City of Louisville
COLORADO • SINCE 1878

Planning Commission
Staff Report
October 9, 2025

ITEM: PUPL-000346-2021, ZON-000347-2021, and SRU-000520-2024 - Coal Creek Village Mixed-Use Development ***– Tabled from December 12th, 2024***

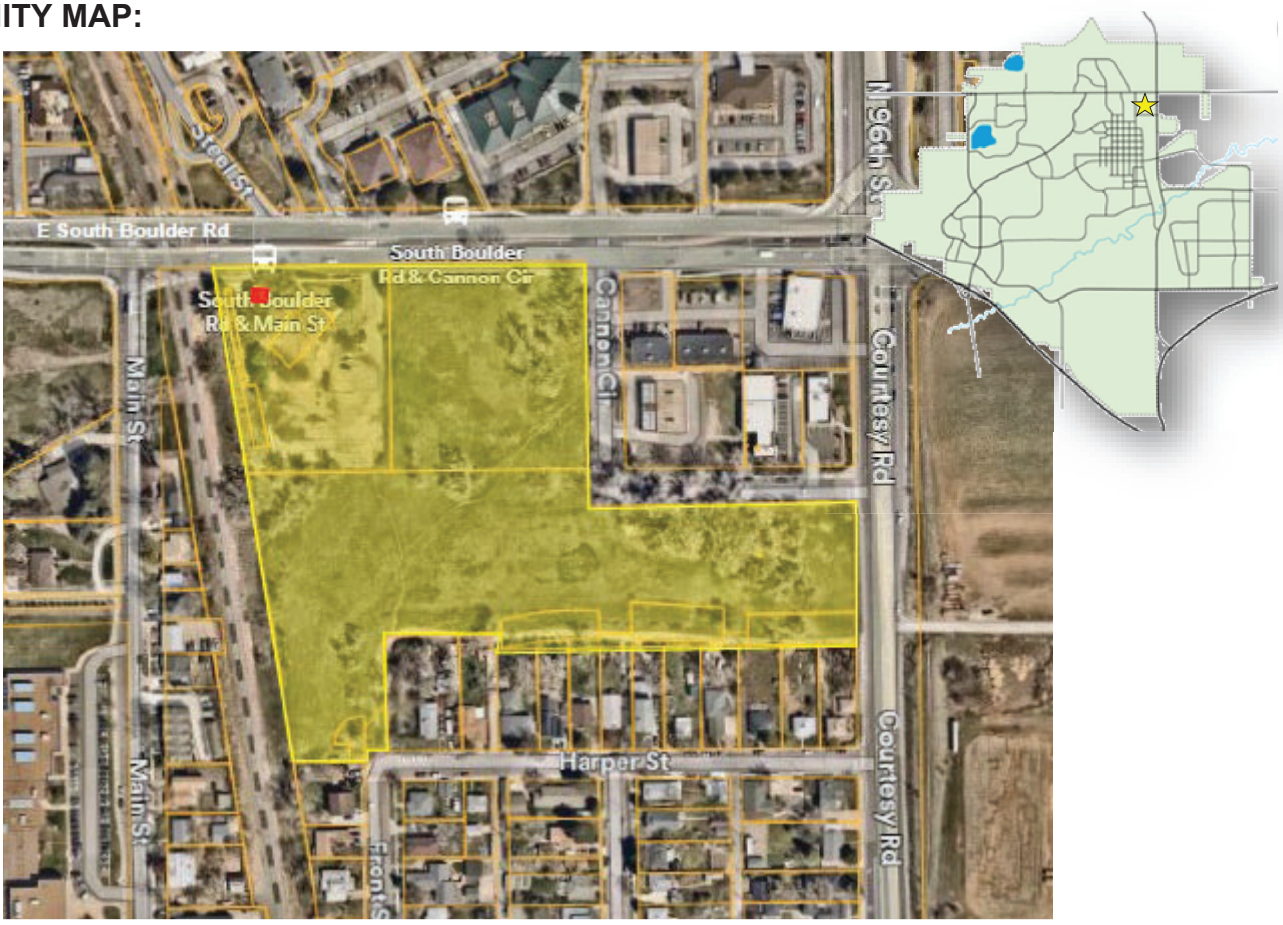
LOCATION: Southwest corner of E South Boulder Rd and Highway 42 - 1032, 1034, and 1040 E South Boulder Rd

PLANNER: Matt Post, AICP, Senior Planner

APPLICANT: Ripley Design, Inc

REQUEST: Approval of Resolution 15, Series 2025 Recommending to the Planning Commission Approval of a Preliminary Planned Unit Development (PUD), Preliminary Plat, an Ordinance Rezoning a Portion of the Property from CC-MU (Commercial Community – Mixed Use) and R-M (Residential Medium Density) to MU-R (Residential Mixed Use), Amending Exhibit A, Land Use Exhibit, Referenced in LMC Chapter 17.14, and a Special Review Use to permit multi-unit dwellings on the ground floor in the MU-R zone district.

VICINITY MAP:



PLANNING COMMISSION TABLING:

This application was tabled indefinitely from a series of Planning Commission hearings held in 2024, during which staff presented findings and analysis, public comment was received, and deliberation by the Planning Commission occurred regarding the proposal. At the October 10, 2024, hearing, the Planning Commission continued the item to December 12, 2024, and directed that an updated Traffic Impact Study (TIS) be prepared to address additional considerations and more fully evaluate the project's potential impacts. Because the revised TIS was not completed in time for the December hearing, the Planning Commission voted to table the item indefinitely pending submission of the updated study.

Following that action, staff met with the applicant to establish the scope for the revised TIS. The study was then prepared by the applicant, submitted, and reviewed in accordance with the agreed scope, incorporating updated traffic counts and expanded analyses requested by the Planning Commission. The revised scope included:

- Analysis of traffic impacts with and without the proposed Front Street connection.
- Incorporation of traffic projections from the Delo Boom development, a mixed-use project proposed and currently under review south of the subject property.
- Inclusion of six additional intersections in the study area - Main Street/South Boulder Road, Main Street/Griffith Street, Front Street/Griffith Street, Cannon Street/Griffith Street, SH 42/Griffith Street, and SH 42/Harper Street.
- Evaluation of the Cannon Circle/South Boulder Road intersection as a potential ¾ movement configuration.
- Updated, objective directional distribution assumptions.
- Application of a 1,000 vehicle-per-day (vpd) threshold for local street capacity (Front Street only) based on neighborhood livability considerations rather than maximum roadway capacity.

The revised TIS (Attachment 6) evaluated existing and projected traffic conditions for 2026 and 2045, with and without the proposed connection of Front Street between South Boulder Road and Griffith Street. The new study assumed the same development intensity as the last study. New traffic counts were collected during weekday morning and evening peak hours in November 2024 and during the Saturday mid-day peak in November 2022 under normal conditions, updating and replacing the previous 2020 and 2022 volumes.

The development is projected to generate approximately 1,839 daily vehicle trips through four (4) access points around the site, with 220 AM peak hour (7:00AM – 9:00AM) trips and 244 PM peak hour (4:00pm – 6:00PM) trips.

The revised TIS evaluated the Front Street connection using a 1,000 vpd threshold, which is generally recognized by most jurisdictions as the most conservative standard for local residential street classification. The City's 2013 Comprehensive Plan identifies local residential streets carrying more than 1,000 vpd as candidates for traffic-calming measures (p. 41), but not for reclassification. The TIS projects traffic volumes on Front Street below the 1,000 vpd threshold (p.66). However, in response to community concerns regarding the connection, the applicant has agreed to proactively install traffic-calming measures along Front Street and at the Front Street/Harper Street intersection (Attachment 7).

The results of the revised TIS indicate that the **Front Street connection is necessary for maintaining circulation and safe vehicular operations**. The site fronts South Boulder Road, where turning movements are restricted due to heavy through volumes. Without the connection, eastbound U-turn volumes on South Boulder Road are projected to increase by 40–85% in the long term, requiring weaving movements across multiple lanes within a limited distance of the signalized intersection, which present unacceptable safety risks. The revised TIS and City staff both recommend construction of the Front Street connection, which would provide transportation redundancy, support a safer gridded street system consistent with prior planning efforts, implement adopted plan policies, and distribute traffic more evenly across the network.

APPLICATION SUMMARY:
The applicant, Ripley Design Inc., requests approval of a Preliminary Planned Unit Development (PUD), a Preliminary Plat, a Rezoning of a portion of the property from the CC-MU (Commercial Community – Mixed Use) and R-M (Residential Medium Density) zoning districts to the MU-R (Residential Mixed Use) zoning district, a Land Use Exhibit Amendment, and a Special Review Use to allow ground floor multi-unit dwellings in the MU-R zoning district.

A portion of the property is currently zoned CC-MU, which limits development to commercial, office, and institutional land uses. The requested MU-R zoning district allows for a range of residential uses in addition to commercial, office, and institutional uses, including townhouses and apartments, up to a maximum gross density of 20 dwellings per acre. To ensure a balance of uses, properties that are greater than 5 acres in size in the MU-R zoning district must include a minimum of two distinct principal uses on site.

The requested rezoning will require the applicant to amend Land Use Plan, Exhibit A referenced in Louisville Municipal Code (LMC) Chapter 17.14 – Mixed Use Zone Districts. The existing Land Use Plan Exhibit designates the property as CC-Mixed Use, R-M, and Park. To match the requested zoning change, the exhibit needs to be updated to classify the entire property as MU-R (Attachment 4).

BACKGROUND:

The property is located in the Highway 42 Revitalization Area. In 2003, the City adopted the Highway 42 Revitalization Area Framework Plan and the Highway 42 Revitalization Area Comprehensive Plan Amendment. In order to implement these adopted plans the City created a Mixed Use Overlay District (Zoning Chapter 17.14) and the Mixed Use Development Design Standards and Guidelines (MUDDSG), which govern development of properties within the Mixed Use district.

The subject property is also located in the Highway 42 Urban Renewal Area. The City and the City's Urban Renewal Authority have adopted an Urban Renewal Plan that is intended to: *reduce, eliminate and prevent the spread of blight… to stimulate growth and reinvestment…* and *promote local objectives with respect to appropriate land uses* in the Urban Renewal Area (Sec. 1.3).

Pursuant to LMC Sec. 17.14.020, any property within the Highway 42 Revitalization Area undergoing new development or redevelopment shall be rezoned to a zoning district consistent with the Land Use Plan, Exhibit A (Attachment 4). In 2013, the City Council approved the rezoning of the subject properties from Commercial Business (CB) to Mixed-Use Residential (MU-R), Commercial Community (CC), and Residential Medium Density (RM) under Ordinance No. 1641-2013 (Attachment 8). This rezoning was approved concurrent with a Preliminary PUD and Plat.

In 2016, the City Council approved a Final PUD and Plat, known as Coal Creek Station, allowing 51 residential units and 29,472 square feet of commercial space on the subject property. The applicant never executed the Final PUD and Plat, and eligibility for permit issuance lapsed on May 17, 2019.

The Planning Commission considered this application on September 12, 2024 and October 10, 2024. The hearing was continued indefinitely to consider a revised TIS.

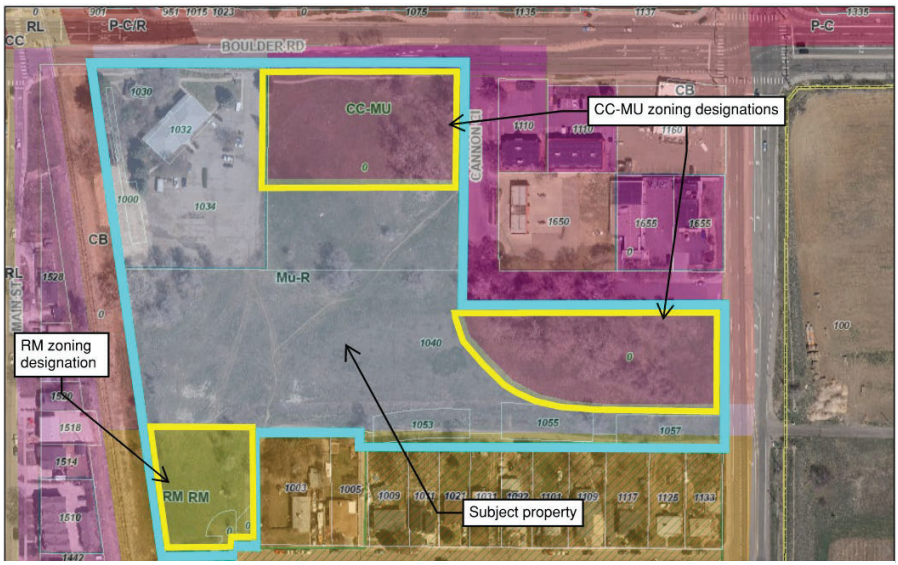
PROPOSAL:

Rezoning

The current zoning designation of CC-MU on the north and east sides of the site prohibits residential uses. The applicant is requesting to rezone the portions of the property zoned CC-MU and RM to MU-R to allow for a mix of uses and housing types. This is a discretionary request from the applicant as the mandatory rezone requirement for redevelopment of the subject property was satisfied with the approved 2013 rezoning.

In the narrative provided, the applicant asserts that the proposed rezoning will support the City's goals as outlined in the Highway 42 Revitalization Area Framework Plan, the Coty of Louisville Housing Plan, and the MUDDSG by developing a variety of housing types while providing additional commercial space along South Boulder Road. The applicant notes that the area has changed since the initial rezoning, and that the current CC-MU zoning is commercially focused and does not support needed housing in the community.

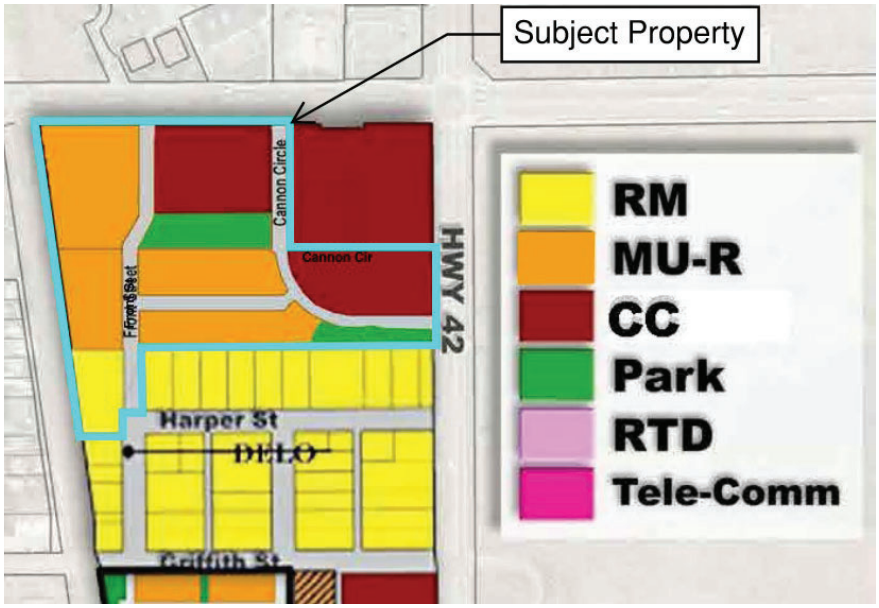
The applicant provided an updated market analysis by CBRE (Attachment 5), indicating that both retail and office sectors in Metro Denver remain challenged, with limited support for speculative new development. Retail conditions are stable but stagnant with modest new completions, and demand focused on smaller pad users such as gas/convenience, quick-service restaurants, and financial services, while larger-format tenants remain scarce. The office market faces even greater headwinds, with vacancy at 27.4%, and new construction at historic lows as conversions and demolitions outpace new projects. These trends suggest that large-scale retail and office development are not viable under current conditions, and that smaller-scale retail paired with residential and mixed-use development represents the most feasible path forward.



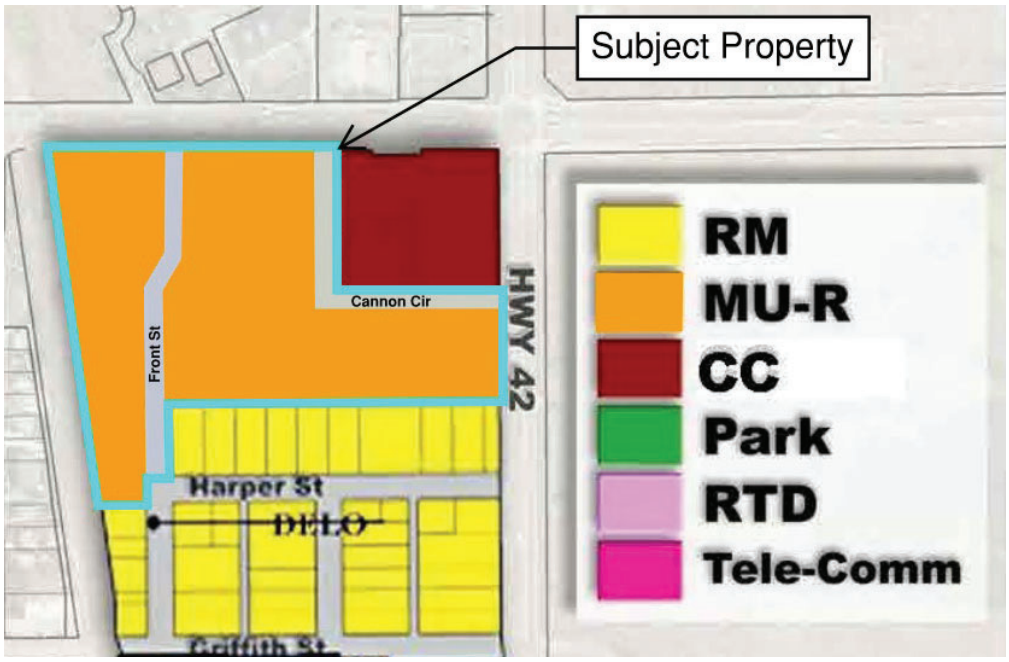
Zoning map

Land Use Plan Amendment

The rezoning request necessitates an update to the Land Use Plan, Exhibit A, to reflect the new zoning district designations and the proposed street connections. Presently, the existing zoning designations are consistent with those outlined in the current Land Use Plan.



Current Land Use Plan, Exhibit A



Proposed Land Use Plan, Exhibit A

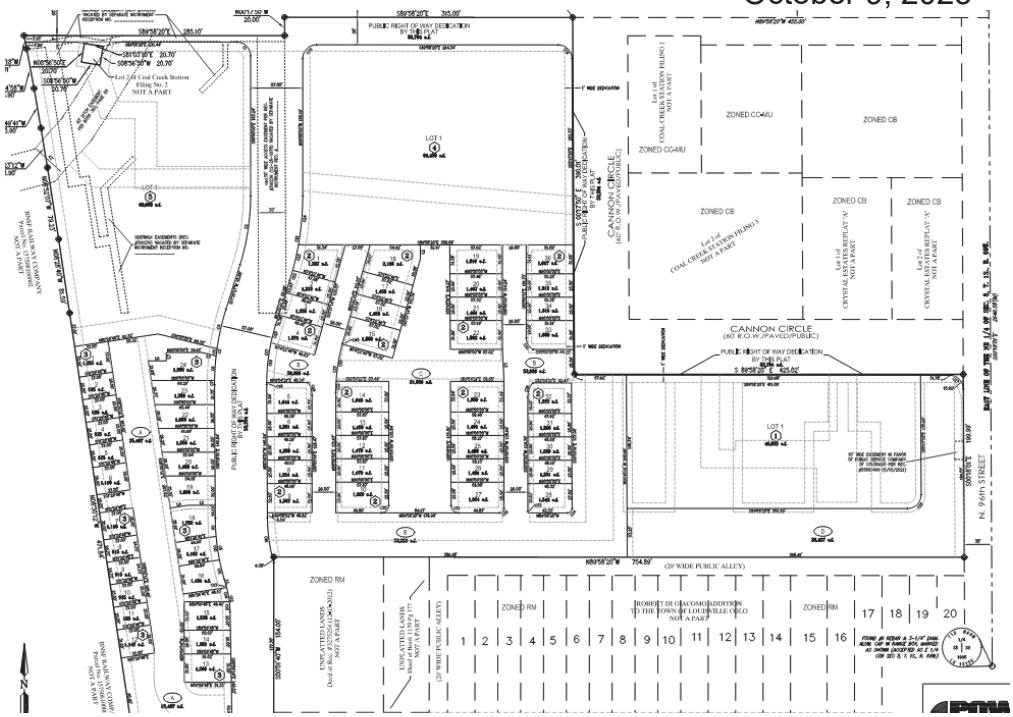
Preliminary Plat

The request includes a proposal to subdivide the existing 10.7 acres property into five blocks that will accommodate the anticipated development. Further subdivision of the townhome blocks (blocks 2 & 3) into individual lots will allow for the fee-simple sale of those units. The plat sets aside 4 Outlots totaling 2.9 acres in size that include private roads, drainage and detention areas, utilities, open space and parks. The Outlots will be shared areas that are maintained by a required owner's association. The City will accept 1.2 acres of right-of-way, dedicated via this plat, that will allow for the construction of Front Street and Cannon Circle. The total right-of-way dedication includes additional area along South Boulder Road that will align the property boundary with the edge of public improvements. A Subdivision Improvement Agreement will be entered into during the Final Plat review process outlining maintenance and improvement responsibilities.

A portion of the plat will include the Coal Creek Station Filing No. 2 subdivision; a previously subdivided portion on the property on the northwest corner of the site. That plat created Lot 2 (also depicted on this Preliminary Plat) which is currently developed and occupied by The Argentos Empanada and maintained under separate ownership. The proposed subdivision will maintain the current boundary and configuration of Lot 2.

A portion of the south side of the site, occupied by Outlot D, will include 26,397 square-foot detention and water quality pond. Outlot C is proposed as a 20,908 square-foot park in the center of the site that will be privately owned and maintained by the required owner's association.

Sixty townhome lots are proposed in Blocks 2 and 3 of the plat, all accessed by private drives which are contained in Outlots A and B, respectively. Blocks 4 and 5 include two multifamily and two mixed-use buildings, while Block contains “micro townhome units”.



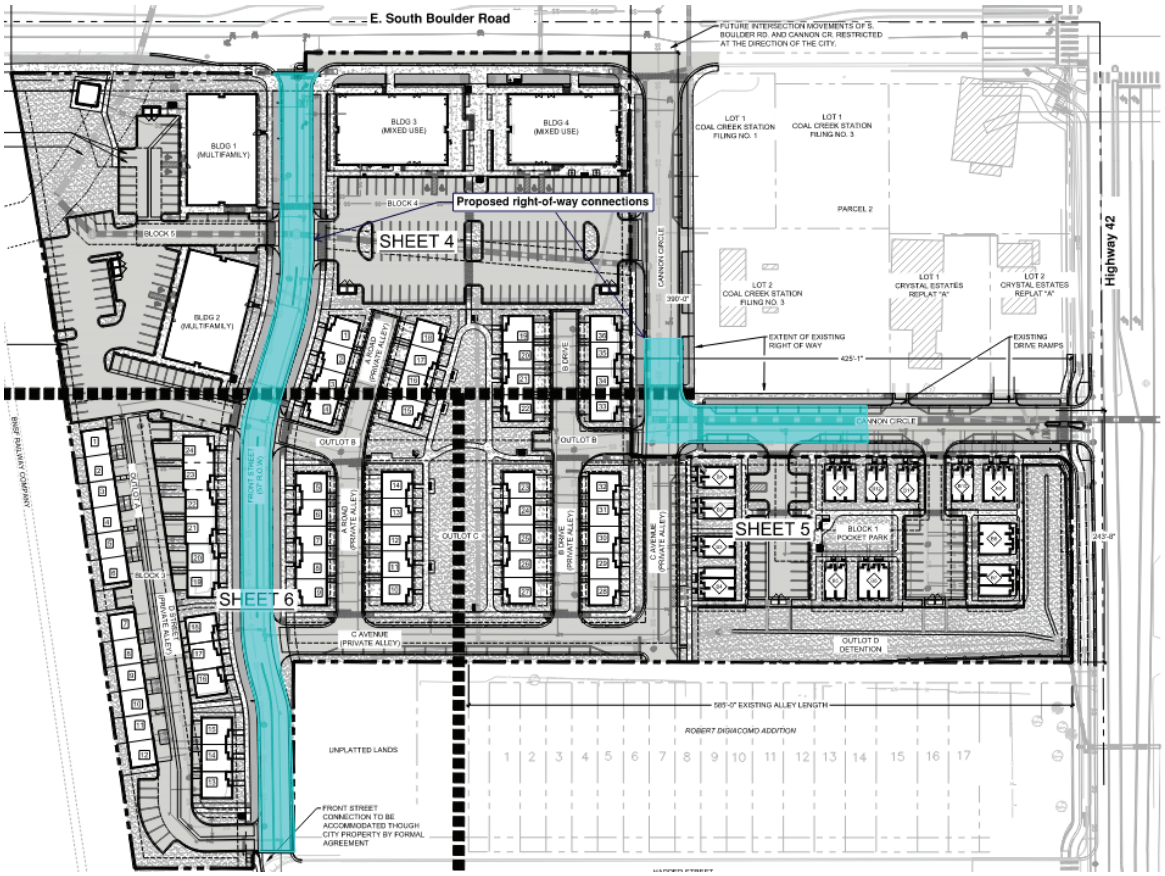
Preliminary Plat

Staff find that the Preliminary Plat complies with the design standards in the LMC Sec. 16.16.

Preliminary PUD

The Preliminary PUD plan includes 188 dwelling units and 13,534 square feet of commercial space. The 188 dwelling units include 60 townhomes, 96 apartments, and 32 "micro-townhome units," which are defined by the applicant as 350-400 square-foot homes designed to be offered at "attainable" rates. The proposal features two, three-story mixed-use buildings near South Boulder Road (buildings 3 & 4), with commercial space on the ground floor and studios, one- and two-bedroom apartments on the second and third floors. A plaza space is provided between the mixed-use buildings in accordance with MUDDSG standards. An additional two, three-story multifamily buildings (buildings 1 & 2) are planned for the interior of the site along Front Street, each offering 24 units ranging from 500 to 900 square feet in size.

The development will require the dedication, construction, and connection of Front Street from its north terminus on the south side of the site to E. South Boulder Road, where right-in right-out access is proposed. Cannon Circle, on the northeast side of the site, will also be dedicated, constructed, and connected providing access to the site from Highway 42 and South Boulder Road. According to the future Land Use Plan, Exhibit A, both Front Street and Cannon Circle are planned to connect through the site to improve overall connectivity in this part of the city.



Site Plan with Right-of-way Connections Shown in Blue

The full extent of both Front Street and Cannon Circle will include 5-foot detached sidewalks with 8-foot tree lawns, while similarly designed detached walks are provided adjacent to private alleys throughout the site.

The site is appropriately parked, with all proposed townhomes designed with alley-loaded garages which account for 120 total spaces on site. 316 parking spaces are provided with a minimum of 304 required by the LMC to support all uses on site. The apartments, mixed-use buildings, and micro townhomes include surface parking internal to their respective blocks and located behind buildings so as not to be prominent from the street.

A 20,908 square-foot park is located on Outlot C which is designed to accommodate the main entrance of 18 townhomes on site, while a smaller, 2,350 square-foot pocket park is provided within the micro townhome block. It is important to note that the entirety of this property was originally platted as part of the Caledonia Place subdivision in 1890, and therefore the public land dedication requirement of LMC Sec. 16.16.060 does not apply.

Landscaping includes low-water shrubs, grasses, perennials, and trees in common areas, open space areas, the detention area, and within the public and private tree lawns through the site. The applicant has proposed some high-demand water areas on site that utilize turf as a landscape material. Recently adopted Colorado SB24-005 states that, on or after January 1, 2026, local governments are prohibited from allowing the installation of “nonfunctional turf” with certain development proposals. Due to the timescale of this project, staff will work with applicant through the Final PUD and Plat process to ensure compliance with this measure.

Block 1 of the development includes 32 micro townhome units, proposed to be 350-400 square feet in size and designed at an “attainable” scale, consisting of three-unit and two-unit townhomes to a maximum height of 25 feet.



Micro townhomes

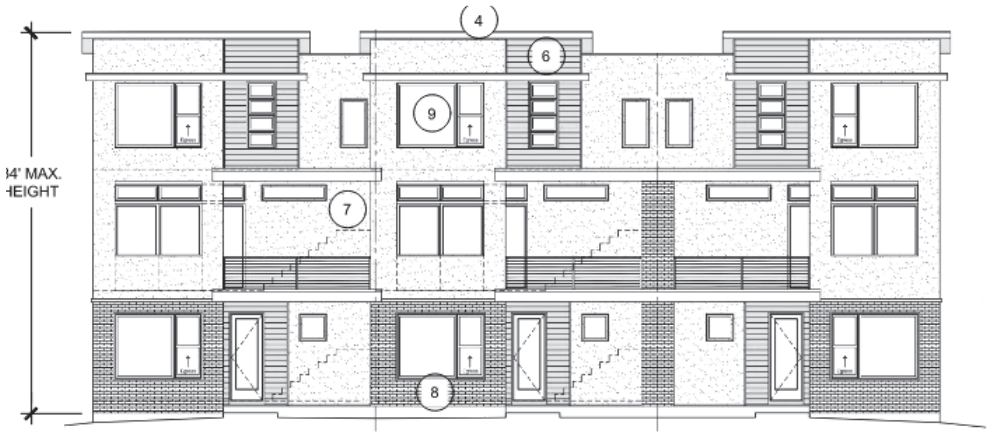
Block 2 of the development includes four- and five-unit townhomes, each 40 feet tall, arranged around a proposed central park. All units include alley-loaded garages.





Block 2 - four-unit townhomes

Block 3 of the development includes three- and six-unit townhomes. The six-unit dwellings are proposed at 40 feet tall, while the three-unit dwellings are adjacent to the west side of the existing single-family homes in the Little Italy neighborhood and are limited to 34 feet in height in accordance with height transition standard in MUDDSG Chapter 8.



Block 3 - height restricted, three-unit dwellings



Block 3 - six-unit dwellings

Blocks 4 and 5 of the development include the mixed-use and multifamily buildings with associated site improvements, including surface parking and a plaza space between buildings.



Mixed-use building



Multifamily building

The updated Traffic Impact Study (TIS) was submitted as part of this application, with the agreed upon scope presented at the beginning of this report, and was reviewed by staff to inform the analysis and recommendation. The revised study incorporates updated traffic counts, expanded intersection analysis, and evaluation of long-term conditions with and without the proposed Front Street connection. The findings conclude that, with the inclusion of the Front Street connection, the proposed development can be successfully integrated into the existing roadway network in a manner that maintains safe and efficient operations.

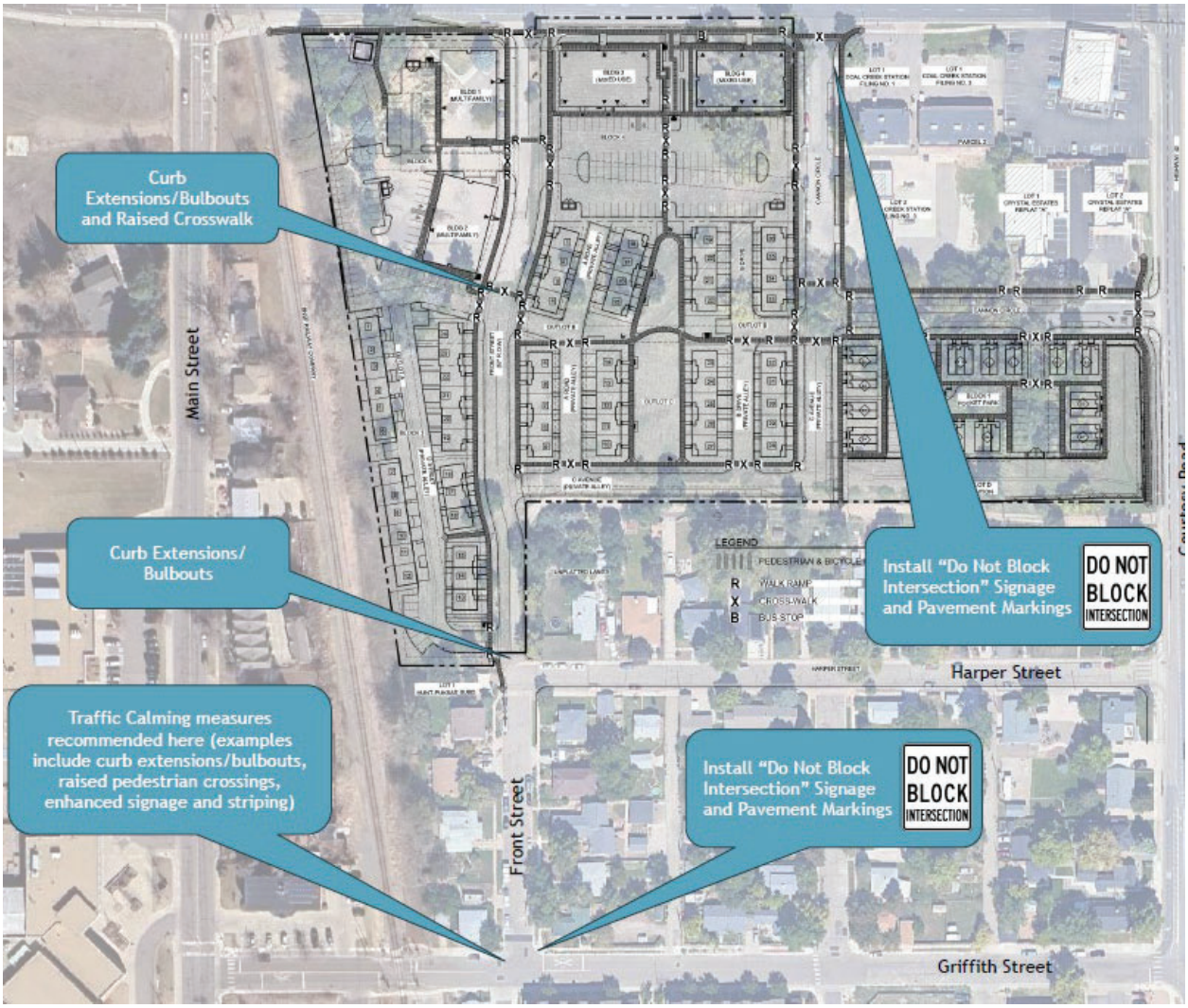
In addition to the Front Street connection, the updated TIS analyzed additional intersections in the vicinity of the development site to evaluate projected Levels of Service (LOS), a standard measure of intersection delay. LOS “A” represents little or no delay (0–10 seconds per vehicle), while LOS “E” and “F” indicate failing intersections, typically exceeding 55 seconds of delay per signal cycle during peak hours. The analysis shows that, when comparing background conditions with total projected traffic, most intersections are expected to continue operating at an acceptable LOS of “D” or better, with some intersections projected to improve, while others worsen. Several intersections currently operate at LOS “E” or “F” during certain peak periods, and the majority of those locations are projected to remain at lower LOS levels in future conditions. Background (existing) LOS counts are provided on p. 29 of the updated TIS, while projected LOS counts with the Front Street connection are presented on p. 61 of the revised TIS and here for reference.

#	Intersection	Traffic Control	Approach	Year 2026 Total with Front Street Level of Service (Delay in Seconds)			Year 2045 Total with Front Street Level of Service (Delay in Seconds)		
				AM	PM	SAT	AM	PM	SAT
1	South Boulder Road & Main Street	Signal	EBT	A (8.2)	A (10.0)	A (7.0)	A (9.4)	B (13.1)	A (7.7)
			EBR	A (1.4)	A (2.5)	A (1.5)	A (2.2)	A (3.3)	A (1.5)
			WBL	A (5.2)	A (9.3)	A (3.4)	A (4.9)	B (12.8)	A (3.5)
			WBT	A (5.8)	A (6.2)	A (3.3)	A (7.0)	A (7.6)	A (3.4)
			NBL	E (58.4)	E (61.8)	D (48.4)	E (56.2)	E (59.2)	D (47.7)
			NBR	B (13.7)	C (32.8)	B (13.9)	B (13.8)	D (49.3)	B (14.3)
2	South Boulder Road & Front Street	3/4, NB/SB Stop	WBL	B (11.6)	C (18.5)	B (12.1)	B (13.3)	D (26.8)	B (14.2)
			NB	B (12.4)	C (16.9)	B (12.7)	B (14.1)	C (22.1)	B (14.5)
			SB	C (15.5)	B (13.6)	B (12.2)	C (19.4)	C (16.0)	B (13.9)
3	South Boulder Road & Cannon Circle	3/4 NB/SB Stop	EBL	C (17.1)	C (18.0)	B (13.0)	D (26.0)	D (29.8)	C (16.7)
			WBL	B (10.7)	C (16.8)	B (10.9)	B (12.3)	D (25.4)	B (12.6)
			NB	B (12.6)	C (19.2)	B (12.9)	B (14.5)	D (26.6)	B (15.0)
			SB	C (16.1)	C (15.3)	B (13.2)	C (20.8)	C (19.4)	C (15.4)
4	SH 42 (Courtesy Road) & South Boulder Road	Signal	EBL	F (545.3)*	F (953.6)*	F (596.3)*	F (953.0)*	F (1559.4)*	F (964.2)*
			EBT	C (30.5)	D (45.8)*	C (25.7)	C (29.3)	D (41.9)*	C (26.1)
			EBR	-	-	-	A (9.8)	A (6.7)	A (1.2)
			WBL	E (61.5)	F (109.4)*	E (75.6)*	E (65.1)*	F (167.8)*	F (99.5)*
			WBT	D (42.8)	D (48.1)	C (33.8)	D (49.0)*	E (58.5)*	D (35.1)
			WBR	A (4.9)	A (7.8)	A (1.8)	A (8.5)	B (14.5)	A (3.7)
			NBL	E (63.3)	F (191.3)*	F (187.7)*	F (568.5)*	F (379.1)*	F (341.8)*
			NBT	C (32.6)	E (76.8)*	C (26.6)	D (36.8)	D (48.2)*	C (24.9)
			NBR	-	-	-	B (10.1)	B (13.2)	A (7.4)
			SBL	F (193.3)*	F (240.4)*	F (94.1)*	F (321.4)*	F (372.3)*	F (152.0)*
			SBT	D (37.0)	D (38.6)	C (29.2)	D (39.2)	D (40.2)	C (29.1)
			SBR	C (22.3)	A (8.2)	A (6.0)	D (40.4)*	B (16.4)	B (11.1)
5	SH 42 (Courtesy Rd) & Cannon Circle	EB Stop	EB	B (12.6)	B (13.1)	B (11.2)	B (14.6)	C (15.3)	B (12.3)
			NBL	B (11.6)	B (11.1)	B (10.1)	-	-	-
6	SH 42 (Courtesy Road) & Griffith Street	EB/WB Stop	EB	F (81.6)	F (96.8)	E (35.4)	-	-	-
			WB	F (77.4)	F (137.2)	D (27.7)	-	-	-
			NB	A (0.5)	A (0.3)	A (0.3)	-	-	-
			SB	A (0.0)	A (0.0)	A (0.1)	-	-	-
6	SH 42 (Courtesy Road) & Griffith Street	Signal	EBL	-	-	-	C (27.1)	C (25.6)	C (20.4)
			EBT	-	-	-	A (1.0)	A (1.0)	A (9.1)
			WBL	-	-	-	C (24.0)	C (24.0)	B (18.5)
			WBT	-	-	-	C (21.0)	C (21.0)	B (13.3)
			NBL	-	-	-	C (26.8)	C (25.6)	B (17.8)
			NBT	-	-	-	A (4.4)	A (5.7)	A (4.8)
			SBL	-	-	-	C (28.8)	C (33.0)	B (17.6)
			SBT	-	-	-	A (5.1)	A (6.8)	A (4.7)
			SBR	-	-	-	A (0.6)	A (2.0)	A (0.7)
7	Griffith Street & Cannon Street	NB/SB Stop	EB	A (0.0)	A (0.2)	A (0.0)	A (0.0)	A (7.5)	A (0.0)
			WB	A (1.0)	A (0.0)	A (1.4)	A (1.0)	A (0.0)	A (1.4)
			NB	B (10.1)	B (10.6)	A (9.6)	A (9.7)	B (10.2)	A (9.3)
			SB	A (8.9)	B (11.0)	A (9.2)	A (8.9)	B (11.1)	A (9.3)
8	Griffith Street & Front Street	NB/SB Stop	EB	A (0.5)	A (1.3)	A (1.2)	A (0.6)	A (1.3)	A (1.3)
			WB	A (0.2)	A (0.2)	A (0.1)	A (0.2)	A (0.2)	A (0.1)
			NB	B (10.3)	B (10.4)	B (10.1)	B (10.2)	B (10.3)	A (10.0)
			SB	A (9.9)	B (10.4)	A (9.4)	A (9.9)	B (10.5)	A (9.5)
9	Griffith Street & Main Street	WB Stop	WB	C (15.2)	B (13.7)	B (11.6)	B (14.8)	B (13.6)	B (11.5)
			SB	A (1.2)	A (0.0)	A (0.9)	A (1.2)	A (0.0)	A (0.7)
10	Harper Street & Front Street	WB Stop	WB	A (9.6)	A (9.7)	A (9.5)	A (9.7)	A (9.7)	A (9.6)
			SB	A (0.0)	A (0.0)	A (0.0)	A (0.0)	A (0.0)	A (0.0)
11	SH 42 (Courtesy Rd) & Harper Street	EB Stop	EB	D (33.7)	F (118.0)	E (40.9)	B (14.5)	C (17.7)	B (12.7)
			NBL	B (10.4)	B (10.7)	A (9.3)	-	-	-

Total Traffic LOS with Front Street Connection

In response to concerns raised by neighboring community members most directly impacted by the development, the applicant has elected to proactively implement the traffic-calming measures recommended in the TIS. These measures include bulb-outs, curb extensions, and a raised crosswalk along the new portion of Front Street, as well as crosswalk and pavement marking improvements at the Griffith Street/Front Street intersection. In addition, a unique traffic-calming treatment is proposed at the Front

Street/Harper Street intersection, consisting of a mountable, roll-over curb intended to discourage cut-through traffic from South Boulder Road to Griffith Street.



Traffic Calming Exhibit

ANALYSIS:

Rezoning Analysis

The purpose of the Mixed Use Zone District is to implement the Highway 42 Revitalization Area to support potential development of a commuter rail station. The intent is to transition the historically industrial and vacant properties within the district to mixed-use developments with multi-modal transportation and walkability oriented to the rail station. While the commuter rail station has not yet materialized as planned, there is a current RTD study underway looking at "Peak Service" rail (limited rail service to support peak hour commuting on a single track) and the new Front Range Passenger Rail commission is also considering the Northwest Rail corridor as a possible alignment for rail service. No timeline has been established for completion of the project or finalization of the study.

Per LMC Sec. 17.14.030, the MU-R zoning district is *intended to implement the residential mixed use land use and planning goals depicted and discussed in the Highway 42 Revitalization Area Plan. Areas zoned MU-R should be used predominantly for higher density multi-family residential, with subsidiary commercial uses and civic uses that cater to the needs of residents and transit commuters.*

LMC Sec. 17.44.050 establishes four potential policies for rezoning. Any request for a rezoning should meet one or more of the established policies. Staff recommend a finding that the following policy is met with the requested rezoning:

- *The area for which rezoning is requested has changed or is changing to such a degree that it is in the public interest to encourage a redevelopment of the area;*

Staff find that changed conditions include the lack of market feasibility for purely commercial uses on the current CC-MU parcels. This is due to ongoing weak market conditions that do not support additional large-scale retail or office development. According to the provided market analysis (Attachment 5), retail demand remains limited. Modest new completions and tenant interest are concentrated in smaller pad users such as gas/convenience, quick-service restaurants, and financial services, while larger-format users are scarce. Office conditions remain even more constrained, with vacancy at 27.4%, and construction activity at historic lows as conversions and demolitions outpace new development. These findings confirm that speculative, large-scale commercial development is less feasible under current conditions, and that more viable opportunities are likely to center on smaller-scale retail paired with residential and mixed-use development.

The public interest for rezoning this property is to stimulate development of the vacant areas around Highway 42 and South Boulder Road to achieve the desired mixed-use environment, boost economic activity, and provide additional housing in the City of Louisville. Rezoning the CC-MU portions of this property will allow for development that will support surrounding commercial uses by activating this site and adding residences to the neighborhood, addressing the goals of the Highway 42 Revitalization Area Framework Plan.

Additional residential development on site will support the implementation of the recently adopted Louisville Housing Plan, the primary goals of which include increasing development opportunities in Louisville by expanding, maintaining, and diversifying Louisville's housing stock.

Staff also note that the Highway 42 Revitalization Area Comprehensive Plan Amendment envisioned mixed-use residential development adjoining Highway 42 in addition to commercial development, and specifically shows mixed-use residential development in the vicinity of the subject property.

Preliminary Plat Analysis
Section 16.12.075 of the LMC establishes the following criteria for consideration of Preliminary Plats by Planning Commission and City Council:

1. *Whether the plat conforms to all of the requirements of Title 16 (Subdivisions);*
    - No modifications have been requested by the applicant, and the plat conforms to all other requirements of Title 16. Further and more detailed review will occur at the Final Plat stage.

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 application is consistent with the City of Louisville Comprehensive Plan. The area lies within an urban neighborhood designation in the plan, which is characterized by smaller blocks and lots with a street orientation. The plat provides a design that supports this urban development pattern.

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.*
    - Staff find that the proposal promotes the purposes set forth in the LMC Title 16, including the assurance that public services are available, that character and economic stability of the city is protected, that there is safe and efficient circulation of traffic, and that the plat provides appropriate regulation of the use of land in the city. New public right-of-way is proposed to be dedicated and constructed, while easements will be established for utility service and drainage areas. The plat allows for a residential and mixed-use development and meets permitted densities for the net site area.

The entirety of this property was originally platted as part of the Caledonia Place subdivision in 1890 and the Coal Creek Station Filing No. 2 subdivision in 1978. Because the property has been previously subdivided, the public land dedication requirement of LMC Section 16.16.060 does not apply.

Staff find the Preliminary Plat to be consistent with the criteria in LMC Chapters 16 and 17 and recommend approval.

Preliminary PUD Analysis
The site design is regulated by LMC Chapter 17.14 and 17.28, the Mixed Use Design Standards and Guidelines (MUDDSG), and Comprehensive and adopted City Plans.

MUDDSG
The MUDDSG apply to the design and development of this site, establishing requirements for street and block design, vehicle and pedestrian circulation, site planning, parking, open space, landscaping, and building design. The MUDDSG are

intended to ensure that new development within the MU-R district contributes to a connected, multimodal, and high-quality built environment.

With consideration given to the waiver requests described below, staff find that the proposal satisfies the applicable standards of the MUDDSG. The project provides appropriate site planning and building orientation, incorporates adequate off-street parking consistent with the standards, and demonstrates compliance with building massing, design, and material requirements. Open space and landscaping features are provided in accordance with Section 6 of the MUDDSG, and the proposal includes pedestrian and bicycle circulation improvements that align with the connectivity standards. Collectively, the application demonstrates conformance with the MUDDSG requirements and achieves the overall intent of creating a cohesive mixed use development.

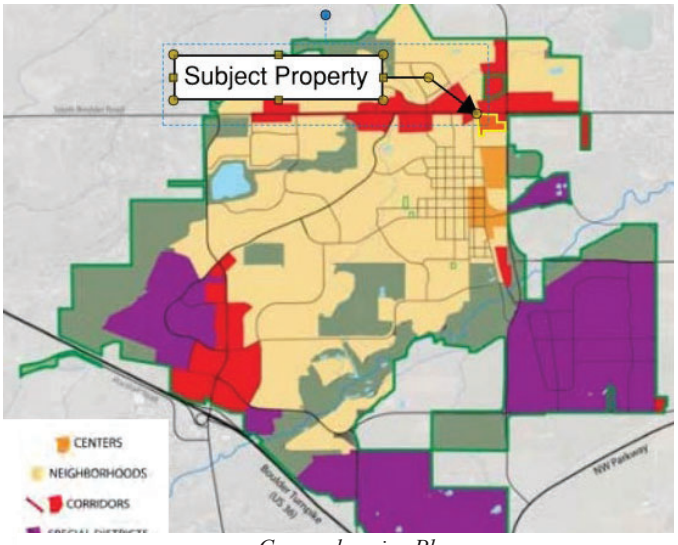
The street and block standards are a foundational element in establishing a multimodal, mixed use development. These standards are intentionally modeled on the existing street grid in Downtown Louisville to promote development in the MU-R zone district as a logical extension of Downtown (p. 6). By requiring a connected grid, the standards ensure present and future opportunities for vehicle, pedestrian, bike, and visual access between districts, supporting circulation, walkability, and integration with surrounding neighborhoods.

Inclusionary Housing

The applicant has indicated their intent to satisfy the requirements of LMC Chapter 17.16 by providing on-site affordable housing pursuant to LMS Sec. 17.76.050.A, which will require that at least 12 percent of the units on-site to be deed restricted. A minimum of half of the affordable housing shall be limited to those households at or below 60 percent of the area median income (AM), with the remainder limited to those persons between 60 percent and 80 percent AMI, as calculated by the United States Department of Housing and Urban Development.

Comprehensive and Small Area Plans

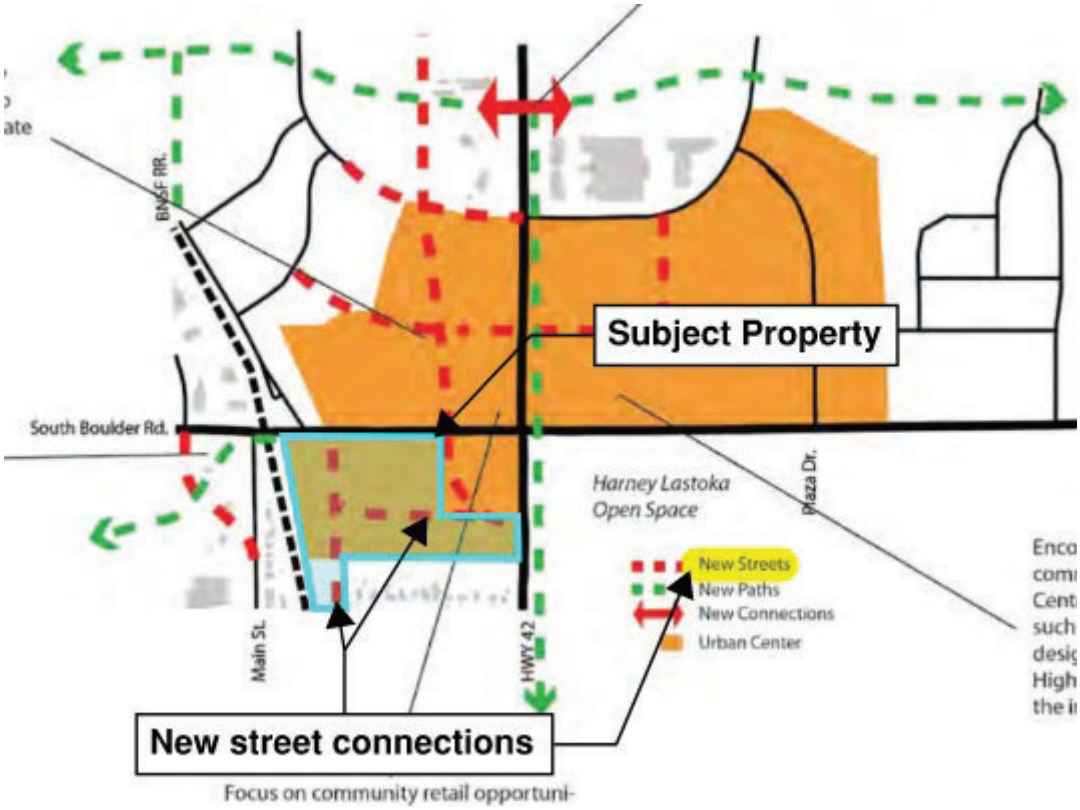
This property is referenced in both the 2013 Comprehensive Plan and the South Boulder Road Small Area Plan. Within the Comprehensive Plan, the property is located in the Highway 42 and South Boulder Road Urban Center (p. 29) with an Urban Corridor designation. The Urban Pattern (p. 19) calls for an interconnected street network with multimodal transportation opportunities, development on smaller parcels, and street-oriented building placement with an emphasis on pedestrian scale and massing. The identified neighborhood development types are predominately residential and may



Comprehensive Plan

range from low-density to high-density multifamily communities. Based on this guidance, the Urban Neighborhood designation at this location would support a mid- to high-density multifamily project. The Corridor development type calls for strong retail, commercial, and multifamily development types (P. 22). The Urban Corridor designation of this property supports the mix of uses adjacent to South Boulder Road, with a focus on multifamily density.

The Highway 42 and South Boulder Road Urban Center is intended to bring the separate parcels surrounding the intersection into one cohesive center. As properties redevelop, new roadway connections should be introduced to create a more connected street grid with smaller parcels that relate to one another in an urban and walkable mixed-use environment (. 29). As redevelopment occurs, the introduction of a roadway network will enable a variety of redevelopment possibilities and connect the Highway 42 and South Boulder Road Urban Center to the rest of Louisville (p. 29, Policy 5). New commercial retail services are encouraged in the Urban Center where the location and scale of such development is appropriate for the area.



Comprehensive Plan

The proposal is also consistent with policies in the Comprehensive Plan's Neighborhoods and Housing, and Economic Development framework, including:

- PRINCIPAL NH-3.1 - Streets shall form an interconnected network (p. 37).

- POLICY NH-3.4 - Diverse housing opportunities shall be available for residents of varying income levels (p. 38).

- PRINCIPLE NH-4 - The character and identity of existing residential neighborhoods should be maintained while allowing for evolution and reinvestment (p. 38).

- POLICY NH-4.7 - Housing should support vibrant retail and commercial centers that serve local residents (p. 38).

- PRINCIPLE NH-5. - There should be a mix of housing types and pricing to meet changing economic, social, and multi-generational needs of those who reside, and would like to reside, in Louisville (p. 38).

- POLICY NH-5.3 - Higher density housing should be located primarily in the centers and corridors of the Framework (p. 38).

- PRINCIPAL ED-3 - The City should be responsive to market opportunities as they occur, and maintain and enhance the City's competitive position to attract development that adheres to the Community Vision (p. 38).

The proposal is consistent with the policies in the Neighborhoods and Housing, and Economic Development framework because:

- The proposal provides additional street connectivity;

- It provides a variety of housing types for varying income levels, including deed-restricted affordable housing;

- The proposal allows for the redevelopment of a vacant site adjacent to existing residential;

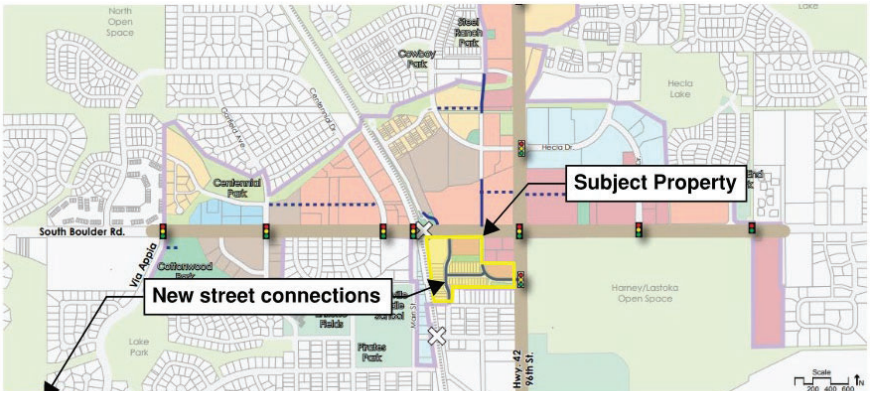
- The housing is relatively close to Downtown and the South Boulder Road commercial corridor. The resulting customer base supports vibrant retail and commercial centers that serves local residents;

- The proposed housing ensures a variety of housing types to meet changing social needs of current and future residents;

- Higher density housing would be established within the Highway 42 and South Boulder Road Urban Center and South Boulder Road Corridor; and

- The proposal is appropriate due to current market conditions.

The South Boulder Road Small Area Plan designates the property for medium-density residential development and retail/office (p. 21). Medium density residential is defined by the Plan as a density range of 10 to 20 dwelling units per acre, while the retail/office use is contemplated where the property is currently zoned CC-MU. Further, the Plan contemplates additional street connections, specifically the Front Street connection, as improving overall connectivity in the street network (p. 11).



South Boulder Road Small Area Plan

Transportation Master Plan

The Transportation Master Plan (TMP), adopted in 2019, provides a City-wide framework for managing and improving Louisville's transportation system. It evaluates existing conditions, establishes goals, and identifies policies, projects, and programs to create a safe, efficient, and multimodal network that serves all users. The plan is intended to guide both near- and long-term transportation decisions, ensure consistency with community values and land use goals, and enhance connectivity for driving, walking, biking, and transit while supporting economic vitality, environmental health, and overall quality of life. The TMP includes a number of goals to which this application satisfies:

- Efficient and safe transportation systems (p. 1.6) – this application includes additional vehicular, bicycle, and pedestrian connectivity that when implements with the development, will minimize conflict on the broader transportation network.

- Cohesive and layered system of streets and trails for walking, biking, and driving (p. 1.6) – this application introduces connectivity to the transportation network for all modes of transportation.

- Complete streets that are inviting, enhance livability, and respect the City's small-town atmosphere (p. 1.7) – the proposed Front Street connection completes a through design that will benefit all modes of transportation with proactive traffic calming measures and pedestrian crossing improvements.

Housing Plan

This application is consistent with the Louisville Housing Plan (May 2024). The Housing Plan establishes three primary goals, which are to increase opportunities for residential development in appropriate locations, to expand and maintain access to affordable housing, and to diversify the housing stock by encouraging mixed-use and mixed-

income neighborhoods with a wider range of housing types to serve different household sizes, incomes, and demographics (p. 26).

The plan further identifies the importance of supporting housing opportunities in the City of Louisville. Strategies and findings to provide more housing include:

- *Action 1.1 Establish Criteria and Identify Areas for Zoning Changes to Support Additional Residential Development:* The Plan recommends rezoning underutilized commercial properties to increase residential capacity and address housing demand (p. 31–32).

- *Action 3.2 Expand Allowances for More Housing Types:* This action calls for expanding allowances for multifamily housing in commercial zones and considering stand-alone residential development in appropriate commercial areas (p. 46–47).

- The Housing Needs Assessment (included as an addendum to housing plan) indicates a need to prioritize diversifying the City's housing stock to adequately meet the needs of future residents (p. 2).

Staff find that the proposed development and associated improvements are consistent with the City's adopted policy framework, including the Comprehensive Plan, the South Boulder Road Small Area Plan, the Transportation Master Plan, and the Louisville Housing Plan. Collectively, these plans emphasize the creation of connected, multimodal, mixed-use environments and the expansion of housing opportunities to meet community needs. The proposal advances these adopted goals by aligning with the City's long-term vision for coordinated growth, improved mobility, and enhanced quality of life.

Traffic Impact Study

The updated Traffic Impact Study (TIS), submitted with this application and reviewed by staff, incorporated new traffic counts, expanded intersection analysis, and evaluation of long-term conditions both with and without the Front Street connection. The findings demonstrate that the proposed development can be successfully integrated into the existing roadway network with the Front Street connection in place, maintaining safe and efficient operations while mitigating traffic impacts on adjacent streets.

The Front Street connection is an essential component for maintaining circulation and safe vehicular operations associated with the proposed development. Its construction would provide necessary transportation redundancy, support a safer and more efficient gridded street network consistent with prior planning efforts, and distribute traffic more evenly across the surrounding roadway system. For these reasons, staff conclude that the Front Street connection is crucial to achieving acceptable traffic conditions and ensuring compatibility with the broader transportation system.

PUD Waiver Compliance with LMC Sec. 17.28.110 Analysis

Section 17.28.110 sets forth the PUD waiver process and criteria. The applicant requests zoning waivers from the MU-R zoning requirements and MUDDSG design requirements as set forth below.

WAIVERS*			
	CODE SECTION	REQUIREMENT	PROPOSED
1	MUDDSG 1.3.A.1 MUDDSG 1.3.B.1	EAST/ WEST BLOCK WIDTH = 270 - 320' NORTH/ SOUTH BLOCK WIDTH = 300 - 400'	**BLOCK ONE:** EAST AND WEST SIDES =146', NORTH AND SOUTH SIDES =321'; **BLOCK TWO:** EAST AND WEST SIDES =293', NORTH AND SOUTH SIDES =333'; **BLOCK THREE:** EAST AND WEST SIDES =443', NORTH AND SOUTH SIDES =155'; **BLOCK FOUR:** EAST AND WEST SIDES =221', NORTH AND SOUTH SIDES 295'; **BLOCK FIVE:** EAST AND WEST SIDES = 332', NORTH AND SOUTH SIDES = 246'
2	MUDDSG 5.4.B	ALL PUBLIC SIDEWALKS SHALL BE A MINIMUM OF TEN (10) FEET WIDE INCORPORATING TREE PLANTING INTO THE RIGHT OF WAY (ROW).	ALONG FRONT STREET AND CANNON CIRCLE: 5' WIDE DETACHED SIDEWALK AND AN 8' TREE LAWN.
3	MUNICIPAL CODE 17.14.060. - TABLE 3: DIMENSIONAL AND BULK STANDARDS	MINIMUM LOT WIDTH = 40 FEET	TOWNHOME LOTS VARY FROM 24'-6" TO 32 FEET WIDE.
4	MUNICIPAL CODE 17.14.060. - TABLE 3: DIMENSIONAL AND BULK STANDARDS	MINIMUM BUILDING COVERAGE (SF) = 40%	BUILDING COVERAGE PROVIDED = 21.2%
5	MUNICIPAL CODE 17.14.060. - TABLE 3: DIMENSIONAL AND BULK STANDARDS	20-FOOT MINIMUM SETBACK FROM REAR PROPERTY LINE.	TOWNHOME REAR YARD SETBACK RANGES FROM 6-20 FEET.
6	MUNICIPAL CODE 17.14.060. - TABLE 3: DIMENSIONAL AND BULK STANDARDS	MINIMUM 70% OF STREET FACING PROPERTY LINES MUST CONTAIN A BUILDING OR BUILDING WALL.	58.6% OF STREET FACING PROPERTY LINES CONTAIN A BUILDING OR BUILDING WALL.

Waiver table

Section 17.28.110 sets forth the PUD waiver process and criteria. The applicant requests zoning waivers from the MU-R zoning requirements and MUDDSG design requirements as set forth below.

In the MU-R zone district, there is a 40% minimum lot coverage requirement, a requirement that at least 70% of the street-facing property lines contain buildings, and a minimum lot width of 40 feet. The total proposed lot coverage for the entire development is 21.2%, allowing for more open space and pedestrian connectivity. The 70% frontage requirement adds additional challenges as the project will construct new public streets. The total percentage of buildings along the street-facing property lines is 58.6%. Considering the reduced density, these modifications to the yard and bulk standards are justified to make an attractive and functional development.

The applicant is requesting a waiver from the required internal sidewalk width of eight feet to allow sidewalks to be 5 feet wide, with an 8-foot tree lawn. Staff support the request, as the National Association of City Transportation Engineers recommends residential walk widths between 5-7 feet.

The request for waiver from block length standards will allow the development to more closely align with proposed access points while ensuring that traffic is dispersed through and out of the site, while the addition of detached sidewalks along all streets and some private alley ways allows for accessible and safe pedestrian circulation.

The requested waiver for rear setback standards will have little to no impact on adjacent properties. The western-most townhomes abut the BNSF rail right-of-way, and there are no rear setbacks adjacent to the Little Italy neighborhood to the south.

Strict adherence to the dimensional standards of the MU-R zone district would limit the number of dwellings permitted, resulting in larger units on fewer lots. The intent of the MU-R zoning district is to provide higher density multi-family residential, with subsidiary commercial uses that cater to the needs of residents and transit commuters (LMC Sec. 17.14.030). The requested waivers will support the intent of the zoning district by allowing a reasonable, modern density of townhouses and apartments while still maintaining the character of development in Louisville with less building coverage proposed on site. Staff recommend approval of the requested waivers.

Staff find that the applicant has satisfied the standards for Preliminary PUD review and recommend approval with the conditions listed below.

Special Review Use Analysis
A SRU is required to establish dwelling units on the ground floor of the proposed mixed-use buildings in the MU-R zoning district. SRUs are reviewed against the criteria and conditions for approval presented in LMC Sec. 17.40.100. The criteria include ensuring that use meets the following:

- Satisfies the intent of the Comprehensive Plan and LMC Chapter 17
- The use is economically stable and compatible with surrounding areas
- The design promotes safety and welfare, including appropriate site layout
- External and negative impacts on adjacent properties are controlled for and reduced
- Adequate pedestrian walks and landscape areas are provided, including accommodations for public transportation.

A further, in-depth analysis of the SRU will occur during the Final PUD and Plat stage for final approvals. Staff have reviewed the proposal as part of the preliminary package and found that the application for SRU satisfies all relevant standards at this time.

PUBLIC COMMENTS:
Public comments received as of the publication of this report are provided as Attachment 10.

STAFF RECOMMENDATION:
Staff recommend approval of an ordinance rezoning portions of Caledonia Place Subdivision Plat from CC-MU (Commercial Community – Mixed Use) and R-M (Residential Medium Density) to MU-R (Residential Mixed Use) and Amending Exhibit A, Land Use Exhibit, Referenced in LMC Chapter 17.14.

Staff recommend approval of Resolution 15, Series 2025 for approval of the Coal Creek Village Preliminary PUD and Plat with the following conditions:

1. The applicant will work with staff in the Final PUD process to redesign the proposed sidewalk and right-of-way improvements adjacent to South Boulder Road.

2. The Final PUD shall comply with Colorado SB24-005, which prohibits local governments from permitting the installation of “nonfunctional turf,” as defined in the legislation.

3. The improvements described in the traffic calming exhibit (Attachment 6), including the Front Street/Harper Street design concept, shall be incorporated into the Final PUD and Plat applications, subject to further staff review.

4. The applicant shall work with staff and the property owner at 1110 E. South Boulder Road to modify the plans as necessary and ensure that vehicular access to the property from Cannon Circle is provided.

ATTACHMENTS:

1. Resolution 15, Series 2025
2. Proposed Ordinance
3. Application Materials
4. Land Use Plan Exhibit A
5. Market Analysis
6. Traffic Impact Study
7. Traffic Calming Exhibit
8. Ordinance 1641-2013
9. Preliminary Drainage Report
10. Public Comment

RESOLUTION NO. 15
SERIES 2025

A RESOLUTION RECOMMENDING APPROVAL OF A PRELIMINARY PLANNED UNIT DEVELOPMENT AND PRELIMINARY PLAT TO ALLOW A 188 DWELLING UNIT AND 13,755 SQUARE FEET OF COMMERCIAL SPACE IN A MIXED-USE DEVELOPMENT AT 1030, 1042, 1034 AND 1040 SOUITH BOULDER ROAD

WHEREAS, there has been submitted to the Louisville Planning Commission an application for a preliminary planned unit development to allow construction 188 dwelling unit mixed-use development and 13,755 square feet of commercial space at 1030, 1042, 1034 and 1040 South Boulder Road; and

WHEREAS, there has been submitted to the Louisville Planning Commission an application for a preliminary plat to subdivide the existing property at 1030, 1042, 1034 and 1040 South Boulder Road; and

WHEREAS, a rezoning application is under concurrent review to permit the proposed uses: and

WHEREAS, City staff has reviewed the information submitted and found that, with the six requested waivers, the application complies with the Louisville zoning regulations and other applicable sections of the Louisville Municipal Code; and

WHEREAS, the Planning Commission has considered the application at a duly noticed public hearing on October 9, 2025, where evidence and testimony where entered into the record.

NOW THEREFORE, BE IT RESOLVED that the Planning Commission of the City of Louisville, Colorado does hereby recommend approval of a preliminary planned unit development and preliminary plat to allow 188 dwelling-units and 13,755 square feet in a mixed-use development at 1030, 1042, 1034 and 1040 South Boulder Road;

PASSED AND ADOPTED this 9th day of October, 2025

By: _____
Steve Brauneis, Chair
Planning Commission

Attest: _____
Cullen Choi, Secretary
Planning Commission

ORDINANCE NO. XXXX
SERIES 2025

AN ORDINANCE APPROVING A REZONING OF A PORTION OF THE CALEDONIA PLACE SUBDIVISION PLAT FROM COMMERCIAL COMMUNITY (CC) AND RESIDENITAL MEDIUM DENSITY (R-M) TO MIXED-USE RESIDENTIAL (MU-R) AND APPROVING AN AMENDMENT TO EXHIBIT A, LAND USE PLAN EXHIBIT, REFERENCED IN LOUISVILLE MUNICIPAL CODE CHAPTER 17.14 – MIXED USE ZONE DISTRICTS

WHEREAS, Coal Creek Village, LLC is the owner of certain real property described as a portion of Coal Creek Station Filing No. 1 Subdivision Plat; and

WHEREAS, the land owner has requested rezoning of the property from Commercial Community (CC) and Residential Medium Density (R-M) to Mixed-Use Residential (MU-R) and an amendment to Exhibit A, Land Use Plan Exhibit referenced in Louisville Municipal Code Chapter 17.14 – Mixed Use Zone Districts; and

WHEREAS, the Louisville Planning Commission has held a public hearing on September 12, 2024 to review the proposed rezoning, has provided notice of the public hearing as provided by law, and has forwarded a recommendation to the City Council to approve the rezoning and amendment to Exhibit A, Land Use Plan Exhibit; and

WHEREAS, the City Council held a public hearing on _____, 2025 to review the proposed rezoning and has provided notice of the public hearing as provided by law*;* and

WHEREAS, the City Council finds that the rezoning and amendment to Exhibit A, Land Use Plan Exhibit are consistent with Louisville Municipal Code Sec. 17.44.050.A.2, Declaration of Policy for Rezoning, which states that the *area for which rezoning is requested has changed or is changing to such a degree that it is in the public interest to encourage a redevelopment of the area;* and

WHEREAS, the City Council finds that conditions of the property have changed including potential market feasibility of commercial-only development on the parcel and changes to vehicular access plans that are not supportive of highway-oriented commercial development; and

WHEREAS, the City Council finds that it is in the public interest to support redevelopment of the property which is located in the Highway 42 Revitalization Area and rezoning of the property will support the goal of the Urban Renewal Plan to reduce, eliminate and prevent the spread of blight, to stimulate growth and redevelopment, and promote appropriate land uses.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF LOUISVILLE, COLORADO:

Section 1. Pursuant to the zoning ordinance of the City, certain property described as portion of Coal Creek Station Filing No. 1 Subdivision Plat, is hereby rezoned from Commercial Community (CC) and Residential Medium (R-M) to Mixed-Use Residential (MU-R).

Section 2. Exhibit A, Land Use Plan Exhibit referenced in Louisville Municipal Code Chapter 17.14 – Mixed Use Zone Districts, is hereby amended as reflected in Exhibit A to this ordinance.

Section 3. If any portion of this ordinance is held to be invalid for any reason, such decision shall not affect the validity of the remaining portions of this ordinance. The City Council hereby declares that it would have passed this ordinance and each part hereof irrespective of the fact that any one part be declared invalid.

Section 4. The repeal or modification of any provision of the Municipal Code of the City of Louisville by this ordinance shall not release, extinguish, alter, modify, or change in whole or in part any penalty, forfeiture, or liability, either civil or criminal, which shall have been incurred under such provision, and each provision shall be treated and held as still remaining in force for the purpose of sustaining any and all proper actions, suits, proceedings, and prosecutions for the enforcement of the penalty, forfeiture, or liability, as well as for the purpose of sustaining any judgment, decree, or order which can or may be rendered, entered, or made in such actions, suits, proceedings, or prosecutions.

Section 5. All other ordinances or portions thereof inconsistent or conflicting with this ordinance or any portion hereof are hereby repealed to the extent of such inconsistency or conflict.

INTRODUCED, READ, PASSED ON FIRST READING AND ORDERED PUBLISHED this __ day of _____, 2025.

_____
Christopher M. Leh, Mayor

ATTEST:

_____
Genny Kline, Interim City Clerk

APPROVED AS TO FORM:

DRAFT

_____
Kelly PC, City Attorney

PASSED AND ADOPTED ON SECOND AND FINAL READING, this __ day of _____, 2025.

_____
Christopher M. Leh, Mayor

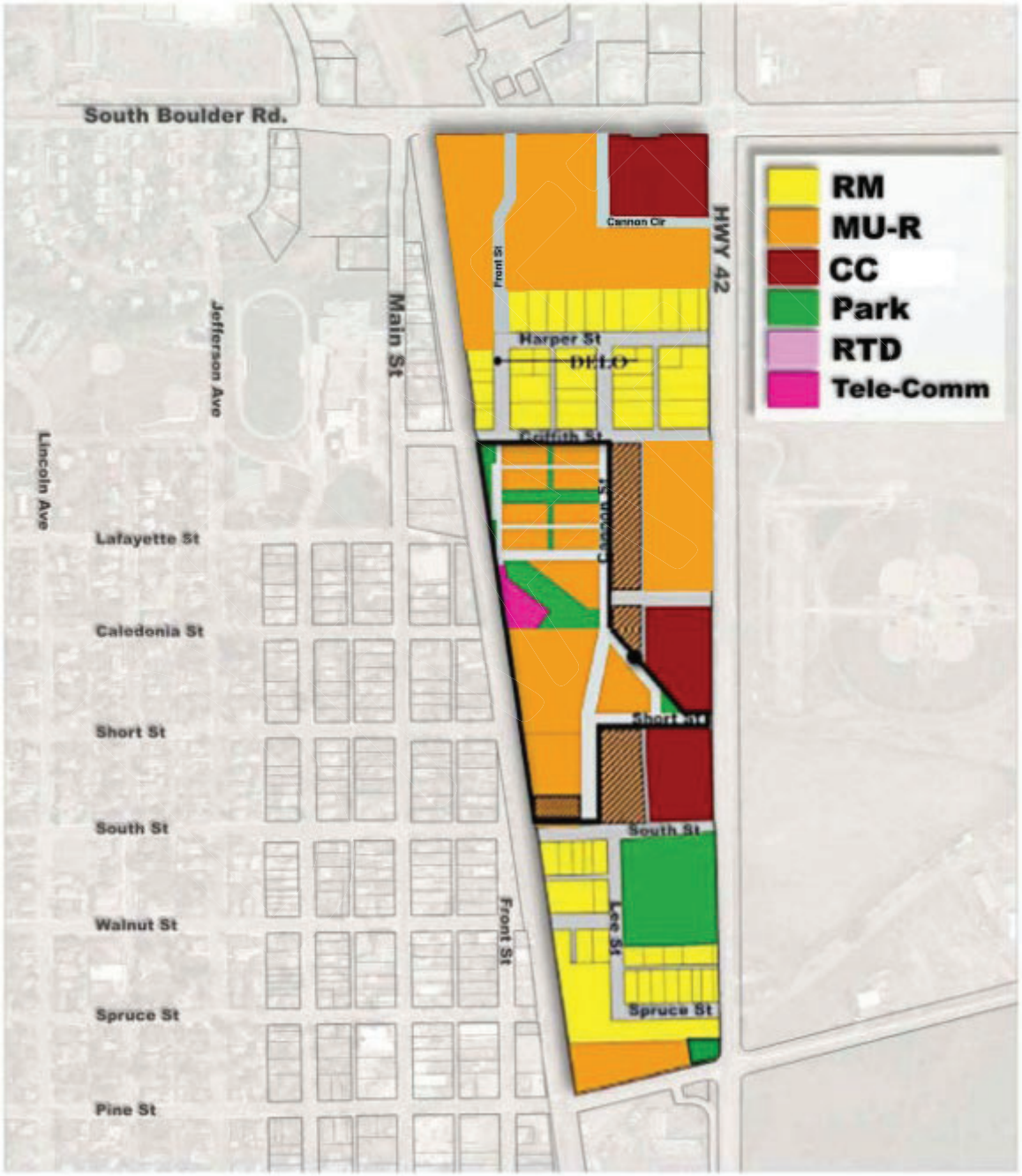
ATTEST:

_____
Genny Kline, Interim City Clerk

DRAFT

Exhibit A to Ordinance

Land Use Plan
Exhibit A



Coal Creek Village PUD
Project Narrative

Introduction
Coal Creek Village, (formerly called Coal Creek Station) is a proposed mixed-use development located southwest of the intersection of South Boulder Road (SBR) and Highway 42. The proposed development plan is supported by the City's goals for the Highway 42 revitalization area and is consistent with the intent and purposes of the Mixed-Use Development Design Standards and Guidelines (MUDDSG) as well as the requirements contained in Section 17.14 of the Municipal Code created for mixed-use development.

Site Description
Commercial development exists at the southwest corner of the SBR and Highway 42 intersection. The Coal Creek Village PUD is proposed on vacant property located south and west of the commercial area. The Argentos Empanadas Shop exists near the northwest corner on a separate lot. The BNSF Railroad borders the site on the west and the existing "Little Italy" residential neighborhood is located to the south. The Louisville Sports Complex is located to the east on the other side of Highway 42. The Goodhue Ditch cuts through the property diagonally at the northwest corner and the site slopes to the south with thickets of unmaintained vegetation. No significant natural features exist on the site.

Project Description
The Applicant proposes to develop a vibrant mixed-use project including 13,534 square feet of commercial use adjacent to South Boulder Road along with a unique mix of medium to high density residential development. With over 19,000 vehicle trips per day along South Boulder Road the commercial is expected to do well. The small-scale commercial uses expected to include retail, restaurants, offices and personal service shops would benefit from drive-by traffic and be supported by neighborhood residents.

The site is also well suited to residential development for the following reasons:

- <u>Shopping and Restaurants</u>
  There is existing retail and service shops located at the intersection corner. In addition, historic downtown Louisville, with its many restaurants, shops and breweries is located one half mile to the south, easily accessible by car, bicycle or on foot.
- <u>Recreation</u>
  Just west of the railroad tracks residents will have trail access to Pirates Park, Lawrence Enrietto Park, Lake Park and eventually the Coyote Run Open Space. The Louisville Sports Complex is located to the east along with acres of open space and an interconnected trail system.

- Schools
  Louisville Middle School is located to the west of the railroad tracks within easy walking distance. Centaurus High School is located to the east and is accessible by car or bicycle via trails east of the Louisville Sports Complex.

The Applicant is proposing a wide a variety of housing choices that are architecturally exciting, energy efficient and most of all attainable. Specific product types are described as follows:

- Two 3-story **mixed-use buildings** are proposed to be located along South Boulder Road. Commercial space occupies the 1st floor, with residential units on the 2nd and 3rd floors. The commercial spaces face South Boulder Road and to the interior of the site, creating attractive and inviting architectural space on both sides. Each building contains twenty-four studios, 1- and 2-bedroom units ranging in size from 500-800 square feet. The residential units are served by an elevator that provides for many accessible units. Parking for the commercial uses and residents is provided south of the buildings.
- Two 3-story **multi-family buildings** face Front Street and create an attractive pedestrian-oriented streetscape at the entrance to the neighborhood. These buildings each have twenty-four residential units ranging in size from 500-900 square feet.
- Further south along Front Street **alley-loaded townhomes** continue the architecturally cohesive streetscape. The townhomes are 3-stories with a garage on the first level accessed from the alley. Living and bedroom spaces are located above the garage.
- The **micro townhome condominiums** located south of the existing commercial area form an ideal transition between the existing commercial uses and the existing “Little Italy” residential neighborhood to the south. These unique townhome dwelling units organized as duplexes and triplexes are located on a shared lot and share common amenities including a central park space, benches, dog waste station, bicycle parking and landscaping. These homes at 300-450 square feet are the most attainable homes in the neighborhood.

The proposed street pattern is logical and conforms to the street pattern proposed in the Highway 42 Revitalization Framework Plan. It is designed to be convenient and safe for both motorists and pedestrians. Front Street connects to the existing Front Street located to the south, providing neighborhood continuity. Streets and curb-cuts are aligned where possible and pedestrian crosswalks prioritize the pedestrian.

All the public streets have detached sidewalks and street trees that provide an attractive interconnected pedestrian system throughout the neighborhood. Wherever possible, buildings are located along the streetscape making the walking experience more interesting and comfortable. Parking lots are located behind buildings where possible and attractively screened with a variety of trees, shrubs and ornamental grasses.

Park, open space and a variety of site amenities are provided throughout the project. A plaza space between the mixed-use buildings along South Boulder Road provides shade, benches and opportunities for outdoor dining. The Applicant plans to pipe the Goodhue Ditch which runs diagonally through the northwest corner allowing the area to be seeded, enhanced with additional plant material and utilized as a passive recreation space. A sidewalk will provide access to the existing empanada shop. There is a centrally located park that will allow residents to have expansive recreation space without the responsibility of having to maintain a large landscape on their own individual lot/ property. The park is connected to the proposed mixed-use buildings via multiple sidewalk connections.

Small families, young professionals, singles, and older adults that prefer urban living will welcome this innovative community in Louisville. All the housing types are energy efficient utilizing heat pumps, tankless hot water heaters and tight construction. The dwelling units are small making them more energy efficient, easy to maintain and most importantly attainable. The Applicant expects the proposed micro townhome condominiums to be especially popular because they will allow first time buyers to own their own home, an important step in gaining long term financial stability.

The project is planned to be phased. While the design of the project adheres to the majority of the standards and design guidelines contained in the MUDDSG and the Municipal Code, there are a few specific instances where waivers are requested. Narratives detailing the waivers along with justifications are included in this Submittal package.

Conclusion

The design of the project is supported by the Purpose and Intent of the Highway 42 Revitalization Plan and the MUDDSG. As the last major development in the Highway 42 Revitalization Area the project will implement the goals and objectives of the Plan in the following ways:

- Mixed-use development that includes commercial uses and a variety of housing types.
- Provides medium to high density residential development within walking distance of historic downtown Louisville.
- Creates pedestrian connections that are safe, comfortable and interesting.
- Establishes streetscapes that enhance adjacent architecture with detached sidewalks, street trees, and attractive parkways.
- Provides dynamic and sustainable architecture that will complement existing development within the Revitalization Plan area.
- Offers diverse product choices that are attractive, energy efficient and attainable for both buyers and renters.

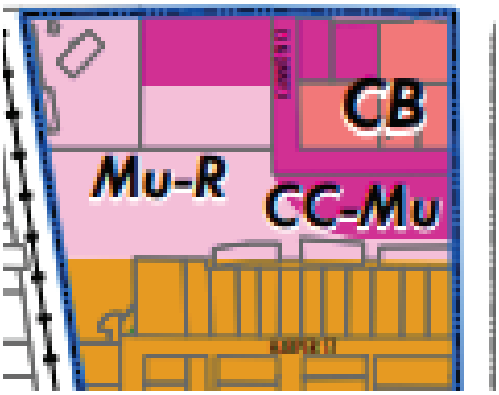
- Provides publicly accessible parks, natural areas and urban plaza space that include seating, shade, seasonal plantings, outdoor dining opportunities, and doggie stations.
- Provides a comfortable land use transition between the existing Little Italy neighborhood and the commercial area to the north.

In conclusion, we believe the commercial uses proposed along South Boulder Road are consistent with the commercial use proposed in the original Revitalization Plan. The urban-style housing offered in this project at 16.5 DU/AC is well above the minimum density requirement of 12 DU/AC. The medium to high density proposed will ensure the success of the commercial uses and provide residents with a variety of housing choices to rent or to buy. It is the kind of housing described in the Revitalization Plan for this area and is needed in Louisville now more than ever.

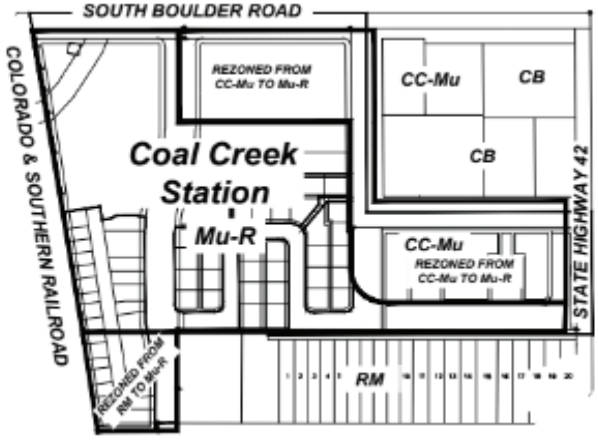
Coal Creek Village

Markel Homes
Request to Rezone
August 2023

The Applicant is requesting that two areas of the City's existing zoning map be changed. The existing zoning and the proposed changes are depicted on the graphics below. Land to the west of Cannon Circle and land to the south of Cannon Circle, connected by Cannon Circle, are proposed to be rezoned from CC-Mu to Mu-R. In addition, the land at the extreme southwest corner of the property is proposed to be rezoned from RM to Mu-R. The proposed changes are consistent with the proposed revisions to Exhibit A in the **Highway 42 Revitalization Area Framework Plan** (see separate request to revise Exhibit A).



Existing Zoning



Proposed Zoning

<u>Proposed Rezoning Criteria</u>
The rezonings allow for commercial uses along South Boulder Road as originally intended and expands areas of the site to be utilized for higher density residential development. Most small-scale commercial establishments, like restaurants, personal service shops and offices are allowed within the Mu-R district. Since these are the types of commercial uses that the Highway 42 Revitalization Plan envisioned for the area, this proposed rezoning will not result in a loss of commercial use, but will significantly increase residential density in the area to ensure success of the proposed commercial uses.

The City's Municipal Code lists four criteria for considering a rezoning (17.44.050):

1.The land to be rezoned was zoned in error and as presently zoned is inconsistent with the policies and goals of the city's comprehensive plan;

2.The area for which rezoning is requested has changed or is changing to such a degree that it is in the public interest to encourage a redevelopment of the area;

3.The proposed rezoning is necessary in order to provide land for a community-related use which was not anticipated at the time of the adoption of the city's comprehensive plan, and such rezoning will be consistent with the policies and goals of the comprehensive plan; or

4.The rezoning would only permit development which, if evaluated as a proposed annexation under the annexation standards and procedures codified in title 16, would qualify for annexation.

We believe the proposed rezonings associated with the Coal Creek Village PUD meet Criteria 2 and 3, for the following reasons:

2. The area for which rezoning is requested has changed or is changing to such a degree that it is in the public interest to encourage a redevelopment of the area;

We believe that **significant change** has occurred both in the vicinity of the site and in the housing marketplace.

i. The property was rezoned in 2007 to fit a proposed development plan that was never approved. The result is the existing zoning now dictates a specific design that matches what was proposed in 2007 but never carried forward. The fact that the land was rezoned based on a particular development plan, Coal Creek Station, that never happened, makes it difficult for subsequent developers to propose different, and perhaps more successful plans.

ii. Major improvements to State Highway 42 and the potential development of a commuter rail station in Louisville were the impetus for the City is to create mixed-use zoning in the Highway 42 Revitalization Area. A commuter rail station would significantly increase the number of people arriving to and leaving from the neighborhood. Those additional people would all be potential customers for commercial uses. In reality though, the commuter rail station has not come to fruition. The absence of a commuter rail station undeniably lessens the viability of the site for stand-alone commercial development.

iii. The prime commercial property, based on visibility, is located at the intersection of South Boulder Road and State Highway 42. At this point in time, the site is both under-developed and aging. We believe that additional housing in the neighborhood will spur the redevelopment of the corner in years ahead.

iv. The need for housing inventory across all price points has grown significantly in recent years. The housing crisis in Boulder County is well documented and was only exacerbated in recent years by market conditions and the tragic Marshall Fire. This plan seeks to bring units to the market across a variety of price points and can fill the needs of current and future residents.

