clear(g_c), s	2.0	3.8	0.0	1.7	6.6	0.0	27.0	6.5	0.0	1.8	25.5	8.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	203	209		303	311		1536	2150		113	1145	603
V/C Ratio(X)	0.36	0.67		0.20	0.76		0.91	0.23		0.56	0.84	0.33
Avail Cap(c_a), veh/h	346	355		343	353		1694	2150		206	1145	603
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.84	0.84	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.3	46.1	0.0	42.3	44.6	0.0	33.3	8.9	0.0	47.6	31.4	21.7
Incr Delay (d2), s/veh	0.3	1.1	0.0	0.3	8.5	0.0	7.0	0.3	0.0	4.2	7.7	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	1.7	0.0	0.7	3.2	0.0	11.2	2.2	0.0	0.8	11.3	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.6	47.2	0.0	42.7	53.1	0.0	40.3	9.1	0.0	51.8	39.1	23.2
LnGrp LOS	D	D		D	D		D	A		D	D	C
Approach Vol, veh/h		212			300			1901			1226	
Approach Delay, s/veh		46.7			50.9			32.1			37.2	
Approach LOS		D			D			C			D	

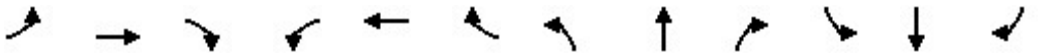
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.3	67.0		10.9	36.8	38.5		13.8				
Change Period (Y+Rc), s	5.0	6.0		5.0	6.0	6.0		5.0				
Max Green Setting (Gmax), s	6.0	53.0		10.0	34.0	24.0		10.0				
Max Q Clear Time (g_c+I1), s	3.8	8.5		5.8	29.0	27.5		8.6				
Green Ext Time (p_c), s	0.0	3.3		0.1	1.8	0.0		0.2				

Intersection Summary		
HCM 6th Ctrl Delay		36.2
HCM 6th LOS		D

Notes

User approved pedestrian interval to be less than phase max green.

Unsignalized Delay for [NBR, EBR, WBR] is excluded from calculations of the approach delay and intersection delay.



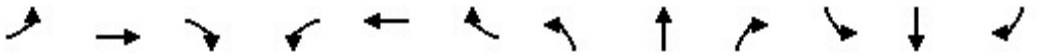
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	42	15	752	255	20	95	815	1450	200	76	1391	150
v/c Ratio	0.10	0.11	1.77	0.45	0.07	0.23	1.09	0.74	0.21	0.39	1.05	0.10
Control Delay	30.4	45.4	372.3	34.1	40.2	1.3	92.8	15.3	1.2	54.2	53.0	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.4	45.4	372.3	34.1	40.2	1.3	92.8	15.3	1.2	54.2	53.0	0.0
Queue Length 50th (ft)	10	9	~518	69	12	0	~307	308	6	25	~518	0
Queue Length 95th (ft)	13	10	0	104	9	0	m#389	338	m5	m28	m#590	0
Internal Link Dist (ft)		527			679			676			2055	
Turn Bay Length (ft)	125		125	250		500	455		250	550		550
Base Capacity (vph)	449	141	426	570	298	409	748	1963	966	204	1331	1568
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.11	1.77	0.45	0.07	0.23	1.09	0.74	0.21	0.37	1.05	0.10

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	5	188	240	5	60	701	1218	190	60	1349	75
Future Volume (veh/h)	21	5	188	240	5	60	701	1218	190	60	1349	75
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	42	15	0	255	20	95	815	1450	200	76	1391	0
Peak Hour Factor	0.50	0.33	0.25	0.94	0.25	0.63	0.86	0.84	0.95	0.79	0.97	0.50
Percent Heavy Veh, %	0	0	0	3	3	3	3	3	3	3	3	3
Cap, veh/h	444	94		570	168	143	754	2124	947	126	1478	
Arrive On Green	0.05	0.05	0.00	0.09	0.09	0.09	0.22	0.60	0.60	0.04	0.42	0.00
Sat Flow, veh/h	3510	1900	1610	3428	1856	1572	3428	3526	1572	3428	3526	1572
Grp Volume(v), veh/h	42	15	0	255	20	95	815	1450	200	76	1391	0
Grp Sat Flow(s),veh/h/ln	1755	1900	1610	1714	1856	1572	1714	1763	1572	1714	1763	1572
Q Serve(g_s), s	1.1	0.8	0.0	6.9	1.0	5.8	22.0	27.8	5.8	2.2	37.8	0.0
Cycle Q Clear(g_c), s	1.1	0.8	0.0	6.9	1.0	5.8	22.0	27.8	5.8	2.2	37.8	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	444	94		570	168	143	754	2124	947	126	1478	
V/C Ratio(X)	0.09	0.16		0.45	0.12	0.67	1.08	0.68	0.21	0.60	0.94	
Avail Cap(c_a), veh/h	515	133		634	204	173	754	2124	947	206	1478	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	41.0	45.5	0.0	39.8	41.8	44.0	39.0	13.4	9.1	47.4	27.9	0.0
Incr Delay (d2), s/veh	0.1	0.9	0.0	0.7	0.4	7.9	56.7	1.8	0.5	1.7	13.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.4	0.0	2.9	0.5	2.6	14.7	9.8	2.0	0.9	17.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.1	46.5	0.0	40.4	42.2	51.9	95.7	15.2	9.6	49.1	40.9	0.0
LnGrp LOS	D	D		D	D	D	F	B	A	D	D	
Approach Vol, veh/h		57			370			2465			1467	
Approach Delay, s/veh		42.5			43.5			41.4			41.3	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.7	66.2	15.1	11.0	26.0	47.9	11.0	15.1
Change Period (Y+Rc), s	4.0	6.0	6.0	6.0	4.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	6.0	54.0	11.0	7.0	22.0	38.0	7.0	11.0
Max Q Clear Time (g_c+I1), s	4.2	29.8	8.9	2.8	24.0	39.8	3.1	7.8
Green Ext Time (p_c), s	0.0	12.2	0.2	0.0	0.0	0.0	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	41.6
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

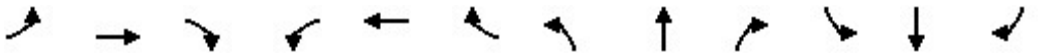
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	609	313	194	705	177	212
v/c Ratio	0.54	0.25	0.36	0.26	0.48	0.13
Control Delay	15.6	1.0	5.6	4.4	46.6	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.6	1.0	5.6	4.4	46.6	0.2
Queue Length 50th (ft)	191	0	23	51	56	0
Queue Length 95th (ft)	434	10	65	99	87	0
Internal Link Dist (ft)	1510			466	307	
Turn Bay Length (ft)			400		200	200
Base Capacity (vph)	1123	1484	590	2700	970	1599
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.21	0.33	0.26	0.18	0.13

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	554	244	173	564	172	144
Future Volume (vph)	554	244	173	564	172	144
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	5.0	6.0	6.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	0.97	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1845	1568	1787	3574	3467	1599
Flt Permitted	1.00	1.00	0.29	1.00	0.95	1.00
Satd. Flow (perm)	1845	1568	539	3574	3467	1599
Peak-hour factor, PHF	0.91	0.78	0.89	0.80	0.97	0.68
Adj. Flow (vph)	609	313	194	705	177	212
RTOR Reduction (vph)	0	102	0	0	0	0
Lane Group Flow (vph)	609	211	194	705	177	212
Confl. Peds. (#/hr)					12	
Heavy Vehicles (%)	3%	3%	1%	1%	1%	1%
Turn Type	NA	pm+ov	pm+pt	NA	Prot	Free
Protected Phases	2	4	1	6	4	
Permitted Phases		2	6			Free
Actuated Green, G (s)	56.9	67.5	71.6	71.6	10.6	100.0
Effective Green, g (s)	56.9	67.5	71.6	71.6	10.6	100.0
Actuated g/C Ratio	0.57	0.68	0.72	0.72	0.11	1.00
Clearance Time (s)	6.0	6.0	5.0	6.0	6.0	
Vehicle Extension (s)	3.1	2.0	2.0	3.1	2.0	
Lane Grp Cap (vph)	1049	1058	506	2558	367	1599
v/s Ratio Prot	c0.33	0.02	c0.04	0.20	c0.05	
v/s Ratio Perm		0.11	0.24			c0.13
v/c Ratio	0.58	0.20	0.38	0.28	0.48	0.13
Uniform Delay, d1	13.9	6.1	7.4	5.0	42.1	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.3	0.0	0.2	0.3	0.4	0.2
Delay (s)	16.2	6.1	7.6	5.3	42.5	0.2
Level of Service	B	A	A	A	D	A
Approach Delay (s)	12.8			5.8	19.4	
Approach LOS	B			A	B	

Intersection Summary			
HCM 2000 Control Delay	11.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	61.2%	ICU Level of Service	B
Analysis Period (min)	15		

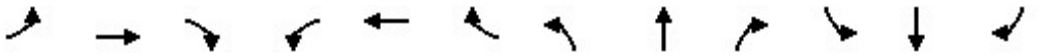
c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	322	276	157	592	421	138	114	980	386	128	807	282
v/c Ratio	0.72	0.37	0.34	0.90	0.36	0.23	0.54	0.88	0.24	0.77	0.73	0.32
Control Delay	32.6	48.7	8.8	44.3	37.1	6.3	35.5	55.4	0.4	58.1	47.8	6.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.6	48.7	8.8	44.3	37.1	6.3	35.5	55.4	0.4	58.1	47.8	6.5
Queue Length 50th (ft)	170	114	0	383	153	0	64	449	0	73	351	35
Queue Length 95th (ft)	210	160	44	#522	197	33	80	#535	0	#118	423	87
Internal Link Dist (ft)		605			645			562			691	
Turn Bay Length (ft)	415		415	420		420	330		330	335		335
Base Capacity (vph)	500	745	457	670	1157	610	224	1116	1599	170	1098	924
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.37	0.34	0.88	0.36	0.23	0.51	0.88	0.24	0.75	0.73	0.31

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	261	268	129	545	362	110	79	872	351	100	718	271
Future Volume (veh/h)	261	268	129	545	362	110	79	872	351	100	718	271
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1885	1885	1885	1870	1870	1870
Adj Flow Rate, veh/h	322	276	157	592	421	138	114	980	0	128	807	282
Peak Hour Factor	0.81	0.97	0.82	0.92	0.86	0.80	0.69	0.89	0.91	0.78	0.89	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	1	1	1	2	2	2
Cap, veh/h	505	737	329	658	1126	502	212	1102		190	1114	743
Arrive On Green	0.16	0.21	0.21	0.26	0.32	0.32	0.06	0.31	0.00	0.06	0.31	0.31
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1795	3582	1598	1781	3554	1585
Grp Volume(v), veh/h	322	276	157	592	421	138	114	980	0	128	807	282
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1795	1791	1598	1781	1777	1585
Q Serve(g_s), s	19.6	9.3	12.2	35.7	12.8	9.1	6.0	36.4	0.0	6.8	28.2	16.1
Cycle Q Clear(g_c), s	19.6	9.3	12.2	35.7	12.8	9.1	6.0	36.4	0.0	6.8	28.2	16.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	505	737	329	658	1126	502	212	1102		190	1114	743
V/C Ratio(X)	0.64	0.37	0.48	0.90	0.37	0.27	0.54	0.89		0.67	0.72	0.38
Avail Cap(c_a), veh/h	521	737	329	658	1126	502	238	1102		193	1114	743
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.6	47.6	48.7	28.8	37.0	35.7	33.6	46.1	0.0	35.8	42.6	24.0
Incr Delay (d2), s/veh	1.8	1.5	4.9	15.1	1.0	1.4	0.8	10.8	0.0	7.1	4.1	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.7	4.3	5.2	17.7	5.7	3.7	2.6	17.5	0.0	3.3	12.8	6.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.5	49.0	53.6	43.9	38.0	37.1	34.4	56.9	0.0	42.9	46.7	25.4
LnGrp LOS	D	D	D	D	D	D	C	E		D	D	C
Approach Vol, veh/h		755			1151			1094			1217	
Approach Delay, s/veh		44.6			40.9			54.5			41.4	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	42.0	35.0	13.8	49.0	26.7	50.3	12.9	49.8
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0
Max Green Setting (Gmax), s	37.0	29.0	9.0	43.0	23.0	43.0	10.0	42.0
Max Q Clear Time (g_c+I1), s	37.7	14.2	8.8	38.4	21.6	14.8	8.0	30.2
Green Ext Time (p_c), s	0.0	1.9	0.0	2.5	0.1	3.3	0.0	4.9

Intersection Summary	
HCM 6th Ctrl Delay	45.2
HCM 6th LOS	D

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	22	82	235	216	20	247	180	56	362	13
v/c Ratio	0.09	0.40	0.48	0.42	0.05	0.39	0.19	0.06	0.49	0.02
Control Delay	25.4	43.0	27.6	28.4	20.5	30.5	3.6	19.0	28.8	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.4	43.0	27.6	28.4	20.5	30.5	3.6	19.0	28.8	0.0
Queue Length 50th (ft)	7	34	82	62	5	95	0	7	115	0
Queue Length 95th (ft)	26	55	183	36	17	231	8	32	#445	0
Internal Link Dist (ft)		538		1917		1338			851	
Turn Bay Length (ft)	125		210		170		170	400		200
Base Capacity (vph)	445	436	493	549	549	634	965	1100	735	709
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.19	0.48	0.39	0.04	0.39	0.19	0.05	0.49	0.02

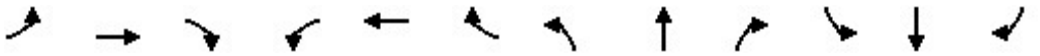
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	30	15	167	25	86	10	188	119	53	311	10
Future Volume (vph)	15	30	15	167	25	86	10	188	119	53	311	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0		5.0	6.0		5.0	6.0	5.0	5.0	6.0	6.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	0.97	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00	0.99	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.96		1.00	0.92		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1763	1788		1752	1674		1770	1863	1567	3390	1845	1568
Flt Permitted	0.62	1.00		0.46	1.00		0.43	1.00	1.00	0.48	1.00	1.00
Satd. Flow (perm)	1156	1788		841	1674		803	1863	1567	1721	1845	1568
Peak-hour factor, PHF	0.67	0.50	0.69	0.71	0.25	0.74	0.50	0.76	0.66	0.94	0.86	0.78
Adj. Flow (vph)	22	60	22	235	100	116	20	247	180	56	362	13
RTOR Reduction (vph)	0	10	0	0	26	0	0	0	86	0	0	8
Lane Group Flow (vph)	22	72	0	235	190	0	20	247	94	56	362	5
Confl. Peds. (#/hr)	2					2			8	8		
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	2%	2%	2%	3%	3%	3%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	pm+ov	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	11.6	9.2		32.5	25.1		33.4	31.2	49.5	39.0	34.0	34.0
Effective Green, g (s)	11.6	9.2		32.5	25.1		33.4	31.2	49.5	39.0	34.0	34.0
Actuated g/C Ratio	0.12	0.10		0.34	0.26		0.35	0.33	0.52	0.41	0.36	0.36
Clearance Time (s)	5.0	6.0		5.0	6.0		5.0	6.0	5.0	5.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.5	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	156	173		463	442		305	612	817	795	661	561
v/s Ratio Prot	0.00	0.04		c0.10	0.11		0.00	0.13	0.02	c0.00	c0.20	
v/s Ratio Perm	0.01			c0.08			0.02		0.04	0.03		0.00
v/c Ratio	0.14	0.42		0.51	0.43		0.07	0.40	0.11	0.07	0.55	0.01
Uniform Delay, d1	37.0	40.3		23.9	29.0		20.4	24.6	11.6	17.0	24.3	19.6
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	1.6		0.9	0.7		0.1	2.0	0.1	0.0	3.2	0.0
Delay (s)	37.4	41.9		24.7	29.6		20.5	26.6	11.6	17.0	27.6	19.6
Level of Service	D	D		C	C		C	C	B	B	C	B
Approach Delay (s)		41.0			27.1			20.3			25.9	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	25.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	94.9	Sum of lost time (s)	26.5
Intersection Capacity Utilization	48.6%	ICU Level of Service	A
Analysis Period (min)	15		

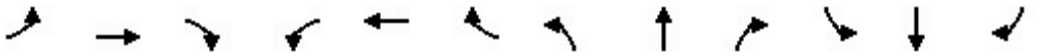
c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	180	232	1101	42	182	96	1426	1103	66	32	522	85
v/c Ratio	0.57	0.71	0.69	0.12	0.50	0.06	0.89	0.53	0.04	0.15	0.54	0.11
Control Delay	50.2	56.0	2.4	40.6	46.8	0.1	40.8	10.2	0.0	46.2	34.7	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.2	56.0	2.4	40.6	46.8	0.1	40.8	10.2	0.0	46.2	34.7	0.9
Queue Length 50th (ft)	57	76	0	12	58	0	238	115	0	10	156	0
Queue Length 95th (ft)	89	113	0	19	89	0	159	134	m0	22	189	6
Internal Link Dist (ft)		741			1037			943			877	
Turn Bay Length (ft)	280		250	180		180	700			600		600
Base Capacity (vph)	520	536	1599	377	389	1599	1598	2063	1599	215	959	838
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.43	0.69	0.11	0.47	0.06	0.89	0.53	0.04	0.15	0.54	0.10

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	178	220	914	25	160	75	713	794	45	25	428	81
Future Volume (veh/h)	178	220	914	25	160	75	713	794	45	25	428	81
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	180	232	0	42	182	0	1426	1103	0	32	522	85
Peak Hour Factor	0.99	0.95	0.83	0.60	0.88	0.78	0.50	0.72	0.68	0.78	0.82	0.95
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	296	305		253	260		1468	2180		82	1190	667
Arrive On Green	0.09	0.09	0.00	0.07	0.07	0.00	0.29	0.61	0.00	0.02	0.33	0.33
Sat Flow, veh/h	3483	3582	1598	3483	3582	1598	5063	3582	1598	3483	3582	1598
Grp Volume(v), veh/h	180	232	0	42	182	0	1426	1103	0	32	522	85
Grp Sat Flow(s),veh/h/ln	1742	1791	1598	1742	1791	1598	1688	1791	1598	1742	1791	1598
Q Serve(g_s), s	5.0	6.3	0.0	1.1	5.0	0.0	27.8	17.4	0.0	0.9	11.4	3.3
Cycle Q Clear(g_c), s	5.0	6.3	0.0	1.1	5.0	0.0	27.8	17.4	0.0	0.9	11.4	3.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	296	305		253	260		1468	2180		82	1190	667
V/C Ratio(X)	0.61	0.76		0.17	0.70		0.97	0.51		0.39	0.44	0.13
Avail Cap(c_a), veh/h	522	537		348	358		1468	2180		209	1190	667
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.73	0.73	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.1	44.7	0.0	43.5	45.3	0.0	35.1	11.1	0.0	48.1	26.1	17.9
Incr Delay (d2), s/veh	0.5	1.1	0.0	0.3	3.6	0.0	17.0	0.8	0.0	3.0	1.2	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	2.8	0.0	0.5	2.3	0.0	13.0	6.1	0.0	0.4	4.8	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.7	45.8	0.0	43.8	48.9	0.0	52.0	11.9	0.0	51.1	27.3	18.3
LnGrp LOS	D	D		D	D		D	B		D	C	B
Approach Vol, veh/h		412			224			2529			639	
Approach Delay, s/veh		45.3			47.9			34.5			27.3	
Approach LOS		D			D			C			C	

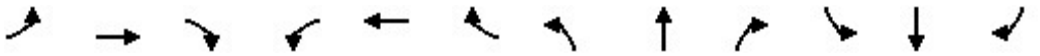
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.4	66.9		13.5	35.0	39.2		12.3				
Change Period (Y+Rc), s	5.0	6.0		5.0	6.0	6.0		5.0				
Max Green Setting (Gmax), s	6.0	48.0		15.0	29.0	24.0		10.0				
Max Q Clear Time (g_c+I1), s	2.9	19.4		8.3	29.8	13.4		7.0				
Green Ext Time (p_c), s	0.0	8.4		0.2	0.0	2.5		0.3				

Intersection Summary		
HCM 6th Ctrl Delay		35.3
HCM 6th LOS		D

Notes

User approved pedestrian interval to be less than phase max green.

Unsignalized Delay for [NBR, EBR, WBR] is excluded from calculations of the approach delay and intersection delay.



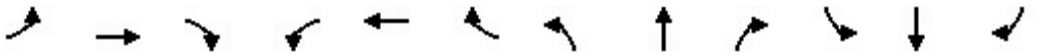
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	105	10	757	258	10	66	1040	1519	200	43	1349	56
v/c Ratio	0.20	0.06	1.52	0.47	0.04	0.18	1.15	0.73	0.20	0.23	1.12	0.04
Control Delay	31.1	42.6	263.4	34.6	42.2	1.1	115.6	14.2	1.7	53.2	91.7	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.1	42.6	263.4	34.6	42.2	1.1	115.6	14.2	1.7	53.2	91.7	0.0
Queue Length 50th (ft)	27	6	~441	70	6	0	~414	311	3	14	~534	0
Queue Length 95th (ft)	40	13	#671	104	13	0	86	413	15	m21	#672	0
Internal Link Dist (ft)		527			679			676			2055	
Turn Bay Length (ft)	125		125	250		500	455		250	550		550
Base Capacity (vph)	564	171	497	551	233	360	901	2074	1012	205	1203	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.06	1.52	0.47	0.04	0.18	1.15	0.73	0.20	0.21	1.12	0.04

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	79	5	757	230	5	55	260	1413	180	25	1309	28
Future Volume (veh/h)	79	5	757	230	5	55	260	1413	180	25	1309	28
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1885	1885	1885	1885	1885	1885	1870	1870	1870
Adj Flow Rate, veh/h	105	10	0	258	10	66	1040	1519	200	43	1349	0
Peak Hour Factor	0.75	0.50	1.00	0.89	0.50	0.83	0.25	0.93	0.90	0.58	0.97	0.50
Percent Heavy Veh, %	0	0	0	1	1	1	1	1	1	2	2	2
Cap, veh/h	449	95		577	167	142	906	2216	988	78	1355	
Arrive On Green	0.05	0.05	0.00	0.09	0.09	0.09	0.26	0.62	0.62	0.02	0.38	0.00
Sat Flow, veh/h	3510	1900	1610	3483	1885	1598	3483	3582	1598	3456	3554	1585
Grp Volume(v), veh/h	105	10	0	258	10	66	1040	1519	200	43	1349	0
Grp Sat Flow(s),veh/h/ln	1755	1900	1610	1742	1885	1598	1742	1791	1598	1728	1777	1585
Q Serve(g_s), s	2.8	0.5	0.0	6.9	0.5	3.9	26.0	28.1	5.5	1.2	37.9	0.0
Cycle Q Clear(g_c), s	2.8	0.5	0.0	6.9	0.5	3.9	26.0	28.1	5.5	1.2	37.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	449	95		577	167	142	906	2216	988	78	1355	
V/C Ratio(X)	0.23	0.11		0.45	0.06	0.47	1.15	0.69	0.20	0.55	1.00	
Avail Cap(c_a), veh/h	590	171		580	170	144	906	2216	988	207	1355	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	41.8	45.4	0.0	40.1	41.7	43.3	37.0	12.6	8.3	48.4	30.9	0.0
Incr Delay (d2), s/veh	0.3	0.6	0.0	0.7	0.2	2.8	79.7	1.7	0.5	2.2	23.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.3	0.0	3.0	0.2	1.7	20.4	9.8	1.9	0.5	19.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.1	46.0	0.0	40.7	41.9	46.2	116.7	14.4	8.8	50.6	54.3	0.0
LnGrp LOS	D	D		D	D	D	F	B	A	D	D	
Approach Vol, veh/h		115			334			2759			1392	
Approach Delay, s/veh		42.4			41.8			52.5			54.2	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.3	67.9	14.9	11.0	30.0	44.1	11.0	14.9
Change Period (Y+Rc), s	4.0	6.0	6.0	6.0	4.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	6.0	54.0	9.0	9.0	26.0	34.0	9.0	9.0
Max Q Clear Time (g_c+I1), s	3.2	30.1	8.9	2.5	28.0	39.9	4.8	5.9
Green Ext Time (p_c), s	0.0	12.7	0.0	0.0	0.0	0.0	0.1	0.1

Intersection Summary	
HCM 6th Ctrl Delay	52.0
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	424	522	613	535	452	575
v/c Ratio	1.01	0.52	0.83	0.23	0.67	0.37
Control Delay	92.4	3.3	36.4	9.8	51.2	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	92.4	3.3	36.4	9.8	51.2	0.7
Queue Length 50th (ft)	318	0	330	69	167	0
Queue Length 95th (ft)	#534	37	#578	116	#176	0
Internal Link Dist (ft)	1510			466	307	
Turn Bay Length (ft)			400		200	200
Base Capacity (vph)	420	1009	738	2278	673	1568
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.01	0.52	0.83	0.23	0.67	0.37

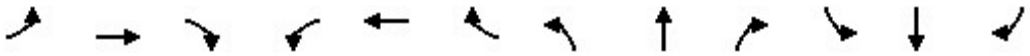
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	365	465	490	385	280	500
Future Volume (vph)	365	465	490	385	280	500
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	5.0	6.0	6.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	0.97	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1845	1568	1752	3505	3400	1568
Flt Permitted	1.00	1.00	0.14	1.00	0.95	1.00
Satd. Flow (perm)	1845	1568	260	3505	3400	1568
Peak-hour factor, PHF	0.86	0.89	0.80	0.72	0.62	0.87
Adj. Flow (vph)	424	522	612	535	452	575
RTOR Reduction (vph)	0	317	0	0	0	0
Lane Group Flow (vph)	424	205	613	535	452	575
Confl. Peds. (#/hr)					9	
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%
Turn Type	NA	pm+ov	pm+pt	NA	Prot	Free
Protected Phases	2	4	1	6	4	
Permitted Phases		2	6			Free
Actuated Green, G (s)	23.4	47.2	74.0	74.0	23.8	120.0
Effective Green, g (s)	23.4	47.2	74.0	74.0	23.8	120.0
Actuated g/C Ratio	0.19	0.39	0.62	0.62	0.20	1.00
Clearance Time (s)	6.0	6.0	5.0	6.0	6.0	
Vehicle Extension (s)	3.1	2.0	2.0	3.1	2.0	
Lane Grp Cap (vph)	359	616	727	2161	674	1568
v/s Ratio Prot	c0.23	0.07	c0.32	0.15	c0.13	
v/s Ratio Perm		0.06	0.20			c0.37
v/c Ratio	1.18	0.33	0.84	0.25	0.67	0.37
Uniform Delay, d1	48.3	25.4	27.0	10.4	44.5	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	106.5	0.1	8.5	0.3	2.1	0.7
Delay (s)	154.8	25.5	35.4	10.7	46.5	0.7
Level of Service	F	C	D	B	D	A
Approach Delay (s)	83.5			23.9	20.9	
Approach LOS	F			C	C	

Intersection Summary			
HCM 2000 Control Delay	41.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	68.9%	ICU Level of Service	C
Analysis Period (min)	15		

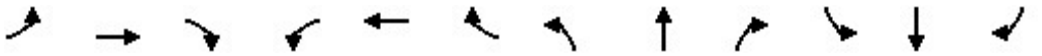
c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	426	398	171	283	558	111	258	745	456	125	657	459
v/c Ratio	0.93	0.35	0.27	0.56	0.57	0.21	0.86	0.75	0.29	0.52	0.76	0.68
Control Delay	49.6	33.1	6.0	23.1	39.2	6.1	53.4	45.0	0.5	30.6	48.6	13.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.6	33.1	6.0	23.1	39.2	6.1	53.4	45.0	0.5	30.6	48.6	13.0
Queue Length 50th (ft)	210	124	0	127	194	0	134	274	0	60	250	45
Queue Length 95th (ft)	#408	162	38	171	183	28	129	364	0	95	315	60
Internal Link Dist (ft)		605			645			489			691	
Turn Bay Length (ft)	415		415	420		420	330		330	335		335
Base Capacity (vph)	460	1143	628	563	987	526	306	998	1583	318	867	680
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.93	0.35	0.27	0.50	0.57	0.21	0.84	0.75	0.29	0.39	0.76	0.68

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	400	330	140	235	385	90	160	700	415	105	585	340
Future Volume (veh/h)	400	330	140	235	385	90	160	700	415	105	585	340
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1841	1841	1841	1870	1870	1870	1885	1885	1885
Adj Flow Rate, veh/h	426	398	171	283	558	111	258	745	0	125	657	459
Peak Hour Factor	0.94	0.83	0.82	0.83	0.69	0.81	0.62	0.94	0.91	0.84	0.89	0.74
Percent Heavy Veh, %	1	1	1	4	4	4	2	2	2	1	1	1
Cap, veh/h	476	1149	513	485	995	444	314	1053		261	869	388
Arrive On Green	0.17	0.32	0.32	0.13	0.28	0.28	0.12	0.30	0.00	0.07	0.24	0.24
Sat Flow, veh/h	1795	3582	1598	1753	3497	1560	1781	3554	1585	1795	3582	1598
Grp Volume(v), veh/h	426	398	171	283	558	111	258	745	0	125	657	459
Grp Sat Flow(s),veh/h/ln	1795	1791	1598	1753	1749	1560	1781	1777	1585	1795	1791	1598
Q Serve(g_s), s	20.0	10.2	9.7	13.5	16.2	6.6	12.5	22.3	0.0	6.2	20.3	29.0
Cycle Q Clear(g_c), s	20.0	10.2	9.7	13.5	16.2	6.6	12.5	22.3	0.0	6.2	20.3	29.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	476	1149	513	485	995	444	314	1053		261	869	388
V/C Ratio(X)	0.90	0.35	0.33	0.58	0.56	0.25	0.82	0.71		0.48	0.76	1.18
Avail Cap(c_a), veh/h	476	1149	513	549	995	444	320	1053		365	869	388
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.4	31.0	30.9	24.6	36.4	33.0	30.2	37.4	0.0	31.8	42.0	45.3
Incr Delay (d2), s/veh	18.8	0.8	1.7	0.6	2.3	1.3	14.5	4.0	0.0	0.5	6.1	106.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.7	4.5	3.9	5.6	7.2	2.6	6.4	10.0	0.0	2.7	9.5	22.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.2	31.8	32.6	25.1	38.7	34.3	44.7	41.4	0.0	32.3	48.1	151.6
LnGrp LOS	D	C	C	C	D	C	D	D		C	D	F
Approach Vol, veh/h		995			952			1003			1241	
Approach Delay, s/veh		37.3			34.2			42.3			84.8	
Approach LOS		D			C			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.6	44.4	13.1	41.4	25.0	40.0	19.6	35.0
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0
Max Green Setting (Gmax), s	20.0	34.0	15.0	29.0	20.0	34.0	15.0	29.0
Max Q Clear Time (g_c+I1), s	15.5	12.2	8.2	24.3	22.0	18.2	14.5	31.0
Green Ext Time (p_c), s	0.2	3.1	0.1	2.0	0.0	3.6	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	51.8
HCM 6th LOS	D

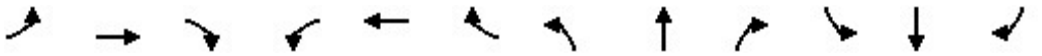
Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	79	297	250	426	112	413	553	532	250	438
v/c Ratio	0.37	0.89	0.79	0.81	0.24	0.81	0.61	0.79	0.41	0.54
Control Delay	31.3	71.9	46.8	36.8	21.4	51.9	9.6	30.9	34.5	6.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.3	71.9	46.8	36.8	21.4	51.9	9.6	30.9	34.5	6.4
Queue Length 50th (ft)	31	181	110	155	37	240	47	98	117	0
Queue Length 95th (ft)	97	214	#372	49	110	#464	109	#239	244	2
Internal Link Dist (ft)		538		1696		1320			1541	
Turn Bay Length (ft)	125		210		170		170	400		200
Base Capacity (vph)	323	334	317	527	565	509	900	675	616	816
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.24	0.89	0.79	0.81	0.20	0.81	0.61	0.79	0.41	0.54

Intersection Summary

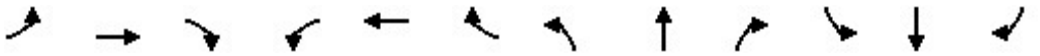
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	140	30	220	25	210	95	310	415	410	185	315
Future Volume (vph)	70	140	30	220	25	210	95	310	415	410	185	315
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0		5.0	6.0		5.0	6.0	5.0	5.0	6.0	6.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	0.97	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.98		1.00	1.00	0.99	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.87		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1787	1845		1703	1532		1770	1863	1565	3431	1863	1583
Flt Permitted	0.20	1.00		0.19	1.00		0.60	1.00	1.00	0.16	1.00	1.00
Satd. Flow (perm)	381	1845		334	1532		1118	1863	1565	591	1863	1583
Peak-hour factor, PHF	0.89	0.54	0.79	0.88	0.39	0.58	0.85	0.75	0.75	0.77	0.74	0.72
Adj. Flow (vph)	79	259	38	250	64	362	112	413	553	532	250	438
RTOR Reduction (vph)	0	4	0	0	130	0	0	0	248	0	0	299
Lane Group Flow (vph)	79	293	0	250	296	0	112	413	305	532	250	139
Confl. Peds. (#/hr)	2					2			8	8		
Heavy Vehicles (%)	1%	1%	1%	6%	6%	6%	2%	2%	2%	2%	2%	2%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	pm+ov	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	27.9	20.4		40.7	28.2		38.7	29.6	44.9	49.9	35.8	35.8
Effective Green, g (s)	27.9	20.4		40.7	28.2		38.7	29.6	44.9	49.9	35.8	35.8
Actuated g/C Ratio	0.25	0.18		0.36	0.25		0.34	0.26	0.40	0.44	0.32	0.32
Clearance Time (s)	5.0	6.0		5.0	6.0		5.0	6.0	5.0	5.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.5	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	188	334		306	383		436	489	624	647	592	503
v/s Ratio Prot	0.03	0.16		c0.11	0.19		0.02	0.22	0.07	c0.11	0.13	
v/s Ratio Perm	0.08			c0.18			0.07		0.13	c0.25		0.09
v/c Ratio	0.42	0.88		0.82	0.77		0.26	0.84	0.49	0.82	0.42	0.28
Uniform Delay, d1	34.1	44.9		28.6	39.2		25.9	39.3	25.3	24.1	30.3	28.7
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.5	21.8		15.4	9.3		0.2	16.2	0.6	8.3	2.2	1.4
Delay (s)	35.6	66.7		44.0	48.5		26.1	55.6	25.9	32.4	32.5	30.1
Level of Service	D	E		D	D		C	E	C	C	C	C
Approach Delay (s)		60.2			46.9			37.3			31.6	
Approach LOS		E			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	39.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	112.6	Sum of lost time (s)	26.5
Intersection Capacity Utilization	67.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



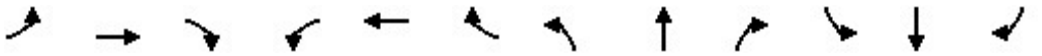
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	63	151	1540	68	250	62	1476	524	37	71	952	144
v/c Ratio	0.27	0.62	0.97	0.18	0.65	0.04	1.20	0.26	0.02	0.34	1.13	0.09
Control Delay	46.1	56.1	19.7	41.5	51.0	0.0	127.2	5.4	0.0	49.6	110.2	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.1	56.1	19.7	41.5	51.0	0.0	127.2	5.4	0.0	49.6	110.2	0.1
Queue Length 50th (ft)	20	50	0	20	80	0	~595	27	0	22	~373	0
Queue Length 95th (ft)	38	74	0	40	112	0	312	47	m0	31	#349	0
Internal Link Dist (ft)		741			1037			943			877	
Turn Bay Length (ft)	280		250	180		180	700			600		600
Base Capacity (vph)	343	353	1583	381	392	1568	1226	1997	1568	213	841	1568
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.43	0.97	0.18	0.64	0.04	1.20	0.26	0.02	0.33	1.13	0.09

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	55	125	770	60	205	50	915	440	25	45	695	130
Future Volume (veh/h)	55	125	770	60	205	50	915	440	25	45	695	130
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	62	151	0	68	250	0	1476	524	0	71	952	0
Peak Hour Factor	0.88	0.83	0.50	0.88	0.82	0.81	0.62	0.84	0.68	0.63	0.73	0.90
Percent Heavy Veh, %	2	2	2	3	3	3	3	3	3	3	3	3
Cap, veh/h	215	221		313	322		1166	2121		120	1011	
Arrive On Green	0.06	0.06	0.00	0.09	0.09	0.00	0.34	0.60	0.00	0.03	0.29	0.00
Sat Flow, veh/h	3456	3554	1585	3428	3526	1572	3428	3526	1572	3428	3526	1572
Grp Volume(v), veh/h	62	151	0	68	250	0	1476	524	0	71	952	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1714	1763	1572	1714	1763	1572	1714	1763	1572
Q Serve(g_s), s	1.7	4.2	0.0	1.8	6.9	0.0	34.0	7.0	0.0	2.0	26.4	0.0
Cycle Q Clear(g_c), s	1.7	4.2	0.0	1.8	6.9	0.0	34.0	7.0	0.0	2.0	26.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	215	221		313	322		1166	2121		120	1011	
V/C Ratio(X)	0.29	0.68		0.22	0.78		1.27	0.25		0.59	0.94	
Avail Cap(c_a), veh/h	346	355		343	353		1166	2121		206	1011	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	44.8	45.9	0.0	42.1	44.4	0.0	33.0	9.3	0.0	47.5	34.9	0.0
Incr Delay (d2), s/veh	0.3	1.4	0.0	0.3	9.7	0.0	126.8	0.3	0.0	4.6	17.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	1.8	0.0	0.8	3.4	0.0	33.6	2.4	0.0	0.9	13.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.1	47.3	0.0	42.5	54.1	0.0	159.8	9.6	0.0	52.1	52.2	0.0
LnGrp LOS	D	D		D	D		F	A		D	D	
Approach Vol, veh/h		213			318			2000			1023	
Approach Delay, s/veh		46.7			51.6			120.4			52.2	
Approach LOS		D			D			F			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.5	66.2		11.2	40.0	34.7		14.1				
Change Period (Y+Rc), s	5.0	6.0		5.0	6.0	6.0		5.0				
Max Green Setting (Gmax), s	6.0	53.0		10.0	34.0	24.0		10.0				
Max Q Clear Time (g_c+I1), s	4.0	9.0		6.2	36.0	28.4		8.9				
Green Ext Time (p_c), s	0.0	3.5		0.1	0.0	0.0		0.2				

Intersection Summary		
HCM 6th Ctrl Delay		90.2
HCM 6th LOS		F

Notes

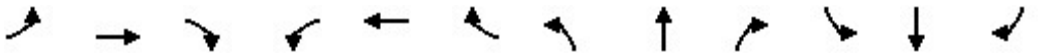
User approved pedestrian interval to be less than phase max green.

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	271	103	1548	216	82	1500
v/c Ratio	0.48	0.22	0.71	0.20	0.35	0.60
Control Delay	41.1	1.1	12.8	1.1	47.6	4.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.1	1.1	12.8	1.1	47.6	4.5
Queue Length 50th (ft)	82	0	322	12	27	117
Queue Length 95th (ft)	121	0	337	3	m27	m118
Internal Link Dist (ft)			647			2055
Turn Bay Length (ft)	250	500		250	550	
Base Capacity (vph)	565	468	2184	1058	240	2501
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.22	0.71	0.20	0.34	0.60

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	255	0	65	0	1300	205	65	1455	0
Future Volume (veh/h)	0	0	0	255	0	65	0	1300	205	65	1455	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	0	0	0	271	0	103	0	1548	216	82	1500	0
Peak Hour Factor	0.50	0.25	0.25	0.94	0.25	0.63	0.25	0.84	0.95	0.79	0.97	0.50
Percent Heavy Veh, %	1	1	1	3	3	3	3	3	3	3	3	3
Cap, veh/h	3	2		240	130	110	3	2576	1149	134	2856	
Arrive On Green	0.00	0.00	0.00	0.07	0.00	0.07	0.00	0.73	0.73	0.04	0.81	0.00
Sat Flow, veh/h	3483	1885	1598	3428	1856	1572	3428	3526	1572	3428	3526	1572
Grp Volume(v), veh/h	0	0	0	271	0	103	0	1548	216	82	1500	0
Grp Sat Flow(s),veh/h/ln	1742	1885	1598	1714	1856	1572	1714	1763	1572	1714	1763	1572
Q Serve(g_s), s	0.0	0.0	0.0	7.0	0.0	6.5	0.0	21.1	4.3	2.4	14.1	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	7.0	0.0	6.5	0.0	21.1	4.3	2.4	14.1	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	3	2		240	130	110	3	2576	1149	134	2856	
V/C Ratio(X)	0.00	0.00		1.13	0.00	0.94	0.00	0.60	0.19	0.61	0.53	
Avail Cap(c_a), veh/h	279	151		240	130	110	549	2576	1149	206	2856	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	46.5	0.0	46.3	0.0	6.5	4.2	47.3	3.1	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	97.3	0.0	65.8	0.0	1.0	0.4	1.7	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	6.2	0.0	4.5	0.0	5.8	1.1	1.0	2.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	0.0	143.8	0.0	112.1	0.0	7.5	4.6	49.0	3.8	0.0
LnGrp LOS	A	A		F	A	F	A	A	A	D	A	
Approach Vol, veh/h		0			374			1764			1582	
Approach Delay, s/veh		0.0			135.1			7.1			6.2	
Approach LOS					F			A			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.9	79.1		0.0	0.0	87.0		13.0				
Change Period (Y+Rc), s	4.0	6.0		6.0	4.0	6.0		6.0				
Max Green Setting (Gmax), s	6.0	57.0		8.0	16.0	47.0		7.0				
Max Q Clear Time (g_c+I1), s	4.4	23.1		0.0	0.0	16.1		9.0				
Green Ext Time (p_c), s	0.0	15.7		0.0	0.0	13.3		0.0				

Intersection Summary		
HCM 6th Ctrl Delay	19.6	
HCM 6th LOS	B	

Notes

User approved pedestrian interval to be less than phase max green.

Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	577	372	399	663	345	801
v/c Ratio	0.82	0.39	0.67	0.26	0.69	0.50
Control Delay	40.0	3.4	26.6	5.9	48.0	1.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.0	3.4	26.6	5.9	48.0	1.1
Queue Length 50th (ft)	305	20	157	60	109	0
Queue Length 95th (ft)	#584	33	#328	113	148	0
Internal Link Dist (ft)	1510			466	307	
Turn Bay Length (ft)			400		200	200
Base Capacity (vph)	702	1125	599	2566	970	1599
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.82	0.33	0.67	0.26	0.36	0.50

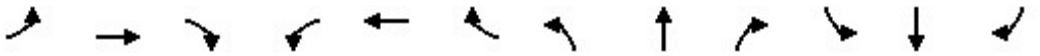
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	525	290	355	530	335	545
Future Volume (vph)	525	290	355	530	335	545
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	5.0	6.0	6.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	0.97	1.00
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1845	1554	1787	3574	3467	1599
Flt Permitted	1.00	1.00	0.10	1.00	0.95	1.00
Satd. Flow (perm)	1845	1554	193	3574	3467	1599
Peak-hour factor, PHF	0.91	0.78	0.89	0.80	0.97	0.68
Adj. Flow (vph)	577	372	399	662	345	801
RTOR Reduction (vph)	0	148	0	0	0	0
Lane Group Flow (vph)	577	224	399	663	345	801
Confl. Peds. (#/hr)		1			33	
Heavy Vehicles (%)	3%	3%	1%	1%	1%	1%
Turn Type	NA	pm+ov	pm+pt	NA	Prot	Free
Protected Phases	2	4	1	6	4	
Permitted Phases		2	6			Free
Actuated Green, G (s)	34.0	48.4	67.8	67.8	14.4	100.0
Effective Green, g (s)	34.0	48.4	67.8	67.8	14.4	100.0
Actuated g/C Ratio	0.34	0.48	0.68	0.68	0.14	1.00
Clearance Time (s)	6.0	6.0	5.0	6.0	6.0	
Vehicle Extension (s)	3.1	2.0	2.0	3.1	2.0	
Lane Grp Cap (vph)	627	752	589	2423	499	1599
v/s Ratio Prot	c0.31	0.04	c0.19	0.19	0.10	
v/s Ratio Perm		0.10	0.26			c0.50
v/c Ratio	0.92	0.30	0.68	0.27	0.69	0.50
Uniform Delay, d1	31.7	15.6	22.4	6.4	40.7	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	20.9	0.1	2.4	0.3	3.3	1.1
Delay (s)	52.6	15.6	24.8	6.6	44.0	1.1
Level of Service	D	B	C	A	D	A
Approach Delay (s)	38.1			13.5	14.0	
Approach LOS	D			B	B	

Intersection Summary			
HCM 2000 Control Delay	21.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	71.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

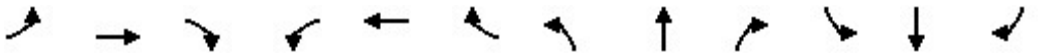


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	525	454	213	538	552	163	87	798	209	160	719	344
v/c Ratio	1.01	0.40	0.33	0.95	0.49	0.27	0.42	0.90	0.13	0.75	0.74	0.50
Control Delay	66.4	38.0	5.7	52.3	39.7	6.0	34.4	64.7	0.2	52.4	51.3	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.4	38.0	5.7	52.3	39.7	6.0	34.4	64.7	0.2	52.4	51.3	6.7
Queue Length 50th (ft)	~296	167	0	306	210	0	50	367	0	97	309	0
Queue Length 95th (ft)	#424	223	40	#487	258	34	67	#483	0	135	390	79
Internal Link Dist (ft)		605			645			489			691	
Turn Bay Length (ft)	415		415	420		420	330		330	335		335
Base Capacity (vph)	519	1133	651	564	1133	611	284	884	1599	246	968	682
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.01	0.40	0.33	0.95	0.49	0.27	0.31	0.90	0.13	0.65	0.74	0.50

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	425	440	175	495	475	130	60	710	190	125	640	330
Future Volume (veh/h)	425	440	175	495	475	130	60	710	190	125	640	330
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1885	1885	1885	1870	1870	1870
Adj Flow Rate, veh/h	525	454	213	538	552	162	87	798	0	160	719	344
Peak Hour Factor	0.81	0.97	0.82	0.92	0.86	0.80	0.69	0.89	0.91	0.78	0.89	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	1	1	1	2	2	2
Cap, veh/h	528	1151	513	554	1151	507	194	896		220	1000	446
Arrive On Green	0.18	0.32	0.32	0.18	0.32	0.32	0.05	0.25	0.00	0.08	0.28	0.28
Sat Flow, veh/h	1781	3554	1585	1781	3554	1565	1795	3582	1598	1781	3554	1585
Grp Volume(v), veh/h	525	454	213	538	552	162	87	798	0	160	719	344
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1565	1795	1791	1598	1781	1777	1585
Q Serve(g_s), s	25.0	13.5	14.3	25.0	16.9	10.6	4.9	29.2	0.0	8.9	24.8	27.1
Cycle Q Clear(g_c), s	25.0	13.5	14.3	25.0	16.9	10.6	4.9	29.2	0.0	8.9	24.8	27.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	528	1151	513	554	1151	507	194	896		220	1000	446
V/C Ratio(X)	1.00	0.39	0.42	0.97	0.48	0.32	0.45	0.89		0.73	0.72	0.77
Avail Cap(c_a), veh/h	528	1151	513	554	1151	507	304	896		274	1000	446
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.9	35.6	35.9	28.6	36.8	34.7	36.9	49.2	0.0	36.8	44.0	44.8
Incr Delay (d2), s/veh	37.9	1.0	2.5	30.9	1.4	1.7	0.6	12.9	0.0	5.0	4.4	12.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.0	6.0	5.8	16.7	7.6	4.2	2.1	14.4	0.0	4.1	11.3	12.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	66.8	36.6	38.4	59.6	38.2	36.3	37.5	62.1	0.0	41.7	48.4	56.9
LnGrp LOS	E	D	D	E	D	D	D	E		D	D	E
Approach Vol, veh/h		1192			1252			885			1223	
Approach Delay, s/veh		50.2			47.2			59.7			49.9	
Approach LOS		D			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	30.0	50.0	15.9	40.0	30.0	50.0	11.6	44.3
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0
Max Green Setting (Gmax), s	25.0	44.0	15.0	34.0	25.0	44.0	15.0	34.0
Max Q Clear Time (g_c+I1), s	27.0	16.3	10.9	31.2	27.0	18.9	6.9	29.1
Green Ext Time (p_c), s	0.0	3.8	0.1	1.4	0.0	4.3	0.0	2.5

Intersection Summary	
HCM 6th Ctrl Delay	51.1
HCM 6th LOS	D

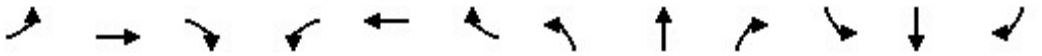
Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	291	237	359	398	30	349	106	122	430	83
v/c Ratio	0.80	0.54	0.94	0.84	0.10	0.61	0.13	0.18	0.62	0.13
Control Delay	43.8	12.9	61.8	30.6	21.7	37.7	5.5	19.9	34.9	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.8	12.9	61.8	30.6	21.7	37.7	5.5	19.9	34.9	0.7
Queue Length 50th (ft)	112	9	145	63	9	166	1	19	211	0
Queue Length 95th (ft)	#227	0	#336	0	23	342	15	62	#564	0
Internal Link Dist (ft)		538		1696		1320			1541	
Turn Bay Length (ft)	125		210		170		170	400		200
Base Capacity (vph)	363	497	381	525	466	574	794	877	688	657
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.80	0.48	0.94	0.76	0.06	0.61	0.13	0.14	0.63	0.13

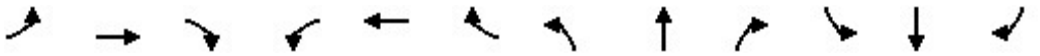
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	195	10	150	255	10	265	15	265	70	115	370	65
Future Volume (vph)	195	10	150	255	10	265	15	265	70	115	370	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0		5.0	6.0		5.0	6.0	5.0	5.0	6.0	6.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	0.97	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.95		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.86		1.00	0.87		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1767	1607		1752	1520		1770	1863	1558	3389	1845	1530
Flt Permitted	0.26	1.00		0.33	1.00		0.34	1.00	1.00	0.32	1.00	1.00
Satd. Flow (perm)	480	1607		602	1520		634	1863	1558	1158	1845	1530
Peak-hour factor, PHF	0.67	0.50	0.69	0.71	0.25	0.74	0.50	0.76	0.66	0.94	0.86	0.78
Adj. Flow (vph)	291	20	217	359	40	358	30	349	106	122	430	83
RTOR Reduction (vph)	0	184	0	0	233	0	0	0	53	0	0	54
Lane Group Flow (vph)	291	53	0	359	165	0	30	349	53	122	430	29
Confl. Peds. (#/hr)	10					10			19	19		
Confl. Bikes (#/hr)												4
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	2%	2%	2%	3%	3%	3%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	pm+ov	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	31.0	15.5		31.0	15.5		36.1	32.3	47.8	44.1	36.3	36.3
Effective Green, g (s)	31.0	15.5		31.0	15.5		36.1	32.3	47.8	44.1	36.3	36.3
Actuated g/C Ratio	0.30	0.15		0.30	0.15		0.35	0.31	0.47	0.43	0.35	0.35
Clearance Time (s)	5.0	6.0		5.0	6.0		5.0	6.0	5.0	5.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.5	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	339	242		355	229		264	585	725	666	652	540
v/s Ratio Prot	0.13	0.03		c0.15	0.11		0.00	0.19	0.01	c0.01	c0.23	
v/s Ratio Perm	0.13			c0.15			0.04		0.02	0.06		0.02
v/c Ratio	0.86	0.22		1.01	0.72		0.11	0.60	0.07	0.18	0.66	0.05
Uniform Delay, d1	30.7	38.3		33.0	41.5		22.6	29.7	15.2	18.5	28.0	21.9
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	18.9	0.5		50.6	10.3		0.1	4.4	0.0	0.1	5.2	0.2
Delay (s)	49.6	38.7		83.6	51.8		22.7	34.1	15.2	18.6	33.2	22.1
Level of Service	D	D		F	D		C	C	B	B	C	C
Approach Delay (s)		44.7			66.9			29.3			28.9	
Approach LOS		D			E			C			C	

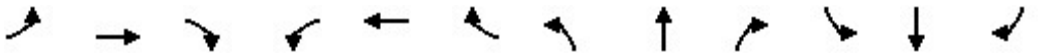
Intersection Summary			
HCM 2000 Control Delay	44.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	102.7	Sum of lost time (s)	26.5
Intersection Capacity Utilization	69.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	126	247	1133	50	193	103	1450	1090	74	38	537	68
v/c Ratio	0.38	0.72	0.71	0.14	0.52	0.06	1.23	0.53	0.05	0.18	0.63	0.04
Control Delay	45.0	55.8	2.7	40.9	47.4	0.1	140.4	11.3	0.1	46.4	37.8	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.0	55.8	2.7	40.9	47.4	0.1	140.4	11.3	0.1	46.4	37.8	0.0
Queue Length 50th (ft)	39	82	0	14	62	0	~608	207	0	11	161	0
Queue Length 95th (ft)	65	119	0	21	94	0	254	158	0	24	194	0
Internal Link Dist (ft)		741			1037			943			877	
Turn Bay Length (ft)	280		250	180		180	700			600		600
Base Capacity (vph)	520	536	1599	378	390	1599	1179	2041	1599	218	857	1599
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.24	0.46	0.71	0.13	0.49	0.06	1.23	0.53	0.05	0.17	0.63	0.04

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	125	235	940	30	170	80	725	785	50	30	440	65
Future Volume (veh/h)	125	235	940	30	170	80	725	785	50	30	440	65
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	126	247	0	50	193	0	1450	1090	0	38	537	0
Peak Hour Factor	0.99	0.95	0.83	0.60	0.88	0.78	0.50	0.72	0.68	0.78	0.82	0.95
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	311	320		264	272		1010	2145		91	1164	
Arrive On Green	0.09	0.09	0.00	0.08	0.08	0.00	0.29	0.60	0.00	0.03	0.32	0.00
Sat Flow, veh/h	3483	3582	1598	3483	3582	1598	3483	3582	1598	3483	3582	1598
Grp Volume(v), veh/h	126	247	0	50	193	0	1450	1090	0	38	537	0
Grp Sat Flow(s),veh/h/ln	1742	1791	1598	1742	1791	1598	1742	1791	1598	1742	1791	1598
Q Serve(g_s), s	3.4	6.7	0.0	1.3	5.3	0.0	29.0	17.5	0.0	1.1	11.9	0.0
Cycle Q Clear(g_c), s	3.4	6.7	0.0	1.3	5.3	0.0	29.0	17.5	0.0	1.1	11.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	311	320		264	272		1010	2145		91	1164	
V/C Ratio(X)	0.41	0.77		0.19	0.71		1.44	0.51		0.42	0.46	
Avail Cap(c_a), veh/h	522	537		348	358		1010	2145		209	1164	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	43.0	44.5	0.0	43.3	45.1	0.0	35.5	11.6	0.0	47.9	26.8	0.0
Incr Delay (d2), s/veh	0.3	1.5	0.0	0.3	4.4	0.0	201.7	0.9	0.0	3.0	1.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	3.0	0.0	0.6	2.5	0.0	39.8	6.2	0.0	0.5	5.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.3	46.1	0.0	43.7	49.5	0.0	237.2	12.4	0.0	51.0	28.1	0.0
LnGrp LOS	D	D		D	D		F	B		D	C	
Approach Vol, veh/h		373			243			2540			575	
Approach Delay, s/veh		45.1			48.3			140.7			29.6	
Approach LOS		D			D			F			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.6	65.9		13.9	35.0	38.5		12.6				
Change Period (Y+Rc), s	5.0	6.0		5.0	6.0	6.0		5.0				
Max Green Setting (Gmax), s	6.0	48.0		15.0	29.0	24.0		10.0				
Max Q Clear Time (g_c+I1), s	3.1	19.5		8.7	31.0	13.9		7.3				
Green Ext Time (p_c), s	0.0	8.2		0.2	0.0	2.3		0.3				

Intersection Summary		
HCM 6th Ctrl Delay	108.0	
HCM 6th LOS	F	

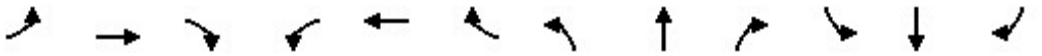
Notes

User approved pedestrian interval to be less than phase max green.

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	275	72	1608	217	52	1412
v/c Ratio	0.57	0.15	0.68	0.19	0.25	0.54
Control Delay	44.8	0.7	9.7	1.9	49.7	4.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.8	0.7	9.7	1.9	49.7	4.7
Queue Length 50th (ft)	85	0	65	0	17	113
Queue Length 95th (ft)	121	0	428	27	23	151
Internal Link Dist (ft)			647			2055
Turn Bay Length (ft)	250	500		250	550	
Base Capacity (vph)	482	467	2352	1124	274	2621
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.57	0.15	0.68	0.19	0.19	0.54

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	245	0	60	0	1495	195	30	1370	0
Future Volume (veh/h)	0	0	0	245	0	60	0	1495	195	30	1370	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1885	1885	1885	1885	1885	1885	1870	1870	1870
Adj Flow Rate, veh/h	0	0	0	275	0	72	0	1608	217	52	1412	0
Peak Hour Factor	0.25	0.50	1.00	0.89	0.50	0.83	0.25	0.93	0.90	0.58	0.97	0.50
Percent Heavy Veh, %	0	0	0	1	1	1	1	1	1	2	2	2
Cap, veh/h	4	2		341	184	156	3	2563	1143	93	2780	
Arrive On Green	0.00	0.00	0.00	0.10	0.00	0.10	0.00	0.72	0.72	0.03	0.78	0.00
Sat Flow, veh/h	3510	1900	1610	3483	1885	1598	3483	3582	1598	3456	3554	1585
Grp Volume(v), veh/h	0	0	0	275	0	72	0	1608	217	52	1412	0
Grp Sat Flow(s),veh/h/ln	1755	1900	1610	1742	1885	1598	1742	1791	1598	1728	1777	1585
Q Serve(g_s), s	0.0	0.0	0.0	7.7	0.0	4.3	0.0	23.2	4.5	1.5	14.4	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	7.7	0.0	4.3	0.0	23.2	4.5	1.5	14.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	4	2		341	184	156	3	2563	1143	93	2780	
V/C Ratio(X)	0.00	0.00		0.81	0.00	0.46	0.00	0.63	0.19	0.56	0.51	
Avail Cap(c_a), veh/h	281	152		348	189	160	557	2563	1143	276	2780	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	44.2	0.0	42.6	0.0	7.3	4.7	48.1	3.9	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	13.2	0.0	2.5	0.0	1.2	0.4	2.0	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	3.9	0.0	1.8	0.0	6.7	1.2	0.6	3.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	0.0	57.4	0.0	45.2	0.0	8.5	5.1	50.1	4.6	0.0
LnGrp LOS	A	A		E	A	D	A	A	A	D	A	
Approach Vol, veh/h		0			347			1825			1464	
Approach Delay, s/veh		0.0			54.9			8.1			6.2	
Approach LOS					D			A			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.7	77.5		0.0	0.0	84.2		15.8				
Change Period (Y+Rc), s	4.0	6.0		6.0	4.0	6.0		6.0				
Max Green Setting (Gmax), s	8.0	52.0		8.0	16.0	44.0		10.0				
Max Q Clear Time (g_c+I1), s	3.5	25.2		0.0	0.0	16.4		9.7				
Green Ext Time (p_c), s	0.0	14.6		0.0	0.0	11.6		0.0				

Intersection Summary	
HCM 6th Ctrl Delay	11.8
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	440	509	136	429	300	168
v/c Ratio	0.59	0.39	0.38	0.24	0.27	0.11
Control Delay	32.9	1.5	17.8	16.2	33.9	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.9	1.5	17.8	16.2	33.9	0.1
Queue Length 50th (ft)	264	0	52	92	80	0
Queue Length 95th (ft)	392	32	87	124	#185	0
Internal Link Dist (ft)	1510			466	307	
Turn Bay Length (ft)			400		200	200
Base Capacity (vph)	740	1321	609	1822	1108	1568
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.39	0.22	0.24	0.27	0.11

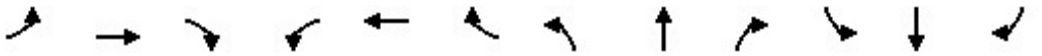
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	405	468	125	395	276	155
Future Volume (vph)	405	468	125	395	276	155
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	5.0	6.0	6.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	0.97	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1845	1568	1752	3505	3400	1568
Flt Permitted	1.00	1.00	0.26	1.00	0.95	1.00
Satd. Flow (perm)	1845	1568	487	3505	3400	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	440	509	136	429	300	168
RTOR Reduction (vph)	0	156	0	0	0	0
Lane Group Flow (vph)	440	353	136	429	300	168
Confl. Peds. (#/hr)					9	
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%
Turn Type	NA	pm+ov	pm+pt	NA	Prot	Free
Protected Phases	2	4	1	6	4	
Permitted Phases		2	6			Free
Actuated Green, G (s)	44.1	83.2	58.4	58.4	39.1	120.0
Effective Green, g (s)	44.1	83.2	58.4	58.4	39.1	120.0
Actuated g/C Ratio	0.37	0.69	0.49	0.49	0.33	1.00
Clearance Time (s)	6.0	6.0	5.0	6.0	6.0	
Vehicle Extension (s)	3.1	2.0	2.0	3.1	2.0	
Lane Grp Cap (vph)	678	1087	335	1705	1107	1568
v/s Ratio Prot	c0.24	c0.11	c0.03	0.12	0.09	
v/s Ratio Perm		0.12	0.17			c0.11
v/c Ratio	0.65	0.32	0.41	0.25	0.27	0.11
Uniform Delay, d1	31.5	7.3	19.8	18.0	29.9	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.8	0.8	0.3	0.4	0.6	0.1
Delay (s)	36.3	8.1	20.1	18.4	30.5	0.1
Level of Service	D	A	C	B	C	A
Approach Delay (s)	21.2			18.8	19.6	
Approach LOS	C			B	B	

Intersection Summary			
HCM 2000 Control Delay	20.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	50.7%	ICU Level of Service	A
Analysis Period (min)	15		

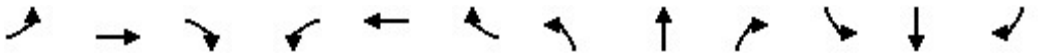
c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	287	168	158	496	252	98	92	934	658	114	1026	221
v/c Ratio	0.56	0.19	0.30	0.79	0.23	0.17	0.61	0.83	0.42	0.67	0.88	0.24
Control Delay	24.6	35.9	6.5	32.8	31.0	4.2	39.4	45.1	0.8	42.5	47.9	2.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.6	35.9	6.5	32.8	31.0	4.2	39.4	45.1	0.8	42.5	47.9	2.7
Queue Length 50th (ft)	131	54	0	265	76	0	42	352	0	53	394	0
Queue Length 95th (ft)	195	84	49	375	111	28	#82	435	0	#112	#511	39
Internal Link Dist (ft)		605			645			562			691	
Turn Bay Length (ft)	415		415	420		420	330		330	335		335
Base Capacity (vph)	531	899	524	633	1101	573	153	1129	1583	171	1169	926
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.19	0.30	0.78	0.23	0.17	0.60	0.83	0.42	0.67	0.88	0.24

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	270	155	145	456	232	90	85	878	605	105	944	203
Future Volume (veh/h)	270	155	145	456	232	90	85	878	605	105	944	203
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1841	1841	1841	1870	1870	1870	1885	1885	1885
Adj Flow Rate, veh/h	287	168	158	496	252	98	92	934	0	114	1026	221
Peak Hour Factor	0.94	0.92	0.92	0.92	0.92	0.92	0.92	0.94	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	4	4	4	2	2	2	1	1	1
Cap, veh/h	560	896	400	617	1079	481	172	1126		208	1167	734
Arrive On Green	0.13	0.25	0.25	0.19	0.31	0.31	0.05	0.32	0.00	0.06	0.33	0.33
Sat Flow, veh/h	1795	3582	1598	1753	3497	1560	1781	3554	1585	1795	3582	1598
Grp Volume(v), veh/h	287	168	158	496	252	98	92	934	0	114	1026	221
Grp Sat Flow(s),veh/h/ln	1795	1791	1598	1753	1749	1560	1781	1777	1585	1795	1791	1598
Q Serve(g_s), s	14.1	4.4	9.9	23.0	6.4	5.6	4.1	29.2	0.0	5.1	32.5	10.4
Cycle Q Clear(g_c), s	14.1	4.4	9.9	23.0	6.4	5.6	4.1	29.2	0.0	5.1	32.5	10.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	560	896	400	617	1079	481	172	1126		208	1167	734
V/C Ratio(X)	0.51	0.19	0.40	0.80	0.23	0.20	0.54	0.83		0.55	0.88	0.30
Avail Cap(c_a), veh/h	560	896	400	617	1079	481	174	1126		209	1167	734
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.1	35.4	37.4	25.6	30.9	30.6	30.6	38.0	0.0	29.4	38.2	20.4
Incr Delay (d2), s/veh	0.4	0.5	2.9	7.0	0.5	1.0	1.6	7.1	0.0	1.7	9.6	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.0	2.0	4.1	11.5	2.8	2.2	1.8	13.4	0.0	2.2	15.3	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.5	35.8	40.3	32.7	31.4	31.5	32.2	45.1	0.0	31.1	47.8	21.4
LnGrp LOS	C	D	D	C	C	C	C	D		C	D	C
Approach Vol, veh/h		613			846			1026			1361	
Approach Delay, s/veh		33.1			32.2			43.9			42.1	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	28.0	36.0	11.9	44.0	21.0	43.0	10.9	45.1
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0
Max Green Setting (Gmax), s	23.0	30.0	7.0	38.0	16.0	37.0	6.0	39.0
Max Q Clear Time (g_c+I1), s	25.0	11.9	7.1	31.2	16.1	8.4	6.1	34.5
Green Ext Time (p_c), s	0.0	1.4	0.0	3.3	0.0	1.9	0.0	2.8

Intersection Summary	
HCM 6th Ctrl Delay	39.0
HCM 6th LOS	D

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	22	38	310	208	11	167	783	458	205	21
v/c Ratio	0.10	0.21	0.86	0.51	0.02	0.26	0.65	0.36	0.21	0.02
Control Delay	29.4	31.0	54.4	24.9	19.2	28.9	4.8	15.6	19.6	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.4	31.0	54.4	24.9	19.2	28.9	4.8	15.6	19.6	0.1
Queue Length 50th (ft)	8	9	130	42	2	61	0	57	50	0
Queue Length 95th (ft)	37	24	#476	25	20	203	0	167	227	0
Internal Link Dist (ft)		538		1917		1338			851	
Turn Bay Length (ft)	125		210		170		170	400		200
Base Capacity (vph)	373	458	359	514	734	643	1196	1368	968	890
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.08	0.86	0.40	0.01	0.26	0.65	0.33	0.21	0.02

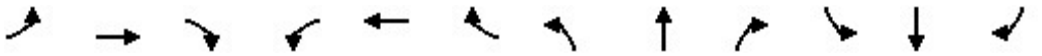
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	10	15	273	20	91	10	154	587	353	189	15
Future Volume (vph)	20	10	15	273	20	91	10	154	587	353	189	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0		5.0	6.0		5.0	6.0	5.0	5.0	6.0	6.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	0.97	1.00	1.00
Frpb, ped/bikes	1.00	0.98		1.00	1.00		1.00	1.00	0.99	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.93		1.00	0.89		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1787	1708		1701	1590		1770	1863	1565	3422	1863	1583
Flt Permitted	0.73	1.00		0.38	1.00		0.63	1.00	1.00	0.56	1.00	1.00
Satd. Flow (perm)	1368	1708		687	1590		1172	1863	1565	2026	1863	1583
Peak-hour factor, PHF	0.89	0.54	0.79	0.88	0.39	0.58	0.88	0.92	0.75	0.77	0.92	0.72
Adj. Flow (vph)	22	19	19	310	51	157	11	167	783	458	205	21
RTOR Reduction (vph)	0	18	0	0	79	0	0	0	384	0	0	11
Lane Group Flow (vph)	22	20	0	310	129	0	11	167	399	458	205	10
Confl. Peds. (#/hr)			2	2					8	8		
Heavy Vehicles (%)	1%	1%	1%	6%	6%	6%	2%	2%	2%	2%	2%	2%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	pm+ov	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	8.0	5.5		25.5	18.0		35.5	34.7	49.7	51.0	45.2	45.2
Effective Green, g (s)	8.0	5.5		25.5	18.0		35.5	34.7	49.7	51.0	45.2	45.2
Actuated g/C Ratio	0.08	0.06		0.26	0.18		0.36	0.36	0.51	0.52	0.46	0.46
Clearance Time (s)	5.0	6.0		5.0	6.0		5.0	6.0	5.0	5.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.5	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	122	96		335	293		431	662	796	1220	862	733
v/s Ratio Prot	0.00	0.01		c0.14	0.08		0.00	0.09	c0.08	c0.04	0.11	
v/s Ratio Perm	0.01			c0.10			0.01		0.18	0.15		0.01
v/c Ratio	0.18	0.21		0.93	0.44		0.03	0.25	0.50	0.38	0.24	0.01
Uniform Delay, d1	41.6	44.0		33.1	35.3		19.9	22.3	15.8	13.0	15.8	14.2
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	1.1		30.5	1.1		0.0	0.9	0.5	0.2	0.7	0.0
Delay (s)	42.4	45.1		63.5	36.4		19.9	23.2	16.3	13.2	16.5	14.2
Level of Service	D	D		E	D		B	C	B	B	B	B
Approach Delay (s)		44.1			52.6			17.5			14.2	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	25.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	97.6	Sum of lost time (s)	26.5
Intersection Capacity Utilization	65.6%	ICU Level of Service	C
Analysis Period (min)	15		

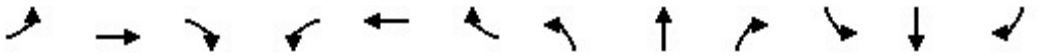
c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	77	136	830	65	223	54	992	503	27	49	848	214
v/c Ratio	0.35	0.60	0.52	0.18	0.59	0.03	0.80	0.25	0.02	0.24	0.68	0.26
Control Delay	48.4	56.0	1.2	41.4	49.2	0.0	44.5	5.5	0.0	47.7	32.2	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.4	56.0	1.2	41.4	49.2	0.0	44.5	5.5	0.0	47.7	32.2	7.1
Queue Length 50th (ft)	24	45	0	19	71	0	189	25	0	15	240	24
Queue Length 95th (ft)	46	75	0	40	111	0	212	37	m0	34	#375	73
Internal Link Dist (ft)		741			1037			943			877	
Turn Bay Length (ft)	280		250	180		180	700			600		600
Base Capacity (vph)	343	353	1583	377	388	1568	1680	2025	1568	211	1255	880
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.39	0.52	0.17	0.57	0.03	0.59	0.25	0.02	0.23	0.68	0.24

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	71	125	764	60	205	50	913	463	25	45	780	197
Future Volume (veh/h)	71	125	764	60	205	50	913	463	25	45	780	197
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	77	136	0	65	223	0	992	503	0	49	848	214
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	3	3	3	3	3	3	3	3	3
Cap, veh/h	200	206		290	298		1147	2178		102	1436	732
Arrive On Green	0.06	0.06	0.00	0.08	0.08	0.00	0.23	0.62	0.00	0.03	0.41	0.41
Sat Flow, veh/h	3456	3554	1585	3428	3526	1572	4983	3526	1572	3428	3526	1572
Grp Volume(v), veh/h	77	136	0	65	223	0	992	503	0	49	848	214
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1714	1763	1572	1661	1763	1572	1714	1763	1572
Q Serve(g_s), s	2.1	3.7	0.0	1.8	6.2	0.0	19.1	6.4	0.0	1.4	18.8	8.4
Cycle Q Clear(g_c), s	2.1	3.7	0.0	1.8	6.2	0.0	19.1	6.4	0.0	1.4	18.8	8.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	200	206		290	298		1147	2178		102	1436	732
V/C Ratio(X)	0.38	0.66		0.22	0.75		0.87	0.23		0.48	0.59	0.29
Avail Cap(c_a), veh/h	346	355		343	353		1694	2178		206	1436	732
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.80	0.80	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.4	46.1	0.0	42.7	44.7	0.0	37.0	8.5	0.0	47.8	23.1	16.5
Incr Delay (d2), s/veh	0.4	1.1	0.0	0.4	7.1	0.0	2.3	0.2	0.0	3.5	1.8	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	1.6	0.0	0.8	3.0	0.0	7.6	2.1	0.0	0.6	7.6	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.7	47.2	0.0	43.1	51.9	0.0	39.3	8.8	0.0	51.2	24.9	17.6
LnGrp LOS	D	D		D	D		D	A		D	C	B
Approach Vol, veh/h		213			288			1495			1111	
Approach Delay, s/veh		46.7			49.9			29.0			24.7	
Approach LOS		D			D			C			C	

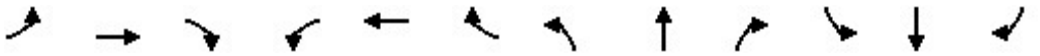
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.0	67.8		10.8	29.0	46.7		13.5				
Change Period (Y+Rc), s	5.0	6.0		5.0	6.0	6.0		5.0				
Max Green Setting (Gmax), s	6.0	53.0		10.0	34.0	24.0		10.0				
Max Q Clear Time (g_c+I1), s	3.4	8.4		5.7	21.1	20.8		8.2				
Green Ext Time (p_c), s	0.0	3.3		0.1	1.9	1.8		0.3				

Intersection Summary		
HCM 6th Ctrl Delay		30.6
HCM 6th LOS		C

Notes

User approved pedestrian interval to be less than phase max green.

Unsignalized Delay for [NBR, EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

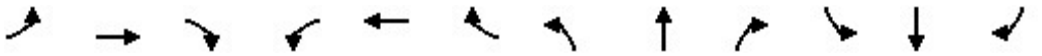


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	46	3	832	271	20	71	958	1411	216	71	1494	170
v/c Ratio	0.16	0.03	0.52	0.51	0.12	0.23	0.86	0.64	0.20	0.34	0.87	0.11
Control Delay	39.5	44.0	1.2	39.6	43.4	1.7	38.8	11.1	1.2	57.3	29.7	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.5	44.0	1.2	39.6	43.4	1.7	38.8	11.1	1.2	57.3	29.7	0.1
Queue Length 50th (ft)	14	2	0	77	12	0	309	284	1	24	356	0
Queue Length 95th (ft)	14	4	0	110	9	0	m#425	m352	m5	m41	413	0
Internal Link Dist (ft)		527			679			676			2055	
Turn Bay Length (ft)	125		125	250		500	455		250	550		550
Base Capacity (vph)	295	133	1615	543	202	337	1118	2192	1061	217	1712	1568
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.02	0.52	0.50	0.10	0.21	0.86	0.64	0.20	0.33	0.87	0.11

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	1	208	255	5	65	824	1298	205	65	1449	85
Future Volume (veh/h)	23	1	208	255	5	65	824	1298	205	65	1449	85
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	46	3	0	271	20	71	958	1411	216	71	1494	0
Peak Hour Factor	0.50	0.33	0.25	0.94	0.25	0.92	0.86	0.92	0.95	0.92	0.97	0.50
Percent Heavy Veh, %	0	0	0	3	3	3	3	3	3	3	3	3
Cap, veh/h	446	93		599	174	148	891	2119	945	120	1905	
Arrive On Green	0.05	0.05	0.00	0.10	0.09	0.09	0.26	0.60	0.60	0.03	0.38	0.00
Sat Flow, veh/h	3510	1900	1610	3428	1856	1572	3428	3526	1572	3428	5066	1572
Grp Volume(v), veh/h	46	3	0	271	20	71	958	1411	216	71	1494	0
Grp Sat Flow(s),veh/h/ln	1755	1900	1610	1714	1856	1572	1714	1763	1572	1714	1689	1572
Q Serve(g_s), s	1.2	0.2	0.0	7.3	1.0	4.3	26.0	26.6	6.4	2.0	26.1	0.0
Cycle Q Clear(g_c), s	1.2	0.2	0.0	7.3	1.0	4.3	26.0	26.6	6.4	2.0	26.1	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	446	93		599	174	148	891	2119	945	120	1905	
V/C Ratio(X)	0.10	0.03		0.45	0.11	0.48	1.07	0.67	0.23	0.59	0.78	
Avail Cap(c_a), veh/h	516	133		650	204	173	891	2119	945	206	1905	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	41.1	45.3	0.0	39.3	41.5	43.0	37.0	13.3	9.2	47.6	27.6	0.0
Incr Delay (d2), s/veh	0.1	0.2	0.0	0.6	0.3	2.9	52.3	1.7	0.6	1.7	3.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.1	0.0	3.1	0.5	1.8	16.7	9.3	2.2	0.9	10.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.3	45.5	0.0	40.0	41.8	45.9	89.3	14.9	9.8	49.3	30.9	0.0
LnGrp LOS	D	D		D	D	D	F	B	A	D	C	
Approach Vol, veh/h		49			362			2585			1565	
Approach Delay, s/veh		41.5			41.2			42.1			31.8	
Approach LOS		D			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.5	66.1	15.5	10.9	30.0	43.6	11.0	15.4
Change Period (Y+Rc), s	4.0	6.0	6.0	6.0	4.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	6.0	54.0	11.0	7.0	26.0	34.0	7.0	11.0
Max Q Clear Time (g_c+I1), s	4.0	28.6	9.3	2.2	28.0	28.1	3.2	6.3
Green Ext Time (p_c), s	0.0	12.1	0.2	0.0	0.0	4.2	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	38.5
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

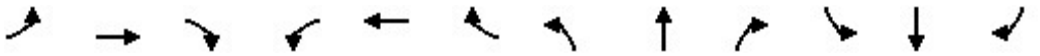
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	635	285	199	646	204	173
v/c Ratio	0.57	0.23	0.39	0.24	0.53	0.11
Control Delay	16.8	1.0	6.2	4.5	47.2	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.8	1.0	6.2	4.5	47.2	0.1
Queue Length 50th (ft)	207	0	24	46	64	0
Queue Length 95th (ft)	476	19	70	108	98	0
Internal Link Dist (ft)	1510			466	307	
Turn Bay Length (ft)			400		200	200
Base Capacity (vph)	1111	1475	563	2685	970	1599
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.57	0.19	0.35	0.24	0.21	0.11

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	584	262	183	594	198	159
Future Volume (vph)	584	262	183	594	198	159
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	5.0	6.0	6.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	0.97	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1845	1568	1787	3574	3467	1599
Flt Permitted	1.00	1.00	0.27	1.00	0.95	1.00
Satd. Flow (perm)	1845	1568	499	3574	3467	1599
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.97	0.92
Adj. Flow (vph)	635	285	199	646	204	173
RTOR Reduction (vph)	0	93	0	0	0	0
Lane Group Flow (vph)	635	192	199	646	204	173
Confl. Peds. (#/hr)					12	
Heavy Vehicles (%)	3%	3%	1%	1%	1%	1%
Turn Type	NA	pm+ov	pm+pt	NA	Prot	Free
Protected Phases	2	4	1	6	4	
Permitted Phases		2	6			Free
Actuated Green, G (s)	56.2	67.3	71.1	71.1	11.1	100.0
Effective Green, g (s)	56.2	67.3	71.1	71.1	11.1	100.0
Actuated g/C Ratio	0.56	0.67	0.71	0.71	0.11	1.00
Clearance Time (s)	6.0	6.0	5.0	6.0	6.0	
Vehicle Extension (s)	3.1	2.0	2.0	3.1	2.0	
Lane Grp Cap (vph)	1036	1055	482	2541	384	1599
v/s Ratio Prot	c0.34	0.02	c0.04	0.18	c0.06	
v/s Ratio Perm		0.10	0.25			c0.11
v/c Ratio	0.61	0.18	0.41	0.25	0.53	0.11
Uniform Delay, d1	14.6	6.1	8.2	5.1	42.0	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.7	0.0	0.2	0.2	0.7	0.1
Delay (s)	17.3	6.1	8.4	5.3	42.7	0.1
Level of Service	B	A	A	A	D	A
Approach Delay (s)	13.9			6.1	23.2	
Approach LOS	B			A	C	

Intersection Summary			
HCM 2000 Control Delay	12.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	63.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	300	297	151	627	415	130	91	1021	414	114	864	298
v/c Ratio	0.70	0.40	0.34	0.93	0.33	0.20	0.57	0.92	0.26	0.79	0.77	0.34
Control Delay	31.5	49.5	10.1	47.2	34.3	6.0	42.5	60.2	0.4	64.0	48.4	6.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.5	49.5	10.1	47.2	34.3	6.0	42.5	60.2	0.4	64.0	48.4	6.6
Queue Length 50th (ft)	151	124	4	405	144	0	52	475	0	66	376	38
Queue Length 95th (ft)	215	171	65	#587	199	47	91	#606	0	#159	457	91
Internal Link Dist (ft)		605			645			562			691	
Turn Bay Length (ft)	415		415	420		420	330		330	335		335
Base Capacity (vph)	486	741	445	683	1251	643	160	1109	1599	145	1125	928
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.40	0.34	0.92	0.33	0.20	0.57	0.92	0.26	0.79	0.77	0.32

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	276	288	139	577	382	120	84	939	381	105	795	286
Future Volume (veh/h)	276	288	139	577	382	120	84	939	381	105	795	286
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1885	1885	1885	1870	1870	1870
Adj Flow Rate, veh/h	300	297	151	627	415	130	91	1021	0	114	864	298
Peak Hour Factor	0.92	0.97	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	1	1	1	2	2	2
Cap, veh/h	490	736	328	675	1207	539	174	1100		158	1117	729
Arrive On Green	0.15	0.21	0.21	0.28	0.34	0.34	0.04	0.31	0.00	0.05	0.31	0.31
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1795	3582	1598	1781	3554	1585
Grp Volume(v), veh/h	300	297	151	627	415	130	91	1021	0	114	864	298
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1795	1791	1598	1781	1777	1585
Q Serve(g_s), s	18.3	10.1	11.7	38.0	12.2	8.3	4.9	38.7	0.0	6.2	30.8	17.5
Cycle Q Clear(g_c), s	18.3	10.1	11.7	38.0	12.2	8.3	4.9	38.7	0.0	6.2	30.8	17.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	490	736	328	675	1207	539	174	1100		158	1117	729
V/C Ratio(X)	0.61	0.40	0.46	0.93	0.34	0.24	0.52	0.93		0.72	0.77	0.41
Avail Cap(c_a), veh/h	510	736	328	675	1207	539	174	1100		158	1117	729
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.2	48.0	48.6	28.5	34.5	33.2	35.1	47.0	0.0	37.2	43.5	25.1
Incr Delay (d2), s/veh	1.4	1.6	4.6	19.1	0.8	1.1	1.4	14.6	0.0	13.3	5.2	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.1	4.7	5.0	19.3	5.4	3.3	2.2	19.1	0.0	3.2	14.1	6.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.6	49.7	53.2	47.6	35.3	34.3	36.4	61.6	0.0	50.5	48.7	26.8
LnGrp LOS	D	D	D	D	D	C	D	E		D	D	C
Approach Vol, veh/h		748			1172			1112			1276	
Approach Delay, s/veh		45.2			41.8			59.5			43.8	
Approach LOS		D			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	44.0	35.0	12.0	49.0	25.4	53.6	11.0	50.0
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0
Max Green Setting (Gmax), s	39.0	29.0	7.0	43.0	22.0	46.0	6.0	44.0
Max Q Clear Time (g_c+I1), s	40.0	13.7	8.2	40.7	20.3	14.2	6.9	32.8
Green Ext Time (p_c), s	0.0	2.0	0.0	1.4	0.1	3.3	0.0	5.0

Intersection Summary	
HCM 6th Ctrl Delay	47.5
HCM 6th LOS	D

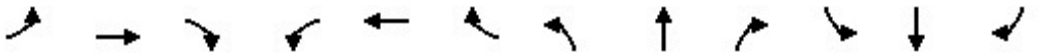
Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	22	82	235	216	20	233	188	56	358	13
v/c Ratio	0.09	0.41	0.46	0.41	0.05	0.37	0.19	0.06	0.49	0.02
Control Delay	25.3	43.5	26.9	28.0	21.1	30.8	3.5	19.4	29.3	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.3	43.5	26.9	28.0	21.1	30.8	3.5	19.4	29.3	0.0
Queue Length 50th (ft)	7	35	82	62	5	90	0	7	116	0
Queue Length 95th (ft)	26	55	183	36	18	271	7	33	#480	0
Internal Link Dist (ft)		538		1917		1338			851	
Turn Bay Length (ft)	125		210		170		170	400		200
Base Capacity (vph)	439	408	509	554	542	625	975	1100	725	701
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.20	0.46	0.39	0.04	0.37	0.19	0.05	0.49	0.02

Intersection Summary

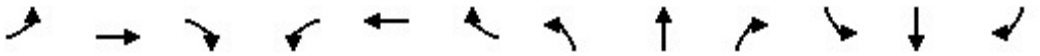
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	30	15	167	25	86	10	214	124	53	329	10
Future Volume (vph)	15	30	15	167	25	86	10	214	124	53	329	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0		5.0	6.0		5.0	6.0	5.0	5.0	6.0	6.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	0.97	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00	0.99	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.96		1.00	0.92		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1763	1788		1752	1675		1770	1863	1567	3389	1845	1568
Flt Permitted	0.62	1.00		0.46	1.00		0.43	1.00	1.00	0.50	1.00	1.00
Satd. Flow (perm)	1156	1788		844	1675		803	1863	1567	1773	1845	1568
Peak-hour factor, PHF	0.67	0.50	0.69	0.71	0.25	0.74	0.50	0.92	0.66	0.94	0.92	0.78
Adj. Flow (vph)	22	60	22	235	100	116	20	233	188	56	358	13
RTOR Reduction (vph)	0	10	0	0	26	0	0	0	89	0	0	8
Lane Group Flow (vph)	22	72	0	235	190	0	20	233	99	56	358	5
Confl. Peds. (#/hr)	2					2			8	8		
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	2%	2%	2%	3%	3%	3%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	pm+ov	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	11.7	9.3		33.6	26.2		33.4	31.2	50.5	39.0	34.0	34.0
Effective Green, g (s)	11.7	9.3		33.6	26.2		33.4	31.2	50.5	39.0	34.0	34.0
Actuated g/C Ratio	0.12	0.10		0.35	0.27		0.35	0.32	0.53	0.41	0.35	0.35
Clearance Time (s)	5.0	6.0		5.0	6.0		5.0	6.0	5.0	5.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.5	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	155	173		477	456		301	604	823	803	652	554
v/s Ratio Prot	0.00	0.04		c0.10	0.11		0.00	0.13	0.02	c0.00	c0.19	
v/s Ratio Perm	0.01			c0.07			0.02		0.04	0.02		0.00
v/c Ratio	0.14	0.42		0.49	0.42		0.07	0.39	0.12	0.07	0.55	0.01
Uniform Delay, d1	37.5	40.8		23.6	28.7		20.9	25.1	11.5	17.5	24.9	20.1
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	1.6		0.8	0.6		0.1	1.9	0.1	0.0	3.3	0.0
Delay (s)	38.0	42.5		24.4	29.3		21.0	26.9	11.6	17.5	28.2	20.2
Level of Service	D	D		C	C		C	C	B	B	C	C
Approach Delay (s)		41.5			26.8			20.1			26.6	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	25.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	96.1	Sum of lost time (s)	26.5
Intersection Capacity Utilization	48.6%	ICU Level of Service	A
Analysis Period (min)	15		

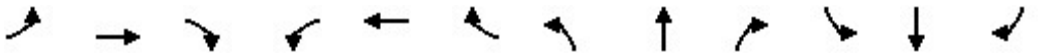
c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	201	247	1048	33	185	87	799	950	54	33	511	93
v/c Ratio	0.61	0.72	0.66	0.09	0.51	0.05	0.78	0.46	0.03	0.16	0.38	0.10
Control Delay	50.8	55.8	2.1	40.4	47.3	0.1	50.7	7.6	0.0	46.1	25.1	1.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.8	55.8	2.1	40.4	47.3	0.1	50.7	7.6	0.0	46.1	25.1	1.0
Queue Length 50th (ft)	64	82	0	9	59	0	170	63	0	10	123	0
Queue Length 95th (ft)	97	119	0	24	93	0	185	80	m0	26	194	9
Internal Link Dist (ft)		741			1037			943			877	
Turn Bay Length (ft)	280		250	180		180	700			600		600
Base Capacity (vph)	520	536	1599	375	386	1599	1461	2049	1599	217	1354	1000
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.46	0.66	0.09	0.48	0.05	0.55	0.46	0.03	0.15	0.38	0.09

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	199	235	964	30	170	80	735	874	50	30	470	88
Future Volume (veh/h)	199	235	964	30	170	80	735	874	50	30	470	88
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	201	247	0	33	185	0	799	950	0	33	511	93
Peak Hour Factor	0.99	0.95	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.95
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	311	320		256	263		945	2161		84	1543	831
Arrive On Green	0.09	0.09	0.00	0.07	0.07	0.00	0.19	0.60	0.00	0.02	0.43	0.43
Sat Flow, veh/h	3483	3582	1598	3483	3582	1598	5063	3582	1598	3483	3582	1598
Grp Volume(v), veh/h	201	247	0	33	185	0	799	950	0	33	511	93
Grp Sat Flow(s),veh/h/ln	1742	1791	1598	1742	1791	1598	1688	1791	1598	1742	1791	1598
Q Serve(g_s), s	5.6	6.7	0.0	0.9	5.0	0.0	15.2	14.3	0.0	0.9	9.5	3.0
Cycle Q Clear(g_c), s	5.6	6.7	0.0	0.9	5.0	0.0	15.2	14.3	0.0	0.9	9.5	3.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	311	320		256	263		945	2161		84	1543	831
V/C Ratio(X)	0.65	0.77		0.13	0.70		0.85	0.44		0.39	0.33	0.11
Avail Cap(c_a), veh/h	522	537		348	358		1468	2161		209	1543	831
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.67	0.67	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.0	44.5	0.0	43.3	45.3	0.0	39.3	10.7	0.0	48.1	18.9	12.2
Incr Delay (d2), s/veh	0.6	1.0	0.0	0.2	3.8	0.0	1.6	0.7	0.0	3.0	0.6	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	3.0	0.0	0.4	2.4	0.0	6.2	5.0	0.0	0.4	3.8	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.6	45.6	0.0	43.6	49.1	0.0	40.9	11.4	0.0	51.1	19.5	12.5
LnGrp LOS	D	D		D	D		D	B		D	B	B
Approach Vol, veh/h		448			218			1749			637	
Approach Delay, s/veh		45.1			48.3			24.9			20.1	
Approach LOS		D			D			C			C	

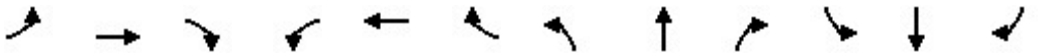
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.4	66.3		13.9	24.7	49.1		12.3				
Change Period (Y+Rc), s	5.0	6.0		5.0	6.0	6.0		5.0				
Max Green Setting (Gmax), s	6.0	48.0		15.0	29.0	24.0		10.0				
Max Q Clear Time (g_c+I1), s	2.9	16.3		8.7	17.2	11.5		7.0				
Green Ext Time (p_c), s	0.0	7.0		0.2	1.4	2.7		0.3				

Intersection Summary		
HCM 6th Ctrl Delay	28.5	
HCM 6th LOS	C	

Notes

User approved pedestrian interval to be less than phase max green.

Unsignalized Delay for [NBR, EBR, WBR] is excluded from calculations of the approach delay and intersection delay.



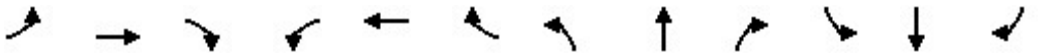
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	119	10	883	266	10	65	1140	1638	212	33	1437	60
v/c Ratio	0.32	0.08	0.55	0.45	0.08	0.23	0.94	0.73	0.20	0.18	0.94	0.04
Control Delay	41.5	44.8	1.3	37.2	44.8	2.0	48.9	13.6	1.9	54.1	42.9	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.5	44.8	1.3	37.2	44.8	2.0	48.9	13.6	1.9	54.1	42.9	0.0
Queue Length 50th (ft)	37	6	0	74	6	0	~398	322	0	11	342	0
Queue Length 95th (ft)	45	13	0	110	13	0	89	464	16	m20	#430	0
Internal Link Dist (ft)		527			679			676			2055	
Turn Bay Length (ft)	125		125	250		500	455		250	550		550
Base Capacity (vph)	372	171	1615	597	169	312	1210	2248	1084	209	1525	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.06	0.55	0.45	0.06	0.21	0.94	0.73	0.20	0.16	0.94	0.04

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	89	5	883	245	5	60	285	1523	195	30	1394	30
Future Volume (veh/h)	89	5	883	245	5	60	285	1523	195	30	1394	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1885	1885	1885	1885	1885	1885	1870	1870	1870
Adj Flow Rate, veh/h	119	10	0	266	10	65	1140	1638	212	33	1437	0
Peak Hour Factor	0.75	0.50	1.00	0.92	0.50	0.92	0.25	0.93	0.92	0.92	0.97	0.50
Percent Heavy Veh, %	0	0	0	1	1	1	1	1	1	2	2	2
Cap, veh/h	459	95		581	164	139	1045	2229	994	62	1737	
Arrive On Green	0.05	0.05	0.00	0.09	0.09	0.09	0.30	0.62	0.62	0.02	0.34	0.00
Sat Flow, veh/h	3510	1900	1610	3483	1885	1598	3483	3582	1598	3456	5106	1585
Grp Volume(v), veh/h	119	10	0	266	10	65	1140	1638	212	33	1437	0
Grp Sat Flow(s),veh/h/ln	1755	1900	1610	1742	1885	1598	1742	1791	1598	1728	1702	1585
Q Serve(g_s), s	3.1	0.5	0.0	7.1	0.5	3.9	30.0	31.8	5.8	0.9	25.8	0.0
Cycle Q Clear(g_c), s	3.1	0.5	0.0	7.1	0.5	3.9	30.0	31.8	5.8	0.9	25.8	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	459	95		581	164	139	1045	2229	994	62	1737	
V/C Ratio(X)	0.26	0.11		0.46	0.06	0.47	1.09	0.74	0.21	0.53	0.83	
Avail Cap(c_a), veh/h	590	171		581	170	144	1045	2229	994	207	1737	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	41.7	45.4	0.0	40.1	41.9	43.4	35.0	13.2	8.2	48.7	30.3	0.0
Incr Delay (d2), s/veh	0.4	0.6	0.0	0.7	0.2	2.9	56.0	2.2	0.5	2.6	4.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.3	0.0	3.1	0.2	1.6	20.0	11.1	2.0	0.4	10.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.0	46.0	0.0	40.7	42.1	46.4	91.0	15.4	8.7	51.3	35.0	0.0
LnGrp LOS	D	D		D	D	D	F	B	A	D	C	
Approach Vol, veh/h		129			341			2990			1470	
Approach Delay, s/veh		42.3			41.8			43.7			35.3	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.8	68.2	15.0	11.0	34.0	40.0	11.3	14.7
Change Period (Y+Rc), s	4.0	6.0	6.0	6.0	4.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	6.0	54.0	9.0	9.0	30.0	30.0	9.0	9.0
Max Q Clear Time (g_c+I1), s	2.9	33.8	9.1	2.5	32.0	27.8	5.1	5.9
Green Ext Time (p_c), s	0.0	12.5	0.0	0.0	0.0	1.6	0.1	0.1

Intersection Summary	
HCM 6th Ctrl Delay	41.1
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

BOULDER VALLEY SCHOOL DISTRICT RE-2

SUPPLEMENTAL RESOLUTION NO. 24-09
(Renewing and Extending Timelines in Resolution No. 22-25)

WHEREAS, on August 23, 2022, the Board of Education ("Board") of Boulder Valley School District RE-2 ("District") adopted Resolution No. 22-25, attached hereto and incorporated by this reference, approving the expansion of the right-of-way onto district property for the widening and alignment of Campus Drive adjacent to the district's Monarch High School Campus, as presented in the Developer's preliminary and final plat filed with the City of Louisville, Colorado ("City") for the development of "Redtail Ridge – Filing No. 1;" and

WHEREAS, Resolution No. 22-25 was conditioned, in part, upon approval by the City within one year from August 23, 2022, of the final plat of Redtail Ridge – Filing No. 1, with the new alignment of Campus Drive; and

WHEREAS, City approval did not occur within one year; and

WHEREAS, due to recent progress with the City, the Board desires to extend the date for final City approval and to renew, extend, and ratify the provisions of Resolution No. 22-25.

NOW, THEREFORE, BE IT RESOLVED:

Section 1. Renewal and Extension of Concept Approval. That the Board hereby renews, extends, and ratifies its approval of the concept for the widening of Campus Drive by the Developer, as provided in Resolution No. 22-25, subject to the City's adoption of the final plat for Redtail Ridge - Filing No. 1 within one year of the date of this Resolution No. 24-09, with substantially the same configuration of Campus Drive as previously approved by the Board. All provisions of Resolution No. 22-23 not inconsistent with the terms of this Supplemental Resolution are hereby authorized, approved, ratified, and confirmed in all respects.

Section 2. Approval and Execution of Documents; Authorized District Officials. The President or Vice-President of the Board, the Superintendent of Schools, and the District's Assistant Superintendent of Operational Services ("Authorized District Officials") are each individually hereby authorized to execute and deliver for and on behalf of the Board and District any and all additional documents, easements, agreements and other papers and to perform all other acts that each of them may deem necessary or appropriate in order to implement and carry out the transaction and other matters authorized by this Resolution.

Section 3. Severability. If any section, paragraph, clause, or provision of this Resolution shall for any reason be held to be invalid or unenforceable, the invalidity or unenforceability of such section, paragraph, clause, or provision shall not affect any of the remaining provisions of this Resolution.

[Signature page follows this page.]

APPROVED AND ADOPTED this 12th day of March, 2024.

BOULDER VALLEY SCHOOL DISTRICT RE-2

By: _____
Name: Nicole Rajpal
Title: President, Board of Education

ATTEST:

By: _____
Name: Laura Shafer
Title: Secretary, Board of Education

4857-5393-0665, v. 2

BOULDER VALLEY SCHOOL DISTRICT RE-2

RESOLUTION NO. 22-25

WHEREAS, the Board of Education ("Board") of Boulder Valley School District RE-2 ("District") is the owner of the Monarch K-8 and Monarch High School Campus ("Campus") located in the City of Louisville, Colorado ("City"); and

WHEREAS, vehicular access to and from the Campus is primarily along Campus Drive, a public right-of-way previously dedicated by the District and owned by the City; and

WHEREAS, the real property adjacent to the Campus on the south was acquired by Brue-Baukol Capital Partners which recently has become a joint owner with Sterling Bay Capital Partners, (collectively the "Developer"); and

WHEREAS, the Developer has filed a preliminary and final plat with the City for the development of the Property titled "Redtail Ridge – Filing No. 1;" and

WHEREAS, as a condition of the application process for Redtail Ridge – Filing No. 1, the City requires the Developer to make the widening and extension of Campus Drive part of the first phase of infrastructure improvements that will be followed in the future as part of a larger construction project by the Developer to extend the right-of-way on the Developer's property to South 96th Street, creating a second and much-needed access to the Campus; and

WHEREAS, the alignment currently proposed by the Developer, in consultation with the District and City, will add approximately 1.15 acres of District property to the current Campus Drive right-of-way, improve pedestrian and vehicle access to and from the Campus, and keep the Campus parking lot virtually intact; and

WHEREAS, the proposed new configuration of Campus Drive is depicted on Attachment A; and general vicinity of the Campus Drive widening improvements is depicted on Attachment B; and

WHEREAS, the District's staff has reviewed the proposed widening and new alignment, has determined that the construction of the Campus Drive project will not significantly impact school operations, and has recommended the project as it will provide a substantial benefit to the District by improving access to and from the Campus.

NOW, THEREFORE, BE IT RESOLVED:

Section 1. Approval of Concept. That the Board of Education hereby approves the concept for the widening of Campus Drive by the Developer, substantially in the configuration presented on Attachment B, including the potential future conveyance or dedication by the District of approximately 1.15 acres of District property to the City for additional right-of-way as shown on Attachment B, subject to the following:

A. That a land use application filed by the Developer or its successor that includes the new alignment of Campus Drive as shown on Attachment A is approved by the City within one year from the date of this Resolution; and

B. That upon receipt of the City's written request within 180 days after approval of the land use application, the additional right-of-way be dedicated by the District to the City and that any necessary documents of conveyance to be subject to approval by the District's legal counsel; and

C. That, if deemed necessary by the Authorized District Officials, designated below, to allow construction of the Campus Drive widening improvements to proceed prior to dedication or conveyance of the additional right-of-way to the City as provided herein, the District will grant a temporary construction easement to the Developer, on terms approved by the District's legal counsel, following or in conjunction with approval and the issuance of building permits for the project by the City.

D. That the widening of Campus Drive in the configuration presented does not prevent or materially interfere with pedestrian or vehicular access to and from the Campus during construction.

Section 2. Approval and Execution of Documents; Authorized District Officials. The President or Vice-President of the Board, the Superintendent of Schools, and the District's Assistant Superintendent for Operational Services ("Authorized District Officials") are each individually hereby authorized to execute and deliver for and on behalf of the Board and District any and all additional documents, easements, agreements and other papers and to perform all other acts that each of them may deem necessary or appropriate in order to implement and carry out the transaction and other matters authorized by this Resolution.

Section 3. Severability. If any section, paragraph, clause, or provision of this Resolution shall for any reason be held to be invalid or unenforceable, the invalidity or unenforceability of such section, paragraph, clause, or provision shall not affect any of the remaining provisions of this Resolution.

APPROVED AND ADOPTED this 23rd day of August 2022.

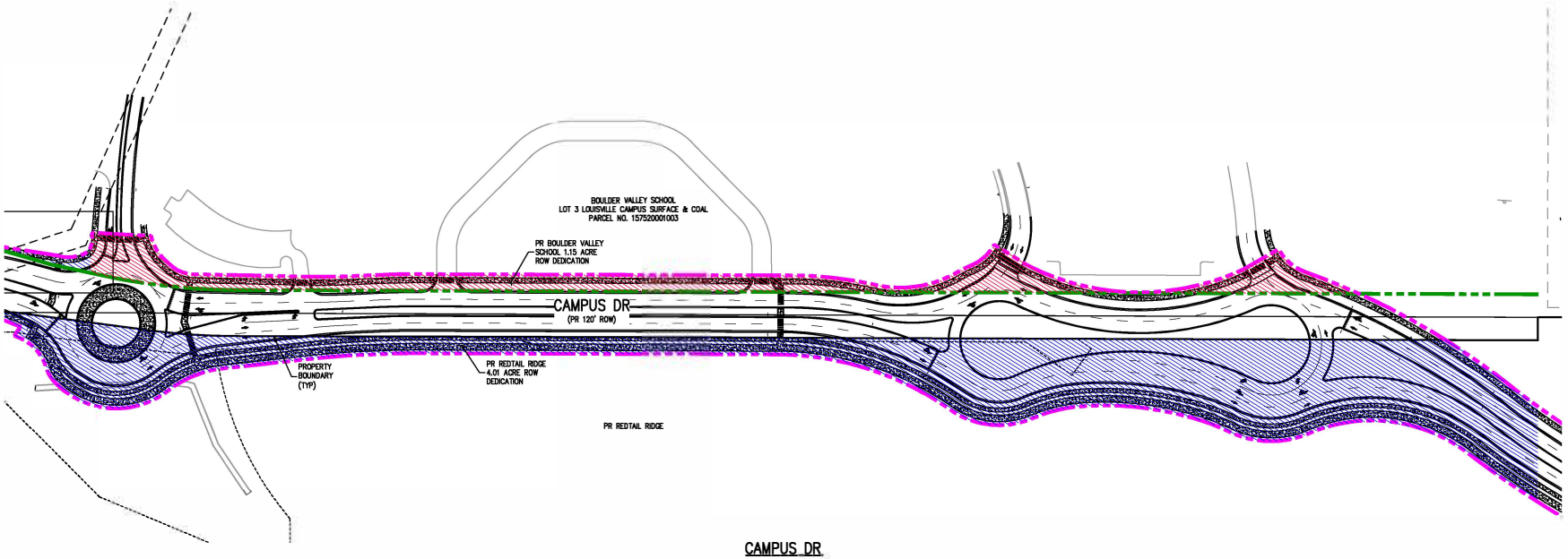
BOULDER VALLEY SCHOOL DISTRICT RE-2

By: Kathy Gebhardt
Name: Kathy Gebhardt
Title: President, Board of Education

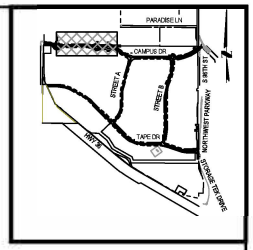
ATTEST:

By: _____
Name: Laura Shafer
Title: Secretary, Board of Education

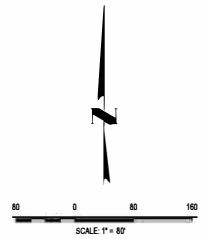
4880-7561-6557, v. 1



CAMPUS DR



KEY MAP
SCALE: 1"=2000'



SCALE: 1" = 80'

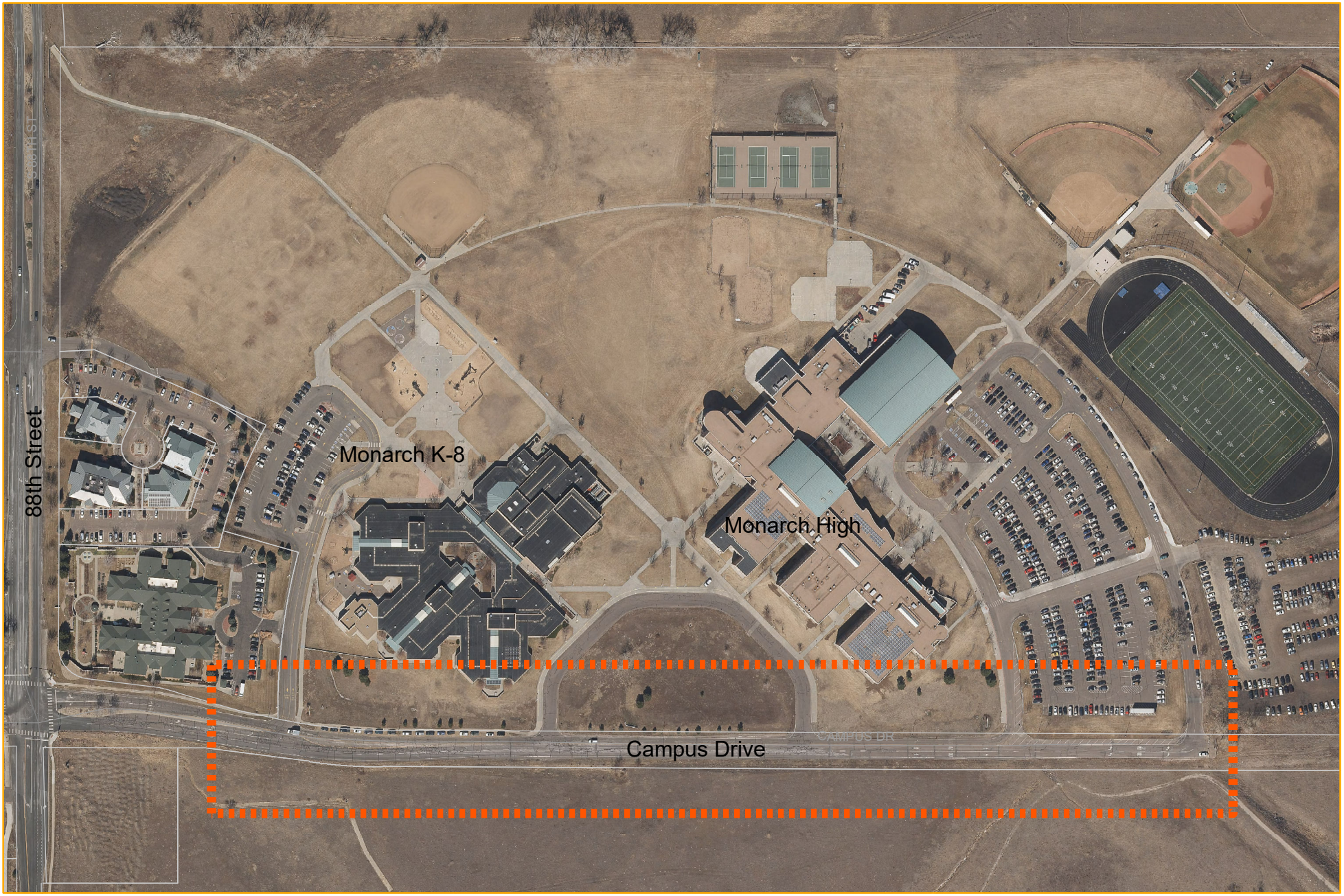
CAMPUS DR ROW AREA			
LOCATION	EXISTING ROW AREA (ACRES)	PROPOSED ROW AREA (ACRES)	DIFFERENCE (ACRES)
BOULDER VALLEY SCHOOL	1.81	2.96	1.15
REDTAIL RIDGE	1.77	5.78	4.01

LEGEND

- PR ROW
- EX ROW
- ADDITIONAL ROW NEEDED
- BOULDER VALLEY SCHOOL ADDITIONAL ROW NEEDED
- PR FLOWLINE
- PR LANE STRIPING
- EX LANE STRIPING

ATTACHMENT A

HARRIS KOCHER SMITH
1120 Lincoln Street, Suite 1000
Denver, Colorado 80203
P: 303.623.6300 F: 303.623.6311
HarrisKocherSmith.com



(Map produced by the Planning Dept., June 2019)

Boulder Valley School District

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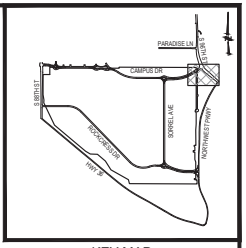
ATTACHMENT B

Vicinity of Right-of-Way (ROW)
Detailed on Attachment A

0 55 110 220 330 440 Feet

This map is for illustrative purposes only, and is not suitable for parcel-specific decision making. The areas depicted here are approximate. More site-specific studies may be required to draw accurate conclusions



KEY MAP
1"=2000'

LEGEND
LEASE AREA
MULTI-USE EASEMENT

BOULDER COUNTY
CITY OF LOUISVILLE

CITY AND COUNTY OF BROOMFIELD

CAMPUS DR
(120' ROW)

S 96TH ST

OLD S 96TH ST

NORTHWEST PARKWAY

AREA OUTSIDE OF ROW NEEDED FOR IMPROVEMENTS

NORTHWEST PARKWAY PUBLIC HIGHWAY AUTHORITY BROOMFIELD BUSINESS CENTER FILING NO. 1

TK-65-66-67-1 REV-5
REC. NO. 2003011963

NORTH METRO FIRE RESCUE DISTRICT BROOMFIELD BUSINESS CENTER FILING NO. 1 REPLAT B

PR PARKING SPACES

PR END OF ROADWAY

PR 10' TRAIL

MU-65-66-67 LT REV-6
REC. NO. 2004014750

EXISTING MULTI-USE ESMT PER REC NO 2009014041

TK-65-66-67-2 REV-5
REC. NO. 2003011963

PR CONNECTION TO NWPKY BRIDGE

PR 12' TRAIL

PR 10' TRAIL

EXHIBIT G- ADDITIONAL IMPROVEMENTS PROPERTY
AUG 8, 2024

SCALE: 1" = 100'

HARRIS KOCHER SMITH
1120 Lincoln Street, Suite 1000
Denver, Colorado 80203
P: 303.623.6300 F: 303.623.6311
HarrisKocherSmith.com

NO CHANGES ARE TO BE MADE TO THIS DRAWING WITHOUT WRITTEN PERMISSION OF HARRIS KOCHER SMITH

2004014750 10/01/2004 03:17P DE
1 of 14 R 71.00 D 0.00 City&Cnty Broomfield

DEED WITH RESERVATION OF MULTI-USE EASEMENT AND COVENANT RESTRICTING ACCESS

Entered into by and between the Northwest Parkway Public Highway Authority and the North Metro Fire Rescue District

June 29, 2004

Unofficial Copy

2004014750 10/01/2004 03:17P DE
2 of 14 R 71.00 D 0.00 City&Cnty Broomfield

I. DEED

This Deed is made this 29th day of June, 2004, by and between the Northwest Parkway Public Highway Authority, a body corporate and political subdivision of the State of Colorado, whose legal address is 3701 Northwest Parkway, Broomfield, Colorado 80020, (the "Authority" or the "Grantor"), and the North Metro Fire Rescue District, a body politic of the State of Colorado, whose legal address is 10550 Huron Street, Northglenn, CO 80234, (the "Grantee" or the "District").

Witnesseth, that the Grantor for and in consideration of the sum of $10.00, the receipt and sufficiency of which is hereby acknowledged, has, subject to the reservations and conditions contained in Sections II and III of this Deed, granted, bargained, sold and conveyed, and by these presence does grant, bargain, sell, convey and confirm, unto the Grantee and its assigns forever, all the real property, together with all its appurtenances and improvements if any, and including all non-tributary and all not non-tributary water rights beneath the property, situate, lying and being in the City and County of Broomfield, State of Colorado, described in **Exhibit A** attached hereto and incorporated herein by reference (the "Property").

This conveyance is granted, subject to the reservations and conditions contained in Sections II and III of this Deed, together with all the hereditaments and appurtenances belonging to the Property, or in anywise appertaining, and the reversion and reversions, remainder and remainders, rents, issues and profits thereof, and all the estate, right, title, interest, claim and demand whatsoever of the Grantor, either in law or equity, of, in and to the Property, with the hereditaments and appurtenances.

II. MULTI-USE EASEMENT AGREEMENT

The conveyance set forth in Section I of this Deed is specifically made subject to the following reservation of Multi-Use Easement:

The Grantor hereby reserves, for itself, its agents, employees, successors and assigns, a perpetual, non-exclusive easement to construct, maintain, repair, replace and use a multi-use easement (the "Easement") through, on, over and across, along, and in all of the easement property situated in the City and County of Broomfield, State of Colorado, being described more fully on **Exhibit B** attached hereto and by this reference made a part hereof, (the "Multi-Use Easement Property").