3. The proposed rezoning is necessary in order to provide land for a community-related use which was not anticipated at the time of the adoption of the city's comprehensive plan, and such rezoning will be consistent with the policies and goals of the comprehensive plan;

According to the Urban Land Institute, the industry definition of attainable, for-sale housing is unsubsidized, profitable housing developments that meet the needs of those with incomes between 80% and 120% of the Area Median Income. ULI's latest Emerging Trends in Real Estate report provides recommendations and strategies for creating more attainable housing. Coal Creek Village utilizes several of these recommendations including:

- Offering innovative product types
- Combining product types in developments
- Creating smaller homes
- Creating more middle income attached housing

The report concludes with *"It is as important as ever for the industry to build all types of housing, and especially to find ways to build nonsubsidized housing for middle-class buyers," says the report. "Ultimately, this type of housing – attainable housing – will relieve the current downward pressure on the market that has kept renters from becoming homeowners and has made housing increasingly unaffordable for Americans at lower income levels."*

These rezonings efforts are needed to provide more housing inventory than is possible without the them, thus making the designs more efficient and the prices more attainable. Essentially the residential units proposed above ground floor commercial uses along South Boulder Road would not be possible under the current zoning. We believe that the lack of housing is a community-related use that was not as extreme when the Comprehensive Plan was adopted.

Applicable City of Louisville Plans and Policies

Simply stated, the Coal Creek Village project cannot move forward without the proposed rezoning. The rezoning is critical to allowing the vertical mixed-use proposed along South Boulder Road (SBR). The residential above supports the commercial use and

increases the overall density on the site. Higher densities make site amenities more affordable and helps to create a sense of community. The proposed rezoning also creates a better land use transition for the Little Italy neighborhood. The proposed rezoning allows the developer to create a mixed-use project that we believe will be both innovative and successful. The following City Plans and Policies support the proposed rezoning and the project.

2013 Comprehensive Plan (sections relevant to SBR and Highway 42)

The 2013 Comprehensive Plan clarifies and illustrates the City's expectations regarding land use function, form and character. The Framework proposed by the Comprehensive Plan puts the Coal Creek site in the "urban" development pattern, defined as follows:

Streets are interconnected and form small walkable blocks. Residences are alley-loaded and alternative modes of travel including walking, biking and transit are viable and encouraged. Vehicular speeds are reduced, and development parcels are smaller. Buildings are oriented to the street and are designed with human scale in mind. Civic and public infrastructure is integrated, multi-purpose and the landscape is formal.

The comprehensive Plan further separates Louisville into development types – Centers, Corridors, Neighborhoods, Special Districts and Parks/Open Space. The Coal Creek Village project falls within a Corridor, specifically the SBR Corridor. The following description of anticipated land use development in the Corridor describes Coal Creek Village as well.

"As properties redevelop in this area, attention will be paid to introducing a more connected street grid creating smaller parcels which relate to one another in an urban and walkable mixed-use environment. Commercial land uses and higher density residential uses will concentrate along the South Boulder Road and Highway 42 intersection while lower density residential uses should locate away from the main arterials to provide a transition to the existing neighborhoods".

The proposed rezoning and development plan for Coal Creek Village are supported by the following policies related to the Highway 42 and SBR Corridor:

1. *Include a mix of low to higher density residential and commercial neighborhood services.*
   The rezoning would allow a mix of low to higher density housing along with development of commercial neighborhood services.

2. *Transition from higher intensity uses at the core of the center to lower density uses at the neighborhoods on the periphery of the center*
   Development will transition from high intensity along SBR to lower intensity adjacent to the existing Little Italy neighborhood.

3. *To encourage the economic health of existing shopping centers, leverage public investment for infrastructure improvements and business assistance packages to stimulate private redevelopment.*
   New commercial uses and additional residential development in the neighborhood will help existing commercial development on the corner become more successful.

4. *Focus on community retail opportunities at the intersection of South Boulder Road and HWY 42 which serve a smaller trade area than those found at a regional retail center.*
   The commercial development proposed along SBR will focus on small scale shops providing goods and services to the local neighborhood.

5. *Introduce new roadway network in the center to enable the area to operate as a connected urban center. Medium to high density residential areas should be located with proximity to and pedestrian access to public transportation, neighborhood parks and trail connections and commercial services.*
   New roadways that connect the various component of the neighborhood will be developed.

6. *As redevelopment occurs, introduce roadway network to enable a variety of redevelopment possibilities. The City should cooperate with the City of Lafayette and Boulder County to secure access between Hecla Lake, Waneka Lake, and Coal Creek.*
   The proposed roadway network will support the existing and proposed commercial development.

7. *Create a high degree of trail and open space connectivity reinforcing the east/west connectedness of a regional trail system to Hecla Lake and north/south connectedness to Downtown and Coal Creek regional trail.*
   A system of detached sidewalks and connecting walkways link the proposed neighborhood to trail systems located to the west and to the east across Highway 42 as well as to Downtown.

8. *Explore realigning Main Street on the western edge of the urban center to consolidate access near the railroad tracks and introduce a Gate way to the HWY 42 and South Boulder Road urban center and Downtown Louisville.*
   The proposed rezoning would not affect the City's ability to realign Main Street.

9. *Connect the Highway 42 and South Boulder Road Urban Center to the rest of Louisville by the introduction of new roads, trail connections, and pedestrian crossings of the railroad tracks, South Boulder Road, and HWY 42.*
   The extension of Front Street will provide a needed connect ion between SBR and Downtown Louisville.

10. *Encourage development of new commercial retail services in the Urban Center where the location and scale of such development is consistent with design standards developed for the HWY 42 corridor and the character of the immediate neighborhood.*
    The proposed rezoning will allow the development of commercial uses along SBR with housing above that will be in scale and in character with the neighborhood.

11. *Louisville Plaza shopping center should not include any Mixed-Use streets.*
    Not applicable.

Transportation Master Plan

The City's Transportation Master Plan (TMP) completed in 2019 describes four policies that support the TMP goals. The design and development of Coal Creek Village will help advance these policies and help the City achieve it's transportation goals.

Policy 1: Great Streets
Great streets are those designed to be safe and accessible for all users regardless of ability, age, or mode. The streets in Coal Creek Village are engineered and designed to be safe, functional and attractive. Detached sidewalks keep the pedestrian a safe distance from vehicular traffic and crosswalks provide increased safety at points of conflict. Handicap ramps are provided at all street crossings. Sidewalks provide walkable access to all areas of the neighborhood and connect the pedestrian to the larger community at its edges along SBR, Highway 42 and Front Street.

Policy 2: Guidelines for Walkable and Bikeable Places
Coal Creek Village is designed to be walkable and bikeable. The mixed-use development is located within walking and biking distance of schools, employment opportunities, shopping, and recreation. The neighborhood itself is designed to encourage walking and biking by providing safe streets with detached sidewalks and street trees. Alley-loaded residential products eliminate driveways and enhance the walking experience along streets. Green spaces, parks, plazas are provided throughout the neighborhood, making it a comfortable place to walk around and explore.

Policy 3: Transit Oriented Development Guidelines
Residents at Coal Creek Village will have access to bus stops at SBR and Garfield Street and along Main Street at Griffith Street.

Policy 4: Applications for Technology
The residential projects at Coal Creek Village will have Homeowner Associations that can work the City to publicize City programs like "safe routes to school" and "ride share programs" designed to make walking and biking safer and more fun. Smart technology can be used to disseminate information to neighborhood residents, easily and quickly.

South Boulder Road Small Area Plan

The South Boulder Road Small Area Plan (Plan) provides general guidelines for development in the SBR corridor and suggests design concepts for new development within the corridor. We believe that Coal Creek Village exemplifies the Community Design Principles and Placemaking Concepts contained in the Plan as outlined below:

Community Design Principles

- Providing places to go and to stay
  Coal Creek Villages provides spaces that encourage gathering and interaction. Retail shops along SBR with entrances front and back have a central outdoor plaza with seating and shade. A natural area is planned behind the existing coffee shop on SBR as well. In addition to tree lined streets and detached sidewalks there are several green, park-like spaces provided throughout the community that serve the residents with amenities such as play equipment, benches, doggie stations, lawns and plants that provide seasonal interest.

- Easy to get to and easy to get around
  The proposed project provides vehicular links to the larger community at four existing access points. Two on SBR, one on to Highway 42 and one connecting to Front Street and linking the project to Downtown Louisville. Safe and convenient pedestrian circulation is provided throughout the community along tree-line streets with detached sidewalks. Pedestrians can walk to nearby Louisville Middle School and to Downtown.

- Knitting the community together
  Tree-lined sidewalks are provided along SBR and Hwy 42 frontages. Community residents can cross SBR at Main Street just west of the site and also at the HWY42/SBR intersection. Highway 42 can be crossed at SBR and at Short Street approximately 1/3 mile south of the project.

- Development that contributes
  Coal Creek Village contributes to the community by providing an appropriate mix of commercial development and housing that targets middle income residents. The proposed buildings are both architecturally exciting and energy efficient.

Placemaking Concepts

- Parking rooms
  The proposed parking lot is located to the interior of the site and designed to be well landscaped and pedestrian friendly.

- Traditional streets
  A network of public streets and private drives knit the community together. Streets are enhanced with detached sidewalks and periodic green spaces which promote walking around the neighborhood. Alley-loaded residential projects contribute to the walkability of the neighborhood because of fewer driveways to cross.

- Pedestrian refuges
  The project provides a pedestrian refuge along SBR between the two mixed-use buildings. A well landscape plaza with street furniture is provided for shoppers and pedestrians alike.

- Views into the community
  Views into the community occur at three locations along SBR. West of the existing coffee shop a shaded natural open space gives a peek into the project. Front Street with detached sidewalks lined with street trees offers an inviting view into the neighborhood and the plaza between the mixed-use buildings provides a view into the central green space.

Highway 42 Framework and Comprehensive Plan Amendment

The design of the project is supported by the Highway 42 Revitalization Area Framework Plan and the MUDDSG. As the last major development in the Highway 42 Revitalization Area the project will implement the goals and objectives of the Plan in the following ways:

- Mixed-use development that includes commercial uses and a variety of housing types.
- Provides medium to high density residential development within walking distance of historic downtown Louisville.
- Creates pedestrian connections that are safe, comfortable and interesting.
- Establishes streetscapes that enhance adjacent architecture with detached sidewalks, street trees, and attractive parkways.
- Provides dynamic and sustainable architecture that will complement existing development within the Revitalization Plan area.
- Offers diverse product choices that are attractive, energy efficient and attainable for both buyers and renters.
- Provides publicly accessible parks, natural areas and urban plaza space that include seating, shade, seasonal plantings, outdoor dining opportunities, and doggie stations.

- Provides a comfortable land use transition between the existing Little Italy neighborhood and the commercial area to the north.

Conclusion

In conclusion, we believe the proposed rezonings are necessary and desirable because of changes in the area and because the proposed project would help alleviate a community need by providing more attainable housing, two of the criteria for consideration of rezoning. The Coal Creek Village project is overwhelmingly supported by the City's Plans and Policies that have created the community vision for Louisville. The proposed rezoning is in alignment with the regulatory requirements defined in the Municipal Code Section 17.14 Mixed Use Zone Districts specifically created to guide development in the Highway 42 Revitalization Area. By supporting the proposed rezonings the decision-makers will be allowing Coal Creek Village to move forward.

Coal Creek Village PUD

Requested Waivers

Coal Creek PUD conforms to the majority of the standards and guidelines created for the City of Louisville and specifically for the Highway 42 Revitalization Area, however, there are some instances where conforming to the standard would not be possible because of existing conditions or, would not serve the best interest of the City. We believe that in each case that a waiver is requested, the proposed design is superior to a design that would strictly adhere to the standard. The City of Louisville anticipated this situation and included the following rule in the Municipal Code:

"General rule allowing waiver or modification of standards. Unless otherwise limited by this section, the city may waive or modify all applicable stated Mixed Use Development Design Standards and Guidelines stated in this chapter, or other generally applicable design standards and provision of this Title 17, if the decision-making body finds that the proposed development represents an improvement in site and building design over that which could be accomplished through strict compliance with otherwise applicable district standards. Unless specifically waived or modified during the review and approval process, the zoning, use, bulk, dimensional, development, and design standards stated in this chapter and the Mixed Use Design Standards and Guidelines shall apply."

The Applicant respectfully requests the following Waivers:

Waiver Number 1

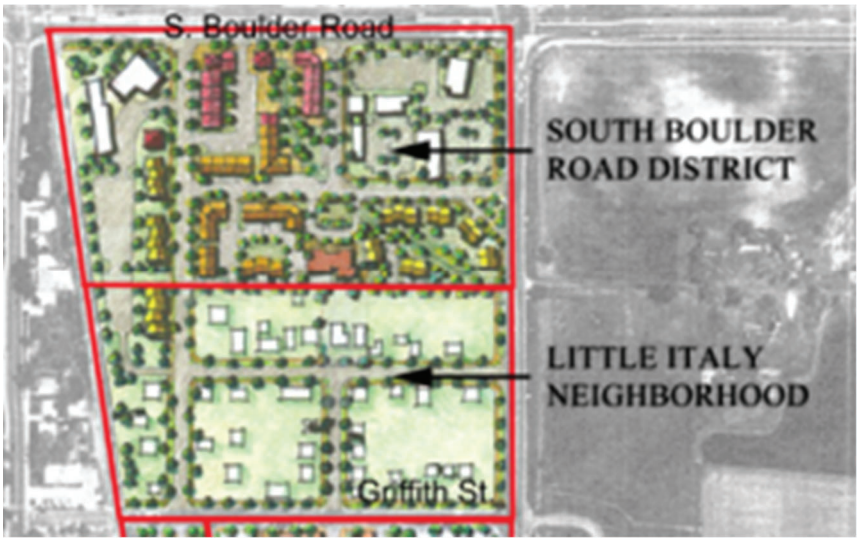
City Document: Implementation of the Highway 42 Revitalization Area Plan - Appendix A Mixed Use Development Design Standards and Guidelines (MUDDSG)

Requirement: MUDDSG 1.3.A.1 East and west sides of blocks to be 270-320 feet.
MUDDSG 1.3.B.1 North and south sides of blocks to be 300-400 feet.

Proposed:

Block One	East and west sides 146 feet
	North and south sides 321 feet
Block Two	East and west sides 293 feet
	North and south sides 333 feet
Block Three	East and west sides 443 feet
	North and South side 155 feet
Block Four	East and west sides 221 feet
	North and south sides 295 feet
Block Five	East and west sides 332 feet
	North and south sides 246 feet

Justification:
The intent of the Street and Block Design Standards is to encourage a synergistic mix of uses within the MU-R and CC Districts, complement existing Downtown development, to disperse and distribute traffic to multiple access points and to create a pedestrian-oriented and pedestrian friendly district. Furthermore "*Street alignment within the MU-R and CC Districts shall generally conform to the street pattern adopted in the Highway 42 Plan to the maximum extent practicable."*



From the Highway 42 Revitalization Area Framework Plan

The street layout and resulting block sizes are largely determined by existing access points along South Boulder Road and Highway 42. In addition, the Front Street alignment connecting to the south is consistent with the Highway 42 Revitalization Area Framework Plan depicted above. The fact that the site is bordered by the Colorado and Southern Railroad on the west further puts limitations on block size.

While not all the specific block dimensions are consistent with requirements, the street layout and blocks do meet the intent of the MUDDSG. Traffic is dispersed and distributed in a logical fashion consistent with the Highway 42 Framework Plan shown above. The site plan proposes sidewalks and tree lawns along all public streets and provides for safe, convenient and attractive pedestrian connections throughout.

Waiver Number 2

City Document: Implementation of the Highway 42 Revitalization Area Plan - Appendix A
Mixed Use Development Design Standards and Guidelines (MUDDSG)

Requirement: **MUDDSG 5.4. Public Sidewalk Design Standards**
B. In the MU-R and CC Districts, all public sidewalks shall be a minimum of ten (10) feet wide incorporating tree planting within the right-of-way. The right-of-way shall be landscaped with street trees and other living plant material or, as an alternative, tree grates for street trees combined with decorative paving and/or moveable planters may be utilized.

Proposed: Along Front Street and Canon Circle, a 5-foot-wide detached sidewalk with an 8-foot parkway is provided.

Justification:
Coal Creek PUD meets the pedestrian connectivity standards stated in the MUDDSG by providing well-defined pedestrian connections through out the site and to off-site locations. Walkways are designed to be direct and efficient creating opportunities for residents to walk to commercial areas along SBR and Hwy 42, as well as to on-site parks, open space and amenities. The public sidewalks are all detached with adjacent tree lawns. We believe the proposed 5-foot and 8-foot sidewalk widths will be adequate for the numbers of pedestrians anticipated and will provide a more comfortable human scale than 10-foot sidewalks would.

The proposed sidewalk widths are also consistent with recommendations of the National Association of City Transportation Officials. "*The pedestrian through zone is the primary, accessible pathway that runs parallel to the street. The through zone ensures that pedestrians have a safe and adequate place to walk and should be 5–7 feet wide in residential settings and 8–12 feet wide in downtown or commercial areas*." (NACTO)

Waiver Number 3

City Document: **Municipal Code 17.14.060**
Table 3: Mixed Use Zoning District Dimensional and Bulk Standards

Requirement: **Minimum Lot Width 40 feet**

Proposed: **Townhome lots vary from 24'-6" to 32 feet wide.**

Justification:
The proposed townhomes are designed for residents that desire urban scale living, that is attractive, low maintenance, energy efficient, architecturally exciting and attainable. By reducing lot size the developer can lower the cost of the dwelling unit, making it more attainable. densities that utilize public infrastructure and land more effectively, helping to lower housing costs as well. In Smaller lot sizes also help to create more efficient addition, small lots fit the lifestyle of active adults and are preferred by many urban dwellers. A few examples of contemporary townhome design that utilize the narrower lot width include the following communities: North End (Louisville), Northfield Commons (Boulder), and Dakota Ridge – Northbriar (Boulder).

Waiver Number 4

City Document: **Municipal Code 17.14.060**
Table 3: Mixed Use Zoning District Dimensional and Bulk Standards

Requirement: **Minimum Building Coverage 40%**

Proposed: **21.2%**

Justification:
The dimensional and bulk standards are intended to encourage and allow more "urban scale" development within the Highway 42 Revitalization Area consistent with planning goals for that area. Compared to other commercial and residential development allowed in Louisville, "urban scale" generally means taller buildings like those found in downtown Louisville, greater lot coverage, and buildings pushed close to the front property line.

We believe that Coal Creek Village PUD accomplishes the intent of the standard. Most of the buildings in the development are 3-stories tall and are brought close to the front property line with parking enclosed in garages or located to the back side. However, it's hard to imagine how the proposed project could achieve 40% building coverage without providing structured parking. Figure 6 (below) was provided to help clarify the standard. The example illustrates 1-story buildings, and it only achieves 36 % coverage. The proposed mixed-use buildings (3 &4) and the multi-family buildings (1&2) are 3-story buildings and require more parking than a 1-story building would. Additional parking means more circulation drives and the additional pavement requires additional stormwater detention. The overall residential density of 16.5 DU/AC necessitates the need for additional site amenities, parks and open space. Additionally, Figure 6 alludes to the use of structured parking to help achieve the standard – but the cost to construct structured parking is so great that the use of structured parking would remove the middle-class attainability aspect of the proposed development. Given the nature of the proposed mixed-use project, we believe achieving 40% lot coverage is not necessary nor practical as demonstrated by Figure 6.

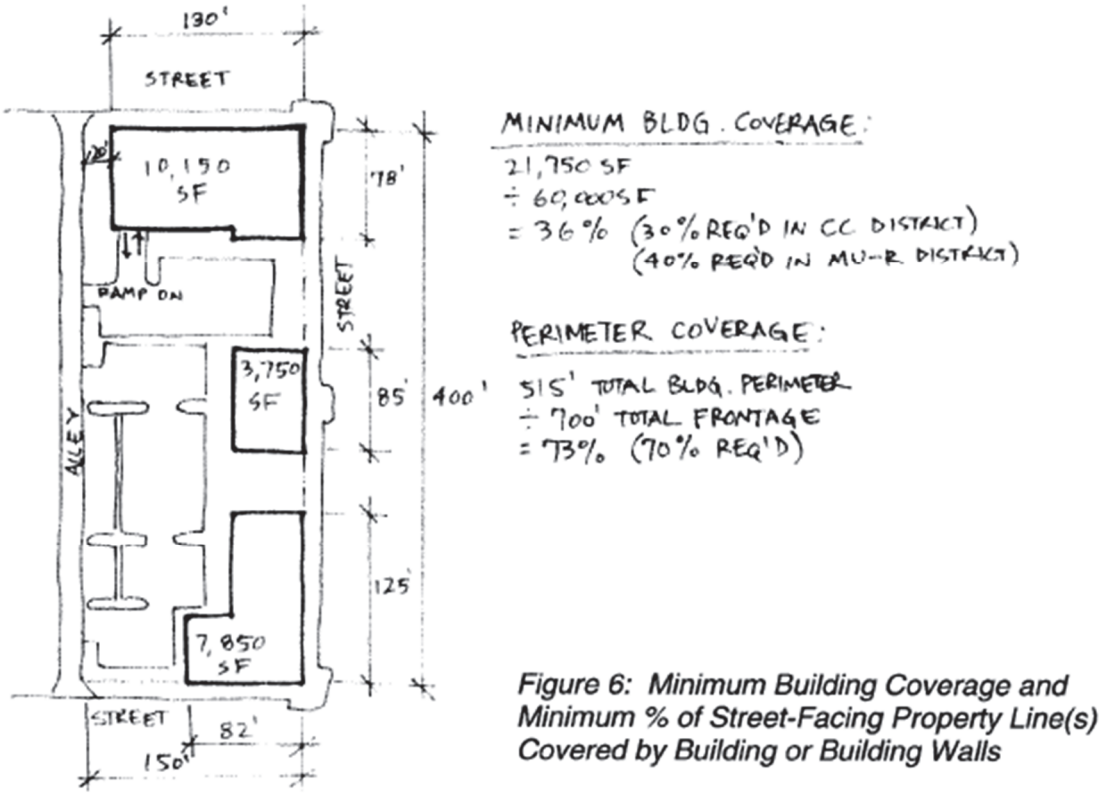


Figure 6: Minimum Building Coverage and Minimum % of Street-Facing Property Line(s) Covered by Building or Building Walls

Waiver Number 5

City Document: **Municipal Code 17.14.060**
Table 3: Mixed Use Zoning District Dimensional and Bulk Standards

Requirement: 20-Foot Minimum Setback from Rear Property Line

Proposed: Townhome and Micro Cottages rear yard setbacks from 6-20 feet

Justification:
The townhome and micro cottages proposed for Coal Creek PUD are designed for residents that desire urban scale living, that is attractive, low maintenance, energy efficient, architecturally exciting and attainable. Smaller back yards that still provide opportunities for outdoor dining and relaxation without the need to mow or water a lawn fit the lifestyle of many urban dwellers. Smaller back yards also help create more efficient densities that utilize public infrastructure and land more effectively, helping to lower housing costs.

Waiver Number 6

City Document: **Municipal Code 17.14.060**
Table 3: Mixed Use Zoning District Dimensional and Bulk Standards

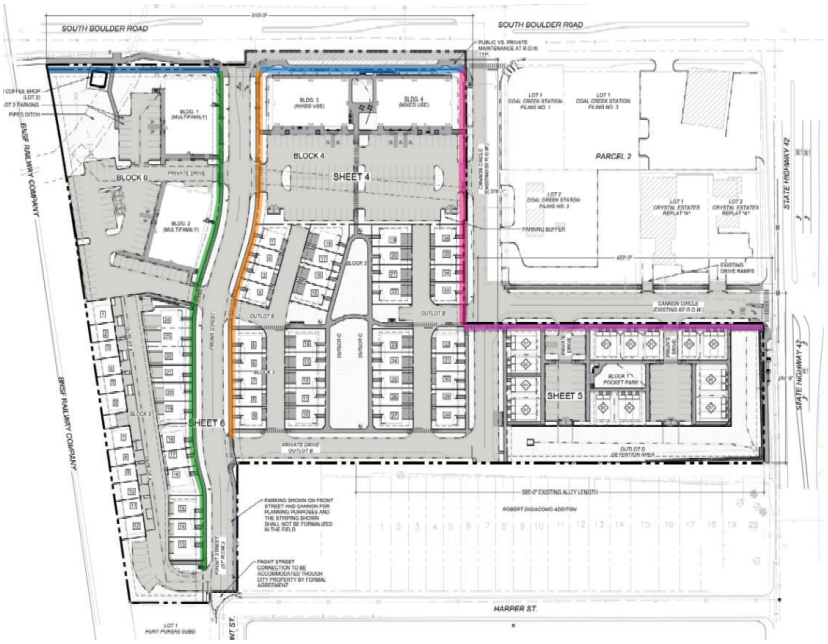
Requirement: **Minimum 70% of Street Facing Property Lines must contain a Building or Building Wall**

Proposed: **58.6%**

Justification:
The standard is intended to support a pedestrian friendly environment along the district's streets. Buildings pushed closer to the street edge provide a sense of enclosure for the pedestrian, making the district a more inviting place to walk. The 70% is a very high standard that is difficult to achieve particularly when site amenities and landscaped open space is left out of the equation. We believe that a variety of building types and scales that are interspersed with a plaza, park and landscaped open space create a diverse and pleasant streetscape for pedestrians to enjoy. The walking experience proposed throughout Coal Creek Village PUD is further enhanced by street trees that are provided in tree lawns along all the public streets.

Additionally, the City of Louisville has adopted Appendix D of the International Fire Code which has a component related to dead-end fire apparatus access on roads within a new development. This means that a fire truck access path shall go no further than 150' without a means to turn around or exit the access road. On the site plan, this creates the need for additional access points along public streets to comply with this IFC requirement and thus reduces the percentage of street facing property lines that contain a building or building wall.

TOTAL BUILDING FRONTAGE/COVERAGE CALCULATIONS				
STREET	APPLICABLE STREET FRONTAGE(FT)	TOTAL BUILDING FRONTAGE(FT)	% BUILDING FRONTAGE	TOTAL BUILDING COVERAGE(SF)
SOUTH BOULDER ROAD	543	304	56.0	
EAST OF FRONT STREET	295	216	73.2	
WEST OF FRONT STREET	248	88	35.5	
FRONT STREET	1240	825	66.5	
EAST SIDE	532	297	55.8	
WEST SIDE	708	528	74.6	
CANNON CIRCLE	692	320	46.2	
NORTH/ SOUTH LEG	363	170	46.8	
EAST/ WEST LEG	329	150	45.6	
HIGHWAY 42	147	90	61.2	
TOTALS:	5097	2988	58.6 *	80070
TOTAL % BUILDING COVERAGE (USING TOTAL NET SITE ACREAGE 8.66 AC):				21.2% *



COAL CREEK VILLAGE
PLANNED UNIT DEVELOPMENT

COAL CREEK STATION FILING NO.4, LYING WITHIN THE NORTHEAST QUARTER (NE 1/4) OF SECTION 8, TOWNSHIP 1 SOUTH, RANGE 69 WEST OF THE SIXTH PRINCIPAL MERIDIAN, CITY OF LOUISVILLE, COUNTY OF BOULDER, STATE OF COLORADO.

SIGNATURE BLOCKS

OWNERSHIP SIGNATURE BLOCK

The undersigned as the owner of the lands described herein, hereby agrees on behalf of itself, and its heirs, successors and assigns to develop and maintain the property described hereon in accordance and compliance with this approved plan and the Louisville Municipal Code.

(COAL CREEK VILLAGE LLC

Witness my/our hand(s) and seal(s) this ____ day of _____, 20___.

BY:_____
Coal Creek Village LLC
Michael Markel, President

_____ SEAL:
Notary Signature

MY COMMISSION EXPIRES _____

CITY COUNCIL CERTIFICATE

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 CERTIFICATE

RECOMMENDED APPROVAL THIS ____ DAY OF _____, 20___ BY THE PLANNING COMMISSION OF THE CITY OF LOUISVILLE, COLORADO.

RESOLUTION NO. _____, SERIES _____

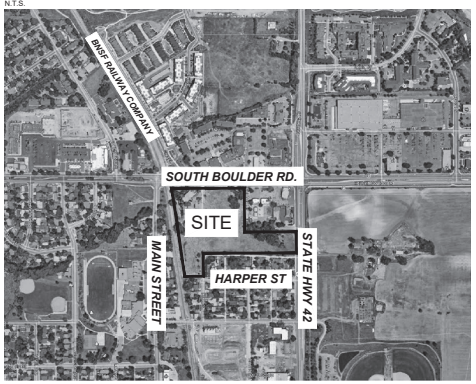
GOODHUE DITCH & RESERVOIR COMPANY

APPROVED THIS _____ DAY OF _____, 20_____ .

_____
SIGNATURE OF REPRESENTATIVE

VICINITY MAP

N.T.S.



SITE SUMMARY

EXISTING ZONING:	CC-MU, Mu-R & RM
PROPOSED ZONING:	Mu-R
TOTAL GROSS SITE AREA:	495,658 SF (11.378 ACRES)
TOTAL COMMERCIAL AREA:	13,534 SF (1ST FLOOR OF BUILDINGS 3 & 4, BLOCK 4)
TOTAL RESIDENTIAL UNITS:	188
GROSS DENSITY*:	16.5 DU/ACRE

*AREA OF DENSITY CALCULATION INCLUDES PLATTED ACREAGE AND ½ THE AREA OF ANY ADJACENT STREET PER SECTION 17.14.060.C.1.A

LEGAL DESCRIPTION

A TRACT OF LAND IN THE NORTHEAST QUARTER OF THE NORTHEAST QUARTER OF SECTION 8, TOWNSHIP 1 SOUTH, RANGE 69 WEST OF THE 6TH P.M., COUNTY OF BOULDER, STATE OF COLORADO, DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHEAST CORNER OF BLOCK 1, CALEDONIA PLACE, ACCORDING TO THE RECORDED PLAT; THENCE SOUTH 330 FEET TO THE TRUE POINT OF BEGINNING; THENCE WEST 967 FEET, MORE OR LESS TO A POINT ON THE EAST RIGHT-OF-WAY LINE OF THE COLORADO AND SOUTHERN RAILROAD; THENCE SOUTHEASTERLY ALONG SAID EAST RIGHT-OF-WAY LINE TO THE SOUTH LINE OF BLOCK 4 IN SAID CALEDONIA PLACE; THENCE EAST, ALONG THE SOUTH LINE OF BLOCK 4 IN SAID CALEDONIA PLACE TO THE NORTHERLY RIGHT-OF-WAY LINE OF THE REX MINE NO. 1 SPUR; THENCE EASTERLY, ALONG THE NORTHERLY RIGHT-OF-WAY LINE OF SAID REX MINE NO. 1 SPUR, TO A POINT ON THE EAST LINE OF BLOCK 6 IN SAID CALEDONIA PLACE; THENCE NORTH, ALONG THE EAST LINE OF BLOCK 6 AND ALONG THE EAST LINE OF BLOCK 1, IN SAID CALEDONIA PLACE, 230 FEET, MORE OR LESS, TO THE TRUE POINT OF BEGINNING.

TOGETHER WITH THAT PORTION OF THE NORTH 1/2 OF VACATED HARPER STREET LYING ADJACENT THERETO, AS VACATED IN ORDINANCE RECORDED JANUARY 13, 1981 UNDER RECEPTION NO. 430265 AND RECORDED JANUARY 21, 1981 UNDER RECEPTION NO. 431497;

EXCEPTING THEREFROM THAT PART THEREOF DESCRIBED IN BOOK 646 AT PAGE 505 AND EXCEPTING ANY PORTION PLATTED AS COAL CREEK STATION FILING NO. 1 AND EXCEPTING THAT PORTION DESCRIBED IN DEED RECORDED FEBRUARY 11, 2013 UNDER RECEPTION NO. 3288889, AND EXCEPTING ANY PORTION LYING WITHIN THE ROBERT DI GIACOMO ADDITION TI THE TOWN OF LOUISVILLE.

CONTAINING ±440,608 SQUARE FEET OR ±10.115 ACRES OF LAND, MORE OR LESS.

A PORTION OF THE NORTHEAST QUARTER (NE 1/4) OF SECTION 8,TOWNSHIP 1 SOUTH, RANGE 69 WEST OF THE 6TH PRINCIPAL MERIDIAN, CITY OF LOUISVILLE, COUNTY OF BOULDER, STATE OF COLORADO, DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHEAST CORNER OF SAID NORTHEAST QUARTER (NE 1/4); FROM WHENCE THE NORTHWEST CORNER OF SAID NORTHEAST QUARTER (NE 1/4) BEARS NORTH 89°58'20" WEST A DISTANCE OF 2642.02 FEET, WITH ALL BEARINGS HEREIN RELATED THERETO; THENCE ALONG THE EAST LINE OF SAID NORTHEAST QUARTER (NE 1/4), SOUTH 00°18'01" EAST, 30.00 FEET TO THE SOUTH LINE OF SOUTH BOULDER CANNON CIRCLE, AND BEING THE POINT OF BEGINNING;

THENCE ALONG SAID WEST LINE OF CANNON CIRCLE, SOUTH 00°17'50" EAST, 390.01 TO A POINT OF INTERSECTION WITH THE SOUTH LINE OF CANNON CIRCLE;
THENCE ALONG SAID SOUTH LINE, SOUTH 89°58'20" EAST , 425.02 FEET TO THE WEST LINE OF NORTH 96TH STREET;
THENCE ALONG SAID WEST LINE, SOUTH 00°18'01" EAST, 199.89 FEET TO THE NORTHEAST CORNER OF THE ROBERT DI GIACOMO SUBDIVISION, SAID POINT ALSO BEING ON THE NORTH LINE OF A 20 FOOT WIDE PUBLIC ALLEY;
THENCE ALONG SAID NORTH LINE, NORTH 89°58'20" WEST, 754.89 FEET TO THE NORTHWEST CORNER OF A PARCEL OF LAND DESCRIBED AND CONVEYED IN THAT CERTAIN QUITCLAIM DEED RECORDED DECEMBER 14, 2012 AT RECEPTION NO. 03275254;
THENCE ALONG THE WEST LINE OF SAID PARCEL, SOUTH 00°01'40" WEST, 184.00 FEET TO THE SOUTHWEST CORNER OF SAID PARCEL, SAID POINT ALSO BEING ON THE NORTH LINE OF HARPER STREET;
THENCE ALONG SAID NORTH LINE, NORTH 89°58'20" WEST, 39.06 FEET TO A POINT OF INTERSECTION WITH THE WEST LINE OF FRONT STREET;
THENCE ALONG SAID WEST LINE, SOUTH 00°18'01" EAST, 16.00 FEET TO A POINT OF INTERSECTION WITH THE NORTH LINE OF LOT 1 OF HUNT-PUKSAS SUBDIVISION;
THENCE ALONG SAID NORTH LINE, NORTH 89°58'20" WEST, 114.35 FEET TO A POINT ON THE EAST LINE OF THE B.N.S.F. RAILROAD RIGHT-OF-WAY;
THENCE ALONG SAID EAST LINE THE FOLLOWING SEVEN (7) COURSES:

1. *NORTH 08°30'12" WEST, 471.84 FEET TO A POINT;*
2. *NORTH 08°28'40" WEST, 81.59 FEET TO A POINT;*
3. *NORTH 08°52'07" WEST, 79.23 FEET TO A POINT;*
4. *NORTH 09°23'12" WEST, 43.90 FEET TO A POINT;*
5. *NORTH 09°49'41" WEST, 43.80 FEET TO A POINT;*
6. *NORTH 10°34'58" WEST, 43.90 FEET TO A POINT;*
7. *NORTH 11°44'18" WEST, 15.01 FEET TO A POINT ON THE SOUTH LINE OF SOUTH BOULDER ROAD;*

THENCE ALONG SAID SOUTH LINE THE FOLLOWING THREE (3) COURSES:

1. *SOUTH 89°58'20" EAST, 285.10 FEET TO A POINT;*
2. *NORTH 00°17'50" WEST, 20.00 FEET TO A POINT;*
3. *SOUTH 89°58'20" EAST, 315.00 FEET TO THE POINT OF BEGINNING.*

CONTAINING 440,608 SQUARE FEET OF 10.115 ACRES OF LAND, MORE OR LESS.

LAND USE SUMMARY

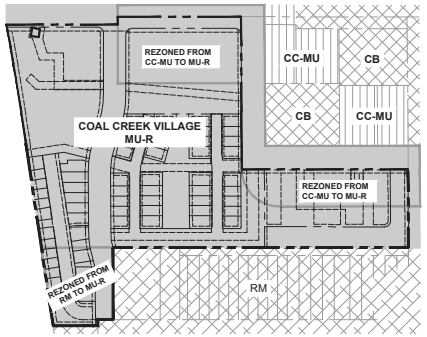
AREA	AREA (SF)	AREA (AC)	USE
OUTLOT A	25,120	0.58	PRIVATE ROAD, DRAINAGE, PUBLIC UTILITY & MAINTENANCE, LANDSCAPE, ACCESS EASEMENT
OUTLOT B	53,927	1.24	PRIVATE ROAD, DRAINAGE, PUBLIC UTILITY & MAINTENANCE, LANDSCAPE, ACCESS EASEMENT
OUTLOT C	21,056	0.48	DRAINAGE, UTILITY, LANDSCAPE, PEDESTRIAN ACCESS, PARK
OUTLOT D	26,318	0.60	PRIVATE ROAD, DRAINAGE, UTILITY, LANDSCAPE, PEDESTRIAN ACCESS, EAE
ROW DEDICATION	53,689	1.23	PUBLIC STREETS

SHEET INDEX

Sheet Number	Sheet Title	Sheet Number	Sheet Title
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2	SITE PLAN DATA AND NOTES	29	TREE INVENTORY PLAN
3	SITE PLAN	30	TREE INVENTORY
4	SITE PLAN ENLARGEMENT	31	FENCING PLAN
5	SITE PLAN ENLARGEMENT	32	SITE DETAILS
6	SITE PLAN ENLARGEMENT		
7	PEDESTRIAN CIRCULATION PLAN		
8	PLANNING STREET SECTIONS AND TYPICALS		
9	PARKING PLAN		
10	MICRO TOWNHOME ELEVATIONS		
11	MULTI-FAMILY & MIXED-USE ELEVATIONS		
12	ALLEY LOADED TOWNHOME ELEVATIONS		
13	ALLEY LOADED TOWNHOME ELEVATIONS		
14	FRONT LOADED TOWNHOME ELEVATIONS		
15	STREET SECTIONS		
16	OVERALL UTILITY PLAN		
17	DRAINAGE AND GRADING PLAN		
18	GRADING PLAN		
19	RETAINING WALL DETAILS		
20	OVERALL LANDSCAPE PLAN		
21	LANDSCAPE PLAN ENLARGEMENT		
22	LANDSCAPE PLAN ENLARGEMENT		
23	LANDSCAPE PLAN ENLARGEMENT		
24	LANDSCAPE PLAN ENLARGEMENT		
25	LANDSCAPE PLAN ENLARGEMENT		
26	PLANT SCHEDULE		
27	LANDSCAPE DETAILS & NOTES		

PROPOSED ZONING

SCALE: 1"=150'-0"



PROJECT HISTORY

12.04.1980 AMENDED P.U.D PLAN

PROPOSED PUD

THIS PRELIMINARY PUD PROPOSES TO DEVELOP A VIBRANT MIXED-USE PROJECT THAT INCLUDES APPROXIMATELY 13,534 SQUARE FEET OF COMMERCIAL USE ADJACENT TO SOUTH BOULDER ROAD. A WIDE VARIETY OF HOUSING CHOICES ARE PROPOSED THAT ARE EXCITING, ENERGY EFFICIENT AND MOST OF ALL ATTAINABLE. SPECIFIC PRODUCT TYPES ARE DESCRIBED AS FOLLOWS:

1. 3-STORY MIXED-USE BUILDINGS PROPOSED TO BE LOCATED ALONG SOUTH BOULDER ROAD.
2. 3-STORY MULTI-FAMILY BUILDINGS FACE FRONT STREET AND CREATE AND ATTRACTIVE PEDESTRIAN-ORIENTED STREETSCAPE AT THE ENTRANCE TO THE NEIGHBORHOOD.
3. FURTHER SOUTH ALONG FRONT STREET, ALLEY-LOADED TOWNHOMES CONTINUE THE ARCHITECTURALLY DOMINANT STREETSCAPE. THEY ARE 3-STORIES WITH A GARAGE ON THE FIRST LEVEL ACCESSED FROM THE ALLEYS.
4. MICRO TOWNHOMES LOCATED SOUTH OF THE EXISTING C-B COMMERCIAL AREA FORM AN IDEAL TRANSITION BETWEEN THE EXISTING COMMERCIAL USES AND THE EXISTING "LITTLE ITALY" RESIDENTIAL NEIGHBORHOOD TO THE SOUTH.
5. A SPECIAL REVIEW USE IS REQUESTED WITH THIS PUD APPLICATION TO ALLOW RESIDENTIAL USE ON THE FIRST FLOOR OF MULTI-UNIT DWELLINGS (MULTIFAMILY AND TOWNHOMES).
6. THIS PUD WILL SUPERSEDE ALL PREVIOUSLY RECORDED PUD'S RELATED TO THE SITE.

PROPOSED PHASING

UPON FINAL PUD ACCEPTANCE. THE BUILDER OR DEVELOPER CAN OBTAIN PERMITS FOR 42 RESIDENTIAL UNITS. BEFORE ISSUING PERMITS FOR ADDITIONAL RESIDENTIAL UNITS, A PERMIT FOR ONE MIXED-USE BUILDING MUST BE OBTAINED, AND ITS FOUNDATION COMPLETED, BACKFILLED, AND ACCEPTED BY THE CITY. ONCE THIS IS DONE, ANOTHER 42 RESIDENTIAL UNIT PERMITS CAN BE ISSUED.

THE PERMIT FOR THE SECOND MIXED-USE BUILDING AND THE COMPLETION AND BACKFILLING OF ITS FOUNDATION ARE REQUIRED BEFORE ISSUING THE REMAINING RESIDENTIAL UNIT PERMITS. IF THE BUILDER OR DEVELOPER OBTAINS MIXED-USE BUILDING PERMITS AND COMPLETES THE FOUNDATION WORK AHEAD OF SCHEDULE, ALL RESTRICTIONS ON RESIDENTIAL PERMIT ISSUANCE ARE REMOVED.

COAL CREEK VILLAGE

PRELIMINARY PUD AND SRU

LOUISVILLE, COLORADO

PREPARED BY:

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ENGINEER
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Joel Seamons
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LONGMONT, COLORADO 80501
P. 303.651.6626

NORTH

ORIGINAL SIZE 24X36

ISSUED

No.	DESCRIPTION	DATE
1	PRELIMINARY PUD	01/22/2021
2	PRELIMINARY PUD RD 2	06/21/2021
3	PRELIMINARY PUD RD 3	06/17/2022
4	PRELIMINARY PUD RD 4	12/23/2022
5	PRELIMINARY PUD RD 5	08/04/2023
6	PRELIMINARY PUD RD 6	05/14/2024

REVISIONS

No.	DESCRIPTION	DATE

COVER SHEET

SEAL:

ENTITLEMENT DRAWINGS NOT FOR CONSTRUCTION

PROJECT No.:	R20-030
DRAWN BY:	
REVIEWED BY:	

DRAWING NUMBER:

1 OF 32

Plotted By: Megan McGregor **Layout:** S1 COVER SHEET **Printed On:** 3/26/2024 10:27 AM **File Name:** SITE PLAN.dwg

GROSS DENSITY

GROSS AREA* (ACRES)	11.378
TOTAL DWELLING UNITS	188
GROSS DENSITY (DU/AC)	16.5

*AREA OF DENSITY CALCULATION INCLUDES PLATTED ACREAGE AND ½ THE AREA OF ANY ADJACENT STREET PER SECTION 17.4.060.C.1.A

DWELLING UNIT BREAK DOWN

DWELLING TYPE	DUs
MULTI-FAMILY	96
ALLEY-LOADED TOWNHOME UNITS	60
MICRO TOWNHOME UNITS	32
TOTAL	188

SETBACKS & HEIGHT PER LOT

			MINIMUM SETBACK PROVIDED		
DWELLING TYPE / BLOCK	HEIGHT (FT.)	STORIES	FRONT (FT.)	SIDE (FT.)	REAR (FT.)
MIXED USE (BLOCK 4)	45'	3	10'-1"	10'	20'+
TOWNHOMES (BLOCK 3)	(2)	3	1'	0"	6'
MULTI-FAMILY (BLOCK 5)	45'	3	10'	13'	20'+
TOWNHOMES (BLOCK 2)	40'	3	8'-7"	0"	8'-9"
MICRO-TOWNHOMES (BLOCK 1)	25'	1.5	10'	(1)	8'

(1) 8' AT STREET OR OUTLOT, 10' BETWEEN BUILDINGS.

(2) TYPICAL 40'-0" MAXIMUM BUILDING HEIGHT. FOR TOWNHOMES #13-18, WHICH ARE LOCATED IN RM DISTRICT TRANSITIONAL HEIGHT SETBACK, MAXIMUM HEIGHT SHALL BE 35'-0".

TOTAL BUILDING FRONTAGE/COVERAGE CALCULATIONS

STREET	APPLICABLE STREET FRONTAGE(FT)	TOTAL BUILDING FRONTAGE(FT)	% BUILDING FRONTAGE	TOTAL BUILDING COVERAGE(SF)
SOUTH BOULDER ROAD	543	304	55.9853	
EAST OF FRONT STREET	295	216	73.2203	
WEST OF FRONT STREET	248	88	35.4839	
FRONT STREET	1240	825	66.5323	
EAST SIDE	532	297	55.8271	
WEST SIDE	708	528	74.5763	
CANNON CIRCLE	592	320	46.2428	
NORTH/ SOUTH LEG	363	170	46.8320	
EAST/ WEST LEG	329	150	45.5927	
HIGHWAY 42	147	90	61.2245	
TOTALS:	5097	2988	58.6227	80070
TOTAL % BUILDING COVERAGE (USING TOTAL NET SITE ACREAGE 8.66 AC):				21.2% *

* WAIVER REQUEST INCLUDED WITH THIS APPLICATION.

DIMENSIONAL STANDARDS

RESIDENTIAL DENSITY	REQUIRED BY CODE				PROVIDED	
	MIN:	12	UNITS/GROSS ACRE		16.5	UNITS/ GROSS ACRE
	MAX:	20	UNITS/GROSS ACRE			
MINIMUM LOT AREA	NA				915 SF/.02 AC	
MINIMUM LOT WIDTH	40'-0"				24'-6" **	
MINIMUM BUILDING COVERAGE	40%				21.2%**	
MINIMUM LANDSCAPE COVERAGE	10%				31% ***	
BUILDING SETBACKS FROM PROPERTY LINES:						
MINIMUM/MAXIMUM SETBACKS FROM PROPERTY LINE ADJACENT TO HWY. 42 AND SOUTH BOULDER ROAD:				NA	NA	
MINIMUM/MAXIMUM SETBACKS FROM ALL OTHER STREET-FACING PROPERTY LINES:			MIN:	0	1'-0"	
			MAX:	10'-0"	10'-0"	
MINIMUM SIDE-YARD SETBACK				0	0	
MINIMUM REAR YARD SETBACK				20'-0"	6'-0" MIN. **	
MAXIMUM BUILDING HEIGHT (PRINCIPAL BUILDINGS)			2-STORIES	35'-0"	2-STORIES: 35'-0"	
			3-STORIES	45'-0"	3-STORIES: 45'-0"	
MAXIMUM GROUND FLOOR BUILDING FOOTPRINT	(1)				7,325 SF	
MAXIMUM BUILDING LENGTH ALONG STREET FRONTAGE						
FRONTING HWY. 42:	NA				N/A	
ALL OTHER BUILDINGS:	200'-3"				156'-0"	
MINIMUM % OF STREET-FACING PROPERTY LINES THAT MUST FRONT A BUILDING OR BUILDING WALL	70%				58.6%**	

(1) 10,000 SQ. FT. OPTION: SPECIAL REVIEW REQUIRED FOR BUILDINGS > 10,000 SQ. FT

* AREA OF DENSITY CALCULATION INCLUDES PLATTED ACREAGE AND ½ THE AREA OF ANY ADJACENT STREET PER SECTION 17.14.060.C.1.A

** WAIVER REQUEST INCLUDED WITH THIS APPLICATION.

*** 31% (OR 3.53 ACRES) OF THE SITE IS DEDICATED TO LANDSCAPE AREA (1.87 ACRES ARE DEDICATED TO LANDSCAPED PLANT MATERIAL AND 1.66 ACRES ARE HARDSCAPED). IT IS THE APPLICANT'S UNDERSTANDING THAT THE SITE IS COMPLIANT WITH MUDDSG SEC. 7.4.B.1.B AS HARDSCAPE ELEMENTS MAKE UP LESS THAN ½ OF THE LANDSCAPE AREA REQUIREMENT.

WAIVERS*

	CODE SECTION	REQUIREMENT	PROPOSED
1	MUDDSG 1.3.A.1 MUDDSG 1.3.3.1	EAST/ WEST BLOCK WIDTH = 270 - 320 NORTH/SOUTH BLOCK WIDTH = 300 - 400'	**BLOCK ONE:** EAST AND WEST SIDES =146', NORTH AND SOUTH SIDES =321'; **BLOCK TWO:** EAST AND WEST SIDES =293', NORTH AND SOUTH SIDES =333'; **BLOCK THREE:** EAST AND WEST SIDES =447', NORTH AND SOUTH SIDES =155'; **BLOCK FOUR:** EAST AND WEST SIDES =221', NORTH AND SOUTH SIDES 295'; **BLOCK FIVE:** EAST AND WEST SIDES = 332', NORTH AND SOUTH SIDES = 248'
2	MUDDSG 5.4.3	ALL PUBLIC SIDEWALKS SHALL BE A MINIMUM OF TEN (10) FEET WIDE INCORPORATING TREE PLANTING INTO THE RIGHT OF WAY (ROW).	ALONG FRONT STREET AND CANNON CIRCLE: 5' WIDE DETACHED SIDEWALK AND AN 8' TREE LAWN.
3	MUNICIPAL CODE 17.14.060 - TABLE 3: DIMENSIONAL AND BULK STANDARDS	MINIMUM LOT WIDTH = 40 FEET	TOWNHOME LOTS VARY FROM 24'-6" TO 32 FEET WIDE.
4	MUNICIPAL CODE 17.14.060 - TABLE 3: DIMENSIONAL AND BULK STANDARDS	MINIMUM BUILDING COVERAGE (SF) = 40%	BUILDING COVERAGE PROVIDED = 21.2%
5	MUNICIPAL CODE 17.14.060 - TABLE 3: DIMENSIONAL AND BULK STANDARDS	20-FOOT MINIMUM SETBACK FROM REAR PROPERTY LINE.	TOWNHOME REAR YARD SETBACK RANGES FROM 6-20 FEET.
6	MUNICIPAL CODE 17.14.060 - TABLE 3: DIMENSIONAL AND BULK STANDARDS	MINIMUM 70% OF STREET FACING PROPERTY LINES MUST CONTAIN A BUILDING OR BUILDING WALL.	58.6% OF STREET FACING PROPERTY LINES CONTAIN A BUILDING OR BUILDING WALL.

*PLEASE REFER TO WAIVER REFERENCE DIAGRAMS INCLUDED WITH SUBMITTAL PACKAGE AND DESCRIPTIONS IN WAIVER REQUEST DOCUMENT FOR MORE INFORMATION.

SITE PLAN NOTES

1. REFER TO UTILITY PLANS FOR LOCATIONS OF STORM DRAINAGE STRUCTURES, UTILITY MAINS AND SERVICES.
2. REFER TO THE CIVIL ENGINEERING PLANS FOR DETAILED INFORMATION OF PROPOSED TOPOGRAPHY, UTILITY, AND STREET IMPROVEMENTS.
3. REFER TO THE PLAT FOR LOT AREAS, TRACT SIZES, EASEMENTS, LOT DIMENSIONS, UTILITY EASEMENTS, OTHER EASEMENTS, AND OTHER SURVEY INFORMATION.
4. ALL SIDEWALKS AND RAMPS WILL CONFORM TO CITY STANDARDS. ALL HANDICAP PARKING SPACES AND RAMPS ARE TO BE VERIFIED WITH CIVIL ENGINEER FOR GRADING DRAINAGE, AND ACCESSIBLE ROUTE CONSIDERATIONS. HANDICAP PARKING SPACES SHOULD SLOPE NO MORE THAN 1:48 IN ANY DIRECTION. ALL ACCESSIBLE ROUTES SHOULD SLOPE NO MORE THAN 1:20 IN DIRECTION OF TRAVEL AND NO MORE THAN 1:48 IN CROSS SLOPE.
5. ACCESSIBLE RAMPS TO BE PROVIDED AT ALL STREET AND DRIVE INTERSECTIONS AND AT ALL DESIGNATED ACCESSIBLE PARKING SPACES.
6. PLACEMENT OF ALL LANDSCAPING SHALL BE IN ACCORDANCE WITH THE SIGHT DISTANCE CRITERIA AS SPECIFIED BY THE CITY OF LOUISVILLE. NO STRUCTURES OF LANDSCAPE ELEMENTS GREATER THAN 24" SHALL BE ALLOWED WITHIN THE SIGHT DISTANCE TRIANGLE OF EASEMENT WITH THE EXCEPTION OF DECIDUOUS TREES PROVIDING THE LOWEST BRANCH IS AT LEAST 8' FROM GRADE. ANY FENCES WITHIN THE SIGHT DISTANCE TRIANGLE OR EASEMENT SHALL BE NO MORE THAN 42" IN HEIGHT AND AT LEAST 80% OPEN.
7. MARKED CROSSWALK PAVEMENT MARKING AND SIGNAGE SHOWN ON PRIVATE DRIVES SHALL BE MAINTAINED BY HOA, UNLESS OTHERWISE NOTED.
8. PRIVATE ALLEYS/ DRIVES/ CONCRETE APRONS SHALL BE MAINTAINED BY HOA AS SHOWN. THIS INFORMATION SHALL BE SHOWN ON THE PUD.
9. HANDICAP RAMPS THAT CROSS PRIVATE DRIVES SHALL BE MAINTAINED BY THE HOA.
10. DRAINAGE FACILITIES WITHIN PRIVATE PROPERTY SHALL BE MAINTAINED BY THE HOA. CITY WILL MAINTAIN DRAINAGE FACILITIES THAT ARE ACCESSIBLE VIA PUBLIC DRAINAGE FACILITY IN THE RIGHT OF WAY.
11. HOA SHALL PROVIDE SNOW REMOVAL FROM PUBLIC WALKS WITHIN RIGHT OF WAY. SNOW REMOVAL FROM PRIVATE DRIVES AND STOCKPILE ON PRIVATE PROPERTY SHALL BE PROVIDED BY HOA. SNOW REMOVAL FROM PRIVATE DRIVES SHALL NOT BE DEPOSITED WITHIN THE PUBLIC RIGHT OF WAY. SNOW STOCKPILES ON CITY STREETS BY THE HOA SHALL BE PROMPTLY REMOVED. CITY MAY REMOVE SNOW STOCKPILES ON PUBLIC STREETS AT HOA EXPENSE.
12. HOA RESPONSIBLE FOR SURFACE MAINTENANCE WITHIN DUE DAMAGED/ DISTURBED DURING CITY MAINTENANCE OF PUBLIC UTILITY LINES.
13. FUTURE INTERSECTION MOVEMENTS AT SH42 AND SOUTH BOULDER ROAD MAY BE RESTRICTED AT THE DIRECTION OF THE CITY.

COAL CREEK VILLAGE

PRELIMINARY PUD AND SRU

LOUISVILLE, COLORADO

PREPARED BY:

ripleydesign
LANDSCAPE ARCHITECTURE, LANDPLANNING
419 Canyon Ave. Suite 200 Fort Collins, CO 80521
phone 970.224.5828 | fax 970.225.6820 | www.ripleydesigninc.com

PLANNER / LANDSCAPE ARCHITECT

RIPLEY DESIGN INC.
Joel Welkert
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Fort Collins, CO 80521
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OWNER

COAL CREEK VILLAGE LLC
Michael Markel
5723 ARAPAHOE AVE.
BOULDER, COLORADO 80303
P. 303.775.5524

ENGINEER

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Joel Seamons
420 21ST AVENUE, SUITE 101
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P. 303.651.6626

NORTH

ORIGINAL SIZE 24X36

ISSUED

No.	DESCRIPTION	DATE
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5	PRELIMINARY PUD RD 5	08/04/2023
6	PRELIMINARY PUD RD 6	05/14/2024

REVISIONS

No.	DESCRIPTION	DATE

SITE PLAN DATA AND NOTES

SEAL:

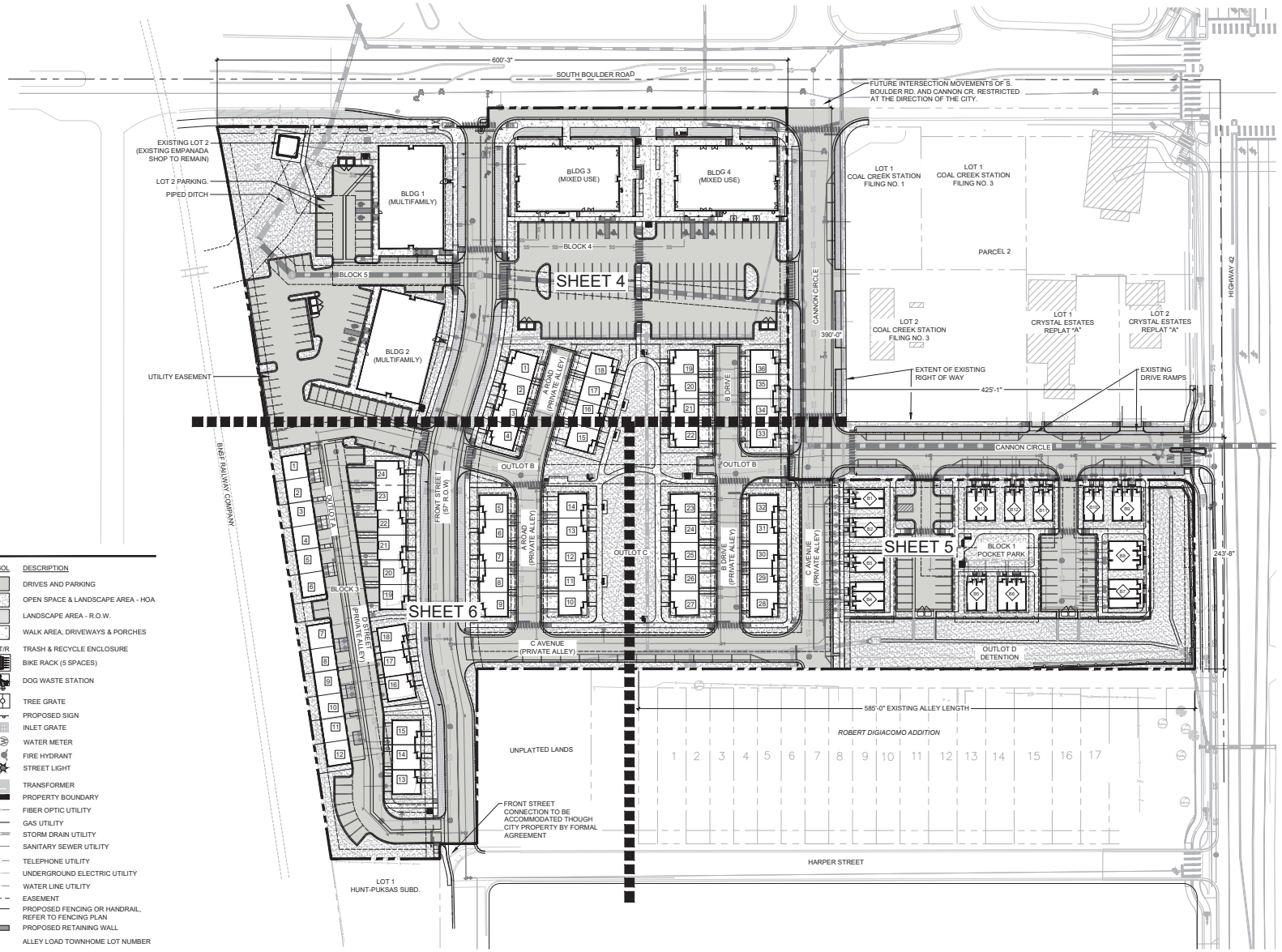
ENTITLEMENT DRAWINGS NOT FOR CONSTRUCTION

PROJECT No.:	R20-030
DRAWN BY:	
REVIEWED BY:	

DRAWING NUMBER:

2 OF 32

Plotted By: Joel Welkert **Layout:** S2 SITE PLAN DATA **Printed On:** 9/3/2024 1:28 PM **File Name:** SITE PLAN.dwg



LEGEND

SYMBOL	DESCRIPTION
	DRIVES AND PARKING
	OPEN SPACE & LANDSCAPE AREA - HOA
	LANDSCAPE AREA - R.O.W.
	WALK AREA, DRIVEWAYS & PORCHES
T/R	TRASH & RECYCLE ENCLOSURE
	BIKE RACK (5 SPACES)
	DOG WASTE STATION
	TREE GRATE
	PROPOSED SIGN
	INLET GRATE
	WATER METER
	FIRE HYDRANT
	STREET LIGHT
	TRANSFORMER
	PROPERTY BOUNDARY
	FIBER OPTIC UTILITY
	GAS UTILITY
	STORM DRAIN UTILITY
	SANITARY SEWER UTILITY
	TELEPHONE UTILITY
	UNDERGROUND ELECTRIC UTILITY
	WATER LINE UTILITY
	EASEMENT
	PROPOSED FENCING OR HANDRAIL, REFER TO FENCING PLAN
	PROPOSED RETAINING WALL
	ALLEY LOAD TOWNHOME LOT NUMBER
	MICRO TOWNHOME BUILDING NUMBER
U.E.	UTILITY EASEMENT
D.E.	DRAINAGE EASEMENT
E.A.E.	EMERGENCY ACCESS EASEMENT
U.S.M.E	UTILITY, SIDEWALK, AND MAINTENANCE EASEMENT
E.U.E	EXCLUSIVE UTILITY EASEMENT

NOTE:
• CONCEPTUAL IMPROVEMENTS FOR HIGHWAY 42 SHOWN. DESIGN OF HIGHWAY 42 IMPROVEMENTS BY OTHERS.

Plotted By: Megan McGregor **Layout:** S3 SITE PLAN **Printed On:** 4/2/2024 9:27 AM **File Name:** SITE PLAN.dwg

COAL CREEK VILLAGE

PRELIMINARY PUD AND SRU

LOUISVILLE, COLORADO

PREPARED BY:

ripleydesign
LANDSCAPE ARCHITECTURE, LAND PLANNING
419 Canyon Ave. Suite 200 Fort Collins, CO 80521
phone 970.224.5828 | fax 970.226.0827 | www.ripleydesigninc.com

PLANNER / LANDSCAPE ARCHITECT

RIPLEY DESIGN INC.
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OWNER

COAL CREEK VILLAGE LLC
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ENGINEER

ROCKY RIDGE CIVIL ENGINEERING
Joel Seamons
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P. 303.651.8626

NORTH
0 25 50 100
SCALE: 1"=50'-0"
ORIGINAL SIZE 24X36

ISSUED

No.	DESCRIPTION	DATE
1	PRELIMINARY PUD	01/22/2021
2	PRELIMINARY PUD RD 2	06/21/2021
3	PRELIMINARY PUD RD 3	05/17/2022
4	PRELIMINARY PUD RD 4	12/23/2022
5	PRELIMINARY PUD RD 5	08/04/2023
6	PRELIMINARY PUD RD 6	05/14/2024

REVISIONS

No.	DESCRIPTION	DATE

SITE PLAN

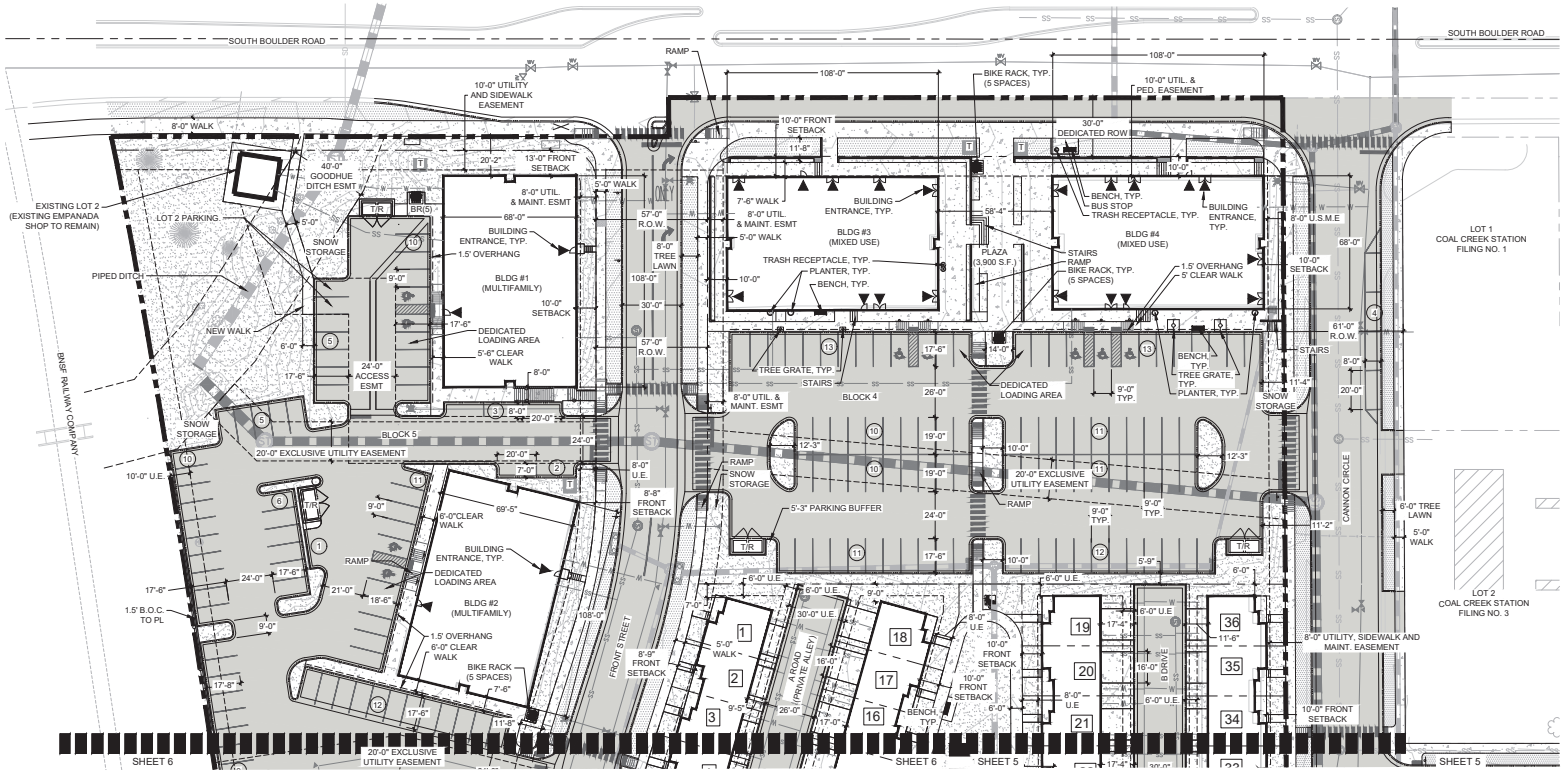
SEAL:

ENTITLEMENT DRAWINGS NOT FOR CONSTRUCTION

PROJECT No.:	R20-030
DRAWN BY:	
REVIEWED BY:	

DRAWING NUMBER:

3 OF 32



LEGEND

SYMBOL	DESCRIPTION
	DRIVES AND PARKING
	OPEN SPACE & LANDSCAPE AREA - HOA
	LANDSCAPE AREA - R.O.W.
	WALK AREA, DRIVEWAYS & PORCHES
T/R	TRASH & RECYCLE ENCLOSURE
	BIKE RACK (5 SPACES)
	DOG WASTE STATION
	TREE GRATE
	PROPOSED SIGN
	INLET GRATE
	WATER METER
	FIRE HYDRANT
	STREET LIGHT
	TRANSFORMER

	PROPERTY BOUNDARY
	FIBER OPTIC UTILITY
	GAS UTILITY
	STORM DRAIN UTILITY
	SANITARY SEWER UTILITY
	TELEPHONE UTILITY
	UNDERGROUND ELECTRIC UTILITY
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	EASEMENT
	PROPOSED FENCING OR HANDRAIL, REFER TO FENCING PLAN
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E.A.E.	EMERGENCY ACCESS EASEMENT
U.S.M.E	UTILITY, SIDEWALK, AND MAINTENANCE EASEMENT
E.U.E	EXCLUSIVE UTILITY EASEMENT

Plotted By: Megan McGregor **Layout:** SITE PLAN ENLARGEMENT **Printed On:** 4/2/2024 9:12 AM **File Name:** SITE PLAN ENLARGEMENT.dwg

COAL CREEK VILLAGE

PRELIMINARY PUD AND SRU

LOUISVILLE, COLORADO

PREPARED BY:

ripleydesign
LANDSCAPE ARCHITECTURE, LAND PLANNING
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P. 303.651.6626

NORTH
0 15 30 60
SCALE: 1"=30'-0"
ORIGINAL SIZE 24X36

ISSUED

No.	DESCRIPTION	DATE
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5	PRELIMINARY PUD RD 5	08/04/2023
6	PRELIMINARY PUD RD 6	05/14/2024

REVISIONS

No.	DESCRIPTION	DATE

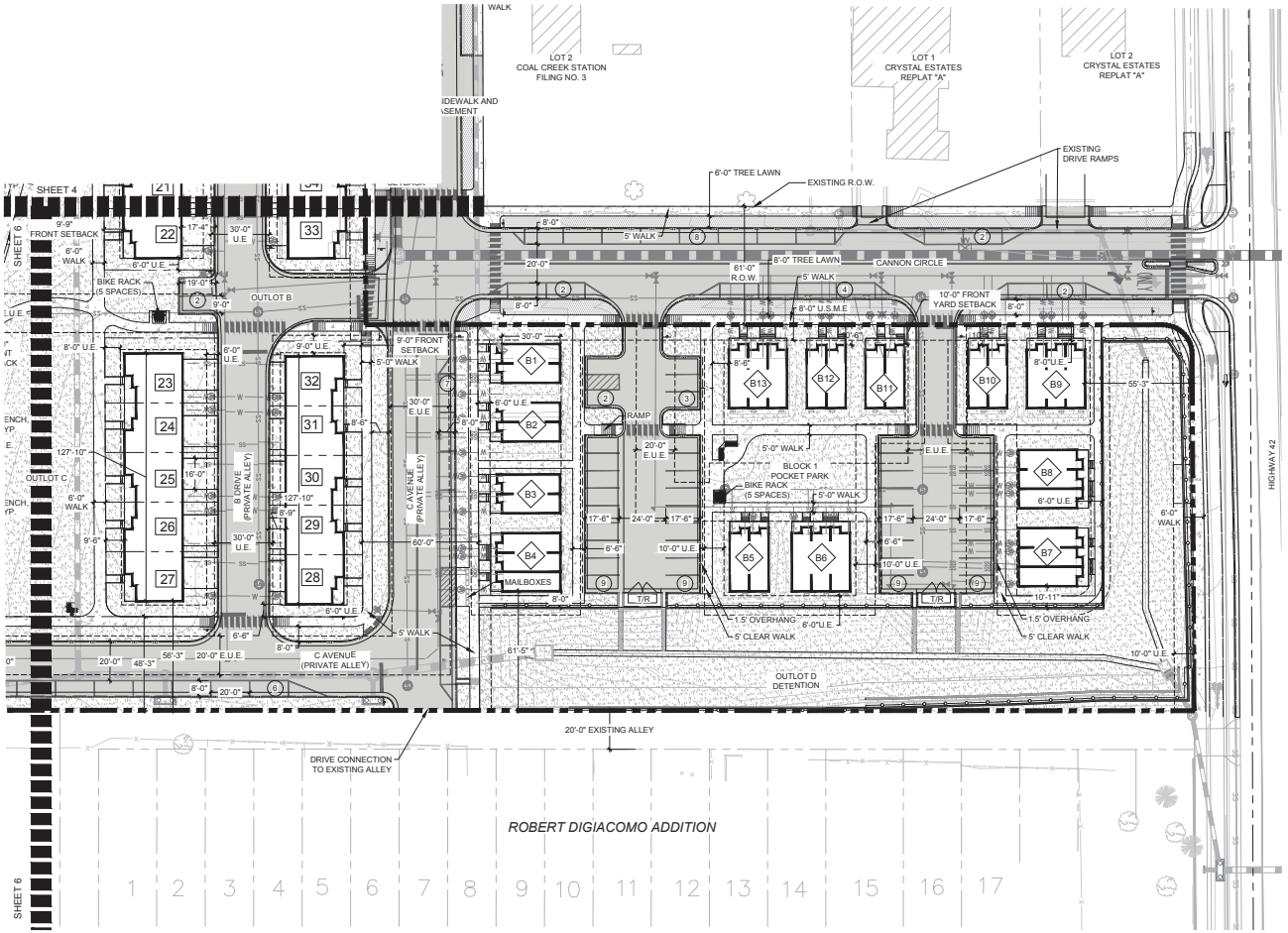
SITE PLAN ENLARGEMENT

SEAL:

ENTITLEMENT DRAWINGS NOT FOR CONSTRUCTION

PROJECT No.:	R20-030
DRAWN BY:	
REVIEWED BY:	

DRAWING NUMBER:



LEGEND

SYMBOL	DESCRIPTION
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	DOG WASTE STATION
	TREE GRATE
	PROPOSED SIGN
	INLET GRATE
	WATER METER
	FIRE HYDRANT
	STREET LIGHT
	TRANSFORMER

	PROPERTY BOUNDARY
FO	FIBER OPTIC UTILITY
G	GAS UTILITY
SD	STORM DRAIN UTILITY
SS	SANITARY SEWER UTILITY
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U.S.M.E	UTILITY, SIDEWALK, AND MAINTENANCE EASEMENT
E.U.E	EXCLUSIVE UTILITY EASEMENT

NOTE:
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COAL CREEK VILLAGE

PRELIMINARY PUD AND SRU

LOUISVILLE, COLORADO

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NORTH
0 15 30 60
SCALE: 1"=30'-0"
ORIGINAL SIZE 24X36

ISSUED

No.	DESCRIPTION	DATE
1	PRELIMINARY PUD	1/25/2021
2	CITY COMMENTS	6/2/2021
3	CITY COMMENTS	11/18/2021
4	CITY COMMENTS	6/10/2022
5	CITY COMMENTS	12/19/2022
6	CITY COMMENTS	05/14/2024

REVISIONS

No.	DESCRIPTION	DATE

SITE PLAN ENLARGEMENT

SEAL:

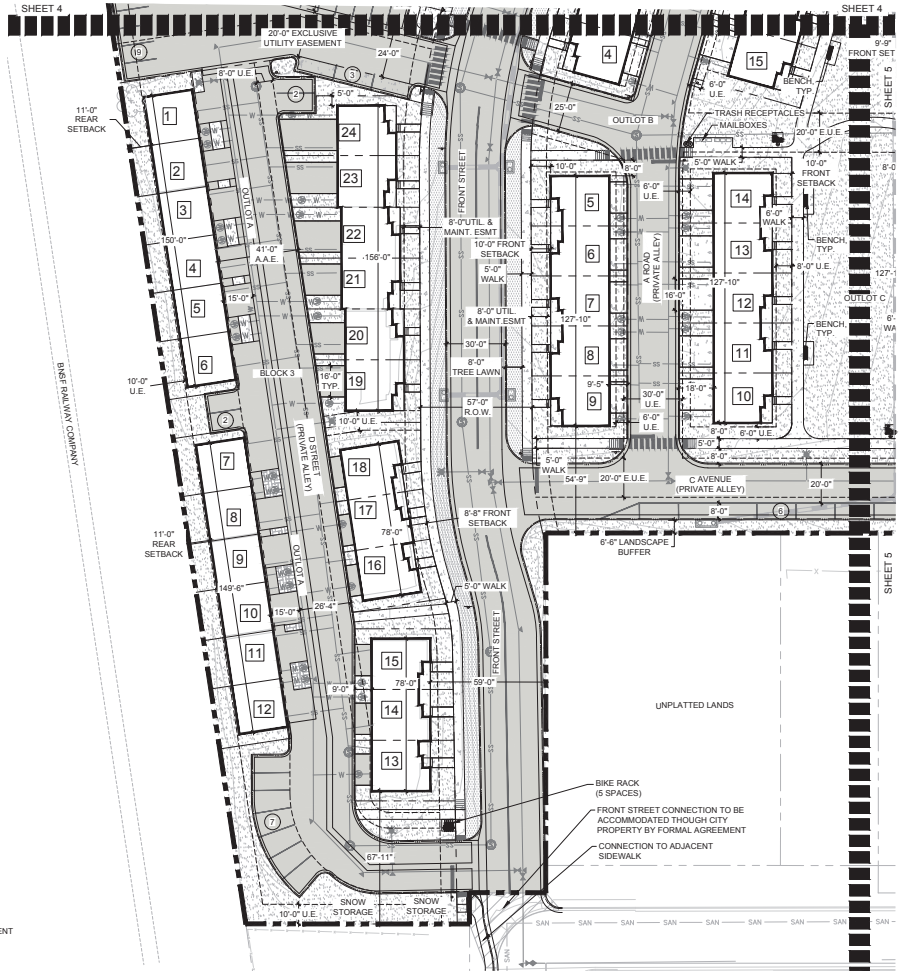
ENTITLEMENT DRAWINGS NOT FOR CONSTRUCTION

PROJECT No.:	R20-030
DRAWN BY:	
REVIEWED BY:	

DRAWING NUMBER:

5 OF 32

Plotted By: Joel Welkert **Layout:** SITE PLAN ENLARGEMENT (2) **Printed On:** 5/14/2024 10:39 AM **File Name:** SITE PLAN ENLARGEMENT.dwg



LEGEND

SYMBOL	DESCRIPTION
	DRIVES AND PARKING
	OPEN SPACE & LANDSCAPE AREA - HOA
	LANDSCAPE AREA - R.O.W.
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	PROPERTY BOUNDARY
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G	GAS UTILITY
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UE	UNDERGROUND ELECTRIC UTILITY
W	WATER LINE UTILITY
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U.S.M.E	UTILITY, SIDEWALK, AND MAINTENANCE EASEMENT
E.U.E	EXCLUSIVE UTILITY EASEMENT

COAL CREEK VILLAGE

PRELIMINARY PUD AND SRU

LOUISVILLE, COLORADO

PREPARED BY:

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0 15 30 60
SCALE: 1"=30'-0"
ORIGINAL SIZE 24X36

ISSUED

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5	CITY COMMENTS	12/19/2022
6	CITY COMMENTS	05/14/2024

REVISIONS

No.	DESCRIPTION	DATE

SITE PLAN ENLARGEMENT

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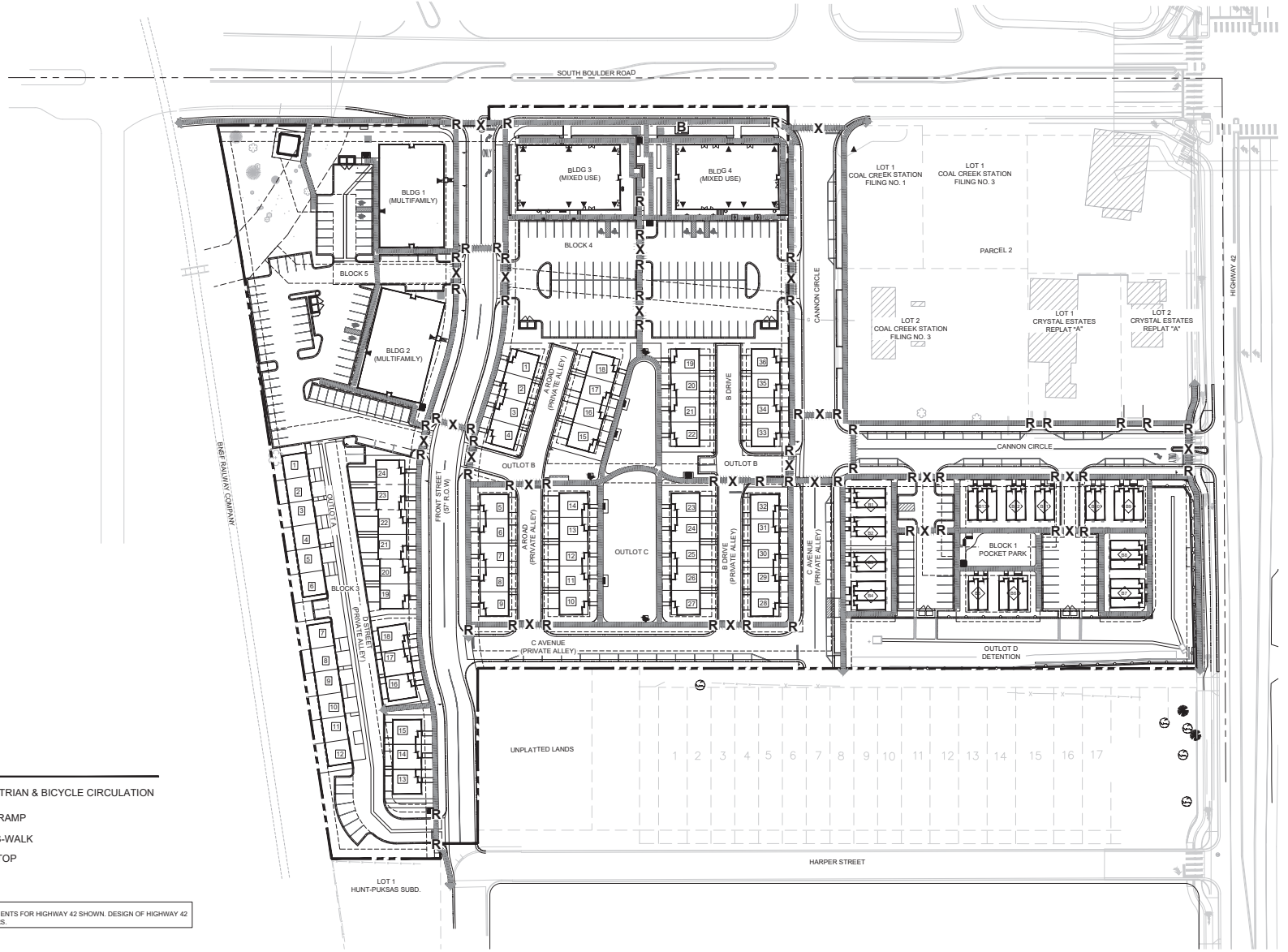
ENTITLEMENT DRAWINGS NOT FOR CONSTRUCTION

PROJECT No.:	R20-030
DRAWN BY:	
REVIEWED BY:	

DRAWING NUMBER:

6 OF 32

Plotted By: Joel Welkert **Layout:** SITE PLAN ENLARGEMENT (3) **Printed On:** 5/14/2024 10:44 AM **File Name:** SITE PLAN ENLARGEMENT.dwg



LEGEND

PEDESTRIAN & BICYCLE CIRCULATION

R WALK RAMP

X CROSS-WALK

B BUS-STOP

NOTE:
+ CONCEPTUAL IMPROVEMENTS FOR HIGHWAY 42 SHOWN. DESIGN OF HIGHWAY 42 IMPROVEMENTS BY OTHERS.

COAL CREEK VILLAGE

PRELIMINARY PUD AND SRU

LOUISVILLE, COLORADO

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0 25 50 100
SCALE: 1"=50'-0"
ORIGINAL SIZE 24X36

ISSUED

No.	DESCRIPTION	DATE
1	PRELIMINARY PUD	01/22/2021
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3	PRELIMINARY PUD RD 3	06/17/2022
4	PRELIMINARY PUD RD 4	12/23/2022
5	PRELIMINARY PUD RD 5	08/04/2023
6	PRELIMINARY PUD RD 6	05/14/2024

REVISIONS

No.	DESCRIPTION	DATE

PEDESTRIAN CIRCULATION PLAN

SEAL:

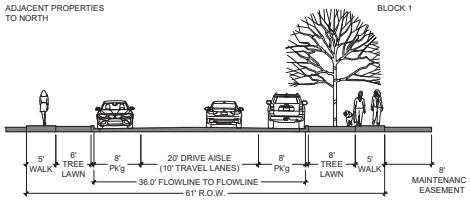
ENTITLEMENT DRAWINGS NOT FOR CONSTRUCTION

PROJECT No.:	R20-030
DRAWN BY:	
REVIEWED BY:	

DRAWING NUMBER:

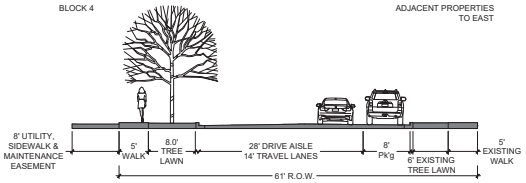
7 OF 32

Plotted By: Megan McGregor **Layout:** PED & BIKE CIRCULATION **Printed On:** 3/28/2024 4:45 PM **File Name:** PEDESTRIAN & BICYCLE CIRCULATION.dwg

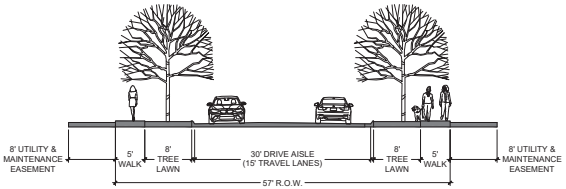


CANNON CIRCLE (EAST/WEST DIRECTION)

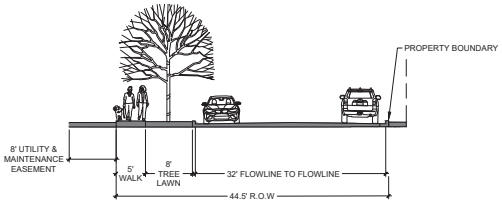
PARKING ON BOTH SIDES



CANNON CIRCLE (NORTH/SOUTH DIRECTION)

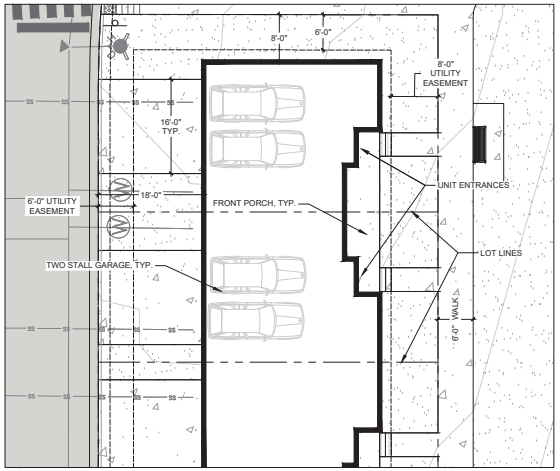


FRONT STREET (NORTH OF OUTLOT B)



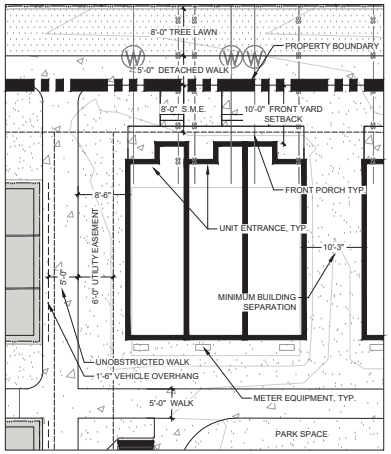
FRONT STREET (SOUTH OF OUTLOT B TO HARPER)

PARKING ON ONE SIDE



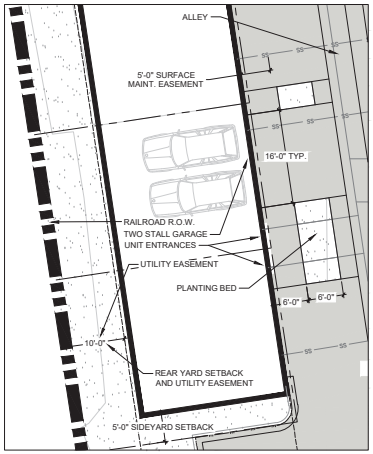
TYPICAL ALLEY LOADED TOWNHOME

SCALE: 1"=10'



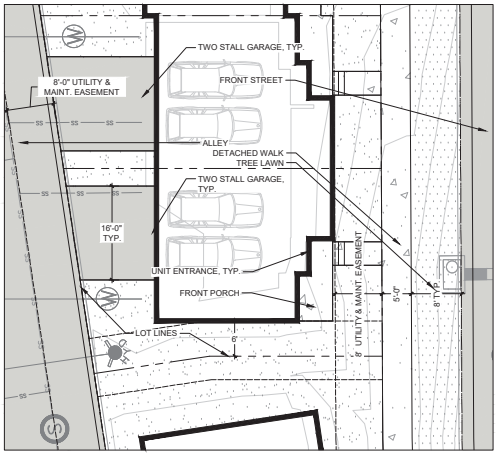
TYPICAL MICRO TOWNHOME

SCALE: 1"=10'



FRONT LOADED TOWNHOME

SCALE: 1"=10'



HEIGHT RESTRICTED ALLEY LOADED TOWNHOME

SCALE: 1"=10'

COAL CREEK VILLAGE

PRELIMINARY PUD AND SRU

LOUISVILLE, COLORADO

PREPARED BY:

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P. 303.651.6626

ORIGINAL SIZE 24X36

ISSUED

No.	DESCRIPTION	DATE
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6	PRELIMINARY PUD RD 6	05/14/2024

REVISIONS

No.	DESCRIPTION	DATE

PLANNING STREET SECTIONS AND TYPICALS

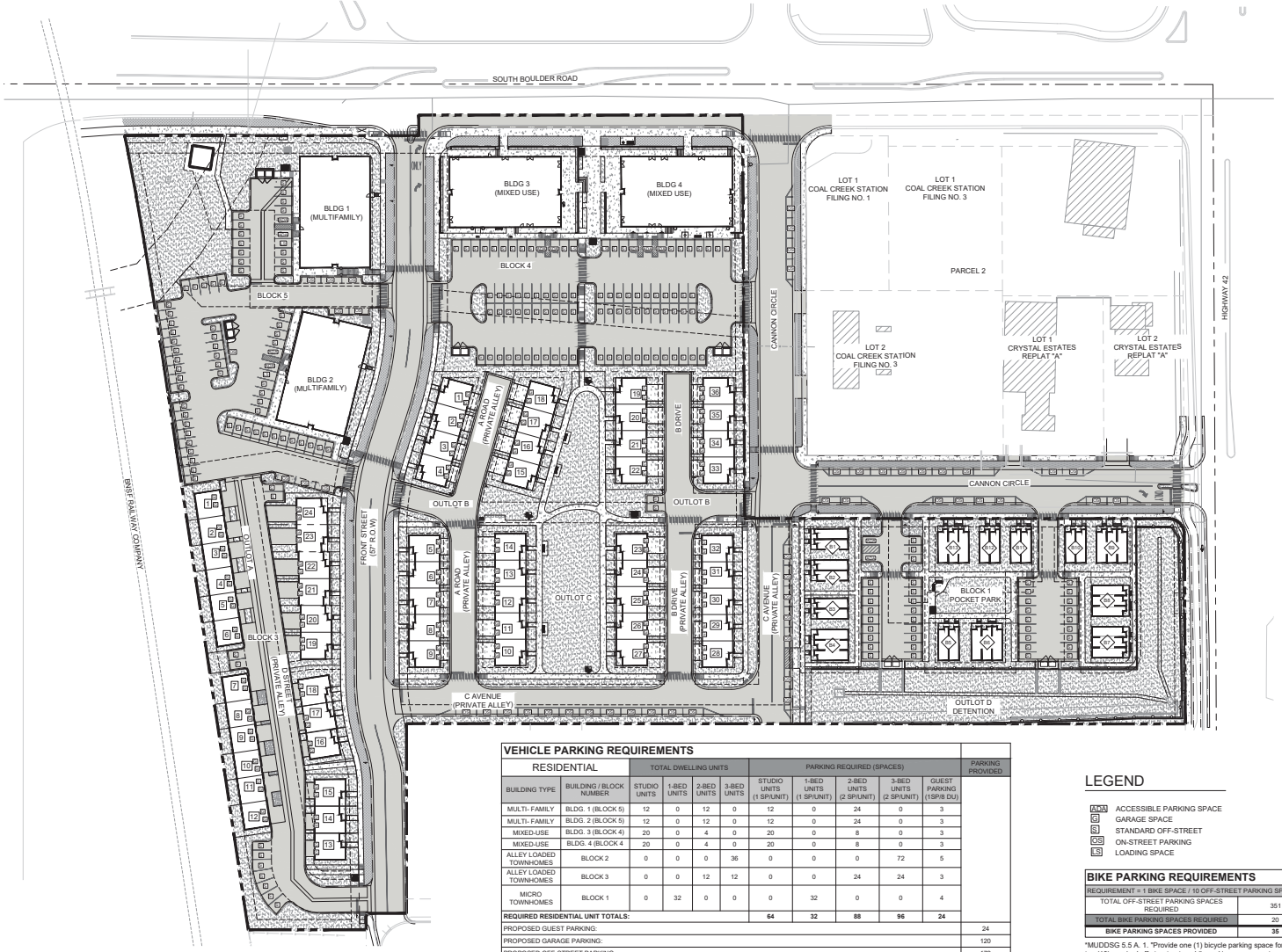
SEAL:

ENTITLEMENT DRAWINGS NOT FOR CONSTRUCTION

PROJECT No.:	R20-030
DRAWN BY:	
REVIEWED BY:	

DRAWING NUMBER:

Plotted By: Megan McGregor **Layout:** 84 STREET SECTIONS **Printed On:** 3/28/2024 4:46 PM **File Name:** SITE PLAN.dwg



VEHICLE PARKING REQUIREMENTS

RESIDENTIAL

BUILDING TYPE	BUILDING / BLOCK NUMBER	TOTAL DWELLING UNITS: STUDIO UNITS	1-BED UNITS	2-BED UNITS	3-BED UNITS	PARKING REQUIRED (SPACES): STUDIO UNITS (1 SP/UNIT)	1-BED UNITS (1 SP/UNIT)	2-BED UNITS (2 SP/UNIT)	3-BED UNITS (2 SP/UNIT)	GUEST PARKING (1SP/8 DU)	PARKING PROVIDED
MULTI- FAMILY	BLDG. 1 (BLOCK 5)	12	0	12	0	12	0	24	0	3	
MULTI- FAMILY	BLDG. 2 (BLOCK 5)	12	0	12	0	12	0	24	0	3	
MIXED-USE	BLDG. 3 (BLOCK 4)	20	0	4	0	20	0	8	0	3	
MIXED-USE	BLDG. 4 (BLOCK 4	20	0	4	0	20	0	8	0	3	
ALLEY LOADED TOWNHOMES	BLOCK 2	0	0	0	36	0	0	0	72	5	
ALLEY LOADED TOWNHOMES	BLOCK 3	0	0	12	12	0	0	24	24	3	
MICRO TOWNHOMES	BLOCK 1	0	32	0	0	0	32	0	0	4	
REQUIRED RESIDENTIAL UNIT TOTALS:						**64**	**32**	**88**	**96**	**24**	
PROPOSED GUEST PARKING:											24
PROPOSED GARAGE PARKING:											120
PROPOSED OFF-STREET PARKING:											172
TOTAL PARKING REQUIRED FOR RESIDENTIAL								**304**			**316**

VEHICLE PARKING REQUIREMENTS

COMMERCIAL

BUILDING TYPE	BUILDING / BLOCK NUMBER	TOTAL COMMERCIAL AREA (S.F.)	PARKING REQUIRED (1 SPACE / 300 S.F.)	PARKING PROVIDED
MIXED-USE	BLDG. 3 (BLOCK 4)	6767	22	
MIXED-USE	BLDG. 4 (BLOCK 4)	6767	22	
EXISTING BUILDING LOT 2		428	2	
TOTAL PARKING REQUIRED FOR COMMERCIAL			**46**	**46**

VEHICLE PARKING TOTALS

TOTAL PARKING REQUIRED FOR RESIDENTIAL	**304**
TOTAL PARKING REQUIRED FOR COMMERCIAL	**46**
TOTAL PROJECT PARKING REQUIRED	350
TOTAL PROJECT PARKING PROVIDED	**384***

*TOTAL INCLUDES 21 SPACES PROVIDED ON PUBLIC STREETS

OFF STREET LOADING SPACES

OFF-STREET LOADING SPACES PROVIDED	4

* A minimum of one (1) dedicated, off-street loading space is required for nonresidential uses greater than 50,000 square feet in gross leasable area and for multi-family residential uses containing more than fifteen (15) units, per MUDDSG Sec. 4.3

LEGEND

- ADA ACCESSIBLE PARKING SPACE
- G GARAGE SPACE
- S STANDARD OFF-STREET
- OS ON-STREET PARKING
- LS LOADING SPACE

BIKE PARKING REQUIREMENTS

REQUIREMENT = 1 BIKE SPACE / 10 OFF-STREET PARKING SPACES

TOTAL OFF-STREET PARKING SPACES REQUIRED	351
TOTAL BIKE PARKING SPACES REQUIRED	20
BIKE PARKING SPACES PROVIDED	**35**

*MUDDSG 5.5 A. 1. "Provide one (1) bicycle parking space for every ten (10) required off-street automobile parking spaces up to a total of twenty (20) bicycle parking spaces. (S)"

COAL CREEK VILLAGE

PRELIMINARY PUD AND SRU

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LONGMONT, COLORADO 80501
P. 303.651.6626

NORTH SCALE: 1"=50'-0" (0, 25, 50, 100)

ORIGINAL SIZE 24X36

ISSUED

No.	DESCRIPTION	DATE
1	PRELIMINARY PUD	01/22/2021
2	PRELIMINARY PUD RD 2	06/21/2021
3	PRELIMINARY PUD RD 3	06/17/2022
4	PRELIMINARY PUD RD 4	12/23/2022
5	PRELIMINARY PUD RD 5	08/04/2023
6	PRELIMINARY PUD RD 6	05/14/2024

REVISIONS

No.	DESCRIPTION	DATE

PARKING PLAN

SEAL:

ENTITLEMENT DRAWINGS NOT FOR CONSTRUCTION

PROJECT No.:	R20-030
DRAWN BY:	
REVIEWED BY:	

DRAWING NUMBER:

9 OF 32

Plotted By: Megan McGregor **Layout:** PARKING PLAN **Printed On:** 3/28/2024 4:45 PM **File Name:** PARKING PLAN.dwg



MODEL A



MODEL B

FRONT ELEVATIONS



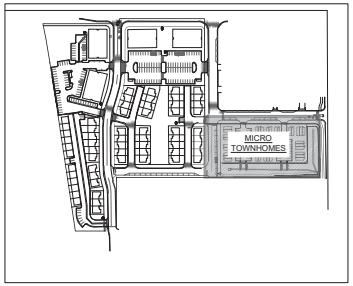
MODEL A



MODEL B

LEFT ELEVATIONS

KEY MAP



MATERIAL LEGEND	
KEY - ITEM	MATERIAL - ITEM
1	ASPHALT SHINGLES
2	BOARD & BATTEN SIDING
3	LAP SIDING
4	PANEL OR STUCCO
5	SYNTHETIC MASONRY VENEER
6	VINYL WINDOWS



MODEL A



MODEL B

REAR ELEVATIONS



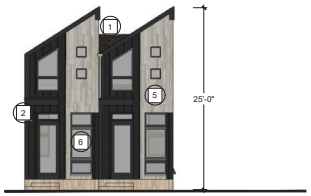
MODEL A



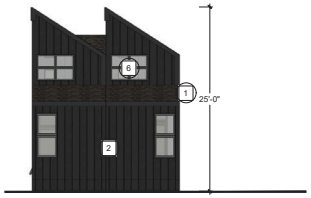
MODEL B

RIGHT ELEVATIONS

MICRO TOWNHOME UNITS, TRIPLEX



FRONT ELEVATION



REAR ELEVATION



LEFT ELEVATION



RIGHT ELEVATION

MICRO TOWNHOME UNITS, DUPLEX

COAL CREEK VILLAGE

PRELIMINARY PUD
AND SRU

LOUISVILLE, COLORADO

PREPARED BY:

ripley design
LANDSCAPE ARCHITECTURE, LAND PLANNING
419 Canyon Ave. Suite 200 Fort Collins, CO 80521
phone 970.224.5828 | fax 970.224.6857 | www.ripleydesigninc.com

APPLICANT

RIPLEY DESIGN INC.
Joel Welkert
419 Canyon Ave. Suite 200
Fort Collins, CO 80521
p. 970.224.5828

OWNER

COAL CREEK VILLAGE LLC
Michael Markel
5723 ARAPAHOE AVE.
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ENGINEER

ROCKY RIDGE CIVIL ENGINEERING
Joel Seamons
420 21ST AVENUE, SUITE 101
LONGMONT, COLORADO 80501
P. 303.651.6626

ORIGINAL SIZE 24X36

ISSUED

No.	DESCRIPTION	DATE
1	PRELIMINARY PUD	01/22/2021
2	PRELIMINARY PUD RD 2	06/21/2021
3	PRELIMINARY PUD RD 3	05/17/2022
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5	PRELIMINARY PUD RD 5	08/04/2023
6	PRELIMINARY PUD RD 6	05/14/2024

REVISIONS

No.	DESCRIPTION	DATE

MICRO TOWNHOME
ELEVATIONS

SEAL:

ENTITLEMENT DRAWINGS NOT FOR CONSTRUCTION

PROJECT No.:	R20-030
DRAWN BY:	
REVIEWED BY:	

DRAWING NUMBER:

10 OF 32

Plotted By: Megan McGregor **Layout:** S6 MICRO COTTAGE CONDO ELEVATIONS **Printed On:** 3/26/2024 10:29 AM **File Name:** ELEVATIONS_MICRO-HOMES.dwg



FRONT ELEVATION VIEW



REAR ELEVATION VIEW



END ELEVATION VIEW 1



FRONT PERSPECTIVE VIEW



REAR PERSPECTIVE VIEW



END ELEVATION VIEW 2

MULTI-FAMILY BUILDINGS



FRONT ELEVATION VIEW



REAR ELEVATION VIEW



END ELEVATION VIEW 1



FRONT PERSPECTIVE VIEW



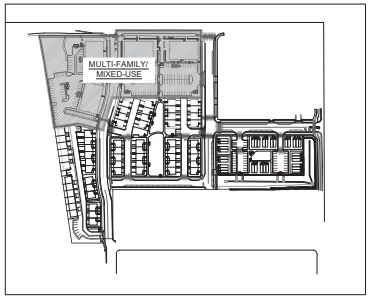
REAR PERSPECTIVE VIEW



END ELEVATION VIEW 2

MIXED-USE BUILDINGS

KEY MAP



MATERIAL LEGEND

KEY - ITEM	MATERIAL - ITEM
1	ARCHITECTURAL PANEL & LAP SIDING/STUCCO
2	EPDM ROOF
3	PANEL OR STUCCO
4	SYNTHETIC MASONRY VENEER
5	VINYL WINDOWS
6	STUCCO
7	ALUMINUM STORE-FRONT
8	STEEL RAILING

COAL CREEK VILLAGE

PRELIMINARY PUD AND SRU

LOUISVILLE, COLORADO

PREPARED BY:

ripley design

LANDSCAPE ARCHITECTURE, LAND PLANNING

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phone 970.224.5828 | fax 970.224.6857 | www.ripleydesigninc.com

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OWNER

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Michael Markel
5723 ARAPAHOE AVE.
BOULDER, COLORADO 80303
P. 303.775.5524

ENGINEER

ROCKY RIDGE CIVIL ENGINEERING
Joel Seamons
420 21ST AVENUE, SUITE 101
LONGMONT, COLORADO 80501
P. 303.651.6626

ORIGINAL SIZE 24X36

ISSUED

No.	DESCRIPTION	DATE
1	PRELIMINARY PUD	01/22/2021
2	PRELIMINARY PUD RD 2	06/21/2021
3	PRELIMINARY PUD RD 3	05/17/2022
4	PRELIMINARY PUD RD 4	12/23/2022
5	PRELIMINARY PUD RD 5	08/04/2023
6	PRELIMINARY PUD RD 6	05/14/2024

REVISIONS

No.	DESCRIPTION	DATE

MULTI-FAMILY & MIXED-USE ELEVATIONS

SEAL:

ENTITLEMENT DRAWINGS NOT FOR CONSTRUCTION

PROJECT No.:	R20-030
DRAWN BY:	
REVIEWED BY:	

DRAWING NUMBER:

11 OF 32

Plotted By: Megan McGregor **Layout:** S7 MULTI-FAMILY & MIXED-USE ELEVATIONS **Printed On:** 3/26/2024 10:30 AM **File Name:** ELEVATIONS_MULTI-FAMILY-MIXED-USE.dwg



MODEL A



MODEL B

FRONT ELEVATIONS

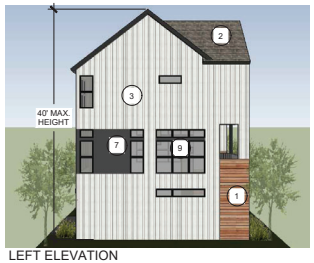


MODEL A



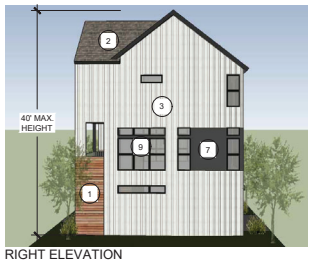
MODEL B

REAR ELEVATIONS



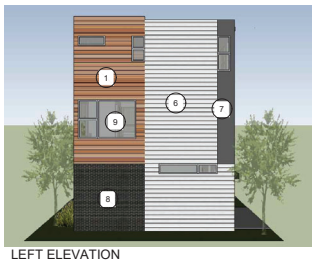
LEFT ELEVATION

MODEL A



RIGHT ELEVATION

MODEL A



LEFT ELEVATION

MODEL B



RIGHT ELEVATION

MODEL B

END ELEVATIONS

ALLEY LOADED TOWNHOME (4-PLEX)



LEFT ELEVATION

FRONT ELEVATION

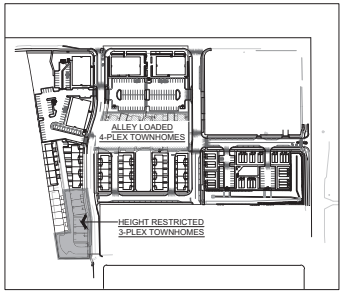


RIGHT ELEVATION

REAR ELEVATION

HEIGHT RESTRICTED, ALLEY LOADED TOWNHOME (3-PLEX)

KEY MAP



MATERIAL LEGEND

KEY - ITEM	MATERIAL - ITEM
1	ARCHITECTURAL PANEL & LAP SIDING/STUCCO
2	ASPHALT SHINGLES
3	BOARD & BATTEN SIDING
4	EPDM ROOF
5	GARAGE DOORS WITH WINDOWS
6	LAP SIDING
7	PANEL OR STUCCO
8	SYNTHETIC MASONRY VENEER
9	VINYL WINDOWS

COAL CREEK VILLAGE

PRELIMINARY PUD AND SRU

LOUISVILLE, COLORADO

PREPARED BY:

ripley design
LANDSCAPE ARCHITEDTURE, LAND PLANNING
419 Canyon Ave. Suite 200 Fort Collins, CO 80521
phone 970.224.5828 | fax 970.224.6857 | www.ripleydesigninc.com

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OWNER

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ENGINEER

ROCKY RIDGE CIVIL ENGINEERING
Joel Seamons
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LONGMONT, COLORADO 80501
P. 303.651.6626

ORIGINAL SIZE 24X36

ISSUED

No.	DESCRIPTION	DATE
1	PRELIMINARY PUD	01/22/2021
2	PRELIMINARY PUD RD 2	06/21/2021
3	PRELIMINARY PUD RD 3	05/17/2022
4	PRELIMINARY PUD RD 4	12/23/2022
5	PRELIMINARY PUD RD 5	08/04/2023
6	PRELIMINARY PUD RD 6	05/14/2024

REVISIONS

No.	DESCRIPTION	DATE

ALLEY LOADED TOWNHOME ELEVATIONS

SEAL:

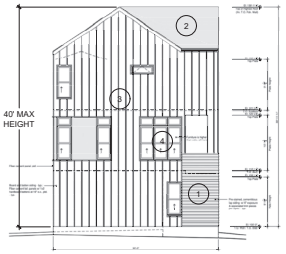
ENTITLEMENT DRAWINGS NOT FOR CONSTRUCTION

PROJECT No.:	R20-030
DRAWN BY:	
REVIEWED BY:	

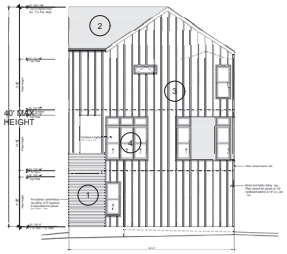
DRAWING NUMBER:

12 OF 32

Plotted By: Megan McGregor **Layout:** S8 TOWN HOME ELEVATIONS **Printed On:** 3/26/2024 10:31 AM **File Name:** ELEVATIONS_TOWNHOMES.dwg



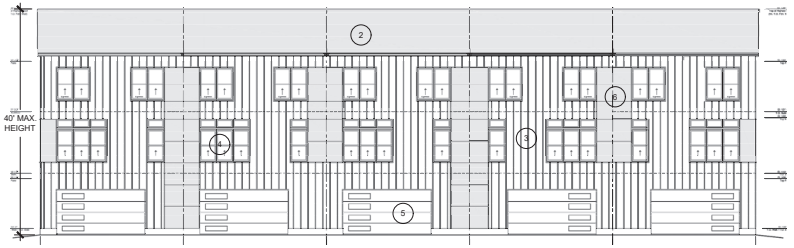
LEFT ELEVATION



RIGHT ELEVATION



FRONT ELEVATION

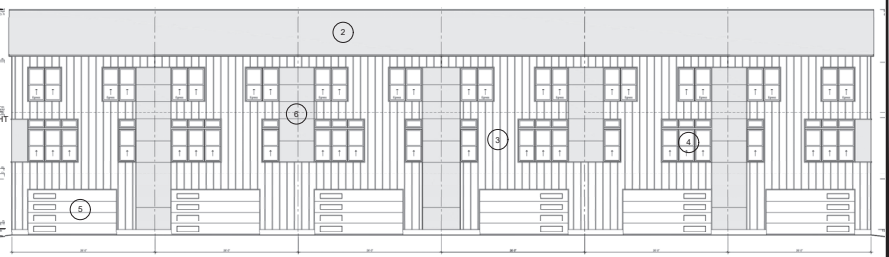


REAR ELEVATION

ALLEY LOADED TOWNHOME (5-PLEX) - FARMHOUSE



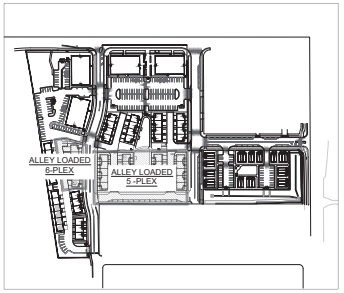
FRONT ELEVATION



REAR ELEVATION

ALLEY LOADED TOWNHOME (6-PLEX) - FARMHOUSE

KEY MAP



MATERIAL LEGEND	
KEY - ITEM	MATERIAL - ITEM
1	ARCHITECTURAL PANEL & LAP SIDING/STUCCO
2	ASPHALT SHINGLES
3	BOARD & BATTEN SIDING
4	VINYL WINDOWS
5	GARAGE DOORS WITH WINDOWS
6	PANEL OR STUCCO

COAL CREEK VILLAGE

PRELIMINARY PUD AND SRU

LOUISVILLE, COLORADO

PREPARED BY:

ripley design
LANDSCAPE ARCHITECTURE, LAND PLANNING
419 Canyon Ave. Suite 200 Fort Collins, CO 80521
phone 970.224.5828 | fax 970.224.6647 | www.ripleydesigninc.com

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RIPLEY DESIGN INC.
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BOULDER, COLORADO 80303
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ENGINEER

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Joel Seamons
420 21ST AVENUE, SUITE 101
LONGMONT, COLORADO 80501
P. 303.651.6626

ORIGINAL SIZE 24X36

ISSUED

No.	DESCRIPTION	DATE
1	PRELIMINARY PUD	01/22/2021
2	PRELIMINARY PUD RD 2	06/21/2021
3	PRELIMINARY PUD RD 3	05/17/2022
4	PRELIMINARY PUD RD 4	12/23/2022
5	PRELIMINARY PUD RD 5	08/04/2023
6	PRELIMINARY PUD RD 6	05/14/2024

REVISIONS

No.	DESCRIPTION	DATE

ALLEY LOADED TOWNHOME ELEVATIONS

SEAL:

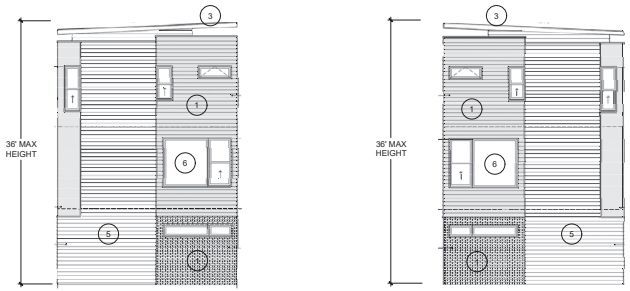
ENTITLEMENT DRAWINGS NOT FOR CONSTRUCTION

PROJECT No.:	R20-030
DRAWN BY:	
REVIEWED BY:	

DRAWING NUMBER:

13 OF 32

Plotted By: Megan McGregor **Layout:** S10 ALLEY LOADED TOWN HOME ELEVATIONS **Printed On:** 3/26/2024 2:33 PM **File Name:** ELEVATIONS_TOWNHOMES.dwg



LEFT ELEVATION

RIGHT ELEVATION



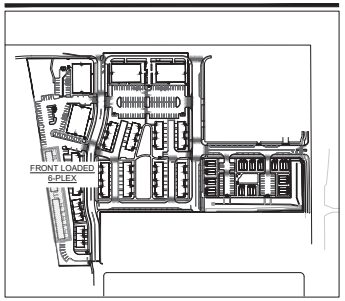
FRONT ELEVATIONS



REAR ELEVATIONS

FRONT LOADED TOWNHOME (6-PLEX) - MODERN

KEY MAP



MATERIAL LEGEND	
KEY - ITEM	MATERIAL - ITEM
1	BRICK OR TILE VENEER
2	PANEL OR STUCCO
3	EPDM ROOF
4	GARAGE DOORS WITH WINDOWS
5	LAP SIDING
6	VINYL WINDOWS

COAL CREEK VILLAGE

PRELIMINARY PUD AND SRU

LOUISVILLE, COLORADO

PREPARED BY:

ripley design

LANDSCAPE ARCHITECTURE, LAND PLANNING

419 Canyon Ave. Suite 200 Fort Collins, CO 80521
phone 970.224.5828 | fax 970.224.5847 | www.ripleydesigninc.com

APPLICANT

RIPLEY DESIGN INC.
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419 Canyon Ave. Suite 200
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OWNER

COAL CREEK VILLAGE LLC
Michael Markel
5723 ARAPAHOE AVE.
BOULDER, COLORADO 80303
P. 303.775.5524

ENGINEER

ROCKY RIDGE CIVIL ENGINEERING
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420 21ST AVENUE, SUITE 101
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P. 303.651.6626

ORIGINAL SIZE 24X36

ISSUED

No.	DESCRIPTION	DATE
1	PRELIMINARY PUD	01/22/2021
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4	PRELIMINARY PUD RD 4	12/23/2022
5	PRELIMINARY PUD RD 5	08/04/2023
6	PRELIMINARY PUD RD 6	05/14/2024

REVISIONS

No.	DESCRIPTION	DATE

FRONT LOADED TOWNHOME ELEVATIONS

SEAL:

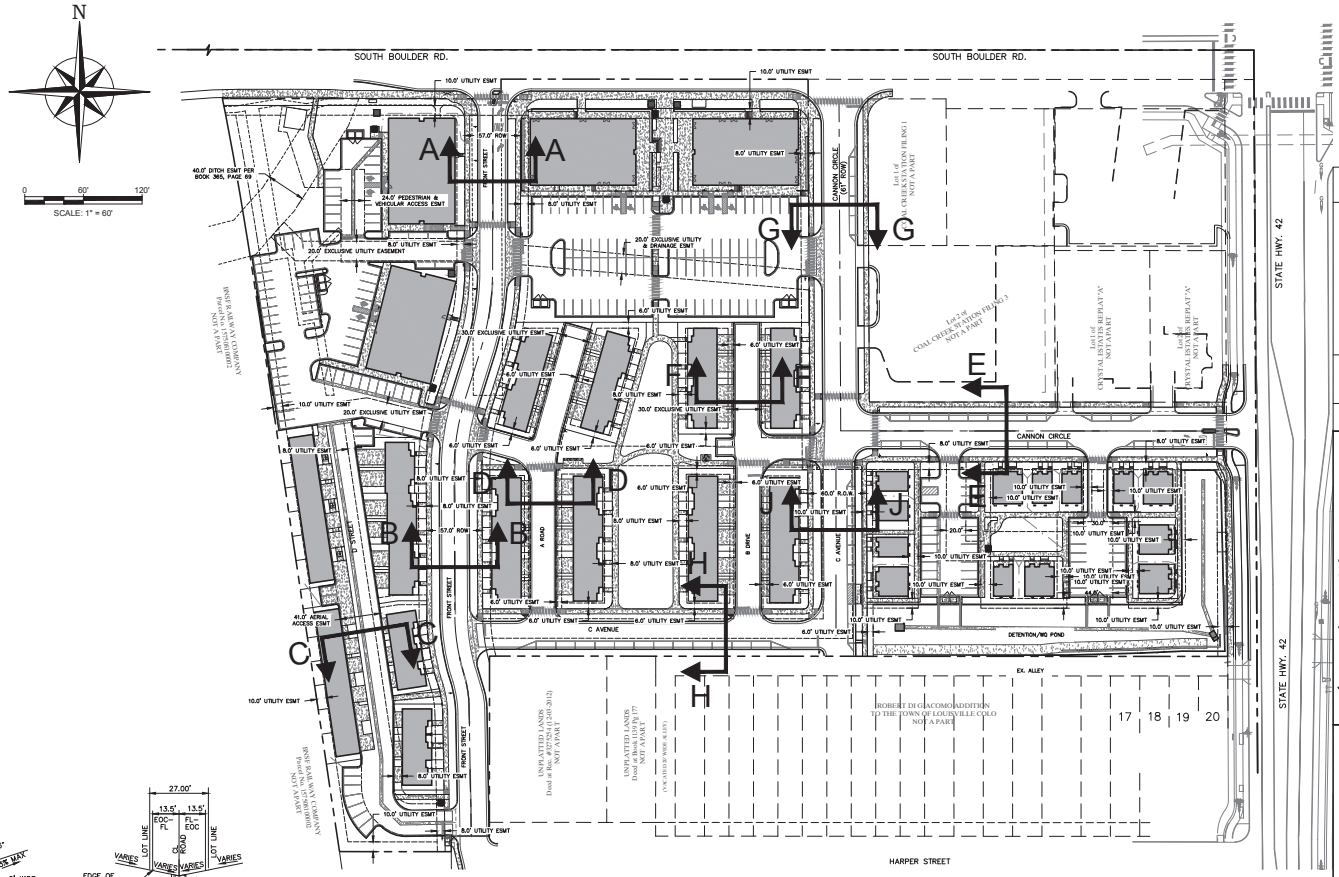
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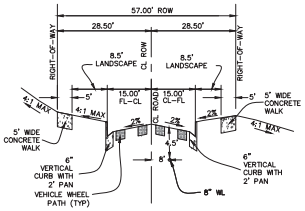
PROJECT No.:	R20-030
DRAWN BY:	
REVIEWED BY:	

DRAWING NUMBER:

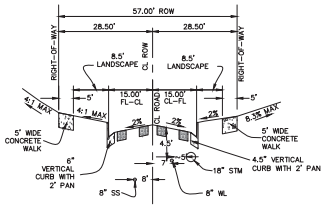
14 OF 32

Plotted By: Megan McGregor **Layout:** S11 ALLEY LOADED TOWN HOME ELEVATIONS **Printed On:** 3/26/2024 2:38 PM **File Name:** ELEVATIONS_TOWNHOMES.dwg

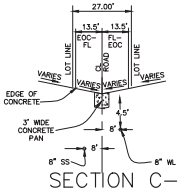




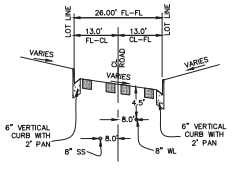
SECTION A–A
FRONT STREET



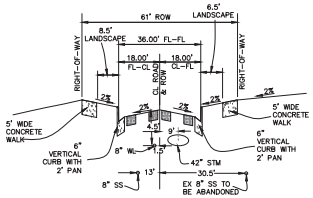
SECTION B–B
FRONT STREET



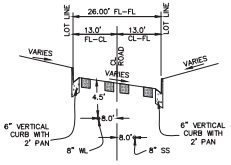
SECTION C–C
PRIVATE DRIVE D



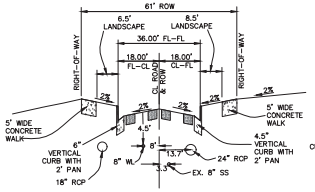
SECTION D–D
PRIVATE DRIVE A



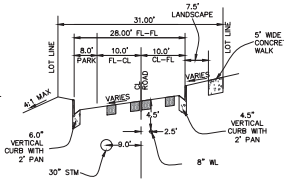
SECTION E–E
CANNON CIRCLE



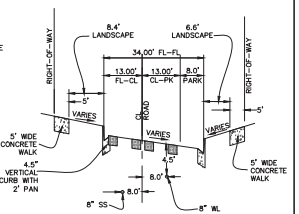
SECTION F–F
PRIVATE DRIVE B



SECTION G–G
CANNON CIRCLE



SECTION H–H
PRIVATE DRIVE C



SECTION J–J
PRIVATE DRIVE C

NO.	DATE	DESCRIPTION	BY

Rocky Ridge Civil Engineering
420 21st Ave, Suite 101
Longmont, CO 80501
303.651.6626
www.rockyridgecivil.com

COAL CREEK VILLAGE

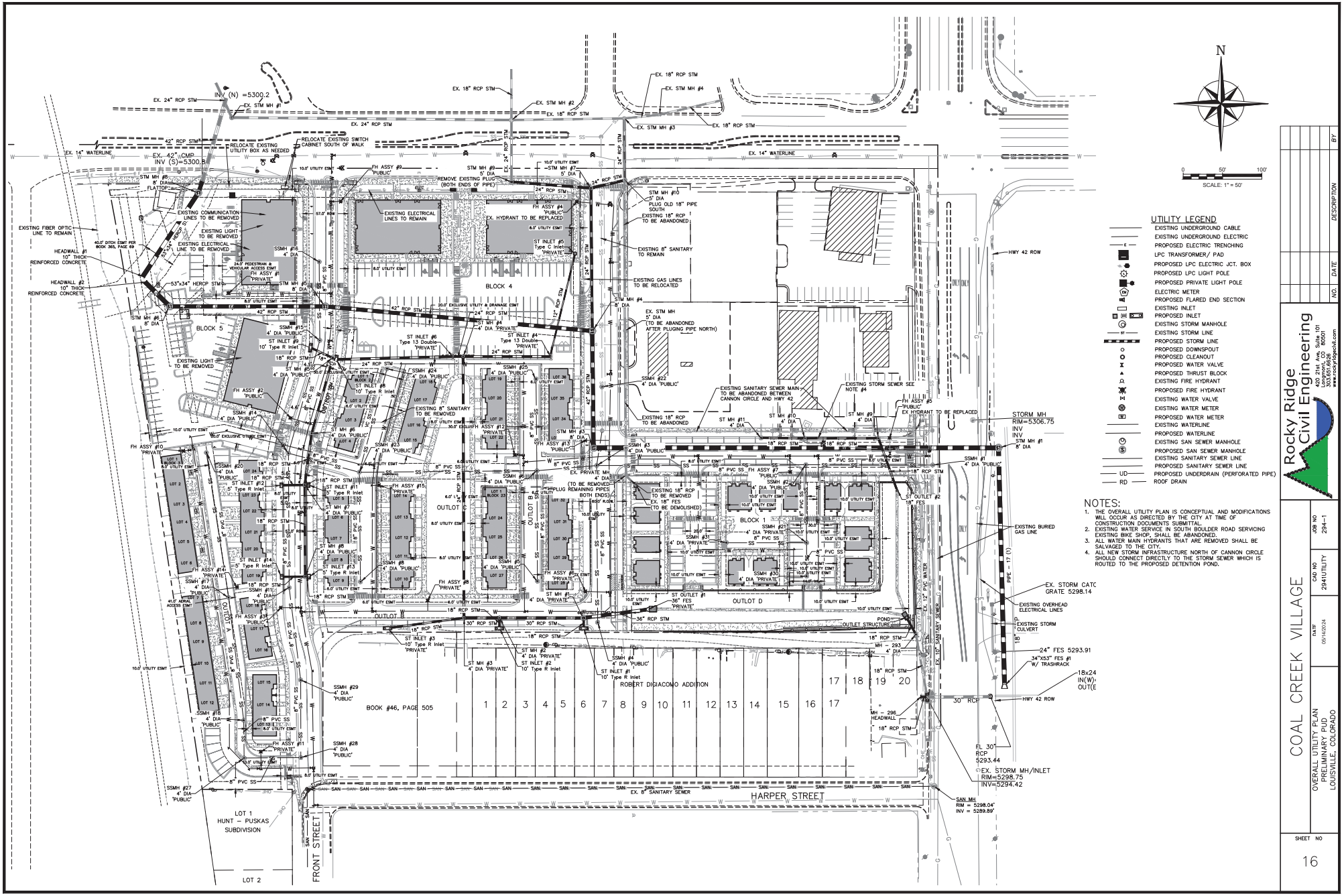
STREET SECTIONS
PRELIMINARY PUD
LOUISVILLE, COLORADO

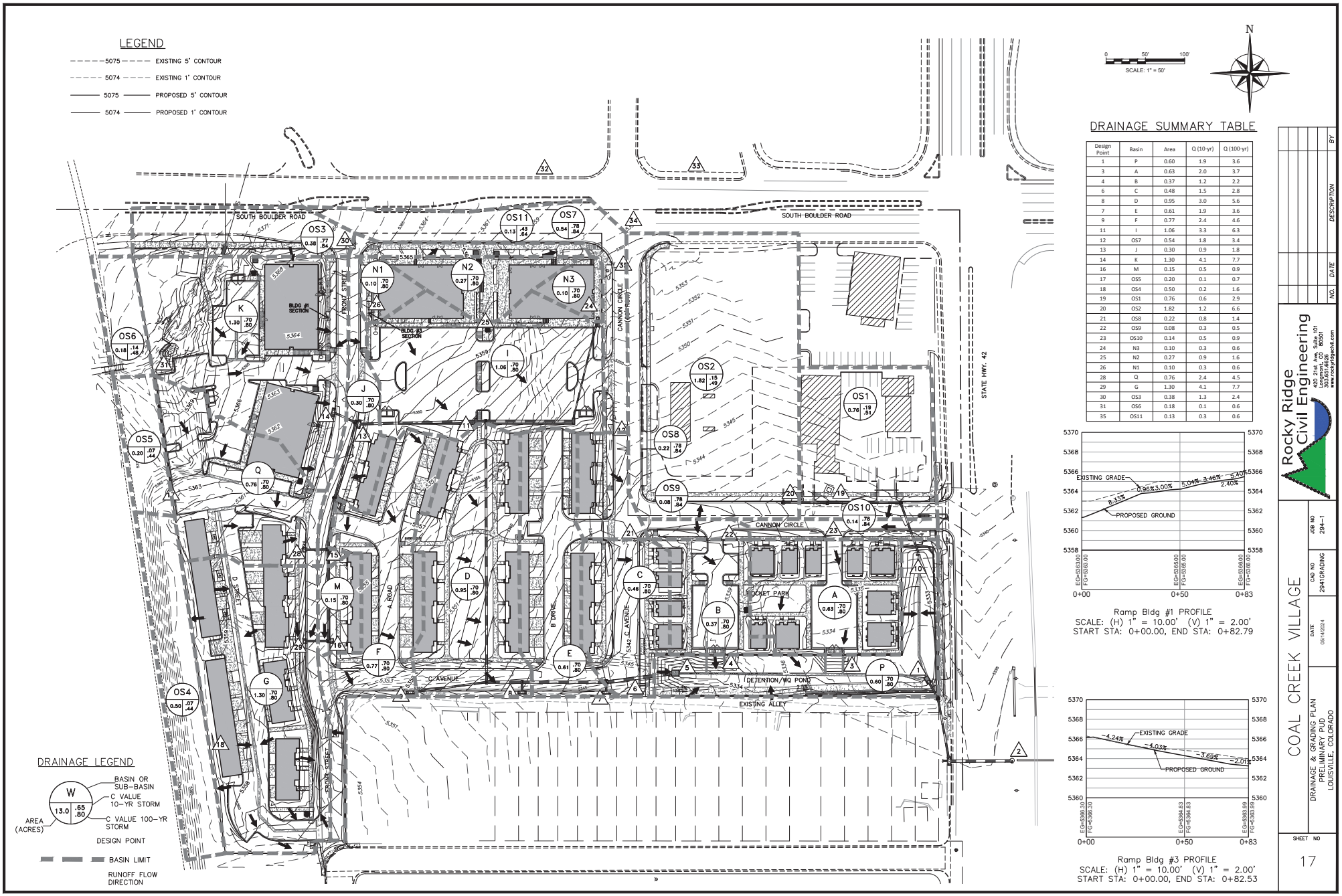
DATE 06/14/2024

CAD NO 2941BASE

JOB NO 294-1

SHEET NO
15


N
0 50' 100'
SCALE: 1" = 50'
UTILITY LEGEND
EXISTING UNDERGROUND CABLE
EXISTING UNDERGROUND ELECTRIC
PROPOSED ELECTRIC TRENCHING
LPC TRANSFORMER/ PAD
PROPOSED LPC ELECTRIC JCT. BOX
PROPOSED LPC LIGHT POLE
PROPOSED PRIVATE LIGHT POLE
ELECTRIC METER
PROPOSED FLARED END SECTION
EXISTING INLET
PROPOSED INLET
EXISTING STORM MANHOLE
EXISTING STORM LINE
PROPOSED STORM LINE
PROPOSED DOWNSPOUT
PROPOSED CLEANOUT
PROPOSED WATER VALVE
PROPOSED THRUST BLOCK
EXISTING FIRE HYDRANT
PROPOSED FIRE HYDRANT
EXISTING WATER VALVE
EXISTING WATER METER
PROPOSED WATER METER
EXISTING WATERLINE
PROPOSED WATERLINE
EXISTING SAN SEWER MANHOLE
PROPOSED SAN SEWER MANHOLE
EXISTING SANITARY SEWER LINE
PROPOSED SANITARY SEWER LINE
PROPOSED UNDERDRAIN (PERFORATED PIPE)
ROOF DRAIN
NOTES:
1. THE OVERALL UTILITY PLAN IS CONCEPTUAL AND MODIFICATIONS WILL OCCUR AS DIRECTED BY THE CITY AT TIME OF CONSTRUCTION DOCUMENTS SUBMITTAL.
2. EXISTING WATER SERVICE IN SOUTH BOULDER ROAD SERVICING EXISTING BIKE SHOP, SHALL BE ABANDONED.
3. ALL WATER MAIN HYDRANTS THAT ARE REMOVED SHALL BE SALVAGED TO THE CITY.
4. ALL NEW STORM INFRASTRUCTURE NORTH OF CANNON CIRCLE SHOULD CONNECT DIRECTLY TO THE STORM SEWER WHICH IS ROUTED TO THE PROPOSED DETENTION POND.
BLOCK 1
BLOCK 4
BLOCK 5
OUTLOT C
OUTLOT D
OUTLOT B
ROBERT DIGIACOMO ADDITION
BOOK #46, PAGE 505
HARPER STREET
FRONT STREET
LOT 1 HUNT – PUSKAS SUBDIVISION
LOT 2
HWY 42 ROW
EX. 8" SANITARY SEWER
EX. 10" SANITARY SEWER
EX. 12" PVC WATER
EX. 14" WATERLINE
EX. 42" CMP INV (S)=5300.5
INV (N) =5300.2
EX. 24" RCP STM
EX. 18" RCP STM
EX. 42" RCP STM
EX. 30" RCP STM
EX. STM MH #1
EX. STM MH #2
EX. STM MH #3
EX. STM MH #4
EXISTING FIBER OPTIC LINE TO REMAIN
EXISTING COMMUNICATION LINES TO BE REMOVED
EXISTING LIGHT TO BE REMOVED
EXISTING ELECTRICAL LINE TO BE REMOVED
EXISTING ELECTRICAL LINES TO REMAIN
RELOCATE EXISTING UTILITY BOX AS NEEDED
RELOCATE EXISTING SWITCH CABINET SOUTH OF WALK
REMOVE EXISTING PLUG (BOTH ENDS OF PIPE)
EX. HYDRANT TO BE REPLACED
EXISTING 18" RCP TO BE ABANDONED
PLUG OLD 18" PIPE SOUTH
EXISTING 8" SANITARY TO REMAIN
EXISTING GAS LINES TO BE RELOCATED
EX. STM MH 5' DIA (TO BE ABANDONED AFTER PLUGING PIPE NORTH)
EXISTING SANITARY SEWER MAIN TO BE ABANDONED BETWEEN CANNON CIRCLE AND HWY 42
EXISTING STORM SEWER SEE NOTE #4
EX. PRIVATE MH 4' DIA (TO BE REMOVED-PLUG REMAINING PIPES BOTH ENDS)
EXISTING 18" RCP TO BE REMOVED
EX. 18" FES (TO BE DEMOLISHED)
EXISTING BURIED GAS LINE
EXISTING OVERHEAD ELECTRICAL LINES
EXISTING STORM CULVERT
EX. STORM CATC GRATE 5298.14
24" FES 5293.91
34"X53" FES #1 W/ TRASHRACK
18x24 IN(W)- OUT(E
FL 30" RCP 5293.44
EX. STORM MH/INLET RIM=5298.75 INV=5294.42
STORM MH RIM=5306.75 INV INV
SAN MH RIM = 5298.04' INV = 5289.89'
MH – 293 4' DIA
MH – 296 HEADWALL 18" RCP STM
OUTLET STRUCTURE POND
EXISTING 8" SANITARY TO BE REMOVED
EXISTING 18" RCP STM
EXISTING 24" RCP STM
EXISTING 42" RCP STM
EXISTING 30" RCP STM
EXISTING 14" WATERLINE
EXISTING 24" RCP STM
EXISTING 18



DRAINAGE SUMMARY TABLE

Design Point	Basin	Area	Q (10-yr)	Q (100-yr)
1	P	0.60	1.9	3.6
3	A	0.63	2.0	3.7
4	B	0.37	1.2	2.2
6	C	0.48	1.5	2.8
8	D	0.95	3.0	5.6
7	E	0.61	1.9	3.6
9	F	0.77	2.4	4.6
11	I	1.06	3.3	6.3
12	OS7	0.54	1.8	3.4
13	J	0.30	0.9	1.8
14	K	1.30	4.1	7.7
16	M	0.15	0.5	0.9
17	OS5	0.20	0.1	0.7
18	OS4	0.50	0.2	1.6
19	OS1	0.76	0.6	2.9
20	OS2	1.82	1.2	6.6
21	OS8	0.22	0.8	1.4
22	OS9	0.08	0.3	0.5
23	OS10	0.14	0.5	0.9
24	N3	0.10	0.3	0.6
25	N2	0.27	0.9	1.6
26	N1	0.10	0.3	0.6
28	Q	0.76	2.4	4.5
29	G	1.30	4.1	7.7
30	OS3	0.38	1.3	2.4
31	OS6	0.18	0.1	0.6
35	OS11	0.13	0.3	0.6

Ramp Bldg #1 PROFILE
SCALE: (H) 1" = 10.00' (V) 1" = 2.00'
START STA: 0+00.00, END STA: 0+82.79

Ramp Bldg #3 PROFILE
SCALE: (H) 1" = 10.00' (V) 1" = 2.00'
START STA: 0+00.00, END STA: 0+82.53

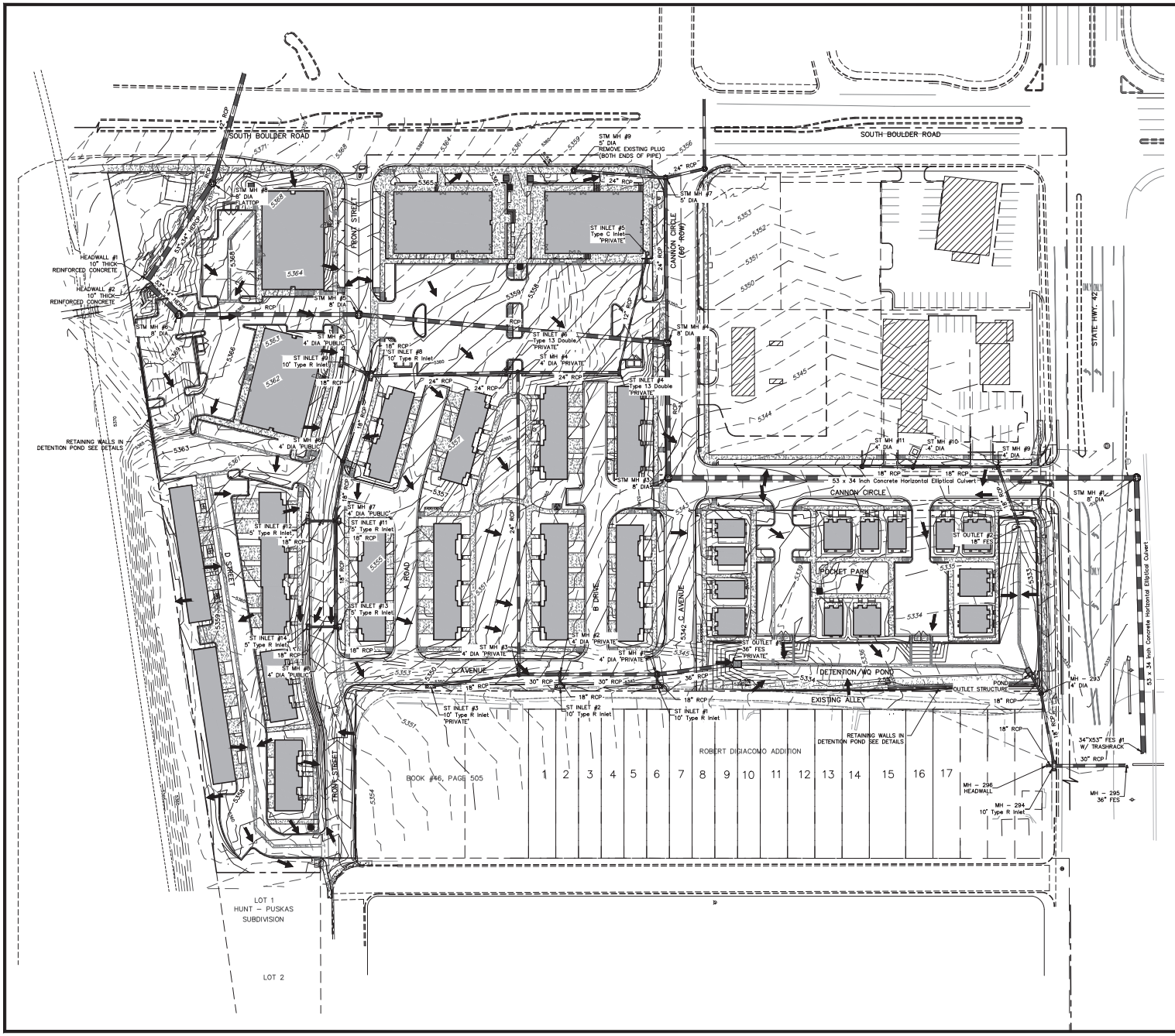
Rocky Ridge Civil Engineering
420 21st Ave, Suite 101
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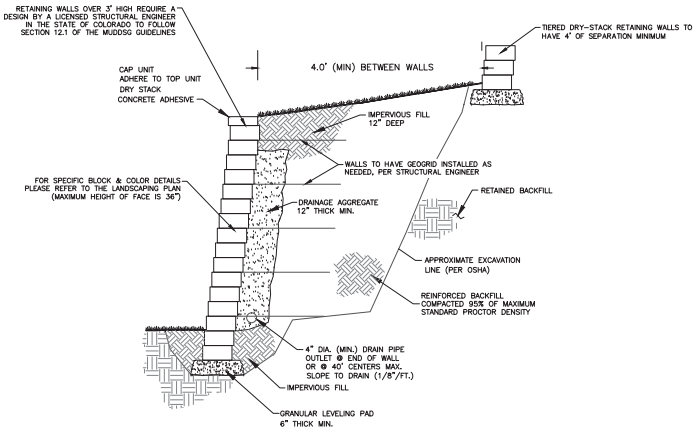
NO.	DATE	DESCRIPTION	BY

COAL CREEK VILLAGE
DRAINAGE & GRADING PLAN
PRELIMINARY PUD
LOUISVILLE, COLORADO

DATE 06/14/2024
CAD NO 2941GRADING
JOB NO 294-1

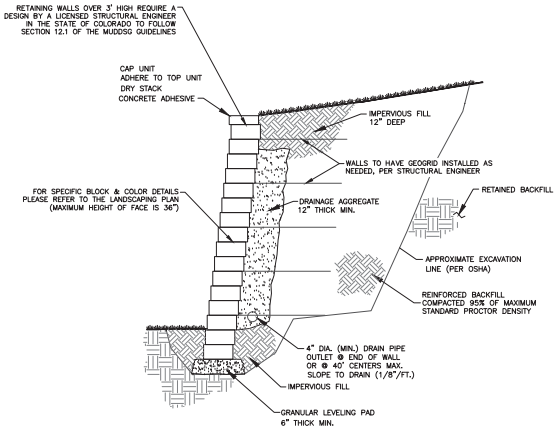
SHEET NO 17


SOUTH BOULDER ROAD
SOUTH BOULDER ROAD
FRONT STREET
CANNON CIRCLE (66' ROW)
STATE HWY. 42
CANNON CIRCLE
A ROAD
B DRIVE
C AVENUE
D STREET
POCKET PARK
DETENTION/WQ POND
EXISTING ALLEY
RETAINING WALLS IN DETENTION POND SEE DETAILS
ROBERT DIGIACOMO ADDITION
BOOK #46, PAGE 505
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17
LOT 1
HUNT – PUSKAS
SUBDIVISION
LOT 2
HEADWALL #1
10" THICK
REINFORCED CONCRETE
HEADWALL #2
10" THICK
REINFORCED CONCRETE
53 x 34 Inch Concrete Horizontal Elliptical Culvert
53 x 34 Inch Concrete Horizontal Elliptical Culvert
34"X53" FES #1
W/ TRASHRACK
MH – 296
HEADWALL
MH – 294
10' Type R Inlet
MH – 295
36" FES
MH 293
4' DIA
POND OUTLET STRUCTURE
ST OUTLET #1
36" FES "PRIVATE"
ST OUTLET #2
18" FES
ST INLET #1
10' Type R Inlet "PRIVATE"
ST INLET #2
10' Type R Inlet
ST INLET #3
10' Type R Inlet "PRIVATE"
ST INLET #4
Type 13 Double "PRIVATE"
ST INLET #5
Type C Inlet "PRIVATE"
ST INLET #6
Type 13 Double "PRIVATE"
ST INLET #7
10' Type R Inlet "PUBLIC"
ST INLET #8
10' Type R Inlet "PRIVATE"
ST INLET #9
10' Type R Inlet
ST INLET #10
5' Type R Inlet
ST INLET #11
5' Type R Inlet
ST INLET #12
5' Type R Inlet
ST INLET #13
5' Type R Inlet
ST INLET #14
5' Type R Inlet
STM MH #1
8' DIA
STM MH #2
8' DIA
STM MH #3
8' DIA
STM MH #4
4' DIA "PRIVATE"
STM MH #5
4' DIA "PUBLIC"
STM MH #6
4' DIA "PUBLIC"
STM MH #7
4' DIA "PUBLIC"
STM MH #8
4' DIA "PRIVATE"
STM MH #9
5' DIA
REMOVE EXISTING PLUG
(BOTH ENDS OF PIPE)
STM MH #10
4' DIA
STM MH #11
4' DIA
STM MH #12
8' DIA
STM MH #13
5' DIA
STM MH #14
8' DIA
STM MH #15
8' DIA
STM MH #16
8' DIA
STM MH #17
8' DIA
STM MH #18
8' DIA
STM MH #19
8' DIA
STM MH #20
8' DIA
STM MH #21
8' DIA
STM MH



TYPICAL SECTION–DRY STACK RETAINING WALL

(LOCATED IN DETENTION POND)
SCALE: NONE



TYPICAL SECTION–DRY STACK RETAINING WALL

(LOCATED ON WEST PROPERTY LINE)
SCALE: NONE

NO.	DATE	DESCRIPTION	BY

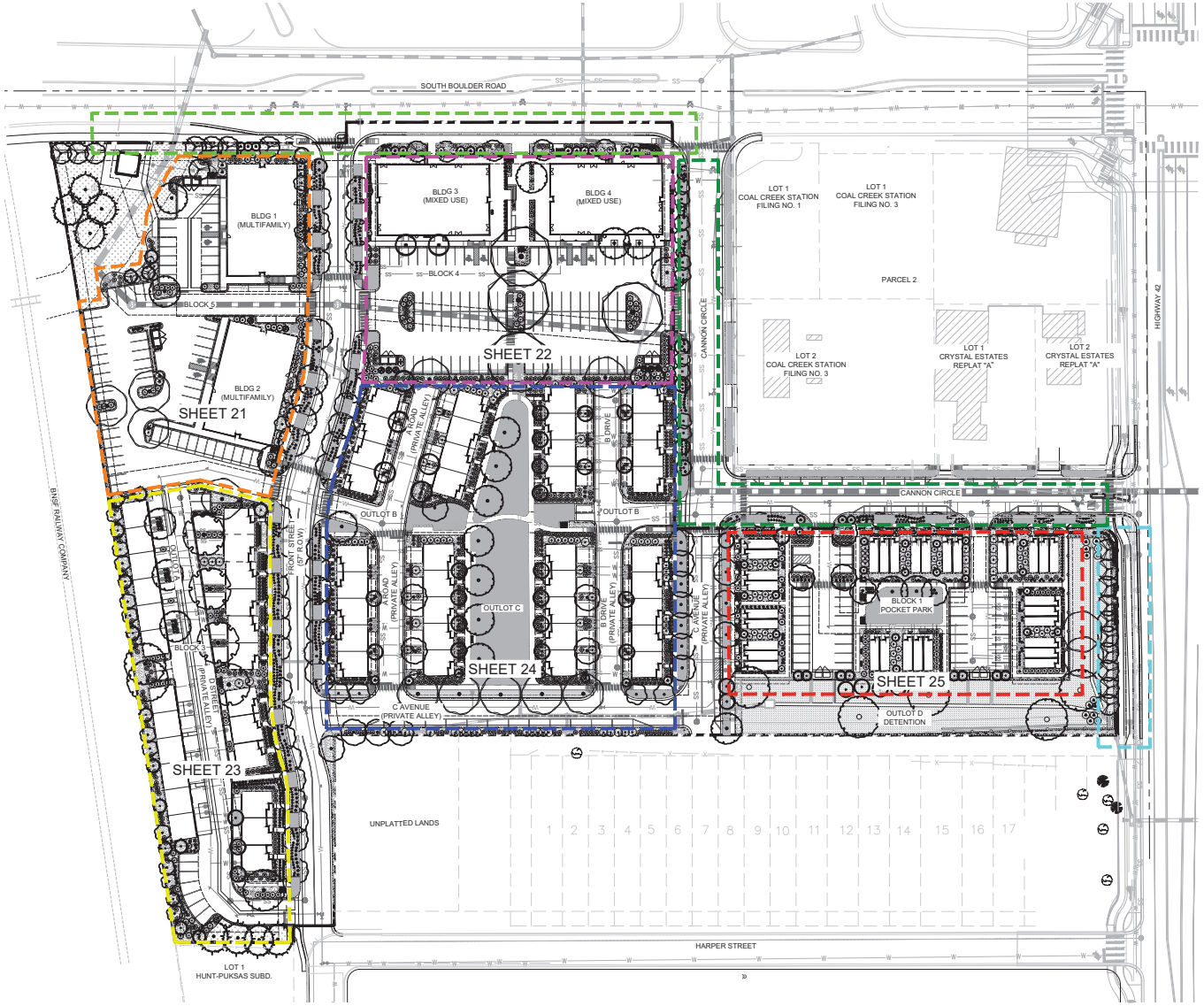
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COAL CREEK VILLAGE

RETAINING WALL DETAILS
PRELIMINARY PUD
LOUISVILLE, COLORADO

DATE 05/14/2024
CAD NO 2941GRADING
JOB NO 294-1

SHEET NO
19



LANDSCAPE LEGEND

DECIDUOUS SHADE TREES
DECIDUOUS ORNAMENTAL TREES
EVERGREEN TREES
DECIDUOUS SHRUBS
EVERGREEN SHRUBS
PERENNIALS

LANDSCAPE MATERIAL LEGEND	
SYMBOL	DESCRIPTION
	2-3" RIVER ROCK MULCH
	NATIVE GRASS, UPLAND BLEND
	NATIVE GRASS, WET MEADOW BLEND
	IRRIGATED TURF
	COBBLE ROCK MULCH

LANDSCAPE REQUIREMENTS

CODE SECTION

REQUIRED PLANT MATERIAL - SOUTH BOULDER ROAD

CODE SECTION	AREA / ITEM	REQUIREMENT	REQUIRED AREA	PROVIDED AREA
5.4.B.1	REQ. STREET TREES	1 TREE / 20 L.F.	531 / 20 = 26.55	27 TREES

REQUIRED PLANT MATERIAL - HIGHWAY 42

CODE SECTION	AREA / ITEM	REQUIREMENT	REQUIRED AREA	PROVIDED AREA
5.4.B.1	REQ. STREET TREES	1 TREE / 20 L.F.	196 / 20 = 9.9 TREES	10 TREES

REQUIRED PLANT MATERIAL - CANNON CIRCLE

CODE SECTION	AREA / ITEM	REQUIREMENT	REQUIRED AREA	PROVIDED AREA
5.4.E.1	REQ. STREET TREES	1 TREE / 20 L.F.	586 / 20 = 29.8	29 TREES

REQUIRED PLANT MATERIAL - BLOCK 4 OVERALL & PARKING

CODE SECTION	AREA / ITEM	REQUIREMENT	REQUIRED AREA	PROVIDED AREA
7.4.B.1.a	LANDSCAPED AREA	10% AREA REQ. OF 64,608 S.F.	6,460 SF	10,365 SF (16%)
7.4.B.1.b	HARDSCAPED AREA	HARDSCAPED AREA MUST BE LESS THAN 2/3 OF MIN. LANDSCAPED AREA REQ.	< 4,263 SF	3,875 SF
7.3.B.2.b.i	PARKING INTERIOR L.S. AREA	5% AREA REQ. OF 33,018 S.F.	1,651 SF	4,606 SF (7%)
7.1.B.1	PARKING PERIMETER	5' BUFFER @ PERIMETER	5' BUFFER MIN	5' BUFFER
7.3.E	LANDSCAPE ISLANDS	1 TREE / 300 SF OF LANDSCAPED AREA	2,453/300=8	9

REQUIRED PLANT MATERIAL - BLOCK 5 OVERALL & PARKING

CODE SECTION	AREA / ITEM	REQUIREMENT	REQUIRED AREA	PROVIDED AREA
7.4.B.1.a	LANDSCAPED AREA	10% AREA REQ. OF 80,798 S.F.	4,039 SF	19,915 SF (24%)
7.4.B.1.b	HARDSCAPED AREA	HARDSCAPED AREA MUST BE LESS THAN 2/3 OF MIN. LANDSCAPED AREA REQ.	< 2,665 SF	0 SF
7.3.B.2.b.i	PARKING INTERIOR L.S. AREA	5% AREA REQ. OF 30,623 S.F.	1,541 SF	3,408 SF (9%)
7.1.B.1	PARKING PERIMETER	5' BUFFER @ PERIMETER	5' BUFFER	5' BUFFER
7.3.E	LANDSCAPE ISLANDS	1 TREE / 300 SF OF LANDSCAPED AREA	3,408/300=11	11

REQUIRED PLANT MATERIAL - BLOCK 1 OVERALL & PARKING

CODE SECTION	AREA / ITEM	REQUIREMENT	REQUIRED AREA	PROVIDED AREA
7.4.B.1.a	LANDSCAPED AREA	10% AREA REQ. OF 78,798 S.F.	7,879 SF	17,355 (22%)
7.4.B.1.b	HARDSCAPED AREA	HARDSCAPED AREA MUST BE LESS THAN 2/3 OF MIN. LANDSCAPED AREA REQ.	< 5,200 SF	95 SF
7.3.B.2.b.i	PARKING INTERIOR L.S. AREA	5% AREA REQ. OF 12,702 S.F.	635 SF	1,298 SF (10%)
7.1.B.1	PARKING PERIMETER	5' BUFFER @ PERIMETER	5' BUFFER	5' BUFFER
7.3.E	LANDSCAPE ISLANDS	1 TREE / 300 SF OF LANDSCAPED AREA	1,298/300 = 4	12

REQUIRED PLANT MATERIAL - BLOCK 3 OVERALL

CODE SECTION	AREA / ITEM	REQUIREMENT	REQUIRED AREA	PROVIDED AREA
7.4.B.1.a	LANDSCAPED AREA	10% AREA REQ. OF 56,694 S.F.	5,669 SF	15,717 SF (27%)
7.4.B.1.b	HARDSCAPED AREA	HARDSCAPED AREA MUST BE LESS THAN 2/3 OF MIN. LANDSCAPED AREA REQ.	<3,741 SF	0 SF

REQUIRED PLANT MATERIAL - BLOCK 2 OVERALL

CODE SECTION	AREA / ITEM	REQUIREMENT	REQUIRED AREA	PROVIDED AREA
7.4.B.1.a	LANDSCAPED AREA	10% AREA REQ. OF 116,198 S.F.	11,619 SF	36,706 SF (31%)
7.4.B.1.b	HARDSCAPED AREA	HARDSCAPED AREA MUST BE LESS THAN 2/3 OF MIN. LANDSCAPED AREA REQ.	<7,666 SF	1,040 SF

NORTH
0 25 50 100
SCALE: 1"=50'-0"
ORIGINAL SIZE 24X36

COAL CREEK VILLAGE

PRELIMINARY PUD AND SRU

LOUISVILLE, COLORADO

PREPARED BY:

ripleydesign
LANDSCAPE ARCHITECTURE, LAND PLANNING
419 Canyon Ave. Suite 200 Fort Collins, CO 80521
phone 970.224.5828 | fax 970.224.6917 | www.ripleydesigninc.com

PLANNER / LANDSCAPE ARCHITECT

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ENGINEER

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Joel Seamons
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P. 303.651.6626

ISSUED

No.	DESCRIPTION	DATE
1	PRELIMINARY PUD	01/22/2021
2	PRELIMINARY PUD RD 2	06/21/2021
3	PRELIMINARY PUD RD 3	05/17/2022
4	PRELIMINARY PUD RD 4	12/23/2022
5	PRELIMINARY PUD RD 5	08/04/2023
6	PRELIMINARY PUD RD 6	05/14/2024

REVISIONS

No.	DESCRIPTION	DATE

OVERALL LANDSCAPE PLAN

SEAL:

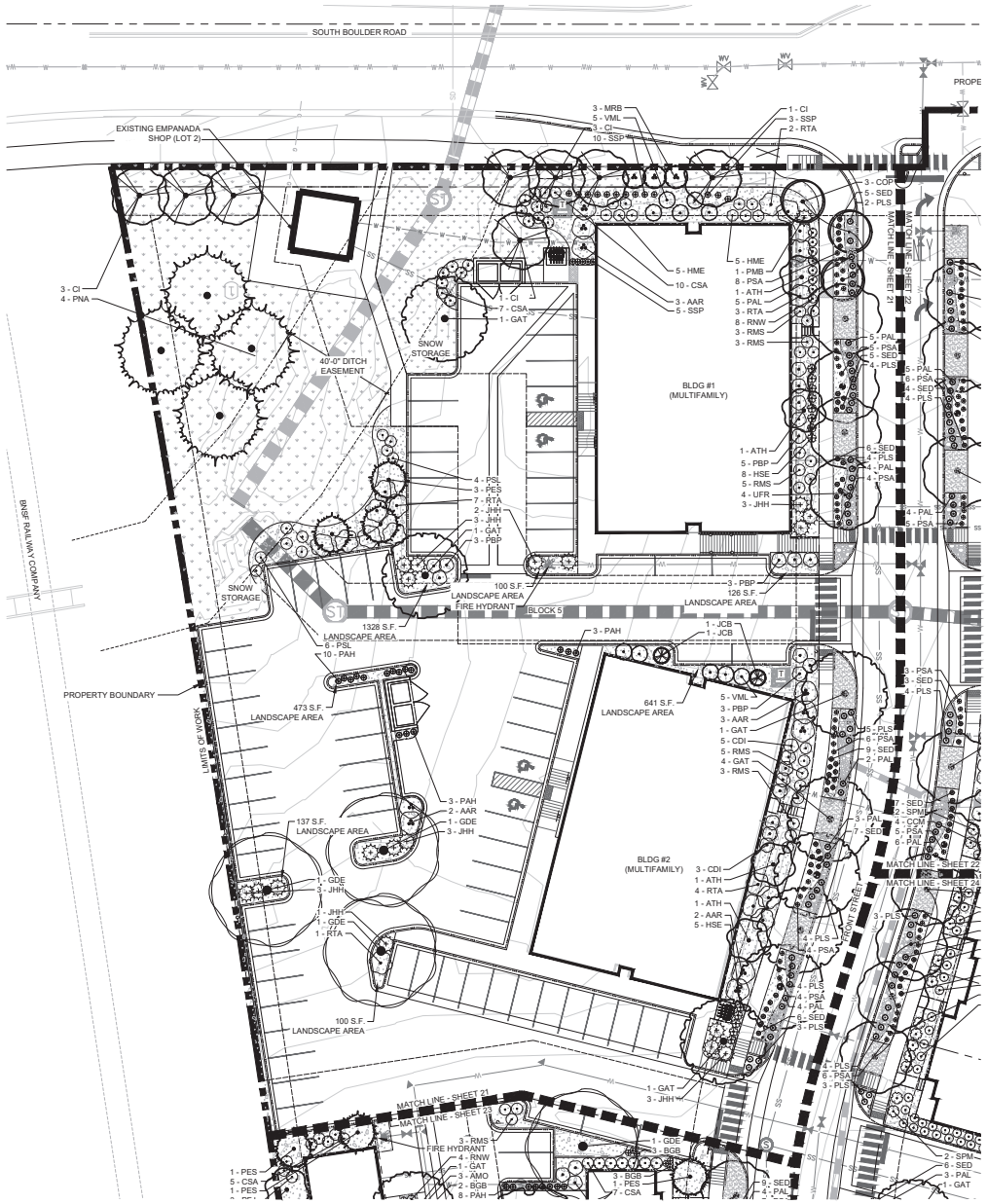
ENTITLEMENT DRAWINGS NOT FOR CONSTRUCTION

PROJECT No.:	R20-030
DRAWN BY:	RDI
REVIEWED BY:	RDI

DRAWING NUMBER:

20 OF 32

Plotted By: Megan McGregor **Layout:** L1 OVERALL LANDSCAPE PLAN **Printed On:** 3/29/2024 9:33 AM **File Name:** LANDSCAPE PLAN.dwg



PLANT LEGEND

CODE	QTY	BOTANICAL / COMMON NAME	CONT	CAL	SIZE
DECIDUOUS TREES					
COP	3	CELTIS OCCIDENTALIS 'PRAIRIE SENTINEL' / PRAIRIE SENTINEL HACKBERRY	B & B	2.5"CAL	
GAT	8	GLEDITSIA TRIACANTHOS 'SKYLINE' / SKYLINE HONEY LOCUST	B & B	2.5"CAL	
GDE	3	GYMNOCLADUS DIOICA 'ESPRESSO' / SEEDLESS KENTUCKY COFFEETREE	B & B	2.5"CAL	
UFR	4	ULMUS 'FRONTIER' / FRONTIER ELM	B & B	2.5"CAL	
EVERGREEN TREES					
JCB	2	JUNIPERUS CHINENSIS 'BLUE POINT' / BLUE POINT JUNIPER	B & B		6' HT
PES	3	PINUS EDULIS / PINYON PINE	B & B		6' HT
PNA	4	PINUS NIGRA / AUSTRIAN PINE	B & B		6' HT
ORNAMENTAL TREES					
ATH	4	ACER TATARICUM 'HOT WINGS' / HOT WINGS MAPLE	B & B	1.5"CAL	
CI	8	CRATAEGUS CRUS-GALLI INERMIS / THORNLESS COCKSPUR HAWTHORN	B & B	1.5"CAL	
MRB	3	MALUS X 'RED BARRON' / RED BARRON CRAB APPLE	B & B	1.5"CAL	

CODE	QTY	BOTANICAL / COMMON NAME	SIZE	HYDROZONE
DECIDUOUS SHRUBS				
AAR	10	AMELANCHIER ALNIFOLIA 'REGENT' / REGENT SERVICEBERRY	5 GAL	
CSA	17	CORNUS SERICEA 'ARCTIC FIRE' / ARCTIC FIRE RED TWIG DOGWOOD	5 GAL	
CDI	8	COTONEASTER DIVARICATUS / SPREADING COTONEASTER	5 GAL	
HME	10	HYDRANGEA MACROPHYLLA 'ENDLESS SUMMER' / ENDLESS SUMMER HYDRANGEA	5 GAL	
PAL	23	PEROVSKIA ATRIPLICIFOLIA 'LISSLITT' / LACEY BLUE RUSSIAN SAGE	5 GAL	
PSL	10	PHYSOCARPUS OPULIFOLIUS 'LITTLE DEVIL' TM / DWARF NINEBARK	5 GAL	
PBP	14	PRUNUS BESSEYI 'PAWNEE BUTTES' / DWARF WESTERN SAND CHERRY	5 GAL	
RTA	17	RHUS TRILOBATA 'GRO LOW' / SKUNKBUSH SUMAC	5 GAL	
RMS	19	ROSA SHRUB 'MORDEN SUNRISE' / MORDEN SUNRISE SHRUB ROSE	5 GAL	
RNW	8	ROSA X 'NEARLY WILD' / NEARLY WILD SHRUB ROSE	5 GAL	
VML	10	VIBURNUM LENTAGO / NANNYBERRY	5 GAL	
EVERGREEN SHRUBS				
JHH	18	JUNIPERUS HORIZONTALIS 'HUGHES' / HUGHES JUNIPER	5 GAL	
PLS	26	PINUS LEUCODERMIS 'SMIDTII' / DWARF GLOBE BOSNIAN PINE	5 GAL	
PMB	1	PINUS MUGO 'BIG TUNA' / BIG TUNA MUGO PINE	10 GAL	-
PERENNIALS				
HSE	13	HELICTOTRICHON SEMPERVIRENS / BLUE AVENA GRASS	1 GAL	
PAH	16	PENNISETUM ALOPECUROIDES 'HAMELN' / DWARF FOUNTAIN GRASS	1 GAL	
PSA	31	PENNISETUM SETACEUM 'ALBA' / WHITE FOUNTAIN GRASS	5 GAL	
SSP	18	SCHIZACHYRIUM SCOPARIUM 'PRAIRIE BLUES' / LITTLE BLUESTEM GRASS	1 GAL	
SED	38	SEDUM X 'DAZZLEBERRY' / DAZZELBERRY STONECROP	1 GAL	

REQUIRED PLANT MATERIAL - BLOCK 4 OVERALL & PARKING

CODE SECTION	AREA / ITEM	REQUIREMENT	REQUIRED AREA	PROVIDED AREA
7.4.B.1.a	LANDSCAPED AREA	10% AREA REQ. OF 64,608 S.F.	6,460 SF	10,365 SF (16%)
7.4.B.1.b	HARDSCAPED AREA	HARDSCAPED AREA MUST BE LESS THAN 2/3 OF MIN. LANDSCAPED AREA REQ.	< 4,263 SF	3,875 SF
7.3.B.2.b.i	PARKING INTERIOR L.S. AREA	5% AREA REQ. OF 33,018 S.F.	1,651 SF	4,608 SF (7%)

LANDSCAPE LEGEND

DECIDUOUS SHADE TREES
DECIDUOUS ORNAMENTAL TREES
EVERGREEN TREES
DECIDUOUS SHRUBS
EVERGREEN SHRUBS
PERENNIALS

LANDSCAPE MATERIAL LEGEND	
SYMBOL	DESCRIPTION
	2-3" RIVER ROCK MULCH
	NATIVE GRASS, UPLAND BLEND
	NATIVE GRASS, WET-MEADOW BLEND
	IRRIGATED TURF
	COBBLE ROCK MULCH

COAL CREEK VILLAGE

PRELIMINARY PUD AND SRU

LOUISVILLE, COLORADO

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LONGMONT, COLORADO 80501
P. 303.651.6626

NORTH SCALE: 1"=20'-0" (0, 10, 20, 40)
ORIGINAL SIZE 24X36

ISSUED

No.	DESCRIPTION	DATE
1	PRELIMINARY PUD	01/22/2021
2	PRELIMINARY PUD RD 2	06/21/2021
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5	PRELIMINARY PUD RD 5	08/04/2023
6	PRELIMINARY PUD RD 6	05/14/2024

REVISIONS

No.	DESCRIPTION	DATE

LANDSCAPE PLAN ENLARGEMENT

SEAL:

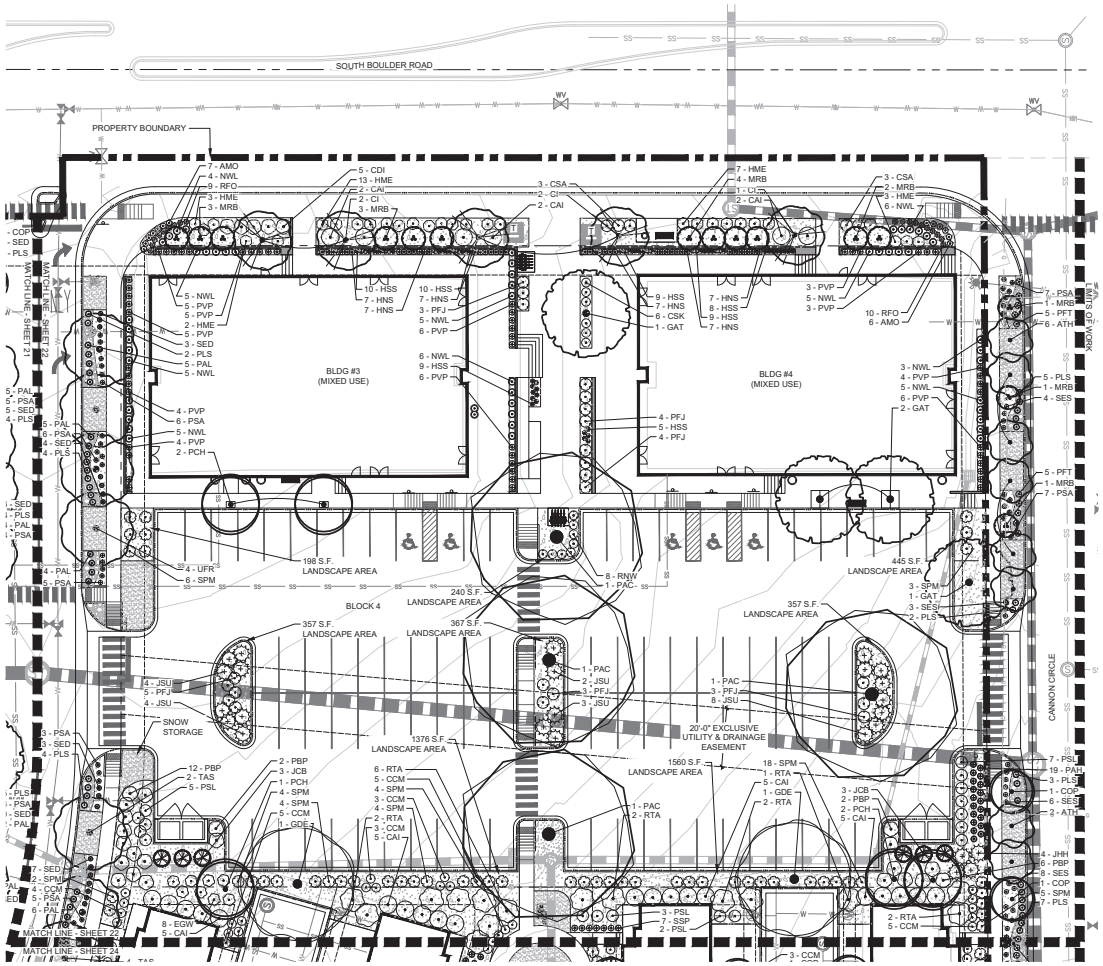
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PROJECT No.:	R20-030
DRAWN BY:	
REVIEWED BY:	

DRAWING NUMBER:

21 OF 32

Plotted By: Megan McGregor **Layout:** L2 LANDSCAPE PLAN - BLOCK 6 **Printed On:** 4/2/2024 9:04 AM **File Name:** LANDSCAPE PLAN.dwg



PLANT LEGEND

CODE	QTY	BOTANICAL / COMMON NAME	CONT	CAL	SIZE
DECIDUOUS TREES					
COP	2	CELTIS OCCIDENTALIS 'PRAIRIE SENTINEL' / PRAIRIE SENTINEL HACKBERRY	B & B	2.5"CAL	
GAT	4	GLEDITSIA TRIACANTHOS 'SKYLINE' / SKYLINE HONEY LOCUST	B & B	2.5"CAL	
GDE	2	GYMNOCLADUS DIOICA 'ESPRESSO' / SEEDLESS KENTUCKY COFFEETREE	B & B	2.5"CAL	
PAC	4	PLATANUS X ACERIFOLIA 'BLOODGOOD' / BLOODGOOD LONDON PLANETREE	B & B	2.5"CAL	
TAS	2	TILIA AMERICANA 'SENTRY' / AMERICAN LINDEN	B & B	2.5"CAL	
UFR	4	ULMUS 'FRONTIER' / FRONTIER ELM	B & B	2.5"CAL	
EVERGREEN TREES					
JCB	6	JUNIPERUS CHINENSIS 'BLUE POINT' / BLUE POINT JUNIPER	B & B		6' HT
ORNAMENTAL TREES					
ATH	8	ACER TATARICUM 'HOT WINGS' / HOT WINGS MAPLE	B & B	1.5"CAL	
CI	5	CRATAEGUS CRUS-GALLI INERMIS / THORNLESS COCKSPUR HAWTHORN	B & B	1.5"CAL	
MRB	15	MALUS X 'RED BARRON' / RED BARRON CRAB APPLE	B & B	1.5"CAL	
PCH	5	PYRUS CALLERYANA 'CHANTICLEER' / CHANTICLEER ORNAMENTAL PEAR	B & B	1.5"CAL	

CODE	QTY	BOTANICAL / COMMON NAME	SIZE	HYDROZONE
DECIDUOUS SHRUBS				
CCM	25	CARYOPTERIS X CLANDONENSIS 'BLUE MIST' / BLUE MIST SPIREA	5 GAL	
CAI	26	CORNUS ALBA 'IVORY HALO' / IVORY HALO VARIEGATED DOGWOOD	5 GAL	
CSA	6	CORNUS SERICEA 'ARCTIC FIRE' / ARCTIC FIRE RED TWIG DOGWOOD	5 GAL	
CSK	6	CORNUS SERICEA 'KELSEYI' / KELSEY DWARF DOGWOOD	5 GAL	
CDI	5	COTONEASTER DIVARICATUS / SPREADING COTONEASTER	5 GAL	
HME	28	HYDRANGEA MACROPHYLLA 'ENDLESS SUMMER' / ENDLESS SUMMER HYDRANGEA	5 GAL	
PAL	20	PEROVSKIA ATRIPLICIFOLIA 'LISSLITT' / LACEY BLUE RUSSIAN SAGE	5 GAL	
PSL	17	PHYSOCARPUS OPULIFOLIUS 'LITTLE DEVIL' TM / DWARF NINEBARK	5 GAL	
PFJ	22	POTENTILLA FRUTICOSA 'JACKMANII' / JACKMAN POTENTILLA	5 GAL	
PFT	11	POTENTILLA FRUTICOSA 'TANGERINE' / TANGERINE BUSH CINQUEFOIL	5 GAL	
PBP	22	PRUNUS BESSEYI 'PAWNEE BUTTES' / DWARF WESTERN SAND CHERRY	5 GAL	
RTA	15	RHUS TRILOBATA 'GRO LOW' / SKUNKBUSH SUMAC	5 GAL	
RNW	8	ROSA X 'NEARLY WILD' / NEARLY WILD SHRUB ROSE	5 GAL	
SPM	50	SYRINGA PATULA 'MISS KIM' / MISS KIM DWARF LILAC	5 GAL	
EVERGREEN SHRUBS				
EGW	8	EUONYMUS FORTUNEI 'EMERALD GAIETY' TM / EMERALD GAIETY WINTERCREEPER	5 GAL	
JHH	4	JUNIPERUS HORIZONTALIS 'HUGHES' / HUGHES JUNIPER	5 GAL	
JSU	21	JUNIPERUS SABINA 'BUFFALO' / BUFFALO JUNIPER	5 GAL	
PLS	27	PINUS LEUCODERMIS 'SMIDTII' / DWARF GLOBE BOSNIAN PINE	5 GAL	
PERENNIALS				
AMO	13	ACHILLEA X 'MOONSHINE' / MOONSHINE YARROW	1 GAL	
HNS	42	HELICTOTRICHON SEMPERVIRENS / BLUE OAT GRASS	1 GAL	
HSS	60	HEUCHERA SANGUINEA 'SNOW ANGEL' / VARIEGATED CORAL BELLS	1 GAL	
NWL	49	NEPETA X FAASSENII 'WALKERS LOW' / WALKERS LOW CATMINT	1 GAL	
PVP	51	PANICUM VIRGATUM 'PRAIRE FIRE' / RED SWITCH GRASS	5 GAL	
PAH	20	PENNISETUM ALOPECUROIDES 'HAMELN' / DWARF FOUNTAIN GRASS	1 GAL	
PSA	40	PENNISETUM SETACEUM 'ALBA' / WHITE FOUNTAIN GRASS	5 GAL	
RFO	19	RUDBECKIA FULGIDA 'GOLDSTURM' / BLACK-EYED SUSAN	1 GAL	
SSP	7	SCHIZACHYRIUM SCOPARIUM 'PRAIRIE BLUES' / LITTLE BLUESTEM GRASS	1 GAL	
SED	17	SEDUM X 'DAZZLEBERRY' / DAZZELBERRY STONECROP	1 GAL	
SES	21	SEDUM X 'KNIGHT RIDER' / KNIGHT RIDER STONECROP	1 GAL	