TERMS OF EASEMENT

A. USE OF EASEMENT BY AUTHORITY. The right to use the Multi-Use Easement Property shall inure to the benefit of the Authority and its directors, officers, agents, employees, designees, contractors, guests and invitees and all those acting by or on behalf of it for the purposes set forth below.

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1. Slopes. To construct and maintain slopes of cuts and fills to ensure proper support for and drainage from the Northwest Parkway Public Highway, which is being or has been constructed by the Authority on land abutting the Multi-Use Easement Property.

2. Ditches, Drainage, Streams and Utilities. To install, construct, reconstruct, relocate, maintain, enlarge, repair, use, operate and remove any and all pipes, casings, wires, conduit, culverts, valves, ventilators, manholes, surface or subterranean streams, creeks, springs, seeps, wetlands, river or other water courses either natural or manmade and any other appurtenances necessary for water, drainage, storm sewer, and sanitary sewer lines, for ditches and canals, for cell towers, for relocation of existing appurtenant and non-appurtenant utilities, for television, cable, telephone, fiber optic lines, and other communication facilities, for natural gas and electric lines, and for the installation, construction, reconstruction, relocation, maintenance, enlargement, repair, use, operation, and removal of any equipment, conduit or material necessary for the uses set forth in this paragraph.

3. Oil and Gas Facilities. To install, construct, reconstruct, relocate, maintain, repair, use, operate and remove pipes, casings, valves, and any other appurtenances necessary for oil and gas facilities in the Multi-Use Easement Property and for the installation, construction, reconstruction, relocation, maintenance, repair, use, operation, and removal of any equipment, conduit or material necessary for the uses set forth in this paragraph.

4. Multi-Use Trail. To install, construct, reconstruct, relocate, maintain, enlarge, repair, use, operate and remove a paved pathway for pedestrians, bicycles, horses and other non-motorized forms of transportation. Members of the public may use the recreation trail portion of the Multi-Use Easement Property.

5. Access. To have a right of entry and access in, to, through, on, over, under, and across the Multi-Use Easement Property at agreed upon locations, at any and all times necessary for all purposes necessary and at all times convenient and necessary to exercise the rights retained in this Easement Agreement.

6. Irrigation Facilities. To install, construct, reconstruct, relocate, maintain, repair, use, operate and remove any and all facilities necessary for transportation and use of irrigation waters and for the installation,

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construction, reconstruction, relocation, maintenance, repair, use, operation and removal of any equipment or materials necessary for such irrigation facilities.

B. USE OF EASEMENT BY THE DISTRICT. Upon execution of this Deed the fee title to the Multi-Use Easement Property shall pass to the ownership of the District and may be used by it for any and all lawful purposes which do not unreasonably interfere with the exercise of the easement rights granted hereunder. No building, structure, landscaping or other above or below ground obstruction that may interfere with the purposes for which this Easement is being retained may be placed, erected, installed or permitted upon the Multi-Use Easement Property without the prior approval of the Authority, which shall not be unreasonably withheld. In the event the terms of this paragraph are violated, such violation shall immediately be eliminated upon receipt of written notice from the Authority or the Authority shall have the immediate right to correct or eliminate such violation at the sole expense of the District, which shall promptly reimburse the Authority for any expense related thereto. The District shall not in any manner interfere with the purposes for which the Easement is conveyed.

C. MAINTENANCE. The Authority or its designee shall maintain all facilities and structures it installs or relocates on the Multi-Use Easement Property (facilities and structures shall include, but not be limited to, culverts, and recreation trails). Other portions of the Multi-Use Easement Property shall be maintained by the District.

D. RESTORATION. The Authority agrees that after it has exercised its rights to use the Easement in any manner that disturbs the surface of the Multi-Use Easement Property, as permitted under Section A of this Easement, it will restore said surface to the condition in which it was in prior to the use of the Easement, except as the surface may be permanently modified by the use of the Easement.

E. BENEFITS AND BURDENS. The benefits and burdens of this Easement Agreement and the Easement granted hereunder shall be binding upon and shall inure to the benefit of the Authority and the District, their heirs, assigns, successors and personal representatives.

F. RUNS WITH THE LAND. This Easement shall run with the land.

G. INTEGRATION. The parties hereto agree that neither has made or authorized any agreement with respect to the subject matter of this instrument other than expressly set forth herein, and no oral representation, promise, or consideration

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different from the terms herein contained shall be binding on either party, or its agents or employees, hereto.

H. CONSTRUCTION. Whenever used herein, the singular number shall include the plural, the plural the singular; and the use of any gender shall be applicable to all genders.

III. ACCESS DEED
(No Points of Access)

The Conveyance set forth in Section I of this Deed is specifically made subject to the following restrictive covenant:

The Authority hereby declares and imposes upon the Property a restrictive covenant prohibiting the District, its successors and assigns, from accessing to and from any part of the right of way of the Northwest Parkway Public Highway, a public highway within the meaning of § 43-4-501, *et seq.* C.R.S., from any part of the Property, along or across the access line or lines described as **Exhibit C**, attached hereto and incorporated herein.

This covenant shall run with the land and shall be binding upon the Authority, the District, and their respective successors and assigns.

[Remainder of page left blank intentionally.]

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2004014750 10/01/2004 03:17P DE
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IN WITNESS WHEREOF, the Parties have caused this Deed to be duly executed and delivered by their respective officers thereunto duly authorized as of the date first above written.

NORTHWEST PARKWAY PUBLIC HIGHWAY AUTHORITY

[redacted]

By: Stephen D. Hogan
Title: Executive Director

ATTEST:

[redacted]

By: Benton Tempas
Title: IT Director

STATE OF COLORADO)
) ss.
COUNTY OF Broomfield)

The foregoing instrument was acknowledged before me this 29 day of June, 2004, by Stephen D. Hogan and Benton Tempas, as Executive Director and IT Director of the Northwest Parkway Public Highway Authority.

WITNESS my hand and official seal.

My commission expires: 1/31/08

[redacted]

Notary Public

JAMIE J DAWSON
Notary Public
State of Colorado

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2004014750 10/01/2004 03:17P DE
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North Metro Fire Rescue District

[redacted]

By: John J. O'Hayre
Title: Fire Chief

ATTEST:

Dennis D. Day
By: [redacted]
Title: Deputy Chief

STATE OF COLORADO)
) ss.
COUNTY OF Adams)

The foregoing instrument was acknowledged before me this 9th day of September, 2004, by John J. O'Hayre and Dennis D. Day, as Fire Chief and Deputy Chief of the North Metro Fire Rescue District.

WITNESS my hand and official seal.

Norena M. Moran
My Commission Expires
October 12, 2006

My commission expires: _____

[redacted]
Notary Public

NWRPHA/RightofWay/NmetroFireREscueDistrict
JRC1650
0514.5021.0301

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2004014750 10/01/2004 03:17P DE
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EXHIBIT A

A parcel of land No. TK-65-66-67 LT REV-6 of the Northwest Parkway Public Highway Authority being a part of Outlot B, Broomfield Business Center Filing No. 1, located in the North 1/2 of the Southwest 1/4 of Section 21, Township 1 South, Range 69 West of the Sixth Principal Meridian, City and County of Broomfield, State of Colorado, being more particularly described as follows:

NOTE: For the purpose of this description the bearings are based on said Broomfield Business Center Filing No. 1. The East-West centerline of said Section 21 has a bearing of North 89°34'24" East, 5260.07 feet. The termini of said North line being the West quarter corner, a 3 1/4" aluminum cap in concrete stamped 1996 PLS 28292 and the East quarter corner, a 2 1/2" aluminum cap on a #6 rebar stamped Power Elevation PLS 19585.

Commencing at the West quarter corner of said Section 21; thence North 89°34'24" East, 30.00 feet along the East-West centerline of said Section 21 to a point of intersection with the Easterly right-of-way line of 96th Street; thence South 00°02'11" East, 162.44 feet along said Easterly right-of-way line, parallel with and 30.00 feet Easterly of the Westerly line of said Section 21 to the Westerly line of said Outlot B; thence North 13°39'20" East, 21.40 feet along the Westerly line of Outlot B to the True Point of Beginning: thence along said Outlot B the following five (5) courses:

1) North 13°39'20" East, 28.00 feet;

2) North 41°14'28" East, 57.22 feet;

3) North 55°02'01" East, 56.01 feet to a point of non-tangent curvature:

4) Southeasterly along arc of a curve to the left, whose center bears North 53°22'02" East, 1031.93 feet through a central angle of 08°22'13", an arc length of 150.76 feet, whose chord bears South 40°49'04"East, 150.62 feet to a point of tangency:

5) South 45°00'11" East, 456.27 feet;

Thence South 78°15'10" West, 270.81 feet;
Thence North 27°30'09" West, 87.36 feet;
Thence North 78°59'58" East, 157.36 feet;
Thence North 42°44'14" West, 442.63 feet;
Thence South 54°12'24" West, 73.88 feet to the True Point of Beginning,
City and County of Broomfield,
State of Colorado.

(for informational purposed only) Vacant Land

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2004014750 10/01/2004 03:17P DE
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EXHIBIT B

OWNER: **NORTHWEST PARKWAY**
MU-65-66-67 LT REV-6
STA 54± STA 63±
DATE REVISED: December 31, 2003

DESCRIPTION

A parcel of land No. MU-65-66-67 LT REV-6 of the Northwest Parkway Public Highway Authority being a part of Outlot B, Broomfield Business Center Filing No. 1, located in the North Half of the Southwest Quarter of Section 21, Township 1 South, Range 69 West of the Sixth Principal Meridian, City and County of Broomfield, State of Colorado, being more particularly described as follows:

NOTE: For the purpose of this description the bearings are based on said Broomfield Business Center Filing No. 1. The east-west centerline of said Section 21 has a bearing of North 89°34'24" East, 5260.07 feet. The termini of said north line being the West Quarter Corner a 3 1/4" Aluminum Cap in concrete stamped 1996 PLS 28292 and the East Quarter Corner a 2 1/2" Aluminum Cap on a #6 rebar stamped Power Elevation PLS 19585.

Commencing at the West Quarter Corner of said Section 21;
Thence North 89°34'24" East, 30.00 feet, along the East-West centerline of said Section 21, to a point of intersection with the easterly right of way line of 96TH Street;
Thence South 00°02'11" East, 162.44 feet, along said easterly right of way line, parallel with and 30.00 feet easterly of the westerly line of said Section 21 to the westerly line of said Outlot B;
Thence North 13°39'20" East, 21.40 feet, along said westerly line of Outlot B, to the **TRUE POINT OF BEGINNING;**
Thence along said Outlot B the following five (5) courses:

1. North 13°39'20" East, 28.00 feet;
2. North 41°14'28" East, 57.22 feet;
3. North 55°02'01" East, 56.01 feet, to a point of non-tangent curvature;
4. Southeasterly, along the arc of a curve to the left, whose center bears North 53°22'02" East, 1031.93 feet, thru a central angle of 08°22'13", an arc length of 150.76 feet, whose chord bears South 40°49'04" East, 150.62 feet to a point of tangency;
5. South 45°00'11" East, 456.27 feet;

Thence South 78°15'10" West, 270.81 feet;
Thence North 27°30'09" West, 87.36 feet;
Thence North 78°59'58" East, 157.36 feet;
Thence North 42°44'14" West, 442.63 feet;
Thence South 54°12'24" West, 73.88 feet, to the **TRUE POINT OF BEGINNING;**

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2004014750 10/01/2004 03:17P DE
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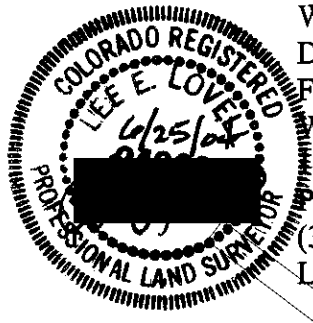
EXHIBIT B

Containing 1.2177 acres, or 53,045 square feet, more or less.

I hereby certify that the above legal description was prepared under my direct supervision.



WSSI JOB NO: 20035-001 Item 26
DATE REVISED: December 31, 2003
For and on Behalf of
WESTERN STATES SURVEYING, INC.
2753 South Parker Road, Suite 205
Parker, CO 80134-3486
(303) 841-7436
Lee E. Lovell, PLS 24960

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2004014750 10/01/2004 03:17P DE
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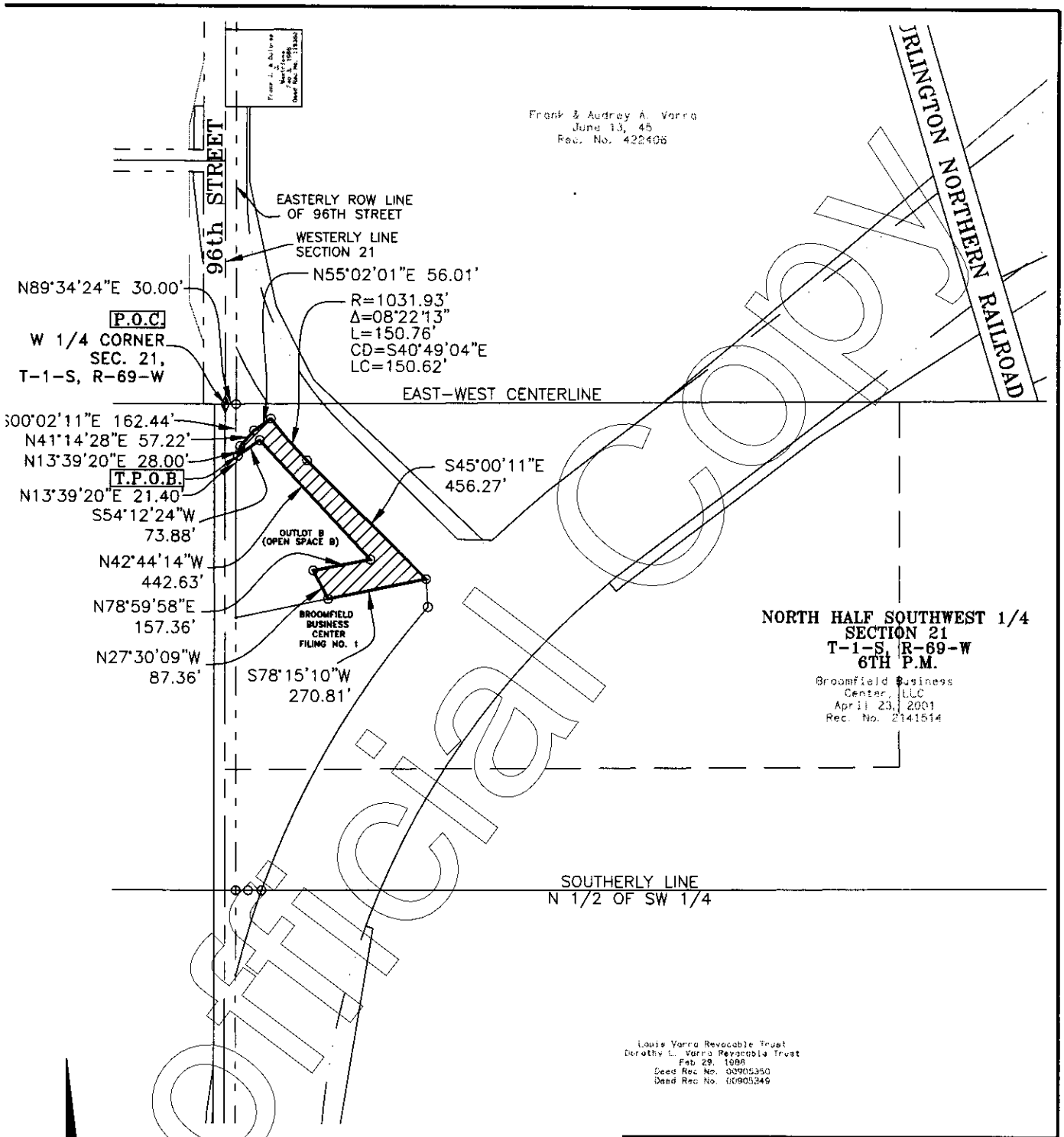
EXHIBIT B

ACQUISITION EXHIBIT



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NOTE:
THIS DOES NOT REPRESENT A MONUMENTED SURVEY. IT IS INTENDED ONLY TO DEPICT THE ATTACHED DESCRIPTION.

N

0 400 800

SCALE: 1" = 400'

Page 3 of 3

NORTHWEST PARKWAY PROJECT

MU-65-66-67 LT REV-6
OWNER: NORTHWEST PARKWAY
STA 54+/- STA 63+/-
PARCEL CONTAINS: 1.2177 ACRES

CALC: LEL 2/04/02	REV: 10/1/02
DRWN: RDC 2/08/02	REV: 10/8/02
CHECKED: RDC 2/08/02	REV: 11/6/02
WESTERN STATES SURVEYING, Inc.	REV: 12/31/03
DWG NAME: MU65-67L	PLOT DATE: 12/31/03

S:\20035001\OWNER\Exhibit\65-66-67\REV5-NMFRD\Eagle Point\MU-65-67L

2004014750 10/01/2004 03:17P DE
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EXHIBIT C

OWNER: **NORTHWEST PARKWAY**
AC-65-66-67 LT REV-6
STA 54± STA 63±
DATE REVISED: December 31, 2003

DESCRIPTION

EACH AND EVERY RIGHT OR RIGHTS OF ACCESS OF THE GRANTOR to and from any part of the Right-of-Way of the Northwest Parkway Public Highway Authority, and from and to any part of the real property of the Grantor, being a part of Outlot B, Broomfield Business Center Filing No. 1, located in a part of the North Half of the Southwest Quarter of Section 21, Township 1 South, Range 69 West of the Sixth Principal Meridian, City and County of Broomfield, State of Colorado, being more particularly described as follows:

NOTE: For the purpose of this description the bearings are based on said Broomfield Business Center Filing No. 1. The east-west centerline of said Section 21 has a bearing of North 89°34'24" East, 5260.07 feet. The termini of said east-west centerline being the West Quarter Corner a 3 1/4" Aluminum Cap in concrete stamped 1996 PLS 28292 and the East Quarter Corner a 2 1/2" Aluminum Cap on a #6 rebar stamped Power Elevation PLS 19585.

Commencing at the West Quarter Corner of said Section 21;
Thence North 89°34'24" East, 30.00 feet, along the East-West centerline of said Section 21, to a point on the easterly right of way line of 96th Street;
Thence South 00°02'11" East, 162.44 feet, along said easterly right of way line, parallel with and 30.00 feet easterly of the westerly line of said Section 21, to the westerly line of said Outlot B the **TRUE POINT OF BEGINNING**;
Thence along said Outlot B the following five (5) courses:

1. Thence North 13°39'20" East, 49.40 feet;
2. Thence North 41°14'28" East, 57.22 feet;
3. Thence North 55°02'01" East, 56.01 feet, to a point of non-tangent curvature;
4. Thence southeasterly, along the arc of a curve to the left, whose center bears North 53°22'02" East, 1031.93 feet, thru a central angle of 08°22'13", an arc length of 150.76 feet, whose chord bears South 40°49'04" East, 150.62 feet to a point of tangency;
5. Thence South 45°00'11" East, 36.00 feet, to the **POINT OF TERMINUS**;

Thence South 45°00'11" East, 135.27 feet, along said Outlot B, **BEGINNING AGAIN**;
Thence along said Outlot B the following one (1) course:

1. South 45°00'11" East, 285.00 feet, to the **POINT OF TERMINUS**.

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2004014750 10/01/2004 03:17P DE
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EXHIBIT C

I hereby certify that the above legal description was prepared under my direct supervision.

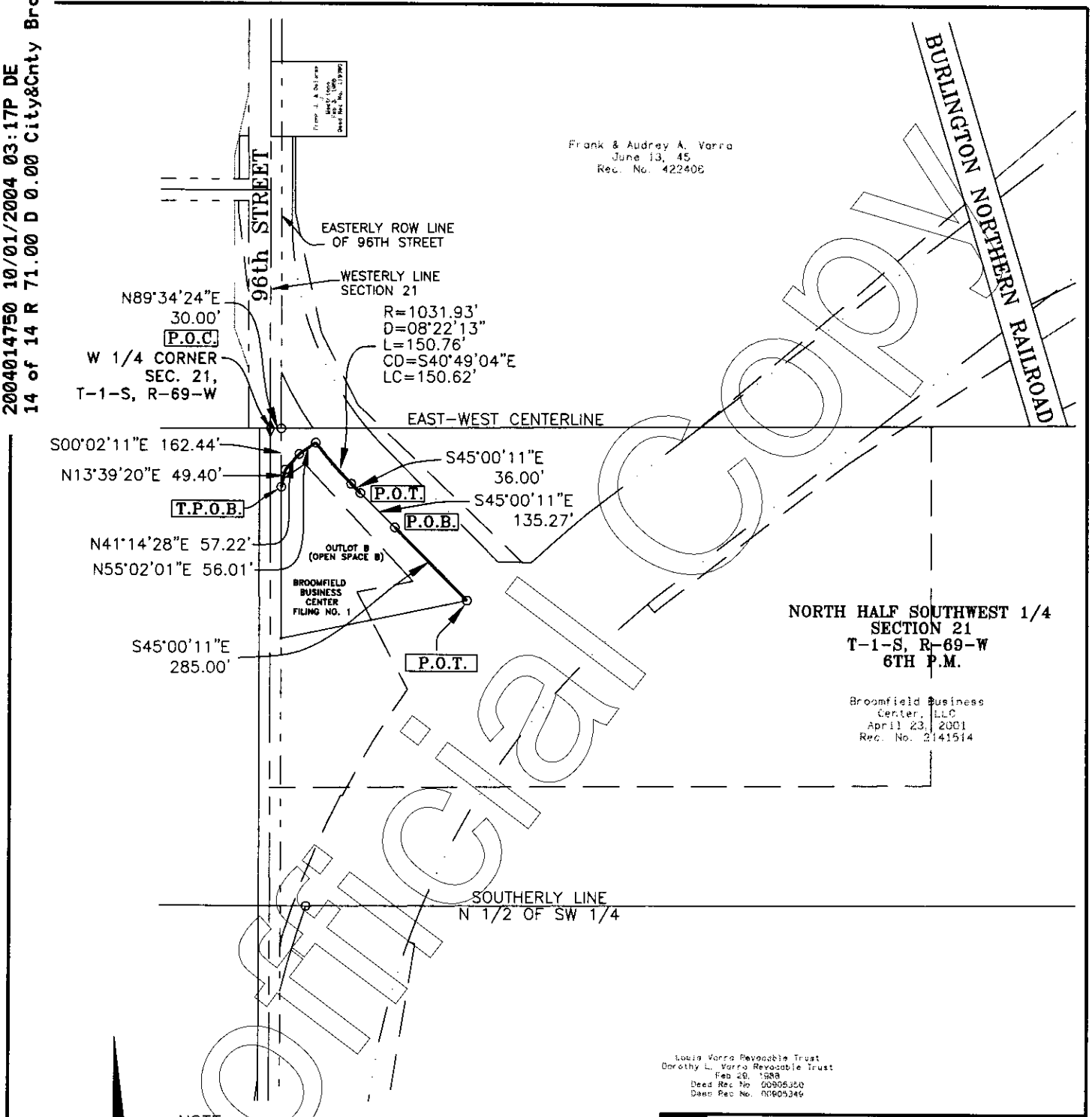
WSSI JOB NO: 20035-001 Item 26
DATE REVISED: December 31, 2003
For and on Behalf of
WESTERN STATES SURVEYING, INC.
12753 South Parker Road, Suite 205
Parker, CO 80134-3486
(303) 841-7436
Lee E. Lovell, PLS 24960

Unofficial Copy

2004014750 10/01/2004 03:17P DE
14 of 14 R 71.00 D 0.00 City&Cnty Broomfield

EXHIBIT C

ACQUISITION EXHIBIT



NOTE:
THIS DOES NOT REPRESENT A MONUMENTED SURVEY. IT IS INTENDED ONLY TO DEPICT THE ATTACHED DESCRIPTION.

Unofficial Copy

NORTHWEST PARKWAY PROJECT

AC-65-66-67 LT REV-6
OWNER: NORTHWEST PARKWAY
STA 54+/- STA 63+/-

CALC: LEL 2/04/02	REV: 10/1/02
DRWN: RDC 2/08/02	REV: 10/8/02
CHECKED: RDC 2/08/02	REV: 11/6/02
WESTERN STATES SURVEYING, Inc.	REV: 12/31/03
DWG NAME: AC65-67L	PLOT DATE: 12/31/03

S:\20035001\OWNER\Exhibit\65-66-67\REV5-NMFRD\Eagle Point\AC65-67L.d

Record and Return to:
ICENOGLE • NORTON
SMITH • GILIDA • POGUE
A Professional Corporation
Attorneys at Law
1331 17th Street, Suite 500
Denver, Colorado 80202-3040

2009014041 10/28/2009 01:29P DE
1 of 16 R 81.00 D 0.00 City&Cnty Broomfield

DEED
WITH
RESERVATION OF MULTI-USE EASEMENT, ACCESS AND USE RESTRICTIONS

Entered into by and between the Northwest Parkway Public Highway Authority and the North Metro Fire Rescue District

AUGUST 6, 2009

Unofficial Copy

EXEMPT FROM DOCUMENTARY FEE PER §39-13-104(1)(a)
CONSIDERATION: $400,000.00

2009014041 10/28/2009 01:29P DE
2 of 16 R 81.00 D 0.00 City&Cnty Broomfield

I. DEED

This Deed is made this 6th day of AUGUST, 2009, by and between the **NORTHWEST PARKWAY PUBLIC HIGHWAY AUTHORITY**, a body corporate and political subdivision of the State of Colorado, whose legal address is 3701 Northwest Parkway, Broomfield, Colorado 80023, (the "**Authority**" or the "**Grantor**"), and the **NORTH METRO FIRE RESCUE DISTRICT**, a body politic of the State of Colorado, whose legal address is 10550 Huron Street, Northglenn, CO 80234, (the "**Grantee**" or the "**District**").

Witnesseth, that the Grantor for and in consideration of the sum of $10.00 and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, has, subject to the reservations, covenants, and conditions contained in Sections II (Multi-Use Easement), III (Access Deed), and IV (Use Restriction) of this Deed, granted, bargained, sold and conveyed, and by these presence does grant, bargain, sell, convey and confirm, unto the Grantee and its assigns forever, all the real property, together with all its appurtenances and improvements if any, and including all non-tributary and all not non-tributary water rights beneath the property, situate, lying and being in the City and County of Broomfield, State of Colorado, described in **Exhibit A** attached hereto and incorporated herein by reference (the "Property").

This conveyance is granted, subject to the reservations, covenants, and conditions contained in Sections II III, and upon the condition set forth in Section IV, of this Deed, together with all the hereditaments and appurtenances belonging to the Property, or in anywise appertaining, and the reversion and reversions, remainder and remainders, rents, issues and profits thereof, and all the estate, right, title, interest, claim and demand whatsoever of the Grantor, either in law or equity, of, in and to the Property, with the hereditaments and appurtenances, and the Grantor warrants the title to the Property against all persons claiming under Grantor, subject to matters of record and unrecorded Intergovernmental Agreements and amendments thereto to which the District is a party or of which the District has actual knowledge. Notwithstanding the foregoing: (A) the Grantor does not warrant its title to (i) any water rights conveyed by this Deed and (ii) any vacated street, alley, or other right-of-way that adjoins the Property conveyed by this Deed, and (B) Grantor does not convey by this Deed any interest in the right-of-way of the Northwest Parkway Public Highway, a public highway within the meaning of § 43-40-501, *et seq.* C.R.S.

The Authority hereby notifies the District that a portion of the Property is subject to a "Deed of Conservation Easement in Gross with Reservation of Rights and Access Reservation (No Points of Access to Northwest Parkway)" granted by the Authority to the County of Boulder, Colorado, the City of Louisville, Colorado, and the City and County of Broomfield, Colorado.

II. MULTI-USE EASEMENT AGREEMENT

The conveyance set forth in Section I of this Deed is specifically made subject to the following reservation of Multi-Use Easement:

The Grantor hereby reserves, for itself, its agents, employees, successors and assigns, a perpetual, non-exclusive easement to construct, maintain, repair, replace and use a multi-use easement (the "Easement") through, on, over and across, along, and in all of the easement property

Unofficial Document

situated in the City and County of Broomfield, State of Colorado, being described more fully on **Exhibit B** attached hereto and by this reference made a part hereof, (the "Multi-Use Easement Property").

TERMS OF EASEMENT

A. USE OF EASEMENT BY AUTHORITY. The right to use the Multi-Use Easement Property shall inure to the benefit of the Authority and its directors, officers, agents, employees, designees, contractors, guests and invitees and all those acting by or on behalf of it for the purposes set forth below.

1. Slopes. To construct and maintain slopes of cuts and fills to ensure proper support for and drainage from the Northwest Parkway Public Highway, which is being or has been constructed by the Authority on land abutting the Multi-Use Easement Property.

2. Ditches, Drainage, Streams and Utilities. To install, construct, reconstruct, relocate, maintain, enlarge, repair, use, operate and remove any and all pipes, casings, wires, conduit, culverts, valves, ventilators, manholes, surface or subterranean streams, creeks, springs, seeps, wetlands, river or other water courses either natural or manmade and any other appurtenances necessary for water, drainage, storm sewer, and sanitary sewer lines, for ditches and canals, for cell towers, for relocation of existing appurtenant and non-appurtenant utilities, for television, cable, telephone, fiber optic lines, and other communication facilities, for natural gas and electric lines, and for the installation, construction, reconstruction, relocation, maintenance, enlargement, repair, use, operation, and removal of any equipment, conduit or material necessary for the uses set forth in this paragraph.

3. Oil and Gas Facilities. To install, construct, reconstruct, relocate, maintain, repair, use, operate and remove pipes, casings, valves, and any other appurtenances necessary for oil and gas facilities in the Multi-Use Easement Property and for the installation, construction, reconstruction, relocation, maintenance, repair, use, operation, and removal of any equipment, conduit or material necessary for the uses set forth in this paragraph.

4. Multi-Use Trail. To install, construct, reconstruct, relocate, maintain, enlarge, repair, use, operate and remove a paved pathway for pedestrians, bicycles, horses and other non-motorized forms of transportation. Members of the public may use the recreation trail portion of the Multi-Use Easement Property.

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5. Access. To have a right of entry and access in, to, through, on, over, under, and across the Multi-Use Easement Property at agreed upon locations, at any and all times necessary for all purposes necessary and at all times convenient and necessary to exercise the rights retained in this Easement Agreement.

6. Irrigation Facilities. To install, construct, reconstruct, relocate, maintain, repair, use, operate and remove any and all facilities necessary for transportation and use of irrigation waters and for the installation, construction, reconstruction, relocation, maintenance, repair, use, operation and removal of any equipment or materials necessary for such irrigation facilities.

B. USE OF EASEMENT BY THE DISTRICT. Upon execution of this Deed the fee title to the Multi-Use Easement Property shall pass to the ownership of the District and may be used by it for any and all lawful purposes which do not unreasonably interfere with the exercise of the easement rights granted hereunder. No building, structure, landscaping or other above or below ground obstruction that may interfere with the purposes for which this Easement is being retained may be placed, erected, installed or permitted upon the Multi-Use Easement Property without the prior approval of the Authority, which shall not be unreasonably withheld. In the event the terms of this paragraph are violated, such violation shall immediately be eliminated upon receipt of written notice from the Authority or the Authority shall have the immediate right to correct or eliminate such violation at the sole expense of the District, which shall promptly reimburse the Authority for any expense related thereto. The District shall not in any manner interfere with the purposes for which the Easement is conveyed.

C. MAINTENANCE. The Authority or its designee shall maintain all facilities and structures it installs or relocates on the Multi-Use Easement Property (facilities and structures shall include, but not be limited to, culverts, and recreation trails). Other portions of the Multi-Use Easement Property shall be maintained by the District.

D. RESTORATION. The Authority agrees that after it has exercised its rights to use the Easement in any manner that disturbs the surface of the Multi-Use Easement Property, as permitted under Section A of this Easement, it will restore said surface to the condition in which it was in prior to the use of the Easement, except as the surface may be permanently modified by the use of the Easement.

E. BENEFITS AND BURDENS. The benefits and burdens of this Easement Agreement and the Easement granted hereunder shall be binding upon and shall inure to the benefit of the Authority and the District, their heirs, assigns, successors and personal representatives.

F. RUNS WITH THE LAND. This Easement shall run with the land.

Unofficial Document

G. INTEGRATION. The parties hereto agree that neither has made or authorized any agreement with respect to the subject matter of this instrument other than expressly set forth herein or in the Intergovernmental Agreement dated November 4, 2003 between the District and the Authority for the Conveyance of Real Property and the Provision of Emergency Services, and no oral representation, promise, or consideration different from the terms therein contained shall be binding on either party, or its agents or employees, hereto.

H. CONSTRUCTION. Whenever used herein, the singular number shall include the plural, the plural the singular; and the use of any gender shall be applicable to all genders.

III. ACCESS DEED
(No Points of Access)

The conveyance set forth in Section I of this Deed is specifically made subject to the following restrictive covenant:

The Authority hereby declares and imposes upon the Property a restrictive covenant prohibiting the District, its successors and assigns, from accessing to and from any part of the right of way of the Northwest Parkway Public Highway, a public highway within the meaning of § 43-4-501, *et seq.* C.R.S., from any part of the Property, along or across the access line or lines described in **Exhibit C**, attached hereto and incorporated herein. Notwithstanding the foregoing, the District shall have the right of access to Disk Drive and Relocated 96th Street at no more than two locations along that portion of the access line described in Exhibit C beginning at its True Point of Beginning and terminating where such access line is first located on the right of way of the Northwest Parkway Public Highway , provided: (i) such access is in accordance with good engineering and public safety practices and (ii) the District has obtained all approvals and consents required for such access.

This covenant shall run with the land and shall be binding upon the Authority, the District, and their respective successors and assigns.

IV. USE RESTRICTION

The conveyance set forth in Section I of this Deed is specifically subject to the following provisions:

1. The Property shall be used by the District, its successors and assigns (including but not limited to a successor owing to merger or successor regional authority), solely for a fire station and related public facilities. .

2. Nothing herein shall limit the rights of the Authority under the Easement described above.

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IN WITNESS WHEREOF, the Parties have caused this Deed to be duly executed and delivered by their respective officers thereunto duly authorized as of the date first above written.

NORTHWEST PARKWAY PUBLIC HIGHWAY AUTHORITY, a body corporate and political subdivision of the State of Colorado

[redacted]

By: George DiCiero
Title: Managing Administrator

STATE OF COLORADO)
) ss.
CITY AND COUNTY OF BROOMFIELD)

The foregoing instrument was acknowledged before me this 14th day of July, 2009 by George DiCiero as Managing Administrator of the Northwest Parkway Public Highway Authority, a body corporate and political subdivision of the State of Colorado.

WITNESS my hand and official seal.

My commission expires: February 12, 2010

[redacted]

Notary Public

ANNE MARIE BROUWER NOTARY PUBLIC STATE OF COLORADO MY COMMISSION EXPIRES FEB. 12, 2010

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North Metro Fire Rescue District

By: [redacted]
Title: Fire Chief

ATTEST:

By: _____
Title: _____

STATE OF COLORADO)
) ss.
COUNTY OF Adams)

The foregoing instrument was acknowledged before me this 6 day of August, 2009, by Joseph A. Bruce and _____, as Fire Chief and _____ of the North Metro Fire Rescue District.

WITNESS my hand and official seal.

My commission expires: September 28, 2009

[redacted]
Notary Public

SEAL
PAULETTE A. WERTZ NOTARY PUBLIC STATE OF COLORADO

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EXHIBIT A
(Property Description)

LOT 1,
BROOMFIELD BUSINESS CENTER FILING NO. 1, REPLAT B, a Resubdivision of Outlot B, Broomfield Business Center Filing No. 1, a part of the SW1/4 of Section 21, Township 1 South, Range 69 West of 6th P.M.,
City and County of Broomfield,
State of Colorado

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EXHIBIT B
(Multi-Use Easement Property Description)

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LEGAL DESCRIPTION
EXHIBIT B

A parcel of land being a part of Lot 1, Broomfield Business Center Filing No. 1, Replat B, located in the Southwest Quarter of Section 21, Township 1 South, Range 69 West of the Sixth Principal Meridian, City and County of Broomfield, State of Colorado, being more particularly described as follows:

NOTE: For the purpose of this description the bearings are based on the east-west centerline of said Section 21 which has an assumed bearing of North 89°34'24" East, 5260.07 feet. The termini of said north line being the West Quarter Corner a #6 rebar with a 2 1/2" Aluminum Cap stamped 2003 PLS 35597 and the East Quarter Corner a #6 rebar with a 2 1/2" Aluminum Cap stamped Power Elevation PLS 19585.

COMMENCING at the West Quarter Corner of said Section 21;
Thence North 89°34'24" East, 30.00 feet, along the east-west centerline of said Section 21;
Thence South 00°02'11" East, 162.44 feet, parallel with and 30 feet easterly of the westerly line of said Southwest Quarter of Section 21 to the westerly line of said Lot 1;
Thence North 13°39'20" East, 21.40 feet to the **TRUE POINT OF BEGINNING**;
Thence along said Lot 1, said Tract A the following eight (8) courses:

1. North 13°39'20" East, 28.00 feet;
2. North 41°14'28" East, 57.22 feet;
3. North 55°02'01" East, 56.01 feet;
4. along a non-tangent curve to the left having a central angle of 08°22'13", a radius of 1031.93 feet, an arc length of 150.76 feet, a chord bearing of South 40°49'04" East and a chord distance of 150.62 feet;
5. South 45°00'11" East, 456.27 feet;
6. South 03°44'47" East, 76.64 feet;
7. southwesterly along the arc of a curve to the left, the radial line to the center point bears South 49°16'16" East, a radius of 2,441.83 feet, thru a central angle of 03°15'13", an arc length of 138.67 feet, whose chord bears South 39°06'08" West a length of 138.65 feet to the south line of said Lot 1;
8. South 89°57'49" West, 115.53 feet along said south line;

Thence North 27°30'09" West, 232.81 feet;
Thence North 78°59'58" East, 157.36 feet;
Thence North 42°44'14" West, 442.63 feet;
Thence South 54°12'24" West, 73.88 feet to the **TRUE POINT OF BEGINNING.**

Containing 86,152 square feet or 1.978 acres, more or less.

Unofficial Copy

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I hereby certify that the above legal description was prepared under my direct supervision.

WSSI Job No. : 20745-001.5
Date: May 22, 2009 Res. Rights Area Lot 1
For and on Behalf of
Western States Surveying, Inc
12753 S. Parker Road, Suite 205
Parker, CO 80134
(303) 841-7436
Albert V. Valletta, Jr., PLS 23524

Notice: According to Colorado law you must commence any legal actions based upon a defect in this survey within three years after you first discover such defect. In no event, may any action based upon any defect in this survey be commenced more than ten years from the date of certification shown hereon.

Unofficial Copy

2009014041 10/28/2009 01:29P DE
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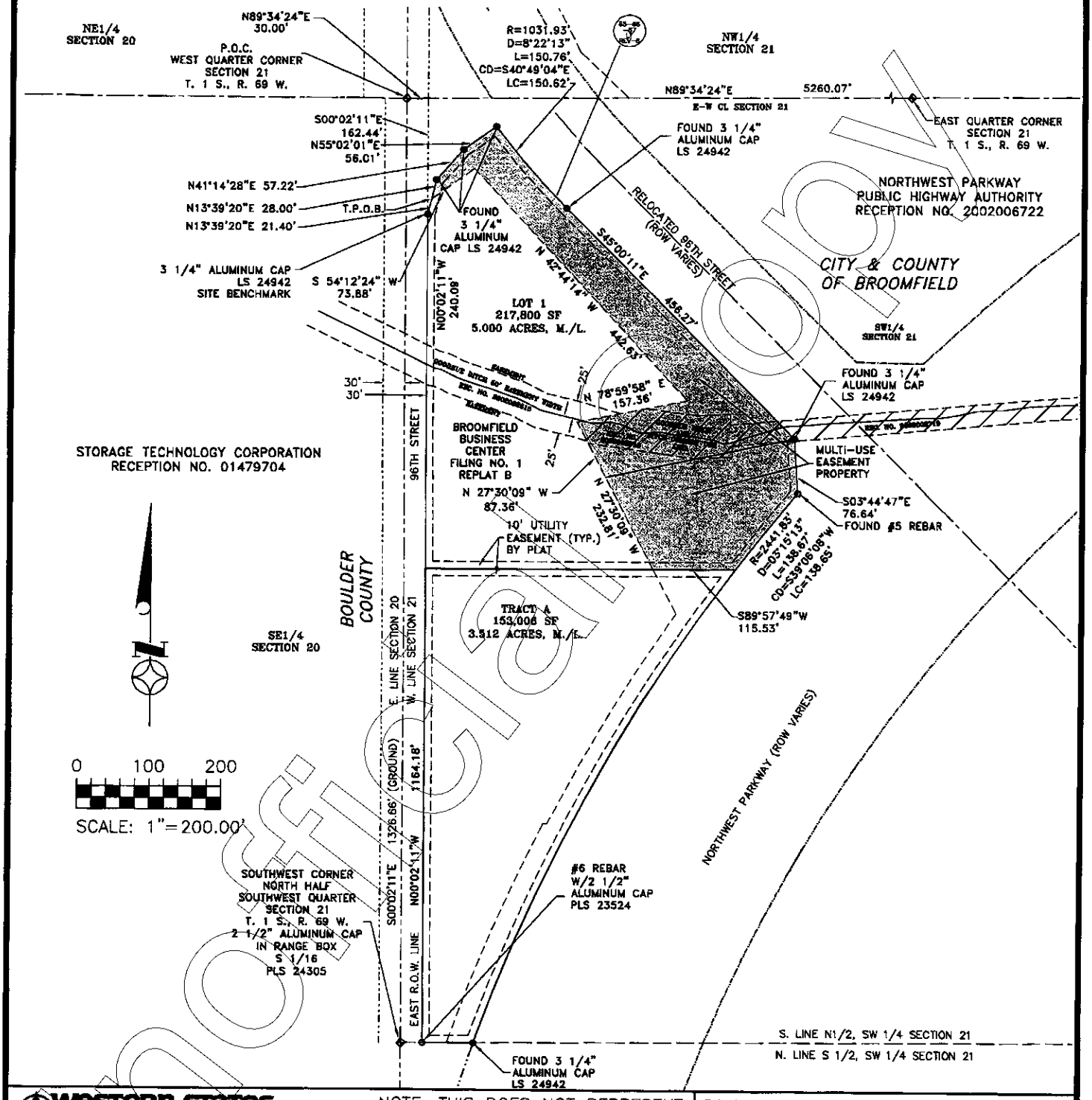
EXHIBIT B



Unofficial Document

Western States Surveying, Inc.
12753 SOUTH PARKER ROAD, SUITE 205
PARKER, CO 80134-3486 (303) 841-7436

NOTE: THIS DOES NOT REPRESENT A MONUMENTED SURVEY. IT IS INTENDED ONLY TO DEPICT THE ATTACHED DESCRIPTION.

OWNER: NORTHWEST PARKWAY PUBLIC HIGHWAY AUTHORITY

NORTH METRO FIRE RESCUE DISTRICT STATION #67

CALC: AVV	DATE: 05/22/09
DRWN: AVV	COMMIT. NO.
JOB NO. 20745:001.5	
DWG. NAME: MUE	SHEET 3 OF 3

AREA OF PARCELS: 1.978 AC. | 86,152 SQ. FT.

T:\20745001p05\Conservation Easement\Reserved Rights Area Lot 1 05-22-09.dwg May 26, 2009 - 2:49pm

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EXHIBIT C
(Access Limitation Description)

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OWNER: **NORTHWEST PARKWAY**
AC-65-66-67 LT REV-7
STA 54± STA 63±
DATE REVISED: January 7, 2009

DESCRIPTION

EACH AND EVERY RIGHT OR RIGHTS OF ACCESS OF THE GRANTOR to and from any part of the Right-of-Way of the Northwest Parkway Public Highway Authority, and from and to any part of the real property of the Grantor, being a part of Lot 1, Broomfield Business Center Filing No. 1 Replat B, located in a part of the North Half of the Southwest Quarter of Section 21, Township 1 South, Range 69 West of the Sixth Principal Meridian, City and County of Broomfield, State of Colorado, being more particularly described as follows:

NOTE: For the purpose of this description the bearings are based on said Broomfield Business Center Filing No. 1, Replat B. The east-west centerline of said Section 21 has a bearing of North 89°34'24" East, 5260.07 feet. The termini of said north line being the West Quarter Corner a 3 1/4" Aluminum Cap in concrete stamped 1996 PLS 28292 and the East Quarter Corner a 2 1/2" Aluminum Cap on a #6 rebar stamped Power Elevation PLS 19585.

Commencing at the West Quarter Corner of said Section 21;
Thence North 89°34'24" East, 30.00 feet, along the East-West centerline of said Section 21, to a point of intersection with the easterly right of way line of 96TH Street;
Thence South 00°02'11" East, 162.44 feet, along said easterly right of way line, parallel with and 30.00 feet easterly of the westerly line of said Section 21 to the westerly line of said Lot 1 and the **TRUE POINT OF BEGINNING;**
Thence along said Lot 1 the following seven (7) courses:

1. North 13°39'20" East, 49.40 feet;
2. North 41°14'28" East, 57.22 feet;
3. North 55°02'01" East, 56.01 feet to a point of non-tangent curvature;
4. southeasterly, along the arc of a curve to the left, whose center bears North 53°22'02" East, 1031.93 feet, thru a central angle of 08°22'13", an arc length of 150.76 feet, whose chord bears South 40°49'04" East, 150.62 feet to a point of tangency;
5. South 45°00'11" East, 456.27 feet;
6. South 03°44'47" East, 76.64 feet to a point of non-tangent curvature;
7. southwesterly, along the arc of a curve to the left, the radial line to the center point bears South 49°16'16" East, 2,441.83 feet, thru a central angle of 2°15'13", an arc length of 138.67 feet, whose chord bears South 39°06'08" West, 138.65 feet to the **POINT OF TERMINUS.**

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I hereby certify that the above legal description was prepared under my direct supervision.

WSSI JOB NO: 20745-001.3
DATE REVISED: January 7, 2009
For and on Behalf of
WESTERN STATES SURVEYING, INC.
12753 South Parker Road, Suite 205
Parker, CO 80134-3486
(303) 841-7436
Albert V. Valletta, Jr., PLS 23524

Notice: According to Colorado law you must commence any legal actions based upon a defect in this survey within three years after you first discover such defect. In no event, may any action based upon any defect in this survey be commenced more than ten years from the date of certification shown hereon.

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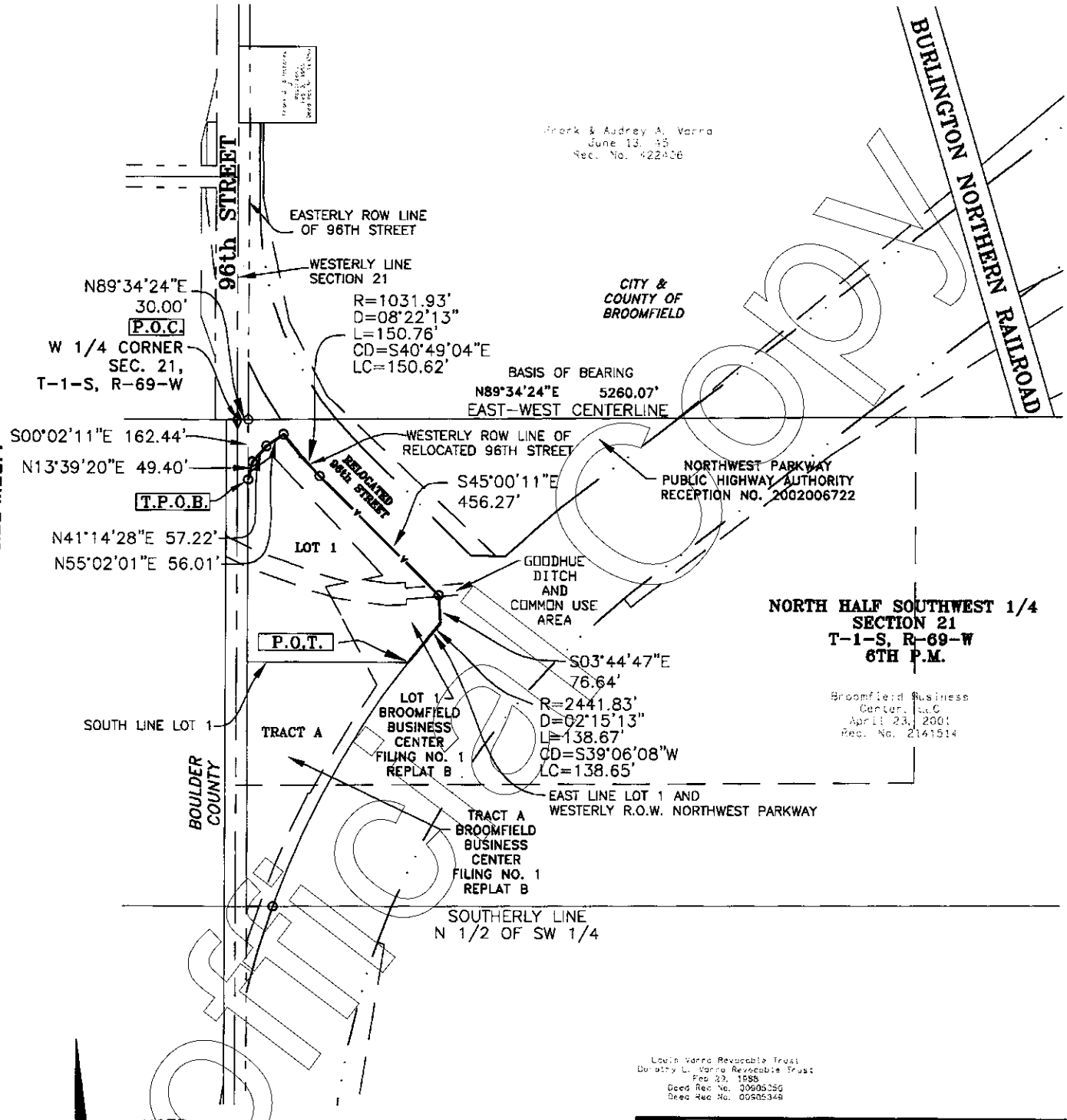
ACQUISITION EXHIBIT



NOTE:
THIS DOES NOT REPRESENT A MONUMENTED SURVEY. IT IS INTENDED ONLY TO DEPICT THE ATTACHED DESCRIPTION.

0 400 800

SCALE: 1" = 400'

Page 3 of 3

NORTHWEST PARKWAY PROJECT

AC-65-66-67 LT REV-7
OWNER: NORTHWEST PARKWAY
STA 54+/- STA 63+/-

CALC: LEL 2/04/02	REV: 01/07/09
DRWN: RDC 2/08/02	REV: 10/8/02
CHECKED: RDC 2/08/02	REV: 11/6/02
WESTERN STATES SURVEYING, Inc.	REV: 12/31/03
DWG NAME: AC65-67L	PLOT DATE: 01/07/09

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101 Spader Way
Broomfield, Colorado 80020
303-452-9910 Fax 303-451-0289
www.northmetrofire.org

David A. Ramos
Fire Chief

July 10, 2024

Mr. Ryan Amos
Redtail Ridge Portfolio
100 Bayview
Suite 250
Newport Beach, CA 92660

Re: Letter of Support for Easement Request

Dear Mr. Amos:

North Metro Fire Rescue District ("District") submits this letter of support for Redtail Ridge Portfolio ("RRP") request for a right-of-way access easement consisting of .056 acres ("Easement") over a portion of the District' property located at 13975 S 96th Street, Broomfield, CO 80020 ("Property"), subject to the conditions described herein.

When the Northwest Parkway Public Highway Authority ("Authority") deeded the Property to the District, it retained a perpetual multi-use easement over and across portions of the Property, including the area that is the subject of the RRP's requested Easement. The District and Authority have had preliminary discussions concerning RRP's Easement request, which the District intends to continue should this development proceed.

It is the District's understanding that the requested Easement will be used to expand both Campus Drive and the turn lane onto southbound S 96th Street. Subject to the final design and form of the Easement agreement, the District believes the Easement will benefit traffic flow. In exchange for the Easement, RRP has agreed to cover all costs associated with the Easement, including legal fees. RRP has also agreed to pay for the costs related to installation of an Opticom Emergency Traffic System on 96th Street.

Based on the foregoing, the District is in support of RRP's Easement request. Please do not hesitate to contact me with any questions.

Richard Miller, Board President
North Metro Fire Rescue District

AGREEMENT
BY AND BETWEEN
THE NORTHWEST PARKWAY PUBLIC HIGHWAY AUTHORITY,
NORTHWEST PARKWAY LLC
AND
REDTAIL RIDGE METROPOLITAN DISTRICT
REGARDING
CAPITAL IMPROVEMENTS PLANNING, CONSTRUCTION, AND MAINTENANCE

THIS **AGREEMENT BETWEEN THE NORTHWEST PARKWAY PUBLIC HIGHWAY AUTHORITY, NORTHWEST PARKWAY LLC AND REDTAIL RIDGE METROPOLITAN DISTRICT REGARDING CAPITAL IMPROVEMENTS PLANNING, CONSTRUCTION, AND MAINTENANCE** (the "**Agreement**") is made and entered into this ____day of _____, 2024 (the "**Effective Date**"), by and between the **NORTHWEST PARKWAY PUBLIC HIGHWAY AUTHORITY**, a body corporate and political subdivision of the State of Colorado (the "**Authority**"), the **NORTHWEST PARKWAY LLC,** a Delaware limited liability company (the "**LLC**"), and **REDTAIL RIDGE METROPOLITAN DISTRICT**, a quasi-municipal corporation and political subdivision of the State of Colorado (the "**District**") (the Authority, the LLC, and the District may be collectively referred to herein as the "**Parties**" or individually as a "**Party**").

RECITALS

A. The Authority and District, as Colorado governmental entities, are constitutionally and statutorily empowered pursuant to Colorado Constitution Article XIV, Section 18 and Sections 29-1-201, et seq., C.R.S., to cooperate or contract via agreement with one another to provide functions, services, or facilities authorized to each cooperating government.

B. The Authority was created pursuant to the Public Highway Authority Law, §§ 43-4-501, *et seq*., C.R.S. (the "**PHA Law**") and the Establishing Contract for the Northwest Parkway Public Highway Authority, dated June 2, 1999, as amended, to coordinate the planning, funding, construction, operation, and maintenance of the public highway as defined in the PHA Law known as the Northwest Parkway (the "**Northwest Parkway**").

C. The Authority and the LLC are parties to that certain Northwest Parkway Concession and Lease Agreement, dated as of August 29, 2007, and as amended pursuant to that certain First Amendment to Northwest Parkway Concession and Lease Agreement, dated as of November 21, 2007 (collectively, the "**CLA**").

D. Pursuant to the CLA, the LLC leases the Northwest Parkway, and real property associated with the Northwest Parkway, from the Authority and has obtained all rights, licenses, and privileges to operate, maintain, and toll the Northwest Parkway in connection therewith.

E. Pursuant to the authority granted to the District by its Service Plan, as approved by City of Louisville (the "**City**") on February 18, 2020, as it may be amended or restated from time to time (the "**Service Plan**"), the District exists for the purpose of, among other things, designing, acquiring, constructing, installing, financing, operating and maintaining certain street, traffic and

safety controls, and transportation improvements within and without the boundaries of the District, and providing certain services to the service area covered by the Service Plan, all in accordance with the Service Plan.

F. The formation of the District was necessary in order to finance the construction of, and thereafter operate certain, public improvements, including the Improvements (defined below) for Redtail Ridge, a master-planned development (the "**Project**") located in the City.

G. The Project is located on property owned by the developer of the Project, Redtail Ridge Portfolio, LLC, a Delaware limited liability company.

H. Given its scale, the Project development is projected to be phased over approximately 10 years. At full build out, the Project is anticipated to include approximately 2.6 million square feet of commercial development.

I. The District shall fund the below defined Improvements.

J. The Parties acknowledge the need for the Improvements, as described in this Agreement, which are necessary for continuity of operations and non-impairment of safety and tolling for the Northwest Parkway.

K. The Parties acknowledge that significant efficiencies and cost savings may be realized to the mutual benefit of the Parties by planning and executing the construction of the Improvements. Accordingly, the District is agreeable to constructing the Improvements.

L. The Parties and their respective taxpayers, constituents, and customers will jointly benefit from the construction of the Improvements and the Parties therefore agree to cooperatively provide for the funding, design, construction, and maintenance of the Improvements as provided herein.

AGREEMENT

1. RECITALS. The foregoing recitals are hereby incorporated as though fully set forth herein.

2. DEFINITIONS.

Agreement	This Agreement between the Authority, the LLC, and the District regarding Capital Improvements Planning, Construction, and Maintenance as of the Effective Date.
Authority	Northwest Parkway Public Highway Authority.
Authority Property	All property either owned in fee by the Authority or encumbered by easements in favor of the Authority, including the Northwest Parkway right-of-way.

CCOB	City and County of Broomfield.
CDOT	Colorado Department of Transportation.
CDOT's Field Materials Manual	Colorado Department of Transportation's Field Material Manual 2023, as it may be amended from time to time, currently accessible at https://www.codot.gov/business/designsupport/materials-and-geotechnical/manuals/2023-field-materials-manual
CDOT's Standard Specifications	Colorado Department of Transportation's Standard Specifications for Road and Bridge Construction 2021, as it may be amended from time to time, currently accessible at https://www.codot.gov/business/designsupport/cdot-construction-specifications/2021-construction-specifications/2021-specs-book/2021-standard-specifications-book
CLA	As defined in Recital C to this Agreement.
City	As defined in Recital E of this Agreement.
Construction Agreement(s)	One or more agreements that may be entered into between the District and third parties for the construction of the Improvements.
District Maintenance Obligations	Subject to completion of the Improvements, the District will be responsible for maintenance as shown on **Exhibit B** attached hereto, until such time as the District enters into a Maintenance Obligations IGA(s) with the City and/or the CCOB.
Effective Date	As defined in the introductory paragraph of this Agreement.
Final Design	The final 100% design for the Improvements which will be contracted for construction, which includes all necessary approvals from the City, the Authority, the LLC, and any other local government agencies or entities with jurisdiction.
Improvements	The Other Improvements and the Improvements Within Authority Property collectively.
Improvements Costs	Actual costs incurred to design and construct the Improvements, including reasonable costs of the

	consultants retained by both the Authority and LLC to review plans and perform the owner's quality assurance roles during construction.
Improvements Property	The property anticipated to be acquired by the District, more particularly described in Section 3(b) below and depicted on **Exhibit D** attached hereto.
Improvements Within Authority Property	Those public improvements to the Northwest Parkway which are being designed and constructed to facilitate the Project while preserving the integrity and safety of Northwest Parkway operations, which improvements are more particularly described in Section 5(b) below and depicted on **Exhibit A** attached hereto.
Initial Design	District's preliminary design work for the Improvements ranging from initial efforts and encompassing 30%, 60%, and 90% design, which will culminate in 90% design.
LLC	Northwest Parkway LLC, a Delaware limited liability company.
LLC Maintenance Obligations	Subject to completion of the Improvements, the LLC will only be responsible for maintenance of Improvements Within Authority Property as shown on **Exhibit B**, attached hereto.
Maintenance Obligations IGA(s)	One or more intergovernmental agreements to be entered into between the District, the City, and/or the CCOB providing for ownership and maintenance of the Other Improvements shown on **Exhibit B**, which, when signed, may terminate the District Maintenance Obligations for the subject Other Improvements.
Other Improvements	Any and all transportation, trail or associated public use infrastructure adjacent or connected to the Northwest Parkway, but not on Authority Property, necessary to complete the Project, including but not limited to local roads, trails, walkways, 96th Street north of Campus Drive and the third southbound lane from Rockcress Drive to U.S. 36, as described in Section 5(a), and depicted on **Exhibit A**, as well as other public infrastructure associated with any of the foregoing.
Party(ies)	District, the Authority and/or the LLC as the context may dictate.

Pedestrian Bridge Crossing	The portion of the Improvements Within Authority Property consisting of a new grade separated pedestrian/bicycle crossing ("Pedestrian Bridge"), at or near the 96th Street intersection in a precise location to be approved by the Authority and LLC, together with an easement and subject to a Permit (as defined herein) to be issued by the LLC, to the District for construction, placement and maintenance of the Pedestrian Bridge, which Pedestrian Bridge and easement are to be owned and maintained by the District unless and until the CCOB or the City agrees in writing to assume ownership and/or maintenance of the Pedestrian Bridge.
Permit	A construction and access permit, including permit special provisions, to be issued and administered by the LLC in addition to this Agreement that shall include, among other terms, insurance and other LLC standard and non-standard specific requirements to allow the construction and use of the Improvements Within Authority Property pursuant to the terms thereof.
Project	As defined in Recital F of this Agreement.
Rockcress Drive	References to Rockcress Drive herein shall refer to the existing Tape Drive, which is to be renamed Rockcress Drive in the future.
Service Plan	As defined in Recital E of this Agreement.

3. FUNDING OF IMPROVEMENTS.

(a) Improvements Costs. The District shall, at its sole cost and expense and without financial contribution from the Authority or the LLC, fund all Improvements Costs.

(b) Improvements Property Acquisition Costs. In the event it is necessary to acquire Improvements Property to complete the Improvements, the District will bear the sole responsibility to acquire and fund all of the costs of obtaining the Improvements Property without contribution from the Authority or the LLC; provided, however, neither the Authority nor the LLC shall charge the District acquisition costs for easements or improvements within the Authority's right of way, other than typical and applicable Permit fees for the work necessary to complete the contemplated Improvements.

4. DESIGN OF IMPROVEMENTS.

(a) Initial Design. The District has commenced work on the Initial Design and will continue work on the Initial Design in accordance with the following terms and conditions:

(i) The District shall provide the Authority and the LLC with copies or electronic access to all existing Initial Design documentation. The District shall regularly coordinate with the Authority and the LLC regarding further development of the Initial Design, including but not limited to holding regular coordination meetings with the Authority's engineering and LLC staff and all involved contractors and consultants for the purpose of coordinating the Initial Design. The District shall be responsible, at its sole cost and expense, for completing the Initial Design.

(ii) The scope of the Initial Design included, but was not limited to, surveying, geotechnical services, utility investigation, public meetings, and overall design of the Improvements.

(iii) The District agrees to eliminate from the Initial Design and Final Design the proposed "right in right out" access from the Northwest Parkway opposite Via Lata Drive for the proposed hospital site and to provide written evidence of the removal of the right in right out access to the Authority and LLC.

(b) Final Design. The District shall commence the Final Design in accordance with the following terms and conditions:

(i) The Authority and LLC shall, within 30 days following the District's written request for approval of any update to the Initial Design, respond in writing with its approval or disapproval of the same, and, as to any disapproval, shall provide the reason for the disapproval and any revisions required by the Authority and LLC that would be needed for them to approve the same.

(ii) In addition to the coordination required in Section 4(b)(i) above, the Final Design shall be submitted to the Authority for final written approval by the Authority and LLC. Construction of the Improvements shall not commence without the Authority's and the LLC's written approval and necessary permits issued by the LLC. The Authority and the LLC shall respond in writing to the District's request for final written approval within 30 days following the District's request. If the LLC or Authority withholds any consent or approval, the LLC or the Authority, as applicable, shall provide a written statement giving the proposed reasons therefor and the revisions needed in order for it to approve the same.

(iii) The District shall undergo all plan review processes and receive all approvals necessary for the Final Design, including but not limited to the development process and approval required by the Authority, the City and other local governments and agencies having jurisdiction over the Improvements. The Authority must receive written confirmation that the District has undergone all required review processes and has received all necessary approvals from the Authority, the City and other local governments and agencies having jurisdiction over the Improvements in order to approve the Final Design.

5. CONSTRUCTION OF IMPROVEMENTS.

(a) Other Improvements. The District has agreed to fund and construct the Other Improvements in conjunction with the Project. The Other Improvements that the District will fund and construct are listed below and depicted on the attached **Exhibit A**.

(i) Reconstruct and widen South 96th Street from Campus Drive north to Dillon Road. The cross section of 96th Street includes two (2) northbound and two (2) southbound lanes between Campus Drive and Dillon Road. [See "**P**" on **Exhibit A**]

(ii) Construct a third southbound through lane on the Northwest Parkway from Rockcress Drive to U.S. 36. The lane will be constructed on the western most edge of the existing Northwest Parkway and tie into the existing turn lane to westbound U.S. 36. [See "**J**" on **Exhibit A**]

(b) Improvements Within Authority Property. The District shall fund and construct the Improvements Within Authority Property in conjunction with the Project. The Improvements Within Authority Property are listed below and depicted on the attached **Exhibit A**.

(i) Construct traffic signal and intersection improvements at 96th Street and Campus Drive (currently Old 96th Street and S. 96th Street intersection). Campus Drive and 96th Street intersection to include the following lane configurations: [See "**M**" on **Exhibit A**]

- Three northbound through lanes on 96th Street from the Northwest Parkway to Campus Drive.
- Two dedicated left turn lanes from northbound 96th Street to westbound Campus Drive.
- Two southbound through lanes on 96th Street.
- One dedicated right turn lane from southbound 96th Street to westbound Campus Drive.
- Two dedicated left turn lanes from eastbound Campus Drive to northbound 96th Street.
- One dedicated right turn lane from eastbound Campus Drive to southbound 96th Street.

(ii) Construct a third eastbound left-turn lane from southbound 96th Street to northbound Northwest Parkway. [See "**L**" on **Exhibit A**]

(iii) The 96th Street cross section varies depending on turn lane configuration; however, the cross section will include four (4) receiving lanes from the Northwest Parkway to 96th Street, which tapers down to three (3) through lanes through the intersection of 96th Street and Campus Drive, and then tapers down to two lanes north of Campus Drive. [See "**L, M, and P**" on **Exhibit A**]

(iv) Construct modifications to the Northwest Parkway and Rockcress Drive/Via Varra intersection which shall include two (2) eastbound left turn lanes from Rockcress Drive to northbound Northwest Parkway. In addition, improvements shall be made on Rockcress Drive to provide for LLC snowplows to turn around. [See "**O**" on **Exhibit A**]

(v) Eliminate the existing at grade pedestrian/bicycle crossings at the 96th Street/Northwest Parkway intersection and the north side of Rockcress Drive/Northwest Parkway intersection and construct a Pedestrian Bridge Crossing at/near the 96th Street intersection. [See "**K**" on **Exhibit A**]. Location of the Pedestrian Bridge on **Exhibit A** is approximate and the final actual location of the Pedestrian Bridge shall be subject to modification as reasonably directed by the Authority and LLC for the safe and efficient operation of the Northwest Parkway through the design and construction plan approval process contemplated herein.

(vi) Construct a third left turn lane from northbound Northwest Parkway to northbound 96th Street. [See "**L**" on **Exhibit A**]

(vii) Construct one new receiving lane (acceleration lane) on northbound Northwest Parkway, north of 96th Street within the existing center median to receive the additional lane of turning traffic. [See "**L**" on **Exhibit A**]

(viii) Construct a third southbound through lane on the Northwest Parkway from 96th Street to Rockcress Drive. The third southbound lane will be constructed on the westernmost edge of the existing Northwest Parkway. [See "**J**" on **Exhibit A**]

(ix) Signalization improvements at the intersection of 96th Street and Campus Drive.

(x) Signalization improvements at the intersection of 96th Street and Northwest Parkway.

(xi) Signalization improvements at the intersection of Rockcress Drive and Northwest Parkway.

(xii) Pay the reasonable costs of the Authority or the LLC to relocate the current Electronic Tolling Sign on 96th Street, such moving to be performed at the direction of the LLC with contractors retained by the LLC. The cost estimate for such moving shall be provided in advance in writing to the District for approval, and for payment by the District to the LLC in advance of moving the sign.

(c) Standard of Construction. The District shall cause the Improvements to be built in accordance with all applicable standards, rules, and regulations required by the Authority and other local governments and agencies having jurisdiction over the Improvements. All Construction Agreement(s) will incorporate the requirement that all contractors and subcontractors are to conduct all inspections and material testing in accordance with the CDOT's Field Materials Manual to ensure all work complies with CDOT's Standard Specifications. The Authority shall be permitted to conduct appropriate owner quality assurance verification testing and inspections to confirm construction is consistent with the standards established in this Section 5.(c). The reasonable and customary costs of such inspections shall be included in the Improvements Costs to be funded by the District hereunder.

(d) Diligent Construction of Improvements. Once construction of the Improvements begins, the District will diligently complete the same in accordance with all

applicable laws, rules, or regulations within a period of time no longer than three (3) years from the commencement of construction of the Improvements, subject to extension for Force Majeure (as defined below) delays pursuant to Section 10(p). In the event construction of any Improvements are not completed within three (3) years from the date construction of the Improvements begins, then the Authority may, but is not obligated to, upon written notice to District, exercise its discretion to step in and complete the construction of the Improvements, or any uncompleted portions thereof. The District shall remain responsible for the funding of the Improvements as set forth in Section 3 above, and the Authority shall have the right to seek reimbursement from the District for its actual costs and expenses incurred in the process of completing such construction, including but not limited to reasonable attorney, engineering, and other contractor and consultant fees.

(e) Terms of Construction.

(i) Insurance Requirements. Prior to commencement of this Agreement, the District shall provide the following insurance coverages:

(1) Commercial General Liability Insurance. District shall provide commercial general liability insurance for claims arising out of bodily injury, death, damage to or destruction of the property of others, including loss of use, and including contractual liability products and completed operations and, if the scope of work involves underground work, XCU (underground, collapse and explosion) coverage in an amount not less than Two Million Dollars ($2,000,000) per occurrence, Four Million Dollars ($4,000,000) general aggregate.

(2) Workers' Compensation or Employers' Liability Insurance. District shall provide proof of workers' compensation coverage with limits as required by the laws of the State of Colorado. Additionally, District shall provide proof of Employers' Liability Insurance with limits as follows: $1,000,000 bodily injury each accident, $1,000,000 bodily injury each disease, $1,000,000 bodily injury disease aggregate.

(3) Additional Insured. District shall name the Authority and the LLC as an additional insured on its Commercial General Liability policy.

(4) Certificates of Insurance. Upon the execution of this Agreement, District shall provide certificates of insurance to the Authority and the LLC demonstrating that the required coverages are in effect. District agrees that the required coverages will not be reduced, canceled, non-renewed or materially changed without thirty (30) days prior written notice to the Authority. District shall be responsible for providing updated insurance certificates from the respective insurance carriers and forwarding the replacement certificates to the Authority within thirty (30) days of the expiration date of any previously delivered certificate.

(5) Contractor's Coverages. Any contractor performing work on District's behalf pursuant to this Agreement will provide the following:

i) Commercial General Liability Insurance coverages comparable to those set forth above in an amount not less than $1,000,000 per occurrence and $2,000,000 general aggregate. This insurance shall include the following coverages: Bodily Injury

and property damage, including loss of use thereof, Contractual Liability, Property Damage, Products and Complete Operations and Personal Injury.

ii) Commercial Auto Liability Insurance covering all owned, non-owned and hired vehicles, with a combined single limit not less than $1,000,000.

iii) Workers' compensation coverage with limits as required by the laws of the State of Colorado and proof of Employers' Liability Insurance with minimum limits as follows: $500,000 bodily injury each accident, $500,000 bodily injury each disease, $500,000 bodily injury disease aggregate.

iv) Umbrella/Excess Liability Insurance. The Contractor shall maintain umbrella/excess liability insurance on an occurrence basis in excess of the underlying insurance described in this agreement which is at least as broad as the underlying policies. Policy limits with minimum limits of not less than Two Million Dollars ($2,000,000) per occurrence.

v) Pollution Legal Liability Insurance. The Contractor shall maintain a separate Contractor's Pollution Liability insurance policy covering any bodily injury, liability and property damage liability, arising out of the collection and disposal of pollutants, including items in transit to a permanent disposal facility, which may arise from activities under or incidental to this agreement. This policy shall be maintained with minimum limits of Two Million ($2,000,000) per claim.

vi) If any policies are claims-made rather than per occurrence, the carrier/broker shall note on the certificate of insurance all retroactive dates and extended reporting periods.

(6) Certificates of Insurance. The District shall provide to the Authority and the LLC certificates of insurance evidencing all insurance coverage obtained by the construction contractors and their subcontractors prior to commencement of construction. Said insurance shall be maintained until construction is complete. The District shall provide the Authority and the LLC new certificates of insurance within thirty (30) days of renewal of such insurance.

All coverages shall be continuously maintained to cover all liability, claims, demands, and other obligations assumed by contractor pursuant to the indemnification provisions of this Agreement.

The contemplated certificate(s) of insurance shall be sent to:

Northwest Parkway Public Highway Authority
c/o CRS of Colorado
Attn: Joel Meggers
7995 E. Prentice Avenue, Suite 103E
Greenwood Village, CO 80111
E-Mail: jmeggers@crsofcolorado.com

Northwest Parkway LLC

Attn: Brenda Shuler
3701 Northwest Parkway
Broomfield, CO 80023
E-Mail: bshuler@nwpky.com

The Authority and the LLC shall be named an additional insured on the District's and the Contractor's policies by endorsement. The Authority and the LLC shall have the right to review a copy of the insurance policies with any endorsements upon request.

(ii) Permit Requirement. Prior to commencement of construction or pre-construction activities for the Improvements and the Pedestrian Bridge, the District, its contractors and/or subcontractors, shall apply for and obtain from the LLC all required Permits in accordance with the terms of the CLA for the construction of all Improvements. In the event that the District fails to comply with the permitting requirements and fees of the CLA in effect at the time, provided, that in no event shall the LLC's permitting requirements and fees be interpreted, applied and enforced in such manner as would place a disproportionate impact on the District as compared to other permittees. The Authority and/or the LLC may pursue remedies in accordance with Section 7 herein. Nothing herein shall be construed as granting the District or any other entity any rights in or to the Authority's Property. All Construction Agreement(s) will incorporate the requirement that all of the District's contractors and subcontractors shall comply with the Authority's permit manual, including but not limited to all required Permits and insurance specified thereby.

(f) Varra Park Improvements. The District shall participate in improvements the Authority is obligated to undertake within the proposed Varra Park parcel between the eastern boundary of Redtail Ridge and the Northwest Parkway (southwest corner of 96th Street and the Northwest Parkway, directly south of the North Metro Fire Station). Such parcel is located within the CCOB. The District's total cost obligation for both design and construction shall not exceed $500,000.00. While currently existing plans for Varra Park are only schematic, the scope of the proposed park improvements is restricted to minor grading, trail construction, signage, limited parking and landscaping (the "Park Improvements"). The District will assume responsibility for design of the Park Improvements by Norris Design, Inc. and will cooperate with the Authority in obtaining approval of plans by CCOB. The District shall fund and construct the Park Improvements in accordance with the plans approved by CCOB. Should the design and CCOB approval process result in the proposed Park Improvements costing more than $500,000.00, the Authority will be responsible for any such additional costs, and in addition, the following shall apply: [See "**N**" on **Exhibit A**].

(i) In the event the costs of design plus the estimated costs to complete the Park Improvements exceeds $500,000, the District shall not be obligated to proceed with construction of the Park Improvements unless and until the Authority has (i) agreed to modify the design to bring the total cost to not more than $500,000, or (ii) deposited funds equal to the estimated costs in excess of the $500,000 with the District.

(ii) To the extent CCOB approval of plans for the Park Improvements is required under any separate agreement or obligation between CCOB and the Authority, the Authority shall be responsible for obtaining timely approval from CCOB of the same.

(iii) Upon the District's substantial completion of the Park Improvements, the District shall make written request upon the Authority for final approval of the Park Improvements, which approval shall be granted in writing (or a punch list of remaining work provided) within ten (10) business days of submittal of such written request to the Authority. Punch list items shall be completed by the District within thirty (30) days.

(iv) The Authority shall accept assignment of the District's contractor's construction contract related to the Park Improvements and contractor's warranty of the Park Improvements and no security shall be required to be posted for any such warranty by the District.

(v) Maintenance of the park and the Park Improvements shall not be the obligation of the District after completion and acceptance of the Park Improvements.

6. MAINTENANCE AND OWNERSHIP OF THE IMPROVEMENTS.

(a) Improvements Within Authority Property. The Improvements Within Authority Property shall be owned and maintained as follows:

(i) The LLC shall be responsible for the LLC Maintenance Obligations as outlined in **Exhibit B**. The LLC shall further be responsible for snow plowing and ice removal as set forth on **Exhibit C** attached hereto. The District will not impede the LLC's efforts to secure permission to use Rockcress Drive in order to perform snow plowing and ice removal. Upon execution of this Agreement, the parties shall commence negotiations with the City to reach an agreement to grant the LLC permission to use Rockcress Drive in perpetuity for its snowplowing and ice removal operations per this Agreement.

(ii) The District shall maintain those Improvements Within Authority Property that are not being maintained by the LLC as outlined in **Exhibit B** until such time as the City and/or CCOB assume maintenance responsibilities pursuant to a Maintenance Obligations IGA.

(iii) The Authority and the LLC shall not own the Pedestrian Bridge Crossing and shall not have any responsibility for maintenance of the Pedestrian Bridge Crossing. The District shall be the owner of the Pedestrian Bridge Crossing and agrees to assume and be fully responsible for all costs, expenses, liabilities, and other obligations associated with the operation, use, maintenance, repair, replacement and/or removal of the Pedestrian Bridge Crossing. Notwithstanding the foregoing, the easement upon which the Pedestrian Bridge is located, the Pedestrian Bridge and the maintenance obligations therefor may be assigned by the District without the consent of the Authority or the LLC to either the City or the CCOB.

(iv) The Authority shall maintain Varra Park until such time as the CCOB has assumed maintenance of Varra Park.

(b) Other Improvements.

(i) The Other Improvements shall be owned and maintained by the District, unless and until such time as the Other Improvements are accepted for ownership by the City or the CCOB.

(ii) In no event will the LLC or the Authority own or maintain the Other Improvements.

(iii) Immediately upon execution of this Agreement the parties shall commence negotiations with the City and the CCOB regarding Maintenance Obligations IGA(s) for the Other Improvements. In conjunction with the foregoing negotiations, the parties shall also commence negotiations with the CCOB to amend that certain Intergovernmental Agreement Regarding Use of the 96th Street Area between the Authority and the CCOB, dated December 2, 2003. The District will be responsible, at its sole cost and expense, for the District Maintenance Obligations until such time as the City or the CCOB has agreed to assume the District Maintenance Obligations.

(iv) Any work to be performed to the Improvements, except for snow removal and ice control, by or on behalf of the District, the City, the CCOB, or other entities will require obtaining Permits from the LLC.

7. BREACH AND ENFORCEMENT. It is specifically understood that, by executing this Agreement, each Party commits itself to perform pursuant to the terms and conditions contained herein and that the failure of any Party to fulfill any obligation set forth herein shall constitute a breach of this Agreement to the extent the Party that failed to so perform fails to cure such failure within 30 days (or such longer period as is reasonably necessary if such failure is curable but is not capable of being cured within such thirty (30) day period) following receipt of written notice from another Party to this Agreement notifying it of such failure to perform. The Parties agree that this Agreement may be enforced in law or in equity for specific performance, injunctive, or other appropriate relief, as may be available according to the laws and statutes of the State of Colorado; notwithstanding anything to the contrary in this Agreement, no Party shall be entitled to, and each Party hereby waives, any and all rights to punitive or exemplary damages, however arising, whether in contract, in tort, or otherwise, under or with respect to this Agreement or any action taken in connection with this Agreement.

8. TERM OF AGREEMENT AND TERMINATION. Unless terminated pursuant to specific provisions contained herein, this Agreement shall be effective as of the Effective Date identified above.

9. INDEMNIFICATION.

(a) To the extent permitted by law, subject to the provisions of Section 13-50.5-102(8), Colorado Revised Statutes, to the extent applicable to this Agreement, each Party shall indemnify, defend, and hold harmless the other Parties and each of its member entities, directors, officers, employees, agents, and consultants (collectively the "**Indemnitees**"), from and against any and all claims, demand, suits, actions, proceedings, judgments, losses, damages, injuries, penalties, costs, and expenses of any nature (including but not limited to, reasonable attorneys' fees, investigative and repair costs, expert and consultant fees, litigation costs and other expenses incurred in the defense, lost profits, and insurance deductibles), and liabilities, of, by, or with respect to third parties ("**Any Claims**") to the extent they arise from or may be alleged to arise, directly or indirectly, in whole or in part, from the intentional or negligent acts or omissions of a Party or any of its subcontractors, material suppliers, agents, representatives, or employees or the

agents, representative, or employees of any subcontractors or material suppliers (collectively the "**Related Parties**"), in connection with this Agreement (or a breach thereof) and/or the Parties obligations hereunder, including without limitation, the operation, use, maintenance, repair, replacement and/or removal of the Pedestrian Bridge Crossing, and/or other matters which cause or allow to continue a condition or event which deprives the Indemnitees, as applicable, of their sovereign immunity under the Colorado Governmental Immunity Act, Section 24-10-101, *et seq*., Colorado Revised Statutes, as amended from time to time; provided, however, that the Parties shall not be liable for any claim, loss, damage, injury, or liability arising out of negligence of the Indemnitees.

(b) The obligations of the indemnification extended by any Party to the other Parties under this Section shall survive termination or expiration of this Agreement.

(c) The Parties will promptly defend any action or actions filed in connection with Any Claims and will pay all judgments, costs, and expenses, including legal costs and attorneys' fees incurred in connection with Any Claims. The Authority may protect its intent in defending against Any Claims by selecting their own counsel with legal costs and attorneys' fees paid for by the District. The District's defense, indemnification, and insurance obligations shall be to the fullest extent permitted by law and nothing in this Agreement shall be construed as requiring the District to defend in litigation, indemnify, or insure the Authority and/or the LLC against liability for damage arising out of the death or bodily injury to persons or damage to property caused by the negligence or fault of the Authority, the LLC or any third party under the control or supervision of the Authority and/or LLC.

(d) To the extent the terms of Section 13-50.5-102(8), Colorado Revised Statutes, are applicable to this Contract, the District, the Authority, and the LLC hereby agree for the purposes of this Section that: (i) "the degree or percentage of negligence or fault attributable" to the Related Parties as used in Section 13-50.5-102(8)(a), Colorado Revised Statutes, shall be conclusively determined by a trial court at the state level an (ii) the term "adjudication" used in Section 13-50.5-102(8)(c), Colorado Revised Statutes, shall mean a trial court order at the state level.

(e) Any insurance requirements specified in this Agreement in no way lessen or limit the obligations of the District under the terms of this Section. The District shall obtain, at the District's own expense, additional insurance, if any, required to satisfy the terms of this Section.

10. MISCELLANEOUS.

(a) Assignment. None of the Parties hereto may assign this Agreement or parts hereof or its rights hereunder without the express written consent of the other Parties. Any attempt to assign this Agreement in the absence of such written consent shall be null and void *ab initio*.

(b) Time is of the Essence. The Parties acknowledge that time is of the essence in the performance of this Agreement.

(c) No Partnership or Agency. Notwithstanding any language in this Agreement or any representation or warranty to the contrary, the Parties shall not be deemed or

constitute partners, joint venture participants, or agents of the other. Any actions taken by the Parties pursuant to this Agreement shall be deemed actions as an independent contractor of the others.

(d) No Third-Party Beneficiaries. It is expressly understood and agreed that enforcement of the terms and conditions of this Agreement and all rights of action relating to such enforcement shall be strictly reserved to the Parties. It is the express intention of the Parties that any person or entity other than the Parties shall be deemed to be only an incidental beneficiary under this Agreement.

(e) Governmental Immunity. Nothing in this Agreement or in any actions taken by the Parties or their respective elected officials, directors, officers, agents and employees pursuant to this Agreement shall be construed or interpreted as a waiver, express or implied, of any of the immunities, rights, benefits, protections, or other provisions of the Colorado Governmental Immunity Act, Sections 24-10-101, et seq., C.R.S.

(f) No Personal Liability. No elected official, director, officer, agent or employee of the Parties shall be charged personally or held contractually liable under any term or provision of this Agreement, or because of any breach thereof or because of its or their execution, approval or attempted execution of this Agreement.

(g) Annual Appropriations. The governmental Parties to this Agreement are political subdivisions of the State of Colorado and, as such, any and all financial obligations described hereunder are subject to annual budget and appropriations requirements of applicable law.

(h) Notices. Any notices or other communications required or permitted by this Agreement or by law to be served on, given to, or delivered to either Party hereto, by the other Party shall be in writing and shall be deemed duly served, given, or delivered when:

(i) personally delivered to the party to whom it is addressed;

(ii) sent by electronic mail to the individual designated to receive notice at the email address below, provided that (1) the message includes a cross-reference to this Section of the Agreement and states that it serves as notice pursuant to this Agreement, and (2) notice is also provided in a timely manner by another method of physical delivery provided for in this Section;

(iii) sent by United States certified mail, postage prepaid, return receipt requested ("**US Mail**"); or

(iv) placed in the custody of a nationally recognized overnight carrier for next day delivery ("**Carrier**").

Such notice will be deemed given when received, if delivered personally; if sent by electronic mail and physical delivery in accordance with above, when the sender receives a "delivery receipt" or other response confirming delivery of such electronic mail; 4 days after

deposit, if sent by US Mail; or the next business day after deposited with a Carrier during business hours on a business day.

All notices shall be delivered to the following addresses, or such other address as is provided by one party to the other in accordance with this Section:

If to the District:
Redtail Ridge Metropolitan District
c/o McGeady Becher P.C.
Attn: MaryAnn M. McGeady
450 East 17th Avenue, Suite 400
Denver, CO 80203
E-Mail: legalnotices@specialdistrictlaw.com

If to the Authority:
Northwest Parkway Public Highway Authority
c/o CRS of Colorado
Attn: Joel Meggers
7995 E. Prentice Avenue, Suite 103E
Greenwood Village, CO 80111
E-Mail: jmeggers@crsofcolorado.com

With a copy to:
Northwest Parkway Public Highway Authority
c/o Icenogle Seaver Pogue, P.C.
Attn: Tamara K. Seaver
4725 South Monaco Street, Suite 360
Denver, CO 80237
E-Mail: tseaver@isp-law.com

If to the LLC:
Northwest Parkway LLC
Attn: Brenda Shuler
3701 Northwest Parkway
Broomfield, CO 80023
E-Mail: bshuler@nwpky.com

With a copy to:
Northwest Parkway LLC
c/o Spencer Fane LLP
Attn: Paul Hanley
1700 Lincoln Street, Suite 2000
Denver, CO 80203
E-Mail: Phanley@spencerfane.com

A Party may change its address for the purpose of this Section by giving written notice of such change to the other Parties in the manner provided in this Section.

(i) Rules of Construction. For purposes of this Agreement, except as otherwise expressly provided or unless the context clearly requires otherwise (i) the terms defined herein include the plural as well as the singular and include any words based upon the root of such defined terms; (ii) words importing gender include all genders; (iii) the words “include,” “includes,” and

"including" mean inclusion without limitation; (iv) the word "or" is not exclusive (v) the words "herein" "hereof" and "hereunder" and other words of similar import, refer to this Agreement as a whole and not to any particular Section or other subdivision; and (vi) the headings in the Agreement are for convenience only and shall not affect the interpretation of this Agreement. Unless the context otherwise requires, reference herein to: (A) Sections and orders refer to the Sections of this Agreement and orders made pursuant to this Agreement, as applicable; (B) an agreement, instrument, or other document means such agreement, instrument, or other document as amended, supplemented, and modified from time to time to the extent permitted by the provisions thereof; and (C) a statute means such statute as amended from time to time and includes any successor legislation thereto and any regulation promulgated thereunder. This Agreement shall be construed without regard to any presumption or rule requiring construction or interpretation without regard to any presumption or rule requiring construction or interpretation against the party drafting an instrument or causing any instrument to be drafted.

(j) Choice of Law. This Agreement, and all claims or causes of action (whether in contract, tort or statute) that may be based upon, arise out of or relate to this Agreement, shall be governed by, and enforced in accordance with, the substantive and procedural laws of the State of Colorado, including its statutes of limitations, without giving effect to any choice of law or conflict of laws rules or provisions (whether of the State of Colorado or any other jurisdiction) that would cause the application of the laws of any jurisdiction other than the State of Colorado.

(k) Venue and Jurisdiction. Each party irrevocably and unconditionally agrees that it will not commence any action, litigation, or proceeding of any kind whatsoever against any other party in any way arising from or relating to this Agreement and all contemplated transactions, in any forum other than the Seventeenth Judicial District of Colorado, which forum shall have sole and exclusive jurisdiction over any matters related to this Agreement.

(l) No Waiver. No waiver of any of the provisions of this Agreement shall be deemed to constitute a waiver of any other of the provisions of this Agreement, nor shall such waiver constitute a continuing waiver unless otherwise expressly provided herein, nor shall the waiver of any default hereunder be deemed a waiver of any subsequent default hereunder.

(m) Binding Contract. This Agreement shall inure to and be binding on the successors and permitted assigns of the Parties.

(n) Contract Modification. This Agreement may not be amended, altered, or otherwise changed except by a written agreement signed by authorized representatives of the Parties.

(o) Severability. If any term or provision of this Agreement is determined by the Seventeenth Judicial District of Colorado or any appellate court with competent jurisdiction to be invalid, illegal, or unenforceable under the laws governing this Agreement, such invalidity, illegality, or unenforceability shall not affect any other term or provision of this Agreement; provided, however, that if any term or provision of this Agreement which is material to allowing the parties to achieve the benefit of the bargain originally negotiated between the parties is determined by the Seventeenth Judicial District of Colorado or any appellate court with competent

jurisdiction to be invalid, illegal, or unenforceable, the remainder of this Agreement shall be unenforceable.

(p) Force Majeure. Whenever a Party is required to commence, continue, or complete construction, maintenance, repair, or replacement of an Improvement, or is required to comply with any other requirements by an agreed upon deadline in this Agreement, the Party shall be granted a day-for-day extension of time for the period during which performance in a timely manner is not feasible due to acts of God or any circumstance beyond the reasonable control of a Party which directly impacts the Party's ability to timely perform, including but not limited to, adverse weather, flood, fires, war, epidemic, pandemic, quarantine, civil unrest, natural catastrophes, governmental acts or omissions, changes in laws or regulations, national strikes, fire, explosion, or lack of availability of materials or energy to be used by a Party ("**Force Majeure**").

(q) Covenant of Good Faith and Fair Dealing. The Parties agree to act in good faith in dealing with one another, carrying out their responsibilities, and performing their obligations pursuant to this Agreement. Each Party hereby covenants to the other that it shall not undermine the rights or obligations of the other Party hereto with respect to the Agreement and it will cooperate with the other in achieving the purposes of this Agreement.

(r) Counterpart Execution. This Agreement may be executed in multiple counterparts; all counterparts so executed shall constitute one agreement binding upon all Parties, notwithstanding that all Parties are not signatories to the original or the same counterpart. Documents executed, scanned and transmitted electronically and electronic signatures shall be deemed original signatures for purposes of this Agreement and all matters related thereto, with such scanned and electronic signatures having the same legal effect as original signatures.

(s) Estoppel Certificate. Within 10 business days following the written request by any Party hereto, the other Parties hereto shall execute and deliver to the requesting Party an estoppel certificate certifying (i) whether or not any default exists under this Agreement, (ii) that this Agreement remains in full force and effect, (iii) whether this Agreement has been amended and/or modified in any respect, and (iv) confirmation of facts arising out of this Agreement.

(t) Standard of Consent. Except as specifically provided to the contrary herein, when the consent, approval or other similar authorization of a Party is required by any provision hereof, such consent, approval or other authorization shall not be unreasonably withheld, conditioned or delayed.

[*Remainder of Page Intentionally Left Blank*]

[SIGNATURE PAGE 1 OF 3 OF THE AGREEMENT]

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first set forth above.

REDTAIL RIDGE METROPOLITAN DISTRICT

By: _____
President

Attest:

_____
Secretary

[SIGNATURE PAGE 2 OF 3 OF THE AGREEMENT

NORTHWEST PARKWAY PUBLIC HIGHWAY AUTHORITY

By: _____
Name: _____
Title: _____

APPROVED AS TO FORM:
ICENOGLE SEAVER POGUE
A Professional Corporation

_____
General Counsel

DATE APPROVED BY THE BOARD OF DIRECTORS: _____

[SIGNATURE PAGE 3 OF 3 OF THE AGREEMENT]

NORTHWEST PARKWAY LLC

By: _____
Name: _____
Title: _____

APPROVED AS TO FORM:
SPENCER FANE LLP
a limited liability partnership

_____
General Counsel

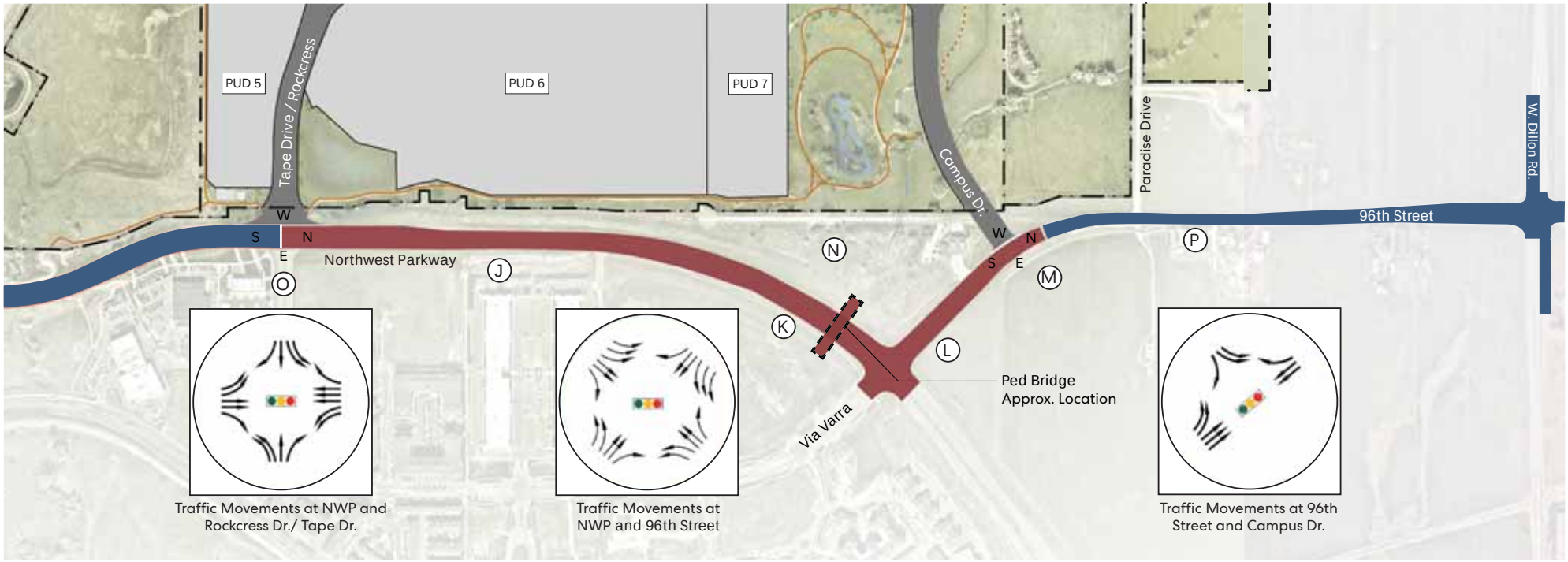
EXHIBIT A

Construction of Improvements

Construction of Improvements

August 1, 2024

Exhibit A to Agreement Between the Northwest Parkway Public Highway Authority (the "Authority"), Northwest Parkway LLC (the "LLC"), and Redtail Ridge Metropolitan District (the "District")



Improvements Within Authority Property

Other Improvements

NOTE: Improvement descriptions and labels are generally consistent with those from the *Redtail Ridge – Subdivision Improvement Agreement: Exhibit B – Schedule of Public Improvements*. Labels associated with improvements that are not a subject of the Agreement have been intentionally omitted.

N 0' 400' 800' 1600'

Construction of Improvements (Cont.)

Exhibit A to Agreement

J. Construct a third southbound through lane on the Northwest Parkway from 96th Street to U.S. 36. The third southbound lane will be constructed on the western most edge of the existing Northwest Parkway and extend from 96th Street south and tie into the existing turn-lane to westbound Highway 36.

K. Eliminate the existing at grade pedestrian/bicycle crossings at the 96th Street and Northwest Parkway intersection (and the north side of Rockcress Drive and Northwest Parkway intersection) and construct a new grade separated pedestrian/bicycle crossing (bridge) at/near the 96th Street intersection.

L. Construct a third eastbound left-turn lane from southbound 96th Street to northbound Northwest Parkway and construct one new receiving lane (acceleration lane) on northbound Northwest Parkway within the existing center median to receive the additional lane of traffic. Construct a third left-turn lane from northbound Northwest Parkway to northbound 96th Street. Improvements include associated signal modifications.

M. Construct traffic signal and intersection improvements at 96th Street and Campus Drive (currently Old 96th Street and 96th Street intersection). Improvements include the installation of new traffic signals. Campus Drive and 96th Street intersection to include the following lane configurations:

- Three northbound through lanes on 96th Street from the Northwest Parkway to Campus Drive
- Two dedicated left turn lanes from northbound 96th Street to westbound Campus Drive
- Two southbound through lanes on 96th Street
- One dedicated right turn lane from southbound 96th Street to westbound Campus Drive
- Two dedicated left turn lanes from eastbound Campus Drive to northbound 96th Street
- One dedicated right turn lane from eastbound Campus Drive to southbound 96th Street

N. Participate in improvements that the authority is obligated to undertake within the proposed Varra Park Parcel that is between the eastern boundary of Redtail Ridge and the Northwest Parkway (southeast corner of 96th Street and the Northwest Parkway, directly south of the North Metro Fire station) withing the CCOB, with the district's total cost obligation not to exceed $500,000.

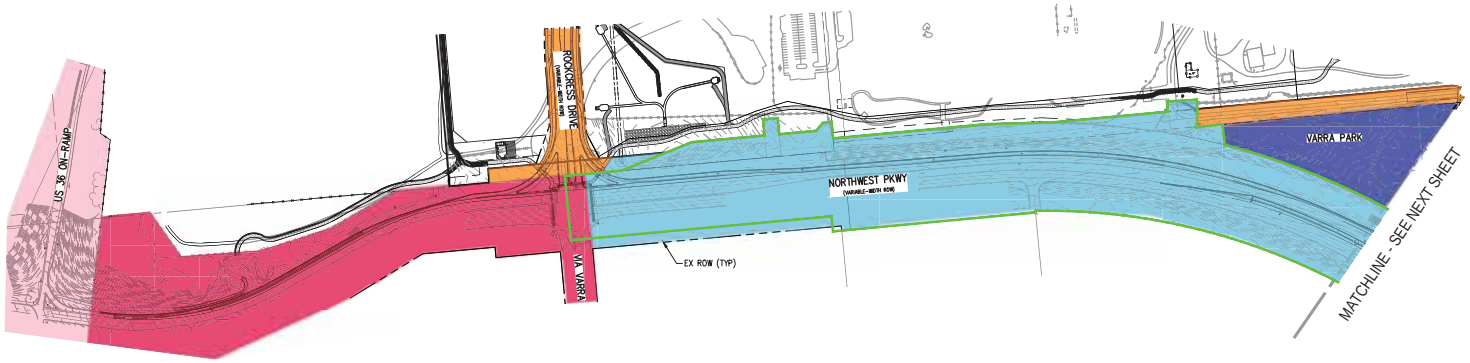
O. Construct modifications to the Northwest Parkway and Tape Drive/Via Varra intersection which shall include two (2) eastbound left turn lanes from Tape Drive (being renamed Rockcress Drive) to Northbound Northwest Parkway. In addition, improvements shall be made on Rockcress Drive to provide for LLC snowplows to turn around.

P. The reconstruction and widening of 96th Street from the Northwest Parkway north to Dillon Road.

EXHIBIT B

Maintenance Obligations for Improvements

NO CHANGES ARE TO BE MADE TO THIS DRAWING WITHOUT WRITTEN PERMISSION OF HARRIS KOCHER SMITH



LEGEND:

- ROUTINE AND CAPITAL MAINTENANCE CONDUCTED BY CDOT
- ROUTINE AND CAPITAL MAINTENANCE CONDUCTED BY NORTHWEST PARKWAY AUTHORITY
- ROUTINE AND CAPITAL MAINTENANCE CONDUCTED BY REDTAIL RIDGE METRO DISTRICT UNTIL ASSUMED BY THE CITY OF LOUISVILLE
- ROUTINE AND CAPITAL MAINTENANCE CONDUCTED BY CITY AND COUNTY OF BROOMFIELD
- LEASE AREA APPROXIMATE LIMITS
- ROUTINE AND CAPITAL MAINTENANCE CONDUCTED BY CITY AND COUNTY OF BROOMFIELD OR NORTHWEST PARKWAY AUTHORITY

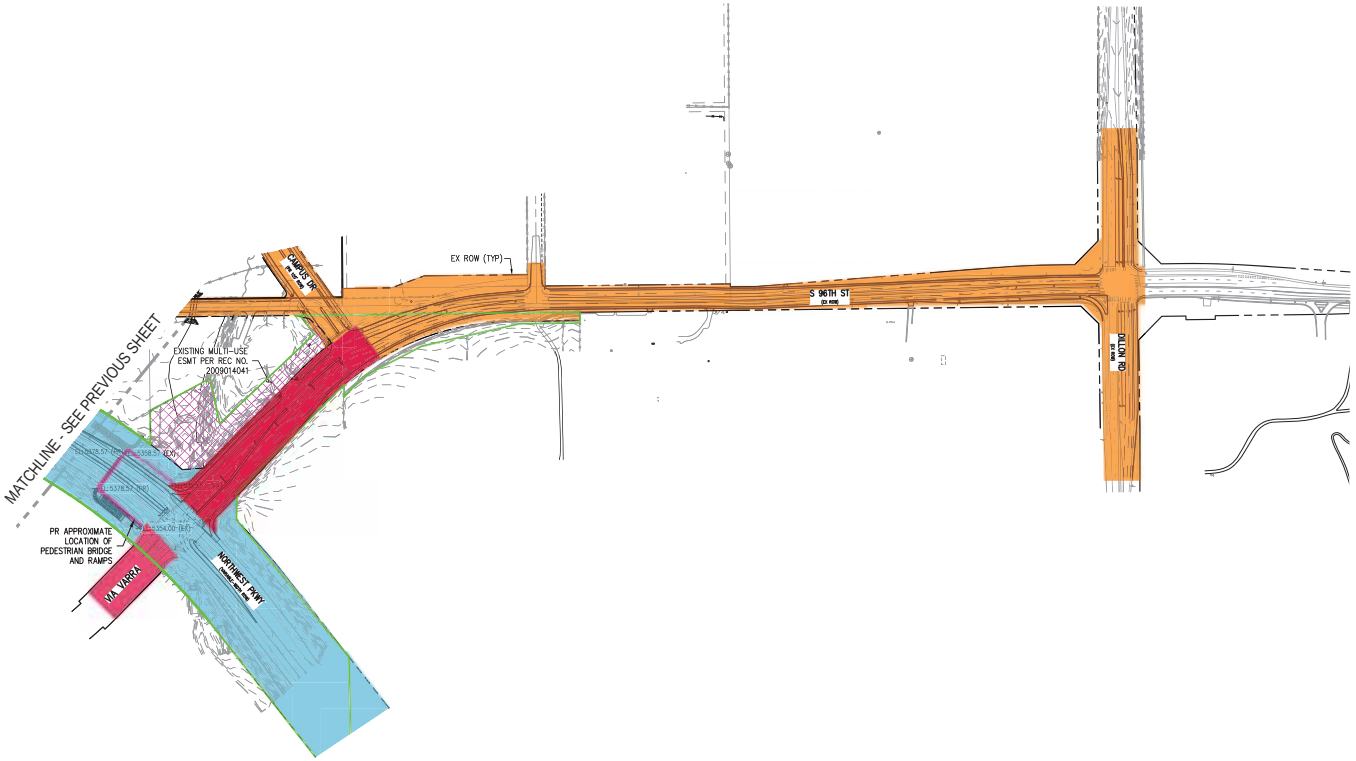
HARRIS KOCHER SMITH
1120 Lincoln Street, Suite 1000
Denver, Colorado 80203
P: 303.623.6300 F: 303.623.6311
HarrisKocherSmith.com

EXHIBIT B - MAINTENANCE OBLIGATIONS FOR IMPROVEMENTS

200 0 200 400
SCALE: 1" = 200'

Plotted: 7/22/2020 8:05 AM BY: TRISTEN A. ROSE
P:\2019\19-033\04 SHEETS\02 EXHIBITS\B MAINTENANCE EXHIBIT.DWG Layout: LAYOUT1
Xrefs Attached: 19-033 XR Ex Boundary.dwg, 19-033 XR Ex Parcels.dwg

NO CHANGES ARE TO BE MADE TO THIS DRAWING WITHOUT WRITTEN PERMISSION OF HARRIS KOCHER SMITH



LEGEND:

- ROUTINE AND CAPITAL MAINTENANCE CONDUCTED BY NORTHWEST PARKWAY AUTHORITY
- ROUTINE AND CAPITAL MAINTENANCE CONDUCTED BY REDTAIL RIDGE METRO DISTRICT UNTIL ASSUMED BY THE CITY OF LOUISVILLE
- ROUTINE AND CAPITAL MAINTENANCE CONDUCTED BY CITY AND COUNTY OF BROOMFIELD INCLUDING THE ENTIRETY OF THE PORK CHOP ISLANDS AT THE INTERSECTION OF NORTHWEST PARKWAY AND S 96TH STREET
- LEASE AREA APPROXIMATE LIMITS
- EXISTING MULTI-USE EASEMENT PER REC NO. 2009014041
- PROPOSED APPROXIMATE LOCATION OF PEDESTRIAN BRIDGE AND RAMPS OF WHICH ROUTINE AND CAPITAL MAINTENANCE AND FHWA AND CDOT INSPECTIONS WILL BE CONDUCTED BY CITY AND COUNTY OF BROOMFIELD AND CITY OF LOUISVILLE

NOTES:

1. THE 96TH ST & CAMPUS DR TRAFFIC SIGNAL WILL BE MAINTAINED BY THE CITY OF LOUISVILLE. ALL OTHER STREET LIGHTING AND TRAFFIC SIGNALS TO BE MAINTAINED BY CITY AND COUNTY OF BROOMFIELD. TRAFFIC SIGNAL TIMING WILL BE COORDINATED BY THE CITY AND COUNTY OF BROOMFIELD.
2. ALL WORK OR FUTURE MAINTENANCE ACTIVITIES REQUIRES A PERMIT ISSUED BY THE LLC WITH THE LEASE AREA.