REQUIRED PLANT MATERIAL - BLOCK 4 OVERALL & PARKING

CODE SECTION	AREA / ITEM	REQUIREMENT	REQUIRED AREA	PROVIDED AREA
7.4.B.1.a	LANDSCAPED AREA	10% AREA REQ. OF 64,608 S.F.	6,460 SF	10,365 SF (16%)
7.4.B.1.b	HARDSCAPED AREA	HARDSCAPED AREA MUST BE LESS THAN 2/3 OF MIN. LANDSCAPED AREA REQ.	< 4,263 SF	3,875 SF
7.3.B.2.b.i	PARKING INTERIOR L.S. AREA	5% AREA REQ. OF 33,018 S.F.	1,651 SF	4,608 SF (7%)
7.1.B.1	PARKING PERIMETER	5' BUFFER @ PERIMETER	5' BUFFER MIN	5' BUFFER
7.3.E	LANDSCAPE ISLANDS	1 TREE / 300 SF OF LANDSCAPED AREA	2,453/300=8	9

LANDSCAPE LEGEND

DECIDUOUS SHADE TREES
DECIDUOUS ORNAMENTAL TREES
EVERGREEN TREES
DECIDUOUS SHRUBS
EVERGREEN SHRUBS
PERENNIALS

LANDSCAPE MATERIAL LEGEND	
SYMBOL	DESCRIPTION
	2-3" RIVER ROCK MULCH
	NATIVE GRASS, UPLAND BLEND
	NATIVE GRASS, WET-MEADOW BLEND
	IRRIGATED TURF
	COBBLE ROCK MULCH

NORTH
SCALE: 1"=20'-0"
ORIGINAL SIZE 24X36

ISSUED		
No.	DESCRIPTION	DATE
1	PRELIMINARY PUD	01/22/2021
2	PRELIMINARY PUD RD 2	06/21/2021
3	PRELIMINARY PUD RD 3	06/17/2022
4	PRELIMINARY PUD RD 4	12/23/2022
5	PRELIMINARY PUD RD 5	09/04/2023
6	PRELIMINARY PUD RD 6	05/14/2024

REVISIONS		
No.	DESCRIPTION	DATE

COAL CREEK VILLAGE

PRELIMINARY PUD AND SRU

LOUISVILLE, COLORADO

PREPARED BY:

ripley design
LANDSCAPE ARCHITECTURE, LAND PLANNING
419 Canyon Ave. Suite 200 Fort Collins, CO 80521
phone 970.224.5828 | fax 970.226.0817 | www.ripleydesigninc.com

PLANNER / LANDSCAPE ARCHITECT

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OWNER

COAL CREEK VILLAGE LLC
Michael Mankel
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P. 303.775.5524

ENGINEER

ROCKY RIDGE CIVIL ENGINEERING
Joel Seamons
420 21ST AVENUE, SUITE 101
LONGMONT, COLORADO 80501
P. 303.651.6626

LANDSCAPE PLAN ENLARGEMENT

SEAL:

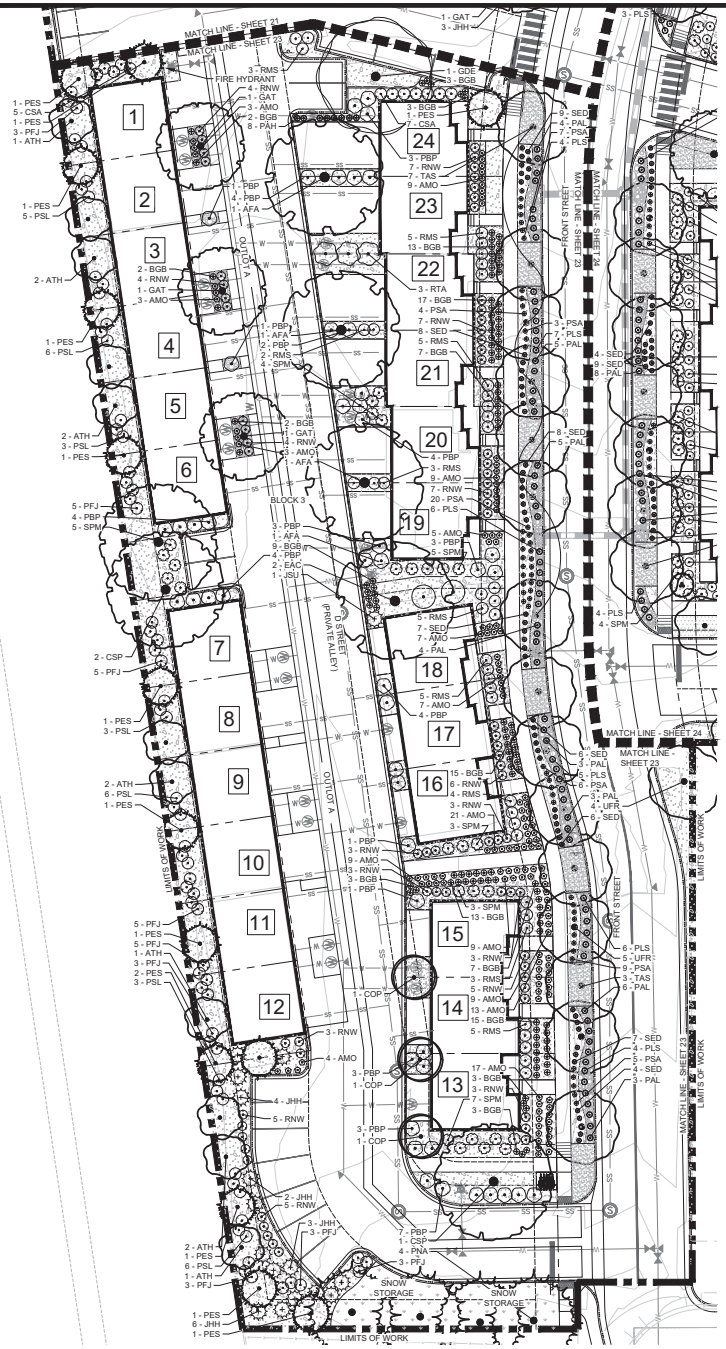
ENTITLEMENT DRAWINGS NOT FOR CONSTRUCTION

PROJECT No.:	R20-030
DRAWN BY:	
REVIEWED BY:	

DRAWING NUMBER:

22 OF 32

Plotted By: Megan McGregor **Layout:** L3 LANDSCAPE PLAN - BLOCK 4 **Printed On:** 4/2/2024 9:05 AM **File Name:** LANDSCAPE PLAN.dwg



PLANT LEGEND

CODE	QTY	BOTANICAL / COMMON NAME	CONT	CAL	SIZE
DECIDUOUS TREES					
AFA	4	ACER X FREEMANII AUTUMN BLAZE / AUTUMN BLAZE MAPLE	B & B	2.5"CAL	
CSP	3	CATALPA SPECIOSA / WESTERN CATALPA	B & B	2.5"CAL	
COP	3	CELTIS OCCIDENTALIS 'PRAIRIE SENTINEL' / PRAIRIE SENTINEL HACKBERRY	B & B	2.5"CAL	
GAT	3	GLEDITSIA TRIACANTHOS 'SKYLINE' / SKYLINE HONEY LOCUST	B & B	2.5"CAL	
GDE	1	GYMNOCLADUS DIOICA 'ESPRESSO' / SEEDLESS KENTUCKY COFFEETREE	B & B	2.5"CAL	
TAS	10	TILIA AMERICANA 'SENTRY' / AMERICAN LINDEN	B & B	2.5"CAL	
UFR	5	ULMUS 'FRONTIER' / FRONTIER ELM	B & B	2.5"CAL	
EVERGREEN TREES					
PES	14	PINUS EDULIS / PINYON PINE	B & B		6' HT
PNA	4	PINUS NIGRA / AUSTRIAN PINE	B & B		6' HT
ORNAMENTAL TREES					
ATH	11	ACER TATARICUM 'HOT WINGS' / HOT WINGS MAPLE	B & B	1.5"CAL	

CODE	QTY	BOTANICAL / COMMON NAME	SIZE	HYDROZONE
DECIDUOUS SHRUBS				
CSA	12	CORNUS SERICEA 'ARCTIC FIRE' / ARCTIC FIRE RED TWIG DOGWOOD	5 GAL	
EAC	2	EUONYMUS ALATUS 'COMPACTUS' / DWARF BURNING BUSH	5 GAL	
PAL	33	PEROVSKIA ATRIPLICIFOLIA 'LISSLITT' / LACEY BLUE RUSSIAN SAGE	5 GAL	
PSL	32	PHYSOCARPUS OPULIFOLIUS 'LITTLE DEVIL' TM / DWARF NINEBARK	5 GAL	
PFJ	35	POTENTILLA FRUTICOSA 'JACKMANII' / JACKMAN POTENTILLA	5 GAL	
PBP	48	PRUNUS BESSEYI 'PAWNEE BUTTES' / DWARF WESTERN SAND CHERRY	5 GAL	
RTA	3	RHUS TRILOBATA 'GRO LOW' / SKUNKBUSH SUMAC	5 GAL	
RMS	40	ROSA SHRUB 'MORDEN SUNRISE' / MORDEN SUNRISE SHRUB ROSE	5 GAL	
RNW	72	ROSA X 'NEARLY WILD' / NEARLY WILD SHRUB ROSE	5 GAL	
SPM	27	SYRINGA PATULA 'MISS KIM' / MISS KIM DWARF LILAC	5 GAL	
EVERGREEN SHRUBS				
JHH	15	JUNIPERUS HORIZONTALIS 'HUGHES' / HUGHES JUNIPER	5 GAL	
JSU	1	JUNIPERUS SABINA 'BUFFALO' / BUFFALO JUNIPER	5 GAL	
PLS	32	PINUS LEUCODERMIS 'SMIDTII' / DWARF GLOBE BOSNIAN PINE	5 GAL	
PERENNIALS				
AMO	128	ACHILLEA X 'MOONSHINE' / MOONSHINE YARROW	1 GAL	
BGB	117	BOUTELOUA GRACILIS 'BLONDE AMBITION' / BLONDE AMBITION GRAMA GRASS	1 GAL	
PAH	8	PENNISETUM ALOPECUROIDES 'HAMELN' / DWARF FOUNTAIN GRASS	1 GAL	
PSA	54	PENNISETUM SETACEUM 'ALBA' / WHITE FOUNTAIN GRASS	5 GAL	
SED	55	SEDUM X 'DAZZLEBERRY' / DAZZELBERRY STONECROP	1 GAL	

REQUIRED PLANT MATERIAL - BLOCK 3 OVERALL				
CODE SECTION	AREA / ITEM	REQUIREMENT	REQUIRED AREA	PROVIDED AREA
7.4.B.1.a	LANDSCAPED AREA	10% AREA REQ. OF 56,694 S.F.	5,669 SF	15,717 SF (27%)
7.4.B.1.b	HARDSCAPED AREA	HARDSCAPED AREA MUST BE LESS THAN 2/3 OF MIN. LANDSCAPED AREA REQ.	<3,741 SF	0 SF

LANDSCAPE LEGEND

DECIDUOUS SHADE TREES
DECIDUOUS ORNAMENTAL TREES
EVERGREEN TREES
DECIDUOUS SHRUBS
EVERGREEN SHRUBS
PERENNIALS

LANDSCAPE MATERIAL LEGEND	
SYMBOL	DESCRIPTION
	2-3" RIVER ROCK MULCH
	NATIVE GRASS, UPLAND BLEND
	NATIVE GRASS, WET-MEADOW BLEND
	IRRIGATED TURF
	COBBLE ROCK MULCH

COAL CREEK VILLAGE

PRELIMINARY PUD AND SRU

LOUISEVILLE, COLORADO

PREPARED BY:

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ENGINEER
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LONGMONT, COLORADO 80501
P. 303.651.8626

NORTH
0 10 20 40
SCALE: 1"=20'-0"
ORIGINAL SIZE 24X36

ISSUED

No.	DESCRIPTION	DATE
1	PRELIMINARY PUD	01/22/2021
2	PRELIMINARY PUD RD 2	06/21/2021
3	PRELIMINARY PUD RD 3	05/17/2022
4	PRELIMINARY PUD RD 4	12/23/2022
5	PRELIMINARY PUD RD 5	08/04/2023
6	PRELIMINARY PUD RD 6	05/14/2024

REVISIONS

No.	DESCRIPTION	DATE

LANDSCAPE PLAN ENLARGEMENT

SEAL:

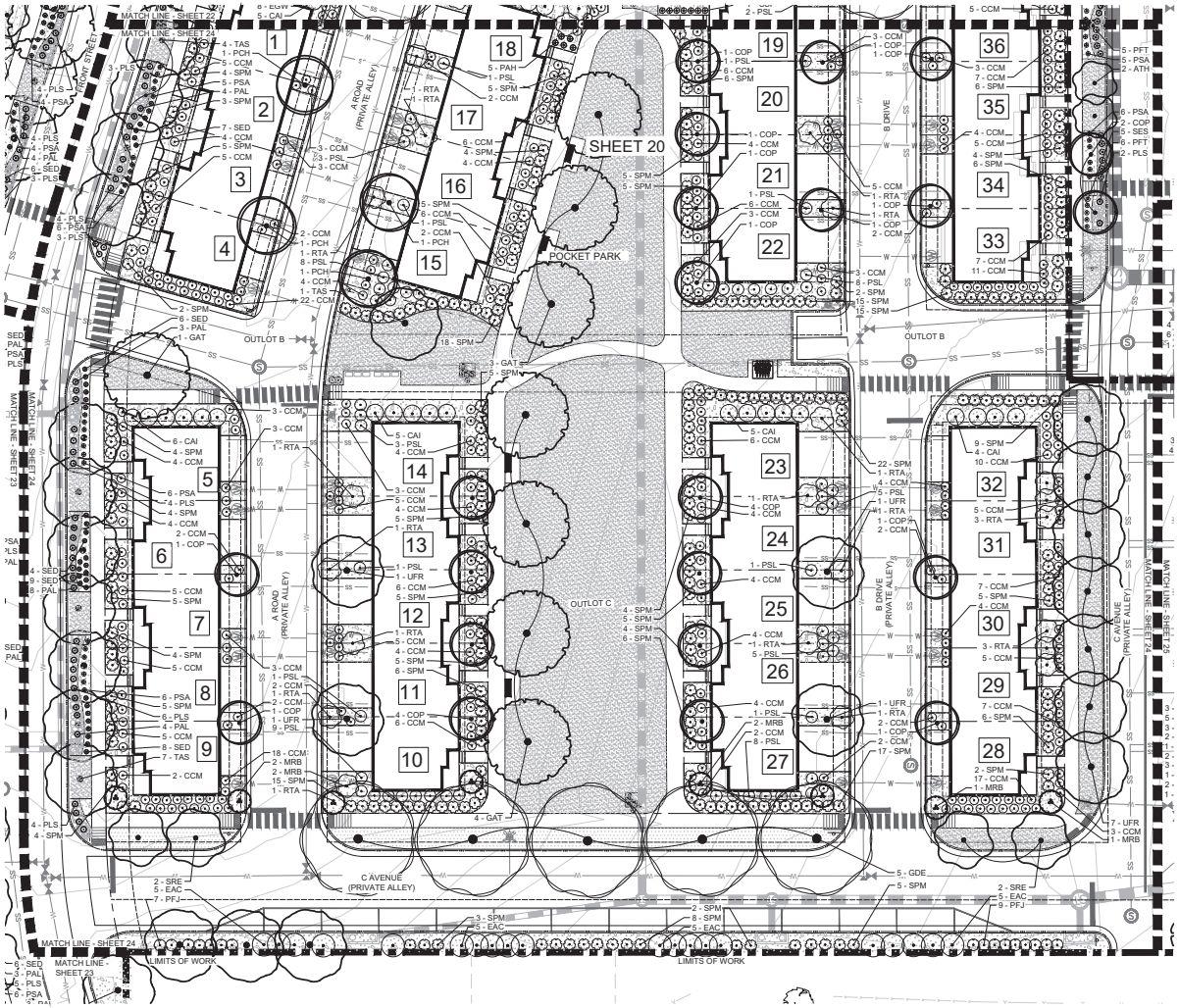
ENTITLEMENT DRAWINGS NOT FOR CONSTRUCTION

PROJECT No.:	R20-030
DRAWN BY:	
REVIEWED BY:	

DRAWING NUMBER:

23 OF 32

Plotted By: Megan McGregor **Layout:** L4 LANDSCAPE PLAN - BLOCK 5 **Printed On:** 4/2/2024 9:06 AM **File Name:** LANDSCAPE PLAN.dwg



PLANT LEGEND

CODE	QTY	BOTANICAL / COMMON NAME	CONT	CAL
DECIDUOUS TREES				
COP	22	CELTIS OCCIDENTALIS 'PRAIRIE SENTINEL' / PRAIRIE SENTINEL HACKBERRY	B & B	2.5"CAL
GAT	8	GLEDITSIA TRIACANTHOS 'SKYLINE' / SKYLINE HONEY LOCUST	B & B	2.5"CAL
GDE	5	GYMNOCLADUS DIOICA 'ESPRESSO' / SEEDLESS KENTUCKY COFFEETREE	B & B	2.5"CAL
TAS	12	TILIA AMERICANA 'SENTRY' / AMERICAN LINDEN	B & B	2.5"CAL
UFR	15	ULMUS 'FRONTIER' / FRONTIER ELM	B & B	2.5"CAL
ORNAMENTAL TREES				
ATH	2	ACER TATARICUM 'HOT WINGS' / HOT WINGS MAPLE	B & B	1.5"CAL
MRB	8	MALUS X 'RED BARRON' / RED BARRON CRAB APPLE	B & B	1.5"CAL
PCH	4	PYRUS CALLERYANA 'CHANTICLEER' / CHANTICLEER ORNAMENTAL PEAR	B & B	1.5"CAL
SRE	4	SYRINGA RETICULATA / JAPANESE LILAC TREE	B & B	1.5"CAL

CODE	QTY	BOTANICAL / COMMON NAME	SIZE	HYDROZONE
DECIDUOUS SHRUBS				
CCM	326	CARYOPTERIS X CLANDONENSIS 'BLUE MIST' / BLUE MIST SPIREA	5 GAL	
CAI	20	CORNUS ALBA 'IVORY HALO' / IVORY HALO VARIEGATED DOGWOOD	5 GAL	
EAC	20	EUONYMUS ALATUS 'COMPACTUS' / DWARF BURNING BUSH	5 GAL	
PAL	19	PEROVSKIA ATRIPLICIFOLIA 'LISSLITT' / LACEY BLUE RUSSIAN SAGE	5 GAL	
PSL	57	PHYSOCARPUS OPULIFOLIUS 'LITTLE DEVIL' TM / DWARF NINEBARK	5 GAL	
PFJ	16	POTENTILLA FRUTICOSA 'JACKMANII' / JACKMAN POTENTILLA	5 GAL	
PFT	10	POTENTILLA FRUTICOSA 'TANGERINE' / TANGERINE BUSH CINQUEFOIL	5 GAL	
RTA	22	RHUS TRILOBATA 'GRO LOW' / SKUNKBUSH SUMAC	5 GAL	
SPM	275	SYRINGA PATULA 'MISS KIM' / MISS KIM DWARF LILAC	5 GAL	
EVERGREEN SHRUBS				
PLS	26	PINUS LEUCODERMIS 'SMIDTII' / DWARF GLOBE BOSNIAN PINE	5 GAL	
PERENNIALS				
PAH	5	PENNISETUM ALOPECUROIDES 'HAMELN' / DWARF FOUNTAIN GRASS	1 GAL	
PSA	33	PENNISETUM SETACEUM 'ALBA' / WHITE FOUNTAIN GRASS	5 GAL	
SED	34	SEDUM X 'DAZZLEBERRY' / DAZZELBERRY STONECROP	1 GAL	
SES	5	SEDUM X 'KNIGHT RIDER' / KNIGHT RIDER STONECROP	1 GAL	

REQUIRED PLANT MATERIAL - BLOCK 2 OVERALL

CODE SECTION	AREA / ITEM	REQUIREMENT	REQUIRED AREA	PROVIDED AREA
7.4.B.1.a	LANDSCAPED AREA	10% AREA REQ. OF 116,156 S.F.	11,616 SF	36,706 SF (31%)
7.4.B.1.b	HARDSCAPED AREA	HARDSCAPED AREA MUST BE LESS THAN 2/3 OF MIN. LANDSCAPED AREA REQ.	17,668 SF	1,040 SF

LANDSCAPE LEGEND



LANDSCAPE MATERIAL LEGEND	
SYMBOL	DESCRIPTION
	2-3" RIVER ROCK MULCH
	NATIVE GRASS, UPLAND BLEND
	NATIVE GRASS, WET-MEADOW BLEND
	IRRIGATED TURF
	COBBLE ROCK MULCH

COAL CREEK VILLAGE

PRELIMINARY PUD AND SRU

LOUISVILLE, COLORADO

PREPARED BY:

ripleydesign
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OWNER

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P. 303.775.5524

ENGINEER

ROCKY RIDGE CIVIL ENGINEERING
Joel Seamons
420 21ST AVENUE, SUITE 101
LONGMONT, COLORADO 80501
P. 303.651.6626

NORTH SCALE: 1"=20'-0"
0 10 20 40
ORIGINAL SIZE 24X36

ISSUED

No.	DESCRIPTION	DATE
1	PRELIMINARY PUD	01/22/2021
2	PRELIMINARY PUD RD 2	06/21/2021
3	PRELIMINARY PUD RD 3	06/17/2022
4	PRELIMINARY PUD RD 4	12/23/2022
5	PRELIMINARY PUD RD 5	08/04/2023
6	PRELIMINARY PUD RD 6	05/14/2024

REVISIONS

No.	DESCRIPTION	DATE

LANDSCAPE PLAN ENLARGEMENT

SEAL:

ENTITLEMENT DRAWINGS NOT FOR CONSTRUCTION

PROJECT No.:	R20-030
DRAWN BY:	
REVIEWED BY:	

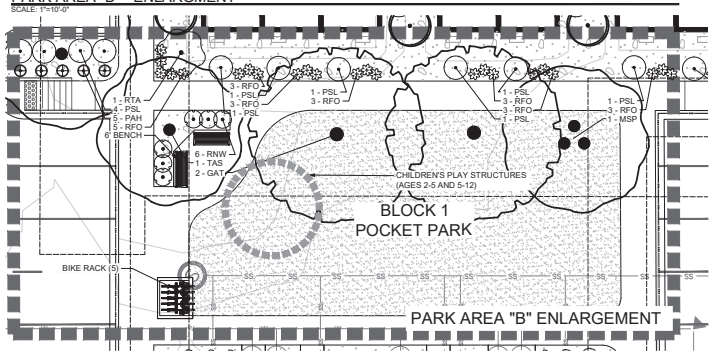
DRAWING NUMBER:

24 OF 32

Plotted By: Megan McGregor **Layout:** L5 LANDSCAPE PLAN - BLOCKS 2 & 3 **Printed On:** 4/2/2024 9:06 AM **File Name:** LANDSCAPE PLAN.dwg

PARK AREA "B" - ENLARGEMENT

SCALE: 1"=10'-0"



PLANT LEGEND (PARK AREA "B" ENLARGEMENT)

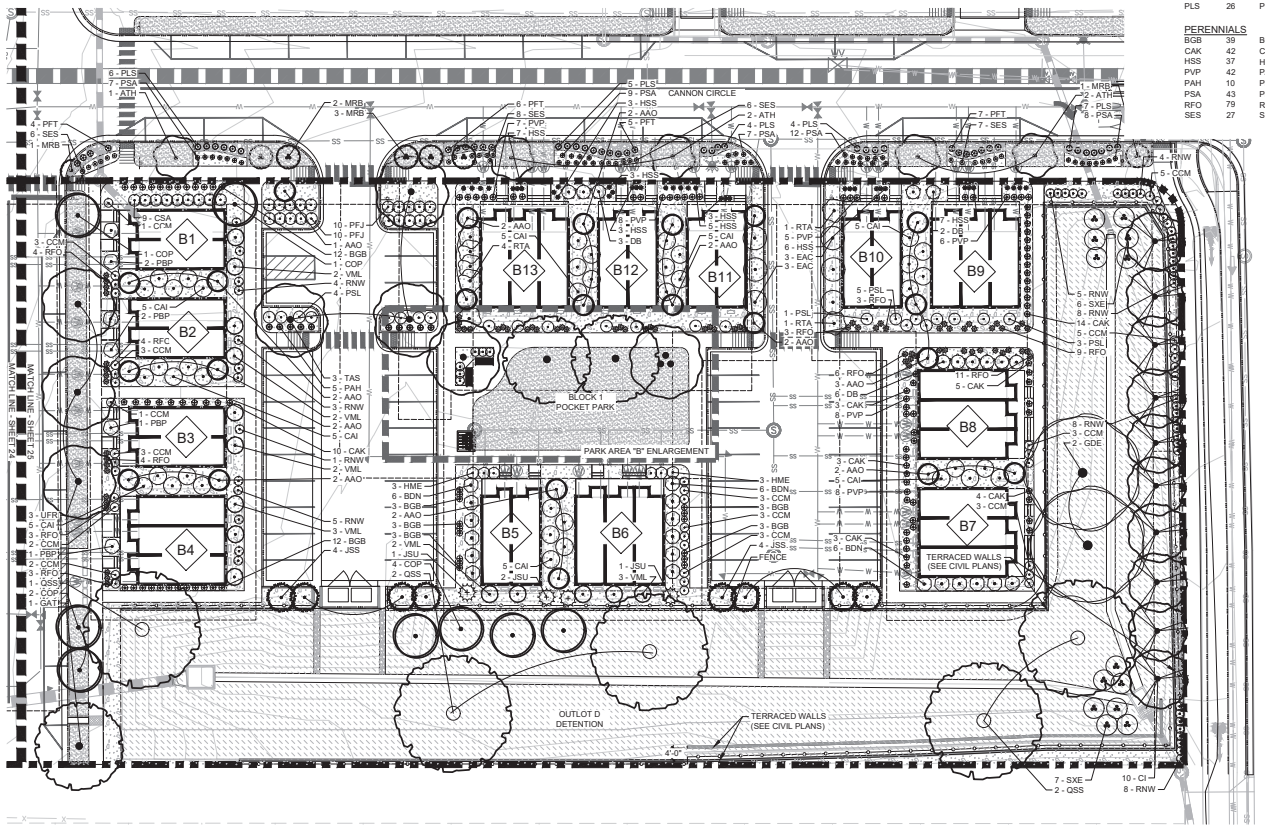
CODE	QTY	BOTANICAL / COMMON NAME	CONT	CAL
DECIDUOUS TREES				
GAT	2	GLEDITSIA TRIACANTHOS `SKYLINE` SKYLINE HONEY LOCUST 40'-50' HT. 30'-40' W.	B & B	2.5"CAL
TAS	2	TILIA AMERICANA `SENTRY` AMERICAN LINDEN 60'-80' HT. 30'-50' W.	B & B	2.5"CAL
ORNAMENTAL TREES				
AAO	3	AMELANCHIER ALNIFOLIA `OBELISK` STANDING OVATION SERVICEBERRY 12'-15' HT 5'-7' W.	B & B	1.5"CAL
MSP	1	MALUS `SPRING SNOW` SPRING SNOW CRAB APPLE 20'-25' HT 20'-25' W.	B & B	1.5"CAL

CODE	QTY	BOTANICAL / COMMON NAME	SIZE	HYDROZONE
DECIDUOUS SHRUBS				
PSL	11	PHYSOCARPUS OPULIFOLIUS `LITTLE DEVIL` TM DWARF NINEBARK 3'-4' HT. 3'-4' W.	5 GAL	
RTA	1	RHUS TRILOBATA `GRO LOW` SKUNKBUSH SUMAC 2'-3' HT. 6'-8' W.	5 GAL	
RNW	6	ROSA X `NEARLY WILD` NEARLY WILD SHRUB ROSE 2'-3' HT. 2'-3' W.	5 GAL	
PERENNIALS				
PAH	5	PENNISETUM ALOPECUROIDES `HAMELN` DWARF FOUNTAIN GRASS 1'-2' HT. 12"-18" W.	1 GAL	
RFO	23	RUDBECKIA FULGIDA `GOLDSTURM` BLACK-EYED SUSAN 18"-24" HT. 18"-24" W.	1 GAL	

PLANT LEGEND

CODE	QTY	BOTANICAL / COMMON NAME	CONT	CAL	SIZE
DECIDUOUS TREES					
COP	8	CELTIS OCCIDENTALIS `PRAIRIE SENTINEL` / PRAIRIE SENTINEL HACKBERRY	B & B	2.5"CAL	
GAT	3	GLEDITSIA TRIACANTHOS `SKYLINE` / SKYLINE HONEY LOCUST	B & B	2.5"CAL	
GDE	2	GYMNOCLADUS DIOICA `ESPRESSO` / SEEDLESS KENTUCKY COFFEETREE	B & B	2.5"CAL	
QSS	5	QUERCUS SHUMARDII / SHUMARD RED OAK	B & B	2.5"CAL	
TAS	4	TILIA AMERICANA `SENTRY` / AMERICAN LINDEN	B & B	2.5"CAL	
UFR	3	ULMUS `FRONTIER` / FRONTIER ELM	B & B	2.5"CAL	
EVERGREEN TREES					
JSS	8	JUNIPERUS SCOPULORUM / ROCKY MOUNTAIN JUNIPER	B & B		6` HT
ORNAMENTAL TREES					
ATH	5	ACER TATARICUM `HOT WINGS` / HOT WINGS MAPLE	B & B	1.5"CAL	
AAO	22	AMELANCHIER ALNIFOLIA `OBELISK` / STANDING OVATION SERVICEBERRY	B & B	1.5"CAL	
CI	10	CRATAEGUS CRUS-GALLI INERMIS / THORNLESS COCKSPUR HAWTHORN	B & B	1.5"CAL	
MSP	1	MALUS `SPRING SNOW` / SPRING SNOW CRAB APPLE	B & B	1.5"CAL	
MRB	7	MALUS X `RED BARRON` / RED BARRON CRAB APPLE	B & B	1.5"CAL	

CODE	QTY	BOTANICAL / COMMON NAME	SIZE	HYDROZONE
DECIDUOUS SHRUBS				
BDN	18	BUDDLEJA DAVIDII NANHOENSIS `PETITE SNOW` / COMPACT BUTTERFLY BUSH	5 GAL	
CCM	40	CARYOPTERIS X CLANDONENSIS `BLUE MIST` / BLUE MIST SPIREA	5 GAL	
CAI	40	CORNUS ALBA `IVORY HALO` / IVORY HALO VARIEGATED DOGWOOD	5 GAL	
CSA	9	CORNUS SERICEA `ARCTIC FIRE` / ARCTIC FIRE RED TWIG DOGWOOD	5 GAL	
DB	11	DAPHNE X BURKWOODII `CAROL MACKIE` / CAROL MACKIE DAPHNE	5 GAL	
EAC	6	EUONYMUS ALATUS `COMPACTUS` / DWARF BURNING BUSH	5 GAL	
HME	6	HYDRANGEA MACROPHYLLA `ENDLESS SUMMER` / ENDLESS SUMMER HYDRANGEA	5 GAL	
PSL	24	PHYSOCARPUS OPULIFOLIUS `LITTLE DEVIL` TM / DWARF NINEBARK	5 GAL	
PFJ	20	POTENTILLA FRUTICOSA `JACKMANII` / JACKMAN POTENTILLA	5 GAL	
PFT	22	POTENTILLA FRUTICOSA `TANGERINE` / TANGERINE BUSH CINQUEFOIL	5 GAL	
PBP	6	PRUNUS BESSEYI `PAWNEE BUTTES` / DWARF WESTERN SAND CHERRY	5 GAL	
RTA	7	RHUS TRILOBATA `GRO LOW` / SKUNKBUSH SUMAC	5 GAL	
RNW	52	ROSA X `NEARLY WILD` / NEARLY WILD SHRUB ROSE	5 GAL	
SXE	13	SALIX EXIGUA / COYOTE WILLOW	5 GAL	
VML	14	VIBURNUM LENTAGO / NANNYBERRY	5 GAL	
EVERGREEN SHRUBS				
JSU	4	JUNIPERUS SABINA `BUFFALO` / BUFFALO JUNIPER	5 GAL	
PLS	26	PINUS LEUCODERMIS `SMIDTII` / DWARF GLOBE BOSNIAN PINE	5 GAL	
PERENNIALS				
BGB	39	BOUTELOUA GRACILIS `BLONDE AMBITION` / BLONDE AMBITION GRAMA GRASS	1 GAL	
CAK	42	CALAMAGROSTIS X ACUTIFLORA `KARL FOERSTER` / FEATHER REED GRASS	1 GAL	
HSS	37	HEUCHERA SANGUINEA `SNOW ANGEL` / VARIEGATED CORAL BELLS	1 GAL	
PVP	42	PANICUM VIRGATUM `PRAIRE FIRE` / RED SWITCH GRASS	5 GAL	
PAH	10	PENNISETUM ALOPECUROIDES `HAMELN` / DWARF FOUNTAIN GRASS	1 GAL	
PSA	43	PENNISETUM SETACEUM `ALBA` / WHITE FOUNTAIN GRASS	5 GAL	
RFO	79	RUDBECKIA FULGIDA `GOLDSTURM` / BLACK-EYED SUSAN	1 GAL	
SES	27	SEDUM X `KNIGHT RIDER` / KNIGHT RIDER STONECROP	1 GAL	



REQUIRED PLANT MATERIAL - BLOCK 1 OVERALL & PARKING				
CODE SECTION	AREA / ITEM	REQUIREMENT	REQUIRED AREA	PROVIDED AREA
7.4.B.1.a	LANDSCAPED AREA	10% AREA REQ. OF 78,798 S.F.	7,879 SF	17,355 (22%)
7.4.B.1.b	HARDSCAPED AREA	HARDSCAPED AREA MUST BE LESS THAN 2/3 OF MIN. LANDSCAPED AREA REQ.	< 5,200 SF	95 SF
7.3.B.2.b.i	PARKING INTERIOR L.S. AREA	5% AREA REQ. OF 12,762 S.F.	635 SF	1,298 SF (10%)
7.1.B.1	PARKING PERIMETER	5' BUFFER @ PERIMETER	5' BUFFER	5' BUFFER
7.3.E	LANDSCAPE ISLANDS	1 TREE / 300 SF OF LANDSCAPED AREA	1,298/300 = 4	12

LANDSCAPE LEGEND

DECIDUOUS SHADE TREES
DECIDUOUS ORNAMENTAL TREES
EVERGREEN TREES
DECIDUOUS SHRUBS
EVERGREEN SHRUBS
PERENNIALS

LANDSCAPE MATERIAL LEGEND	
SYMBOL	DESCRIPTION
	2-3" RIVER ROCK MULCH
	NATIVE GRASS, UPLAND BLEND
	NATIVE GRASS, WET-MEADOW BLEND
	IRRIGATED TURF
	COBBLE ROCK MULCH

COAL CREEK VILLAGE

PRELIMINARY PUD AND SRU

LOUISEVILLE, COLORADO

PREPARED BY:

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NORTH
0 10 20 40
SCALE: 1"=20'-0"
ORIGINAL SIZE 24X36

ISSUED		
No.	DESCRIPTION	DATE
1	PRELIMINARY PUD	01/22/2021
2	PRELIMINARY PUD RD 2	06/21/2021
3	PRELIMINARY PUD RD 3	06/17/2022
4	PRELIMINARY PUD RD 4	12/23/2022
5	PRELIMINARY PUD RD 5	08/04/2023
6	PRELIMINARY PUD RD 6	05/14/2024
REVISIONS		
No.	DESCRIPTION	DATE

LANDSCAPE PLAN ENLARGEMENT

SEAL:

ENTITLEMENT DRAWINGS NOT FOR CONSTRUCTION

PROJECT No.:	R20-030
DRAWN BY:	
REVIEWED BY:	

DRAWING NUMBER:

25 OF 32

Plotted By: Megan McGregor **Layout:** L6 LANDSCAPE PLAN - BLOCK 1 **Printed On:** 4/2/2024 9:05 AM **File Name:** LANDSCAPE PLAN.dwg

PLANT SCHEDULE

SYMBOL	CODE	QTY	REMARKS	BOTANICAL / COMMON NAME	CONT	CAL	SIZE
DECIDUOUS TREES							
	AFA	4	40'-50' HT. 30'-40' W.	ACER X FREEMANII AUTUMN BLAZE / AUTUMN BLAZE MAPLE	B & B	2.5"CAL	
	CSP	3	40'-60' HT. 30'-50' W.	CATALPA SPECIOSA / WESTERN CATALPA	B & B	2.5"CAL	
	COP	38	35'-45' HT. 10'-12' W.	CELTIS OCCIDENTALIS `PRAIRIE SENTINEL` / PRAIRIE SENTINEL HACKBERRY	B & B	2.5"CAL	
	GAT	26	40'-50' HT. 30'-40' W.	GLEDITSIA TRIACANTHOS `SKYLINE` / SKYLINE HONEY LOCUST	B & B	2.5"CAL	
	GDE	13	50'-60' HT. 40'-50' W.	GYMNOCLADUS DIOICA `ESPRESSO` / SEEDLESS KENTUCKY COFFEETREE	B & B	2.5"CAL	
	PAC	4	70'-100' HT. 65'-80' W.	PLATANUS X ACERIFOLIA `BLOODGOOD` / BLOODGOOD LONDON PLANETREE	B & B	2.5"CAL	
	QSS	5	40'-50' HT. 30'-40' W.	QUERCUS SHUMARDII / SHUMARD RED OAK	B & B	2.5"CAL	
	TAS	28	60'-80' HT. 30'-50' W.	TILIA AMERICANA `SENTRY` / AMERICAN LINDEN	B & B	2.5"CAL	
	UFR	31	25'-35-' HT. 15'-25' W.	ULMUS `FRONTIER` / FRONTIER ELM	B & B	2.5"CAL	
EVERGREEN TREES							
	JCB	8	8'-12' HT. 5'-6' W.	JUNIPERUS CHINENSIS `BLUE POINT` / BLUE POINT JUNIPER	B & B		6` HT
	JSS	8	20'-30' HT. 10'-15' W.	JUNIPERUS SCOPULORUM / ROCKY MOUNTAIN JUNIPER	B & B		6` HT
	PES	17	20'-30' HT. 10'-20' W.	PINUS EDULIS / PINYON PINE	B & B		6` HT
	PNA	8	40'-60' HT. 30'-40' W.	PINUS NIGRA / AUSTRIAN PINE	B & B		6` HT
ORNAMENTAL TREES							
	ATH	30	18'-20' HT 15'-20' W.	ACER TATARICUM `HOT WINGS` / HOT WINGS MAPLE	B & B	1.5"CAL	
	AAO	22	12'-15' HT 5'-7' W.	AMELANCHIER ALNIFOLIA `OBELISK` / STANDING OVATION SERVICEBERRY	B & B	1.5"CAL	
	CI	23	15'-25' HT. 15'-20' W.	CRATAEGUS CRUS-GALLI INERMIS / THORNLESS COCKSPUR HAWTHORN	B & B	1.5"CAL	
	MSP	1	20'-25' HT 20'-25' W.	MALUS `SPRING SNOW` / SPRING SNOW CRAB APPLE	B & B	1.5"CAL	
	MRB	33	15'-18' HT. 7'-8' W.	MALUS X `RED BARRON` / RED BARRON CRAB APPLE	B & B	1.5"CAL	
	PCH	9	20-30' HT. 15'-20' W.	PYRUS CALLERYANA `CHANTICLEER` / CHANTICLEER ORNAMENTAL PEAR	B & B	1.5"CAL	
	SRE	4	15'-25' HT. 15'-20' W.	SYRINGA RETICULATA / JAPANESE LILAC TREE	B & B	1.5"CAL	

SYMBOL	CODE	QTY	REMARKS	BOTANICAL / COMMON NAME	SIZE
DECIDUOUS SHRUBS					
	AAR	10	6'-8' HT. 6'-8' W.	AMELANCHIER ALNIFOLIA `REGENT` / REGENT SERVICEBERRY	5 GAL
	BDN	18	4'-6' HT. 4'-5' W.	BUDDLEJA DAVIDII NANHOENSIS `PETITE SNOW` / COMPACT BUTTERFLY BUSH	5 GAL
	CCM	389	3'-4' HT. 2'-3' W.	CARYOPTERIS X CLANDONENSIS `BLUE MIST` / BLUE MIST SPIREA	5 GAL
	CAI	86	5'-6' HT. 5'-6' W.	CORNUS ALBA `IVORY HALO` / IVORY HALO VARIEGATED DOGWOOD	5 GAL
	CSA	44	3'-4' HT. 3'-4' W.	CORNUS SERICEA `ARCTIC FIRE` / ARCTIC FIRE RED TWIG DOGWOOD	5 GAL
	CSK	6	2'-3' HT. 2'-3' W.	CORNUS SERICEA `KELSEYI` / KELSEY DWARF DOGWOOD	5 GAL
	CDI	13	4'-6' HT. 6'-8' W.	COTONEASTER DIVARICATUS / SPREADING COTONEASTER	5 GAL
	DB	11	3'-5' HT. 3'-5' W.	DAPHNE X BURKWOODII 'CAROL MACKIE' / CAROL MACKIE DAPHNE	5 GAL
	EAC	28	6'-8' HT. 6'-8' W.	EUONYMUS ALATUS `COMPACTUS` / DWARF BURNING BUSH	5 GAL
	HME	44	3'-5' HT. 3'-5' W.	HYDRANGEA MACROPHYLLA `ENDLESS SUMMER` / ENDLESS SUMMER HYDRANGEA	5 GAL
	PAL	95	18-24"H X 18-24"W	PEROVSKIA ATRIPLICIFOLIA 'LISSLITT' / LACEY BLUE RUSSIAN SAGE	5 GAL
	PSL	140	3'-4' HT. 3'-4' W.	PHYSOCARPUS OPULIFOLIUS `LITTLE DEVIL` TM / DWARF NINEBARK	5 GAL
	PFJ	93	2'-3' HT. 3'-4' W.	POTENTILLA FRUTICOSA `JACKMANII` / JACKMAN POTENTILLA	5 GAL
	PFT	43	18-24"H X 18-24"W	POTENTILLA FRUTICOSA 'TANGERINE' / TANGERINE BUSH CINQUEFOIL	5 GAL
	PBP	90	15"-30" HT. 4'-6' W.	PRUNUS BESSEYI `PAWNEE BUTTES` / DWARF WESTERN SAND CHERRY	5 GAL
	RTA	63	2'-3' HT. 6'-8' W.	RHUS TRILOBATA `GRO LOW` / SKUNKBUSH SUMAC	5 GAL
	RMS	59	2'-4' HT. 2'-3' W.	ROSA SHRUB `MORDEN SUNRISE` / MORDEN SUNRISE SHRUB ROSE	5 GAL
	RNW	140	2'-3' HT. 2'-3' W.	ROSA X `NEARLY WILD` / NEARLY WILD SHRUB ROSE	5 GAL
	SXE	13	6'-12' HT. 4'-8' W.	SALIX EXIGUA / COYOTE WILLOW	5 GAL
	SPM	352	3'-5' HT. 3'-5' W.	SYRINGA PATULA `MISS KIM` / MISS KIM DWARF LILAC	5 GAL
	VML	24	8'-15' HT. 6'-8' W.	VIBURNUM LENTAGO / NANNYBERRY	5 GAL
EVERGREEN SHRUBS					
	EGW	8	18"-24" HT. 3'-4' W.	EUONYMUS FORTUNEI 'EMERALD GAIETY' TM / EMERALD GAIETY WINTERCREEPER	5 GAL
	JHH	37	1'-2' HT. 5'-8' W.	JUNIPERUS HORIZONTALIS `HUGHES` / HUGHES JUNIPER	5 GAL
	JSU	26	12"-18" HT. 6'-8' W.	JUNIPERUS SABINA `BUFFALO` / BUFFALO JUNIPER	5 GAL
	PLS	137	1-2H X 1-2W	PINUS LEUCODERMIS 'SMIDTII' / DWARF GLOBE BOSNIAN PINE	5 GAL
	PMB	1	6'-8' HT. 5'-6' W.	PINUS MUGO `BIG TUNA` / BIG TUNA MUGO PINE	10 GAL
PERENNIALS					
	AMO	141	24"-30" HT. 18"-24" W.	ACHILLEA X `MOONSHINE` / MOONSHINE YARROW	1 GAL
	BGB	156	30"-36" HT. 20"-24" W.	BOUTELOUA GRACILIS `BLONDE AMBITION` / BLONDE AMBITION GRAMA GRASS	1 GAL
	CAK	42	4'-5' HT. 18"-24" W.	CALAMAGROSTIS X ACUTIFLORA `KARL FOERSTER` / FEATHER REED GRASS	1 GAL
	HSE	13	2'-3' HT. 18"-24" W.	HELICTOTRICHON SEMPERVIRENS / BLUE AVENA GRASS	1 GAL
	HNS	42	2'-3' HT. 2'-3' W.	HELICTOTRICHON SEMPERVIRENS / BLUE OAT GRASS	1 GAL
	HSS	97	12"-18" HT. 10"-15" W.	HEUCHERA SANGUINEA `SNOW ANGEL` / VARIEGATED CORAL BELLS	1 GAL
	NWL	49	18"-24" HT. 2'-3' W.	NEPETA X FAASSENII `WALKERS LOW` / WALKERS LOW CATMINT	1 GAL
	PVP	93	4-5H X 2W	PANICUM VIRGATUM `PRAIRE FIRE` / RED SWITCH GRASS	5 GAL
	PAH	58	1'-2' HT. 12"-18" W.	PENNISETUM ALOPECUROIDES `HAMELN` / DWARF FOUNTAIN GRASS	1 GAL
	PSA	201	1-2H X 12-18"W	PENNISETUM SETACEUM 'ALBA' / WHITE FOUNTAIN GRASS	5 GAL
	RFO	98	18"-24" HT. 18"-24" W.	RUDBECKIA FULGIDA `GOLDSTURM` / BLACK-EYED SUSAN	1 GAL
	SSP	25	3'-4' HT. 15"-18"	SCHIZACHYRIUM SCOPARIUM `PRAIRIE BLUES` / LITTLE BLUESTEM GRASS	1 GAL
	SED	144	6-8"H X 15-18"W	SEDUM X 'DAZZLEBERRY' / DAZZELBERRY STONECROP	1 GAL
	SES	53	20-24"H X 12-18"W	SEDUM X 'KNIGHT RIDER' / KNIGHT RIDER STONECROP	1 GAL

Plotted By: Megan McGregor **Layout:** L7 LANDSCAPE SCHEDULE **Printed On:** 3/28/2024 4:54 PM **File Name:** LANDSCAPE PLAN.dwg

COAL CREEK VILLAGE

PRELIMINARY PUD AND SRU

LOUISVILLE, COLORADO

PREPARED BY:

ripley design

LANDSCAPE ARCHITECTURE, LAND PLANNING

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ENGINEER

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ORIGINAL SIZE 24X36

ISSUED

No.	DESCRIPTION	DATE
1	PRELIMINARY PUD	01/22/2021
2	PRELIMINARY PUD RD 2	06/21/2021
3	PRELIMINARY PUD RD 3	06/17/2022
4	PRELIMINARY PUD RD 4	12/23/2022
5	PRELIMINARY PUD RD 5	08/04/2023
6	PRELIMINARY PUD RD 6	05/14/2024

REVISIONS

No.	DESCRIPTION	DATE

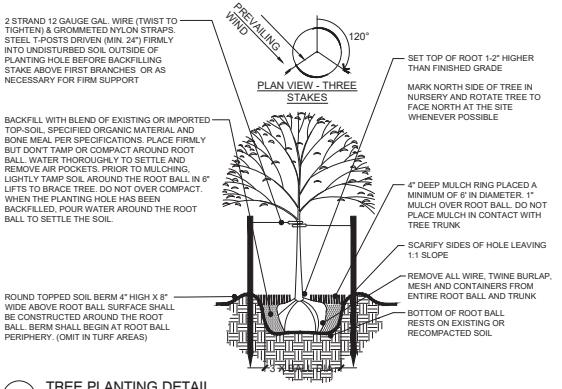
PLANT SCHEDULE

SEAL:

ENTITLEMENT DRAWINGS NOT FOR CONSTRUCTION

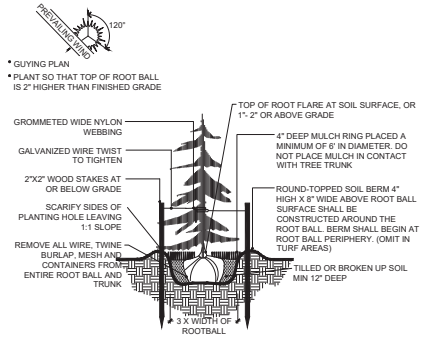
PROJECT No.:	R20-030
DRAWN BY:	
REVIEWED BY:	

DRAWING NUMBER:



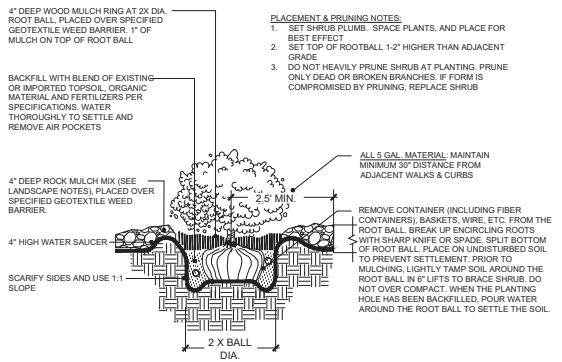
1 TREE PLANTING DETAIL

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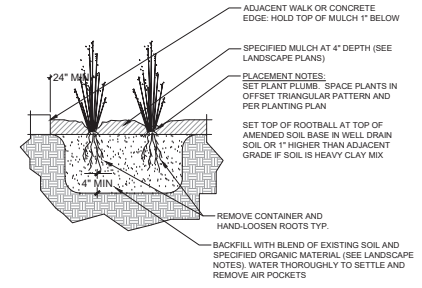
2 CONIFER TREE PLANTING DETAIL

3/8" = 1'-0" OP-NO1-05



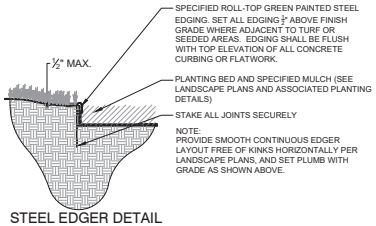
3 SHRUB PLANTING DETAIL

NO SCALE OP-KE3-02



4 PERENNIAL PLANTING DETAIL

NO SCALE OP-KE3-03



5 STEEL EDGER DETAIL

NO SCALE OP-KE3-04

GENERAL LANDSCAPE NOTES

1. TREE PLANTING SHALL BE COORDINATED WITH THE PUBLIC SERVICE COMPANY. DECIDUOUS TREES SHALL NOT BE PLANTED CLOSER THAN 4 FEET TO ANY GAS OR ELECTRIC LINE AND NO CLOSER THAN 7 FEET TO ANY WATER OR SEWER LINE. EVERGREEN TREES SHALL NOT BE PLANTED CLOSER THAN 10 FEET TO ANY CITY UTILITY LINE. LOCATION OF ALL UTILITIES SHALL BE VERIFIED IN THE FIELD PRIOR TO PLANTING. A HORIZONTAL DISTANCE OF 40' BETWEEN STREET TREES AND STREET LIGHTS AND 15' BETWEEN ORNAMENTAL TREES AND STREET LIGHTS SHALL BE MAINTAINED. PLANT MATERIAL SHALL BE ADJUSTED IN THE FIELD TO MAINTAIN THE ABOVE CLEARANCE.
2. ALL TURF SHALL BE AT LEAST 5 FEET AWAY FROM BUILDING FOUNDATIONS.
3. ALL PLANT MATERIAL SHALL MEET SPECIFICATIONS OF THE AMERICAN ASSOCIATION OF NURSERYMEN (AAN) FOR NUMBER ONE GRADE. ALL TREES SHALL BE BALLED AND BURLAPPED OR EQUIVALENT.
4. ALL TURF AREAS TO BE PLANTED WITH TEXAS BLUEGRASS "REVELLI" TURF MIX UNLESS INDICATED ON PLAN AS NATIVE GRASS AREA.
5. ALL SHRUB BEDS EXCEPT THOSE NOTED SHALL BE MULCHED WITH A MINIMUM 4" DEPTH RIVER ROCK, 2-3" (INCHES) IN DIAMETER OVER WATER PERMEABLE GEO-TEXTILE FABRIC MESH WEED BARRIER.
6. EDGING BETWEEN SOD AND SHRUB BEDS SHALL BE 14 GA. X 4" GALVANIZED STEEL SET LEVEL WITH TOP OF SOD.
7. MINOR CHANGES IN SPECIES AND PLANT LOCATIONS MAY BE MADE DURING CONSTRUCTION AS REQUIRED BY SITE CONDITIONS. OVERALL QUALITY AND QUANTITY SHALL BE CONSISTENT WITH THIS PLAN.
8. EXISTING TREES SHALL BE PRESERVED WHENEVER POSSIBLE.
9. ALL TURF AREAS SHALL HAVE SOIL PREPARATION AT A RATE OF 3 CUBIC YARDS OF ORGANIC MATERIAL PER 1000 SQ. FEET OF LANDSCAPED AREA.
10. NO TREES, SHRUBS, FENCES, BERMS, OR OTHER MATERIAL CONSTITUTING VISUAL OBSTRUCTION SHALL BE PLANTED WITHIN ANY SITE DISTANCE TRIANGLE.
11. MINIMUM REQUIREMENTS FOR SOIL PREPARATION SHALL INCLUDE 3 CUBIC YARDS OF ORGANIC MATERIAL PER 1000 SF OF EXISTING SOIL TILLED TO A MINIMUM DEPTH OF 6 INCHES. TREE AND SHRUB PITS SHALL BE BACKFILLED USING A MIXTURE OF ONE THIRD EXISTING SITE SOIL AND ONE THIRD TOPSOIL, AND ONE THIRD ORGANIC MATTER.
12. APPLICANT TO PROVIDE IRRIGATION TO THE FRONT YARDS, TREE LAWN AREAS AND DRIP TO STREET TREES ON PRIVATE LOTS. APPLICANT TO SOD THE LAWNS AND TREE LAWN AREAS WITH TEXAS BLUEGRASS 'REVEILLI'.
13. OPEN SPACE TO BE SEEDED NATIVE SEED AND RECEIVE TEMPORARY IRRIGATION TO ESTABLISHMENT. A MANAGEMENT GUIDE OUTLINING NATIVE GRASS MAINTENANCE SHALL BE PROVIDED TO THE HOA.
14. DRIP IRRIGATION TO TREES AND LANDSCAPING IN OPEN SPACE AREA AND DETENTION POND TO HAVE COMMON LANDSCAPE IRRIGATION METER, CONTROLLER AND SYSTEM MAINTAINED BY HOME OWNERS ASSOCIATION. APPROXIMATE LOCATION SHOWN ON PLAN.
15. STREET TREES TO BE INSTALLED WITH ADJACENT LOT CONSTRUCTION.
16. ALL IRRIGATION AND MAINTENANCE OF THE STREET TREES AND THE LANDSCAPE WITHIN THE RIGHT-OF-WAY ARE THE RESPONSIBILITY OF THE ADJACENT LOT OWNER OR ITS HEIRS, SUCCESSORS OR ASSIGNS.
17. QUANTITIES PROVIDED ARE FOR GENERAL INFORMATION ONLY. THE CONTRACTOR IS RESPONSIBLE FOR PERFORMING THEIR OWN QUANTITY TAKE-OFFS FOR PLANTS AND MATERIALS SHOWN ON THESE PLANS. THE CONTRACTOR IS RESPONSIBLE TO NOTIFY THE OWNER'S REPRESENTATIVE OF ANY MAJOR DISCREPANCIES FOR REVIEW AND DIRECTION.
18. TREES ADJACENT TO PUBLIC STREETS WITHIN TREE LAWNS, PLANTED CLOSER THAN 5' TO WALKS OR STREET CURBS, SHALL INCLUDE ROOT BARRIER PROTECTION PER THE INCLUDED DETAIL.

NATIVE GRASS SEED MIXES

NATIVE DRYLAND SEED MIX	
SEED PERCENTAGE	**SEED TYPE**
44%	FAIRWAY CRESTED WHEAT GRASS
10%	BLUE GRAMMA
10%	BUTTE SIDE OATS GRAMA
3%	TEXOKA BUFFALO GRASS
20%	ANNUAL RYE GRASS
10%	WESTERN WHEAT GRASS
3%	CRITANA WHEAT GRASS
100%	PURE LIVE SEED (PLS)

SEEDING RATES:
1. MECHANICAL DRILL SEEDED RATE:
15 LB/ACRE BY VOLUME (½ LB/1000 S.F.)
2. BROADCAST SEEDED RATE:
40 LB/ACRE BY VOLUME (1 LB/1000 S.F.)

WET MEADOW NATIVE SEED MIX	
SEED PERCENTAGE	**SEED TYPE**
5%	ALKALI BULRUSH
20%	CANADA WILDRYE
20%	SWITCHGRASS
15%	INDIANGRASS
15%	PRAIRIE CORDGRASS
5%	SOFT STEM RUSH
5%	THREE SQUARE BULRUSH
5%	HARDSTEM BULRUSH
5%	NEBRASKA SEDGE, BALTIC RUSH
5%	CREEPING SPIKERUSH
100%	PURE LIVE SEED (PLS)

SEEDING RATES:
1. MECHANICAL DRILL SEEDED RATE:
15 LB/ACRE BY VOLUME (½ LB/1000 S.F.)
2. BROADCAST SEEDED RATE:
40 LB/ACRE BY VOLUME (1 LB/1000 S.F.)

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PRELIMINARY PUD AND SRU

LOUISVILLE, COLORADO

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PLANNER / LANDSCAPE ARCHITECT
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ORIGINAL SIZE 24X36

ISSUED

No.	DESCRIPTION	DATE
1	PRELIMINARY PUD	01/22/2021
2	PRELIMINARY PUD RD 2	06/21/2021
3	PRELIMINARY PUD RD 3	06/17/2022
4	PRELIMINARY PUD RD 4	12/23/2022
5	PRELIMINARY PUD RD 5	08/04/2023
6	PRELIMINARY PUD RD 6	05/14/2024

REVISIONS

No.	DESCRIPTION	DATE

LANDSCAPE DETAILS & NOTES

SEAL:

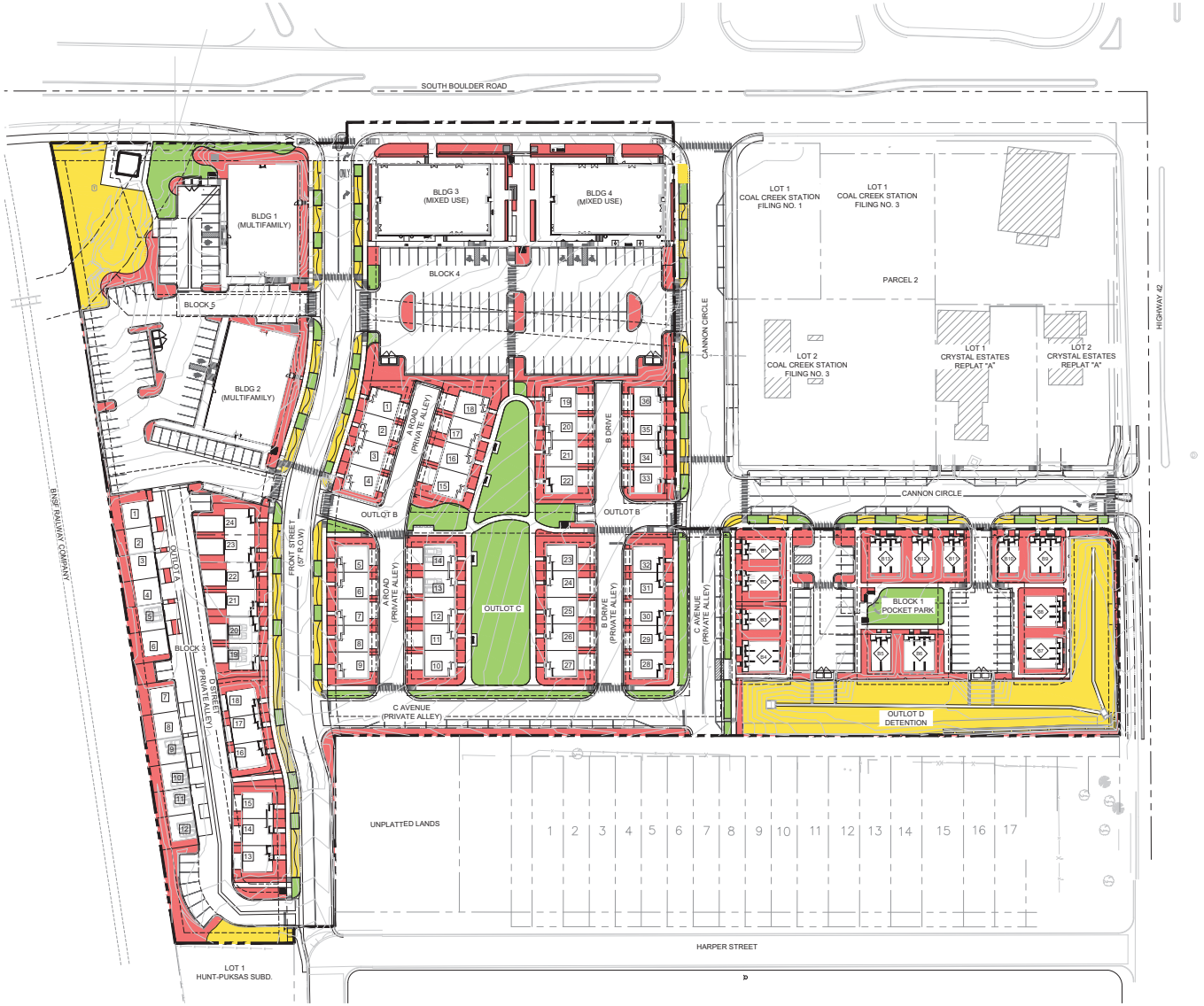
ENTITLEMENT DRAWINGS NOT FOR CONSTRUCTION

PROJECT No.:	R20-030
DRAWN BY:	RDI
REVIEWED BY:	RDI

DRAWING NUMBER:

27 OF 32

Plotted By: Megan McGregor **Layout:** L7 LANDSCAPE DETAILS & NOTES **Printed On:** 3/28/2024 4:55 PM **File Name:** LANDSCAPE PLAN.dwg



LEGEND

- PROPERTY BOUNDARY
- FIBER OPTIC UTILITY
- GAS UTILITY
- STORM DRAIN UTILITY
- SANITARY SEWER UTILITY
- TELEPHONE UTILITY
- UNDERGROUND ELECTRIC UTILITY
- WATER LINE UTILITY
- EASEMENT
- PROPOSED FENCING OR HANDRAIL, REFER TO FENCING PLAN
- PROPOSED RETAINING WALL

HYDROZONE LEGEND

SYMBOL	DESCRIPTION	QTY
	HYDROZONE - HIGH	33,072 SF
	HYDROZONE - MODERATE	63,503 SF
	HYDROZONE - LOW	38,836 SF

WATER USE TABLE

HYDROZONE	AREA (SF)	WATER NEEDED (GALLONS/SF)	ANNUAL WATER USE (GALLONS)
HIGH	33,072	18	595,296
MODERATE	62,786	14	879,004
LOW	38,836	8	310,688
TOTAL	134,694	13.25	1,784,988

COAL CREEK VILLAGE

PRELIMINARY PUD AND SRU

LOUISVILLE, COLORADO

PREPARED BY:

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NORTH
0 25 50 100
SCALE: 1"=50'-0"
ORIGINAL SIZE 24X36

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HYDROZONE PLAN

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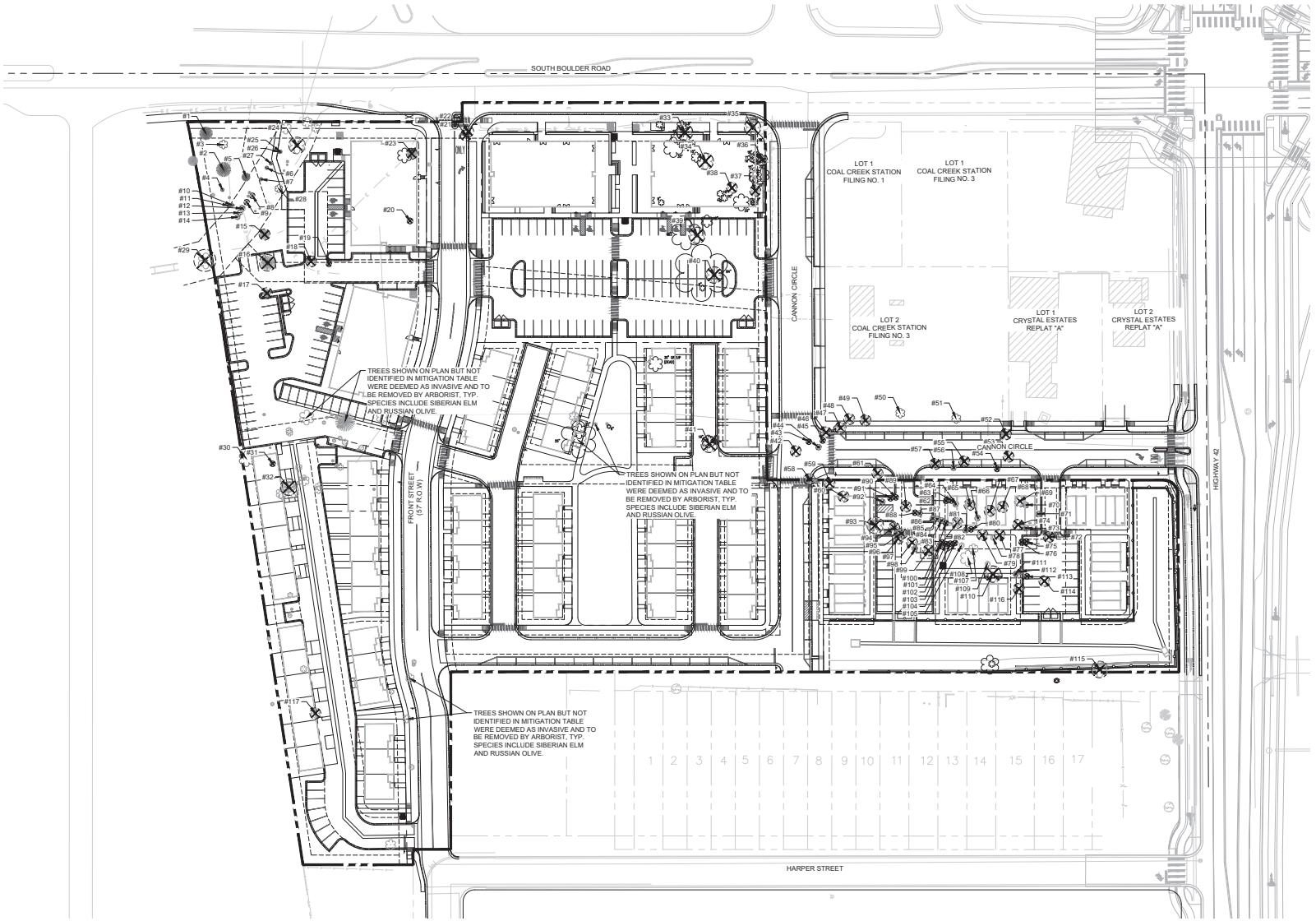
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PROJECT No.:	R20-030
DRAWN BY:	RDI
REVIEWED BY:	RDI

DRAWING NUMBER:

28 OF 32

Plotted By: Megan McGregor **Layout:** L8 HYDROZONE PLAN **Printed On:** 3/28/2024 5:19 PM **File Name:** HYDROZONE PLAN.dwg



TREE MITIGATION LEGEND

XXX EXISTING TREES TO SAVE IN PLACE

XXX EXISTING TO BE REMOVED

NOTES:
1. THIS PLAN IS REPRESENTATIVE ONLY. FIELD VERIFY BEFORE REMOVAL OF ANY TREE.
2. TREES SHOWN ON PLAN BUT NOT IDENTIFIED IN MITIGATION TABLE WERE DEEMED AS INVASIVE AND ARE TO BE REMOVED BY ARBORIST. INVASIVE TREE SPECIES INCLUDE: SIBERIAN ELM (*ULMUS PUMILA*), AND RUSSIAN OLIVE (*ELAEAGNUS ANGUSTIFOLIA*).

COAL CREEK VILLAGE

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REVISIONS

No.	DESCRIPTION	DATE

TREE INVENTORY PLAN

SEAL:

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REVIEWED BY:	

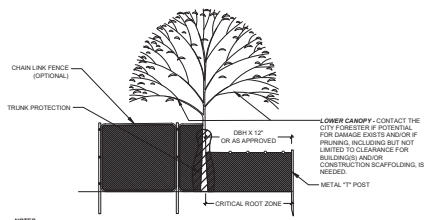
DRAWING NUMBER:

29 OF 32

Plotted By: Megan McGregor **Layout:** TREE INVENTORY **Printed On:** 3/28/2024 4:52 PM **File Name:** TREE INVENTORY.dwg

TREE INVENTORY

#	SPECIES NAME	DBH	HEALTH	ARBORIST NOTES	ACTION
1	AUSTRIAN PINE	23"	85	GOOD SPECIMEN	PRESERVE
2	AUSTRIAN PINE	22"	75	GOOD SPECIMEN. CANOPY SUPPRESSION ON EAST.	PRESERVE
3	GREEN ASH	22"	60	MODERATE STRUCTURE. IMMEDIATE EAB TREATMENT WOULD BE NECESSARY.	PRESERVE
4	CHOKECHERRY	8"	65		PRESERVE
5	BLUE SPRUCE	20"	70	CANOPY SUPPRESSION ON WEST.	PRESERVE
6	GREEN ASH	21"	65	IMMEDIATE EAB TREATMENT WOULD BE NECESSARY.	PRESERVE
7	QUAKING ASPEN	7"	45	POOR STRUCTURE. POOR LOCATION.	PRESERVE
8	QUAKING ASPEN	9"	35	POOR STRUCTURE.	REMOVE
9	QUAKING ASPEN	7"	35	LOW LCR.	REMOVE
10	QUAKING ASPEN	11" (X2)	40	LOW LCR.	PRESERVE
11	QUAKING ASPEN	6"	50	LOW LCR.	PRESERVE
12	QUAKING ASPEN	11" (X2)	30	LOW LCR.	REMOVE
13	GREEN ASH	15"	40	IMMEDIATE EAB TREATMENT WOULD BE NECESSARY. POOR STRUCTURE. POOR LOCATION. SIGNIFICANT STRUCTURAL DEFECT.	PRESERVE
14	GREEN ASH	11"	50	IMMEDIATE EAB TREATMENT WOULD BE NECESSARY.	PRESERVE
15	BLUE SPRUCE	22"	85	GOOD SPECIMEN.	REMOVE
16	BLUE SPRUCE	23"	85	GOOD SPECIMEN.	REMOVE
17	BLUE SPRUCE	22"	50	POOR STRUCTURE. LEAN. SHOWING SIGNS OF STRESS.	REMOVE
18	HONEYLOCUST	23"	90	GOOD SPECIMEN.	REMOVE
19	HONEYLOCUST	12"	60	POOR STRUCTURE. CANOPY SUPPRESSION.	REMOVE
20	HONEYLOCUST	17"	75	GOOD SPECIMEN. LOW ROOT ZONE.	REMOVE
21	AUSTRIAN PINE	14"	80	GOOD SPECIMEN.	REMOVE
22	AUSTRIAN PINE	13"	70		REMOVE
23	BLUE SPRUCE	23"	85	GOOD SPECIMEN.	REMOVE
24	CRABAPPLE	26" (X3)	30	LOW LCR. MAJOR DECLINE.	REMOVE
25	HONEYLOCUST	4"	60	POOR STRUCTURE. POOR LOCATION.	PRESERVE
26	HONEYLOCUST	4"	60	POOR LOCATION.	PRESERVE
27	HONEYLOCUST	21"	70		PRESERVE
28	HONEYLOCUST	4"	55	POOR STRUCTURE. LEAN.	PRESERVE
29	CRACK WILLOW	61" (X3)	30	MULTIPLE STEMS REMOVED PREVIOUSLY. BASAL ROT. LEAN.	REMOVE
30	COTTONWOOD SSP.	107"	80	GOOD SPECIMEN. POOR STRUCTURE. MAJOR FAILURES PRESENT.	PRESERVE
31	GREEN ASH	10"	50	IMMEDIATE EAB TREATMENT WOULD BE NECESSARY. LOW LCR.	REMOVE
32	GREEN ASH	21" (X4)	45	IMMEDIATE EAB TREATMENT WOULD BE NECESSARY. POOR STRUCTURE.	REMOVE
33	WHITE MULBERRY	16"	40	POOR STRUCTURE. POOR LOCATION. LEAN.	REMOVE
34	WHITE MULBERRY	24"	55	POOR STRUCTURE. LOW LCR.	REMOVE
35	GREEN ASH	44"	55	IMMEDIATE EAB TREATMENT WOULD BE NECESSARY. POOR STRUCTURE.	REMOVE
36	GREEN ASH	25" (X4)	30	POOR STRUCTURE.	REMOVE
37	GREEN ASH	24"	50	IMMEDIATE EAB TREATMENT WOULD BE NECESSARY. POOR STRUCTURE.	REMOVE
38	GREEN ASH	18"	40	IMMEDIATE EAB TREATMENT WOULD BE NECESSARY.	REMOVE
39	COTTONWOOD SSP.	46"	85	GOOD SPECIMEN.	REMOVE
40	COTTONWOOD SSP.	84"	75	GOOD SPECIMEN. MAJOR DIEBACK PRESENT.	REMOVE
41	HACKBERRY	30" (X2)	70	POOR STRUCTURE.	REMOVE
42	GREEN ASH	27" (X3)	55	IMMEDIATE EAB TREATMENT WOULD BE NECESSARY. POOR STRUCTURE.	REMOVE
43	GREEN ASH	6"	55	IMMEDIATE EAB TREATMENT WOULD BE NECESSARY.	REMOVE
44	GREEN ASH	8" (X2)	30	POOR STRUCTURE.	REMOVE
45	COTTONWOOD SSP.	11"	65		REMOVE
46	COTTONWOOD SSP.	31" (X2)	50	POOR STRUCTURE.	REMOVE
47	GREEN ASH	12" (X3)	30	POOR STRUCTURE.	REMOVE
48	GREEN ASH	15" (X2)	35	POOR STRUCTURE.	REMOVE
49	AMUR MAPLE	24" (X5)	30	POOR STRUCTURE. LOW LCR.	REMOVE
50	HONEYLOCUST	16"	75	GOOD SPECIMEN.	PRESERVE
51	HONEYLOCUST	19"	70	T-POST IN TRUNK.	PRESERVE
52	COTTONWOOD SSP.	16"	65		REMOVE
53	COTTONWOOD SSP.	21"	70		REMOVE
54	GREEN ASH	4"	55	IMMEDIATE EAB TREATMENT WOULD BE NECESSARY.	REMOVE
55	PEACHLEAF WILLOW	10"	70		REMOVE
56	COTTONWOOD SSP.	6"	30	LOW LCR.	REMOVE
57	COTTONWOOD SSP.	22"	80	GOOD SPECIMEN.	REMOVE
58	GREEN ASH	12" (X3)	30	POOR STRUCTURE. POOR LOCATION. LEAN. BASAL INJURIES.	REMOVE
59	COTTONWOOD SSP.	12"	60	LEAN.	REMOVE
60	GREEN ASH	10" (X2)	30	POOR STRUCTURE. POOR LOCATION. LOW LCR.	REMOVE
61	GREEN ASH	16" (X3)	25	POOR STRUCTURE. LEAN.	REMOVE
62	GREEN ASH	6"	50	IMMEDIATE EAB TREATMENT WOULD BE NECESSARY.	REMOVE
63	GREEN ASH	4"	45	IMMEDIATE EAB TREATMENT WOULD BE NECESSARY.	REMOVE
64	GREEN ASH	5"	30	LOW LCR.	REMOVE
65	GREEN ASH	24" (X4)	25	POOR STRUCTURE.	REMOVE
66	GREEN ASH	4"	30	POOR STRUCTURE.	REMOVE
67	GREEN ASH	11" (X3)	30	POOR STRUCTURE. LEAN.	REMOVE
68	GREEN ASH	16" (X4)	30	POOR STRUCTURE. LEAN.	REMOVE
69	GREEN ASH	23" (X4)	30	POOR STRUCTURE. LEAN.	REMOVE
70	GREEN ASH	4"	25	POOR STRUCTURE. HEAVY LEAN.	REMOVE
71	GREEN ASH	8" (X2)	30	POOR STRUCTURE. LEAN.	REMOVE
72	COTTONWOOD SSP.	15" (X2)	45	POOR STRUCTURE.	REMOVE
73	GREEN ASH	5"	20	POOR STRUCTURE. LEAN.	REMOVE
74	CHOKECHERRY	12" (X6)	60		REMOVE
75	GREEN ASH	5"	45		REMOVE
76	GREEN ASH	4"	40	LEAN.	REMOVE
77	GREEN ASH	13" (X3)	40	POOR STRUCTURE. LEAN.	REMOVE
78	GREEN ASH	4"	45		PRESERVE
79	GREEN ASH	18" (X4)	30	POOR STRUCTURE. LEAN.	REMOVE
80	GREEN ASH	5"	40	LOW LCR. ERODED ROOT BASE.	REMOVE
81	GREEN ASH	4"	30	HEAVY LEAN.	REMOVE
82	GREEN ASH	15" (X4)	25	POOR STRUCTURE.	REMOVE
83	GREEN ASH	6"	40		REMOVE
84	GREEN ASH	5"	25	HEAVY LEAN.	REMOVE
85	GREEN ASH	4"	25	HEAVY LEAN.	REMOVE
86	GREEN ASH	5"	35		REMOVE
87	GREEN ASH	6" (X2)	25	POOR STRUCTURE.	REMOVE
88	GREEN ASH	6"	50		REMOVE
89	GREEN ASH	12" (X4)	30	POOR STRUCTURE. POOR LOCATION. HEAVY LEAN.	REMOVE
90	COTTONWOOD SSP.	8"	65	POOR LOCATION.	REMOVE
91	COTTONWOOD SSP.	4"	60	POOR LOCATION.	REMOVE
92	GREEN ASH	6" (X2)	25	POOR LOCATION.	REMOVE
93	COTTONWOOD SSP.	97" (X3)	20	LOW LCR (<25%).	REMOVE
94	BLACK LOCUST	15" (X3)	30	POOR STRUCTURE. LOW LCR.	REMOVE
95	BLACK LOCUST	9" (X3)	30	POOR STRUCTURE. DAMAGE FROM DEADFALL.	REMOVE
96	BLACK LOCUST	7" (X3)	25	LOW LCR. APICAL DIEBACK.	REMOVE
97	BLACK LOCUST	11" (X3)	30	LOW LCR. APICAL DIEBACK.	REMOVE
98	BLACK LOCUST	4" (X2)	35	APICAL DIEBACK POOR STRUCTURE.	REMOVE
99	COTTONWOOD SSP.	30"	55	APICAL DIEBACK. STRUCTURAL DEFECTS. LOW LCR.	REMOVE
100	BLACK LOCUST	5" (X2)	30	LOW LCR. APICAL DIEBACK.	REMOVE
101	COTTONWOOD SSP.	5"	70		REMOVE
102	GREEN ASH	4"	40	IMMEDIATE EAB TREATMENT WOULD BE NECESSARY.	REMOVE
103	COTTONWOOD SSP.	8"	60		REMOVE
104	COTTONWOOD SSP.	4"	55		REMOVE
105	COTTONWOOD SSP.	9"	50	PROBLEMATIC ROOT FLARE.	PRESERVE
106					
107	CHOKECHERRY	13" (X5)	75	GOOD SPECIMEN.	PRESERVE
108	COTTONWOOD SSP.	154" (X7)	70	POOR STRUCTURE.	PRESERVE
109	CHOKECHERRY	7" (X4)	60		PRESERVE
110	COTTONWOOD SSP.	109" (X5)	65	POOR STRUCTURE. HEAVY LEAN.	REMOVE
111	GREEN ASH	5" (X2)	30	POOR STRUCTURE.	REMOVE
112	GREEN ASH	7" (X2)	30	POOR STRUCTURE.	REMOVE
113	COTTONWOOD SSP.	9"	70		REMOVE
114	PEACHLEAF WILLOW	26" (X6)	65		REMOVE
115	BOXELDER	51" (X9)	30	POOR STRUCTURE. MAJOR DEFECTS.	REMOVE
116	PEACHLEAF WILLOW	12" (X2)	55	HEAVY LEAN.	REMOVE
117	FLESHY HAWTHORN	13" (X4)	65	INTERESTING SPECIMEN.	REMOVE



NOTES

1. DAMAGE TO PROTECTED TREES IS SUBJECT TO PENALTY PER CITY ORDINANCE.
2. TREE PROTECTION SHALL BE INSTALLED PRIOR TO COMMENCEMENT OF DEMOLITION/CONSTRUCTION ACTIVITIES AND MAY ONLY BE REMOVED TEMPORARILY IF TRUNK PROTECTION IS INSTALLED. IT SHALL REMAIN IN PLACE UNTIL CERTIFICATE OF OCCUPANCY IS ISSUED.
3. NO MATERIALS, DEBRIS, EQUIPMENT, OR SITE AMENITIES SHALL BE STORED WITHIN THE TREE PROTECTION FENCE.
4. WATER AT LEAST EVERY 14 DAYS DURING CONSTRUCTION PERIOD BY FORMING SUITABLE DIKES AND/OR SOAKING DEVICES AT DRIP LINE AND APPLYING APPROXIMATELY 6 INCHES OF WATER EACH TIME. WATER FREQUENCY DURING WINTER RAIN SEASON MAY BE REDUCED UPON ACCEPTANCE OF ARCHITECT.
5. TREE PROTECTION FENCING SHALL BE "ORANGE PLASTIC SAFETY FENCING," 72" IN HEIGHT, TOP SECURED TO METAL T-POSTS WITH 12-GAUGE WIRE WOVEN THROUGH TOP OF FENCING FOR ENTIRE LENGTH.
   - HEAVY DUTY T-POSTS SHALL BE PLACED SO THAT WIRE & FENCE ARE TAUT.
   - CHAIN LINK FENCING IS OPTIONAL.
6. TRUNK PROTECTION IS REQUIRED IF CONSTRUCTION OCCURS WITHIN TEN FEET OR LESS OF TRUNK. CONSTRUCTION INSIDE CRITICAL ROOT ZONE IS ONLY PERMITTED WHEN EQUIPMENT IS OPERATED EXCLUSIVELY ON EXISTING HARDSCAPE, AND NO SOIL COMPACTION TAKES PLACE.

1 TREE PROTECTION FENCE

SCALE: NTS DETAIL-FILE

TREE PROTECTION NOTES

1. ALL EXISTING TREES WITHIN THE LIMITS OF THE DEVELOPMENT SHALL REMAIN AND BE PROTECTED UNLESS NOTED ON THESE PLANS FOR REMOVAL.
2. WITHIN THE DRIP LINE OF ANY PROTECTED EXISTING TREE, THERE SHALL BE NO CUT OR FILL OVER A FOUR-INCH DEPTH UNLESS A QUALIFIED ARBORIST OR FORESTER HAS EVALUATED AND APPROVED THE DISTURBANCE.
3. PRIOR TO AND DURING CONSTRUCTION, BARRIERS SHALL BE ERECTED AROUND ALL PROTECTED EXISTING TREES WITH SUCH BARRIERS TO BE OF ORANGE FENCING A MINIMUM OF FOUR (4) FEET IN HEIGHT, SECURED WITH METAL T-POSTS, NO CLOSER THAN SIX (6) FEET FROM THE TRUNK OR ONE-HALF (½) OF THE DRIP LINE, WHICHEVER IS GREATER. THERE SHALL BE NO STORAGE OR MOVEMENT OF EQUIPMENT, MATERIAL, DEBRIS OR FILL WITHIN THE FENCED TREE PROTECTION ZONE.
4. DURING THE CONSTRUCTION STAGE OF DEVELOPMENT, THE APPLICANT SHALL PREVENT THE CLEANING OF EQUIPMENT OR MATERIAL OR THE STORAGE AND DISPOSAL OF WASTE MATERIAL SUCH AS PAINTS, OILS, SOLVENTS, ASPHALT, CONCRETE, MOTOR OIL OR ANY OTHER MATERIAL HARMFUL TO THE LIFE OF A TREE WITHIN THE DRIP LINE OF ANY PROTECTED TREE OR GROUP OF TREES.
5. NO DAMAGING ATTACHMENT, WIRES, SIGNS OR PERMITS MAY BE FASTENED TO ANY PROTECTED TREE.
6. NO TREES SHALL BE REMOVED DURING THE SONGBIRD NESTING SEASON (FEBRUARY 1 TO JULY 31) WITHOUT FIRST HAVING A PROFESSIONAL ECOLOGIST OR WILDLIFE BIOLOGIST COMPLETE A NESTING SURVEY TO IDENTIFY ANY ACTIVE NESTS EXISTING ON THE PROJECT SITE. IF ACTIVE NESTS ARE FOUND, THE CITY WILL COORDINATE WITH RELEVANT STATE AND FEDERAL REPRESENTATIVES TO DETERMINE WHETHER ADDITIONAL RESTRICTIONS ON TREE REMOVAL AND CONSTRUCTION APPLY.