N

200 0 200 400

SCALE: 1" = 200'

EXHIBIT B - MAINTENANCE OBLIGATIONS FOR IMPROVEMENTS

HARRIS KOCHER SMITH
1120 Lincoln Street, Suite 1000
Denver, Colorado 80203
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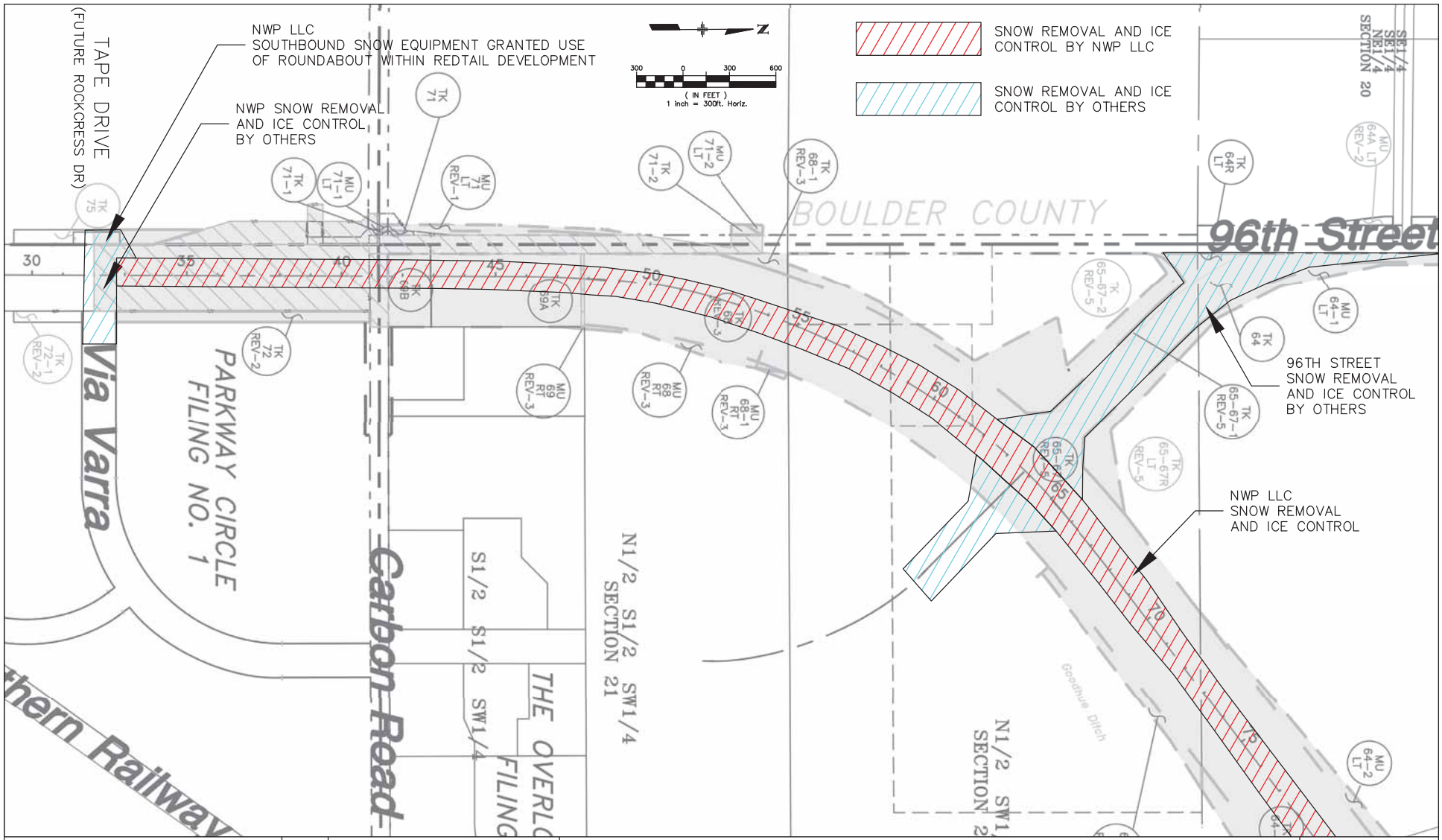
Plotted: 7/27/2020 8:05 AM By: TREVOR A. ROSE
F:\Projects\2020\20-004\Exhibits\Exh 1 TREVOR A. ROSE EXHIBIT B MAINTENANCE EXHIBIT.dwg Layout: LAYOUT2

EXHIBIT C

Snow and Ice Control Responsibilities for Improvements Within Authority Property



Print Date: 4/17/2024 MOCHAPMAN	Sheet Revisions		
File Name: SNOWPLOW.DWG	Date:	Comments	Init.
Horiz. Scale: 1"=300' Vert. Scale:			
Unit Information Unit Leader Initials			
Stantec 410 17TH STREET SUITE 1400 DENVER, COLORADO 80202			

SNOW REMOVAL AND ICE CONTROL RESPONSIBILITIES OF THE NORTHWEST PARKWAY WITHIN AUTHORITY PROPERTY ADJACENT TO REDTAIL RIDGE DEVELOPMENT

Project No.
187607725
Sheet Number 2

EXHIBIT D

Improvements Property

32158372_v15

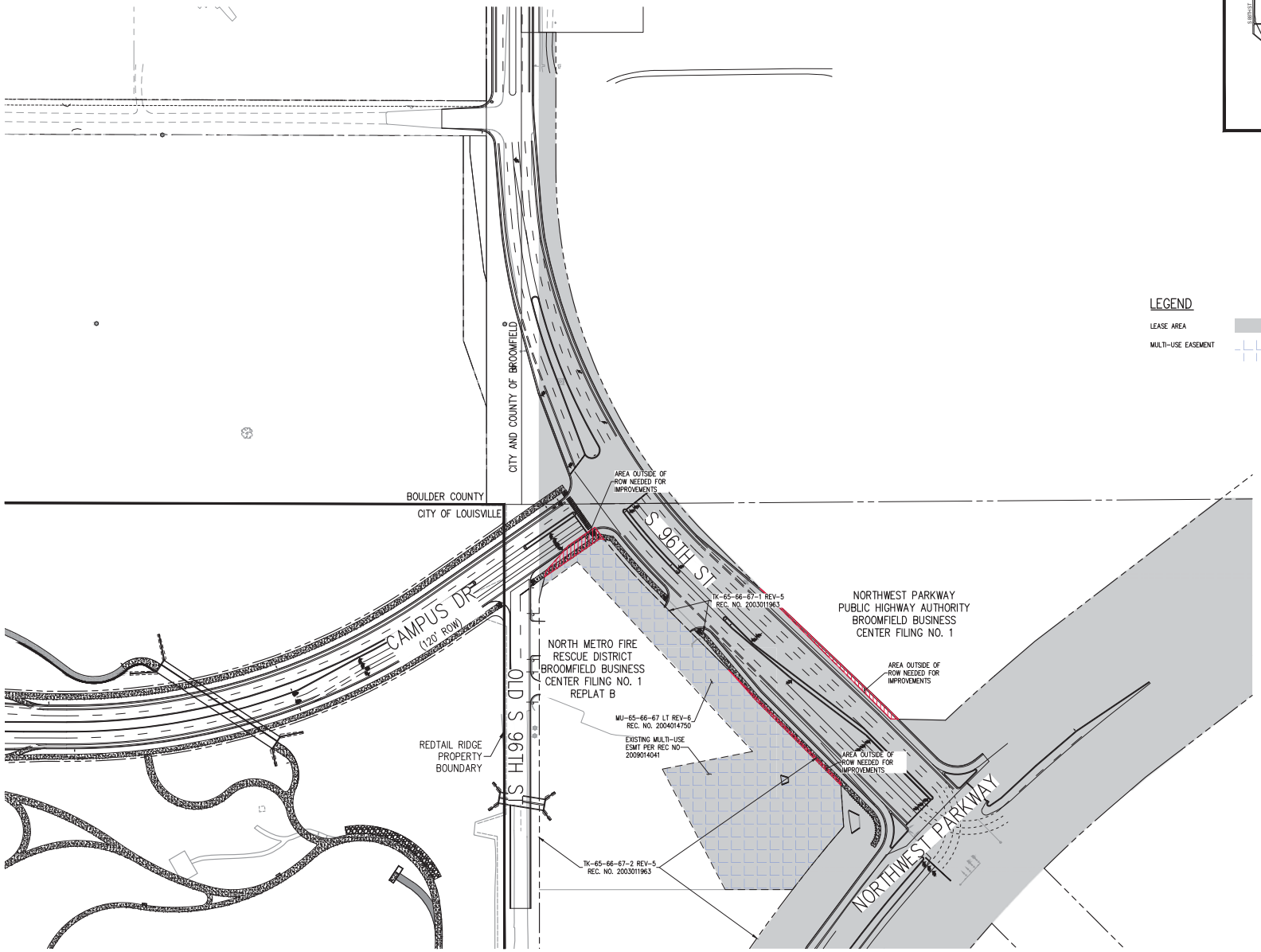


EXHIBIT G- ADDITIONAL IMPROVEMENTS PROPERTY

JULY 19, 2024

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HarrisKocherSmith.com

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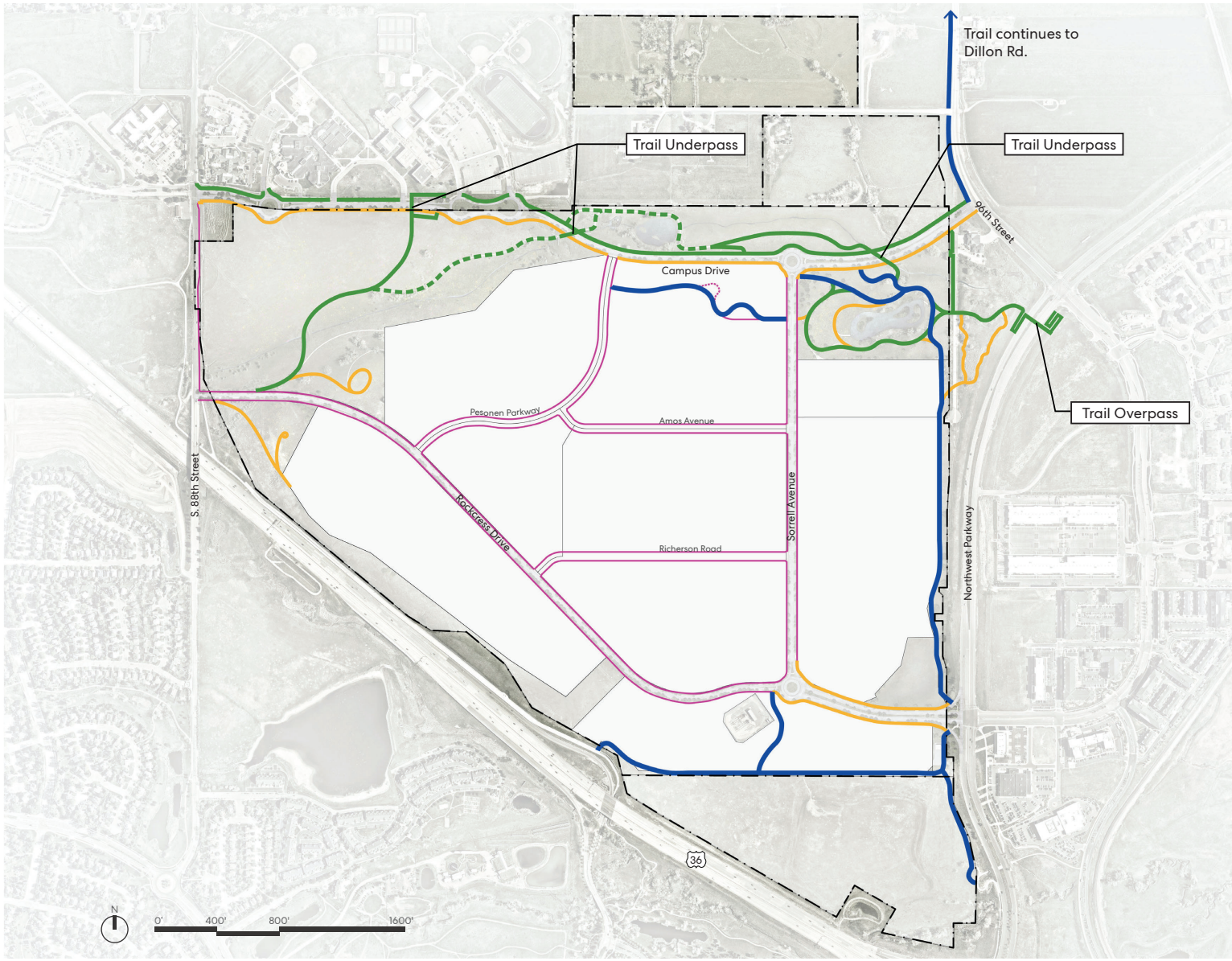
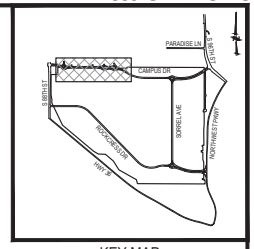
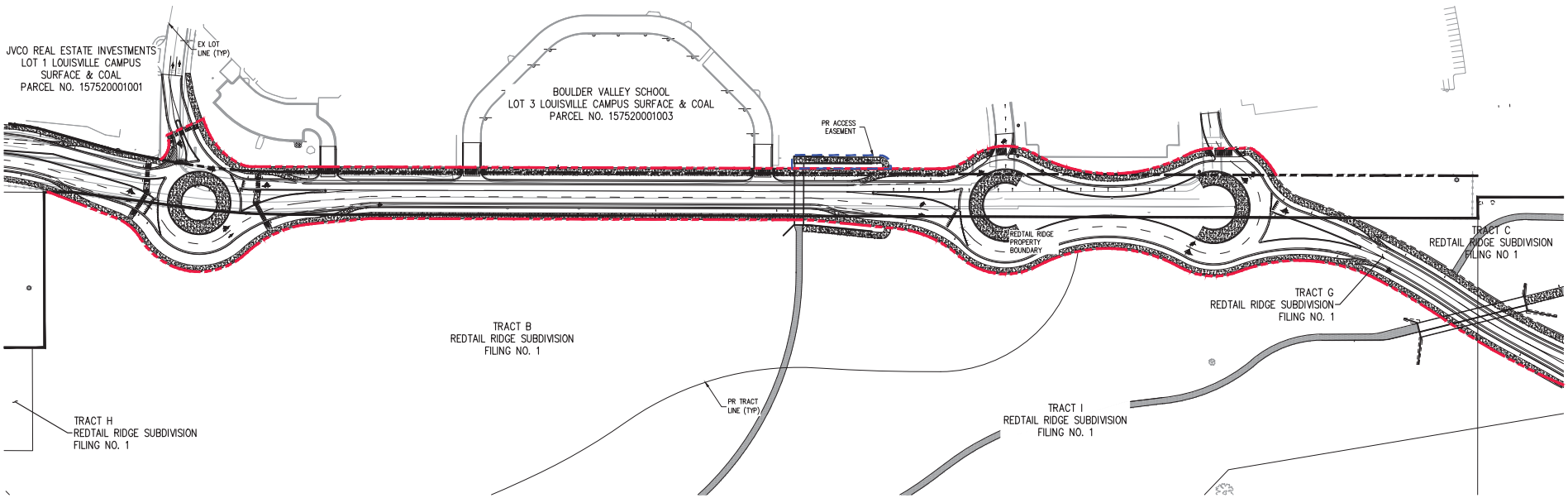
Trail Widths



- 12' Width, Hard Surface Trail
- 10' Width, Hard Surface Trail
- 10' Width, Soft Surface Trail
- 8' Width, Hard Surface Trail
- 8' Width, Soft Surface Trail
- 6' Width, Hard Surface Trail
- 6' Width, Soft Surface Trail



KEY MAP
1"=2000'



LEGEND

PROPOSED ROW

EXISTING ROW

PROPOSED ACCESS EASEMENT

HARRIS KOCHER SMITH
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Denver, Colorado 80203
P: 303.623.6300 F: 303.623.6311
HarrisKocherSmith.com

EXHIBIT G- ADDITIONAL IMPROVEMENTS PROPERTY

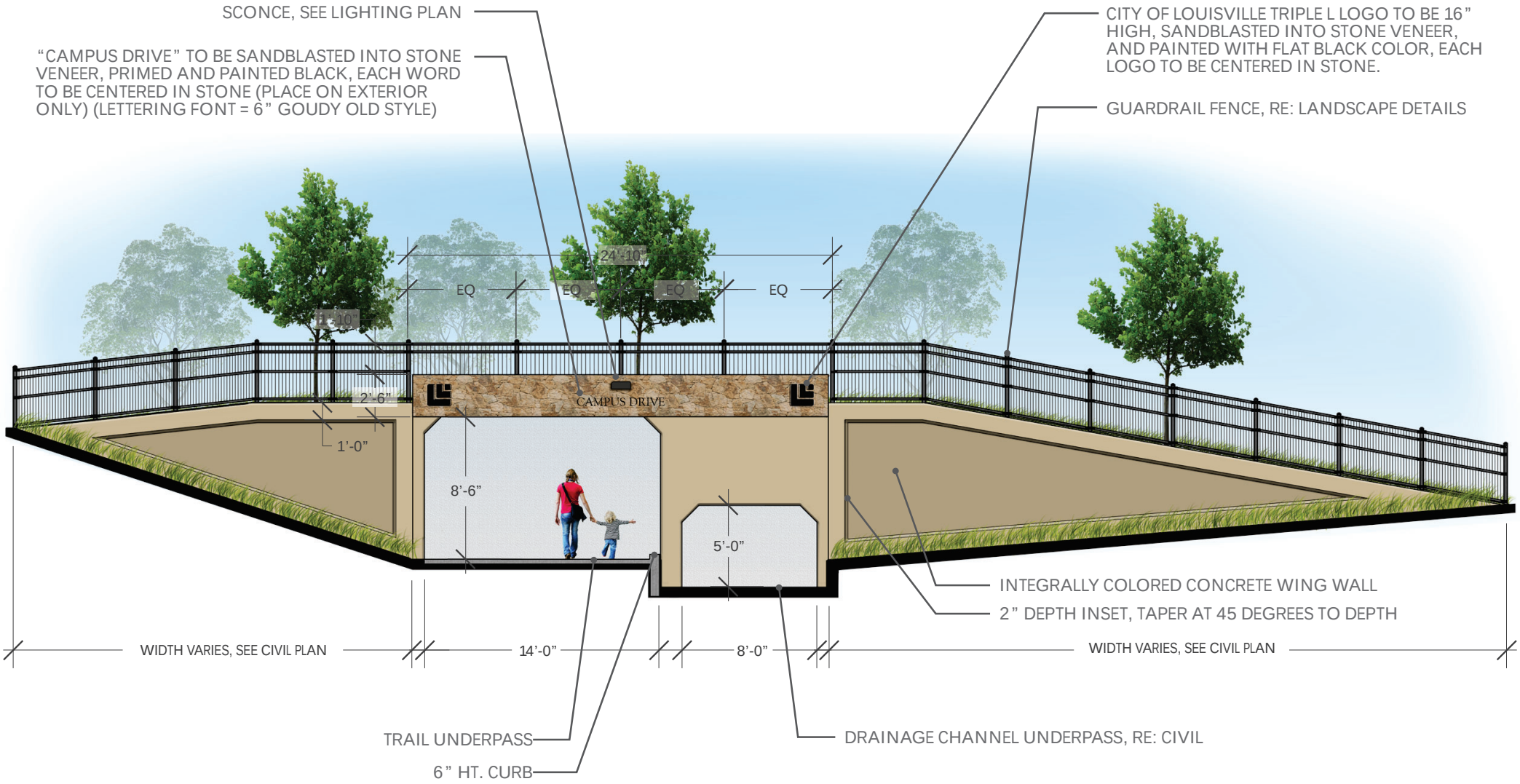
JUNE 25, 2024

N

80 0 80 160

SCALE: 1" = 80'

NO CHANGES ARE TO BE MADE TO THIS DRAWING WITHOUT WRITTEN PERMISSION OF HARRIS KOCHER SMITH

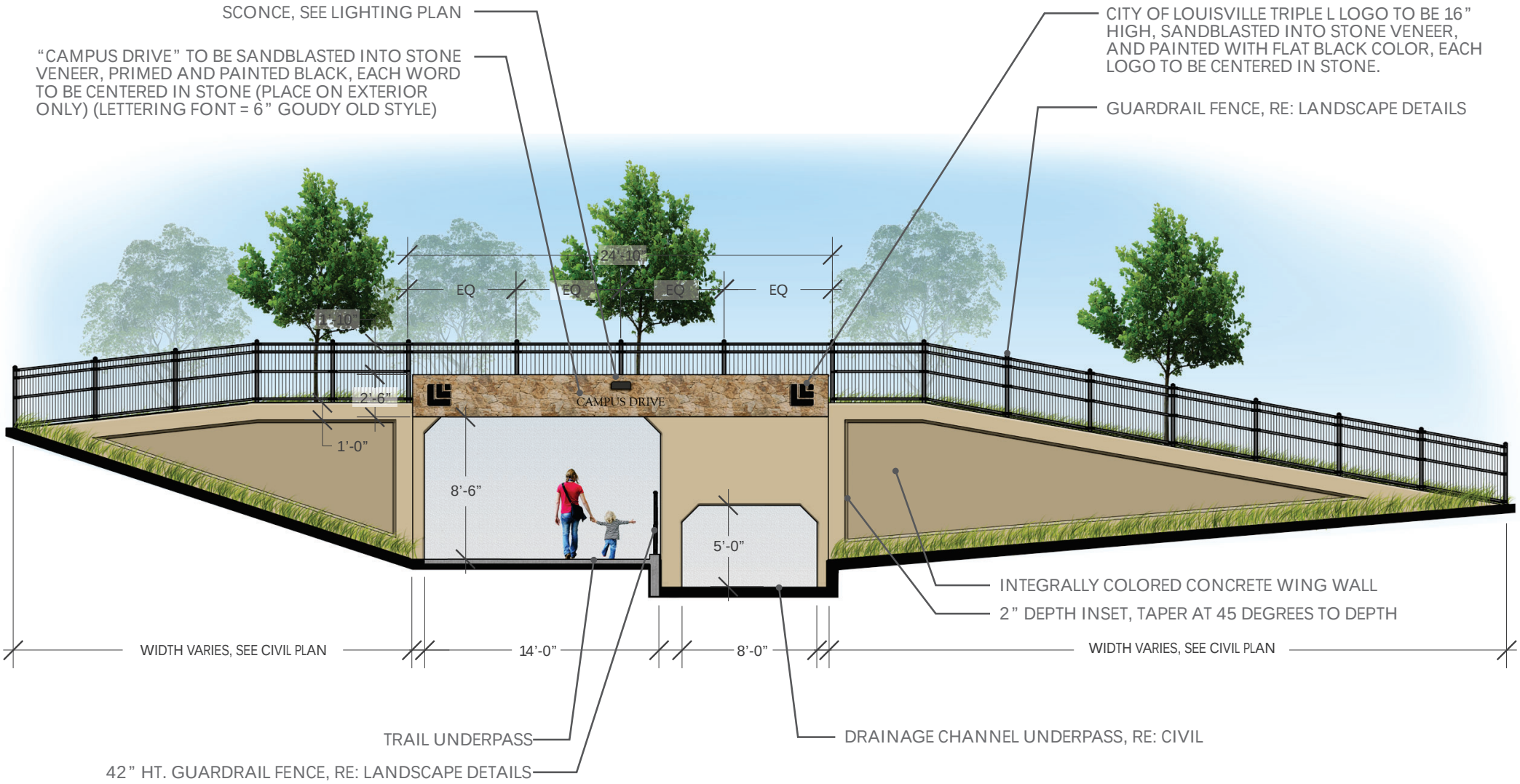


REDTAIL RIDGE | WEST UNDERPASS ELEVATION - CURB OPTION

07/18/2024

SCALE 3/16" =1'-0"

NORRIS DESIGN
PEOPLE + PLACEMAKING

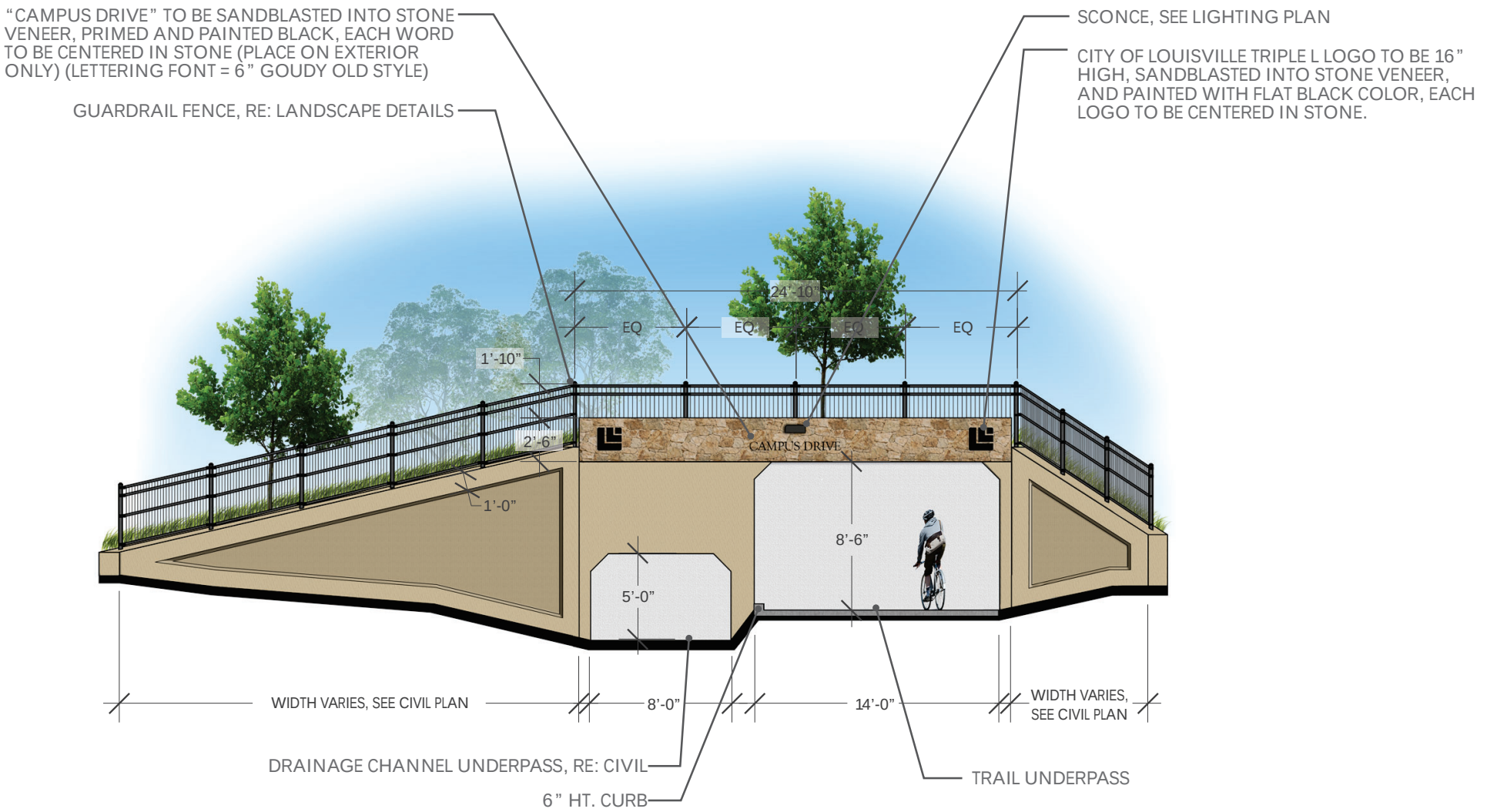


REDTAIL RIDGE | WEST UNDERPASS ELEVATION - GUARDRAIL OPTION

07/18/2024

SCALE 3/16" =1'-0"

NORRIS DESIGN
PEOPLE + PLACEMAKING

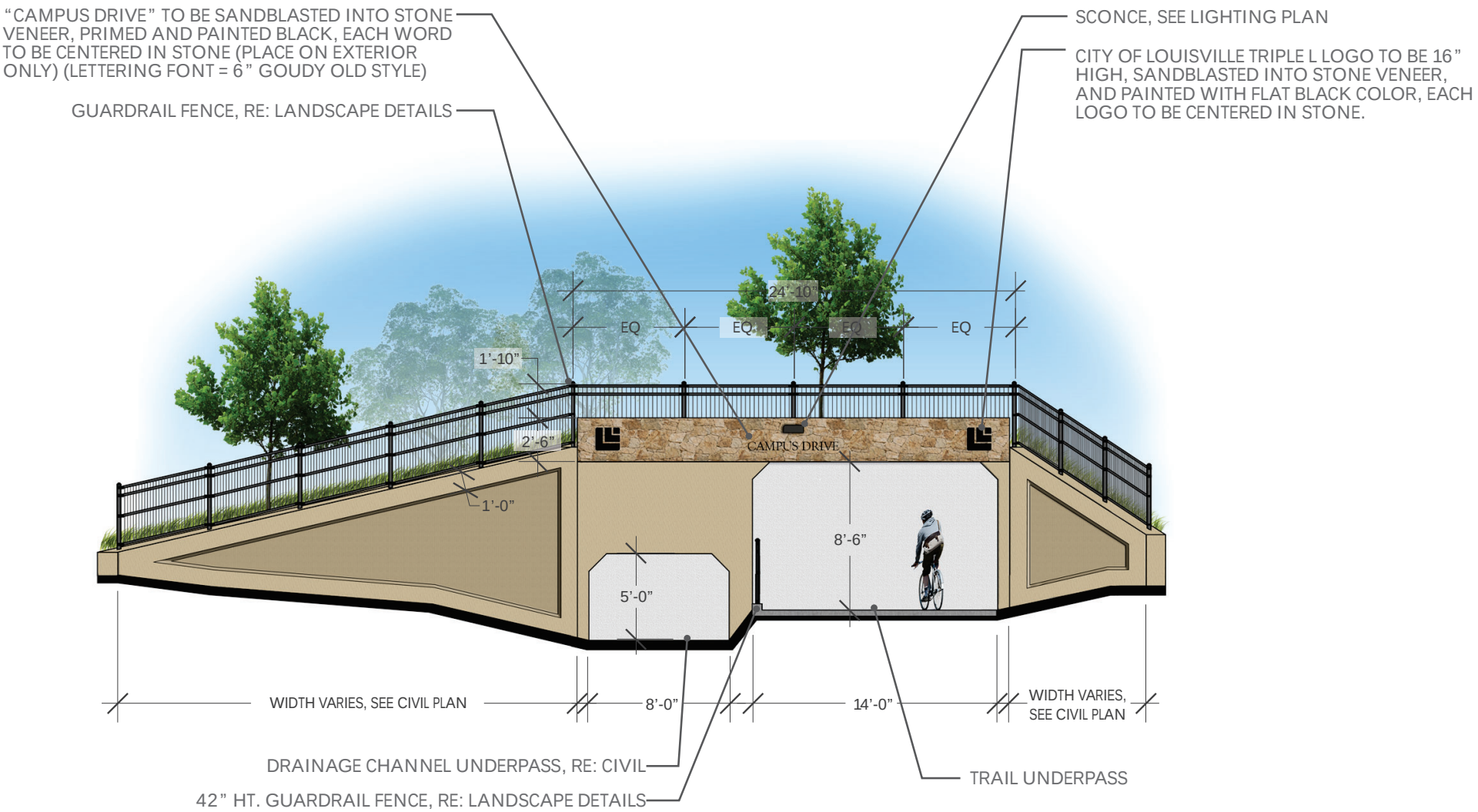


REDTAIL RIDGE | EAST UNDERPASS ELEVATION - CURB OPTION

07/18/2024

SCALE 3/16" =1'-0"

NORRIS DESIGN
PEOPLE + PLACEMAKING

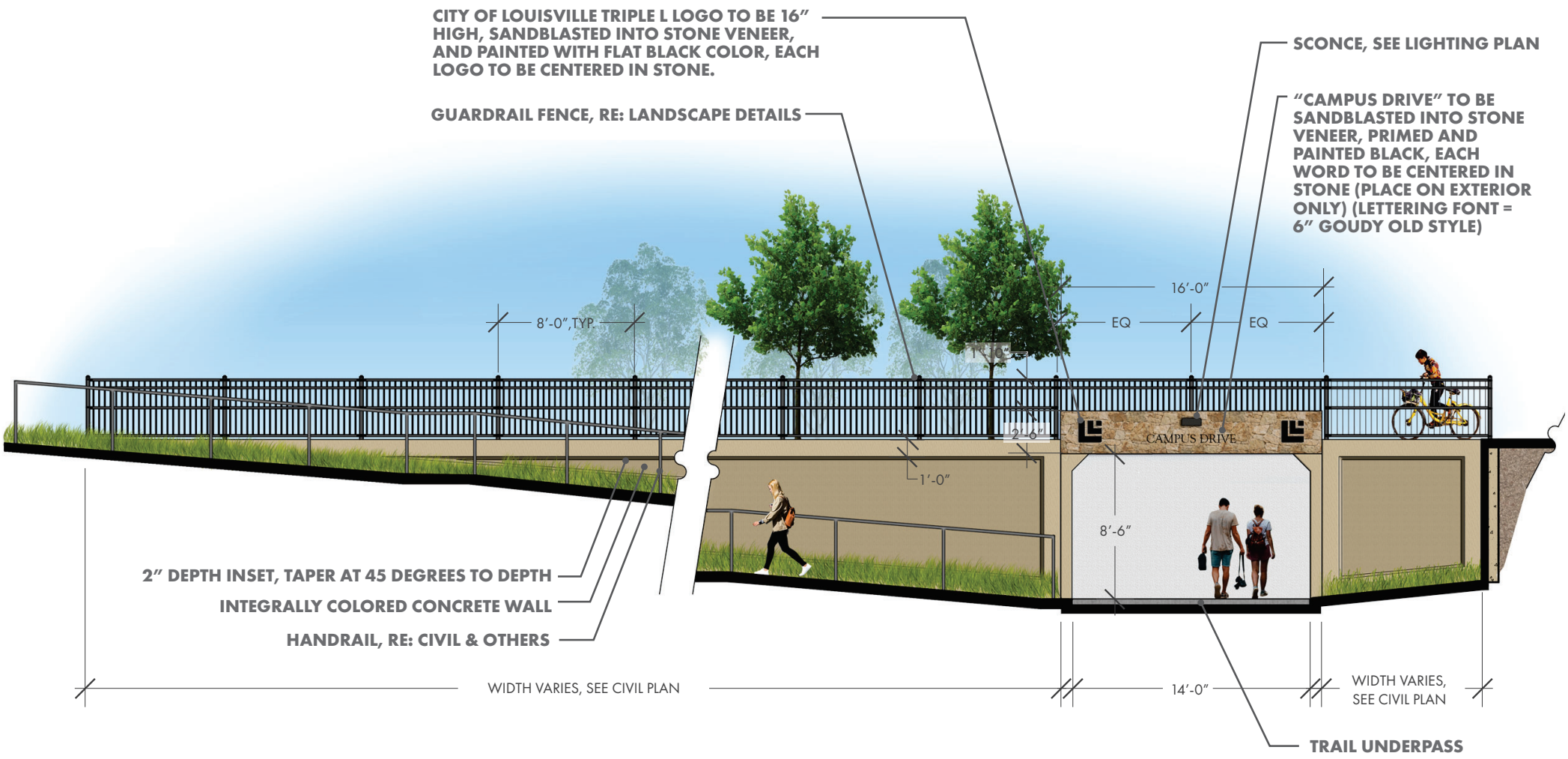


REDTAIL RIDGE | EAST UNDERPASS ELEVATION - GUARDRAIL OPTION

07/18/2024

SCALE 3/16" =1'-0"

NORRIS DESIGN
PEOPLE + PLACEMAKING



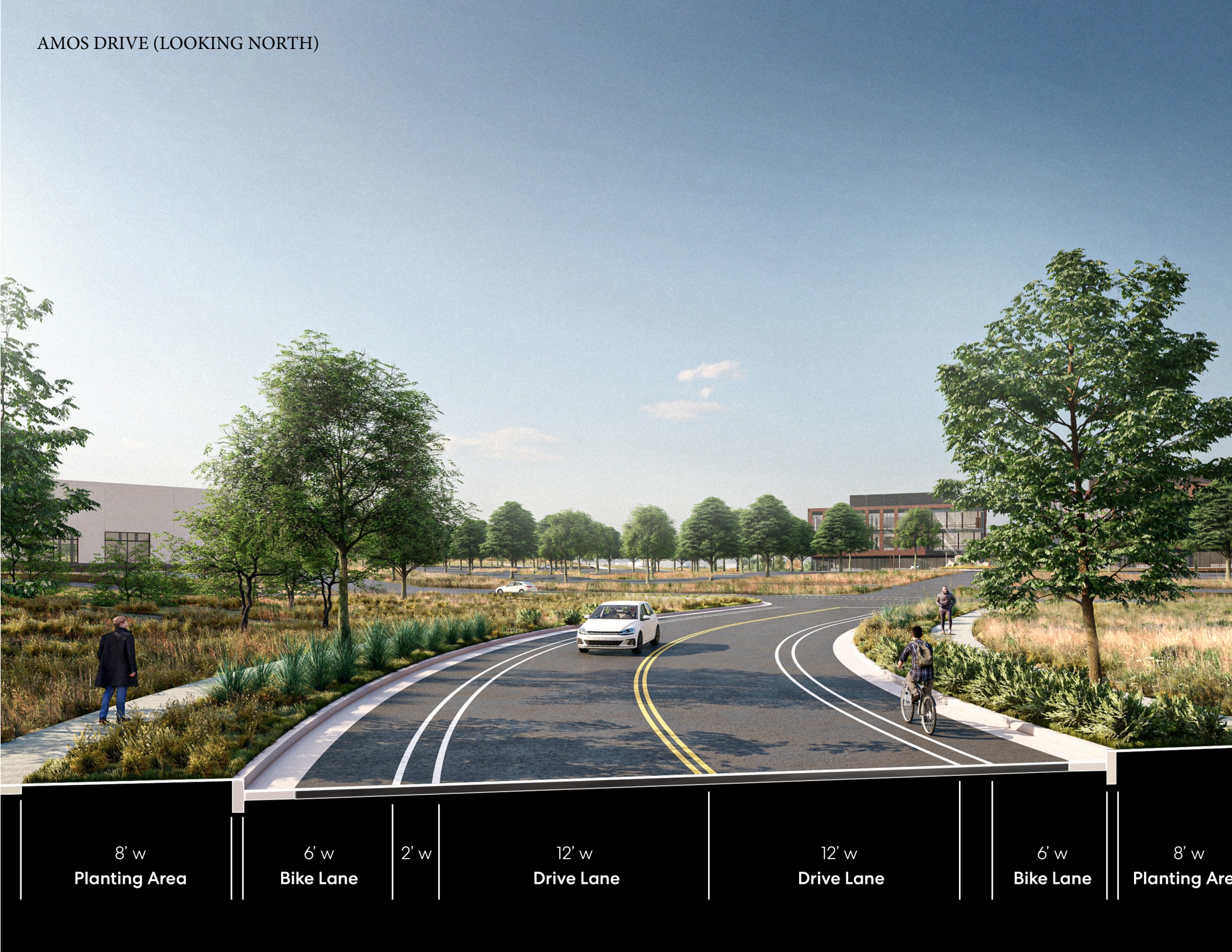
REDTAIL RIDGE | UNDERPASS ELEVATION NEAR BVSD

07/18/2024

SCALE 3/16" =1'-0"

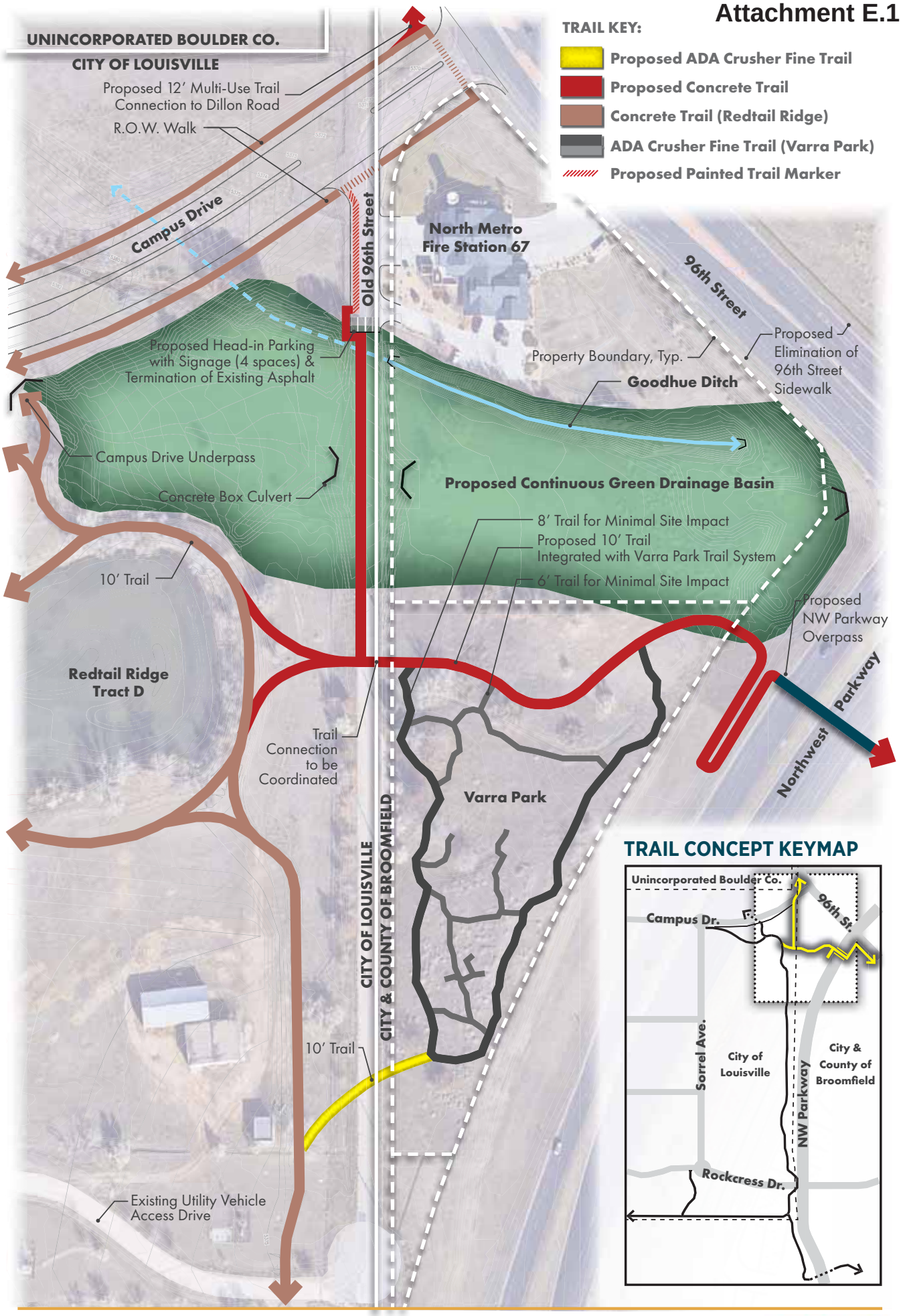
NORRIS DESIGN
PEOPLE + PLACEMAKING

AMOS DRIVE (LOOKING NORTH)



ROCKCRESS DRIVE (LOOKING WEST)

SORREL AVENUE (LOOKING SOUTH)



REDTAIL RIDGE | TRAIL AND LANDSCAPE EXHIBIT

08/09/2024

NORTH

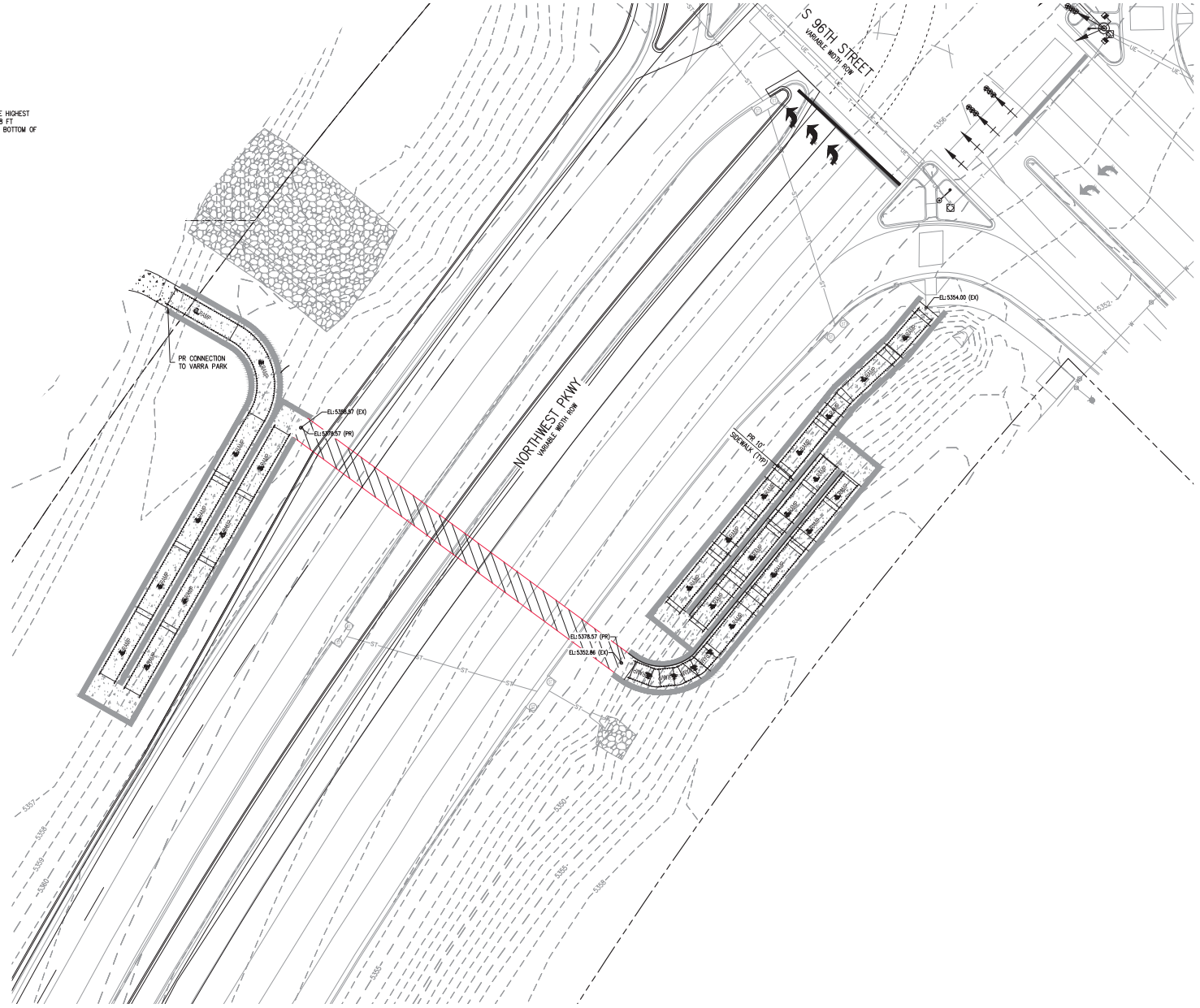
0' 100' 200'
SCALE

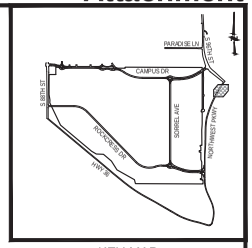
NORRIS DESIGN
PEOPLE + PLACEMAKING

NO CHANGES ARE TO BE MADE TO THIS DRAWING WITHOUT WRITTEN PERMISSION OF HARRIS KOCHER SMITH

ASSUMPTIONS:

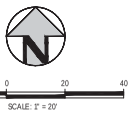
– ELEVATION TO BOTTOM OF THE BRIDGE IS THE HIGHEST ELEVATION ON EITHER SIDE OF THE BRIDGE + 18 FT
– ELEVATION OF BRIDGE DECK IS ELEVATION OF BOTTOM OF THE BRIDGE + 2 FT





KEY MAP
1"=2000'

REDTAIL RIDGE - PEDESTRIAN BRIDGE EXHIBIT



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HarrisKocherSmith.com

Drawing: P:\2020\20045\DESIGN\EXHIBITS\PEDESTRIAN BRIDGE EXHIBIT.DWG [Layout: LAYOUT1]
Plotted: Thu 08/05/21 4:41:35P By: Chris Ray
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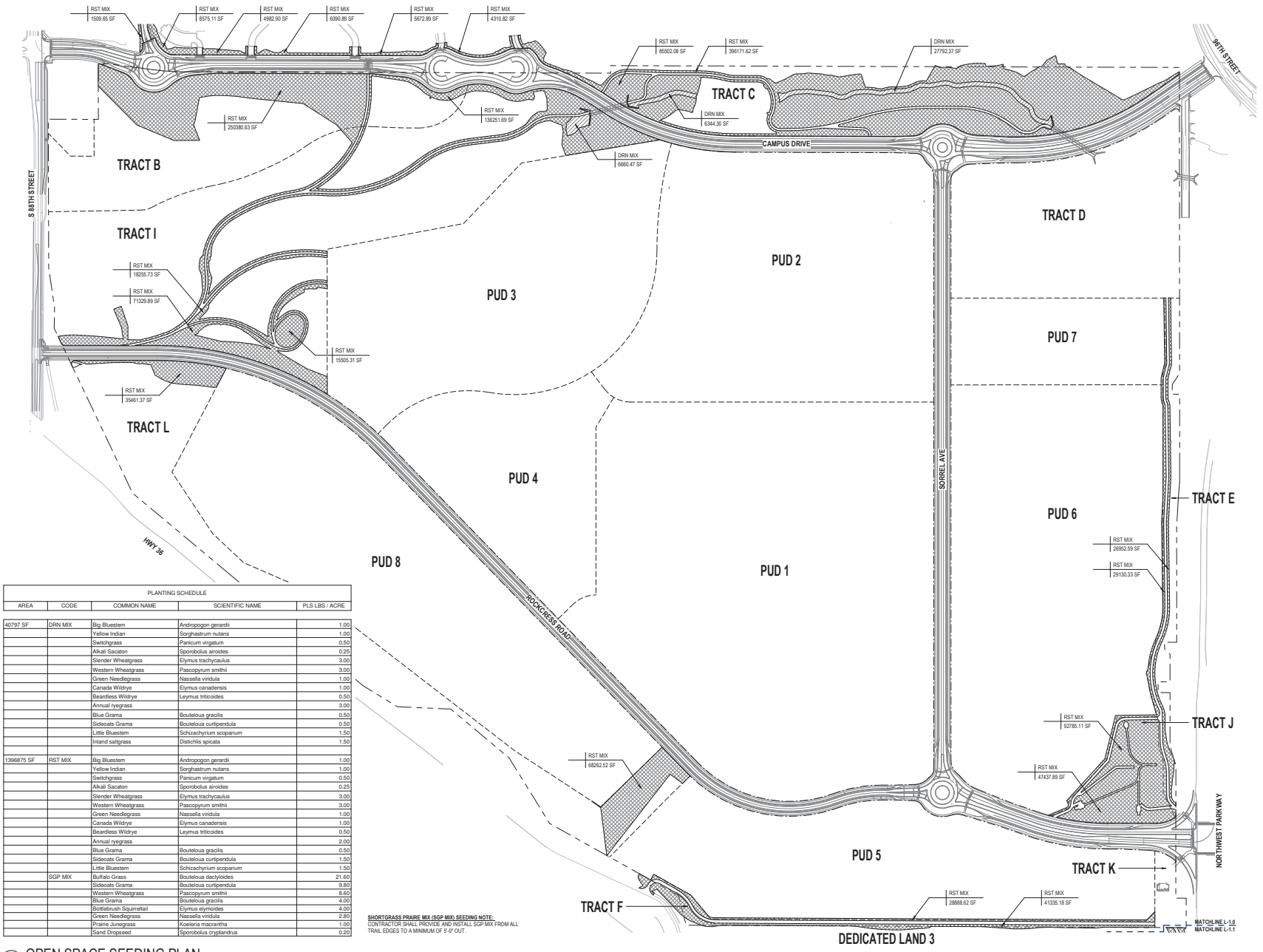

PLANTING SCHEDULE				
AREA	CODE	COMMON NAME	SCIENTIFIC NAME	PLS LBS / ACRE
40797 SF	DRN MIX	Big Bluestem	Andropogon gerardii	1.00
		Yellow Indian	Sorghastrum nutans	1.00
		Switchgrass	Panicum virgatum	0.50
		Alkali Sacaton	Sporobolus airoides	0.25
		Slender Wheatgrass	Elymus trachycaulus	3.00
		Western Wheatgrass	Pascopyrum smithii	3.00
		Green Needlegrass	Nassella viridula	1.00
		Canada Wildrye	Elymus canadensis	1.00
		Beardless Wildrye	Leymus triticoides	0.50
		Annual ryegrass		3.00
		Blue Grama	Bouteloua gracilis	0.50
		Sideoats Grama	Bouteloua curtipendula	0.50
		Little Bluestem	Schizachyrium scoparium	1.50
		Inland saltgrass	Distichlis spicata	1.50
1396875 SF	RST MIX	Big Bluestem	Andropogon gerardii	1.00
		Yellow Indian	Sorghastrum nutans	1.00
		Switchgrass	Panicum virgatum	0.50
		Alkali Sacaton	Sporobolus airoides	0.25
		Slender Wheatgrass	Elymus trachycaulus	3.00
		Western Wheatgrass	Pascopyrum smithii	3.00
		Green Needlegrass	Nassella viridula	1.00
		Canada Wildrye	Elymus canadensis	1.00
		Beardless Wildrye	Leymus triticoides	0.50
		Annual ryegrass		2.00
		Blue Grama	Bouteloua gracilis	0.50
		Sideoats Grama	Bouteloua curtipendula	1.50
		Little Bluestem	Schizachyrium scoparium	1.50
	SGP MIX	Buffalo Grass	Bouteloua dactyloides	21.60
		Sideoats Grama	Bouteloua curtipendula	9.80
		Western Wheatgrass	Pascopyrum smithii	8.60
		Blue Grama	Bouteloua gracilis	4.00
		Bottlebrush Squirreltail	Elymus elymoides	4.00
		Green Needlegrass	Nassella viridula	2.80
		Prairie Junegrass	Koeleria macrantha	1.00
		Sand Dropseed	Sporobolus cryptandrus	0.20

SHORTGRASS PRAIRIE MIX (SGP MIX) SEEDING NOTE:
CONTRACTOR SHALL PROVIDE AND INSTALL SGP MIX FROM ALL TRAIL EDGES TO A MINIMUM OF 5'-0" OUT.

1 OPEN SPACE SEEDING PLAN
1" = 200'-0"

8/12/2024 12:05:09 PM Autodesk Docs://Redtail Ridge Overall Nov.rvt R_PONDS.rvt

Perkins&Will
1315 Peachtree St NE
Atlanta, GA 30309
t 404.873.2300
f 404.892.5823
www.perkinswill.com

CONSULTANTS
CIVIL
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80203
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IRRIGATION
Aqua Engineering, Inc.
3944 JFK Parkway, Unit 12C
Fort Collins, CO 80525-3089
970.372.8104

CONSTRUCTION DOCUMENTS 06.07.2024

Redtail Ridge

REDTAIL RIDGE
OPEN SPACE SEEDING

Sterling Bay | West
5910 Pacific Center Blvd,
Suite 200, San Diego,
CA 92121
P: (312) 466-4100

KEYPLAN

ISSUE CHART

NAME/#	ISSUE	DATE
Job Number		221236

TITLE

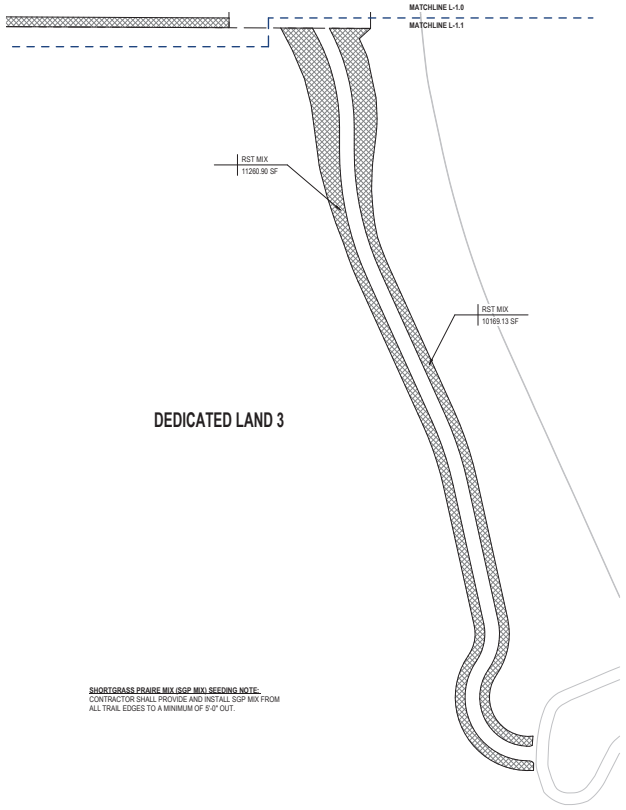
OPEN SPACE SEEDING PLAN

SHEET NUMBER

L-1.0

© 2022 Perkins and Will

PLANTING SCHEDULE				
AREA	CODE	COMMON NAME	SCIENTIFIC NAME	PLS LBS / ACRE
21430 SF	RST MIX	Big Bluestem	Andropogon gerardii	1.00
		Yellow Indian	Sorghastrum nutans	1.00
		Switchgrass	Panicum virgatum	0.50
		Alkali Sacaton	Sporobolus airoides	0.25
		Slender Wheatgrass	Elymus trachycaulus	3.00
		Western Wheatgrass	Pascopyrum smithii	3.00
		Green Needlegrass	Nassella viridula	1.00
		Canada Wildrye	Elymus canadensis	1.00
		Beardless Wildrye	Leymus triticoides	0.50
		Annual ryegrass		2.00
		Blue Grama	Bouteloua gracilis	0.50
		Sideoats Grama	Bouteloua curtipendula	1.50
		Little Bluestem	Schizachyrium scoparium	1.50
	SGP MIX	Buffalo Grass	Bouteloua dactyloides	21.60
		Sideoats Grama	Bouteloua curtipendula	9.80
		Western Wheatgrass	Pascopyrum smithii	8.60
		Blue Grama	Bouteloua gracilis	4.00
		Bottlebrush Squirreltail	Elymus elymoides	4.00
		Green Needlegrass	Nassella viridula	2.80
		Prairie Junegrass	Koeleria macrantha	1.00
		Sand Dropseed	Sporobolus cryptandrus	0.20



SHORTGRASS PRAIRE MIX (SGP MIX) SEEDING NOTE:
CONTRACTOR SHALL PROVIDE AND INSTALL SGP MIX FROM ALL TRAIL EDGES TO A MINIMUM OF 5'-0" OUT.

1 OPEN SPACE SEEDING PLAN
1" = 60'-0"

Perkins&Will
1315 Peachtree St NE
Atlanta, GA 30309
t 404.873.2300
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CONSULTANTS

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IRRIGATION
Aqua Engineering, Inc.
3944 JFK Parkway, Unit 12C
Fort Collins, CO 80525-3089
970.372.8104

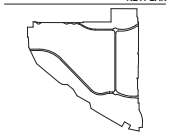
CONSTRUCTION DOCUMENTS 06.07.2024

Redtail Ridge

REDTAIL RIDGE
OPEN SPACE SEEDING

Sterling Bay | West
5910 Pacific Center Blvd,
Suite 200, San Diego,
CA 92121
P: (312) 466-4100

KEYPLAN



ISSUE CHART

MARK	ISSUE	DATE
Job Number		221236

TITLE

OPEN SPACE SEEDING PLAN

SHEET NUMBER

L-1.1

© 2022 Perkins and Will

8/12/2024 12:05:09 PM Autodesk Docs://Redtail Ridge Overall Vistro/RTR_PONDS.rvt

Native Area Grass Establishment Specifications - Redtail Ridge

Prepared by: Kristin Oles

Restoration Ecology Project Manager

High Plains Environmental Center

8/9/2024

Soil Preparation

Fertilizer: Fertilizer is generally not required for Colorado native grass seed, but soil tests can be done to confirm this. Phosphorous is often the deficient nutrient, if there are any deficiencies at all. Native grass species have very low nitrogen requirements and the addition of nitrogen fertilizer often only helps to support weeds. Fertilizer use must be approved by the City of Louisville Parks, Recreation, and Open Space Department. Fertilizers that may be approved for use include organic fertilizers, such as compost, or slow-release fertilizers.

Soil amendments: If soil tests indicate low organic matter or otherwise poor soil, seeded areas should receive "Board-0-1-3" organic fertilizer at a rate of 1,000 lbs per ac and "Humate" soil conditioner at a rate of 600 lbs per ac. All amendments should be applied prior to seeding and according to the product directions.

Weed control: Weed control should be done prior to seeding, especially if there is heavy weed pressure in that area. To be effective, there should be one full growing season of weed control prior to seeding the following winter. If weed control must be done concurrently with native grass establishment, mechanical methods should be used to control annual weeds. Chemical control may still be used for perennial weeds, but if done concurrently with grass establishment, chemical control should be applied as a targeted spot-spray application. See also the "Establishment management" section below.

Soil seedbed preparation: This may not be needed if the soil is not compacted. If there is significant compaction, the soil can be tilled (or disked or ripped, depending on the level of compaction). If seeding with a seed drill, the seedling area should be inspected for debris that may damage the equipment. Tilling should only be done if absolutely necessary as soil disturbance encourages weeds. If tilling, disking or harrowing is required to provide an acceptable seed bed, disturbance shall be a minimum of 6 inches deep with no more than 7 inches between furrows, multiple passes may be required to accomplish this. Topsoil must NOT be imported without prior approval from the Parks, Recreation, and Open Space Department.

Seeding

Seeding method: For native grasses, drill-seeding is preferable to broadcast seeding because of the improved soil-seed contact. Drill-seeding equipment should be able to accommodate fluffy native grass seeds. No-till or minimum-till drills are preferred because they create less soil disturbance, which can help reduce weed pressure. Drilling equipment should be clean and free of any other seeds. Drill depth should be placed between 1/4 and 1/2 inch below the soil surface, depending on grass species. Drill spacing should be no wider than 7 inches between rows. Packer wheels that firm the drill row are required.

If broadcast seeding (which includes hydroseeding), the seeding rate should be doubled to account for the decreased germination rate.

Wherever specified, seeded areas should be top dressed with hydromulch after seeding. The hydromulch should be applied at a minimum of 2,000 lbs per acre and include 3% tackifier and the original seed mix blend at 50% of the original seeding rate.

In any areas susceptible to soil erosion (3:1 or greater slopes, drainage channels, etc.), erosion control blanket or straw and crimp should be applied. Erosion blanket should be rated to last at least two full growing seasons and be fully biodegradable. For slopes that are greater than 3:1, seeding may be broadcast by hand or mechanical spreader and incorporated into the upper soil layer (no deeper than 1/2 inch). Broadcasting may also be used on small areas or areas inaccessible for seed drilling. After broadcasting, seed may be incorporated by hand raking or harrowing. Seed must not be incorporated and applied simultaneously with the hydromulch slurry.

Seed mix: The seed mix is provided and will include an annual cover crop. The seed mix includes a mix of warm- and cool-season species, bunchgrasses and rhizomatous grasses, and species that tolerate different soil conditions. Seed tags should be made available prior to seeding.

If the seed is purchased as a mix, tags must be clearly labeled to show the name and address of the supplier, the seed name, the lot number, net weight, origin, the percent of weed seed content, the guaranteed percentage of purity and germination, pounds per live seed (PLS) of each seed species, and the total pounds of PLS in the container. All seeds shall be free of noxious weed seeds in accordance with state and local lists. The contractor shall supply a signed statement certifying that the seed is from a lot that that has been tested by a recognized laboratory for seed testing within six months prior to the date of seeding. Seed which has become wet, moldy, or damaged in transit or in storage will not be accepted.

Timing: Native grass seeding should be done between November and May, provided the soil is not frozen, there is no snow on the ground, and the soil is dry enough for equipment to drive on it without causing damage. Ideally, seeding will be done either prior to the ground freezing (November/December) or in the very early spring (March/April) to take advantage of precipitation. Seeding into May and June is best with supplemental irrigation.

Establishment management

Weed control: In the first growing season, herbicide should be avoided. Even broadleaf-specific herbicides can harm native grass seedlings and inhibit their growth and establishment. Annual weeds can be controlled with mechanical methods (mowing, string-trimming, hand-pulling). Mowing is especially effective on annual weeds because it can prevent them from producing seeds. Mowing should be done when the weeds are taller than grass seedlings so that only the weeds are affected. Once grass plants are taller, mowing should be limited to particularly weedy patches, avoiding as much grass as possible.

Perennial weeds are most effectively controlled with herbicide. To minimize damage to grass seedlings, herbicides can be spot-sprayed on individual perennial weeds once the native grasses have developed a few leaves. Care should be taken to minimize drift and off-target contact.

Irrigation: Irrigation is the best way to expedite native grass establishment. Initially, irrigation is frequent and shallow to help the grass seed to germinate. As the roots begin to develop, irrigation moves to less frequent and deeper watering. Irrigation schedules will need to be adjusted to compensate for natural precipitation or excessively hot temperatures, as well. Irrigation should be

provided until the grasses have established sufficient root systems to allow them to survive various local conditions without irrigation.

Mowing: Regular mowing can be helpful in establishing native grass areas. Mowing controls annual weeds, which reduces competition for light, water, and nutrients for the native grass seedlings. If annual weeds are a significant issue, the seeded area can be mowed monthly during the first growing season. Mowing should be planned after the soil has dried out between irrigation times or precipitation events. The mower deck should be raised as high as it will go (often about 5" on commercial mowers).

Repairs: The seeding area should be regularly monitored for damage, including erosion from runoff, equipment damage, human disturbance, etc. Damage should be repaired with as little impact to surrounding unaffected areas as possible. For erosion damage, the original cause should be addressed so damage does not recur. This could involve the use of straw wattles or erosion blankets. Damaged areas can be hand-seeded after they are repaired until July 15. It is likely some grasses will not develop enough to survive the winter if they are seeded this late, but in this case, it is preferable to get at least some grass growing rather than leave the area bare.

Monitoring: Seasonal reviews should be conducted in the spring and fall of the first two growing seasons after seeding. Reviews will be provided to the City of Louisville Parks, Recreation, and Open Space Department and will show 1) the status of native reestablishment and status of noxious weed control and 2) seasonal management plan of action. Native establishment will be evaluated as the percentage cover of desired grass species compared to weedy annual broadleaf species.

SUMMARY

- Soil test to check if phosphorous and/or compost is needed
- If compacted or if amendments are applied, soil can be tilled (or disked, ripped, etc. depending on the level of compaction). Soil should only be worked if absolutely necessary to avoid encouraging weeds.
- Drill-seeding is preferred, but equipment must be able to accommodate fluffy native grass seeds. Ensure all seeding equipment is cleaned of any old seed or weed seeds and provide seed tags for the seed mix to be used.
- Seed between November and May, provided the soil is not frozen and is dry.
- Control weeds with mechanical methods like mowing, either the entire site or spot-mowing, or with very limited and targeted spot-applications of herbicide. Mowing timing should ensure annual weeds are not allowed to produce seeds. Whole site mowing should be limited to once per month.
- Irrigation schedule (see next page)

GENERAL SEEDING NOTES:

1. PRIOR TO CONSTRUCTION, THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES & SHALL AVOID DAMAGE TO ALL UTILITIES DURING THE COURSE OF THE WORK. THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY & ALL DAMAGE TO UTILITIES, STRUCTURES, SITE APPURTENCES, ETC. WHICH OCCUR AS A RESULT OF THE LANDSCAPE CONSTRUCTION.
2. THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL QUANTITIES SHOWN ON THESE PLANS BEFORE PRICING THE WORK.
3. THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR FULLY MAINTAINING ALL PLANTING (INCLUDED BUT NOT LIMITED TO: WATERING, SPRAYING, MULCHING, FERTILIZING, ETC...) OF ALL PLANTING AREAS UNTIL THE WORK IS ACCEPTED IN TOTAL BY THE ARCHITECT AND OWNER.
4. THE LANDSCAPE CONTRACTOR SHALL MAINTAIN AND COMPLETELY GUARANTEE ALL PLANT MATERIAL FOR A PERIOD OF TWO (2) YEARS BEGINNING AT THE DATE OF SUBSTANTIAL COMPLETION. THE LANDSCAPE CONTRACTOR SHALL PROMPTLY MAKE ALL REPLACEMENTS BEFORE OR AT THE END GUARANTEE PERIOD (AS DIRECTED BY THE OWNER).

DATE	FREQUENCY	TARGETED SOIL MOISTURE DEPTH	SUGGESTED IRRIGATION START TIMES AND DURATION
May 15 to June 15 (until substantial germination)	2 times per day for 1 to 4 weeks	Maintain moisture at surface and in upper inch of soil. Check moisture depth daily, do not saturate or puddle.	7 AM, 8 PM
June 16 to 30	2 to 3 watering nights per week	Moisture to 2 inches, check moisture depth twice weekly, surface soils can dry slightly between waterings	10 PM or later. Adjust run times to provide moisture to desired depth. Run times can increase with high summer temperatures.
July 1 to 31	2 to 3 watering nights per week	Moisture to 3 inches, check soil moisture twice weekly, surface soils can dry between waterings	10 PM or later. Adjust run times to provide moisture to desired depth. Run times can increase with high summer temperatures.
August 1 to 31	1 watering night per week	Moisture to 4", check moisture depth weekly, surface soils can dry between waterings	10 PM or later. Adjust run times to provide moisture to desired depth. Run times can increase with high summer temperatures.
September 1 to 15	1 watering night plus/as needs as nights cool	Moisture deep moisture to 4", check moisture depth weekly	10 PM or later. Adjust run times to provide moisture to desired depth. Run times can decrease with cooler temperatures.
September 16 or later (as nights cool below 40 degrees F)	Withhold further irrigation		

Kwiatkowski, D.S. and Borland, S.F. (2011). Sustainable Landscape Conversion Design and Irrigation. Denver Water. https://www.denverwater.org/sites/default/files/sustainable-landscape-conversion3.pdf

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CONSTRUCTION DOCUMENTS 06.07.2024

Redtail Ridge

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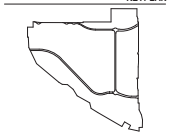

ISSUE CHART

NAME	ISSUE	DATE

Job Number 221236

TITLE

OPEN SPACE SEEDING SPECIFICATION

SHEET NUMBER

L-2.0

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Redtail Ridge

Transportation Demand Management Plan

Date: March 8, 2024

Submitted To:
Sterling Bay
5910 Pacific Center Blvd, Suite 200
San Diego, CA 92121

Submitted By:
Fox Tuttle Transportation Group, LLC
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FOX TUTTLE

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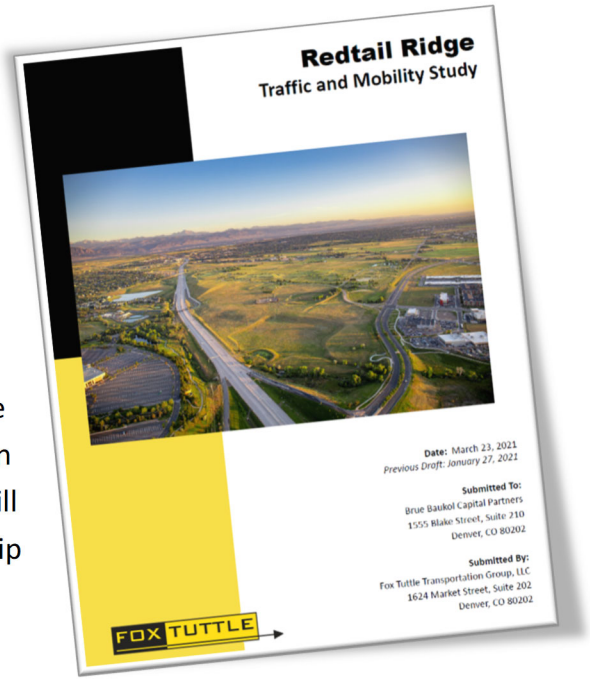
1. Introduction

Transportation Demand Management (TDM) is the application of strategies and policies to reduce travel demand in general and single occupant vehicle (SOV) travel specifically. It can also mean redistributing this demand to occur at less impactful times. TDM measures help people use the transportation system more efficiently, while reducing traffic congestion, vehicle emissions and fuel consumption in support of a larger sustainability plan. TDM activities maximize the value of transportation infrastructure and services by making options for non-SOV trip making easier to use and more readily available.

This TDM Plan was requested by City of Louisville staff as a supplemental submittal to the *Redtail Ridge Traffic and Mobility Study (Study),* to outline possible strategies to reduce SOV traffic generated by the proposed development. Sterling Bay and its development partners are planning to encourage and support non-SOV trips by employees to and from the development. This TDM plan was created to detail the identified strategies and tools which will be implemented as part of the Redtail Ridge development. The elements of this TDM plan in combination with existing programs and facilities within the area, will ensure that non-SOV trips are encouraged and that the trip reduction used in the *Study* is reasonable.



2. Development Overview

Sterling Bay and its development partners are proposing to build a mix of office, industrial, retail and commercial buildings on the former StorageTek campus in the City of Louisville, as detailed in the *Study*. The site is generally bounded by S. 88th Street to the west, Campus Drive to the north, S. 96th Street/Northwest Parkway to the east, and US-36 to the south. The project area is currently vacant but was previously occupied by Storage Tek, which was an active site until the 1990's. The *Study* provides a detailed comparison of potential trip making from the prior Storage Tek uses, the previously approved land uses associated with the ConocoPhillips development and the proposed land use associated with the Redtail Ridge development. In summary, the *Study* estimates that the Redtail Ridge development will generate approximately 28% fewer trips than the formally approved

ConocoPhillips development.

Trip generation of new land use is a significant part of the *Study* as they are modelled as additional trips within the community, and *Study* area roadways and intersections are evaluated for existing and future performance. The *Study* included a motor vehicle trip reduction of 12% to account for the presumed number of external non-single occupant vehicle trips (non-SOV trips)[1]. These trips would be made by walking, biking, carpool, vanpool, shared ride mobility service and/or transit service.

Exhibit 1: Sketch of Redtail Ridge Development and Multi-Modal Facilities (Source: Sterling Bay)

3. Current and Future Non-SOV Mode Share Goals

The new *City of Louisville Transportation Master Plan (TMP)* documented how commuters in Louisville and nearby communities travel to work. This data is based on US Census American Community Survey (https://www.census.gov/programs-surveys/acs) and is summarized in ***Figure 1***. This data is commonly used by agencies across the Denver region as a baseline for TDM programs. The current data is shown below and is the most current estimates available. Based on this data, approximately 28% of people who work in Louisville travel to work by non-SOV modes.

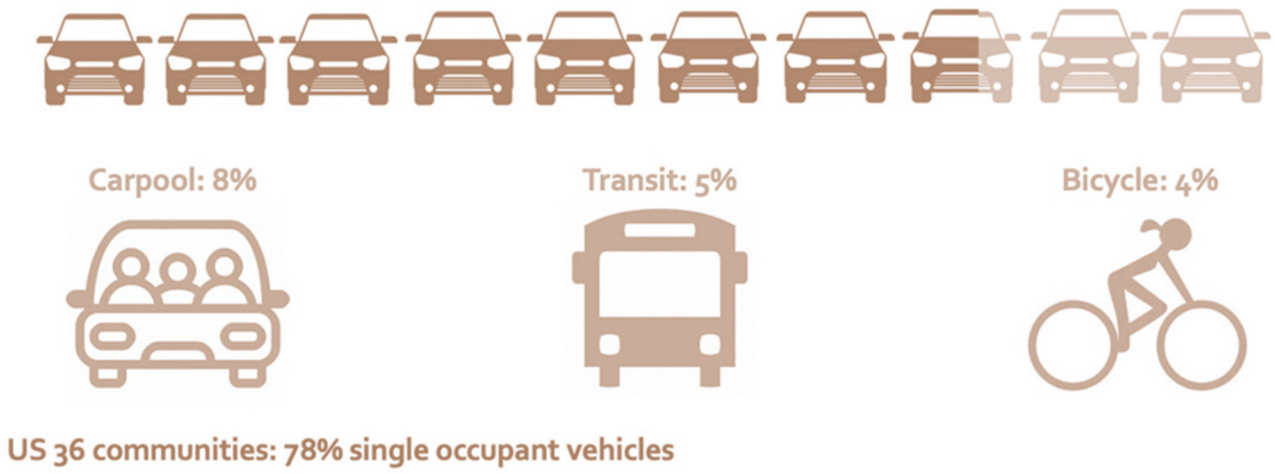
[1] City staff have required that a 12% reduction of SOV trip making potential be used in the *Study*. Analyses in the TDM study suggest this is conservative and the reduction could be as high as 28%.

Figure 1: Louisville and Comparison Area Commute Mode Share (from TMP)

	Drive Alone	Carpool	Transit	Bike	Walk	Work at Home	Other
City of Louisville	72.3%	4.7%	5.9%	2.3%	1.7%	12.7%	0.5%
City of Boulder	51.3%	4.9%	8.3%	10.3%	11.4%	12.5%	1.2%
Boulder County	65.2%	7.6%	5.0%	4.4%	5.3%	11.3%	1.3%
Denver Region	74.8%	8.5%	4.4%	1.2%	2.5%	7.5%	1.0%

The mode share data shown in ***Figure 2*** below is based on survey data from the *2016 Northwest Metro Region Mobility Report*, final draft dated July 2018, prepared by Commuting Solutions. This data shows the mode share for communities along the US 36 corridor, including the City of Louisville. The current data is shown below and is the most current estimates available. Based on this data, approximately 22% of people who work in the US 36 corridor travel to work by non-SOV modes.

Figure 2: US 36 Corridor Commute Mode Shares (from Commuting Solutions)



The anticipated effectiveness of TDM programs is based on their ability to serve commuters of different types of land uses and support trip making through means other than SOV. For the general office, industrial and retail land uses, the *Study* estimated the project would have 12% fewer SOV trips during the peak periods during all development phases.

Redtail Ridge's goal for multi-modal trip reduction is 25%. While substantially higher than the percentage reduction used in the *Study*, it is supported by the information outlined in **Figures 1 and 2**.

While the project team believes that the project's TDM efforts, coupled with existing TDM resources, will result in greater automobile trip reduction, the traffic analysis in the *Study* assumed a conservative trip reduction of 12% for all site uses based on feedback provided by City staff.

4. Planned Land Uses

The Redtail Ridge development at build-out is planning to include the following uses:

- 14,000 square feet of Retail Space (predominantly supporting other internal land use)
- 30,000 square feet of Amenity Space
- 118,750 square feet of Research and Development Space
- 435,000 square foot Hospital/Medical Office space
- 510,000 square feet of Industrial Space
- 534,000 square feet of Life Science Space
- 598,250 square feet of GMP Manufacturing Space
- 360,000 square feet of General Office Space

These land uses are anticipated to be constructed in a series of phases and culminating in full buildout. ***Figure 3*** illustrates the Redtail Ridge site plan to show locations of different land uses[2].

[2] Figure 3 depicts an estimated build out and it is subject to change

Figure 3: Redtail Ridge Development Site Plan

As noted in the site plan, there is a large pad dedicated to the future site of a hospital. The final location, implementation and design are expected to be finalized at the PUD level.

5. Existing Multi-Modal Network

The City of Louisville, Boulder County and the Colorado Department of Transportation (CDOT) have consistently invested in the development of a multi-modal transportation system in this region. The transportation system which serves the project area is a well-balanced mix of local, collector and arterial roadways, intersections with appropriate traffic control, bicycle facilities, pedestrian sidewalks, paths and crossing treatments and frequent transit service connecting to the larger front range area. New travel demand and trip making will be created by the Redtail Ridge development, but the existing and planned multi-modal programs and facilities in this area will ensure that many people can access the site using non-SOV modes of transportation.

The following is a summary of existing multi-modal programs and facilities.

Transit Service

The Redtail Ridge site is located within one mile of the RTD US 36 and East Flatiron Station (see **Photo 1**). This station is serviced by the Flatiron Flyer (routes FF1 and FF2) and the Sky Ride service to Denver International Airport (DEN) via route AB. The station has an underpass under US 36 and is connected to a network of first and final mile destinations. There are approximately 265 parking spaces and eight (8) bike racks at the station. This station is connected to the project site via the Northwest Parkway underpass and it's connecting multi-use path system.

Photo 1: US 36 and East Flatiron Station

The Flatiron Flyer BRT system provides fast and efficient service between Boulder and Denver. Buses are available at the US 36 and East Flatiron Station every 15 minutes during peak and every 30 minutes off peak (on average). Large air conditioned and air ride over the road coaches can serve approximately 50 passengers per vehicle. There is capacity for six (6) to eight (8) bikes on board depending on luggage and other passenger storage needs. The buses are equipped with charging for mobile devices.

The vehicles travel in the High Occupancy Vehicle (HOV) lanes on US 36 and I-25. The trip between the US 36 and East Flatiron Station and Denver Union Station is 28 minutes. The trip between downtown Boulder and the US 36 and East Flatiron Station is 23 minutes. The AB route that provides service to DEN is available every 30 minutes during most hours of the day. Large air conditioned and air ride over the road coaches can serve approximately 50 passengers per vehicle also service this route. The trip between DEN and the US 36 and East Flatiron Station is 34 minutes via the Northwest Parkway.

Walking

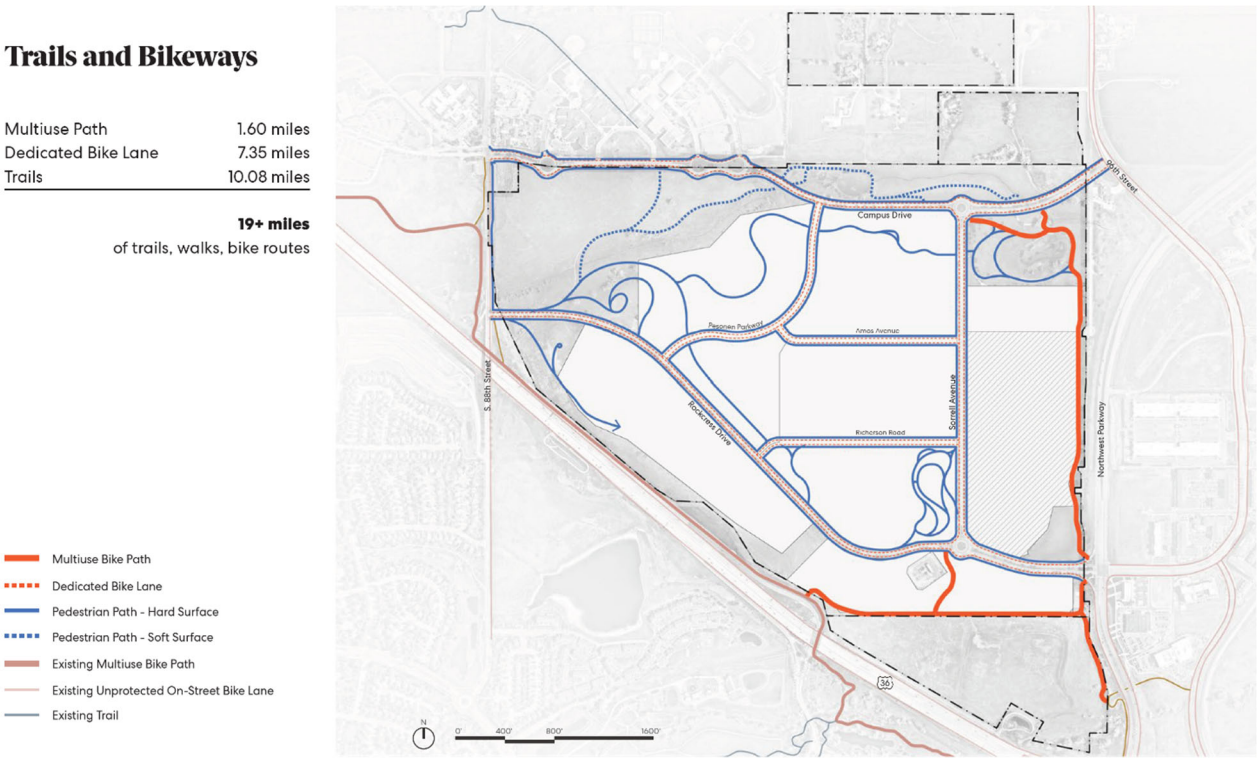
Most of the existing sidewalk and multi-use path network near the Redtail Ridge project is in the S. 88th Street corridor. This is due to the open lands that mostly front Dillon Road and S. 96th Street in the study area. The S. 88th Street sidewalks and multi-use paths connect the Monarch school campus to neighborhoods in Louisville and Superior. There is an existing underpass under S. 88th Street just south of Dillon Road. This underpass connects the Monarch school campus to the sidewalks on Dillon Road west of S. 88th Street. There are missing sidewalk and trail connections along S. 88th Street, Dillon Road, and S. 96th Street, with an example shown in **Photo 2**.

Photo 2: Coal Creek Regional Trail Informal Connection

It is anticipated that the demand to complete the sidewalk and multi-use path network between the CTC Campus, Redtail Ridge, Monarch school campus, residential areas, and retail centers will be increasingly important in the future as the TMP priorities are implemented. Specifically, new sidewalks and pathways will be necessary given future plans for shared ride mobility and BRT near Dillon Road and in the S. 96th Street corridor.

Figure 4 shows the proposed pedestrian and biking system internal to the site.

Figure 4: Pedestrian and Biking System Exhibit



The southeast corner of the Redtail Ridge site has an existing underpass that connects under Northwest Parkway (a photo of the underpass is shown in **Photo 3**). This connects sidewalks and multi-use pathways on the westside of Northwest Parkway to the new Broomfield sidewalk network on the eastside of Northwest Parkway. This underpass is also a critical part of the future walking connections to the Rock Creek and Broomfield Trails.

Photo 3: Northwest Parkway Multi-Use Path Underpass

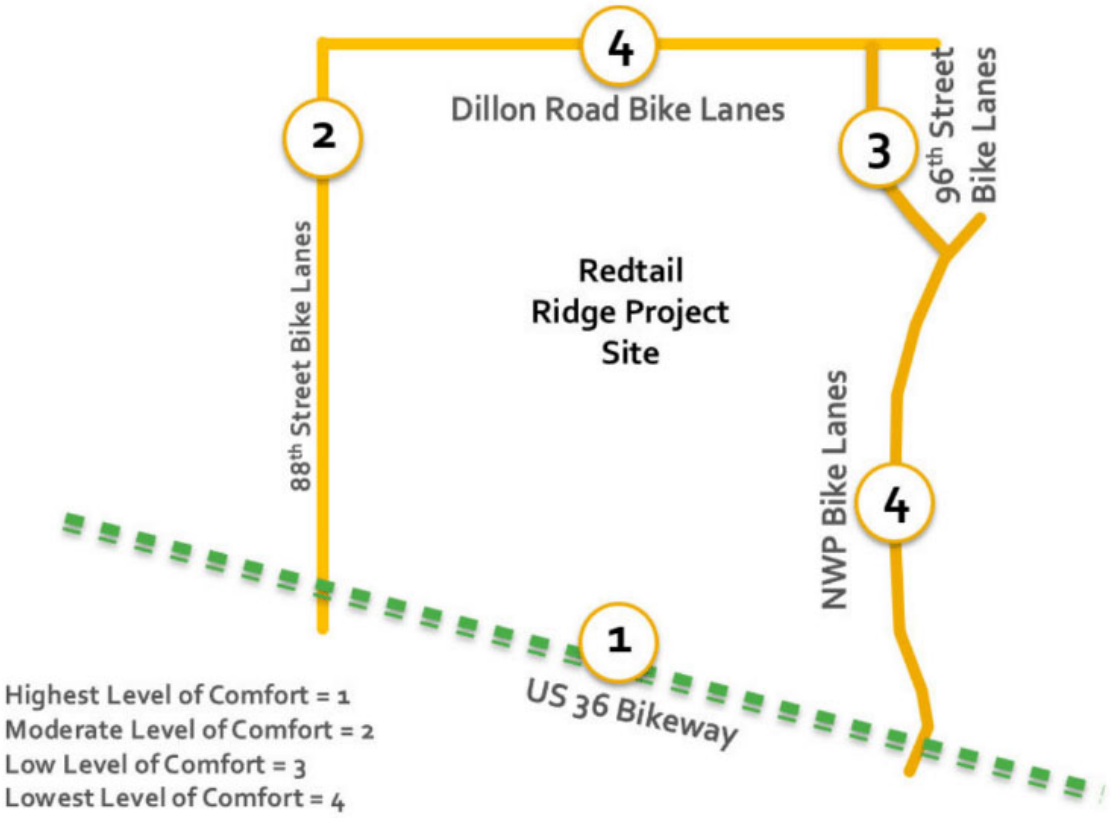
Bicycling

The Redtail Ridge site is located at the confluence of many off-street trails and on-street bicycle lanes. The Coal Creek Trail, Rock Creek Trail and the US 36 Bikeway are located within a short bike ride (5 minutes or less than one mile) of the project site. S. 88th Street, Dillon Road and S. 96th Street currently have on-street bicycle lanes that provide connections to the Coal/Rock Creek Regional Trails and the US 36 Bikeway.

The City of Boulder is located within a six-mile bike ride on the US 36 Bikeway and the RTD US 36 and East Flatiron Station is located within a one-mile bike ride of the project site. Each intersection in the study area has approaches and departures that have accommodations for people on bicycles. The S. 88th Street underpass provides access to the Monarch school campus from Dillon Road.

The City of Louisville TMP evaluated the S. 88th Street, Dillon Road and S. 96th Street corridors/intersections for the level of bicycling comfort (a map summarizing the results of the bicycle level of comfort is illustrated in **Figure 5**). Based on the TMP analysis, the current design of the corridors and intersections have a high level of stress. This appears to be correlated to the high number of crashes at these locations. The high posted speed limits in these corridors and significant peak hour traffic volumes also contribute to the low level of comfort people experience.

Figure 5: Bicycle level of Comfort ratings from City of Louisville TMP



The City plans for future implementation of Great/Complete Street design treatments for the S. 88th Street, Dillon Road, and S. 96th Street corridors and intersections consistent with the TMP's policies. This includes the installing protected bike lanes, multi-use pathways, and intersection treatments throughout the project site and connect to the adjacent arterial roadways, which will provide greater opportunity and protection for all skill levels. Implementation on the public roadways by the City will be subject to public input, topographic limitations, right of way availability, conflicts with utilities and accesses, and construction costs.

6. Future Multi-Modal Network Assumptions

The future multi-modal network improvements around Redtail Ridge project are outlined in the City of Louisville TMP and shown in **Figure 6**. They include a series of bike lanes, transit stops, underpasses, and multiuse trail connections. The TMP also recommends a partnership with the City of Louisville and the business community to provide a shuttle circulator that connects employment areas to regional transit, retail, and other destinations. CTC, Centennial Valley, and Redtail Ridge were identified as service areas for the route. The transit network also includes Bus Rapid Transit (BRT) service in the S. 96th street corridor and two Northwest Rail stations within a mile of Redtail Ridge (see Figure 7). The Northwest Rail stations are planned to be located near the CTC and at the Flatiron and US 36 Park-n-Ride.

Figure 6: Future Multi-modal Network Identified in the City of Louisville TMP

- **A** Bicycle facility connecting Dillon Rd to the US 36 bikeway
- **B** New underpasses at proposed locations along Dillon Road
- **C** Trail connections to provide increased access to the schools and hospital
- **D** Proposed future transit connecting McCaslin Station to the hospital, schools, and CTC
- **E** On-street shoulder bikeway improvements
- **F** Dillon Road capacity improvements to improve intersection operations
- **G** Campus Drive Extension to improve school circulation and improve emergency access
- **H** Paradise Lane realignment to eliminate intersection at S 96th Street. (*Note: Paradise Lane is on County property).
- **I** New signal at Campus Drive and S 96th Street near fire house

Potential Future Transit Service

The *Northwest Area Mobility Study (NAMS)* study identified the S. 96th Street/Highway 42 as one of the six (6) candidate Arterial Bus Rapid Transit (BRT) corridors. All corridors were evaluated, and recommendations were made for transit priority elements such as transit signal priority, queue jump lanes and headway-based scheduling. Operations and maintenance costs for the corridors were also prepared. The NAMS Policy Advisory Committee (PAC) recommended that all six (6) arterial BRT projects be implemented with system-wide service improvements. This corridor was recently identified as a Priority 3 corridor in the *RTD Regional Bus Rapid Transit Study*, the Metro Mayors Caucus is reviewing a ballot initiative to fund this corridor as part of regional ballot initiative, and the City of Louisville has applied for a grant to further study this service as part of a revised Highway 42 corridor study. Refer to **Figure 7** for a map of the identified transit network within the City.

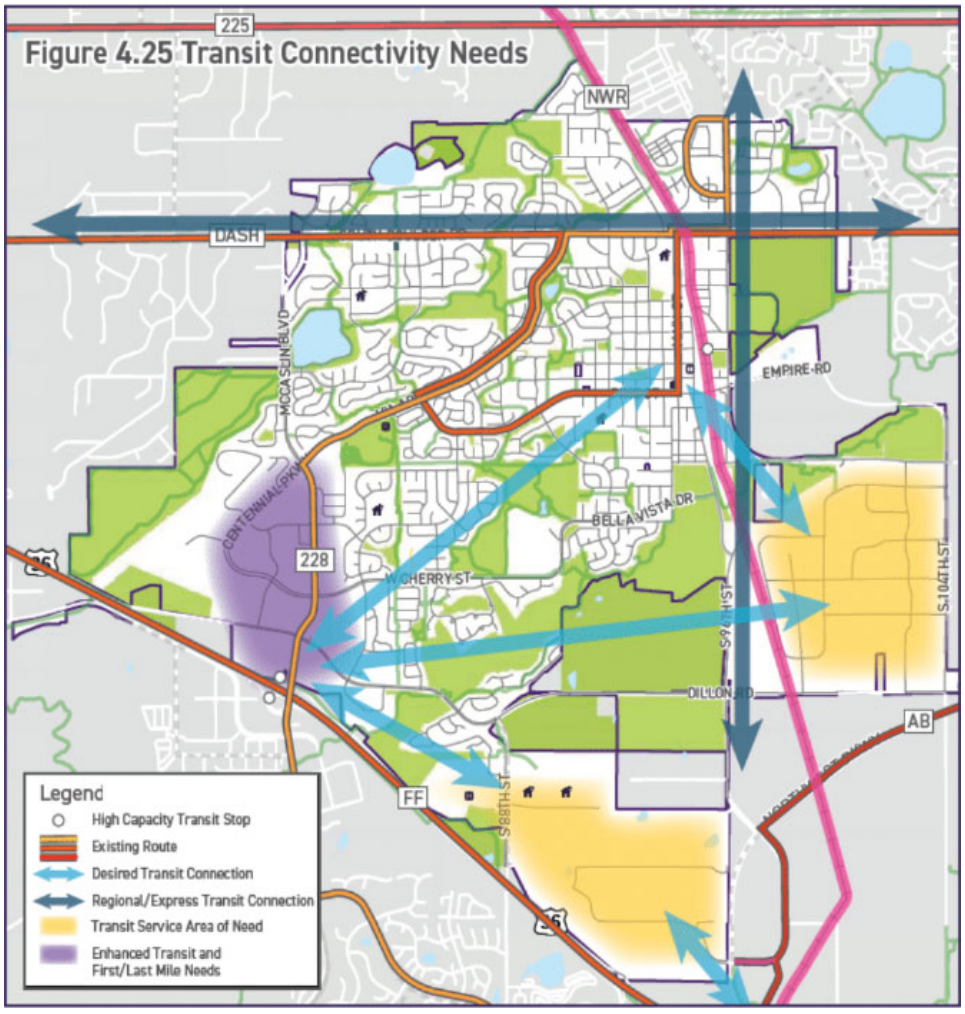


Figure 7: Future Transit Network Identified in the City of Louisville TMP

Proposed Walking and Biking

The Redtail Ridge project will be built over the next 10 years. During this time major shifts in transportation mobility and regional transportation project completion are expected to take place. Transit projects such Northwest Rail, SH 42 BRT, and the RTD local circulator will potentially be operating before Year 2040. In addition, as previously noted, the city's construction of complete streets on S. 88th Street, Dillon Road, and S. 96th Street as well as the new connections within the Red Tail Ridge project on Campus Drive, Rockcress Drive, and Sorrel Avenue will be a major part of the multi-modal transformation in Louisville. These corridors will serve many more travelers and modes in the future and the transformations will use the current right of way to move more people using safe, reliable, connected and sustainable transportation options. **Photo 4** shows an existing on-street bike lane within the study area.

Photo 4: On-Street Bike Lane

The enhanced-future multimodal network that is anticipated to be constructed by the City of Louisville in the vicinity of the Redtail Ridge project is shown in **Table 1**.

Table 1: Enhanced Future Multi-Modal Network Assumptions with Redtail Ridge Project

Schedule	Corridor	Bike Lanes	Multi-use pathways	Sidewalks	Bus Lanes
Background (without Redtail Ridge)	**S. 88th Street** (US 36 to Dillon Road)	buffered or protected	westside or eastside	westside and eastside	none
	Dillon Road (S. 88th to S. 96th Street)	buffered or protected	northside	northside and southside	none
	S. 96th Street (Northwest Parkway to County Road)	buffered or protected	westside	westside and eastside	yes
	Northwest Parkway (S. 96th Street to US 36)	None	eastside	eastside	shoulder running
With Redtail Ridge	**Campus Drive** (S. 88th Street to S. 96th Street)	buffered or protected	southside	northside	none
	Rockcress Drive (S. 88th Street to Northwest Parkway)	buffered or protected	none	northside and southside	none
	Sorrel Avenue (Campus Drive to Rockcress Drive)	buffered or protected	none	eastside and westside	none

** Expanded future multimodal network will include on-site and off-site improvements including connections beyond Louisville that do not exist today but have been identified. See the links to the documents in the "Previous Studies" Section for additional details.*

7. Existing TDM Resources

Redtail Ridge is located within an area that has several existing and proposed TDM measures, and the project will benefit from these existing resources. Along the US 36 corridor, TDM services are provided by 36 Commuting Solutions in partnership with Way to Go.

36 Commuting Solutions is a non-profit organization focused on enhancing mobility along US 36 for all commuting types, with a focus on non-auto travel. The organization is member-driven and advocates for and supports businesses, commuters, and municipalities along the corridor, including the City of Louisville. The program offers numerous services to help travelers, to provide alternative transportation options, and to reduce congestion along the roadways and through communities. The current programs provided by 36 Commuting Solutions for employers and residents within the US 36 corridor are as follows:

- **Free & subsidized transit passes:** The US 36 Master EcoPass Pilot Program subsidizes employers' purchases of EcoPasses for their employees. Eligible commuters can also receive a free 10-ride ticket booklet to try transit.

- **Carpool & Vanpool:** Travelers can use Way to Go services to find carpool and vanpool partners. There is a $75 incentive to individuals who form a new carpool or join a vanpool.

- **Bike & Walk:** In addition to the local and regional multi-use paths, there are interactive maps and education for people that walk and bike.

- **Telework:** In partnership with DRCOG, employers can receive free assistance to establish or expand their telework program.

- **Employer Outreach:** 36 Commuting Solutions staff works with employers to help encourage their employees to commute using sustainable travel modes and to develop commuter programs.

- **Marketing:** Encourages travelers to commute sustainably and participate in the available programs.

waytogo
A program of DRCOG

Commuting Solutions

- **Advocacy:** 36 Commuting Solutions staff work with local municipalities, businesses, and other stakeholders to develop support for transportation improvements and secure funding for these improvements.

8. TDM Strategies

TDM measures will be an important part of managing safe and efficient transportation operations within and in the areas around the project site. The goal of implementing TDM is to:

- Eliminate or shorten trips,
- Change the mode of travel,
- Change the time of day for a trip,
- Increase participation of carpooling, vanpooling, and transit, and
- Encourage bicycling and walking in place of driving.

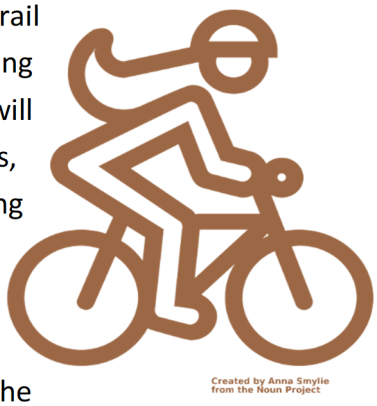
TDM strategies also include employer-based programs such as alternative work schedules, which could shift demand away from peak travel times, and telework, which could reduce the need for trips entirely. There are local transportation management solution organizations that coordinate funding and service efforts that the Metro District should consider partnering with to help facilitate and encourage non-SOV travel.

Program summaries are outlined below.

Walking Trips

Walking trips are a key part of the non-SOV mode share goals. The walking trips would likely occur between neighborhood homes, parks and schools. New walking trips will be made on the Complete Street sidewalk and trail network proposed internal to the development. The forecasted typical walk trip will be less than 1/4 mile or 5-minute walk from a home/work to a destination. It is likely that most of the walking trips will be single or multi-purpose trips within the site context. In the future, walking to shared ride mobility and transit services is also likely to increase. This is commonly referred to as the "first and last mile" of a shared ride or transit trip.

Cycling Trips



Cycling trips will increase in the future as the Complete Street and trail network is completed within the development. The future cycling trips will be made by people of all ages and cycling abilities. They will be connecting between neighborhood homes, parks, schools, commercial uses, and transit on and off site. Most of the new cycling trips would be a result of new people making a choice to cycle because of the protected cycle network and underpasses. That network is focused on removing conflicts with motor vehicles and providing safe access from neighborhoods to destinations in the adjacent area. These cycling trips will be approximately 4 to 6 miles and up to a 20-minute ride.

Carpool, Vanpool and Shared Ride Trips

Employers will have access to programs that match people to carpool services and on-demand rideshare opportunities. The commute carpools and shared rides are typically less than 30 miles.

Transit Trips

In the future, "High-Capacity Transit" services will be available within a 10-minute walk or bike ride as outlined in the City of Louisville and Boulder County Transportation Master Plans. These transit services will be accessible via a 10-minute walk or bike ride using the Complete Streets and underpasses. Local transit shuttles to High Capacity Transit stations will also be provided by partnership with the City of Louisville and private business using the operating models being piloted at the 61st and Pena Station (https://www.fulenwider.com/autonomous-shuttle-launches-in-denver.html) and the Lone Tree Link (http://www.lonetreelink.com).

Telecommute/Work From Home

Working hours which do not require commuting during peak periods (full time or part time work) as well as working from home is considered a valuable TDM strategy and this reduction in trip making is included in the non-SOV goals. As a result of changing work conditions and environments resulting from the COVID 19 pandemic, this will be an even larger reduction in historic trip making then in pre-COVID conditions.

9. Proposed TDM Program

Listed below are the TDM programs, tools and funding sources that the Redtail Ridge development will implement to achieve the project's non-SOV mode share goals. The TDM measures are explained within this letter to the detail available for the phase of development at this time. Future submittals will provide supplementary information when additional details on tenants, employees, and building locations are known. The Metro District is partnering with 36 Commuting Solutions, a local expert in transportation management solutions, to help facilitate these TDM measures.

Transit

Shuttles to High-Capacity Transit: The City of Louisville's TMP highly encourages developments to leverage existing and futures investments in transit. With this goal in mind, the Metro District will be contributing funds for a shuttle service that connects the project area to the Flatiron Flyer BRT station and to downtown Louisville. In addition, representatives of the Metro District will participate in the process which develops this shuttle service and will seek additional public and private partners, including RTD as well as neighboring entities such as Avista, Crocs and the CTC. The shuttle service could be operated with an on-demand application and/or be a fixed route service. The funds provided may be used to help contribute to the creation of the service and/or fund a portion of its initial operations. The Metro District will dedicate a fixed amount of funding at the time of building development completion and tenant occupancy. In addition, it will be a requirement of each subsequent building specific TDM program that the tenant occupying space in the development take on their proportional financial obligation in subsequent years for the operation of the shuttle service.

Employee EcoPasses: Regional Transportation District's (RTD) EcoPass is a bulk-rate, discounted

transit pass that is purchased from RTD and provides unlimited usage of RTD services including local and regional bus routes, the Skyride bus service to the airport, light rail and commuter rail. Access to free transit service has proven to be one of the most effective TDM programs for changing travel behavior and reducing the need to own a vehicle or multiple vehicles. Building on the availability of the US-36 Flatiron Flyer service and the intended future transit service planned for this area, the Metro District will encourage employee transit use by financially securing RTD EcoPasses to all employees for a period of two years. To accomplish this, the development will enter into an agreement with RTD to develop a Master Contract for all land uses within the project area. The cost of these EcoPasses through the Master Contract will be determined using RTD's regional formulas based on total number of employees within the Master Contract area. This will ensure that all employees working within the project area have access to free EcoPasses for the first two years of initial occupancy. In addition, it will be a Covenants, Conditions and Restrictions (CC&R) requirement that the tenant occupying space in the development take on their proportional financial obligation of the TDM program in subsequent years. This will ensure that employee EcoPasses are made available for all employees after the initial two years of funding is spent. Access to the *Guaranteed Ride Home Program* will be included in the Master Contract developed with RTD.

Programming and Education

TDM Coordinator: The Metro District will hire and fund, either independently or in partnership with other benefited parties, a TDM Coordinator or work with a local transportation management organization (such as 36 Commuting Solutions) to act as the TDM Coordinator, to manage the TDM program for the project area. The TDM Coordinator will provide employees with important travel information including transit maps and schedules, bicycle maps, local and regional marketing campaigns, and information on the commute benefits provided to employees. The TDM Coordinator's efforts will assist in ensuring the project's non-SOV mode share goals. In addition, the TDM coordinator would be responsible for coordinating the following programs/tools:

- *TDM Plan evaluation*: Provide periodic surveys of employee travel behavior to evaluate the TDM Plan. The survey is designed to collect anonymous travel information and takes less than 10 minutes to complete.

- *Orientation packets*: Prepare electronic orientation packets to employers that will include non-SOV program information and incentives. This information will be located on the

district website.

- *Flexible work schedules and telecommuting:* The Metro District and the TDM Coordinator will work with employers to encourage this program. Each building specific TDM plan will be encouraged to include language which supports this program. Working conditions in the Front Range, after the COVID 19 Pandemic have resulted in a much higher prevalence of telecommuting for jobs where that is possible.

Carpooling and Vanpooling

Employee Carpools and Vanpools: work with vertical developer/employers to encourage use and to implement dedicated parking for these programs on-site.

Carshare: There are a number of programs across the front range which allow persons to make use of carshare or vanpool vehicles. Use of these vehicles can limit the need for motor vehicle ownership and be a valuable component of a TDM program. Employment centers can support the use of these vehicles by provided dedicated space for these vehicles. Within the development, any land use with over 100,000 square feet of building space will allocate up to three parking spaces for dedicated carshare and/or vanpool vehicle parking. It is not intended that the development or the subsequent businesses occupying the buildings will operate either carshare or vanpool programs. Instead, the allocation of these parking spaces will be based on requests from employees who are using these services. The utilization of this service will be monitored to determine the appropriate number of spaces to allocate for carshare.

Walking and Biking

Walk and Bike Month: actively encourage employees and residents to register and participate in Bike to Work Day (June) or Winter Bike to Work Day (January).

Bicycle Access: Bicycle access to the site will be provided via Complete Streets and multi-use trails as shown on the Redtail Ridge Filing 1 Plat and supporting construction documents which connect to the existing and future bicycle infrastructure in the City of Louisville. Every structure will be accessible by bicycle.

Bicycle Parking: Future site plans will include outdoor short-term bicycle parking at a ratio consistent with Leadership in Energy and Environmental Design (LEED) commitments. Long-term bicycle

parking inside buildings or in covered parking areas will be provided at a rate of at least one secure area per building that is over 75,000 square feet of office space. The long-term parking should be a bicycle room with limited access or a caged secure area within a parking area protected from the weather, as appropriate to the use of the facility/building. At least one long-term bike parking area within the development will include a bicycle maintenance area complete with tools and air pumps for employee use. The specific design of long-term bike parking racks will be determined during final site plan development.

On-Site Bicycle Commuter Amenities: Office buildings will include showers and changing facilities for employees within the building consistent with LEED commitments. Future submittals will include detailed designs and access.

Note that all developers in the project will be required to submit a customized TDM plan for their building identifying what programs will be implemented to meet the non-SOV goals of the project and how they comply with the commitments outlined in this TDM report. Periodic surveys will be conducted by the Metro District to evaluate the TDM program effectiveness and adjustments will be made, if needed, to reach the project non-SOV goals.

10. Timeline and Funding for TDM measures

Metropolitan (Metro) Districts are a type of Colorado special district which is formed to provide services, such as Transportation, Water, Solid Waste Disposal, Sanitation and Street Maintenance and Improvement. Metro Districts are independent governmental entities formed to provide services which finance, design, install, construct, operate and or maintain public improvements not otherwise being provided. The existing Metro District will, amongst other things, manage the funding, operations, and maintenance of the TDM plan. A summation of the timeline for implementing recommended TDM strategies at different Phases of development is provided in **Table 2**. Only TDM Strategies with one-time or annual costs are included.

Table 2: Redtail Ridge TDM Plan Funding and Timeline Summation

TDM Strategy	*Timeline and Frequency*	*Amount*
Develop shuttle service	Metro District to contribute a one-time allocation for the planning and implementation of the shuttle service as a condition of Phase I occupancy permits.	Metro District paid through public RFP
Proportional yearly operational costs for shuttle service	Metro District to secure fees from property owners and/or leasees for annual allocation of proportional share of shuttle service operation. Fees provided to whomever is managing the shuttle service.	$75,000/Year
Employee EcoPasses upfront	Metro District to provide one-time allocation to secure employee EcoPasses, through Master Contract with RTD, for all employee in the initial, Phase 1. Fees paid directly to RTD.	$18,000
Long-term Employee EcoPasses	Metro District to secure funds to pay for EcoPasses through an RTD Master Contract fees in subsequent years.	$75,000/Year
Hire TDM Coordinator	Metro District to secure and maintain TDM Coordinator services	$100,000 annually - Metro District fees

ERO Resources Corporation

Denver 1626 Cole Boulevard, Suite 100, Lakewood, CO 80401
Durango 835 East 2nd Avenue, Suite 400, Durango, CO 81301
Grand Junction 715 Horizon Drive, Unit 301, Grand Junction, CO 81506
Idaho 7154 West State Street, Suite 398, Boise, ID 83714

July 10, 2024

TO: Ryan Amos
Redtail Ridge Portfolio, LLC

FROM: Heidi Gerstung, Ecologist

RE: Redtail Ridge Development Natural Resources Assessment, Louisville, Colorado

ERO Resources Corporation (ERO) is providing this Technical Memorandum to relay a summary of the results of natural resources assessment, completed by ERO in 2024.

Redtail Ridge Portfolio, LLC (RRP) retained ERO Resources Corporation (ERO) to provide a natural resources assessment for the Redtail Ridge Development property (project) southwest of South 96th Street and Dillon Road in Louisville, Boulder County, Colorado (project area). ERO assessed the project area for potential wetlands and other waters of the U.S., threatened and endangered species habitat, and general wildlife use.

The natural resources and associated regulations described in this report are valid as of the date of this report and may be relied upon for the specific use for which it was prepared by ERO under contract to RRP. Because of their dynamic natures, site conditions and regulations should be reconfirmed by a qualified consultant before relying on this report for a use other than that for which ERO was contracted.

Wetlands and Other Waters of the U.S. – Several ephemeral drainages, constructed ditches, and constructed ponds occur in the project area including the Goodhue Ditch, Community Ditch Lateral, South Boulder Coal Creek First Extension Lateral, Stock Ponds 1 and 2, Detention Pond 1, Duck Pond, Ephemeral Drainage 1, and Ephemeral Drainage 2. All of these aquatic features, with the exception of the Goodhue Ditch, were found to be nonjurisdictional by the U.S. Army Corps of Engineers (Corps) in 2019 and again in 2024 (Corps File No. NWO-2019-148-DEN). Proposed impacts on the Goodhue Ditch were permitted in 2023 (Corps File No. NWO-2020-00467). Nonjurisdictional features in the project area, with the exception of Ephemeral Drainage 1 wetlands, fall under categories of exclusion from the State Dredge and Fill Program (Colorado Department of Public Health and Environment [CDPHE] 2024). **If work is planned that would impact Ephemeral Drainage 1 wetlands, notification to the CDPHE would be required for the placement of dredged or fill material in the wetlands. If no work is planned in these areas, no additional action would be necessary**.

Threatened and Endangered Species – The project area contains a very small amount of shrub habitat suitable for Preble's meadow jumping mouse (Preble's), a federally listed threatened species. However, a viable population of Preble's is unlikely to exist in the project area because most of the project area

lacks riparian shrub habitat, and the nearest known Preble's population is approximately 5 miles west of the project area with substantial human development separating this population from the project area. Additionally, the project area is not conducive to the establishment of Ute ladies'-tresses orchid. The wetlands and riparian areas in the project area are suitable habitats for common garter snake and northern leopard frog. If the common garter snake or northern leopard frog is present in the project area, the project may adversely impact individuals. However, the project is not likely to cause a trend toward federal listing or a loss of species viability throughout its range because the proposed impacts would be limited, and the region contains large areas of potential habitat. **No further action regarding federal- or state-listed species is necessary.**

Prairie Dogs – The project area contains areas of active black-tailed prairie dog colony, and active burrows were also observed south and east of the project area. A prairie dog management plan was prepared for the project area in 2021 (ERO 2021), and prairie dog relocation activities began in 2023. **Additional prairie dog management in accordance with CPW regulations will need to occur prior to the start of construction due to continued occupancy of the project area by prairie dogs.**

Bald Eagles –The project area occurs within mapped bald eagle winter forage area and bald eagle winter range (CPW 2023). Winter range typically refers to those areas where bald eagles have been observed from November 15 through March 15 (CPW 2023). **Because no bald eagle nests or roost sites are located within a 0.5 mile of the project area, no additional action regarding bald eagles is necessary.**

Burrowing Owls – Burrowing owls could be impacted by the project if work would occur within the Colorado Parks and Wildlife (CPW)-recommended 0.25-mile (1,320-foot) buffer of any occupied prairie dog burrow (CPW 2021). Because work would occur within the recommended buffer of prairie dog burrows during the burrowing owl breeding season (March through October), a burrowing owl survey was conducted. **Burrowing owl surveys conducted in 2024 were negative for owls (ERO 2024). No further action regarding burrowing owls is necessary, unless project work activities are delayed into the 2025 burrowing owl nesting season, in which case new surveys would be required.**

Migratory Birds – Migratory birds, including raptors, and any active nests are protected under the Migratory Bird Treaty Act. ERO observed one active red-tailed hawk nest along the Rock Creek riparian corridor approximately 0.2 miles south of the project area, and seven unoccupied raptor nests in the project area during the 2024 site visits. The raptor nest could be impacted by the project if human encroachment activities are proposed within the CPW-recommended 0.33-mile radius buffer of active red-tailed hawk nests from February 15 through July 15 permanently or for a significant amount of time (CPW 2020). However, the active red-tailed hawk nest along Rock Creek adjacent to the project area is in an area of high ambient human disturbance due to U.S. 36 and Northwest Parkway, and ERO has determined that any species using this nest is likely tolerant of area activities.

The best way to avoid impacting migratory birds is to conduct ground-clearing activities and construction activities during the nonnesting season. The Eastern Colorado Field Office of the Service (U.S. Fish and Wildlife Service (Service) 2022) and Colorado Department of Transportation (Colorado Department of Transportation (CDOT) 2011) have identified the primary nesting season for migratory birds in eastern Colorado as occurring from April 1 to August 31. However, some birds (e.g., eagles, owls

and red-tailed hawks), can nest as early as February or March. Because of variability in the breeding seasons of various bird species, additional nest surveys during the nesting season may also be warranted. **ERO recommends a nest survey be conducted within one week prior to construction to determine if any active nests are present in or near the project area so they can be avoided**. If active nests are found, any work that would destroy the nests should not be conducted until the birds have vacated the nests. If possible, ground-clearing activities should occur outside of the migratory bird breeding season, generally April 1 through August 31.

Other Wildlife – The project area occurs in mule deer, white-tailed deer, and black bear overall range as well as in mule deer summer range, mule deer limited use area, mule deer resident population area, white-tailed deer concentration area, and black bear human conflict area. No other sensitive species occur in the project area that would be significantly adversely affected by the proposed project. Overall, surrounding, and continuing development contributes to a decline in the number and diversity of wildlife species nearby and to a change in species composition.

References

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Colorado Parks and Wildlife. 2020. "Recommended Buffer Zones and Seasonal Restrictions for Colorado Raptors." https://cpw.state.co.us/Documents/WildlifeSpecies/LivingWithWildlife/Raptor-Buffer-Guidelines.pdf

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ERO Resources Corporation (ERO). 2021. DRAFT Prairie Dog Management Plan. Redtail Ridge. Broomfield and Boulder Counties, Colorado. January 21.

ERO Resources Corporation (ERO). 2024. Redtail Ridge 2024 Burrowing Owl Survey. Broomfield and Boulder Counties, Colorado. July 10.

U.S. Fish and Wildlife Service (Service). 2022. "Personal Communication between Kristin Salamack (U.S. Fish and Wildlife Service) and ERO Resources Corporation Regarding Nesting Season of Migratory Birds."

SIGNED:

Heidi Gerstung, Ecologist

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92660

March 24, 2023

Mr. Rob Zuccaro
Planning and Building Safety Director
City of Louisville
749 Main St
Louisville, CO 80027
Sent via email: RZuccaro@LouisvilleCo.gov

RE: Response to Plan Commission Resolution No. 13, Series 2022

Dear Mr. Zuccaro,

Below please find detailed responses to five reasons the City of Louisville Planning Commission cited as their basis of denial of the preliminary plat on December 8, 2022. For ease of review, the Plan Commissions' concerns are repeated followed by our response.

Section 2. **Based on the testimony of the witnesses and the documents and other evidence made a part of the record of the hearing before the Planning Commission, the Planning Commission finds that the proposed subdivision does not promote the following purposes set forth in Section 16.04.020 of the Louisville Municipal Code ("LMC"), or comply with the following standards set forth in LMC Chapter 16.16 and this title:**

A. The Planning Commission finds that the application from Sterling Bay (the "Applicant") for approval of the Redtail Ridge Filing No. 1 Preliminary and Final Subdivision Plat (the "Application") does not comply with LMC Sec. 16.16.010.D. and E., which states that natural features and vegetation must be preserved to the extent possible and a need for additional open space may be based on vegetation and the type and density of the propose development. The Applicant has not demonstrated that the proposed subdivision adequately preserves natural features, wildlife habitat and vegetation of the property. Previously undeveloped areas on the northern portion of the property include natural vegetation that could be further preserved as public or private open space with clustering of the development lots to the south.

Response: Code Section 16.16.010.D requires natural features and vegetation to "be preserved to the extent possible." Code Section 16.16.010.E generally governs the location of community facilities, parks, and open spaces, and also provides, "The need for additional

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open space, park, and recreation areas shall be based on the following factors: the city's comprehensive plan; topography, drainage, vegetation and other physical conditions; the type and density of the proposed development; the availability of other open space, park and recreation areas; and the overall need within the proposed development for such areas."

The proposed grading of the site is necessary to meet the development's drainage requirements, so the proposal satisfies Code Section 16.16.010.D's direction to preserve vegetation and natural features "to the extent possible." We will have one of our consultants present on these issues specifically, which should help defuse concerns in this area. Staff was in support of our wildlife programs and indicated that they met the Code's requirements.

Additionally, Code Section 16.16.010.E merely states that open space, like other public use amenities, should be designed to complement the proposed development. The provision does not allow the City to deny an application simply because the proposal could be redesigned to provide more open space. The required public use dedication of 12% is provided by Code Section 16.16.060, and the actual open space we propose dedicating greatly exceeds this threshold.

B. The Planning Commission finds that the Application does not comply with LMC Sec. 16.04.020.K, which states the purpose of a subdivision is to avoid traffic congestion, based on the following:

1. According to the traffic study submitted with the Application, the US 36 and Northwest Parkway interchange reaches a Level of Service F and would need modified by the year 2027-2028 to provide additional vehicular capacity to accommodate the proposed subdivision. The Application does not include proposals for mitigation, road capacity work, or contribution to future road capacity work for the interchange, nor are future improvements planned at this time.

   Response: Code Section 16.04.020.K does not state that an applicant must demonstrate avoidance of traffic congestion; instead, the provision merely states that traffic circulation is one of the many purposes for which the City has the authority to grant a subdivision. Thus, the Resolution's statement that the application "does not comply" with Section 16.04.020.K is not technically correct. The subdivision plat results in much needed and high priority reduction in congestion and dangerous traffic patterns for Monarch High School by extending Campus Drive. The current situation is known to be a safety hazard by the School District, the City and the citizens, and there is strong

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community support and school district support for the extension of Campus Drive to the east, which extension creates the issues with the NW Parkway.

2. The Application does not include a commitment from Northwest Parkway Authority for the acquisition of right of way needed to construct road capacity improvements included in the traffic study as needed to mitigate traffic congestion.

   Response: We continue to work with the NWPA regarding the improvements proposed within their right-of-way as well as the limited easements that are needed to accommodate sidewalks along sections of 96th Street.

C. The Planning Commission finds that the Application does not comply with LMC Sec. 16.16.040 concerning block length, as some blocks proposed in the Application exceed the maximum length of 1,320 feet. Although the Applicant requested a modification pursuant to LMC Chapter 16.24 to allow longer block lengths, the Commission does not find that there are unique physical or topographical circumstances or conditions to justify the modification. Maintaining prescribed block lengths is necessary to ensure an adequate and convenient transportation system to serve the proposed subdivision.

   Response: The preliminary and final plats have been modified to decrease the parcel sizes therefore eliminating the block length maximum being exceeded.

D. The Planning Commission finds that the Application does not comply with LMC Sec. 16.16.020.B., which states that drainage areas should be left in a natural state to the greatest extent possible. The Applicant has not demonstrated that grading of drainage areas within public opens spaces has been limited to the greatest extent possible.

   Response: The redevelopment of the project incorporates numerous criteria that were not in place when the original Storagetek campus was designed and built. Stormwater detention, water quality and drainage criteria have all become more stringent, and expansive soil conditions on the property now require over-excavation resulting in additional disturbance that we are mitigating to the greatest extent possible. We have asked our design team to scrutinize the grading limits, and they have been reduced in certain areas. While the criteria outlined in LMC Sec. 16.16.020.B is subjective in our opinion, our professional engineer and design professionals have done everything they feel possible to minimize impacts through their design of the redevelopment and feel we have satisfied the requirements of the City's municipal code and existing entitlement documents.

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E. The Planning Commission finds that the Application does not comply with the 2010 ConocoPhillips Campus General Development Plan (GDP). The type and character of the development proposed with the Application is not consistent with the GDP and the street network does not comply with the street network shown on the GDP because it is proposed as publicly dedicated roads rather than private roads.

Response: For (1), the "permitted uses" allowed by the GDP are very broad and include commercial uses, offices, "facilities for the research, development, manufacturing, fabrication, processing, or assembly of scientific and technical products, or other products," and "other uses as established by the City Council." Thus, while our proposed uses may not be precisely the same as what Conoco Phillips was contemplating, the proposed development fits within the general character of development described in the GDP, which is not tied to the specific uses Conoco Phillips might have contemplated.

The same applies to (2), to which we will respond by quoting the GDP's statement regarding the street network: "Traffic circulation patterns depicted within and across Lot A represent internal private drives and are conceptual only and subject to modification." While the GDP mentions private drives, the statement is intended to clarify that the streets depicted in the GDP are merely conceptual and should in no way limit future development. Thus, a site plan including dedicated public streets is not inconsistent with the GDP.

Thank you and your team for your continued efforts towards finalizing the Preliminary Plat and Filing 1 Final Plat for Redtail Ridge. We are available at your convenience to review and discuss any of your comments and our responses.

Respectfully,
STERLING BAY

Evan Pesonen

Evan Pesonen
Vice President – Asset Management and Acquisitions

RESOLUTION NO. 80
SERIES 2023

A RESOLUTION RECOMMENDING APPROVAL OF THE REDTAIL RIDGE FILING NO. 1 PRELIMINARY SUBDIVISION PLAT

WHEREAS, on April 6, 2010, by Ordinance 1569, Series 2010 (Reception No. 03284515), the City rezoned the property known as the ConocoPhillips Campus property to Planned Community Zone District – Commercial (PCZD-C), approved the ConocoPhillips Campus General Development Plan (Reception No. 3088779), and on April 20, 2010 executed the ConocoPhillips Colorado Campus General Development Plan Planned Community Zone District Zoning Agreement (Reception No. 03284516; and

WHEREAS, the applicant, Sterling Bay, has submitted to the City a proposal for a preliminary plat titled Redtail Ridge Filing No. 1 to develop the ConocoPhillips Campus property as a commercial development consistent with the ConocoPhillips Campus General Development Plan; and

WHEREAS, City staff has reviewed the application and found that, with staff's recommending conditions, and based on the findings in staff's December 5, 2023 staff report, that the application for a preliminary subdivision plat meets the requirements of Louisville Municipal Code Title 16 – Subdivisions, including the standards of approval listed in Louisville Municipal Code Sec. 16.12.075, and meets the policies and standards of the Comprehensive Plan; and

WHEREAS, the Planning Commission has considered the application at duly noticed public hearings on August 11, 2022, September 8, 2022, September 22, 2022, October 13, 2022, November 10, 2022, and December 8, 2022, where evidence and testimony where entered into the record, and where the Commission adopted Resolution 13, 2022 recommending to the City Council denial of the application.

NOW THEREFORE, BE IT RESOLVED that the City Council of the City of Louisville, Colorado does hereby approve the Redtail Ridge Filing No. 1 Preliminary Subdivision Plat, with the following conditions:

1. Prior to the City Council hearing on the final plat, the applicant shall provide approval from the NW Parkway Authority for the Campus Drive alignment.
2. Prior to the City Council hearing on the final plat, the applicant shall address all outstanding Public Works comments on the Traffic and Mobility Study.
3. The final plat application will include a current agreement with the Boulder Valley School District regarding support for the right of way acquisition for Campus Drive.
4. Amend the Planned Community Zone District Zoning Agreement for the ConocoPhillips Colorado Campus General Development Plan to not allow site grading for a period of four months after February 20, 2024.

5. The final plat application shall include a detailed plan for a safe street crossing for students crossing Campus Drive from the south trail running through City parks and open space properties connecting to the Monarch K-12 Campus.

PASSED AND ADOPTED this 20th day of February, 2024.

By: _____
Christopher M Leh, Mayor

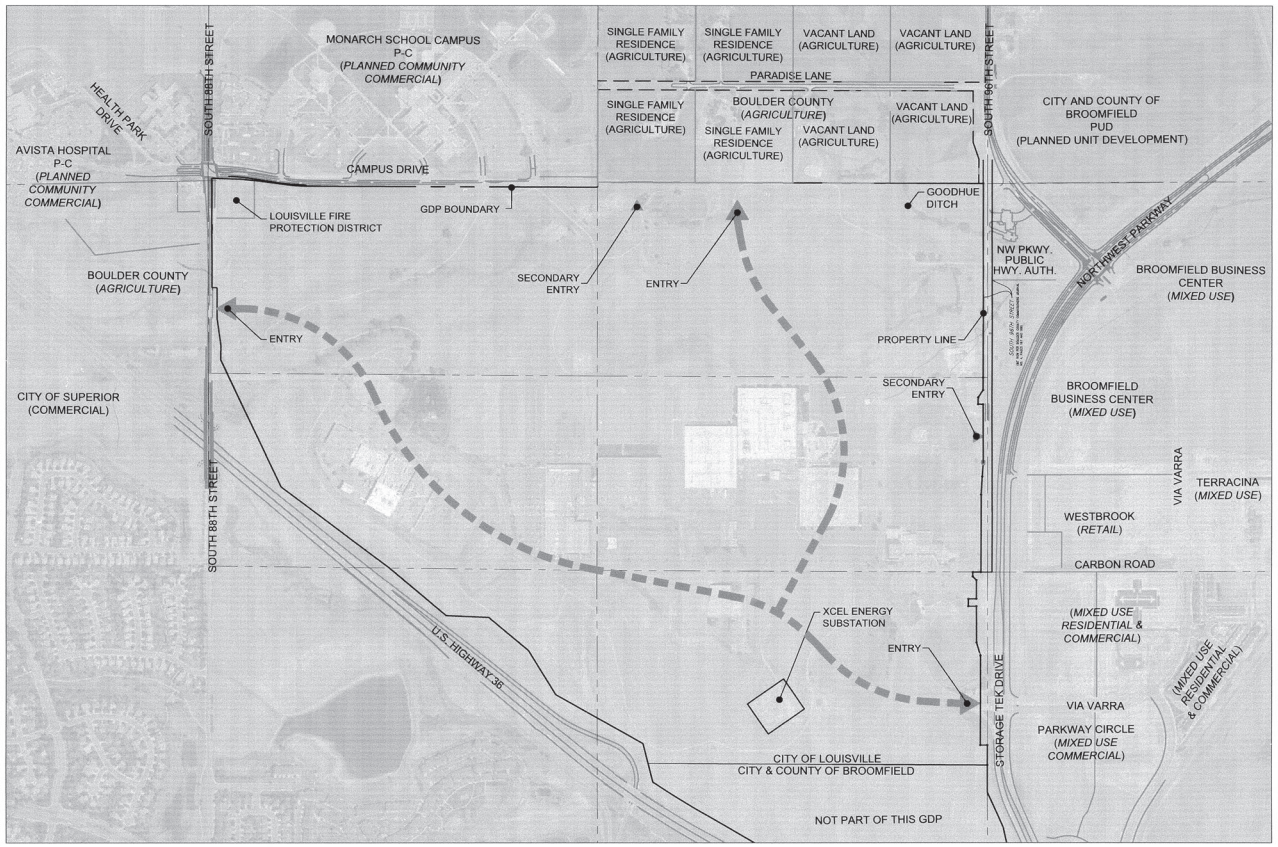
Attest: _____
Meredyth Muth, City Clerk

03088779
Page: 1 of 1
07/30/2010 08:23 AM RF: $11.00 DF: $0.00
Boulder County Clerk, CO

CONOCOPHILLIPS CAMPUS

GENERAL DEVELOPMENT PLAN

A PART OF THE SOUTH HALF OF SECTION 20, THE NORTH HALF OF SECTION 29,
TOWNSHIP 1 SOUTH, RANGE 69 WEST OF THE 6TH P.M.
SHEET 1 OF 1



GENERAL DEVELOPMENT PLAN

400 200 0 400 800 N

SCALE: 1" = 400'

GENERAL NOTES:

1. DEVELOPMENT SHALL CONFORM AND BE CONSISTENT WITH THE LOUISVILLE MUNICIPAL CODE AND THE COMMERCIAL DEVELOPMENT DESIGN STANDARDS AND GUIDELINES UNLESS OTHERWISE WAIVED OR MODIFIED BY THE CITY COUNCIL THROUGH THE PUD DEVELOPMENT PLAN PROCESS.
2. THE CAMPUS SECURITY BOUNDARY WILL NOT EXTEND OUTSIDE OF THE SITE BOUNDARY.
3. TRAFFIC CIRCULATION PATTERNS DEPICTED WITHIN AND ACROSS LOT A REPRESENT INTERNAL PRIVATE DRIVES AND ARE CONCEPTUAL ONLY AND SUBJECT TO MODIFICATION.
4. EXISTING FREE STANDING CMRS FACILITIES WITHIN LOT A SHALL CONSTITUTE A PERMISSIBLE NON-CONFORMING USE.
5. PUBLIC LAND DEDICATION OF AT LEAST 12% WILL COMPLY WITH SECTION 16.16.060.B OF THE LOUISVILLE MUNICIPAL CODE.

SITE INFORMATION

GROSS DEVELOPABLE AREA (PUD BOUNDARY):	391.719 ACRES (MAXIMUM 0.15 F.A.R.) FOR LEGAL DESCRIPTION SEE EXHIBIT A OF ORDINANCE NO. 1569 SERIES 2010
ZONING:	PLANNED COMMUNITY ZONED DISTRICT (PCZD) - COMMERCIAL WITH PUD-C OVERLAY
PLANNED ACCESS:	NORTHWEST PARKWAY, CAMPUS DRIVE, SOUTH 88TH STREET

PERMITTED USES

PERMITTED USE	COMMENTS / REMARKS	PARKING REQUIREMENTS
PROFESSIONAL, BUSINESS AND ADMINISTRATIVE OFFICES	-	4 / 1,000 S.F.
EDUCATIONAL AND TRAINING FACILITIES	MEETING ROOMS AND SOCIAL SPACE FOR EMPLOYEES AND VISITORS	0.5/1000 S.F.
PRIVATE SHORT TERM LODGING FOR CONOCOPHILLIPS EMPLOYEES AND GUESTS	OVERNIGHT ACCOMMODATIONS FOR EMPLOYEES/VISITORS	0.5 / ROOM
PEDESTRIAN PLAZAS AND PEDESTRIAN WAYS	-	-
PRIVATE, NONCOMMERCIAL, RECREATIONAL AND SOCIAL FACILITIES	-	1 / 1,000 S.F.
PARKING LOTS AND PARKING BUILDINGS	SURFACE AND STRUCTURED PARKING	-
CAMPUS ORIENTED CHILDCARE CENTER	PRIVATE CHILDCARE FOR EMPLOYEES	1.5 SPACES PER TEACHER PLUS ONE SPACE PER ADMINISTRATIVE EMPLOYEE
RESEARCH/OFFICE AND CORPORATE USES AND FACILITIES FOR THE RESEARCH, DEVELOPMENT, MANUFACTURING, FABRICATION, PROCESSING, OR ASSEMBLY OF SCIENTIFIC OR TECHNICAL PRODUCTS, OR OTHER PRODUCTS	-	1.25 / 1,000 S.F.
BUILDING MOUNTED CMRS FACILITIES	-	-
CAMPUS ORIENTED FOOD SERVICE	RESTAURANTS, CAFETERIAS, OR CAFES FOR USE BY EMPLOYEES/VISITORS INTEGRATED THROUGHOUT THE CAMPUS	-
COMMERCIAL USES, INCLUDING BUT NOT LIMITED TO BUILDING CONTRACTORS' EQUIPMENT YARDS, TRANSPORTATION CENTERS AND SERVICES, WAREHOUSES, AND STORAGE FACILITIES	STORAGE OF MATERIALS IN SUPPORT OF THE CAMPUS RESEARCH AND DEVELOPMENT FACILITY, HELIPAD (SPECIAL REVIEW USE)	1 / 1,000 S.F.
PRIVATE UTILITY USES	TO ALLOW THE EXISTING SANITARY LIFT STATION, POTENTIAL SUBSURFACE GEO EXCHANGE FIELD, SOLAR PANELS, BUILDING MOUNTED WIND POWERED ELECTRICAL GENERATION FACILITIES, AND CENTRAL MECHANICAL, ELECTRICAL, AND PLUMBING FACILITY	-
OTHER USES AS ESTABLISHED BY THE CITY COUNCIL AS FOUND TO BE SPECIFICALLY COMPATIBLE FOR COMMERCIAL AND OFFICE PLANNING AREAS	-	-

YARD AND BULK REQUIREMENTS

1. MAXIMUM BUILDING HEIGHTS PROPOSED ON THE PUD DEVELOPMENT PLAN EXCEED LIMITATIONS SET FORTH IN THE COMMERCIAL DEVELOPMENT DESIGN STANDARDS AND GUIDELINES (CDDSG). BUILDING HEIGHTS ARE EXPECTED TO RANGE FROM 35' IN SOME AREAS, TO 65' OR 95' IN OTHER AREAS. PROPOSED MAXIMUM BUILDING HEIGHTS IN EXCESS OF CDDSG REQUIREMENTS REQUIRE CITY COUNCIL APPROVAL EITHER BY SEPARATE VESTING AGREEMENT OR THROUGH THE PUD DEVELOPMENT PLAN REVIEW PROCESS, AND ARE NOT APPROVED BY THIS GDP.

MINIMUM BUILDING SETBACKS
(FOR BUILDING FOOTPRINTS LESS THAN OR EQUAL TO 30,000 GROSS SQUARE FEET)

STREET R.O.W. LINE:
- ARTERIAL STREET 30 FT.
- COLLECTOR STREET 20 FT.
- INTERNAL/PRIVATE DRIVE 10 FT.

(FOR BUILDING FOOTPRINTS GREATER THAN OR EQUAL TO 30,000 GROSS SQUARE FEET)

STREET R.O.W. LINE:
- ARTERIAL STREET 50 FT.
- COLLECTOR STREET 40 FT.
- INTERNAL/PRIVATE DRIVE 10 FT.

MINIMUM PARKING SETBACKS
(FROM ALL PERIMETER PROPERTY LINES OR RIGHTS-OF-WAYS)
- PROPERTY LINES ADJACENT TO U.S. 36 40 FT.
- ARTERIAL STREET R.O.W. 25 FT.
- COLLECTOR STREET R.O.W. 15 FT.
- INTERNAL/COMMON PROPERTY BOUNDARY 10 FT.

CERTIFICATIONS/SIGNATURE BLOCKS

CITY COUNCIL CERTIFICATION:

APPROVED THIS 6 DAY OF APRIL, 20 10 BY THE CITY COUNCIL OF THE CITY OF LOUISVILLE, COLORADO.

ORDINANCE NO. 1569, SERIES 2010.

MAYOR SIGNATURE

CITY CLERK SIGNATURE

CITY OF LOUISVILLE SEAL COLORADO

PLANNING COMMISSION CERTIFICATION:

APPROVED THIS 25 DAY OF FEBRUARY, 20 10 BY THE PLANNING COMMISSION OF THE CITY OF LOUISVILLE, COLORADO.

RESOLUTION NO. 3, SERIES 2010

CLERK AND RECORDER CERTIFICATE - COUNTY OF BOULDER, STATE OF COLORADO:

I HEREBY CERTIFY THAT THIS INSTRUMENT WAS FILED IN MY OFFICE AT 8:25 O'CLOCK A M., THIS 30 DAY OF July, 20 10, AND IS RECORDED IN PLAN FILE _____, FEE 11.00, PAID _____, FILM NO. _____, RECEPTION 3088779

CLERK AND RECORDER

DEPUTY

LOUISVILLE FIRE PROTECTION DISTRICT SIGNATURE BLOCK:

WITNESS OUR HANDS AND SEALS THIS 20th DAY OF May, 20 10

OWNER - LOUISVILLE FIRE PROTECTION DISTRICT REPRESENTATIVE

NOTARY SEAL

MY COMMISSION EXPIRES May 7 2013

May 7 2013

OWNERSHIP SIGNATURE BLOCK:

BY SIGNING THIS GDP, THE OWNER ACKNOWLEDGES AND ACCEPTS ALL THE REQUIREMENTS AND INTENT SET FORTH IN THIS G.D.P. WITNESS OUR HANDS AND SEALS

THIS 10th DAY OF May, 20 10

OWNER
CONOCOPHILLIPS COMPANY
A DELAWARE CORPORATION

Mark R Headley, Attorney-In-Fact
BY: SIGNATURE TITLE

NOTARY NAME AND SIGNATURE
Carolyn Reeder

MY COMMISSION EXPIRES 1-31-11

h+k
2190 E 17TH AVENUE
Denver, CO 80206 USA
ƒ +1 303 832 1712
ƒ +1 303 832 1713
PLANNER / LANDSCAPE ARCHITECT

CYL
CONSULTANTS OF COLORADO, INC.
CIVIL ENGINEERING · LAND SURVEYING
7901 E. Belleview Avenue
Suite 150
Englewood, CO 80111
Tel: (720) 482-9526
Fax: (720) 482-9546
CIVIL ENGINEER

Drexel, Barrell & Co.
Engineers/Surveyors
1800 30th Street
Boulder, CO 80301
Tel: (303) 442-4338
Fax: (303) 442-4373
SURVEYOR

ISSUE / REVISION	DATE
GDP SUBMITTAL	11/12/2009
RESUBMITTAL	2/01/2010
RESUBMITTAL	3/08/2010
RESUBMITTAL	3/29/2010
MYLAR RECORDING	4/26/2010

CONOCOPHILLIPS CAMPUS
2270 SO. 88TH STREET
LOUISVILLE, CO

GENERAL DEVELOPMENT PLAN

DRAWN	TEAM
CHK	TEAM
PRJ #	09.01001.00

SHEET NUMBER

1 OF 1

01/25/2013 08:46 AM RF: $71.00 03284516
Page: 1 of 13
Boulder County Clerk, CO DF: $0.00

PLANNED COMMUNITY ZONE DISTRICT ZONING AGREEMENT
ConocoPhillips Colorado Campus General Development Plan

THIS PLANNED COMMUNITY ZONE DISTRICT ZONING AGREEMENT ("Agreement") is made and entered into this 20th day of April, 2010, by and between the CONOCOPHILLIPS COMPANY, a Delaware corporation authorized to do business in the State of Colorado, hereinafter referred to as "Owner," and the CITY OF LOUISVILLE, a Colorado home rule municipal corporation, hereinafter referred to as "Louisville" or "City." The Owner and Louisville are collectively referred to as the "Parties."

WITNESSETH:

WHEREAS, the Owner desires to enter into a Planned Community Zone District ("PCZD") zoning agreement for that land more particularly described on Exhibit "A," which is attached hereto, incorporated herein, and made a part hereof by this reference (such property is hereinafter referred to as "the Property"); and

WHEREAS, the Owner and the City acknowledge that PCZD zoning provides a mechanism by which the Owner may assemble the Property into the framework of an overall General Development Plan, in order to coordinate development, design, access, circulation, and infrastructure requirements into a unified plan; and

WHEREAS, the Owner acknowledges that the Property and the use and development of the Property will be subject to all ordinances, resolutions, and other regulations of the City of Louisville, as they may be amended from time to time; and

WHEREAS, the Owner acknowledges that the need for conveyances and dedication of certain property, including but not limited to property for right-of-ways and easements, and for public use lands, as contemplated in this Agreement, are directly related to and generated by development intended to occur within the Property and that no taking thereby will occur requiring any compensation; and

WHEREAS, the PCZD regulations of the City require such a zone district be accompanied by an agreement, and the development regulations of the City require that public improvement obligations be guaranteed in a form acceptable to the City; and

WHEREAS, this Agreement is intended to set forth mutual understandings of the Parties regarding certain matters related to the zoning and development of the Property;

NOW, THEREFORE, in consideration of the above premises and the covenants as hereinafter set forth, it is agreed by and between the Parties as follows:

1.0 GENERAL CONDITIONS.

1.1 Incorporation of Recitals. The foregoing recitals are hereby incorporated into and made a part of this Agreement.

3/5

5L

1.2 Purpose. The purpose of this Agreement is to set forth the Parties' mutual agreement and understanding concerning certain matters related to the zoning and development of the Property within the **Planned Community Zone District – Commercial ("PCZD-C")** zone district, and to set forth the Parties' agreement concerning certain matters related to the use and development of the Property, including subdivision of the Property; the requirement for submission of development and public improvement phasing and construction plans; the requirement for dedication of open space/public use lands; permissible uses of the Property; and other matters. All terms and conditions herein are in addition to all requirements concerning zoning, subdivision and development contained in the Louisville Municipal Code ("LMC"). This Agreement shall not preclude the requirement for execution of a subdivision or development agreement at the time of any subdivision or development of the Property, or other future agreements between the Parties.

1.3 PCZD-C General Development Plan. A copy of the approved **ConocoPhillips Campus General Development Plan** is set forth as Exhibit "B" attached hereto and is incorporated herein and made a part hereof by this reference. Such **ConocoPhillips Campus General Development Plan**, together with any amendments thereto as may be adopted, is hereafter referred to as the "General Development Plan." The General Development Plan shall be binding upon the Owner and shall limit and control the issuance and validity of all building and occupancy permits for the Property. The General Development Plan shall further serve to restrict and limit the construction, location, use and operation of all land and structures included within Property to all conditions and limitations set forth in the General Development Plan. Further, all development within the General Development Plan shall occur in accordance with the provisions of titles 16 and 17 of the LMC, and as a Planned Unit Development – Commercial ("PUD-C") overlay district as further described in Section 3.1, below.

1.4 Responsibility to Subdivide. The Owner agrees that, except as otherwise expressly provided in this Agreement, prior to any division of the Property for the purposes of any sale or development, and prior to commencement of any development activities (excepting only overlot grading) or construction of any structure upon any portion of the Property, the Owner shall obtain City approval of a final subdivision plat for the Property. Such subdivision request shall be processed through the City's preliminary and final subdivision process. The Owner further agrees that no portion of the Property shall be divided for the purposes of any sale or building development, and that no permits, licenses or notices to proceed for any development activities (excepting only overlot grading) or construction of any structure upon any portion of the Property shall be issued until an approved final plat and the accompanying subdivision agreement for the affected portion of the Property have been recorded in the Office of the Boulder County Clerk and Recorder. Notwithstanding the foregoing, it is expressly understood and agreed by the Parties that the Owner shall not be required to plat the Property, nor any portion thereof, prior to commencing work on existing private utilities or irrigation facilities owned by third parties, nor shall the foregoing or anything contained in this Agreement preclude phased platting and development of the Property in accordance with a City approved phasing plan.

1.5 Subdivision Agreement. Prior to the presentation and acceptance of a final subdivision plat by the City Council, the Owner shall execute a subdivision agreement with the

City that guarantees the construction of all required public improvements and completion of all landscaping improvements upon public lands set forth on the approved final PUD development plan landscape plans. The subdivision agreement may provide for phasing of public improvements; however, any phasing plan shall be acceptable to and approved by the City Council. Further, building permits, as well as approvals or notices to proceed for public improvements as set forth herein above, will be issued for only that phase of development of the Property for which the required financial guarantee has been provided. The required guarantee shall be a cash escrow or an irrevocable letter of credit in form and substance acceptable to the City. The subdivision agreement shall detail the amount, duration and terms of release of such guarantee.

1.6 Public Improvements. The Owner agrees to design, improve, construct, install and provide signage, lighting, and signalization for, all public streets and other public ways within or adjacent to the Property in accordance with City ordinances, resolutions and other applicable standards, subject to any reimbursement which may be provided for in such ordinances, resolutions, and standards. The Owner further agrees to design, improve, construct, install and provide such other utility, landscaping, parks, open space, trails and other improvements as set forth on the final subdivision plats and development plans for the Property, and to make such other improvements as required by City ordinances, resolutions and standards. The Owner shall guarantee construction of all required public improvements and, if requested by the City, shall dedicate to the City any or all such required public improvements. In addition to those improvements which may be described in Exhibit "B" of the required subdivision agreement, the Owner shall also be responsible for coordination of and payment for installation of all required on-site and off-site electric, streetlights, natural gas, telephone and utilities. All utilities shall be placed underground to the extent required by the LMC or applicable City standards.

1.7 Development Phasing. Development of the Property shall proceed in accordance with a detailed, City-approved phasing plan as established in an executed and recorded subdivision agreement. Any phasing plan shall be acceptable to and approved by the City. The phasing plan shall establish acceptable completion schedules (including deadlines within which specified public improvements serving the Property must be completed and receive construction acceptance by the City) in order for the Owner to receive building permits, certificates of occupancy or other approvals or notices to proceed in order to build, develop or occupy portions of the development. The completion of each phase of development of the Property, including completion of public and private improvements, shall occur in accordance with the completion schedules and deadlines set forth in the approved phasing plan, or City approved modifications thereof. All modifications shall be in writing and signed by the City Manager or the City Manager's designee. The Owner specifically agrees that a detailed phasing plan shall be submitted to and receive City approval prior to commencement of any development activities (excepting only overlot grading and work on existing private utilities or irrigation facilities owned by third parties) or construction of any structure upon any portion of the Property. Without limiting the foregoing, the Owner agrees that the full width of Campus Drive from 88th Street to 96th Street, including, without limitation, all roadway improvements and associated landscaping, medians, bikeways, signage and other improvements, shall be completed and receive construction acceptance as part of the first phase of improvements and by the deadline(s)

established in the subdivision agreement which shall accompany the first final subdivision plat for the Property.

1.8 Plan Submission and Approval. Prior to development and in accordance with subdivision requirements of the LMC, the Owner shall furnish to the City complete plans for each phase of public improvements. Except as otherwise expressly provided in this Agreement, the Owner shall obtain approval of each phase prior to commencing any construction work thereon. No work shall commence on any phase of improvements until the City has approved the plans therefor, the City and the Owner have executed the subdivision agreement governing such improvements, and the Owner has posted the required improvement guarantee for all public improvements in such phase of improvements. The improvement guarantee shall include, without limitation, street construction, public trail construction, improvements to public use lands, including all landscaping improvements upon public lands set forth on the approved final PUD development plan landscape plans, streetlights, public water, sewer, storm sewer, erosion control and drainage improvements. Building permits and other approvals or notices to proceed shall be issued for only that phase of the development for which said guarantee has been furnished.

1.9 Engineering Services. The Owner agrees to furnish, at its expense, all necessary engineering services relating to the design, development and construction of the Property and public improvements to serve the Property. Said engineering services shall be performed by or under the supervision of a Registered Professional Engineer or Registered Land Surveyor, or other professionals as appropriate, licensed by the State of Colorado, and in accordance with applicable Colorado law; and shall conform to the standards and criteria for public improvements as established and approved by the City as of the date of submittal to the City.

1.10 Existing Utility Capacity. The City shall provide Owner credit for the sewer and water capacity previously purchased by Storage Technology Corporation for the Property, the amount of which credit shall be mutually determined by the City and Owner and set forth in the initial subdivision agreement for the Property. The credit shall be appurtenant to and used solely for development on the Property.

1.11 It is recognized by the Parties that the City may, in the future, vacate all or a portion of the 96th Street right-of-way adjacent to the Property, and that such land, by operation of law, may revert to the Owner. In the event of such a vacation, Owner may seek to include vacated right-of-way within this Agreement by amendment to Exhibit A and within the General Development Plan pursuant to the procedures within Section 17.72.060 of the LMC.

2.0 PUBLIC USE DEDICATION.

2.1 Public Use Dedication. The Owner shall, at or prior to the recording of the first final subdivision plat for the Property, comply with the public use dedication requirements within Section 16.16.060.B. of the LMC, in order to provide for parks, open space, trails or other public use lands with respect to 309 acres of the Property, which equals the entirety of Property less and except 81 acres which the City previously released from such public use dedication requirements pursuant to an annexation agreement with Owner's predecessors in title to the Property. It is

intended that all or some portion of the required public use dedication will be to establish and enhance trail connectivity in or through the City. Therefore, if the City so requires, the Owner shall at or prior to recording of the first final subdivision plat convey to the City, by easement or fee title absolute, as the City shall determine, public land, right-of-way or a combination thereof necessary for the entirety of the public trail system as established on such plat.

Conveyance of public use land shall be by Special Warranty Deed in form and substance satisfactory to the City Manager or the City Manager's designee. The Owner shall, at Owner's expense, furnish a commitment for title insurance on any property proposed to be dedicated to the City. The property shall be free and clear of liens, taxes and encumbrances, except for ad valorem real property taxes for the year of conveyance (which shall be prorated and paid by the Owner) and thereafter, but subject to all easements, rights-of-way, reservations, restrictions, or other title burdens of record which are acceptable to the City in its discretion. The Owner shall, at its expense, cause a title policy in conformance herewith to be delivered to the City at the time of the conveyance. Nothing herein is intended to or shall be construed to affect the discretion of the Louisville Planning Commission or City Council to evaluate and approve or reject any proposed public use dedication under the criteria set forth in the LMC; to require cash payment in lieu of dedication; to require open space pursuant to Section 17.28.080 of the LMC, or to modify requirements pursuant to the provisions of Sections 16.24.020 and 17.28.110 of the LMC. The Owner acknowledges that dedications required pursuant to Section 16.16.060.B are in addition to those required by Section 16.16.060.A of the LMC.

3.0 DEVELOPMENT STANDARDS AND USES.

3.1 Development Standards. All of the Property shall be developed as a PUD-C overlay district. The PUD-C overlay requires that a preliminary Planned Unit Development ("PUD") development plan and one or more final PUD development plan(s) be submitted for development within the Property, and that such development occur in accordance with the Commercial Development Design Standards and Guidelines ("CDDSG") and PUD-C standards and criteria in the LMC, subject to such waivers or modifications of applicable requirements as are approved through the PUD development plan approval process.

3.2 Development Density. The maximum density for the Property shall be as set forth in the General Development Plan. It is acknowledged that application of City development standards and criteria may serve to limit or prevent development of density upon the Property.

3.3 Permitted Uses. Uses of the Property are limited to those uses specifically set forth on the General Development Plan, and to such other uses as established by the City Council as found to be specifically compatible for commercial and office planning areas. No permitted uses may be commenced unless the City has approved a preliminary and final PUD development plan for such use pursuant to the PUD procedures, standards and criteria set forth in the LMC, as in effect from time to time. It is acknowledged that application of the foregoing standards and criteria may serve to limit or prevent development of particular uses and/or density upon the Property. Uses not expressly listed on the General Development Plan, or otherwise established by the City Council in the LMC as found to be specifically compatible for commercial and office planning areas are prohibited, and the City shall have the right to pursue an action for injunctive

relief to require cessation of any prohibited use or to require the Owner's compliance with provisions of the General Development Plan.

3.4 Traffic Demand Management Plan. The Owner agrees that the first final subdivision plat and final PUD development plan for the Property shall be accompanied by a comprehensive traffic demand management ("TDM") plan. The TDM plan shall cover the entire Property and all anticipated phases of development of the Property. The TDM plan shall detail the improvements, programs and strategies the Owner intends to implement in its development and use of the Property to reduce vehicle trips, manage transportation demands, and encourage the use of alternative modes of transportation. The Owner agrees to give consideration to comments on the TDM plan that are received from the City and other real parties in interest. The Owner further agrees to adopt a TDM plan prior to initial occupancy of the Property, to update the TDM plan from time to time, and to use commercially reasonable efforts to implement the TDM plan. The requirement herein for the Owner to adopt a TDM plan is in addition to compliance with applicable procedures, standards and criteria set forth in the LMC.

4.0 MISCELLANEOUS PROVISIONS.

4.1 Reference to Amendment. As used in this Agreement, unless otherwise specifically provided herein or in any separate vesting agreement, any reference to any provision of any City ordinance, resolution, rule, regulation, standard or policy is intended to refer to any subsequent amendments or revisions thereto, and the Parties agree such amendments or revisions shall be binding upon the Owner.

4.2 Binding Agreement. As used in this Agreement, the term "Owner" includes the undersigned Owner and any of the transferees, successors, or assigns of the undersigned Owner, and all such parties shall have the right to enforce this Agreement, and shall be subject to the terms of this Agreement, as if they were the original Parties thereto. This Agreement shall be binding upon and inure to the benefit of the transferees, successors, and assigns hereof, and shall constitute covenants running with the land. This Agreement shall be recorded with the County Clerk of Boulder County, Colorado, at the Owner's expense.

4.3 Remedies and Vested Rights. The Parties agree that they shall work cooperatively and use reasonable best efforts to resolve any dispute arising under or relating to this Agreement prior to pursuing any available legal or equitable remedies for the alleged breach of any provision hereof. The Owner acknowledges that certain actions, such as the review of subdivision plats and site-specific development plans are matters of quasi-judicial discretion, and no promises or assurances of favorable exercise of such discretion have been made to or relied upon by the Owner. The Owner further acknowledges that this Agreement does not constitute a vested rights agreement pursuant to C.R.S. 24-68-101 et seq. or Chapter 17.54 of the LMC.

4.4 Conformity with Laws. The Owner agrees that the design, improvement, construction, development, and use of the Property shall be in conformance with, and that the Owner shall comply with, all City ordinances and resolutions including, without limitation, ordinances and resolutions pertaining to subdivision, zoning, storm drainage, utilities, and flood control.

4.5 No Repeal of Laws. Nothing contained in this Agreement shall constitute or be interpreted as a repeal of the City's ordinances or resolutions, or as a waiver of the City's legislative, governmental, or police powers to promote and protect the health, safety, and welfare of the City and its inhabitants; nor shall this Agreement prohibit the enactment or increase by the City of any tax or fee.

4.6 Amendment. This Agreement may be amended by the City and any Owner of the Property or any portion thereof without the consent of any other Owner as long as such amendment affects only that portion of the Property owned by such Owner at the time of such amendment. Such amendments shall be in writing and recorded with the County Clerk of Boulder County.

4.7 Construction. In the event of any direct and express conflict between any provision of this Agreement and any provision of an annexation agreement affecting any portion of the property, this Agreement shall control. This Agreement is not intended to nor shall it be deemed to confer any rights on third parties. The laws of the State of Colorado shall govern the validity, performance, and enforcement of this Agreement. Should either party institute legal suit or action for enforcement of any obligation contained herein, it is agreed that the venue of such suit or action shall be in Boulder County, Colorado or the federal district courts for Colorado. The paragraph headings in this Agreement shall not be used in the construction or interpretation hereof as they have no substantive effect and are for convenience only.

OWNER:
ConocoPhillips Company, a Delaware corporation

By: Mark R. Headley
Name: Mark R. Headley
Title: Attorney-in-Fact

ACKNOWLEDGEMENT

STATE OF Oklahoma)
)ss
COUNTY OF Washington)

The above and foregoing signature of Mark R. Headley, as Attorney-in-Fact of ConocoPhillips Company, a Delaware corporation, was subscribed and sworn to before me this 15 day of April, 2010.

Witness my hand and official seal.

My commission expires on: 8/21/11.

(SEAL)

SANDRA PARKS NOTARY # 07007859 EXP. 08/21/11 PUBLIC STATE OF OKLAHOMA

Sandra Parks

ATTEST:

Nancy Varra
City Clerk

CITY OF LOUISVILLE,
a Colorado home rule municipal corporation

By:_____
Charles Sisk
Mayor

Exhibit "A"
Legal Description of ConocoPhillips Colorado Campus Property

A TRACT OF LAND LOCATED IN THE S1/2 OF SECTION 20 AND IN THE N1/2 OF THE N1/2 OF SECTION 29, T1S, R69W OF THE 6TH P.M., COUNTY OF BOULDER, STATE OF COLORADO, DESCRIBED AS FOLLOWS:

BASIS OF BEARINGS: THE EAST LINE OF THE SE1/4 OF SECTION 20 ASSUMED TO BEAR N00°02'11"W.

COMMENCING AT THE E1/4 CORNER OF SAID SECTION 20, THENCE N89°48'41"W, 30.00 FEET ALONG THE NORTH LINE OF THE SE1/4 OF SAID SECTION 20 TO THE WEST LINE OF THE EAST 30 FEET OF THE SE1/4 OF SAID SECTION 20 AND THE TRUE POINT OF BEGINNING;
THENCE S00°02'11"E, 1412.21 FEET PARALLEL WITH THE EAST LINE OF THE SE1/4 OF SAID SECTION 20 TO THE NORTH LINE OF THAT TRACT OF LAND AS DESCRIBED IN DEED RECORDED AT RECEPTION NO. 2386686 OF THE RECORDS OF BOULDER COUNTY, COLORADO;
THENCE ALONG THE NORTHWESTERLY, WESTERLY AND SOUTHERLY LINES OF THAT TRACT OF LAND AS DESCRIBED AT SAID RECEPTION NO. 2386686 THE FOLLOWING THREE (3) COURSES:
1) S33°27'49"W, 60.64 FEET;
2) S01°40'51"W, 45.12 FEET;
3) S88°19'09"E, 34.84 FEET TO THE WEST LINE OF THE EAST 30 FEET OF THE SE1/4 OF SAID SECTION 20;
THENCE S00°02'11"E, 404.21 FEET PARALLEL WITH THE EAST LINE OF THE SE1/4 OF SAID SECTION 20 TO THE MOST NORTHERLY CORNER OF THAT TRACT OF LAND AS DESCRIBED AS PARCEL TK-71 IN DEED RECORDED AT RECEPTION NO. 2309730 OF THE RECORDS OF BOULDER COUNTY, COLORADO;
THENCE ALONG THE WESTERLY LINES OF PARCEL TK-71 AND PARCEL TK-71-1 AS DESCRIBED AT SAID RECEPTION NO. 2309730 THE FOLLOWING THREE (3) COURSES:
1) SOUTHERLY, 86.27 FEET ALONG THE ARC OF A CURVE CONCAVE TO THE EAST TO A POINT TANGENT, SAID ARC HAVING A RADIUS OF 2441.83 FEET, A CENTRAL ANGLE OF 02°01'28" AND BEING SUBTENDED BY A CHORD THAT BEARS S04°26'51"W, 86.27 FEET;
2) S03°26'07"W, 124.37 FEET;
3) S00°02'11"E, 529.70 FEET TO THE SOUTH LINE OF SAID SECTION 20 AND THE NORTH LINE OF THAT TRACT OF LAND AS DESCRIBED IN EXHIBIT D IN DEED RECORDED ON FILM 2088 AT RECEPTION NO. 1560711 OF THE RECORDS OF BOULDER COUNTY, COLORADO;
THENCE ALONG THE NORTHERLY AND WESTERLY LINES OF THAT TRACT OF LAND AS DESCRIBED IN EXHIBIT D ON SAID FILM 2088 AT RECEPTION NO. 1560711 THE FOLLOWING FOUR (4) COURSES:
1) N89°43'22"W, 55.72 FEET;
2) S00°00'51"W, 30.00 FEET;
3) S44°51'10"E, 35.44 FEET;
4) S00°00'51"W, 127.21 FEET TO THE NORTH LINE OF THAT TRACT OF LAND AS DESCRIBED IN DEED RECORDED ON FILM 1229 AT RECEPTION NO. 520800 OF THE

RECORDS OF BOULDER COUNTY, COLORADO;
THENCE ALONG THE NORTHERLY, WESTERLY AND SOUTHERLY LINES OF THAT TRACT OF LAND AS DESCRIBED ON SAID FILM 1229 AT RECEPTION NO. 520800 THE FOLLOWING THREE (3) COURSES:
1) N89°59'09"W, 55.00 FEET;
2) S00°00'51"W, 50.00 FEET;
3) S89°59'09"E, 55.00 FEET TO THE WEST LINE OF THAT TRACT OF LAND AS DESCRIBED IN EXHIBIT C ON SAID FILM 2088 AT RECEPTION NO. 1560711;
THENCE ALONG THE WESTERLY LINES OF THAT TRACT OF LAND AS DESCRIBED IN EXHIBIT C ON SAID FILM 2088 AT RECEPTION NO. 1560711 THE FOLLOWING TWO (2) COURSES:
1) S00°00'51"W, 247.79 FEET;
2) S16°40'10"E, 93.73 FEET TO THE WESTERLY LINE OF PARCEL TK-75 AS DESCRIBED AT SAID RECEPTION NO 2309730;
THENCE ALONG THE WESTERLY AND SOUTHERLY LINES OF PARCEL TK-75 AS DESCRIBED AT SAID RECEPTION NO. 2309730 THE FOLLOWING TWO (2) COURSES:
1) S00°00'51"W, 611.16 FEET
2) S89°48'29"E, 48.09 FEET TO THE EAST LINE OF THE NE1/4 OF SAID SECTION 29;
THENCE S00°00'51"W, 136.13 FEET ALONG THE EAST LINE OF THE NE1/4 OF SAID SECTION 29 TO THE SOUTHEAST CORNER OF PARCEL 5 AS DESCRIBED IN DEED RECORDED AT RECEPTION NO. 2906901 OF THE RECORDS OF BOULDER COUNTY, COLORADO;
THENCE N89°43'22"W, 2308.90 FEET PARALLEL WITH THE NORTH LINE OF THE NE1/4 OF SAID SECTION 29 TO THE NORTHEASTERLY RIGHT-OF-WAY LINE OF U.S. HIGHWAY NO. 36 AS DESCRIBED AS PARCEL E IN DEED RECORDED AT RECEPTION NO. 2013403 OF THE RECORDS OF BOULDER COUNTY, COLORADO;
THENCE ALONG THE NORTHEASTERLY RIGHT-OF-WAY LINE OF U.S. HIGHWAY NO. 36 AS DESCRIBED AS PARCELS E, B AND C AT SAID RECEPTION NO. 2013403 AND IN DEEDS RECORDED IN BOOK 878 AT PAGE 507 AND BOOK 880 AT PAGE 98 OF THE RECORDS OF BOULDER COUNTY, COLORADO, THE FOLLOWING EIGHT (8) COURSES:
1) N14°10'39"W, 139.83 FEET;
2) N60°40'32"W, 682.73 FEET;
3) N31°43'34"W, 355.23 FEET;
4) N50°05'55"W, 351.45 FEET;
5) N87°28'56"W, 291.28 FEET;
6) N50°04'31"W, 504.79 FEET;
7) N53°12'12"W, 923.62 FEET;
8) N25°29'10"W, 857.10 FEET TO THE NORTH LINE OF THE S1/2 OF THE SW1/4 OF SAID SECTION 20;
THENCE S89°35'16"E, 0.64 FEET ALONG THE NORTH LINE OF THE S1/2 OF THE SW1/4 OF SAID SECTION 20 TO THE MOST EASTERLY CORNER OF THAT TRACT OF LAND AS DESCRIBED IN DEED RECORDED IN BOOK 878 AT PAGE 503 OF THE RECORDS OF BOULDER COUNTY, COLORADO;
THENCE N25°38'10"W, 103.33 FEET ALONG THE EASTERLY LINE OF THAT TRACT OF LAND AS DESCRIBED IN SAID BOOK 878 AT PAGE 503 TO THE EASTERLY LINE OF THAT TRACT OF LAND AS DESCRIBED IN DEED RECORDED AT RECEPTION NO. 1989419 OF THE RECORDS OF BOULDER COUNTY, COLORADO;
THENCE ALONG THE EASTERLY AND NORTHERLY LINES OF THAT TRACT OF LAND

AS DESCRIBED AT SAID RECEPTION NO. 1989419 THE FOLLOWING FOUR (4) COURSES:
1) N00°57'04"E, 95.84 FEET;
2) N08°19'13"W, 184.77 FEET;
3) N00°09'40"W, 213.70 FEET;
4) S89°50'20"W, 59.06 FEET TO THE WEST LINE OF THE N1/2 OF THE SW1/4 OF SAID SECTION 20;
THENCE N00°09'40"W, 473.73 FEET ALONG THE WEST LINE OF THE N1/2 OF THE SW1/4 OF SAID SECTION 20 TO THE SOUTH LINE EXTENDED WESTERLY OF THAT TRACT OF LAND AS DESCRIBED IN DEED RECORDED AT RECEPTION NO. 1819920 OF THE RECORDS OF BOULDER COUNTY, COLORADO;
THENCE S89°48'41"E, 290.23 FEET ALONG THE SOUTH LINE EXTENDED WESTERLY AND ALONG THE SOUTH LINE OF THAT TRACT OF LAND AS DESCRIBED AT SAID RECEPTION NO. 1819920 TO THE SOUTHEAST CORNER THEREOF;
THENCE N00°09'40"W, 256.00 FEET ALONG THE EAST LINE OF THAT TRACT OF LAND AS DESCRIBED AT SAID RECEPTION NO. 1819920 TO THE NORTH LINE OF THE SW1/4 OF SAID SECTION 20;
THENCE S89°48'41"E, 50.03 FEET ALONG THE NORTH LINE OF THE SW1/4 OF SAID SECTION 20 TO THE MOST WESTERLY CORNER OF THAT TRACT OF LAND AS DESCRIBED IN DEED RECORDED ON FILM 2169 AT RECEPTION NO. 1658713 OF THE RECORDS OF BOULDER COUNTY, COLORADO;
THENCE ALONG THE SOUTHERLY LINE OF THAT TRACT OF LAND AS DESCRIBED ON SAID FILM 2169 AT RECEPTION NO. 1658713 THE FOLLOWING THREE (3) COURSES:
1) S82°25'31"E, 202.22 FEET TO A POINT OF CURVE TO THE LEFT;
2) SOUTHEASTERLY, 139.86 FEET ALONG THE ARC OF SAID CURVE TO A POINT TANGENT, SAID ARC HAVING A RADIUS OF 1085.00 FEET, A CENTRAL ANGLE OF 07°23'09" AND BEING SUBTENDED BY A CHORD THAT BEARS S86°07'07"E, 139.77 FEET;
3) S89°48'41"E, 1975.06 FEET TO THE WEST LINE OF THE SE1/4 OF SAID SECTION 20;
THENCE N00°02'10"E, 35.00 FEET ALONG THE WEST LINE OF THE SE1/4 OF SAID SECTION 20 TO THE CENTER 1/4 CORNER OF SAID SECTION 20; THENCE S89°48'41"E, 2625.65 FEET ALONG THE NORTH LINE OF THE SE1/4 OF SAID SECTION 20 TO THE TRUE POINT OF BEGINNING.

EXCEPT THAT PORTION CONVEYED TO PUBLIC SERVICE COMPANY OF COLORADO BY DEED RECORDED FEBRUARY 3, 1983 ON FILM 1238 AS RECEPTION NO. 531604 OF THE RECORDS OF BOULDER COUNTY, COLORADO.

AREA= 390.013 ACRES, MORE OR LESS
LEGAL DESCRIPTION PREPARED BY:
WILLIAM K. WRIGHT, PLS #23529
DREXEL, BARRELL & CO.
1800 38TH STREET
BOULDER, CO 80301

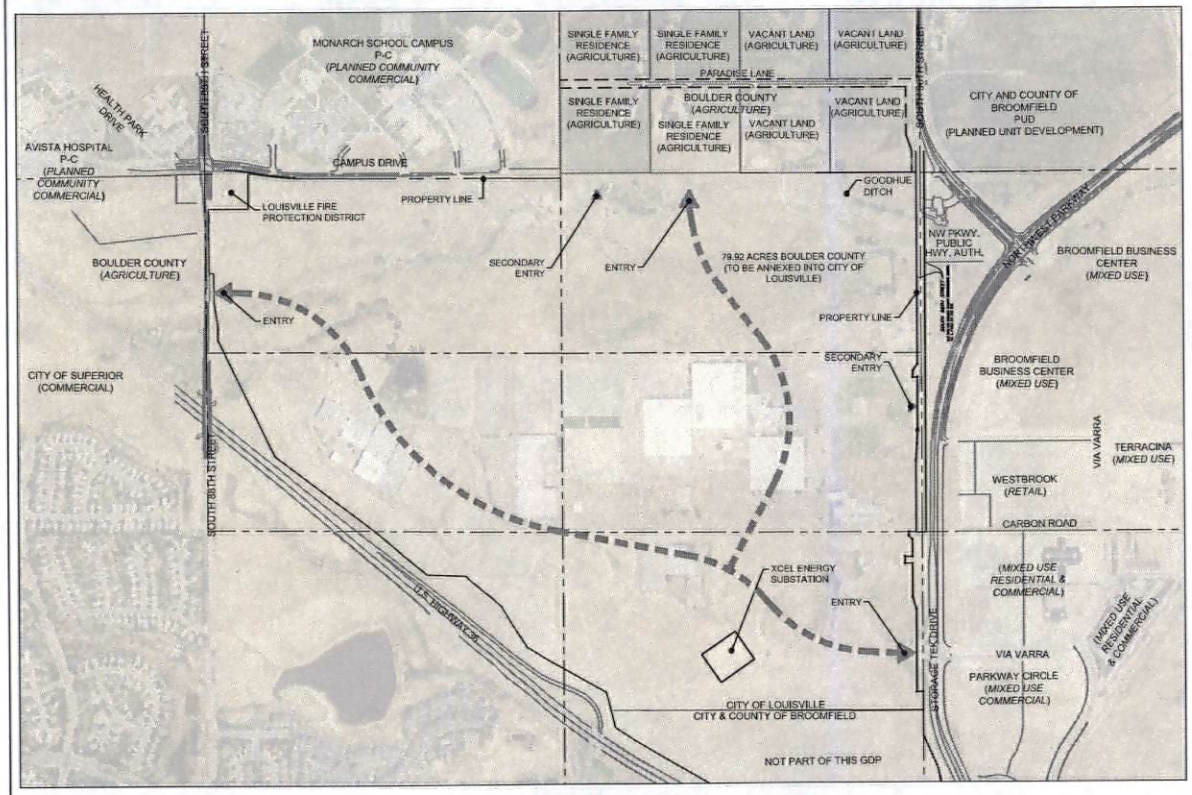
Exhibit "B"
Copy of ConocoPhillips Colorado Campus General Development Plan

CONOCOPHILLIPS CAMPUS

GENERAL DEVELOPMENT PLAN

A PART OF THE SOUTH HALF OF SECTION 20, THE NORTH HALF OF SECTION 29,
TOWNSHIP 1 SOUTH, RANGE 69 WEST OF THE 6TH P.M.

SHEET 1 OF 1



GENERAL DEVELOPMENT PLAN

400 200 0 400 800

SCALE: 1" = 400'

GENERAL NOTES:

1. DEVELOPMENT SHALL CONFORM AND BE CONSISTENT WITH THE LOUISVILLE MUNICIPAL CODE AND THE COMMERCIAL DEVELOPMENT DESIGN STANDARDS AND GUIDELINES UNLESS OTHERWISE WAIVED OR MODIFIED BY THE CITY COUNCIL THROUGH THE PUD DEVELOPMENT PLAN PROCESS.
2. THE CAMPUS SECURITY BOUNDARY WILL NOT EXTEND OUTSIDE OF THE SITE BOUNDARY.
3. TRAFFIC CIRCULATION PATTERNS DEPICTED WITHIN AND ACROSS LOT A REPRESENT INTERNAL PRIVATE DRIVES AND ARE CONCEPTUAL ONLY AND SUBJECT TO MODIFICATION.
4. EXISTING FREE STANDING CMRS FACILITIES WITHIN LOT A SHALL CONSTITUTE A PERMISSIBLE NON-CONFORMING USE.
5. PUBLIC LAND DEDICATION OF AT LEAST 15% WILL COMPLY WITH SECTION 16.16.280.B OF THE LOUISVILLE MUNICIPAL CODE.

SITE INFORMATION

GROSS DEVELOPABLE AREA (PUD BOUNDARY):	282.213 ACRES (MAXIMUM 0.15 F.A.R.)
ZONING:	PLANNED COMMUNITY ZONED DISTRICT (PCZD) - COMMERCIAL WITH PUD-C OVERLAY
PLANNED ACCESS:	NORTHWEST PARKWAY CAMPUS DRIVE, SOUTH 88TH STREET

PERMITTED USES

PERMITTED USE	COMMENTS / REMARKS	PARKING REQUIREMENTS
PROFESSIONAL, BUSINESS AND ADMINISTRATIVE OFFICES	-	4 / 1,000 S.F.
EDUCATIONAL AND TRAINING FACILITIES	MEETING ROOMS AND SOCIAL SPACE FOR EMPLOYEES AND VISITORS	0.5/1000 S.F.
PRIVATE SHORT TERM LODGING FOR CONOCOPHILLIPS EMPLOYEES AND GUESTS	OVERNIGHT ACCOMMODATIONS FOR EMPLOYEES/VISITORS	0.5 / ROOM
PEDESTRIAN PLAZAS AND PEDESTRIAN WAYS	-	-
PRIVATE, NONCOMMERCIAL RECREATIONAL AND SOCIAL FACILITIES	-	1 / 1,000 S.F.
PARKING LOTS AND PARKING BUILDINGS	SURFACE AND STRUCTURED PARKING	-
CAMPUS ORIENTED CHILDCARE CENTER	PRIVATE CHILDCARE FOR EMPLOYEES	1.5 SPACES PER TEACHER PLUS ONE SPACE PER ADMINISTRATIVE EMPLOYEE
RESEARCH/OFFICE AND CORPORATE USES AND FACILITIES FOR THE RESEARCH, DEVELOPMENT, MANUFACTURING, FABRICATION, PROCESSING, OR ASSEMBLY OF SCIENTIFIC OR TECHNICAL PRODUCTS, OR OTHER PRODUCTS	-	1.25 / 1,000 S.F.
BUILDING MOUNTED CMRS FACILITIES	-	-
CAMPUS ORIENTED FOOD SERVICE	RESTAURANTS, CAFETERIAS, OR CAFES FOR USE BY EMPLOYEES/VISITORS INTEGRATED THROUGHOUT THE CAMPUS	-
COMMERCIAL USES, INCLUDING BUT NOT LIMITED TO BUILDING CONTRACTORS' EQUIPMENT YARDS, TRANSPORTATION CENTERS AND SERVICES, WAREHOUSES, AND STORAGE FACILITIES	STORAGE OF MATERIALS IN SUPPORT OF THE CAMPUS RESEARCH AND DEVELOPMENT FACILITY. HELIPAD (SPECIAL REVIEW USE)	1 / 1,000 S.F.
PRIVATE UTILITY USES	TO ALLOW THE EXISTING SANITARY LIFT STATION, POTENTIAL SUBSURFACE GEO EXCHANGE FIELD, SOLAR PANELS, BUILDING MOUNTED WIND POWERED ELECTRICAL GENERATION FACILITIES, AND CENTRAL MECHANICAL, ELECTRICAL AND PLUMBING FACILITY	-
OTHER USES AS ESTABLISHED BY THE CITY COUNCIL AS FOUND TO BE SPECIFICALLY COMPATIBLE FOR COMMERCIAL AND OFFICE PLANNING AREAS	-	-

YARD AND BULK REQUIREMENTS

1. MAXIMUM BUILDING HEIGHTS PROPOSED ON THE PUD DEVELOPMENT PLAN EXCEED LIMITATIONS SET FORTH IN THE COMMERCIAL DEVELOPMENT DESIGN STANDARDS AND GUIDELINES (CDDSG). BUILDING HEIGHTS ARE EXPECTED TO RANGE FROM 30' IN SOME AREAS, TO 60' OR 80' IN OTHER AREAS. PROPOSED MAXIMUM BUILDING HEIGHTS IN EXCESS OF CDDSG REQUIREMENTS REQUIRE CITY COUNCIL APPROVAL EITHER BY SEPARATE VESTING AGREEMENT OR THROUGH THE PUD DEVELOPMENT PLAN REVIEW PROCESS, AND ARE NOT APPROVED BY THIS GDP.

MINIMUM BUILDING SETBACKS
(FOR BUILDING FOOTPRINTS LESS THAN OR EQUAL TO 30,000 GROSS SQUARE FEET)

STREET R.O.W. LINE:	
ARTERIAL STREET	30 FT.
COLLECTOR STREET	20 FT.
INTERNAL/PRIVATE DRIVE	10 FT.

(FOR BUILDING FOOTPRINTS GREATER THAN OR EQUAL TO 30,000 GROSS SQUARE FEET)

STREET R.O.W. LINE:	
ARTERIAL STREET	50 FT.
COLLECTOR STREET	40 FT.
INTERNAL/PRIVATE DRIVE	10 FT.

MINIMUM PARKING SETBACKS
(FROM ALL PERIMETER PROPERTY LINES OR RIGHTS-OF-WAYS)

PROPERTY LINES ADJACENT TO U.S. 36	40 FT.
ARTERIAL STREET R.O.W.	25 FT.
COLLECTOR STREET R.O.W.	15 FT.
INTERNAL/COMMON PROPERTY BOUNDARY	10 FT.

CERTIFICATIONS/SIGNATURE BLOCKS

CITY COUNCIL CERTIFICATION:

APPROVED THIS ____ DAY OF _____, 20____ BY THE CITY COUNCIL OF THE CITY OF LOUISVILLE, COLORADO.

ORDINANCE NO. _____ SERIES _____.

CITY SEAL

_____
MAYOR SIGNATURE

_____
CITY CLERK SIGNATURE

PLANNING COMMISSION CERTIFICATION:

APPROVED THIS ____ DAY OF _____, 20____ BY THE PLANNING COMMISSION OF THE CITY OF LOUISVILLE, COLORADO.

RESOLUTION NO. _____ SERIES____.

CLERK AND RECORDER CERTIFICATE - COUNTY OF BOULDER, STATE OF COLORADO:

I HEREBY CERTIFY THAT THIS INSTRUMENT WAS FILED IN MY OFFICE AT ____ O'CLOCK ____ M., THIS ____ DAY OF _____, 20____ AND IS RECORDED IN PLAN FILE _____ FEE _____ PAID _____ FILM NO. _____ RECEPTION _____.

_____
CLERK AND RECORDER

_____
DEPUTY

OWNERSHIP SIGNATURE BLOCK:

BY SIGNING THIS GDP, THE OWNER ACKNOWLEDGES AND ACCEPTS ALL THE REQUIREMENTS AND INTENT SET FORTH IN THIS GDP, WITNESS OUR HANDS AND SEALS

THIS ____ DAY OF _____, 20____.

OWNER
CONOCOPHILLIPS COMPANY
A DELAWARE CORPORATION

_____ _____
BY: SIGNATURE TITLE

_____
NOTARY NAME AND SIGNATURE

MY COMMISSION EXPIRES _____.

2100 E 97TH AVENUE
Denver, CO 80229 USA
T +1 303 832 1712
F +1 303 832 1712
PLANNER // LANDSCAPE ARCHITECT

CONSULTANTS OF COLORADO, INC.
CIVIL ENGINEERS LAND SURVEYORS
7901 E. Belleview Avenue
Suite 150
Englewood, CO 80111
Tel: (720) 482-9576
Fax: (720) 482-9546
CIVIL ENGINEER

Dietzel, Burrell & Co.
Engineers/Surveyors
1800 30th Street
Boulder, CO 80301
Tel: (303) 442-4338
Fax: (303) 442-4373
SURVEYOR

ISSUE / REVISION	DATE
GDP SUBMITTAL	10/2009
RESUBMITTAL	05/2010
RESUBMITTAL	09/2010
RESUBMITTAL	03/2011

CONOCOPHILLIPS CAMPUS
2270 SO. 88TH STREET
LOUISVILLE, CO

GENERAL DEVELOPMENT PLAN

DRAWN	TEAM
CHK	TEAM
PROJ #	10.0100.20

SHEET NUMBER

1 OF 1

FIRST AMENDMENT TO
PLANNED COMMUNITY ZONE DISTRICT ZONING AGREEMENT

THIS FIRST AMENDMENT to Planned Community Zone District Agreement (this "Amendment") is made and entered into this 19th day of March, 2024, by and between the CITY OF LOUISVILLE, a Colorado home rule municipal corporation ("City"), and REDTAIL RIDGE PORTFOLIO, LLC, a Delaware limited liability company authorized to business in the State of Colorado ("Owner"). City and Owner may be referred to herein collectively as the "Parties" and each individually as a "Party."

WITNESSETH:

WHEREAS, Owner is the owner of certain real property in the City of Louisville, County of Boulder, and State of Colorado more particularly described in Exhibit A attached hereto (the "Property"); and

WHEREAS, on February 6 and 20, 2024, the Louisville City Council (the "Council") held a public hearing on Owner's application for the Redtail Ridge Filing No. 1 Preliminary Subdivision Plat (the "Preliminary Plat"), which Preliminary Plat affects the Property; and

WHEREAS, City and ConocoPhillips Company ("Conoco"), a predecessor in interest to Owner with respect to the Property, entered into that certain Planned Community Zone District Zoning Agreement dated April 20, 2010, and recorded in the official records of the Boulder County Clerk and Recorder on January 25, 2013, at Reception No. 03284516 (the "PCZD Agreement"), which PCZD Agreement sets forth certain restrictions and obligations affecting the Property; and

WHEREAS, the PCZD Agreement provides that the PCZD Agreement runs with the land and binds and inures to the benefit of successors in interest to Conoco, such as Owner; and

WHEREAS, Section 1.4 of the PCZD Agreement provides that Owner, as successor in interest to Conoco, may seek to commence overlot grading prior to approval of a final subdivision plat for the Property; and

WHEREAS, to address concerns related to the criteria for preliminary plat approval set forth in the Louisville Municipal Code, Owner offered to refrain from any grading activity on the Property until after the date that is four (4) months after February 20, 2024; and

WHEREAS, such commitment by Owner was memorialized by the City Council in Resolution No. 80, Series 2023 as a condition of preliminary plat approval that the PCZD Agreement be amended to provide that overlot grading would not occur on the Property for a period of four months after February 20, 2024.

NOW, THEREFORE, in consideration of the premises and the covenants herein set forth, the Parties agree as follows:

1. Incorporation of Recitals. The foregoing recitals are hereby incorporated into and made a part of this First Amendment as if fully set forth herein.

2. Grading. Owner covenants and agrees that Owner shall not cause any grading activity to occur on the Property prior to June 21, 2024 or approval of the final subdivision plat for the Property by the City, whichever occurs first.

3. PCZD Rights. Owner covenants and agrees that Owner will forebear, and shall not seek to enforce, any rights that Owner may have under the PCZD Agreement to commence overlot grading activity on the Property prior to June 21, 2024 or approval of the final subdivision plat for the Property by the City, whichever occurs first.

4. Binding Agreement. This First Amendment shall be binding upon and inure to the benefit of any transferees, successors, and assigns of Owner.

5. No Repeal of Laws. Nothing contained in this First Amendment shall constitute or be interpreted as a repeal of the City's ordinances or resolutions; a waiver of the City's legislative, governmental, or police powers to promote and protect the health, safety, and welfare of the City and its inhabitants; or a prohibition on the enactment or increase by the City of any tax or fee.

6. PCZD Agreement. Except as set forth in this First Amendment, the PCZD Agreement shall remain in full force and effect in accordance with its terms.

7. Further Amendments. As set forth in Section 4.6 of the PCZD Agreement, any further amendments shall be in writing and shall be recorded with the Boulder County Clerk and Recorder.

8. Recordation. This First Amendment shall be recorded with the Boulder County Clerk and Recorder at Owner's expense.

[Signature Page Follows]

IN WITNESS WHEREOF, the Parties have executed this First Amendment as of the date first above written.

CITY OF LOUISVILLE,
a Colorado home rule municipal corporation

By: _____
Christopher M. Leh, Mayor

ATTEST:

By: _____
Meredyth Muth, City Clerk

OWNER:

REDTAIL RIDGE PORTFOLIO, LLC
a Delaware limited liability company

By: _____
Name: Andrew Glaser
Title: Authorized Signatory

ACKNOWLEDGMENT

STATE OF IL)
) ss.
COUNTY OF COOK)

The above and foregoing signature of Andrew Glaser, as Authorized Signatory of Redtail Ridge Portfolio, LLC, a Delaware limited liability company, was subscribed and sworn to before me this 27th day of February, 2024.

Witness my hand and official seal.
My commission expires: Oct. 16, 2024

_____
Notary Public

JENNIFER STEINBORN
OFFICIAL SEAL
Notary Public, State of Illinois
My Commission Expires
October 16, 2024

Exhibit A

Legal Description of Property

A TRACT OF LAND SITUATED IN THE SOUTH HALF OF SECTION 20 AND THE NORTH HALF OF SECTION 29, TOWNSHIP 1 SOUTH, RANGE 69 WEST OF THE SIXTH PRINCIPAL MERIDIAN, CITY OF LOUISVILLE, BOULDER COUNTY, STATE OF COLORAOD, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE CENTER QUARTER CORNER OF SAID SECTION 20;
THENCE SOUTH 89°48'50" EAST ALONG THE NORTH LINE OF THE SOUTHEAST QUARTER OF SAID SECTION 20, A DISTANCE OF 2,625.59 FEET;
THENCE SOUTH 00°02'13" EAST ALONG A LINE PARALLEL WITH AND 30 FEET WEST OF THE EAST LINE OF THE NORTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SAID SECTION 20, A DISTANCE OF 1,326.76 FEET TO A POINT ON THE SOUTH LINE OF THE NORTH HALF OF SAID SOUTHEAST QUARTER;
THENCE SOUTH 00°02'35" EAST ALONG A LINE PARALLEL WITH AND 30 FEET WEST OF THE EAST LINE OF THE SOUTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SAID SECTION 20, A DISTANCE OF 85.45 FEET TO THE NORTH CORNER OF PARCEL TK-71-2 DESCRIBED AT RECEPTION NO. 2386688 IN THE RECORDS OF BOULDER COUNTY;
THENCE ALONG THE PERIMETER OF SAID PARCEL THE FOLLOWING THREE (3) COURSES:
1) SOUTH 33°27'26" WEST, A DISTANCE OF 60.64 FEET;
2) SOUTH 01°40'28" WEST, A DISTANCE OF 45.12 FEET;
3) SOUTH 88°19'32" EAST, A DISTANCE OF 34.84 FEET TO A POINT 30 FEET WEST OF SAID EAST LINE;
THENCE SOUTH 00°02'35" EAST ALONG A LINE PARALLEL WITH AND 30 FEET WEST OF SAID EAST LINE, A DISTANCE OF 404.28 FEET TO A POINT OF NON-TANGENT CURVATURE AT THE NORTH CORNER OF PARCEL TK-71 DESCRIBED AT RECEPTION NO. 2309730 IN THE RECORDS OF BOULDER COUNTY;
THENCE ALONG THE PERIMETER OF SAID PARCEL THE FOLLOWING THREE (3) COURSES:
1) ALONG THE ARC OF SAID CURVE TO THE LEFT AN ARC LENGTH OF 86.28 FEET, SAID CURVE HAVING A RADIUS OF 2,441.83 FEET, A CENTRAL ANGLE OF 02°01'28", AND A CHORD WHICH BEARS SOUTH 04°26'27" WEST A CHORD DISTANCE OF 86.27 FEET;
2) SOUTH 03°25'43" WEST, A DISTANCE OF 124.37 FEET;
3) SOUTH 00°02'35" EAST AND ALONG THE WEST LINE OF PARCEL TK-71-1 DESCRIBED AT RECEPTION NO. 2309730 IN THE RECORDS OF BOULDER COUNTY, A DISTANCE OF 529.71 FEET TO A POINT ON THE SOUTH LINE OF THE SAID SOUTHEAST QUARTER AND A POINT ON THE NORTH LINE OF PARCEL 12 AS DESCRIBED AT RECEPTION NO. 1560711 IN THE RECORDS OF BOULDER COUNTY;
THENCE ALONG THE PERIMETER OF SAID PARCEL 12 THE FOLLOWING FOUR (4) COURSES:
1) NORTH 89°42'42" WEST, A DISTANCE OF 55.73 FEET;
2) SOUTH 00°00'35" WEST, A DISTANCE OF 30.02 FEET;
3) SOUTH 44°51'26" EAST, A DISTANCE OF 35.44 FEET;
4) SOUTH 00°00'35" WEST, A DISTANCE OF 127.21 FEET TO A POINT ON THE NORTH LINE OF THAT PARCEL DESCRIBED AT RECEPTION NO. 520800 IN THE RECORDS OF BOULDER COUNTY;
THENCE ALONG THE PERIMETER OF SAID PARCEL THE FOLLOWING THREE (3) COURSES:
1) NORTH 89°59'25" WEST, A DISTANCE OF 55.00 FEET;
2) SOUTH 00°00'35" WEST, A DISTANCE OF 50.00 FEET;
3) SOUTH 89°59'25" EAST, A DISTANCE OF 55.00 FEET TO THE NORTHWEST CORNER OF PARCEL 10 AS DESCRIBED AT RECEPTION NO. 1560711 IN THE RECORDS OF BOULDER COUNTY;
THENCE ALONG THE PERIMETER OF SAID PARCEL 10 THE FOLLOWING TWO (2) COURSES:
1) SOUTH 00°00'35" WEST ALONG THE WEST LINE OF SAID PARCEL AND ALONG A LINE PARALLEL WITH AND 75 FEET WEST OF THE SAID EAST LINE, A DISTANCE OF 247.79 FEET;
2) SOUTH 16°40'03" EAST ALONG THE SOUTHEASTERLY LINE OF SAID PARCEL, A DISTANCE OF 93.77 FEET TO THE NORTH CORNER OF PARCEL TK-75 DESCRIBED AT RECEPTION NO. 2309730 IN THE RECORDS OF BOULDER COUNTY;
THENCE SOUTH 00°00'35" WEST ALONG A LINE PARALLEL WITH THE EAST LINE OF SAID SECTION 29 AND ALONG THE WEST LINE OF SAID TK-75, A DISTANCE OF 611.12 FEET;
THENCE SOUTH 89°48'45" EAST ALONG THE SOUTH LINE OF SAID TK-75, A DISTANCE OF 48.09 FEET TO A POINT ON THE EAST LINE OF THE NORTHEAST QUARTER OF SAID SECTION 29;
THENCE SOUTH 00°00'35" WEST ALONG SAID EAST LINE, A DISTANCE OF 136.13 FEET TO A POINT ON THE SOUTH LINE OF THE NORTH HALF OF THE NORTHEAST QUARTER OF SAID SECTION 29;
THENCE NORTH 89°42'42" WEST ALONG SAID SOUTH LINE, A DISTANCE OF 2,308.62 FEET TO A POINT ON THE NORTHEAST LINE OF THE LAND CONVEYED TO THE CITY OF BROOMFIELD BY GIFT DEED RECORDED AT RECEPTION NO. 2013403 IN THE RECORDS OF BOULDER COUNTY;
THENCE ALONG THE PERIMETER OF SAID PARCEL THE FOLLOWING FIVE (5) COURSES:
1) NORTH 14°13'32" WEST, A DISTANCE OF 140.04 FEET;
2) NORTH 60°44'04" WEST, A DISTANCE OF 682.66 FEET;
3) NORTH 31°43'59" WEST, A DISTANCE OF 355.27 FEET;
4) NORTH 50°04'57" WEST, A DISTANCE OF 351.37 FEET;
5) NORTH 87°28'56" WEST, A DISTANCE OF 246.66 FEET TO THE EASTERN CORNER OF PARCEL 32B AS DESCRIBED BY SPECIAL WARRANTY DEED RECORDED AT RECEPTION NO. 3411796 IN THE RECORDS OF BOULDER COUNTY;
THENCE NORTH 58°29'24" WEST ALONG THE NORTHEASTERLY LINE OF SAID PARCEL, A DISTANCE OF 186.70 FEET TO A POINT ON THE RIGHT-OF-WAY OF HIGHWAY 36;
THENCE NORTH 50°07'12" WEST ALONG SAID RIGHT-OF-WAY, A DISTANCE OF 356.68 FEET TO A POINT ON THE SOUTH LINE OF THE SOUTHWEST QUARTER OF SAID SECTION 20 AND THE SOUTH CORNER OF PARCEL 32A OF SAID SPECIAL WARRANTY DEED;
THENCE CONTINUING NORTH 50°07'12" WEST ALONG THE NORTHEAST LINE OF SAID PARCEL 32A, A DISTANCE OF 1,028.45 FEET TO A POINT ON THE EAST LINE OF THAT PARCEL DESCRIBED AT BOOK 880, PAGE 98 IN THE RECORDS OF BOULDER COUNTY;
THENCE NORTH 25°26'59" WEST ALONG SAID EAST LINE AND ALONG THE EAST LINE OF THAT PARCEL DESCRIBED AT BOOK 878, PAGE 503, A DISTANCE OF 842.57 TO THE SOUTH CORNER OF THAT PARCEL DESCRIBED AT RECEPTION NO. 1989419 IN THE RECORDS OF BOULDER COUNTY;
THENCE ALONG THE PERIMETER OF SAID PARCEL THE FOLLOWING FOUR (4) COURSES:
1) NORTH 00°54'00" EAST, A DISTANCE OF 95.53 FEET;
2) NORTH 08°22'46" WEST, A DISTANCE OF 184.53 FEET;
3) NORTH 00°09'09" WEST ALONG A LINE PARALLEL WITH THE WEST LINE OF THE SOUTHWEST QUARTER OF SAID SECTION 20, A DISTANCE OF 213.70 FEET;
4) SOUTH 89°50'51" WEST, A DISTANCE OF 34.06 FEET TO A POINT 25.00 FEET EAST OF THE WEST LINE OF SAID SOUTHWEST QUARTER;
THENCE NORTH 00°09'09" WEST ALONG A LINE PARALLEL WITH AND 25 FEET FROM THE SAID WEST LINE, A DISTANCE OF 473.64 FEET TO A POINT ON THE SOUTH LINE OF THAT PARCEL DESCRIBED AT RECEPTION NO. 1819920 IN THE RECORDS OF BOULDER COUNTY EXTENDED WESTERLY;
THENCE SOUTH 89°48'38" EAST ALONG SAID SOUTH LINE AND SAID SOUTH LINE EXTENDED, A DISTANCE OF 265.23 FEET TO THE SOUTHEAST CORNER OF SAID PARCEL;
THENCE NORTH 00°09'09" WEST ALONG THE EAST LINE OF SAID PARCEL, A DISTANCE OF 256.00 FEET TO A POINT ON THE SOUTH RIGHT-OF-WAY LINE OF CAMPUS DRIVE AS DEDICATED BY LOUISVILLE CAMPUS RECORDED AT RECEPTION NO. 1669751;
THENCE ALONG SAID SOUTH LINE THE FOLLOWING FOUR (4) COURSES:
1) SOUTH 89°48'38" EAST ALONG SAID NORTH LINE, A DISTANCE OF 50.02 FEET;
2) SOUTH 82°25'28" EAST, A DISTANCE OF 202.23 FEET TO A POINT OF NON-TANGENT CURVATURE;
3) ALONG THE ARC OF SAID CURVE TO THE LEFT AN ARC LENGTH OF 139.86 FEET, SAID CURVE HAVING A RADIUS OF 1,085.00 FEET, A CENTRAL ANGLE OF 07°23'09", AND A CHORD WHICH BEARS SOUTH 86°07'04" EAST A CHORD DISTANCE OF 139.77 FEET;
4) SOUTH 89°48'38" EAST, A DISTANCE OF 1,975.05 FEET TO A POINT ON THE EAST LINE SAID SOUTHWEST QUARTER;
THENCE NORTH 00°02'50" EAST ALONG SAID EAST LINE, A DISTANCE OF 35.00 FEET TO THE **POINT OF BEGINNING**;

EXCEPTING THEREFROM THAT PARCEL DESCRIBED BY DEED RECORDED AT RECEPTION NO. 531604 IN THE RECORDS OF BOULDER COUNTY;

SAID PARCEL CONTAINS 16,949,252 SQUARE FEET OR 389.10 ACRES, MORE OR LESS;

CONOCOPHILLIPS CAMPUS

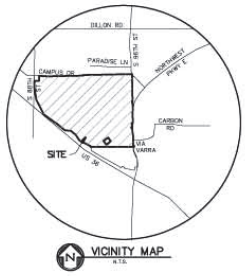
Attachment #29

PRELIMINARY PLAT

A RESUBDIVISION OF STORAGETEK BUILDING SIX SUBDIVISION AND A SUBDIVISION OF A TRACT OF LAND LOCATED IN THE S1/2 OF SECTION 20 AND IN THE N1/2 OF SECTION 29, TOWNSHIP 1 SOUTH, RANGE 69 WEST OF THE 6TH P.M. COUNTY OF BOULDER, STATE OF COLORADO

AREA = 390.013 ACRES, MORE OR LESS

SHEET 1 OF 3



LEGAL DESCRIPTION

A TRACT OF LAND LOCATED IN THE S1/2 OF SECTION 20 AND IN THE N1/2 OF THE N1/2 OF SECTION 29, T1S, R69W OF THE 6TH P.M., COUNTY OF BOULDER, STATE OF COLORADO, DESCRIBED AS FOLLOWS:

BASIS OF BEARINGS: THE EAST LINE OF THE SE1/4 OF SECTION 20 ASSUMED TO BEAR N00°02'11"W.

COMMENCING AT THE E1/4 CORNER OF SAID SECTION 20, THENCE N89°48'41"W, 30.00 FEET ALONG THE NORTH LINE OF THE SE1/4 OF SAID SECTION 20 TO THE WEST LINE OF THE EAST 30 FEET OF THE SE1/4 OF SAID SECTION 20 AND THE TRUE POINT OF BEGINNING;
THENCE S00°02'11"E, 1412.21 FEET PARALLEL WITH THE EAST LINE OF THE SE1/4 OF SAID SECTION 20 TO THE NORTH LINE OF THAT TRACT OF LAND AS DESCRIBED IN DEED RECORDED AT RECEPTION NO. 2386686 OF THE RECORDS OF BOULDER COUNTY, COLORADO;
THENCE ALONG THE NORTHWESTERLY, WESTERLY AND SOUTHERLY LINES OF THAT TRACT OF LAND AS DESCRIBED AT SAID RECEPTION NO. 2386686 THE FOLLOWING THREE (3) COURSES:
1) S33°27'49"W, 60.64 FEET;
2) S01°40'51"W, 45.12 FEET;
3) S88°19'09"E, 34.84 FEET TO THE WEST LINE OF THE EAST 30 FEET OF THE SE1/4 OF SAID SECTION 20;
THENCE S00°02'11"E, 404.21 FEET PARALLEL WITH THE EAST LINE OF THE SE1/4 OF SAID SECTION 20 TO THE MOST NORTHERLY CORNER OF THAT TRACT OF LAND AS DESCRIBED AS PARCEL TK-71 IN DEED RECORDED AT RECEPTION NO. 2309730 OF THE RECORDS OF BOULDER COUNTY, COLORADO;
THENCE ALONG THE WESTERLY LINES OF PARCEL TK-71 AND PARCEL TK-71-1 AS DESCRIBED AT SAID RECEPTION NO. 2309730 THE FOLLOWING THREE (3) COURSES:
1) SOUTHERLY, 86.27 FEET ALONG THE ARC OF A CURVE CONCAVE TO THE EAST TO A POINT TANGENT, SAID ARC HAVING A RADIUS OF 2441.83 FEET, A CENTRAL ANGLE OF 02°01'28" AND BEING SUBTENDED BY A CHORD THAT BEARS S04°26'51"W, 86.27 FEET;
2) S03°26'07"W, 124.37 FEET;
3) S00°02'11"E, 529.70 FEET TO THE SOUTH LINE OF SAID SECTION 20 AND THE NORTH LINE OF THAT TRACT OF LAND AS DESCRIBED IN EXHIBIT D IN DEED RECORDED ON FILM 2088 AT RECEPTION NO. 1560711 OF THE RECORDS OF BOULDER COUNTY, COLORADO;
THENCE ALONG THE NORTHERLY AND WESTERLY LINES OF THAT TRACT OF LAND AS DESCRIBED IN EXHIBIT D ON SAID FILM 2088 AT RECEPTION NO. 1560711 THE FOLLOWING FOUR (4) COURSES:
1) N89°43'22"W, 55.73 FEET;
2) S00°00'51"W, 30.00 FEET;
3) S44°51'10"E, 35.44 FEET;
4) S00°00'51"W, 127.21 FEET TO THE NORTH LINE OF THAT TRACT OF LAND AS DESCRIBED IN DEED RECORDED ON FILM 1229 AT RECEPTION NO. 520800 OF THE RECORDS OF BOULDER COUNTY, COLORADO;
THENCE ALONG THE NORTHERLY, WESTERLY AND SOUTHERLY LINES OF THAT TRACT OF LAND AS DESCRIBED ON SAID FILM 1229 AT RECEPTION NO. 520800 THE FOLLOWING THREE (3) COURSES:
1) N89°59'09"W, 55.00 FEET;
2) S00°00'51"W, 50.00 FEET;
3) S89°59'09"E, 55.00 FEET TO THE WEST LINE OF THAT TRACT OF LAND AS DESCRIBED IN EXHIBIT C ON SAID FILM 2088 AT RECEPTION NO. 1560711;
THENCE ALONG THE WESTERLY LINES OF THAT TRACT OF LAND AS DESCRIBED IN EXHIBIT C ON SAID FILM 2088 AT RECEPTION NO. 1560711 THE FOLLOWING TWO (2) COURSES:
1) S00°00'51"W, 247.79 FEET;
2) S16°40'10"E, 93.73 FEET TO THE WESTERLY LINE OF PARCEL TK-75 AS DESCRIBED AT SAID RECEPTION NO 2309730;
THENCE ALONG THE WESTERLY AND SOUTHERLY LINES OF PARCEL TK-75 AS DESCRIBED AT SAID RECEPTION NO. 2309730 THE FOLLOWING TWO (2) COURSES:
1) S00°00'51"W, 611.16 FEET;
2) S89°48'29"E, 48.09 FEET TO THE EAST LINE OF THE NE1/4 OF SAID SECTION 29;
THENCE S00°00'51"W, 136.13 FEET ALONG THE EAST LINE OF THE NE1/4 OF SAID SECTION 29 TO THE SOUTHEAST CORNER OF PARCEL 5 AS DESCRIBED IN DEED RECORDED AT RECEPTION NO. 2906901 OF THE RECORDS OF BOULDER COUNTY, COLORADO;
THENCE N89°43'22"W, 2308.90 FEET PARALLEL WITH THE NORTH LINE OF THE NE1/4 OF SAID SECTION 29 TO THE NORTHEASTERLY RIGHT-OF-WAY LINE OF U.S. HIGHWAY NO. 36 AS DESCRIBED AS PARCEL E IN DEED RECORDED AT RECEPTION NO. 2013403 OF THE RECORDS OF BOULDER COUNTY, COLORADO;
THENCE ALONG THE NORTHEASTERLY RIGHT-OF-WAY LINE OF U.S. HIGHWAY NO. 36 AS DESCRIBED AS PARCELS E, B AND C AT SAID RECEPTION NO. 2013403 AND IN DEEDS RECORDED IN BOOK 878 AT PAGE 507 AND BOOK 880 AT PAGE 98 OF THE RECORDS OF BOULDER COUNTY, COLORADO, THE FOLLOWING EIGHT (8) COURSES:
1) N14°10'39"W, 139.83 FEET;
2) N60°40'32"W, 682.73 FEET;
3) N31°43'34"W, 355.23 FEET;
4) N50°05'55"W, 351.45 FEET;
5) N87°28'56"W, 291.28 FEET;
6) N50°04'31"W, 504.79 FEET;
7) N53°13'12"W, 923.62 FEET;
8) N25°29'10"W, 857.10 FEET TO THE NORTH LINE OF THE S1/2 OF THE SW1/4 OF SAID SECTION 20;

LEGAL DESCRIPTION (CONT'D)

THENCE S89°35'16"E, 0.64 FEET ALONG THE NORTH LINE OF THE S1/2 OF THE SW1/4 OF SAID SECTION 20 TO THE MOST EASTERLY CORNER OF THAT TRACT OF LAND AS DESCRIBED IN DEED RECORDED IN BOOK 878 AT PAGE 503 OF THE RECORDS OF BOULDER COUNTY, COLORADO;
THENCE N25°36'10"W, 103.33 FEET ALONG THE EASTERLY LINE OF THAT TRACT OF LAND AS DESCRIBED IN SAID BOOK 878 AT PAGE 503 TO THE EASTERLY LINE OF THAT TRACT OF LAND AS DESCRIBED IN DEED RECORDED AT RECEPTION NO. 1989419 OF THE RECORDS OF BOULDER COUNTY, COLORADO;
THENCE ALONG THE EASTERLY AND NORTHERLY LINES OF THAT TRACT OF LAND AS DESCRIBED AT SAID RECEPTION NO. 1989419 THE FOLLOWING FOUR (4) COURSES:
1) N00°57'04"E, 95.84 FEET;
2) N08°19'13"W, 184.77 FEET;
3) N00°09'40"W, 213.70 FEET;
4) S89°50'20"W, 59.06 FEET TO THE WEST LINE OF THE N1/2 OF THE SW1/4 OF SAID SECTION 20;
THENCE N00°09'40"W, 473.73 FEET ALONG THE WEST LINE OF THE N1/2 OF THE SW1/4 OF SAID SECTION 20 TO THE SOUTH LINE EXTENDED WESTERLY OF THAT TRACT OF LAND AS DESCRIBED IN DEED RECORDED AT RECEPTION NO. 1819920 OF THE RECORDS OF BOULDER COUNTY, COLORADO;
THENCE S89°48'41"E, 290.23 FEET ALONG THE SOUTH LINE EXTENDED WESTERLY AND ALONG THE SOUTH LINE OF THAT TRACT OF LAND AS DESCRIBED AT SAID RECEPTION NO. 1819920 TO THE SOUTHEAST CORNER THEREOF;
THENCE N00°09'40"W, 256.00 FEET ALONG THE EAST LINE OF THAT TRACT OF LAND AS DESCRIBED AT SAID RECEPTION NO. 1819920 TO THE NORTH LINE OF THE SW1/4 OF SAID SECTION 20;
THENCE S89°48'41"E, 50.03 FEET ALONG THE NORTH LINE OF THE SW1/4 OF SAID SECTION 20 TO THE MOST WESTERLY CORNER OF THAT TRACT OF LAND AS DESCRIBED IN DEED RECORDED ON FILM 2169 AT RECEPTION NO. 1658713 OF THE RECORDS OF BOULDER COUNTY, COLORADO;
THENCE ALONG THE SOUTHERLY LINE OF THAT TRACT OF LAND AS DESCRIBED ON SAID FILM 2169 AT RECEPTION NO. 1658713 THE FOLLOWING THREE (3) COURSES:
1) S82°25'31"E, 202.22 FEET TO A POINT OF CURVE TO THE LEFT;
2) SOUTHEASTERLY, 139.86 FEET ALONG THE ARC OF SAID CURVE TO A POINT TANGENT, SAID ARC HAVING A RADIUS OF 1085.00 FEET, A CENTRAL ANGLE OF 07°23'09" AND BEING SUBTENDED BY A CHORD THAT BEARS S86°07'07"E, 139.77 FEET;
3) S89°48'41"E, 1975.06 FEET TO THE WEST LINE OF THE SE1/4 OF SAID SECTION 20;
THENCE N00°02'10"E, 35.00 FEET ALONG THE WEST LINE OF THE SE1/4 OF SAID SECTION 20 TO THE CENTER 1/4 CORNER OF SAID SECTION 20;
THENCE S89°48'41"E, 2625.65 FEET ALONG THE NORTH LINE OF THE SE1/4 OF SAID SECTION 20 TO THE TRUE POINT OF BEGINNING.

EXCEPT THAT PORTION CONVEYED TO PUBLIC SERVICE COMPANY OF COLORADO BY DEED RECORDED FEBRUARY 3, 1983 ON FILM 1238 AS RECEPTION NO. 531604 OF THE RECORDS OF BOULDER COUNTY, COLORADO.

AREA= 390.013 ACRES, MORE OR LESS

LEGAL DESCRIPTION PREPARED BY:
WILLIAM K. WRIGHT, PLS #23529
DREXEL, BARRELL & CO.
1800 38TH STREET
BOULDER, CO 80301

NOTES

1. SEE THE ALTA SURVEY PREPARED BY DREXEL, BARRELL & CO. JOB NO. 3652-32B, DATED SEPTEMBER 29, 2007, LAST REVISED AUGUST 14, 2009, DRAWING NO. A.35-16 FOR EXISTING TOPOGRAPHY, EXISTING UTILITIES AND EXISTING EASEMENTS AND ENCUMBRANCES.
2. NEW PUBLIC UTILITY AND/OR EMERGENCY ACCESS EASEMENTS TO BE GRANTED, AND/OR NEW PUBLIC RIGHTS-OF-WAY TO BE DEDICATED, AND EXISTING EASEMENTS TO REMAIN WILL BE DELINEATED ON THE FINAL PLAT OF THIS PROPERTY.
3. AN ACCESS EASEMENT TO THE TRACT OF LAND OWNED BY PUBLIC SERVICE COMPANY WILL BE DELINEATED ON THE FINAL PLAT OF THIS PROPERTY.
4. STREET NAMES WILL BE SET FORTH IN THE FINAL DEVELOPMENT PLAN(S).
5. PRIVATE UTILITY EASEMENTS SHALL BE AVAILABLE FOR GAS, ELECTRIC, AND TELECOMMUNICATIONS BY CONOCOPHILLIPS GRANTING OF NON-EXCLUSIVE EASEMENTS BY SEPARATE INSTRUMENT.
6. EMERGENCY ACCESS SHALL BE SOLELY LIMITED TO LAW ENFORCEMENT, FIRE AND EMERGENCY MEDICAL VEHICLES AND PERSONNEL.
7. MAINTENANCE ACCESS TO ALL STORM DRAINAGE FACILITIES ON THE CAMPUS IS GRANTED TO THE CITY OF LOUISVILLE TO ASSURE CONTINUOUS OPERATIONAL CAPABILITY OF THE DRAINAGE SYSTEM. THE PROPERTY OWNER SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF ALL DRAINAGE FACILITIES INCLUDING INLETS, PIPES, CULVERTS, CHANNELS, DITCHES, HYDRAULIC STRUCTURES AND DETENTION BASINS LOCATED ON THE SITE. SHOULD THE OWNER FAIL TO MAINTAIN SAID FACILITIES, THE CITY, AFTER PROVIDING OWNER WITH WRITTEN NOTICE OF SPECIFIC MAINTENANCE ITEMS TO BE CORRECTED AND A REASONABLE OPPORTUNITY TO CURE, MAY PROVIDE NECESSARY MAINTENANCE AND ASSESS THE MAINTENANCE COST TO THE OWNER OF THE PROPERTY UPON WHICH THE FACILITY IS LOCATED.
8. ACCESS TO ALL PUBLIC WATER AND SEWER FACILITIES IS GRANTED TO THE CITY OF LOUISVILLE FOR THE PURPOSE OF INSPECTING, MAINTAINING, REPAIRING AND REPLACING PUBLIC WATER AND SANITARY SEWER IMPROVEMENTS. ANY PRIVATE WATER AND SANITARY SEWER FACILITY LOCATED ON THE SITE SHALL BE MAINTAINED BY THE OWNER OF THE PROPERTY UPON WHICH THE FACILITY IS LOCATED. THE CITY OF LOUISVILLE SHALL HAVE THE RIGHT TO ENTER THE SITE TO INSPECT SAID WATER AND SANITARY SEWER FACILITIES. IF THESE PRIVATE WATER AND SEWER FACILITIES ARE NOT PROPERLY MAINTAINED, THE CITY, AFTER PROVIDING THE OWNER WITH WRITTEN NOTICE OF SPECIFIC MAINTENANCE ITEMS TO BE CORRECTED AND A REASONABLE OPPORTUNITY TO CURE, MAY PROVIDE NECESSARY MAINTENANCE AND ASSESS THE MAINTENANCE COST TO THE OWNER OF THE PROPERTY UPON WHICH THE FACILITY IS LOCATED.
9. ALL ROADWAYS INTERNAL TO THE SITE, STREETS A-F, ARE PRIVATE AND WILL BE PRIVATELY OWNED AND MAINTAINED, ACCESSIBLE ONLY TO CONOCOPHILLIPS EMPLOYEES, AUTHORIZED VISITORS AND ACCESS EASEMENT HOLDERS.
10. THE PUBLIC LAND DEDICATION SHALL BE LIMITED TO LAND OUTSIDE OF THE CAMPUS SECURITY BOUNDARY AS SET FORTH AND DEPICTED HEREIN. THE RESPONSIBILITIES OF THE CITY AND CONOCOPHILLIPS RESPECTIVELY, AS WELL AS ANY RESTRICTIONS PERTAINING TO USE, LOCATION, AESTHETICS AND MAINTENANCE OF THE LAND AND IMPROVEMENTS, SHALL BE SET FORTH BY DEED RESTRICTIONS AND/OR SEPARATE AGREEMENT(S) OR OTHER INSTRUMENT(S) TO BE AGREED UPON BY AND BETWEEN THE CITY AND CONOCOPHILLIPS AND SHALL BE CONSISTENT WITH CONOCOPHILLIPS' FINAL DEVELOPMENT PLAN(S). NOTWITHSTANDING THE FOREGOING, ALLOWED USES OF DEDICATED PUBLIC LAND SHALL INCLUDE ROADWAY CONNECTIONS AND UTILITY IMPROVEMENTS UNLESS SPECIFICALLY EXCLUDED BY AGREEMENT OF THE PARTIES IN WRITING.

h+k
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f +1 303 832 1713
PLANNER / LANDSCAPE ARCHITECT

CYL
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CIVIL ENGINEER

Drexel, Barrell & Co.
Engineers/Surveyors
1800 38th Street
Boulder, CO 80301
Tel: (303) 442-4338
Fax: (303) 442-4373
SURVEYOR

ISSUE / REVISION	DATE
PRELIMINARY PLAT SUBMITTAL	11/12/2009
RESUBMITTAL	3/5/2010

CONOCOPHILLIPS CAMPUS
2270 SO. 96TH STREET
LOUISVILLE, CO

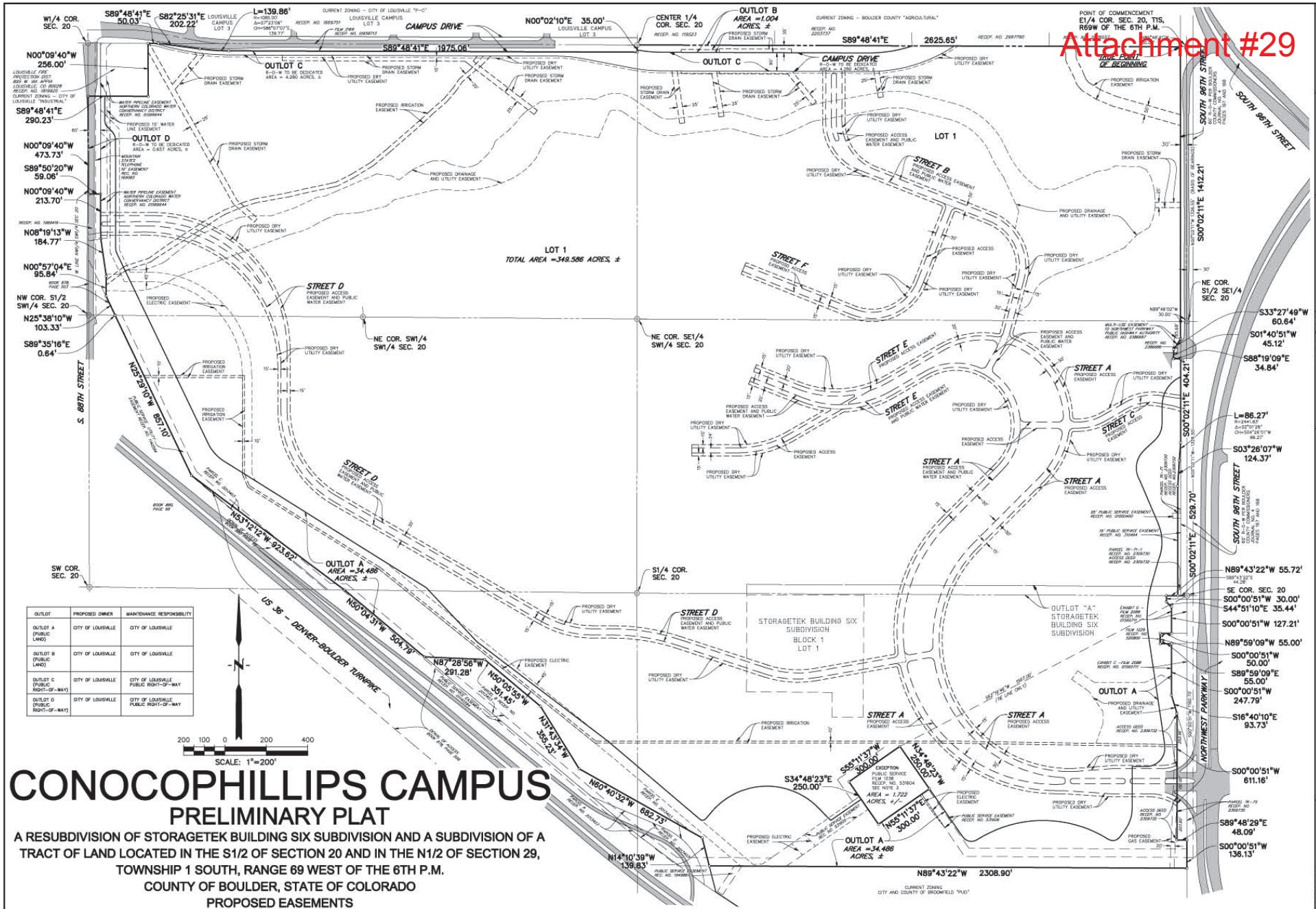
PRELIMINARY PLAT

DRAWN: BJS
CHK: WKW
PRJ #: 3652-32B

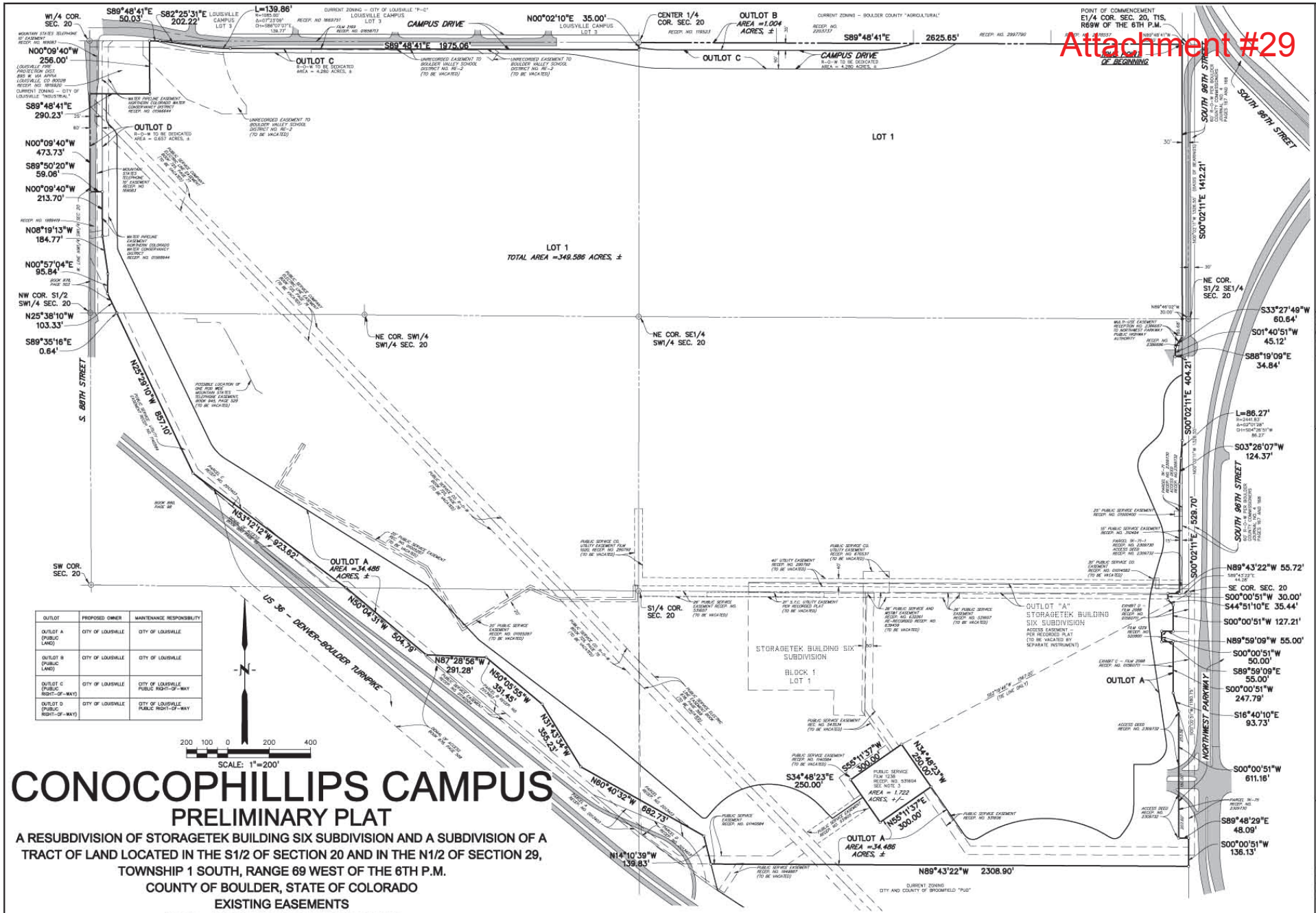
SHEET NUMBER:
1 OF 3

S:\3652-32B\DWG\PRELIMS\MOD-STATE PLANE\PRELIMINARY PLAT\3652S32BPP01.C3D.dwg, 1/29/2010 10:15:57 AM, Drexel, Barrell & Co..stb

Attachment #29


W1/4 COR. SEC. 20
S89°48'41"E 50.03'
S82°25'31"E 202.22'
L=139.86'
CAMPUS DRIVE
N00°02'10"E 35.00'
CENTER 1/4 COR. SEC. 20
OUTLOT B AREA =1.004 ACRES, ±
S89°48'41"E 2625.65'
POINT OF COMMENCEMENT E1/4 COR. SEC. 20, T1S, R69W OF THE 6TH P.M.
TRUE POINT OF BEGINNING
S89°48'41"E 1975.06'
N00°09'40"W 256.00'
OUTLOT C
S89°48'41"E 290.23'
OUTLOT D
N00°09'40"W 473.73'
S89°50'20"W 59.06'
N00°09'40"W 213.70'
N08°19'13"W 184.77'
N00°57'04"E 95.84'
NW COR. S1/2 SW1/4 SEC. 20
N25°38'10"W 103.33'
S89°35'16"E 0.64'
LOT 1
TOTAL AREA =349.586 ACRES, ±
STREET A
STREET B
STREET C
STREET D
STREET E
STREET F
NE COR. SW1/4 SW1/4 SEC. 20
NE COR. SE1/4 SW1/4 SEC. 20
NE COR. S1/2 SE1/4 SEC. 20
S00°02'11"E 1412.21'
S00°02'11"E 404.21'
S00°02'11"E 529.70'
S33°27'49"W 60.64'
S01°40'51"W 45.12'
S88°19'09"E 34.84'
L=86.27'
S03°26'07"W 124.37'
S. 88TH STREET
SOUTH 96TH STREET
NORTHWEST PARKWAY
N25°29'10"W 857.10'
N53°12'12"W 923.82'
N50°04'31"W 504.79'
N87°28'56"W 291.28'
N50°05'55"W 351.45'
N37°43'34"W 395.23'
N80°40'32"W 682.73'
N14°10'39"W 139.83'
SW COR. SEC. 20
S1/4 COR. SEC. 20
OUTLOT A AREA =34.486 ACRES, ±
US 36 - DENVER-BOULDER TURNPIKE
STORAGETEK BUILDING SIX SUBDIVISION BLOCK 1 LOT 1
OUTLOT "A" STORAGETEK BUILDING SIX SUBDIVISION
N89°43'22"W 55.72'
SE COR. SEC. 20
S00°00'51"W 30.00'
S44°51'10"E 35.44'
S00°00'51"W 127.21'
N89°59'09"W 55.00'
S00°00'51"W 50.00'
S89°59'09"E 55.00'
S00°00'51"W 247.79'
S16°40'10"E 93.73'
S00°00'51"W 611.16'
S89°48'29"E 48.09'
S00°00'51"W 136.13'
S34°48'23"E 250.00'
N34°48'23"W 250.00'
S55°11'37"W 300.00'
N55°11'37"E 300.00'
EXCEPTION PUBLIC SERVICE FILM 1238 RECEP. NO. 531604 SEE NOTE 3
AREA = 1.722 ACRES, +/-
N89°43'22"W 2308.90'
CURRENT ZONING CITY AND COUNTY OF BROOMFIELD "PUD"
CURRENT ZONING – BOULDER COUNTY "AGRICULTURAL"
CURRENT ZONING – CITY OF LOUISVILLE "P–C"
CURRENT ZONING – CITY OF LOUISVILLE "INDUSTRIAL"
LOUISVILLE CAMPUS LOT 3
LOUISVILLE CAMPUS LOT 1
PROPOSED ACCESS EASEMENT AND PUBLIC WATER EASEMENT
PROPOSED DRY UTILITY EASEMENT
PROPOSED STORM DRAIN EASEMENT
PROPOSED IRRIGATION EASEMENT
PROPOSED DRAINAGE AND UTILITY EASEMENT
PROPOSED ELECTRIC EASEMENT
PROPOSED GAS EASEMENT
PUBLIC SERVICE EASEMENT REC. NO. 1240806
PROPOSED 15' WATER LINE EASEMENT
WATER PIPELINE EASEMENT NORTHERN COLORADO WATER CONSERVANCY DISTRICT RECEIP. NO. 01666644
MOUNTAIN STATES TELEPHONE TEL EASEMENT REC. NO. 1809983
WATER PIPELINE EASEMENT NORTHERN COLORADO WATER CONSERVANCY DISTRICT RECEIP. NO. 01666644
MULTI-USE EASEMENT TO NORTHWEST PARKWAY PUBLIC HIGHWAY AUTHORITY RECEP. NO. 2388888
PUBLIC SERVICE EASEMENT RECEP. NO. 2010004600
PUBLIC SERVICE EASEMENT RECEP. NO. 2004494
PARCEL 36-TH-1 RECEP. NO. 2309730 ACCESS DEED RECEP. NO. 2309732
EXHIBIT C - FILM 2088 RECEP. NO. 01666171
EXHIBIT G - FILM 1238 RECEP. NO. 01666170
FILM 1238 RECEP. NO. 530800
ACCESS DEED RECEP. NO. 2309732
PARCEL 36-TH-2 RECEP. NO. 2309730
ACCESS DEED RECEP. NO. 2309732
SOUTH 96TH STREET (WIDTH VARIES) RECEP. NO. 2309730 BOOK 4 PAGES 167 AND 168
NORTHWEST PARKWAY (WIDTH VARIES) RECEP. NO. 2309730 BOOK 4 PAGES 167 AND 168
BOOK 889 PAGE 98
BOOK 878 PAGE 363
RECEP. NO. 1989419
RECEP. NO. 1999822
RECEP. NO. 1999751
FILM 2169 RECEP. NO. 01658713
RECEP. NO. 2003737
RECEP. NO. 2007790
RECEP. NO. 1993533
RECEP. NO. 2388888
RECEP. NO. 2309732
RECEP. NO. 2309730
RECEP. NO. 2309732
RECEP. NO. 2309730
RECEP. NO. 2309732
RECEP. NO. 2309730

Attachment #29


W1/4 COR. SEC. 20
S89°48'41"E 50.03'
S82°25'31"E 202.22'
L=139.86'
CAMPUS DRIVE
S89°48'41"E 1975.06'
N00°02'10"E 35.00'
CENTER 1/4 COR. SEC. 20
OUTLOT B AREA = 1.004 ACRES, ±
S89°48'41"E 2625.65'
POINT OF COMMENCEMENT E1/4 COR. SEC. 20, T1S, R69W OF THE 6TH P.M.
POINT OF BEGINNING
N00°09'40"W 256.00'
S89°48'41"E 290.23'
OUTLOT C
OUTLOT D
N00°09'40"W 473.73'
S89°50'20"W 59.06'
N00°09'40"W 213.70'
N08°19'13"W 184.77'
N00°57'04"E 95.84'
NW COR. S1/2 SW1/4 SEC. 20
N25°38'10"W 103.33'
S89°35'16"E 0.64'
S. 88TH STREET
N25°29'10"W 857.10'
LOT 1
LOT 1 TOTAL AREA =349.586 ACRES, ±
NE COR. SW1/4 SW1/4 SEC. 20
NE COR. SE1/4 SW1/4 SEC. 20
NE COR. S1/2 SE1/4 SEC. 20
SOUTH 96TH STREET
S00°02'11"E 1412.21'
S33°27'49"W 60.64'
S01°40'51"W 45.12'
S88°19'09"E 34.84'
S00°02'11"E 404.21'
L=86.27'
S03°26'07"W 124.37'
S00°02'11"E 529.70'
N89°43'22"W 55.72'
SE COR. SEC. 20
S00°00'51"W 30.00'
S44°51'10"E 35.44'
S00°00'51"W 127.21'
N89°59'09"W 55.00'
S00°00'51"W 50.00'
S89°59'09"E 55.00'
S00°00'51"W 247.79'
S16°40'10"E 93.73'
S00°00'51"W 611.16'
S89°48'29"E 48.09'
S00°00'51"W 136.13'
NORTHWEST PARKWAY
SW COR. SEC. 20
S1/4 COR. SEC. 20
OUTLOT A AREA = 34.486 ACRES, ±
US 36 - DENVER-BOULDER TURNPIKE
N53°12'12"W 923.62'
N50°04'31"W 504.79'
N87°28'56"W 291.28'
N50°05'55"W 351.45'
N37°43'34"W 355.23'
N80°40'32"W 682.73'
N14°10'39"W 139.83'
N89°43'22"W 2308.90'
S34°48'23"E 250.00'
S55°11'37"W 300.00'
N34°48'23"W 250.00'
N55°11'37"E 300.00'
OUTLOT A AREA = 34.486 ACRES, ±
OUTLOT "A" STORAGETEK BUILDING SIX SUBDIVISION
STORAGETEK BUILDING SIX SUBDIVISION
BLOCK 1
LOT 1
OUTLOT A
CURRENT ZONING — CITY OF LOUISVILLE "P-C"
CURRENT ZONING — BOULDER COUNTY "AGRICULTURAL"
CURRENT ZONING CITY AND COUNTY OF BROOMFIELD "PUD"
LOUISVILLE CAMPUS LOT 3
UNRECORDED EASEMENT TO BOULDER VALLEY SCHOOL DISTRICT NO. RE-2 (TO BE VACATED)
UNRECORDED EASEMENT TO BOULDER VALLEY SCHOOL DISTRICT NO. RE-1 (TO BE VACATED)
PUBLIC SERVICE EASEMENT RECEPTION NO. 1946887 (TO BE VACATED)
PUBLIC SERVICE EASEMENT RECEPTION NO. 1946884 (TO BE VACATED)
PUBLIC SERVICE EASEMENT RECEPTION NO. 1946885 (TO BE VACATED)
PUBLIC SERVICE EASEMENT RECEPTION NO. 1946886 (TO BE VACATED)
PUBLIC SERVICE EASEMENT RECEPTION NO. 1946887 (TO BE VACATED)
PUBLIC SERVICE EASEMENT RECEPTION NO.

CONOCOPHILLIPS CAMPUS

PRELIMINARY PUD DEVELOPMENT PLAN

A PART OF THE SOUTH HALF OF SECTION 20, THE NORTH HALF OF SECTION 29,
TOWNSHIP 1 SOUTH, RANGE 69 WEST OF THE 6TH P.M.

COVER SHEET

SHEET 1 OF 11

LEGAL DESCRIPTION:

A TRACT OF LAND LOCATED IN THE S1/2 OF SECTION 20 AND IN THE N1/2 OF THE N1/2 OF SECTION 29, T1S, R69W OF THE 6TH P.M., COUNTY OF BOULDER, STATE OF COLORADO, DESCRIBED AS FOLLOWS:

BASIS OF BEARINGS: THE EAST LINE OF THE SE1/4 OF SECTION 20 ASSUMED TO BEAR N00°32'11"W.