COAL CREEK VILLAGE

PRELIMINARY PUD AND SRU

LOUISVILLE, COLORADO

PREPARED BY:

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No.	DESCRIPTION	DATE

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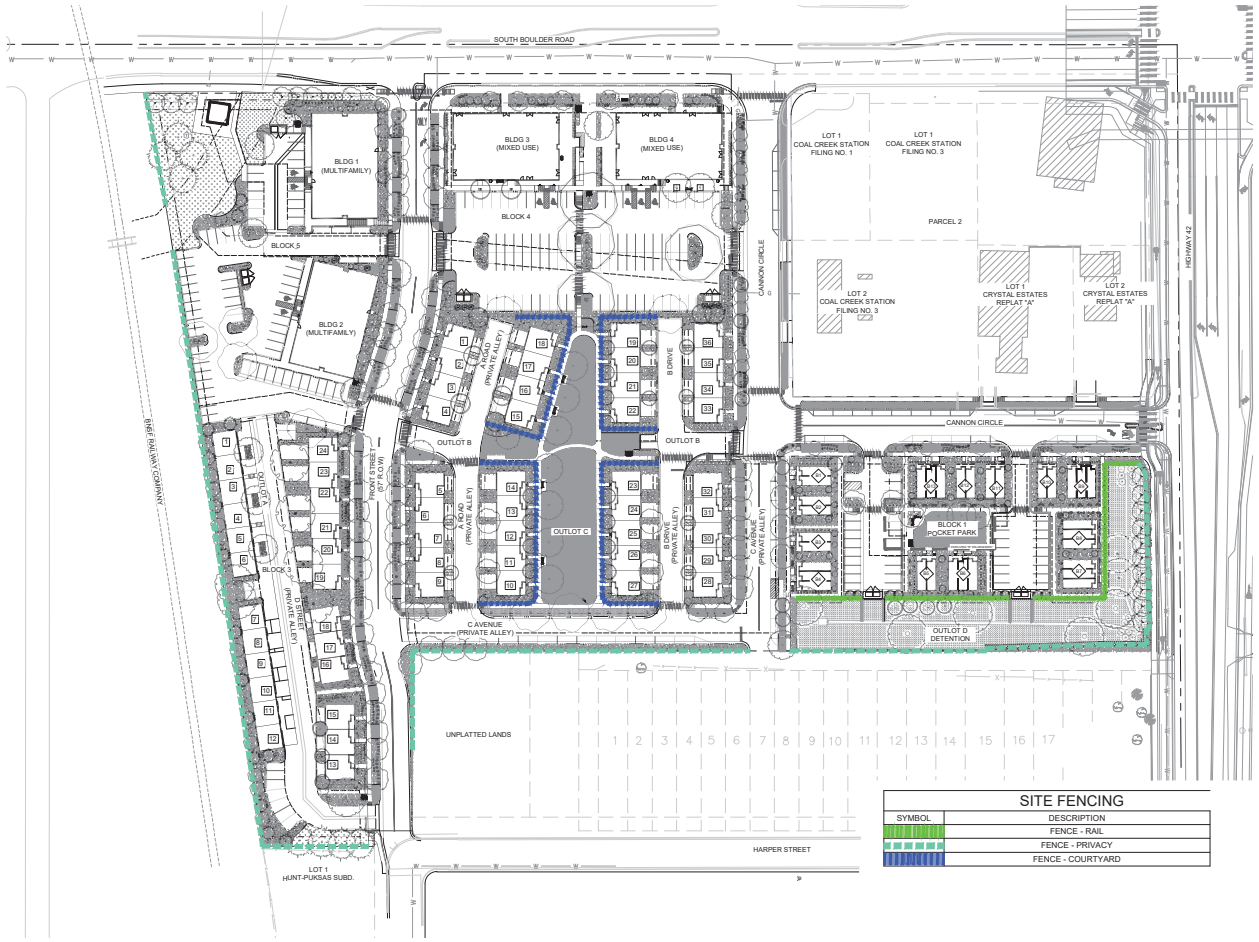
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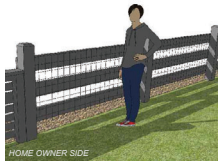
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Plotted By: Megan McGregor **Layout:** TREE INVENTORY (2) **Printed On:** 3/26/2024 2:39 PM **File Name:** TREE INVENTORY.dwg

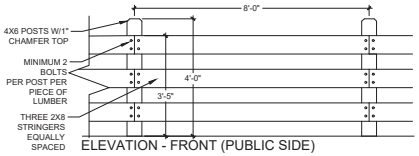


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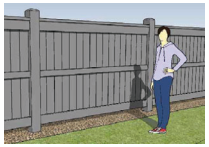
SYMBOL	DESCRIPTION
	FENCE - RAIL
	FENCE - PRIVACY
	FENCE - COURTYARD



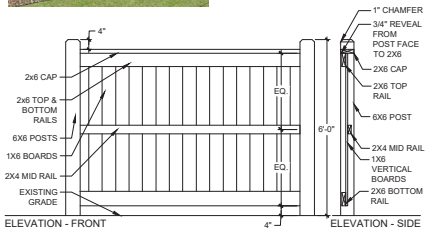
NOTE:
1. UNLESS OTHERWISE REQUESTED ALL WOOD TO BE EITHER STAINED RED CEDAR OR COMPOSITE WOOD SUCH AS TREX OR SIMILAR BRAND.
2. ALL FASTENERS & GLUES TO BE WEATHER PROOF TOP OF FENCE TO BE LEVEL BOTTOM OF FENCE TO STEP WITH GRADE AS NEEDED FENCE MAY STEP DOWN AT POSTS IN 6" INCREMENTS IF NECESSARY



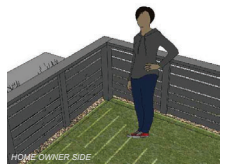
1 RAIL FENCE
1/2" = 1'-0" OP-SI-05



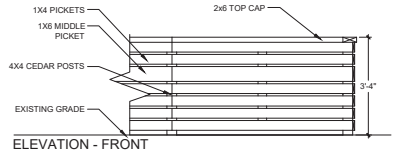
NOTE:
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2. ALL FASTENERS & GLUES TO BE WEATHER PROOF TOP OF FENCE TO BE LEVEL BOTTOM OF FENCE TO STEP WITH GRADE AS NEEDED FENCE MAY STEP DOWN AT POSTS IN 6" INCREMENTS IF NECESSARY



2 PRIVACY FENCE
1/2" = 1'-0" OP-SI-07



NOTE:
1. UNLESS OTHERWISE REQUESTED ALL WOOD TO BE EITHER STAINED RED CEDAR OR COMPOSITE WOOD SUCH AS TREX OR SIMILAR BRAND.
2. ALL FASTENERS & GLUES TO BE WEATHER PROOF TOP OF FENCE TO BE LEVEL BOTTOM OF FENCE TO STEP WITH GRADE AS NEEDED FENCE MAY STEP DOWN AT POSTS IN 6" INCREMENTS IF NECESSARY



3 COURTYARD FENCE
1/2" = 1'-0" OP-SI-06

COAL CREEK VILLAGE

PRELIMINARY PUD AND SRU

LOUISVILLE, COLORADO

PREPARED BY:

ripleydesign
LANDSCAPE ARCHITEDTURE, LAND PLANNING
419 Canyon Ave. Suite 200 Fort Collins, CO 80521
phone 970.224.5828 | fax 970.224.5827 | www.ripleydesigninc.com

PLANNER / LANDSCAPE ARCHITECT
RIPLEY DESIGN INC.
Joel Welkert
419 Canyon Ave. Suite 200
Fort Collins, CO 80521
p. 970.224.5828

OWNER
COAL CREEK VILLAGE LLC
Michael Markel
5723 ARAPAHOE AVE.
BOULDER, COLORADO 80303
P.303.775.5524

ENGINEER
ROCKY RIDGE CIVIL ENGINEERING
Joel Seamons
420 21ST AVENUE, SUITE 101
LONGMONT, COLORADO 80501
P. 303.651.6626

NORTH SCALE: 1"=60'-0"
0 30 60 120
ORIGINAL SIZE 24X36

ISSUED

No.	DESCRIPTION	DATE
1	PRELIMINARY PUD	01/22/2021
2	PRELIMINARY PUD RD 2	06/21/2021
3	PRELIMINARY PUD RD 3	05/17/2022
4	PRELIMINARY PUD RD 4	12/23/2022
5	PRELIMINARY PUD RD 5	08/04/2023
6	PRELIMINARY PUD RD 6	05/14/2024

REVISIONS

No.	DESCRIPTION	DATE

FENCING PLAN

SEAL:

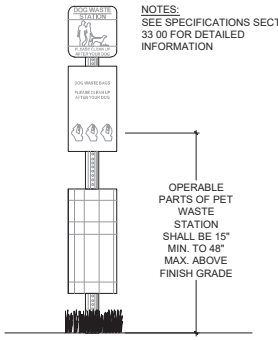
ENTITLEMENT DRAWINGS NOT FOR CONSTRUCTION

PROJECT No.:	R20-030
DRAWN BY:	
REVIEWED BY:	

DRAWING NUMBER:

31 OF 32

Plotted By: Megan McGregor **Layout:** L9 FENCING PLAN & SITE DETAILS **Printed On:** 3/26/2024 10:36 AM **File Name:** LANDSCAPE PLAN.dwg



NOTES:
SEE SPECIFICATIONS SECTION 32 33 00 FOR DETAILED INFORMATION

1 DOG WASTE STATION.
1/2" = 1'-0" OP-BR2-33

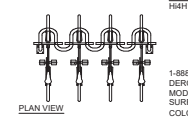


MANUFACTURER: ANOVA FURNISHINGS
MODEL: MADISON 6' RECYCLED PLASTIC CONTOUR BENCH
PLASTIC SLAT COLOR: CEDAR
FRAME COLOR: TEXTURED BLACK

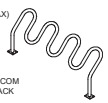
NOTE: THIS SPECIFICATION SHALL SERVE AS A BASIS OF DESIGN.

2 BENCH
NTS OP-CO3-01

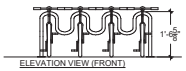
NOTE: THIS SPECIFICATION SHALL SERVE AS A BASIS OF DESIGN.



MODEL:
Hi4H (SHOWN) = 6 BIKES (MAX)

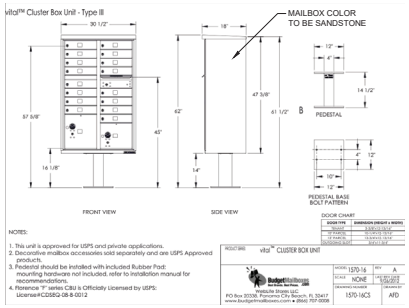


1-888-337-6729, WWW.DERO.COM
DERO HIGH-ROLLER BIKE RACK
MODEL Hi4H - 90°
SURFACE MOUNT
COLOR: BLACK





3 BIKE RACK
1/2" = 1'-0" OP-CO3-05



4 MAILBOX
1/2" = 1'-0" OP-NO2-17



MANUFACTURER: ANOVA FURNISHINGS
MODEL: MADISON 35 GAL RECYCLED PLASTIC RECEPTACLE, OPEN HOOD TOP
PLASTIC SLAT COLOR: CEDAR
FRAME COLOR: TEXTURED BLACK
LID COLOR: TEXTURED BLACK

NOTE: THIS SPECIFICATION SHALL SERVE AS A BASIS OF DESIGN.

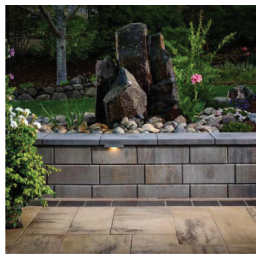
5 TRASH CAN
NTS OP-CO3-02



MANUFACTURER: PLANTERS UNLIMITED
MODEL: MODERN FIBERGLASS TAPERED ROUND PLANTER
COLOR: BLACK
SIZE: 36" DIAMETER, 30" HEIGHT

NOTE: THIS SPECIFICATION SHALL SERVE AS A BASIS OF DESIGN.

6 PLANTER
NTS OP-CO3-03



COLOR: PEWTER



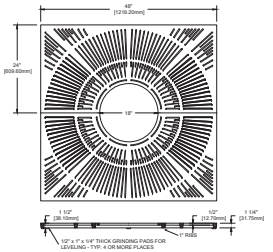
COLOR: PEWTER

MANUFACTURER: BELGARD
MODEL: MELVILLE TANDEM
BLOCK COLOR: PEWTER
CAP COLOR: PEWTER

NOTE: THIS SPECIFICATION SHALL SERVE AS A BASIS OF DESIGN.

7 RUNNING BOND BLOCK RETAINING WALL
NTS OP-CO3-04

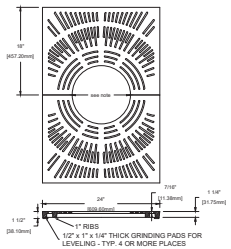
TREE GRATE #M4814-1
STYLE: STARBURST
SERIES 1



NOTES:
SLOT WIDTH IS 1/4" MAXIMUM. MEETS ADA COMPLIANCE.
GRATE CAST FROM GRAY IRON OR ALUMINUM.
TREE OPENING SIZE: 18"
STEEL ANGLE FRAME REQUIRED FOR INSTALLATION, USE MODEL M4800F - SEE SIDE WALK CHASE DETAIL A CIVIL DWGS.
OUTER FRAME DIM. IS 3/4" ± 1/8" GREATER THAN GRATE. .

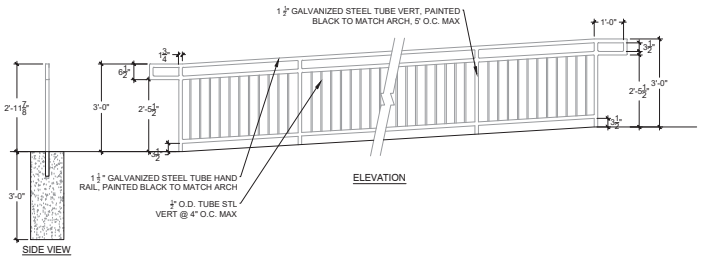
8 IRONSMITH STARBURST SERIES 1 TREE GRATE
3/4" = 1'-0" OP-AI5-05

TREE GRATE #M3654-1
STYLE: STARBURST
RECTANGULAR
SERIES 1



NOTES:
SLOT WIDTH IS 1/4" MAXIMUM. MEETS ADA COMPLIANCE.
GRATE CAST FROM GRAY IRON OR ALUMINUM
TREE OPENING SIZE. 16", 18", OR 28"
STEEL ANGLE FRAME REQUIRED FOR INSTALLATION USE MODEL M24X36F
OUTER FRAME DIM. IS 3/4" ± 1/8"
GREATER THAN GRATE. .

9 IRONSMITH STARBURST SERIES 1 TREE GRATE
1" = 1'-0" OP-CO3-06



10 SURFACE MOUNTED RAMP RAILING
1/2" = 1'-0" OP-CO3-07

COAL CREEK VILLAGE

PRELIMINARY PUD AND SRU

LOUISVILLE, COLORADO

PREPARED BY:

ripleydesign
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NORTH SCALE: 1"=60'-0"
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REVISIONS

No.	DESCRIPTION	DATE

SITE DETAILS

SEAL:

ENTITLEMENT DRAWINGS NOT FOR CONSTRUCTION

PROJECT No.:	R20-030
DRAWN BY:	
REVIEWED BY:	

DRAWING NUMBER:

32 OF 32

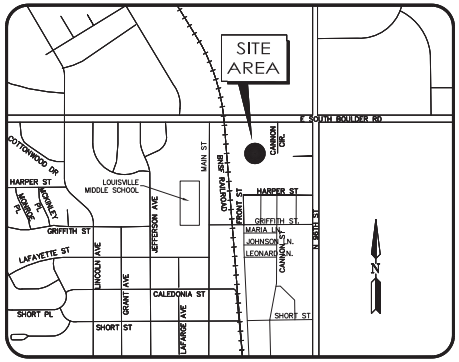
Plotted By: Megan McGregor Layout: L10 SITE DETAILS Printed On: 3/26/2024 10:39 AM File Name: LANDSCAPE PLAN.dwg

COAL CREEK VILLAGE

PRELIMINARY PLAT

A RESUBDIVISION OF PORTIONS OF COAL CREEK STATION FILING NO 1 AND CALEDONIA PLACE, TOGETHER WITH ALL OF COAL CREEK STATION FILING NO. 2, ALSO TOGETHER WITH OTHER LANDS, LYING WITHIN THE NORTHEAST QUARTER (NE 1/4) OF SECTION 8, TOWNSHIP 1 SOUTH, RANGE 69 WEST OF THE SIXTH PRINCIPAL MERIDIAN, CITY OF LOUISVILLE, COUNTY OF BOULDER, STATE OF COLORADO

SHEET 1 OF 5



VICINITY MAP
Not to scale

INDEX TO SHEETS

1	COVER SHEET
2	HISTORIC PLATTING INFORMATION
3	PRELIMINARY PLAT PLAN
4	NEW EASEMENT INFORMATION
5	LINE AND CURVE TABLES

LAND USE SUMMARY

	AREA	USE	OWNERSHIP	MAINTENANCE
OUTLOT A	0.585 AC.	PRIVATE ROAD, DRAINAGE, PUBLIC UTILITY & MAINTENANCE, LANDSCAPE, ACCESS EASEMENT	HOA	HOA
OUTLOT B	1.238 AC.	PRIVATE ROAD, DRAINAGE, PUBLIC UTILITY & MAINTENANCE, LANDSCAPE, ACCESS EASEMENT	HOA	HOA
OUTLOT C	0.483 AC.	DRAINAGE, UTILITY, LANDSCAPE, PEDESTRIAN ACCESS, PARK	HOA	HOA
OUTLOT D	0.606 AC.	PRIVATE ROAD, DRAINAGE, UTILITY, LANDSCAPE, PEDESTRIAN ACCESS & EMERGENCY ACCESS EASEMENT	HOA	HOA
RIGHT OF WAY DEDICATION	1.235 AC.	PUBLIC STREETS	CITY	CITY

OWNER / SUBDIVIDER

COAL CREEK VILLAGE LLC
5723 ARAPAHOE AVE., SUITE B2
BOULDER, CO 80301
(303) 449-8689

CONTACT: MICHAEL MARKEL / CHAD KIPFER

CIVIL ENGINEER

ROCKY RIDGE CIVIL ENGINEERING
420 21ST AVENUE, SUITE 101
LONGMONT, CO 80501
(303) 651-6626

LEGAL DESCRIPTION

KNOW ALL MEN BY THESE PRESENTS, THAT RIDGELINE DEVELOPMENT CORPORATION, BEING THE OWNERS OF THE LANDS DESCRIBED HEREIN, LYING WITHIN THE NORTHEAST QUARTER (NE 1/4) OF SECTION 8, TOWNSHIP 1 SOUTH, RANGE 69 WEST OF THE SIXTH PRINCIPAL MERIDIAN, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

A PORTION OF THE NORTHEAST QUARTER (NE 1/4) OF SECTION 8, TOWNSHIP 1 SOUTH, RANGE 69 WEST OF THE 6TH PRINCIPAL MERIDIAN, CITY OF LOUISVILLE, COUNTY OF BOULDER, STATE OF COLORADO, DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHEAST CORNER OF SAID NORTHEAST QUARTER (NE 1/4), FROM WHENCE THE NORTHWEST CORNER OF SAID NORTHEAST QUARTER (NE 1/4) BEARS NORTH 89°58'20" WEST A DISTANCE OF 2642.02 FEET, WITH ALL BEARINGS HEREIN RELATED THERETO;
THENCE ALONG THE EAST LINE OF SAID NORTHEAST QUARTER (NE 1/4), SOUTH 00°18'01" EAST, 30.00 FEET TO THE SOUTH LINE OF SOUTH BOULDER ROAD;
THENCE LEAVING SAID EAST LINE, ALONG SAID SOUTH LINE OF SOUTH BOULDER ROAD, NORTH 89°58'20" WEST, 455.00 FEET TO THE WEST LINE OF CANNON CIRCLE, AND BEING THE POINT OF BEGINNING;

THENCE ALONG SAID WEST LINE OF CANNON CIRCLE, SOUTH 00°17'50" EAST, 390.01 TO A POINT OF INTERSECTION WITH THE SOUTH LINE OF CANNON CIRCLE;
THENCE ALONG SAID SOUTH LINE, SOUTH 89°58'20" EAST, 425.02 FEET TO THE WEST LINE OF NORTH 96TH STREET;
THENCE ALONG SAID WEST LINE, SOUTH 00°18'01" EAST, 199.99 FEET TO THE NORTHEAST CORNER OF THE ROBERT DI GIACOMO SUBDIVISION, SAID POINT ALSO BEING ON THE NORTH LINE OF A 20 FOOT WIDE PUBLIC ALLEY;
THENCE ALONG SAID NORTH LINE, NORTH 89°58'20" WEST, 754.89 FEET TO THE NORTHWEST CORNER OF A PARCEL OF LAND DESCRIBED AND CONVEYED IN THAT CERTAIN QUITCLAIM DEED RECORDED DECEMBER 14, 2014 AT RECEPTION No. 03275254;
THENCE ALONG THE WEST LINE OF SAID PARCEL, SOUTH 00°01'40" WEST, 184.00 FEET TO THE SOUTHWEST CORNER OF SAID PARCEL, SAID POINT ALSO BEING ON THE NORTH LINE OF HARPER STREET;
THENCE ALONG SAID NORTH LINE, NORTH 89°58'20" WEST, 39.06 FEET TO A POINT OF INTERSECTION WITH THE WEST LINE OF FRONT STREET;
THENCE ALONG SAID WEST LINE, SOUTH 00°18'07" EAST, 16.00 FEET TO A POINT OF INTERSECTION WITH THE NORTH LINE OF LOT 1 OF HUNT-PUKSAS SUBDIVISION;
THENCE ALONG SAID NORTH LINE, NORTH 89°58'20" WEST, 114.35 FEET TO A POINT ON THE EAST LINE OF THE B.N.S.F. RAILROAD RIGHT-OF-WAY;
THENCE ALONG SAID EAST LINE THE FOLLOWING SEVEN (7) COURSES:

1. NORTH 08°30'12" WEST, 471.84 FEET TO A POINT;
2. NORTH 08°28'40" WEST, 81.59 FEET TO A POINT;
3. NORTH 08°52'07" WEST, 79.23 FEET TO A POINT;
4. NORTH 09°23'12" WEST, 43.90 FEET TO A POINT;
5. NORTH 09°49'41" WEST, 43.90 FEET TO A POINT;
6. NORTH 10°34'58" WEST, 43.90 FEET TO A POINT;
7. NORTH 11°44'18" WEST, 15.01 FEET TO A POINT ON THE SOUTH LINE OF SOUTH BOULDER ROAD;

THENCE ALONG SAID SOUTH LINE THE FOLLOWING THREE (3) COURSES:

1. SOUTH 89°58'20" EAST, 285.10 FEET TO A POINT;
2. NORTH 00°17'50" WEST, 20.00 FEET TO A POINT;
3. SOUTH 89°58'20" EAST, 315.00 FEET TO THE POINT OF BEGINNING.

EXCEPTING THEREFROM ALL OF LOT 2 OF COAL CREEK STATION FILING NO. 2.

CONTAINING 440,180 TOTAL SQUARE FEET OR 10.105 TOTAL ACRES OF LAND, MORE OR LESS.

GENERAL NOTES

1. NOTICE: ANY PERSON WHO KNOWINGLY REMOVES, ALTERS OR DEFACES ANY PUBLIC LAND SURVEY MONUMENT, OR LAND BOUNDARY MONUMENT OR ACCESSORY, COMMITS A CLASS 2 MISDEMEANOR PURSUANT TO STATE STATUTE 18-4-508 C.R.S.

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. THE LINEAR UNIT OF MEASUREMENT FOR THIS SUBDIVISION PLAT IS THE U.S. SURVEY FOOT, DEFINED AS EXACTLY 1200/3937 METER.

4. THIS SURVEY DOES NOT CONSTITUTE A TITLE SEARCH BY POWER SURVEYING INC. FOR INFORMATION REGARDING BOUNDARY, EASEMENTS AND TITLE POWER SURVEYING RELIED UPON OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY TITLE COMMITMENT NO. ABZ70663585-4, WITH AN EFFECTIVE DATE OF MAY 27, 2021 AT 5:00 P.M..

5. ALL SINGLE FAMILY DETACHED, FEE SIMPLE LOTS HAVE 5' DRAINAGE EASEMENTS ALONG SHARED/COMMON LOT LINES TO ALLOW FOR CONVEYANCES OF STORM WATER RUNOFF. CONSTRUCTION OF IMPROVEMENTS, BEYOND THOSE DEPICTED ON THE CITY APPROVED CONSTRUCTION PLANS, OR MODIFICATION OF LOT DRAINAGE CHARACTERISTICS IS STRICTLY PROHIBITED.

6. THE CITY OF LOUISVILLE SHALL REVIEW AND APPROVE THE LOCATIONS OF UTILITY LINES, PEDESTALS AND CABINETS WITHIN PUBLIC PROPERTY AND WITHIN CITY OF LOUISVILLE EXCLUSIVE WATER, STORM AND SANITARY SEWER EASEMENTS.

7. THE MINIMUM SEPARATION BETWEEN WATER AND SANITARY SHALL BE 10' OUTSIDE OF PIPE TO OUTSIDE OF PIPE. SEPARATION BETWEEN ALL OTHER UTILITIES SHALL NOT BE LESS THAN 7' TO THE EXTENT PRACTICAL BASED ON CONSTRUCTIBILITY, COST, RIGHT-OF-WAY AND ASSOCIATED STREET WIDTHS, ETC. THE CITY WILL WORK WITH THE SUBDIVIDER TO GENERATE PRACTICAL SOLUTIONS FOR AREAS OF UTILITY SEPARATION CONCERNS.

8. EXCLUSIVE CITY UTILITY EASEMENTS ARE RESERVED FOR CITY OF LOUISVILLE EXCLUSIVE USE FOR CITY WATER, SANITARY SEWER AND STORM SEWER FACILITIES. DRY UTILITIES COMPANIES AND/OR PRIVATE OWNERS OF STORM DRAINAGE AND IRRIGATION LINES MUST OBTAIN PRIOR WRITTEN APPROVAL FROM THE CITY FOR ANY PROPOSED CROSSING OF ANY CITY WET UTILITY EASEMENTS AND MUST EXECUTE AN AGREEMENT WHICH STIPULATES THE DRY UTILITIES, STORM DRAINAGE AND/OR IRRIGATION LINES APPROVED TO CROSS CITY EASEMENTS ARE SUBJECT TO RELOCATION AT THE COMPANY'S OR OWNER'S EXPENSE AT THE DIRECTION OF THE CITY. DRY UTILITIES, STORM DRAINAGE AND/OR IRRIGATION LINES THAT ARE APPROVED TO CROSS CITY EASEMENTS SHALL DO SO AT SUBSTANTIALLY RIGHT ANGLES. WET UTILITIES MAY TRAVERSE DRY UTILITY EASEMENTS WITHOUT REQUIREMENT FOR FURTHER PERMISSION. NO JOINT USE OF ANY CITY EXCLUSIVE UTILITY EASEMENT IS PERMITTED WITHOUT EXPRESS WRITTEN APPROVAL OF THE CITY AND EXECUTION OF A JOINT USE AGREEMENT, WHICH SHALL BE AT THE CITY'S DISCRETION.

9. UTILITY EASEMENTS ARE DEDICATED TO THE CITY OF LOUISVILLE FOR THE BENEFIT OF THE APPLICABLE UTILITY PROVIDERS FOR THE INSTALLATION, MAINTENANCE AND REPLACEMENT OF ELECTRIC, GAS, TELEVISION, CABLE AND TELECOMMUNICATIONS FACILITIES (DRY UTILITIES). UTILITY EASEMENTS SHALL ALSO BE GRANTED WITHIN ANY ACCESS EASEMENTS AND PRIVATE STREETS IN THE SUBDIVISION. PERMANENT STRUCTURES, IMPROVEMENTS, OBJECTS, BUILDINGS, WELLS, WATER METERS AND OTHER OBJECTS THAT MAY INTERFERE WITH THE UTILITY FACILITIES OR USE THEREOF (INTERFERING OBJECTS) SHALL NOT BE PERMITTED WITHIN SAID UTILITY EASEMENTS AND THE UTILITY PROVIDERS, AS GRANTEES, MAY REMOVE ANY INTERFERING OBJECTS AT NO COST TO SUCH GRANTEES, INCLUDING, WITHOUT LIMITATION, VEGETATION. PUBLIC SERVICE COMPANY OF COLORADO (PSCO) AND ITS SUCCESSORS RESERVE THE RIGHT TO REQUIRE ADDITIONAL EASEMENTS AND TO REQUIRE THE PROPERTY OWNER TO GRANT PSCO AN EASEMENT ON ITS STANDARD FORM.

10. THE EXISTING 30' WIDE ACCESS EASEMENT AND PUBLIC SIDEWALK EASEMENTS THAT WERE ORIGINALLY GRANTED PER THE PLAT OF COAL CREEK STATION FILING No. 2 WERE VACATED BY ORDINANCE No. _____. THAT CERTAIN PORTION OF CANNON CIRCLE RIGHT OF WAY DEDICATED PER THE PLAT OF COAL CREEK STATION FILING No. 1 WAS VACATED PER ORDINANCE No. _____.

11. THE CITY OF LOUISVILLE IS GRANTED A 4' WIDE MAINTENANCE ACCESS EASEMENT BEYOND RIGHT OF WAY FOR MAINTENANCE OF CURB AND WALK. MINIMUM SURFACE DISTURBANCE IS ALLOWED WITHIN THIS EASEMENT.

12. A 10' WIDE MAINTENANCE ACCESS EASEMENT ALLOWED ON EITHER SIDE OF EXCLUSIVE UTILITY EASEMENTS OR 5' ON EACH SIDE OF THE EXCLUSIVE UTILITY EASEMENTS.

13. PEDESTRIAN EASEMENTS AND ACCESS EASEMENTS ARE HEREBY GRANTED FOR BLOCKS 1, 4 & 5 OVER ALL PAVED SURFACES, SUCH AS PARKING LOTS AND SIDEWALKS.

MAINTENANCE NOTE

FOUR FOOT WIDTH (4') WILL BE ASSUMED OUTSIDE EDGE OF WALK TO BE USED FOR MAINTENANCE OF THE WALKS BY THE CITY OF LOUISVILLE.

FLOODPLAIN STATEMENT

THE SUBJECT PROPERTY LIES ENTIRELY WITHIN ZONE X (AREAS OF MINIMAL FLOOD HAZARD; AREAS DETERMINED TO BE OUTSIDE THE 0.2% PERCENT ANNUAL CHANCE FLOODPLAIN), AS SHOWN ON F.I.R.M. PANEL #08013 C 0582K, WITH AN EFFECTIVE DATE OF AUGUST 15, 2019.

BASIS OF BEARINGS

NORTH 89°58'20" WEST, BEING THE BEARING OF THE NORTH LINE OF THE NORTHEAST QUARTER (NE 1/4) OF SECTION 8, TOWNSHIP 1 SOUTH, RANGE 69 WEST OF THE SIXTH PRINCIPAL MERIDIAN, AS DEFINED AND MEASURED BETWEEN A FOUND 2" DIAMETER ILLEGIBLE BRASS CAP IN RANGE BOX AT THE NORTHEAST CORNER OF SAID NORTHEAST QUARTER (NE 1/4) AND A FOUND 2-1/2" DIAMETER ILLEGIBLE ALUMINUM CAP IN RANGE BOX AT THE NORTHWEST CORNER OF SAID NORTHEAST QUARTER (NE 1/4).

SURVEYOR'S CERTIFICATE

I, RICHARD BRUCE GABRIEL, A LICENSED PROFESSIONAL LAND SURVEYOR IN THE STATE OF COLORADO, DO HEREBY CERTIFY THAT THE SURVEY REPRESENTED HEREIN WAS MADE UNDER MY DIRECT RESPONSIBILITY, SUPERVISION AND CHECKING; THE MONUMENTS SHOWN THEREON ACTUALLY EXIST; THE PLAT ACCURATELY REPRESENTS SAID SURVEY; AND THIS SUBDIVISION PLAT WAS MADE IN ACCORDANCE WITH C.R.S. 35-51-101.

RICHARD BRUCE GABRIEL, P.L.S.
Colorado License No. 37929
For and on behalf of
Power Surveying Company, Inc.

COVER SHEET

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FAX. 303-705-1488
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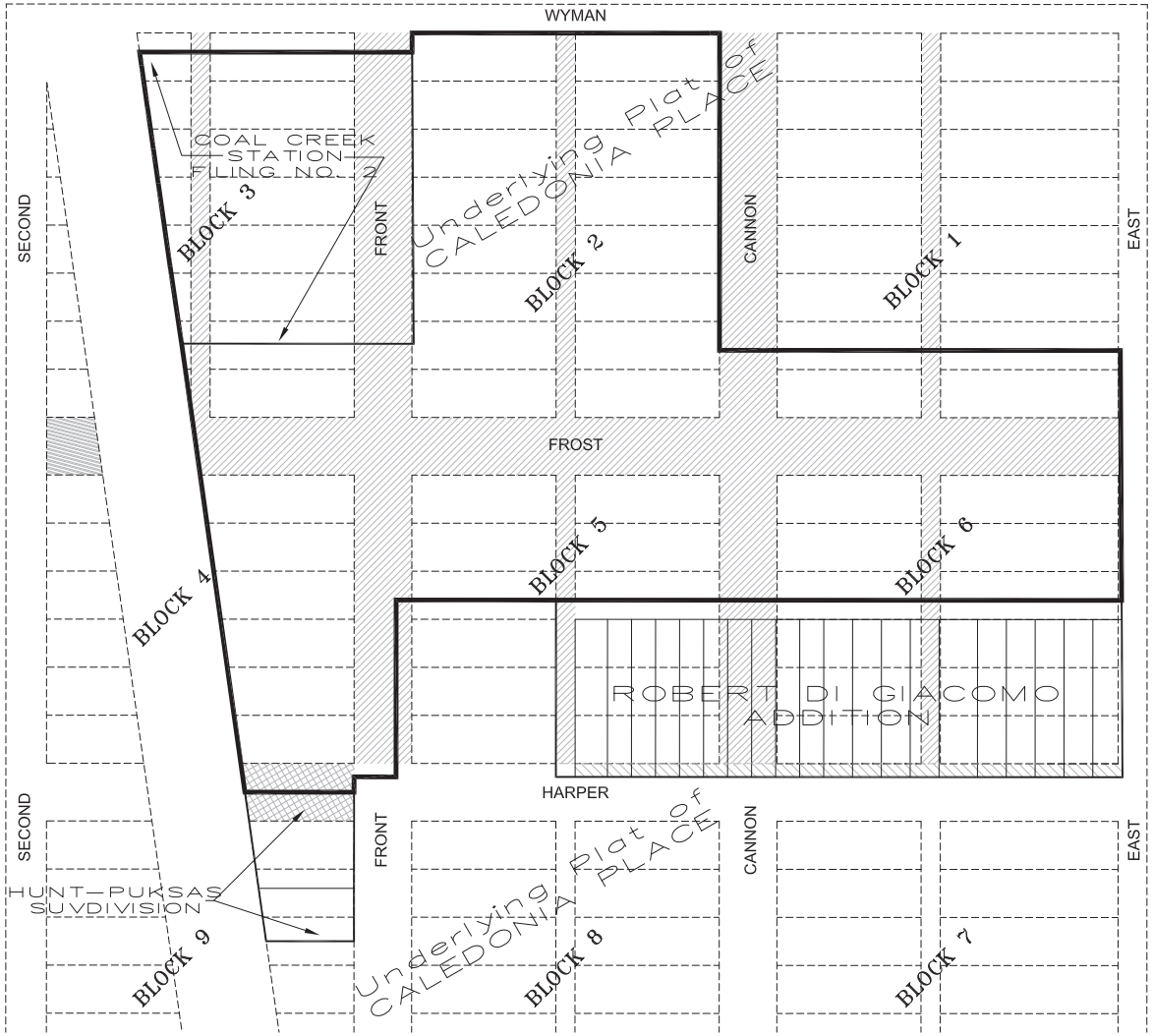
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SHEET 1 OF 5

COAL CREEK VILLAGE

PRELIMINARY PLAT

SHEET 2 OF 5



1901 VACATION OF CERTAIN STREETS AND ALLEYS IN CALEDONIA PLACE

14' WIDE VACATION OF A PORTION OF HARPER STREET PER ORDINANCE 352

60' WIDE VACATION OF A PORTION OF FROST STREET PER ORDINANCE 369

60' WIDE VACATION OF A PORTION OF HARPER STREET PER ORDINANCE 599

N

SCALE: 1" = 60'

60' 0 30' 60'

HISTORIC PLATTING INFORMATION

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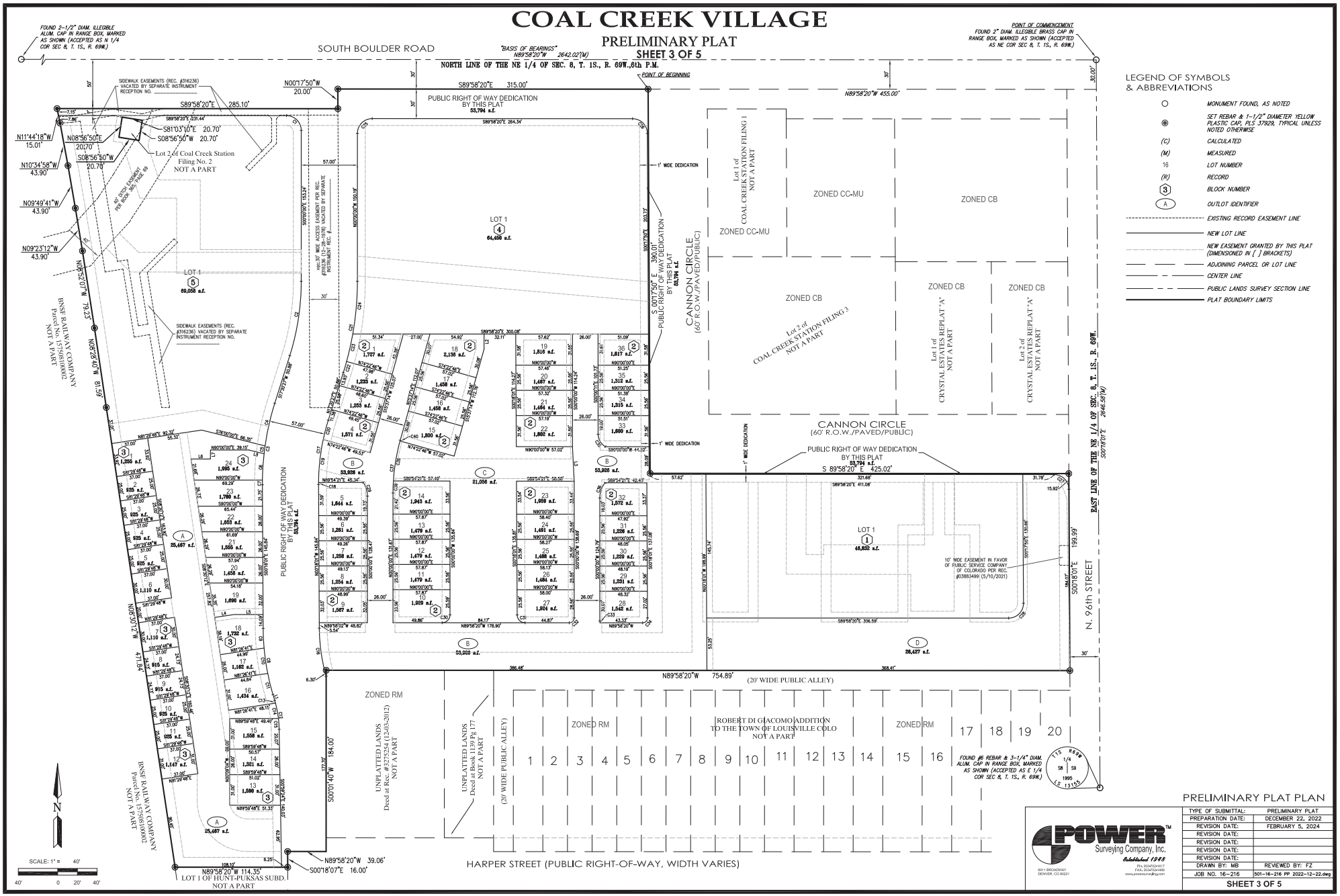
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SHEET 2 OF 5

COAL CREEK VILLAGE

PRELIMINARY PLAT

SHEET 3 OF 5



LEGEND OF SYMBOLS & ABBREVIATIONS

- ○ MONUMENT FOUND, AS NOTED
- ◉ SET REBAR & 1-1/2" DIAMETER YELLOW PLASTIC CAP, PLS 37929, TYPICAL UNLESS NOTED OTHERWISE
- (C) CALCULATED
- (M) MEASURED
- 16 LOT NUMBER
- (R) RECORD
- (3) BLOCK NUMBER
- (A) OUTLOT IDENTIFIER
- EXISTING RECORD EASEMENT LINE
- NEW LOT LINE
- NEW EASEMENT GRANTED BY THIS PLAT (DIMENSIONED IN [ ] BRACKETS)
- ADJOINING PARCEL OR LOT LINE
- CENTER LINE
- PUBLIC LANDS SURVEY SECTION LINE
- PLAT BOUNDARY LIMITS

PRELIMINARY PLAT PLAN

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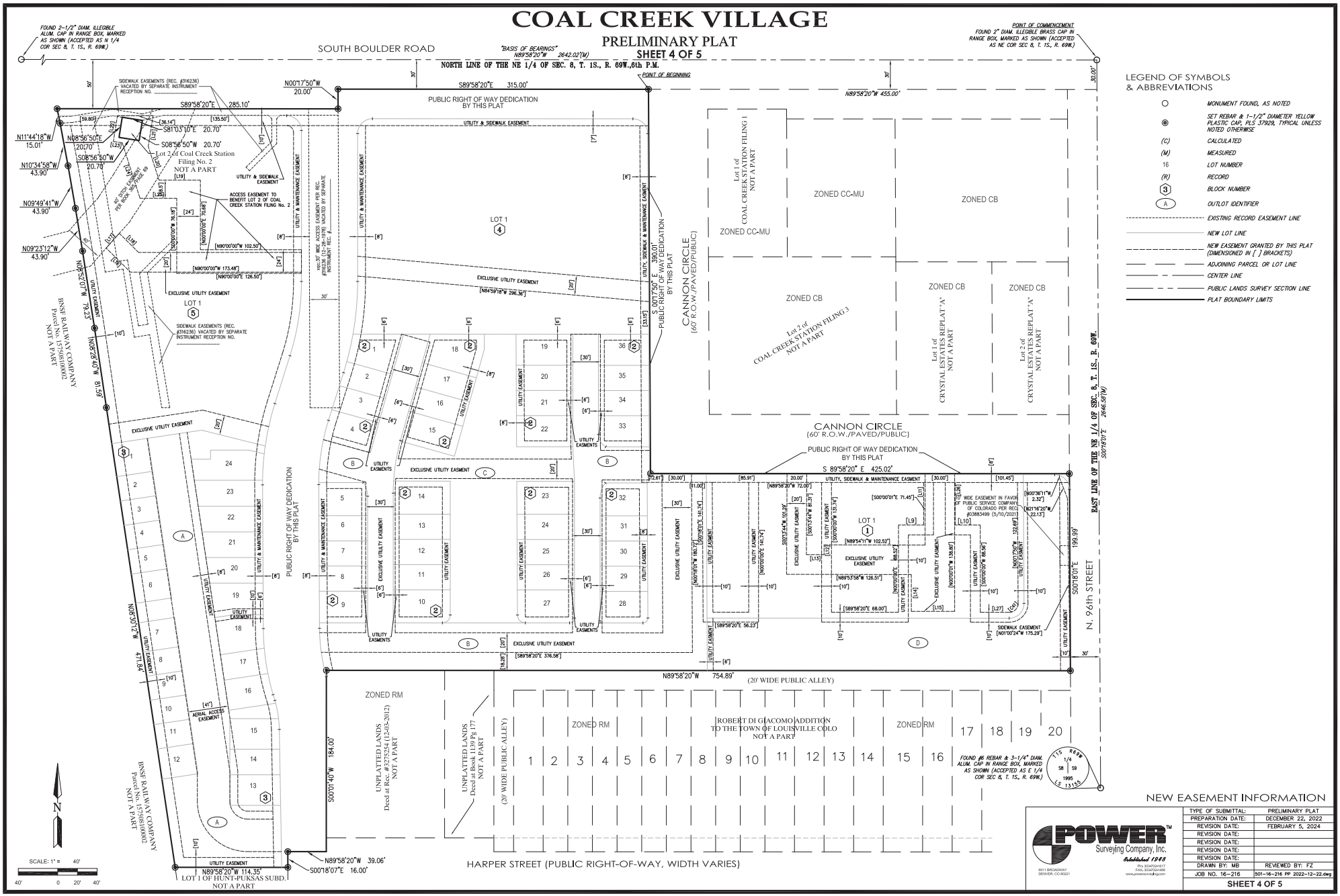
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SHEET 3 OF 5

COAL CREEK VILLAGE

PRELIMINARY PLAT

SHEET 4 OF 5



LEGEND OF SYMBOLS & ABBREVIATIONS

- ○ MONUMENT FOUND, AS NOTED
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NEW EASEMENT INFORMATION

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SHEET 4 OF 5

COAL CREEK VILLAGE

PRELIMINARY PLAT

SHEET 5 OF 5

LINE TABLE

LINE	BEARING	LENGTH
L1	S16°33'03"E	6.11'
L2	N00°01'40"E	15.33'
L3	N02°50'04"W	35.18'
L4	S81°26'48"W	19.91'
L5	S90°00'00"W	29.43'
L6	N90°00'00"E	19.74'
L7	N00°00'00"E	9.12'
L8	S76°00'00"E	15.73'
[L9]	N90°00'00"E	25.50'
[L10]	S90°00'00"E	25.50'
[L11]	N00°00'00"E	43.21'
[L12]	S00°00'21"W	10.00'
[L13]	N89°54'11"W	17.91'
[L14]	N00°00'21"E	37.38'
[L15]	N90°00'00"W	44.00'
[L16]	S45°11'56"E	34.69'
[L17]	S41°37'52"W	20.03'
[L18]	N45°11'56"W	27.55'
[L19]	N90°00'00"E	42.00'
[L20]	S17°41'27"E	35.89'
[L21]	S08°57'00"W	31.60'
[L22]	N08°56'50"E	26.58'
[L23]	N82°00'04"W	9.07'
[L24]	N17°41'27"W	59.20'
[L25]	N90°00'00"W	37.29'
[L26]	S00°00'00"W	43.19'
[L27]	S89°58'20"E	29.34'

CURVE TABLE

CURVE	RADIUS	DELTA	LENGTH	CHORD BRG	CHORD LENGTH
C1	15.00'	89°58'20"	23.55'	N44°59'10"W	21.21'
C2	250.58'	17°30'27"	76.57'	N08°45'14"E	76.27'
C3	269.82'	17°48'28"	83.86'	S08°36'13"W	83.52'
C4	269.82'	9°24'22"	44.30'	S12°48'16"W	44.25'
C5	269.82'	1°42'39"	8.06'	S07°14'46"W	8.06'
C6	269.82'	5°41'42"	26.82'	S03°32'35"W	26.81'
C7	269.82'	0°59'46"	4.69'	S00°11'52"W	4.69'
C8	240.00'	16°15'02"	68.07'	S06°25'32"E	67.84'
C9	240.00'	4°46'05"	19.97'	S02°41'04"E	19.97'
C10	240.00'	6°12'37"	26.01'	S08°10'25"E	26.00'
C11	240.00'	5°16'20"	22.08'	S13°54'53"E	22.08'
C12	110.00'	15°33'39"	29.87'	N08°46'14"W	29.78'
C13	110.00'	1°33'27"	2.99'	N15°46'19"W	2.99'
C14	110.00'	8°17'38"	15.92'	N10°50'47"W	15.91'
C15	110.00'	5°42'34"	10.96'	N03°50'41"W	10.96'
C16	183.00'	15°33'21"	49.68'	S08°04'41"E	49.53'
C17	212.82'	17°48'28"	66.15'	S08°36'13"W	65.88'
C18	212.82'	0°31'52"	1.97'	S00°02'05"E	1.97'
C19	212.82'	11°50'15"	43.97'	S06°08'59"W	43.89'
C20	212.82'	5°26'21"	20.20'	S14°47'17"W	20.20'
C21	307.58'	17°30'27"	93.99'	N08°45'14"E	93.62'
C22	307.58'	2°10'09"	11.65'	N16°25'22"E	11.64'
C23	307.58'	5°19'59"	28.63'	N12°40'18"E	28.62'
C24	307.58'	10°00'19"	53.71'	N05°00'09"E	53.64'
C25	15.00'	90°01'40"	23.57'	S45°00'50"W	21.22'
C26	15.00'	89°40'30"	23.48'	N45°08'05"W	21.15'
C27	15.00'	89°40'30"	23.48'	N45°08'05"W	21.15'
C28	15.00'	90°19'30"	23.65'	N44°51'55"E	21.27'
C29	25.00'	33°47'40"	14.75'	N16°53'50"W	14.53'
C30	8.00'	90°01'40"	12.57'	N45°00'50"E	11.32'
C31	8.00'	89°40'19"	12.52'	S45°08'11"E	11.28'
C32	5.00'	90°01'40"	7.86'	N45°00'50"E	7.07'
C33	15.00'	7°29'22"	1.96'	S03°53'30"E	1.96'
C34	5.00'	90°19'41"	7.88'	N44°51'49"E	7.09'
C35	15.00'	58°16'42"	15.26'	S30°41'11"E	14.61'
C36	25.00'	38°03'16"	16.60'	S19°01'38"W	16.30'
C37	198.50'	15°37'14"	54.12'	S07°48'37"W	53.95'
C38	198.50'	3°32'05"	12.25'	S01°46'02"W	12.24'
C39	198.50'	11°53'18"	41.19'	S09°28'44"W	41.11'
C40	198.50'	0°11'52"	0.68'	S15°31'18"W	0.68'
[C41]	9.00'	90°19'30"	14.19'	N44°51'55"E	12.76'

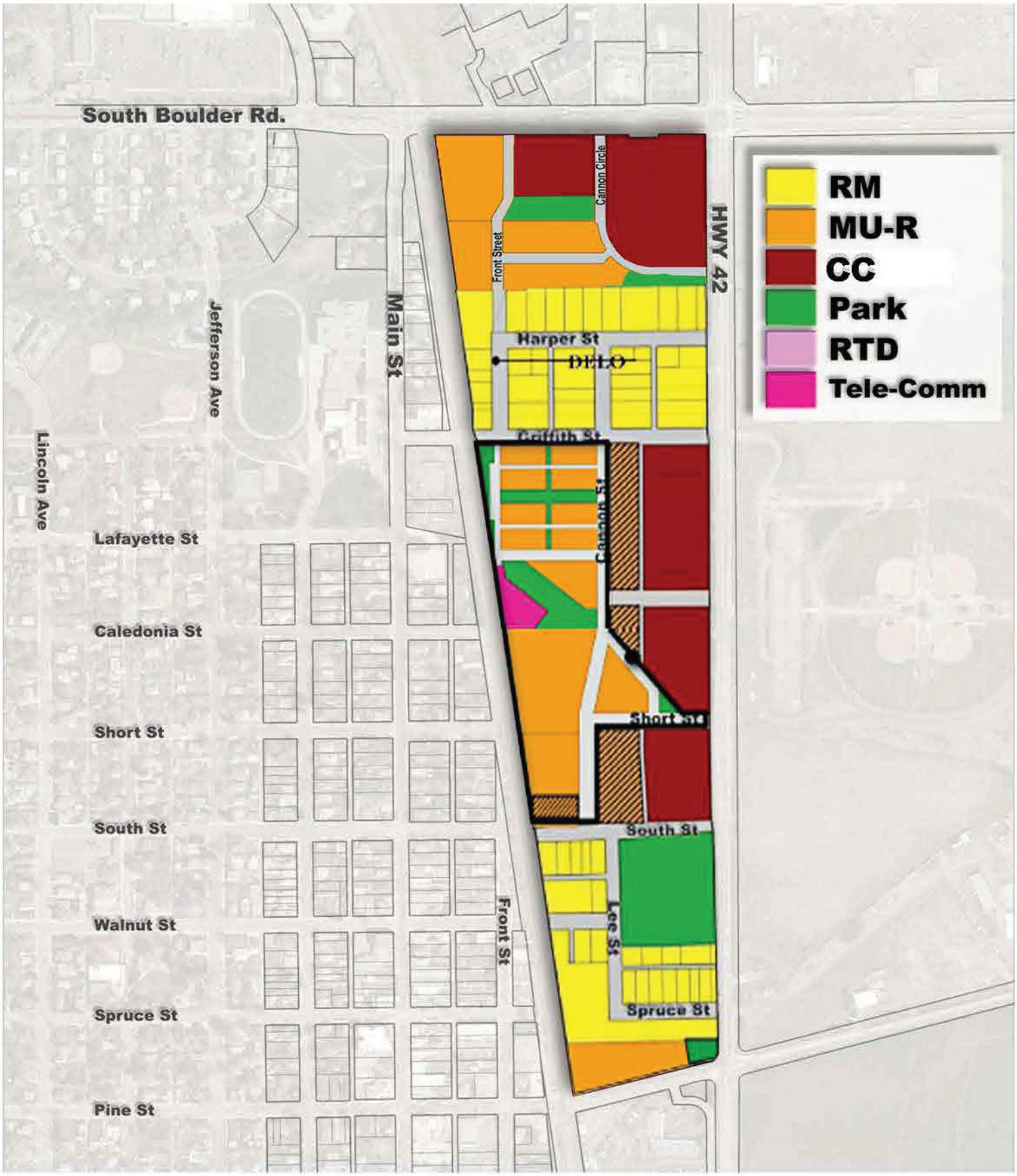
LINE AND CURVE TABLES

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SHEET 5 OF 5

Land Use Plan
Exhibit A



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Executive Vice President

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August 11, 2025

Re: Coal Creek Village

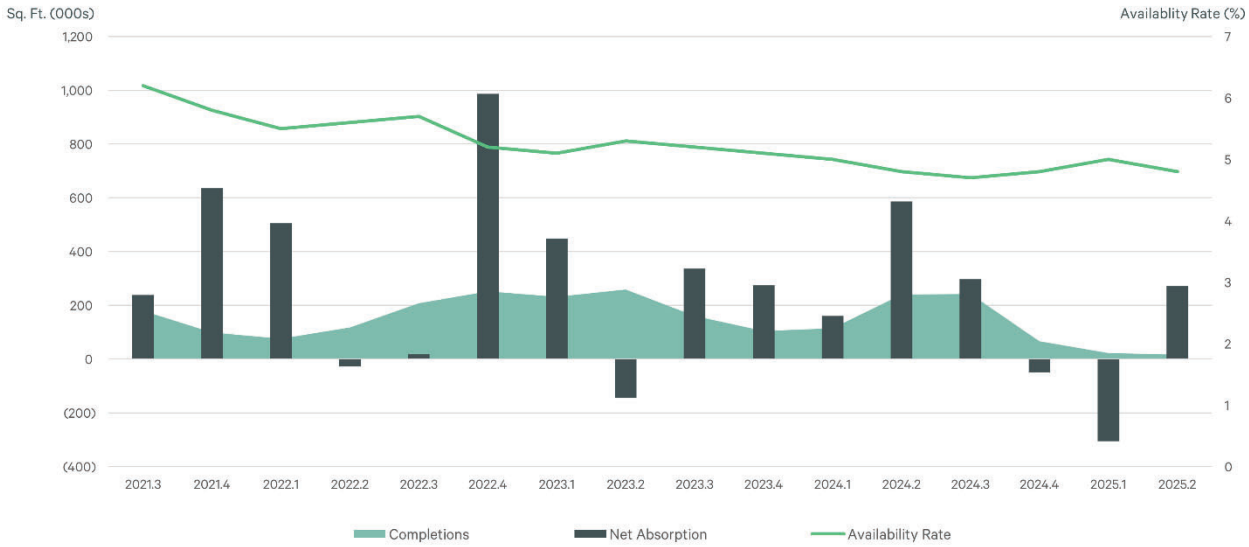
Dear City of Louisville Planning Department,

The Metro Denver commercial real estate market is showing conditions that call for a highly selective approach to new development. Current fundamentals in both retail and office suggest that speculative projects face significant headwinds.

Retail

In retail, the story has been one of stability rather than growth. As of the second quarter of 2025, availability in the Denver market sits at 4.8%, essentially unchanged from a year ago. Net absorption did rebound this quarter, but at 272,000 square feet it remains well off the pace we saw in 2024. New deliveries have been modest—just 348,000 square feet in the past year—and the bulk of leasing interest is coming from smaller pad users like gas/convenience, quick service restaurants, and a handful of financial institutions. Larger-format retail users are scarce, and while average asking rents have reached $21.65 per square foot, the highest level in five years, much of that growth is a function of limited quality space in prime corridors rather than robust tenant expansion. Many communities are recognizing this reality and are choosing to bolster their existing retail cores with nearby residential density instead of risking oversaturation.

Per the statistical data below, retail completions* have been modest for several years, with most quarters since 2021 delivering fewer than 250,000 square feet. Despite this limited new supply, availability has eased only slightly—from 5.2% in late 2022 to 4.8% today—showing that demand has not been strong enough to materially tighten the market. Net absorption has been inconsistent over the past several years, with positive quarters often followed by periods of giveback. Tenant growth has not been consistent enough to establish a clear upward trend.

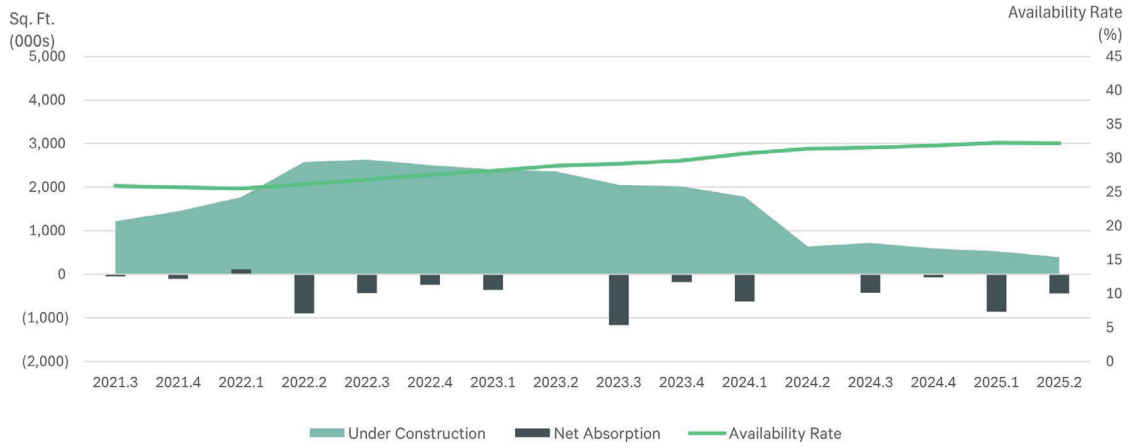


Source: CBRE Economic Advisors & CBRE Research, Q2 2025
**CBRE no longer reports construction data for retail properties, replacing it with completions data.*

Office

The headwinds are even stronger in office. Vacancy has inched up to 27.4%, and although absorption has improved compared to earlier this year, the market remains in negative territory. Leasing activity has slowed materially, under-construction volume has dropped to just under 400,000 square feet, and rents, averaging $33.86 full-service gross, often fall short of the levels needed to underwrite new projects. Companies are still adjusting to hybrid and remote work, which is keeping a lid on expansion plans and contributing to elevated sublease space. At the same time, we are seeing conversions and demolitions begin to outpace new office construction—a sign that the market is working through existing oversupply before it can support meaningful new development.

Per the statistical data below, the office sector's long-term trajectory underscores these challenges. The pipeline of space under construction has fallen sharply—from a recent peak of 2.6 million square feet in Q3 2022 to just 394,000 square feet today. Net absorption has been negative in 13 of the past 16 quarters, and availability has climbed from 26% in late 2021 to 32% currently. These figures highlight a market still digesting excess inventory, with more space being removed through repurposing than added through new construction.



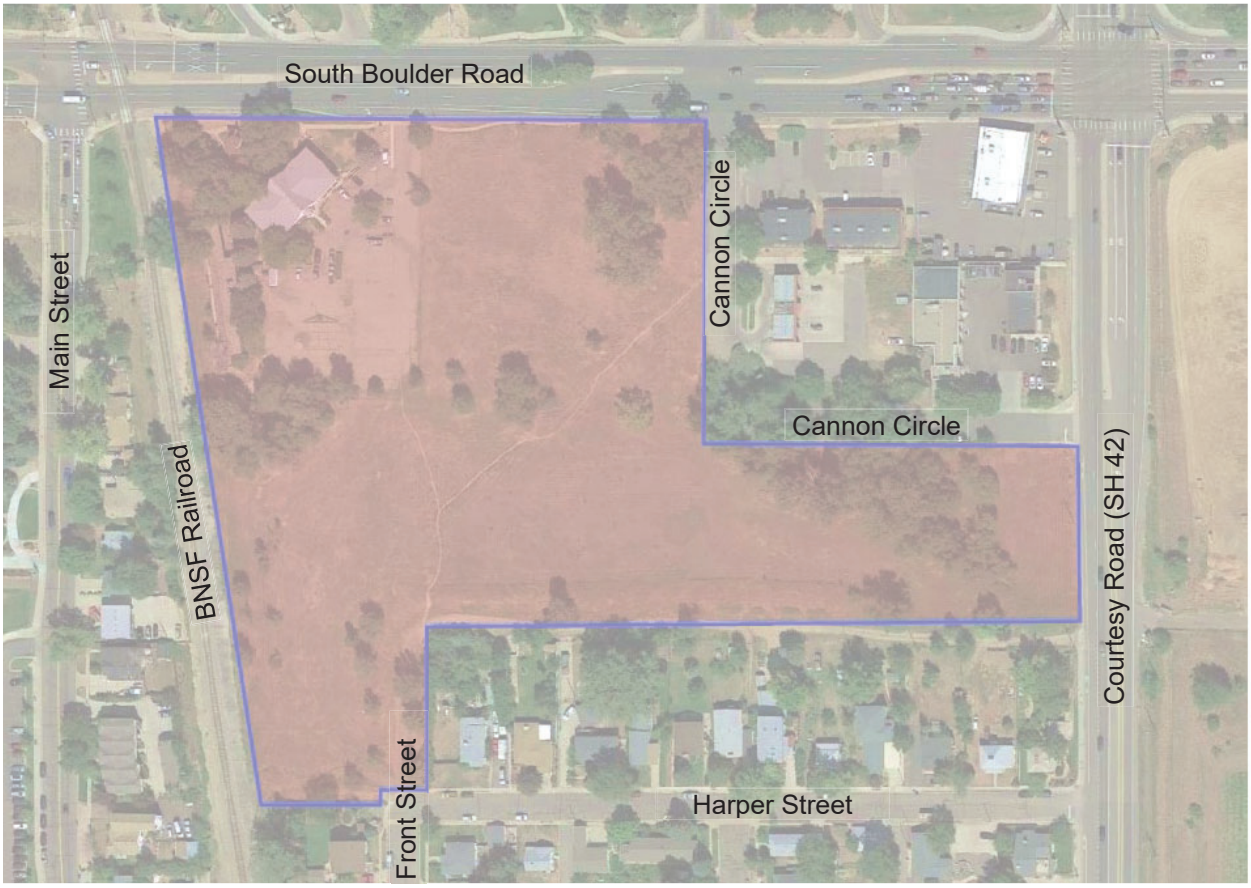
Source: CBRE Research, Q2 2025

Please feel free to call me with any questions.

Sincerely,

Martin Roth
CBRE, Inc.

Transportation Impact Study
Coal Creek Village
Louisville, Colorado



January 14, 2021
Revised: June 9, 2025
Revised: July 18, 2025

CITY OF LOUISVILLE APPROVAL
BY:
DATE:08/14/2025
DOCUMENT APPROVAL EXPIRES ONE YEAR FROM APPROAL DATE

THIS DOCUMENT WAS REVIEWED FOR CONFORMANCE WITH THE CITY OF LOUISVILLE DESIGN AND CONSTRUCTION STANDARDS. CITY APPROVAL DOES NOT RELIEVE OWNER, DESIGN ENGINEER, OR CONTRACTOR OF RESPONSIBILITY TO CORRECT ERRORS OR OMISSIONS RELATING TO THIS DOCUMENT

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Contact: Kari J. McDowell Schroeder, PE, PTOE
Project Number: M1475 & M1663

Statement of Engineering Qualifications

Kari J. McDowell Schroeder, PE, PTOE is a Transportation and Traffic Engineer for McDowell Engineering, LLC. Ms. McDowell Schroeder has over twenty-eight years of extensive traffic and transportation engineering experience. She has completed numerous transportation studies and roadway design projects throughout Colorado. Ms. McDowell Schroeder is a licensed Professional Engineer in the State of Colorado and has her certification as a Professional Traffic Operations Engineer from the Institute of Transportation Engineers.

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1.0 Executive Summary

Coal Creek Village is a proposed residential development located southwest of the intersection of South Boulder Road and Colorado State Highway 42. The development proposes the following land uses:

Land Use Category	Qty	Units
Multifamily Housing	188	dwelling units
Commercial/Retail	13,530	square feet
Existing Empanada Shop (1030 E. South Boulder Road.)	430	square feet

Trip Generation: The proposed development is expected to generate a total of 1,839 vehicle trips on the adjacent roadway network over the course of an average weekday (vpd). This includes 220 vehicle trips per hour (vph) during the morning peak hour, 244vph during the evening peak hour, and 144vph during the Saturday peak hour.

Internal Site Circulation: The proposed street configuration for Coal Creek Village provides good internal circulation as well as providing alternate routes to access adjacent arterial streets. Drivers wanting to go west on South Boulder Road or north on SH 42 may need to alter their travel routes, as left turns out of the site are prohibited onto these two roadways.

Sidewalks are proposed throughout the development. Adjacent access to transit is provided at South Boulder Road and Main Street.

Site Access: The new Coal Creek Village is proposing four access locations. Three of the four accesses exist, and the fourth access will need to be constructed. Two accesses will have direct connectivity to South Boulder Road, one access will have direct connectivity to State Highway 42, and the fourth access will have direct connectivity to Front Street. The four accesses are listed below. Refer to the site plan in **Figure 2**.

1. Front Street and South Boulder Road
2. Cannon Circle and South Boulder Road
3. Cannon Circle and State Highway 42
4. Front Street and Harper Street (with and without the Front Street connection)

This study analyzes the transportation impacts with and without the Front Street connection.

Intersection Analysis: Year 2026 and Year 2045 background and total traffic conditions were modeled and analyzed. Total traffic conditions were analyzed with and without

the Front Street connection from South Boulder Road to Griffith Street. Additionally, future access control, infrastructure improvements, and traffic from the Delo Boom development were factored into these projections.

Infrastructure recommendations based upon future traffic conditions, access restrictions, and operations are detailed in **Section 7.0**. A summary of the necessary improvements is included below.

Front Street Connection: This TIS includes analysis of scenarios with and without the Front Street connection. Due to the sites' direct access to S. Boulder Road with heavy through volumes, the site accesses will have restricted turning movements. Without the Front Street connection, more vehicles access South Boulder Road from the Cannon Circle access creating additional weave and U-turn movements that present safety concerns. Both the City staff and the TIS recommendations are to include the Front Street connection.

The Front Street connection provides numerous benefits to the Louisville community. The Front Street connection will allow for transportation redundancy as part of a gridded street network. Gridded networks have more capacity and increase circulation with narrower roadways that are safer for pedestrians and other multimodal traffic. It also aligns with the City's previous planning efforts.

Without the Front Street connection, there is anticipated to be an additional 25% of the exiting site distribution that would use the eastbound U-turn, which amounts to between 8 to 18vph. This equates to an anticipated increase of between 40% and 85% for the eastbound U-turn movements on South Boulder Road in the long-term traffic scenarios. This includes a difficult weave movement across two or three lanes of traffic in the 400 feet between the northern site accesses to the eastbound left turn lane at the signalized intersection.

Under both scenarios, Front Street is anticipated to stay within Front Street's local residential street capacity.

With the Front Street connection, it is recommended that traffic calming measures are constructed to attenuate operations on Front Street. Several measures that may be considered are described in the City of Louisville's *Transportation Master Plan*. This document's Neighborhood Traffic Management Program (NTMP) focuses on neighborhood-level traffic calming and safety improvements. These improvements help maintain the City's family-friendly small-town character. Examples of tools utilized within an NTMP include, but are not limited to the following.

- Enhanced or raised pedestrian crossings
- Medians and/or entry islands
- Curb extensions

- Speed humps or cushions
- Speed monitoring and enforcement campaigns
- Education campaigns

Intersection #2 - South Boulder Road and Front Street Intersection: With the development of Coal Creek Village, the eastbound right turn lane needs to be extended to include 75' of storage and a 13.5:1 taper to accommodate the anticipated site-generated traffic. Alternately, the construction of a bay taper would be acceptable and may help facilitate the addition of an adjacent transit stop. The westbound left turn lane is constrained by the back-to-back turn lane to the adjacent access.

The northbound movement is restricted to right turn movements. Therefore, the northbound movement out of the site does not require a separate turn lane. No acceleration lane is required for this movement onto South Boulder Road.

Intersection #3 - South Boulder Road and Cannon Circle intersection: The City is considering the restriction of the left turns from the side streets at the South Boulder Road and Cannon Circle intersection as mentioned in the *South Boulder Road Corridor Evaluation*. Per the analysis included in this report, McDowell Engineering recommends that the left turn and through movements are restricted at Cannon Street at the time of Coal Creek Village buildout. This can be accomplished with the construction of a raised center median at the intersection.

With the development of Coal Creek Village, an eastbound right turn lane needs to be constructed to include 50' of storage and a 13.5:1 taper to accommodate the anticipated site-generated traffic. Alternately, the construction of a bay taper would be acceptable. The westbound left turn lane is constrained by the back-to-back turn lane to the adjacent access. The 95th percentile queue for this movement is less than the available storage length + taper length. Therefore, no changes are recommended to the westbound left deceleration lanes.

The northbound movement is restricted to right turn movements. Therefore, the northbound movement out of the site does not require a separate turn lane.

Intersection #4 – South Boulder Road and SH 42 intersection: The City's *Future 42* plan proposes improvements to this intersection in the future. This analysis supports the City's planned improvements.

Intersection #5 - SH 42 and Cannon Circle intersection: With the construction of Coal Creek Village, this intersection will be restricted to a ¾ movement by extending the existing center median in SH 42. The median should be installed per the *Future 42* plan and align with the SH 42 Trail and Bike Lane designs.

The eastbound movement will be restricted to right turn only movements. Therefore, no deceleration lane is needed for this movement.

This intersection and the median should be installed per the implementation of the *Future 42* plan, including the trail and bike lane components.

A new State Highway Access Permit is required for this access onto SH 42.

Intersection #6 – SH 42 and Griffith Street intersection: The City's *Future 42* Plan proposes a future traffic signal installation at this intersection. The additional traffic from Coal Creek Village will not meet MUTCD traffic signal warrants at this intersection, future conditions with other growth likely will. This analysis supports the City's planned improvements.

Intersection #7 – Griffith Street and Front Street Intersection: No improvements are required at this intersection.

Intersection #8 – Griffith Street and Front Street intersection: This is a full-movement intersection with stop-control on the north and south legs. No additional turn lanes are required.

It is recommended that with the Front Street connection, additional traffic calming features are incorporated such as curb extensions/bulbouts and raised pedestrian crossings, enhanced signage and striping per further discussion with City Staff. The applicant has prepared a separate, schematic traffic control plan to be included in the application.

Additionally, with the Front Street connection, this intersection should have 'Do Not Block Intersection' signage and striping added that will assist with traffic accessing Front Street. Intersection of Griffith Street and the BNSF Railroad: This at-grade railroad crossing sees multiple trains crossings per day, with each impacting the crossing for three to five minutes at a time. During the crossing, traffic queues on Griffith Street back up in either direction. As described above, it is recommended that the intersection of Griffith Street and Front Street has 'Do Not Block Intersection' signage and striping added that will assist with traffic accessing Front Street.

Intersection #9 – Griffith Street and Main Street Intersection: No improvements are required at this intersection.

Intersection #10 – Front Street and Harper Street intersection with the Front Street Connection: This is currently a free-flowing intersection. There is an unimproved alley access as a third, north leg. With the buildout of Coal Creek Village and a connection of Front Street from South Boulder Road to Griffith Street, it is recommended that Front Street is designed as the through street and Harper Street is stop-controlled

with a stop sign and stop bar on this east leg. The north leg of this intersection is recommended to have a painted pedestrian crosswalk.

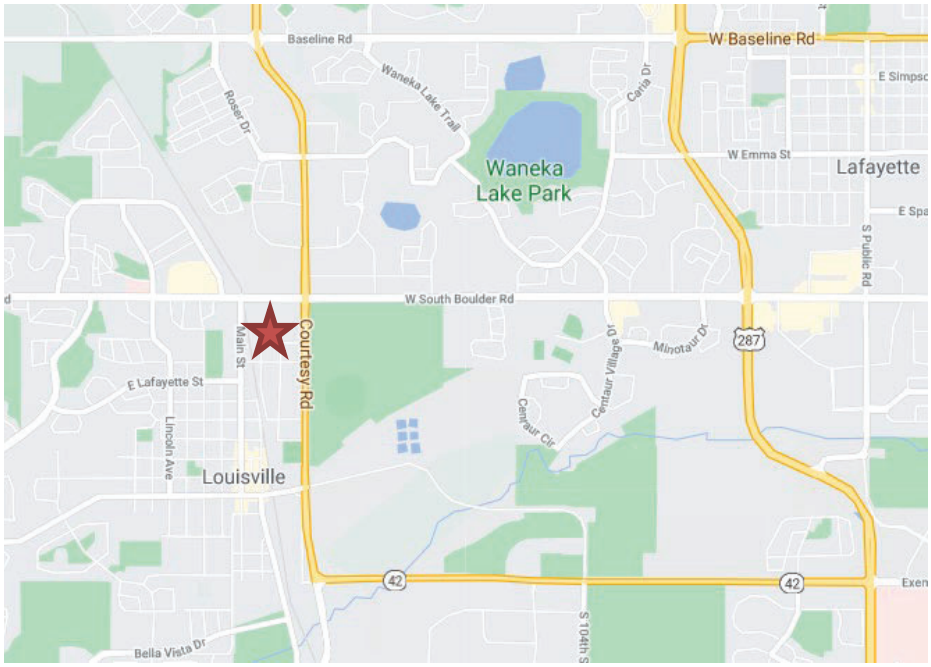
Intersection #11 – SH 42 and Harper Street intersection: The existing volume of eastbound right turns from Harper Street onto SH 42 exceeds the *Access Code*'s requirement to construct an acceleration lane for this movement. With the implementation of the *Future 42* Plan, this volume is anticipated to increase because current traffic making the eastbound left movement will likely make a right turn instead. Coal Creek Village's site traffic is not anticipated to impact this movement. At a minimum, the construction of an acceleration lane should be incorporated into the implementation of Future 42 plans.

2.0 Project Description

Coal Creek Village is a proposed mixed-use residential and commercial development in Louisville, located southwest of the intersection of South Boulder Road and Courtesy Road (Colorado State Highway 42, SH 42), as shown in **Figure 1**. The site is bounded by the BNSF Railroad on the west. The current site plan for the development is shown in **Figure 2**. A full-size copy of the site plan is included in the **Appendix**. The existing commercial parcels north and east of Cannon Circle are not part of the development.

The existing building located at 1032 East South Boulder Road was demolished in 2022. The existing building at 1030 East South Boulder Road remains in operation as an Empanada shop.

Figure 1: Vicinity Map

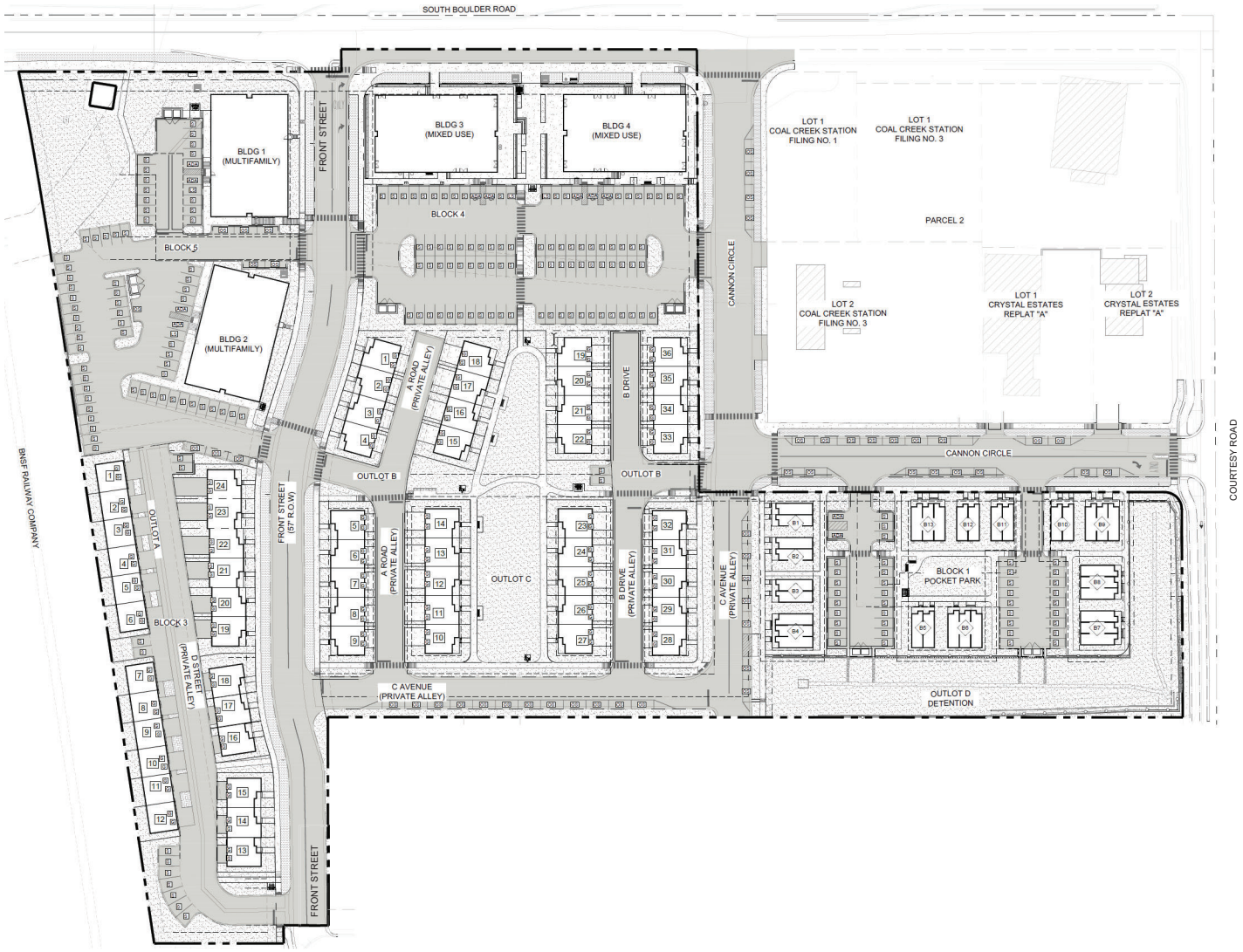


The development proposes the following land uses.

Table 1: Coal Creek Village Land Use

Land Use Category	Qty	Units
Multifamily Housing	188	dwelling units
Commercial/Retail	13,530	square feet
Existing Empanada Shop (1030 E. South Boulder Road.)	430	square feet

Figure 2: Current Site Plan



2.1 Recent Capital Improvements and Studies

Recent South Boulder Road Access Restrictions: The City of Louisville restricted northbound and southbound left turns at the intersection of South Boulder Road and Front Street by extending the raised median in Summer 2022. The westbound left turn is still allowed.

(Courtesy Road) *Future 42* Corridor Plan: The City of Louisville completed *Future 42*[9], a SH 42 corridor study, in December 2022. The study recommended improvements to the intersection of South Boulder Road and SH 42 as well as the SH 42 corridor that may impact construction of walk/detention pond/retaining wall at southwest corner of Cannon Circle. The Year 2045 background traffic and Year 2045 total traffic conditions assume additional turn lanes at the intersection of South Boulder Road and SH 42 per the *Future 42* plan. Refer to an excerpt in the **Appendix**.

Future 42 includes a recommendation that the intersection of SH 42 and Griffith Street is signalized in the future. Therefore, this analysis assumes that this intersection is signalized in both the Year 2045 background traffic and Year 2045 total traffic conditions.

Future 42 includes a recommendation that the intersections of SH 42 with Cannon Circle and Harper Street, are restricted to right-in, right-out only movements in the future. Therefore, this analysis assumes that this intersection is restricted in both the Year 2045 background traffic and Year 2045 total traffic conditions.

Refer to a table of the access restriction assumptions for each analysis scenario in **Table 2**.

Transportation Master Plan: The *City of Louisville Transportation Master Plan*[10] identifies recommended improvements for the South Boulder Road corridor. Key considerations were bus rapid transit, improvements to bus stops and frequency of transit service, eliminating right-turn lanes, and providing underpasses and at-grade pedestrian crossings. Refer to an excerpt in **Appendix G**.

South Boulder Road Corridor Evaluation: The City of Louisville also prepared a *South Boulder Road Corridor Evaluation*[11]. This analysis determined that signalization is not appropriate at Cannon Circle due to spacing constraints to the SH 42 traffic signal. Therefore, pedestrian and signage improvements at the Canon Circle intersection were recommended. Additionally, the Commercial Driveway extension to the north was suggested as an alternative roadway connection.

2.2 Proximate Development Projects

The Delo Boom project is proposed to be located on the southeast corner of the Griffith Street and Cannon Street intersection in Louisville, Colorado. The project is proposed to include 36 townhomes, 99 multifamily units, and 4,000 square feet of retail space. It is expected that the project will be completed in the next couple of years. The anticipated traffic associated with the proposed Delo Boom project is included in the short-term and long-term background traffic projections. Data from the *Delo Boom Traffic Impact Study*[12] was used for these projections. Figures for the Year 2026 and Year 2045 Delo Boom traffic assignment are included in the **Appendix**.

2.3 Project Access Locations

The new Coal Creek Village is proposing four access locations. Three of the four accesses exist, and the fourth access will need to be constructed. Two accesses will have direct connectivity to South Boulder Road, one access will have direct connectivity to State Highway 42, and the fourth access will have direct connectivity to Front Street. The four accesses are listed below. Refer to the site plan in **Figure 2**.

5. Front Street and South Boulder Road
6. Cannon Circle and South Boulder Road
7. Cannon Circle and State Highway 42
8. Front Street and Harper Street

This study analyzes the transportation impacts with and without the Front Street connection. Refer to **Section 3.2** of the report for more information on the two alternatives modeling the anticipated transportation network impacts with and without the Front Street connection.

2.4 Intersection Analysis Locations

This report also studies several additional off-site intersections. The analysis locations and modeling methodology were discussed with City of Louisville Engineering staff before performing the analysis.

1. Main Street & South Boulder Road
2. Front Street & South Boulder Road (Existing Site Access)
3. Cannon Circle & South Boulder Road (Existing Site Access)
4. Courtesy Road & South Boulder Road
5. Cannon Circle & Courtesy Road (SH 42) (Existing Site Access)
6. Griffith Street & Courtesy Road (SH 42)
7. Griffith Street & Cannon Street
8. Griffith Street & Front Street
9. Griffith Street & Main Street
10. Front Street & Harper Street (Proposed Site Access – Modeled with and without this connection.)
11. Harper Street & Courtesy Road (SH 42)

3.0 Existing Transportation System

3.1 Description of Existing Transportation System

Highway 42 (SH 42 / Courtesy Road): SH 42 is a north/south major arterial street that is classified as an NR-A roadway by CDOT's *Online Transportation Information System*[1] *(OTIS)*. Within the City of Louisville, the local street name is Courtesy Road. It is a four-lane street with auxiliary lanes north of South Boulder Road and narrows to a two-lane street with auxiliary lanes south of the development site. The posted speed limit is 45 mph in both directions in the vicinity of the site. There is a southbound bike lane on the segment of the highway adjacent to this development.

The *Future 42* Plan adopted by the City of Louisville (See **Section 2.1**) informs the the different intersection improvement scenarios (See **Section 3.2**) that are studied in this TIS.

South Boulder Road: South Boulder Road is a four-lane divided, east/west major arterial street with auxiliary lanes at some intersections. It is owned and operated by the City of Louisville. The roadway has high traffic volumes, local transit service, on-street bike lanes, and several traffic generators. The speed limit is 35 mph in both directions in the vicinity of the site.

Front Street: Front Street is a two-lane north/south local residential street. As a residential street within the City of Louisville, its speed limit is 25 mph.

Within the development, Front Street will be a dedicated public street replacing the south driveway and connecting to the existing street to the south.

Cannon Circle: Cannon Circle is a local street that loops around the west and south sides of the commercial properties at the southwest corner of SH 42 and South Boulder Road. A portion of the street has not been constructed. The north-south segment extends 290 feet south from South Boulder Road. The east-west segment extends 200 feet west from SH 42.

Griffith Street: Griffith Street is a two-lane, east-west street that connects Main Street to SH 42. Griffith Street has on-street parking. It has sidewalks on a majority of the roadway. The BNSF railroad has an at-grade crossing of Griffith Street between Main Street and Front Street.

Harper Street: Harper Street is a two-lane, east-west street that connects Front Street to SH 42. Harper Street has sidewalks on both sides and on-street parking. It provides access to the residences in the areas.

[1] Colorado Department of Transportation, Online Transportation Information System.

Main Street: Main Street is a busy two-lane road that is central to Downtown and connects to South Boulder Road. Main Street is lined with retail and parking in Downtown and provides direct access to Louisville Middle School. It has a posted speed limit of 25mph.

BNSF Railroad: The BNSF Railroad has an active freight line through Louisville. Both at-grade crossings at South Boulder Road and Griffith Street have crossbucks and warning systems installed.

3.2 Transportation Network Access Control and Infrastructure Improvement Implementation

There are several anticipated access control changes in both the background traffic and total traffic scenarios. Intersection access control is summarized in **Table 2**. These assumptions were reviewed with City staff.

Table 2: Intersection Access Control

#	Intersection	Year 2024 Existing	Year 2025 Background	Year 2045 Background	Year 2025 Total - With Front Street Connection	Year 2045 Total - With Front Street Connection	Year 2025 Total - Without Front Street Connection	Year 2045 Total - Without Front Street Connection
1	Main Street & South Boulder Road	Signal	Signal	Signal	Signal	Signal	Signal	Signal
2	Front Street & South Boulder Road	3/4 Movement	3/4 Movement	3/4 Movement	3/4 Movement	3/4 Movement	3/4 Movement	3/4 Movement
3	Cannon Circle & South Boulder Road	Full Movement	Full Movement	Full Movement	3/4 Movement	3/4 Movement	3/4 Movement	3/4 Movement
4	Courtesy Road & South Boulder Road	Signal - Exist	Signal - Exist	Signal - Future 42 Conditions	Signal - Exist	Signal - Future 42 Conditions	Signal - Exist	Signal - Future 42 Conditions
5	Cannon Circle & SH 42 (Courtesy Road)	Full Movement	Full Movement	RIRO[3]	3/4 Movement	RIRO[3]	3/4 Movement	RIRO[3]
6	Griffith Street & SH 42 (Courtesy Road)	Full Movement	Full Movement	Signal	Full Movement	Signal	Full Movement	Signal
7	Griffith Street & Cannon Street	Full Movement	Full Movement	Full Movement	Full Movement	Full Movement	Full Movement	Full Movement
8	Griffith Street & Front Street	Full Movement	Full Movement	Full Movement	Full Movement	Full Movement	Full Movement	Full Movement
9	Griffith Street & Main Street	Full Movement	Full Movement	Full Movement	Full Movement	Full Movement	Full Movement	Full Movement
10	Front Street & Harper Street	Full Movement[1]	Full Movement[1]	Full Movement[1]	Full Movement[2]	Full Movement[2]	Full Movement[1]	Full Movement[1]
11	Harper Street & SH 42 (Courtesy Road)	Full Movement	Full Movement	RIRO[3]	Full Movement	RIRO[3]	Full Movement	RIRO[3]
	Scenario	A	A	B	C	D	E	F

Notes: [1]Not Stop Controlled (Free Flowing)
[2]Westbound Stop Controlled
[3]RIRO = Right-In-Right-Out

Key infrastructure improvement assumptions used in the traffic modeling analyses are summarized below.

- Intersection #3 - South Boulder Road and Cannon Circle
    - Developer constructs a ¾ movement intersection at site development

- Intersection #4 - South Boulder Road and SH 42
    - City constructing signalized intersection improvements in future
- Intersection #5 - SH 42 and Cannon Circle intersection
    - Developer constructs a ¾ movement intersection at site development
    - City restricts to RIRO movements in the future with signalization of Intersection #6
- Intersection #6 - SH 42 and Griffith Street
    - City constructs a traffic signal in the future
- Intersection #10 – Front Street and Harper Street
    - With Front Street Connection: Developer constructs a north leg and installs a stop sign for westbound Harper Street
    - Without Front Street Connection: No change from existing conditions
- Intersection #11 – SH 42 and Harper Street
    - City restricts to RIRO movements in the future with signalization of SH 42 and Griffith Street

Key infrastructure improvements are described in detail below.

Intersection #1 - South Boulder Road and Main Street Intersection: This 3-legged intersection is signalized. The signal is coordinated with the BNSF Railroad crossing that is located on the eastern leg of the intersection.