COMMENCING AT THE E1/4 CORNER OF SAID SECTION 20, THENCE N89°48'41"W, 30.00 FEET ALONG THE NORTH LINE OF THE SE1/4 OF SAID SECTION 20 TO THE WEST LINE OF THE EAST 30 FEET OF THE SE1/4 OF SAID SECTION 20 AND THE TRUE POINT OF BEGINNING;
THENCE S00°32'11"E, 1412.21 FEET PARALLEL WITH THE EAST LINE OF THE SE1/4 OF SAID SECTION 20 TO THE NORTH LINE OF THAT TRACT OF LAND AS DESCRIBED IN DEED RECORDED AT RECEPTION NO. 2386886 OF THE RECORDS OF BOULDER COUNTY, COLORADO;
THENCE ALONG THE NORTHWESTERLY, WESTERLY AND SOUTHERLY LINES OF THAT TRACT OF LAND AS DESCRIBED AT SAID RECEPTION NO. 2386886 THE FOLLOWING THREE (3) COURSES:
1) S33°27'49"W, 60.84 FEET;
2) S01°40'51"W, 45.12 FEET;
3) S88°19'09"E, 34.84 FEET TO THE WEST LINE OF THE EAST 30 FEET OF THE SE1/4 OF SAID SECTION 20;
THENCE S00°50'11"E, 494.21 FEET PARALLEL WITH THE EAST LINE OF THE SE1/4 OF SAID SECTION 20 TO THE MOST NORTHERLY CORNER OF THAT TRACT OF LAND AS DESCRIBED AS PARCEL TK-71 IN DEED RECORDED AT RECEPTION NO. 2309730 OF THE RECORDS OF BOULDER COUNTY, COLORADO;
THENCE ALONG THE WESTERLY LINES OF PARCEL TK-71 AND PARCEL TK-71-1 AS DESCRIBED AT SAID RECEPTION NO. 2309730 THE FOLLOWING THREE (3) COURSES:
1) SOUTHERLY, 88.27 FEET ALONG THE ARC OF A CURVE CONCAVE TO THE EAST TO A POINT TANGENT, SAID ARC HAVING A RADIUS OF 2441.83 FEET, A CENTRAL ANGLE OF 02°01'29" AND BEING SUBTENDED BY A CHORD THAT BEARS S04°26'51"W, 88.27 FEET;
2) S03°26'07"W, 124.37 FEET;
3) S00°50'11"E, 529.70 FEET TO THE SOUTH LINE OF SAID SECTION 20 AND THE NORTH LINE OF THAT TRACT OF LAND AS DESCRIBED IN EXHIBIT D IN DEED RECORDED ON FILM 2088 AT RECEPTION NO. 1560711 OF THE RECORDS OF BOULDER COUNTY, COLORADO;
THENCE ALONG THE NORTHERLY AND WESTERLY LINES OF THAT TRACT OF LAND AS DESCRIBED IN EXHIBIT D ON SAID FILM 2088 AT RECEPTION NO. 1560711 THE FOLLOWING FOUR (4) COURSES:
1) N89°43'22"W, 55.72 FEET;
2) S00°00'51"W, 30.00 FEET;
3) S44°51'10"E, 35.44 FEET;
4) S00°00'51"W, 127.21 FEET TO THE NORTH LINE OF THAT TRACT OF LAND AS DESCRIBED IN DEED RECORDED ON FILM 1229 AT RECEPTION NO. 520600 OF THE RECORDS OF BOULDER COUNTY, COLORADO;
THENCE ALONG THE NORTHERLY, WESTERLY AND SOUTHERLY LINES OF THAT TRACT OF LAND AS DESCRIBED ON SAID FILM 1229 AT RECEPTION NO. 520600 THE FOLLOWING THREE (3) COURSES:
1) N89°59'09"W, 55.00 FEET;
2) S00°00'51"W, 50.00 FEET;
3) S89°59'09"E, 55.00 FEET TO THE WEST LINE OF THAT TRACT OF LAND AS DESCRIBED IN EXHIBIT C ON SAID FILM 2088 AT RECEPTION NO. 1560711;
THENCE ALONG THE WESTERLY LINES OF THAT TRACT OF LAND AS DESCRIBED IN EXHIBIT C ON SAID FILM 2088 AT RECEPTION NO. 1560711 THE FOLLOWING TWO (2) COURSES:
1) S00°00'51"W, 247.79 FEET;
2) S16°46'10"E, 99.73 FEET TO THE WESTERLY LINE OF PARCEL TK-75 AS DESCRIBED AT SAID RECEPTION NO 2309730;
THENCE ALONG THE WESTERLY AND SOUTHERLY LINES OF PARCEL TK-75 AS DESCRIBED AT SAID RECEPTION NO. 2309730 THE FOLLOWING TWO (2) COURSES:
1) S00°00'51"W, 611.16 FEET;
2) S89°48'29"E, 48.09 FEET TO THE EAST LINE OF THE NE1/4 OF SAID SECTION 29;
THENCE S00°00'51"W, 136.13 FEET ALONG THE EAST LINE OF THE NE1/4 OF SAID SECTION 29 TO THE SOUTHEAST CORNER OF PARCEL 5 AS DESCRIBED IN DEED RECORDED AT RECEPTION NO. 2306901 OF THE RECORDS OF BOULDER COUNTY, COLORADO;
THENCE N89°43'22"W, 2306.90 FEET PARALLEL WITH THE NORTH LINE OF THE NE1/4 OF SAID SECTION 29 TO THE NORTHEASTERLY RIGHT-OF-WAY LINE OF U.S. HIGHWAY NO. 36 AS DESCRIBED AS PARCEL 6, IN DEED RECORDED AT RECEPTION NO. 2013403 OF THE RECORDS OF BOULDER COUNTY, COLORADO;
THENCE ALONG THE NORTHEASTERLY RIGHT-OF-WAY LINE OF U.S. HIGHWAY NO. 36 AS DESCRIBED AS PARCELS 6, 8 AND C AT SAID RECEPTION NO. 2013403 AND IN DEEDS RECORDED IN BOOK 878 AT PAGE 507 AND BOOK 880 AT PAGE 96 OF THE RECORDS OF BOULDER COUNTY, COLORADO, THE FOLLOWING EIGHT (8) COURSES:
1) N14°10'39"W, 139.83 FEET;
2) N60°40'32"W, 682.73 FEET;
3) N31°43'54"W, 355.23 FEET;
4) N50°05'55"W, 351.45 FEET;
5) N67°29'56"W, 291.26 FEET;
6) N50°04'51"W, 304.79 FEET;
7) N53°12'12"W, 923.62 FEET;
8) N25°29'10"W, 857.10 FEET TO THE NORTH LINE OF THE S1/2 OF THE SW1/4 OF SAID SECTION 20;
THENCE S89°35'16"E, 0.64 FEET ALONG THE NORTH LINE OF THE S1/2 OF THE SW1/4 OF SAID SECTION 20 TO THE MOST EASTERLY CORNER OF THAT TRACT OF LAND AS DESCRIBED IN DEED RECORDED IN BOOK 878 AT PAGE 503 OF THE RECORDS OF BOULDER COUNTY, COLORADO;

CONTINUED...

THENCE N25°38'10"W, 103.33 FEET ALONG THE EASTERLY LINE OF THAT TRACT OF LAND AS DESCRIBED IN SAID BOOK 878 AT PAGE 503 TO THE EASTERLY LINE OF THAT TRACT OF LAND AS DESCRIBED IN DEED RECORDED AT RECEPTION NO. 1989419 OF THE RECORDS OF BOULDER COUNTY, COLORADO;
THENCE ALONG THE EASTERLY AND NORTHERLY LINES OF THAT TRACT OF LAND AS DESCRIBED AT SAID RECEPTION NO. 1989419 THE FOLLOWING FOUR (4) COURSES:
1) N00°57'04"E, 90.86 FEET;
2) N08°19'13"W, 184.77 FEET;
3) N00°09'40"W, 213.70 FEET;
4) S89°50'20"W, 59.08 FEET TO THE WEST LINE OF THE N1/2 OF THE SW1/4 OF SAID SECTION 20;
THENCE N00°09'40"W, 473.73 FEET ALONG THE WEST LINE OF THE N1/2 OF THE SW1/4 OF SAID SECTION 20 TO THE SOUTH LINE EXTENDED WESTERLY OF THAT TRACT OF LAND AS DESCRIBED IN DEED RECORDED AT RECEPTION NO. 1819920 OF THE RECORDS OF BOULDER COUNTY, COLORADO;
THENCE S89°48'41"E, 390.23 FEET ALONG THE SOUTH LINE EXTENDED WESTERLY AND ALONG THE SOUTH LINE OF THAT TRACT OF LAND AS DESCRIBED AT SAID RECEPTION NO. 1819920 TO THE SOUTHEAST CORNER THEREOF;
THENCE N00°09'40"W, 236.00 FEET ALONG THE EAST LINE OF THAT TRACT OF LAND AS DESCRIBED AT SAID RECEPTION NO. 1819920 TO THE NORTH LINE OF THE SW1/4 OF SAID SECTION 20;
THENCE S89°48'41"E, 50.03 FEET ALONG THE NORTH LINE OF THE SW1/4 OF SAID SECTION 20 TO THE MOST WESTERLY CORNER OF THAT TRACT OF LAND AS DESCRIBED IN DEED RECORDED ON FILM 2169 AT RECEPTION NO. 1658713 OF THE RECORDS OF BOULDER COUNTY, COLORADO;
THENCE ALONG THE SOUTHERLY LINE OF THAT TRACT OF LAND AS DESCRIBED ON SAID FILM 2169 AT RECEPTION NO. 1658713 THE FOLLOWING THREE (3) COURSES:
1) S82°23'31"E, 202.22 FEET TO A POINT OF CURVE TO THE LEFT;
2) SOUTHEASTERLY, 139.66 FEET ALONG THE ARC OF SAID CURVE TO A POINT TANGENT, SAID ARC HAVING A RADIUS OF 1085.00 FEET, A CENTRAL ANGLE OF 07°23'09" AND BEING SUBTENDED BY A CHORD THAT BEARS S86°07'07"E, 139.77 FEET;
3) S89°48'41"E, 1975.06 FEET TO THE WEST LINE OF THE SE1/4 OF SAID SECTION 20;
THENCE N00°02'10"E, 35.00 FEET ALONG THE WEST LINE OF THE SE1/4 OF SAID SECTION 20 TO THE CENTER 1/4 CORNER OF SAID SECTION 20; THENCE S89°48'41"E, 2625.65 FEET ALONG THE NORTH LINE OF THE SE1/4 OF SAID SECTION 20 TO THE TRUE POINT OF BEGINNING.

EXCEPT THAT PORTION CONVEYED TO PUBLIC SERVICE COMPANY OF COLORADO BY DEED RECORDED FEBRUARY 3, 1993 ON FILM 1238 AS RECEPTION NO. 531604 OF THE RECORDS OF BOULDER COUNTY, COLORADO.

AREA= 390.013 ACRES, MORE OR LESS

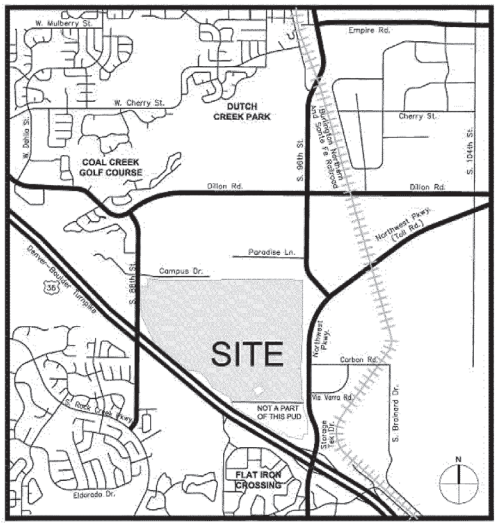
LEGAL DESCRIPTION PREPARED BY:
WILLIAM K. WRIGHT, PLS #23529
DREXEL, BARRELL & CO.
1800 38TH STREET
BOULDER, CO 80301

NOTES:

1. OFFSITE PARCEL BOUNDARIES SHOWN ARE APPROXIMATE, BASED ON COMMUNITY MASTER PLANNING MAPS AND BOULDER COUNTY TAX ASSESSOR MAPS.
2. THE SURVEY INFORMATION SHOWN IN THIS PRELIMINARY PUD DEVELOPMENT PLAN IS PER THE ALTA SURVEY DATED AUGUST, 2009 BY DREXEL BARRELL AND COMPANY.
3. THE FLOODPLAIN DEPICTED ON THIS PRELIMINARY PUD DEVELOPMENT PLAN IS FOR ROCK CREEK WITHIN ZONE X BASED ON THE FEMA FIRM 08007C0555F, DATED AUGUST 16, 2004. ZONE X IS CLASSIFIED AS AREAS OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1' OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 100-YEAR FLOOD. THIS FLOODPLAIN IS LOCATED WITHIN THE CITY AND COUNTY OF BROOMFIELD AND NOT A PART OF THIS PRELIMINARY PUD DEVELOPMENT PLAN.
4. NO HISTORIC STRUCTURES EXIST ON THE SITE.
5. THE EXISTING XCEL SUBSTATION IS NOT A PART OF THIS PRELIMINARY PUD DEVELOPMENT PLAN.

GENERAL NOTES AND STANDARDS/ALL PLANNING AREAS:

1. DEVELOPMENT SHALL CONFORM AND BE CONSISTENT WITH THE LOUISVILLE MUNICIPAL CODE AND THE COMMERCIAL DEVELOPMENT DESIGN STANDARDS AND GUIDELINES AS MODIFIED BY THIS PRELIMINARY PUD DEVELOPMENT PLAN, THE GENERAL DEVELOPMENT PLAN OR THE FINAL DEVELOPMENT PLAN(S).
2. PUBLIC IMPROVEMENTS WILL BE CONSTRUCTED IN ACCORDANCE WITH THE PHASING SCHEDULE OUTLINED IN THE DEVELOPMENT AGREEMENT.
3. MAINTENANCE ACCESS TO ALL STORM DRAINAGE FACILITIES ON THE CAMPUS IS GRANTED TO THE CITY OF LOUISVILLE TO ASSURE CONTINUOUS OPERATIONAL CAPABILITY OF THE DRAINAGE SYSTEM. THE PROPERTY OWNER SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF ALL DRAINAGE FACILITIES INCLUDING INLETS, PIPES, CULVERTS, CHANNELS, DITCHES, HYDRAULIC STRUCTURES AND DETENTION BASINS LOCATED ON THE SITE. SHOULD THE OWNER FAIL TO MAINTAIN SAID FACILITIES, THE CITY, AFTER PROVIDING OWNER WITH WRITTEN NOTICE OF SPECIFIC MAINTENANCE ITEMS TO BE CORRECTED AND A REASONABLE OPPORTUNITY TO CURE, MAY PROVIDE NECESSARY MAINTENANCE AND ASSESS THE MAINTENANCE COST TO THE OWNER OF THE PROPERTY UPON WHICH THE FACILITY IS LOCATED.
4. ACCESS TO ALL PUBLIC WATER FACILITIES IS GRANTED TO THE CITY OF LOUISVILLE FOR THE PURPOSE OF INSPECTING, MAINTAINING, REPAIRING AND REPLACING PUBLIC WATER IMPROVEMENTS. ANY PRIVATE WATER AND SANITARY SEWER FACILITY LOCATED ON THE SITE SHALL BE MAINTAINED BY THE OWNER OF THE PROPERTY UPON WHICH THE FACILITY IS LOCATED. THE CITY OF LOUISVILLE SHALL HAVE THE RIGHT TO ENTER THE SITE TO INSPECT SAID WATER FACILITIES. IF THESE PRIVATE WATER AND SEWER FACILITIES ARE NOT PROPERLY MAINTAINED, THE CITY, AFTER PROVIDING THE OWNER WITH WRITTEN NOTICE OF SPECIFIC MAINTENANCE ITEMS TO BE CORRECTED AND A REASONABLE OPPORTUNITY TO CURE, MAY PROVIDE NECESSARY MAINTENANCE AND ASSESS THE MAINTENANCE COST TO THE OWNER OF THE PROPERTY UPON WHICH THE FACILITY IS LOCATED.
5. EXISTING BODIES OF WATER, DRAINAGE CHANNELS AND DITCH ALIGNMENTS MAY BE ALTERED, RELOCATED OR CHANNELIZED TO CONFORM TO THE CITY OF LOUISVILLE, BOULDER COUNTY STORM DRAINAGE DESIGN AND TECHNICAL CRITERIA MANUAL AND OTHER APPLICABLE REGULATIONS PROVIDED CONSENT FROM THIRD PARTIES POSSESSING A PROPERTY RIGHT IN SUCH WATER OR WATER FACILITIES IS SECURED IN ADVANCE.
6. ALL PEDESTRIAN AND BICYCLE TRAILS WITHIN THE CAMPUS SECURITY BOUNDARY SHALL REMAIN A PRIVATE AMENITY FOR CONOCOPHILLIPS EMPLOYEES AND AUTHORIZED VISITORS.
7. PROPOSED PEDESTRIAN AND BICYCLE TRAILS OUTSIDE OF THE CAMPUS SECURITY BOUNDARY SHALL CONNECT TO THE LOUISVILLE COMPREHENSIVE TRAIL SYSTEM.
8. ANY IMPACTS ON RESIDENTIAL DWELLINGS ADJACENT TO CAMPUS DRIVE, AS EXTENDED, SHALL BE MITIGATED THROUGH THE USE OF SUCH BUFFERING MECHANISMS AS LANDSCAPING, EARTHEN BERMS AND/OR FENCING.
9. THE SITE WILL BE SECURE AND ACCESSIBLE TO ONLY CONOCOPHILLIPS EMPLOYEES AND AUTHORIZED VISITORS. ALL ROADWAYS INTERNAL TO THE SITE ARE PRIVATE ROADS ACCESSIBLE TO CONOCOPHILLIPS EMPLOYEES AND AUTHORIZED VISITORS ONLY AND SHALL BE THE MAINTENANCE RESPONSIBILITY OF CONOCOPHILLIPS.
10. THE ALIGNMENT OF ALL ACCESS POINTS, INTERNAL ROADS AND DRAINAGE FACILITIES ARE CONCEPTUAL AND SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE FINAL DEVELOPMENT PLAN(S).
11. A VARIETY OF PERIMETER BARRIER TYPES WILL BE UTILIZED TO SECURE THE SITE, THE HEIGHTS, STYLES AND LOCATION OF WHICH SHALL BE ESTABLISHED ON THE FINAL DEVELOPMENT PLAN(S).
12. THE CAMPUS SECURITY BOUNDARY WILL NOT EXTEND OUTSIDE OF THE SITE BOUNDARY.
13. SIGNAGE STANDARDS, DIMENSIONS, LOCATIONS, TYPES AND DESIGNS WILL BE SET FORTH IN THE FINAL DEVELOPMENT PLAN(S).



VICINITY MAP

SCALE: 1" = 2000'

SHEET INDEX

1	COVER SHEET
2	MASTER PLAN AND GENERAL NOTES
3	TRANSPORTATION PLAN
4	PRELIMINARY UTILITY PLAN
5	PRELIMINARY UTILITY PLAN
6	PRELIMINARY OFFSITE WATER
7	PRELIMINARY GRADING AND DRAINAGE PLAN
8	PRELIMINARY GRADING AND DRAINAGE PLAN
9	LANDSCAPE PLAN
10	LANDSCAPE NARRATIVE AND PLANT SCHEDULE
11	VEHICULAR/PEDESTRIAN CIRCULATION PLAN

CERTIFICATIONS/SIGNATURE BLOCKS

CITY COUNCIL CERTIFICATION:

APPROVED THIS _____ DAY OF _____, 20____ BY THE CITY COUNCIL OF THE CITY OF LOUISVILLE, COLORADO.

RESOLUTION NO. _____ SERIES _____. CITY SEAL

MAYOR SIGNATURE

CITY CLERK SIGNATURE

PLANNING COMMISSION CERTIFICATION:

APPROVED THIS _____ DAY OF _____, 20____ BY THE PLANNING COMMISSION OF THE CITY OF LOUISVILLE, COLORADO.

RESOLUTION NO. _____, SERIES_____.

CLERK AND RECORDER CERTIFICATE - COUNTY OF BOULDER, STATE OF COLORADO:

I HEREBY CERTIFY THAT THIS INSTRUMENT WAS FILED IN MY OFFICE AT _____ O'CLOCK, ____ M., THIS ____ DAY OF _____, 20____, AND IS RECORDED IN PLAN FILE _____, FEE _____, PAID _____, FILM NO. _____, RECEPTION: _____.

CLERK AND RECORDER DEPUTY

OWNERSHIP SIGNATURE BLOCK:

BY SIGNING THIS PRELIMINARY PUD DEVELOPMENT PLAN, THE OWNER ACKNOWLEDGES AND ACCEPTS ALL THE REQUIREMENTS AND INTENT SET FORTH IN THIS PRELIMINARY PUD DEVELOPMENT PLAN. WITNESS OUR HANDS AND SEALS

THIS ____ DAY OF _____, 20____.

OWNER
CONOCOPHILLIPS COMPANY
A DELAWARE CORPORATION

BY: SIGNATURE TITLE

NOTARY NAME AND SIGNATURE

MY COMMISSION EXPIRES _____.

PROPERTY AREA TABLE

GROSS PROPERTY AREA:	431.578 ACRES
GROSS DEVELOPABLE AREA (PUD BOUNDARY):	390.013 ACRES
AREA WITHIN CITY of LOUISVILLE LIMITS	310.091 ACRES
AREA WITHIN BOULDER COUNTY (TO BE ANNEXED TO CITY of LOUISVILLE)	79.922 ACRES
AREA WITHIN CITY and COUNTY OF BROOMFIELD	41.565 ACRES
ZONING:	PLANNED COMMUNITY ZONED DISTRICT (PCZD) - COMMERCIAL WITH PUD-C OVERLAY
PLANNED ACCESS:	NORTHWEST PARKWAY, CAMPUS DRIVE, SOUTH 88TH STREET

PRIVATE COMMON OPEN SPACE SUMMARY:

1. THE IDENTIFICATION OF PRIVATE COMMON OPEN SPACE AREA IS CONCEPTUAL AND SHOULD NOT BE INTERPRETED TO ESTABLISH PRECISE DIMENSIONS OR ACREAGE. THE LOCATION AND AMOUNT OF ANY PRIVATE COMMON OPEN SPACE, WHICH BY DEFINITION SHALL INCLUDE, WITH THE EXCEPTION OF ROADWAYS, ALL NON-HARDSCAPE PERVIOUS AREAS WITHIN THE GROSS DEVELOPABLE AREA, MAY BE ADJUSTED BASED ON FINAL ENGINEERING AND SITE PLAN CONSIDERATIONS. ANY MODIFICATIONS TO THE AMOUNT AND LOCATION OF PRIVATE COMMON OPEN SPACE SHALL NOT REQUIRE ANY AMENDMENT TO THIS PUD. THE PRIVATE COMMON OPEN SPACE SHALL REMAIN PRIVATE AND AVAILABLE ONLY FOR THE USE AND ENJOYMENT OF CONOCOPHILLIPS EMPLOYEES AND AUTHORIZED VISITORS. THE PRIVATE COMMON OPEN SPACE SHALL CONTAIN SUCH IMPROVEMENTS AS MAY BE APPROPRIATE TO ENHANCE THE USE AND FUNCTIONALITY OF THE PRIVATE COMMON OPEN SPACE. SUCH AS UTILITY EASEMENTS/CORRIDORS, DETENTION AND WATER QUALITY PONDS, SIGNAGE, TRAILS, PONDS, BENCHES, STORM WATER IMPROVEMENTS, LIGHTING, SECURITY MEASURES, LANDSCAPING, IRRIGATION, FENCING, LANDSCAPE WALLS, AGRICULTURAL OR FARMING USES, SMALL TRASH RECEPTACLES, GRILLS, PICNIC AREAS, STRUCTURED PAVILIONS, RECREATIONAL AMENITIES, SPORTING FIELDS, COURSES AND COURTS AND SUCH OTHER APPURTENANCES AS MAY BE SUPPORTIVE OF THE FUNCTIONALITY AND USE OF THE PRIVATE COMMON OPEN SPACE.
2. PRIVATE COMMON OPEN SPACE AREAS SHALL BE THE MAINTENANCE RESPONSIBILITY OF CONOCOPHILLIPS.

2190 E 17TH AVENUE
Denver, CO 80206 USA
t +1 303 832 1712
f +1 303 832 1713

PLANNER / LANDSCAPE ARCHITECT

CONSULTANTS OF COLORADO, INC.
CIVIL, ENGINEERING · LAND SURVEYING
7901 E. Belleview Avenue
Suite 150
Englewood, CO 80111
Tel: (720) 482-9526
Fax: (720) 482-9546

CIVIL ENGINEER

Drexel, Barrell & Co.
Engineers/Surveyors
1800 38th Street
Boulder, CO 80301
Tel: (303) 442-4338
Fax: (303) 442-4373

SURVEYOR

ISSUE / REVISION	DATE
PRELIMINARY PUD DEVELOPMENT PLAN SUBMITTAL	11/12/2009
RESUBMITTAL	2/01/2010
RESUBMITTAL	3/08/2010

CONOCOPHILLIPS CAMPUS
2270 SO. 88TH STREET
LOUISVILLE, CO

COVER SHEET

DRAWN	TCAM
CHK	TCAM
PRJ #	09.20001.00

SHEET NUMBER:

1 OF 11

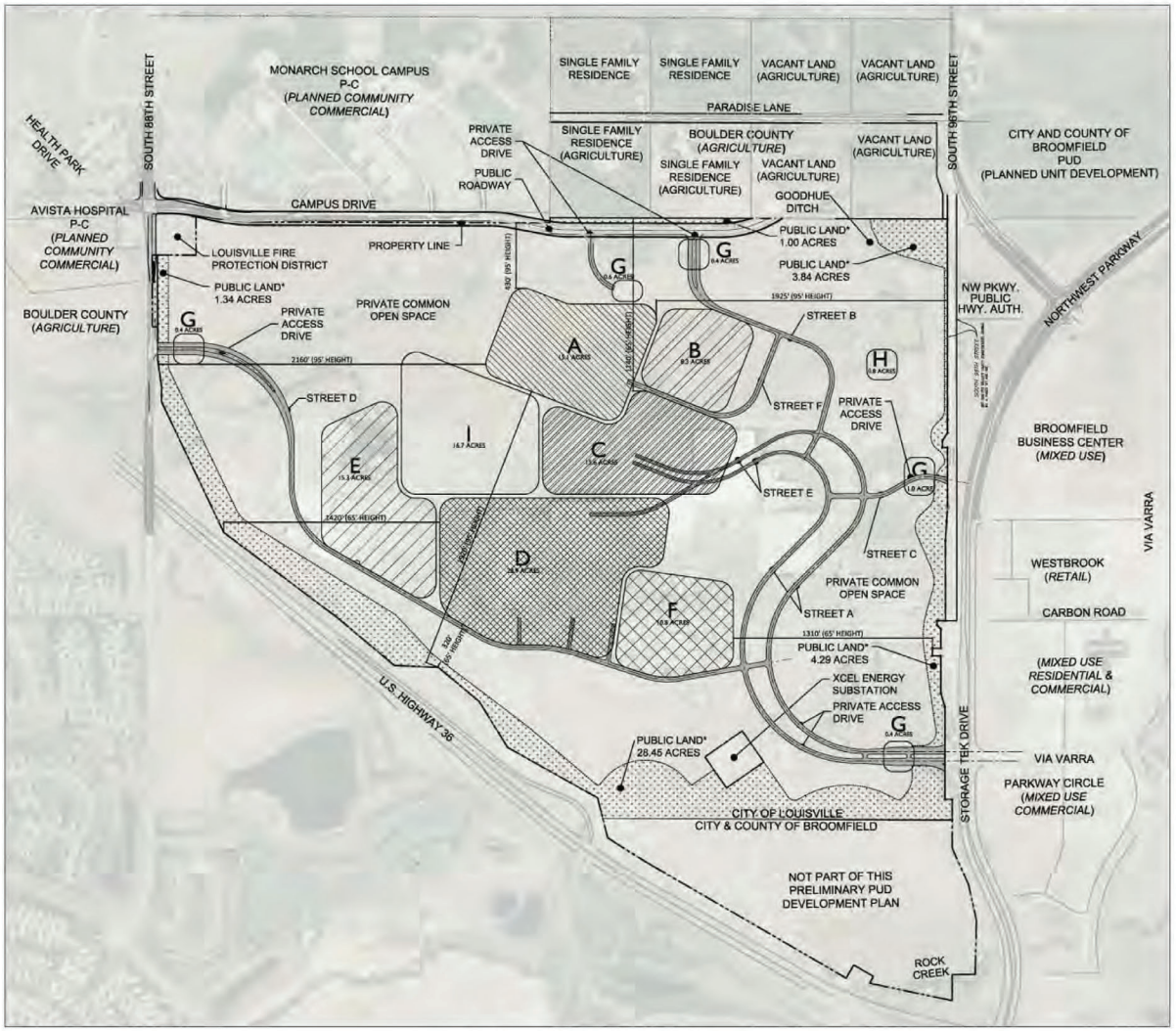
CONOCOPHILLIPS CAMPUS

PRELIMINARY PUD DEVELOPMENT PLAN

A PART OF THE SOUTH HALF OF SECTION 20, THE NORTH HALF OF SECTION 29,
TOWNSHIP 1 SOUTH, RANGE 69 WEST OF THE 6TH P.M.

MASTER PLAN AND GENERAL NOTES

SHEET 2 OF 11



PLANNING AREA MASTER PLAN

400 200 0 400 800

SCALE: 1" = 400'

N

PUBLIC LAND:

1. EXCEPT AS SET FORTH IN THE FOLLOWING NOTE NO. 2, THE PUBLIC LAND DEDICATION SHALL BE LIMITED TO LAND OUTSIDE OF THE CAMPUS SECURITY BOUNDARY AS SET FORTH AND DEPICTED HEREIN. THE RESPONSIBILITIES OF THE CITY AND CONOCOPHILLIPS, RESPECTIVELY, AS WELL AS ANY RESTRICTIONS PERTAINING TO USE, LOCATION, AESTHETICS AND MAINTENANCE OF THE LAND AND IMPROVEMENTS, SHALL BE SET FORTH BY DEED RESTRICTIONS AND/OR SEPARATE AGREEMENT(S) OR OTHER INSTRUMENT(S) TO BE AGREED UPON BY AND BETWEEN THE CITY AND CONOCOPHILLIPS AND SHALL BE CONSISTENT WITH CONOCOPHILLIPS' FINAL DEVELOPMENT PLAN(S). NOTWITHSTANDING THE FOREGOING, ALLOWED USES OF DEDICATED PUBLIC LAND SHALL INCLUDE ROADWAY CONNECTIONS AND UTILITY IMPROVEMENTS UNLESS SPECIFICALLY EXCLUDED BY AGREEMENT OF THE PARTIES IN WRITING.*
2. CONOCOPHILLIPS SHALL CONVEY APPROXIMATELY 20 ADDITIONAL ACRES OF PUBLIC LAND TO THE CITY, EITHER IN FEE OR BY CONSERVATION EASEMENT OR A COMBINATION THEREOF, TO SUPPLEMENT THE PUBLIC LAND DEDICATION DEPICTED HEREIN, WHICH ADDITIONAL PUBLIC LAND SHALL BE LOCATED IMMEDIATELY NORTH OF THE SITE, SOUTH OF PARADISE LANE AND WEST OF SOUTH 96TH STREET. SUCH SUPPLEMENTAL AND ADDITIONAL PUBLIC LAND DEDICATION SHALL BE CREDITED TO CONOCOPHILLIPS PUBLIC LAND DEDICATION REQUIREMENTS SET FORTH IN SECTION 16.16.060.B OF THE LOUISVILLE MUNICIPAL CODE.

AREA TRANSFER:

1. THE DELINEATED PLANNING AREAS ARE CONCEPTUAL AND MAY BE ADJUSTED.
2. THE DELINEATED PLANNING AREAS WERE CREATED TO DEFINE LOCATIONS OF VARIOUS BUILDING HEIGHTS.

PHASING NOTES:

1. IT IS ANTICIPATED THAT INITIAL OCCUPANCY OF IMPROVEMENTS CONSTRUCTED DURING PHASE 1 WILL OCCUR IN 2013.
2. IT IS ANTICIPATED THAT INITIAL OCCUPANCY OF IMPROVEMENTS CONSTRUCTED DURING PHASE 2 WILL OCCUR IN 2018.
3. IT IS ANTICIPATED THAT INITIAL OCCUPANCY OF IMPROVEMENTS CONSTRUCTED DURING PHASE 3 WILL OCCUR IN 2032.
4. THE PHASING OF DEVELOPMENT, AS DESCRIBED IN THE DEVELOPMENT SUMMARY BELOW, IS CONCEPTUAL ONLY AND IS SUBJECT TO CHANGE.
5. PUBLIC IMPROVEMENTS WILL BE CONSTRUCTED IN ACCORDANCE WITH THE PHASING SCHEDULE OUTLINED IN THE DEVELOPMENT AGREEMENT.
6. A PORTION OF A PLANNING AREA CAN BE COMPLETELY OR PARTIALLY CONSTRUCTED WITHIN A RESPECTIVE PHASE.
7. EACH PHASE SHALL HAVE DUAL ACCESS AND A LOOPED WATER SYSTEM FOR LIFE SAFETY PURPOSES.

DEVELOPMENT SUMMARY:

	PLANNING AREA	LAND USE	GROSS AREA (ACRES)	F.A.R.	MAXIMUM BUILDING HEIGHT (STORIES) (1)	MAXIMUM BUILDING HEIGHT (FEET)	ANTICIPATED PHASING
	A	EDUCATIONAL AND TRAINING FACILITIES; PEDESTRIAN PLAZAS AND PEDESTRIAN WAYS; PARKING LOTS AND PARKING BUILDINGS; RESEARCH/OFFICE AND CORPORATE USES AND FACILITIES FOR THE RESEARCH, DEVELOPMENT, MANUFACTURING, FABRICATION, PROCESSING, OR ASSEMBLY OF SCIENTIFIC OR TECHNICAL PRODUCTS, OR OTHER PRODUCTS; BUILDING MOUNTED CMRS FACILITIES; SOLAR PANELS; AND/OR BUILDING MOUNTED WIND POWERED ELECTRICAL GENERATION FACILITIES	15.1	1.7	4	95	PHASE 1, PHASE 2, PHASE 3
	B	PARKING LOTS AND PARKING BUILDINGS; HELIPAD (SPECIAL REVIEW USE); PRIVATE UTILITY USES; BUILDING MOUNTED CMRS FACILITIES; SOLAR PANELS; AND/OR BUILDING MOUNTED WIND POWERED ELECTRICAL GENERATION FACILITIES	8.3	0.31	2	35	PHASE 1
	C	PROFESSIONAL, BUSINESS AND ADMINISTRATIVE OFFICES; EDUCATIONAL AND TRAINING FACILITIES; PRIVATE SHORT TERM LODGING FOR CONOCOPHILLIPS EMPLOYEES AND GUESTS; PEDESTRIAN PLAZAS AND PEDESTRIAN WAYS; PRIVATE, NONCOMMERCIAL, RECREATIONAL AND SOCIAL FACILITIES; PARKING LOTS AND PARKING BUILDINGS; HELIPAD (SPECIAL REVIEW USE); CAMPUS ORIENTED CHILDCARE CENTER; CAMPUS ORIENTED FOOD SERVICE; BUILDING MOUNTED CMRS FACILITIES; SOLAR PANELS; AND/OR BUILDING MOUNTED WIND POWERED ELECTRICAL GENERATION FACILITIES	15.6	0.49	3	65	PHASE 1
	D	PROFESSIONAL, BUSINESS AND ADMINISTRATIVE OFFICES; PARKING LOTS AND PARKING BUILDINGS; PEDESTRIAN PLAZAS AND PEDESTRIAN WAYS; CAMPUS ORIENTED FOOD SERVICE; PRIVATE UTILITY USES; HELIPAD (SPECIAL REVIEW USE); BUILDING MOUNTED CMRS FACILITIES; SOLAR PANELS; AND/OR BUILDING MOUNTED WIND POWERED ELECTRICAL GENERATION FACILITIES	28.9	0.44	5	65	PHASE 1
	E	PROFESSIONAL, BUSINESS AND ADMINISTRATIVE OFFICES; MEETING ROOM; PRIVATE, SHORT TERM LODGING FOR CONOCOPHILLIPS EMPLOYEES AND GUESTS; PEDESTRIAN PLAZAS AND PEDESTRIAN WAYS; PARKING LOTS AND PARKING BUILDINGS; CAMPUS ORIENTED FOOD SERVICE; PRIVATE UTILITY USES; HELIPAD (SPECIAL REVIEW USE); BUILDING MOUNTED CMRS FACILITIES; SOLAR PANELS; AND/OR BUILDING MOUNTED WIND POWERED ELECTRICAL GENERATION FACILITIES	15.3	0.06	1	35	PHASE 1, PHASE 2
	F	PROFESSIONAL, BUSINESS AND ADMINISTRATIVE OFFICES; PEDESTRIAN PLAZAS AND PEDESTRIAN WAYS; PARKING LOTS AND PARKING BUILDINGS; CAMPUS ORIENTED FOOD SERVICE; HELIPAD (SPECIAL REVIEW USE); BUILDING MOUNTED CMRS FACILITIES; SOLAR PANELS; AND/OR BUILDING MOUNTED WIND POWERED ELECTRICAL GENERATION FACILITIES	10.8	0.70	5	65	PHASE 3
	G	SECURITY SCREENING; PRIVATE UTILITY USES; BUILDING MOUNTED CMRS FACILITIES; SOLAR PANELS; AND/OR BUILDING MOUNTED WIND POWERED ELECTRICAL GENERATION FACILITIES	2.8	0.13	2	35	PHASE 1, PHASE 2, PHASE 3
	H	MEETING ROOM; BUILDING MOUNTED CMRS FACILITIES; SOLAR PANELS; AND/OR BUILDING MOUNTED WIND POWERED ELECTRICAL GENERATION FACILITIES	0.8	0.9	2	35	PHASE 1
	I	PRIVATE UTILITY USES	16.7				PHASE 1, PHASE 2, PHASE 3
		TOTAL	**114.3**				PHASE 3
	PUBLIC LAND*	OPEN SPACE	38.52				PHASE 1
	PRIVATE COMMON OPEN SPACE	OPEN SPACE	222.05				PHASE 1, PHASE 2, PHASE 3
	INTERNAL ROADS	ROADS	14.74				PHASE 1
		TOTAL	**390.613**				PHASE 3

(1) THE MAXIMUM BUILDING HEIGHTS SET FORTH IN THE DEVELOPMENT SUMMARY ARE CALCULATED FROM THE PROPOSED BUILDING FINISH FLOOR ELEVATION TO THE TOP OF THE ROOFTOP MECHANICAL SCREEN AND ANY PARAPET OR ARCHITECTURAL ELEMENT NOT OTHERWISE EXEMPTED BY SEC. 17.16.080 OF THE LOUISVILLE MUNICIPAL CODE. ANY BUILDING MOUNTED CMRS FACILITIES, SOLAR PANELS, AND/OR BUILDING MOUNTED WIND POWERED ELECTRICAL GENERATION IMPROVEMENTS SHALL BE EXEMPTED FROM THE MAXIMUM BUILDING HEIGHTS ESTABLISHED HEREIN.

(2) THE DESIGNATION OF SPECIFIC LAND USES WITH THE PLANNING AREAS SHALL NOT PRECLUDE THE DEVELOPMENT OF OTHER USES PERMITTED UNDER THE PCZD-COMMERCIAL WITH PUD-C OVERLAY. RELOCATION OF LAND USES WITHIN PLANNING AREAS MAY ALSO OCCUR WITHOUT AMENDMENT OF THIS PRELIMINARY PUD DEVELOPMENT PLAN.

(3) TOTAL BUILDING SQUARE FOOTAGE SHALL NOT EXCEED 2,500,000 SQUARE FEET, EXCLUSIVE OF STAIRWELLS; ELEVATOR SHAFTS; HALLWAYS; BALCONIES; PATIOS; SPACE OCCUPIED BY HEATING, AIR CONDITIONING OR OTHER UTILITY OR MECHANICAL EQUIPMENT; SPACE DEVOTED EXCLUSIVELY TO STORAGE; AND SPACE DEVOTED TO OFF-STREET PARKING OR LOADING AREAS, INCLUDING PARKING GARAGES.

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ISSUE / REVISION	DATE
PRELIMINARY PUD DEVELOPMENT PLAN SUBMITTAL	11/12/2009
RESUBMITTAL	2/21/2010
RESUBMITTAL	3/29/2010

CONOCOPHILLIPS CAMPUS
2270 SO. 88TH STREET
LOUISVILLE, CO

MASTER PLAN AND GENERAL NOTES

DRAWN	TCM
CHK	TCM
PRJ #	09.21001.00

SHEET NUMBER

2 OF 11

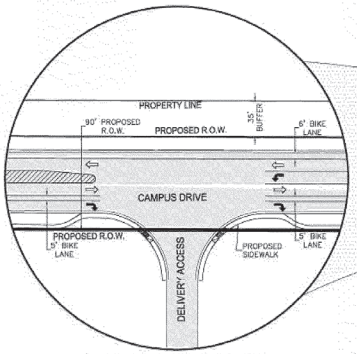
CONOCOPHILLIPS CAMPUS

PRELIMINARY PUD DEVELOPMENT PLAN

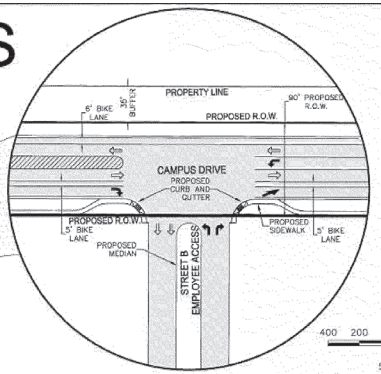
A PART OF THE SOUTH HALF OF SECTION 20, THE NORTH HALF OF SECTION 29,
TOWNSHIP 1 SOUTH, RANGE 69 WEST OF THE 6TH P.M.

TRANSPORTATION PLAN

SHEET 3 OF 11

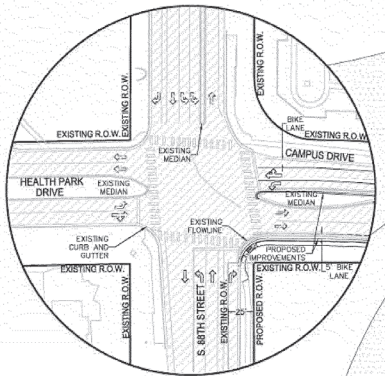


NEW INTERSECTION (UNSIGNALIZED)
N.T.S.



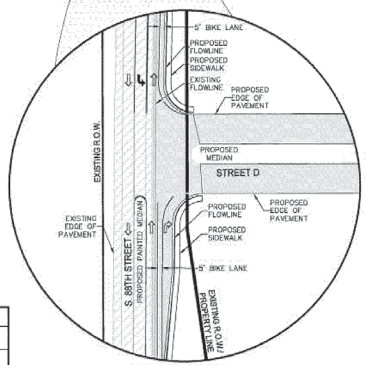
NEW INTERSECTION (UNSIGNALIZED)
N.T.S.

400 200 0 400 800
SCALE: 1" = 400'



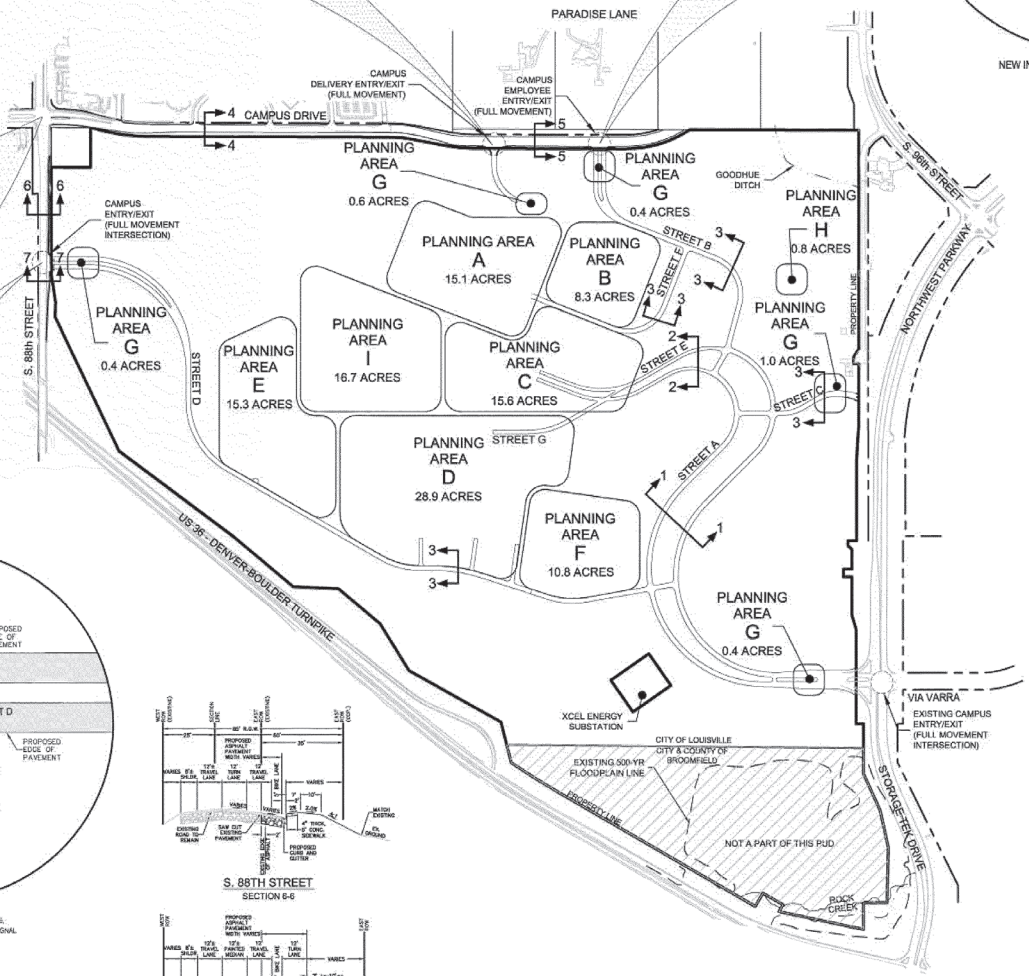
EXISTING INTERSECTION

PROPOSED BIKE LANES ON CAMPUS DRIVE, EXISTING MEDIAN NARROWING, NEW CURB AND GUTTER ON SOUTH SIDE OF CAMPUS DRIVE
N.T.S.



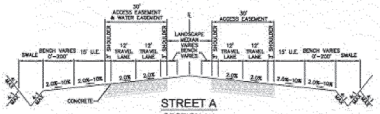
NEW INTERSECTION

PROPOSED NORTHBOUND RIGHT TURN LANE, SOUTHBOUND LEFT TURN LANE AND TRAFFIC SIGNAL
N.T.S.

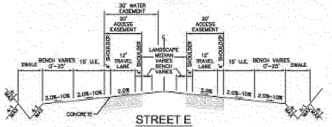


S. 88TH STREET
SECTION 6-6

S. 88TH STREET
SECTION 7-7

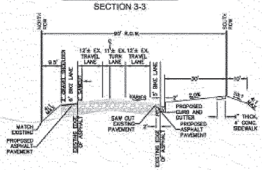


STREET A
SECTION 1-1

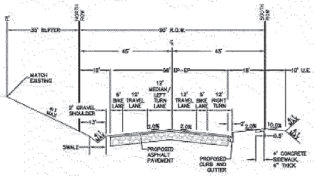


STREET E
SECTION 2-2

STREETS B, C, D & F
SECTION 3-3



EXISTING CAMPUS DRIVE
SECTION 4-4



PROPOSED CAMPUS DRIVE
SECTION 5-5

LEGEND	
	EXISTING PAVEMENT
	PROPOSED PAVEMENT
⇨	ARROW SHOWN FOR INFORMATION ONLY
➡	PROPOSED ARROW TO BE INSTALLED

TRANSPORTATION NOTES:

1. INTERSECTIONS SHOWN DEPICT ULTIMATE BUILDOUT CONFIGURATION.
2. LANE CONFIGURATIONS FOR THE BLOWUP INTERSECTIONS ARE PER THE TRAFFIC STUDY BY FELSBURG HOLT & ULLEVIG DATED OCTOBER, 2009.
3. ALL ROADWAYS INTERNAL TO THE SITE, STREETS A–F, ARE PRIVATE AND WILL BE PRIVATELY OWNED AND MAINTAINED, ACCESSIBLE ONLY TO CONOCOPHILLIPS EMPLOYEES, AUTHORIZED VISITORS AND ACCESS EASEMENT HOLDERS.

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ISSUE / REVISION	DATE
PRELIMINARY PUD DEVELOPMENT PLAN SUBMITTAL	11/12/2009
FIRST RESUBMITTAL	02/01/10

CONOCOPHILLIPS CAMPUS
2270 SO. 88TH STREET
LOUISVILLE, CO

TRANSPORTATION PLAN

DRAWN	TAH
CHK	MEL
PRJ #	5.13.01.00003

SHEET NUMBER:

3 OF 11

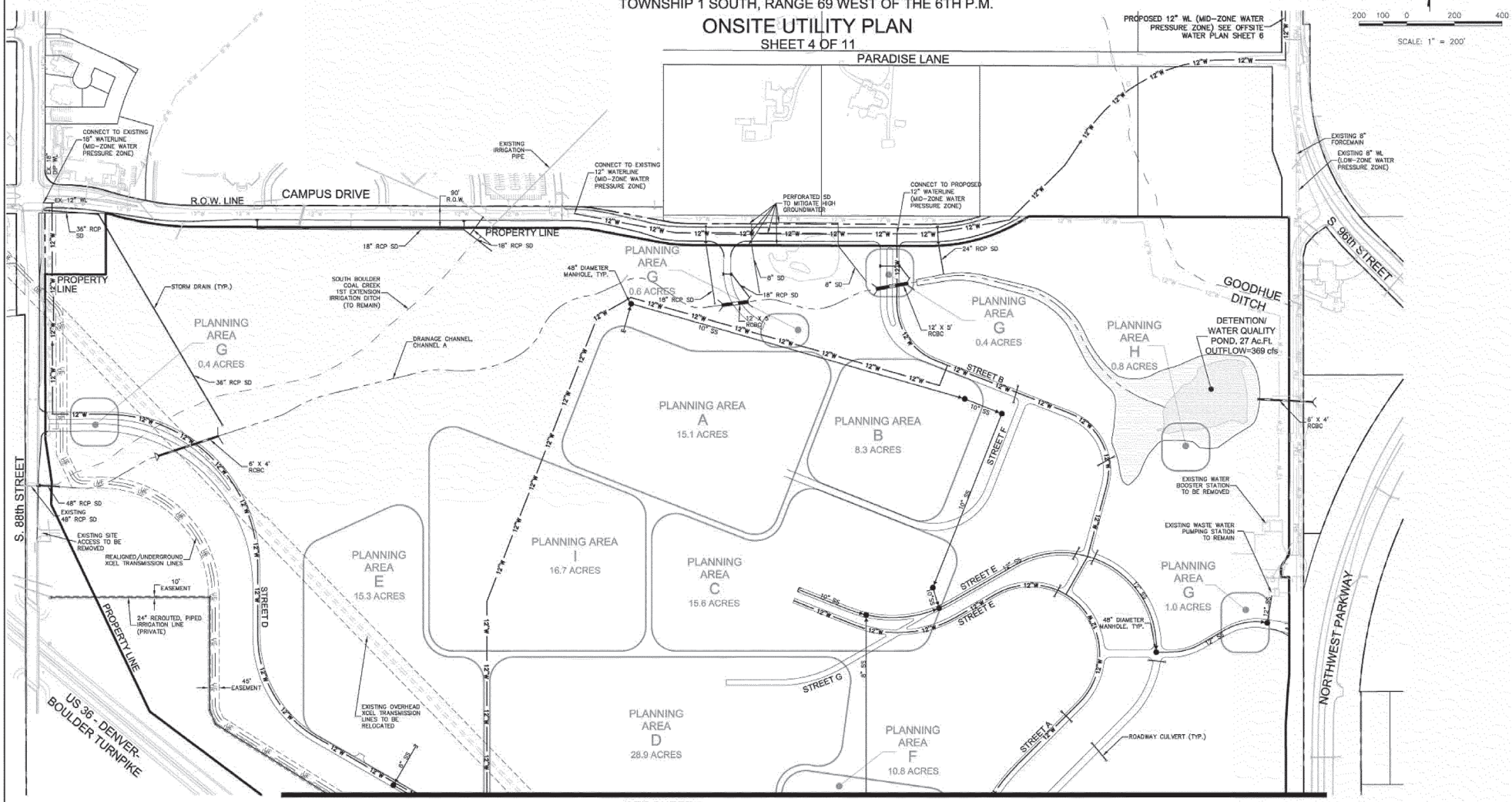
CONOCOPHILLIPS CAMPUS

PRELIMINARY PUD DEVELOPMENT PLAN

A PART OF THE SOUTH HALF OF SECTION 20, THE NORTH HALF OF SECTION 29,
TOWNSHIP 1 SOUTH, RANGE 69 WEST OF THE 6TH P.M.

ONSITE UTILITY PLAN

SHEET 4 OF 11



SCALE: 1" = 200'

SEE SHEET 5

SANITARY SEWER COLLECTION SYSTEM NOTES:

1. CONOCOPHILLIPS PROPOSES TO UTILIZE THE EXISTING OFFSITE SANITARY FORCE MAIN AND GRAVITY SYSTEMS TO THEIR CAPACITIES TO SERVE THE PROPOSED PROJECT.
2. CONOCOPHILLIPS PROPOSES CONTINUED USE OF THE EXISTING ONSITE SANITARY SEWER LIFT STATION. CONOCOPHILLIPS ANTICIPATES OWNERSHIP AND MAINTENANCE RESPONSIBILITY FOR THIS FACILITY AS THE SOLE USER.
3. SANITARY MAINLINES DEPICTED HEREON ARE LOCATED TO INDICATE GENERAL COLLECTION INTENT FOR THE SITE. FINAL ALIGNMENTS WILL BE DESIGNED IN ACCORDANCE WITH THE FINAL DEVELOPMENT PLAN(S). FINAL DIAMETERS SHALL BE CONFIRMED BASED ON FINAL ARCHITECTURE AND MECHANICAL ENGINEERING DESIGNS.
4. PRIVATELY OWNED AND MAINTAINED SANITARY SEWER LINES SHALL BE INSTALLED NO CLOSER THAN 11' LATERALLY (10' CLEAR PER COLORADO DEPARTMENT OF HEALTH) AND 2' VERTICALLY AT CROSSINGS TO A CITY MAINTAINED UTILITY. SLEEVED UTILITIES MAY BE CONSTRUCTED CLOSER.
5. THE ONSITE SANITARY SEWER SHOWN WITHIN THE CONOCOPHILLIPS CAMPUS IS PROPOSED TO BE PRIVATELY OWNED AND MAINTAINED.

WATER DISTRIBUTION SYSTEM NOTES:

1. PRELIMINARY WATERMAIN LOCATIONS INDICATE SERVICE FROM THE CITY OF LOUISVILLE MID-ZONE WATER PRESSURE ZONES.
2. LOOPED SERVICE WILL BE PROVIDED TO THE BUILDING(S) BASED UPON THE FINAL DEVELOPMENT PLAN(S) DESIGN OF INTERIOR STREET SYSTEMS.
3. WATERMAIN DIAMETERS WILL BE DETERMINED BY FINAL DESIGN DEMANDS AND IN COMMUNICATION WITH THE CITY OF LOUISVILLE PUBLIC WORKS DEPARTMENT.
4. ALL PUBLIC WATER MAINS SHALL BE CONSTRUCTED IN EASEMENTS DEDICATED TO THE CITY OF LOUISVILLE.

GENERAL NOTES:

1. WATER AND SEWER UTILITIES SHALL BE CONSTRUCTED WITH A 10' CLEAR SEPARATION.
2. ENTRY LOCATIONS INTO THE PLANNING AREAS ARE CONCEPTUAL ONLY.
3. CITY UTILITY LINES SHALL BE INSTALLED WITH ADEQUATE CLEARANCE FROM OTHER PRIVATELY OWNED DRY UTILITIES. DRY UTILITIES SHALL BE CONSTRUCTED NO CLOSER THAN 6' LATERALLY AND 2' VERTICALLY AT CROSSINGS TO A CITY MAINTAINED UTILITY. SLEEVED UTILITIES MAY BE CONSTRUCTED CLOSER.

LEGEND

- EXISTING FIRE HYDRANT (FH)
- PROPOSED SANITARY MANHOLE (SSMH)
- PROPOSED GRAVITY SANITARY SEWER (SS)
- EXISTING WATER LINE (WL)
- 8"W — PROPOSED 8" WATER LINE (WL)
- 12"W — PROPOSED 12" WATER LINE (WL)

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ISSUE / REVISION	DATE
PRELIMINARY PUD DEVELOPMENT PLAN SUBMITTAL	11/12/2008
FIRST RESUBMITTAL	02/01/10

CONOCOPHILLIPS CAMPUS
2270 SO. 88TH STREET
LOUISVILLE, CO

ONSITE UTILITY PLAN

DRAWN	TAH
CHK	MEL
PRJ #	5.13.01.0003

SHEET NUMBER

4 OF 11

CONOCOPHILLIPS CAMPUS

PRELIMINARY PUD DEVELOPMENT PLAN

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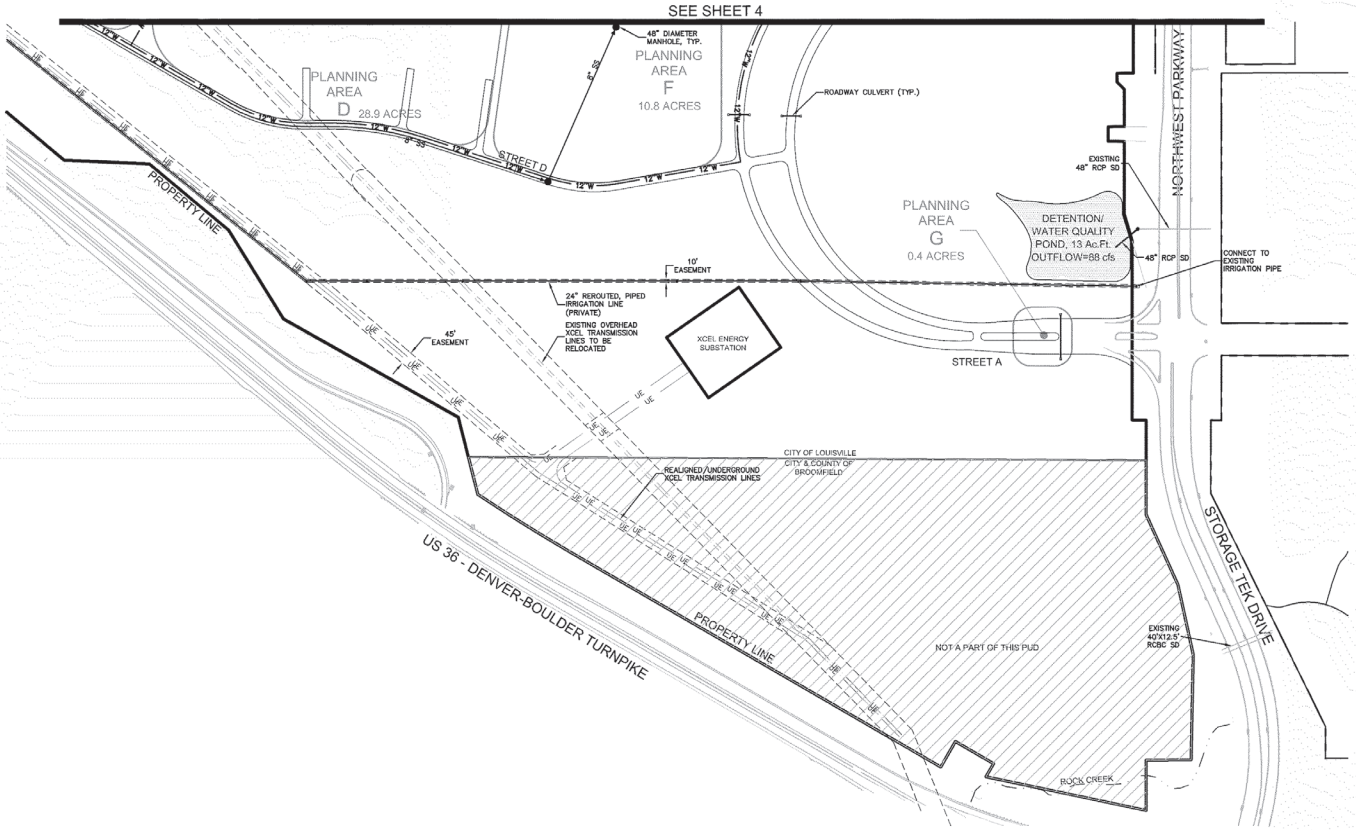
ONSITE UTILITY PLAN

SHEET 5 OF 11



200 100 0 200 400

SCALE: 1" = 200'

LEGEND	
	EXISTING FIRE HYDRANT (FH)
	PROPOSED SANITARY MANHOLE (SSMH)
	PROPOSED GRAVITY SANITARY SEWER (SS)
	EXISTING WATER LINE (WL)
8"W	PROPOSED 8" WATER LINE (WL)
12"W	PROPOSED 12" WATER LINE (WL)

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ISSUE / REVISION	DATE
PRELIMINARY PUD DEVELOPMENT PLAN SUBMITTAL	11/12/2009
FIRST RESUBMITTAL	02/01/10

CONOCOPHILLIPS CAMPUS
2270 SO. 88TH STREET
LOUISVILLE, CO

ONSITE UTILITY PLAN

DRAWN	TAH
CHK	MEL
PN / #	8.19.01.M005

SHEET NUMBER:

5 OF 11

CONOCOPHILLIPS CAMPUS

PRELIMINARY PUD DEVELOPMENT PLAN

A PART OF THE SOUTH HALF OF SECTION 20, THE NORTH HALF OF SECTION 29,
TOWNSHIP 1 SOUTH, RANGE 69 WEST OF THE 6TH P.M.

OFFSITE WATER PLAN

SHEET 6 OF 11

200 100 0 200 400

SCALE: 1" = 200'

NOTES:

1. EXISTING UTILITIES IDENTIFIED ON THIS EXHIBIT MAY NOT BE INCLUSIVE OF ALL EXISTING UTILITIES.
2. RIGHT-OF-WAY LINES ARE APPROXIMATE, AND OWNERSHIP INFORMATION IS BASED ON CURRENT COUNTY ASSESSOR RECORDS.
3. THE PROPOSED 12" WATERLINE BETWEEN THE CONOCOPHILLIPS NORTH BOUNDARY AND DILLION ROAD PROVIDES THE REQUIRED SECONDARY CONNECTION TO THE CITY OF LOUISVILLE MID-ZONE WATER PRESSURE ZONE. IN CONJUNCTION WITH THIS ADDITIONAL WATERLINE THE EXISTING PRESSURE REDUCING VALVE (PRV) MUST BE RELOCATED TO S. 96TH STREET. THIS IN TURN ADJUSTS THE LOCATION OF THE WATER PRESSURE ZONE SPLIT. THE EXISTING 8" WATERLINE IN S. 96TH STREET WILL REMAIN AS PART OF THE CITY OF LOUISVILLE LOW-ZONE WATER PRESSURE ZONE WHICH CURRENTLY SERVES THE RANCHETTE PROPERTIES ALONG PARADISE LANE.

LEGEND	
✱	EXISTING FIRE HYDRANT (FH)
⋈	EXISTING GATE VALVE (GV)
——W——	EXISTING WATER LINE (WL)
——12"W——	PROPOSED 12" WATER LINE (WL)

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CONOCOPHILLIPS CAMPUS
2270 SO. 88TH STREET
LOUISVILLE, CO

OFFSITE WATER PLAN

DRAWN	TAH
CHK	MEL
PRJ #	9.13.013.00003

SHEET NUMBER:

6 OF 11

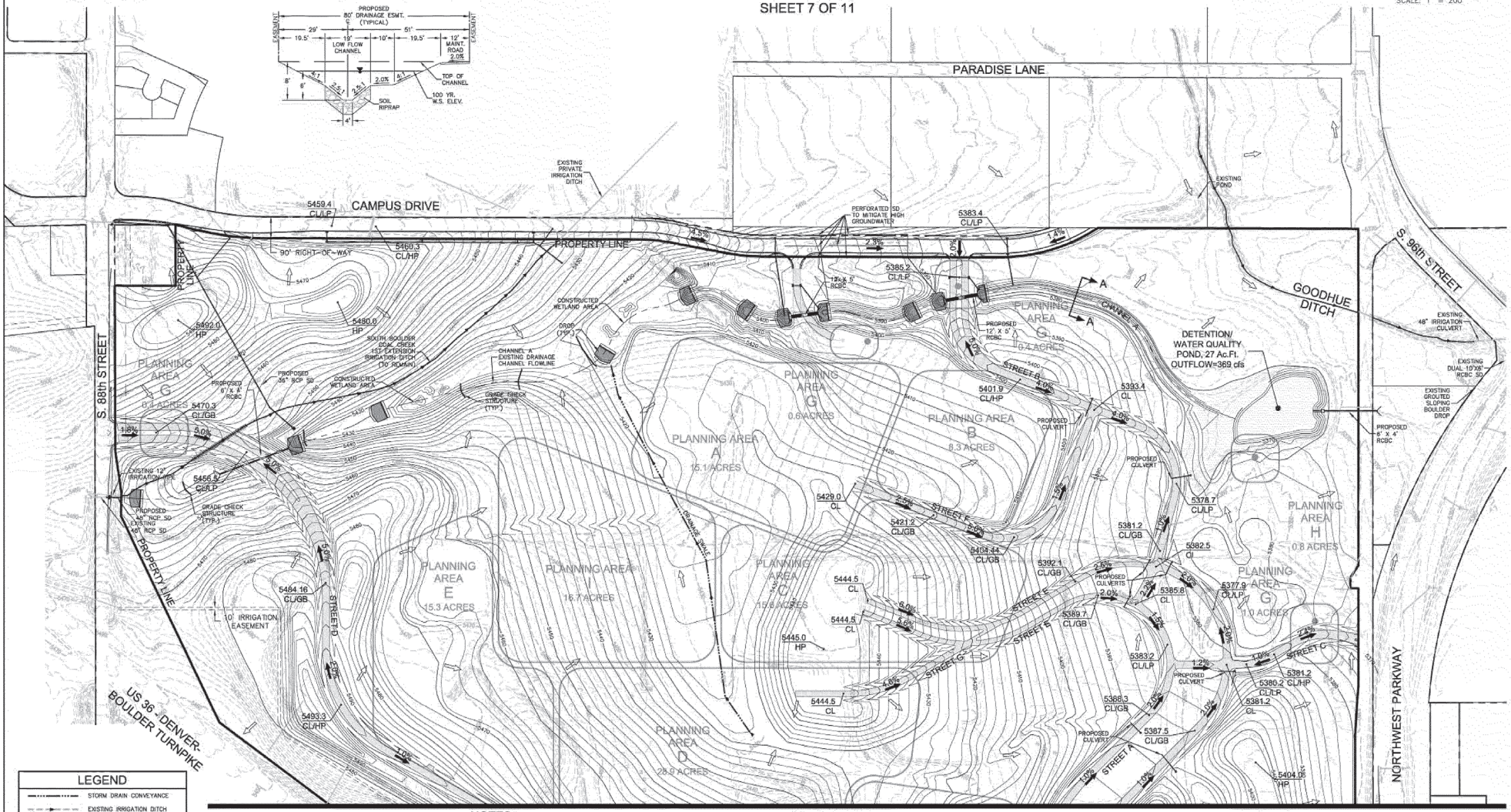
CONOCOPHILLIPS CAMPUS

PRELIMINARY PUD DEVELOPMENT PLAN

A PART OF THE SOUTH HALF OF SECTION 20, THE NORTH HALF OF SECTION 29,
TOWNSHIP 1 SOUTH, RANGE 69 WEST OF THE 6TH P.M.

GRADING AND DRAINAGE PLAN

SHEET 7 OF 11



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SCALE: 1" = 200'

LEGEND

- STORM DRAIN CONVEYANCE
- EXISTING IRRIGATION DITCH
- PROPOSED IRRIGATION DITCH
- PROPOSED IRRIGATION PIPE
- EXISTING CONTOUR
- PROPOSED CONTOUR
- DIRECTION OF FLOW
- 1.0% PROPOSED SLOPE
- 5422.0 CL PROPOSED SPOT ELEVATION

SEE SHEET 3 FOR TYPICAL ROADWAY SECTIONS

SEE SHEET 8

NOTES:

1. THIS PLAN IDENTIFIES POTENTIAL LOCATIONS FOR DETENTION AND WATER QUALITY PONDS.
2. CONTOURS MAY BE SHAPED TO PROVIDE AESTHETIC LANDSCAPING.
3. POND DEPTHS AND CONTOURS ARE SUBJECT TO CHANGE.
4. THE PROPOSED STORM DRAIN PIPING, DRAINAGE CHANNEL AND DETENTION PONDS TO BE CONSTRUCTED ON PRIVATE PROPERTY WILL REQUIRE EASEMENTS DEDICATED TO THE CITY OF LOUISVILLE. EASEMENTS SHOWN FOR THESE PURPOSES ARE CONCEPTUAL AND SUBJECT TO CHANGE.
5. ALL ONSITE STORM DRAIN FACILITIES WILL BE PRIVATELY OWNED AND MAINTAINED BY CONOCOPHILLIPS.

201

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SURVEYOR

ISSUE / REVISION	DATE
PRELIMINARY PUD DEVELOPMENT PLAN SUBMITTAL	11/12/2009
FIRST RESUBMITTAL	02/01/10

CONOCOPHILLIPS CAMPUS
2270 SO. 88TH STREET
LOUISVILLE, CO

GRADING AND DRAINAGE PLAN

DRAWN	TAH
CHK	MEL
PROJ #	5.13.0138.00

SHEET NUMBER:

7 OF 11

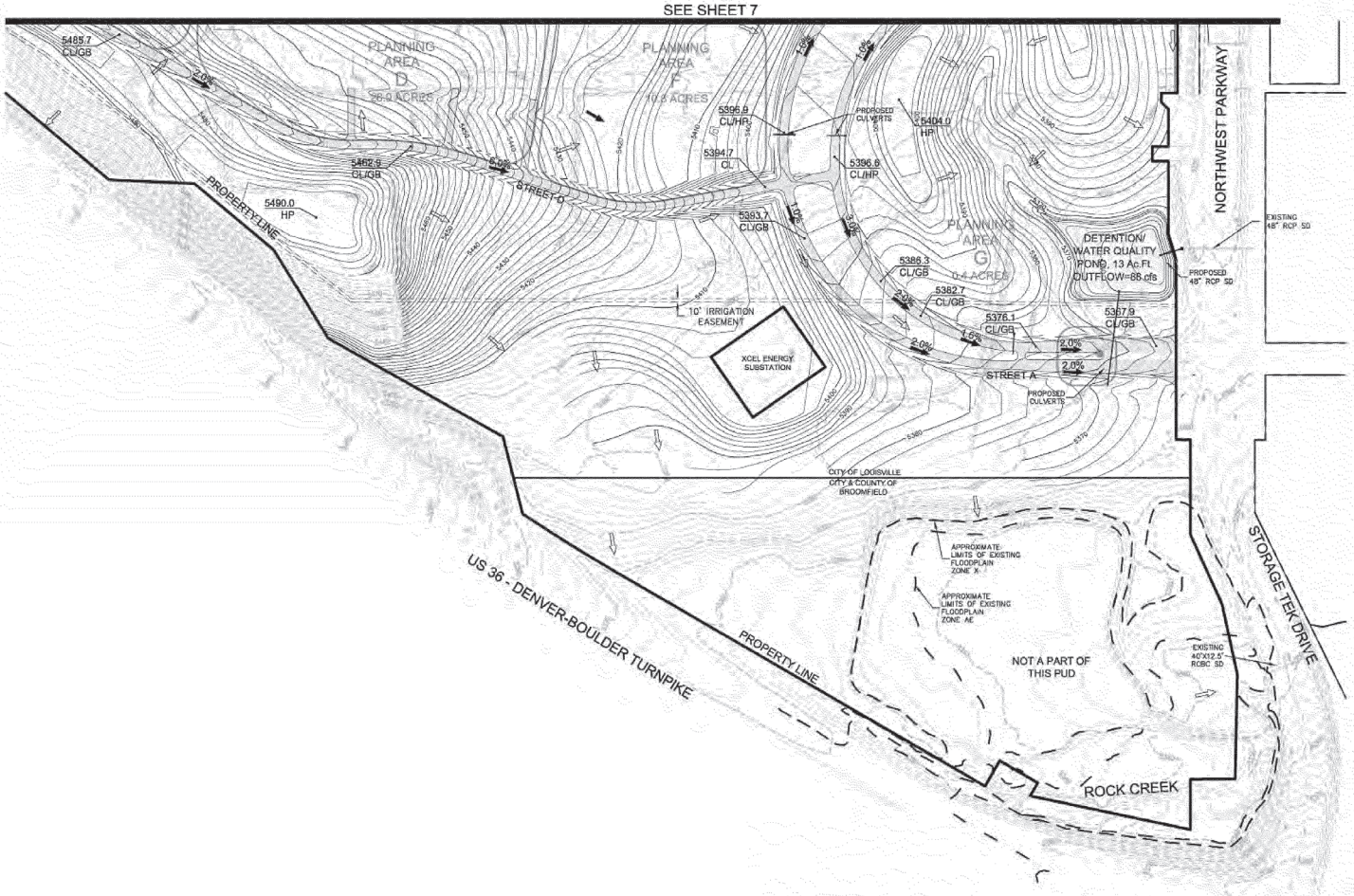
CONOCOPHILLIPS CAMPUS

PRELIMINARY PUD DEVELOPMENT PLAN

A PART OF THE SOUTH HALF OF SECTION 20, THE NORTH HALF OF SECTION 29,
TOWNSHIP 1 SOUTH, RANGE 69 WEST OF THE 6TH P.M.

GRADING AND DRAINAGE PLAN

SHEET 8 OF 11



SEE SHEET 3 FOR TYPICAL ROADWAY SECTIONS

NOTES:

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LEGEND

- STORM DRAIN CONVEYANCE
- EXISTING IRRIGATION DITCH
- PROPOSED IRRIGATION DITCH
- PROPOSED IRRIGATION PIPE
- EXISTING CONTOUR
- PROPOSED CONTOUR
- DIRECTION OF FLOW
- 1.0% PROPOSED SLOPE
- 5422.0 CL PROPOSED SPOT ELEVATION

SCALE: 1" = 200'

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SURVEYOR

ISSUE / REVISION	DATE
PRELIMINARY PUD DEVELOPMENT PLAN SUBMITTAL	11/12/2009
FIRST RESUBMITTAL	02/01/10

CONOCOPHILLIPS CAMPUS
2270 SO. 88TH STREET
LOUISVILLE, CO

GRADING AND DRAINAGE PLAN

DRAWN: TAH
CHK: MD
PRJ #: 5-13-015003
SHEET NUMBER:

8 OF 11

CONOCOPHILLIPS CAMPUS

PRELIMINARY PUD DEVELOPMENT PLAN

A PART OF THE SOUTH HALF OF SECTION 20, THE NORTH HALF OF SECTION 29,
TOWNSHIP 1 SOUTH, RANGE 69 WEST OF THE 6TH P.M.

LANDSCAPE PLAN

SHEET 9 OF 11

Feature Landscape Zones

Primary Entry Areas
- Monuments to be included
- Extensive private common open space with landscape, grading, and irrigation to demonstrate corporate sustainability mission
- Combination of native and ornamental materials
- Coordination with City regarding regulatory signage and signalization, if any

Secondary Entry Areas
- Include campus wayfinding signage
- Private common open space, landscape and irrigation – less extensive than primary areas
- Combination of native and ornamental landscape materials
- Final locations to be determined with development – adjacency to private common open space and native landscape features

Internal Private Trails
- Within private common open space
- Accommodate campus pedestrian circulation system inside of secure perimeter
- Predominantly restored prairie and enhanced prairie landscapes
- Facilitate internal building connections

External Public Trails
- Within public land
- Connection to local and regional trail networks
- Accommodate pedestrian and bicycle circulation outside of security perimeter

Entry Drive
- Broad, meandering divided roadway
- Bio-filtration to be incorporated to accommodate area stormwater drainage overflow
- Enhanced prairie landscape
- Landscape enhancements at entry areas to enhance campus wayfinding

Restorative Landscape Zones & Drainage Areas

Prairie Garden (High Water Use / High Maintenance)
- Ornamental garden landscape with wildflowers, shrubs, and trees
- Native and noninvasive adapted plant material
- High supplemental water requirements after establishment

Enhanced Prairie (Medium Water Use / Medium Maintenance)
- Prairie landscape enhanced with wildflower, shrub, and tree plantings
- Native and adapted noninvasive plant material
- Moderate supplemental water requirements after establishment

Restored Prairie (Low Water Use / Low Maintenance)
- Restored shortgrass prairie landscape
- Native ornamental grasses and wildflowers
- Low supplemental water requirements after establishment

Riparian
- Naturalized vegetated wetlands and swales
- Native and adapted wetland plant species
- Capture and filter stormwater runoff

Potential Detention Ponds
- Final delineation required
- Potential detention ponds per civil grading and drainage plans
- Restore using native riparian vegetation at fringe areas
- Integrate into private common open space and private trail system

LANDSCAPE PLAN

400 200 0 400 800

SCALE: 1" = 400'

N

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ISSUE / REVISION	DATE
PRELIMINARY PUD DEVELOPMENT PLAN SUBMITTAL	11/12/2009
RESUBMITTAL	2/01/2010
RESUBMITTAL	3/09/2010

CONOCOPHILLIPS CAMPUS
2270 SO. 88TH STREET
LOUISVILLE, CO

LANDSCAPE PLAN

DRAWN	TEAM
CHK	TEAM
PRJ #	09.25001.00

SHEET NUMBER:

9 OF 11

CONOCOPHILLIPS CAMPUS

PRELIMINARY PUD DEVELOPMENT PLAN

A PART OF THE SOUTH HALF OF SECTION 20, THE NORTH HALF OF SECTION 29,
TOWNSHIP 1 SOUTH, RANGE 69 WEST OF THE 6TH P.M.

LANDSCAPE NARRATIVE AND PLANT SCHEDULE

SHEET 10 OF 11

LANDSCAPE NARRATIVE

Landscape Narrative

This narrative is intended to set forth the general goals and objectives for the successful integration of the proposed ConocoPhillips campus within a regionally distinctive context. This narrative is not intended to provide prescriptive recommendations for the landscape design and implementation, as those decisions will be made within the context of a more established and definitive architectural design for the entire campus which will be submitted for review and approval at a later date. The following is a summary of ConocoPhillips' landscape / environmental goals and objectives, with an accompanying schedule of acceptable plant materials for this site and region.

Landscape Master Plan

The conceptual landscape plan layout for site landscaping (Landscape Plan) has been specifically configured in order to not only accommodate a phased campus development, but also to showcase, enhance and preserve the natural and environmental features of this site. The Landscape Plan will contribute to this mission through sustainable site planning and development involving native landscape preservation, restoration and enhancement.

The Landscape Plan is also structured through the establishment of the referenced landscape typologies to allow for a hierarchy of landscape treatments, which includes accommodating the incorporation of ornamental landscapes in areas where campus employees and visitors approach buildings and congregate in exterior building related spaces. The inclusion of landscape typologies is intended to accommodate this diversity of environments, and allow for a variety of landscape experiences and expressions over the entirety of the site.

Each of these goals and objectives is recognized within a series of landscape typologies that overlay all private common open spaces throughout the site. Following is a summary of the landscape typologies that are being proposed. This summary is intended to provide an organizational framework for the future physical design for the site, including a general outline of the goals and objectives within each zone, respectively.

- **Existing Landscape Features**
  This site sits at an approximate 5335 to 5490 elevation, with views of the Flatirons to the immediate west, and of Longs Peak to the northwest. At this elevation, and with an approximate 15" of annual rainfall, the site technically falls within the Grassiands ecosystem / lifezone classification for the region. As such, and due to the intensive grazing and introduction of annual, non-native species, there are few places on the site that possess the unique flora and fauna characteristics that are representative of this environment/ecosystem. Those areas of the site where existing native characteristics can best be preserved, enhanced or restored, are most typically found in areas around existing ponds and water features, within natural lowland / drainage areas.

  - ***Drainage Sheds*** - Historically, drainage on this site has been accommodated in two main drainage sheds: the northern drainage way leading towards the Goodhue Ditch system, and Rock Creek towards the southeast of the site. Future drainage for the campus will continue to utilize these main drainage regimes for the majority of the overland flow and to convey offsite drainage throughout the site, with the addition of another proposed storm water detention pond located near the main campus entry off of Northwest Parkway. By utilizing these existing flow regimes, it is the goal of ConocoPhillips to protect and preserve as much of the existing plant material associated with these areas as possible, and to augment, where necessary, to ultimately facilitate incorporation of the same into the site private common open space system; to serve as prominently featured landscape elements. Within these zones, natural drainage will be encouraged and complemented with native and riparian landscape materials (see Plant Schedule). Detention may be considered along natural topographic contours in areas where storm water can naturally be temporarily impounded (see Existing Ponds and Water Features below).
  - ***Existing Ponds and Water Features*** - Existing pond / water feature areas have been identified on the Landscape Plan as areas for the preservation of existing plant material. The existing Chaussart Reservoir in the northeast corner of the property will be converted to function as a primary storm water detention pond for the northern drainage regime. All other existing ponds / water features will be drained and incorporated into the private common open space network. For each of these areas, which have slightly different characteristics, riparian and upland landscape materials will be used to enhance and restore an indigenous character. Some ornamental landscape may be introduced along the internal pedestrian circulation system. This will create environmental education opportunities for ConocoPhillips employees and visitors throughout the site by displaying a regionally appropriate landscape environment.
  - ***Existing Slope Areas*** - This zone is primarily represented along the steep southern boundary of the site (adjacent to the US 36 - Denver Boulder Turnpike frontage). Provisions for slope stabilization and erosion control during construction, and long-term solutions to re-vegetate with a combination of native grasses and perennials will be incorporated. It is ConocoPhillips' objective, given the size of this zone and its visual prominence, that a unified and consistent landscape character be established which highlights the future design aesthetic for the site.

- **Landscape Typologies**
  Landscape typologies are those areas that contribute to the operational objectives for the proposed development, including establishing a sense of entry and arrival, promoting a unified visual character, controlling buffers and edges in a consistent and controlled manner and serving the social and recreational outdoor needs of ConocoPhillips employees and visitors. These zones on the site (and represented on the Landscape Plan) include the following specific areas:

  - ***Primary Entry Areas*** - At the eastern and western limits of the internal collector roadway (intersecting S. 88th Street and Northwest Parkway), the native landscape will intersect and integrate with feature areas that will contain future monument signage for the site. These are areas where landscape may be enhanced to include more use of seasonal color and ornamental landscape materials in order to enhance the sense of arrival. Consideration will be given to coordination of these landscape materials with signage and traffic control devices. Also included within these zones will be future consideration for the intersection of pedestrian circulation systems, and the segregation of off-site and on-site improvements for security purposes.
  - ***Secondary Entry Areas*** - Secondary site entries occur as shown on the Landscape Plan at Campus Drive, South 88th Street and the northern entry off of Northwest Parkway. These areas will be similar to primary entries though smaller in scale, and will leverage their adjacency to native landscape zones to create a unique sense of arrival to the campus.
  - ***Entry Drive*** - The entry drive experience is a highly scripted sequence of landscape events that reinforce ConocoPhillips' goal of creating a campus that is "quiet and astonishing". The entry experience consists of entering the site from Northwest Parkway through a secured campus entry. Once through the check point, employees and authorized visitors will travel along a rolling topography of restored shortgrass prairie species with glimpses of the campus buildings coming in and out of view along the way. The overall landscape approach will be subtle and contextually appropriate. The alignment of the entry drive will prominently feature private common open spaces, travel through all three distinctive landscape typologies and will be responsive to the established rolling topography.
  - ***External Public Trails*** - Public land along a portion of the periphery of the campus, outside of the campus security perimeter, will provide for pedestrian trail connections to the regional trail network.
  - ***Internal Private Trails*** - Within the site private common open space there will be a series of connected private trails. These trails will connect buildings and provide for the connection of employees to the landscape.
  - ***Riparian*** - This typology surrounds the natural drainage features of the site. Since the alignment of the northern drainage regime will not substantially be realigned, ConocoPhillips' goal is to protect and preserve as much of the existing native riparian plant material as possible. This zone will require the addition of native riparian plant material to augment and enhance the existing system, and will require minor irrigation and maintenance until full establishment.
  - ***Restored Prairie*** - It is ConocoPhillips' goal to restore/establish the vast majority of the site to a contextually appropriate shortgrass prairie aesthetic. This will require considerable grading and soil preparation along with an intensive establishment strategy. This typology makes up the majority of the site and, once fully established, requires the least maintenance and irrigation of the proposed typologies.
  - ***Enhanced Prairie*** - The enhanced prairie is the transitional zone between the Restored Prairie and the Prairie Garden. This zone uses native plant materials and topography in a more formal and structured arrangement to provide the subtle contrast to the Restored Prairie typology. It has a moderate maintenance and irrigation requirement.
  - ***Prairie Garden*** - This landscape typology is the zone closest to the buildings and includes a mixture of hardscape and more formally arranged softscape elements. These areas in particular will utilize a mixture of colorful native plant material, which will provide seasonal interest. This requires the highest level of maintenance and irrigation, and has therefore been limited in size and location.

PLANT SCHEDULE

Native and Xeriscape Plants

Deciduous Trees	
Botanical Name	Scientific Name
Amur Chokecherry	Prunus maackii
Amur Maple	Acer ginnala
Austrian Pine	Pinus nigra
Bigtooth Maple	Acer grandidentatum
Bur Oak	Quercus macrocarpa
Canada Red Chokecherry	Prunus virginiana 'Canada Red'
Canyon Maple	Acer grandidentatum
Chinkapin Oak	Quercus muehlenbergii
Chokecherry	Prunus virginiana
Colorado Blue Spruce	Picea pungens 'Glauca'
Common Hackberry	Celtis occidentalis
Crabapple	Malus species
Eastern Redbud	Cercis canadensis
European Mountain Ash	Sorbus aucuparia
Flowering Crabapple	Malus sp.
Hackberry	Celtis occidentalis
Hedge Maple	Acer campestre
Honeylocust	Gleditsia triacanthos inermis
Ironwood	Ostrya virginiana
Kentucky Coffeetree 'Espresso'	Gymnocladus dioica 'Espresso'
Kentucky Coffeetree	Gymnocladus dioica
Littleleaf Linden	Tilia cordata
Mountain Ash	Sorbus species
Norway Maple	Acer platanoides
Oak	Quercus species
Oregon Ash	Fraxinus latifolia
Paper Birch	Betula papyrifera
Pin Oak	Quercus palustris
Plains Cottonwood	Populus deltoides ssp. Wislizeni
Quaking Aspen	Populus tremuloides
Regent Honeylocust	Gleditsia triacanthos inermis 'Regent'
Rocky Mountain Maple	Acer glabrum
Sandcherry	Prunus besseyi
Serviceberry	Amelanchier species
Shademaster Honeylocust	Gleditsia triacanthos inermis 'Shademaster'
Shantung Maple	Acer truncatum
Shubert Chokecherry	Prunus virginiana 'Shubert'
Siberian Elm	Ulmus pumila
Silver Linden	Tilia tomentosa
Skyline Honeylocust	Gleditsia triacanthos inermis 'Skyline'
Thornless Cockspur Hawthorn	Crataegus crus-galli inermis
Tree Lilac	Syringa reticulata
Turkish Filbert	Corylus colurna
Western Catalpa	Catalpa speciosa
Western Hackberry	Celtis occidentalis
Western Soapberry	Sapindus saponaria drummondii
Wild Plum	Prunus americana
Willow	Salix species
Zumbrota Honeylocust	Gleditsia triacanthos inermis 'Zumbrota'

Evergreen Trees	
Botanical Name	Scientific Name
Austrian Pine	Pinus nigra
Bristlecone Pine	Pinus aristata
Colorado Blue Spruce	Picea pungens 'Glauca'
Douglas Fir	Pseudotsuga menziesii 'Fastigiata'
Eastern White Pine	Pinus strobus
Limber Pine	Pinus flexilis
Mugo Pine	Pinus mugo
Ponderosa Pine	Pinus ponderosa
Rocky Mountain Juniper	Juniperus scopulorum 'Wichita Blue'
Rocky Mountain Lodgepole Pine	Pinus contorta latifolia
Scotch Pine	Pinus sylvestris
Spruce	Picea species
Swiss Stone Pine	Pinus cembra
Western Red Cedar	Thuja plicata
White Fir	Abies concolor

Deciduous Shrubs	
Common Name	Scientific Name
Apache Plume	Fallugia paradoxa
Aspen Daisy	Erigeron speciosus
Bearberry Cotoneaster	Cotoneaster dammeri
Big Sagebrush	Artemisia tridentata
Blue Mist Spirea	Caryopteris x clandonensis
Bush Cinquefoil	Potentilla fruticosa
Chokecherry	Prunus virginiana
Common Buckthorn	Rhamnus cathartica
Common Ninebark	Physocarpus opulifolius
Cotoneaster	Cotoneaster species
Creeping Mahonia	Mahonia repens
Dwarf Alpine Currant	Ribes alpinum 'Pumilum'
Dwarf Burning Bush	Euonymus alatus 'Compacta'
Dwarf Fothergilla	Fothergilla gardenii
Dwarf Korean Lilac	Syringa meyeri 'Palibin'
Dwarf Mugo Pine	Pinus mugo pumilio
Dwarf Rabbitbrush	Chrysothamnus nauseosus
Dwarf Winged Euonymus	Euonymus alatus 'Compacta'
Fernbush	Chamaebatiaria millefolium
Forsythia	Forsythia species
Fragrant Sumac	Rhus aromatica
Gambel Oak	Quercus gambelii
Golden Currant	Ribes aureum
Gro-Low Fragrant Sumac	Rhus aromatica 'Gro-Low'
Hydrangea	Hydrangea species
Japanese Barberry	Berberis thunbergii
Japanese Kerria	Kerria japonica
Littleleaf Mockorange	Philadelphus microphyllus
Mountain Mahogany	Cercocarpus montanus
Native Plum	Prunus americana
Nine Bark	Physocarpus species
Oregon Grape	Mahonia species
Peking Cotoneaster	Cotoneaster acutifolius
Pfitzer Juniper	Juniperus chinensis 'Pfitzeriana'
Potentilla	Potentilla species
Red Barberry	Berberis thunbergii 'Atropurpurea'
Redleaf Rose	Rosa species
Regent Bird Willow	Prunus besseyi
Salix Species	Salix species
Shrub Dogwood	Cornus species
Shrub Honeysuckle	Lonicera species
Silver Buffaloberry	Shepherdia argentea
Silver Leaf Dogwood	Cornus sericea
Smooth Sumac	Rhus glabra
Snowberry	Symphoricarpos albus
Spirea	Spiraea species, hybrids and/or cultivars
Thinleaf Alder	Alnus incana
Tobosa Grass	Hilaria mutica
Western Sandcherry	Prunus besseyi
Western Snowberry	Symphoricarpos occidentalis
Wild Rose	Rosa species
Willow	Salix species
Winterfat	Krascheninnikovia lanata
Yucca	Yucca species

Evergreen Shrubs	
Common Name	Scientific Name
Creeping Juniper	Juniperus horizontalis
Dwarf Mugo Pine	Pinus mugo pumilio
Dwarf Pfitzer Juniper	Juniperus chinensis 'Pfitzeriana'
Dwarf Scotch Pine	Pinus sylvestris 'Nana'
Mugo Pine	Pinus mugo
Oregon Grape	Mahonia species
Rocky Mountain Juniper	Juniperus scopulorum 'Wichita Blue'
Savin Juniper	Juniperus sabina
Spreading Juniper	Juniperus species
Yucca	Yucca species

Ornamental Grasses & Forbs	
Common Name	Scientific Name
Alkali Sacaton	Sporobolus airoides
Big Bluestem	Andropogon gerardii
Blue Fescue	Festuca ovina glauca
Blue Oat Grass	Helictotrichon sempervirens
Blue Penstemon	Penstemon species
Blue Switchgrass	Panicum virgatum 'Heavy Metal'
Blue Wild Rye	Elymus glaucus
Blue Wildrye	Elymus species
Blue Wildrye 'Canadian'	Elymus canadensis
Blue Wildrye 'Mammoth'	Elymus cinereus 'Mammoth'
Blue Wildrye 'Prairie Blue'	Elymus trachycaulus 'Prairie Blue'
Blue Wildrye 'Rocky Mountain'	Elymus glaucus 'Rocky Mountain'
Blue Wildrye 'Sand'	Elymus trachycaulus 'Sand'
Blue Wildrye 'Snowy Owl'	Elymus trachycaulus 'Snowy Owl'
Blue Wildrye 'Trailway'	Elymus trachycaulus 'Trailway'
Blue Wildrye 'Victoriana'	Elymus trachycaulus 'Victoriana'
Blue Wildrye 'Washoe'	Elymus trachycaulus 'Washoe'
Blue Wildrye 'Whitmar'	Elymus trachycaulus 'Whitmar'
Blue Wildrye 'Wyoming'	Elymus trachycaulus 'Wyoming'
Blue Wildrye 'Wyoming Germplasm'	Elymus trachycaulus 'Wyoming Germplasm'
Bluebell	Mertensia species
Blue-eyed Grass	Sisyrinchium species
Bottlebrush Squirreltail	Elymus elymoides
Bouncing Bet	Saponaria officinalis
Brown-eyed Susan	Rudbeckia triloba
Buffalograss	Buchloe dactyloides
Butterfly Weed	Asclepias tuberosa
Canada Wildrye	Elymus canadensis
Canada Wildrye 'Mammoth'	Elymus canadensis 'Mammoth'
Canada Wildrye 'Prairie Gold'	Elymus canadensis 'Prairie Gold'
Canada Wildrye 'Prairie Red'	Elymus canadensis 'Prairie Red'
Canada Wildrye 'Prairie Silver'	Elymus canadensis 'Prairie Silver'
Canada Wildrye 'Prairie Sunset'	Elymus canadensis 'Prairie Sunset'
Canada Wildrye 'Prairie Sunshine'	Elymus canadensis 'Prairie Sunshine'
Canada Wildrye 'Rocky Mountain'	Elymus canadensis 'Rocky Mountain'
Canada Wildrye 'Sand'	Elymus canadensis 'Sand'
Canada Wildrye 'Shoshone'	Elymus canadensis 'Shoshone'
Canada Wildrye 'Swift'	Elymus canadensis 'Swift'
Canada Wildrye 'Wyoming'	Elymus canadensis 'Wyoming'
Canada Wildrye 'Wyoming Germplasm'	Elymus canadensis 'Wyoming Germplasm'
Cheatgrass	Bromus tectorum
Columbine	Aquilegia species
Common Yarrow	Achillea millefolium
Creeping Mahonia	Mahonia repens
Dalmation Toadflax	Linaria dalmatica
Dotted Gayfeather	Liatris punctata
Downy Gayfeather	Liatris mucronata
Fringed Sage	Artemisia frigida
Gaillardia	Gaillardia species
Golden Banner	Thermopsis species
Golden Currant	Ribes aureum
Goldenrod	Solidago species
Gro-Low Fragrant Sumac	Rhus aromatica 'Gro-Low'
Hairy Golden Aster	Heterotheca villosa
Hairy Vetch	Vicia villosa
Hollyhock	Alcea rosea
Indian Blanketflower	Gaillardia pulchella
Indian Ricegrass	Oryzopsis hymenoides
Jacob's Ladder	Polemonium species
Junegrass	Koeleria macrantha
Kentucky Bluegrass	Poa pratensis
Lamb's Ear	Stachys byzantina
Lanceleaf Coreopsis	Coreopsis lanceolata
Lupine	Lupinus species
Maximilian Sunflower	Helianthus maximiliani
Mexican Hat	Ratibida columnifera
Missouri Goldenrod	Solidago missouriensis
Mountain Bluebell	Mertensia species
Mountain Muhly	Muhlenbergia montana
Needle and Thread	Hesperostipa comata
Nodding Onion	Allium cernuum
Oxeye Daisy	Leucanthemum vulgare
Palmer Penstemon	Penstemon palmeri
Pasque Flower	Pulsatilla patens
Penstemon	Penstemon species
Plains Coreopsis	Coreopsis tinctoria
Prairie Aster	Aster species
Prairie Clover	Dalea species
Prairie Coneflower	Ratibida columnifera 'Nana Sunbird'
Prairie Cordgrass	Spartina pectinata
Prairie Dropseed	Sporobolus heterolepis
Prairie Junegrass	Koeleria macrantha
Prairie Sage	Artemisia ludoviciana
Prairie Smoke	Geum triflorum
Prairie Sunflower	Helianthus petiolaris
Purple Coneflower	Echinacea purpurea
Purple Prairie Clover	Dalea purpurea
Rocky Mountain Penstemon	Penstemon strictus
Rocky Mountain Zinnia	Zinnia grandiflora
Rush Skeletonweed	Chondrilla juncea
Sand Dropseed	Sporobolus cryptandrus
Sand Lily	Leucocrinum montanum
Sandhill Muhly	Muhlenbergia pungens
Scarlet Gaura	Gaura coccinea
Scarlet Globemallow	Sphaeralcea coccinea
Scarlet Penstemon	Penstemon barbatus
Showy Goldeneye	Viguiera multiflora
Showy Milkweed	Asclepias speciosa
Side-oats Grama	Bouteloua curtipendula
Silky Lupine	Lupinus sericeus
Silver Buffaloberry	Shepherdia argentea
Silver Lupine	Lupinus argenteus
Silverleaf Scurfpea	Psoralidium tenuiflorum
Slender Wheatgrass	Agropyron trachycaulum
Smooth Brome	Bromus inermis
Snow-in-Summer	Cerastium tomentosum
Spiderwort	Tradescantia species
Stiff Sunflower	Helianthus pauciflorus
Sulphur Flower	Eriogonum umbellatum
Sundial Lupine	Lupinus perennis
Sunflower	Helianthus species
Switchgrass	Panicum virgatum
Tall Fescue	Festuca arundinacea
Tall Oatgrass	Arrhenatherum elatius
Tall Oatgrass 'Bandera'	Arrhenatherum elatius 'Bandera'

CONOCOPHILLIPS CAMPUS

PRELIMINARY PUD DEVELOPMENT PLAN

A PART OF THE SOUTH HALF OF SECTION 20, THE NORTH HALF OF SECTION 29,
TOWNSHIP 1 SOUTH, RANGE 69 WEST OF THE 6TH P.M.

VEHICULAR / PEDESTRIAN CIRCULATION PLAN

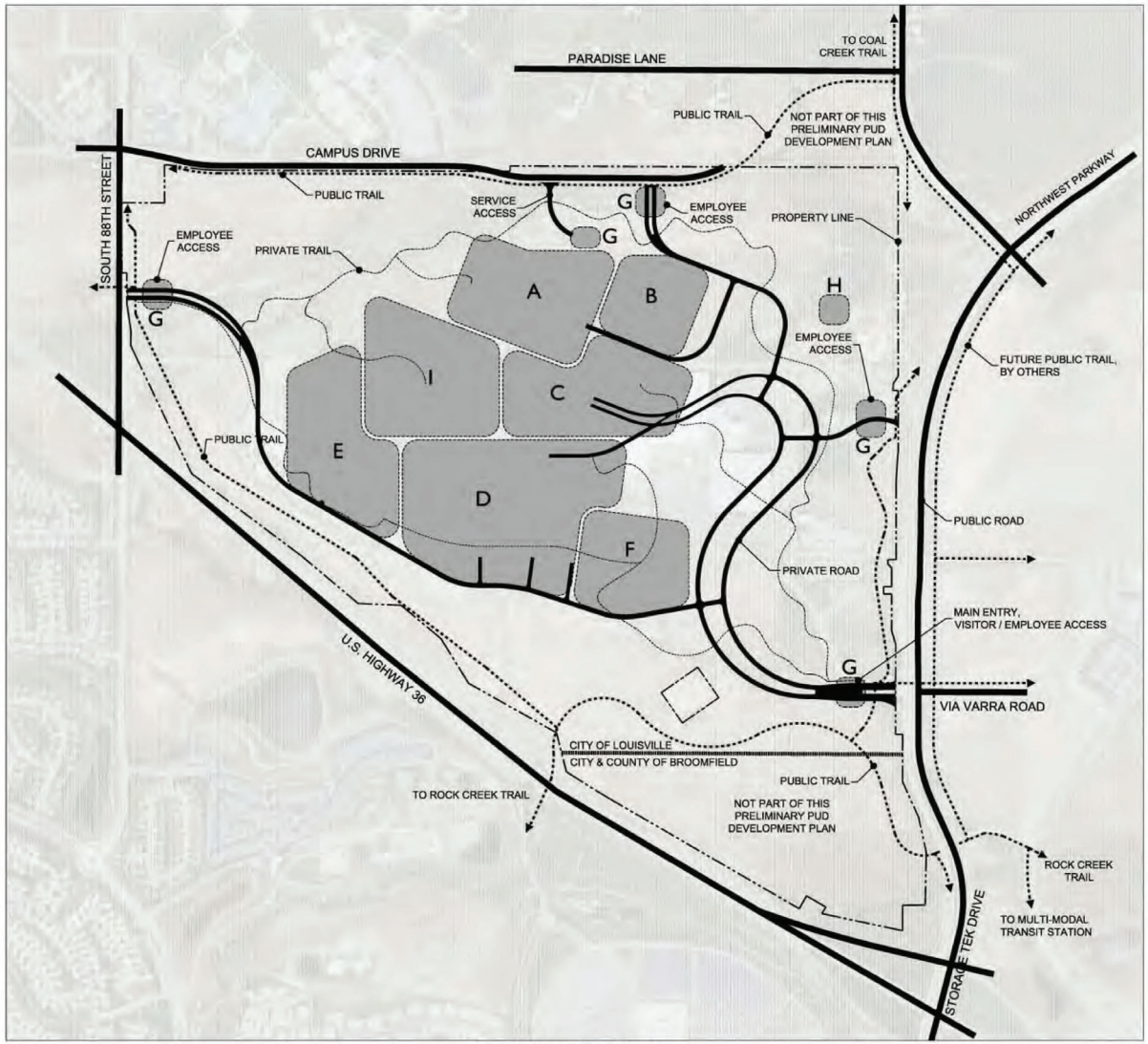
SHEET 11 OF 11

PUBLIC ROADS

PRIVATE ROADS

PUBLIC TRAILS

PRIVATE TRAILS



VEHICULAR / PEDESTRIAN CIRCULATION PLAN

400 200 0 400 800

SCALE: 1" = 400'

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2190 E 17TH AVENUE
Denver, CO 80206 USA
t +1 303 832 1712
f +1 303 832 1713
PLANNER / LANDSCAPE ARCHITECT

CONSULTANTS OF COLORADO, INC.
CIVIL ENGINEERING LAND SURVEYING
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Fax: (720) 482-9546
CIVIL ENGINEER

Drexel, Barrell & Co.
Engineers/Surveyors
1800 38th Street
Boulder, CO 80301
Tel: (303) 442-4338
Fax: (303) 442-4373
SURVEYOR

ISSUE / REVISION	DATE
PRELIMINARY PUD DEVELOPMENT PLAN SUBMITTAL	11/12/2009
RESUBMITTAL	2/01/2010
RESUBMITTAL	3/08/2010

CONOCOPHILLIPS CAMPUS
2270 SO. 88TH STREET
LOUISVILLE, CO

VEHICULAR / PEDESTRIAN CIRCULATION PLAN

DRAWN	TEAM
CHK	TEAM
PRJ #	09.026001.00

SHEET NUMBER:

11 OF 11

Recorded 3:02 P.M. On NOV 19 1981
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Reception No. ..... Charlotte Houston, Boulder County Recorder

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ANNEXATION AGREEMENT

THIS AGREEMENT, made and entered into this 20th day of October, 1981, by and between the CITY OF LOUISVILLE, a municipal corporation, in the County of Boulder, State of Colorado, hereinafter referred to as "CITY", and Storage Technology Corporation, hereinafter referred to as "ANNEXOR".

WITNESSETH: That,

WHEREAS, the ANNEXOR has petitioned CITY for annexation and zoning of the unincorporated territory (" The Property") owned by ANNEXOR, more particularly described in Exhibit "A", attached hereto and by this reference made a part hereof: and,

WHEREAS, the parties mutually agree and recognize that it is necessary for the development of The Property by ANNEXOR, that ANNEXOR obtain certain services from the CITY, including water and sewer services and police protection, and that ANNEXOR dedicate and improve certain rights-of-way and provide other improvements.

NOW,THEREFORE, it is understood and agreed as follows:

1. Basic Intent. The intent of this Agreement is to set forth basic agreements with respect to various designated areas of the annexation as described in Exhibit "A". This Agreement shall be in general in scope and shall not preclude supplemental agreement, including subdivision agreements or other agreements between the parties setting forth requirements and further details for implementation of the general provisions described herein. This Agreement and the terms hereof are made as a result and in anticipation of the annexation of The Property . The annexation of The Property and the furnishing of services by the CITY shall constitute the consideration given on behalf of the CITY to ANNEXOR in exchange for ANNEXOR'S performance of the terms and duties as set forth herein. The sufficiency of such consideration as set forth above is hereby acknowledged by the parties.

2. Zoning. ANNEXOR'S annexation petition requests the passage of zoning by the CITY of The Property as illustrated on Exhibit "B" attached hereto and by this reference made a part hereof.

3. Municipal Services. As a result of the annexation of The Property , CITY agrees to provide The Property with all the usual municipal services in accordance with the existing ordinances and policies of the CITY, which services shall include police protection, water and sewer utilities, and all other services customarily provided by the CITY.

4. Streets. ANNEXOR agrees to dedicate upon request from the CITY all necessary rights-of-way for the full width thereof of all residential, collector, minor and major streets presently lying and in use within the Property and other land owned by STC. All such dedications shall be by tansfer of warranty deed to the CITY after approval of said transfer by the City Attorney. ANNEXOR further agrees upon development of the property to fully improve with curb, gutter, sidewalk, sub-base and surfacing said streets for the full width thereof in full conformity with the street specifications established by the City of Louisville. Also, ANNEXOR agrees to dedicate 88th Street where it is adjacent to the existing STC property. Furthermore, ANNEXOR and the CITY agrees there are other areas of concern relative to major street improvements because of this annexation, including improvements to 88th Street, 96th Street, Dillon Road, and the Superior Interchange. The parties agree that these matters will be discussed more fully prior to development of the annexed parcel. Also, ANNEXOR agrees to aid the CITY in the attempt to locate an interchange at 96th Street and Highway 36.

5. Water and Sewer. ANNEXOR agrees to install upon subdivision and/or development thereof, water lines of a diameter described by the CITY, in accordance with the CITY'S standards and specifications, which plans must be approved by the CITY. ANNEXOR agrees to dedicate, upon request from the CITY all necessary unobstructed rights-of-way for utility easements needed for water and sewer lines to serve the Property or for the transmission through the Property. There shall be no duty or obligation upon the CITY to furnish water or sanitary sewer facilities to the Property until such time as such services for water and sewer can be economically and reasonably installed so as to provide services to a number of inhabitants so as to make the construction and establishment of such services feasible. ANNEXOR agrees and understands that in view of this annexation and other construction on the present site, it will be necessary to increase its existing water tap and meter as follows: 1. Said tap will be immediately increased from a three inch to a four inch tap and fees for such tap paid along with any fees necessary for the accompanying increase in the sewer tap fee. 2. Water and sewer tap and meter requirements for the Property shall be determined at the time building construction begins on this property and, if possible, the Property shall be served by its own separate water and sewer tap and meter.

ANNEXOR also understands and agrees that such an increase will necessitate additional wastewater tap fees.

6. Storm Drainage. Upon subdivision and/or development of The Property, Storm drainage improvements shall be installed by ANNEXOR in full conformity with all regulations and ordinances of the CITY. ANNEXOR agrees to dedicate upon request from the CITY all necessary rights-of-way for storm sewers to serve The Property or for transmission through The Property.

7. Other Public Improvements. All public improvements to The Property, including but not limited to, water distribution, sewage collection, gas service, electrical service, sidewalks and grading shall be constructed to CITY standards by the ANNEXOR in conformance with plans approved by the CITY. Said improvements shall be properly connected to and integrated with existing systems of the CITY and existing facilities. Said improvements shall be oversized to the extent necessary to serve as future development as determined by the CITY.

8. Water Rights. ANNEXOR owns no water rights which have historically served The Property.

9. Fees. Annexation fees have been paid by ANNEXOR prior to signing this Agreement, as follows: Annexation - $

Zoning - $

10. Development Proposal. Prior to the issuance of any building permits for construction on The Property, Annexor agrees to subdivide The Property under the procedures of the Louisville Municipal Code.

11. Time of Development. Nothing in this Agreement shall be construed as binding ANNEXOR to any development schedule, it being understood that the timing of any subdivision or development of The Property is within ANNEXOR'S sole discretion.

12. Purpose. The purpose of this Agreement is to set forth some of the major requirements imposed by law on developments within the City, so that both parties are aware at the outset of their respective responsibilities; except for Paragraph 14, below, the parties do not intend by this Agreement to modify any of the provisions of the City's Municipal Code or state law relating to annexation, subdivision or development of The Property.

13. Binding Effect of Agreement. This Agreement, when executed, shall insure to the benefit and be binding upon the heirs, successors and assigns of their respective parties. The original hereof, upon execution, shall be recorded in the County of Boulder, State of Colorado. Both parties covenant and agree that they will cooperate with one another in accomplishing the terms, conditions and provisions of this Agreement.

and will execute such documents necessary to effectuate the same.

14. Public Land Donation. In view of ANNEXOR'S existing recreation facilities on land previously annexed to the City, the City hereby releases ANNEXOR from the dedication (or cash in lieu thereof) requirements of section 16.16.060 of the Louisville Municipal Code with respect to any future subdivision and/or development of the Property by ANNEXOR.

15. Water Share. It is agreed that the one share of water rights in the Marshall Ditch which are currently owned by ANNEXOR will not be transferred to the CITY at this time. However, it is agreed that in the event said share is no longer used by ANNEXOR in the operation of its existing business, said share shall be transferred to the CITY for no additional consideration. ANNEXOR and CITY agree to take any steps necessary to effectuate this provision.

Said share shall also be transferred to the CITY for no additional consideration if ANNEXOR attempts to transfer the share to a party other than the CITY. These restrictions shall be placed upon said share.

IN WITNESS WHEREOF, the parties hereto have set their hands and seals this 20th day of October, 1981.

CITY OF LOUISVILLE

By Lawrence P. Caranci
Lawrence P. Caranci
Mayor

STORAGE TECHNOLOGY CORPORATION

By Charles J. Siefert
Charles J. Siefert
Executive Vice President
Finance and Administration

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INTERGOVERNMENTAL AGREEMENT SOUTHEAST BOULDER COUNTY, SOUTH 96TH STREET, DILLON ROAD, AND US 287 AREA COMPREHENSIVE DEVELOPMENT PLAN

This Intergovernmental Agreement by, between and among the City of Broomfield, a Colorado home rule municipal corporation (Broomfield); the City of Lafayette, a Colorado home rule municipal corporation (Lafayette); the City of Louisville, a Colorado statutory city (Louisville); and the County of Boulder, a body politic and corporate of the State of Colorado (Boulder County); (collectively the "Parties") is made to be effective on the 18th day of February, 1999.

WITNESSETH:

WHEREAS, 29-20-101 et seq., C.R.S. as amended, enables the Parties to enter into Intergovernmental Agreements to plan for and regulate land uses, in order to minimize the negative impacts of development on the surrounding areas and protect the environment, and specifically authorizes local governments to cooperate and contract with each other for the purpose of planning and regulating the development of land by means of a "comprehensive development plan"; and

WHEREAS, in order to ensure that the unique and individual character of Broomfield, Lafayette, and Louisville, respectively, are preserved, the Parties believe that a comprehensive development plan which recognizes the annexed areas and development approved by each community, accompanied by binding commitments by the responsible jurisdictions for the preservation of the rural character of surrounding lands as identified within the Plan Area, is in the best interest of the citizens of each of the Parties; and

WHEREAS, the prohibition of rezoning or other discretionary land use approvals by Boulder County and of annexation or development by Broomfield, Lafayette or Louisville of certain lands within the Plan Area, is intended to preclude increased development and urban sprawl which would obliterate the boundaries of Broomfield, Lafayette, and Louisville and would, if permitted in the unincorporated area, require the provision of urban services by Boulder County, in contravention of provisions of the Boulder County Comprehensive Plan; and

WHEREAS, the parcels designated City Preservation do not currently have city utility services; and

WHEREAS, the Denver Regional Council of Governments, the transportation planning agency in which this Plan area is located, has adopted a Metro Vision 2020 plan calling for urban growth boundaries which serve to preserve individual communities through rural development and/or open space buffers separating such communities; and

WHEREAS, the Parties desire to enter into this Intergovernmental Agreement in order to plan for and regulate the use of the lands within the Plan Area through joint adoption of a mutually binding and enforceable comprehensive development plan; and

WHEREAS, the Parties find that designating a portion of the Plan Area to remain as rural development for the purpose of preserving a community buffer serves the economic and civic interest of their citizens and meets the goals of the Boulder County Comprehensive Plan; and

WHEREAS, the Parties anticipate the location of a multi-modal roadway to serve the transportation needs of the citizens, hereinafter referred to as the "Northwest Parkway"; and

WHEREAS, with respect to the rezoning and other land use regulatory actions required pursuant to this Agreement, the Parties find that the proposed Northwest Parkway is intended primarily to serve as a major throughway providing relief from congestion at its interchanges at U.S. 36, U.S. 287, and I-25; that, for the Parkway to serve this purpose, it is essential that further development in the Rock Creek valley be limited, so that traffic-generating uses in the valley do not use up the traffic carrying capacity of the Parkway and surrounding transportation infrastructure, and so that the need for additional or expanded local access points with the Parkway is limited into the future; and

WHEREAS, with respect to the annexation provisions herein, the Parties declare that the rural preservation designations and land use regulations contained in this Agreement affect the future development of each municipality. Consistent with the municipal annexation, utility service, and land use laws of the State of Colorado, this Agreement, including specifically the annexation and utility service portions hereof, is intended to encourage the natural and well-ordered future development of each Party; to promote planned and orderly growth in the affected areas; to distribute fairly and equitably the costs of government services among those persons who benefit therefrom; to extend the government, services, and facilities to the affected areas in a logical fashion; to simplify providing utility services to the affected areas; to simplify the governmental structure of the affected areas; to reduce and avoid, where possible, friction between the Parties; and to promote the economic viability of the Parties; and

WHEREAS, the functions described in this Agreement are lawfully authorized to each of the Parties which perform such functions hereunder, as provided in article 20 of title 29; part 1 of article 28 of title 30; part 1 of article 12 of title 31; and parts 2 and 3 of article 23 of title 31, C.R.S., as amended; and

WHEREAS, 29-1-201, et seq., C.R.S., as amended, authorizes the Parties to cooperate and contract with one another with respect to functions lawfully authorized to each of the Parties and the people of the State of Colorado have encouraged such cooperation and contracting through the adoption of Colorado Constitution, Article XIV, 18(2); and

WHEREAS, the Parties have each held hearings after proper public notice for the consideration of entering into this Agreement and the adoption of a comprehensive development plan for the subject lands, hereinafter referred to as the "Plan Area", as shown on the map portion of the Development Limitations attached hereto as Exhibit A;

NOW THEREFORE, in consideration of the above and the mutual covenants and commitments made herein, the Parties agree as follows:

1. **SOUTHEAST BOULDER COUNTY AREA COMPREHENSIVE DEVELOPMENT PLAN.** This Agreement, including Development Limitations (both text and map portions) attached hereto as Exhibit A, is adopted by the Parties as the Southeast Boulder County, South 96th Street, Dillon Road and U.S. 287 Area Comprehensive Development Plan (the "Plan") governing the Plan Area.

2. **CONTROLLING REGULATIONS.** Restrictions on use and development of lands within the Plan Area, as provided in Exhibit A, shall control and supersede local regulations of the Regulatory Party to the extent they conflict. For purposes of this Plan, the "Regulatory Party" is that Party having regulatory jurisdiction over the subject property at the time, or seeking to acquire jurisdiction through annexation. A Party shall be deemed to be "seeking" annexation as of the date when an annexation petition is filed. No Party shall agree with any landowner or other person or entity interested in any parcel within the Plan Area to allow any use or development which does not comply with the Plan without first obtaining a Plan Amendment as set forth herein.

2.1 The Parties each agree to undertake all steps to adopt procedures, plans, policies, and ordinances or other regulations as may be necessary to implement and enforce the provisions of this Plan. Any Party adopting such procedures, plans, policies, ordinances or regulations shall give each of the other Parties sufficient advance notice of such action as will enable such Parties, if they so desire, to comment upon the planned actions of that Party.

2.2 To the extent this Plan is silent as to a particular land use matter, existing local land use regulations of the Regulatory Party having jurisdiction over the property, as amended from time to time, shall control.

3. **RURAL PRESERVATION AREA.** Broomfield, Lafayette, and Louisville each agree that they will immediately disclose to the other any and all

instances in which they are approached by landowners in the Rural Preservation Area seeking annexation. Further, Broomfield, Lafayette, and Louisville each commit that they are not currently pursuing any annexations within the Rural Preservation Area.

3.1 The Map portion of Exhibit A shows certain lands within the Plan Area which are designated "Rural Preservation Area". These lands are intended to remain within the unincorporated area of Boulder County, subject to Boulder County's land use regulatory jurisdiction as limited in the text portion of Exhibit A. Broomfield, Lafayette, and Louisville each agree that it will not initiate or approve an annexation of any portion of any of the lands shown as "Rural Preservation Area" on the Map portion of Exhibit A without first obtaining approval of a Plan Amendment as provided for herein.

3.2 By authorizing the execution of this Agreement, the City Councils of Broomfield, Lafayette, and Louisville each respectively finds and declares that there is no community of interest between the lands designated "Rural Preservation Area" on the Map portion of this Plan with their respective jurisdictions, either Broomfield, Lafayette, or Louisville; that none of these lands is urban nor is likely to urbanize within the term of this Plan; and that none of these lands is currently integrated with, nor for the term of this Plan will any of them be capable of being integrated with their respective jurisdictions, either Broomfield, Lafayette, or Louisville.

4. TRANSPORTATION SYSTEM. The proposed Northwest Parkway is part of an overall roadway network whose components are part of an interdependent system.

4.1 NORTHWEST PARKWAY. Boulder County currently regulates the site selection of arterial or collector highways, pursuant to §24-65.1-101 et seq., C.R.S. Boulder County agrees that the acquisition of right-of-way for the Northwest Parkway as indicated on Exhibit A approximately 300 feet in width and the construction of the roadway, across the parcels shown on Exhibit A to contain potential right-of-way, and along an alignment reasonably conforming to that shown on Exhibit A shall be exempt from the guidelines and regulations adopted by Boulder County pursuant to §24-65.1-101 et seq., C.R.S. if the right-of-way does not encroach more than 50 feet into the Rock Creek Farm Open Space. Additional encroachment into the Rock Creek Farm Open Space may be allowed only at the discretion of Boulder County. Where necessary for on/off ramps at interchanges and for slope easements at interchanges and overpasses, the width may exceed 300 feet to the extent of such necessity.

While the final design of the roadway is to be determined at a later date, the Parties agree to the following:

4.1.1 The Parties agree that the use of any more than the northerly 50 feet of the Rock Creek Farm Open Space area shall in all circumstances require the express consent of Boulder County. For purposes of

this Agreement, the Rock Creek Farm Open Space consists of the open space properties owned by Boulder County in sections 22, 27 & 28, T1S, R69W, 6th PM. The construction of connector roads will be permitted as a part of the Parkway project. Intersections, interchanges, and overpasses on the Northwest Parkway shall be as indicated on Exhibit A. The foregoing provisions of this paragraph notwithstanding, the right-of-way for the Parkway shall be located sufficiently far south in the NW1/4 of Section 22, T1S, R69W, 6th PM, as shown on Exhibit A, so as to avoid the Kilker homestead building cluster.

4.1.2 The Parties will support an access point at U.S. 287. The parties agree to support a request to the Colorado Department of Transportation for such access. Preferred access will be through the construction of an Urban Interchange as shown on Exhibit A.

4.1.3 The Parties will support the roadway designed as a multi-modal facility within a right-of-way, approximately 300 feet in width, within an alignment that provides buffering between communities.

4.1.4 When determining the final location of the roadway corridor within the Plan Area as shown on Exhibit A, the Parties agree to take into account environmental and economic factors, as well as any other appropriate issues. In making this determination for the roadway corridor location west of U.S. 287 in the vicinity of Dillon Road, the Parties agree to also take into consideration the interests of the homeowners whose homes front on Dillon Road in this area.

4.1.5. As conceptually shown on Exhibit A, a continuous Dillon Road connection will be provided across the U.S. 287 corridor. The exact alignment will be determined at a later date. The Dillon Road alignment will avoid floodplain and riparian areas as much as possible and the location of the Dillon Road crossing of U.S. 287 will be subject to State approval. Furthermore, the conceptual design of the U.S. 287 interchange, at a reasonable cost, shall be subject to review by the city council of Lafayette, prior to the financing of the Parkway.

4.1.6 The Parties agree to cooperate and assist any of the other Parties in their efforts to acquire right-of-way for the Northwest Parkway within their jurisdictions, within the Plan Area. Such cooperation and assistance may include, but shall not require, any Party's use of the power of eminent domain, contribution of funds, or provision of land for such right-of-way.

4.1.7 The Parties will not object to the construction of the Northwest Parkway and the conceptual alignment for the roadway as shown on Exhibit A with a permitted variation of 50 feet from the center line. The Parties consent (1) to the creation of a public entity or entities pursuant to state statutes in effect as of the date of this agreement (including public highway authorities established pursuant to §43-4-501, et seq., C.R.S. and metropolitan districts established pursuant to §32-1-101, et seq., C.R.S.,) to construct the Northwest Parkway, and to that entity's or entities' inclusion of Northwest Parkway right-of-way only within the boundaries of such entity or entities; (2) to the construction of the Northwest Parkway within the Parties' boundaries and within the corridor

shown in Exhibit A; and (3) to the exercise of the power of eminent domain by the entity or entities within the Parties' boundaries to acquire real property on which to construct the Northwest Parkway, which exercise shall (a) be in a manner so as to create no liability to the Parties or (b) be accompanied by an indemnification of the Parties by the entity or entities, to the extent permitted by law, for any loss or damage arising from the exercise of the power of eminent domain.

Notwithstanding anything in this subsection 4.1.7 to the contrary, where a public highway authority, in the exercise of eminent domain for right-of-way purposes, must condemn an additional portion of a parcel as an uneconomic remainder attendant, the Parties consent to such condemnation, and such parcel shall thereafter be used in accordance with the provisions of this Agreement and Plan, except that the Party in whose jurisdiction such parcel is located shall have an option to purchase such parcel for open space purposes at the price paid by the public highway authority, and the consent given to the extraterritorial condemnation by the authority is expressly conditioned upon the grant of such option by the authority to that Party.

4.1.8 Except for the consents set forth in subsection 4.1.7, the Parties expressly reserve and retain all rights, remedies, and authorities available under the Public Highway Authority law, C.R.S. §43-4-501 et seq. and the Special District Act, C.R.S. §32-1-101 et seq. Such rights specifically include, but are not limited to, the right to withhold consent to the authority's exercise of eminent domain outside its boundary but within the boundaries of the Parties, the right to refuse to allow the imposition of highway expansion fees or other impact fees by an authority within that Party's jurisdiction, and the right to withhold consent to the inclusion of any property other than Parkway right-of-way within the boundaries of the authority.

4.1.9 Design drawings for the construction of the Parkway shall be submitted to all Parties for review and comment regarding technical engineering issues such as drainage and grading.

4.2 AREA ROAD IMPROVEMENTS The four roadway improvements listed below are critical to the function of the overall transportation system. In order to assure the construction of these roadway improvements, the Parties agree to pursue funding through at least one or more of the following methods:

I. Special improvement district
II. Transportation Improvement Program funds through the Denver Regional Council of Governments
III. Impact fees
IV. State Transportation funds
V. Northwest Parkway financing proceeds, tolls, or other revenues

4.2.1 South 96th Street. The Parties will support the construction of a four-lane extension of South 96th Street as conceptually shown on Exhibit A. The parties will support an application through the Denver Regional Council

of Governments (DRCOG) process for inclusion of this project on the Transportation Improvement Plan (TIP), with Louisville as the sponsoring agency.

4.2.2 West Midway Boulevard. The Parties will support extension of West Midway Boulevard to connect with Industrial Lane and an extension of Industrial Lane to connect with South 96th Street as shown on Exhibit A. The parties will support an application through the DRCOG process for inclusion of this project on the TIP, with Broomfield as the sponsoring agency.

4.2.3 South Boulder Road. The Parties will support extension of South Boulder Road from S. 120th St. eastward to Lowell Boulevard to provide access to a future Northwest Parkway interchange. The Parties will support an application through the DRCOG process for inclusion of this project on the TIP, with Lafayette as the sponsoring agency.

4.2.4 U.S. 36. The Parties will not oppose the interchange improvements at U.S. 36 and South 96th Street, including construction of directional ramps and transit facilities. Additionally, the Parties will not oppose interchange improvements at U.S. 36 and McCaslin Boulevard, consisting of construction of directional ramps and transit facilities within the right-of-way existing as of the date of this agreement and within 1,000 feet of the existing interchange.

4.3 ALLOCATION OF PARKWAY FINANCING PROCEEDS The parties agree, and the consents set forth in subsection 4.1.7 are expressly conditioned upon the requirements, that a minimum of $22 million will be allocated from the Parkway financing proceeds for right-of-way acquisition, design engineering and the construction of South 96th Street pursuant to 4.2.1., of West Midway Boulevard pursuant to 4.2.2. and of a Dillon Road connection across the U.S. 287 corridor pursuant to 4.1.5. and that a minimum of $10 million will be allocated from Parkway financing proceeds for open space and conservation easement acquisition. An illustrative allocation is as follows - actual totals for the Parkway financing proceeds may vary depending upon financing and Parkway design:

Total bond issue	$255M
Open space and conservation easement allocation	$ 10M*
Roads allocation	$ 22M (see table below)

* To be provided equally to Broomfield and Louisville for perpetual conservation easement or fee title land purchases for five years after the Parkway financing proceeds are made available and after which, the parties will agree on the allocation of remaining funds. If Broomfield and Louisville expend funds for permanent conservation easements or fee title land purchases in advance of Parkway financing proceeds being available, Broomfield and Louisville are entitled to be reimbursed equally when such proceeds are available. To the extent these acquisitions are

totally funded by bond proceeds, title to the properties so acquired shall vest in the Public Highway Authority or other entity which issued the bonds, with an undivided interest in a conservation easement ensuring preservation of such properties as open space granted to or reserved by each of the Parties.

Road Priority for Minimum $22M Listed Above**	
1	Dillon Road
2	South 96th Street
3	West Midway Boulevard

** Any remaining funds after projects are completed will be applied to implementation of the Northwest Parkway.

No Party which is a member of any public highway authority established to create the roadway referred to herein as the Northwest Parkway shall permit its representative(s) on the Board of Directors of said authority to authorize a bond issue to finance Northwest Parkway right-of-way acquisition or construction costs by the authority without inclusion of the $10 million for perpetual conservation easements and fee title land acquisition or without inclusion of the $22 million for road improvements as provided in this section. Further, the consents set forth under subsection 4.1.7 of this Agreement are expressly conditioned upon the requirements that the governing body(ies) of the entity(ies) created to construct the Northwest Parkway will include in and make available from the Northwest Parkway financing proceeds the $10 million for perpetual conservation easement and fee title land acquisitions and the $22 million for road improvements as provided in this section, and that such entity(ies) will exercise its powers and construct the Northwest Parkway in accordance with this Agreement. No consent set forth under subsection 4.1.7 shall benefit such entity(ies) until the governing body(ies) of the entity(ies) has executed a consent stating it agrees to be bound by these requirements, which consent shall be delivered to, run in favor of, and enforceable by the Parties hereto.

Conservation easements and lands purchased in fee shall be held for the purposes set forth in §5.4 of the Plan, to preclude additional development, except as specified in this agreement, on such lands in perpetuity as community buffers and to preclude additional traffic generation on the Parkway.

5. **REFERRALS.** Any application or other proposal for annexation or development on any parcel within that portion of the Plan Area designated Rural Preservation Area as set forth in Exhibit A, shall be immediately referred in writing to all Parties and no action shall be taken thereon by the referring Party until such Parties have had the opportunity to respond concerning the proposal's conformity to this Plan and other land use concerns. All such responses are to be received within 20 days of date of referral.

6. **AMENDMENTS.** This Plan contains the entire agreement

between the Parties. Any proposed amendment of the Plan affecting the jurisdiction over lands or the development regulation of lands must be referred to the Parties by the Regulatory Party, or by any Party seeking to become the Regulatory Party through annexation. Amendment of the Plan shall take place only upon approval by resolution or ordinance adopted by the governing body of each of the Parties, after notice and hearing as may be required by law. The Regulatory Party shall not approve nor permit any development or change of use of any parcel in the Plan Area by any means in a manner inconsistent with this Agreement until and unless the Plan has been amended so that the proposed development or use of such parcel is consistent with the Plan.

7. SEVERABILITY. If any portion of this Plan is held by a court in a final, non-appealable decision to be per se invalid or unenforceable as to any Party, the entire Agreement and the Plan shall be terminated, it being the understanding and intent of the Parties that every portion of the Agreement and Plan is essential to and not severable from the remainder.

8. BENEFICIARIES. The Parties, in their corporate and representative governmental capacities, are the only entities intended to be the beneficiaries of the Plan, and no other person or entity is so intended.

9. ENFORCEMENT. Any one or more of the Parties may enforce this Agreement by any legal or equitable means including specific performance, declaratory and injunctive relief. No other person or entity shall have any right to enforce the provisions of this Agreement.

10. DEFENSE OF CLAIMS/INDEMNIFICATION. If any person allegedly aggrieved by any provision of the Plan and who is not a Party to the Plan should sue any Party concerning such Plan provision, such Party shall, and any other Party may, defend such claim upon receiving timely and appropriate notice of pendency of such claim. Defense costs shall be paid by the Party providing such defense.

Notwithstanding the foregoing, if the claim concerns the designation of property as "Rural Preservation Area," Boulder County shall provide defense in such action. If the claim concerns the designation of property as "City Preservation," the responsible city Party shall provide such defense.

In the event that any person not a Party to the Plan should obtain a final money judgment against any Party who is not the Regulatory Party for the diminution in value of any regulated parcel resulting from regulations in the Plan, or regulations adopted by the Regulatory Party implementing the Plan, the Regulatory Party shall, to the extent permitted by law, indemnify such Party for the amount of said judgment.

11. GOVERNING LAW AND VENUE. This Agreement shall be governed by the laws of the State of Colorado and venue shall lie in the County

of Boulder.

12. TERM AND EFFECTIVE DATE. This Agreement shall become effective upon signature of an authorized representative of the governing bodies of the Parties. Except as provided herein, this Agreement shall remain in effect for a period of thirty (30) years from the effective date, unless terminated prior thereto by agreement of all the Parties or pursuant to the terms of section 7 above.

13. PARTY REPRESENTATIVES. Referrals made under the terms of this Agreement shall be sent to the Parties' representatives as follows:

ENTITY:	REPRESENTATIVES:
County of Boulder	Director, Land Use Department P.O. Box 471 Boulder, CO 80306
City of Broomfield	City Manager 1 DesCombes Dr. Broomfield, CO 80020
City of Lafayette	City Administrator 1290 S. Public Rd. Lafayette, CO 80026
City of Louisville	City Administrator 749 Main St. Louisville, CO 80027

Name and address changes for representatives shall be made in writing, mailed to the other representatives at the then current address.

THIS AGREEMENT made and entered into to be effective on the date as set forth above.

CITY OF BROOMFIELD

By: William M. Berens
William Berens, Mayor

2/18/99
Date

ATTEST:

Vicki Mayo
City Clerk

CITY OF BROOMFIELD CORPORATE SEAL STATE OF COLORADO

APPROVED AS TO FORM:

Roy S. Howard, City Attorney

Boulder County Clerk, CO AG R 8.00
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CITY OF LAFAYETTE

By: _____
Carolyn McIntosh, Mayor

8/18/99
Date

ATTEST:

_____
City Clerk

APPROVED AS TO FORM:

_____
Patricia C. Tisdale, City Attorney

CITY OF LOUISVILLE

By: _____
Thomas Davidson, Mayor

2-18-99
Date

ATTEST:

_____
City Clerk

APPROVED AS TO FORM:

_____
Samuel J. Light, City Attorney

COUNTY OF BOULDER
BY: BOARD OF COUNTY COMMISSIONERS

By: Ronald K Stewart
Ronald K. Stewart

2-18-99
Date

ATTEST:

Susan M. Osbecht
Clerk to the Board

APPROVED AS TO FORM:

H. Lawrence Hoyt
H. Lawrence Hoyt, County Attorney

SEAL OF BOULDER COUNTY COLORADO

EXHIBIT A
(text portion)

SOUTHEAST BOULDER COUNTY 96TH STREET, DILLON ROAD AND U.S. 287 AREA IGA COMPREHENSIVE DEVELOPMENT PLAN

1. INTRODUCTION. This Comprehensive Development Plan (hereinafter "CDP") has been jointly developed and adopted by the Parties, and is entered into by Intergovernmental Agreement of said entities.

1.1 These Development Limitations are intended to provide specific land use and development restrictions governing the "Rural Preservation Area" parcels, the "City Preservation Area" parcels and the "City Open Space Area" parcels located within the Plan Area, the boundaries of which are set forth on the attached Map.

2. DEFINITIONS.

2.1 DEVELOPMENT: Construction or establishment of structures, parking areas, and/or surfaced vehicular roadways (except expansion of existing roads and except construction of the "Northwest Parkway" or a successor thereto along the alignment shown on Exhibit A), or establishment of new land uses.

2.2 PLAN AREA: Lands included within the boundaries of the designated Plan Area as set forth on the Map, including right-of-way, setback areas, and parcels subject to the Plan's Development Limitations.

2.3 STRUCTURE: Anything which is built or constructed, including but not limited to an edifice or building of any kind, or any piece of work artificially built up or composed of parts joined together in some definite manner, but excluding fences, retaining walls not over 6 feet in height, and buried utility lines.

3. DEVELOPMENT LIMITATIONS ON RURAL PRESERVATION AREA PARCELS.

3.1 For parcels designated Rural Preservation Area on the Map, those existing uses of such parcels which conform to Boulder County's regulations, or which are legally nonconforming, shall be permitted to continue, either as legal or legal nonconforming uses. No density increase beyond the limits currently permissible under the Boulder County Land Use Code shall be approved for any such parcel, nor shall any such parcel be annexed to any municipal Party, unless the same is approved through the Plan amendment

procedure set forth in Section 6 of the Agreement above.

3.2 Pursuant to regulations in the Boulder County Land Use Code as it may exist from time to time, parcels within the Rural Preservation Area may be "sending parcels" for purposes of transferring development rights (TDRs). However, such parcels shall not serve as "receiving parcels" without amendment of this Agreement. TDR units shall not be "sent" from parcels designated in this Agreement as Rural Preservation Area to be located upon a receiving site within the adopted comprehensive plan area of a municipal Party without the consent of the interested Party or Parties.

3.3 Development on parcels for which "vested rights" for further development have been acquired through an estoppel against Boulder County precluding the prohibition of such development established by a final, non-appealable court judgment in a proceeding of which the other Parties have been given timely notice and the opportunity to join or intervene shall be permitted to the extent such development is in conformance with the rights so acquired and occurs within the vested period.

3.4 Establishment of uses and development in conformance with the zoning (including approved PUD plans) and other land use and development regulations applicable to the property on the effective date of this Plan shall be permitted, where such uses or development continue to be permitted under the provisions of the Boulder County Land Use Code at the time at which they are sought to be established. Permission for such development shall be processed through the normal procedures otherwise established by Boulder County.

3.5 Approval of an NUPUD with residential density no greater than 2 units per 35 acres by Boulder County upon such lands is permitted pursuant to the regulations generally applicable therefor at the time of application submittal, and such approval is not for purposes of these Development Limitations an increase in density.

3.6 Any proposed use or development of any portion of the parcels designated Rural Preservation Area shall conform to the provisions of this Agreement, or, if nonconforming, shall require amendment of the Plan in the manner provided in the Agreement. Any proposed rezoning, subdivision, special use or other regulatory process, or amendment or modification of any existing zoning, PUD, special or conditional use, or subdivision plat, or issuance of a building permit, or proposed annexation, whether or not coupled with any such regulatory process, entered into for any lands designated Rural Preservation Area shall conform to the Plan, or with an approved amendment thereof, in order to be approved by the Regulatory Party.

4. SPECIFIC PARCELS PROVISION. References to specific parcels in this agreement will be by the Boulder County Assessor's parcel number. The attached map shows parcel numbers, acres and the current owner.

4.1 Parcels numbered 157521000034 (40.00 acres), 157521000037 (38.53 acres), 157521002001 (39.24 acres), 157521001003

(30.04 acres), 157521001001 (4.29 acres), 157521001002 (2.50 acres) and 157521001004 (2.50 acres) on the attached map, totaling 157.1 acres, are designated City Preservation Area with future use to be limited to agriculture and low density residential development. Broomfield hereby agrees to acquire a perpetual conservation easement on the above parcels that will allow additional residential use with a density of no more than 1 unit per 13 acres and will negotiate in good faith to this end.

4.2 A parcel numbered 157521000024 (1.20 acres) on the attached map is designated City Preservation Area with future use to be limited to agriculture and low density residential development. Broomfield hereby agrees to acquire a perpetual conservation easement on the above parcel that will allow additional residential use with a density of no more than 1 unit and will negotiate in good faith to this end.

4.3 A parcel numbered 157521000019 Tract "C" (8.45 acres) on the attached map is designated City Preservation Area with future use to be limited to agriculture and low density residential development. Broomfield hereby agrees to acquire a perpetual conservation easement on the above parcel that will allow additional residential use with a density of no more than 1 unit and will negotiate in good faith to this end.

4.4 Parcels numbered 157521000020 (18.00 acres), 157521000003 (40.00 acres), 157521000022(73.00 acres), 157521000001 (40.00 acres) on the attached map, totaling 171.00 acres, are designated City Preservation Area with future use to be limited to agriculture and low density residential development. Louisville hereby agrees to acquire a perpetual conservation easement on the above parcels that will allow additional residential use with a density of no more than 1 unit per 5 acres and will negotiate in good faith to this end.

4.5 A parcel numbered 157521000021 (59.00 acres) on the attached map is designated City Preservation Area with future use to be limited to agriculture and low density residential development. Broomfield hereby agrees to acquire a perpetual conservation easement on the above parcel that will allow additional residential use with a density of no more than 1 unit per 5 acres and will negotiate in good faith to this end.

4.6 A parcel numbered 157521000016 (1.00 acre) on the attached map is designated City Preservation Area with future use to be limited to agriculture and low density residential development. Broomfield hereby agrees to acquire a perpetual conservation easement on the above parcel that will allow residential use with a density of no more than 1 unit and will negotiate in good faith to this end.

4.7 A parcel numbered 157520000032 (33.70 acres) on the attached map is designated City Preservation Area with future use to be limited to agriculture and low density residential development. Louisville hereby agrees to allow residential use with a density of no more than 1 unit per 5 acres, on this parcel.

4.8 Fifty percent of a parcel numbered 157520000001 (23.15

acres) on the attached map is designated City Open Space Area with future use to be limited to open space uses. Louisville hereby agrees to allow only open space uses on this parcel.

4.9 Parcels numbered 157528000004 (13.80 acres), 157528000005 (28.91 acres), and 157528000016 (13.00 acres) on the attached map are designated City Preservation Area with future use to be limited to 10± acres for RTD transit center and park and ride facility and 46± acres for city open space and/or City Preservation Area. By agreement, Broomfield has an option to purchase the remaining acreage not needed for the transit center and park and ride facility and has allowed RTD residential use with a density of no more than one unit per five acres on 46± acres of this parcel if Broomfield does not purchase the 46± acres for open space by November 2002. Broomfield will use its best efforts to purchase all or part of remaining RTD property.

4.10 The parcel numbered 157528000003 (5.00 acres) on the attached map is designated City Preservation Area with future use to be limited to agriculture and low density residential. Broomfield hereby agrees to acquire a perpetual conservation easement on the above parcel which will limit the use to 1 residential unit.

4.11 Parcels numbered 157529000019 (2.48 acres) and 157529000010 (38.91 acres) on the attached map are designated City Preservation Area with future use to be limited to private open space. Broomfield hereby agrees to acquire a perpetual conservation easement on the above parcels that will allow private open space and will negotiate in good faith to this end.

4.12 A parcel numbered 15752000002 (51.71 acres) on the attached map is designated City Preservation Area with future use to be limited to agriculture, private open space (including a golf course use) and low density residential development. Broomfield hereby agrees to acquire a perpetual conservation easement on the above parcel that will allow additional residential use with a density of no more than 1 unit per 13 acres and will negotiate in good faith to this end.

4.13 A parcel numbered 157520000009 (78.30 acres) on the attached map is currently unincorporated Boulder County and is designated City Preservation Area; if and when annexed to the City of Louisville, future use shall be limited to agriculture and low density residential development. Louisville hereby agrees to allow residential use with a density of no more than 1 unit per 4 acres, on this parcel. Prior to annexation this parcel is designated Rural Preservation.

4.14 Parcels numbered 157515000006 (155.00+-acres), 157515000022 (3.0 acres) and 157515000023 (1.0 acres) on the attached map are designated City Preservation Area with future use to be limited to agriculture and low density residential development. Louisville hereby agrees to acquire perpetual conservation easements on the above parcels that will allow additional residential use with a density of no more than 1 unit per 5 acres and will negotiate in good faith to this end.

4.15 A parcel numbered 157521000018 (36.0 acres) on the attached map includes a portion designated as "A" (6.14 acres) titled Gateway City Open Space Area. Broomfield hereby agrees to acquire and allow only open space uses or entry feature uses on this parcel and will negotiate in good faith to this end.

4.16 Parcels numbered 157520000002, 157520000003, 157520000004, 157520000005, 157520000020, 157520000019 and 157520000007 (a total of approximately 78 acres) on the attached map are currently unincorporated Boulder County and are designated Rural Preservation Area. Future Use shall be limited to agriculture and low density residential development. Boulder County agrees to consider approval of residential use with a density of no more than 1 unit per 4.5 acres on these parcels, provided that a perpetual conservation easement limiting development to no more than 1 unit per 4.5 acres is secured as part of the approval of the new density.

4.17 A parcel numbered 157520000031 (80 acres) on the attached map is currently unincorporated Boulder County. If and when annexed to the City of Louisville, Louisville shall use its best efforts in good faith to require an undeveloped buffer along the northern side of said parcel. The parties agree that only Louisville can annex this property.

4.18 Louisville, Lafayette, and Boulder County agree to initiate a process to amend the existing Lafayette/Louisville Buffer Comprehensive Development Plan Intergovernmental Agreement between the cities of Lafayette and Louisville, to bring the Haight property (Parcel number 157515000012) into conformance with the map portion of Exhibit A.

5. RURAL PRESERVATION AREA.

5.1 Any properties within the Plan Area designated as Rural Preservation Area which are acquired as "open space" shall be acquired in fee or by perpetual conservation easement (as defined in §38-30.5-102, C.R.S.) for open space purposes by any one or more of the Parties, to the extent funds are appropriated and made available for such purpose. The method by which such acquisition will take place, and the terms and conditions of purchase, together with the determination of whether fee title or a perpetual conservation easement will be acquired, shall be at the sole discretion of the acquiring Party(ies).

5.2 The right-of-way necessary for construction of the Northwest Parkway or a successor roadway, as shown on Exhibit A, may be obtained at the same time that any Rural Preservation Area property which is sought to be acquired for open space (through which the proposed Northwest Parkway) alignment runs as shown on Exhibit A is acquired; or any Party may acquire the right-of-way necessary for construction of the Northwest Parkway at any other time. Any Party seeking to obtain the proposed right-of-way shall commit to the acquiring Party to purchase the right-of-way upon the same terms and at the same time as the open space acquisition. For this purpose, at the time any Party(ies) contracts to purchase such Rural Preservation Area parcel for open space purposes, such Party(ies) shall provide to each other Party(ies) an option

for purchase of the right-of-way.

5.3 Upon acquisition of any Rural Preservation parcels shown on Exhibit A, the acquiring Party shall provide to each of the other Parties an undivided interest in a perpetual conservation easement upon said lands, providing for restrictions on development and the use in accordance with the terms of this Plan and the site-specific management plan.

5.4 Open space shall serve one or more of the following functions:

(a) urban shaping between or around municipalities or community service areas and buffer zones between residential and non-residential development;

(b) preservation of critical ecosystems, natural areas, scenic vistas and area fish and wildlife habitat, natural resources and landmarks, and cultural, historical and archaeological areas;

(c) linkages and trails, access to public lakes, streams and other usable open space lands, stream corridors and scenic corridors along highways;

(d) areas of environmental preservation, designated as areas of concern, generally in multiple ownership, where several different preservation methods (including other governmental bodies' participation or private ownership) may need to be utilized;

(e) conservation of natural resources, including but not limited to forest lands, range lands, agricultural land, aquifer recharge areas, and surface water;

(f) preservation of land for outdoor recreation areas limited to passive recreational use, including but not limited to hiking, photography or nature studies, and if specifically designated, bicycling, horseback riding, or fishing;

(g) underground public facilities, including public utility mains and lines; other public facilities may be located thereon where approved by the governing bodies of each of the Parties.

5.5 Once acquired, open space may be used only for the above purposes, and shall be used in accordance with a site-specific management plan approved by the governing body of the acquiring Party(ies) after consultation with the other Parties. Until acquisition, such parcels or portions of parcels shall be subject to the Development Limitations set forth in Section 3 of this Plan.

5.6 Residents of the Cities of Broomfield, Lafayette, and Louisville shall be entitled to use the open space properties acquired by Boulder County pursuant to (and subsequent to the execution of) this Agreement to the same extent and upon the same terms and conditions as all Boulder County residents, irrespective of the county in which such city residents live.

6. CITY PRESERVATION AREA.

6.1 Any properties within the Plan Area designated as City Preservation Area for which perpetual conservation easements are to be

acquired shall be acquired by any one or more of the Parties. The method by which such acquisition will take place, and the terms and conditions of purchase, together with the determination of whether fee title or a perpetual conservation easement will be acquired, shall be at the sole discretion of the acquiring Party(ies). Moreover, no Party shall have any responsibility regarding the acquisition or provision of right-of-way for the Northwest Parkway pursuant to this Agreement until such conservation easement acquisitions have been completed by the other Parties or such regulatory actions have been taken by the other parties to the extent permitted by law to ensure that development on the properties conforms to the use and densities set forth in Section 4 and its subsections above. Any Party is entitled to enforce this provision through an action for specific performance, which shall expressly be understood to include the right to specifically enforce the acquisition of such properties by any Party which is in default of this provision and/or to enforce the provisions of this Agreement upon regulatory actions of ary Party and development applications for any parcel subject to this Agreement. It is also expressly understood that the lack of appropriation shall not be a defense to such an action for specific performance so long as Northwest Parkway proceeds have been received and appropriated in the then current and succeeding fiscal years for open space land acquisition and that, because this provision is of the essence to this Agreement, to the extent any Party has performed any action in pursuance of this Agreement, no other Party shall thereafter renege on its obligations pursuant to this intergovernmental agreement. Nothing herein shall be deemed to affect or hinder anticipated open space acquisitions by Louisville and Boulder County in Section 17, T1S, R69W, 6th P.M.

6.2 The right-of-way necessary for construction of the Northwest Parkway or a successor roadway, as shown on Exhibit A, may be acquired by any Party(ies) at the same time that any City Preservation Area (through which the proposed "Northwest Parkway" alignment runs as shown on Exhibit A) perpetual conservation easement or fee title is sought to be acquired or any Party(ies) may acquire the right-of-way necessary for construction of the Northwest Parkway at any other time. For this purpose, at the time any Party(ies) contracts to purchase such City Preservation Area perpetual conservation easement or fee title, such Party(ies) shall provide to each other Party(ies) notice of such actions and such Party(ies) shall cooperate with other Party(ies) that wish to purchase right-of-way.

6.3 Upon acquisition of any City Preservation Area parcels shown on Exhibit A, the acquiring Party shall provide to each of the other Parties an undivided interest in a perpetual conservation easement upon said lands, providing for restrictions on development and the use in accordance with the terms of this Plan.

6.4 Within any properties within the Plan Area designated as City Preservation Area a "clustering" concept shall be encouraged wherein allowed residential units shall be concentrated on smaller lots within one portion of the property to preserve larger contiguous areas of undeveloped land,

provided maximum gross densities are not exceeded.

6.5 Each Regulatory Party shall adopt such regulations and take such regulatory actions to the extent permitted by law as necessary to ensure that development on the properties conforms to the uses and densities set forth in section 4 and its subsections above. All regulatory actions required pursuant to this Agreement shall be taken by the relevant Party within 90 days of the effective date of this Agreement. No construction of the Parkway west of U.S. 287 and governed by the Plan shall take place until all Parties have taken all regulatory actions required pursuant to this Agreement.

6.6 Should a Party(ies) exercise its power of eminent domain to obtain property interests under this agreement, the Party(ies) shall in its appraisal, performed pursuant to section 38-1-121, C.R.S., or otherwise, value the property at the fair market value based upon the zoning prior to the time of taking the regulatory action.

6.7 The city Parties hereby grant their consent to the purchase or other acquisition, including through the exercise of eminent domain, by Boulder County of any City Preservation parcel or portion thereof for open space purposes.

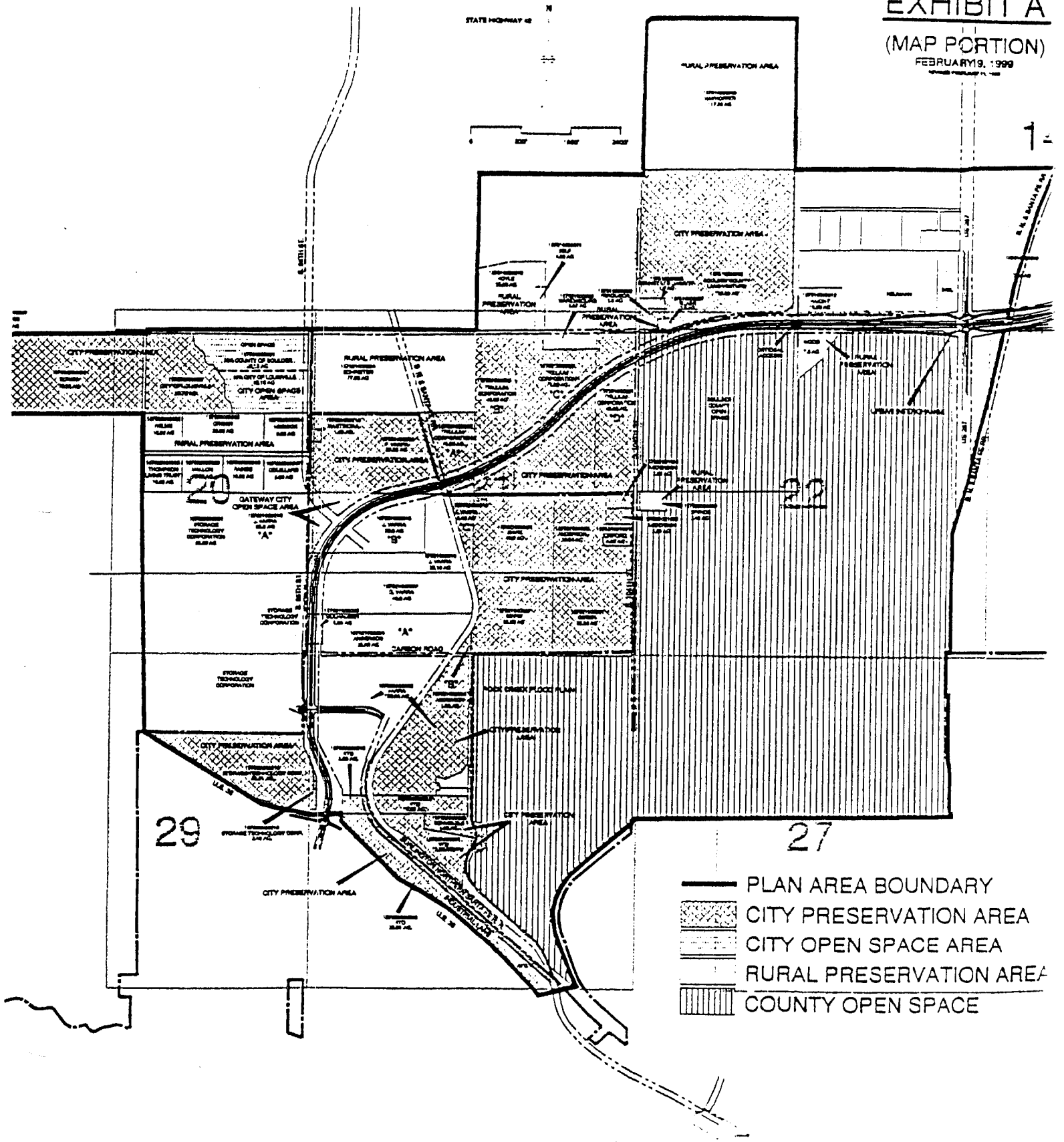
6.8 If the acquisitions provided for in Section 4 of this Plan, or any of them, have not occurred by January 1, 2005 and there are not sufficient Parkway financing proceeds available then to complete the acquisitions, then the Parties shall meet and negotiate in good faith a plan for financing the balance of the acquisitions, which financing plan shall be adopted by the Parties on or before July 1, 2005.

6.9 Each of the cities in which City Preservation parcels are located agrees that it shall, prior to December 31, 1999, obtain an amendment to its "urban growth boundary" in the approved DRCOG Metro Vision 2020 Plan, placing such City Preservation parcels outside that city's urban growth boundary, and agrees that, based thereon, it will not extend urban utility services to said properties during the term of this Agreement and Plan; except that a city may extend such services to a cluster development authorized by subsection 6.4 and existing homes within the City Preservation Area; and except that no city Party shall be deemed in breach of this provision if required to provide any such services pursuant to a final, non-appealable court order or judgment. Any such amendment, however, shall not be required if said amendment would prevent any city Party from providing said parcels with water and sewer service at the density levels provided under Section 4 Specific Parcels Provision.

EXHIBIT A

(MAP PORTION)

FEBRUARY 19, 1999



GOODHUE DITCH & RESERVOIR CO.

August 13, 2024

City of Louisville
Department of Planning and Building Safety
Attn: Rob Zuccaro, Case Manager
Via email

Re: Redtail Ridge Filing No. 1, Final Plat

Dear Rob:

Redtail Ridge Portfolio, LLC ("Redtail") has requested Goodhue Ditch and Reservoir Company's ("Goodhue") permission to modify the Goodhue Ditch and its easement in the vicinity of South 96th Street and Campus Drive in Louisville for the Redtail Ridge Filing No. 1. Goodhue and Redtail are currently working through the Goodhue requirements for this proposed work. These requirements include, without limitation, reaching agreement on reimbursement for Goodhue expenses associated with the requested modifications, Redtail addressing all of Goodhue's engineering, operations and construction requirements, Redtail and Goodhue entering into an agreement for the ditch and easement modifications, Redtail paying the necessary modification fees, and Redtail completing the modification to Goodhue's specifications. A summary of Goodhue's preliminary engineering and construction requirements that was provided to Redtail on 7/26/2024 is given in the attached letter from Schnabel Engineering. Provided that Redtail commits to working diligently toward meeting these requirements, as they may be updated and supplemented, Goodhue supports Redtail's request for final plat on August 20.

Nothing in this letter of support constitutes or is to be construed as constituting Goodhue's consent to the requested modifications to the Goodhue Ditch and its easement, or to any specific terms and conditions for those modifications. Should Redtail not meet Goodhue's requirements for the project, Goodhue will withhold its consent to the proposed modifications.

Please contact Goodhue if clarifications or further discussion are needed on any of these items.

Sincerely,

CMBischoff

Cari Bischoff
Secretary
Goodhue Ditch and Reservoir Company

Attachment: Schnabel Engineering review letter 07/26/2024

GOODHUE DITCH & RESERVOIR CO.

July 26, 2024

Redtail Ridge Portfolio, LLC
Attn.: Don Guerra
1555 Blake St., Suite 210
Denver, CO 80202

Via email

Dear Don:

Redtail Ridge has requested Goodhue's permission to modify the Goodhue Ditch and its easement in the vicinity of South 96th Street and Campus Drive in Louisville for the Redtail Ridge Filing No. 1. Goodhue Ditch and Reservoir Company (Goodhue) engaged Schnabel Engineering to review the Goodhue Irrigation Culvert Plans associated with the Redtail Ridge Filing No. 1. Enclosed are comments provided by Schnabel on behalf of Goodhue based on review of the preliminary plan set provided.

Goodhue retains the rights to provide additional review and comments throughout the remainder of the approval process.

Please contact Goodhue if clarifications or further discussion are needed on any of these items.

Sincerely,

CM Bischoff

Cari Bischoff
Secretary
Goodhue Ditch and Reservoir Company

Schnabel ENGINEERING
T 303.651.1468 / F 303.651.1469
600 S. Airport Road, Suite A-205 / Longmont, CO 80503
schnabel-eng.com

July 26, 2024 [via email]

Ms. Cari Bischoff
Goodhue Ditch & Reservoir Company
P.O. Box 276
Louisville, CO 80027

Subject: **Project Goodhue – Redtail Ridge Filing No. 1 – Goodhue Irrigation Culvert Plans – Initial Review Louisville, CO**

Dear Ms. Bischoff:

Goodhue Ditch & Reservoir Company (Goodhue) engaged Schnabel Engineering to review the Goodhue Irrigation Culvert Plans associated with the Redtail Ridge Filing No. 1. Redtail Ridge is a proposed commercial/industrial development located on the southside of Louisville, Colorado, as shown on the attached **Figure 1**. The Goodhue Ditch traverses the northeast corner of the development, generally from the property line south of Paradise Lane to S. 96th Street. The Goodhue Ditch will also be crossed by the extended Campus Drive, reconstructed South 96th Street, and several wet utilities (water & sewer). Other than at the road crossings the ditch traversers lands that appear to be dedicated to the City of Louisville as Open Space. The preliminary plans provided by the developer are for the realigned and piped ditch along with the road crossings and show some information about the wet utilities. The following comments are based on review of the preliminary plan set provided, and Goodhue retains the right to provide additional review and comments throughout the remainder of the approval process.

The developer of Redtail Ridge supplied the proposed Goodhue Irrigation Culvert Plan set (4 pages) for the rerouting and piping of the Goodhue Ditch. The developer's plans show: 1) a rerouting of the earthen ditch through a new 54-inch inner diameter (ID) reinforced concrete pipe (RCP), 2) a 60-foot wide easement for the new ditch alignment, 3) two road crossings of the ditch (extension of Campus Drive and reconstructed S. 96th Street), 4) a new 12-inch water main crossing over the ditch in Campus Drive, 5) a new 8-inch waterline crossing under the ditch in S. 96th St., and 6) an existing and new sewer force main crossing under the ditch in S. 96th Street. It is understood that discussions are taking place for the removal of the existing sewer force main and its replacement with two new parallel sewer force mains but, should be in the general location and alignment as shown on the plans. My initial review is presented below as questions, comments, and additional design details/notes for plan sets.

Questions:

1) The future status of the Goodhue shares owned by the developer and the existing lateral serving the property should be clarified in the agreement with the developer.

2) The developer should provide an estimated construction schedule for the project, from a planned start date through projected completion. When is the proposed rerouting and piping work of Goodhue Ditch scheduled for construction? Goodhue Ditch should require the developer's contractor to hold a pre-construction meeting prior to the commencement of work.

3) How is stormwater being managed for the development specifically as it affects the northeastern corner of the property and the Goodhue Ditch? The developer should provide a copy of the Stormwater Management Plan for the project.

4) How will the abandoned section of existing earthen ditch be reclaimed once bypassed by the new pipeline?

5) If the proposed inlet structure is clogged, how would the overflow be managed? Where would flows go? As is typical in projects of this kind, I suggest that flows collect in a grassy swale that discharges to a drainage or stormwater inlet away from any buildings.

6) What Class of RCP will be utilized based on bedding type and depth of bury? Class III or Class IV? Developer to show both bedding type and pipe Class on the plans.

7) Stormwater note 14 mentions "boring information", are there proposed borings within the proposed ditch easement? If so, the developer should provide information on the proposed borings.

Comments:

1) Goodhue retains the right to provide additional review and comments throughout the approval process as additional information and details are provided.

2) The executed Agreement Regarding License to Modify Goodhue Ditch (Agreement) between Goodhue and developer should be in-place prior to the commencement of work. The Agreement should assign financial and physical responsibility for maintenance and repairs of the new ditch structures, including the inlet, manholes, and pipes, and I recommend the warranty period that is standard for Goodhue in similar agreements. My understanding is that the standard warranty period is 5 years.

3) The future status of the Goodhue shares owned by the developer and the existing lateral serving the property should be clarified in the agreement with the developer.

4) Approved plans, specifications and other required submittals should also be in place prior to the commencement of work.

5) At the completion of the project, the developer must provide complete, as-constructed drawings that include the depths and location of any other utilities within the ditch easement (parallel or crossing) and quality control test information. One complete set of paper drawings must be provided to Goodhue in addition to complete sets in CAD and PDF formats.

6) Any relocation or modification of the Goodhue Ditch, including construction of ditch structures and piping, should be completed during the initial phase of development.

7) The plans show a proposed 60-foot easement for the piped ditch which appears to be adequate for the size and depth of the pipe.

8) The ditch easement should be superior to all other easements (e.g.., the overlapping 60-foot utility easement). The developer should note this on the Plat.

9) The ditch easement should be shown across both ROW's.

10) The pipeline inlet structure should be designed like the inlet structure for the Goodhue Ditch constructed as part of the North End development in northeast Louisville. That inlet includes a sediment trap, concrete apron with toe wall, angled headwall with trash rack, and overflow weir. The attached picture shows the inlet structure located to the northwest of 1323 Ella Ct, Louisville, CO 80027. Please note there are to be no internal cross bars on the trash rack.

11) A vehicle access road should be provided between Campus Drive and the inlet structure. Such access could be combined with an Open Space trail.

12) The developer must install "Danger, Do Not Enter" signage at the pipe inlet structure, one on each bank as directed in the field by Goodhue. Location of signage must not interfere with trash rack access.

13) The new pipeline should connect to the existing RCP culvert under the Northwest Parkway with any associated appurtenances. The property is owned by North Metro Fire Rescue District but, Goodhue could execute a License Agreement for work within its easement to complete the work. If the pipeline is not extended to the NW Parkway, the outlet structure may require energy dissipation (depending on outlet velocity), which should consist of a headwall, apron, toe wall, etc. instead of a Flared End Section. Goodhue's preference is for no riprap being used in the ditch.

14) The developer should provide the hydraulic analysis and results for the proposed pipeline including design assumptions, design flows, inlet/outlet depths, and velocities. The developer should also show the hydraulic grade line on the profiles of the proposed pipe and provide its maximum flow capacity.

15) The developer must install a clay or concrete cut-off wall downstream of the first manhole (A41), located near to Station 7+75. The cut-off wall should extend at least 1-foot into undisturbed soil and extend above the pipe.

5) At the completion of the project, the developer must provide complete, as-constructed drawings that include the depths and location of any other utilities within the ditch easement (parallel or crossing) and quality control test information. One complete set of paper drawings must be provided to Goodhue in addition to complete sets in CAD and PDF formats.

6) Any relocation or modification of the Goodhue Ditch, including construction of ditch structures and piping, should be completed during the initial phase of development.

7) The plans show a proposed 60-foot easement for the piped ditch which appears to be adequate for the size and depth of the pipe.

8) The ditch easement should be superior to all other easements (e.g.., the overlapping 60-foot utility easement). The developer should note this on the Plat.

9) The ditch easement should be shown across both ROW's.

10) The pipeline inlet structure should be designed like the inlet structure for the Goodhue Ditch constructed as part of the North End development in northeast Louisville. That inlet includes a sediment trap, concrete apron with toe wall, angled headwall with trash rack, and overflow weir. The attached picture shows the inlet structure located to the northwest of 1323 Ella Ct, Louisville, CO 80027. Please note there are to be no internal cross bars on the trash rack.

11) A vehicle access road should be provided between Campus Drive and the inlet structure and should provide for vehicles to turn around at the inlet. Such access could be combined with an Open Space trail.

12) The developer must install "Danger, Do Not Enter" signage at the pipe inlet structure, one on each bank as directed in the field by Goodhue. Location of signage must not interfere with trash rack access.

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15) The developer must install a clay or concrete cut-off wall downstream of the first manhole (A41), located near to Station 7+75. The cut-off wall should extend at least 1-foot into undisturbed soil and extend above the pipe.

16) The developer must include a minimum of 2 feet of cover over the pipeline to assist in vegetation growth over the pipeline.

17) All utility crossings must include tracer wire with test stations and marker posts at both edges of the ditch easement.

18) All utility crossings must be perpendicular to the ditch unless otherwise shown on the plans or approved by Goodhue in writing prior to the work.

19) Any utilities in or crossing the 60-foot easement not shown on the plans will require a separate review and crossing agreement with Goodhue.

20) The developer should label manholes consistently. Current labels are A35, Goodhue Ditch Culvert 1 and A41.

21) In Plan View, the developer should include an arrow showing the direction of flow in the ditch.

22) Utilities crossing under the ditch pipe must be installed with casing pipe. The casing pipe must be thick-walled, high tensile strength and tested prior to installation. Casing pipe must be extended to the edge of the easement. Cathodic protection may be required based on soil properties. Developer will need to evaluate the need for insulation when crossings are in close proximity with the ditch pipe.

23) The developer should include the size of the new force main to be installed in S. 96th Street on the plan sheets.

24) The developer should provide the relevant Civil Plan sheets (Plan & Profile) for the road and utility crossings along with associated details. The developer should also provide the Grading Plan sheets for the ditch easement and adjacent areas.

25) The developer should provide the referenced CTL Thompson Geotechnical report and any updates or revisions. The Geotechnical Report for the project should be reviewed but, any recommendations in such a report should be followed for the installation of the Goodhue pipeline and appurtenances.

26) The drawings should show all planned surface features; fences, gates, trails, landscaping proposed to be located within and within close proximity to the proposed ditch easement. Adequately sized gates should be provided for access through any fencing located within the easement.

27) All existing trees and deep-rooted vegetation are to be removed from within the new ditch easement. This includes grubbing of stumps, roots, etc. No new trees or other deep-rooted vegetation shall be planted with the easement. Unless expressly permitted by Goodhue in writing.

28) Stormwater note 15 mentions receiving a 404 Permit for construction in the Goodhue Ditch. The developer should provide a copy of the 404 Permit to Goodhue.

Design details that should also be added as Notes on the plan set:

29) All work within Goodhue Ditch and its easements must be coordinated with the Goodhue Ditch representative.

30) No work within Goodhue Ditch and its easements will be allowed to occur during the water season (April 1 to October 1. Construction during this time is prohibited without written consent from Goodhue.

31) Developer will notify Goodhue at least five business days prior to the commencement of work within the Goodhue Ditch and/or its easements.

32) All reinforced concrete used for irrigation pipe will meet ASTM C-76.

33) All circular reinforced concrete pipe joins must be rubber O-ring type per ASTM C-361.

34) All manhole barrel sections must be watertight and grouted on both the inside and outsides.

35) All manhole lids must be vented and labeled “IRRIGATION”. Manholes must have the following confined space information incorporated “Caution Confined Space, Entry Permit Required”.

36) All pipe and manhole construction must conform to the applicable City of Louisville Details and Standards unless otherwise noted.

37) Installation of all pipelines and appurtenances must follow any applicable recommendation from the Geotechnical Report and any subsequent reports.

38) Erosion control blankets, made of biodegradable natural materials, must be installed on banks of ditch but not across ditch bottom in areas where ditch has been disturbed and after any reconstruction work.

39) All portions of the ditch, bottoms, sides, banks, and all affected portions of the ditch easement which are disturbed by the agreed to activities must be restored to their original condition or better so the flow of the water in the ditch runs at the original amount and velocity.

40) The developer must revegetate disturbed areas with seed mix as approved by Goodhue and City.

41) Flat-top manholes will be utilized that extend 4 to 6-inches above surrounding final grade and the area graded to drain away from the manhole. The developer must install marker posts adjacent to manholes.

42) First manhole after the inlet should include a sump/silt trap 6-inches deep for managing heavy debris carried in the pipe.

43) Soil amendments such as Bentonite or similar may be required to “re-seal” the ditch after disturbances.

44) Material for ditch repair should meet USCS for SC or CL clayey Material with a minimum 30% passing the #200 Sieve and a PI of 12-15. Samples should be taken from each stockpile for lab testing and should include gradations, Atterberg Limits and Standard Proctor Testing. Material must be placed in maximum of 8-inch lifts and should be moisture conditioned and compacted to reach 95% maximum density for the Standard Proctor plus or minus 2% optimum moisture content. Field density and moisture testing should be provided and recorded to confirm the material is placed per specifications. Testing frequency should be once every 500 CY or at a minimum once per day at each work location.

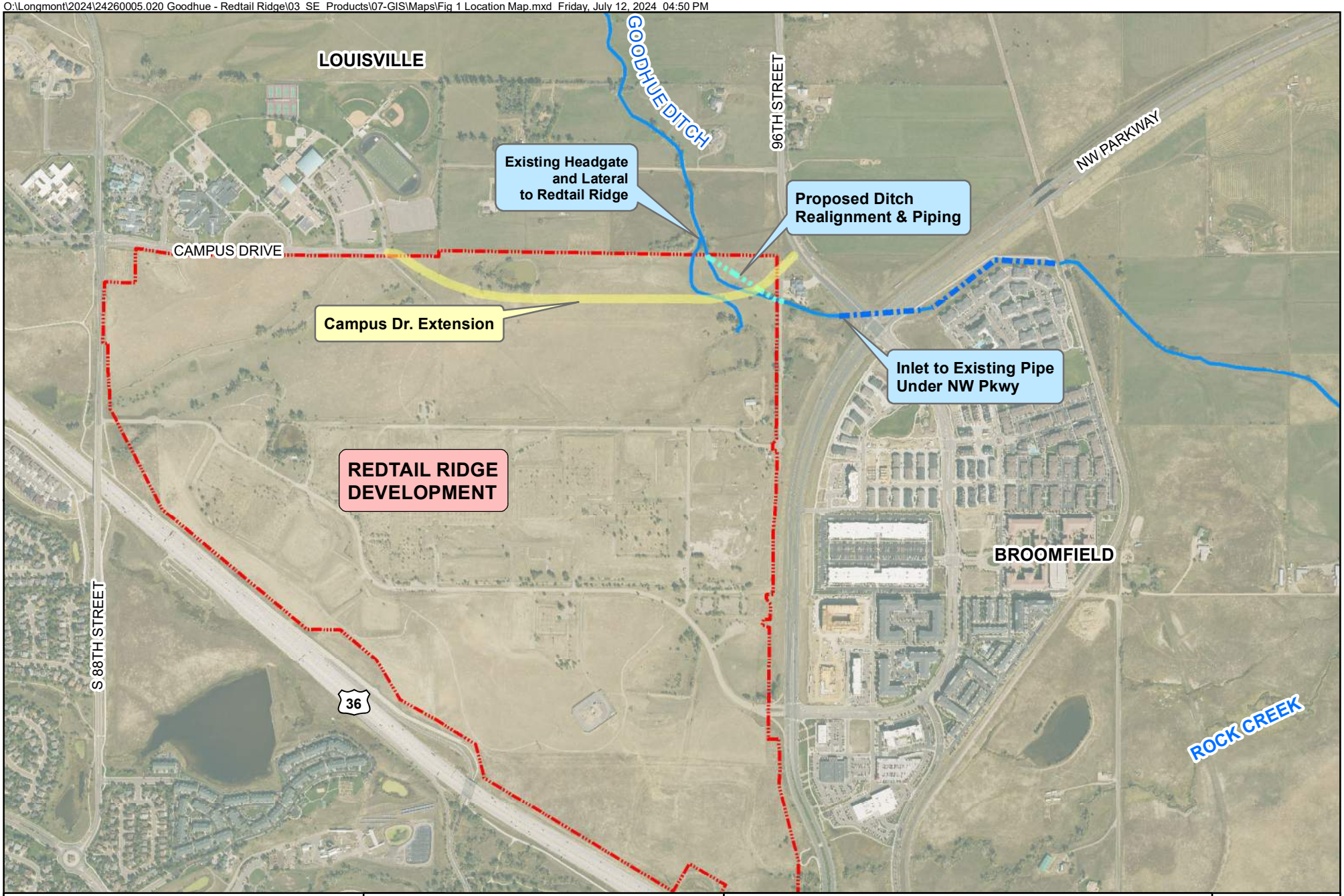
Please contact me if clarifications or further discussions are needed on any of these items.

Sincerely,

SCHNABEL ENGINEERING, LLC

Dan Mathes
Associate Engineer

O:\Longmont\2024\24260005.020 Goodhue - Redtail Ridge\03_SE_Products\07-GIS\Maps\Fig 1 Location Map.mxd Friday, July 12, 2024 04:50 PM



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2023 NAIP

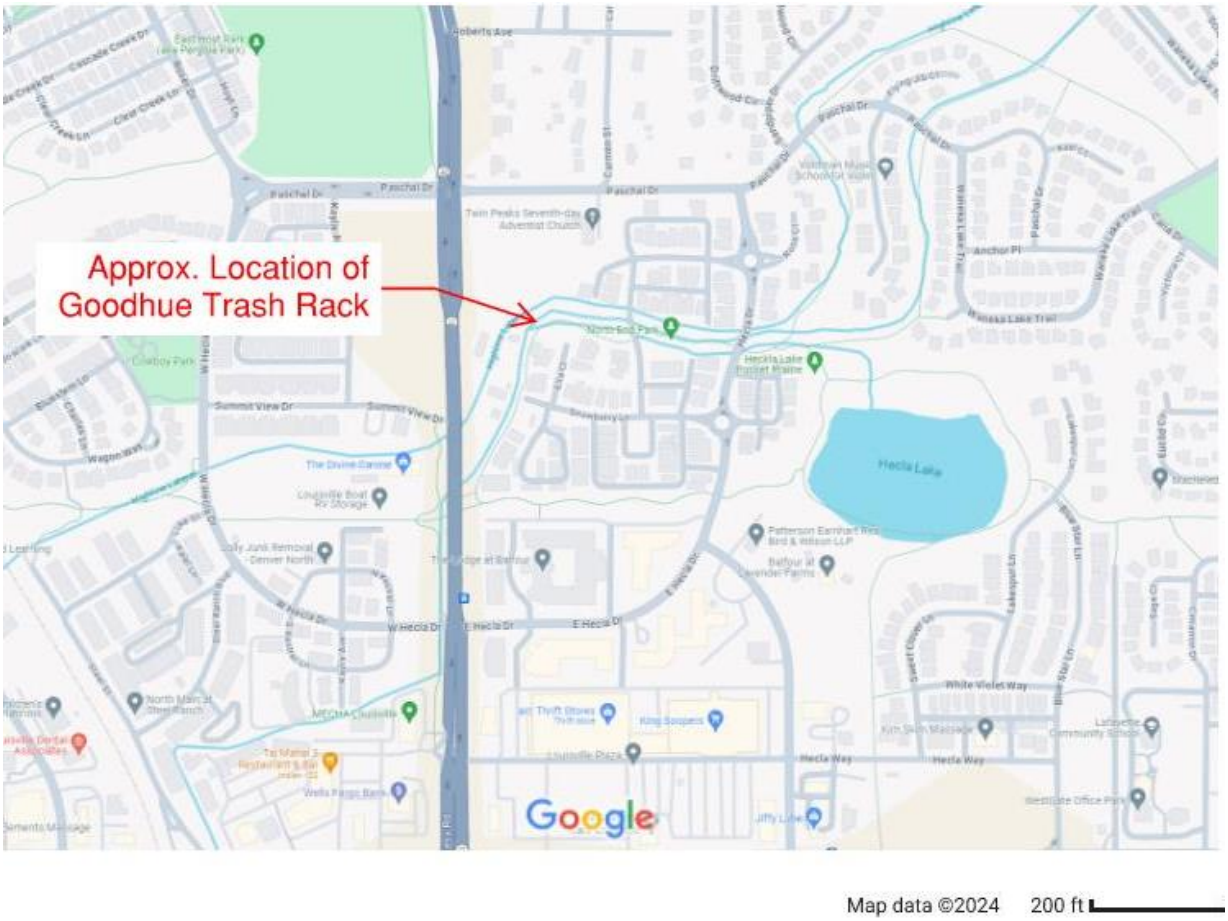
Schnabel ENGINEERING

GOODHUE DITCH & RESERVOIR COMPANY
Redtail Ridge Development, Louisville, CO

JOB NO: 24260005.020

SCALE: 1 inch = 1,000 feet

FIGURE: 1


Approx. Location of Goodhue Trash Rack
Hecla Lake
Google
Map data ©2024
200 ft

Parks and Public Landscaping Advisory Board

Minutes

Thursday, May 5, 2022

Louisville City Services

739 104th St

7 PM

1. Roll Call: PPLAB members present Ellen Toon, Laurie Harford, Shannon Mihally, John Webb and Steve Knapp. Dean Johnson, Superintendent of Parks and Staff Liaison, Ember Brignull, Acting Deputy Director of Parks and Open Space, Robb Zuccaro, Planning and Building Safety Director, Jeff Durban, City Manager and Allan Gill, Parks Project Manager. Citizens in Attendance:
    - Jane Uitth, Louisville CO
    - Oscar Mccollom, Louisville CO
    - Joshua Cooperman, Louisville CO
    - Tim Sayler, Redtail Team
    - Sherry Sommr, Louisville CO
    - Cynthia Corne Musslewaide, Louisville CO
    - Don Guerra, Golden CO
    - Jay Hard, Windsor CO
    - Andrew K, Superior CO
    - Bahadeer Parkhet, Louisville CO
    - Tyler Sontrop, Louisville CO
    - Laura Page, Louisville CO

2. Approval of Agenda: Agenda approved
3. Approval of Minutes: Roll call amendment: Laurie Harford was absent in April. Approval of amended minutes.
4. Staff Updates
   Open Space Advisory Board is interested in doing a joint meeting. Proposed Dates:
   July 13, Aug 10, Sep 14
   Proposed topics: pollinator garden, xeric landscaping, dog off-leash area, etc.
   Hiring is going well; new arborist hired. Offers are out for additional positions, some temporary employees have begun work.
   Recovery work is going well; volunteers from additional municipalities volunteered their help with irrigation repair. Looking forward to offers of help for tree work.
   Community Park irrigation project/pollinator garden is set to break ground week of May 9th.

5. Board Updates
    - The first re-built permit will be approved very soon.

- Shelly Alm via email: New playground equipment at Cottonwood Park looks amazing!

6. Public Comments on Items Not on Agenda
    - Cynthia Corn Musselwaide: current Redtail Plans are not on the developer's plans on their website; advises against reviewing final plan if it is not on the website.

7. Redtail Ridge Preliminary and Final Plat Review
    - Robb Zuccaro gave a presentation of the Redtail Ridge Plat and the ConocoPhillips General Development Plan which was approved in 2010.
    - Redtail Ridge Developer proposed some amendments to the plan, which was not upheld in a City-Wide vote in April.
    - Role of PPLAB: to make a formal recommendation on the proposed plan
        i. Steve Knapp asked about the road network; maps of former Storage Tek and proposed roads were reviewed.
        ii. Laurie Harford asked if proposed plan meets the 2010 GDP. Robb confirmed the proposal is within the 2010 GDP
    - Applicant presented the proposed plan
        i. Redtail Ridge 2.0
        ii. Identity and Conceptual Plan
        iii. Community Amenities

    - Discussion and Questions
        i. The City Wide vote in April was to decide upon the amendments to the 2010 GDP. The amendments were not approved in the City Wide vote. The applicant is therefore moving forward with a subdivision plat under the 2010 GDP.
        ii. Ellen asked about timing; if the Board would need additional time or request additional information. Ellen reiterated that PPLAB is an advisory board that can provide a recommendation only. Robb advised that more information may be requested if needed.
        iii. Sheri Sommr: advised against approving plan due to lack of information.
            1. Feels that Campus Drive alignment would bisect open space.
            2. Feels that the buildings are spread out over the same amount of land and does not include enough open space.
            3. Feels that trails should be separated from streets
        iv. Laura Page: advised against approving plan due to City Wide vote
            1. Wants clarity around what PPLAB can advise upon.
            2. Feels that land will not be easy for the community to access; recommends that dedicated park space in plan is instead open space. Proposes to accept cash in lieu of park space and use the money to develop park space elsewhere
            3. Feels that proposed extension of Campus Drive divides proposed open space.
        v. Josh Cooperman: advised against approving plan

1. Plans have not been made available to the public ahead of tonight's meeting; feels that there is inadequate time to come to a decision.
2. Feels that plans run counter to the sentiment of the City Wide vote.
3. Would like to see a lot more open space
4. Prior ConocoPhillips plan had over 200 acres of open space, recommends an amount closer to the 200 acres
5. Proposed open space is cut in half by Campus Drive

vi. Cynthia Corne Musslewaide: advised against approving plan
1. Concerned about 5 story buildings. Placement is Northern Exposure onto Campus Drive
2. Proposed water habitats are too close to the roads and parking lots
3. The "No" campaign was not contacted after the election.
4. Concerned about parking lots in lieu of more innovative, creative parking structures

vii. Anonymous online
1. What is the square footage of parking lots vs. buildings? Robb answered: design standards and guidelines dictate minimum amounts of open area on property, setbacks, etc. There is no proposal for parking at this time

viii. Anonymous online: Is there an industrial use in the 2010 GDP?
1. Robb: same type of development as in the Colorado Tech Center: generally light industrial

ix. Anonymous online: there should not be development North of Disc Drive

x. Tim Stalker online: current proposal is only 500,000 square feet less than amendment which was voted down. Would like to see something that is substantially fewer square feet.

xi. Catherine Smith online: Resident of Ward 3.
1. Would like to see developer reach out community and engage in City's discussion.
2. Concerned about safety in bike lanes. Would like to see buffering of bike lanes from the roads.
3. Resonates with commenters who expressed desire to preserve natural high plains environment. Would like Redtail Ridge to be similar to Davidson Mesa
4. Requests more information around how City is interpreting 2010 GDP to accept industrial development. Requests that Board presents information that was presented to the Board. (Laurie H note: Packet materials are presented as part of PPLAB minutes)

xii. Questions around "Industrial Use" language
1. Research, corporate use, scientific research and manufacturing, warehousing and storage facilities all fall under "light industrial use"
2. Site number to reference: Section 17.12.030

xiii. Follow up from Tim: Feels that the definition of "light industrial use" is a stretch. Would like a survey of why people voted the way that they did, and does not understand what is driving the urgency of the plan.
xiv. Steve Knapp: What is the status of the hospital's plans? Robb: No update.
xv. Sharon Mihally: how was the park size determined vs. the open space?
    1. 2 years ago, applicant came with a few options. Location and size was narrowed in on at the time to accommodate multi-purpose fields. Park location is adjacent to school for better access to residents and school.
xvi. Ellen Toon: How does this Park acreage compare to Community Park?
    1. Robb and Dean: Similar in size
    2. Laurie Harford: Park land would not be developed for years, at which time the new Parks director would be on-board.

Additional Discussion: around what PPLAB may speak to. PPLAB feels that recommendation around Parks and Trails is appropriate; OSAB will have the same opportunity.

- Discussion around reasoning for swinging Campus Drive to the South: interest by Boulder County in swinging road down to create a buffer with Paradise Lane. Everything North of Paradise Lane is unincorporated Boulder County.
- The Northwest corner is very hilly and there will be a lot of earthwork needed to incorporate playing fields
- Discussion around definition of "rural": City has a comprehensive plan which defines 'rural'. Plan does comply with the comprehensive plan definition of 'rural'.
- Review of Campus Drive placement on slides
- High Planes Environmental Center Discussion: would this be in open space only? Applicant: the partnership will encompass the entire development.
- Applicant: Respects everything that has been said and feels that there has been community outreach over the last year. There will be some higher story buildings in the plan; GDP allows for up to 8 stories, though this is not the applicant's intent. There has been extensive study by subject matter experts regarding the road placement and feels that placement is sound. Park/Open Space location is proposed based on community input.
- Technical clarification on building height: GDP anticipates heights higher than 3 stories, though this must be done through a Planned Unit Development (PUD). Set base code is 35 feet.
- History of Open Space acquisition in Louisville: It is common to dedicate more than the minimum the code ordains (12%); however, some developers have dedicated the minimum. Coal Creek Ranch dedicated the most, which includes the golf course. Centennial Valley also dedicated a large amount which includes Davidson Mesa. The two developments averaged 35-40%. Avista Health Park dedicated 15%, Louisville Plaza 14%, St. Louis Parish 12%, and Dakota Ridge 20%.
- Mayor Stoltzman feels that larger developments should dedicate larger amounts of open space.

Ellen moved that PPLAB vote to approve the Plan; Laurie seconded. Motion passed unanimously.

8. Final Scorecard Review and Discussion
    - Overall parks received good marks with comments and areas for improvement. Scorecard submitted to City consultant, who is writing a Parks Management Plan
    - Discussion on implementing scorecards for Medians, Subdivision entries, etc.

9. Discussion on Potential Pollinator Bed(s) at Community Park
    - Area would be in the old 'BMX' area (adjacent to the band shell)
    - ADA accessible: trails with raised beds
    - Demonstration beds
    - Musical interactive element: outdoor xylophone, wind chimes, etc.
    - Educational signs, etc.
    - Garden could have the potential to grow over the years; right now the garden will be within the scope of the irrigation project. Pollinator beds will have pop up sprayers
    - Garden may act as a demonstration and proof of concept, giving ideas for other similar gardens.
    - Discussion around mix of native grasses in area adjacent to Bella Vista drive.

10. Discussion on Median Landscape Renovation Designs
    - Introduction to topic:
    - Landscape architect will be hired to review medians and propose concepts to PPLAB. Need for additional review due to fire damage. Changing sentiment from original review several years ago; desire to remove bluegrass sod.
    - Shelly Alm via email: Thanks, Dean, for the summary/history of the design concepts. It's been awhile since this was started! I'm still in agreement with the Preferred Concept Design for the most part. Low maintenance/low number of plantings along medians with majority of plantings & color near the noses & key intersections. If possible, tying in the colorful planters that make downtown so inviting with similar planters near noses and/or key intersections in appropriate medians. Not sure where things are with any money that could be coming in from outside resources for fire recovery that could cover some of the medians that were affected so budgeted city money might go further for other medians?

11. Review of Recommendation Memo for Bee City USA Designation
    - Shelly Alm via email: Looking forward to this!
    - John presented information around Bee City and honeybee/pollinator festivals throughout Colorado. Proposed a local/Louisville festival during the month of June.

that they use DOLA themselves and his comments are not related to not liking dogs; he loves the park.

Marcus pointed out that municipalities and cities typically adhere to certain best practices when they put in dog off-leash areas. He brought pamphlets from the American Kennel Club and Humane Society and both state that the best practices of municipalities implement a buffer zone. Marcus left the pamphlets with staff. He specifically asked that the DOLA area be moved 50 yards west. He explained that this could be done while still enabling use of the existing trail / footpaths already in and adjacent to DOLA.

Marcus further explained that the DOLA western gate is adjacent to their yard. Since the fire, trash was tipped over and waste bags were spilled. They were not cleaned up until he called to ask for it to be cleaned up (6 weeks later).

Marcus said that Davidson Mesa is 270 acres and DOLA is just 4 acres. There is plenty of room to move it. They paid $34k in property taxes last year; 6 years ago spent $38k for concrete wall; looking at $50k additional wall for more privacy.

David thanked Marcus for his comments and Charles briefly suggested that members of the public could help clean up spilled trash when they see it on open space rather than waiting several weeks before calling staff.

8. Action Item: Redtail Ridge Preliminary and Final Plat Review. Presented by Rob Zuccaro, Director of Building, Safety, and Planning

Presentation by Rob Zuccaro

Refer to presentation in the amended packet.

Rob started by explaining that his comments and presentation would mostly focus on process. The Redtail Ridge property was formerly owned and occupied by Storage Tech until 2010 when Conoco Philips purchased the property. Conoco Philips had a planned unit development (PUD) approved, which can't change the underlying zoning standards but can set a lot of design standards. That PUD has since expired. The prior owner also received approval of a general development plan (GDP). The GDP was recorded on the property and doesn't expire; it sets the regulatory standard for zoning for property.

In subsequent years there have been a lot of proposals to amend the GDP. City Council approved proposal last year and a subsequent Citizen's referendum resulted in a public vote on the proposed amendments to the GDP. Rob explained that OSAB's role was to review the subdivision plat document which would create developable lots, establish easements and rights of way, including requirements for developer to build infrastructure, etc. Staff asked OSAB to make a recommendation to Council about how to proceed.

The subdivision plat also includes public land dedication. A minimum of 12% public land dedication is required for commercial developments in Louisville. See presentation for detail on

public land dedication proposal. The current proposal includes 89.9 acres of land for public dedication. The prior PUD had 39 acres within the property and 20 acres separate for conservation easement; it also included 222 acres of private common open space. The Redtail Ridge GDP amendment proposal had 93 acres of public land. Rob displayed the plat document with public land dedication summary, including trail corridors. He displayed the trail plan overview. Rob explained that the property outside of City of Louisville in Broomfield would have a conservation easement protection on it.

Additional detail was described, including:

- Two drainage areas that would also be underpasses for trails under Campus Drives
- The developer would build all trails as part of dedication
- Trail through open space runs along existing drainage way
- There is a Metro district planned for landscaping
- City would take care of hardscape within public right of way

In his presentation Rob shared Louisville Municipal Code sections that staff felt were most relevant to OSAB. He stated staff was asking for a recommendation, which could include a recommendation of approval, conditional recommendation of approval, or a recommendation of denial. Alternatively, OSAB could also ask for additional information on any relevant topic related to their review.

Board Questions

David asked about the 80 exempt acres (related to the 12% land dedication requirement). Staff explained that these related to Storage Teck's private recreation facilities; even though the facilities don't exist anymore the exemptions don't go away.

Charles asked staff to clarify the difference between new plan and what went up for a public vote in April. Staff explained that a GDP is fundamentally different from a subdivision plat, which outlines legal law boundaries, rights of way, etc. A subdivision plat needs to comply with 2010 GDP and it does. The difference is in square footage of development (2.5M sq ft vs. 3M). Allowed uses (commercial and office, some light industrial) are very similar. The 2010 plan envisioned private roads, which the developer is now proposing be public. City Council's approval of amended GDP was 83 acres. Current proposal has open space in generally the same location. What is new is open space areas in the West and East

Helen asked if there is a maximum dedication. Helen also asked about % land dedications in other developments. Staff offered to share numbers, which range from 12% into 30%'s. Coal Creek was highest with a dedicated golf course. Several other GDP's have been approved with less dedication than this plan.

Applicant Presentation

Jay Hardy from Brue Baukol reviewed the presentation included in the May 2022 OSAB meeting packet. Some points covered include:

- They started by outlining natural areas existing already

- Explained that High Plains Environmental Center is a non-profit that was asked to look into how development could work with the land
- Described case study from Loveland, CO – restoration of habitat, including re-establishing wetland; 3k acre master planned community that is certified "Wild"
- Showed renderings of various entrances to the future community
- Explained that the difference between this plan and Conoco Philips was that this developer wanted to open site up to community with open space and trails (versus private undeveloped land)
- In first phase committed to doing all 6+ miles of trails
- Campus Drive would also be done in phase 1, with a focus on keeping pedestrian and bikes removed from vehicles
- Design has gone through a lot of iterations – BVSD, Boulder County, traffic study, etc. dictated how to move people through Campus Drive

Board Questions

Jessamine asked applicant to point out where Disk Drive is located, noting that several members of the public commented (via email) on adding additional open space north of Disk Drive.

Susan asked why Campus Drive was placed in the proposed location. It was explained that an intergovernmental agreement between Louisville and the County requires Campus Drive to have a buffer between it and County properties and Paradise Lane area. Paradise Lane area includes rural residential parcels, mix of existing houses and houses that could be built.

Charles and a public meeting participant pointed out that the proposed drive location goes along a railroad bed.

David asked about cause of reduction in square footage. It was explained that this results from a reduced number of buildings (versus reduced building height).

David asked about habitat considerations. It was explained that the Habitat Management Plan indicates that one prairie dog community would stay in conservation easement and some would be relocated to that area. The developer would follow Colorado's six-step process to do so.

Helen asked for clarification of process – is this the final stage? Rob explained that once an owner has a GDP the next stage is subdivision plat, then once they have property platted and infrastructure is going in, each lot needs a planned unit development (site plan, architecture, layout). This process will require a public hearing before the planning commission before it goes to City Council. City Council will have a hearing to make a determination on proposal. Anticipated timeline: might go to planning commission in June or July.

Rob showed table with different land dedication percentages (see last page of Packet Addendum #1). Helen asked how decisions were made about dedications in past. Rob indicated that it is complex and happened in late 1980's / early 1990's and is difficult to piece together; he has not reviewed minutes or record.

Susan asked about density comparison to understand if we can ask for more public open space; Rob referred back to Chapter 16.16 Subdivision Design Standards.

David asked if it was possible to do site visits. Rob said it is possible but challenging because of quasi-judicial and open government requirements. Site visits would need to be a fact-finding meeting process.

Charles asked about parking square footage. Rob said that will be determined at PUD stage. Rob indicated there is a maximum in design standards to dictate character of the area.

Public Comments

David described public comment process, including timing of comments. David also summarized emails submitted and provided to OSAB in advance of the meeting, which would be included in an amended packet.

- Tom Lepa, 846 St. Andrews Lane: Been in Louisville since 2007. Thank you to the volunteers on Board. Conoco Philips – 222 private open space acres. Asked developer what they envision for private open space development.
- Sherry Sommer, 910 S. Palisade Court: Noted that building square footage has gone down and the plat we are considering is the same as the Niwatny Ridge plat. In the current proposal, structures are not clustered, building is proposed on greenfields, would result in destruction of habitat. 2.56M square footage does not include concrete parking, etc. Noted that this is an important opportunity for OSAB to advocate for more open space dedication; 40% open space. Also noted the property was in OSAB's top 5 priorities. During referendum process Sherry spoke with 100+ people and approximately 90 to 100 wanted more open space.
- Mike Schantz, 623 W. Hickory Court: Was on OSAB for 9 years. Quoted minutes from February 10 2021 OSAB meeting in which OSAB noted that paying market prices for prime commercial property at this location and the cost of reclaiming such land would be an unbearable burden. Believes it would be irresponsible to pretend much of the site is suitable for open space. You can literally see rubble on site. Mike has walked site a number of times. He doesn't think open space would be a responsible use of funds for the City. Mike is a proponent of this plan; he knows the developer has carved out the highest quality space for public land dedication. Thinks they have also done a nice job with the trails. He suggests considering an off leash area in the park dedication portion of property to take pressure off DOLA. Noted that the plan is currently at nearly 2.5x required land dedication.
- Cindy Biddell; 662 W Willow Street: Noted that most of what is north of Disk Drive is undisturbed. Recommended that OSAB does not approve this version; 66.06 acres is not enough for parcel of this size. This is an important buffer property to neighboring Broomfield. Not enough if compared to Louisville's other two largest developments – 46% and 35% in two other projects. Demand for open space has only increased. It is important to follow the lead of voters to recommend that 40-50% of parcel be set aside; open space is a subset of public land dedication. Noted that Mayor Stolzman and Councilmember Brown recommended everything north of Disk Drive be open space.

Said the Board has the right to recommend more open space and there is a need for more open space and consideration of natural features.

- Tim Stalker, 806 W. Dahlia Court: Is a proponent of voting no on the plan. Explained there is a lot of room to find out more information: consider trail connections to existing trails in City – how they will align and integrate with how the City has been trailed so far; connection points will need to occur along 88th street; no connections at 96th across Dillon Road. Noted others' comments that trails on NE section somehow pertain to the drainage system of that area; explore if those trails could become drainage ways during large rain events. Overall development is not equal in scope to Coal Creek Ranch and Centennial Valley. He doesn't like riding on pavement; cyclist (mountain / trail biking). Davidson Mesa traffic indicates great appreciation for open space in the community. Advocate for nothing north of Disk Drive. Burrowing animals are primarily in the northern half. Work with University on how to do remediation of landscape.
- Cathern Smith, 608 West Street: Proponent for open space and an attorney advising state board bodies. Open meetings law prohibits three or more members from getting together privately. Encouraged OSAB to get together to view property without violating open meetings law. Thinks it is essential that members of the Board get the opportunity to see the site. Site seems fragmented and the proposal does not have the same feel as Davidson Mesa. The proposed plan breaks up site with trails surrounded by roads. Said "What do I value?" At Davison Mesa you can get away and into nature, you don't feel like you are in a suburban area, can ground yourself in land. That experience is immensely valuable.
- Laura Page, 920 Rex Street: Philips 66 had full plan that showed buffering around the land; even though it was private, it was land that was preserved and gave contiguous area for wildlife. Focus needs to be on preservation of existing wildlife. Campus Drive is not wildlife friendly. This plan shows the land chopped up, not supportive of environment. Concerned about trail immediately adjacent to the pond; developer's own environmental consultant suggested that it was not supportive of wildlife. Philips 66 – same square footage, so we know the site can be developed in such a way that enables more open space. Boulder County recommended multi-year surveys for burrowing owls
- Joshua Cooperman, 216 Griffith Street: Asked Board not to approve plan as it currently stands. Doesn't reflect large enough change from prior plans that were recently voted down. Would ask Board recommend that Council ask for a much larger open space dedication – something on the order of 40%. Open space is one of Louisville's greatest assets. Science community indicates need to maintain 30-50% of undeveloped land. Preserve all land north of Disk Drive. Redevelop on former Storage Tech footprint. Explore other possible alignments for Campus Drive. Would be nice if the north-south trail had a buffer between it and the Northwest Parkway. Also would be nice if there were trail connections across Northwest Parkway to enable neighbors to the east to access open space.
- Gaylynn Potemkin, 505 Spruce Street: Said we are trying to figure out a way to squeeze in spaces for wildlife to enable development. It would be great to look at whether we can squeeze people in where the animals / wildlife live. Is there a way to get in without obliterating them all?

- Anna Carlson, 929 LaFarge Avenue: Has lived in Louisville her whole life. Enjoys biking and running in open space. Current plan gives up a lot of opportunity; she wants the board to push a little more to protect it. Should think more about density considerations and building heights; need to look into it a bit more before approval. Stated support for more open space and greater wildlife corridors.
- Alexis Kahn, 1416 Fillmore Place (by Zoom meeting): Has lived in Louisville since 1986 and been on both sides of debate. Hearing that the Northern piece is being referred to as open space; it's not open space – it is private land. The land has been vacant for so many years; would be nice to shift to usable open space in that area. Grateful that developer has agreed to give additional land to the City for open space and listened to voters in City. Said the City can't afford to purchase open space. Said it was unfortunate the way the developer has been treated; does what is asked and then gets a Citizen referendum. Council and staff have worked hard to get the proposal to this point. Developer is already being generous; community already spent time and money on this project. We should honor that work and stand by our word; we are not acting in good faith as a City.

Board Discussion

Helen asked who owns parcels north of site. Rob pulled up map. The developer explained it is low density residentially zoned and the developer owns two parcels north of the site in question.

A member of the public encouraged Board to learn more about buffer requirement with Paradise Lane.

Charles mentioned that the Board had discussed trail connection options along Goodhue Ditch. Discussion of alignment of Campus Drive. Asked if there could be a use for the existing developer parcels.

David supported Redtail Ridge, but has been underwhelmed by what was dismissed by voters and what is being presented here tonight. Doesn't seem like the results were modified by much. Difficult to assume we'd get general public support given the outcome of the vote. Personally wants to make sure we push for as much public land dedication as possible and put something out that Planning Commission and Council will approve.

Charles noted that the plan as-is failed in the recent election.

David suggested it would be worthwhile to explore opportunities for preservation.

Charles does feel like we are moving the goal posts, but asked "what are the goal posts?" Currently "closed open space" is not open.

Helen moved to request more time to enable a site visit. She asked for more information through satellite, surveys, environmental impact on the property, the history of the larger land dedications that were done previously. Helen noted that she was not familiar with the subdivision design standards and would like to spend more time to understand our role and the criteria we need to apply. Also would like to spend more time with the feedback from Citizen comments shared via email the afternoon of the meeting. Noted that the City has hired but does not currently have

anyone serving in role of Parks & Open Space Director. Would also like additional information about buffer for Campus Drive.

Developer said they are happy to accommodate a site visit so information can be expedited prior to the next meeting. Rob noted that staff / OSAB would need to coordinate with City attorney and a visit would require public notice.

Jessamine asked staff to provide information about cost implications for dedication of more acreage. David asked about process and Rob suggested OSAB provide a list of questions and request for more information. Staff and the applicant can pull together site visit, information about fiscal impact, buffer zones and requirements for Campus Drive, etc. Staff would need the request for additional information within one week and would aim for a site visit prior to the June OSAB meeting.

Helen amended her motion and moved for more time to enable a site visit and collection of additional information. Charles seconded the motion. The motion was approved unanimously.

9. Discussion Item: Opportunities to Improve the Property Acquisition Ranking Process.

Agenda item moved to next meeting.

10. Update Item: Marshall Fire Updates Related to Open Space.

Staff Update

Ember reviewed key points from the staff memo. Items described include:

- Bid out for fencing: In prior round some contractors said they were not aware, some said they were too busy at the time but are now available. At least 6 companies interested; seems more promising this time around.
- Property line mowing: Adjacent to homes adjacent to open space. Waiting for cost estimate. Broken down to High/Medium/Low priority areas; high plus medium areas are equivalent to 14 miles of mowing. Ten-foot buffers. Some areas where access may not be possible. Ten-foot width is best practice staff has heard regarding wildland-urban interface. Buffer width will depend somewhat on contractor equipment. Will be putting out RFP in next month or so.
- Still working with FEMA to look at fence line documentation. Field consultations required to verify all reported documentation. Currently looking at reimbursement options from FEMA.
- Ember forwarded public works email related to reseeding the pipeline project with open space grass mix; will watch for how establishment occurs; usually takes a couple of tries to have good coverage.
- Susan asked about testing water in Coal Creek post-fire? Last time staff asked there hadn't been any; Ember will follow up.

Public Comments

City of Louisville
PARKS, RECREATION & OPEN SPACE

Open Space Advisory Board Meeting Minutes
Wednesday June 8, 2022, 7:00pm
Louisville Public Library

1. Call to Order

David Blankinship called the meeting to order at 7:05 pm.

2. Roll Call

Board Members Present in Person: Susan McEachern, Peter Gowen
Board Members Present Remotely: David Blankinship, Charles Danforth, Helen Moshak
Board Members Absent: Laura Scott Denton, Jessamine Fitzpatrick, Thomas Neville
Staff Members Present: Ember Brignull, Rob Zuccaro

3. Approval of Agenda

Peter moved to approve the agenda, which was approved unanimously.

4. Approval of Previous Meeting's Minutes

David moved to approve the minutes as written. Susan requested that her concern expressed at the previous meeting about the difficulty of relocating prairie dogs to an established prairie dog town be added. With that change, the minutes were approved unanimously with Peter abstaining.

Since this is a quasi-judicial proceeding, David asked if it was acceptable to proceed with the discussion without the majority of the board in physical attendance. The Redtail Ridge representatives indicated their desire to proceed.

5. Staff updates

See "Information Item 5: Staff Updates" on pages 21-23 of the June 2022 OSAB Meeting packet. Ember reiterated items in the staff update memo. There was no discussion.

Ember reported that Hecla Lake water rights came into priority today. Water is now flowing in, but it will soon be flowing out to meet the farmer's irrigation needs.

Received three bids for fire damaged fence repair in the second round of the bidding process. On June 21, the contract award is going to council for contract award approval. DOLA will be closed while contract work is progressing. Possibly a second closure for the trail surfacing.

David: Regarding the DOLA fence repair, we should make sure we aren't ignoring the concerns raised by homeowner Marcus Bell, who provided much documentation about established norms for the establishment and maintenance of successful off-leash dog

exercise areas and providing a buffer between private homes and dog parks (see pp 13-20 of the June 2022 OSAB Meeting packet). Ember: The project has been bid, FEMA reimbursement requests are underway. This is such an important issue that the City Manager's office agrees that adequate staff and public input would be needed before any changes to location were made to this city asset.

David: Some volunteer events were canceled because of low registration. Has the cause been identified? Ember: There was great participation for Marshall Fire cleanup events. For other events, participation is low, in some cases because of competition from other events.

6. Board updates

No board updates

7. Public Comments on Items Not on the Agenda

John Webb, 119 S. Buchanan Ct: John provided handouts on the process for becoming a bee city, sponsored by the Xerces Society. As Louisville becomes a bee city, it has a responsibility to promote the health and safety of domestic bees and native pollinators, which have been seriously affected by habitat loss and pesticides. He asked the City to create a standing committee, reduce use of pesticides, incorporate native plantings, reduce water-intensive bluegrass plantings, and develop an on-line presence. The annual fee for joining is $200. Benefits: Sustaining and enhancing bees and other pollinators, a shared community cause, a connection with other communities, using IPM (integrated pest management) in conjunction with the City's commitment to limit the use of herbicides, biological diversity, sustainability. A pollinator path could be a parks, public lands, and open space initiative. He passed out printed material and will provide electronic resources. The websites beecityusa.org and xerces.org provide further information. Susan volunteered to serve on the committee. Handouts provided following these minutes.

8. Action Item: Redtail Ridge Preliminary and Final Plat Review

Presented by Rob Zuccaro, Director of Building, Safety, and Planning

Rob summarized the history of the property he presented at the May OSAB meeting (see pp. 5-6 of the May 2022 minutes). He emphasized that because the revised GDP was overturned by the voters, the GDP under consideration was the original 2010 ConocoPhillips GDP, which allows approximately 2.5 million sq. ft. of commercial and office development on the 389-acre property. A final subdivision plat creates lots, tracts, rights of ways, and easements to enable development of the property. The proposal includes dedication of several tracts of land to the City for a park, open spaces, trails, and a public safety facility, totaling 89.9 acres. He noted that:
Part of the development review process for a subdivision plat includes a recommendation from OSAB to the Planning Commission and City Council on relevant aspects of the application. Per LMC Sec. 4.02.040, ongoing duties of OSAB are the following.

-Provide comments to the council and/or planning commission on development proposals for land immediately adjacent to, or materially impacting, open space lands providing the comments during the standard referral timelines established for the city's development processes;

-Provide input on the location of trails and paths on open space lands;

-Provide recommendations as to how open space within the city's boundaries and immediately adjacent thereto can best coexist with surrounding private land;
-Provide recommendations as to how the city can manage park and other land adjacent to open space lands in a manner that best promotes the continued integrity of open space;
-Provide any additional recommendation on open space issues the board finds appropriate.

Rob supplied detailed documents (see pp. 24-54 of the June 2022 agenda) addressing the questions board members raised at the May meeting and in later emails to further inform their decision-making process:

1. Redtail Ridge Preliminary Plat
2. Redtail Ridge Filing 1 Final Plat
3. Redtail Ridge Filing 1 Select Construction Documents
4. OSAB Questions
5. ERO Wildlife Use Assessment
6. HPEC Management Recommendations
7. ERO Initial Raptor Nest Survey
8. ERO 2020 Migratory Bird Nest Surveys
9. Baseline Burrowing Owl Survey
10. ERO Prairie Dog Management Plan
11. NW Parkway IGA
12. Centennial Valley Annexation Agreement
13. March 20, 11979 City Council Meeting Minutes
14. Centennial Valley Amended Annexation Agreement
15. Centennial Valley GDP
16. Coal Creek Ranch GDP
17. Coal Creek Ranch Annexation Agreement
18. March 1 & 9, 1988 City Council Meeting Minutes
19. North End GDP
20. December 19, 2006 City Council Meeting Minutes
21. Takoda Amended GDP
22. August 3, 2010 City Council Meeting Minutes 23.1981 Storage Tech Corp Annexation Agreement
24. ConocoPhillips Campus Zoning Agreement
25. Staff Presentation
26. Applicant Responses and Presentation
27. Public Comments Received Since Last Meeting

Jay Hardy and Geoff Baukal presented for Redtail Ridge.

The application property contains 389 acres within Louisville. The property must have zoning to proceed. A Planned Community Zoned District is unique. A development is required to have a GDP, which is essentially a master plan for the project. In 2010, ConocoPhillips was going to build and had an approved GDP. That document doesn't expire, it runs with the land. An application to amend was overturned by a citizen referendum in April 2022, but the 2010 plan remains in effect. Talks are underway about where specific elements will go. Applicant is asking for the final subdivision plat for phase one and preliminary plat for remaining phases. OSAB could review if there are open space elements. Minimum public land dedication is 12%, which the applicant has exceeded. In addition, the applicant proposes to add 18 acres in a strip along

Highway 36. The applicant is also newly proposing to preserve 47.4 acres north of Campus Drive, which is in unincorporated Boulder County.

The applicant wasn't able to offer a site visit for OSAB since the City attorney felt it raised legal issues, so they showed videos taken from Disk Drive and Tape Drive, as well as photos and site plans demonstrating hardscape trails and soft-scape trails. The existing lake in the NE corner of the property will be expanded.

Fiscal analysis prepared by a consultant estimates City revenues and expenses at development phases are built. A detailed spreadsheet can be found in the agenda package. Best estimates include: $49 million in revenue; $25 million in expenditures; $23 million in net revenue; approximately $1 million net revenue per year; and $3 million for the City to build a 16-acre park.

Helen: where is the density determined? Rob: Density cap: floor area max 2.5 m sf. City will track square footage PUD by PUD, and the developer wouldn't be able to go above that total. Modeling very little sales tax, most revenue by use tax (construction tax, equipment and furniture purchase), property tax is $2.6 million over 20 years projected for open space. Given gross land area (389, 37.4% in BC, 35.6%, 40.9% with Broomfield portion).

Charles: What's the difference? Rob: Same except for 10 acres less of unspecified land requested by City Council for previous GDP.

David: Is OSAB able to vote on the additional 47.4 acres? Rob: Yes, consider it a dedication of public-purpose land.

Helen: Changes in the GDPs in the other developments provided as examples. Can the City amend GDPs? Rob: No. An applicant can request a change. All were initiated by the property owner.

Geoff Baukol: He's lived in Superior for 22 years, his wife grew up in Boulder, his kids go to Monarch. StorageTek owned the property from 1970-2005. It had 4800 employees and 12,400 daily car trips, at its private campus. In 2008, ConocoPhillips, demolished the prior structures over two years. The property has been dormant since 2010. The 2010 GDP remains in effect. The Applicant submitted a revised GDP which was approved by City Council in September 2021, but rejected by city voters in April, 2022.

Jay Hardy grew up in Spanish Hills. The 2022 plat changes they're proposing represent the largest public land dedication in Louisville (without a golf course). They've added another 18 acres along US 36 to create a buffer zone. They have also added 47.4 acres in unincorporated Boulder County that connect to the north. Compared to the original ConocoPhillips GDP, the applicant is offering more open space, better view corridors, more trails. Applicant had the option of submitting another revised GDP, but elected not to do so and proceed under the previously approved 2010 GDP as was its right. This plat contains four times as much open space as required.

Geoff talked about the 2020 OSAB site tour, after which OSAB gave unanimous approval for the proposed revised GDP. He detailed their sustainability commitments and how they would be finalized during the PUD process. The proposal now includes 205 acres of connected open space with the addition of the new north piece.

Additional features include solar-ready covered parking, underpasses, and restored pollinator habitat. Campus Drive extension is a high priority for all government entities.

Susan asked if the Campus Drive extension could go south of the east pond. No, because then the road would connect to the Northwest Parkway instead of 96th Street, which would be difficult.

Helen: Is the hazardous waste site in the new 18 acres? Jay: No, it's been remediated and cleaned.
Helen: would the 18 new acres require new money from the city? Rob: No capital improvements planned at this point. No public access planned at this point.
Helen: Would the trail go through the new 47 acres? Geoff: Yes.
Helen: Would this be a conservation easement or a dedication? Geoff: Undecided, but if approved, however the City wants to proceed. Geoff is committed to this promise.

David: Can 2010 GDP allow above 35 foot building heights?
Rob: GDP can't alter height or setback requirements. Can't allow above our max 35 ft height without PUD process approval.

David: Green energy requirements planned?
Geoff: Yes, a subset will be included. Not as complete as the 2021 GDP though.

David: Why the narrow buffer along the Northwest Parkway? Is there any flexibility to expand that?
Geoff: Always some flexibility, and it's already a pretty substantial setback.

David: Does the 18-acre belt include the rubble from StorageTek? Do they see it as undisturbed land?
Geoff: More of a buffer, not the highest quality of the open space on the property.
David: Underpasses should be designed so no multi-modal conflict and potentially to minimize length (straight across street rather than diagonal). Has an underpass been considered for the spot where the north/south trail crosses Rockcress Drive?
Geoff: Open to redesign and that underpass location at Rockcress Drive makes sense.

Charles: What about houses to the sides of the new 47 acres?
Geoff: Abandoned houses would be demolished.

Helen: Does the applicant agree to change the design of the underpasses to follow the City model established for the Harper Lake/DM underpass per staff recommendations?
Rob: Hadn't shown to applicant yet, so he described to Geoff. Changes fine with applicant.

Public Comment (11 plus 41 emailed comments, 11 from those also speaking in person; mostly urging a greater proportion of open space, especially the entire portion north of Disk Drive.

Channah Horst, 136 Hoover Ave: She is confused about who is putting in the trails. The developer would put in and the city would maintain. Concerned about the carbon sink from developing the land, especially given the empty buildings already in town.

Cynthia Corie, 438 Jefferson Ave: Appreciated the spirit of compromise, especially given the tenor of the election. Felt it was dismissive to say the vote was so close. Please ask for a

phased plan, starting with Northwest Parkway. Strike a compromise, have a community gathering with more discussion. Many of us care more about open space than public access.

Richard Morgan, 644 W. Pine St: Appreciated all the work that went in. Was in favor of the 2021 GDP, reminds OSAB that the amount of open space has exceeded requirements. The land offered is the highest-value space on the property. The land is disturbed, it's not pristine. It's not like Davidson Mesa. He supports new, enhanced proposal.

Sherry Sommer, 910 W. Calisade Ct: Public has spoken out that more land should be saved. All land north of Disk Drive should be saved. That element of the space hasn't been built on. A Goodhue Ditch trail would also bisect habitat.

Tim Stalker, 806 W. Dahlia Ct: Handed out a master drainage plan. Conflict between the development and natural drainage. Underpasses and culverts next to each other only designed for a 10-year flood pattern. Need more detail about the buffer required by Boulder County. Encourages OSAB to get more detail about the north section, cooperation with Boulder County.

M. Christiansen, 543 Adams Ave: Concern about the placement of Campus Drive.

Mike Shantz: 623 W. Hickory Court: Former OSAB member: A fan of encouraging more public land dedication. Went through the history of the debate, advocated that OSAB to approve the current plan.

Justin Solomon 477 Lincoln Ct: The 18 acres added along 36 aren't developable land anyway. He feels those strips of land aren't high-quality. Centennial Valley included 260 open-space acres (public and private).

Cindy Bedell, 662 W. Willow St: Proposed open space isn't enough for a development of this size. Voters asked for more open space in the election. Asks for 40% set aside, all north of Disk Drive. Prairie dogs are a keystone feature. Not clear how the 47 acres in Boulder County add. Could it be developed anyway given the IGA? Consider a grant through GOCO to fund purchase of additional land.

Laura Page, 920 Rex St: OSAB shouldn't make a decision without consulting with Boulder County about the new 47 acres. Per city code, natural features should be maintained. In the ConocoPhillips plan, 222 acres would have been set aside for private open space. She hopes for a compromise that would avoid development north of Disk Drive. Move the 18 acres along Highway 36 to the north section so it adds contiguous open space. She is concerned about the demise of prairie dogs. The 47 acres to the north are already designated as rural preservation.

Josh Cooperman, 216 Griffith St: Advocated for more open space at the last meeting. Appreciates the addition of more by the developer, but thinks even more needed. Wants to see all land north of Disk Drive preserved and realignment of Campus Drive.

Board discussion:

Peter: Our jurisdiction is confined to matters of open space and trails. The dedication of open space exceeds the city code. He's read the code and doesn't see any way the city can require more open space than the applicant has already offered. The trail dedications make sense in consideration of the 2010 GDP.

Charles: Agrees with Peter. We keep moving the goalposts, and we're getting a good deal.

Helen: We and the citizens would like to consider further the possibility of moving Campus Drive further south.

Susan: Can the 47 acres be developed? Geoff: Per the IGA (which expires in 2029) they could build 6 homes and the rest of the land would have to be placed in a conservation easement.

Peter: Not comfortable asking for more open space than the applicant is willing to give. We have no legal right to demand more. They have use by right. He cannot support a request for more land dedication. The PUD process is the time to ask for more open space in exchange for enhanced building height.

Rob: PUD process is the only opportunity to adjust building height. OSAB could be brought in at that time since the development would be contiguous to open space. We could put that condition into our recommendation.

David: summarized possible recommendations in preparation for a final vote, including pursuing legal commitment by developer to dedicate 47.4 acres north of Campus Drive as open space, an additional underpass at Rockcress Drive, OSAB involvement in PUD review, and ensure underpass design meets city standards. Noted that there doesn't currently seem to be clear support for asking for more open space with a tradeoff of clustering and higher building heights, so that can be considered in a future OSAB review of the PUD.

Motion Language: OSAB recommends approval of the revised proposed final plat contingent on:

1. A legal commitment by the developer to rehabilitate and dedicate the 47.4 acres in Boulder County (paradise lane properties) for jointly managed Louisville and Boulder County Open Space.

2. The developers follow the current city standards for underpasses consistent with the McCaslin Underpass and Harper Lake.

3. OSAB participation in the PUD review process.

4. The developers and city continue to work on creating safe trails and the possible addition of a 3rd underpass.

Helen made a motion to approve as submitted and amended with conditions. Peter seconded. Vote: Passed unanimously by Peter, Helen, Charles, David, and Susan.

Memorandum of Decision

Open Space Advisory Board

City of Louisville

June 8, 2022

RE: Brue Baukol Capital Partners

Preliminary and Final Subdivision Plat

389-acre Redtail Ridge (ConocoPhillips Campus) Development

Preface

In view of the significant public interest in this matter, OSAB desires to memorialize the background and rationale for its decision in this matter.

Introduction

1. This matter comes before the Open Space Advisory Board (OSAB) upon applicant Brue Baukol Capital Partners (Applicant) submission of a preliminary and final subdivision plat for the 389-acre Redtail Ridge (ConocoPhillips Campus) development (Property).

2. The property was first developed in 1970 and occupied by StorageTek until 2005 as a private commercial business park with up to 4,800 employees generating up to 12,400 daily trips. ConocoPhillips purchased the Property in 2008 and demolished most of the improvements. It has remained in its present condition since 2010.

3. The application is pursuant to the 2010 ConocoPhillips Campus General Development Plan (GDP). It is a proposed final subdivision plat for the first phase of development creating lots, tracts, rights-of-ways and easements to enable development of the Property.

4. Additional plat filings will be required for future phases of development. A Subdivision Improvement Agreement (SIA) will also be required for installation of public infrastructure such as roads, trails, water lines, sewer lines, and a sewer lift station.

Procedural History

5. On December 11, 2019, OSAB first considered the Applicant's proposed 1st Amendment to the 2010 ConocoPhillips Campus GDP (1st Amendment) The proposed 1st Amendment included an updated access plan; expanded allowed land uses (a 1,500 unit senior living community in Area A, and a mix of office and commercial uses in Areas B, C and D); increased allowed gross FAR to 0.38 (6.4M sq. ft.); updated parking standards; and stated an intent to allow building heights up to 75', and proposed 77.54 acres for open space and 7 acres for parks, where the minimum public land dedication was 40 acres.

6. The Applicant presented two alternative plans for OSAB consideration. OSAB made the following recommendation:

a. Option B is strongly preferable

b. Include lake in NE Corner as part of the public lands dedications

c. OSAB is open to discussion of reducing other public lands areas to accommodate the lake area

d. Provide trail corridors to/from the lake

e. Preserve option to build a trail along the Goodhue Ditch leading towards downtown Louisville

f. Strongly prefer land dedication vs. cash in lieu

7. On February 10, 2021, OSAB considered the Applicant's revised 1st amendment to the GDP (Revised 1st Amendment). The revised concept included a mix of industrial, office and commercial development with a maximum development area of 3,115,000 sq. ft., and maintaining the previous open space, park, and trails plan. This plan was designed to be consistent with the city's comprehensive plan.

8. OSAB February 10, 2021 action on Applicant's Revised 1st Amendment was to approve the staff recommendation with additional conditions: 1) that Applicant and staff make an appropriate effort to preserve natural features, historical and archaeological sites, vegetation including trees, to the greatest extent possible; and 2) OSAB encourages clustering to the extent possible to minimize the development footprint. The staff recommendation was to support the Applicant's proposal with the following conditions: 1) that the Applicant work with staff to determine final trail alignments to ensure good user experience but that are in line with the application as proposed; and 2) that the Applicant work with staff to finalize plan for site restoration and grading. Detailed rationale for the OSAB's deliberations are contained in that meeting's minutes.

9. Applicant's Revised 1st Amendment was considered by the Planning Commission and by City Council, where additional changes were made. City Council approved the revised 1st Amendment on September 21, 2021.

10. City Council's approval of the revised 1st Amendment was challenged successfully by citizen initiative vote on April 22, 2022. By operation of law, the 2010 ConocoPhillips Campus General Development Plan remains in effect and governs OSAB's deliberations on the present preliminary and final subdivision plat.

11. Preliminary and Final Subdivision Plat Proposal

12. The preliminary and final subdivision plat considered by OSAB at its May 11, 2022 meeting proposes approximately 2.559 million square feet of improvements and is comprised of: 1) corporate campuses; 2) ancillary office uses; 3) ancillary institutional uses; 4) industrial & research and development districts; and 5) retail servicing on-site demand. Applicant further claims the proposal: 1) provides approximately 66 acres additional open space providing continuity with adjacent, off-site open space; 2) safeguards an expansive natural habitat corridor; 3) preserves a direct western view to the Flatirons to be enjoyed by all; 4) provides an approximate 16.5-acre park land dedication, one of the largest in the City park opportunities, paralleling the size of Community Park; 5) provides key linkages for the regional trail network; 6) provides bikeway completion with pedestrian underpasses and raised crosswalk; 7) provides

multi-use paths for separated bicycle and pedestrian access; 8) provides buffered on-street bike lanes; and 9) provides integrated, sustainable native landscape design.

13. Applicant by letter dated June 8, 2022 (included in the OSAB June 8, 2022 Board Package at page 404) modified its proposal as follows:

a. Added approximately 18 acres of open space dedication (was previously 66 acres) totaling 84 acres;

b. A new commitment of 47.4 acres of open space/conservation easement for the lands just north of the Louisville/Boulder County property line; and

c. Committed to extend and additional "leg" of the trail from the eastern underpass north along the Goodhue ditch.

OSAB Hearing Process

14. On May 11, 2022, OSAB conducted its first hearing on Applicant's preliminary and final subdivision plat for the 389-acre Redtail Ridge property. Members present included: Chair, David Blankinship, Charles Danforth, Jessamine Fitzpatrick, Susan McEachern, and Helen Moshak. Members absent included: Laura Scott Denton, Peter Gowen, and Thomas Neville.

15. Louisville Planning Director, Rob Zuccaro summarized the proposal, development history and staff analysis. Jay Hardy, Senior Vice President, Brue Baukol Capital Partners presented on behalf of Applicant. Approximately eleven citizens addressed the application at the hearing, in addition to approximately 28 persons who submitted written comments that were incorporated into the board's pre-meeting hearing package. While there was public support for the application, a preponderance of public comments was in opposition to the application. Much of the opposition focused on a desire for the city to require a larger public lands dedication.

16. OSAB decided to continue the matter for further fact finding and discussion. OSAB requested a formal, publicly noticed tour of the Property. That request was denied based on advice from the city's legal counsel.

17. On June 8, 2022, OSAB considered the application a second time. Members present included: Chair, David Blankinship, Charles Danforth, and Helen Moshak appearing remotely; with Peter Gowen and Susan McEachern appearing in person. Members absent included: Laura Scott Denton, Jessamine Fitzpatrick, and Thomas Neville.

18. The Applicant was asked if it objected to the form of the meeting or whether it objected to members participating at this meeting who did not participate at the May 11, 2022 meeting. The Applicant waived any objection.

19. Rob Zuccaro presented on behalf of staff. Geoff Baukol and Jay Hardy presented on behalf of Applicant. Presenters provided additional material and answered OSAB questions. Eleven members of the public offered comments. The OSAB meeting package for this meeting provided extensive additional background documentation and responded to OSAB questions raised at its May 11, 2022 meeting.

OSAB Analysis

20. OSAB's role in this matter is governed by Louisville Municipal Code (LMC) Sec. 4.02.040. As such, its role is to provide comments and make recommendations. Its comments and recommendations are as follows:

21. 4.02.040. D - [P]rovide comments to the council and/or planning commission on development proposals for land immediately adjacent to, or materially impacting, open space lands;

a. The application proposes dedication of approximately 84 acres of additional open space lands and an approximate 16.5-acre park land dedication. Planning staff analysis calculated the minimum required public land dedication as approximately 40 acres (12% of gross acreage). The proposal is well in excess of that required by the LMC.

b. Many of the public comments focused on a preference for significantly greater open space and other public land dedications than proposed in the application. There appears no basis in law for the city to require public land dedications in excess of what Applicant has proposed.

c. OSAB acknowledges the Applicant has increased the total open space dedications compared to what was presented to OSAB at its May 11, 2022 meeting. OSAB does not recommend that either Planning Commission or City Council require Applicant to dedicate more than Applicant is willing to do so.

22. 4.02.040 E. Provide input on the location of trails and paths on open space lands;

a. Considering the constraints of the GDP in place, the location of the trails and paths on open space for the appears appropriate and consistent with previous recommendations of OSAB.

b. OSAB supports the planning staff recommendation regarding the design of the Campus Drive underpasses, including upgrading the chain-link fence to corten steel fencing, LED lighting and addition of a stone veneer headwall treatment with street name and City logo.

c. OSAB recommends that Applicant and Staff consider a third underpass for the trail that intersects the proposed Rockcress Drive, applying the same design standards as recommended for the underpasses along Campus Drive.

23. 4.02.040 H Provide recommendations as to how open space within the city's boundaries and immediately adjacent thereto can best coexist with surrounding private land;

OSAB concludes that the open space dedications designated in the application are in sufficient harmony with surrounding private land of both the Applicant and adjacent private land and consistent with previous OSAB recommendations.

24. 4.02.040 I Provide recommendations as to how the city can manage park and other land adjacent to open space lands in a manner that best promotes the continued integrity of open space;

a. Many public comments focused on Campus Drive not being routed so as not to cut through open space. The December 30, 2021 Marshall Fire made clear the imperative for additional ingress and egress for the Monarch school and Avista campuses. The Applicant's proposal addresses this important public safety need in a responsible manner. It is also consistent with the 1999 Intergovernmental Agreement (IGA) between Boulder County, Louisville, Lafayette and Broomfield commonly referred to as the NW Parkway IGA.

25. 4.02.040 M Provide any additional recommendation on open space issues the board finds appropriate.

a. OSAB supports Applicant's new commitment of 47.4 acres of open space/conservation easement for the lands just north of the Louisville/Boulder County property line and its commitment to extend and additional "leg" of the trail from the eastern underpass north along the Goodhue Ditch. OSAB recommends that the 47.4 acres be formally dedicated as open space, with the understanding that Applicant would be responsible for removing existing structures on the acreage and restoring those sites to their natural condition.

b. OSAB supports Applicant's newly proposed addition of 18 acres of open space along the Property's edge with US 36. While this area was not among OSAB's highest priorities for open space acquisition, it is a welcome enhancement for the public lands dedication.

c. OSAB supports Applicant's efforts with this application to consider protection of portions of the Property outside the city limits (47.4 acres north of the city limit, and the conservation easement in favor of Broomfield to the south of the city limit) and associated trail connections. Such efforts strengthen the open space components of the Application.

d. At its February 10, 2021 meeting OSAB approved a motion supporting the GDP proposal before it, and encouraging building clustering to the extent possible to minimize the development footprint on the land. Although the current application is pursuant to the 2010 GDP and not the GDP under consideration in 2021, OSAB remains interested in the concept of clustering buildings. Since clustering decisions are made at the PUD phase, OSAB is interested in reviewing the associated PUD application for possible recommendations regarding building clustering and minimizing the development's footprint, consistent with its responsibilities under LMC section 4.02.040. D.

26. OSAB expresses its appreciation to both staff and Applicant for their efforts throughout this project's duration for providing OSAB with necessary detailed information, particularly in response to OSAB questions and issues raised at its May 11, 2022 meeting. OSAB further expresses its appreciation to participating members of the public, who thoughtfully and respectfully engaged OSAB throughout this process.

Motion Language: OSAB recommends approval of the revised proposed final plat contingent on:

1. A legal commitment by the developer to rehabilitate and dedicate the 47.4 acres in Boulder County (paradise lane properties) for jointly managed Louisville and Boulder County Open Space.

2. The developers follow the current city standards for underpasses consistent with the McCaslin Underpass and Harper Lake.

3. OSAB participation in the PUD review process.

4. The developers and city continue to work on creating safe trails and the possible addition of a 3rd underpass.

Helen made a motion to approve as submitted and amended with conditions. Peter seconded. Vote: Passed unanimously by Peter, Helen, Charles, David, and Susan.

9. Discussion Item: Review and Revise Public Communication on Temporary Property Line Mowing Efforts and Scope of Work for Wildfire Mitigation Efforts

Ember provided the draft buffer mowing statement, which will appear on the City's Facebook page next week. This policy applies only to the 2022 mowing season, and not all properties will be mowed, either because they are a low mitigation priority or not easily accessible to mowing equipment. Those property owners will receive written notification that they are allowed to mow their own 10-foot buffers. David and Susan made some suggestions to clarify the wording.