The City of Louisville's *Louisville South Boulder Road Connectivity Plan* and the *DRCOG South Boulder Road Corridor Study*[17] both identify a future pedestrian underpass on the western leg of the intersection.

Intersection #2 - South Boulder Road and Front Street Intersection: This intersection serves a private driveway to an apartment complex to the north and the site's existing commercial driveway to the south. In the Summer of 2022, the City of Louisville made changes to the configuration of the South Boulder Road and Front Street intersection by restricting the northbound and southbound left turns.

No additional changes to this intersection are expected.

Intersection #3 - South Boulder Road and Cannon Circle intersection: This full-movement intersection currently serves a commercial driveway to the north and

Cannon Circle to the south. This intersection has westbound and eastbound left turn lanes.

The City of Louisville completed a *South Boulder Road Corridor Evaluation*[11]. The resulting recommendations determined that signalization is not appropriate at Cannon Circle due to spacing constraints to the SH 42 traffic signal. Refer to an excerpt in the **Appendix**.

With the buildout of Coal Creek Village, this intersection will be restricted to a ¾ movement, with left turns out of the site restricted. Therefore, all total traffic scenarios are modeled with the northbound left turn lane restricted.

Intersection #4 - South Boulder Road and SH 42 intersection: This is a full-movement, signalized intersection. The intersection is owned by CDOT and maintained by the City of Louisville. There are double left-turn lanes on all four legs of the intersection. There are westbound and southbound right-turn lanes. U-turns are permitted.

The *Future 42* plan depicts intersection improvements that include northbound and eastbound channelized right turn lanes. The Year 2045 background and total traffic scenarios are modeled assuming the westbound and southbound right turn lanes are constructed.

Intersection #5 - SH 42 and Cannon Circle intersection: This is currently a full-movement "T" intersection. This intersection has a single auxiliary turn lane: northbound left. Southbound SH 42 is two lanes wide through the intersection. Northbound SH 42 has a single through-lane approaching the intersection, then widens to two lanes north of the intersection.

With the buildout of Coal Creek Village, this intersection will be restricted to a ¾ movement, with left turns out of the site restricted. Therefore, Year 2026 total traffic scenarios are modeled with the eastbound left turns restricted.

Per the *Future 42* Plan, the TIS assumes that the Cannon Circle access allows right-in, right-out movements only. This improvement would likely coincide with the signalization of the SH 42 and Griffith Street intersection. Therefore, Year 2045 background and total traffic scenarios are modeled with the northbound and eastbound left turns restricted.

Intersection #6 - SH 42 and Griffith Street intersection: This is currently a full-movement intersection. The east and west legs are stop-controlled. Griffith Street is a public roadway that has an at-grade railroad crossing and accesses Main Street. The east leg of this intersection accesses the Louisville Sports Complex. This intersection currently has southbound and northbound left turn lanes and a southbound right turn lane.

Per the *Future 42* Plan, the TIS assumes that this intersection will be signalized in the future. Therefore, Year 2045 background and total traffic scenarios are modeled with a traffic signal.

Intersection #7 – Griffith Street and Cannon Street intersection: This is a full-movement intersection with stop-control on the north and south legs.

No additional changes to this intersection are expected.

Intersection #8 – Griffith Street and Front Street intersection: This is a full-movement intersection with stop-control on the north and south legs.

No additional changes to this intersection are expected.

Intersection #9 – Griffith Street and Main Street intersection: This is a full-movement "T" intersection. The north and south legs are stop-controlled.

No additional changes to this intersection are expected.

Intersection #10 – Front Street and Harper Street intersection: This is currently a free-flowing intersection. There is unimproved alley access as a third, north leg. All background scenarios assume no change in the current configuration.

This intersection is modeled with two scenarios.

In the Year 2026 and Year 2045 total traffic scenarios with the Front Street connection, it is recommended that Front Street becomes the through street, resulting in the installation of westbound stop-control. This connection aligns with the City of Louisville's previous *The Highway 42 Revitalization Area Framework Plan*[14] and *42 Gateway Alternative Analysis Report*[15] plans to connect South Boulder Road and Griffith Street via Front Street. Excerpts from these reports are included in the **Appendix**.

Intersection #11 - SH 42 and Harper Street intersection: This is currently an eastbound stop-controlled full-movement "T" intersection. This intersection is located within SH 42's transition area between two southbound through lanes at South Boulder Road and a separate single southbound through lane and southbound right turn lane on SH 42 for Griffith Street. There is a double yellow stripe for northbound through traffic at the intersection. Vehicles are still making left turns into and out of Harper Street across the double yellow stripe.

Per the Future 42 Plan, the TIS assumes that the Harper Street access allows right-in, right-out movements only. This improvement would likely coincide with the signalization of the SH 42 and Griffith Street intersection. Therefore, Year 2045 background and total traffic scenarios are modeled with the northbound and eastbound left turns restricted.

3.3 Traffic Data Collection

Existing Traffic Volumes: Both weekday and weekend peak traffic operations were studied at the study area intersections. Weekday morning peak hour turning movement counts were collected on Tuesday, November 5, 2024, from 7:00am to 9:00am. Weekday evening peak hour turning movement counts were collected on Tuesday, November 5, 2024, from 4:00pm to 6:00pm. Saturday mid-day peak hour turning movement counts were collected on Saturday, November 2, 2022 from 11:00am to 1:00pm. During the data collection, the weather was clear and school was in session. This data replaces and updates previous traffic data that was collected in August 2020 and November 2022.

Traffic movements at the intersection of SH 42 and Harper Street were determined from the counts collected at the adjacent intersections of SH 42 with Cannon Circle and Griffith Street.

The traffic data collection showed that the peak traffic occurred from 7:45am to 8:45am and 4:00pm to 5:00pm during the weekday. Saturday peak hour traffic occurred from 11:30am to 12:30pm. Raw traffic data is included in the **Appendix**.

4.0 Future Background Traffic Projections

Background traffic refers to the anticipated future traffic without the development of the proposed Coal Creek Village project.

The existing traffic counts are used to determine the forecasted background traffic volumes using industry-standard background annual traffic growth rates, additional adjacent development traffic, and travel route adjustments for modified access control scenarios.

4.1 Background Annual Traffic Growth

Growth factors for South Boulder Road, SH 42, and Main Street were derived from the traffic volume projections for 2020 and 2050 published by the *Denver Regional Council of Governments*[2] *(DRCOG)*. The resulting average annual growth rate was 1.30% for these corridors. Calculations are included in the **Appendix**.

All properties served by the opposing driveways on the north side of South Boulder Road, the east side of SH 42, and along Griffith Street are assumed to be built out. Therefore, no growth rate was applied to these access points.

4.2 Proximate Development Projects

As described in **Section 2.2**, the Delo Boom project is anticipated to impact the analysis intersections. Data from the *Delo Boom Traffic Impact Study*[12] was used for all future Year 2026 and Year 2045 traffic projections. Figures for the Year 2026 and Year 2045 Delo Boom traffic assignment are included in the **Appendix**.

4.3 Travel Route Adjustments for Modified Access Control Scenarios

As described in **Section 3.2**, there are several anticipated access control changes in both the background traffic and total traffic scenarios. Modifications to the allowed turning movements at the analysis intersections, future construction of a traffic signal at SH 42 and Griffith Street, and scenarios with and without Front Street connection from South Boulder Road to Griffith Street will impact the travel routes of both existing and future traffic.

- Background and total traffic modifications for each applicable scenario were calculated based on data from DRCOG and the *Louisville Transportation Masterplan*. Data referencing residents' and visitors' origins and destinations was compared to anticipated travel time differences. Additionally, South Boulder Road and SH 42 are already at capacity during peak traffic hours. This makes it difficult to make certain left and through movements from side streets. Long signal cycle

[2] Denver Regional Council of Governments, 2020 & 2050 Model Assigned All-Day Volumes. August 2022.

lengths (120 seconds) at the intersection of SH 42 and South Boulder Road can cause substantial side street delay along these corridors. The delay caused by this difficulty impacts the travel route and travel time.

Gravity-based travel time calculations were used to determine ideal origin and destination routes based upon both distance and trip time. Travel time tools for existing routes were compared using Google Maps and Apple Maps - two mobile apps that are regularly utilized by drivers to route them to their destination efficiently.

City of Louisville's *Transportation Master Plan* provided statistics on the community's activity centers, areas of future development potential, locations of where Louisville residents work, and locations of where Louisville employees live.

- Currently, 40% of all trips made within, to, or from Louisville are work-related.[3]

- Approximately 93% of Louisville employees live outside of Louisville, and 7% live within the City, which has influences on commuting corridors including US 36, US 287, and Hwy 119[4]

- Louisville residents work in Boulder (28%) and Denver (14%). Approximately 89% of employed residents work outside of Louisville, which has influences on commuting corridors including US 36, US 287, and Hwy 119[5]

- Anticipated increased queuing distance, delays, and congestion along South Boulder Road with increased background traffic growth, since South Boulder Road is already at capacity

Most of the study area intersections are impacted by the access modifications described below. Specific modifications for each applicable scenario are included in the **Appendix**.

Intersection #3 - South Boulder Road and Cannon Circle intersection: With the development of Coal Creek Village, this intersection will be restricted to a ¾ movement, with left turns out of the site restricted. Vehicles desiring to make a northbound left turn movement out of the site were redistributed on South Boulder Road. Details of this shift can be found in the **Appendix**.

Intersection #4 - South Boulder Road and SH 42 intersection: Due to the restriction of left turns out of the site at Cannon Circle with the development of Coal Creek Village, additional U-turn movements are anticipated at this signalized intersection. A significant weave motion between the site accesses and the SH 42 traffic signal are anticipated to accommodate both U-turns at the signal and eastbound left turn

[3] Louisville TMP, August 2019, Page 3-17
[4] Louisville TMP, August 2019, Page 3-16
[5] Louisville TMP, August 2019, Page 3-15

movements onto SH 42 to use an alternate route to access destinations north and west of the site.

Intersection #5 - SH 42 and Cannon Circle intersection: With the buildout of Coal Creek Village, this intersection will be restricted to a ¾ movement, with left turns out of the site restricted. Per the *Future 42* Plan, the Cannon Circle access will allow right-in, right-out movements only in Year 2045 background and total traffic scenarios.

Vehicles desiring to make left turns at this access were re-routed on SH 42. Details of this shift can be found in the **Appendix**.

Intersection #6 - SH 42 and Griffith Street intersection: Per the *Future 42* Plan, this intersection will be signalized in the future. Therefore, it will be easier to make an eastbound left turn movement in the future at this intersection. Details of this shift can be found in the **Appendix**.

At current intersection volumes, no signal warrants are met. Nor is the intersection anticipated to meet MUTCD warrant volumes with the long-term buildout conditions of Coal Creek Village. The City should monitor the intersection volumes in the future to determine when the intersection may meet MUTCD signal warrant volumes.

Intersection #10 – Front Street and Harper Street intersection: This is currently a free-flowing intersection. There is an unimproved alley access as a third, north leg. All background scenarios assume no change in the current configuration.

This intersection is modeled with two scenarios.

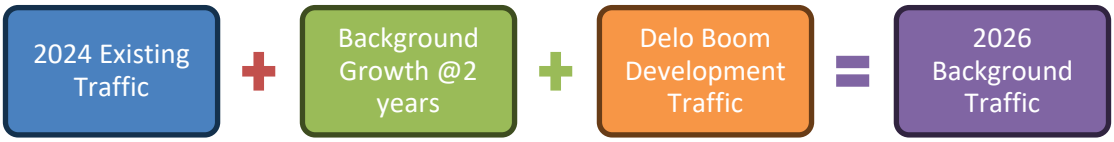
In the Year 2026 and Year 2045 total traffic scenarios with the Front Street connection, it is recommended that Front Street becomes the through street, resulting in the installation of westbound stop-control. Additional traffic are anticipated to utilize the Front Street connection. Details of this shift can be found in the **Appendix**.

Intersection #11 - SH 42 and Harper Street intersection: Per the *Future 42* Plan, the Harper Street access will allow right-in, right-out movements only in Year 2045 background and total traffic scenarios. Vehicles desiring to make left turns at this access were re-routed on SH 42. Details of this shift can be found in the **Appendix**.

4.4 Year 2026 Background Traffic Forecasts

The forecasted Year 2026 background traffic is the combination of the November 2024 existing traffic volumes with the applied average annual traffic growth on the mainline streets and Delo Boom traffic assignment. This calculation methodology is depicted in **Figure 3**. The resulting projected Year 2026 background traffic volumes can be seen in **Figure 5**.

Figure 3: 2026 Background Schematic Diagram



4.5 Year 2045 Background Traffic Forecasts

The forecasted Year 2045 background traffic is the combination of the November 2024 existing traffic volumes with the applied average annual traffic growth on the mainline streets, Delo Boom traffic assignment, and redistributed traffic for the anticipated access control changes. This calculation methodology is depicted in **Figure 4**. The resulting projected Year 2026 background traffic volumes can be seen in **Figure 6**.

Figure 4: 2045 Background Schematic Diagram

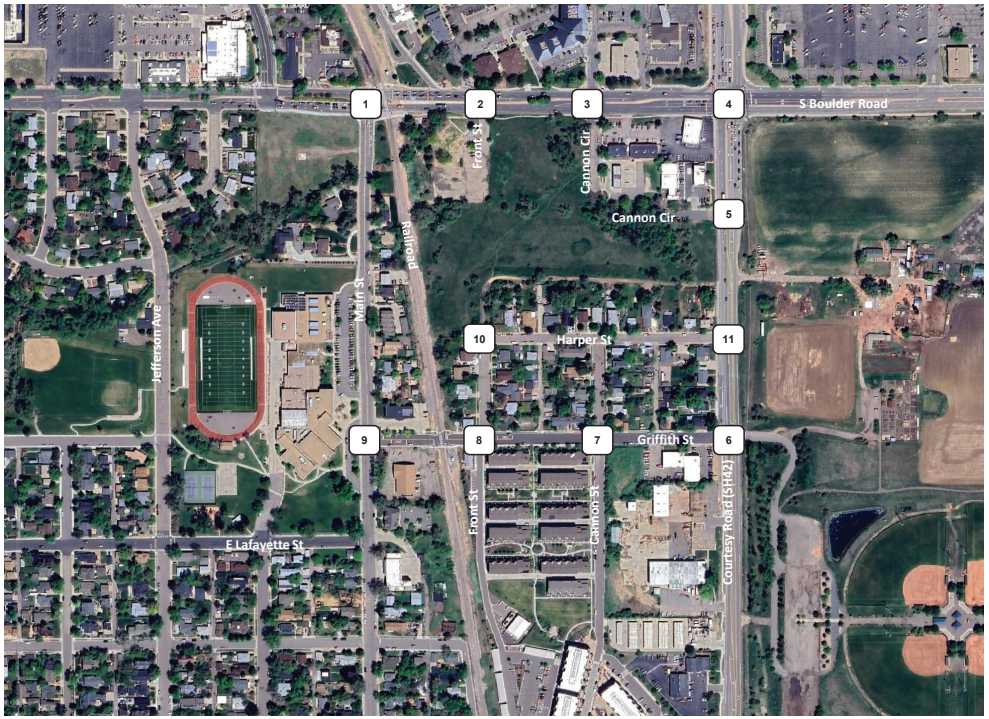


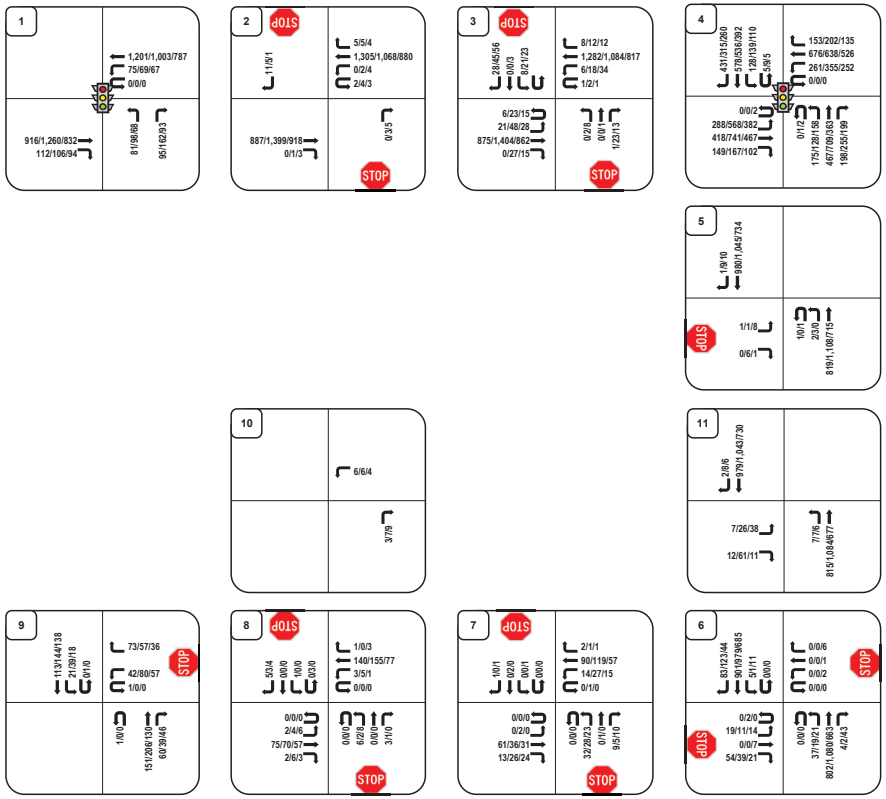
Table 3 summarizes the background traffic intersection scenarios and the corresponding figures used to calculate them.

Table 3: Background Traffic Figures Summary

Scenario (from Table 2)	Existing Traffic	Annual Growth Rate	Delo Boom Traffic	Travel Route Adjustments Figures	Background Traffic Figures
Scenario A: Year 2026 Background Traffic	**Appendix Figure AP01**: Year 2024 Existing Traffic	**Section 4.1**	**Appendix Figure AP02**: Year 2026 Background Traffic (Delo Boom Development)	**Appendix Figure AP04**: Year 2045 Background Adjust (Int #5 & #6 Redistribution)	**Figure 5**: Year 2026 Background Traffic
Scenario B: Year 2045 Background Traffic	**Appendix Figure AP01**: Year 2024 Existing Traffic	Figure **16: Project Generated Traffic Assignment – Scenario D (Residential & Retail)**	**Appendix Figure AP03**: Year 2045 Background Traffic (Delo Boom Development)	**Appendix Figure AP04**: Year 2045 Background Adjust (Int #5 & #6 Redistribution)	**Figure 6**: Year 2045 Background Traffic

Figure 5: Year 2026 Background Traffic





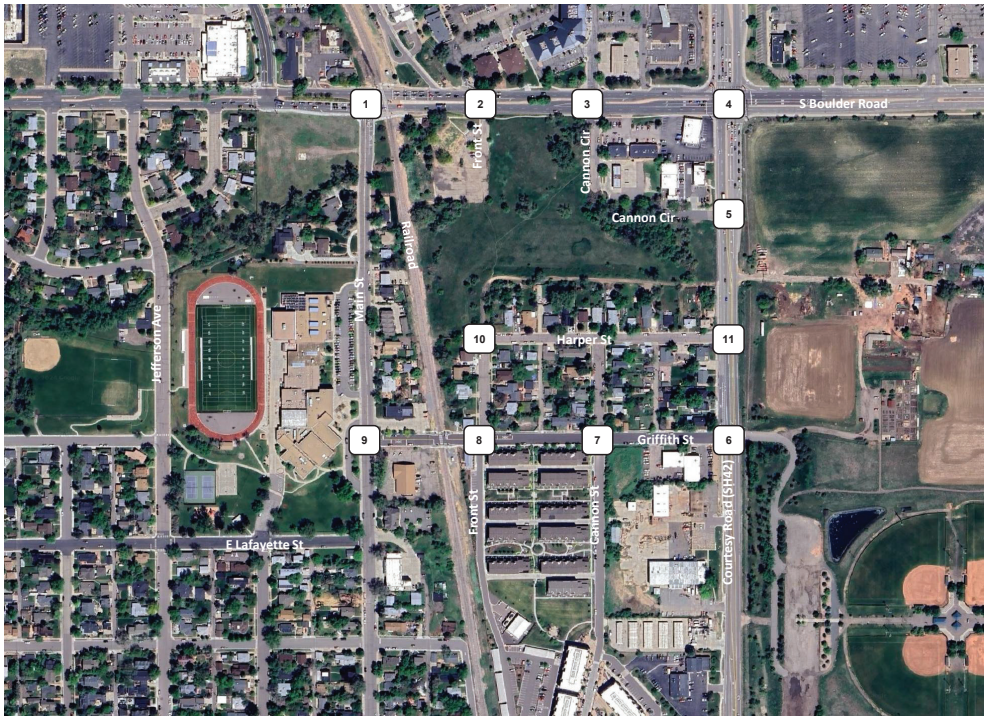
LEGEND:
Directional Distribution = Inbound% (Outbound %)
AM/PM/SAT Volumes = XX/XX/XX VPH (in PCEs)
Turning Movements

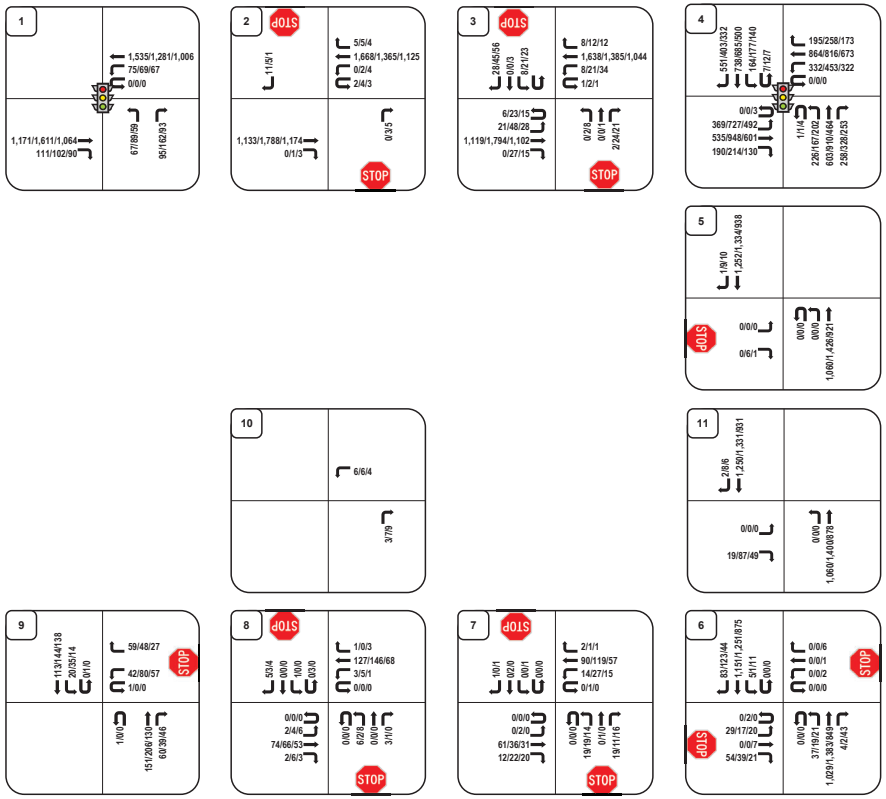
McDowell Engineering, LLC
Transportation Engineering Consultants

Coal Creek Station
Louisville, CO

Project Number M1663
Prepared By GWS
4/23/2025

Figure 6: Year 2045 Background Traffic





LEGEND:
Directional Distribution = Inbound% (Outbound %)
AM/PM/SAT Volumes = XX/XX/XX VPH (in PCEs)
Turning Movements

McDowell Engineering, LLC
Transportation Engineering Consultants

Coal Creek Station
Louisville, CO

Project Number M1663
Prepared By GWS
4/23/2025

4.6 Background Traffic Level of Service

Using *Highway Capacity Manual*[6] *(HCM)* methodology, Synchro Version 10 software was used to determine the delay and Level of Service (LOS.) *HCM* LOS is defined by the following criteria:

Table 4: HCM Level of Service Criteria

LOS	Expected Delay to Minor Street Traffic	Average Signal Delay (Seconds/Vehicle)	Average Stop-Controlled Delay (Seconds/Vehicle)
A	Little or no delay.	0-10	0-10
B	Short traffic delays.	>10-20	>10-15
C	Average traffic delays.	>20-35	>15-25
D	Long traffic delays.	>35-55	>25-35
E	Very long traffic delays.	>55-80	>35-50
F	When volume exceeds the capacity of the lane extreme delays will be encountered with queuing that may cause severe congestion affecting other traffic movements in the intersection. This condition usually warrants improving the intersection.	>80	>50

Table 5 shows the resulting LOS as determined by HCM analysis. The Synchro reports for the background level of service analysis can be found in the **Appendix**. These projections reflect the peak morning and evening traffic in Year 2026 and Year 2045.

[6] Highway Capacity Manual, 6th Edition. Transportation Research Board, 2016.

Table 5: Background Traffic Level of Service

#	Intersection	Traffic Control	Approach	Year 2026 Background Level of Service (Delay in Seconds)			Year 2045 Background Level of Service (Delay in Seconds)		
				AM	PM	SAT	AM	PM	SAT
1	South Boulder Road & Main Street	Signal	EBT	A (7.5)	A (9.6)	A (6.6)	A (8.5)	B (10.8)	A (7.0)
			EBR	A (1.3)	A (2.4)	A (1.4)	A (2.1)	A (3.0)	A (1.4)
			WBL	A (5.1)	A (7.4)	A (3.1)	A (5.1)	A (9.5)	A (2.9)
			WBT	A (5.9)	A (6.6)	A (3.2)	A (7.3)	A (7.9)	A (2.9)
			NBL	D (55.0)	E (55.3)	D (47.5)	D (53.1)	E (59.8)	D (47.0)
			NBR	B (13.9)	B (15.3)	B (14.4)	B (14.1)	C (29.0)	B (15.0)
2	South Boulder Road & Front Street	3/4, NB/SB Stop	WBL	C (15.3)	C (24.3)	B (12.9)	C (20.5)	E (41.3)	C (16.3)
			NB	A (0.0)	C (15.9)	B (12.3)	A (0.0)	C (20.1)	B (14.0)
			SB	C (15.3)	B (13.3)	B (12.0)	C (19.1)	C (15.6)	B (13.6)
3	South Boulder Road & Cannon Circle	NB/SB Stop	EBL	C (16.6)	C (16.9)	B (12.5)	C (24.8)	D (25.8)	C (15.6)
			WBL	B (10.9)	C (16.2)	B (10.6)	B (12.5)	C (23.2)	B (12.2)
			NB	B (12.0)	E (47.6)	E (44.3)	B (13.6)	F (186.8)	F (91.1)
			SB	E (50.0)	F (324.2)	F (53.2)	F (194.7)	F (1776.7)	F (216.3)
4	SH 42 (Courtesy Road) & South Boulder Road	Signal	EBL	E (55.1)	F (121.1)*	F (505.8)*	E (63.8)*	F (215.3)*	F (863.0)*
			EBT	C (30.2)	D (46.2)*	C (25.2)	C (29.4)	D (41.7)*	C (25.8)
			EBR	-	-	-	B (11.3)	A (9.1)	A (1.8)
			WBL	E (61.5)	F (109.4)*	E (75.6)*	E (65.1)*	F (167.8)*	F (99.5)*
			WBT	D (42.5)	D (47.3)	C (33.7)	D (48.4)*	E (56.6)*	C (34.9)
			WBR	A (4.9)	A (7.8)	A (1.8)	A (8.5)	B (14.5)	A (3.7)
			NBL	E (63.0)	F (180.8)*	F (183.0)*	F (529.6)*	F (305.6)*	F (313.5)*
			NBT	C (32.6)	E (76.8)*	C (26.6)	D (35.5)	D (48.8)*	C (25.0)
			NBR	-	-	-	A (9.4)	B (12.2)	A (7.4)
			SBL	F (193.3)*	F (240.4)*	F (94.1)*	F (321.4)*	F (372.3)*	F (152.0)*
			SBT	D (37.0)	D (38.6)	C (29.2)	D (39.2)	D (40.2)	C (29.1)
			SBR	B (17.0)	A (6.0)	A (5.4)	C (31.8)*	A (9.2)	A (6.9)
5	SH 42 (Courtesy Rd) & Cannon Circle	EB Stop	EB	F (65.1)	D (28.5)	E (38.2)	A (0.0)	C (15.2)	B (12.2)
			NBL	B (14.1)	B (11.0)	C (15.7)	-	-	-
6	SH 42 (Courtesy Road) & Griffith Street	EB/WB Stop	EB	F (76.4)	F (96.9)	E (39.2)	-	-	-
			WB	F (70.2)	F (115.0)	D (26.5)	-	-	-
			NB	A (0.5)	A (0.2)	A (0.3)	-	-	-
			SB	A (0.0)	A (0.0)	A (0.1)	-	-	-
6	SH 42 (Courtesy Road) & Griffith Street	Signal	EBL	-	-	-	C (26.7)	C (25.3)	C (20.5)
			EBT	-	-	-	A (0.7)	A (0.5)	B (11.0)
			WBL	-	-	-	C (24.0)	C (24.0)	B (18.5)
			WBT	-	-	-	C (21.0)	C (21.0)	B (13.3)
			NBL	-	-	-	C (26.5)	C (25.1)	B (17.7)
			NBT	-	-	-	A (3.9)	A (4.9)	A (4.8)
			SBL	-	-	-	C (29.0)	C (32.0)	B (17.5)
			SBT	-	-	-	A (4.4)	A (5.2)	A (4.7)
			SBR	-	-	-	A (0.6)	A (1.7)	A (0.7)
7	Griffith Street & Cannon Street	NB/SB Stop	EB	A (0.0)	A (0.2)	A (0.0)	A (0.0)	A (0.3)	A (0.0)
			WB	A (1.0)	A (0.0)	A (1.5)	A (1.0)	A (0.0)	A (1.5)
			NB	A (9.9)	B (10.3)	A (9.4)	A (9.6)	A (9.9)	A (9.2)
			SB	A (8.9)	B (10.7)	A (9.1)	A (8.9)	B (10.7)	A (9.2)
8	Griffith Street & Front Street	NB/SB Stop	EB	A (0.2)	A (0.4)	A (0.7)	A (0.2)	A (0.4)	A (0.7)
			WB	A (0.2)	A (0.2)	A (0.1)	A (0.2)	A (0.2)	A (0.1)
			NB	A (9.9)	A (10.0)	A (9.8)	A (9.8)	A (9.9)	A (9.7)
			SB	A (9.3)	A (9.2)	A (8.8)	A (9.3)	A (9.2)	A (8.8)
9	Griffith Street & Main Street	WB Stop	WB	B (13.9)	B (12.9)	B (11.2)	B (13.6)	B (12.8)	B (11.2)
			SB	A (1.3)	A (0.0)	A (0.9)	A (1.2)	A (0.0)	A (0.7)
10	Harper Street & Front Street	None	WB	-	-	-	-	-	-
			SB	-	-	-	-	-	-
11	SH 42 (Courtesy Rd) & Harper Street	EB Stop	EB	D (33.7)	F (118.0)	E (40.9)	B (14.7)	C (18.2)	B (12.9)
			NBL	B (10.4)	B (10.7)	A (9.3)	-	-	-

* Indicates LOS F with volume exceeding capacity (delays in seconds likely not accurate due to modelling limitations)

As can be seen in **Table 5**, unsignalized intersections on South Boulder Road and SH 42 will continue to see longer wait times/delay as traffic on these arterial streets continue to grow and there are less gaps in traffic to make a left turn movement onto the larger road. Left turns at the South Boulder Road and SH 42 traffic signal continue to be starved for time, resulting in failing LOS for these movements. These degradations and failures will occur with or without the addition of the proposed Coal Creek Village traffic.

Intersection #1 - South Boulder Road and Main Street Intersection: This 3-legged intersection is signalized. The signal is coordinated with the BNSF Railroad crossing that is located on the eastern leg of the intersection.

This intersection will see acceptable LOS A and B on all mainline eastbound and westbound movements. As is typical with side streets to major arterials, the side street receives less green time from the traffic signal. As the signal timing is currently set, Main Street is anticipated to operate with failing LOS E and F. Overall intersection LOS is B or better through Year 2045 background traffic conditions.

Intersection #2 - South Boulder Road and Front Street Intersection: This unsignalized intersection is anticipated to operate at an acceptable overall intersection LOS A for Year 2026 background traffic conditions and LOS B through Year 2045 background traffic conditions.

The northbound right turn movement is anticipated to operate LOS C or better through background Year 2045 conditions.

The westbound left turn is currently operating at an acceptable LOS C. By Year 2045 background traffic conditions, this movement is anticipated to degrade to a LOS E, as gaps in South Boulder Road traffic decrease.

Intersection #3 - South Boulder Road and Cannon Circle intersection: This full-movement intersection currently serves a commercial driveway to the north and Cannon Circle to the south. All mainline South Boulder Road movements are anticipated to operate at an acceptable LOS of D or better through Year 2045 background traffic conditions.

As is typical with unsignalized side street traffic accessing a major arterial, side street traffic operations for left and through movements will continue to degrade over time as traffic volumes on South Boulder Road continue to grow. The northbound and southbound movements are anticipated to experience failing LOS F operations.

The City of Louisville completed a *South Boulder Road Corridor Evaluation*[11]. The resulting recommendations determined that signalization is not appropriate at Cannon Circle due to spacing constraints to the SH 42 traffic signal. Refer to an excerpt in the **Appendix**.

Intersection #4 - South Boulder Road and SH 42 intersection: This is a full-movement, signalized intersection. The *Future 42* plan depicts intersection improvements that include northbound and eastbound channelized right turn lanes. The Year 2045 background and total traffic scenarios are modeled assuming the westbound and southbound right turn lanes are constructed. Even with these future improvements, this intersection has movements that are anticipated to operate at a failing LOS F for both Year 2026 and Year 2045 background conditions. The overall intersection LOS is between D and F for these scenarios.

This intersection has below acceptable LOS due to the high traffic volumes it handles. The current traffic volumes are too high to be flushed out of the intersection within one cycle during peak traffic hours. This causes vehicles to wait in queues for more than one cycle. LOS on the north and south legs of SH 42 are slightly better than on the South Boulder Road's east and west legs. This is due to CDOT's prioritization of SH 42 and giving the highway more green time.

Intersection #5 - SH 42 and Cannon Circle intersection: This is currently a full-movement "T" intersection. Mainline SH 42 is anticipated to operate at good LOS in Year 2026 background traffic conditions. However, the eastbound leg is already experiencing failing LOS F during peak traffic hours.

Future 42 identifies that this access will be restricted to right-in, right-out only movements in the future. This improvement would likely coincide with the signalization of the SH 42 and Griffith Street intersection. With the access restriction, this access will operate at acceptable LOS C or better through Year 2045 background traffic conditions.

Intersection #6 - SH 42 and Griffith Street intersection: This is currently a full-movement intersection. Mainline SH 42 is anticipated to operate at acceptable LOS A under short-term background traffic conditions. However, the side streets are currently seeing significant delays during peak traffic. The west leg is currently operating at a LOS F due to the delay experienced turning out onto SH 42.

Per the *Future 42* Plan, the TIS assumes that this intersection will be signalized in the future. Year 2045 background and total traffic scenarios are modeled with a traffic signal. The signal timing used assumed a half-cycle (from the South Boulder Road intersection) of 60 seconds for the morning and evening peak hours and 50 seconds for the Saturday peak hour. The green time on SH 42 was prioritized. The maximum bandwidth was used to coordinate the signals with the SH 42 and South Boulder Road intersection. This improved the northbound LOS at the SH 42 and South Boulder Road intersection. The southbound movement into this intersection was limited by the constraints of the upstream South Boulder Road cycle.

The side street operations are anticipated to improve to LOS C with signalization. Mainline SH 42 may degrade due to the added delay to the corridor. SH 42 is

anticipated to operate at a LOS D or better through Year 2045 background traffic conditions.

Intersection #7 – Griffith Street and Cannon Street intersection: This is a full-movement intersection with stop-control on the north and south legs. This intersection is anticipated to operate at acceptable LOS A or B for all movements for both Year 2026 and Year 2045 background conditions.

Intersection #8 – Griffith Street and Front Street intersection: This is a full-movement intersection with stop-control on the north and south legs. This intersection is anticipated to operate at LOS A for all movements for both Year 2026 and Year 2045 background conditions.

Intersection #9 – Griffith Street and Main Street intersection: This is a full-movement "T" intersection. The east leg is stop-controlled. This intersection is anticipated to operate at LOS B or better for all movements for both Year 2026 and Year 2045 background conditions.

Intersection #10 – Front Street and Harper Street intersection: This is currently a free-flowing intersection. There is an unimproved alley access as a third, north leg. All background scenarios assume no change in the current configuration. All legs of this intersection are anticipate to operate at a LOS A.

Intersection #11 – SH 42 and Harper Street intersection: Left turns at this intersection currently experience delay into and out of the site during peak traffic on SH 42. Currently, through movements on SH 42 are operating at a LOS A. Eastbound Harper Street is operating at a LOS F during the evening peak hour.

Per the *Future 42* Plan, the Harper Street access will be restricted to right-in, right-out movements by the Year 2045 background traffic conditions. With this scenario, the eastbound movement is anticipated to improve to a LOS C.

5.0 Project Traffic

5.1 Trip Generation

The Institute of Transportation Engineers' (ITE) *11th Edition of the Trip Generation Manual*[7] *(Trip Generation Manual)* was used to determine the anticipated trip generation for the Coal Creek Village development. Site-generated traffic volumes were determined for the weekday morning peak hour, the weekday afternoon peak hour, and the Saturday midday peak hour.

The trip generation analysis used the following ITE Land Uses:

Table 6: ITE Land Use Codes

ITE Code	Land Use Category	Size	
220	Multifamily Housing (Low-Rise)	188	Dwelling Units
822	Retail Plaza (<40K)	13.53	1000 Sq. Ft. GFA*
930	Fast Casual Restaurant (Existing Empanada Shop)	0.43	1000 Sq. Ft. GFA*

GFA = Gross Floor Area

As per ITE's *Trip Generation Handbook*[8] methodology, the trip generation regression equations and average rates were utilized as part of this analysis.

Existing Empanada Shop: As previously mentioned, the existing Empanada shop was operating during the November 2024 traffic data collection. Therefore, the existing and background traffic counts already include the empanada shop's traffic.

It is anticipated that with the buildout of the Coal Creek Village project, a portion of Coal Creek Village's residents and patrons will access the empanada shop. Therefore, an internal capture reduction is applied to the existing empanada shop's traffic in the total traffic scenarios.

Multimodal Reduction: A five percent (5%) multimodal reduction was applied to all the proposed land uses. The development is within walking and biking distance to Louisville Middle School, Fairview Montessori School, the Louisville Sports Complex, and various commercial facilities. There are bike lanes on South Boulder Road and on SH 42. There are bus stops for the RTD DASH Route adjacent to the development on South Boulder Road.

Internal Capture: Internal capture traffic refers to trips that occur within a mixed-use development (like trips between a residential area and a retail area within the same site), rather than trips that originate or end outside the development. This capture

[7] Trip Generation Manual, 11th Edition. Institute of Transportation Engineers, 2021.
[8] Trip Generation Handbook, 3rd Edition. Institute of Transportation Engineers, 2017.

reduces the overall number of trips that would otherwise use the external road network.

The ITE *Trip Generation Handbook*[9] was used to determine the internal capture reductions for the proposed residential and commercial developments. Internal reduction calculations for the average weekday, AM peak hour, and PM peak hour are included in the **Appendix**. Data for the Saturday peak hour was not available. Therefore, the internal reductions rates for the PM peak hour were used for the Saturday peak hour.

Project Trip Generation: The proposed development is expected to generate a total of 1,839 vehicle trips on the adjacent roadway network over the course of an average weekday (vpd). This includes 175 vehicle trips per hour (vph) during the morning peak hour, 244vph during the evening peak hour, and 144vph during the Saturday peak hour.

The existing empanada shop is already generating traffic, as detailed in the traffic counts and **Table 7**. The additional development is anticipated to generate an additional 1,779 vehicle trips on the adjacent roadway network over the course of an average weekday (vpd). This includes 173 vehicle trips per hour (vph) during the morning peak hour, 238vph during the evening peak hour, and 132vph during the Saturday peak hour.

[9] Trip Generation Handbook, 2nd Edition. Institute of Transportation Engineers, 2004.

Table 7: Project Trip Generation

ITE Code	Units [2]		Eq. Coef	ITE Trip Generation Equation [3] Avg. Weekday	AM Peak Hour	PM Peak Hour	Sat. Peak Hour	Average Weekday Trips (vpd)	Morning Peak Hour Inbound % Trips	Morning Peak Hour Inbound Trips (vph)	Morning Peak Hour Outbound % Trips	Morning Peak Hour Outbound Trips (vph)	Evening Peak Hour Inbound % Trips	Evening Peak Hour Inbound Trips (vph)	Evening Peak Hour Outbound % Trips	Evening Peak Hour Outbound Trips (vph)	Saturday Peak Hour Inbound % Trips	Saturday Peak Hour Inbound Trips (vph)	Saturday Peak Hour Outbound % Trips	Saturday Peak Hour Outbound Trips (vph)
Existing Land Use																				
Empanada Shop (Actual Derived Rate Equations) [6]	0.43	kSF	Type a= b=	Rate 139.53	Rate 4.65	Rate 13.95	Rate 27.91	60	50%	1	50%	1	50%	3	50%	3	58%	7	42%	5
Existing External Restaurant Vehicular Trips								**60**		**1**		**1**		**3**		**3**		**7**		**5**
Internal Capture Reduction[4]								-23		0		0		-1		-1		-2		-2
External Restaurant Vehicular Trips with Buildout of Coal Creek Station [7]								**37**		**1**		**1**		**2**		**2**		**5**		**3**
										2				***4***				***8***		
Proposed Residential Land Use																				
#220 - Multifamily Housing (Low-Rise)	188	DU	Type a= b=	A 6.41 75.31	A 0.35 28.13	A 0.42 34.78	Rate 0.41	1,280	24%	23	76%	71	62%	71	38%	43	51%	39	49%	38
Multi-Modal Reduction		*-5%*						*-64*		*-1*		*-4*		*-4*		*-2*		*-2*		*-2*
Vehicular Trips								**1,216**		**22**		**67**		**67**		**41**		**37**		**36**
Internal Capture Reduction[4]								-82		-3		-2		-10		-9		-6		-5
Project External Residential Vehicular Trips								**1,134**		**19**		**65**		**57**		**32**		**31**		**31**
										84				***89***				***62***		
Proposed Commercial Land Use																				
#822 - Retail Plaza[5]	13.53	kSF	Type a= b=	A 42.20 229.68	Rate 7.60	Rate 13.24	Rate 6.57	801	50%	51	50%	51	54%	97	46%	82	51%	45	49%	44
Multi-Modal Reduction		*-5%*						*-40*		*-3*		*-3*		*-5*		*-4*		*-2*		*-2*
Vehicular Trips								**761**		**48**		**48**		**92**		**78**		**43**		**42**
Internal Capture Reduction[4]								-93		-3		-4		-9		-10		-5		-6
Project External Commercial Vehicular Trips								**668**		**45**		**44**		**83**		**68**		**38**		**36**
										89				***151***				***74***		
Project Trip Generation Summary																				
Existing External Restaurant Vehicular Trips								**60**		**1**		**1**		**3**		**3**		**7**		**5**
External Restaurant Vehicular Trips with Buildout of Coal Creek Station7								**37**		**1**		**1**		**2**		**2**		**5**		**3**
										2				***4***				***8***		
Project External Residential Vehicular Trips								**1,134**		**19**		**65**		**57**		**32**		**31**		**31**
										84				***89***				***62***		
Project External Commercial Vehicular Trips (Less Empanada Shop Internal Capture)								**645**		**45**		**44**		**82**		**67**		**36**		**34**
										89				***149***				***70***		
Project Total New Vehicular Trips (Restaurant's new internal capture + residential + commercial)								**1,779**		**64**		**109**		**139**		**99**		**67**		**65**
										173				***238***				***132***		
Project Total Vehicular Trips (Including Existing Restaurant + Restaurant's new internal capture + residential + commercial)								**1,839**		**65**		**110**		**142**		**102**		**74**		**70**
										175				***244***				***144***		

Notes:

[1] Values obtained from *Trip Generation, 11th Edition,* Institute of Transportation Engineers, September 2021.

[2] vpd = vehicle trips per day, vph = vehicle trips per hour, DU = Dwelling Units, kSF = 1,000 Square Feet

[3] Fitted curve equations from ITE Land Uses - Equation Type A is T = a * X + b, Equation Type B is Ln(T) = a * Ln(X) + b, Rate is T = a * X

[4] Internal capture reductions were obtained from the *ITE Trip Generation Handbook*, Second Edition, June 2004. See calculations in Appendix.

[5] The ITE Trip Generation Manual did not have available data for the directional distribution of the Saturday peak hour. Therefore, the distribution from mid-rise multifamily housing was used.

[6] Trip generation rates were calculated from existing traffic counts onsite. Weekday rates were estimated by using a 10% DHV rate based upon the PM Peak hour. A minimum of 1vph inbound/outbound was used for the AM peak (Actual counts were 0vph inbound and 0vph outbound)

[7] External Restaurant Vehicular Trips are the sum of the empanada shop existing traffic with the anticipated internal capture traffic reduction that will occur at project buildout.

5.2 Trip Distribution

The distribution of project-generated vehicular traffic on adjacent roadways is influenced by several factors including the following:

- The location of the site relative to other commercial and healthcare facilities and the roadway network.
- The configuration of the existing and proposed adjacent roadway network
- Relative location of neighboring population centers.
- The proposed development has four accesses.
    - Distributions per access are dependent upon the general origin/destination of traffic.
    - Access restrictions are being imposed for Coal Creek Village's two accesses onto South Boulder Road and access onto SH 42. This will significantly impact Coal Creek Village's residents and patrons that wish to make the following movements:
        - Westbound on South Boulder Road
        - Northbound on SH 42
- Access control variations for each analysis scenario (from **Table 2**), with consideration for travel times and access configurations and restrictions.

From the review of the traffic data, TMP data, and factors described above; it was determined that generally 30% of site traffic is coming from/going to the west on South Boulder Road, 20% has destinations/origins to the north on SH 42, 20% has destinations/origins to the south on SH 42, 20% has destinations/origins to the south in the Main Street area, and 10% has destinations/origins to the east on South Boulder Road.

5.3 Internal Site Circulation

The proposed street configuration for Coal Creek Village provides good internal circulation and alternate routes to access adjacent arterial streets. Access restrictions will require that drivers wanting to go west on South Boulder Road or north on SH 42 may need to adjust their travel routes, as left turns out of the site are prohibited onto these two roadways.

Sidewalks are proposed throughout the development. Adjacent access to transit is provided at South Boulder Road and Main Street.

5.4 Front Street Connection Analysis Scenarios

This study analyzes the transportation impacts with and without the Front Street connection. Refer to **Section 3.2** of the report for more information on the two alternatives modeling the anticipated transportation network impacts with and without the Front Street connection.

With the Front Street Connection: In the Year 2026 and Year 2045 total traffic scenarios with the Front Street connection, it is recommended that Front Street becomes the through street, resulting in the installation of westbound stop-control. This connection aligns with the City of Louisville's previous *The Highway 42 Revitalization Area Framework Plan*[14] and *42 Gateway Alternative Analysis Report*[15] plans to connect South Boulder Road and Griffith Street via Front Street. Excerpts from these reports are included in the **Appendix**.

Additionally, per Louisville's *Transportation Master Plan*, "Louisville's transportation network is focused on a few major corridors, for which there aren't many readily available substitutes. This means it may be difficult to shift travel to lesser-traveled routes that would help handle additional future capacity."

Front Street is an example of an alternative roadway connector that can provide the traditional gridded street network that is more efficient and has more capacity for the area. This also allows for narrower street sections that benefit pedestrian and multimodal travel. The Front Street connection provides redundancy for Louisville's transportation network in the event of an emergencies, such as fire and other emergency response providers.

As traffic volumes on South Boulder Road and SH 42 are significant and anticipated to increase over time, the City of Louisville is implementing access control restrictions on side streets. As access restrictions are being imposed for Coal Creek Village's two accesses onto South Boulder Road and access onto SH 42, some site traffic is anticipated to utilize Front Street to access their destinations. Details are of the site traffic's anticipated directional distribution and background traffic's travel route adjustments are documented in the **Appendix**.

Without the Front Street Connection: In the Year 2026 and Year 2045 total traffic scenarios without the Front Street connection, no changes from the current conditions are considered. Thus, no additional traffic volume is anticipated on Front Street.

Combined with the South Boulder Road and SH 42 access restrictions, Coal Creek Village's residents and patrons that wish to make westbound movements on South Boulder Road and northbound movements on SH 42 will be required to make weave movements across South Boulder Road to access the eastbound left turn lane at the SH 42 traffic signal to make U-turns or left turns onto SH 42 for an alternate travel route.

5.5 Travel Route Adjustments for Modified Access Scenarios

As detailed in **Section 4.3**, modifications to the allowed turning movements at the analysis intersections, future construction of a traffic signal at SH 42 and Griffith Street, and scenarios with and without Front Street connection from South Boulder

Road to Griffith Street will impact the travel routes of both existing and future traffic. Specific modifications for each applicable scenario are included in the **Appendix**.

5.6 Site-Generated Traffic

When the anticipated project trip generation (**Table 7**) is applied for the anticipated retail and residential distributions, the result is the new anticipated traffic assignment for the proposed Coal Creek Village. Traffic assignment for each analysis scenario is a combination of the following trip generation and directional distribution as shown below in **Table 8**.

For instance, for Scenario C (Year 2025 Total Traffic with a Front Street connection), the anticipated vehicular traffic assignment (**Figure 13**) is the result of applying the anticipated trip generation (**Table 7**) to the residential distribution (**Figure 11**) and the retail distribution (**Figure 12**).

5.7 Total Traffic

The forecasted Year 2026 and Year 2045 total traffic is the combination of the background traffic forecasts with Coal Creek Village's anticipated traffic assignment, and travel route adjustments for that scenario. Both the short-term and long-term projections include scenarios with and without the Front Street connection.

Figure 7: Year 2026 Total – With Front Street Connection Schematic Diagram



Figure 8: Year 2045 Total – With Front Street Connection Schematic Diagram



Figure 9: Year 2026 Total – Without Front Street Connection Schematic Diagram

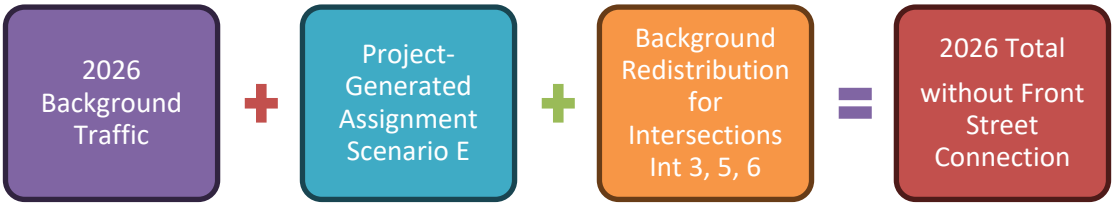


Figure 10: Year 2045 Total – Without Front Street Connection Schematic Diagram

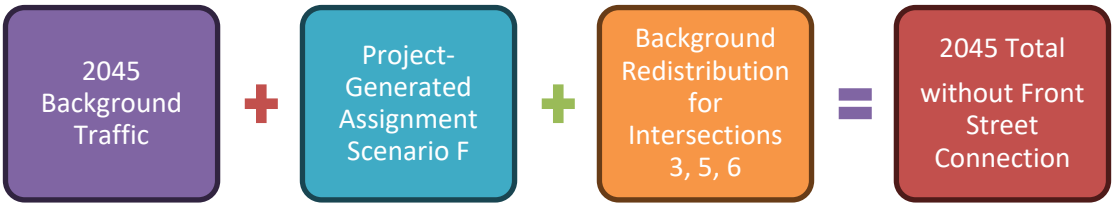
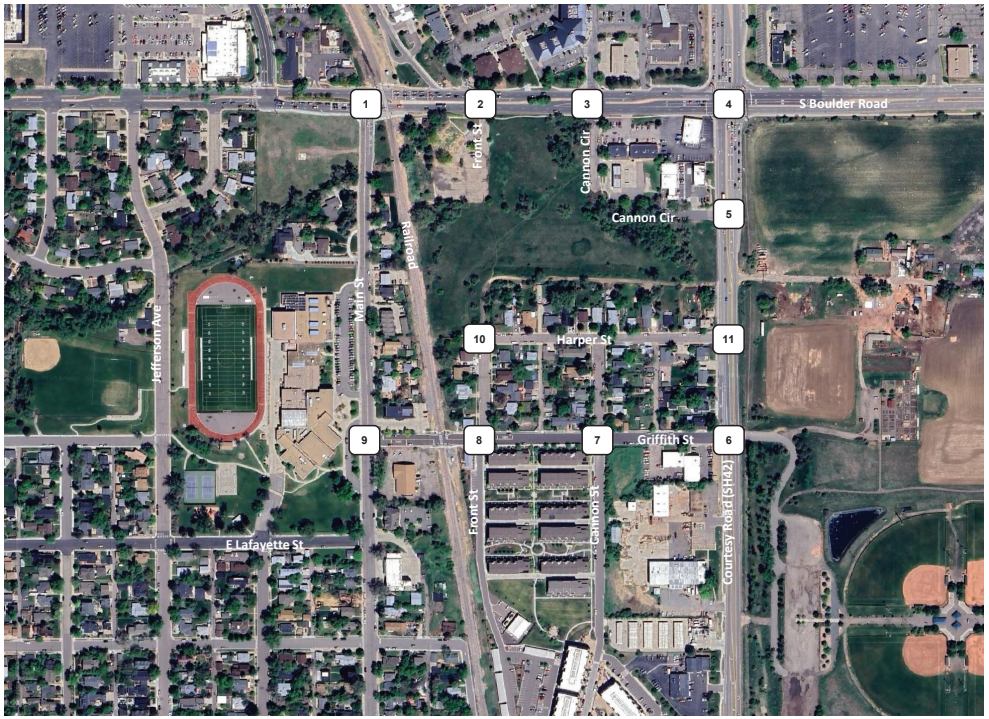


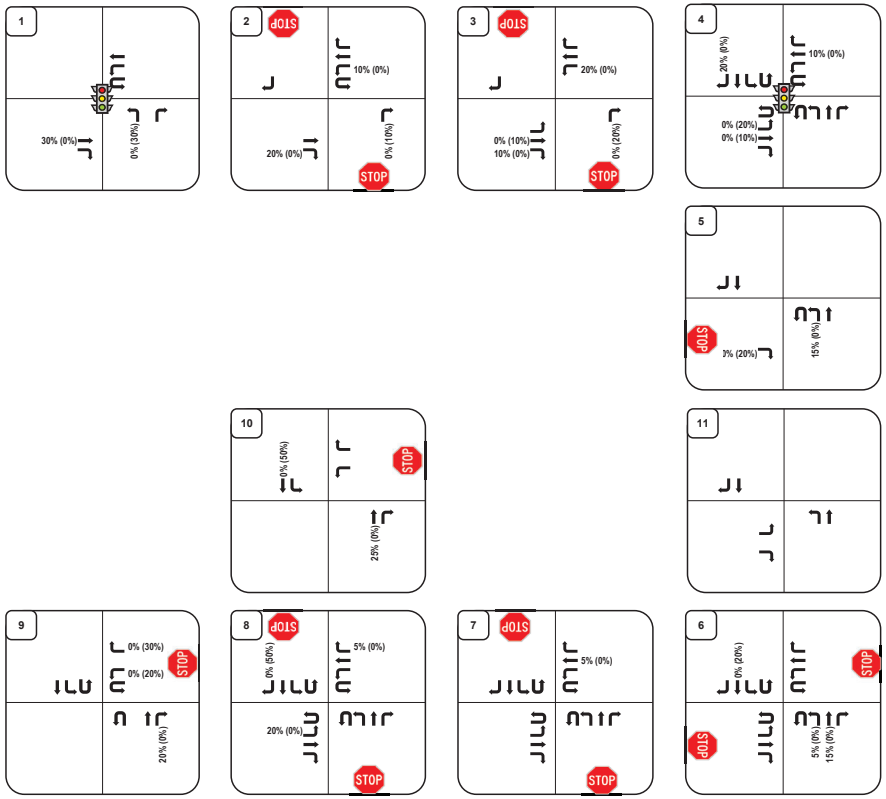
Table 8 summarizes the background traffic intersection scenarios and the corresponding figures used to calculate them.

Table 8: Total Traffic Figures Summary

Scenario (from Table 2)	Distribution Figures	Assignment Figures	Travel Route Adjustments Figures	Total Traffic Figures
Scenario C: Year 2026 Total Traffic with Front Street Connection	**Figure 11**: Project Generated Traffic Distribution – Scenario C (Residential) **Figure 12**: Project Generated Traffic Distribution – Scenario C (Retail)	**Figure 13**: Project Generated Traffic Assignment – Scenario C (Residential & Retail)	**Appendix Figure AP05**: Background Adjust for Total (Int #3 Redistribution) **Appendix Figure AP06**: Front Street Diverted Traffic (Year 2026)	**Figure 7**: Year 2026 Total – With Front Street Connection Schematic Diagram
Scenario D: Year 2045 Total Traffic with Front Street Connection	**Figure 14**: Project Generated Traffic Distribution – Scenario D (Residential) **Figure 15**: Project Generated Traffic Distribution – Scenario D (Retail)	**Figure 16**: Project Generated Traffic Assignment – Scenario D (Residential & Retail)	**Appendix Figure AP05**: Background Adjust for Total (Int #3 Redistribution) **Appendix Figure AP07**: Front Street Diverted Traffic (Year 2045)	Figure 8: Year 2045 Total – With Front Street Connection *Schematic* Diagram
Scenario E: Year 2026 Total Traffic without Front Street Connection	**Figure 17**: Project Generated Traffic Distribution – Scenario E (Residential) **Figure 18**: Project Generated Traffic Distribution – Scenario E (Retail)	**Figure 19**: Project Generated Traffic Assignment – Scenario E (Residential & Retail)	**Appendix Figure AP05**: Background Adjust for Total (Int #3 Redistribution)	**Figure 9**: Year 2026 Total – Without Front Street Connection Schematic Diagram
Scenario F: Year 2045 Total Traffic without Front Street Connection	**Figure 20**: Project Generated Traffic Distribution – Scenario F (Residential) **Figure 21**: Project Generated Traffic Distribution – Scenario F (Retail)	**Figure 22**: Project Generated Traffic Assignment – Scenario F (Residential & Retail)	**Appendix Figure AP05**: Background Adjust for Total (Int #3 Redistribution)	**Figure 10**: Year 2045 Total – Without Front Street Connection Schematic Diagram

Figure 11: Project Generated Traffic Distribution - Scenario C (Residential)





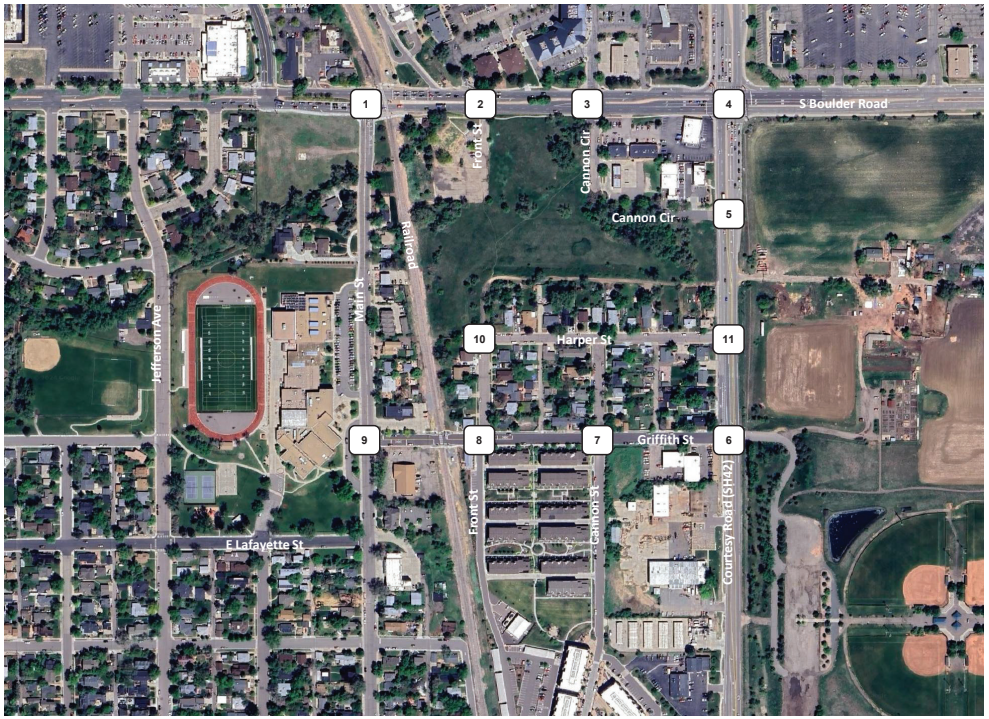
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AM/PM/SAT Volumes = XX/XX/XX VPH (in PCEs)
Turning Movements

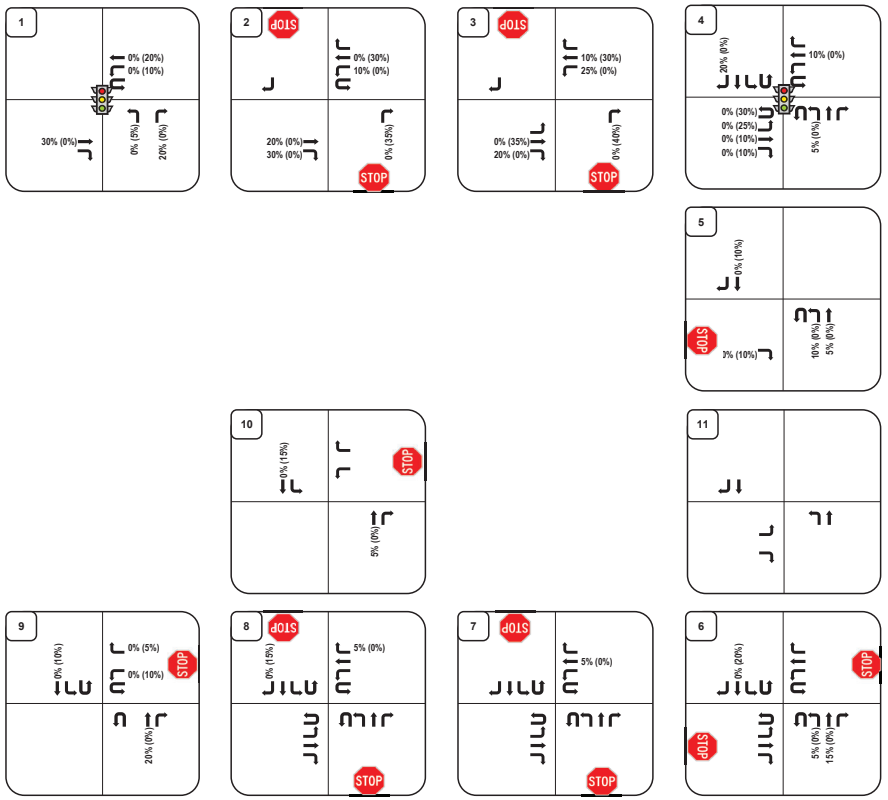
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Figure 12: Project Generated Traffic Distribution - Scenario C (Retail)





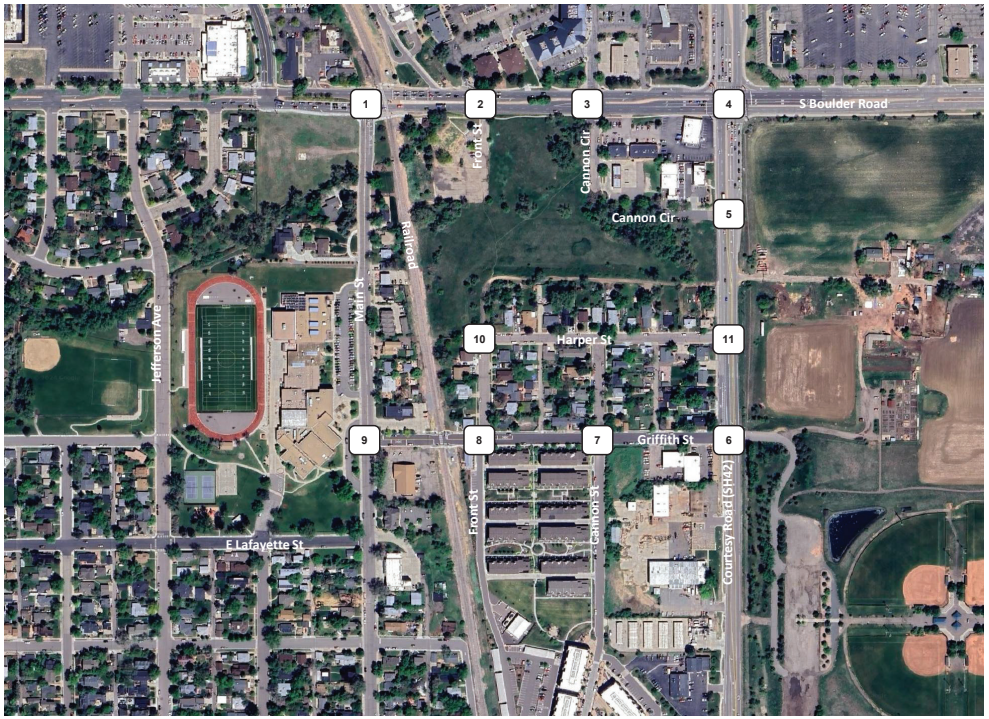
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Turning Movements

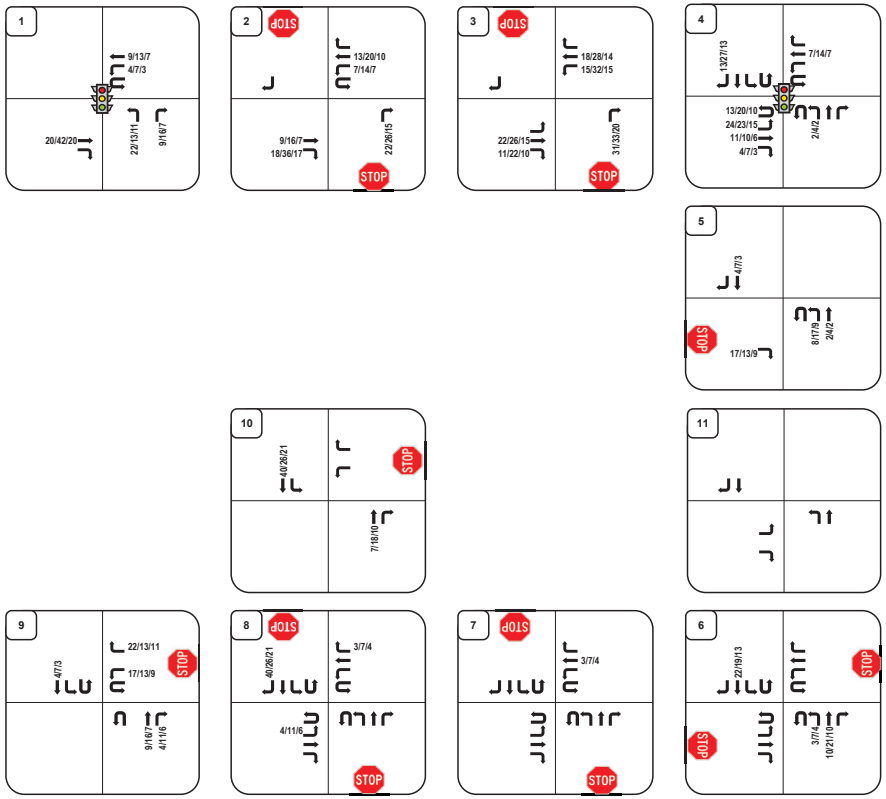
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Figure 13: Project Generated Traffic Assignment - Scenario C (Residential & Retail)





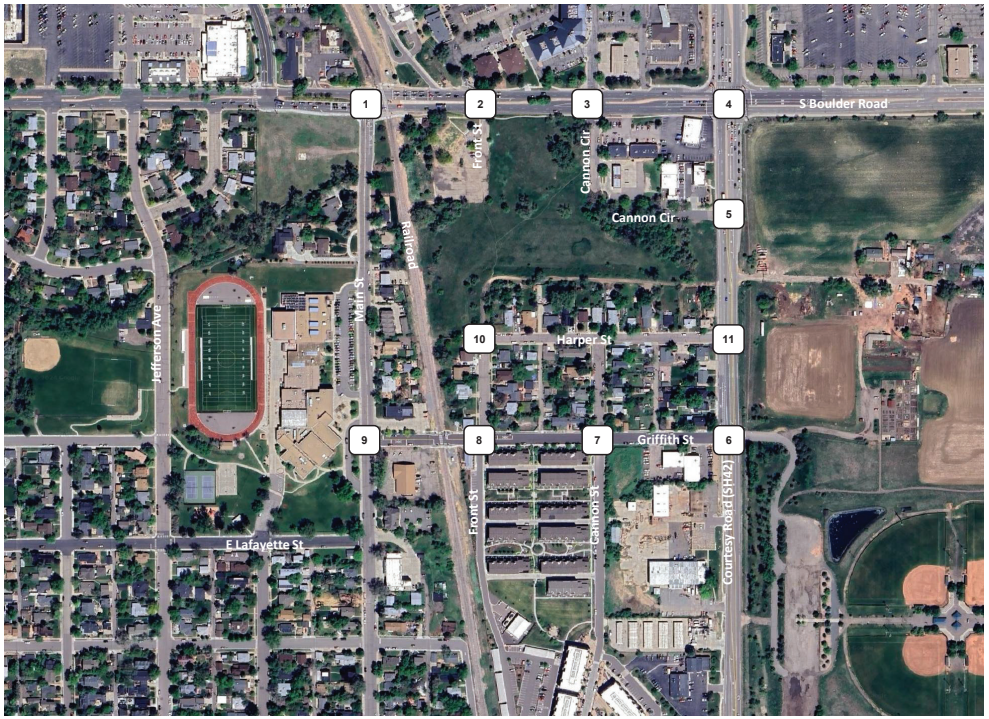
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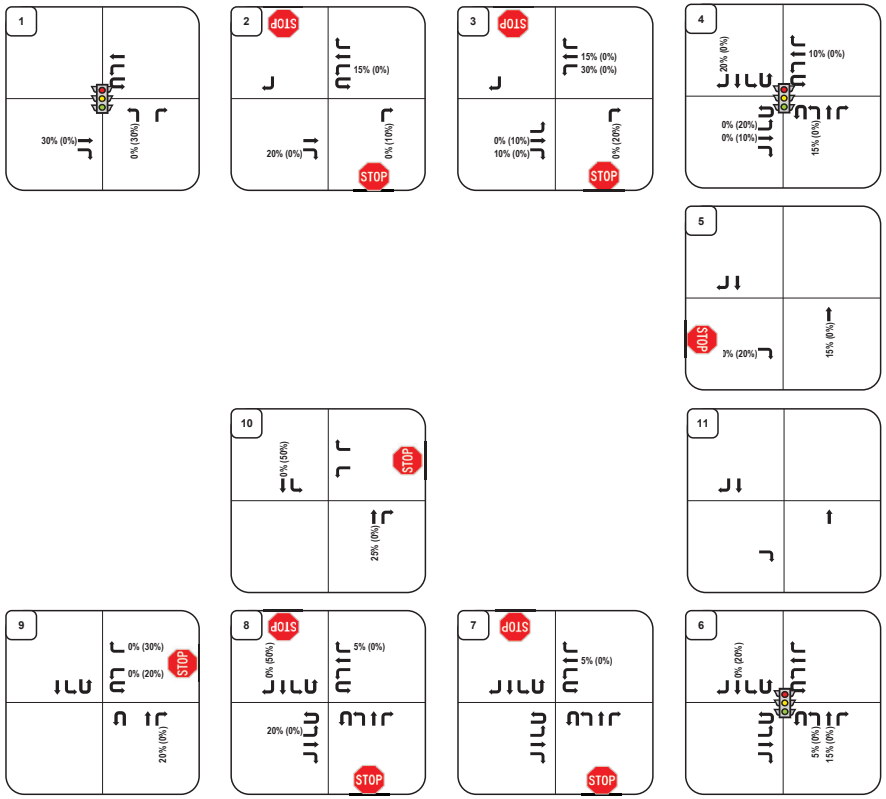
LEGEND:
Directional Distribution = Inbound% (Outbound %)
AM/PM/SAT Volumes = XX/XX/XX VPH (in PCEs)
Turning Movements

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Figure 14: Project Generated Traffic Distribution - Scenario D (Residential)





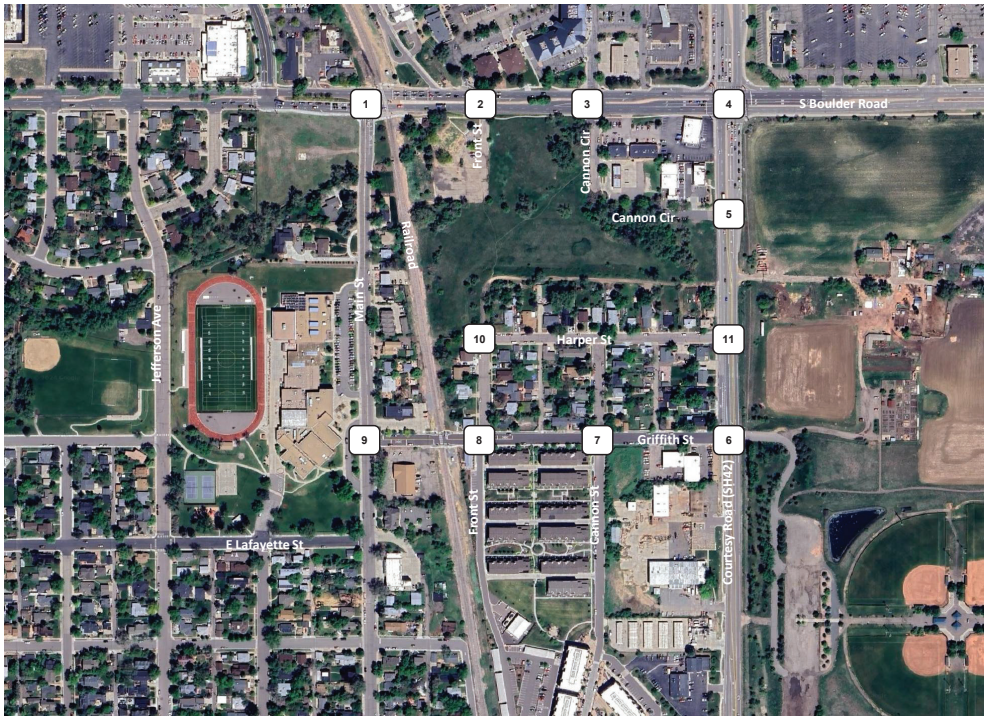
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Turning Movements

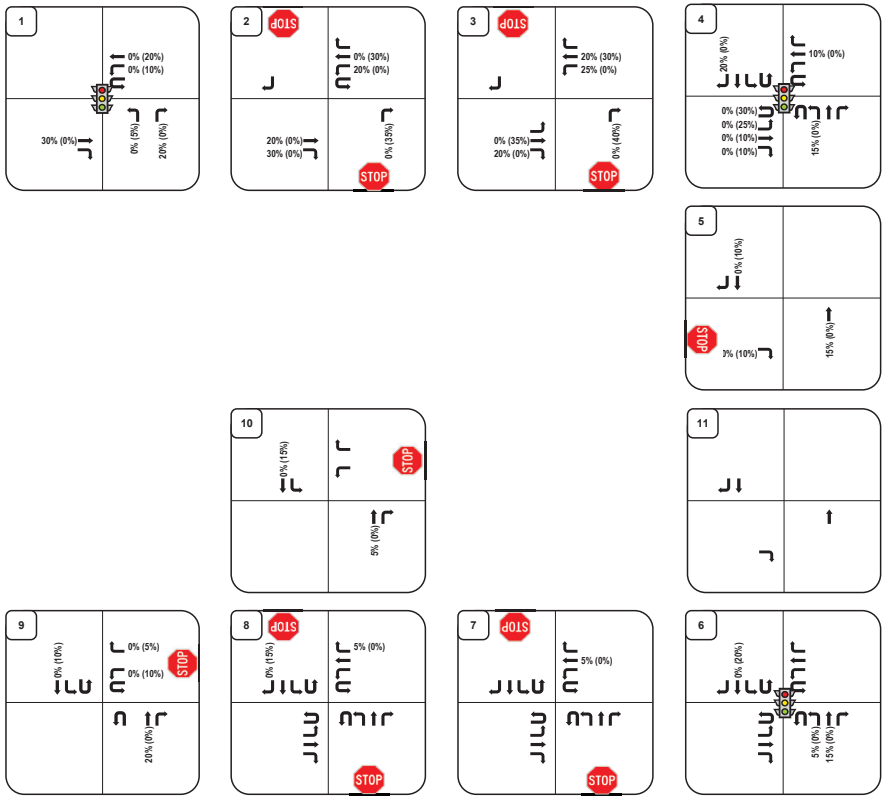
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Figure 15: Project Generated Traffic Distribution - Scenario D (Retail)





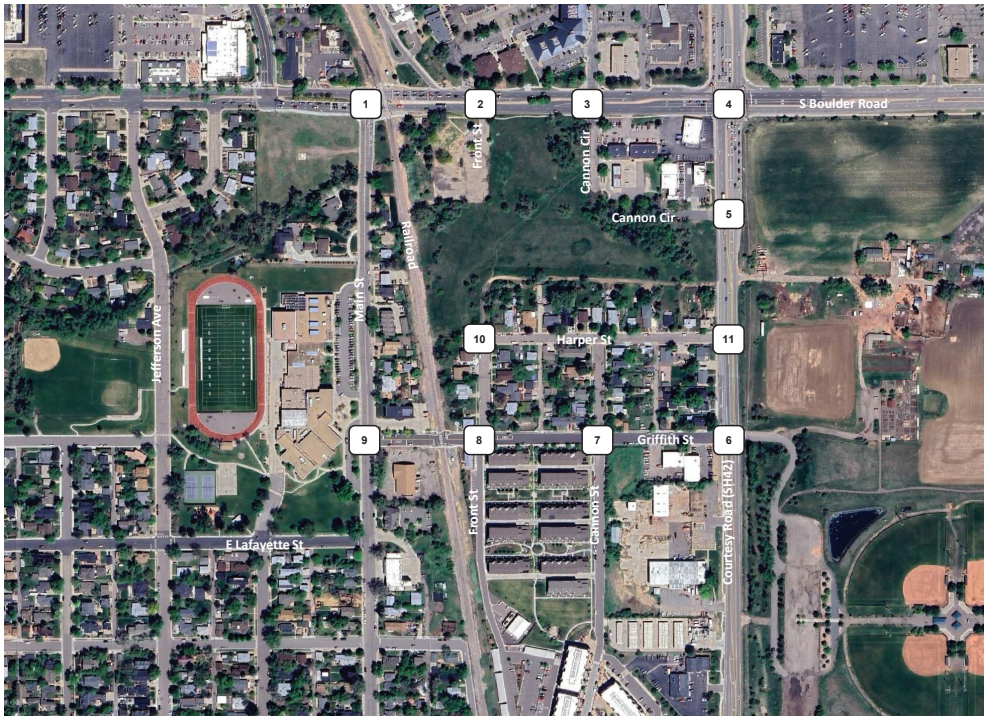
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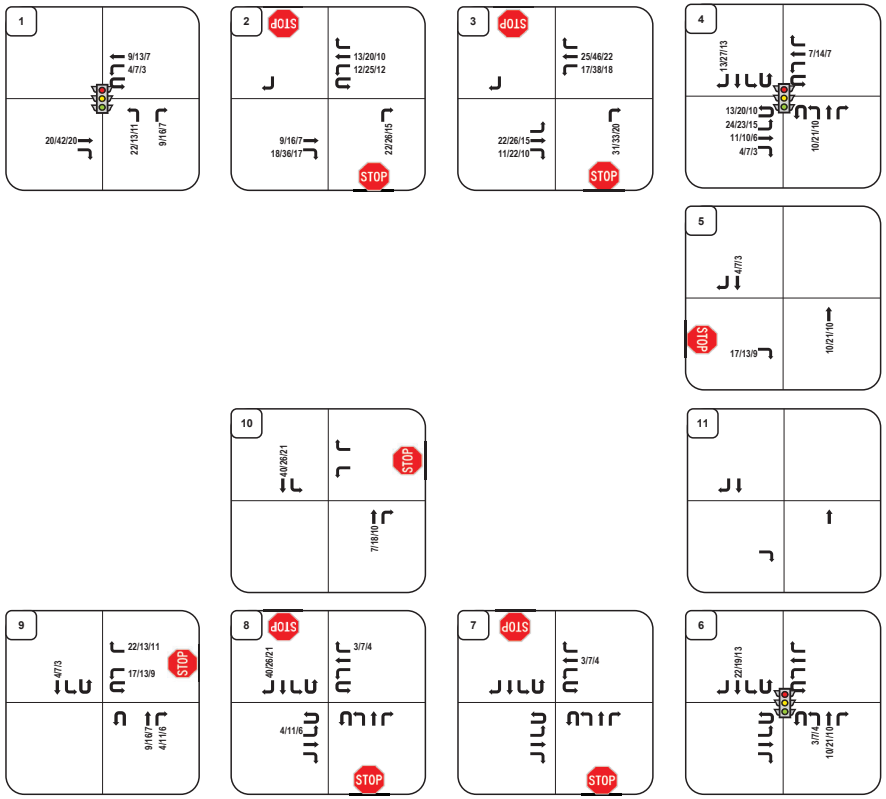
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Figure 16: Project Generated Traffic Assignment - Scenario D (Residential & Retail)





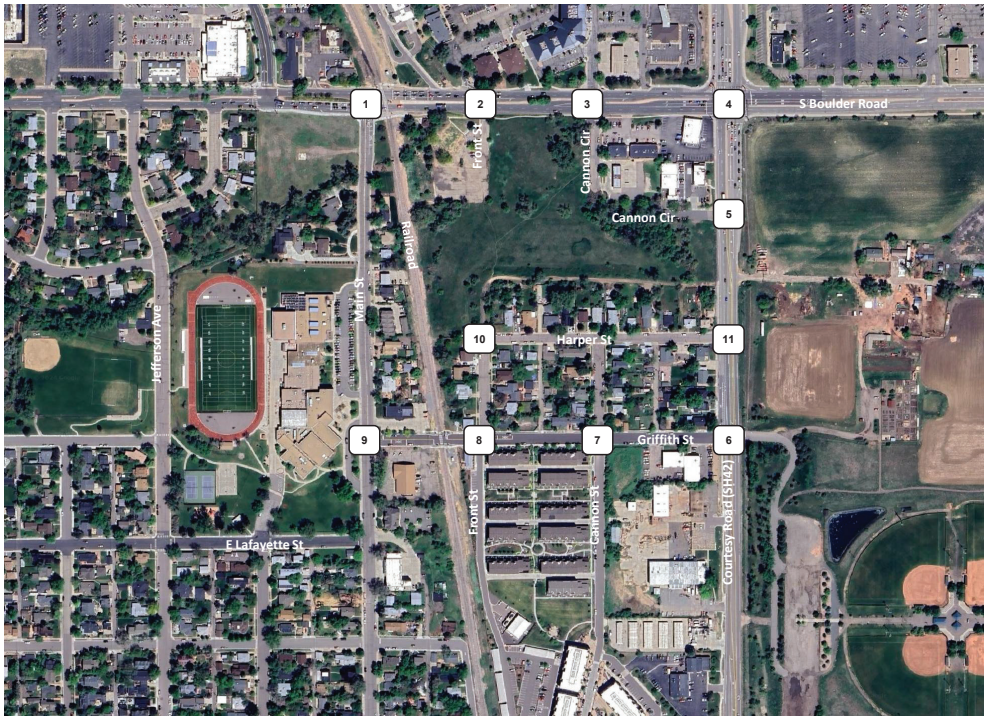
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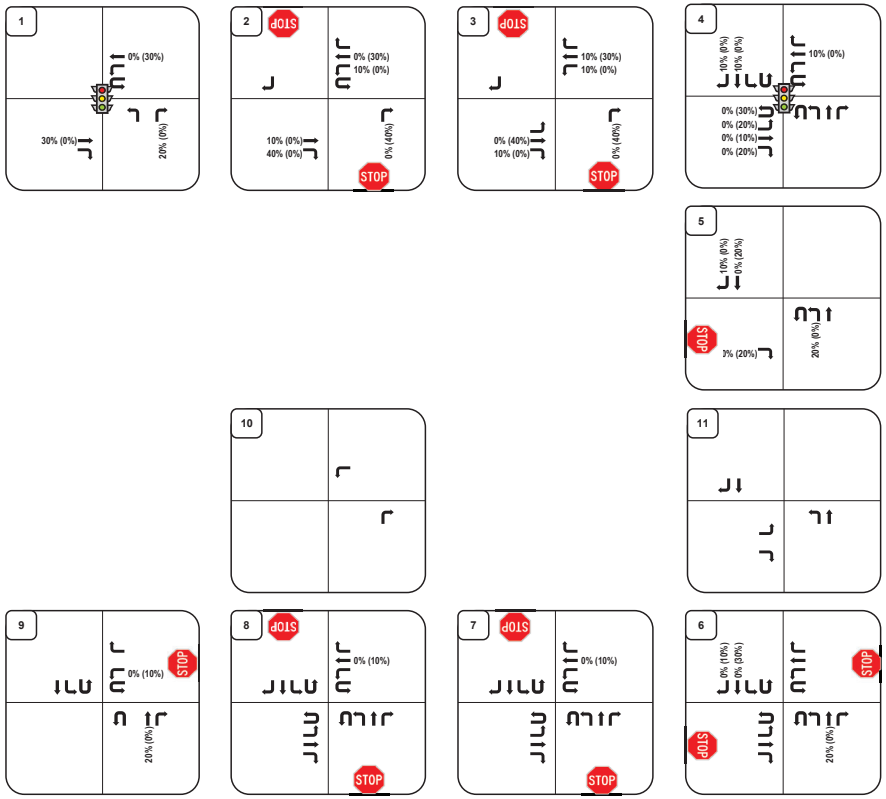
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Figure 17: Project Generated Traffic Distribution - Scenario E (Residential)