A wildfire mitigation plan was last done in 2012. The revised plan will change the focus to both the pros and cons of mitigation efforts and resource management. Ember will send a rough draft to the Tiger Team for review.

Rangers are pitching in on fire-recovery efforts by driving streets in fire-damaged neighborhoods on weekends to check on contractor right-of-way violations.

FEMA has given its initial approval to the City's damage assessment. A big milestone, though there are many more steps before final approval.

11. Brainstorm Ideas for Joint OSAB/PPLAB Meeting Agenda

OSAB/PPLAB agenda items for the September meeting:
-Bee City, Pollinators, and Xeric Gardens
-Wayfinding and Park Signs
-Cottonwood/Church/Lake Park Master Planning
-Nature Play, Warembourg Pond
-BMX/Pump Track (Charles: bike-specific trails and school safety)
-Wildfire Mitigation
-DOLAs

12. Discussion Items for Next Meeting on July 13, 2022

-Opportunities to Improve the Property and Trail Acquisition Process
-2022 goals assessment

13. Adjourn
Meeting adjourned at 10:40.

City of Louisville
COLORADO • SINCE 1878

Planning Commission
Meeting Minutes
August 11, 2022
Council Chambers
6:30 PM

Chair Brauneis calls the meeting to order at 6:30 PM.

Roll Call is taken and the following members are present:

Commission Members Present:	Steve Brauneis, Chair Dietrich Hoefner, Vice Chair Ben Diehl, Secretary Keaton Howe Jeff Moline Tamar Krantz
Commission Members Absent:	Allison Osterman
Staff Members Present:	Rob Zuccaro, Dir. of Planning & Building Safety Lisa Ritchie, Fire Recovery and Planning Manager

APPROVAL OF AGENDA

Moline moves and **Howe** seconds a motion to approve the August 11, 2022 agenda. Motion passes unanimously by a voice vote.

APPROVAL OF MINUTES

Howe moves and **Krantz** seconds a motion to approve the July 14, 2022 minutes. Motion passes unanimously by a voice vote.

PUBLIC COMMENTS ON ITEMS NOT ON THE AGENDA

None is heard.

NEW BUSINESS – PUBLIC HEARING ITEMS

A. Temporary Use Permit as a Precursor to a Permanent Use – Rocky Mountain Tap & Garden: To consider an application for a 90-day temporary use permit as a precursor to a permanent use for Rocky Mountain Tap and Garden to utilize the lot at 1077 Courtesy Road (Lot 1, DELO Plaza Subdivision) as an outdoor beer garden (outdoor eating and serving area) (Resolution No. 12, Series 2022).

- Applicant: Garret Nicodemus
- Case Planner: Rob Zuccaro, Director of Planning and Building Safety

All notice was met as required and there is no commissioner conflict of interest.

Staff Presentation:
Ritchie begins her presentation showing the vicinity's aerial image. Going over the background, she mentions that the 0.64 vacant acre lot is located in the DELO Plaza development and the DELO Plaza PUD was approved in 2015.

She discusses the proposal and what is and is not allowed. Outdoor dining is an allowed accessory use in the mixed-use zone district. An approval of a PUD or SRU is required prior to development and operation of outdoor dining use. The applicant is requesting approval of a temporary use permit as a precursor to a permanent use. The applicant anticipates approval of a PUD Amendment to authorize the permanent use. This typically requires approval of the PUD, however staff recommends an exception because this is in support of an existing restaurant in operation and they have already begun to install the improvements. The applicant and staff have revised the request to be a 9-month time frame to ensure adequate time to complete the PUD Amendment.

She concludes her presentation by reviewing the criteria and staff's recommendation. In regards to Sections 17.60.010(D) and 17.16.190(A)(5), the use is compatible with surrounding area and community facilities, conforms to the applicable requirements, the applicants are capable of restoring the site to its previous condition, and the site has adequate parking and service areas.

Staff Recommendations:
Staff recommends approval for nine months with the following conditions:
1. Execute the Restoration Agreement prior to City Council public hearing
2. Submittal of a complete PUD Amendment application

Commissioner Questions of Staff:
Kathleen Kelly, City Attorney
Kelly confirms that adequate notice was provided as noted by staff.

Moline says that the applicant mentions parking is available because of vacancies in the building. Will there be adequate parking if the building no longer holds vacancies?
Ritchie mentions that when staff was reviewing the special review use (SRU), the application at that time had an analysis of the parking, which assumed the building would be completely full. Staff feels confident that there is adequate parking for the site because of the review of the previous SRU, but will review again during the PUD Amendment process.
Moline says on the seasonality of the use, is that something that will be discussed more at the PUD stage?
Ritchie says that is a good question for the applicant if they intend to change the use seasonally. From this approval, the applicant would be able to operate through the entirety of those nine months.
Krantz asks if staff can give more information on the relationship between the tenant and owner and if this is agreed upon for the long term.

Ritchie says the owner is Stephen Tebo and the applicant is the operator of the restaurant. With every land use application the owner has to give consent, which he has done.
Krantz asks if the LED string lights comply with the City's lighting requirements.
Ritchie says string lights are typically very low voltage bulbs and our current code is pretty silent on this. Staff will get a more complete analysis with the PUD Amendment.
Howe asks if staff can comment on the hours of operation and if there will be live music.
Ritchie says there is no limitations on hours of operation but if the commission feels the need to add a condition stating what those hours should be, they can do so at time of approval. We do not have a condition on whether or not they can have live music. These are good questions for the applicant though.

Applicant Presentation:
Applicants: Paul Rossi, Paul Lichty

None is heard.

Commissioner Questions of Applicant:
Howe asks what the hours of operation will be and if they will have live music.
Rossi says they will be open Monday – Wednesday: 3-9pm, Thursday/Sunday: 11-9pm, and Friday – Saturday: 11-10pm. We do plan to have live music.
Moline asks if they can speak on how they see this use through the year.
Rossi says he can see it being used through January or February, depending upon the weather.
Brauneis asks if the applicant is working on obtaining a liquor license.
Ritchie says they are working on getting this with the City Clerk's office.
Rossi shows the commissioners where the gates will be on the property and the main entrance for the garden.
Howe says he is concerned about safety when people are walking back and forth.
Rossi says there is parking lot lighting when it is dark. We will be installing solar lighting though.
Diehl asks if there will be normal amplified music when there is no live band.
Rossi says there will not be music outside of a live band.

Public Comment:
Mark Cathcart, 1763 Sweet Clover Lane
Cathcart says it is an interesting use for a parking lot. He recommends having shade.

Closing Statement by Applicant:
Rossi says the PUD Amendment will have shade sails on a 4x4 post and we will ensure that those are safe. We will have large umbrellas on each table as well.

Discussion by Commissioners:
Diehl says he is supportive of this going to nine months instead of 90 days. It is a good use of the parking lot and he looks forward to enjoying it someday. He mentions the idea of creating a condition that live music is not permissible after 9pm.
Krantz is in support of this and would like to hear from the commissioners on possible conditions relating to the live music and crosswalk safety precautions.
Moline is in support. He is in favor of making this parking lot more usable.

Brauneis mentions that this is an out lot and there are two on this property. For that reason, parking in this area is not an issue.
Hoefner is supportive of this and does not see the need for conditions.
Howe thinks this is a creative use and supports the nine month extension. He thinks lighting is necessary for walking visibility and good signage to direct walking paths.
Brauneis asks what governs live music.
Ritchie says it is the city's noise ordinance.
Brauneis says the condition is unnecessary since they still have to adhere to the city's noise ordinance.
Zuccaro mentions that there is no specific time for downtown in regards to the city's noise ordinance. That is usually tied to an SRU. If the commission wants live music until 10pm, a condition should be made with the approval.
Diehl says he is comfortable without a condition since this is a nine month trial.

Howe moves and **Hoefner** seconds the motion to recommend approval of Resolution 12, Series 2022. Motion passes unanimously by a roll call vote.

B. Preliminary and Final Plat – Redtail Ridge: To consider the Redtail Ridge Filing No. 1 Preliminary and Final Subdivision Plat for a 389.10 acre property, located northwest of US 36 and Northwest Parkway and Southeast of S 88th Street and Campus Drive (Resolution 13, Series 2022.)

- Applicant: Sterling Bay
- Case Planner: Rob Zuccaro, Director of Planning and Building Safety

All notice was met as required. Commissioner Dietrich recuses himself from participating in this agenda item. Commissioner Krantz discloses that she participated in the referendum election for the General Development Plan Amendment. Commissioner Moline discloses that he is an employee of Boulder County Parks and Open Space Department.

Staff Presentation:
Zuccaro begins his presentation by discussing the background. He shows an aerial image of the property and reviews the 2010 approval of the ConocoPhillips GDP, preliminary PUD, and Plat. He explains that it establishes lots, blocks and tracts of land for development. It also establishes rights of way, easements, and includes public purpose land dedications. There will also be a Subdivision Improvement Agreement for installation of public infrastructure such as roads, water, and sewer.

The following is the proposed phasing of the project:

- First Phase
    - Campus Drive
    - Sorrel Ave
    - Portion of Rockcress Dr
    - All Trails
    - Water and Sewer Mains
    - Sewer Lift Station
    - Off-Site Road Improvements
    - Drainage
- Future Phases

- Completion of Rockcress Dr
- Sewer Plant Expansion
- Drainage

In regards to the public land dedication, the code requires a minimum of 12%, 80 of the 390 acres are exempt, but the minimum requires that 37.1 acres be dedicated. They are proposing 155.3 acres be dedicated and have Open Space Advisory Board (OSAB) and Parks and Public Landscaping Advisory Board (PPLAB) support. Speaking on the road and trail plan, all streets will include multi-use paths and on-street buffered bike lanes. There will be soft and hard surface trail networks, two Campus Drive underpasses, and a US 36 bikeway to the Rock Creek Trail connection. The ROW landscaping will be maintained by the Metro District while the City will maintain the trails, sidewalks, and roads.

Zuccaro reviews the traffic analysis. This analysis has an updated development area and modeled uses, evaluates the road network capacity, explains that there will be less building area but more traffic due to the change in use, and recommends road improvements to maintain acceptable levels of service.

Brauneis says regarding who pays for what and when, the applicant does not have to deal with the Highway 36 improvements, correct?
Zuccaro says that is correct.
Krantz asks if staff can discuss possible dates for when these improvements will be in play.
Zuccaro says the traffic study for the interchange would need to be updated in the 2027-2028 time frame. The Northwest Expressway would need to be addressed in the 2027-2035 time frame.

He discusses the right-of-way requirements for Northwest Parkway Authority, North Metro Fire Rescue, and Boulder Valley School District. He mentions the various transportation demands for this project and how staff is recommending an updated plan with funding from the Metro District. Some possible transportation programs are as follows: EcoPasses, hire a Transportation Demand Management (TDM) coordinator, a carpool/vanpool program, local shuttles to RTD stations, and bicycle commute amenities. He informs the commissioners the plans for grading, drainage, and utilities, mentioning that the Waste Water Treatment Plant will require an expansion at future development stages.

He concludes his presentation going over the approval criteria for the preliminary and final plat review.

LMC Sec. 16.12.075 Approval Criteria

1. *Whether the plat conforms to all of the requirements of this title*;
    a. Reviewed by Public Works, Parks, Recreation and Open Space, Police, Fire, and Utilities and Referral Agencies. Staff finds the plat conditionally complies with the standards within Title 16, Subdivisions.
2. *Whether approval of the plat will be consistent with the city's comprehensive plan, applicable zoning requirements, and other applicable federal, state and city laws*;

   a. Part of Phillips 66 Rural District, includes policies on density (0.25 FAR), limits height to three stories but promotes clustering of buildings in exchange for height, supports retail, office, industrial, and institutional uses.
   b. The General Development Plan provides setback and parking standards and requires Commercial Development Design Standards and Guidelines (CDDSG) compliance, and was applied at PUD review stage.
3. *Whether the proposed subdivision will promote the purposes set forth in section 16.04.020 of this Code and comply with the standards set forth in chapter 16.16 of this Code and this title*.
   a. Section 16.04.020 includes 19 specific purpose statements
   b. Chapter 16.16 provides subdivision design standards
      i. General design and construction
      ii. Site considerations
      iii. Streets, alleys and easements
      iv. Blocks
      v. Lots
      vi. Public sites and dedications

The PPLAB reviewed this on May 5, 2022 and recommended approval. The OSAB reviewed this on May 11, 2022 and June 8, 2022 and recommended approval with the following conditions:

- Legal commitment to rehabilitate and dedicate Paradise Lane properties
- Follow City standards for underpass design
- OSAB participation in PUD review process
- Consider 3rd underpass at Rockress Drive/NW Parkway

Staff Recommendations:
Staff recommends approval with the following conditions:

- Prior to recording the final plat acquiring all necessary right of way
- Address in the Subdivision Improvement Agreement
  - License agreements for maintenance of drainage on city property
  - Sewer plant expansion trigger/development cap
  - Maintenance of Tract L as private common open space
  - Paradise Lane properties dedication to the city
  - Underpass design
- Update TDM Plan and address Metro District obligations
- Written approval from Xcel on use of easements
- Update plat labeling
- Add note on Tract Summary Table noting Tracts C, D and I are dedicated for open space
- Adjust Tract K dimensions to accommodate the sewer lift station
- Label Tract L on plat as common open space owned by Metro District

Commissioner Questions of Staff:
Howe asks if staff can highlight the major changes from the previous overturned ordinance and this one.

Zuccaro says this plan is much simpler and has fewer conditions. Last year's land use plan had many, very specific uses. He discusses the different uses available from last year's to this current one. This plan does not have a sustainability commitment plan and does not have a commitment for installing a certain amount of solar panels. Last years version allowed approximately 3 million square feet of development. This one allows only 2.5-2.6. Last years had slightly less open space and land dedication than this proposed one.
Howe says you mentioned the possibility for a hospital for the use. Can you share what blocks or where that could be for the land use?
Zuccaro says he will let the applicant clarify the probability of that location.
Diehl asks if this proposal maximizes the FAR.
Zuccaro says because right now it is just a subdivision plat, it is not addressing how much development will actually go on the property.
Diehl says in regards to the 155-acre open space dedication, does that include the 80 acres that were exempt.
Zuccaro says when staff calculated the minimum required, there are 80 acres being exempted. There was an 80-acre section of land that was annexed and it was exempt from the public land dedication. That does not mean it was dedicated as public land. It was never dedicated as public land.
Diehl mentions that the applicant is exceeding, by a large amount, what they are required to dedicate to public land. He asks if staff can say who owns the mineral rights.
Zuccaro says he does not know and would have him refer to the applicant for that answer.
Brauneis mentions the PUD includes the 95 foot height for four stories. The reason for that was that ConocoPhillips wanted to have a research facility on petroleum products that would include 20 foot ceiling laboratories. That is part of the existing GDP. How does that mesh with the proposed plan?
Zuccaro says this GDP does not authorize this height. It can only be authorized through a PUD application. When the applicant develops this over time, they may want to seek more than three stories.
Moline mentions that the slopes along the road are extensive. He is concerned about the grading.
Zuccaro says we do have a maximum slope requirement and it does meet that but it just meets it. He says he will let the applicant speak more on their grading plan though.
Moline says looking at the list and cost of storm water drainage improvements, he did not see the underpasses. Is that because they are also the storm water facilities?
Zuccaro says they will be duel and are captured in that appendix.
Krantz asks whether or not the subdivision plat conforms to the ConocoPhillips GDP. She mentions a section of code that she would like staff to speak more on.
Zuccaro read section 17.72.160 to the commissioners and explains in more detail how staff interpreted this code section.
Krantz mentions that she would like staff and the commissioners to look at the limitations or restrictions of the GDP. She asks staff what limitations they see with this GDP.
Zuccaro says the restrictions are the FAR, the CDDSG, this table limits uses and parking, and building setbacks.
Howe reads the yard-and-bulk requirements as noted in the staff report. He asks for clarification on the building height maximum such as 65 feet and that not having to go to City Council for approval.

Zuccaro says it is saying that an applicant can't get a height waiver through that document and can only get a waiver approved through the PUD process. Future developers may request height waivers through the PUD process.
Howe asks if there has been any discussion on making the taller heights be located more in the middle.
Zuccaro says that is a better question for the applicant.
Howe says in regards to the sewer expansion and lift stations, the lift station is planned to be one mile. That seems like that may be too long. Is that a common length?
Zuccaro says he will refer that question to the applicant's engineers who are present for the meeting.
Diehl asks if the city will have to cover any of the operating costs that come after it is built.
Zuccaro says the applicant is responsible for building everything. When the city does zone changes, staff does a fiscal analysis that analyzes what type of revenue the city can expect such as property and use taxes. Through the collection of property, use, and sales taxes, staff expects the city to collect enough to cover the costs of maintenance on the roads, trails, and parks.
Moline references code section 16.16.010 and asks if staff looked at and analyzed this section of the code.
Zuccaro shows the old Disc Drive on the north side of the property, it has largely been left natural, as drainage and vegetation. Working with the applicant on where the public land dedication should go, staff tried to overlay the park and open space lands where you see that natural vegetation.
Moline says that you see this proposal meeting that criterion.
Zuccaro says that is correct.
Krantz asks what the best map is to see the natural vegetation and topography.
Zuccaro shows a map from his presentation displaying the grading and pond expansion.
Krantz asks what will be left in the state it is today without being re-graded.
Zuccaro shows what will be staying from the presentation map.
Howe says of the proposed 155.3 acres, Tract C is a required buffer space.
Zuccaro says that is a required no build buffer. It is not required for it to be open space though. It could be private open space but it is not required to be public.
Howe says he can imagine Tract L being a berm and it seems to be pretty unusable space.
Zuccaro says that is correct. We do not foresee it having much public purpose. The berm was created for StorageTek.
Howe says in regards to Paradise Lane, that is restricted by an Intergovernmental Agreement (IGA) and can't be built on, correct?
Zuccaro says you can build up to five new homes there.
Diehl asks that at the next meeting, staff bring better clarification on what the net dedication is versus what was already required.
Zuccaro mentions that if you look at other city developments, often times public land dedications are in floodplain or drainage areas, or other areas that are not well suited for development. Those are areas that are better suited for preservation.
Howe asks why we avoid the sustainability plan and LEED building and solar requirements.
Zuccaro says when you are doing a GDP, the purpose is to address those types of subjects and create restrictions or design standards within the GDP. Because this is not

a GDP or GDP Amendment, it's just the plat to implement the 2010 GDP. Staff did not bring any of that forward as part of the discussion.
Diehl asks if that means we cannot bring that forward at this time from the previous Redtail proposal.
Zuccaro says there are design standards within the subdivision plat where the commission could deliberate whether or not these standards are in alignment with the plat. Section 16.12.075 talks about what the commission can add as conditions. From staff's point of view, it is clearer that use, height, area, or bulk requirements are plausible conditions the commission could put on this proposal.
Krantz asks how we interpret the mandate that was given to the voters and the results from that.
Zuccaro says the election was specific to an ordinance that dealt with a GDP proposal. This proposal is for a final plat and uses the 2010 ConocoPhillips GDP. That was a completely separate application.
Kelly says it was a zoning action from City Council, which is considered legislative law. The application that is being deliberated tonight is on a subdivision plat, which is a completely different type of application. It is not a legislative matter. What happened during the election should have no bearing on this application and is not relevant to your decision tonight.
Krantz asks if staff can differentiate between a preliminary and a final plat. Which parts are we reviewing that are preliminary and which parts are final?
Zuccaro says what is being heard tonight is a preliminary and final plat, but they cover the same geographic area. The actual lots and blocks on both the preliminary and final are the same in this case. There are different submittal requirements but the approval criteria for consideration are the same. One example, for a preliminary plat, the applicant must provide a drainage plan but for a final plat, there is no requirement for an updated drainage plan. The applicant has decided to give all of this information together for the preliminary and final.
Krantz brings up a concern of hers that the proposed drainage report says it is not good for the final.
Zuccaro says once a plat is approved, we get construction documents and drainage reports that are reviewed by Public Works. Those final plans are adopted and then approved for construction. The submittal requirements for a preliminary plat include a drainage plan. He shows Section 16.12.050 and reads the code for the preliminary plat submittal requirements. The drainage plan will not be final until it is reviewed by Public Works.
Diehl mentions five topics he would like to discuss at the next meeting. He wants to know more about the financial model, understand in greater detail the intersection of Highway 36 and Campus Drive, get better clarity on the open space, and have a discussion on sustainability and mineral rights.
Moline asks for more information on how open space is credited.
Zuccaro discusses the various ways open space can be credited, one of them being a net public land dedication.
Krantz says in the transportation memo, there was a 12% non-SOV goal and this is not consistent with the traffic and mobility study that mentioned a 25% goal. She asks for clarification from staff or the applicant at the next meeting on the goals for those two plans.
Howe asks for clarification on the traffic shown on Table 2 such as the increase in traffic patterns and intersection distances.

Zuccaro mentions that the City hired a third-party traffic engineer consultant to analyze the stacking distances and see if there are any conflicts between the intersections so staff will re-evaluate that and see if it needs to be refreshed.
Krantz points out that the financial analysis does not include the use of a hospital or medical center. She asks that staff include that use in order to see the data on the possible revenue the City could acquire for having a non-profit use.

Howe moves and **Moline** seconds a motion to continue Resolution 13, Series 2022 to the September 8, 2022 meeting. Motion passes unanimously by voice vote.

COMMISSIONER COMMENTS

None is heard.

STAFF COMMENTS

None is heard.

ITEMS TENTATIVELY SCHEDULED FOR THE MEETING ON SEPTEMBER 08, 2022

- Planned Unit Development Amendment – 525 McCaslin - Murphy Express
- Amendment, Replat, Easement Vacation – 1501 S Boulder Road – North End Block 11

ADJOURN

Howe moves and **Diehl** seconds a motion to adjourn. Motion passes unanimously by a voice vote. Meeting adjourns at 8:45 PM.

Jeffry L. Moline

Secretary Jeffrey Moline

Steve Brauneis

Chair Steve Brauneis

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Planning Commission
Meeting Minutes
September 08, 2022
Council Chambers
6:30 PM

Chair Brauneis calls the meeting to order at 6:30 PM.

Roll Call is taken and the following members are present:

Commission Members Present:	Steve Brauneis, Chair Ben Diehl, Secretary Keaton Howe Jeff Moline Tamar Krantz Allison Osterman
Commission Members Absent:	Dietrich Hoefner, Vice Chair
Staff Members Present:	Rob Zuccaro, Dir. of Planning & Building Safety Lisa Ritchie, Fire Recovery and Planning Manager Elizabeth Kay Marchetti, Senior Planner

APPROVAL OF AGENDA

Moline moves and **Diehl** seconds a motion to approve the September 08, 2022 agenda. Motion passes unanimously by a voice vote.

APPROVAL OF MINUTES

Diehl moves and **Howe** seconds a motion to approve the August 11, 2022 minutes with the corrections mentioned by Krantz on page nine and eleven in the packet. Motion passes unanimously by a voice vote. Osterman abstains from voting.

PUBLIC COMMENTS ON ITEMS NOT ON THE AGENDA

Cathern Smith, 608 West St

Smith discusses concerns about how public comment is received for meetings. There is no way to pool individual's time since it is capped at three minutes. There is no guarantee that they will get to speak in any type of order. The applicant gets unlimited

time before the commission. The current process does not do justice to the community's involvement. She proposes a tier process for more complex items.

RJ Harrington, 457 E Raintree Ct
Harrington says the link for the computer login on the Planning Commission forces one to download a calendar invite. Using that, you can get the Zoom login. He suggests either making it transparent that it is a Zoom login or just having that link go straight to Zoom.

NEW BUSINESS – PUBLIC HEARING ITEMS

A. Preliminary and Final Plat – Redtail Ridge: To consider the Redtail Ridge Filing No. 1 Preliminary and Final Subdivision Plat for a 389.10 acre property, located northwest of US 36 and Northwest Parkway and Southeast of S 88th Street and Campus Drive (Resolution No. 13, Series 2022). ***Continued from August 11, 2022***

- Applicant: Sterling Bay
- Case Planner: Rob Zuccaro, Director of Planning and Building Safety

Osterman mentions that although she was not present for this agenda item at last month's meeting, she has watched the recording and read the packet and is knowledgeable enough to participate in tonight's meeting.

All notice was met as required and there is no commissioner conflict of interest.

Staff Presentation:
Zuccaro mentions that staff provided a memo in the packet that answers questions the commission brought up. There were also two addendums for public comment.

His presentation entails addressing commissioner questions from the last meeting. He begins discussing how the city charter affects this application process. He shows the commission a flow chart of the process. A subdivision plat is a distinct application type that is not subject to a charter restriction. The proposed preliminary and final plat are governed by, and may develop under, the General Development Plan (GDP) approved in 2010.

There was a question about the fiscal analysis with the assumption of the use being a nonprofit hospital campus as part of the development. If it is nonprofit, they do not pay property or use taxes. Using a model of a 435,000 sq ft campus, over a 20-year period, the city would expect a positive economic benefit. He shows specific numbers and a graph through his presentation.

He discusses the development restrictions on the public land dedication parcels. He mentions the Northwest Parkway Intergovernmental Agreement (IGA) restrictions. There will be a buffer between the Paradise Lane properties, although the language does not say how big or deep the buffer must be. Developments on Paradise Lane are limited to 4.5 acres.

Diehl asks why Paradise Lane is included in the dedication.
Zuccaro says staff describes this in many different ways. It is land within the boundaries or within the total land. In 2010, ConocoPhillips included 20 acres of this

land and planned for it to be part of the dedication. The ordinance does suggest that it needs to be within the development.

A question was asked about net public land dedication (PLD). The minimum PLD is 37 acres. The gross PLD is 137.3 acres (89.9 acres within the boundaries and 47.4 acres outside the boundaries). The net PLD is 116.7 acres (69.3 acres within the boundaries and 47.4 acres outside the boundaries).

He provides additional information on traffic analysis. The Single Occupancy Vehicle (SOV) assumption of 12% of the traveling population is a conservative estimate. The following are traffic distribution assumptions proposed from the applicant's traffic engineer and reviewed by City staff: 60% of Highway 36, 15% of Northwest Parkway, 15% of 96th St, and 10% of other. He mentions that the difference between the traffic study from last year and this year is that there is less square footage proposed to be built. Knowing that, one would think that the traffic would decrease, however, the traffic engineers modeled a hospital campus and medical offices. Those uses have higher traffic demands. The average weekday trips would be 20,745 (an increase of 641 trips). The AM peak hour trips would be 1,926 (an increase of three trips). The PM peak hour trips would be 2,176 (an increase of 166 trips). The applicant updated the traffic study to include a queuing analysis. The applicant's traffic engineer found there is adequate vehicle stacking capacity.

Discussing the final grading plan, last month's packet included the storm water drainage and grading plan. He reviews the cut/fill expectations in the phases with road construction and over-lot grading. The PUD stage will also include the final grading plan.

Moline refers to one of the grading images and asks if it is fair to say that the places that are not in the green or red will not be graded?
Zuccaro says this image is just for the first phase. At the PUD stage, there will be a more precise grading plan. The green or red areas should still have grading. This image does not show all the areas needed to be graded.
Krantz says the grading table mentions there will be a 250,000 cubic yard net export of soil. Is that correct?
Zuccaro says based on that cut/fill, that is correct.

He concludes his presentation by mentioning that there has been certification provided for the mineral rights notification and discusses the sustainability commitments. At a subdivision plat stage, it is not typical to look at the sustainability standards. That is very much a part of the GDP process. The 2010 GDP does not have a similar requirement other than a Transportation Demand Management (TDM) plan requirement.

Commissioner Questions of Staff:
Krantz asks what the goals are in the transportation demand management plan and if it can be included with the transportation master plan.
Zuccaro says in staff's view, what is important is what has been committed to in the plan itself. Whatever percentage it ends up being in reality is only as good as the resources being put into it. Things staff have talked about with the applicant are RTD Eco-passes for the entire development. There is no RTD service right now so having

private shuttles and a TDM coordinator that can work with the businesses is a goal. Staff are more focused on creating a structure that can sustain transportation and can adapt to technological transportation advancements. As far as targets and goals for 25%, staff are all hopeful that all of the city's developments continue to decrease single person vehicle occupancy.
Diehl asks in terms of the traffic study, is this a consultant that the applicant paid for?
Zuccaro says the traffic study and analysis is the applicant's consultant. City staff has been working with its own consultant to assist with the staff review of the traffic study.
Diehl asks if staff can describe how the sustainability conversation went with the applicant. Did the importance of it come up?
Zuccaro says it was not discussed to that large an extent. The focus was building to the 2010 GDP and reviewing the plat documents to ensure that they complied with the GDP. He does not recall a specific discussion or a request from staff for a sustainability plan.
Osterman asks about the grading plan and cut/fill. She is trying to understand how much of the land will be left in a natural state.
Zuccaro shows the area that is public land dedication and a trail/street being graded in. That is the largest undisturbed area. He shows a few other smaller areas that are part of the open space land dedication. One thing staff has been working on with the applicant is habitat restoration and the applicant is working with a consultant on that concept.
Osterman says they are open spaces but will still be modified and left in a natural state.
Zuccaro says they would have to be restored where they are graded. After that, the city will require that they restore them to a natural state.
Osterman says given that is the case, has there been an analysis on the environmental impact?
Zuccaro says with the GDP from last year, there was a wildlife inventory and that was not included in this packet but we can present that to the commission if needed. Looking at the subdivision criteria, there are criteria about preserving the natural areas. It does not mean you preserve every undisturbed area of the development.
Howe says when the net public land dedication is being calculated, the northwest and pond area were highlighted. The land adjacent to Highway 36, is that also a part of the 69.3 acres?
Zuccaro says the applicant is proposing an 18-acre area near Highway 36, which would be dedicated public land. Staff is proposing that remain private open land that is not developed upon. The net public land dedication numbers mentioned in the presentation do not include that number.
Howe says when talking about grading, are we talking about preservation of trees and other things? Is it just flattening the land?
Zuccaro says if you are doing grading and there are trees there, you typically remove those trees.
Howe says if you are grading the majority of that site for construction, he imagines it would be difficult to leave certain parts ungraded and natural because it would affect the areas that are graded.
Zuccaro says yes, you would have to be thoughtful of the places undisturbed still working within the drainage plan.
Krantz says a part of the subdivision application should show trees and other natural features. She does not think that was included in the packet and believes that is a requirement for a preliminary plat. She would like to be able to see where those would be on the site.

Applicant Presentation:
Jeff Baukol, Brue Baukol Capital Partners
Baukol begins his presentation by giving an overview of who their company is. We are a company made up of Louisville/Superior locals who grew up here or live minutes away and have had kids who went to Goddard Pre-K and Monarch. We specialize in creating much needed housing opportunities, and developing or redeveloping mixed-use, commercial projects along major transit corridors. Our projects have received industry and national recognition for sustainability, preservation, and design innovation. Our professional reputation depends on building to the highest standards of quality and care.

Our partner is Sterling Bay. They are a vertical partner in the project, providing the management and funding toward development of the entire Redtail Ridge project. They are a vertically integrated, developer/owner operator known for innovative approaches to place making and environmental sustainability. They also have deep expertise in delivering state-of-the-art facilities designed for next-generation research and customized wet lab and industrial space. They have a national portfolio including a development of Google's Midwestern headquarters and life science campuses in California and Chicago, totaling 57 properties owned across 14 states.

He discusses the site history. The following is StorageTek throughout the years:

- 1970 - 2005: An active campus
- 4,800 employees and 12,400 daily car trips
- Private campus: no public use or access
- Created significant economic stimulus for Louisville's economy and greatly benefitted small businesses.
- Many StorageTek employees moved here and helped make Louisville "A Best Place to Live."

The Parks Board had a unanimous approval on May 5, 2022 and on June 8, 2022, the Open Space Advisory Board (OSAB) had a unanimous approval with conditions as mentioned by staff.

We share the same values on sustainability, habitat preservation and restoration, and conservation. We are proposing the single largest public land dedication in Louisville's history that does not include land for golf courses. Over three years of negotiations, we have demonstrated commitment to finally enable open and public access. He shows the commission what is new in the plat and reviews OSAB approved open space configuration. It has been approved twice by OSAB. It is the second largest public land dedication ever made in Louisville (Coal Creek's dedication included 90 acres of developed golf course out of 227 acres total). It keeps the superior placement, quality, acreage of 107+ acres of open space, parks, and trails. It also includes 16.55 acres dedicated to parkland per PPLAB guidance. The donation is valued at more than $54 million.

He then shows an image in his presentation displaying a comparison of the previously approved vs current proposal as well as showing a comparison of the open space donation.

He reviews the connections to the regional trail and open space network, including the 47.4 acres of land adjacent to Paradise Lane in Boulder County and the 240+ acres of connected open space.

Jay Hardy, Brue Baukol Capital Partners

Hardy discusses how they model the best practices for sustainability. This proposal meets or exceeds the standards in Louisville's Sustainability Action Plan. This will be one of the most environmentally sustainable life science campuses in Colorado. It will also be a smart campus with connected energy efficiency and water conservation measures. It has an industry-forward commitment to renewable energy, energy efficiency, water conservation, habitat protection and management, and more. The following is the comprehensive sustainability commitment plan:

- Requirement for 2.165 MW (one watt/buildable SF) solar energy captured on full site
- Requirement that all buildings designed as "solar ready"
- All electric buildings in office and retail buildings
- EV charging stations throughout the project
- LEED certification for all buildings
- Habitat Management Plan, in partnership with the High Plains Environmental Center
- Water-wise design, including use of native and drought resistant plant palettes

He explains to the commission their habitat and wildlife management plan and preservation. We have an active collaboration with High Plains Environmental Center. We promote biodiversity by ensuring a healthy and resilient natural environment, robust plant life, and diverse habitats. We also embrace biophilic design and will incorporate native and water-wise landscaping. This includes the sustainability commitments that have been reviewed and enhanced throughout the collaboration with the City of Louisville's Sustainability Coordinator. Water restrictions and limitations are also included in the Sustainability Commitments.

We will be continuously monitoring the following:

- Wildlife use study
- Burrowing owl surveys
- Raptor surveys
- Prairie dog management plan
- Migratory bird nest assessments
- Tree survey and recommendation
- Pollinator protections

He explains Campus Drive's safety and access. It enhances safety for all users and is a top unfunded priority in Louisville's Transportation Master Plan, which is currently an unfunded priority. It also provides an ease of access and circulation, an improved emergency access to schools, and a Boulder Valley School District (BVSD)-approved design & right-of-way dedications.

Below are Transportation Demand Management Plan (TDM) commitments we are proposing:

TDM commitments Per PCZD

- TDM commitments per commitment letter
- Full TDM report will be a part of the City Council submittal

Additional Commitments

- Improved options and access for people who do not want/need to drive
- Vision Zero
- Trails program outline
- First and last-mile solutions
- Employee Eco-Passes discount and paid for through the Metropolitan District
- Development-funded TDM Coordinator in partnership
- Bicycle access
- Shared and micro-mobility solutions

In his presentation, he mentions the trip generation and traffic study, which was updated in July of this year. This study was completed in 2021 and remains statistically valid. It reduced square footage and the inclusion of a hospital are key factors incorporated into the study's methodology and findings. The average daily trip generation at full buildout is 20,745 trips per day. The hospital and medical traffic account for nearly 35% (7,235 trips daily). The daily trip generation numbers will occur over a 20-year timeframe. The development-funded infrastructure will bring improvements to roads, intersections, and multimodal paths will keep apace of project milestones. This project is designed to reroute car traffic from residential areas and onto major corridors like Highway 36 and Northwest Parkway. He shows a graphic of the key moments in time in the trip generation estimates as well as for a hospital and medical building use.

Their vision of the site is to be a pre-eminent life and biosciences campus with next-generation laboratory and manufacturing facilities. It will be the second largest public land dedication in Louisville history, becoming an industry and statewide model for sustainability and conservation. This will lead to attracting the best companies in the world and become a new home for Avista Hospital.

Under a recent city staff determination, Hospitals are an "allowable use" under the commercial zoning. Avista Hospital is now under contract to purchase 40 acres on the east side of the Redtail campus. There is approximately 435,000 developable square feet of space to be completed in phases. Avista Hospital will have a great impact. The hospital wants new facilities as part of Phase 1. This accelerates the need for safe multi-modal access and development-funded infrastructure investments. The superior placement and access is designed to channel car traffic to major arterials like Highway 36. This is projected to account for nearly 35% (7,200+) of trip generation at full build-out. The hospital's intention is to build a new, state-of-the-art health care facility to continue its award-winning care. Following the Marshall Fire, Avista Hospital has prioritized this location due to its multiple access points. This significantly expands their service capabilities within a 15-minute radius by moving one mile.

He summarizes his presentation by reiterating the following points:

- This proposed plat is submitted in accordance with the governing GDP that was approved in 2010.
- Our vision is to build a pre-eminent life and biosciences campus for the most innovative companies in the world, complete with next-generation laboratories and manufacturing facilities.
- We want new homes and a safer, more efficient location for Avista Hospital.
- This is the second largest public land dedicate ever, being a $55 million donation.
- This will have the best-in-class sustainability and conservation features.
- It has an innovative habitat management plan.
- This will create an extension of Campus Drive, which is a top unfunded priority in Louisville's TMP.

Commissioner Questions of Applicant:
Diehl asks why Paradise Lane is considered a part of the public land dedication. Is it because you own that?
Baukol says that is correct.
Moline asks if he can explain why they find that an appropriate space for public land dedication.
Baukol says it is a good location because it is a space that is connecting to other open space areas. This is an important connector to all the open space to the north.
Howe asks if he is correct that there can be residential on the lots north of Campus Drive.
Baukol says that is right. Once we dedicate the land, there is no building on the land ever.
Osterman says in regards to what is new in this plat, the proposal is 2.55 million square feet. How does that compare to the 2021 GDP and the spread of land that will be used to build out that square footage. There was a lot of public comments about trying to consolidate the development. Was there consideration of approaches to try to consolidate?
Baukol says the current GDP had approval for 2.55 million square feet. The 2021 proposed GDP was 3.1 million square feet. In terms of where the development goes, another consideration of the public land dedication was to keep more a rural feel on the west side and keep traffic and the development on the east side. He mentions that questions have been asked in previous meetings about height for buildings. He does not know what height will look like because they do not know what use will be built on that side. That is a PUD question and will be discussed at that time.
Krantz asks if he can address the difference in the footprint in comparison to the current GDP and the 2021 GDP.
Zuccaro makes a clarification. The 2010 GDP does not address the 200 acres you are addressing. That was on the preliminary PUD that was also reviewed and approved in 2010 but has since expired. That is not a regulatory document anymore. That document is the 2010 GDP, which does not have any requirements of clustering buildings or the common open space.
Krantz asks if there was an additional 29 acres including the area around the pond and the triangle to the left (referencing two comparison maps of the previously approved and the current proposal).
Baukol says what Planning Commission approved last year is the previously approved image.

Moline asks if he can clarify the grading plan and the 250,000 excess of soil.
Hardy says we do not anticipate any trucking offsite for that soil. At the PUD level, we will get more specific on the amount, but that 250,000 will be staying on site.
Moline asks how they would respond about the public comments saying they are over grading the site.
Hardy says when you look at the over lot grading program in the open space areas, the grading taking place has to be done for roads, drainage. We are not cutting and filing just to do it. The central area is the majority of the cut/fill area.
Howe asks if there is a possibility in maintain topography in the northern area of open space without grading.
Tim **Sayler**, an engineer with Harris Kocher Smith, says the main grading done just north of Campus Drive in the buffer area is done for the drainage channel. As it goes up, around the small pond, we are not touching that. On the other side of that, there is grading to ensure the water will be draining to the east. Grading continues to the west from that pond that we are not disturbing.
Howe says if we assumed that Campus Drive was not there, could you leave that area ungraded and still complete your construction.
Sayler says no, because we would not be complying with the current drainage standards.
Krantz asks the difference between the two runoff coefficients.
Sayler says there are different runoff coefficients for parking lots and open space. He does not have the composite runoff coefficient for the entire site and that it is difficult to determine without knowing what will be built on the site. The runoff coefficient today is very low because it is just dirt. Development increases that though.
Krantz asks if that runoff will be going off the site.
Sayler says everything must be detained on site.
Diehl says in terms of the sustainability plan, how does that get memorialized in the process.
Zuccaro says there will be a subdivision improvement agreement (SIA). He says the commission can require a sustainability plan in the subdivision agreement.
Diehl asks if that has been drafted yet.
Zuccaro says it has not but it will be drafted before it goes to City Council.
Howe asks if they can speak more on the habitat management plan.
Hardy says we went through the entire development and went through the items most important. That involved the trees and animals. The details of that plan will come out at City Council through the SIA.
Krantz asks if we are allowed to make conditions on the previous habitat management plan.
Zuccaro says if the commission has reviewed and relied upon that for decision making, the commission should request that document to be put into the official record.
Howe asks if they can think of any way to improve the roadway from Campus Drive to 96th St.
Hardy says we cannot take it all the way up to the north because of the Boulder County setback. The plan was reviewed by city staff, Boulder Valley School District, traffic engineers, and the fire department and was concluded that this was the best route.
Krantz asks how they define life sciences and biotech. What kind of manufacturing does that include?
Hardy says those types of spaces usually end up being predominantly office buildings but within those offices, they will have labs. That is one end of it. The other end would

be the production and manufacturing side that could include pharmaceuticals. He is not sure what products would be used or made, though.

Public Comment:
Moline moves and **Diehl** seconds a motion to add both addendums into the record. Motion passes unanimously by a voice vote.

Jojo Follmar, 1712 Steel St, Apt 7302
Follmar recommends not approving Redtail ridge. Our area has already so many more jobs than houses; it will be devastating for climate with how many more car trips there will be. It will be less affordable housing and there is not enough open space for this development.

Matt Jones, 265 Dahlia Dr
Jones says the developer's previous proposed GDP lost by five points during the election process of Redtail Ridge. Based upon the election finding, the city was not in favor of this development. These proposals are not just based on criteria but also heavily influenced and pushed by the public and public opinion. This plan has more open space but it should be the most public land dedicated space, not the second. Please do what the community wants you to do and deny this proposal.

Jerry McQuie, 972 St Andrews Ln
McQuie comments on the plat. The plat calls for vacating drainage easements from the Boulder Valley School District but he sees no communications in the packets indicating that the school district agreed to it. He does not want to see road improvements on 88th Street in preparation for this proposal because of the delays possible from multiple municipalities involved. He asks the commission to keep the limits that were in the 2010 GDP. Regarding the economic analysis, you did take out the use and sales tax for the hospital but he believes the employee contribution should be taken out as well.

RJ Harrington, 457 E Raintree Ct
Harrington says the last two pages of the packet prove that these developers are not our neighbors. These developers are not recognizing what their neighbors have been saying for years. None of them has a Louisville address. He would like to hear a definition of hope and he hopes that this plat does not get approved.

Cathern Smith, 608 West St
Smith discusses Section 16.12.060. A preliminary plat must be approved before the final plat. She does not think the code says you can review them simultaneously. She focuses on the approval with conditions. She thinks conditions are different from approving with modifications. A modification is saying the plat will be approved if these changes are made. A condition is saying we will approve the plat on the condition that for example a traffic demand management plan is submitted. She does not view this code section saying the commission can approve with conditions. She says she is uncomfortable with grey. She has been attending the other board meetings such as parks and open space. If the city does not tie down the participant in very clear terms, the proposal starts to change. She still does not know if the 47 acres is a conservation easement. She asks the commission to make the applicant commit in writing their

sustainability commitment. She asks that if the applicant provides new information to their proposal, public comment would be open to speak on that new information.

Joshua Cooperman, 216 Griffith St
Cooperman says he is not opposed to this development. He asks that the commission not approve this subdivision plat. The current proposal is not efficiently revised from the election proposal. He thinks it does not fully conform with city code, especially regarding the subdivision plat. He speaks on the comprehensive plan and how this proposal does not fit into the comprehensive plan. He thinks there should be a larger open space dedication and a smaller development footprint. There should be more effort to arrange transportation to this site. Environmental sustainability is his main concern. This proposal lacks sustainability because it is an isolated campus in which everyone must drive to reach it. Affordable housing should be a part of this development.

Cynthia Corne, 438 Jefferson Ave
Corne discusses the 2010 PUD and industrial uses. We need specifics around the industrial uses. She is in favor of having Avista Hospital in this development for Louisville. Sustainable pavement needs to be better. She asks how construction traffic will be managed without creating chaos.

Sherry Sommer, 910 S Palisade Ct
Sommer says the documents submitted by the applicant are the same ones that the public has seen and deliberated over before. The applicant has claimed to listen to our community but those are just words. She is concerned about the grading and drainage plan. The open space proposed is not really usable open space. She does not think this should be approved but should be denied without conditions or modifications.

Joy Brook, 1590 Garfield Ave, Unit E
Brook says the air pollution is getting worse and this development will further deteriorate the atmosphere. She is concerned about traffic the development will cause and how the wildlife will not be cared for. We need legal requirements with this developer, not vague promises. This does not look like a small town feel, which is an important character trait for Louisville. There are many empty buildings in town. That shows that we do not need this development. This proposal should be denied.

Tim Stalker, 806 W Dahlia Ct
Stalker says he wonders how 250,000 cubic yards of soil will be stored on site. The footprint is expressed in acreage and the build out is expressed in square feet. He does not know how in city code, they are allowed to look at 47 acres outside of the plat. The city evaluated the public land dedication and they came up with 69.3 acres within the plat. The city staff looked at tracks A, B, H, and I. They did not look at track C or D. Track C is very contentious. He asks if the drainage plan can be adjusted with more recent mapping. He is concerned about the underpasses and how they are only built for 10 year floods.

Cindy Bedell, 662 W Willow St
Bedell gives an overview of the importance of this land to Louisville. City staff mentioned that there is 69 acres of open space and this number is significantly lower than what the applicant had in their presentation. The lack of open space should be a

component of the criteria and play a factor in the decision-making. She concludes saying that the 47 acres mentioned is outside of Louisville and should not be part of the public land dedication.

Discussion by Commissioners:
Brauneis mentions continuing this agenda item to September 22.
Diehl says he is in favor of that. He would like to see the subdivision agreement and have the sustainability commitments in that document at the next meeting.
Zuccaro says that so far, the commission has requested documentation on the requirement for natural features as well as documentation on the sustainability commitments that could be included in the subdivision agreement.
Krantz asks if staff can also provide the habitat management plan and the biological and cultural resources study. Can we also get a copy of the applicant's presentation from this evening?
Zuccaro says he can provide that.
Moline says it sounds like the transportation demand management plan is getting close or there is a draft. Can you speak more on that?
Zuccaro says there are two documents that are in the record. Staff has suggested a more specific plan be submitted before City Council. He does not think it will be ready at the next meeting.
Krantz asks if staff can add in more detail the economic impacts to staff's analysis. She also requests more analysis on how this complies with the 2010 GDP.
Zuccaro says if you reference back to the August memo, it shows that analysis. He needs a more specific direction in what else the commission would need from staff.
Krantz asks if staff can analyze in more detail specific code sections such as Sections 17.72.030, 17.72.050, 17.72.060, 17.72.160, 17.72.170, and 17.72.010.
Zuccaro says those sections of the code refer to a GDP and the commission is not reviewing a GDP.
Krantz says she understands that but believes the purpose behind a GDP is understanding whether or not a subdivision plat complies with the purpose of a GDP.
Zuccaro mentions that the GDP clearly states what uses are allowed and that staff cannot speculate what is and is not allowed. If the question is how those are interpreted, then staff could provide more information on that.
Howe asks for new developments on these items. Prior to reaching full build out, traffic expansions would be needed for the Northwest Parkway and Highway 36 interchange. If there is any update on those changes or any study that has been done there, that would be great to have at the next meeting. Secondly, the implication for traffic improvements requires acquisition of right of way from Boulder Valley School District for the expansion of Campus Drive. He asks if staff can provide a resolution or evidence of support of this expansion. Staff has not received a letter of support from the Northwest Parkway authority related to the right of way acquisition requirement so if there is any new progress made on that he would like to know.
Zuccaro says staff can provide that information at the next meeting.

Moline moves and **Diehl** seconds a motion to continue Resolution 13, Series 2022 to the September 22, 2022 overflow meeting. Motion passes unanimously by voice vote.

COMMISSIONER COMMENTS

None is heard.

STAFF COMMENTS

None is heard.

ITEMS TENTATIVELY SCHEDULED FOR THE MEETING ON SEPTEMBER 22, 2022

- Planned Unit Development Amendment – 525 McCaslin - Murphy Express
- General Development Plan Amendment, Planned Unit Development Amendment, Replat, Easement Vacation – 1501 S Boulder Road – North
- Coal Creek Ranch Filing 3 PUD Amendment – fences

ADJOURN

Moline moves and **Diehl** seconds a motion to adjourn. Motion passes unanimously by a voice vote. Meeting adjourns at 9:11 PM.

Jeffry L. Moline

Secretary Jeffrey Moline

Steve Brauneis

Chair Steve Brauneis

City of Louisville
COLORADO • SINCE 1878

Planning Commission
Meeting Minutes
September 22, 2022
Council Chambers
6:30 PM

Chair Brauneis calls the meeting to order at 6:30 PM.

Roll Call is taken and the following members are present:

Commission Members Present:	Steve Brauneis, Chair Keaton Howe Jeff Moline Tamar Krantz Allison Osterman
Commission Members Absent:	Dietrich Hoefner, Vice Chair Ben Diehl, Secretary
Staff Members Present:	Rob Zuccaro, Dir. of Planning & Building Safety Lisa Ritchie, Fire Recovery and Planning Manager Elizabeth Kay Marchetti, Senior Planner

APPROVAL OF AGENDA

Howe moves and **Moline** seconds a motion to approve the September 22, 2022 agenda. Motion passes unanimously by a voice vote.

APPROVAL OF MINUTES

Moline moves and **Howe** seconds a motion to approve the September 08, 2022 minutes. Motion passes unanimously by a voice vote.

PUBLIC COMMENTS ON ITEMS NOT ON THE AGENDA

Cynthia Corne Musslewhite, 438 Jefferson Ave

Corne Musslewhite brings up procedure. She says it is the role of the city manager instead of the planning director to present to the commission. She references code sections 016.08.10, 016.12.10, and 016.12.70 to support this stance. She says the planning department is not representing the public.

NEW BUSINESS – PUBLIC HEARING ITEMS

A. Preliminary and Final Plat – Redtail Ridge: To consider the Redtail Ridge Filing No. 1 Preliminary and Final Subdivision Plat for a 389.10 acre property, located northwest of US 36 and Northwest Parkway and Southeast of S 88th Street and Campus Drive (Resolution No. 13, Series 2022). ***Continued from September 08, 2022 and August 11, 2022, and September 8, 2022***

- Applicant: Sterling Bay
- Case Planner: Rob Zuccaro, Director of Planning and Building Safety

All notice was met as required and there is no commissioner conflict of interest.

Staff Presentation:
Zuccaro notes that there were two addendums to the packet.

As stated in the meeting packet, staff reviews the last meeting's commissioner questions. A summary of the commission's questions and requests for information are in italics and underlined below followed by staff's response.

Request for documentation to meet the Preliminary Plat submittal requirement under Sec. 16.12.050.S. "Location of significant natural features such as trees, woodlands, lakes, hills, streams, wetlands, and floodplains, and historical and archaeological sites."

Below are documents that are in the packet and were provided by the applicant to meet this requirement. The ALTA Survey, Wildlife Use Assessment and Tree Inventory directly address the location of natural features on the property. Other wildlife reports and plans submitted by the application are also included for reference.

- June 19, 2019 ALTA/NPS Land Title Survey (Attachment No. 3)
- April 23, 2021 ERO Redtail Ridge – 2021 Wildlife Use Assessment (Attachment No. 4)
- September 7, 2022 ERO Tree Inventory (Attachment No. 5)
- April 27, 2021 High Plains Environmental Center Redtail Ridge Management Recommendations DRAFT (Attachment No. 6)
- March 23, 2020 ERO Initial Raptor Nest Survey (Attachment No. 7)
- January 19, 2021 ERO Migratory Bird Nest Surveys (Attachment No. 8)
- January 19, 2021 ERO Baseline Burrowing Owl Survey (Attachment No. 9)
- July 16, 2021 Burrowing Owl Survey (Attachment No. 10)
- January 19, 2021 ERO Prairie Dog Management Plan (Attachment No. 11)

In addition, there is a section of the Goodhue Ditch that is categorized as a federal jurisdictional wetland, shown in the image below. The plans include realignment and piping of the ditch in this vicinity. This section of the Ditch is exempt from Army Corps of Engineer 404 Permit requirements. Attachments 12 and 13 include a wetlands delineation memo from ERO Resources Corp and the Army Corps of Engineers determination letter respectively.

Request to run the fiscal model with an 80% constrained buildout assumption and no employee spending for the hospital/medical office development.

To provide a range of potential fiscal outcomes a "high and low" model run can be used. The "low" model run reduces construction and building values to 80%, and total building area constructed to 80% of standard assumptions. The request by the Commission for no employee spending is related to the assumption that the hospital would move its campus and the old campus would remain vacant, thus no increase would be seen to employee spending. Staff notes that this assumption would not be expected, as the existing hospital campus would be expected to redevelop or be repurposed, but has run the model with this assumption upon request.

The fiscal model estimates that costs are covered by revenue in each fund and estimates a positive fiscal impact that averages $884,000 annually, or $17,678,000 over 20 years with the "Low" model input adjustments, compared to an average of $1,300,000 annually, or $26,002,000 over 20 years for the "High" model inputs.

The Comprehensive Plan policy for the Phillips66 Rural District states that the "Land use mix demonstrates neutral fiscal benefits and positive economic benefits." The fiscal model estimates a positive fiscal benefit to the City. Economic benefits are anticipated from the added employment base and workforce to support local businesses.

Request for Additional Analysis on compliance of the Preliminary and Final Plat proposal with the 2010 ConocoPhillips Campus General Development Plan approval and any applicable sections of Chapter 17.72 – Planned Community Zone District.

Per LMC Sec. 17.72.030, the purpose of a GDP is to set forth the following:

A. *The proposed use of all lands within the subject property;*
B. *The type or character of development and the number of dwelling units per gross acre proposed;*
C. *The proposed location of school sites, parks, open spaces, recreation facilities and other public and quasi-public facilities;*
D. *The proposed location of all streets shall be coordinated with the adopted general street plan for the city.*

LMC Sections 17.72.050 and 17.72.160 state that any development of a property must be in compliance with the approved GDP.

The 2010 ConocoPhillips Campus GDP (see Attachment 14) is a single page document approved by the City to address the purpose and required contents for a GDP. Each section of the GDP is discussed below.

The 2010 GDP includes the following table that notes the allowed "Floor Area Ratio" (FAR), which establishes the development cap for the property. The stated FAR of 0.15 results in a development cap of approximately 2.54 million square feet of building area.

The 2010 GDP includes the following general notes. Staff has not identified any conflicts with the notes and the proposed Preliminary and Final Plat proposal, except that the GDP notes that the traffic and circulation patterns shown on the GDP are intended as private drives rather than publically dedicated roads as proposed. However, the note on traffic and circulation also notes that the depiction is conceptual

only and subject to modification. The proposed road locations and circulation patterns included in the Preliminary and Final Plat proposal are consistent with the road locations shown on the GDP map.

Note No. 5 is the only regulatory requirement on public land dedication requirements that is part of the GDP, and states that at least 12% of the land area needs to be dedicated for public purposes, consistent with the municipal code standards.

The 2010 GDP includes a Permitted Use Table that outlines specific allowed uses for the property. In addition, any use listed in LMC Sec. 17.72.090 is allowed, which specifies uses as being consistent with commercially designated GDPs. This table also outlines minimum parking standards by use. Staff finds that the proposed Preliminary and Final Subdivision Plat is logically set up to develop the permitted uses consistent with the 2010 GDP and zoning allowances and does not find any conflicts between the Plat and allowed uses and parking standards.

The 2010 GDP includes the following Yard and Bulk Requirements table outlining required setbacks. The first part of the table includes a note regarding building heights. LMC Sec. 17.72.190 limits the ability of a GDP to establish height standards outside of underlying zoning standards. A development must meet the established height standard, or seek a waiver through the PUD review process. The 2010 GDP note states an intent for building heights between 35' and 65' or 95', but acknowledges this must be approved through PUD.

In addition to the sections of Chapter 17.72 discussed above, the Commission also asked about compliance with the following sections:

- Section 17.72.010 – Purpose. This section outlines the purpose of the Planned Community Zone District (PCZD) generally. The City has already approved an ordinance zoning the property PCZD and approving a GDP. The purpose statement was relevant to those actions in 2010, but staff does not find this section directly relevant to the current Preliminary and Final Subdivision Plat application.
- Section 17.72.060 – Amendment. This section states that an adopted GDP may be amended and provides some administrative authority for amendments. The Commission is not reviewing an amendment to the 2010 GDP, thus, staff does not find this section to be relevant to the current Preliminary and Final Subdivision Plat application.
- Section 17.72.170 – Amendments of Approved Plans. This section states that a GDP amendment is subject to the same procedures, limitations and requirements as the original plan. The Commission is not reviewing an amendment to the 2010 GDP, thus, staff does not find this section to be relevant to the current Preliminary and Final Subdivision Plat application.

As part of the 2010 GDP approval, the City also approved a development agreement that governs the current development and proposal for a Preliminary and Final Subdivision Plat (see Attachment 15 for ConocoPhillips Colorado Campus General Development Plan PCZD Zoning Agreement).

Section 1 of the agreement addresses items such as requirements to subdivide before development, development phasing, and credits for existing utility connections. Section 1.7 specifies that the extension of Campus Drive to 96th Street must be done in the first phase of the development.

Section 2 of the agreement addresses public land dedications and acknowledges that 309 acres of the property is subject to the dedication calculation with 81 acres exempt by a previous annexation agreement. Part of the public land dedication needs to establish and enhance trail connectivity in or through the City.

Section 3 of the agreement addresses development standards. This includes reference to the density and permitted uses noted on the GDP and the requirement for a comprehensive Transportation Demand Management (TDM) Plan at the time of final subdivision plat.

Staff does not find any conflicts between the development agreement and the proposed Preliminary and Final Subdivision Plat. A TDM plan has been provided and is discussed in the next section.

Request for an updated comprehensive Transportation Demand Management (TDM) plan.

The August 11, 2022 Commission packet included a TDM Memo provided for last year's proposed GDP Amendment and a TDM Commitment Letter. Staff recommended a condition that a comprehensive TDM plan be submitted in compliance with the 2010 development agreement. The applicant has provided an updated TDM Plan included as Attachment No 16. The plan outlines strategies to reduce single occupancy vehicle (SOV) trips in the categories of transit access, programming and education, carpooling and vanpooling, and walking and biking.

Request for staff analysis on compliance of the application with the Permitted Uses table on the 2010 GDP and Section 3.3 of the associated development agreement.

Section 3.3 of the development agreements states that use of the property is limited to uses specified on the GDP or other uses established by City Council as being compatible for commercial and office planning areas. The Permitted Use table from the GDP was included previously in this memo. The development agreement also discusses that a permitted use must be approved through a Planned Unit Development proposal. An application for a Preliminary and Final Subdivision Plat does not regulate allowed uses, and instead creates developable lots, tracts, and right-of way to accommodate the potential development of the allowed uses established through the GDP and zoning code. Staff finds that the overall Subdivision Plat lot and block layout, transportation network, and utility layout is sufficient and consistent with the range of allowed uses.

Specific questions have been raised about whether industrial uses could be developed based on the permitted uses listed on the GDP. The term Industrial is not included in the permitted use table. However, the following language is included as part of the allowed uses, which are consistent with some types of light industrial uses and the type

of research and development uses that the applicant has described as envisioned for the campus.

Research/office and corporate uses and facilities for the research, development, manufacturing, fabrication, processing, or assembly of scientific or technical products, or other products.

Any proposed use consistent with this language could be allowed if approved through the PUD process.

Request for detailed information on the Sustainability Commitments

The applicant has provided a list of sustainability commitments that are proposed as an exhibit to the Subdivision Improvement Agreement (see Attachment No. 17). The commitments include installation of photovoltaic solar with all new development, excluding the potential hospital development, building all office and retail buildings as "all-electric," building all buildings to a LEED Certified standard, implementing a habitat management plan, and using water wise landscaping.

Request for information on any new information related to improvements at the NW Parkway/US 36 interchange.

The Traffic Analysis Memo and Traffic and Mobility Study provided with the August 11, 2022 packet note that the Northwest Parkway/US 36 Interchange will reach a Level of Service (LOS) of F in 2040 based on background traffic alone, and with background traffic and traffic from the proposed development, the interchange would have an LOS of F sooner and need capacity expansion in the 2027-2028 timeframe. The interchange is within the jurisdiction of CDOT and the City and County of Broomfield and staff is not aware of any current or future plans for expansion of the interchange at this time. Staff defers to the applicant for any additional information or detail on future plans for the interchange.

Request for updates on right of way acquisition needs for the construction of off-site road expansion requirements.

There are requirements to acquire right of way from Boulder Valley School District (BVSD), NW Parkway, and North Metro Fire Rescue Authority in order to complete required transportation improvements and road capacity expansions for Campus Drive, NW Parkway, and 96th Street. The applicant has provided a resolution of support from BVSD (Attachment No. 18) and a letter of support from North Metro Fire Rescue (Attachment No. 19). NW Parkway has not provided a letter of support and has submitted a letter stating that they are requesting additional information for their board to consider (Attachment No. 20). Staff's recommended conditions of approval include a requirement that all required rights of way be acquired prior to recordation of the final subdivision plat.

Request for information or analysis of economic impact of the proposed development in relation to traffic, housing, and vacant properties.

The project would provide a major employment center for the City and region and is anticipated to increase tax revenue for the City, contributing to the economic stability of the City and region.

There is currently an employment/housing imbalance in all of Boulder County and the region that influences housing access and affordability and vehicle miles traveled due to longer commute distances. Adding a new employment center within a community that does not have a counterbalance of new housing development would contribute to the access and affordability concern and regional traffic congestion.

Adding appropriate transportation infrastructure within a new development to ensure safety, promote multi-modal infrastructure, and ensure levels of service are maintained can influence the success of a project and the resulting economic impact.

Included as Attachment No. 21 is the City's Q1 2022 Commercial Vacancy report.

Request for information on if the Commission can make a recommendation on a Preliminary and Final Subdivision Plat simultaneously.

The applicant requests concurrent review of both a preliminary and final plat application for the property. The typical procedure is to first review a preliminary plat and then subsequently review a final plat application upon approval of the preliminary plat. A preliminary plat approval will expire after 12 months if the final application is not made. In addition, LMC Section 16.12.060 states that "after the subdivider has received approval of the preliminary plat, the final plat may be prepared." However, staff has consulted with the City Attorney and the City Attorney determined that a concurrent application could be requested considering that there is not a clear prohibition on concurrent applications. Staff has reviewed the application against both the preliminary and final plat standards.

Request for information on if the Commission can make a recommendation with conditions.

Yes, the Commission's recommendation can include conditions of approval. Such conditions should be considered necessary to meet submittal requirements or criteria for consideration of Preliminary and Final Subdivision Plats outlined in the Louisville Municipal Code.

Request for information on how the Paradise Lane properties are going to be dedicated?

City planning and open space staff have met with Boulder County open space staff to discuss preference for how the property would be dedicated and managed. Both City and County staff recommend that the Paradise Lane properties be included in the dedications, as the property holds a high value for opens space and agricultural use and would expand and connect other existing and proposed open spaces and agricultural properties. While the specific mechanism of dedication, ownership and maintenance agreements have not been decided, staff is pursuing having the land dedicated to the County for ownership and then the City holding a conservation easement on the

property. This has been the most recent structure for joint City/County purchase of open space properties.

Request for information on when the Paradise Lane properties were acquired by the applicant, at what price, and development potential of the property.

The 47.4-acre Paradise Lane properties were owned by Phillips66 along with part of the current owner's overall property when purchased from Phillips 66 by the applicant. Boulder County Clerk and Recorder records show that the entire Redtail Ridge property, including the Paradise Lane properties, were purchased in 2020 for $34,930,000. Development potential for the properties is addressed through the NW Parkway Intergovernmental Agreement (IGA), which is discussed in more detail in the September 8, 2022 staff report. The IGA allows residential development at one dwelling per 4.5 acres, allowing up to 10 residential lots to develop on the properties.

Commissioner Questions of Staff:
Moline asks how we ensure that commitments made by the applicant are followed through on.
Zuccaro says it would need to be in a development agreement. He suggests making a condition that those would be included in an agreement.
Howe asks if staff can review and comment on the changes to the sewer lift station. Will that affect the city as a whole?
Zuccaro says there would be an agreement to expand the treatment plant to accommodate the development. It would affect the city in that the treatment plant would need additional staff and maintenance. He mentions regarding the sustainability commitments and that the anticipated hospital property is excluded. The applicant is willing to have some modified language to account for that. If the hospital does not locate on the site, some of the commitments could be expanded. The hospital will have to go through a PUD process.
Brauneis says currently, those revised sustainability commitments are very light and short. We would expect to see more detail at the PUD stage.
Zuccaro says from staff's standpoint, when we worked on the GDP last year, having sustainability commitments affects the character and design of the development. The applicant has proposed sustainability efforts in the plat.
Howe says we have the ability in the city to expand our sewer and water treatment facility correct?
Zuccaro agrees.
Krantz speaks on the industrial use on page 25 in the packet. Is this an abbreviated type of industrial use allowed from Section 16.72.090?
Zuccaro says when you have zoning ordinances that are additive to each other, the most restrictive is going to take precedent. That is one way to look at it. If these types of facilities were to be built, they would have to be under those restrictive standards as well. We do not have a proposed use in front us but when the city does, staff would make sure it fits with the city's use standards. He reiterated that there are no uses proposed, only potential or likely uses.
Krantz asks how to evaluate the uses.
Zuccaro says staff's opinion on this is that uses are set through the code and the GDP. Those uses are provided and any of them are allowed. There are no restrictions on ratio of uses.

Osterman speaks on the public land dedication in the northwest corner. That area is to be developed by the city to be a park. In the public comments, there were concerns about the suitability of that land. She asks staff's opinion on that.
Zuccaro says he would not say the city has done an engineering feasibility study. Staff has visited the property and it would take grading and flattening of some areas of the property. There was no concern expressed by the parks department though during their site visit.
Moline says the developer would be responsible for that grading correct?
Zuccaro says that it is not included in the proposal.
Howe asks staff to comment on the plan to provide water and if there is any plan to re-use the water. We are not receiving more water for this development correct?
Zuccaro says the city does charge tap fees for new development. Part of those fees go towards new water rights acquisitions. The city requires water to accommodate new development. The applicant will have to build a main line as well internal lines.
Howe asks if we just passed the preliminary plat, it would come back to the commission in 12 months. What change in the presentation would that have for the final plat?
Zuccaro says the final plat would have to conform to the preliminary plat. You cannot really make major changes to the proposal. It is just about finishing the detailed elements of the plat.

Applicant Presentation:
Jay Hardy, Brue Baukol Capital Partners
Hardy says he does not have a presentation but they did have follow up comments and reports that are in the packet.

Commissioner Questions of Applicant:
1.12.46-1.15.15

Moline asks how they will have the Transportation Demand Management (TDM) and sustainability commitments apply to the people in the development.
Hardy TDM activities will be tied to the Subdivision Improvement Agreement (SIA) so it will be implemented and executed that way. The TDM program, he suspects, would be the same. The one exception is related to the solar generation.
Moline says some of the ERO reports provide recommendations. How would you go about following through on those commitments?
Hardy asks for a specific example.
Moline mentions the prairie dog management plan. He wonders how to hold them to these recommendations.
Hardy says that they have not said that they would not follow or would go against them. If we need another exhibit to the SIA then we could do it that way.
Howe asks for clarification on the water and sewer contributions.
Hardy says within the first phase, the lift station in the southeast corner will be built at the very beginning. 100% of that is paid from the metropolitan district. Once we get to a certain threshold of development, then we will go through the process of getting the treatment plant expanded.
Brauneis asks about their light version and how it is not the full version that was previously proposed. It seems like it is full of loopholes.
Hardy mentions that they had 13 conditions last fall and many of those are either being met through a different path or they are irrelevant.

Brauneis says in regards to the usage and availability of raw water, have you evaluated that?
Jordan Swisher, Brue Baukol Capital Partners
Jordan **Swisher**, from Brue Baukol Capital Partners, says the best opportunity to benefit from the water rights is that the property does have inherit water rights. She describes in more detail the availability of water.
Howe says regarding the intersection of 96th St and Campus Drive, could you walk us through the other traffic options you considered?
Hardy says the initial evaluation would have come right across the north property line against Boulder County land. Both Boulder County and the Boulder Valley School District did not approve of that location. We then adjust the alignment towards the south and brought it up to where it is now and that leaves the 47.4 acres open. It was the only design option that was supported by Boulder County, the city, and met all the other regulations.
Krantz says when you did the traffic analysis, was that done before the plan of hospital or after?
Hardy says last fall, the hospital was not a part of that. Everything you see dated July of this year does include the hospital.
Howe mentions a lot of public comment expresses concerns for four lane roads. Can you address those concerns?
Hardy says that was also looked as a two lane and it does not work coming into the roundabout in both directions.
Osterman asks about the proposed square footage buildout and if during the process, there was a consideration of condensing the proposed square footage. For example, only occupying the former StorageTek area.
Hardy says the uses will be different from StorageTek. They did evaluate height and clustering from the GPD of last fall. Those are irrelevant now since we are not using that GDP.
Krantz says the GDP from last fall included 3 million square feet. Is it possible with the reduced density to allow more private common open space and cluster it more?
Hardy says the 2.6 million square feet that is being represented now in the plans also show an elimination of some of the buildings. This allows the northwest corner to have more open space.
Krantz asks to see a map that shows all the proposed open space. Staff reviews this map with the commission.
Krantz wants to know if it is possible to have the development footprint reduced due to the reduced square footage.
Hardy shows on the map where an addition to the open space quantity was made from the fall GDP. The development footprint did get smaller based on the additional open space he shows on the map.
Krantz asks if they would be willing to expand the open space along Highway 36.
Hardy says he does not know why they could not do that. That area is not going to be buildable anyway.

Public Comment:
Moline moves and **Howe** seconds a motion to add the two addendums into the public comment. Motion passes unanimously by a voice vote.

Laura Page, 920 Rex St

Page says she cannot see grading the entirety of the property is preserving the natural beauty and topography. She does not think this proposal meets our city code. She does not think the vegetation such as trees will be preserved enough.

Jojo Follmar, 1712 Steel St, Apt 7302
Follmar says Monarch will be heavily influenced by this development because students will no longer be looking out to open space but instead will be looking at buildings. She is concerned about traffic on Campus Drive and not having enough vegetation and landscape preserved.

Jesse Truman, 9557 Paradise Ln
Truman supports this project and believes the developers have gone through a lot to get to where they are today. He thinks this plan preserves the open space and land. The landowners on Paradise Lane are in favor of this development. He also believes this development will benefit downtown Louisville.

Sherry Sommer, 910 S Palisade Ct
Sommer says the environment and animal reports in the packet are outdated. She thinks reports are being thrown in last minute into the packet. She thinks the commission should vote depending upon the code. She thinks it is not true that you can have any mix of commercial and industrial use. The tree study does not mention what trees will be preserved. She would like the public works department to verify that everything on the checklist is correct. We also do not have an agreement from a ditch company. She requests that Alan Gill from the parks department have an opportunity to speak in the next meeting because he spoke on how this development will be too expensive for the city.

Cynthia Corne Musslewhite, 438 Jefferson Ave
Corne Musslewhite mentions that Rob Zuccaro said he is the director but not city manager, and she believes the code says that the city manager should be in the position to present this proposal to the commission. This proposal should be weighed against the GDP and the Comprehensive Plan. She reads the vision statement for sustainability from the Comprehensive Plan. She encourages having other departments present and share for the commission.

Mike Schantz, 623 W Hickory Ct
Schantz says he supports this plan. He believes the current plat goes beyond the public land dedication. This plan brings more trails and connections for the public. He is excited about having the hospital use in this area. He mentions more benefits for this development and the public.

Tim Stalker, 806 W Dahlia Ct
Stalker thinks the Comprehensive Plan has not been factored in enough for this proposal. He explains in greater detail why he believes this. He encourages the commission to look at section 16.24.30 and review that checklist when deliberating on this development. He concludes by saying that Tract C should be a modification.

Cathern Smith, 608 West St

Smith speaks on conditions of approval and when required documents are needed to be presented at the time of the proposal versus making a condition in order to receive such documents. She comments on traffic and is very concerned about the increase of traffic from this development.

Closing Statement by Applicant:
Hardy says they believe their proposed plat is in accordance with the 2010 GDP. They are excited about the possible businesses and they are committed to public land dedication.

Moline asks if he has been in contact with the ditch company.
Hardy says they do have the approval from the ditch company and have been in contact with them.

Closing Statement by Staff:
Brauneis says regarding the sustainability plan, if we were to come up with a condition for that, what is the process of upholding that condition.
Zuccaro asks if the condition is just from the original plan or if it includes the four conditions as stated from City Council's resolution. That could be included as a condition from the commission. He reminds the commission what the four conditions were.
Krantz asks about requirements of state and federal laws. She mentions the Army Corps of Engineers exemption letter. Is there a burden from the city for not complying with the clean water act?
Zuccaro says the city's standard is that the applicant has to provide a compliance letter. The applicant provided this letter so they met that city requirement. He cannot speak to the eligibility since he does not work for the Army Corps of Engineers.
Krantz says the letter from the packet from the Army Corps of Engineers is based on the information given from ERO.
Zuccaro says if there was an issue with the exemption, that would not be an issue with the city. They provided the correct document. If there is something not legitimate about that, the city would not be liable for that.
Moline mentions that we would have a condition that the applicant would comply with all local, state and federal laws. This would be captured in that.

Discussion by Commissioners:
Moline discusses open space and how he feels that staff has fully educated the commission on how this application affects open space. He thinks this proposal meets the open space dedication requirement. This is a rural district and is not designated as open space. If we, as a city, want this northern portion as dedicated open space, we would need to revise the comprehensive plan for this parcel. He heavily relies upon the parks and open space staff when they say this proposal has adequate dedicated open space. He would like to see the commission take the ERO recommendations and have those be made part of a conditional of approval.
Osterman says she appreciates that they are meeting and exceeding the 15% requirement. She is having a hard time moving past the section of the code discussing topography and natural environment. She has an issue with the grading and the environmental consequences. It disturbs the natural environment.

Moline says when open spaces are surrounded by urbanized environment, they will be subject to additional storm water flows and grading. He agrees that he would prefer that the dedicated open space would not be graded. On natural features, he looks at this as a site that is split between being a brownfield and a green field. When looking at the wetland and vegetation reports provided, this is an area that is not pristine. Development will disturb vegetation and trees though.
Howe thanks the planning department for the time and effort in presenting this information. He thanks the applicant as well as public comment. He appreciates that this development could give the Avista Hospital a new home. He likes the connectivity of the open space and trails. He read the entire Comprehensive Plan and two of the five priorities involve open space and parks. There is an increase demand of open space so he believes there is an argument to maintain that balance. The northern part of the parcel has some value and natural vegetation to it. He would like to add more to that. He would also like to create a better traffic pattern to preserve more of the open space.
Krantz says we had 184 letters from the public, 162 asking for denial and 19 asking for approval. She thinks it would be preferable to have all the land north of Disk Drive to remain as open space. In this area, we have three health prairie dog towns. That is a topographical feature.
Brauneis says a part of him wishes the city would have bought the property a long time ago. Knowing that this land has been agricultural for a long time and is not considered a high value ecological area, we have the decision to have more development in our backyard or to push development further away from us. Building more open space into this development may cost us something in the long haul that we did not take into account.
Moline says he would be supportive of additional open space. There are two things make him hesitant on that though. The first being that he thinks requiring more open space is not following the code. The Comprehensive Plan shows this parcel as Rural District, not any of it as open space. Secondly, when our open space advisory board and planning staff are saying that they approve the proposal. That makes me more inclined for approval.
Krantz says in regards to moving the development further, she would like to increase the open space and condense the development. She thinks increasing open space is justified within the Comprehensive Plan.
Moline expresses concerns of increasing open space when open space staff do not have the bandwidth to manage more while accomplishing the current upkeep of open spaces already owned by the city.
Howe says he is concerned about traffic. We have a failed plan that will fail in 2027. He references a code section about roadways being provided without congestion. The current layout is not the best option and he believes if we are creative, there can be a better option.
Moline thinks the commission should give a suggestion since the applicant has expressed that to provide different traffic flows, it would be difficult since Boulder County, the school district, and other entities have to be involved and sign off.
Howe does not think this traffic plan provides safety or less congestion, which is against current code.
Brauneis mentions that the appropriate departments and experts have signed off on this traffic plan, saying this is the best option. We know that there will be increased traffic and does not believe that traffic will go away with any development.

Howe thinks the proximity of the 96th St and Campus Drive intersection is too close to E-470.
Moline says when city staff and engineers have looked at the traffic studies and do find it is safe and an appropriate location, to him that is compelling enough.
Krantz mentions that they have said they will fail though in 2027. She does not think the engineers were concluding this was a perfect solution.
Brauneis says then it would need to be re-engineered at that point.
Moline points out that there is a lot of traffic moving throughout the city that does not begin or originate from this location and that will affect this development's traffic.
Brauneis says the traffic study provides a work plan. City Council can then direct work in order to rectify and make it better for the public.
Krantz says she thinks that outlook could be negative in that it is waiting for action to take place once the problem arises versus trying to get ahead of the problem in the first place. She expresses other ways that have not been explored. If we cannot handle the demand of 20,000 cars, then it may be possible that we would need to decrease the density.
Moline says he does not understand when you say that we are not meeting the ability to accommodate 20,000 car trips but the traffic studies are saying that it can be accomplished. His challenge is that way we have traffic materials that show it can work in a safe manner.
Howe reads the traffic study and it says the Northwest Parkway and Highway 36 interchange will reach an LOS rating of F in 2040. With this development, the LOS rating of F will be reached sooner in 2027-2028. There are no future plans from CDOT and the City and County of Broomfield to expand at this time. They are not prepared for this.
Brauneis says to him that is just being aware that there is a problem and they should solve it. It will fail no matter what. The Comprehensive Plan calls for what is being proposed so either way there will be development and traffic will happen.
Howe asks if they are trying to make things better or just plug the hole.
Moline says he struggles with those same issues. He does not see this proposal not following the code.
Krantz mentions code for a subdivision plat and says it must avoid the congestion of streets and highways. She feels that is an avenue they can rely on for how this traffic plan does not meet code.
Moline says in our transportation master plan, connecting Campus Drive is one of the goals of that plan. Here is a development that is proposing to do that.
Howe says a condition for the proposal he would like to discuss is having an approval letter from the Northwest Parkway. That is going to be needed at some point.
Krantz also mentions she would like a condition to reduce the density to be 1.6 million square feet.
Moline says at that point, it would just be better to deny the proposal.
Howe says that there seems to be a lot of open-ended discussion around infrastructure such as water and if it is re-usable. There are grey water lines in the city. He thinks those lines could be extended from the golf course.
Moline says he trusts the city's public works staff and they reviewed all of these documents. They are able to forecast if the city has the water and sewer capacity for this development.

Brauneis says grey water is a technical term. He thinks Howe may mean raw water or ditch water. At that point, it comes down to water rights. There is not any extra water and it is not available for this project.
Howe says there is purified water and then water that you would not drink like grey water. That is water that could be recycled and be re-used. Could we re-use water in order to be more sustainable?
Brauneis says he thinks the water treatment plant does not have the functionality to re-use water at this point in time. They are only required to re-lease it.
Howe says he thinks it is re-used for watering the golf course.
Brauneis says the sewer is planned and the expansion of the treatment plant will be paid by the developer. He discusses sustainability. He thinks solar has been addressed with this proposal. He suggests sustainability regarding the buildings should be added as conditions.
Krantz says she has concerns about the modification requests.
Brauneis says he relies upon the city attorney to provide guidance on whether we are addressing what needs to be addressed by law. We have gotten the green light from the city attorney.
Krantz says she thinks it is the commission's responsibility to vet this against the ConocoPhillips GDP. She thinks it is unusual to be using a 12-year-old GDP. She is concerned about the type and character of the development, the location of open space, and location of roads. The prior GDP had private roads and now we are considering public roads. If we are changing something with the roads, we need to consider having that be a GDP amendment.
Moline asks what the mechanism would be to amend the GDP.
Krantz says the amendment would lay out what the uses would be and the type and character of what the development is. In addition, it would include how the new roads would be integrated with the existing roads. She is unsure if the subdivision plat is meeting those requirements.
Moline says the landowner has an approved GDP. He does not understand why the GDP would need an amendment.
Krantz says the question they need to ask is if this subdivision plat complies with the GDP. If the answer is no, then it would require a GDP amendment or changing the subdivision plat. She thinks we have had a change the roads, uses, and the type and character of the development. Because of this, she thinks it requires a GDP amendment.
Moline says for the Campus Drive aspect, from the applicant's perspective, they had to move it in order to meet the intent of the proposal. Because of that, it needs to be amended?
Krantz says she thinks that is true.
Moline says generally that proposals for a GDP amendment comes from the landowner.
Brauneis says in general, in his interpretation of the code, it does comply.
Krantz brings up the discussion on super blocks.
Moline says he is supportive of staff's recommendation on this because this is a rural district. If we wanted to see similar downtown development for this property, we would need to change the Comprehensive Plan.
Krantz says her question on super blocks and making a modification is there no other alternative. She thinks there is one. The blocks can be less than 1300 square feet long.

Howe says this parcel is a gateway into Louisville. This proposal has been difficult for him to evaluate because of its complexity, expansive nature, and at time ambiguity. He does not think it meets code sections 16.16.010, 16.04.020 B and K. We assume there will be contractual agreements with Northwest Parkway but that does not exist yet. How can we assume that these buildings will be net zero? Will that be an additional condition? There are many good things in this proposal and he does not think they need to go back to square one. He does not want to add problems to the city's current, existing problems.
Moline asks what the mechanism is.
Howe says as a developer myself, in different ways, you see the project and you have it fix your needs. A better way for this development though would be to have needs and the development center around those needs. He is concerned they will have a long list of conditions.
Moline asks if he is thinking about continuing the meeting so that those conditions can be worked out.
Brauneis says we only have a few options. We can deny, approve with conditions, or approve as is. He does not think they have very many options.
Howe asks if they did a preliminary plat approval, then it would have to come back as a final plat.
Brauneis says the way it is proposed right now is a preliminary and final plat. Our vote would have to be denial.
Krantz says with the conditions being long, she would not mind making a motion to deny.
Zuccaro mentions that if there is a motion of denial, staff would come back with a new resolution showing the findings. He asks that the motion would be to direct staff to draft a resolution of denial. If anyone wants to add reasons of denial before the vote, that would be helpful.
Moline thanks all public comment and staff. We want what is best for the city and we are trying to ensure that what is before us, meets our code.
Brauneis agrees with Moline.

Krantz moves and **Howe** seconds a motion to have staff draft a resolution of denial. Motion passes 3-2 by a roll call vote.

Name	Vote
Steve Brauneis	No
Allison Osterman	Yes
Keaton Howe	Yes
Jeff Moline	No
Tamar Krantz	Yes
Motion passed/failed:	Passes

COMMISSIONER COMMENTS

None is heard.

STAFF COMMENTS

None is heard.

ITEMS TENTATIVELY SCHEDULED FOR THE MEETING ON OCTOBER 13, 2022

- Planned Unit Development Amendment – 525 McCaslin - Murphy Express

- General Development Plan Amendment, Planned Unit Development Amendment, Replat, Easement Vacation – 1501 S Boulder Road – North
- Coal Creek Ranch Filing 3 PUD Amendment – fences

ADJOURN

Brauneis moves and **Moline** seconds a motion to adjourn. Motion passes unanimously by a voice vote. Meeting adjourns at 9:51 PM.

Secretary Jeffrey Moline

Chair Steve Brauneis

City of Louisville
COLORADO • SINCE 1878

Planning Commission

Meeting Minutes

October 13, 2022
City Hall, Council Chambers
749 Main Street
6:30 PM

Call to Order – Chairperson **Brauneis** called the meeting to order at 6:30pm.

Roll Call was taken and the following members were present:

Commission Members Present:	Steve Brauneis, Chair Dietrich Hoefner, Vice Chair Jeff Moline Tamar Krantz Allison Osterman
Commission Members Absent:	Ben Diehl, Secretary Keaton Howe
Staff Members Present:	Rob Zuccaro, Dir. of Community Development Elizabeth Kay Marchetti, Senior Planner Ellie Hassan, Planner II

Approval of Agenda
The agenda is approved by all members.

Approval of Meeting Minutes
The minutes from the September 22, 2022 meeting are approved as written.

Public Comments
Cynthia Corne Musslewhite, 438 Jefferson Ave
Corne Musslewhite discusses the work plans and asks for the commission to think about the exits into Louisville, especially on US36.

Public Hearing Items

A. Adoption of Resolution 13, Series 2022 recommending denial of the Redtail Ridge Preliminary and Final Plat: Redtail Ridge Filing No. 1 Preliminary and Final Subdivision Plat for a 389.10-acre property, located

northwest of US 36 and Northwest Parkway and Southeast of S 88th Street and Campus Drive.

Applicant: Sterling Bay
Case Manager: Rob Zuccaro, Director of Community Development

Hoefner excuses himself from discussion since he has a conflict of interest.

Staff Presentation:
Zuccaro reviews for the commission Section 16.12.075, which goes over the action on preliminary and final plats.

Discussion by Commissioners:
Krantz says the proposed subdivision does not comply with ConocoPhillips GDP for the following reasons: The type and character of the development, proposed uses, and road network do not comply with those in the GDP document.
City Attorney Kelly says if you tie your deliberations back to the criteria, which is going to be the most defensible action. She cannot give a legal opinion as to whether or not your decision is correct or not.
Krantz says she looked at the four major components of a GDP. The type and character falls under one of those four components. Another large component of a GDP is the proposed location of the streets. The plat includes a street network that differs significantly from the ConocoPhillips GDP. In review of the type and character of the ConocoPhillips GDP, it is clear to her that it was used for a single user corporate campus. This location would fit more of a commercial and industrial zoning. Regarding the street network of the ConocoPhillips GDP, the roads represent internal private drive. This GDP also has Campus Drive to be routed through Paradise Lane. The application has Campus Drive exiting north of the fire station. She would like these items to be added to the motion of denial.
Moline says he will not be voting for the motion of denial so he is not opposed to changing it.
Osterman says that it seems that Krantz's comments were based on the GDP and she is not sure if that is part of the criteria staff has shown from their presentation.
Zuccaro says it should comply with the provisions of the adopted ConocoPhillips GDP. We have received word that Commissioner Howe will not be able to make it to the meeting. We will only four votes. It is possible of the vote being a tie.
Krantz mentions that it would be more beneficial to separate out the preliminary and final plat so that it is more organized for City Council.
Brauneis points out that staff and the city attorney has said it is okay to have a preliminary and plat be reviewed at once. How does that tie back into our criteria?
Krantz says in the applicant's cover letter, they are asking for a modification for the preliminary plat processing. This is an exception to the requirements of Title 16. Because they are asking for a modification, it should be the modification criteria.
Osterman says she is included to use the findings from the city attorney.

Brauneis asks if Krantz would ever find it appropriate to have a preliminary and a final plat be submitted at the same time.
Krantz says she does think that can be submitted at one time.
Zuccaro asks if Krantz can say what all the modifications were because he is only aware of one modification, which is about the block length requirement.
Krantz reads the second modification request. It mentions the following: A final plat for a portion of the overlay property prior to an approval of the preliminary plat for the property. The applicant understands that the approval of the final plat is dependent upon the preliminary plat.
City Attorney Kelly says that she and staff have reviewed this matter and a modification request was not required regardless of how the applicant stated that in their application letter.
Moline agrees with the city attorney and favors not including this in the resolution.
Krantz agrees with the city attorney as well.
Zuccaro says if there is a tie vote, staff would ask that the application is continued.
Krantz mentions the condition of this application not complying with LMC 16.04.020, section K and he also mentioned it does not comply with section B. she would like to revise that resolution to only include section K but B as well.
Brauneis says because these are planned streets, how does it not find proper arrangement of streets in relation to the existing plan?
Krantz says she was concerned about the location of Campus Drive and it being only a 740-foot difference between the two intersections.
Brauneis says that every traffic engineer that has looked at it has said that it is the best location.
Osterman says she does not feel strongly about adding section B.
Krantz says she is finding dropping that section from denial.
Osterman says in the draft resolution, the three main parts of title 16 conform in her opinion to the discussion that was had. An item she would like to be added to the resolution is in regards to Section 16.16.020. This relates to drainage areas. It says when possible, drainage should be left in a natural state. It seems like the application does not comply with that section of the code.
Krantz agrees.
Moline says when we want to see a roadway in this area, there is going to be encroachment in the drainage way. He does not agree with it but he is fine with it being included on the resolution.
Brauneis agrees with Moline.
Krantz says it is the applicant's responsibility to demonstrate that they have a good reason for altering the drainage course.
Osterman says it seems that where the natural channels currently exist, none of them would be maintained. She also mentions that since the commission can make a recommendation of the amount of public land dedication and the type of the land, is it possible to make this recommendation through this denial?
Zuccaro says if you find that the the public land dedication does not comply with the standard, you can make that as a finding that it does not comply with the

requirement. As far as recommendations, it really is just why you are approving or denying it.
Osterman says her suggestion is to add language that notes that the commission did not find the public land dedication in compliance given that it did not dedicate enough public land north of Disk Drive.
City attorney Kelly asks for Osterman to reference a criterion for this suggestion.
Osterman says this would be based in 16.16.010 section D and E.
Brauneis says that the applicant has submitted over the requirement for public land dedication.
Krantz says that under section D, the proposal does not have enough clustering and open space to meet this development.
Osterman says it is not in compliance given that there is a need for additional open space because it is not preserving the vegetation, specifically in the undeveloped area north of Disk Drive.
Osterman says some members of the commission feel that there should be a larger public land dedication. She says that if they are able to add in reference to section E. There is a need for additional open space for vegetation around Disk Drive in order to preserve.
Moline mentions that he will not be supporting the resolution because he does not agree with the paragraph A portion. He does believe that the proposal does this. Denying it leaves us where we are now which is an empty land that is not benefitting Louisville. Since the land is privately owned, with this denial, we are incapable of ensuring the wildlife and prairie dogs are maintained and taken care of as the public desires.
Krantz does not think this complies with the GDP and she does not think going through a subdivision plat is the way to do it.
Osterman says this has been a tough application for her to review and she has felt torn but she is recommending denial. She would like to see this parcel of land developed.
Brauneis says if he though a vote to deny would guarantee us a better project, then he would vote for denial. He lists items of how this proposal does meet code and the criteria. He does not support this proposal without additional conditions such as how it relates to the green building certification and the discussion regarding the application paying for some of the road extension around Highway 36. A part of this process though is to not design it. He is concerned that denial risks losing any of these benefits.
Zuccaro says because this is sounding like a tie, a resolution cannot end on a tie and would have to be continued.

Brauneis moves and **Krantz** seconds a motion to Resolution 13, Series 2022 recommending denial of the Redtail Ridge Preliminary and Final Plat: Redtail Ridge Filing No. 1 Preliminary and Final Subdivision Plat for a 389.10-acre property, located northwest of US 36 and Northwest Parkway and Southeast of S 88th Street and Campus Drive. The denial with the following amendments:

- Noncompliance with ConocoPhillips GDP

- Noncompliance with LMC 16.16.020 section B related to the drainage not being left to a natural state.
- Noncompliance with LMC 16.16.010 section E related to the need for additional open space in different locations based on the vegetation of the land

Name	Vote
Steve Brauneis	No
Jeff Moline	No
Tamar Krantz	Yes
Allison Osterman	Yes
Motion passed/failed:	Does not carry

Motion ties 2-2 with a roll call vote.

Brauneis moves and **Krantz** seconds a motion to continue this agenda item to the November 10, 2022 meeting. Motion passes unanimously by a roll call vote.

Public Hearing Items – New Business

A. Planned Unit Development – Murphy Express – Consideration of a Planned Unit Development to allow construction of a new 2,824 square-foot automotive service station and convenience store with eight pump fueling stations and canopy.
   Applicant: Michael Maik, Galloway US
   Case Planner: Ellie Hassan, Planner

All notice was met as required and there is no commissioner conflict of interest.

Staff Presentation:

Hassan begins her presentation by saying the property is located on the west side of McCaslin Blvd between Cherry St to the north and Dillon Rd to the south. The site is about 1.5 acres and is zoned Planned Community Commercial. The property is within the Centennial Valley Parcel L Filing No.1 subdivision, which was originally platted in 1996 and replatted in 1997. Parcel L is part of the Centennial Valley General Development Plan, which was first established in 1983. In 1997, the City approved the Bank of Boulder/Rite-Aid PUD, which included structures on both 525 and 515 McCaslin Blvd. An approximately 13,650 square-foot retail building was constructed on the 525 McCaslin portion of the PUD for the Rite-Aid.

The applicants are proposing to demolish the existing structure to construct a new 2,824 square-foot automotive service station and convenience store building with 8 pump fueling stations under a 4,842 square-foot canopy structure. The primary site access is from the private street on the south side of the lot, which connects to McCaslin Blvd to the east. There is an access easement along a shared property line to the north, which provides access through a private street on the west side of the property.

The convenience store building is proposed near the center of the lot with parking to the east and south. The parking areas provide 16 spaces, which exceed the required 13 spaces in the CDDSG. Three bicycle parking spaces are also proposed on the north side of the building along with Ice and Propane storage kiosks. The canopy and fuel pumps are east of the convenience store and separated from the building by parking spaces and a 35ft two-way drive aisle. Underground fuel storage is proposed at the rear of the building, along with a trash enclosure and air and vacuum station.

A new attached sidewalk is being proposed on the south along the private street. The sidewalk connects to McCaslin Blvd and the existing Parcel L sidewalk network. Pedestrian amenities are provided on the southern side of the property with benches remaining from the existing site. Stormwater detention is located on the east side of the property along an existing variable width drainage easement.

The retail building is oriented to the east and faces McCaslin Blvd. The building materials will be primarily brick veneer with aluminum composite material (ACM) metal on the upper portions with textured sheet metal caps. The east elevation has expanses of storefront windows and emphasizes the entrance through the use of red ACM panels surrounded by brick columns on either side.

The west elevation has a matching form and provides variation on the façade. The north and south facades provide interest through the material usage and massing from the areas where materials transition. A physical material board is provided for reference and can be distributed around if needed.

Ten mature trees are being removed to construct the proposed improvements, as indicated in red. Two of the trees proposed for removal are along the McCaslin Blvd frontage. Retaining the majority of the trees along McCaslin Blvd was prioritized in order to minimize the visual impact of the drive aisles and parking areas. The remainder of the trees to be removed are more internal to the site.

The number of existing and proposed trees in the landscape plan exceeds the CDDSG requirements for perimeter and parking lot landscaping, which offsets the loss of mature trees on the site. Plantings are also proposed along the west and north sides of the retail building.

Upon review by staff, it was observed that the site requires new EV charging spaces in Section 17.20.170 of the Municipal Code. The site is considered “retail” and therefore falls under the Tier 3 requirements in the table. For 16 total parking spaces, one space needs to be EV installed, 2 need to be EV Capable, and 2 need to be EV ready. A new amended resolution includes this as a condition and has been provided to the commission and included on the planning commission webpage.

Staff's analysis finds that the automotive service station use is permitted in Parcel L1 of the Centennial Valley GDP. The latest applicable GDP from August 2015 differs to Section 17.7.2.090 of the Municipal Code for allowed uses. Automotive service stations are listed as an allowed use, subject to the prescribed performance and design standards in Section 17.72.130.

Staff also finds that the application is compliant with the PUD criteria in Section 17.28.120 of the Municipal Code, and the previously mentioned Automotive Service Station Development Standards in Sec. 17.72.130. The project is compliant with the requirements in the CDDSG as well.

Staff Recommendation:
Staff is recommending approval of Resolution No. 14, Series 2022 to construct a new 2,824 square-foot automotive service station and convenience store with eight pump fueling stations and canopy at 525 S McCaslin Blvd. Staff is adding the condition that prior to the City Council public hearing, the applicant shall amend the PUD to include the required EV installed, EV capable, and EV ready parking space designation pursuant to Section 17.20.170 of the Louisville Municipal Code.

Commissioner Questions of Staff:
Hoefner says the PUD amendment in front of us, how do we view that in light of that this is an allowed use?
Zuccaro says the PUD does not define the use. That is defined by the zoning code or the GDP. The commission would have to find that this is not an allowed use but in staff's analysis, we find that it is.
Krantz asks if staff can show what the allowed uses are in the GDP. She also asks for an analysis on the McCaslin Small Area Plan and how this fits into that.
Hassan shows the allowed uses based on the GDP.
Zuccaro says if you look at the map for L1, it says commercial/retail. Under Section 17.72.12, it lists different uses that fall under a commercial use. He reads that section of code and how it mentions a service station.
Krantz asks what parcel H is zoned.
Hassan says that is also commercial/retail.

Applicant Presentation:
Jeff Weeder, Galloway US

Weeder begins his presentation giving the context of the location. There is no additional public infrastructure needed at this location as well as it is located less than 2,000 feet from US36. No changes to existing vehicle access is being proposed. We will also have the mature landscaping remain along McCaslin.

He gives the commission an overview of the site design. Included on the site design, there will be vehicle access from internal drives and the existing gather space on the south side of the site will be preserved. The pedestrian access will

be extended at the southern frontage. He then shows photos of the landscape buffering along McCaslin looking from southwest and northwest.

He concludes discussing how their proposal is compliant with the city standards.

- Automobile service station is a permitted use in Planned Community Commercial Zone District (PCZD).
- Automobile service station is a permitted use in this governing General Development Plan (GDP).
- Proposed development complies with applicable sections of Louisville Municipal Code approval criteria.
- Proposed development complies with applicable sections of PUD approval criteria.

Commissioner Questions of Applicant:
Moline asks what their thought is on the proposed EV charging stations. He also asks if they have considered utilizing the existing building.
Weeder says he understands the need for charging stations and that it is implemented in the building permit process. It does not generate any revenue to have them but they understand that it is part of the code. It is a great existing building but it is oversized for our use.
Krantz asks about the circulation of traffic. She is concerned about traffic backing up in the left turn lane going from US 36 and turning west into the parking lot. Have you done a traffic analysis? How are directing traffic back onto the highway?
Weeder says the main access to their site does not allow a left turn out, only a left turn in. He goes in to greater detail of the specific directions that can be taken in order to get back onto the highway.
Krantz asks if the signage will be clear on what way to leave the facility.
Weeder says they currently do not have wayfinding signage in their proposal but they could provide that if needed.
Brauneis asks if Murphy has expressed having a fee based electric charging station.
Stephen **Oliver**, Director of Development, says their sister company in the northeast has experience with charging stations but with a Murphy, there is not any experience yet.
Brauneis asks if that is because of the format size.
Oliver says it is partly that as well as demand. Most likely we will assign the stations to a third party, they will do the install, and be responsible for it.
Krantz asks for the proposed hours of operation.
Oliver says they always ask for 24 and once it is opened, it may be reduced.
Krantz asks if they have coordinated with the fire department on emergency spills.
Oliver says the fire department was a part of the application review.
Krantz asks if their storage tanks are ones that get inspected yearly.

Oliver says they are double wall tanks, fiberglass, and a 25,000 and 26,000-gallon tank. We do annual pressure tests, even if they are not required for a double wall.
Krantz asks where the tank vent is located.
Weeder shows her that location from a presentation slide.

Public Comment:
Krantz moves and **Osterman** seconds a motion to add addendum one into the record.

Krantz moves and **Osterman** seconds a motion to add the material board into the record.

Sherry Sommer, 910 S Palisade Ct
Sommer expresses concerns on how this proposal will bring more sustainability to Louisville. She discusses the building being solar ready and more sustainable lighting options. She would like two trees saved off McCaslin and asks what kind of vegetation they will be using.

Cathern Smith, 608 West St
Smith discusses climate change and asks what we can do as a city to reduce the momentum that is behind the climate change. She concludes with talking about traffic and her concern of McCaslin.

Joshua Cooperman, 216 Griffith St
Cooperman mentions his outrage on how this proposal affects climate change. There should be no further development on fossil fuel infrastructure. This proposal is not re-using an existing building. This has no longer term economic ability. He then reviews how this proposal does not meet municipal code. He concludes with discussing the action he will take against the proposal if it is recommended for approval to City Council.

Tiffany Boyd, 550 Grant Ave
Boyd says it seems that the applicant is apprehensive of installing an electric charging station. She discusses the process of retrofitting and being proactive with the climate crisis. She would like gas stations to be banned in Louisville.

Jojo Follmar, 1712 Steel St, Apt 1302
Follmar says Louisville does not need this gas station. Electric vehicles are becoming more prominent, especially in Boulder County. She hopes there will be conditions to make the proposal more sustainable.

Closing Statement by Applicant:
Weeder says the specifications on new plant life being proposed meet the city code. It is in the approved plant list item. The existing trees on McCaslin, there are utilities that have to be re-routed for the detention pond. On the south side, to

make traffic safe, we opened up that access point and created a reason for a loss of that tree.
Krantz asks how many gas stations Louisville can support since the city already has five of them.
Oliver says they do an economic analysis and we do not project or ever look at other competitors.
Krantz asks if they have a statistic of how many gas stations can be supported within a single community.
Oliver says no because the business model is different from others. In a community of 20,000, there should be between 6-8. You also have US36, which gives significant traffic within Louisville.
Krantz asks if they comment on the climate change comments and their strategy for the future.
Oliver says their strategy for the future is that they believe climate change is real but it is more of a personal belief then science. He believes it to be real. He personally has an electronic vehicle on order. The longer people hold onto their gasoline vehicles, the longer gasoline will be in demand. In regards to additional charging stations, he says the infrastructure will happen and he is a firm believer that the free market will take care of it. He does not think it is something that needs to be regulated. He is unsure if they will put solar on the roof.

Closing Statement by Staff:
None is heard.

Discussion by Commissioners:
Hoefner says this is a permitted use in this zoning and there is not much we can do to change that. This application does not comply with our EV requirements though. His preference is that the application comes back to the commission with the EV requirements instead of having a resolution with this being a condition.
Krantz says she thinks that is a great idea because she has concerns about the compliance issues. We do have a vision in our comprehensive plan for a healthy, sustainable economy. It would be great if the applicant could flesh out ideas of how they could achieve that.
Osterman says she would be in support of the applicant coming back and having the minimum EV requirements being met in their revised proposal. Looking at the criteria in chapter 17, it does seem like the applicant is meeting that criteria. My question is related to criteria 17.28.120a about the appropriate relationship to the surrounding area. Directly across the street from McCaslin there is another gas station.
Moline says this development seems to comply with our municipal code. He would be willing to go along with Commissioner Hoefner's comments. He does not think adding the EV would be complicated to the proposal and is in favor of just adding that as a condition since it does not affect the proposal too drastically.
Brauneis says whether we have one or two gas stations on one side of the street, it is not going to affect CO2 emissions. People will buy gas. The fact that there is a gas station on the other side of the street amplifies that this fits the

appropriate setting. On an economic level, the only thing he sees is having more competition for an existing gas station, especially the one closer to this proposal. He thinks pushing this to next month is a waste of tax dollars and staff time. Having the condition on the resolution is as far as we will be able to get this pushed.
Krantz mentions that gas stations and convenience stores are difficult properties to be re-used for new uses down the road. She is concerned about having a use like this and how it affects the community as well as the sustainability efforts from the public.
Hoefner says our time and attention are better sent on big picture items. Recommending approval that does not pass the bar for EV does not sit well with him.
Brauneis says in front of us, we have the hard copy of the resolution that includes the condition. He then reads what the condition says. He thinks it is locked tight and it is what they have to do.
Hoefner says we have to follow the code and he does not think this meets the mark. That is why he wants them to come back with the revised proposal mentioning the EV.
Brauneis says in regards to where people charge their EVs, it is greatly more cost efficient to do it from our own homes. The demand for publicly accessible EV charging stations is going to be different then the uptake of EV vehicles. Hoefner points out that we did spend time working on that EV section of the code.
Brauneis says it does and that is why it is a condition. If we pushed this off to next month's meeting, we would see a site plan that have five spots. One would show active charging, two would be EV capable, and two would be EV ready spots. Why would we need to see that ourselves?
Hoefner says that could be said for any application though. As a commission, we are meant to do investigation.
Moline says if it is worth asking staff what the enactment of this condition would look like before going to City Council.
Zuccaro says that he thinks there was an issue with the number of spaces. Typically, on a PUD, we want to see where they are located. That is what we would want on an amendment.
Brauneis says that is what they would have to do to meet the condition.
Zuccaro says this is not in addition to the minimum parking requirements. This is not five additional spaces.
Osterman says with the amendment of the EV requirement, she is feeling comfortable approving this proposal.
Krantz says at this time, she would consider adding a condition on the hours of operation as well as conditions regarding sustainability.
Zuccaro mentions that if they restrict the hours, they need to site where in the PUD code they can do that.
Brauneis asks staff if we have code that allows us to restrict hours of operation.

Zuccaro says it is not something we typically to reduce hours through the PUD since it is a use by right. You would have to find the reason through our PUD review criteria.
Brauneis asks why we would reduce the hours since there is not residential near there.
Krantz says we received a letter that said they lived a quarter of a mile from there. Their concern was more related to emissions though. With our small town character, it seems like having a business open 24 hours does not fit that character.
Moline says we look at the McCaslin interchange as one of the busier sections of town. For example, bus service is going to run almost 24 hours these days. This is a part of town that is busier and he could see why the applicant would want to be open for 24 hours. He thinks the McCaslin Small Area Plan would support the hours of operation.
Brauneis says given the location and the fact the applicant said if they do not get good enough business, they may reduce their hours. Because of this, he is not concerned with the proposed hours.
Hoefner says he would not approve the resolution and would deny the application and ask them to come back.
Zuccaro says they could ask the applicant if they are willing to have a continuance.
Moline says he could be ready to support this.
Brauneis agrees and is willing to support.
Krantz mentions that she would like this to be closed at 11pm. She is concerned about having alcohol sales past 11pm when that does not exist in Louisville.
Brauneis says alcohol is not part of our review and the other gas station is allowed to do it.
Krantz asks how late the other gas station stays open.
Zuccaro says Google says they are open 24 hours.
Brauneis says that does not mean that alcohol is sold for 24 hours.
Krantz mentions that she would like to add a condition for four charging stations.

Brauneis moves and **Moline** seconds a motion to approve Resolution 14, Series 2022 with the condition that prior to the City Council public hearing, the applicant shall amend the PUD to include the required EV installed, EV capable, and EV ready parking space designation pursuant to Section 17.20.170 of the Louisville Municipal Code. Motion passes 3-2 with a roll call vote.

Name	Vote
Steve Brauneis	Yes
Dietrich Hoefner	No
Jeff Moline	Yes
Tamar Krantz	No
Allison Osterman	Yes
Motion passed/failed:	Passes

Discussion – New Business

A. Review of recommended inclusions in the 2023 City Council Work Plan

Planning Commission Comments
Brauneis says he wants to push the election of officers to the next meeting since only five commissioners are present.

Discussion Items for Next Meeting

A. General Development Plan Amendment, Planned Unit Development Amendment, Replat, Easement Vacation – 1501 S Boulder Road – North End Block 11
B. Coal Creek Ranch Filing 3 PUD Amendment - fences

Adjourn
The meeting was adjourned at 9:32pm.

Secretary Jeffrey Moline

Chair Steve Brauneis

City of Louisville
COLORADO • SINCE 1878

Planning Commission

Meeting Minutes

November 10, 2022
City Hall, Council Chambers
749 Main Street
6:30 PM

Call to Order – Chairperson **Brauneis** called the meeting to order at 6:30 PM.

Roll Call was taken and the following members were present:

Commission Members Present:	Steve Brauneis, Chair Dietrich Hoefner, Vice Chair Keaton Howe Jeff Moline Allison Osterman
Commission Members Absent:	Ben Diehl, Secretary Tamar Krantz
Staff Members Present:	Rob Zuccaro, Dir. of Community Development Elizabeth Kay Marchetti, Senior Planner Ellie Hassan, Planner II

Approval of Agenda
The agenda is approved by all members.

New Business – Discussion

A. Review of Recommended Inclusions in the 2023 City Council Work Plan

Discussion by Commissioners:
Moline says he is excited to see the comprehensive plan update in the works and is very comfortable having the dark sky lighting on there as well.
Howe says priority two helps the commission evaluate proposals and is in favor of it.
Zuccaro mentions that staff is working on a commercial energy efficient building code.
Hoefner says he is excited about this update.
Osterman says she supports the proposed work plan and does not have any additional comments.

Brauneis is excited about dark sky lighting and seeing that in the work plan.

Election of Planning Commission Secretary
Howe nominates Commissioner Moline for the position. **Hoefner** seconds that nomination. Motion passes by a roll call vote.

Public Comments on Items Not on the Agenda
None is heard.

Public Hearing Items

A. Adoption of Resolution 13, Series 2022 recommending denial of the Redtail Ridge Preliminary and Final Plat: Redtail Ridge Filing No. 1 Preliminary and Final Subdivision Plat for a 389.10-acre property, located northwest of US 36 and Northwest Parkway and Southeast of S 88th Street and Campus Drive. *Continued from October 13, 2022*
   Applicant: Sterling Bay
   Case Planner: Rob Zuccaro, Dir. of Community Development

Hoefner recuses himself from discussion since he has a conflict of interest.

Discussion by Commissioners:
Howe mentions that he was not present at the last meeting but watched the entire recording. He thought it was a good discussion and the motion of denial is in alignment with his vote.

Howe moves and **Osterman** seconds a motion to approve the denial of Resolution 13, Series 2022 as drafted by staff. Motion ties 2-2 with a roll call vote.

Name	Vote
Steve Brauneis	No
Jeff Moline	No
Keaton Howe	Yes
Allison Osterman	Yes
Motion passed/failed:	Ties

Brauneis says that because the vote came to a tie of 2-2, if it were different circumstances where all of us were here, we would have to continue our discussion until somebody wavered. In this case, because we know that there is one person who is not here, we can save the discussion, and when we have a future full commission, we can have the vote again.
Zuccaro says they can continue this to December 8th and the commission will hopefully have five members. If that does not happen, you may want to schedule a special meeting so that this can be concluded. The commission does have to continue to a date certain.
Brauneis says lets focus on December 8th date.

Moline moves and **Howe** seconds a motion to continue this agenda item to the December 08, 2022 meeting. Motion passes unanimously by a roll call vote.

Public Hearing Items – New Business

A. General Development Plan (GDP) Amendment, Planned Unit Development (PUD) Amendment, and a Replat With Easement Vacations –1501 S Boulder Rd – A request for a GDP Amendment, a PUD Amendment, and a replat with easement vacations for a mixed-use development of 38 residential units across 13 multi-family buildings and 40,562 square-feet of commercial area across four buildings at Block 11, North End – Replat of North End Parcel 1, Outlot H and Outlot K Replat.
   Applicant: Michael Markel, Owner
   Case Planner: Ellie Hassan, Planner II

All notice was met as required and there is no commissioner conflict of interest.

Staff Presentation:

Hassan begins her presentation by sharing that the property is 4.57 acres and is zoned for Planned Community commercial and residential. The site is bordered by Hecla Way to the north, Blue Star Lane to the east, South Boulder Rd to the south, and a commercial property to the west. It is located within the 73.8-acre North End development, which was originally approved in December 2006 through a Subdivision Plat, General Development Plan, and Planned Unit Development. The property was part of Planning Area 1 in the GDP. It was replatted in 2012 to create Block 11.

In 2017, the City approved a third GDP Amendment, final plat, and final PUD for Block 11. The third GDP Amendment authorized 38 residential units in Planning Area 1 and 40,000 square feet of commercial. The final plat for Block 11 established utility and drainage easements on the property but did not create separate lots. The Planned Unit Development proposed a mixed-use neighborhood consistent with the densities proposed in the third GDP amendment.

The Applicant is requesting a fourth GDP Amendment to accommodate changes to permitted housing types. The maximum number of residential dwelling units and commercial square footage will not change. The tables shown are for the changes to the Land Use Area summary, which allocates all residential acreage to multifamily residential and eliminates single family and townhome/duplex housing types. The map of land uses in Planning Area 1 has been revised to reflect multifamily residential only as well. The use is shown as a honeycomb pattern on the map.

The applicant is requesting a replat to subdivide Block 11 into three lots. The replat accommodates two multifamily lots and a single commercial development lot. New access and utility easements are proposed that coincide with alleyways

proposed on the PUD Amendment. The existing easements were platted as part of the 2017 subdivision plat. The applicant proposes the vacation of easements that are no longer needed from the original plat, as shown in red. This will be further evaluated at the City Council hearing.

The PUD Amendment proposes construction of 17 buildings, including 4 commercial retail/office buildings on the southern half of the site towards South Boulder Road and 13 residential multi-family buildings containing 38 dwelling units on the northern half of the site.

The site layout is similar to the 2017 PUD Amendment and includes a north-south private drive that connects South Boulder Road and Hecla Way. An east-west access drive into the site off Blue Star Lane is located in a similar location to the existing 2017 PUD. The PUD Amendment proposes alleyways for access to the residential buildings. Areas on the site are connected through a network of drive aisles and internal walkways. The walkways connect to the adjacent streets and trail to the west. Walkways are 5ft in width and 6.5ft in width in areas adjacent to parking spaces. Existing drainage infrastructure is maintained in the southern 35ft drainage easement.

A total of 92 spaces are provided for the 38 residential units. Parking is provided through two-stall garages in each unit, along with two driveway spaces for buildings 11 and 12. A total of 148 parking spaces are provided for the office and retail uses on the site. Some spaces are used for snow storage seasonally; however, the required 142 spaces will still be available.16 bicycle spaces are proposed where 15 are required, as shown in red. Bicycle spaces are proposed adjacent to commercial buildings in convenient locations off the sidewalks. The site provides the required number of EV spaces per Section 17.20.170 of the Municipal Code. EV charging spaces are separated out per use, as seen in the PUD parking plan tables on Sheet 5.

As mentioned, there are four commercial buildings on site. Building 1 is a two-story structure with retail on the first floor and office on the second floor. Each floor is 5,471 square feet or 10,942 square feet total. The location of the building is shown in red on the key map in the top left.

The building has varying forms to add architectural interest and depth to the building. Most materials on the forms are contiguous between the first and second stories. The forms consist of stucco, cementitious lap siding, and board and batten siding. Small amounts of metal siding are used on the east and west elevations on the first story.