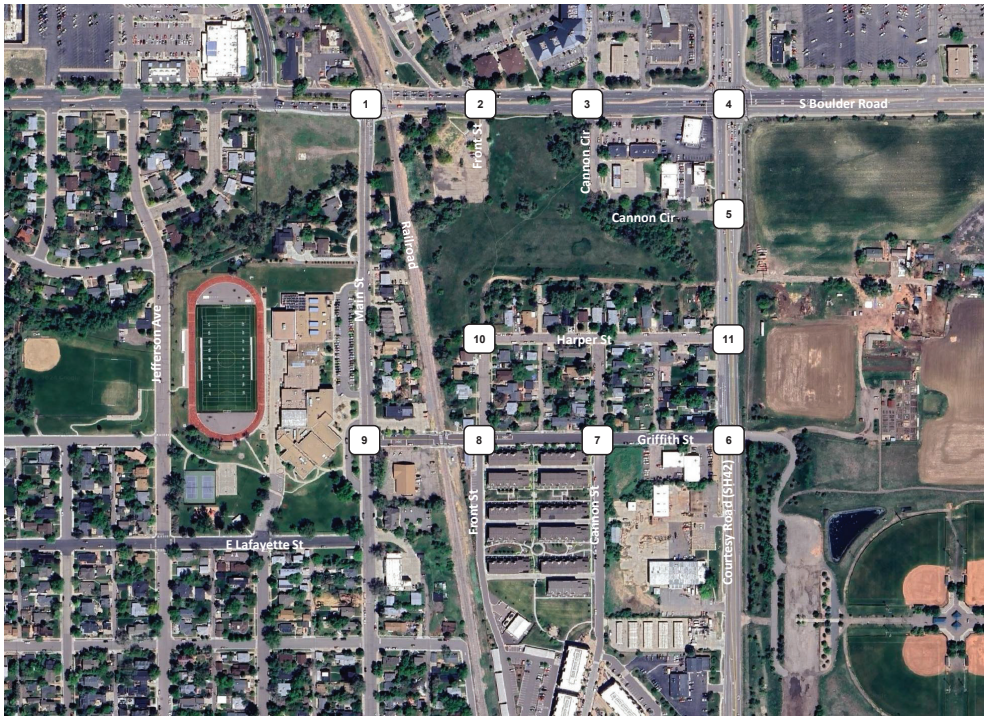
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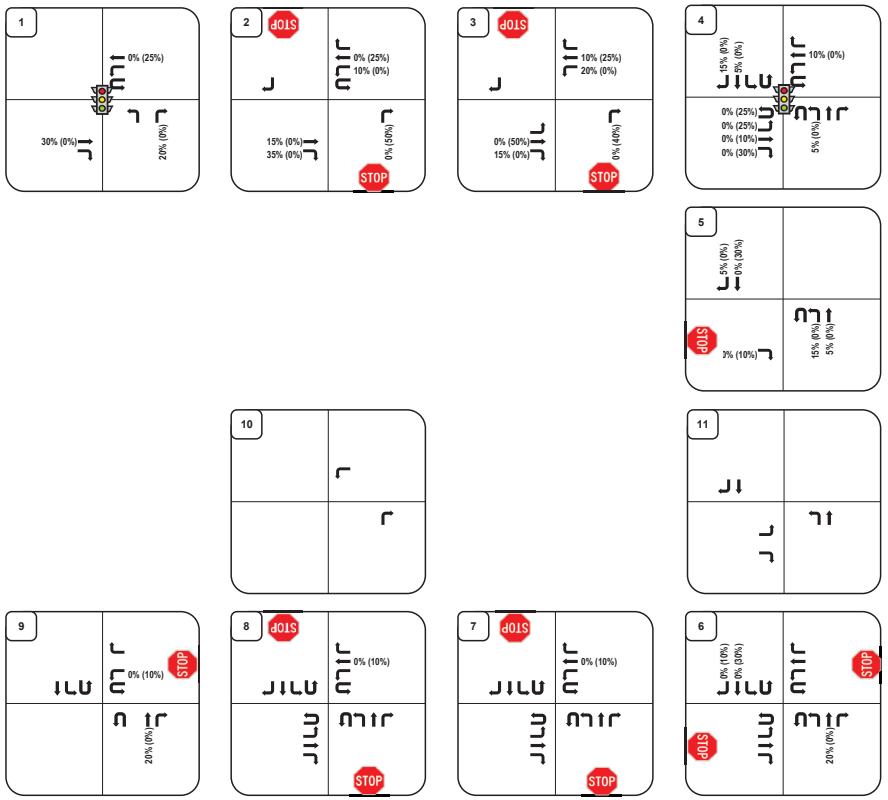
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Figure 18: Project Generated Traffic Distribution - Scenario E (Retail)





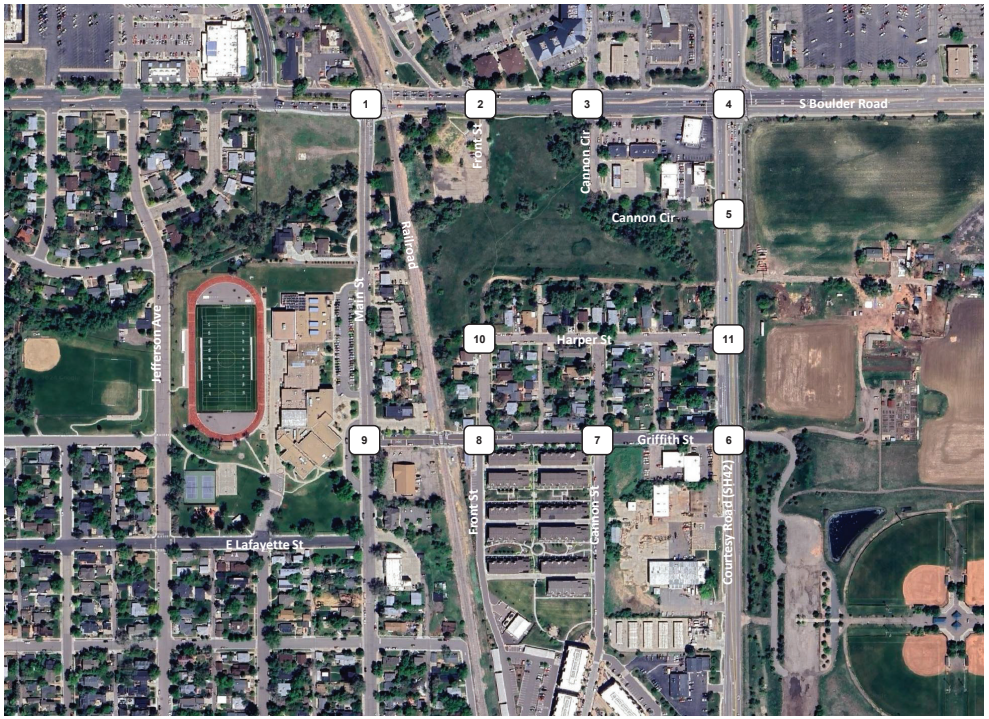
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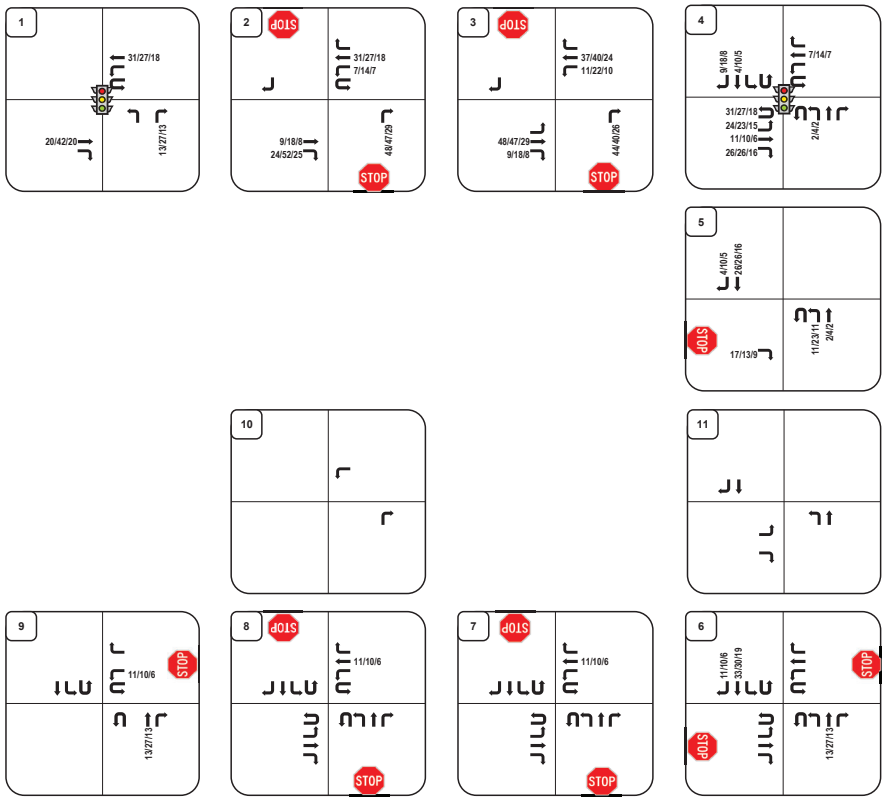
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Figure 19: Project Generated Traffic Assignment - Scenario E (Residential & Retail)





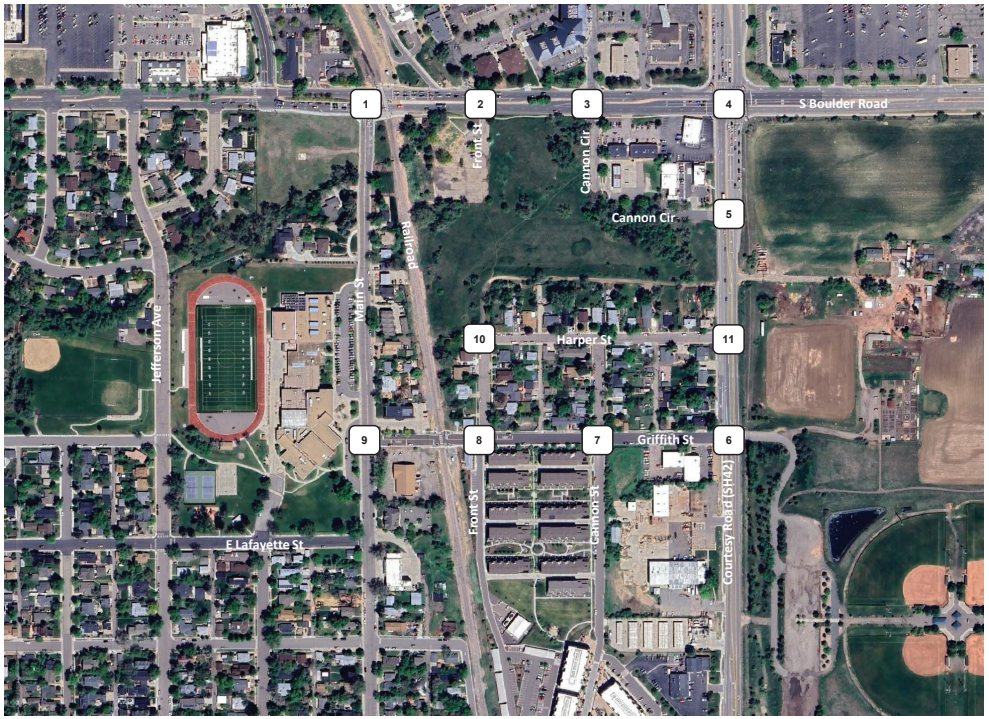
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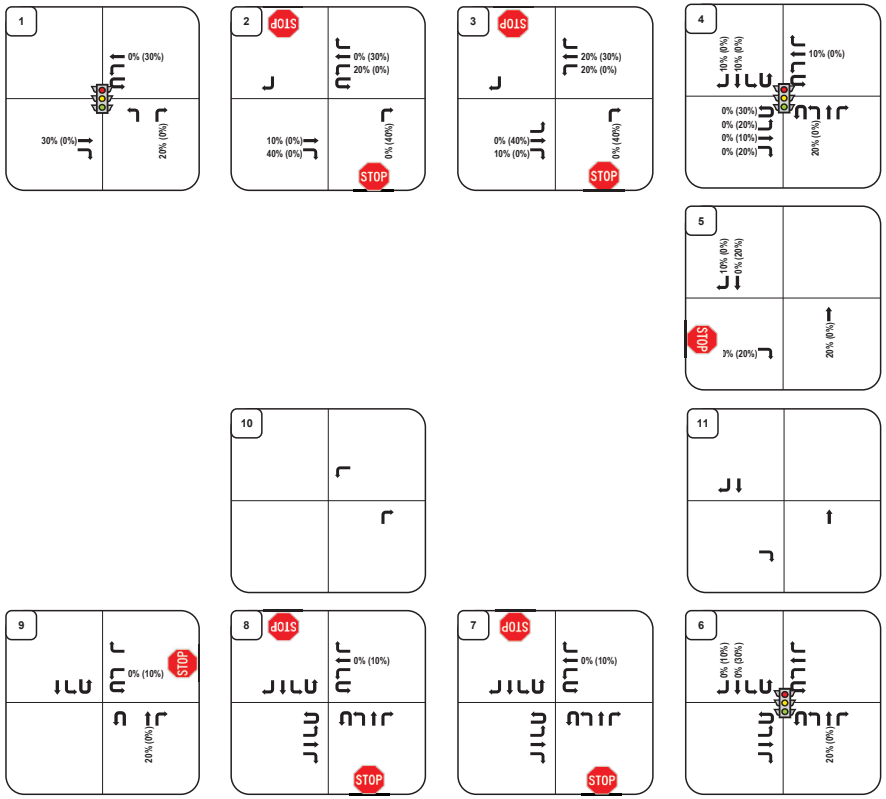
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Figure 20: Project Generated Traffic Distribution - Scenario F (Residential)





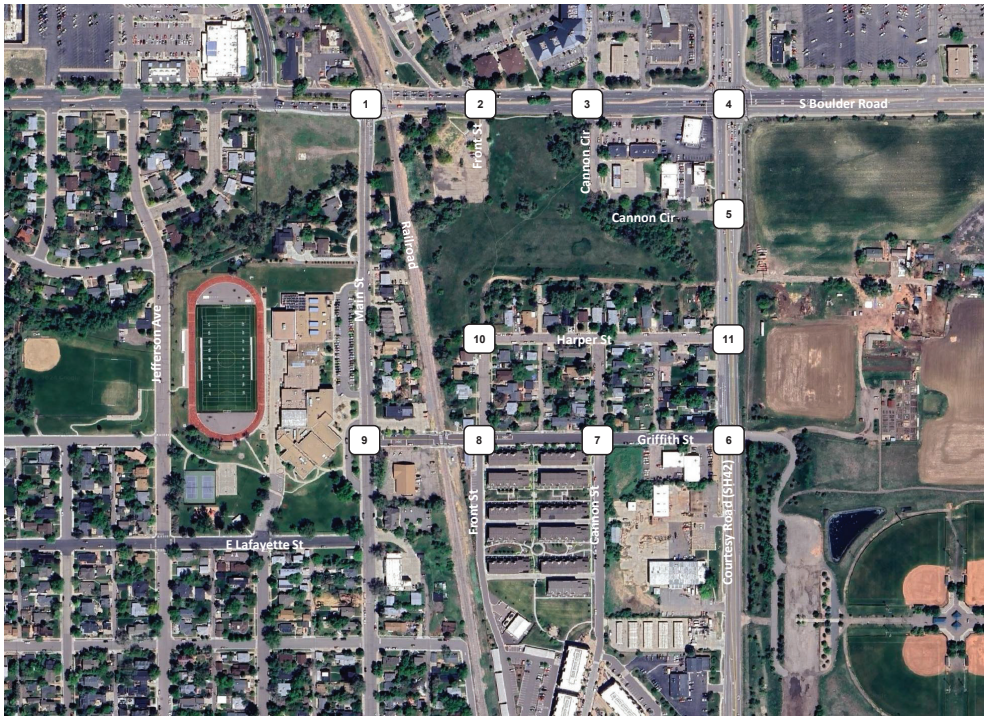
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Turning Movements

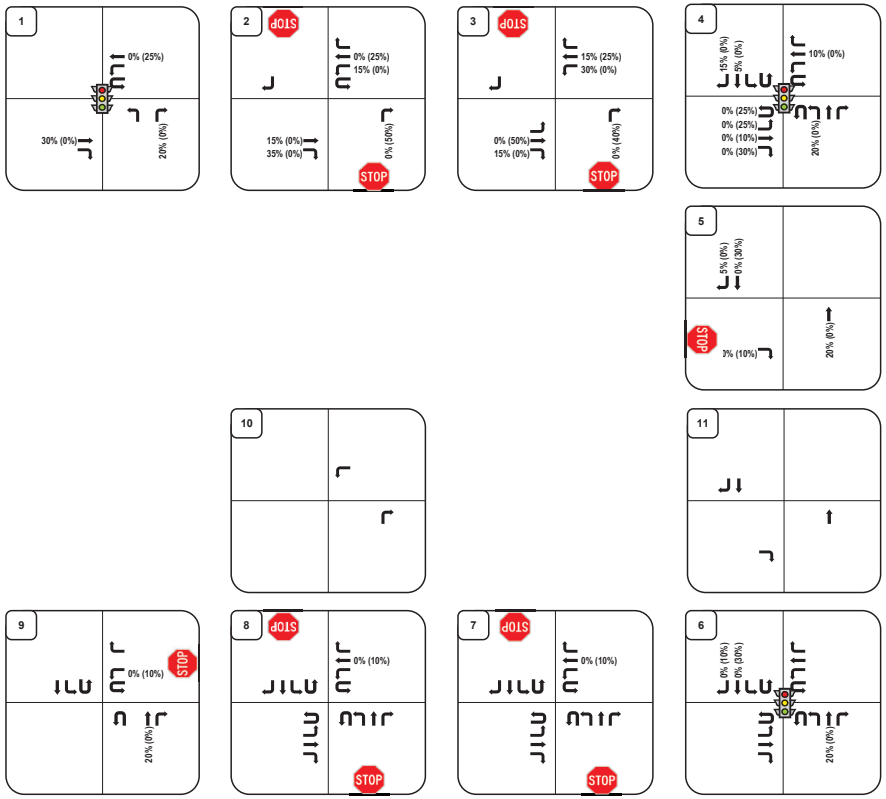
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Figure 21: Project Generated Traffic Distribution - Scenario F (Retail)





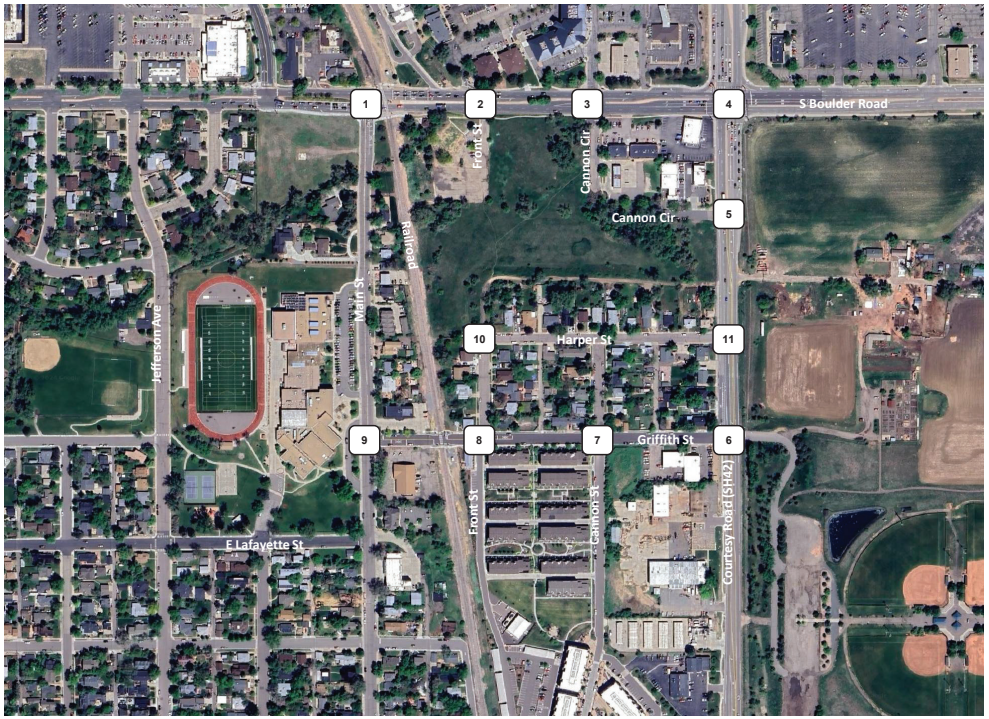
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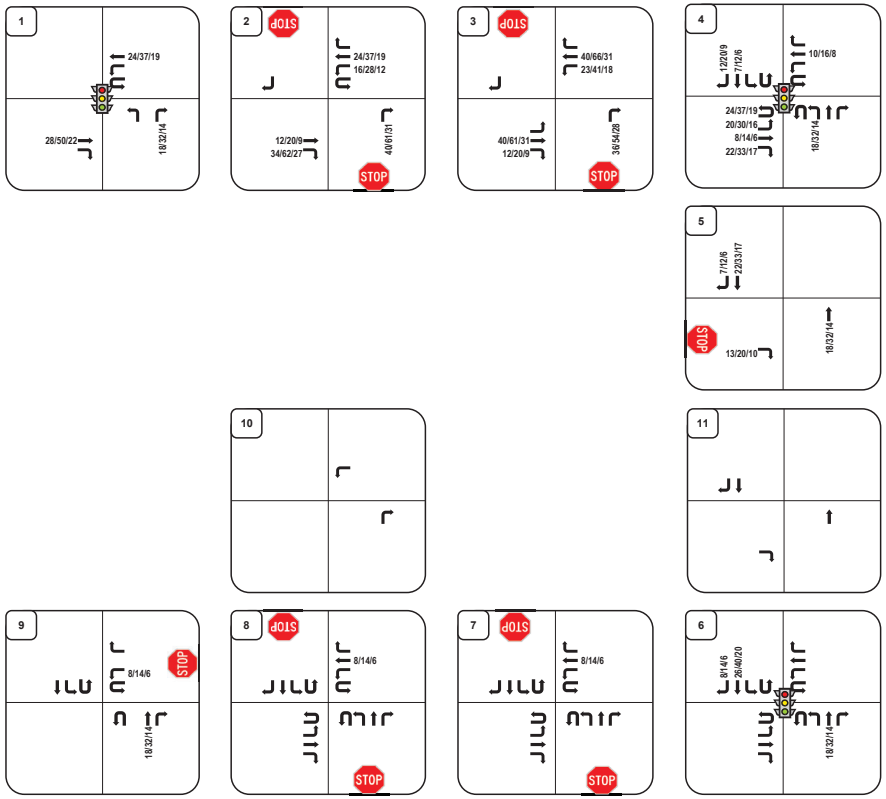
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Figure 22: Project Generated Traffic Assignment - Scenario F (Residential & Retail)





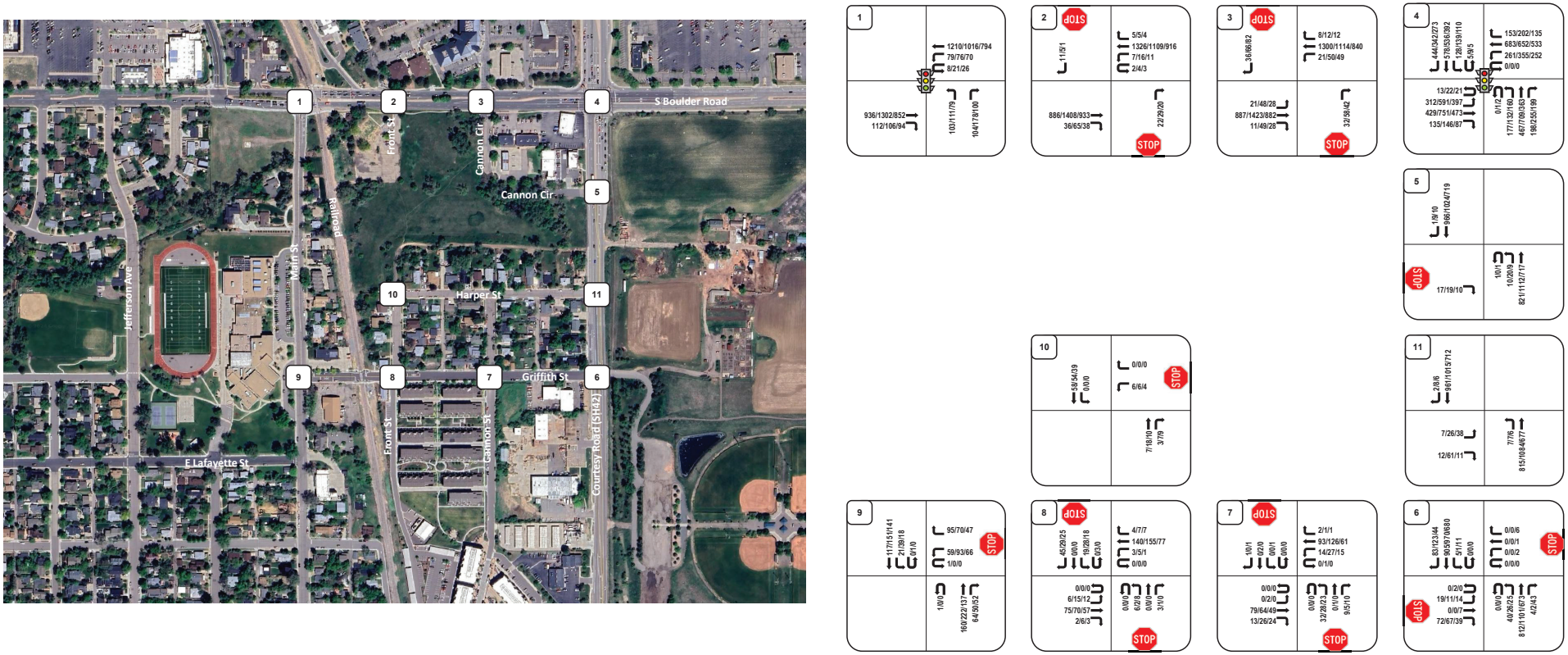
LEGEND:
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AM/PM/SAT Volumes = XX/XX/XX VPH (in PCEs)
Turning Movements

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Figure 23: Year 2026 Total Traffic (With Front St Connection)



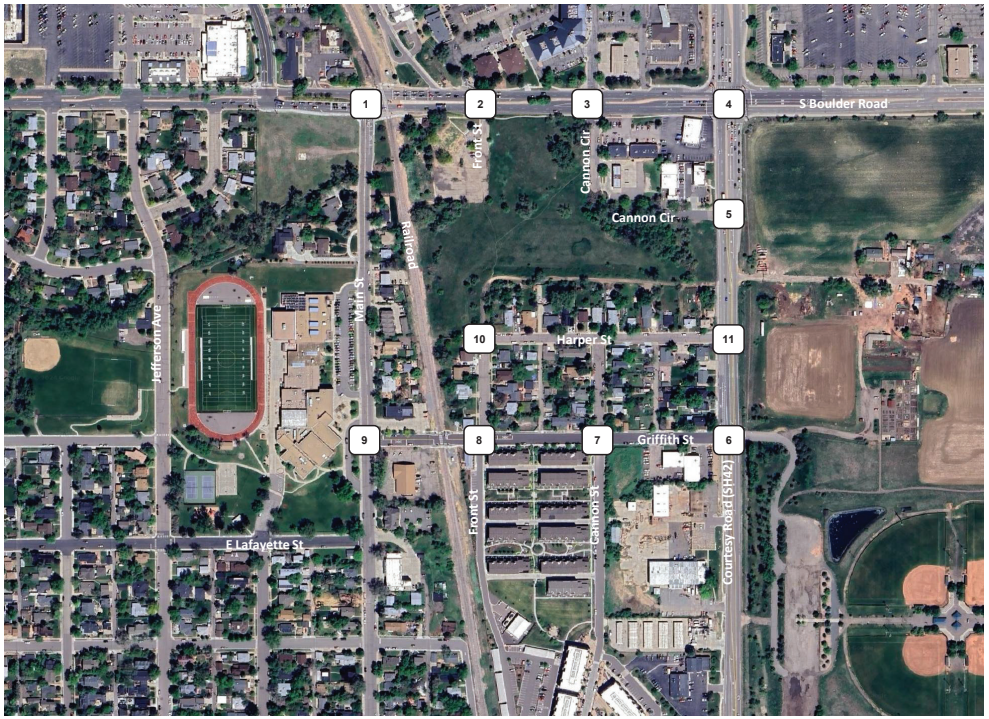
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Turning Movements

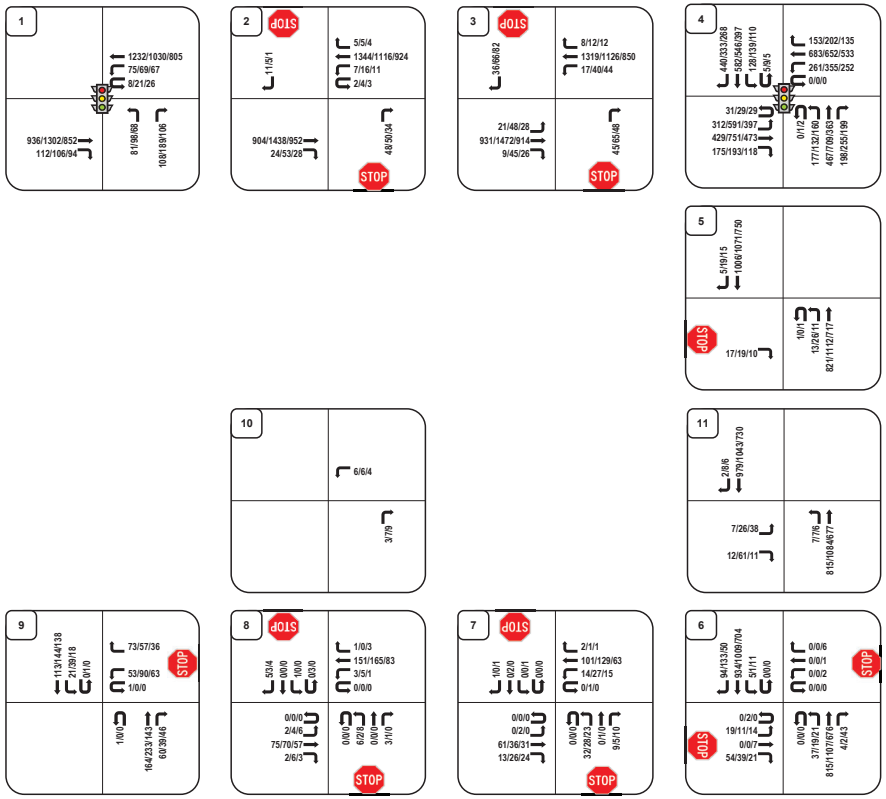
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Figure 24: Year 2026 Total Traffic (Without Front St Connection)





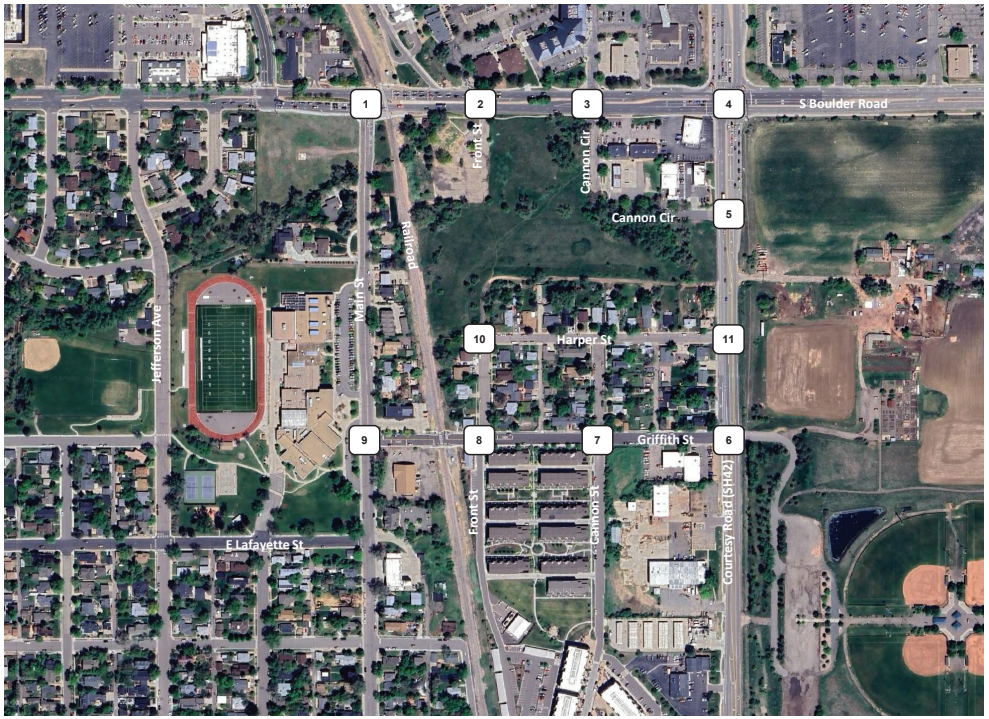
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AM/PM/SAT Volumes = XX/XX/XX VPH (in PCEs)
Turning Movements

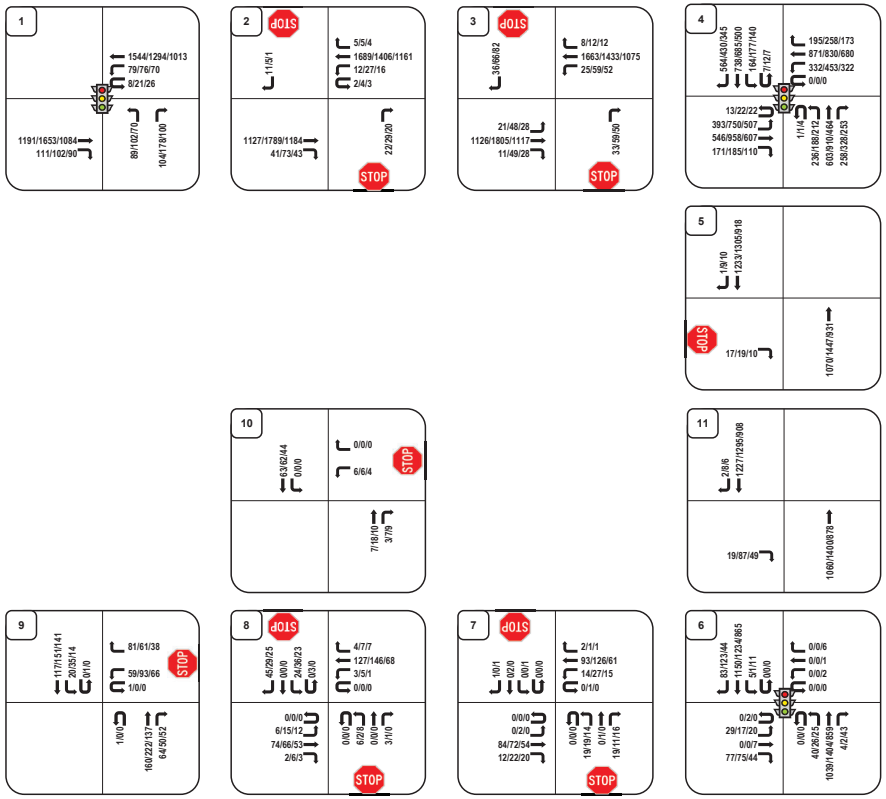
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Figure 25: Year 2045 Total Traffic (With Front St Connection)





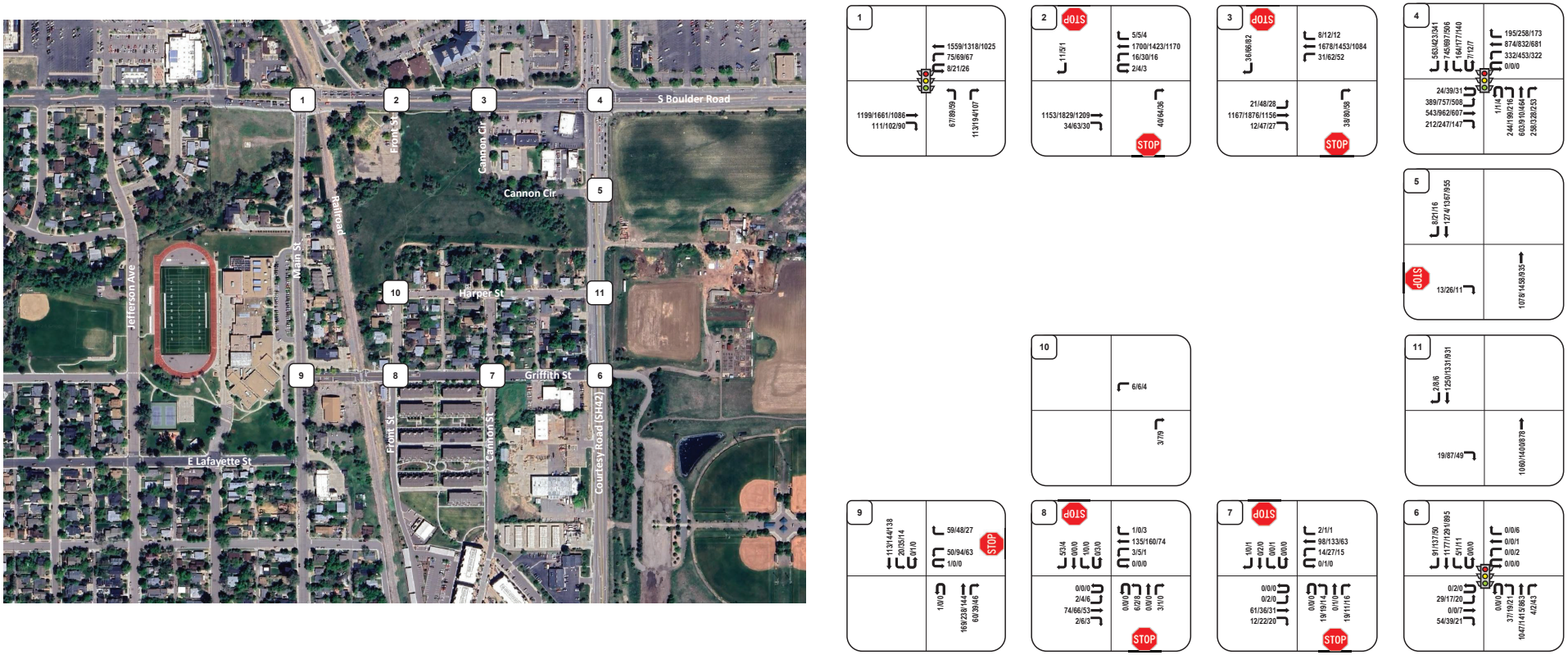
LEGEND:
Directional Distribution = Inbound% (Outbound %)
AM/PM/SAT Volumes = XX/XX/XX VPH (in PCEs)
Turning Movements

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Figure 26: Year 2045 Total Traffic (Without Front St Connection)



LEGEND:
Directional Distribution = Inbound% (Outbound %)
AM/PM/SAT Volumes = XX/XX/XX VPH (in PCEs)
Turning Movements

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6.0 Transportation Impact Analysis

6.1 Total Traffic Level of Service

An *HCM* analysis under total traffic conditions was performed for the proposed site access under both short-term Year 2026 and long-term Year 2045 traffic conditions. Scenarios with and without the Front Street connection were analyzed. The results can be seen in **Table 9**. The Synchro reports for the total traffic level of service analysis can be found in the **Appendix**.

Intersection #1 - South Boulder Road and Main Street Intersection: This 3-legged intersection is signalized. The signal is coordinated with the BNSF Railroad crossing that is located on the eastern leg of the intersection.

With the addition of project-generated traffic, the operations on Main Street will slightly degrade.

The City's proposed future pedestrian underpass of South Boulder Road should allow for better signal timing at this intersection. It is recommended that the City update the corridor's signal timing plans every five years. The future pedestrian underpass will increase the mainline efficiency by eliminating pedestrian signal calls.

Intersection #2 - South Boulder Road and Front Street Intersection: This unsignalized intersection is anticipated to operate at an acceptable overall intersection LOS through Year 2045 total traffic conditions.

With the construction of Coal Creek Village, the westbound left turn lane is anticipated to degrade to a LOS C with long-term Year 2045 total traffic conditions with the Front Street connection. Without the Front Street connection, this movement anticipated to operate at a LOS D or better through the same time period. Total traffic conditions have less opposing traffic for this movement. Additionally, more traffic making the northbound right movement. Therefore, the northbound LOS result is higher than that of background traffic with a lower northbound volume.

As South Boulder Road traffic continues to increase over time, the City should observe the corridor for necessary access control revisions.

Intersection #3 - South Boulder Road and Cannon Circle intersection: This full-movement intersection currently serves a commercial driveway to the north and Cannon Circle to the south.

A Synchro HCM analysis was conducted by not restricting the northbound movement (allowing the left, through, and right northbound movements). This analysis demonstrated that a 95th percentile queue length of nine vehicles, as well as a LOS F

delay in excess of 300 seconds would occur. Therefore, McDowell Engineering recommends that this access is restricted at the time of development.

With the recommend access restriction, eastbound and westbound left turns will still be permitted. With these restrictions, the eastbound and westbound left turns are anticipated to be able to use the gaps in South Boulder traffic created by the adjacent traffic signal during peak hours. These movements are anticipated to experience a LOS D or better with or without the Front Street connection. This is a better LOS than background operations due to the elimination of the difficult through and left turns from the side streets.

Without the Front Street connection, there is anticipated to be 45% more eastbound U-turn movements on South Boulder Road. This includes a weave movement from the northern site accesses to the eastbound left turn lane at the signalized intersection.

Intersection #4 - South Boulder Road and SH 42 intersection: This is a full-movement, signalized intersection. The *Future 42* plan depicts intersection improvements that include northbound and eastbound channelized right turn lanes. The Year 2045 total traffic scenario is modeled assuming the westbound and southbound right turn lanes are constructed. Even with these future improvements, this intersection has movements that are anticipated to operate at a failing LOS F for both Year 2026 and Year 2045 background and total traffic conditions.

This intersection has below acceptable LOS due to the high traffic volumes it handles. The current traffic volumes are too high to be flushed out of the intersection within one cycle during peak traffic hours. This causes vehicles to wait in queues for more than one cycle. LOS on the north and south legs of SH 42 are slightly better than on the South Boulder Road's east and west legs. This is due to CDOT's prioritization of SH 42 and giving the highway more green time.

The addition of Coal Creek Village traffic can anticipate slightly lower LOS from the background traffic conditions. Without the Front Street connection, there is anticipated to be a significant weave movement from project traffic egressing the site to access the eastbound left turn lane at the SH 42 traffic signal. Additional eastbound to westbound U-turn volume at the signal is also anticipated due to the site's access restrictions on South Boulder Road.

Intersection #5 - SH 42 and Cannon Circle intersection: This is currently a full-movement "T" intersection. With the buildout of Coal Creek Village, this intersection will be restricted to a ¾ movement, with left turns out of the site restricted. With the restriction of this difficult movement, Year 2026 total traffic operations are anticipated to be LOS B or better with or without the Front Street connection.

Per the *Future 42* Plan, this TIS assumes that the Cannon Circle access is restricted to right-in, right-out movements only. Therefore, Year 2045 total traffic scenarios are anticipated to be LOS C or better with or without the Front Street connection.

Intersection #6 - SH 42 and Griffith Street intersection: This is currently a full-movement intersection. With the buildout of Coal Creek Village, short-term Year 2026 total traffic operations are anticipated to continue to degrade. SH 42 is anticipated to continue to operate at a LOS B or better. Side street traffic is anticipated to continue to operate at a LOS F with or without the project-generated traffic and with or without the Front Street connection. This will occur with or without the Front Street connection.

Signalization of the SH 42 and Griffith Street intersection will improve the side street LOS to an acceptable LOS C in Year 2045 total traffic conditions. Mainline SH 42 is likely to degrade to a lower LOS E with the additional delay caused by the signal construction.

Intersection #7 – Griffith Street and Cannon Street intersection: This is a full-movement intersection with stop-control on the north and south legs. With the buildout of Coal Creek Village, operations are anticipated to remain acceptable LOS A or B through Year 2045 total traffic conditions. The additional traffic is anticipated to have a nominal impact on the intersection delay with or without the Front Street connection.

Intersection #8 – Griffith Street and Front Street intersection: This is a full-movement intersection with stop-control on the north and south legs. With the buildout of Coal Creek Village, operations are anticipated to remain acceptable LOS A or B through long-term total traffic conditions. With the Front Street connection, the anticipated LOS of the north leg is LOS B through Year 2045 total traffic conditions. Without the Front Street connection, the anticipated LOS of the north leg is LOS A through Year 2045 total traffic conditions. The additional traffic is anticipated to have a nominal impact on the intersection delay with or without the Front Street connection.

Intersection #9 – Griffith Street and Main Street intersection: This is a full-movement "T" intersection. The east leg is stop-controlled.

With the buildout of Coal Creek Village, operations are anticipated to remain acceptable through long-term total traffic conditions. Main Street will continue to operate at an acceptable LOS A through Year 2045 total traffic conditions. With the Front Street connection, the anticipated LOS of the east leg is LOS B through Year 2045 total traffic conditions. Without the Front Street connection, the anticipated LOS of the east leg is LOS C during the morning peak hour through Year 2045 total traffic conditions.

These results are comparable to the anticipated operations with or without the addition of the Coal Creek Village traffic. The additional traffic is anticipated to have a nominal impact on the intersection delay with or without the Front Street connection.

Intersection #10 – Front Street and Harper Street intersection: This is currently a free-flowing intersection. There is an unimproved alley access as a third, north leg. Scenarios E and F analyze total traffic conditions without the Front Street connection.

With the buildout of Coal Creek Village and with or without the connection of Front Street, all legs of this intersection are anticipate to operate at a LOS A.

Intersection #11 – SH 42 and Harper Street intersection: Both with and without the construction of Coal Creek Village, left turns at this intersection currently experience delay into and out of the site during peak traffic on SH 42. Currently, through movements on SH 42 are operating at a LOS A. Eastbound Harper Street is operating at a LOS F during the evening peak hour.

Per the *Future 42* Plan, the Harper Street access will be restricted to right-in, right-out movements by the Year 2045 total traffic conditions. With this scenario, the eastbound movement is anticipated to improve to a LOS C.

Table 9: Total Traffic LOS (with the Front Street Connection)

#	Intersection	Traffic Control	Approach	Year 2026 Total with Front Street Level of Service (Delay in Seconds)			Year 2045 Total with Front Street Level of Service (Delay in Seconds)		
				AM	PM	SAT	AM	PM	SAT
1	South Boulder Road & Main Street	Signal	EBT	A (8.2)	A (10.0)	A (7.0)	A (9.4)	B (13.1)	A (7.7)
			EBR	A (1.4)	A (2.5)	A (1.5)	A (2.2)	A (3.3)	A (1.5)
			WBL	A (5.2)	A (9.3)	A (3.4)	A (4.9)	B (12.8)	A (3.5)
			WBT	A (5.8)	A (6.2)	A (3.3)	A (7.0)	A (7.6)	A (3.4)
			NBL	E (58.4)	E (61.8)	D (48.4)	E (56.2)	E (59.2)	D (47.7)
			NBR	B (13.7)	C (32.8)	B (13.9)	B (13.8)	D (49.3)	B (14.3)
2	South Boulder Road & Front Street	3/4, NB/SB Stop	WBL	B (11.6)	C (18.5)	B (12.1)	B (13.3)	D (26.8)	B (14.2)
			NB	B (12.4)	C (16.9)	B (12.7)	B (14.1)	C (22.1)	B (14.5)
			SB	C (15.5)	B (13.6)	B (12.2)	C (19.4)	C (16.0)	B (13.9)
3	South Boulder Road & Cannon Circle	3/4 NB/SB Stop	EBL	C (17.1)	C (18.0)	B (13.0)	D (26.0)	D (29.8)	C (16.7)
			WBL	B (10.7)	C (16.8)	B (10.9)	B (12.3)	D (25.4)	B (12.6)
			NB	B (12.6)	C (19.2)	B (12.9)	B (14.5)	D (26.6)	B (15.0)
			SB	C (16.1)	C (15.3)	B (13.2)	C (20.8)	C (19.4)	C (15.4)
4	SH 42 (Courtesy Road) & South Boulder Road	Signal	EBL	F (545.3)*	F (953.6)*	F (596.3)*	F (953.0)*	F (1559.4)*	F (964.2)*
			EBT	C (30.5)	D (45.8)*	C (25.7)	C (29.3)	D (41.9)*	C (26.1)
			EBR	-	-	-	A (9.8)	A (6.7)	A (1.2)
			WBL	E (61.5)	F (109.4)*	E (75.6)*	E (65.1)*	F (167.8)*	F (99.5)*
			WBT	D (42.8)	D (48.1)	C (33.8)	D (49.0)*	E (58.5)*	D (35.1)
			WBR	A (4.9)	A (7.8)	A (1.8)	A (8.5)	B (14.5)	A (3.7)
			NBL	E (63.3)	F (191.3)*	F (187.7)*	F (568.5)*	F (379.1)*	F (341.8)*
			NBT	C (32.6)	E (76.8)*	C (26.6)	D (36.8)	D (48.2)*	C (24.9)
			NBR	-	-	-	B (10.1)	B (13.2)	A (7.4)
			SBL	F (193.3)*	F (240.4)*	F (94.1)*	F (321.4)*	F (372.3)*	F (152.0)*
			SBT	D (37.0)	D (38.6)	C (29.2)	D (39.2)	D (40.2)	C (29.1)
			SBR	C (22.3)	A (8.2)	A (6.0)	D (40.4)*	B (16.4)	B (11.1)
5	SH 42 (Courtesy Rd) & Cannon Circle	EB Stop	EB	B (12.6)	B (13.1)	B (11.2)	B (14.6)	C (15.3)	B (12.3)
			NBL	B (11.6)	B (11.1)	B (10.1)	-	-	-
6	SH 42 (Courtesy Road) & Griffith Street	EB/WB Stop	EB	F (81.6)	F (96.8)	E (35.4)	-	-	-
			WB	F (77.4)	F (137.2)	D (27.7)	-	-	-
			NB	A (0.5)	A (0.3)	A (0.3)	-	-	-
			SB	A (0.0)	A (0.0)	A (0.1)	-	-	-
6	SH 42 (Courtesy Road) & Griffith Street	Signal	EBL	-	-	-	C (27.1)	C (25.6)	C (20.4)
			EBT	-	-	-	A (1.0)	A (1.0)	A (9.1)
			WBL	-	-	-	C (24.0)	C (24.0)	B (18.5)
			WBT	-	-	-	C (21.0)	C (21.0)	B (13.3)
			NBL	-	-	-	C (26.8)	C (25.6)	B (17.8)
			NBT	-	-	-	A (4.4)	A (5.7)	A (4.8)
			SBL	-	-	-	C (28.8)	C (33.0)	B (17.6)
			SBT	-	-	-	A (5.1)	A (6.8)	A (4.7)
			SBR	-	-	-	A (0.6)	A (2.0)	A (0.7)
7	Griffith Street & Cannon Street	NB/SB Stop	EB	A (0.0)	A (0.2)	A (0.0)	A (0.0)	A (7.5)	A (0.0)
			WB	A (1.0)	A (0.0)	A (1.4)	A (1.0)	A (0.0)	A (1.4)
			NB	B (10.1)	B (10.6)	A (9.6)	A (9.7)	B (10.2)	A (9.3)
			SB	A (8.9)	B (11.0)	A (9.2)	A (8.9)	B (11.1)	A (9.3)
8	Griffith Street & Front Street	NB/SB Stop	EB	A (0.5)	A (1.3)	A (1.2)	A (0.6)	A (1.3)	A (1.3)
			WB	A (0.2)	A (0.2)	A (0.1)	A (0.2)	A (0.2)	A (0.1)
			NB	B (10.3)	B (10.4)	B (10.1)	B (10.2)	B (10.3)	A (10.0)
			SB	A (9.9)	B (10.4)	A (9.4)	A (9.9)	B (10.5)	A (9.5)
9	Griffith Street & Main Street	WB Stop	WB	C (15.2)	B (13.7)	B (11.6)	B (14.8)	B (13.6)	B (11.5)
			SB	A (1.2)	A (0.0)	A (0.9)	A (1.2)	A (0.0)	A (0.7)
10	Harper Street & Front Street	WB Stop	WB	A (9.6)	A (9.7)	A (9.5)	A (9.7)	A (9.7)	A (9.6)
			SB	A (0.0)	A (0.0)	A (0.0)	A (0.0)	A (0.0)	A (0.0)
11	SH 42 (Courtesy Rd) & Harper Street	EB Stop	EB	D (33.7)	F (118.0)	E (40.9)	B (14.5)	C (17.7)	B (12.7)
			NBL	B (10.4)	B (10.7)	A (9.3)	-	-	-

* Indicates LOS F with volume exceeding capacity (delays in seconds likely not accurate due to modelling method limitations)

Table 10: Total Traffic LOS (without the Front Street Connection)

#	Intersection	Traffic Control	Approach	Year 2026 Total without Front Street Level of Service (Delay in Seconds)			Year 2045 Total without Front Street Level of Service (Delay in Seconds)		
				AM	PM	SAT	AM	PM	SAT
1	South Boulder Road & Main Street	Signal	EBT	A (8.0)	A (9.7)	A (6.8)	A (9.2)	B (13.6)	A (7.5)
			EBR	A (1.4)	A (2.4)	A (1.4)	A (2.3)	A (3.3)	A (1.5)
			WBL	A (5.0)	A (8.4)	A (3.2)	A (4.7)	B (11.6)	A (3.2)
			WBT	A (5.5)	A (6.1)	A (3.1)	A (6.8)	A (7.7)	A (3.3)
			NBL	D (55.0)	E (59.9)	D (47.5)	D (53.1)	E (55.1)	D (47.0)
			NBR	B (13.9)	D (38.7)	B (14.4)	B (14.0)	E (55.7)	B (15.0)
2	South Boulder Road & Front Street	3/4, NB/SB Stop	WBL	B (11.9)	C (19.5)	B (12.3)	B (13.4)	D (29.7)	B (14.6)
			NB	B (13.0)	C (18.3)	B (13.1)	B (14.8)	D (26.6)	C (15.2)
			SB	C (15.6)	B (13.6)	B (12.3)	C (19.5)	C (16.2)	B (13.9)
3	South Boulder Road & Cannon Circle	3/4 NB/SB Stop	EBL	C (17.4)	C (18.3)	B (13.2)	D (26.5)	D (31.2)	C (16.9)
			WBL	B (11.0)	C (17.4)	B (11.0)	B (12.7)	D (28.8)	B (13.0)
			NB	B (13.2)	C (20.3)	B (13.2)	B (15.0)	D (32.3)	C (15.6)
			SB	C (16.4)	C (15.4)	B (13.3)	C (21.0)	C (19.6)	C (15.5)
4	SH 42 (Courtesy Road) & South Boulder Road	Signal	EBL	F (597.4)*	F (969.9)*	F (615.7)*	F (977.5)*	F (1631.4)*	F (990.3)*
			EBT	C (30.9)	D (52.9)*	C (25.8)	C (29.6)	D (42.6)*	C (26.2)
			EBR	-	-	-	B (11.9)	A (9.6)	A (2.6)
			WBL	E (61.5)	F (109.4)*	E (75.6)*	E (65.1)*	F (167.8)*	F (99.5)*
			WBT	D (42.8)	D (48.1)	C (33.8)	D (49.2)*	E (58.8)*	D (35.2)
			WBR	A (4.9)	A (7.8)	A (1.8)	A (8.5)	B (14.5)	A (3.7)
			NBL	E (63.3)	F (191.3)*	F (187.7)*	F (597.5)*	F (421.6)*	F (356.1)*
			NBT	C (32.6)	E (76.8)*	C (26.6)	D (35.5)	D (48.6)*	C (25.0)
			NBR	-	-	-	A (9.4)	B (12.1)	A (7.4)
			SBL	F (193.3)*	F (240.4)*	F (94.1)*	F (321.4)*	F (372.3)*	F (152.0)*
			SBT	D (37.1)	D (38.8)	C (29.3)	D (39.4)	D (40.6)	C (29.2)
			SBR	C (27.1)	A (8.8)	A (6.9)	D (45.7)	B (19.9)	B (12.5)
5	SH 42 (Courtesy Rd) & Cannon Circle	EB Stop	EB	B (12.9)	B (13.5)	B (11.3)	B (14.9)	C (16.3)	B (12.5)
			NBL	B (11.7)	B (11.5)	B (10.2)	-	-	-
6	SH 42 (Courtesy Road) & Griffith Street	EB/WB Stop	EB	F (85.8)	F (110.3)	E (41.9)	-	-	-
			WB	A (0.0)	A (0.0)	D (27.3)	-	-	-
			NB	A (0.5)	A (0.2)	A (0.3)	-	-	-
			SB	A (0.0)	A (0.0)	A (0.1)	-	-	-
6	SH 42 (Courtesy Road) & Griffith Street	Signal	EBL	-	-	-	C (26.7)	C (24.9)	C (20.4)
			EBT	-	-	-	A (0.7)	A (0.5)	B (11.0)
			WBL	-	-	-	C (24.0)	C (24.0)	B (18.5)
			WBT	-	-	-	C (21.0)	C (21.0)	B (13.3)
			NBL	-	-	-	C (26.5)	C (25.1)	B (17.7)
			NBT	-	-	-	A (3.9)	A (5.0)	A (4.8)
			SBL	-	-	-	C (29.0)	C (32.0)	B (17.8)
			SBT	-	-	-	A (4.4)	A (5.2)	A (4.7)
			SBR	-	-	-	A (0.6)	A (1.7)	A (0.8)
7	Griffith Street & Cannon Street	NB/SB Stop	EB	A (0.0)	A (0.2)	A (0.0)	A (0.0)	A (0.3)	A (0.0)
			WB	A (0.9)	A (0.0)	A (1.4)	A (0.9)	A (0.0)	A (1.4)
			NB	A (10.0)	B (10.4)	A (9.4)	A (9.6)	A (10.0)	A (9.2)
			SB	A (8.9)	B (10.8)	A (9.2)	A (8.9)	B (10.8)	A (9.2)
8	Griffith Street & Front Street	NB/SB Stop	EB	A (0.2)	A (0.4)	A (0.7)	A (0.2)	A (0.4)	A (0.7)
			WB	A (0.1)	A (0.2)	A (0.1)	A (0.2)	A (0.2)	A (0.1)
			NB	A (10.0)	A (10.0)	A (9.8)	A (9.9)	A (10.0)	A (9.7)
			SB	A (9.4)	A (9.3)	A (8.8)	A (9.3)	A (9.3)	A (8.8)
9	Griffith Street & Main Street	WB Stop	WB	B (14.4)	B (13.6)	B (11.6)	B (14.0)	B (13.7)	B (11.5)
			SB	A (1.3)	A (0.0)	A (0.9)	A (1.2)	A (0.0)	A (0.7)
10	Harper Street & Front Street	None	WB	-	-	-	-	-	-
			SB	-	-	-	-	-	-
11	SH 42 (Courtesy Rd) & Harper Street	EB Stop	EB	D (33.7)	F (118.0)	E (40.9)	B (14.7)	C (18.2)	B (12.9)
			NBL	B (10.4)	B (10.7)	A (9.3)	-	-	-

* Indicates LOS F with volume exceeding capacity (delays in seconds likely not accurate due to modelling method limitations)

6.2 Intersection Queues

Synchro's HCM modeling software was used to analyze intersection operations, including estimated 95th Percentile Queues for each scenario. A table detailing the traffic queues is included in the **Appendix**.

Intersection #1 - South Boulder Road and Main Street Intersection: This signalized intersection has excessive queues. The eastbound queues are anticipated to back up past Centennial Drive. Westbound queues can reach Steele Street. Northbound queues can exceed 500 feet, but are rarely anticipated to impact the private driveway to the south of the signal.

Train crossing events will increase these anticipated queues.

The City's proposed future pedestrian underpass of South Boulder Road should allow for better signal timing at this intersection. It is recommended that the City update the corridor's signal timing plans every five years. The future pedestrian underpass will increase the mainline efficiency by eliminating pedestrian signal calls.

Intersection #2 - South Boulder Road and Front Street Intersection: Intersection queues are anticipated to be less than two vehicles. The queues are accommodated by existing infrastructure.

Intersection #3 - South Boulder Road and Cannon Circle intersection: This intersection is currently experiencing a 75 feet northbound queue and 250 feet southbound queues. With Coal Creek Village's conversion of this access to ¾ movement, the left turn is restricted and all queues are anticipated to be less than two vehicles.

Intersection #4 - South Boulder Road and SH 42 intersection: Existing conditions at this signal are currently experiencing left turn movement volumes that exceed the intersection's capacity.

Currently, eastbound queues reach 350 feet. In the future, it is anticipated that the queues could reach 750 feet. The westbound left queue is anticipated to reach approximately 550 feet.

The northbound queue is anticipated to reach 500 feet during evening peak traffic. Southbound queues are anticipated to reach 500 feet during the morning peak hour.

The *Future 42* plan depicts intersection improvements that include northbound and eastbound channelized right turn lanes that will improve operations at the intersection.

Intersection #5 - SH 42 and Cannon Circle intersection: All queues are anticipated to be less than one vehicle.

Intersection #6 - SH 42 and Griffith Street intersection: This is currently a stop-controlled, full-movement intersection. The eastbound queue reaches five vehicles during the evening peak hour.

Signalization of the SH 42 and Griffith Street intersection will improve the side street queues. The added mainline delay on SH 42 will create a queue of 275 feet for the northbound left turn during the evening peak hour. Dependent upon the signal timing implemented when the signal is constructed, the queue associated with the Louisville Sports Complex could reach 250 feet.

Intersection #7 – Griffith Street and Cannon Street intersection: With all scenarios, the northbound queue is anticipated to be less than one vehicle.

Intersection #8 – Griffith Street and Front Street intersection: With the front street connection, the southbound queue is anticipated to be one vehicle or less. Without the Front Street connection, the southbound queue is minimal.

Intersection #9 – Griffith Street and Main Street intersection: The southbound left turn can anticipate a queue of less than one vehicle in all scenarios. During school pick up and drop off or train crossings, the queues can be anticipated to be longer. Refer to the additional train analysis in **Section 6.6**.

Intersection #10 – Front Street and Harper Street intersection: With all scenarios, the northbound queue is anticipated to be less than one vehicle.

Intersection #11 – SH 42 and Harper Street intersection: Under current conditions, queues are anticipated for the eastbound left movement. With the Future 42 access restriction implemented, the eastbound queue is anticipated to be less than one vehicle.

6.3 Site Design and Traffic Circulation Evaluation

The proposed street configuration for Coal Creek Village provides good internal circulation and alternate routes to access adjacent arterial streets. Access restrictions will require that drivers wanting to go west on South Boulder Road or north on SH 42 may need to adjust their travel routes, as left turns out of the site are prohibited onto these two roadways.

Analysis Scenario with the Front Street Connection: The current site plan includes a Front Street connection. This connection aligns with the City of Louisville's previous *The Highway 42 Revitalization Area Framework Plan*[14] and *42 Gateway Alternative Analysis Report*[15] plans to connect South Boulder Road and Griffith Street via Front Street. Excerpts from these reports are included in the **Appendix**.

The Front Street connection will allow for transportation redundancy as part of a gridded street network. Gridded networks have more capacity with narrower roadways that are safer for pedestrians and other multimodal traffic.

In the Year 2026 and Year 2045 total traffic scenarios with the Front Street connection, it is recommended that Front Street becomes the through street, resulting in the installation of westbound stop-control on Harper Street.

With the Front Street connection, it is recommended that traffic calming measures are constructed to attenuate operations on Front Street. Several measures that may be considered are described in the City of Louisville's *Transportation Master Plan*. This document's Neighborhood Traffic Management Program (NTMP) focuses on neighborhood-level traffic calming and safety improvements. These improvements help maintain the City's family-friendly small-town character. Examples of tools utilized within an NTMP include, but are not limited to the following.

- Enhanced or raised pedestrian crossings
- Medians and/or entry islands
- Curb extensions
- Speed humps or cushions
- Speed monitoring and enforcement campaigns
- Education campaigns

Analysis Scenario without the Front Street Connection: A second scenario does not include vehicular access from the proposed Coal Creek Village to Front Street. With this option, pedestrian and multimodal connectivity are still encouraged.

In the Year 2026 and Year 2045 total traffic scenarios without the Front Street connection, no changes from the current conditions are considered. Therefore, there no additional vehicular traffic is anticipated without the Front Street connection.

Without the Front Street connection, both Coal Creek Village and other surrounding background traffic will have travel paths impacted by the access control on South Boulder Road and SH 42. Drivers are more likely to make weave movments egressing the South Boulder Road acesses to reach the eastbound left turn lane at the signalized intersection of South Boulder Road and SH 42. Without the Front Street connection, there is anticipated to be 45% more eastbound U-turn movements on South Boulder Road. This includes a weave movement from the northern site accesses to the eastbound left turn lane at the signalized intersection.

Table 11: Anticipated Front Street Traffic Volumes with and without the Connection between South Boulder Road and Griffith Street

	Traffic Volume in vph (vehicle trips per hour)			Time between vehicles (average gap time)		
Scenario	**AM**	**PM**	**SAT**	**AM**	**PM**	**SAT**
Total 2045 With Front St Connection	79 vph	93 vph	67 vph	1 car every 45 seconds	1 car every 38 seconds	1 car every 53 seconds
Total 2045 Without Front St Connection	9 vph	13 vph	13 vph	1 car every 400 seconds (6.5 minutes)	1 car every 276 seconds (4.6 minutes)	1 car every 276 seconds (4.6 minutes

The anticipated total Year 2045 daily traffic volume on Front Street was calculated at a location directly north of Griffith Street. The same methodology graphically represented in

Figure 8 and **Figure 10** was used for the scenarios with and without the Front Street connection, respectively.

Front Street is anticipated to have less than 1,000vpd, which is considered the local residential roadway capacity for livability. In actuality, the roadway can technically handle a much larger volume of vehicles. Different municipalities typically use 1,000 – 1,500vpd as the capacity of a local residential roadway. This analysis conservatively uses the 1,000vpd capacity.

The following figures provide a breakdown of the anticipated future Year 2045 traffic volumes on Front Street with and without the Front Street connection. The total daily capacity is considered to be a conservative 1,000vpd. The total hourly capacity, using a design hourly volume of 10%, is considered to be 100vph.

Figure 27: Year 2045 Total Daily Traffic (vpd) (With Front Street Connection)

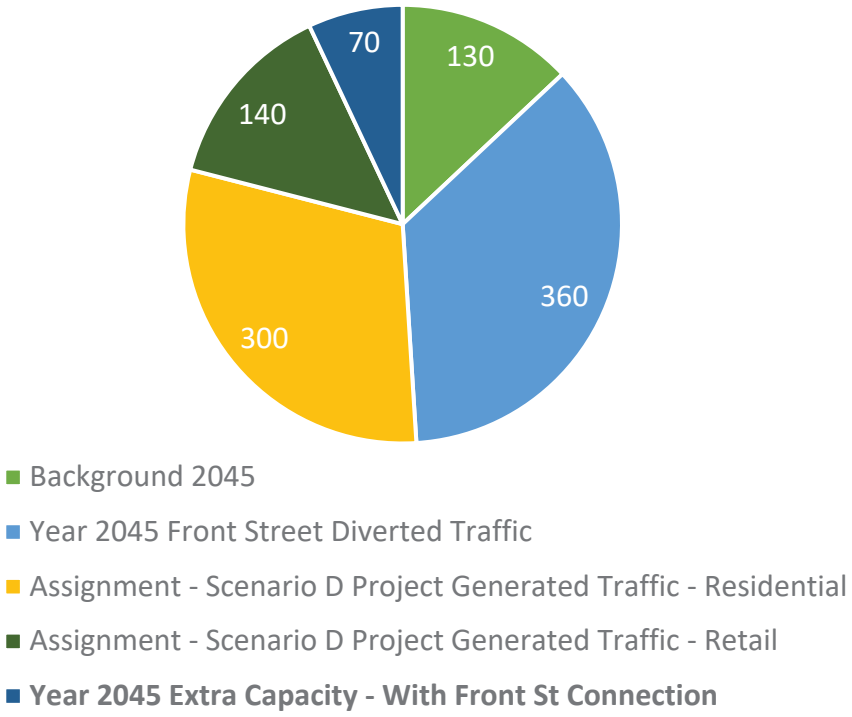
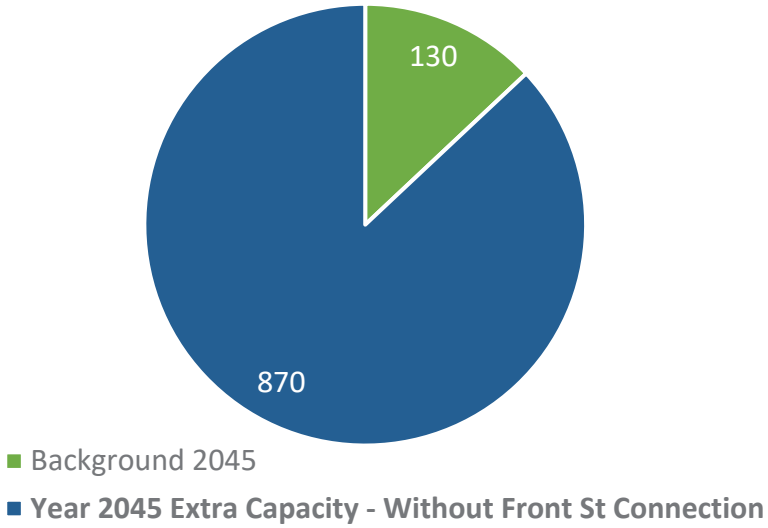


Figure 28: Year 2045 Total Daily Traffic (vpd) (Without Front Street Connection)



The excess capacity on Front Street in each of these scenarios is depicted in bold and dark blue.

Similarly, the anticipated total Year 2045 hourly peak traffic volumes were calculated at a location directly north of Griffith Street. Front Street is anticipated to have less than 100vph, which is considered the local residential roadway capacity for livability.

Figure 29: Year 2045 Total Morning Peak Hour Traffic (vph) (With Front Street Connection)

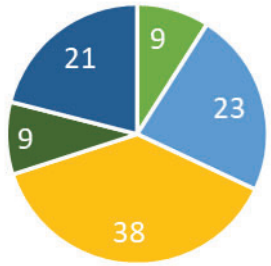


Figure 30: Year 2045 Total Evening Peak Hour Traffic (vph) (With Front Street Connection)

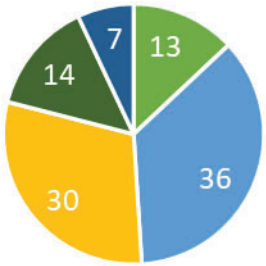
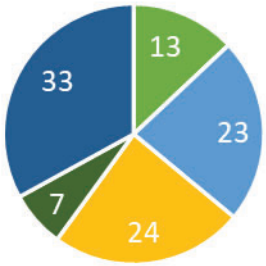
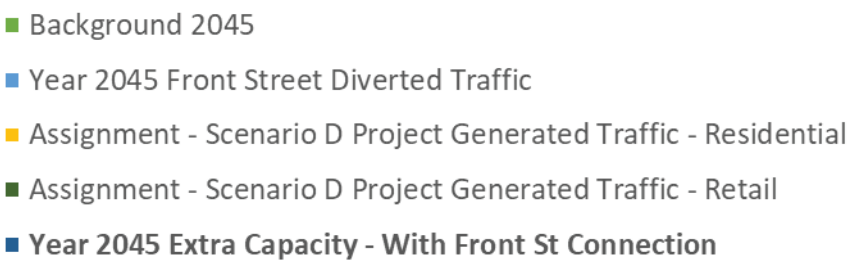


Figure 31: Year 2045 Total Saturday Peak Hour Traffic (vph) (With Front Street Connection)





Cannon Circle Access: Cannon Circle will also provide two of the accesses to the development. Cannon Circle is platted as an L-shaped City street. The north-south leg intersects South Boulder Road one block west of SH 42. The east-west leg intersects SH 42 one block south of South Boulder Road.

Canon Circle approaching SH 42 may require access restriction to the adjacent lot. There is a potential corner clearance problem with an existing driveway. The driveway on Cannon Circle to 1110 E South Boulder Road is about 20 feet south of the stop bar. If there are two or more northbound queued up at the stop sign, the southbound left turn into the driveway will be blocked. Someone waiting to make the left turn into the driveway could cause a backup that extends into the eastbound through lanes on South Boulder Road.

The City may want to implement a countermeasure. One option is to install a "Do Not Block Driveway" sign and appropriate lane markings. Another option is to construct a raised median on Cannon Circle, making the driveway a right-in/right-out access. This intersection may have movements restricted in the future at the direction of the City.

Northbound left turns onto South Boulder Road: The City is considering the restriction of the left turns from the side streets at the South Boulder Road and Cannon Circle intersection as mentioned in the *South Boulder Road Corridor Evaluation*. Per the analysis included in this report, McDowell Engineering recommends that the left turn and through movements are restricted at Cannon Street at the time of Coal Creek Village buildout. This can be accomplished with the construction of a raised center median at the intersection.

6.4 Turn Lane Requirements

The need for auxiliary turn lanes were assessed per the *State of Colorado State Highway Access Code*[10] *(Access Code)* for CDOT's SH 42. The City of Louisville *Design and Construction Standards* does not have turn lane requirements, so the *Access Code* requirements were compared to the 95th Percentile Queue lengths for the Year 2050 total traffic conditions and current site geometric constraints for the turning movements that are not on the State Highway system. Refer to **Table 12** below for the auxiliary turn lane recommendations and details.

[10] State of Colorado State Highway Access Code, 2002.

Table 12 - Auxiliary Turn Lane Requirements (continued) [1]

#	Intersection	Mvmt	Accel or Decel	Posted Speed Limit (MPH)	Road Jurisdiction/ CDOT Class	SHAC Trigger Volume (VPH)	Year 2024 Existing			Year 2026 BG			Year 2045 BG			Year 2045 Total with Front Street			Year 2026 Total without Front Street			Year 2026 Total with Front Street			Year 2045 Total without Front Street			Existing Turn Lane	Trigger Year & Condition
							AM	PM	SAT	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT		
1	S. Boulder Road & Main Street	EBR	D	45	Local	N/A	109	99	87	112	106	94	111	102	90	112	106	94	112	106	94	111	102	90	111	102	90	120' + 90' Taper	95th Percentile Queue < 35'. Existing is adequate.
		WBL	D	45	Local	N/A	75	69	67	75	69	67	75	69	67	79	76	70	75	69	67	79	76	70	75	69	67	290' + 40' Bay Taper	95th Percentile Queue < 30'. Existing is adequate.
		NBL	D	25	Local	N/A	65	87	57	81	98	68	67	89	59	103	111	79	81	98	68	89	102	70	67	89	59	115' Lane	Queues of 205'. Approximately blocks 1 residential driveway.
		NBR	D	25	Local	N/A	95	162	93	95	162	93	95	162	93	104	178	100	108	189	106	104	178	100	113	194	107	115' + 75' Taper	Queues of 205'. Approximately blocks 1 residential driveway.
2	S. Boulder Road & Front Street	EBL	D		Local	N/A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	None	
		EBR	D	45	Local	N/A	0	1	3	0	1	3	0	1	3	36	65	38	24	53	28	41	73	43	34	63	30	50' + 75' Taper	Assume NR-B Equivalent. 73vph. 75' storage + 10' lane @ 13.5:1 (135' taper). Need to extend turn lane.
		WBL	D	45	Local	N/A	0	2	4	0	2	4	0	2	4	7	16	11	7	16	11	12	27	16	16	30	16	90' + 75' Taper	Assume NR-B Equivalent. 30vph. 50' storage + 10' lane @ 13.5:1 (135' taper) Constrained with adjacent access turn lane. Existing bay taper acceptable.
		WBR	D	45	Local	N/A	5	5	4	5	5	4	5	5	4	5	5	4	5	5	4	5	5	4	5	5	4	None	Private Access not applicable to this project.
		NBL	D		Local	N/A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	None	
		NBR	D	20	Local	N/A	0	3	5	0	3	5	0	3	5	22	29	20	48	50	34	22	29	20	40	64	36	None	NB Front Street constrained to NBR movements. Lane is continuous, no decel lane needed.
		NBR	A	45	Local	N/A	0	3	5	0	3	5	0	3	5	22	29	20	48	50	34	22	29	20	40	64	36	None	Assume NR-B Equivalent. 64vph. No safety/operational concerns, therefore accel lanes is not required.
		SBL	D		Local	N/A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	None	
		SBR	D	20	Local	N/A	11	5	1	11	5	1	11	5	1	11	5	1	11	5	1	11	5	1	11	5	1		Private Access not applicable to this project.
3	S. Boulder Road & Cannon Circle	EBL	D		Local	N/A	21	48	28	21	48	28	21	48	28	21	48	28	21	48	28	21	48	28	21	48	28	90' + 65' Taper	Project to construct median extension to restrict to 3/4 movement. EBL at private access not applicable to this project.
		EBR	D		Local	N/A	0	27	15	0	27	15	0	27	15	11	49	28	9	45	26	11	49	28	12	47	27	None	Assume NR-B Equivalent. 49vph. 50' storage + 10' lane @ 13.5:1 (135' taper). Need to construct turn lane.
		WBL	D		Local	N/A	6	18	34	6	18	34	8	21	34	21	50	49	17	40	44	25	59	52	31	62	52	75' + 75' Taper	Assume NR-B Equivalent. 62vph. 55' storage + 10' lane @ 13.5:1 (135' taper) Constrained with adjacent access turn lane. Existing bay taper acceptable.
		WBR	D		Local	N/A	8	12	12	8	12	12	8	12	12	8	12	12	8	12	12	8	12	12	8	12	12	None	Private Access not applicable to this project.
		NBL	D		Local	N/A	0	2	8	0	2	8	0	2	8	0	0	0	0	0	0	0	0	0	0	0	0	None	Project to construct median extension to restrict to 3/4 movement. NBL to be removed in total traffic conditions.
		NBR	D		Local	N/A	1	23	13	1	23	13	2	24	21	32	58	42	45	65	48	33	59	50	38	80	58	None	Project to construct median extension to restrict to 3/4 movement. NB Cannon Circle is constrained to NBR movements. Lane is continuous, no decel lane needed.
		SBL	D		Local	N/A	8	21	23	8	21	23	8	21	23	0	0	0	0	0	0	0	0	0	0	0	0	45' Lane	Project to construct median extension to restrict to 3/4 movement. SBL to be removed in total traffic conditions.
		SBR	D		Local	N/A	28	45	56	28	45	56	28	45	56	36	66	82	36	66	82	36	66	82	36	66	82	45' Lane	Assume NR-B Equivalent. 82vph. No safety/operational concerns, therefore accel lanes is not required.
4	Courtesy Road (SH42) & S Boulder Road	EBL	D	45	Local	N/A	281	554	372	288	568	382	369	727	492	312	591	397	312	591	397	393	750	507	389	757	508	160' Dual	95th percentile queue >766'. Existing queue length exceeds current storage capacity. EBL lanes are constrained from back to back left turns of adjacent intersection.
		EBR	D	45	Local	N/A	145	163	99	149	167	102	190	214	130	135	146	87	175	193	118	171	185	110	212	247	147	None	435' decel including 13.5:1 taper. Proposed with Future 42 Plan implementation.
		EBR	A	45	NR-A	> 50	145	163	99	149	167	102	190	214	130	135	146	87	175	193	118	171	185	110	212	247	147	None	247vph. Accel lane per CDOT 550' lane including 13.5:1 taper. To be coordinated in Future 42 Plan.
		WBL	D	45	Local	N/A	250	336	236	261	355	252	332	453	322	261	355	252	261	355	252	332	453	322	332	453	322	220' Dual	95th percentile queue >362'. Existing queue length may exceed current storage capacity. WBL lanes are constrained from back to back left turns of adjacent intersection.
		WBR	D	45	Local	N/A	149	197	132	153	202	135	195	258	173	153	202	135	153	202	135	195	258	173	195	258	173	Continuous Channelized	WBR Lane is a continuous right turn lane for multiple accesses. 435' decel including 13.5:1 taper. To be coordinated with Future 42 Plan implementation.
		WBR	A	45	NR-A	> 50	149	197	132	153	202	135	195	258	173	153	202	135	153	202	135	195	258	173	195	258	173	None	258vph. Accel lane per CDOT 550' lane including 13.5:1 taper. To be coordinated with Future 42 Plan implementation.
		NBL	D	45	NR-A	> 10	171	125	154	175	128	158	226	167	202	177	132	160	177	132	160	236	188	212	244	199	216	220' Dual	244vph. 435' decel + 245' storage including 13.5:1 taper. To be coordinated with Future 42 Plan implementation.
		NBR	D	45	NR-A	> 25	190	245	190	198	255	199	258	328	253	198	255	199	198	255	199	258	328	253	258	328	253	None	435' decel including 13.5:1 taper. Proposed with Future 42 Plan implementation.
		NBR	A	45	NR-A	> 50	190	245	190	198	255	199	258	328	253	198	255	199	198	255	199	258	328	253	258	328	253	None	328vph. Accel lane per CDOT 550' lane including 13.5:1 taper. To be coordinated with Future 42 Plan implementation.
		SBL	D	45	NR-A	> 10	125	135	107	128	139	110	164	177	140	128	139	110	128	139	110	164	177	140	164	177	140	185' Dual	177vph. 435' decel + 180' storage including 13.5:1 taper. To be coordinated with Future 42 Plan implementation.
		SBR	D	45	NR-A	> 25	420	307	253	431	315	260	551	403	332	444	342	273	440	333	268	564	430	345	563	423	341	300' Channelized	564vph. 435' decel including 13.5:1 taper. To be coordinated with Future 42 Plan implementation.
		SBR	A	45	Local	N/A	420	307	253	431	315	260	551	403	332	444	342	273	440	333	268	564	430	345	563	423	341	None	Assume NR-B Equivalent. 564vph. To be coordinated with Future 42 Plan implementation.
5	Courtesy Road (SH42) & Cannon Circle	EBL	D	20	Local	N/A	1	1	8	1	1	8	0	0	0	1	1	8	1	1	8	0	0	0	0	0	0	None	Project to construct median extension to restrict to 3/4 movement. Future 42 Plan will restrict to RIRO movements only. EBL to be removed with project construction.
		EBR	D	20	Local	N/A	0	6	1	0	6	1	0	6	1	17	19	10	17	19	10	17	19	10	13	26	11	None	Project to construct median extension to restrict to 3/4 movement. EB Cannon Circle is constrained to EBR movements. Lane is continuous, no decel lane needed.
		EBR	A	45	NR-A	> 50	0	6	1	0	6	1	0	6	1	17	19	10	17	19	10	17	19	10	13	26	11	None	26vph. Does not meet Access Code requirements for construction of an accel lane.
		NBL	D	45	NR-A	> 10	2	3	0	2	3	0	0	0	0	10	20	9	13	26	11	0	0	0	0	0	0	135' + 100' Taper	NBL to remain until Future 42 Plan implementation. 26vph. 435' decel including 13.5:1 taper. Turn lane extension to be coordinated with CDOT due to back to back left turns at the Louisville Sports Complex access. NBL will be restricted with Future 42 Plan.
		SBR	D	45	NR-A	> 25	1	9	10	1	9	10	1	9	10	1	9	10	5	19	15	1	9	10	8	21	16	None	21vph. Does not meet Access Code requirements for construction of a decel lane.

Table 13 - Auxiliary Turn Lane Requirements (continued) [1]

#	Intersection	Mvmt	Accel or Decel	Posted Speed Limit (MPH)	Road Jurisdiction/ CDOT Class	SHAC Trigger Volume (VPH)	Year 2024 Existing			Year 2026 BG			Year 2045 BG			Year 2045 Total with Front Street			Year 2026 Total without Front Street			Year 2026 Total with Front Street			Year 2045 Total without Front Street			Existing Turn Lane	Trigger Year & Condition
							AM	PM	SAT	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT		
6	Courtesy Road (SH42) & Griffith Street	EBL	D	25	Local	N/A	15	7	10	19	11	14	29	17	20	19	11	14	19	11	14	29	17	20	29	17	20	None	In the short term the anticipated 95th percentile queue length is 75'. Future 42 Plan implementation in the future will signalize this intersection. A future EBL turn should have 50' of storage + taper to contain the 95th percentile queue with the signal. EBL construction to be coordinated with the Future 42 plan implementation.
		EBR	D	25	Local	N/A	54	39	21	54	39	21	54	39	21	72	67	39	54	39	21	77	75	44	54	39	21	None	Future 42 Plan implementation in the future will signalize this intersection. A future EBTR to be coordinated with the Future 42 plan implementation.
		EBR	A	45	NR-A	> 50	54	39	21	54	39	21	54	39	21	72	67	39	54	39	21	77	75	44	54	39	21	None	77vph. Accel lane per CDOT 550' lane including 13.5:1 taper. To be coordinated with Future 42 Plan implementation.
		WBL	D	45	Local	N/A	0	0	2	0	0	2	0	0	2	0	0	2	0	0	2	0	0	2	0	0	2	None	Private Access not applicable to this project.
		WBR	D	45	Local	N/A	0	0	6	0	0	6	0	0	6	0	0	6	0	0	6	0	0	6	0	0	6	50' Lane	Private Access not applicable to this project.
		WBR	A	45	NR-A	> 50	0	0	6	0	0	6	0	0	6	0	0	6	0	0	6	0	0	6	0	0	6	None	Private Access not applicable to this project.
		NBL	D	45	NR-A	> 10	37	19	21	37	19	21	37	19	21	40	26	25	37	19	21	40	26	25	37	19	21	225' + 150' Taper	In the short term the anticipated 95th percentile queue length is 25'. Future 42 Plan implementation in the future will signalize this intersection. A future NBL turn should have 435' of decel + 45' of storage including a 13.5:1 taper. EBL construction to be coordinated with the Future 42 plan implementation.
		NBR	D	45	NR-A	> 25	4	2	43	4	2	43	4	2	43	4	2	43	4	2	43	4	2	43	4	2	43	None	Existing volumes require the construction of a NBR turn lane of 435' length including a 13.5:1 taper. Private access not applicable to this project.
		NBR	A	25	Local	N/A	4	2	43	4	2	43	4	2	43	4	2	43	4	2	43	4	2	43	4	2	43		
		SBL	D	45	NR-A	> 10	5	1	11	5	1	11	5	1	11	5	1	11	5	1	11	5	1	11	5	1	11	505' + 135' Taper	In the short term the anticipated 95th percentile queue length is 25'. Future 42 Plan implementation in the future will signalize this intersection. A future SBL turn should have 435' of decel + 200' of storage including a 13.5:1 taper. SBL construction to be coordinated with the Future 42 plan implementation. Private access not applicable to this project.
		SBR	D	45	NR-A	> 25	81	117	38	83	123	44	83	123	44	83	123	44	94	133	50	83	123	44	91	137	50	175' (Continuous)	137vph. 435' decel including 13.5:1 taper. Turn lane design to be coordinated with CDOT due to adjacent accesses. Future SBR design to be coordinated with the Future 42 plan implementation.
		SBR	A	25	Local	N/A	81	117	38	83	123	44	83	123	44	83	123	44	94	133	50	83	123	44	91	137	50		
7	Griffith Street & Cannon Street	EBL	D	25	Local	N/A	0	2	0	0	2	0	0	2	0	0	2	0	0	2	0	0	2	0	0	2	0	None	Volume does not meet requirements for construction of a decel lane.
		EBR	D	25	Local	N/A	7	10	8	13	26	24	12	22	20	13	26	24	13	26	24	12	22	20	12	22	20	None	Volume does not meet requirements for construction of a decel lane.
		WBL	D	25	Local	N/A	12	21	9	14	27	15	14	27	15	14	27	15	14	27	15	14	27	15	14	27	15	None	Volume does not meet requirements for construction of a decel lane.
		WBR	D	25	Local	N/A	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	None	Volume does not meet requirements for construction of a decel lane.
		NBL	D	20	Local	N/A	10	11	6	32	28	23	19	19	14	32	28	23	32	28	23	19	19	14	19	19	14	None	Volume does not meet requirements for construction of a decel lane.
		NBR	D	20	Local	N/A	5	1	6	9	5	10	19	11	16	9	5	10	9	5	10	19	11	16	19	11	16	None	Volume does not meet requirements for construction of a decel lane.
		SBL	D	20	Local	N/A	0	0	1	0	0	1	0	0	1	0	0	1	0	0	1	0	0	1	0	0	1	None	Volume does not meet requirements for construction of a decel lane.
		SBR	D	20	Local	N/A	1	0	1	1	0	1	1	0	1	1	0	1	1	0	1	1	0	1	1	0	1	None	Volume does not meet requirements for construction of a decel lane.
8	Griffith Street & Front Street	EBL	D	25	Local	N/A	2	4	6	2	4	6	2	4	6	6	15	12	2	4	6	6	15	12	2	4	6	None	Volume does not meet requirements for construction of a decel lane.
		EBR	D	25	Local	N/A	2	6	3	2	6	3	2	6	3	2	6	3	2	6	3	2	6	3	2	6	3	None	Volume does not meet requirements for construction of a decel lane.
		WBL	D	25	Local	N/A	3	5	1	3	5	1	3	5	1	3	5	1	3	5	1	3	5	1	3	5	1	None	Volume does not meet requirements for construction of a decel lane.
		WBR	D	25	Local	N/A	1	0	3	1	0	3	1	0	3	4	7	7	1	0	3	4	7	7	1	0	3	None	Volume does not meet requirements for construction of a decel lane.
		NBL	D	20	Local	N/A	6	2	8	6	2	8	6	2	8	6	2	8	6	2	8	6	2	8	6	2	8	None	Volume does not meet requirements for construction of a decel lane.
		NBR	D	20	Local	N/A	3	1	0	3	1	0	3	1	0	3	1	0	3	1	0	3	1	0	3	1	0	None	Volume does not meet requirements for construction of a decel lane.
		SBL	D	20	Local	N/A	1	0	0	1	0	0	1	0	0	19	28	18	1	0	0	24	36	23	1	0	0	None	Volume does not meet requirements for construction of a decel lane.
		SBR	D	20	Local	N/A	5	3	4	5	3	4	5	3	4	45	29	25	5	3	4	45	29	25	5	3	4	None	Volume does not meet requirements for construction of a decel lane.
9	Griffith St & Main St	WBL	D	25	Local	N/A	35	74	51	42	80	57	42	80	57	59	93	66	53	90	63	59	93	66	50	94	63	None	Volume does not meet requirements for construction of a decel lane.
		WBR	D	25	Local	N/A	57	46	25	73	57	36	59	48	27	95	70	47	73	57	36	81	61	38	59	48	27	None	Volume does not meet requirements for construction of a decel lane.
		NBR	D	25	Local	N/A	57	31	38	60	39	46	60	39	46	64	50	52	60	39	46	64	50	52	60	39	46	None	Volume does not meet requirements for construction of a decel lane.
		SBL	D	25	Local	N/A	18	32	11	21	39	18	20	35	14	21	39	18	21	39	18	20	35	14	20	35	14	None	Volume does not meet requirements for construction of a decel lane.
10	Front St & Harper St	WBL	D	25	Local	N/A	6	6	4	6	6	4	6	6	4	6	6	4	6	6	4	6	6	4	6	6	4	None	Volume does not meet requirements for construction of a decel lane.
		WBR	D	25	Local	N/A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	None	Volume does not meet requirements for construction of a decel lane.
		NBR	D	25	Local	N/A	3	7	9	3	7	9	3	7	9	3	7	9	3	7	9	3	7	9	3	7	9	None	Volume does not meet requirements for construction of a decel lane.
		SBL	D	25	Local	N/A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	None	Volume does not meet requirements for construction of a decel lane.
11	Courtesy Road (SH42) & Harper Street	EBL	D	20	Local	N/A	7	26	38	7	26	38	0	0	0	7	26	38	7	26	38	0	0	0	0	0	0	None	Volume does not meet requirements for construction of a decel lane.
		EBR	D	20	Local	N/A	12	61	11	12	61	11	19	87	49	12	61	11	12	61	11	19	87	49	19	87	49	None	Volume does not meet requirements for construction of a decel lane.
		EBR	A	45	NR-A	> 50	12	61	11	12	61	11	19	87	49	12	61	11	12	61	11	19	87	49	19	87	49	None	87vph. Accel lane per CDOT 550' lane including 13.5:1 taper. To be coordinated with the Future 42 plan implementation.
		NBL	D	45	NR-A	> 10	7	7	6	7	7	6	0	0	0	7	7	6	7	7	6	0	0	0	0	0	0	None	Volume does not meet requirements for construction of a decel lane.
		SBR	D	45	NR-A	> 25	2	8	6	2	8	6	2	8	6	2	8	6	2	8	6	2	8	6	2	8	6	None	Volume does not meet requirements for construction of a decel lane.