Building 2 is two-stories and also contains retail on the ground floor and offices on the second floor. The building has 7,295 square feet per floor or 14,590 square feet total. Building 2 consists of mostly flat roofs with butterfly roofs on the east and west sides of the building. It has the same materials as building 1,

excluding the metal siding accent areas. The building has similar varied forms, which are broken up by a combination of the entry fascias and a transitioning of stucco to other materials between many first and second story areas.

Building 3 is an 8,539 square-foot three-story structure with 3,472 square feet retail on the ground floor with 4,164 square feet of office on the second and 633 square feet of office on the third floor. The height of the building is 40ft 5in and exceeds the 40ft maximum per the GDP, requiring a waiver. Building 3 contains varied forms, with a mix of flat roofs and shed roofs. A majority of the building is a two-story mass, with a smaller central three-story element with a balcony facing out towards the residential properties to the north. The first story has brick siding on the first floor with a portion extending onto the second and third story. The brick is broken up by board and batten between the first and second story. Fiber cement panels are included in the second and third story facades.

Building 4 is a 4,365 square-foot one-story retail structure with an outdoor patio area to the southwest of the building. The building's form is more simplistic than other commercial buildings on site and is broken up by material changes and fascia elements over the windows. The roof is mostly flat with a shed roof on the southern portion. Materials consist of brick siding, cladding, and Cementitious lap siding.

There are 13 residential buildings proposed on the northern half of the site. There are 38 units total across duplexes, triplexes, and 4-plexes. The units are proposed in either modern or farmhouse architectural styles, as shown in the elevations on this slide. The residential buildings use materials including board and batten, horizontal siding, fiber cement panels, brick, and stucco. The materials match those used on the commercial buildings and in other North End developments.

Because the scope is a mix of commercial and residential uses, staff determined the CDDSG requirements would only be applicable to the commercial portion of the site on Lot 3, which is highlighted on the map. Perimeter landscaping was required along South Boulder Road, and the lot is required to meet building site landscaping and parking lot landscaping requirements.

The South Boulder Road frontage proposes 17 trees where 16 are required. Per the tree survey, 5 existing dead trees along South Boulder Road are proposed for removal and 4 existing trees are proposed to remain. A total of 148 commercial parking spaces are provided, which requires 19 parking lot landscape trees. A total of 20 trees are provided in parking islands and areas adjacent to parking spaces.

The CDDSG also requires that 25% of the area around a building perimeter is landscaped with a 6ft wide planting area. All four commercial buildings have at least 25% of the perimeter bordered by a 6ft or wider planting area. Landscaping

around the residential portions of the site include new tree and shrub plantings between the driveways and between alleyway and sidewalk spaces at the entrances to units. While not subject to CDDSG requirements, elements such as a planting area around the building perimeter are incorporated. The development proposes a courtyard as a pedestrian amenity. The courtyard is located between commercial buildings 2 and 3 in the center of the site and is accessible to the rest of the site. The paving consists of pavers in plank and herringbone patterns. The colors of the pavers match the adjacent building colors. The courtyard also proposes landscaping, trash receptacles, and stone seat walls, which are shown in dark grey.

The PUD Amendment maintains the same general phasing concept as the last amendment, but changes the number of units and commercial area in each phase. The phases allow for residential and commercial buildings to be constructed concurrently, with the provision that residential building permits in each phase are not issued until the foundation inspection for the commercial buildings in each phase is approved. This application is subject to the inclusionary housing ordinance adopted last summer. The applicants are pursuing the fee in lieu option. City Council approval is required in order to pursue this option and it will be further evaluated at their public hearing.

Traffic studies for the overall north end development in 2006 and 2011 assumed for 362 residential units and 6,500 of commercial. Over time north end developed with a maximum of 350 units and 40,000 SF of commercial area, which is less than the amount in the reports. Public Works finds that the traffic assumptions are adequate to accommodate this development.

The applicant requests zoning waivers from the maximum height established in the GDP, which is listed as 40ft for both multifamily and commercial uses. A table of height waivers is listed on the slide. Building 3 proposes a 5-inch increase to the 40ft height limit. The height increase allows for a shed roof form that is compatible with other roof forms on the site. The third story element adds variation and architectural interest to the site while providing additional office space vertically rather than increasing the building footprint.

Three residential buildings also require height waivers. The elevations on this slide show the height of the building relative to adjacent structures. The waivers allow for modern, higher ceiling residential structures that provide a garage and living area at the main level with two stories of living area above, creating efficient and improved designs. The density, height, and design are compatible with the existing North End Block 12 multifamily units adjacent to the property as well. For these reasons, staff supports requested height waivers.

Staff finds the application meets the purpose and applicability statements in Chapter 17.72 of the Louisville Municipal Code. The GDP Amendment encourages coordinated community design by allowing a mixed-use buffer zone

between a major arterial of South Boulder Road and the residential uses in the North End neighborhood. Staff finds the final plat for North End, Block 11 conforms in all respects to the requirements of Title 16 of the Louisville Municipal Code. The plat is complies with the Comprehensive plan by supporting an urban pattern that is more compact and walkable through the creation of alleyways and smaller lots. The plat is compliant with the GDP since it meets minimum lot sizes permitted in the North End GDP.

Staff finds the PUD is compatible with the GDP, with the included height waivers for four of the buildings. The commercial portion of the PUD is compliant with the CDDSG and meets parking and landscaping requirements. The PUD is compatible with Section 17.28 of the Municipal Code as well. The development is compliant with the Comprehensive Plan's framework for urban corridor properties. The site is also compatible with the South Boulder Small Area Plan policies, as discussed in the next slides.

The South Boulder Road Small Area Plan has policies related to building height. The Building Height Plan anticipates development along South Boulder Road to be primarily one and two stories for the south half of the property, and two to three stories for the north half of the property.
Residential buildings on the north half of the property are proposed at three stories. The Small Area Plan states conditions for a third story, including design, public improvements, and limited impacts on view sheds or shadows on surrounding properties. The three-story design allows the site to have more compact, modern designs. The height and massing is compatible in scale with the neighboring North End Block 12 residential buildings as well. The buildings have a minimum 35ft north-south separation between each structure, which mitigates impacts of shadows. Staff therefore supports the 3-story building heights.

Commercial buildings in the first half of the site are one to two stories in height, with a small, approximately 630 square foot three-story portion proposed in the center of building 3. The building height is similar in height to the roof forms of building 2, which is a two-story structure. Staff therefore finds that the impact of the third story element could be analyzed similarly to the conditions required to add a second story in the Small Area Plan. The design is compatible with the existing North End architecture with the materials and forms used, such as the shed roofs and variation on the building façade depth. The building and has a setback of 100ft from South Boulder Road and 58ft from the nearest residential building, which mitigates impacts from shadows and view sheds. The element helps add architectural interest to the building and is compatible architecturally with the rest of the buildings in the development through the shed roof and fiber cement panels. In addition, the commercial buildings vary from 1-3 stories tall, which provides building height variation on the southern area of the site. Because of this, staff finds that the third story element is compatible with the small area plan.

Staff Recommendation:
Staff recommends approval of Resolution No. 16, Series 2022, requesting a General Development Plan Amendment, a Planned Unit Development Amendment, and a Final Plat with easement vacations for a mixed-use development consisting of 38 residential units and 40,562 square feet of commercial area at Block 11 of North End.

Commissioner Questions of Staff:
Hoefner asks what the key differences are from the last version that was approved.
Hassan says this includes attached units versus the previous included detached units but there are different bedroom sizes.
Brauneis asks if she can describe the difference with dropping the townhouse designation and moving it to what it is now.
Hassan says the original plan came with townhomes and these were individually platted units. Now, these are all under one solid platting.
Hoefner says regarding traffic, the public seems to be more concerned with speeding versus the traffic pattern. Has staff looked into that?
Zuccaro says the concern is with the existing roadway and that would be something outside of the scope of this proposal.
Hoefner says he thought there was an extension between Sweet Clover Ln into Hecla Way.
Zuccaro says staff did not ask about this with the applicant but we could ask the applicant to look into it such as a speed bump.
Howe asks if there is any kind of requirements with our city forester for proposals like this.
Hassan says this proposal was reviewed by our parks and rec department.
Howe asks that if the fee in lieu was not approved by city council and required them to do affordable housing, with this come back to the commission with a new PUD?
Zuccaro says no, the affordable housing is administered outside of the PUD process.
Howe asks if staff can talk about the lighting along South Boulder Rd and the pedestrian path that runs north and south.
Hassan says there are pole lights and individual lights for each residential unit has mounted lighting. There are also pole lights for the residential alleyway and parking spaces. There are only entryway lights along South Boulder Rd.
Moline says one public comment we got pertained the intersection of South Boulder and Blue Star. Future improvements to that intersection would fall to the city's responsibility and not be related to this proposal.
Zuccaro says this roadwork was built with this density in mind. We would not recommend that capacity is needed because the land uses and density are not changing. If this were to be built out and these roadworks were not operating appropriately, it would be the city's responsibility to make the improvements.
Howe asks if there are any net zero requirements for these buildings.

Zuccaro says we do not have net zero requirements for commercial.

Applicant Presentation:
Melissa Sherburne, 262 Belford St, Frisco, CO 80443, Markel Homes

Sherburne begins her presentation by introducing the Markel Homes team as well as gives a background on Markel Homes. She gives an overview of what communities Markel serves in the Boulder County area.

Sam Coutts, Ripley Design
Coutts shows in an aerial image where this proposal is located and reviews the GDP Amendment's previous plan versus the current proposal. The previous site plan and current proposal have 38 dwelling units and 40,000+ sq ft of commercial. She shows farmhouse architecture as well as modern architecture for the duplexes, triplexes, and 4-plexes.

As mentioned in staff's presentation, he explains the building height for Building 3, 13, 14, and 17. Each of these buildings will be 40' from the proposed average grade. A neighboring, existing building has a height of 37' 11 ¼" and this proposed building would be at 36' 6", having an 89' 0" distance between the two.

He ends his presentation discussing city policy. The following items are in relation to the comprehensive plan's urban pattern:

- Streets / Parcels
    - Smaller blocks and parcels, alley loaded properties, and multi-purpose development as envisioned by the urban pattern area of the comprehensive plan.
- Building Design and Orientation
    - Sidewalks and plazas to enhance pedestrian experience.
- Civic & Public Infrastructure
    - Mix of residential and office/retail to provide services to the community and encourage walkability.

For South Boulder Rd's small area plan, this proposal meets its design principles by having places to go and places to stay, it is easy to get to and easy to get around, it is knitting the community together, and it is a development that contributes.

Commissioner Questions of Applicant:
Moline asks if they can walk him through the landscape maintenance and the responsibility of the development team with maintenance.
Coutts says this will be under and maintained by an HOA.
Moline asks how the property has currently been managed.
Jason **Markel**, with Markel Homes, says North End is under an HOA. Block 11 will have its own HOA and will be under the guidelines of the master HOA of North End. The sub association will be responsible for maintaining and planting.

Moline asks who is responsible for maintained on block 11.
Markel says we use maintenance companies and we manage it.
Brauneis asks if he can speak to the multi-family versus townhomes.
Markel says the HOA is the reasoning behind that. Once we wanted to get the detached single family out of that zone, we have an HOA that can be uniform across the block.
Brauneis asks what your current understanding of net zero and multi-family.
Markel says we do a decent amount of net zero for single family but when you switch to multi-family, it is different because of party walls. Party walls are harder to obtain net zero.
Hoefner talks about commercial vacancies. What is your optimism of filling 40,000 sq ft of commercial space?
Markel says we are planning to adhere to the phasing requirements. He has hope because of the phasing process, they will be able to get those vacancies filled.
Howe asks if he can comment on affordable housing and why they are choosing the fee in lieu option.
Markel says when we come forward with multi-family, some units are market value and some are affordable. It presents a major challenged to get the building financed. It is better for all the residents to have the entire building affordable.
Brauneis asks what the fee in lieu cost would be.
Markel says he is not sure and would have to check with staff. It is a square footage calculation.
Howe asks if they can comment on the water runoff and where the water retention would be.
Markel says they already have the water detention accounted for this block.
Brauneis asks if he can speak to the LEED buildings that Markel homes has done. Can you tell us the locations of those?
Markel says we get Blue, Sage, Silver Creek, North End, all mostly single-family homes.

Public Comment:
Mark Cathcart, 1763 Sweet Clover
Cathcart does not want this application held up. He has concerns about the traffic. He mentions traffic from Plaza Rd to South Boulder Rd and gives reasons of how traffic could affect the city. He thinks it could be problematic selling those three lots separately.

Tim Merkel, 1849 Sweet Clover Ln
Merkel says 50% of the North End's master HOA budget goes to landscaping. He passes a document to the commissioners showing what their landscaping standards are and requests that the applicant adopt these standards for the tree lawn.

Brian Topping, 1550 White Violet Way

Topping says he would like to see this developed as soon as possible. He comments further on the proposal and what it could do for the area.

Jojo Follmar, 1712 Steel St, Apt 7302
Follmar says she is in favor of more affordable housing and is disappointed with the fee in lieu. She appreciates the sustainability goal and would like to push that further if possible.

Sherry Sommer, 910 S Palisade Ct
Sommer says she does not think this should be rushed but bought out. The issues with dust is no reason to rush an application. She advocates not to have the change for townhomes. She would like to see more green space. She does not like the fee in lieu and does not agree with the height waiver.

Kevin King, 1505 Hecla Way, #302
King says the community did not get the most updated version of the plan that was shown in the presentations. He comments on the speed when driving through Hecla Way. He is concerned that the heights of these buildings could cause problems for the upper units.

Marie Boric, 1505 Hecla Way, #202
Boric comments on the speed on Hecla Way. She wants this application pushed through as fast as possible. She proposes benches for this area.

Moline moves and **Howe** seconds a motion to add the material submitted by Tim Merkel into the public record. Motion passes unanimously by voice vote.

Closing Statement by Applicant:
Coutts addresses tree lawns and thinks that is completely doable and Markel is comfortable adopting Tim Merkel's tree lawn standards. He mentions because of these approved documents, we cannot just pour a foundation and change it from commercial to a residential use. In regards to open space, open space just means more that it is not a building. It does not have to mean more green space. This follows the comprehensive plan for an urban environment.
Moline asks if he can talk more about the urban orientation.
Coutts shows the previous site plan image and share the comparison image for the current proposal.
Moline asks if the front units on Hecla will be front-loaded.
Coutts says no those would be alley loaded.
Michael **Markel**, with Markel Homes, thanks staff for their time and attention as well as his team. He describes his vision for this property and his pride on what kind of development he wants to build in Louisville. They want to building commercial and try to get the right owners in those spaces that is right for Louisville. We are the only builder who build energy start condominiums along the Front Range. We want to make sure that the buildings we build will be

occupied. He discusses market level costs for these units and the costs for building.
Howe asks if he can comment on the concurrency of the development of the three lots.
Markel says they try to figure out how they can divide so it is in bite size chunks. In talking with development lenders, they like to see spaces separated and phased out. There will have to be some kind of separation for the HOA because that is what they want to see.
Brauneis asks which buildings would be energy star certified.
Markel says our residential multi-family will be energy star certified.

Closing Statement by Staff:
Hassan says they checked the development applications webpage and the latest version of the North End PUD was not on their. The only changes that was not on there were changes to the building height elevations.
Zuccaro says the plan set that is online has the exact same site plan and elevations. We worked with the applicant on height elevation waivers, which is what is not shown on the website but it is in the packet.

Discussion by Commissioners:
Howe says this is a great proposal and seems like there is a lot of support from the community. He is in support of this. It would be nice to have a little more green in the parkway.
Moline says he is in support of this. He likes the approach of having phases and the residential being mixed with the commercial. He would be in favor of having a condition in regards to the tree lawn along Hecla and Blue Star. He is in support of the urban orientation that we wanted to see in our comp plan.
Hoefner says he sees the height waiver as not being substantial. He is encouraged to see duplexes and triplexes in this proposal. On traffic, he agrees that the majority of them are outside of this application. He is finding himself in support.
Osterman is leaning towards being in favor given the support of the community. In terms of the changes in the housing types, that seems appropriate for the area. She thinks the request for the height waiver is reasonable. Regarding the inclusionary housing, she is disappointed the developer is going the fee in lieu option but they can do that because of the code.
Brauneis is in favor of this proposal. He is disappointed that there is not on site affordable housing but that is how our code is written. He suggests going to city council with the traffic comments.
Howe says it would be nice to have lighting consistent with South Boulder Rd.
Brauneis says it seems that will already be in place.

Hoefner moves and **Howe** seconds a motion to approve Resolution No. 16, Series 2022 with the condition that before the applicant goes before city council, they would incorporate the tree lawn plan that was submitted into the packet this evening. Motion passes unanimously by a roll call vote.

Hoefner moves and **Moline** seconds a motion to continue Resolution No. 15, Series 2022 to the December 08, 2022 meeting. Motion passes unanimously by a voice vote.

Planning Commission Comments
Brauneis mentions that he really enjoyed the various trees planted throughout the city.
Howe comments on the intersection of South Boulder Rd and Via Appia. It is much friendlier to pedestrians.

Staff Comments
None is heard.

Discussion Items for Next Meeting
A. Coal Creek Ranch Filing 3 PUD Amendment - Fences

Adjourn
The meeting adjourned at 9:13 PM.

City of Louisville
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Planning Commission

Meeting Minutes

December 08, 2022
City Hall, Council Chambers
749 Main Street
6:30 PM

Call to Order – Chairperson **Brauneis** called the meeting to order at 6:30 PM.

Roll Call was taken and the following members were present:

Commission Members Present:	Steve Brauneis, Chair Jeff Moline, Secretary Keaton Howe Allison Osterman Tamar Krantz
Commission Members Absent:	Dietrich Hoefner, Vice Chair
Staff Members Present:	Rob Zuccaro, Dir. of Community Development Elizabeth Kay Marchetti, Senior Planner Ellie Hassan, Planner II

Approval of Agenda
The agenda is approved by all members.

Approval of Minutes
The minutes from the September 22, 2022 and October 13, 2022, meetings are approved by all members. Commissioner Howe abstains from voting on the October meeting minutes.

Public Comments on Items not on the Agenda
None is heard.

Regular Business – Discussion
Adoption of Resolution 13, Series 2022 recommending denial of the **Redtail Ridge Preliminary and Final Plat**: Redtail Ridge Filing No. 1 Preliminary and Final Subdivision Plat for a 389.10 acre property, located northwest of US 36 and Northwest Parkway and Southeast of S 88th Street and Campus Drive.
Continued from October 13, 2022 and November 10, 2022.

Applicant: Sterling Bay
Case Manager: Rob Zuccaro, Director of Planning & Building Safety

Hoefner recuses himself from discussion since he has a conflict of interest.

Discussion by Commissioners:
Moline says he is going to continue to not support the motion as he has previously commented in past meetings.
Brauneis says with the exception of Old Town, people have been opposed to nearly every commercial and residential subdivision that now comprises the Louisville we know and love. Though many of us would love to be on the design team for any given project, that is not the role of Planning Commission for this process. The current proposal includes 155 acres of public land, and the potential for connectivity with the Ardmore Open Space. That connectivity is important and one we could lose. The Campus Drive extension would be built in phase one, providing safety we desperately need for the Monarch High School. He wishes they were discussing conditions to include a sustainability action plan, funding mechanisms for future traffic improvements, and reduced grading on site. Instead, we are just telling the developer that we simply want more from them and giving them a list of ideas that many are which are economically impossible. We have more vacant retail space then any time in recent history. Our message of denial comes at a time when we are also hoping that developers will help us redevelop areas like the McCaslin corridor. While this project has its issues, he does think it has a lot to offer Louisville and that further delay does not ensure a better outcome for the City. Because of these reasons, he is voting against the motion.
Krantz says she hopes they come back with an application that is more compliant with the GDP.

Krantz moves and **Howe** seconds a motion to adopt Resolution 13, Series 2022 recommending denial of the Redtail Ridge preliminary and final plat. Motion passes 3-2 by a roll call vote.

Name	Vote
Steve Brauneis	No
Jeff Moline	No
Keaton Howe	Yes
Allison Osterman	Yes
Tamar Krantz	Yes
Motion passed/failed:	Pass

New Business – Public Hearing Items

A. **Planned Unit Development Amendment – 1411 S Arthur Ave –** Consideration of a Planned Unit Development Amendment to allow for the construction of an 84,164 sq ft office/flex-industrial building with waivers,

including the removal of underground parking spaces, building size decrease, and redesigned parking, landscaping, and drainage. *Continued from November 10, 2022.*

Applicant: Andy Johnson, DAJ Design
Case Planner: Elizabeth Kay Marchetti, Senior Planner

All notice was met as required and there is no commissioner conflict of interest. Commission Howe mentions that he can remain impartial to this proposal.

Staff Presentation:
Kay Marchetti begins her presentation by showing an aerial photo of the site. The site is approximately 5.76 acres and is zoned PCZD. Arthur Avenue bounds the site on the south while existing commercial buildings bound the site on the southwest and east sides. The land to the north is in unincorporated Boulder County and is used for single-family detached homes. The northwest corner is adjacent to the 96th Street right of way. Across Arthur Avenue to the south are large footprint, 2-story buildings used by commercial and light industrial businesses. The site was originally subdivided via the Colorado Technological Center filing number one plat in 1979. It is now subject to the 2019 Business Center at CTC Replat I. The 2019 GDP Amendment G rezoned the land to PCZD and allowed specific commercial uses so the Commercial Development Design Standards and Guidelines apply.

The two-story building is located in the north and western portions of the lot, which generally slopes upward from south to north. The proposed office/flex-industrial use is allowed and fits well in the CTC context. The layout of the building creates a visual break at the northwest end to open up the site to views west. The second floor, glass enclosed walkway spans the ground level plaza and connects the northern portion of the structure to the southern portion. The roof is flat and generally has a southern orientation so that future solar rooftop panels could easily be accommodated. The proposed use in this location aligns with city policy and the GDP that governs the site.

The proposed layout complies with these regulations by providing two automobile/bicycle and two pedestrian access points to the site from Arthur Ave. The proposed walks connect to the existing sidewalk on Arthur Ave and offer convenient pathways to and from the building while effectively separating auto and pedestrian traffic. The pathways provide easy access to the outdoor gathering and lawn game spaces in the northwest portion of the development. The parking lot design accommodates two-way vehicular traffic and provides convenient access to all portions of the building. The drive aisle along the north provides separate parking and loading for the flex-industrial spaces and helps keep truck traffic separate from pedestrians and cyclist. The 40 bicycle parking spaces, highlighted in yellow, provide indoor storage for employees and outdoor racks for visitors in convenient locations near main entrances. The emergency vehicle turnaround, highlighted in orange, doubles as an access point to the

Bennett's property to the north and is in the same location as in the previously approved PUD. Lastly, the proposal meets the requirements regarding spaces for electric vehicle charging.

The proposed building's footprint at 52,735 sq ft is larger than the previous-approved version of 38,495 sq ft. However, the gross square footage of the building has decreased from 102,393 sq ft to only 84,164 sq ft. The same color palette and materials are proposed as in the previously approved version with the use of painted metal panels, concrete, and glass in grays, browns, and black accents. The structure's bulk is reduced through horizontal and vertical variations in the façade and the roofline. The two-story structure is compatible with the other two-story structures in the area. The architecture effectively orients much of the office space and all of the outdoor gathering spaces toward the west. The expanded outdoor plaza allows views to the west from the parking lot and sidewalk along Arthur Ave. The building is set far to the north and west sides of the lot leaving much of the site as landscaping and parking area. From the perspective of Arthur Ave, it provides a sense of openness and distance between the building and the neighboring structures. Along with the previously approved waivers, all of these architectural design choices result in a compliant proposal.

The proposal complies with the review criteria as the high water use zone, which is the tree lawn on Arthur Avenue, is taking up the least amount of land and the low and very low water using areas make up the largest amount of the site. The plant grouping, quantities, and proposed materials effectively reduces the demand for irrigation.

The plan complies with these standards by proposing dense, formal landscaping around the building while somewhat less formal landscaping is proposed around the lot perimeters. The plan calls for more trees in several areas of the site than are required to make up for the lack of trees along the northern border. The landscaping along the southern perimeter with tall shrubs and trees will effectively screen much of the parking lot. There is no know soil subsidence or flood plain in or on the site and 134 trees and 805 shrubs are planned, where today there is mostly only grass. The landscape will create significant shade and reduce demand for heating and cooling.

She then discusses the two new, requested waivers. The first waiver requests that there not be a 30-foot wide planting buffer along the entire length of the north lot line. This image depicts the entire easement area along the northern boundary, in orange. The building footprint is in blue and the narrow, dashed, red line is the building setbacks. This is an aerial photo from Google maps and depicts the existing conditions with the north lot line of the site and the approximate length and width of the 30-foot deep easement. Also shown are the approximate distances to the two single family detached homes to the north. Please note that the ground continues to slope up towards these two homes so that the closest home is approximately eight feet higher than the subject site.

The applicant proposes that the northern portion of the site, with some of the least steep slopes on the whole site is better suited to create a long-flat area to accommodate flex/industrial users without requiring significant cutting or filling of that area of the site. The 30-foot buffer area is proposed for a drive aisle to meet the flex-industrial loading and parking needs. The bottom image is a color rendering of the landscape plan and shows that, where feasible, some larger shrubs are planned at the north property line that don't interfere with views to the west. The proposed condition is nearly the same as was approved with the previous version of the PUD. Given the long distance and slope between the proposed building and the nearest two residences, and the fact that the location is best suited for a long, flat design that results in less land disturbance, staff recommends approval of the waiver.

In regards to the second proposed waiver, this image shown in the presentation is from page two and shows the proposed layout of the western entry to the site along with the four parking stalls proposed to be approximately 70 feet away from the entry as shown by the orange arrow. For an explanation of the larger context, you can see the Drainage Basin four to the northeast and drainage basin two to the southwest. There are four drainage basins that stretch across the front of the site, parallel to Arthur Avenue. The drainage plan for the site was designed to take advantage of the natural slope and reduce the amount of cutting and filling that one or two large drainage basins would require. By planning multiple, smaller drainage basins that work in concert with the proposed slopes of the parking area and drive aisles, the same goals for storm water management are achieved with less earth moving. There is also approximately 281 feet between this entry and the one to the east, which supports the goals of minimizing conflict between entry points and safe internal circulation for vehicles, pedestrians, and cyclists. Given that only four of the 205 proposed parking spaces are affected and the negative impact to the drainage plan should the entry be moved, staff recommends approval of this waiver as the benefits of the larger site design outweigh any possible safety risks posed by these four parking spaces.

Per Section 17.20.080 of the LMC, applicants may request of city council a parking reduction and the applicant is requesting a change to the parking ratio from four spaces per 1,000 square feet to 2.9 parking spaces per 1,000 square feet. The applicant offers that the new normal of office environments is that many employees are now on site only two or three days per week. Furthermore, flex-industrial users typically have a smaller work force than office users; the demand for parking is expected to be significantly reduced. The code requires 282 spaces and 205 are proposed. Given the rationale offered by the applicant, staff is recommending approval of this request.

Staff analyzed the application and its two waivers as they relate to the PUD criteria in Section 17.28.120 of the Louisville Municipal Code and with the CDDSG and thinks that the application is in compliance.

Staff Recommendation:
Staff recommends approval of Resolution 15, Series 2022 regarding a PUD amendment to allow an office/flex-industrial building at 1411 S Arthur Avenue.

Commissioner Questions of Staff:
Krantz asks if the reduction of parking spaces would be a waiver request on the PUD.
Kay Marchetti says waivers cannot be granted for parking.
Zuccaro mentions that it is a different set of criteria.
Krantz says she does not understand a part B of the staff analysis. She reads what part B says.
Kay Marchetti explains what was meant in the staff analysis.
Osterman says part of the use will be office and the other will be flex/industrial. Do we have a breakdown of the sq ft of each use?
Kay Marchetti says that is on the cover page of the PUD.
Howe says how much of this proposed sq ft change is for the buildings versus the underground parking lot.
Kay Marchetti says a parking area would not be counted towards habitable sq ft.
Brauneis says there is concern with the neighboring properties and having an adequate buffer of trees. Why would we not want to provide that buffer?
Kay Marchetti says if we are talking about views, the neighbors are not impeded at all if they are looking at the north. Because these neighbors are at a higher grade, they will always be looking into that development. There are no trees that could be tall enough.
Howe says if we build a 40-foot building, it will not impede these neighbors view to the west.
Kay Marchetti says that is correct. Their view south will look different though.

Applicant Presentation:
Andy Johnson, DAJ Design, 922 Main St, Unit A, Louisville, CO 80027
Johnson begins his presentation by discussing the design concept of the building. He reviews the original proposal and what has been amended. The following compares the original and the amended.

- Building Area- Original: 102,393 sq ft; Amended: 84,164 sq ft gross, 70,610 sq ft net
- Building Footprint – Original: 38,495 sq ft; Amended: 52,735 sq ft
- Landscape Area – Original: 138,666 sq ft; Amended: 94,653 sq ft
- Open Space – Original: 100,171 sq ft; Amended: 119,226 sq ft
- Handscaped Area – Original: 112,341 sq ft; Amended: 103,619 sq ft
- Parking Proposed – Original: 195; Amended: 205
- Water Easement – Remains the same with a 30’ easement north of property line

He mentions the uses, which the building would have a combination of flex industrial, office, and an amenity space. A breakdown of parking spaces is shown. There are a total of 205 spaces. There will be 15 EV ready, 21 EV install, and 31 EV capable. As for ADA parking, there will be two standard and four van. There will be 12,753 sq ft of public land dedication, which makes up 5% of the property. He then reviews where the emergency access is located on the property and how drainage is distributed throughout the property.

In regards to the 2021 IECC, their goal is to prepare and design for 100% electrification. He reviews how this proposal is sustainable. He concludes his portion of the presentation showing where the landscape will be on the property. There will be more distributed trees and they are offering more than what is required.

Jeff Welber, Alliance Investments, 2585 S Gilpin St, Denver, CO 80210
Welber explains the reasoning behind the use choices.

Commissioner Questions of Applicant:
Howe says there are eight separate industrial flex sites. Can they be retrofitted into larger sites if needed?
Welber says they could.
Howe says they have .5 megawatts for solar capacity. If you did have vacancies, would you ever consider collaborating with the city and selling that energy?
Welber says that could be a possibility.
Krantz says when driving down 96th St, can you see that glass walkway?
Johnson says from the north, you can see that.
Brauneis confirms that there is no commitment in regards to solar.
Johnson says we have to consider who will actually be occupying these spaces since these will be core and shell spaces. The idea is that with the development of the project, we set the goals up with the tenant finishes.
Brauneis asks if they are planning to connect to natural gas.
Johnson agrees.
Howe comments that the road passing the west side, the right turn out would be as safe as they think since it could be more of a blind corner. He asks them to keep this in mind.
Johnson says previously in 2012 or 201, there was a study conducted for that access point looking at all of those considerations. An intersection was ruled out.
Krantz asks if they showed where the EV parking spaces are.
Johnson says our EV spaces will be distributed during the permit process.
Krantz says we received a public comment concerned about the lack of buffer to the north.
Johnson says we have had conversations with this landowner in the past. At the upper right corner of the site to the right access point, there is actually a brand new barn there. It effectively blocks at least forty feet of space and it is quite tall. Without any plantings, he thinks that area is very well taken care of.

Krantz mentions that this homeowner says they only have well water, which is not sufficient enough to create their own screening. With this development, would they now have access to use your water?
Johnson explains why it would be difficult to use this development's water.
Howe asks who maintains the emergency access.
Johnson says the owner of the property will maintain it.

Public Comment:
Moline moves and **Krantz** seconds a motion to add the two emails for public comment into the record. Motion passes by a voice vote.

Joshua Cooperman, 216 Griffith St
Cooperman comments about the waiver of the buffer along the north part of the property. He agrees with the architecture and sustainability goals of this proposal. He does not support the waiver. He is concerned about land conservation.

Jojo Follmar, 1712 Steel St, Apt 1302
Follmar agrees with Cooperman about the waiver and is excited about the sustainability efforts.

Sherry Sommer, 910 S Palisade Ct
Sommer is pleased with the applicant asking for less parking spaces. She is said to see if the underground parking being changed to service parking. She agrees with the previous comments regarding the buffer.

Closing Statement by Applicant:
Brauneis asks whose property the water conservation easement is on.
Johnson says the easement is directly on the Cavalier's property.
Brauneis says the open space is there but nobody can do anything on it except for them.
Johnson says that is correct. He mentions in his closing statement that this design has been in the process for four years. He thanks staff for the work they have done.

Closing Statement by Staff:
None is heard.

Discussion by Commissioners:
Moline says he is excited to see this again. He is impressed by the architecture of this proposal and is happy it will be seen in a more prominent area. He agrees with staff's analysis with the proposal and waivers. He is comfortable approving this as it was proposed. He agrees that the northern area is a challenge.
Howe says originally he was skeptical about the success of this work model. He likes the unique design of this, the EV parking, and finds the parking is appropriate for the type of uses this will have. He agrees with the sustainability

goals. He is split over the land dedication. He would be excited to see this constructed and developed.

Osterman says she is excited about this application and it makes sense to incorporate the flex industrial use. She is impressed with the sustainability efforts. She was questioning the waivers and whether or not they are justified, but after hearing from staff and the applicant, there is a rationale for those waivers.

Krantz says she is more concerned about the 30-foot waiver. She would like the applicant to come back and re-design so that there is no waiver. She also suggests that the commission ask the applicant to say where the EV parking spaces will be.

Brauneis says he wishes it was a pure office space but he appreciates the uses have changed in order to have the development work for them. He discusses the past purpose of the tech center in the 1970s. He is okay with the parking waiver. He is in favor of it at this time.

Howe mentions he does not think a condition is needed regarding designated EV parking spaces because the applicant can add those locations for their City Council presentation.

Brauneis says in regards to EV, that is not required to know beforehand.

Zuccaro says the ordinance does not require the spaces to be known at the time of PUD but at the time of the building permit.

Krantz says she agrees with the EV parking spaces. She would still like to discuss the 30-foot buffer waiver.

Brauneis says in his opinion, the applicant has described the complexity of that space and he thinks the buffer was originally for these two difference uses. The current residential spaces are so far away. The 30-foot buffer exists but they just cannot plant on it.

Krantz says she does not consider a drive aisle to be a buffer.

Moline moves and **Howe** seconds a motion to approve Resolution 15, Series 2022. Motion passes 4-1 by a roll call vote.

Name	Vote
Steve Brauneis	Yes
Jeff Moline	Yes
Keaton Howe	Yes
Allison Osterman	Yes
Tamar Krantz	No
Motion passed/failed:	Pass

New Business – Public Hearing Items

B. **Final Plat and Planned Unit Development – 578 + 632 S Pierce –** Consideration of a Final Plat and Planned Unit Development to allow construction of a 31,220 square foot flex-industrial building and a final subdivision plat to consolidate Lots 2 and 3, Block 3 of the CTC Filing 1 Subdivision and create one lot.

Applicant: Mark Ford, The Ford Studio
Case Planner: Ellie Hassan, Planner II

All notice was met as required and there is no commissioner conflict of interest.

Staff Presentation:
Hassan begins her presentation by saying that the properties are located along the east side of South Pierce Avenue in the CTC industrial park. 578 S Pierce is the northern property and 632 S Pierce Ave is the southern property. The cumulative site area is 2.53 Acres and is zoned industrial. The Original plat was approved in 1979 as the CTC First Filing. A Planned Unit Development and Special Review Use for an 8,700 square-foot pet care facility at 578 S Pierce Avenue was approved in 2020, but was never developed.

The site currently consists of two lots. The applicants are looking to consolidate Lots 2 and 3 into one lot with a new address along S Pierce Avenue. A 15-foot wide maintenance and access easement is proposed, which grants access to the existing 22.5-foot drainage easement on the east side of the property.

The application proposes a 31,220 sf, two-story flex industrial building that faces South Pierce Avenue. It can be divided for up to 7 tenants, with each tenant space containing a second-story mezzanine and the end units on the north and south will contain a second-story west-facing balcony. The building is roughly centered on the lot with parking areas distributed around the building with a loading dock and truck access area in the rear of the site. A trash enclosure is also located on the rear of the site across from the building.

99 parking spaces and 10 bicycle parking spaces are proposed, which meets the minimum ratio for flex buildings. On the front of the building, there is a proposed pedestrian amenity area, with a future sculpture in the center. A stormwater detention pond is proposed on the northeast corner of the site.

The building will be constructed primarily with metal panels and stucco, with larger glazing areas and accents of composite wood on the inner walls of the balcony areas.

Entryways for each tenant are accented by anodized aluminum storefronts with fascia canopies. The north and south tenant spaces have a metal panel cantilever on the second story massing, creating interest in contrast to the stucco on the first story. The side and rear elevations contain glazing primarily on the second story. Stucco is also more predominant on the side and rear elevations, as shown on the lower image. Colors of the building materials are mostly neutral shades of grey with wood accents in the balcony cantilever. This creates a color pallet compatible with the surrounding area.

Staff’s analysis finds that the application is compliant with the final plat criteria, as well as the PUD criteria in Section 17.28.120. The project is also compliant with the IDDSG and the CTC special district framework in the Comprehensive plan.

The applicant requests two landscape waivers from the IDDSG. The first is a waiver from Section 5.2.A, which requires perimeter landscaping to have a ratio of one tree per 30 linear feet of property line. Applicants request a waiver to allow 2 trees on the north perimeter, and 7 trees on the south perimeter where 10 and 9 trees are required respectively.

The north perimeter also contains the detention pond, as well as existing asphalt from the shared access easement, which prohibit installation of the required trees on the north property line. The applicants instead propose 27 trees on the eastern perimeter landscaping, where only 14 trees are required. This brings the total perimeter tree count on the north, south, and east perimeter up to 36 total trees where 33 are required. On the southern property line, there are existing utility lines shown in blue, which limit tree planting locations. The applicants propose 16 mountain mahogany shrubs in the gaps of the southern landscape perimeter area in lieu of the tree plantings. Staff supports the waiver request because the northern landscaping is provided elsewhere on the site and provides significant screening. The southern portion of the site provides large shrubs, which also helps with the screening and buffering that trees would provide.

A second waiver is requested for section 5.4.D of the IDDSG, which requires a 10ft wide planting area adjacent to 50% of the building frontage. A perimeter area of between 3.2 and 8 feet in width is proposed along about 60% of the building frontage. Although narrower than required, the landscape area exceeds the perimeter length requirement and staff supports this waiver.

Applicants are also requesting a waiver from another portion of section 5.4.D, which requires the building perimeter planting area to have 1 tree per 30 linear feet. Per the applicant's waiver request letter, the geotechnical report for the project recommends limited planting against the building due to expansive soils. Trees on the south and west sides of the building would also be subject to reflective heat from the building, causing heat stress. In lieu of planting the 15 trees along the building perimeter, four trees are proposed in landscape areas near the front of the building.

The planting area also contains 107 shrubs in rock mulch, which exceeds the minimum requirement of 1 shrub per 25 square-feet of mulch. The proposed shrubs are appropriate for the hotter south and west sides of the building and creates a strong visual impact through groupings of the same shrub species. The relocated trees and proposed shrubs provide a visual buffer to the building, and staff therefore support this waiver request.

Staff Recommendation:
Staff recommends approval of Resolution No. 17, Series 2022 recommending approval of a Final Plat and PUD Amendment for Lots 2 and 3, Block 3, CTC Filing 1.

Commissioner Questions of Staff:
Krantz asks if staff can show where the EV parking spaces will be.
Hassan says they do comply with the minimum requirements of EV parking. She shows where the approximate locations would be.
Brauneis asks if we have any van accessible requirements for ADA parking.
Hassan says she is not aware of any.

Applicant Presentation:
Vahe Christianian, 918 White Hawk Ranch Dr, Boulder, CO, 80303
Christianian thanks staff for their support. This project has been a year in the making. His hope is to occupy 6,000-7,000 sq ft of the space and then rent out the rest of the space. His goal is to have this be a higher tech, green, and more efficient building. He discusses the landscaping plan and how many trees will be planted.

Commissioner Questions of Applicant:
Krantz says they are not planning trees on the perimeter but he is compensating by planting more additional trees elsewhere. What is the net difference?
Hassan says they are eleven trees different for the perimeter.
Krantz asks if the long line of trees are the same species.
Christianian says he thinks it is more attractive to have them be the same. It gives them more of a modern look.
Howe asks if he can go into more detail about the sustainability of the building Mark **Ford**, The Ford Studio, says they will be implementing solar PV. They are also providing EV stations throughout the parking. They are exceeding the 2021 IECC requirements.
Brauneis asks how much they are exceeding the IECC.
Ford says he does not have those documents showing how much but he thinks they are about 10% more efficient.

Public Comment:
Brauneis moves and **Howe** seconds a motion to add the email for public comment into the record. Motion passes by a voice vote.

Joshua Cooperman, 216 Griffith St
Cooperman says he would like us to conserve as much land as possible in the CTC area. He is concerned about the waiver and expresses his concerns.

Closing Statement by Applicant:
None is heard.

Closing Statement by Staff:
None is heard.

Discussion by Commissioners:

Krantz says she finds herself in favor of this application. Given our recent discussion on our commitment to sustainability, she does not want to see any reduction in the green space. Through some conditions, we could have the applicant plant the ten trees.
Moline says he is supportive of this. We are not discussing that there is a deficit of overall open space.
Zuccaro clarifies this topic. The applicant does comply with the open space coverage requirements. They do not meet the tree perimeter requirement. They are exceeding their requirement of number of trees and landscape coverage.
Moline mentions that it is important that a proposal like this is beneficial to pedestrians such as creating more sidewalks. He thinks this plan does that. He is supportive of this proposal.
Osterman says she does not have any concerns with the application and is inclined to support it.
Howe says he likes the design and building materials. He appreciates the applicant's effort to how many trees will be planted. Overall, this project will add value to this vacant land.
Brauneis talks about the ten-foot line around the building was designed for a suburban look and feel. At this point, he is comfortable waiving that 10-foot requirement. He is in favor of the application.
Moline discusses the benefit of having landscaping up against the building in order to help break it up between other buildings. It is not necessarily for the habitat.
Howe thinks it is great that the developer is going above and beyond in regards to energy.
Krantz asks about the tree count again in regards to what is on the PUD.
Hassan explains the tree count for this proposal.
Moline says he does not think the tree count needs to be added as a condition. He is comfortable with the applicant's proposed landscaping plan.
Osterman agrees with Commissioner Moline.
Krantz agrees that she cannot see where they could add more trees in their current landscaping plan. She suggests types of plants that could be added that would not require more watering.
Zuccaro says it is a six-tree deficit. He mentions that the applicant is exceeding the minimum landscape coverage.
Brauneis asks if staff can speak to quantity versus quality.
Zuccaro says typically the purpose of the trees are for shade as well as visual buffering.
Krantz says she understands the purpose of the landscaping plan and is in support of them.

Howe moves and **Moline** seconds a motion to add the building material board into the record. Motion passes unanimously by a voice vote.

Howe moves and **Moline** seconds a motion to approve Resolution 17, Series 2022. Motion passes unanimously by a roll call vote.

Planning Commission Comments
Krantz says she wonders how we receive the email comments and wonders if these emails can be automatically forwarded to the commissioners.
Brauneis says he does not want to receive every email be forwarded to his without them coming in bulk. In addition, if you do that, we would have to have a cutoff of when we can receive emails.
Krantz says when she gets emails from City Council, they send back an immediate response saying that the email will be included in the public record.
Brauneis asks if they are reading emails in real time.
Zuccaro says it is a mix. City Council members have Louisville emails so it is getting those emails. Staff does not forward those in real time. The commissioners would have to use their personal emails. Staff can also forward emails to City Council if it goes directly to staff.
Moline asks if there is a concern that an email would be sent to one commissioner but not to all.
Zuccaro says that could become an issue. City Council knows that if an email goes directly to one person, they forward that email to city staff. He mentions that he can see the concern for the commissioners to have enough time to look at the emails when some applications receive a lot of public comment. he gives options of ways to read all the emails such as coming to the meeting early or taking a recess in order to read them then.
Howe says staff could create a pool of emails and then commissioners could patch into that as well.
Brauneis says he is concerned that would be more staff time. He is more open to taking a recess during the meeting in order to read the emails that were received last minute.

Staff Comments
None is heard.

Discussion Items for Next Meeting
A. Coal Creek Ranch Filing 3 PUD Amendment – Fences

Adjourn
The meeting adjourned at 9:34 PM.

RESOLUTION NO. 13
SERIES 2022

A RESOLUTION RECOMMENDING DENIAL OF THE REDTAIL RIDGE FILING NO. 1 PRELIMINARY AND FINAL SUBDIVISION PLAT

WHEREAS, the City of Louisville is a home rule municipal corporation organized under and pursuant to Article XX of the Colorado Constitution and the Home Rule Charter; and

WHEREAS, by virtue of such authority, and as further authorized by state statutes, including but not limited to C.R.S. § 31-23-201, *et seq.*, and C.R.S. § 29-20-101, *et seq.*, the City has broad authority to make and adopt a comprehensive plan for the physical development of the municipality and regulate the subdivision of land; and

WHEREAS, the City's duly-adopted subdivision regulations are set forth in Title 16 of the Louisville Municipal Code; and

WHEREAS, on April 6, 2010, by Ordinance 1569, Series 2010 (Reception No. 03284515), the City rezoned the property known as the ConocoPhillips Campus property to Planned Community Zone District – Commercial (PCZD-C), approved the ConocoPhillips Campus General Development Plan (Reception No. 3088779) (the "GDP"), and on April 20, 2010 executed the Planned Community Zone District Zoning Agreement for such GDP (Reception No. 03284516; and

WHEREAS, the applicant, Sterling Bay, has submitted to the City an application for approval of the Redtail Ridge Filing No. 1 Preliminary and Final Subdivision Plat to develop the ConocoPhillips Campus property as a commercial development consistent with the ConocoPhillips Campus General Development Plan (the "Application"); and

WHEREAS, the Planning Commission has considered the Application at a duly noticed public hearing held on August 11, 2022, September 8, 2022, and September 22, 2022 where evidence and testimony where entered into the record; and

WHEREAS, after consideration of the evidence and testimony presented at the public hearing and based on the following findings, the Planning Commission directed City staff to draft a resolution recommending the City Council deny the Application.

NOW, THEREFORE, BE IT RESOLVED BY THE PLANNING COMMISSION OF THE CITY OF LOUISVILLE, COLORADO:

Section 1. The foregoing recitals are incorporated into this Resolution by this reference.

Section 2. Based on the testimony of the witnesses and the documents and other evidence made a part of the record of the hearing before the Planning

Commission, the Planning Commission finds that the proposed subdivision does not promote the following purposes set forth in Section 16.04.020 of the Louisville Municipal Code ("LMC"), or comply with the following standards set forth in LMC Chapter 16.16 and this title:

A. The Planning Commission finds that the application from Sterling Bay (the "Applicant") for approval of the Redtail Ridge Filing No. 1 Preliminary and Final Subdivision Plat (the "Application") does not comply with LMC Sec. 16.16.010.D. and E., which states that natural features and vegetation must be preserved to the extent possible and a need for additional open space may be based on vegetation and the type and density of the propose development. The Applicant has not demonstrated that the proposed subdivision adequately preserves natural features, wildlife habitat and vegetation of the property. Previously undeveloped areas on the northern portion of the property include natural vegetation that could be further preserved as public or private open space with clustering of the development lots to the south.

B. The Planning Commission finds that the Application does not comply with LMC Sec. 16.04.020.K, which states the purpose of a subdivision is to avoid traffic congestion, based on the following:

    1. According to the traffic study submitted with the Application, the US 36 and Northwest Parkway interchange reaches a Level of Service F and would need modified by the year 2027-2028 to provide additional vehicular capacity to accommodate the proposed subdivision. The Application does not include proposals for mitigation, road capacity work, or contribution to future road capacity work for the interchange, nor are future improvements planned at this time.

    2. The Application does not include a commitment from Northwest Parkway Authority for the acquisition of right of way needed to construct road capacity improvements included in the traffic study as needed to mitigate traffic congestion.

C. The Planning Commission finds that the Application does not comply with LMC Sec. 16.16.040 concerning block length, as some blocks proposed in the Application exceed the maximum length of 1,320 feet. Although the Applicant requested a modification pursuant to LMC Chapter 16.24 to allow longer block lengths, the Commission does not find that there are unique physical or topographical circumstances or conditions to justify the modification. Maintaining prescribed block lengths is necessary to ensure an adequate and convenient transportation system to serve the proposed subdivision.

D. The Planning Commission finds that the Application does not comply with LMC Sec. 16.16.020.B., which states that drainage areas should be left in a natural state to the greatest extent possible. The Applicant has not demonstrated that grading of drainage areas within public opens spaces has been limited to the greatest extent possible.

E. The Planning Commission finds that the Application does not comply with the 2010 ConocPhillips Campus General Development Plan (GDP). The type and character of the development proposed with the Application is not consistent with the GDP and the street network does not comply with the street network shown on the GDP because it is proposed as publically dedicated roads rather than private roads.

Section 3. Based on the foregoing findings and the evidence and testimony presented at the hearing, the Planning Commission hereby concludes that the Application should be denied in accordance with LMC Sec. 16.12.075.

PASSED AND ADOPTED this 10th day of November, 2022

By: _____
Steve Brauneis, Chair
Planning Commission

Attest: _____
, Secretary
Planning Commission

Rob Zuccaro

From: Laura Page <lpage53@gmail.com>
Sent: Wednesday, February 21, 2024 1:42 PM
To: Rob Zuccaro
Cc: City Council; Parks and Rec
Subject: Follow-up questions on RTR

Director Zuccaro,

Sorry. The questions never end, but most of these require only yes or no answers.

Regarding the Redtail Ridge development, I'm wondering if the city staff or Council has any more ability to control what happens on the property before the final plat is approved. There are some big issues, in my opinion, that are unresolved, or at least unstated. Perhaps my issues of concern are routinely handled during the construction process so would not come before the Council, but they are questions I would still appreciate the answers to.

It would be nice if you could respond by *next* Thursday the 29th. Thank you!

I know the Council will have some further control at the PUD process, but my questions pertain to the property before any PUD is submitted and to the public dedications. I have bolded the topics of concern along with my questions below. The background for my questions is in plain text; you can skip those sections if you prefer.

1. Safe passage
Two Councilors suggested that the plat would NOT pass muster if it did not provide for safe passage across Campus Road near the schools. The initial requirement subsequently placed by Council on the applicant apparently only required that the applicant show the crossing on the final plat. Sadly, I don't believe the condition stated that the City would make the final decision about whether their design was adequate. I would have much preferred that the Council *mandate* an underpass as that would maximize safety.

The two other underpasses planned for this property were easy for the applicant to incorporate because they'll double as a drainage point (and thus potentially flood regularly as underpasses in Louisville, Lafayette, and Superior have done). An underpass under Campus Drive adjacent to the schools would be more challenging and should be accounted for in the grading and drainage plans.

Will the City be able to deny the final plan and mandate a different crossing - potentially, an underpass - if it deems the applicant's final design is insufficient to maximize the safety of the children crossing Campus Road?

2. Public land-dedication timing
Given that the applicant was unwilling to specify nor illustrate the extent to which they have reduced the areas that will be graded, it must be assumed that the vast majority of what will be commuted to the public will be wiped clean of all plant and animal life and the soil structure and microbiology destroyed. It's much easier to amend the environment than to try to rebuild it.

The ability to rejuvenate the land will be hugely hampered by our region's change in precipitation patterns. Long gone are the daily showers that used to be common. Instead, more typical are single-day downpours

interspersed with months-long drought. It will not be enough to toss seed into the lifeless soil and expect it will grow and thrive. Even drought-resistant varieties need a year or two of consistent watering before they can handle water stressors. I confirmed last night in a talk I had with the representative from High Points that rehabilitation will be a years-long effort.

We were told that the property has a significant invasion of noxious weeds. I have no doubt that's true, undoubtedly much more so in the areas that were previously developed because those areas had no competing vegetation. But the extent of invasion *will* be worse if the beneficial plants are not nurtured.

We need only look at our Daughenbaugh open space for an example. Decades ago, that area was the same monoculture of brome left over from agricultural use that Warembourg still is. I believe in an attempt to naturalize the Daughenbaugh property, the land was tilled and sown with a more diverse mix of seed. The attempt was an abject failure, even though soil health was largely unaffected during preparation. The land is now covered with what I would guess is a *majority* of noxious weeds. Recovery is NOT easy.

At what stage and in what state will the City take ownership? Will the City be gifted barren land and be responsible for seeding?

Can the transfer of ownership be delayed a few years to ensure the vegetation is sustainable and as represented in the conceptual drawings?

3. Excavation

It is hard to swallow that the applicant is making "... appropriate use of **natural** contours [16.16.010]. The most recent excavation plans available to the public convey the extent of grading.

- Removal of the high points: 1,230,796 cubic yards. That's an amount equal to 50% of the soil removed to subside I-70.
- Filling in of the low points with the dirt removed from the high points: 981,489 CY

It is unclear to me what will happen to the 250,000 CY of soil left over, though the applicant apparently represents they will keep it on site. That is a volume that approximates 10 football fields filled 15 feet deep.

What are the applicant's plans for the 250,000 cubic feet of excess dirt from the excavation?

Can the applicant be required to set aside the irreplaceable topsoil from the undeveloped land north of Disc Drive for reapplication on the public open space areas that undergo grading?

Many residents are assuming this plan will yield them a large public park with playing fields. The reality is that the City already has suitable locations in town, closer to the population, that have yet to be funded. But if the ultimate goal *is* to develop playing fields, given that the land in that corner of the property undulates and rises significantly so would cost an extraordinary amount to develop, it would behoove the City to have the developer grade the site along with the rest of the property.

Personally, I would prefer that the area currently designated for a park be left as open space. There are more suitable locations closer to residential areas that would suffice.

Is the City committed to putting playing fields in the area designated for a park?

If so, should/can the City require that the area be graded concurrently with the rest of the property?

Boulder County advised the City to ensure that the proposed management of stormwater (the drainage) not adversely affect trails. The County's main concern was with drainage in Tract A, but a similar caution should be applied to all the trails. We do not want to constantly be repairing/rebuilding trails after high-water events such as are occurring with greater frequency.

Will City staff independently confirm that the proposed drainage routes will *not* expose any of the trails to damage during reasonably-anticipated high-precipitation events?

4. Wildlife

The applicant did not directly answer the question about whether poison will be used to exterminate the animals that have been living on this property undisturbed for decades. Thousands of prairie dogs - a keynote species upon which numerous other animals and raptors depend for their survival, *will* be killed. The applicant's environmental consultant recommended that no anticoagulant rodenticides be used to kill the prairie dogs.

Will the applicant be required to submit a wildlife/prairie dog "management" plan that adheres to the most humane practices - e.g. no anticoagulant rodenticides - and will such a plan be put into place before grading begins and buries alive the colonies?

5. Environmental surveys

The burrowing owl is categorized as threatened in Colorado. They often live in prairie dog colonies such as those that cover a vast amount of the RTR property. As far back as 2019, Boulder County staff had strongly recommended that initial burrowing owl and raptor surveys used to establish baseline conditions be continued for several years *before* development was planned in potential habitat.
As far as I know, that didn't happen so we do not have the information necessary to make informed decisions. Even the initial surveys appeared insufficient because they did not assess conditions and populations through all seasons. Unfortunately, we can't undo that oversight.

We were told last night that there would be continued environmental surveys. It would be instructive to analyze the impact of this development on the environment.

Are these additional environmental surveys going to take place over the next four months - a very brief time - before the populations are wiped out by grading?

How long and at whose expense will they continue?

Is the applicant required to consult with the Colorado Department of Wildlife and with the US Fish and Wildlife Service (for endangered species) regarding the results of their survey(s)?

6. Environmental buffers

Boulder County recommended that the final master drainage report include defined setbacks (per Louisville's determination) from all water features including lakes, creeks, wetlands, and ditches to provide a buffer between wildlife and humans.

Is the City mandating a minimum distance between water features and development, such as paths/trails to reduce the impact on wildlife?

7. Herbicides

High Plains recommended avoiding broadcast application of herbicides such as glyphosate, now prohibited on some of our public land. Instead, they advised that weeds be spot-treated with aminopyralid.

Will the City be able to prohibit, during development, the use of certain herbicides, notably glyphosate, as it has on certain public lands within the City?

8. Tree preservation

The preliminary plat was required by law to show the existing trees and other natural features (but failed to?) and our code requires that preservation of the natural landscape be maximized. There was mention at the last meeting of perhaps only 10 trees worth keeping on the property, though High Plains recommended that even the dead trees be left for wildlife habitat, unless there is a safety issue. I assume several, if not all of these few trees are mature cottonwoods that will be vital to any bird and wildlife recovery.

At a minimum, in order to support these trees' recovery, their root zones will need to be fenced off to avoid disturbance and compaction. The City's arborist would probably be best suited to convey the precautions needed.

Will the applicant be required to implement a protection plan for these trees BEFORE grading?

Will some wildlife-beneficial dead trees also be retained?

9. Contribution to exterior transportation upgrades

It's not clear to me if the applicant is committing a fixed dollar amount to necessary upgrades on impacted roads outside the property, or simply conveying the current *value* of their contribution. Inflation will devalue any monetary contributions made to the City in advance of construction.

Is the applicant only committing to a certain dollar amount or are they being required to pay a certain percentage, or even full cost, of the *final* cost of infrastructure upgrades *outside* the property that are necessary to prevent premature failure of roadways/intersections due to the development?

10. Internal community park

Without any commitment to add housing to this property, the last-minute addition of the small community and dog parks in the southeast corner has dubious value to the community at large. I don't think, actually I hope, people will not drive to this location. Because the value of these additions will be to the employees, not the residents, I do not think Louisville should take ownership and be responsible for the upkeep of these amenities. Rather, it should be up to the Metro District.

Louisville wisely declined to accept public dedication of the 18 acres of land that borders US 36 that were offered to bolster the open space commitment.

Can - and will - the City decline to accept these amenities? If not, will the applicant be responsible for developing them or will that be another financial burden placed on the City?

11. To the extent possible...

Our code requires that certain things, like the preservation of natural features, happen "to the extent possible." This extent depends in large part on the built environment. The insane amount of grading that's required by this development is due to the need to channel water that was once absorbed by the land that will now be covered by

structures. With less development, there would be less drainage to account for and thus more preservation of natural features possible.

To date, the City has allowed the *applicant* to establish just what is possible. It may have been possible for the applicant to still have a profitable development with less buildout and thus less destruction. After all, at first they said they needed over 6MM sq ft to make a go of it. Then they put their foot down at 3.1MM sq ft. Yet they have continued to pursue development at the original 2.6MM sq ft limit. Without an independent economic-feasibility study, the City had no bargaining power. Louisville continued to take the applicant's word on what was possible.

Will there be any *independent* verification, prior to development, that the applicant is protecting the natural environment to the extent possible?

12. Emissions

During deliberations over the application for an amended GDP, in keeping with the City's goal of sustainability, the previous Council was able to garner agreements from the applicant for minimal use of natural gas.

The applicant has now committed to approximately the same solar energy generation per sq ft as was promised in the amended GDP agreement, which is laudable. It would be even better, given that the applicant has not reduced their projected footprint, to match the total 3kW generation promised in the amended GDP application.

The LEED Silver certification for ALL buildings (except the hospital) is an improvement over the previous Certified LEED promise. But...

Will this Council, during PUD deliberations, be able to mandate limits on natural gas use?

Will Council be able to mandate the installation of geothermal energy sources, if they so choose?

Will Council, during PUD reviews, be able to require more solar-energy generation if the buildings would be capable of accomodating the additional hardware?

13. Parking

Boulder County provided some excellent suggestions regarding parking that could discourage single-vehicle trips and reduce the extent of hardscape.

During PUD discussions, can Council choose to reduce the current City parking capacity regulations?

14. Construction staging and soil storage

I'd like to remind the City that Boulder County previously warned against the applicant's use of Tract A for staging and storage as that would defy the requirement to provide an undeveloped buffer to Paradise Lane per the 1999 and 2010 IGAs. The County made the reasonable suggestion that staging and soil storage be located within a tract destined for development.

Can/does the City mandate the location of the construction staging area, construction trailer, and soil storage area?

If so, will the City require that none of these functions impact the areas that will not be graded?

Will the City disallow a mountain of dirt to remain on the property past a certain number of years that would be an eyesore such as the one off US 42 in front of Steel Ranch where promises of retail never materialized?

A related question regards construction traffic on the public roads to be built. Maintenance for these roads will ultimately fall to the City. If construction traffic is allowed on these new roads, they will degrade quickly.

Can the City mandate that there be a separate entrance to the property for construction vehicles and that all heavy vehicles be kept off the public roads within the development once the roads are completed?

15. North open space
The applicant made a promise to OSAB to remove the existing structures on the open space dedication located north of the property in Boulder County. Has that promise been formalized?

In what state, other than the removal of structures, will those lots be in when the City (and County?) take possession? Will the lots be revegetated?

16. Document expirations
I found the code that delineates when PUDs expire. I cannot find similar language regarding PCZD's and I'm at a loss to understand how a PCZD could expire since I believe it shapes the GDP.

You have stated before that the GDP specifies the zoning. The 2010 GDP specifies that the zoning for this property is PCZD Commercial [with PUD-C Overlay - now expired]. This question is relevant because, last night, I *think* the applicant was claiming that the Agreement that accompanied the GDP - the PCZD Zoning Agreement/ConocoPhillips Colorado Campus General Development Plan - has expired.

Can you please link me to the language in the Municipal Code that states if and when a PCZD and a PCZD agreement expire?

If the Agreement *has* expired thus removing the allowance for overlot grading prior to approval of the final plat, what are the existing regulations regarding the timing of the onset of grading relative to that final approval?

Mr. Zuccaro, I have greatly appreciated your responsiveness throughout this process and fully expect that will continue.

Thank you so much for your answers.

Laura Page

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Rob Zuccaro

From: Laura Page <lpage53@gmail.com>
Sent: Friday, February 23, 2024 8:42 AM
To: City Council; Rob Zuccaro
Subject: NW Parkway conditional agreement for RTR

Dear Director Zuccaro and City Council,

If I understand correctly, the approval of the final plat for Redtail Ridge is conditional on the applicant receiving permission from the NW Parkway Authority to locate the 96/Campus Drive intersection where it is currently shown on the applicant's plans. The applicant said the Authority has offered approval if certain conditions are met.

I do hope that you will look past any approval by the Authority to the actual conditions required by the Authority. Please ensure that the conditions placed on the applicant do not prevent any of the road improvements that are necessary to avoid the intersection failures that are projected to be caused or accelerated by the RTR development.

Thank you for your diligence.

Laura Page

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Rob Zuccaro

Subject: FW: Regarding Potential Lethal Take of Federally Protected Eagles by Secondary Poisoning at RTR

Attachments: Stearns-AF-and-JV-7.30-monarch-DSC08640-Edit.gif; Stearns-AM-monarch-7.30-DSC08651-Edit.gif; Stearns-adult-at-monarch-HS-feeding-PD-5.29.24-11.50a.jpg; Stearns Eagles RTR foraging perches.jpg

From: dana bove <danajbove@gmail.com>
Sent: Thursday, August 1, 2024 10:49 AM
To: Christopher Leh <leh@louisvilleco.gov>; Cameron Fowlkes <cfowlkes@louisvilleco.gov>; Rob Zuccaro <rzuccaro@louisvilleco.gov>; Jeff Durbin <jdurbin@louisvilleco.gov>; Planning <planning@Louisvilleco.gov>; Ember Brignull <emberb@Louisvilleco.gov>
Subject: Regarding Potential Lethal Take of Federally Protected Eagles by Secondary Poisoning at RTR

Dear Mayor and City of Louisville Staff,

Regarding Potential Lethal Take of Federally Protected Eagles by Secondary Poisoning at RTR

I hope these 3 photos and 1 map help provide more context regarding the potential allowance of rodenticides by the City of Louisville at Red Tail Ridge to exterminate prairie dogs. This issue also includes the elimination of prairie dogs on City of Louisville and possibly Boulder County tracts of open space lands that are currently planned to be ceded by the developer.

As mentioned in previous emails to the Boulder County Commissioners, the Stearns territorial bald eagles hunt prairie dogs on the former Storage Tech site, primarily from the light posts at Monarch Stadium. The attached map shows that those light posts (yellow push pins) are only 320 meters from the nearest prairie dog burrows (red circled areas).

For example, just over the past two weeks, each of the Stearns eagles—the male, female, and juvenile fledgling—**has been documented every day** perching on the Monarch light posts The first photo, taken on July 30, 2024, shows the Stearns adult female on the left and her fledgling juvenile on the right, just 320 meters from the nearest prairie dog colonies at the RTR property. The second photo, also taken on July 30, 2024, shows the adult male on an adjacent lamp post when the female and juvenile were present.

The third photo was taken on May 29, 2024, and shows the reason the eagles utilize this area; in the photo one of the Stearns adults is feeding on a prairie dog captured in Red Tail Ridge proposed development site, just south of the entrance to Monarch High School.

To the Major and staff at the City of Louisville: The risk of secondary poisoning for these and other raptors/predators is too high for Louisville to leave this to the discretion of the developer. Furthermore, this area is a remaining fragment of what was once one of the richest raptor habitats in our region, known as "raptor alley" prior to the majority of that rich habitat being developed for Flatirons Crossing and the myriad of other housing and commercial developments in the area.

It is not too late for the involved municipalities to prioritize preserving the ceded tracts of open space land for the remaining prairie dogs and adjacent habitat versus the common priority of recreational facilities and trails. While many know the term keystone species, few actually witness the absence of predators where these key stone species have been eliminated. And without question, the City of Louisville needs to mandate the use of PERC (carbon monoxide) verus rodenticide as a condition for the extermination of prairie dogs at the RTR site.

Thank you for your attention to this critical matter.

PLEASE SEE ATTACHED PHOTOS AND MAP

Dana Bove

FRONT RANGE EAGLE STUDIES

Rob Zuccaro

Subject: FW: Final Study of Nesting Bald Eagles and Impacts at the RTR Development Area
Attachments: FRNBES.1 report on Stearns Eagles and RTR 8.14.24.pdf

From: dana bove <danajbove@gmail.com>
Sent: Wednesday, August 14, 2024 5:42 PM
To: Christopher Leh <leh@louisvilleco.gov>; Cameron Fowlkes <cfowlkes@louisvilleco.gov>; Rob Zuccaro <rzuccaro@louisvilleco.gov>; Jeff Durbin <jdurbin@louisvilleco.gov>; Planning <planning@Louisvilleco.gov>; Ember Brignull <emberb@Louisvilleco.gov>
Subject: Final Study of Nesting Bald Eagles and Impacts at the RTR Development Area

Dear City of Louisville Council, City Staff, and OSAB Board Members.

Attached is the final report by Front Range Eagle Studies on the Stearns bald eagles and what will assuredly be negative impacts by development at the RTR site.

We ask that this study be reviewed by all Council members for the August 20th meeting, and distributed to OSAB members, as well.

Thank you,

Dana Bove

FRONT RANGE EAGLE STUDIES

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FRONT RANGE EAGLE STUDIES

Report on the Stearns Territorial Bald Eagle Habitat Usage at the Red Tail Ridge Site

Summary and Data

This report documents the critical role that the Stearns territorial bald eagles—a species cherished by the local community frequenting the Carolyn Holmberg Preserve—play in the ecosystem, with a significant portion of their prey sourced from the prairie dog colonies on the Red-Tail Ridge (RTR) site. The expertise and methodologies employed by Front Range Nesting Bald Eagle Studies (FRNBES) are highlighted in a recent peer-reviewed journal article, accessible here.

For the purposes of this report, we analyzed data from July 23 through August 9, 2024, focusing on the extensive use of hunting and foraging perches—primarily from the Monarch High School stadium light posts (Figure 2). Standing at nearly 80 feet, these four light posts provide highly advantageous perches for hunting, particularly targeting the prairie dog colonies located approximately 300 meters south on the RTR property. The elevated height of these poles, combined with their distance from the colony sites, not only enhances the eagles' vantage points compared to typical tree perches but also likely offers a stealth advantage, reducing the likelihood of detection and subsequent warning signals by the prairie dogs.

Data on the Stearns eagles—comprising an adult female, an adult male, and a juvenile fledgling—over the 17 days from July 23 through August 9, 2024, are presented in Figures 4a through 4c. The figures illustrate the field observation time for each of these 17 days, depicted by the light gray vertical boxes, and the number of minutes or percentage of field time spent by each eagle at the Monarch High School perches, shown by the solid and dotted lines. As evidenced by the figures, at least one eagle was present on all but two of the 17 days, with substantial time spent at these perches.

During many observation sessions, the Stearns eagles were observed executing low hunting flights over the RTR colony sites, with documented instances of prairie dogs being captured from the northern colony sites on RTR property. Figures 4 through 7 provide visual documentation of the eagles feeding on prairie dogs captured at RTR.

The Importance of Key Hunting/Foraging Sites Outside of Nest Territories (Extra-Territorial Hunting Sites)

While studies by Bove et al. (2024) have shown that territorial bald eagles in the northern Front Range obtain up to half of their prey within their territorial boundaries (<2 km from nests), most nesting eagles also frequent a few preferred "extra-territorial" hunting areas located 2 to 4 km from their nest sites (Bove et al., unpublished data). The RTR prairie dog colonies and the hunting perches at Monarch High School (~3 km from the Stearns Lake bald eagle nest) are prime examples of such important "extra-territorial" hunting and foraging areas.

It is plausible to assume that wildlife, like humans, benefits from a change of scenery. However, studies on Spanish Imperial Eagles by Ferrer (1993) provide additional insights, particularly concerning prey species such as black-tailed prairie dogs, which possess sophisticated communication systems to warn of approaching predators (Loughry and McDonough, 1988; Slobodchikoff et al., 1991; Perla and Slobodchikoff, 2002; Frederiksen and Slobodchikoff, 2007; Hoogland, 1996). These studies suggest that the continuous and predictable presence of a large predator can prompt prey to alter their activity patterns and spatial use, effectively reducing prey availability. Therefore, the RTR hunting and foraging area not only offers a rich prey resource but also provides a rotation in hunting grounds that decreases predictability for prairie dogs. Additionally, the elevated pole perches afford the eagles enhanced sightlines and stealth capabilities.

Federal Protection of Bald Eagles Under the Bald and Golden Eagle Protection Act and the Impact of Resource Reduction at RTR

A common misconception regarding the protection of nesting bald eagles focuses solely on the nest site or its immediate vicinity. For instance, in an ERO Consulting report on RTR (2024) shared with City of Louisville staff, it was stated: "re. Bald Eagles – Because no bald eagle nests or roost sites are located within 0.5 miles of the project area, no additional action regarding bald eagles is necessary."

This narrow interpretation of the needs of bald eagles—a species with well-documented high caloric requirements—risks making decisions that could threaten the survival of the Stearns bald eagles by eliminating a crucial food resource at RTR. The term "take," as defined under the Bald and Golden Eagle Protection Act (16 USC 668-668d), broadly includes protections against sub-lethal activities that "...molest or disturb" eagles, based on the best scientific information available. These protections ensure against sub-lethal take, including documented adverse changes to feeding or other essential biological functions necessary for sustaining adult and juvenile eagles. Put in the simplest terms, it would fall under molestation, harm or the violation of “take” as broadly defined under the Bald and Golden Eagle Protection Act, to eliminate or significantly diminish the prairie dog colonies at RTR. That is one of the primary food sources for the Stearns eagles, as well many other raptors and predators.

The City of Louisville and Building Code Compliance with Federal Law Under City Code Sec. 16.12.0275 - Action on Preliminary and Final Plats

FRNBES urges the City of Louisville to recognize the critical importance of protecting the Stearns bald eagles—a symbol of national significance and a species deeply cherished by our community. The preservation of the prairie dog colonies on the RTR property is essential for maintaining the health and well-being of these eagles. There remains an opportunity for the involved municipalities to prioritize the conservation of these ceded tracts of open space, ensuring the survival of the remaining prairie dogs and their habitats, rather than focusing solely on the development of recreational facilities and trails. The profound impact of losing keystone species, such as prairie dogs, is evident in the decline of their associated predators when these species are removed from the ecosystem.

It is crucial to remind the City of Louisville that, under City Code Sec. 16.12.0275 (Action on Preliminary and Final Plats), the approval of any plat must align with the City's comprehensive plan, applicable zoning requirements, and all relevant federal, state, and city laws. This includes adherence to the Bald and Golden Eagle Protection Act. Any action that would result in the significant reduction or elimination of the prairie dog colonies at RTR would likely constitute a violation of this Act, as these colonies are a vital food source for the Stearns bald eagles. The loss of these colonies would lead to "adverse changes to feeding or other essential biological functions necessary for sustaining adult and juvenile eagles."

Finally, FRNBES reiterates the importance of banning the use of rodenticides within the City of Louisville to prevent secondary poisoning of raptors and other predators at RTR. We stand in full agreement with the August 9, 2024, letter by Peter Ruprecht to the Open Space Advisory Board and commend his thorough research in highlighting the dangers of secondary poisoning to predators.

References

Bove, D. J., Anderson, H. A., Smith, M. A., & Kuhn, T. A. (2024). Nesting Bald Eagle Population Numbers, Density, Territorial Resources, and Relationship to Human Development in Northern Colorado's Front Range. Western Birds, 55(1), 1-35.

Ferrer, M. (1993). Reduction in the range of the Spanish Imperial Eagle (Aquila adalberti) since 1850. Journal of Raptor Research, 27(2), 102-107.

Frederiksen, J. K., & Slobodchikoff, C. N. (2007). Behavioural change in response to predator and conspecific alarm calls in Gunnison's prairie dogs. Behaviour, 144(11), 1317-1338.

Hoogland, J. L. (1996). Why do Gunnison's prairie dogs give anti-predator calls? Animal Behaviour, 51(4), 871-880.

Loughry, W. J., & McDonough, C. M. (1988). Calling and vigilance in California ground squirrels: Age, sex, and seasonal effects in noncolonial animals. Animal Behaviour, *36(4), 1171-1179.*

Perla, B. S., & Slobodchikoff C. N. (2002). Habitat structure and alarm call dialects in Gunnison's prairie dog (Cynomys Gunnisoni). Behavioral Ecology, *13(6), 844-850.*

Slobodchikoff, C. N., Kiriazis, J., Fischer, C., & Creef, E. (1991). Semantic information distinguishing individual predators in the alarm calls of Gunnison's prairie dogs. Animal Behaviour, 42(4), 713-719.

Figures (see below)

Fig. 1. July 30, 2024. Stearns adult female bald eagle (left) and her fledgling juvenile (right) at Monarch High School perch IM (see Fig. 3). This perch is just 320 meters from the nearest prairie dog colonies on the RTR property (see Fig. 3).

Fig. 2. August 12, 2024. Stearns territorial bald eagles at Monarch stadium perch IM (see Fig. 2). Female on left, male to the right.

Fig. 3. The Stearns territorial bald eagles hunt prairie dogs on the former Storage Tech site, primarily from the light posts at Monarch Stadium. The stadium light post perches (yellow push pins) are only 320 meters from the nearest prairie dog burrows (red circled areas) on the RTR property.

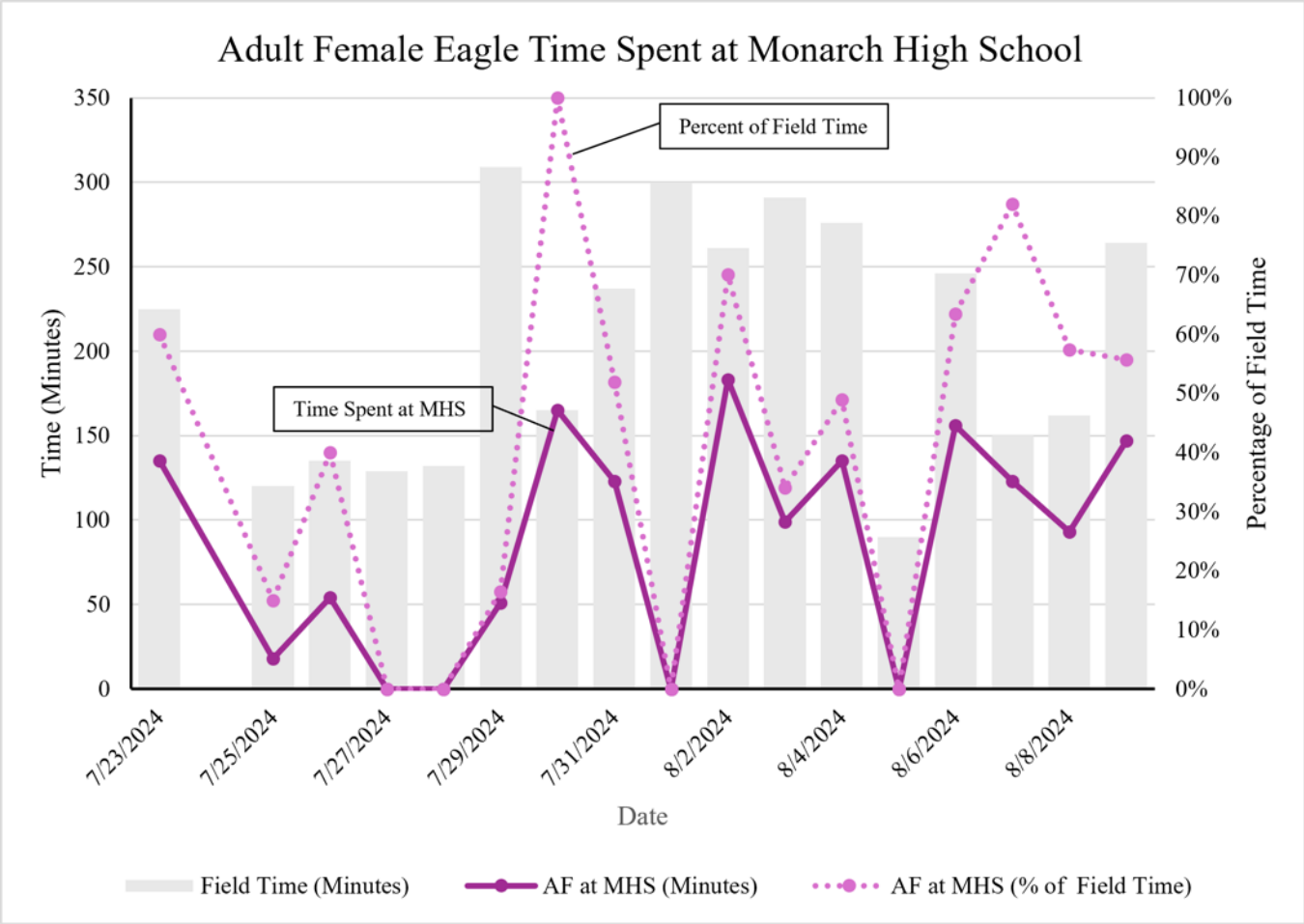


Figure 4a. FRNBES data showing time during 17 days from 7/23 thru 8/9/23 that the Stearns adult female spent at Monarch High School and nearby perches for the primary purpose of hunting prairie dog at the RTR property

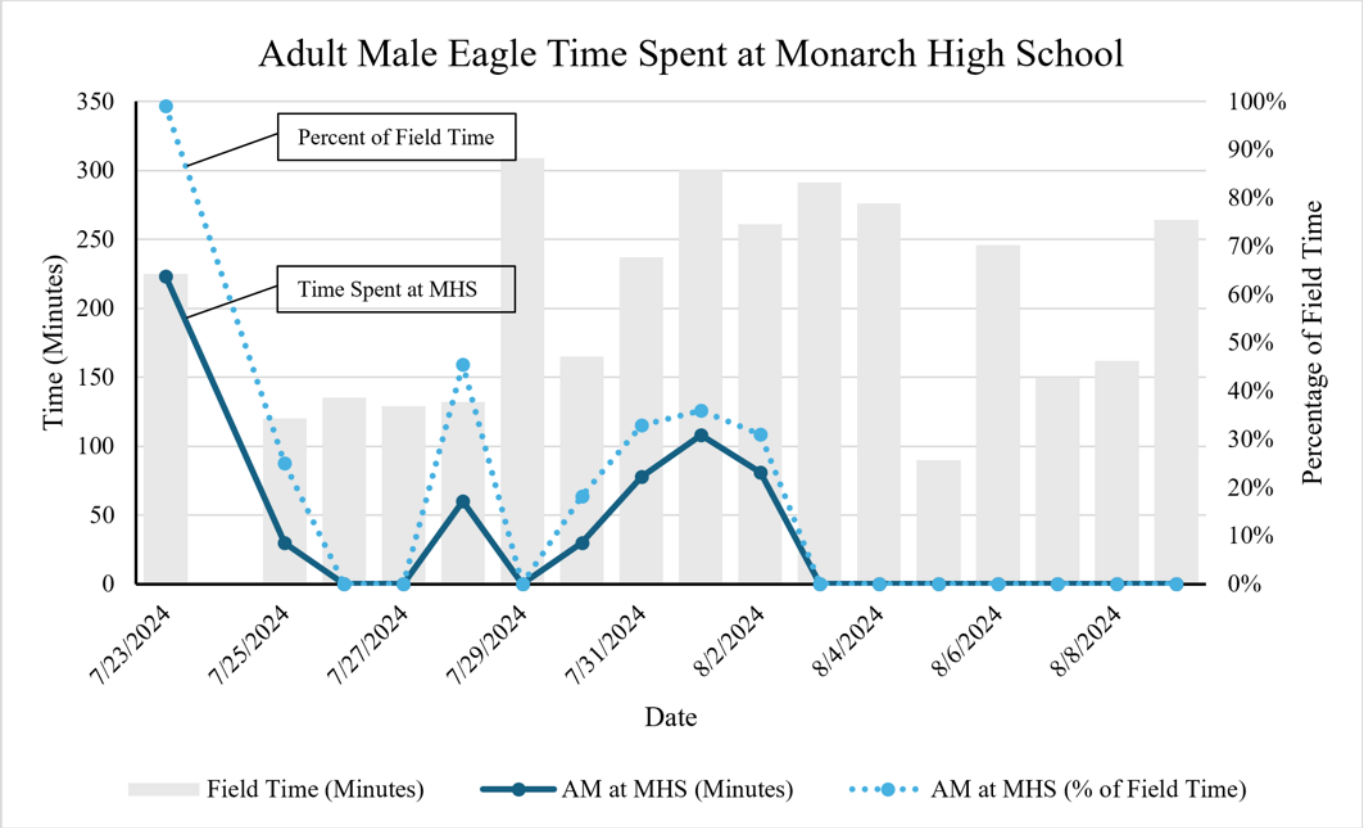


Figure 4b. FRNBES data showing time during 17 days from 7/23 thru 8/9/23 that the Stearns adult male spent at Monarch High School and nearby perches for the primary purpose of hunting prairie dog at the RTR property.

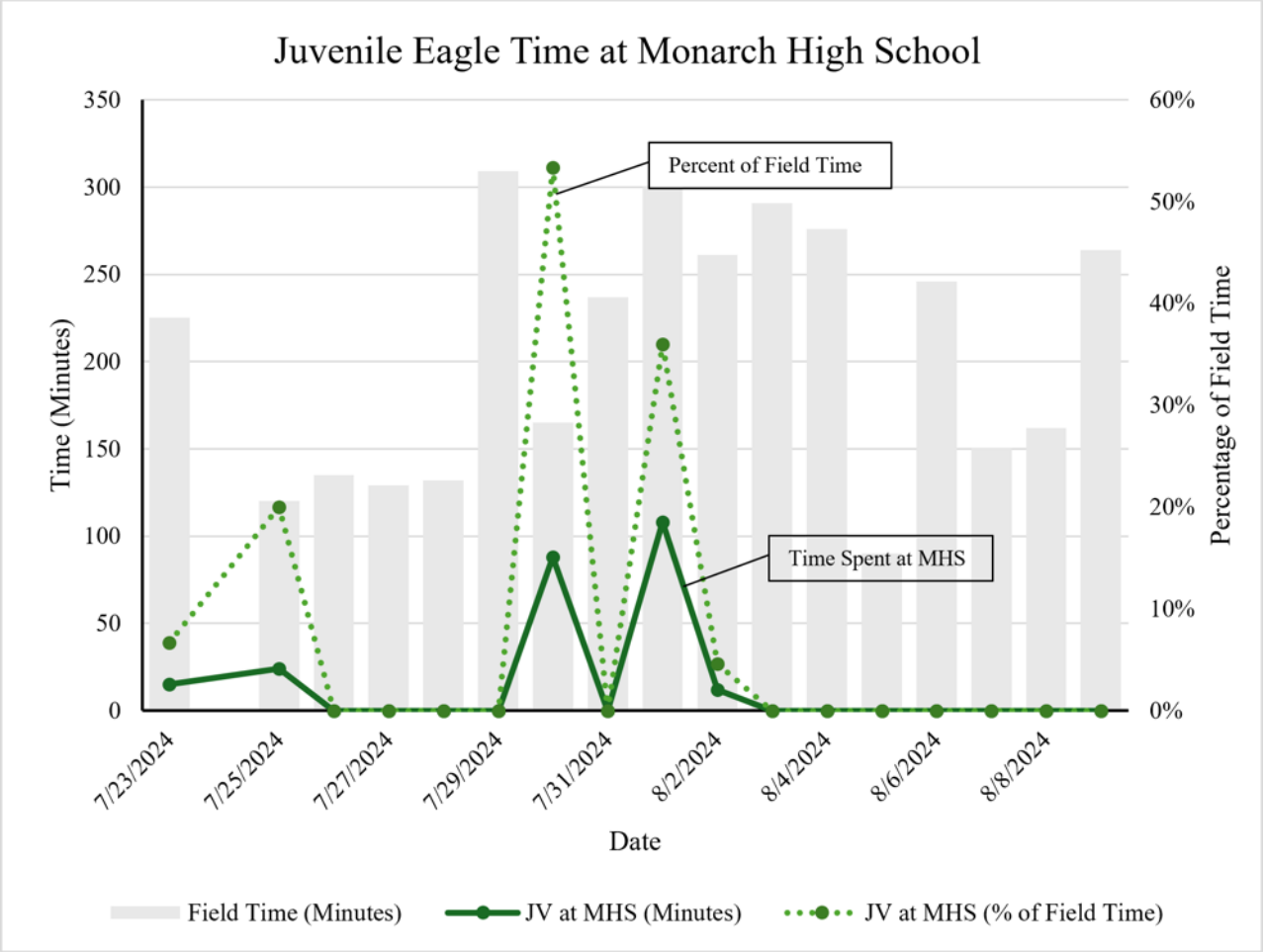


Figure 4c. FRNBES data showing time during 17 days from 7/23 thru 8/9/23 that the Stearns juvenile fledgling spent at Monarch High School and nearby perches.

Fig. 4. August 2, 2024. Stearns adult male bald eagle at Monarch stadium perch IP (see Fig. 2) feeding on a prairie dog caught in the fields to the south on the RTR property.

Fig. 5. May 29, 2024. Stearns adult female bald eagle feeds on a prairie dog captured at colonies just to the south on the RTR property (see Fig. 2). Monarch High School sign in background.

Fig. 6. August 4, 2024. Stearns adult female bald eagle feeds on a prairie dog on the RTR property in the ~50-acre colony site shown in Figure 3.

Fig. 7. August 2, 2024. Wide view of previous photo showing adult female standing above a captured prairie dog; buildings in Broomfield to the south of Highway 36 in background.

COMMUNITY DEVELOPMENT
One DesCombes Drive • Broomfield, CO 80020 • 303.438.6389 • www.broomfield.org

August 15, 2024

To: Rob Zucarro, City of Louisville, Community Development Director
rzuccaro@louisvilleco.gov

RE: **Redtail Ridge Final Plat and Timing of Conservation Easement**

Dear Rob:

The City and County of Broomfield is aware the City of Louisville's City Council will be reviewing the Redtail Ridge plat during their August 20, 2024 meeting.

Broomfield has reviewed and commented on the development and does not object to the final plat moving forward at this time. We look forward to continued coordination with the developer, the Northwest Parkway and the City of Louisville regarding the timing of improvements being constructed and identifying the appropriate parties responsible for maintaining the infrastructure related to the Redtail Ridge development.

Additionally, Broomfield looks forward to continuing to work with the attorneys that represent the Redtail Ridge development team to finalize the conservation easement per the requirements outlined in the Intergovernmental Agreement for South 96th Street, Dillon Road, and US 287 Area Comprehensive Development Plan (dated February 18, 1999) among Broomfield, the City of Louisville, the City of Lafayette and Boulder County. We would like to encourage timely completion of this important conservation easement and anticipate that it will be fully executed in the coming months. We appreciate that the Subdivision Improvement Agreement includes a condition of approval that the developer finalize this conservation easement with Broomfield within one year from the effective date of the Subdivision Improvement Agreement and Final Plat, if approved by the Louisville City Council.

Should you have any additional questions, please do not hesitate to contact us.

Sincerely,

Anna Bertanzetti

Anna Bertanzetti
Interim Deputy City and County Manager and
CoDirector of Community Development
City and County of Broomfield
abertanzetti@broomfield.org

Cc: Kristan Pritz, Director of Open Space and Trails
Karl Frundt, Senior City Attorney
Lynn Merwin, Planning Director
Judy Hammer, Principal Planner

City of Louisville
COLORADO • SINCE 1878

City Council Hearing

August 20, 2024

Redtail Ridge Filing No.1 Final Plat

Resolution 38, Series 2024

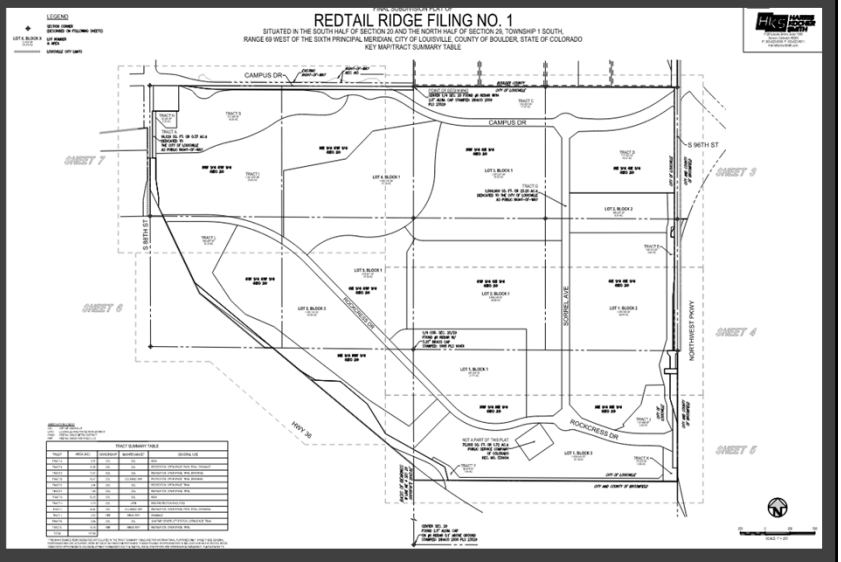
Public Notice Certification:

Published in the Boulder Daily Camera – Sunday, August 4, 2024

Posted at City Facilities, Property Posted and Mailed Notice – Monday, August 5, 2024

Final Subdivision Plat

- Establishes Lots, Blocks and Tracts of Land for Development
- Establishes Rights of Way and Easements
- Includes Public Purpose Land Dedications
- Subdivision Improvement Agreement for installation of public infrastructure (roads, water, sewer)



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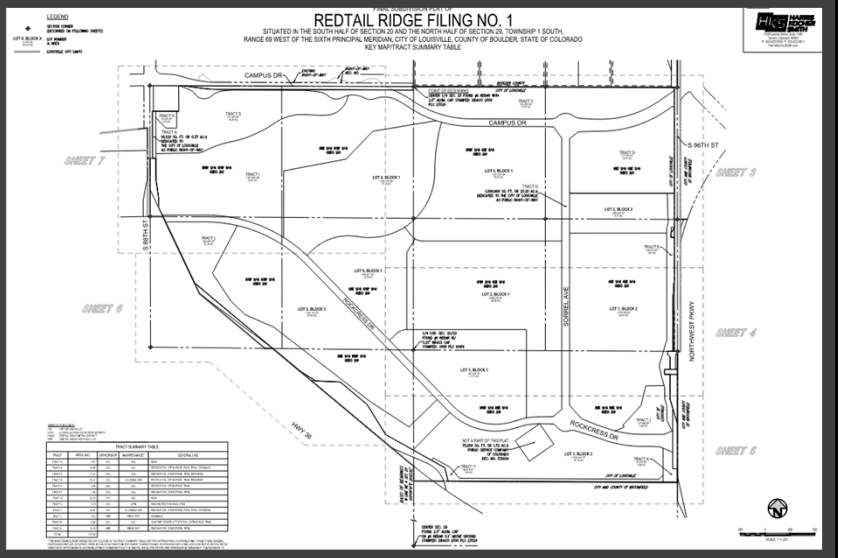
Other Agreements

- Wastewater Treatment Plant Expansion, Water Rights Dedication and Tap Fee Credits
- Metro District Operations and Maintenance
- Shared Maintenance Agreement with NW Parkway and Broomfield
- Agreement for Acquisition of Paradise Lane Property and Conservation Easement



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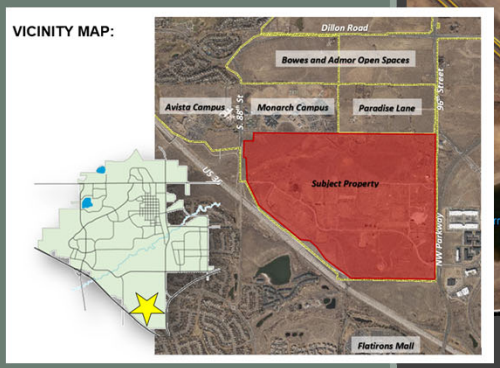
Redtail Ridge
Background



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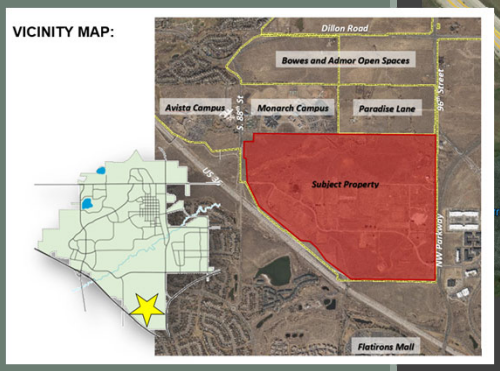


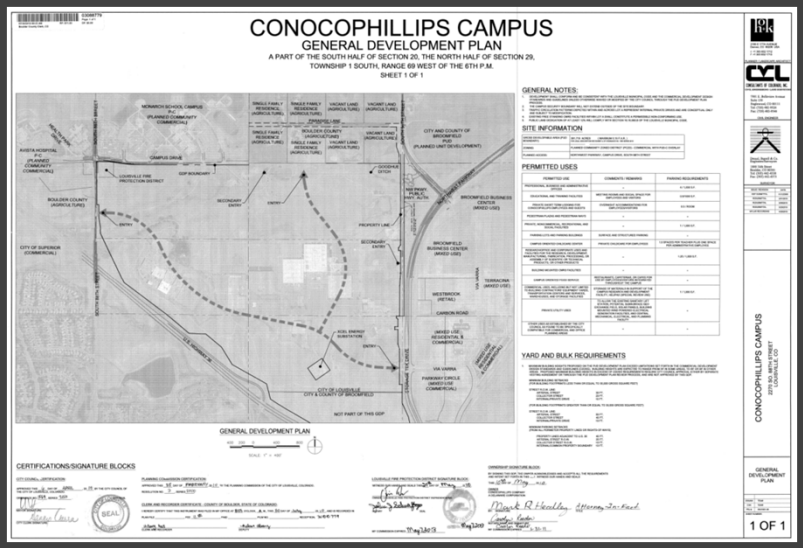
Link to Video Footage of Property

https://www.youtube.com/watch?v=A2fZza0zqa4

Redtail Ridge

Background

- 2010: Approval of ConocoPhillips Campus GDP
  - Zoning Agreement
  - Preliminary PUD and Plat
- GDP and Zoning Agreement Govern
- Preliminary PUD and Plat are Expired



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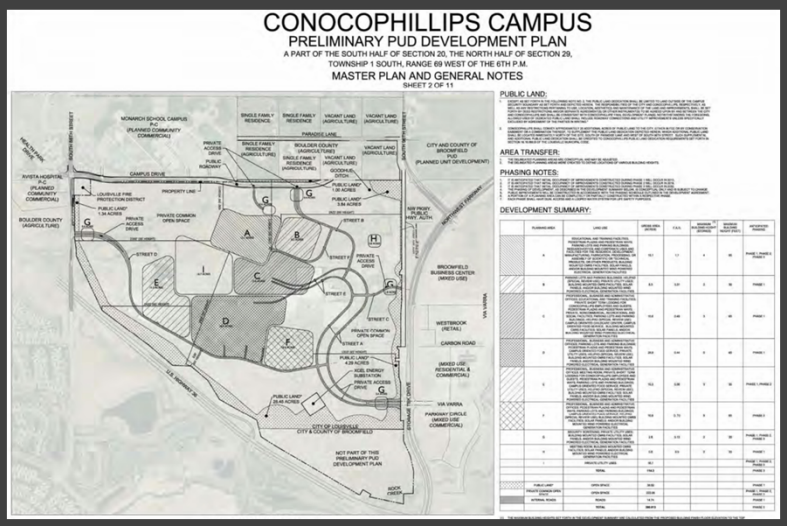
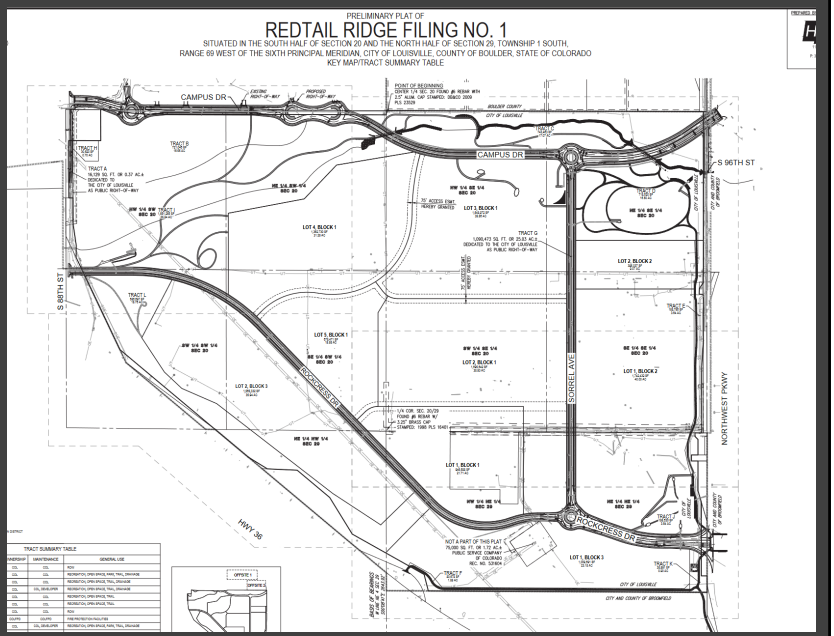


Preliminary Plat Approval

- Approval on February 20, 2024
- Resolution 80, Series 2023
- Five Conditions
  - ✓ NW Parkway Approval
  - ✓ TIS Amendments
  - ✓ BVSD Updated Agreement
  - ✓ Amend Agreement for Grading
  - ✓ Safe Street Crossing of Campus Drive for School Route
- The final plat must substantially conform to the approved preliminary plat



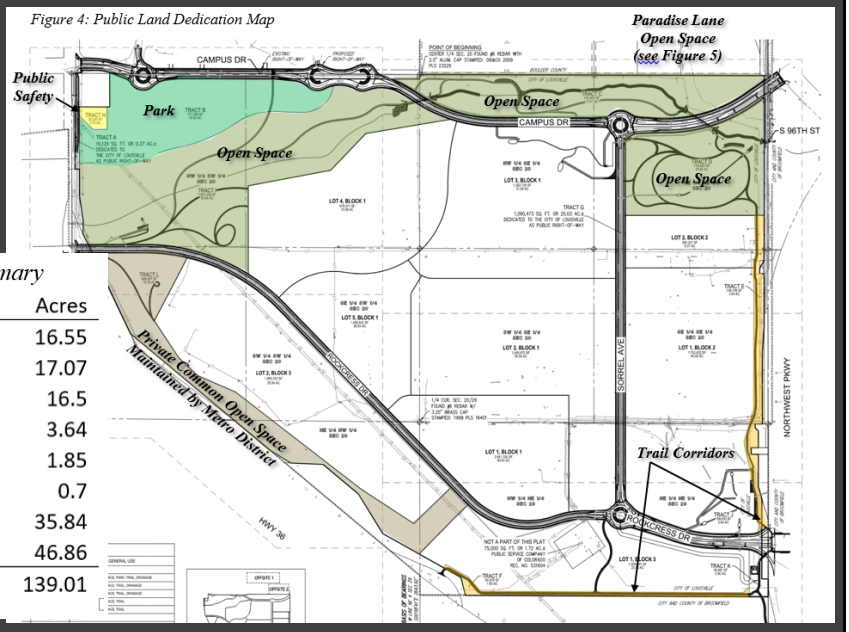
Public Land Dedication

- Code Requires Min. 12%
- 81 Ac of 390 Ac Exempt
- Minimum Required = 37.1 Ac
- Proposing 139 Ac
- OSAB/PPLAB Support

Figure 3: Public Land Dedication Summary

	Purpose	Acres
Tract B	Park	16.55
Tract C	Open Space	17.07
Tract D	Open Space	16.5
Tract E	Trail	3.64
Tract F	Trail	1.85
Tract H	Public Safety	0.7
Tract I	Open Space	35.84
Paradise Ln	Open Space	46.86
Grant Total		139.01

Figure 4: Public Land Dedication Map



Public Land Dedication Considerations

- Covers Relatively Undisturbed Areas of Land
- Follows Natural Drainageway with Habitat
- Continuity with Other Open Spaces
- Regional Trail Connections
- Buffers to Existing Residential Development
- Active Park in Proximity to Residential and School
- Public Safety Facility Expansion

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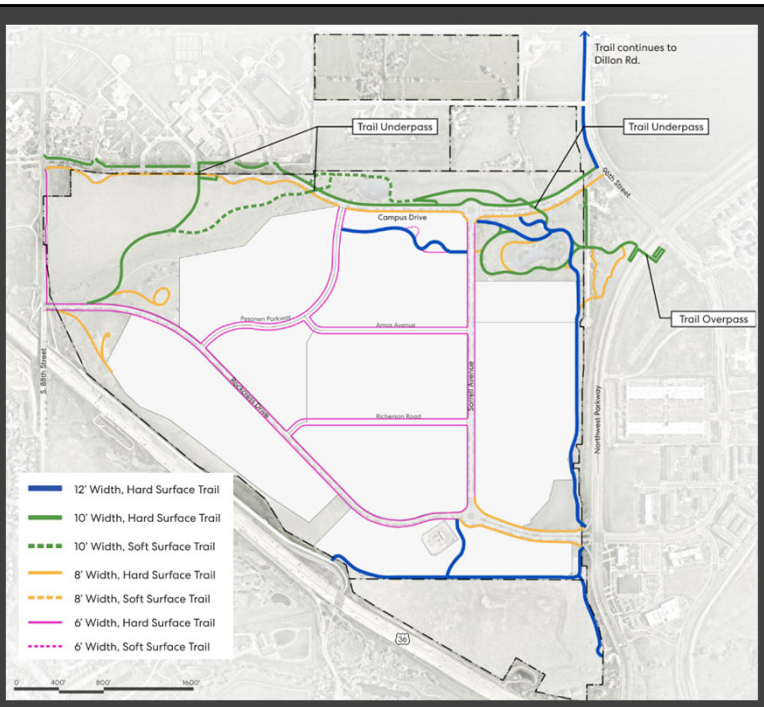
Road & Trail Plan

- Changes After Preliminary Plat
  - ✓ Additional Campus Drive Underpass
  - ✓ Paved Trail Through West Open Space for School Route
  - ✓ NW Parkway Overpass
  - ✓ Additional Details on Private Roads



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Road & Trail Plan

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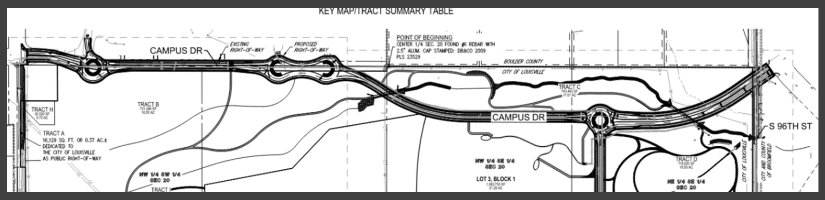
Campus Drive Alignment

- BVSD Support
- Proposed Alignment Runs through Portion of NW Parkway Right of Way



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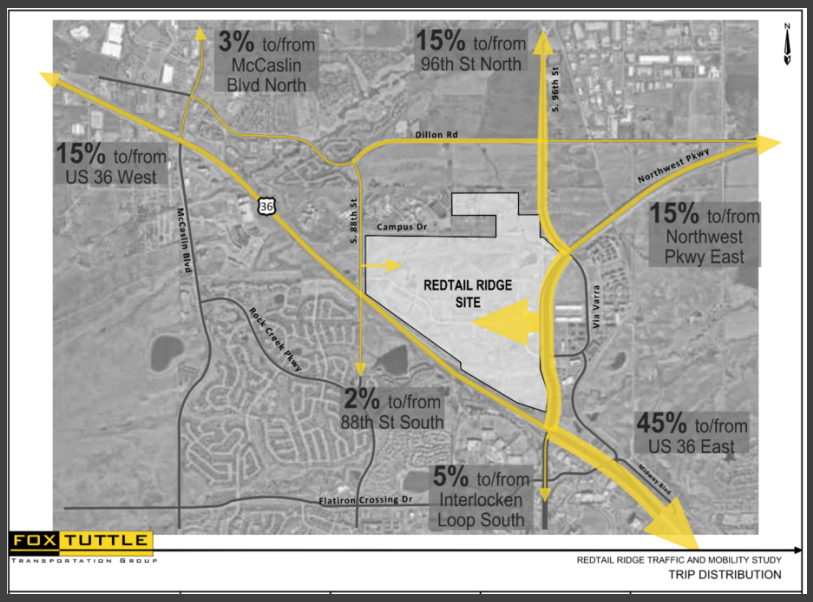
Traffic Analysis

- 75% of Traffic To/From NW Parkway and US 35
- 21,285 Average Daily Vehicle Trips at Full Build Out
- Outlines Road Capacity Improvements to Accommodate Traffic and Maintain Minimum Levels of Service (LOS)
- Specific Improvements Not Identified for NW Parkway/US 36 Interchange – Lack of Clarity on NW Parkway Expansion Plans



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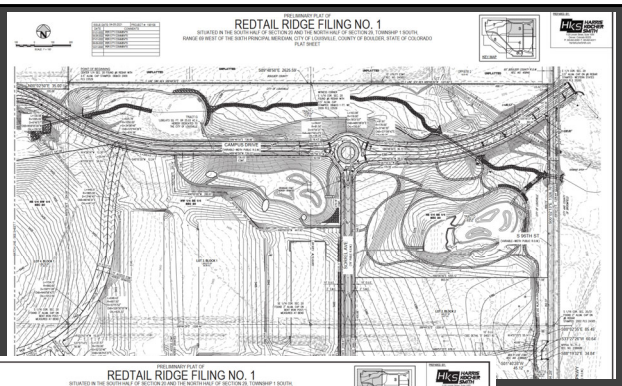
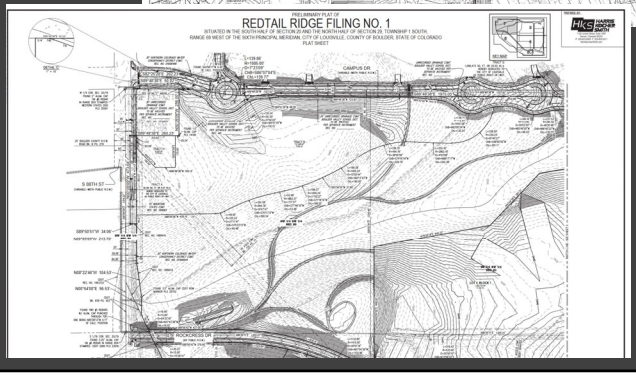
Grading/Drainage and Utilities

- Drainage Report Provided
- Six Regional Detention Ponds
- New Storm Sewer, Waste Water and Potable Water Lines
- New Sewer Lift Station
- Waste Water Treatment Plant will Require Expansion at Future Stages of Development





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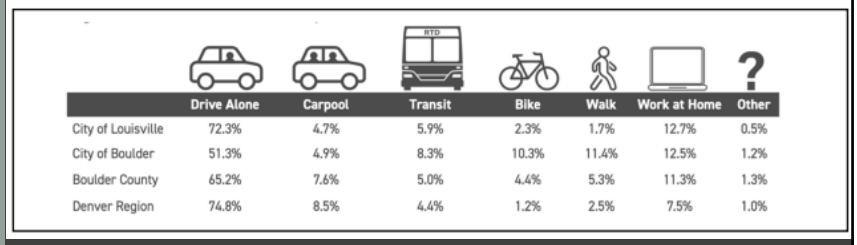
Transportation Demand Management

- Required by 2010 Zoning Agreement



	Drive Alone	Carpool	Transit	Bike	Walk	Work at Home	Other
City of Louisville	72.3%	4.7%	5.9%	2.3%	1.7%	12.7%	0.5%
City of Boulder	51.3%	4.9%	8.3%	10.3%	11.4%	12.5%	1.2%
Boulder County	65.2%	7.6%	5.0%	4.4%	5.3%	11.3%	1.3%
Denver Region	74.8%	8.5%	4.4%	1.2%	2.5%	7.5%	1.0%

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Sustainability Commitments

- SIA Includes Implementation Provisions

Sustainability Commitments

SECTION	#	COMMITMENT	VALIDATION
Community	1	Wayfinding	Fitwel
	2	Crop Share Drop Off	Fitwel
	3	Building Operational Guidelines	Fitwel
	4	Comprehensive Composting	LEED
	5	Emergency Preparedness Plan	Fitwel
	6	Public Art	Fitwel
Energy & Carbon	7	LEED Certification for all buildings	LEED
	8	Idle Reduction	Fitwel
	9	Optimize Energy Performance	LEED
	10	Renewable Energy Production Min. 2.6 MW Solar Garden	LEED
	11	Heat Island Reduction	Fitwel
	12	Advanced Energy Metering	LEED
Site Development & Water	13	Open Space	LEED
	14	Walking Trail	Fitwel
	15	Light Pollution Mitigation	Fitwel
	16	Restorative Garden	Fitwel
	17	Indoor Water Use	LEED
	18	Outdoor Water Use	LEED
Transportation & Mobility	19	Pedestrian Network	Fitwel
	20	Green Vehicles	Fitwel
	21	Safe Street Infrastructure	Fitwel
	22	Transit Access	Fitwel
	23	Bicycle Parking	Fitwel
	24	Universal Accessibility	Fitwel
Health	25	Outdoor Fitness Area	Fitwel
	26	Bike Lanes	Fitwel
	27	Minimum IAQ Performance	LEED
	28	Outdoor Space Amenities	Fitwel
	29	Air Quality Testing	Fitwel
	30	Tobacco and Smoke-Free Outdoor Spaces	Fitwel

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Subdivision Improvement and Development Agreement

Unique Provisions

- Agreement with the subdivider and metro district vs. City standard agreement with subdivider only
- Funds provided by Metro District bonds and drawn down to pay for infrastructure vs. City standard of holding full amount of funds until construction acceptance
- Funds held by escrow agent vs. City standard of holding letter of credit or cash deposit
- Improvement guarantee of 105% vs City standard of 115% of the total infrastructure cost estimate
- A warranty guaranty held by the City of 5% vs. City standard of 15% of the total infrastructure cost estimate
- "Lender Protection Provisions"

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Approval Criteria

LMC Sec. 16.12.075 Approval Criteria

1. Whether the plat conforms to all of the requirements of this title;

2. Whether approval of the plat will be consistent with the city's comprehensive plan, applicable zoning requirements, and other applicable federal, state and city laws;

3. Whether the proposed subdivision will promote the purposes set forth in section 16.04.020 of this Code and comply with the standards set forth in chapter 16.16 of this Code and this title.

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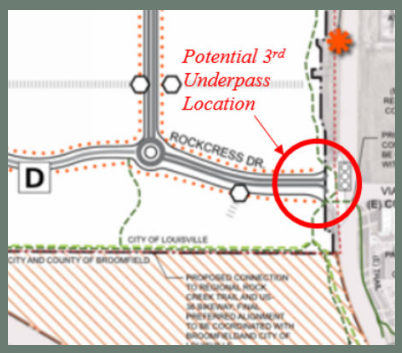
Advisory Board Recommendations



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Parks and Public Landscaping Advisory Board (PPLAB) Review

- Reviewed on May 5, 2022 – Recommend Approval

Open Space Advisory Board (OSAB) Review

- Reviewed on May 11, 2022 and June 8, 2022 – Recommend Approval with Conditions
  - Legal Commitment to Rehabilitate and Dedicate Paradise Lane Properties
  - Follow City Standards for Underpass Design
  - OSAB Participation in PUD Review Process
  - Consider 3rd Underpass at Rockress Drive/NW Parkway

Planning Commission Recommendation

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Planning Commission

- Reviewed on Aug. 11, 2002; Sept. 8 2022; Sept. 22, 2022; Oct. 13, .2022; Nov. 10, 2022; Dec. 8, 2022
- Voted 3-2 to Recommend Denial

Findings:

1. LMC Sec. 16.16.010.D. & E. Preservation of Natural Features
2. LMC Sec. 16.04.020.K. Traffic Congestion
3. LMC Sec. 16.16.040 Block Length
4. LMC Sec. 16.16.020B. Natural Drainage Areas
5. Non-Compliance With ConocoPhillips GDP

Staff Recommendation

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Staff Recommends Approval with Following Conditions:

- Approval of Maintenance Agreement with NW Parkway and Broomfield
- City Engineer Final Approval of Infrastructure Cost Estimates, Sewer Expansion Cost Estimate, and Water Rights Credit Amounts in Agreements
- Additional SIA Section Addressing Surface Repairs in City Exclusive Easements
- Additional SIA Section for Contribution to 96th Street Widening North of Dillon
- Provision of Public Access Easement for Campus Underpass on BVSD Campus
- Completion of Goodhue Ditch Agreements and Easement
- Completing of All Associated Agreements
- Warranty Deeds, Title Policy and Legal Descriptions for Public Dedications