[1]Based upon *State Highway Access Code* requirements for an NR-A roadway with posted speed of 45mph.

Triggered by State Highway Access Code Volumes

Triggered by State Highway Access Code Safety and Operations

Intersection #1 - South Boulder Road and Main Street Intersection: This existing signalized intersection has adequate eastbound right and westbound left turn lanes for normal operations through Year 2045 total traffic operations. The northbound movement on Main Street can be anticipated to queue up to over 200' at the signal. This queue is anticipated to block approximately one residential driveway during peak traffic operations.

During railroad crossings at this intersection, longer queues occur. It takes a few minutes for the queues to dissipate.

These conditions occur with or without the addition of the Coal Creek Village project-generated traffic.

Intersection #2 - South Boulder Road and Front Street Intersection: Mainline South Boulder Road operates at an equivalent classification as a CDOT NRB roadway. It has a posted speed limit of 45mph.

With the development of Coal Creek Village, the eastbound right turn lane needs to be extended to include 75' of storage and a 13.5:1 taper to accommodate the anticipated site-generated traffic. The westbound left turn lane is constrained by the back-to-back turn lane to the adjacent access.

The northbound movement is restricted to right turn movements. Therefore, the northbound movement out of the site does not require a separate turn lane. No acceleration lane is required for this movement onto South Boulder Road.

Intersection #3 - South Boulder Road and Cannon Circle intersection: With the construction of Coal Creek Village, this access will be further restricted from to a ¾ movement access, prohibiting the northbound and southbound through and left turn movements.

Mainline South Boulder Road operates at an equivalent classification as a CDOT NRB roadway. It has a posted speed limit of 45mph.

With the development of Coal Creek Village, an eastbound right turn lane needs to be constructed to include 50' of storage and a 13.5:1 taper to accommodate the anticipated site-generated traffic. The westbound left turn lane is constrained by the back-to-back turn lane to the adjacent access. The 95th percentile queue for this movement is less than the available storage length + taper length. Therefore, no changes are recommended to the westbound left deceleration lanes.

The northbound movement is restricted to right turn movements. Therefore, the northbound movement out of the site does not require a separate turn lane.

Intersection #4 - South Boulder Road and SH 42 intersection: This is a full-movement, signalized intersection. The *Future 42* plan depicts intersection improvements that

include the construction of channelized northbound and eastbound right turn lanes. The Year 2045 total traffic scenario is modeled assuming the westbound and southbound right turn lanes are constructed. Even with these future improvements, this intersection has movements that are anticipated to operate at a failing LOS F for both Year 2026 and Year 2045 background and total traffic conditions.

The existing eastbound and westbound left turn lane queues exceed the available capacity. Both of the median islands are constrained by a back-to-back left turn lane at the adjacent access.

The northbound and southbound left turn lanes also need to be extended to accommodate the existing queue lengths. All of the turn lane and intersection improvements should be coordinated with the implementation of the City's *Future 42* plan.

Intersection #5 - SH 42 and Cannon Circle intersection: This is currently a full-movement "T" intersection. With the buildout of Coal Creek Village, this intersection will be restricted to a ¾ movement by extending the existing center median in SH 42.

The eastbound movement will be restricted to right turn only movements. Therefore, no deceleration lane is needed for this movement.

The northbound left turn movement will remain until the *Future 42* plan is implemented. Per the Access Code, this movement should have a deceleration lane that is 435' in length, including a 13.5:1 taper. Any modifications to the turn lane need to be coordinated with CDOT, as the movement is temporary and the associated median is back-to-back with the southbound left turn lane into the Louisville Sports Complex.

The southbound right turn lane is not required per CDOT's *Access Code* based upon the anticipated traffic volumes at this access.

Intersection #6 - SH 42 and Griffith Street intersection: This is currently a full-movement intersection. It is planned to be signalized with the implementation of the *Future 42* plan. Upon signalization, it is anticipated that separate eastbound and westbound left turn lanes will need to be constructed. The existing southbound right turn lane should remain. The northbound left turn lane is anticipated to require 435' of deceleration length with 45' of storage. The southbound left turn lane is anticipated to require 435' of deceleration length with 50' of storage. Additional length may be required for the traffic queues associated with the Louisville Sports Complex. These improvements are required with or without the addition of Coal Creek Village's project-generated traffic.

Intersection #7 – Griffith Street and Cannon Street intersection: This is a full-movement intersection with stop-control on the north and south legs. No additional turn lanes are required.

Intersection #8 – Griffith Street and Front Street intersection: This is a full-movement intersection with stop-control on the north and south legs. No additional turn lanes are required.

Intersection of Griffith Street and the BNSF Railroad: This at-grade railroad crossing sees multiple trains crossings per day, with each impacting the crossing for three to five minutes at a time. During the crossing, traffic queues on Griffith Street back up in either direction. Refer to **Section 6.6** for analysis of the crossing impacts.

It is recommended that the intersection of Griffith Street and Front Street is signed and striped with "Do not block intersection" to allow for ingress and egress movements at the Griffith Street and Front Street intersection during train crossings.

Intersection #9 – Griffith Street and Main Street intersection: This is a full-movement "T" intersection. The east leg is stop-controlled. This is a full-movement intersection with stop-control on the north and south legs. No additional turn lanes are required.

Intersection #10 – Front Street and Harper Street intersection with the Front Street Connection: This is currently a free-flowing intersection. There is an unimproved alley access as a third, north leg. With the buildout of Coal Creek Village and a connection of Front Street from South Boulder Road to Griffith Street, it is recommended that Front Street is designed as the through street and Harper Street is stop-controlled with a stop sign. The installation of a stop sign, stop bar, and painted pedestrian crosswalk should be included on the north leg of Front Street.

It is recommended that traffic calming is implemented along Front Street to encourage slower and safer travel speeds.

Intersection #10 – Front Street and Harper Street intersection without the Front Street Connection: This is currently a free-flowing intersection. There is an unimproved alley access as a third, north leg. Without the construction of a Front Street connection from South Boulder Road to Griffith Street, the existing conditions of this intersection would remain in place.

Intersection #11 – SH 42 and Harper Street intersection: The existing volume of eastbound right turns from Harper Street onto SH 42 exceeds the *Access Code*'s requirement to construct an acceleration lane for this movement. With the implementation of the *Future 42* Plan, this volume is anticipated to increase because current traffic making the eastbound left movement will likely make a right turn instead. Coal Creek Village's site traffic is not anticipated to impact this movement.

At a minimum, the construction of an acceleration lane should be incorporated into the implementation of Future 42 plans.

6.5 SH 42 and Cannon Circle State Highway Access Permit

Per Section 2.6(3) of the Access Code, a new access permit is required by CDOT when the traffic volume is anticipated to increase by 20%. The additional site traffic associated with the proposed Coal Creek Village project is anticipated to double traffic at the Cannon Circle access with the Front Street connection. Without the Front Street connection, the project is anticipated to approximately triple traffic on the Cannon Circle Access. Therefore, a new State Highway Access Permit will be required for this intersection. Louisville Middle School

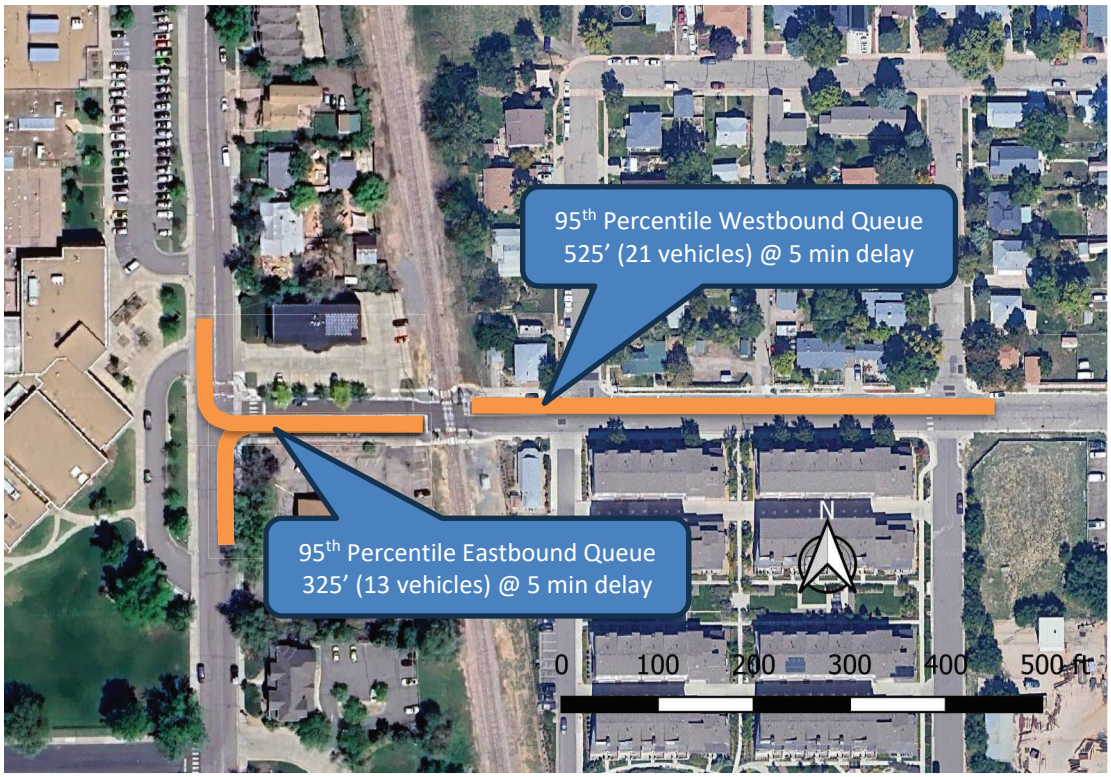
Louisville Middle School is located directly west of the Griffith Street and Main Stre intersection. Middle school students are not old enough to drive themselves to school. The school day runs from 8:45am to 3:45pm. Wednesday's schedule runs from 9:45am to 3:45pm. Main Street experiences high traffic congestion during peak dropoff and pickup periods. The Boulder Valley School District has published a *Louisville Middle School Travel Map*[16] encouraging students to walk within a three-block and ½ mile radius of the school. This map is included in the **Appendix**. This traffic impacts traffic queues on Griffith Street. Hug n' Go Lanes are located on the south and west sides of the school.

The recommended improvements at the intersection of Griffith Street and Front Street should assist with school queues impacting Griffith Street. The pedestrian crosswalk will facilitate pedestrian access across Griffith Street. The 'Do Not Block Intersection' signing and striping improvments will also assist with Front Street egress onto Griffith Street.

6.6 Griffith Street Queuing Analysis for Railroad

The railroad that runs parallel to Main Street between Main Street and Front Street is anticipated to have delays between three and five minutes when trains are crossing Griffith Street. A queuing analysis was performed on Griffith Street at the railroad crossing.

Figure 32: Anticipated Queue Lengths for Railroad Operations



Both 50th percentile and 95th percentile queues were calculated using a cumulative Poisson distribution. Detailed calculations are available in the **Appendix**. **Table 14** and **Table 15**. summarize the queuing calculations for all the scenarios assuming a 3 minute or 5 minute railroad delay.

The maximum anticipated 50th and 95th percentile queue lengths occur during the Total 2026 with Front Street PM Peak hour scenario. **Figure 32** shows the 95th percentile queue lengths with a 5 minute delay for this scenario. These queues are 525' for the westbound and 325' for the eastbound. It was assumed that each vehicle occupies 25' in the queue, therefore, the 525' westbound queue is anticipated to contain 21 vehicles and the 325' eastbound queue is anticipated to contain 13 vehicles.

Table 14: Queuing Summary (3 Minute Delay)

Scenario	Sum of (50th Percentile) Queue Length (ft.)		Sum of (95th Percentile) Queue Length (ft.)	
	EB	WB	EB	WB
Background 2026 AM	100	150	200	250
Background 2026 PM	100	175	175	275
Background 2026 SAT	75	100	150	200
Background 2045 AM	100	125	200	225
Background 2045 PM	100	150	175	275
Background 2045 SAT	75	100	150	200
Total 2026 With Front Street AM	100	200	200	325
Total 2026 With Front Street PM	100	225	200	350
Total 2026 With Front Street SAT	75	150	175	250
Total 2026 Without Front Street AM	100	150	200	275
Total 2026 Without Front Street PM	100	175	175	300
Total 2026 Without Front Street SAT	75	125	150	225
Total 2045 With Front Street AM	100	175	200	300
Total 2045 With Front Street PM	100	200	200	350
Total 2045 With Front Street SAT	75	125	175	250
Total 2045 Without Front Street AM	100	125	200	250
Total 2045 Without Front Street PM	100	175	175	300
Total 2045 Without Front Street SAT	75	100	150	200

Table 15: Queuing Summary (5 Minute Delay)

Scenario	Sum of (50th Percentile) Queue Length (ft.)		Sum of (95th Percentile) Queue Length (ft.)	
	EB	WB	EB	WB
Background 2026 AM	175	225	275	375
Background 2026 PM	150	275	275	425
Background 2026 SAT	125	200	225	325
Background 2045 AM	175	200	275	350
Background 2045 PM	150	250	250	400
Background 2045 SAT	125	175	225	300
Total 2026 With Front Street AM	175	350	300	500
Total 2026 With Front Street PM	200	375	325	550
Total 2026 With Front Street SAT	150	250	250	400
Total 2026 Without Front Street AM	175	250	275	400
Total 2026 Without Front Street PM	150	300	275	450
Total 2026 Without Front Street SAT	125	200	225	325
Total 2045 With Front Street AM	175	325	300	475
Total 2045 With Front Street PM	175	350	300	525
Total 2045 With Front Street SAT	125	225	250	375
Total 2045 Without Front Street AM	175	225	275	350
Total 2045 Without Front Street PM	150	300	250	450
Total 2045 Without Front Street SAT	125	175	225	300

Note: Highlighted Line represents the longest anticipated queue

It is anticipated that the addition of development-related traffic will increase the 95th Percentile queue lengths by a maximum of 3 vehicles (75') per 3 minute delay. When the railroad delay is 5 minutes, the 95th Percentile queue lengths are anticipated to be increased by approximately 5 vehicles (125').

7.0 Recommendations and Conclusions

Transportation infrastructure recommendations associated with the construction of the Coal Creek Village project are summarized below.

Front Street Connection:

This TIS includes analysis of scenarios with and without the Front Street connection. Due to the sites' direct access to S. Boulder Road with heavy through volumes, the site accesses will have restricted turning movements. Without the Front Street connection, more vehicles access South Boulder Road from the Cannon Circle access creating additional weave and U-turn movements that present safety concerns. Both the City staff and the TIS recommendations are to include the Front Street connection.

The Front Street connection provides numerous benefits to the Louisville community. The Front Street connection will allow for transportation redundancy as part of a gridded street network. Gridded networks have more capacity and increase circulation with narrower roadways that are safer for pedestrians and other multimodal traffic. It also aligns with the City's previous planning efforts.

Without the Front Street connection, there is anticipated to be an additional 25% of the exiting site distribution that would use the eastbound U-turn, which amounts to between 8 to 18vph. This equates to an anticipated increase of between 40% and 85% for the eastbound U-turn movements on South Boulder Road in the long-term traffic scenarios. This includes a difficult weave movement across two or three lanes of traffic in the 400 feet between the northern site accesses to the eastbound left turn lane at the signalized intersection.

Under both scenarios, Front Street is anticipated to stay within Front Street's local residential street capacity.

With the Front Street connection, it is recommended that traffic calming measures are constructed to attenuate operations on Front Street. Several measures that may be considered are described in the City of Louisville's *Transportation Master Plan*. This document's Neighborhood Traffic Management Program (NTMP) focuses on neighborhood-level traffic calming and safety improvements. These improvements help maintain the City's family-friendly small-town character. Examples of tools utilized within an NTMP include, but are not limited to the following.

- Enhanced or raised pedestrian crossings
- Medians and/or entry islands
- Curb extensions
- Speed humps or cushions

- Speed monitoring and enforcement campaigns
- Education campaigns

Intersection #2 - South Boulder Road and Front Street Intersection: With the development of Coal Creek Village, the eastbound right turn lane needs to be extended to include 75' of storage and a 13.5:1 taper to accommodate the anticipated site-generated traffic. The westbound left turn lane is constrained by the back-to-back turn lane to the adjacent access.

The northbound movement is restricted to right turn movements. Therefore, the northbound movement out of the site does not require a separate turn lane. No acceleration lane is required for this movement onto South Boulder Road.

Intersection #3 - South Boulder Road and Cannon Circle intersection: With the construction of Coal Creek Village, this access will be further restricted to a ¾ movement access, prohibiting the northbound and southbound through and left turn movements by extending the raised center median.

With the development of Coal Creek Village, an eastbound right turn lane needs to be constructed to include 50' of storage and a 13.5:1 taper to accommodate the anticipated site-generated traffic. The westbound left turn lane is constrained by the back-to-back turn lane to the adjacent access. The 95th percentile queue for this movement is less than the available storage length + taper length. Therefore, no changes are recommended to the westbound left deceleration lanes.

The northbound movement is restricted to right turn movements. Therefore, the northbound movement out of the site does not require a separate turn lane.

Intersection #5 - SH 42 and Cannon Circle intersection: With the construction of Coal Creek Village, this intersection will be restricted to a ¾ movement by extending the existing center median in SH 42.

The eastbound movement will be restricted to right turn only movements. Therefore, no deceleration lane is needed for this movement.

Intersection #8 – Griffith Street and Front Street intersection: This is a full-movement intersection with stop-control on the north and south legs. No additional turn lanes are required.

It is recommended that with the Front Street connection, a pedestrian crossing of Griffith Street is installed with a rectangular, rapid flashing beacon (RRFB) to assist pedestrians in crossing Griffith Street.

Additionally, with the Front Street connection, this intersection should have 'Do Not Block Intersection' signage and striping added that will assist with traffic accessing Front Street.

Intersection of Griffith Street and the BNSF Railroad: This at-grade railroad crossing sees multiple trains crossings per day, with each impacting the crossing for three to five minutes at a time. During the crossing, traffic queues on Griffith Street back up in either direction. As described above, it is recommended that the intersection of Griffith Street and Front Street has 'Do Not Block Intersection' signage and striping added that will assist with traffic accessing Front Street.

Intersection #10 – Front Street and Harper Street intersection with the Front Street Connection: This is currently a free-flowing intersection. There is an unimproved alley access as a third, north leg. With the buildout of Coal Creek Village and a connection of Front Street from South Boulder Road to Griffith Street, it is recommended that Front Street is designed as the through street and Harper Street is stop-controlled with a stop sign. The installation of a stop sign, stop bar, and painted pedestrian crosswalk should be included on the north leg of Front Street.

Intersection #11 – SH 42 and Harper Street intersection: The existing volume of eastbound right turns from Harper Street onto SH 42 exceeds the *Access Code*'s requirement to construct an acceleration lane for this movement. With the implementation of the *Future 42* Plan, this volume is anticipated to increase because current traffic making the eastbound left movement will likely make a right turn instead. Coal Creek Village's site traffic is not anticipated to impact this movement. At a minimum, the construction of an acceleration lane should be incorporated into the implementation of Future 42 plans.

8.0 Appendix

Reference Documents

1. *CDOT Online Traffic Information System.* Colorado Department of Transportation, https://dtdapps.coloradodot.info/otis
2. *2015 Assigned All Day Model Volumes* and *2040 Assigned All Day model Volumes,* Denver Regional Council of Governments, https://drcog.org/services-and-resources/data-maps-and-modeling/travel-modeling
3. *Highway Capacity Manual.* Transportation Research Board, 2010.
4. *11th Edition Trip Generation Manual*. Institute of Transportation Engineers, 2021.
5. *Trip Generation Handbook, 3rd Edition*. Institute of Transportation Engineers, 2017.
6. *Trip Generation Handbook*, 2nd Edition. Institute of Transportation Engineers, 2004.
7. *State of Colorado, State Highway Access Code, Volume 2,* Code of Colorado Regulations 601-1, March 2002.
8. *Design and Construction Standards, City of Louisville, Department of Public Works, Engineering Division, 1994.*
9. *Future 42* (SH 42 Corridor Study). City of Louisville, December 2022.
10. *City of Louisville Transportation Master Plan*. City of Louisville, 2019.
11. *South Boulder Road Corridor Evaluation*. City of Louisville and FHU, 2022.
12. *Delo Boom Traffic Impact Study*. Kimley Horn, September 2024.
13. *Louisville South Boulder Road Connectivity Plan.* City of Louisville, 2019.
14. *The Highway 42 Revitalization Area Framework Plan.* City of Louisville, May 2003.
15. *42 Gateway Alternative Analysis Report.* City of Louisville, 2013.
16. *Louisville Middle School Travel Map.* Boulder Valley School District, 2024.
17. *DRCOG South Boulder Road Corridor Study.* DRCOG, 2024

Included Documents

Appendix A: Traffic Study Scoping Form and City Staff's Comments

Appendix B: Site Plan (24" x 36" pdf)

Appendix C: Traffic Counts

Appendix D: Background Growth Rate Calculations per DRCOG

Appendix E: Internal Reduction Calculations

Appendix F: Signal Timing Plans

- SH 42 and South Boulder Road
- Main Street and South Boulder Road

Appendix G: *Future 42* Excerpt of Preferred South Boulder Road and SH 42 Design

Appendix H: *Future 42* Excerpt of Preferred SH 42 and Griffith Street Design

Appendix I: *City of Louisville Transportation Master Plan* Excerpt of South Boulder Road Corridor Improvements and Commercial Driveway

Appendix J: *Louisville South Boulder Road Connectivity Plan* Excerpt of South Boulder Road and Main Street Future Pedestrian Underpass

Appendix K: *The Highway 42 Revitalization Area Framework Plan* Excerpt of Framework Plan

Appendix L: *42 Gateway Alternative Analysis Report* Excerpt of Future Roadway Network

Appendix M: Additional Figures

- Figure AP01: Year 2024 Existing Traffic
- Figure AP02: Year 2026 Background Traffic (Delo Boom Development)
- Figure AP03: Year 2045 Background Traffic (Delo Boom Development)
- Figure AP04: Year 2045 Background Adjust (Int #5 & #6 Redistribution)
- Figure AP05: Background Adjust for Total (Int #3 Redistribution)
- Figure AP06: Front Street Diverted Traffic (Year 2026)
- Figure AP07: Front Street Diverted Traffic (Year 2045)

Appendix N: Synchro Modeling Reports

Appendix O: Louisville TMP Pages

Appendix P: Railroad Queuing Calculations

Appendix Q: Louisville Middle School Travel Map

Appendix R: Intersection Queues

Appendix A: Traffic Study Scoping Form

Traffic Study Scoping Form

Contact Information	
Consultant Name:	McDowell Engineering
Tele:	970-623-0788
E-mail:	kari@mcdowelleng.com
Developer/Owner Name:	Jason Markel, Markel Homes

Project Information (*Attach proposed site plan.*)								
Project Name:		Coal Creek Station						
Project Location:		1000, 1030, 1032, 1034, 1040 E. South Boulder Road, Louisville, CO						
Project Description: Application type (rezoning, subdivision), acreage, new or re-development, etc.		Mixed Use Redevelopment						
Existing Land Uses	ITE Code	#units or Size	Proposed Land Uses	ITE Code	#units or Size	Proposed Land Uses	ITE Code	#units or Size
Restaurant	930	428sf	Low Rise Multifamily	220	188du			
			Retail Plaza	822	13,534sf			
Please attach Trip Generation Summary table for large or mixed use projects.								

Assumptions						
Study Horizons	Current Year: 2024			Buildout Year: 2025	Long Term Year: 2045	
Study Area Boundaries	North: South Boulder Road			South: Griffith Street		
(Attach map if needed.)	East: Courtesy Road			West: Main Street		
Intersections to be Evaluated	1. S. Boulder Rd. & Main St.			6. Courtesy Rd. & Griffith St.		
(Attach map if needed.)	2. S. Boulder Rd. & Front St.			7. Griffith St. & Cannon St.		
	3. S. Boulder Rd. & Cannon Cir.			8. Griffith St. & Front St.		
	4. S. Boulder Rd. & Courtesy Rd.			9. Griffith St. & Main St.		
	5. Courtesy Rd. & Cannon Cir.			10. Front St. & Harper St.		
Trip Distribution	*See attached sketch.*					
Trip Reductions*	Internal Capture	Use: See attached.	%	Pass By	Use: N/A	%
	Multimoda	Use: 5	%		Use:	%
**Include in Trip Generation table if provided. Submit calculations based upon ITE's* Trip Generation Handbook.						

Assumptions (continued)			
Anticipated Future Traffic Growth Rates *(Describe methodology.)*	See attached graphic with DRCOG projections. Find Annual Growth Rate for 2015-2040 model	Study Time Periods *(Check all that apply.)*	☒ AM (7-9) ☒ PM (4-6) ☒ SAT (noon) ☐ Other:
Other Factors (Proposed/assumed transportation improvements, other studies, nearby proposed developments, etc.)	1. Include analyses with and without a Front Street connection. 2. Include Delo Bloom TIS from 2/2024 in background analysis. 3. From the previous TIS, change Cannon Circle/Courtesy Road to a 3/4 movement in Year 2025. 4. A matrix of the intersection control(s) for each scenario is included. 5. Address cut through traffic caused by the inability to turn left out of the site. 6. Include objective analysis for the directional distribution assumptions. 7. Use 1,000vpd for a residential street capacity based upon livability, not actual capacity.		
Analysis Methods & Issues *(Check all that apply.)*	☐ Synchro ☐ HCS ☐ aaSidra or Rodel ☐ Intersections ☐ Roadway Sections ☐ Signal Warrants ☐ Safety/Sight Distance ☐ Queuing & Storage ☐ CDOT (Access Permit, etc.) ☐ Identify Bicycle, Pedestrian & Transit Accomodations ☐ TDM ☐ Neighborhood Impacts ☐ Other:		

Attachments, Notes, & Other Assumptions:

Signed: Kari McDowell Schroeder (Applicant or Consultant) Print Name: Kari McDowell Schroeder (Applicant or Consultant) Date: 2/26/2025	Review Agency: Department: Signed: Print Name: Date:

McDOWELL ENGINEERING

Table 1 - Coal Creek Station
Project Trip Generation
Estimated Project-Generated Traffic[1]

PROJECT NUMBER: M1663
PREPARED BY: KJS
DATE: 2025-02-26
REVISED:

ITE Code	Units [2]		Eq. Coef	ITE Trip Generation Equation[3] Avg. Weekday	AM Peak Hour	PM Peak Hour	Sat. Peak Hour	Average Weekday Trips (vpd)	Morning Peak Hour Inbound % Trips	Morning Peak Hour Inbound Trips (vph)	Morning Peak Hour Outbound % Trips	Morning Peak Hour Outbound Trips (vph)	Evening Peak Hour Inbound % Trips	Evening Peak Hour Inbound Trips (vph)	Evening Peak Hour Outbound % Trips	Evening Peak Hour Outbound Trips (vph)	Saturday Peak Hour Inbound % Trips	Saturday Peak Hour Inbound Trips (vph)	Saturday Peak Hour Outbound % Trips	Saturday Peak Hour Outbound Trips (vph)
Existing Land Use																				
#930 - Fast Casual Restaurant	0.43	ksf	Type a= b=	Rate 97.14	Rate 5.71	Rate 18.57	Rate 32.64	42	63%	2	37%	1	62%	5	38%	4	55%	8	45%	7
Multi-Modal Reduction		*-5%*						*-2*		*0*		*0*		*0*		*0*		*0*		*0*
Existing External Restaurant Vehicular Trips								**40**		**2**		**1**		**5**		**4**		**8**		**7**
Internal Capture Reduction[4]								-17		-1		0		-1		-1		-2		-2
External Restaurant Vehicular Trips with Buildout of Coal Creek Station								**23**		**1**		**1**		**4**		**3**		**6**		**5**
										2				***7***				***11***		
Proposed Residential Land Use																				
#220 - Multifamily Housing (Low-Rise)	188	DU	Type a= b=	A 6.41 75.31	A 0.35 28.13	A 0.42 34.78	Rate 0.41	1,280	24%	23	76%	71	62%	71	38%	43	51%	39	49%	38
Multi-Modal Reduction		*-5%*						*-64*		*-1*		*-4*		*-4*		*-2*		*-2*		*-2*
Vehicular Trips								**1,216**		**22**		**67**		**67**		**41**		**37**		**36**
Internal Capture Reduction[4]								-80		-3		-3		-10		-9		-6		-5
Project External Residential Vehicular Trips								**1,136**		**19**		**64**		**57**		**32**		**31**		**31**
										83				***89***				***62***		
Proposed Commercial Land Use																				
#822 - Retail Plaza[5]	13.53	kSF	Type a= b=	A 42.20 229.68	Rate 7.60	Rate 13.24	Rate 6.57	801	50%	51	50%	51	54%	97	46%	82	51%	45	49%	44
Multi-Modal Reduction		*-5%*						*-40*		*-3*		*-3*		*-5*		*-4*		*-2*		*-2*
Vehicular Trips								**761**		**48**		**48**		**92**		**78**		**43**		**42**
Internal Capture Reduction[4]								-87		-3		-4		-9		-10		-5		-7
Project External Commercial Vehicular Trips								**674**		**45**		**44**		**83**		**68**		**38**		**35**
										89				***151***				***73***		
Project Trip Generation Summary																				
Existing External Restaurant Vehicular Trips								**40**		**2**		**1**		**5**		**4**		**8**		**7**
External Restaurant Vehicular Trips with Buildout of Coal Creek Station								**23**		**1**		**1**		**4**		**3**		**6**		**5**
										2				***7***				***11***		
Project External Residential Vehicular Trips								**1,136**		**19**		**64**		**57**		**32**		**31**		**31**
										83				***89***				***62***		
Project External Commercial Vehicular Trips								**674**		**45**		**44**		**83**		**68**		**38**		**35**
										89				***151***				***73***		
Project Total New Vehicular Trips (Restaurant's new internal capture + residential + commercial)								**1,793**		**63**		**108**		**139**		**99**		**67**		**64**
										171				***238***				***131***		
Project Total Vehicular Trips (Including Existing Restaurant)								**1,833**		**109**		**109**		**144**		**103**		**75**		**71**
										218				***247***				***146***		

Notes:

[1] Values obtained from *Trip Generation, 11th Edition,* Institute of Transportation Engineers, September 2021.

[2] vpd = vehicle trips per day, vph = vehicle trips per hour, DU = Dwelling Units, kSF = 1,000 Square Feet

[3] Fitted curve equations from ITE Land Uses - Equation Type A is T = a * X + b, Equation Type B is Ln(T) = a * Ln(X) + b, Rate is T = a * X

[4] Internal capture reductions were obtained from the *ITE Trip Generation Handbook* , Second Edition, June 2004. See calculations in Appendix.

[5] The ITE Trip Generation Manual did not have available data for the directional distribution of the Saturday peak hour. Therefore, the distribution from mid-rise multifamily housing was used.

Multi-Use Trip Generation Calculation

Analyst: KJS

Date: 2/26/2025

Name of Dvlpt.: Coal Creek Station

Time Period: Avg Weekday

LAND USE A

ITE LU Code #822 Retail Plaza

Size 13.5 KSF

	Total	Internal	External
Enter	381	41	340
Exit	380	48	332
Total	761	89	672
%	100%	12%	88%

Exit to External 332

340 *Enter from External*

30% 114 *Demand*

6 *Balanced*

28% 6 *Demand*

28% 107 *Demand* 11% 42 *Demand*

6 *Balanced* 42 *Balanced*

30% 6 *Demand* 33% 201 *Demand*

9% 34 *Demand*

34 *Balanced*

38% 231 *Demand*

LAND USE B

ITE LU Code #930 Fast Casual Restaurant

Size 430 SF

	Total	Internal	External
Enter	21	8	13
Exit	21	9	12
Total	42	17	25
%	100%	40%	60%

Exit to External 12

13 *Enter from External*

Demand 9% 2 *Balanced* 2 *Demand* 38% 231

Demand 11% 2 *Balanced* 2 *Demand* 33% 201

LAND USE C

ITE LU Code #220 Multifamily Housing

Size 188 DU

	Total	Internal	External
Enter	608	44	564
Exit	608	36	572
Total	1216	80	1136
%	100%	7%	93%

Exit to External 564

572 *Enter from External*

Net External Trips for Multi-Use Development					
	LAND A	**LAND B**	**LAND C**	**Total**	
Enter	340	13	564	917	
Exit	332	12	572	916	
Total	672	25	1136	1833	
Single Use Trip Gen.	761	42	1216	2019	7.7%

McDOWELL ENGINEERING LLC

Internal capture reductions were calculated using methodology from the ITE *Trip Generation Handbook*, Second Edition, June 2004.

Internal Trip Reduction Calculation Model

Analyst: KJS
Date: 2/26/2025

Name of Dvlpt.: Coal Creek Station
Time Period: AM Peak

LAND USE A

ITE LU Code #822 Retail Plaza
Size 13.5 KSF

	Total	Internal	External
Enter	48	3	45
Exit	48	4	44
Total	96	7	89
%	100%	7%	93%

Exit to External 44
Enter from External 45

29% 14 *Demand* — 1 *Balanced* — 31% 1 *Demand*

31% 15 *Demand* — 0 *Balanced* — 29% 0 *Demand*

7% 3 *Demand* — 3 *Balanced* — 37% 8 *Demand*

5% 2 *Demand* — 2 *Balanced* — 34% 23 *Demand*

LAND USE B

ITE LU Code #930 Fast Casual Restaurant
Size 430 SF

	Total	Internal	External
Enter	2	1	1
Exit	1	0	1
Total	3	1	2
%	100%	33%	67%

Exit to External 1
Enter from External 1

Demand 5% — *Balanced* 0 — *Demand* 34% 23
Demand 7% — *Balanced* 0 — *Demand* 37% 8

LAND USE C

ITE LU Code #220 Multifamily Housing
Size 188 DU

	Total	Internal	External
Enter	22	3	19
Exit	67	3	64
Total	89	6	83
%	100%	7%	93%

Exit to External 19
Enter from External 64

Net External Trips for Multi-Use Development					
	LAND A	**LAND B**	**LAND C**	**Total**	
Enter	45	1	19	65	
Exit	44	1	64	109	
Total	89	2	83	174	
Single Use Trip Gen.	96	3	89	188	7.6%

McDOWELL ENGINEERING, LLC

Internal capture reductions were calculated using methodology from the ITE *Trip Generation Handbook* , Second Edition, June 2004.

Internal Trip Reduction Calculation Model

Analyst: KJS
Date: 2/26/2025

Name of Dvlpt.: Coal Creek Station
Time Period: PM Peak

LAND USE A

ITE LU Code #822 Retail Plaza
Size 13.5 kSF

	Total	Internal	External
Enter	92	9	83
Exit	78	10	68
Total	170	19	151
%	100%	11%	89%

Exit to External 68
83 *Enter from External*

20% 16 *Demand*
1 *Balanced*
20% 1 *Demand*

20% 18 *Demand*
12% 9 *Demand*
1 *Balanced*
20% 1 *Demand*

9% 8 *Demand*
9 *Balanced*
31% 21 *Demand*

8 *Balanced*
53% 22 *Demand*

LAND USE B

ITE LU Code #930 Fast Casual Restaurant
Size 430 SF

	Total	Internal	External
Enter	5	1	4
Exit	4	1	3
Total	9	2	7
%	100%	22%	78%

Exit to External 3
4 *Enter from External*

Demand 9% 0 *Balanced* 0 *Demand* 53% 22
Demand 12% 0 *Balanced* 0 *Demand* 31% 21

LAND USE C

ITE LU Code #220 Multifamily Housing
Size 188 DU

	Total	Internal	External
Enter	67	10	57
Exit	41	9	32
Total	108	19	89
%	100%	18%	82%

Exit to External 57
32 *Enter from External*

Net External Trips for Multi-Use Development				
	LAND A	**LAND B**	**LAND C**	**Total**
Enter	83	4	57	144
Exit	68	3	32	103
Total	151	7	89	247
Single Use Trip Gen.	170	9	108	287

17.9%

McDOWELL ENGINEERING, LLC

Internal capture reductions were calculated using methodology from the ITE *Trip Generation Handbook* , Second Edition, June 2004.

Internal Trip Reduction Calculation Model

Analyst: KJS
Date: 2/26/2025

Name of Dvlpt.: Coal Creek Station
Time Period: SAT Peak

LAND USE A

ITE LU Code #822 Retail Plaza
Size 13.5 kSF

	Total	Internal	External
Enter	43	5	38
Exit	42	7	35
Total	85	12	73
%	100%	14%	86%

Exit to External 35
Enter from External 38

20% 8 *Demand* — 2 *Balanced* — 20% 2 *Demand*

20% 9 *Demand* — 1 *Balanced* — 20% 1 *Demand*

12% 5 *Demand* — 5 *Balanced* — 31% 11 *Demand*

9% 4 *Demand* — 4 *Balanced* — 53% 19 *Demand*

LAND USE B

ITE LU Code #930 Fast Casual Restaurant
Size 430 SF

	Total	Internal	External
Enter	8	2	6
Exit	7	2	5
Total	15	4	11
%	100%	27%	73%

Exit to External 5
Enter from External 6

9% 1 *Demand* — 1 *Balanced* — 53% 19 *Demand*

12% 1 *Demand* — 1 *Balanced* — 31% 11 *Demand*

LAND USE C

ITE LU Code #220 Multifamily Housing
Size 188 DU

	Total	Internal	External
Enter	37	6	31
Exit	36	5	31
Total	73	11	62
%	100%	15%	85%

Exit to External 31
Enter from External 31

Net External Trips for Multi-Use Development				
	LAND A	**LAND B**	**LAND C**	**Total**
Enter	38	6	31	75
Exit	35	5	31	71
Total	73	11	62	146
Single Use Trip Gen.	85	15	73	173

17.0%

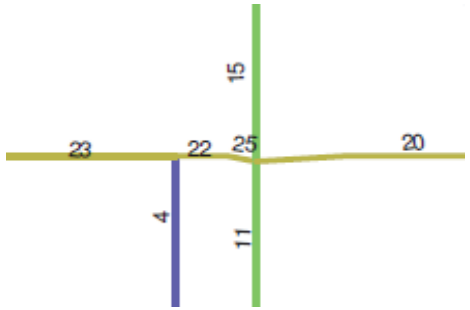
McDOWELL ENGINEERING, LLC

Internal capture reductions were calculated using methodology from the ITE *Trip Generation Handbook* , Second Edition, June 2004.

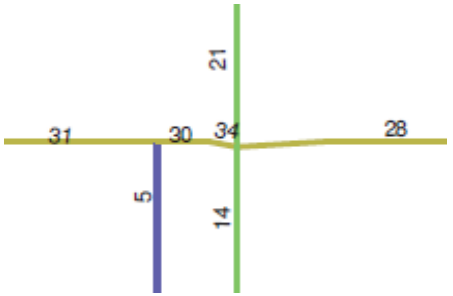
Growth Rate Calculator

Scenario					
Current Year	2015	2015	2015	2015	2015
Current Traffic	23.00	22.00	20.00	15.00	11.00
Future Year	2040	2040	2040	2040	2040
Future Traffic	31.00	30.00	28.00	21.00	14.00
Growth Rate/Year	**1.20%**	**1.25%**	**1.35%**	**1.35%**	**0.97%**
	west leg 1	west leg 2	east leg 1	north leg 1	south leg 1

2015



2040

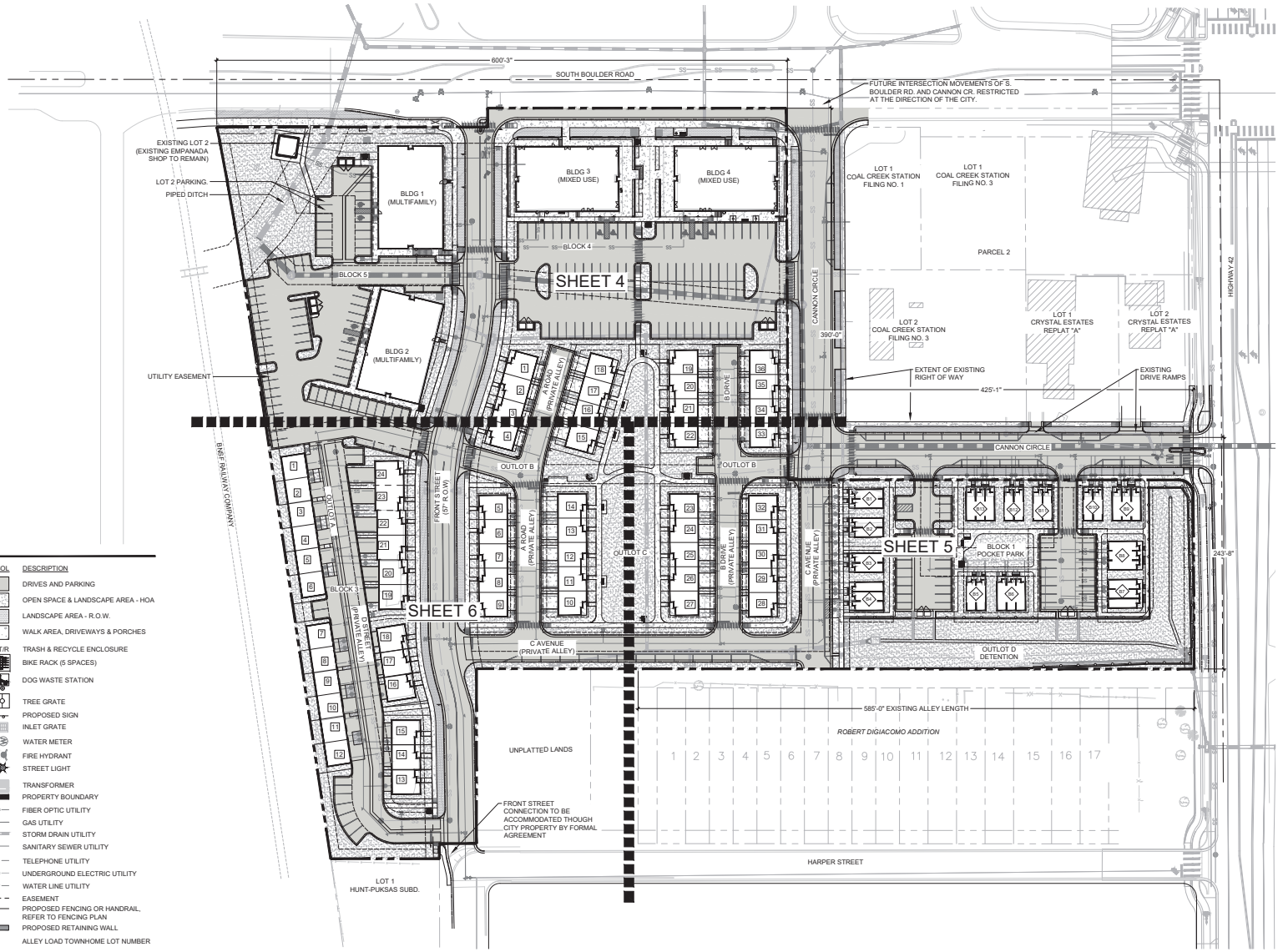


Intersection Control(s) by Scenario

#	Intersection	Year 2024 Existing	Year 2025 BG	Year 2045 BG	Year 2025 Total	Year 2045 Total	Year 2025 Total - No Front St. Connection	Year 2045 Total - No Front St. Connection
1	Main Street & S. Boulder Rd	Signal	Signal	Signal	Signal	Signal	Signal	Signal
2	Front St & S. Boulder Rd	3/4 Movement	3/4 Movement	3/4 Movement	3/4 Movement	3/4 Movement	3/4 Movement	3/4 Movement
3	Cannon Circle & S. Boulder Rd	Full Movement	Full Movement	Full Movement	3/4 Movement	3/4 Movement	3/4 Movement	3/4 Movement
4	Courtesy Rd & S. Boulder Rd	Signal - Exist	Signal - Exist	Signal - Future 42 Conditions	Signal - Exist	Signal - Future 42 Conditions	Signal - Exist	Signal - Future 42 Conditions
5	Cannon Circle & Courtesy Rd. (SH 42)	Full Movement	Full Movement	RIRO[3]	3/4 Movement	RIRO[3]	3/4 Movement	RIRO[3]
6	Griffith St. & Courtesy Rd. (SH42)	Full Movement	Full Movement	Signal	Full Movement	Signal	Full Movement	Signal
7	Griffith St. & Cannon St.	Full Movement	Full Movement	Full Movement	Full Movement	Full Movement	Full Movement	Full Movement
8	Griffith St. & Front St.	Full Movement	Full Movement	Full Movement	Full Movement	Full Movement	Full Movement	Full Movement
9	Griffith St. & Main St.	Full Movement	Full Movement	Full Movement	Full Movement	Full Movement	Full Movement	Full Movement
10	Front St. & Harper St.	Full Movement[1]	Full Movement[1]	Full Movement[1]	Full Movement[2]	Full Movement[2]	Full Movement[1]	Full Movement[1]

Notes: [1]Not Stop Controlled (Free Flowing)
[2]Westbound Stop Controlled
[3]RIRO = Right-In-Right-Out

Appendix B: Site Plan



LEGEND

SYMBOL	DESCRIPTION
	DRIVES AND PARKING
	OPEN SPACE & LANDSCAPE AREA - HOA
	LANDSCAPE AREA - R.O.W.
	WALK AREA, DRIVEWAYS & PORCHES
T/R	TRASH & RECYCLE ENCLOSURE
	BIKE RACK (5 SPACES)
	DOG WASTE STATION
	TREE GRATE
	PROPOSED SIGN
	INLET GRATE
	WATER METER
	FIRE HYDRANT
	STREET LIGHT
	TRANSFORMER
	PROPERTY BOUNDARY
	FIBER OPTIC UTILITY
	GAS UTILITY
	STORM DRAIN UTILITY
	SANITARY SEWER UTILITY
	TELEPHONE UTILITY
	UNDERGROUND ELECTRIC UTILITY
	WATER LINE UTILITY
	EASEMENT
	PROPOSED FENCING OR HANDRAIL, REFER TO FENCING PLAN
	PROPOSED RETAINING WALL
#	ALLEY LOAD TOWNHOME LOT NUMBER
MC#	MICRO TOWNHOME BUILDING NUMBER
U.E.	UTILITY EASEMENT
D.E.	DRAINAGE EASEMENT
E.A.E.	EMERGENCY ACCESS EASEMENT
U.S.M.E	UTILITY, SIDEWALK, AND MAINTENANCE EASEMENT
E.U.E	EXCLUSIVE UTILITY EASEMENT

NOTE:
+ CONCEPTUAL IMPROVEMENTS FOR HIGHWAY 42 SHOWN. DESIGN OF HIGHWAY 42 IMPROVEMENTS BY OTHERS.

COAL CREEK VILLAGE

PRELIMINARY PUD AND SRU

LOUISVILLE, COLORADO

PREPARED BY:

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phone 970.224.5828 | fax 970.225.6657 | www.ripleydesigninc.com

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ENGINEER
ROCKY RIDGE CIVIL ENGINEERING
Joel Seamons
420 21ST AVENUE, SUITE 101
LONGMONT, COLORADO 80501
P. 303.651.6626

NORTH SCALE: 1"=50'-0" (0 25 50 100)

ORIGINAL SIZE 24X36

ISSUED

No.	DESCRIPTION	DATE
1	PRELIMINARY PUD	01/22/2021
2	PRELIMINARY PUD RD 2	06/21/2021
3	PRELIMINARY PUD RD 3	06/17/2022
4	PRELIMINARY PUD RD 4	12/23/2022
5	PRELIMINARY PUD RD 5	08/04/2023
6	PRELIMINARY PUD RD 6	05/14/2024

REVISIONS

No.	DESCRIPTION	DATE

SITE PLAN

SEAL:

ENTITLEMENT DRAWINGS NOT FOR CONSTRUCTION

PROJECT No.:	R20-030
DRAWN BY:	
REVIEWED BY:	

DRAWING NUMBER:

3 OF 32

Plotted By: Megan McGregor **Layout:** S3 SITE PLAN **Printed On:** 4/2/2024 9:27 AM **File Name:** SITE PLAN.dwg

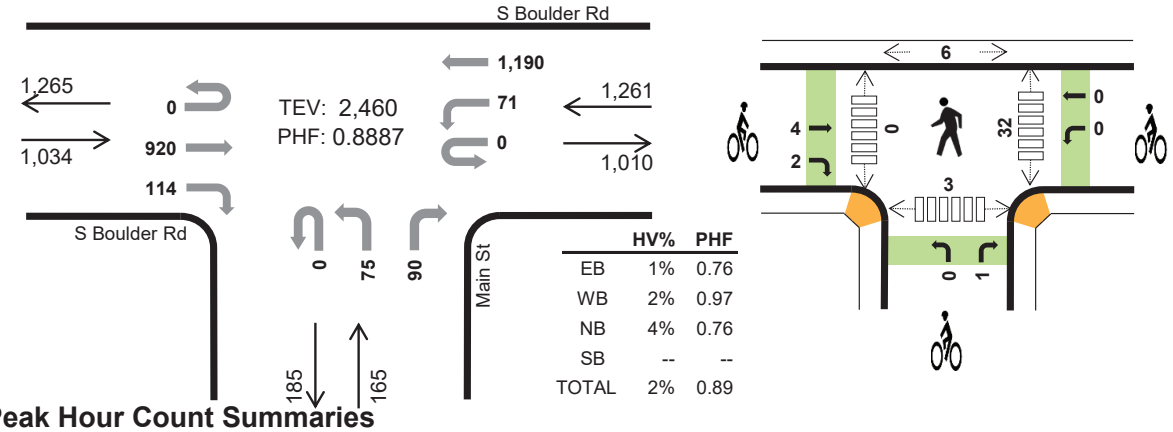
Appendix C: Traffic Counts

Main St
S Boulder Rd

N

Peak Hour

Date: 11/5/2024
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 8:00 AM to 9:00 AM



Peak Hour Count Summaries

Peak Hour Interval Start		S Boulder Rd Eastbound				S Boulder Rd Westbound				Main St Northbound				n/a Southbound				15-min Total	Rolling Hour Total
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
8:00 AM		0	0	226	18	0	13	299	0	0	18	0	20	0	0	0	0	594	0
8:15 AM		0	0	316	22	0	18	293	0	0	15	0	28	0	0	0	0	692	0
8:30 AM		0	0	175	56	0	27	297	0	0	22	0	32	0	0	0	0	609	0
8:45 AM		0	0	203	18	0	13	301	0	0	20	0	10	0	0	0	0	565	2,460
Pk Hr	All	0	0	920	114	0	71	1,190	0	0	75	0	90	0	0	0	0	2,460	
	HV	0	0	13	2	0	2	22	0	0	2	0	5	0	0	0	0	46	
	HV%	-	-	1%	2%	-	3%	2%	-	-	3%	-	6%	-	-	-	-	2%	

Note: For complete count summary (all intervals), see following pages.
*** Heavy Vehicle Classifications include FHWA Classes 4-13.*
*** Count Summaries include heavy vehicles, but exclude bicycles in overall count.*

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) E	W	N	S	Total
8:00 AM	1	7	2	0	*10*	1	0	0	0	*1*	2	0	1	2	*5*
8:15 AM	6	5	3	0	*14*	2	0	1	0	*3*	17	0	2	0	*19*
8:30 AM	6	3	1	0	*10*	2	0	0	0	*2*	10	0	2	0	*12*
8:45 AM	2	9	1	0	*12*	1	0	0	0	*1*	3	0	1	1	*5*
Peak Hour	15	24	7	0	*46*	6	0	1	0	*7*	32	0	6	3	*41*

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Count Summaries - All Vehicles

Interval Start	S Boulder Rd				S Boulder Rd				Main St				n/a				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	71	1	0	3	138	0	0	2	0	17	0	0	0	0	232	0
7:15 AM	0	0	141	4	0	8	172	0	0	8	0	6	0	0	0	0	339	0
7:30 AM	0	0	167	15	0	12	277	0	0	12	0	18	0	0	0	0	501	0
7:45 AM	0	0	176	13	0	17	281	0	0	10	0	15	0	0	0	0	512	1,584
8:00 AM	**0**	**0**	**226**	**18**	**0**	**13**	**299**	**0**	**0**	**18**	**0**	**20**	**0**	**0**	**0**	**0**	**594**	**1,946**
8:15 AM	**0**	**0**	**316**	**22**	**0**	**18**	**293**	**0**	**0**	**15**	**0**	**28**	**0**	**0**	**0**	**0**	**692**	**2,299**
8:30 AM	**0**	**0**	**175**	**56**	**0**	**27**	**297**	**0**	**0**	**22**	**0**	**32**	**0**	**0**	**0**	**0**	**609**	**2,407**
8:45 AM	**0**	**0**	**203**	**18**	**0**	**13**	**301**	**0**	**0**	**20**	**0**	**10**	**0**	**0**	**0**	**0**	**565**	**2,460**
Count Total	0	0	1,475	147	0	111	2,058	0	0	107	0	146	0	0	0	0	4,044	
Pk Hr All	**0**	**0**	**920**	**114**	**0**	**71**	**1,190**	**0**	**0**	**75**	**0**	**90**	**0**	**0**	**0**	**0**	**2,460**	
Pk Hr HV	**0**	**0**	**13**	**2**	**0**	**2**	**22**	**0**	**0**	**2**	**0**	**5**	**0**	**0**	**0**	**0**	**46**	
Pk Hr HV%	**-**	**-**	**1%**	**2%**	**-**	**3%**	**2%**	**-**	**-**	**3%**	**-**	**6%**	**-**	**-**	**-**	**-**	**2%**	

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	E	W	N	S	Total
7:00 AM	2	2	1	0	*5*	0	0	0	0	*0*	3	0	3	0	*6*
7:15 AM	4	9	0	0	*13*	0	0	0	0	*0*	4	0	3	0	*7*
7:30 AM	5	6	1	0	*12*	0	0	0	0	*0*	4	0	1	2	*7*
7:45 AM	3	6	0	0	*9*	0	0	0	0	*0*	4	0	2	2	*8*
8:00 AM	**1**	**7**	**2**	**0**	**10**	**1**	**0**	**0**	**0**	**1**	**2**	**0**	**1**	**2**	**5**
8:15 AM	**6**	**5**	**3**	**0**	**14**	**2**	**0**	**1**	**0**	**3**	**17**	**0**	**2**	**0**	**19**
8:30 AM	**6**	**3**	**1**	**0**	**10**	**2**	**0**	**0**	**0**	**2**	**10**	**0**	**2**	**0**	**12**
8:45 AM	**2**	**9**	**1**	**0**	**12**	**1**	**0**	**0**	**0**	**1**	**3**	**0**	**1**	**1**	**5**
Count Total	29	47	9	0	*85*	6	0	1	0	*7*	47	0	15	7	*69*
Peak Hour	**15**	**24**	**7**	**0**	***46***	**6**	**0**	**1**	**0**	***7***	**32**	**0**	**6**	**3**	**41**

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Count Summaries - Heavy Vehicles

Interval Start	S Boulder Rd				S Boulder Rd				Main St				n/a				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	2	0	0	0	2	0	0	0	0	1	0	0	0	0	5	0
7:15 AM	0	0	4	0	0	1	8	0	0	0	0	0	0	0	0	0	13	0
7:30 AM	0	0	5	0	0	0	6	0	0	0	0	1	0	0	0	0	12	0
7:45 AM	0	0	3	0	0	1	5	0	0	0	0	0	0	0	0	0	9	39
8:00 AM	**0**	**0**	**1**	**0**	**0**	**0**	**7**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**10**	**44**
8:15 AM	**0**	**0**	**5**	**1**	**0**	**1**	**4**	**0**	**0**	**1**	**0**	**2**	**0**	**0**	**0**	**0**	**14**	**45**
8:30 AM	**0**	**0**	**5**	**1**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**10**	**43**
8:45 AM	**0**	**0**	**2**	**0**	**0**	**1**	**8**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**12**	**46**
Count Total	0	0	27	2	0	4	43	0	0	2	0	7	0	0	0	0	85	
Pk Hr Heavy	**0**	**0**	**13**	**2**	**0**	**2**	**22**	**0**	**0**	**2**	**0**	**5**	**0**	**0**	**0**	**0**	**46**	

Count Summaries - Bikes

Interval Start	S Boulder Rd				S Boulder Rd				Main St				n/a				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**
8:15 AM	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**3**	**4**
8:30 AM	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**6**
8:45 AM	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**7**
Count Total	0	0	4	2	0	0	0	0	0	0	0	1	0	0	0	0	7	
Pk Hr Bike	**0**	**0**	**4**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**7**	

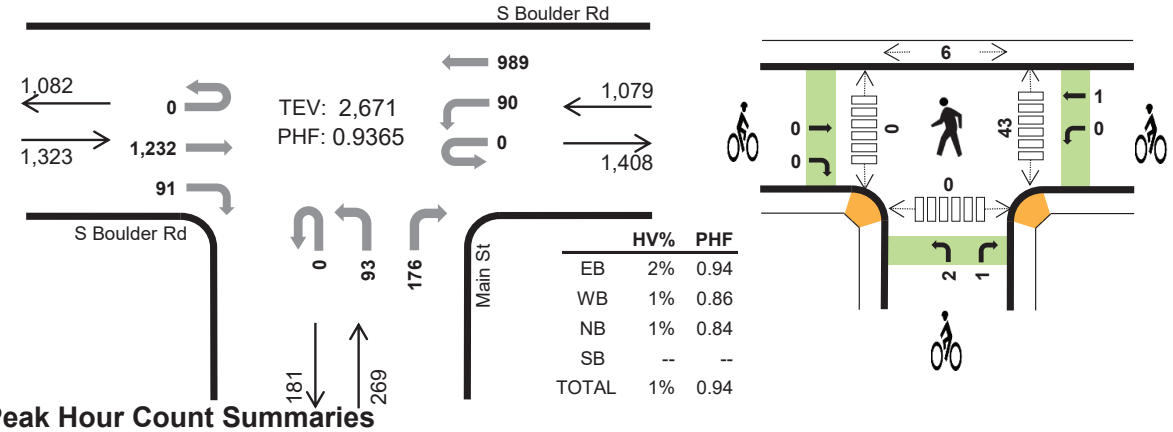
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Main St
S Boulder Rd

N

Peak Hour

Date: 11/5/2024
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM



	HV%	PHF
EB	2%	0.94
WB	1%	0.86
NB	1%	0.84
SB	--	--
TOTAL	1%	0.94

Peak Hour Count Summaries

Peak Hour Interval Start		S Boulder Rd Eastbound				S Boulder Rd Westbound				Main St Northbound				n/a Southbound				15-min Total	Rolling Hour Total
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:30 PM		0	0	294	27	0	17	230	0	0	27	0	45	0	0	0	0	640	0
4:45 PM		0	0	327	24	0	18	239	0	0	26	0	47	0	0	0	0	681	0
5:00 PM		0	0	294	24	0	29	286	0	0	25	0	55	0	0	0	0	713	0
5:15 PM		0	0	317	16	0	26	234	0	0	15	0	29	0	0	0	0	637	2,671
Pk Hr	All	0	0	1,232	91	0	90	989	0	0	93	0	176	0	0	0	0	2,671	
	HV	0	0	20	0	0	2	6	0	0	1	0	3	0	0	0	0	32	
	HV%	-	-	2%	0%	-	2%	1%	-	-	1%	-	2%	-	-	-	-	1%	

Note: For complete count summary (all intervals), see following pages.
*** Heavy Vehicle Classifications include FHWA Classes 4-13.*
*** Count Summaries include heavy vehicles, but exclude bicycles in overall count.*

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) E	W	N	S	Total
4:30 PM	9	3	1	0	*13*	0	0	2	0	*2*	9	0	2	0	*11*
4:45 PM	5	1	1	0	*7*	0	0	0	0	*0*	16	0	1	0	*17*
5:00 PM	2	1	2	0	*5*	0	0	0	0	*0*	11	0	2	0	*13*
5:15 PM	4	3	0	0	*7*	0	1	1	0	*2*	7	0	1	0	*8*
Peak Hour	20	8	4	0	*32*	0	1	3	0	*4*	43	0	6	0	*49*

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Count Summaries - All Vehicles

Interval Start	S Boulder Rd				S Boulder Rd				Main St				n/a				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	355	28	0	18	251	0	0	21	0	40	0	0	0	0	713	0
4:15 PM	0	0	252	20	0	16	257	0	0	13	0	30	0	0	0	0	588	0
4:30 PM	**0**	**0**	**294**	**27**	**0**	**17**	**230**	**0**	**0**	**27**	**0**	**45**	**0**	**0**	**0**	**0**	**640**	**0**
4:45 PM	**0**	**0**	**327**	**24**	**0**	**18**	**239**	**0**	**0**	**26**	**0**	**47**	**0**	**0**	**0**	**0**	**681**	**2,622**
5:00 PM	**0**	**0**	**294**	**24**	**0**	**29**	**286**	**0**	**0**	**25**	**0**	**55**	**0**	**0**	**0**	**0**	**713**	**2,622**
5:15 PM	**0**	**0**	**317**	**16**	**0**	**26**	**234**	**0**	**0**	**15**	**0**	**29**	**0**	**0**	**0**	**0**	**637**	**2,671**
5:30 PM	0	0	291	19	0	9	237	0	0	9	0	28	0	0	0	0	593	2,624
5:45 PM	0	0	269	24	0	16	223	0	0	14	0	26	0	0	0	0	572	2,515
Count Total	0	0	2,399	182	0	149	1,957	0	0	150	0	300	0	0	0	0	5,137	
Pk Hr All	**0**	**0**	**1,232**	**91**	**0**	**90**	**989**	**0**	**0**	**93**	**0**	**176**	**0**	**0**	**0**	**0**	**2,671**	
Pk Hr HV	**0**	**0**	**20**	**0**	**0**	**2**	**6**	**0**	**0**	**1**	**0**	**3**	**0**	**0**	**0**	**0**	**32**	
Pk Hr HV%	**-**	**-**	**2%**	**0%**	**-**	**2%**	**1%**	**-**	**-**	**1%**	**-**	**2%**	**-**	**-**	**-**	**-**	**1%**	

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	E	W	N	S	Total
4:00 PM	2	4	1	0	*7*	0	0	1	0	*1*	5	0	1	1	*7*
4:15 PM	6	3	1	0	*10*	0	0	0	0	*0*	8	0	2	0	*10*
4:30 PM	**9**	**3**	**1**	**0**	**13**	**0**	**0**	**2**	**0**	**2**	**9**	**0**	**2**	**0**	**11**
4:45 PM	**5**	**1**	**1**	**0**	**7**	**0**	**0**	**0**	**0**	**0**	**16**	**0**	**1**	**0**	**17**
5:00 PM	**2**	**1**	**2**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**11**	**0**	**2**	**0**	**13**
5:15 PM	**4**	**3**	**0**	**0**	**7**	**0**	**1**	**1**	**0**	**2**	**7**	**0**	**1**	**0**	**8**
5:30 PM	2	1	0	0	*3*	0	0	0	0	*0*	5	0	2	0	*7*
5:45 PM	2	2	1	0	*5*	0	0	0	0	*0*	5	0	1	0	*6*
Count Total	32	18	7	0	*57*	0	1	4	0	*5*	66	0	12	1	*79*
Peak Hour	**20**	**8**	**4**	**0**	***32***	**0**	**1**	**3**	**0**	***4***	**43**	**0**	**6**	**0**	**49**

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Count Summaries - Heavy Vehicles

Interval Start	S Boulder Rd				S Boulder Rd				Main St				n/a				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	2	0	0	0	4	0	0	0	0	1	0	0	0	0	7	0
4:15 PM	0	0	5	1	0	1	2	0	0	0	0	1	0	0	0	0	10	0
4:30 PM	**0**	**0**	**9**	**0**	**0**	**0**	**3**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**13**	**0**
4:45 PM	**0**	**0**	**5**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**7**	**37**
5:00 PM	**0**	**0**	**2**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**5**	**35**
5:15 PM	**0**	**0**	**4**	**0**	**0**	**1**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**7**	**32**
5:30 PM	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	3	22
5:45 PM	0	0	1	1	0	1	1	0	0	0	0	1	0	0	0	0	5	20
Count Total	0	0	30	2	0	4	14	0	0	1	0	6	0	0	0	0	57	
Pk Hr Heavy	**0**	**0**	**20**	**0**	**0**	**2**	**6**	**0**	**0**	**1**	**0**	**3**	**0**	**0**	**0**	**0**	**32**	

Count Summaries - Bikes

Interval Start	S Boulder Rd				S Boulder Rd				Main St				n/a				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**2**	**4**
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Count Total	0	0	0	0	0	0	1	0	0	3	0	1	0	0	0	0	5	
Pk Hr Bike	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**2**	**0**	**1**	**0**	**0**	**0**	**0**	**4**	

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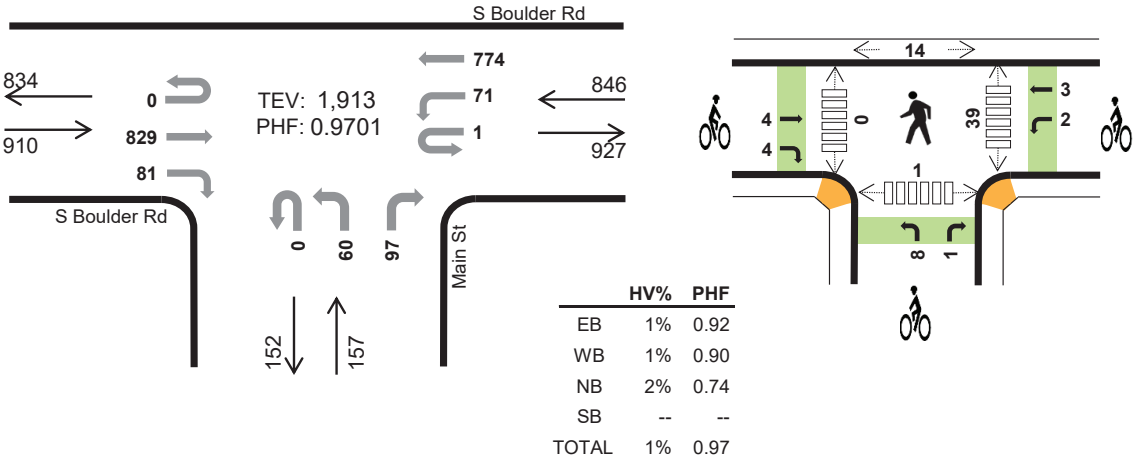
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Main St
S Boulder Rd

N

Peak Hour

Date: 11/2/2024
Count Period: 11:00 AM to 1:00 PM
Peak Hour: 11:15 AM to 12:15 PM



	HV%	PHF
EB	1%	0.92
WB	1%	0.90
NB	2%	0.74
SB	--	--
TOTAL	1%	0.97

Peak Hour Count Summaries

Peak Hour Interval Start		S Boulder Rd Eastbound				S Boulder Rd Westbound				Main St Northbound				n/a Southbound				15-min Total	Rolling Hour Total
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
11:15 AM		0	0	206	15	1	17	173	0	0	16	0	26	0	0	0	0	454	0
11:30 AM		0	0	198	19	0	23	211	0	0	14	0	19	0	0	0	0	484	0
11:45 AM		0	0	219	28	0	20	197	0	0	8	0	21	0	0	0	0	493	0
12:00 PM		0	0	206	19	0	11	193	0	0	22	0	31	0	0	0	0	482	1,913
Pk Hr	All	0	0	829	81	1	71	774	0	0	60	0	97	0	0	0	0	1,913	
	HV	0	0	11	1	0	4	6	0	0	0	0	3	0	0	0	0	25	
	HV%	-	-	1%	1%	0%	6%	1%	-	-	0%	-	3%	-	-	-	-	1%	

Note: For complete count summary (all intervals), see following pages.
*** Heavy Vehicle Classifications include FHWA Classes 4-13.*
*** Count Summaries include heavy vehicles, but exclude bicycles in overall count.*

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	E	W	N	S	Total
11:15 AM	2	7	1	0	*10*	3	0	3	0	*6*	12	0	2	0	*14*
11:30 AM	3	0	1	0	*4*	0	3	0	0	*3*	4	0	3	1	*8*
11:45 AM	5	2	0	0	*7*	2	0	5	0	*7*	9	0	3	0	*12*
12:00 PM	2	1	1	0	*4*	3	2	1	0	*6*	14	0	6	0	*20*
Peak Hour	12	10	3	0	*25*	8	5	9	0	*22*	39	0	14	1	*54*

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Count Summaries - All Vehicles

Interval Start	S Boulder Rd				S Boulder Rd				Main St				n/a				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
11:00 AM	0	0	164	7	0	24	195	0	0	15	0	29	0	0	0	0	434	0
11:15 AM	**0**	**0**	**206**	**15**	**1**	**17**	**173**	**0**	**0**	**16**	**0**	**26**	**0**	**0**	**0**	**0**	**454**	**0**
11:30 AM	**0**	**0**	**198**	**19**	**0**	**23**	**211**	**0**	**0**	**14**	**0**	**19**	**0**	**0**	**0**	**0**	**484**	**0**
11:45 AM	**0**	**0**	**219**	**28**	**0**	**20**	**197**	**0**	**0**	**8**	**0**	**21**	**0**	**0**	**0**	**0**	**493**	**1,865**
12:00 PM	**0**	**0**	**206**	**19**	**0**	**11**	**193**	**0**	**0**	**22**	**0**	**31**	**0**	**0**	**0**	**0**	**482**	**1,913**
12:15 PM	0	0	188	21	0	13	166	0	0	13	0	22	0	0	0	0	423	1,882
12:30 PM	0	0	183	17	2	14	181	0	0	14	0	26	0	0	0	0	437	1,835
12:45 PM	0	0	194	17	1	20	191	0	0	23	0	28	0	0	0	0	474	1,816
Count Total	0	0	1,558	143	4	142	1,507	0	0	125	0	202	0	0	0	0	3,681	
Pk Hr **All**	**0**	**0**	**829**	**81**	**1**	**71**	**774**	**0**	**0**	**60**	**0**	**97**	**0**	**0**	**0**	**0**	**1,913**	
Pk Hr **HV**	**0**	**0**	**11**	**1**	**0**	**4**	**6**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**25**	
Pk Hr **HV%**	**-**	**-**	**1%**	**1%**	**0%**	**6%**	**1%**	**-**	**-**	**0%**	**-**	**3%**	**-**	**-**	**-**	**-**	**1%**	

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	E	W	N	S	Total
11:00 AM	0	4	1	0	*5*	0	0	0	0	*0*	4	0	2	0	*6*
11:15 AM	**2**	**7**	**1**	**0**	**10**	**3**	**0**	**3**	**0**	**6**	**12**	**0**	**2**	**0**	**14**
11:30 AM	**3**	**0**	**1**	**0**	**4**	**0**	**3**	**0**	**0**	**3**	**4**	**0**	**3**	**1**	**8**
11:45 AM	**5**	**2**	**0**	**0**	**7**	**2**	**0**	**5**	**0**	**7**	**9**	**0**	**3**	**0**	**12**
12:00 PM	**2**	**1**	**1**	**0**	**4**	**3**	**2**	**1**	**0**	**6**	**14**	**0**	**6**	**0**	**20**
12:15 PM	1	1	0	0	*2*	0	0	0	0	*0*	6	0	3	0	*9*
12:30 PM	4	0	1	0	*5*	4	1	0	0	*5*	14	0	2	0	*16*
12:45 PM	1	3	0	0	*4*	3	0	1	0	*4*	9	0	3	0	*12*
Count Total	18	18	5	0	*41*	15	6	10	0	*31*	72	0	24	1	*97*
Peak Hour	**12**	**10**	**3**	**0**	***25***	**8**	**5**	**9**	**0**	***22***	**39**	**0**	**14**	**1**	**54**

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Count Summaries - Heavy Vehicles

Interval Start	S Boulder Rd				S Boulder Rd				Main St				n/a				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
11:00 AM	0	0	0	0	0	0	4	0	0	0	0	1	0	0	0	0	5	0
11:15 AM	**0**	**0**	**2**	**0**	**0**	**1**	**6**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**10**	**0**
11:30 AM	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**4**	**0**
11:45 AM	**0**	**0**	**4**	**1**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**7**	**26**
12:00 PM	**0**	**0**	**2**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**4**	**25**
12:15 PM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	2	17
12:30 PM	0	0	4	0	0	0	0	0	0	0	0	1	0	0	0	0	5	18
12:45 PM	0	0	1	0	0	1	2	0	0	0	0	0	0	0	0	0	4	15
Count Total	0	0	17	1	0	5	13	0	0	0	0	5	0	0	0	0	41	
Pk Hr Heavy	**0**	**0**	**11**	**1**	**0**	**4**	**6**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**25**	

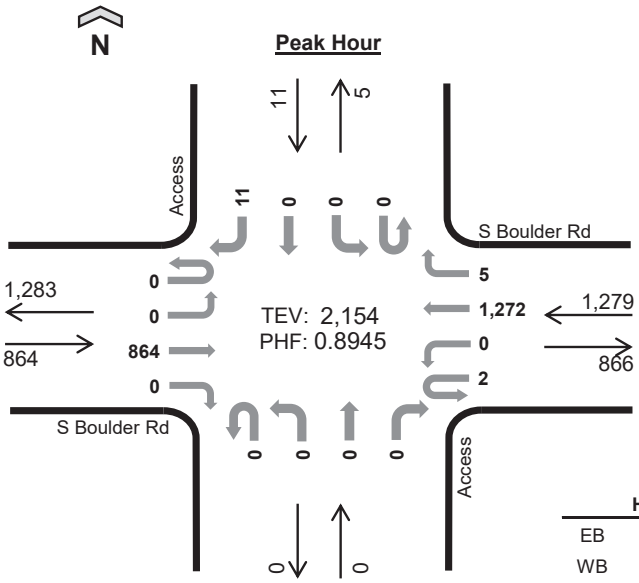
Count Summaries - Bikes

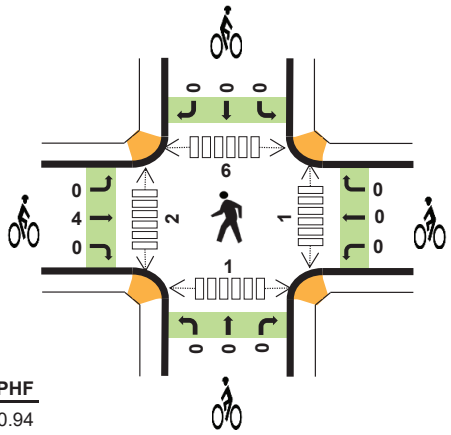
Interval Start	S Boulder Rd				S Boulder Rd				Main St				n/a				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	**0**	**0**	**2**	**1**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**6**	**0**
11:30 AM	**0**	**0**	**0**	**0**	**0**	**1**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**
11:45 AM	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**1**	**0**	**0**	**0**	**0**	**7**	**16**
12:00 PM	**0**	**0**	**1**	**2**	**0**	**1**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**6**	**22**
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16
12:30 PM	0	0	2	2	0	0	1	0	0	0	0	0	0	0	0	0	5	18
12:45 PM	0	0	3	0	0	0	0	0	0	0	0	1	0	0	0	0	4	15
Count Total	0	0	9	6	0	2	4	0	0	8	0	2	0	0	0	0	31	
Pk Hr Bike	**0**	**0**	**4**	**4**	**0**	**2**	**3**	**0**	**0**	**8**	**0**	**1**	**0**	**0**	**0**	**0**	**22**	

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Access
S Boulder Rd

Date: 11/12/2024
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:45 AM to 8:45 AM





	HV%	PHF
EB	2%	0.94
WB	2%	0.87
NB	--	--
SB	0%	0.55
TOTAL	2%	0.89

Peak Hour Count Summaries

Peak Hour Interval Start		S Boulder Rd Eastbound				S Boulder Rd Westbound				Access Northbound				Access Southbound				15-min Total	Rolling Hour Total
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:45 AM		0	0	201	0	2	0	292	2	0	0	0	0	0	0	0	4	501	0
8:00 AM		0	0	204	0	0	0	310	1	0	0	0	0	0	0	0	0	515	0
8:15 AM		0	0	228	0	0	0	303	0	0	0	0	0	0	0	0	5	536	0
8:30 AM		0	0	231	0	0	0	367	2	0	0	0	0	0	0	0	2	602	2,154
Pk Hr	All	0	0	864	0	2	0	1,272	5	0	0	0	0	0	0	0	11	2,154	
	HV	0	0	17	0	0	0	31	0	0	0	0	0	0	0	0	0	48	
	HV%	-	-	2%	-	0%	-	2%	0%	-	-	-	-	-	-	-	0%	2%	

Note: For complete count summary (all intervals), see following pages.
*** Heavy Vehicle Classifications include FHWA Classes 4-13.*
*** Count Summaries include heavy vehicles, but exclude bicycles in overall count.*

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	E	W	N	S	Total
7:45 AM	5	8	0	0	*13*	0	0	0	0	*0*	0	0	1	0	*1*
8:00 AM	1	4	0	0	*5*	1	0	0	0	*1*	0	0	1	0	*1*
8:15 AM	4	12	0	0	*16*	2	0	0	0	*2*	1	1	2	0	*4*
8:30 AM	7	7	0	0	*14*	1	0	0	0	*1*	0	1	2	1	*4*
Peak Hour	17	31	0	0	*48*	4	0	0	0	*4*	1	2	6	1	*10*

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Count Summaries - All Vehicles

Interval Start	S Boulder Rd Eastbound				S Boulder Rd Westbound				Access Northbound				Access Southbound				15-min Total	Rolling Hour Total
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	81	0	0	0	127	0	0	0	0	1	0	0	0	0	209	0
7:15 AM	0	0	136	0	0	0	177	1	0	0	0	0	0	0	0	0	314	0
7:30 AM	0	0	148	0	0	0	283	0	0	0	0	0	0	0	0	2	433	0
7:45 AM	**0**	**0**	**201**	**0**	**2**	**0**	**292**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**501**	**1,457**
8:00 AM	**0**	**0**	**204**	**0**	**0**	**0**	**310**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**515**	**1,763**
8:15 AM	**0**	**0**	**228**	**0**	**0**	**0**	**303**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**536**	**1,985**
8:30 AM	**0**	**0**	**231**	**0**	**0**	**0**	**367**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**602**	**2,154**
8:45 AM	0	0	188	0	1	1	298	3	0	0	0	0	0	0	0	2	493	2,146
Count Total	0	0	1,417	0	3	1	2,157	9	0	0	0	1	0	0	0	15	3,603	
Pk Hr All	**0**	**0**	**864**	**0**	**2**	**0**	**1,272**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**11**	**2,154**	
Pk Hr HV	**0**	**0**	**17**	**0**	**0**	**0**	**31**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**48**	
Pk Hr HV%	**-**	**-**	**2%**	**-**	**0%**	**-**	**2%**	**0%**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**0%**	**2%**	

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) E	W	N	S	Total
7:00 AM	3	5	0	0	*8*	1	0	0	0	*1*	0	0	1	1	*2*
7:15 AM	2	9	0	0	*11*	1	0	0	0	*1*	0	0	1	0	*1*
7:30 AM	6	6	0	0	*12*	0	0	0	0	*0*	0	0	1	0	*1*
7:45 AM	**5**	**8**	**0**	**0**	**13**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**
8:00 AM	**1**	**4**	**0**	**0**	**5**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**1**
8:15 AM	**4**	**12**	**0**	**0**	**16**	**2**	**0**	**0**	**0**	**2**	**1**	**1**	**2**	**0**	**4**
8:30 AM	**7**	**7**	**0**	**0**	**14**	**1**	**0**	**0**	**0**	**1**	**0**	**1**	**2**	**1**	**4**
8:45 AM	2	6	0	0	*8*	0	0	0	0	*0*	0	0	1	0	*1*
Count Total	30	57	0	0	*87*	6	0	0	0	*6*	1	2	10	2	*15*
Peak Hour	**17**	**31**	**0**	**0**	***48***	**4**	**0**	**0**	**0**	***4***	**1**	**2**	**6**	**1**	**10**

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Count Summaries - Heavy Vehicles

Interval Start	S Boulder Rd				S Boulder Rd				Access				Access				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	3	0	0	0	5	0	0	0	0	0	0	0	0	0	8	0
7:15 AM	0	0	2	0	0	0	9	0	0	0	0	0	0	0	0	0	11	0
7:30 AM	0	0	6	0	0	0	6	0	0	0	0	0	0	0	0	0	12	0
7:45 AM	**0**	**0**	**5**	**0**	**0**	**0**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**13**	**44**
8:00 AM	**0**	**0**	**1**	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**41**
8:15 AM	**0**	**0**	**4**	**0**	**0**	**0**	**12**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**16**	**46**
8:30 AM	**0**	**0**	**7**	**0**	**0**	**0**	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**14**	**48**
8:45 AM	0	0	2	0	0	0	6	0	0	0	0	0	0	0	0	0	8	43
Count Total	0	0	30	0	0	0	57	0	0	0	0	0	0	0	0	0	87	
Pk Hr Heavy	**0**	**0**	**17**	**0**	**0**	**0**	**31**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**48**	

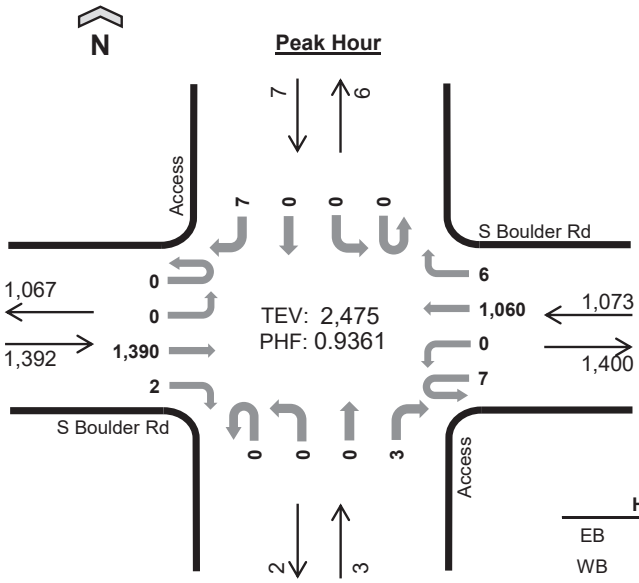
Count Summaries - Bikes

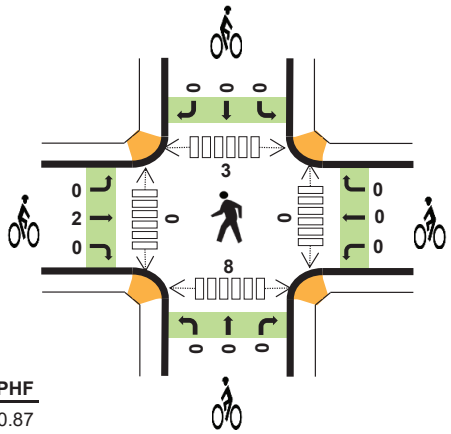
Interval Start	S Boulder Rd				S Boulder Rd				Access				Access				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
7:15 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**
8:00 AM	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**2**
8:15 AM	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**3**
8:30 AM	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**4**
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Count Total	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	6	
Pk Hr Bike	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	

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Access
S Boulder Rd

Date: 11/12/2024
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:15 PM to 5:15 PM





	HV%	PHF
EB	2%	0.87
WB	1%	0.94
NB	33%	0.38
SB	0%	0.44
TOTAL	2%	0.94

Peak Hour Count Summaries

Peak Hour Interval Start		S Boulder Rd Eastbound				S Boulder Rd Westbound				Access Northbound				Access Southbound				15-min Total	Rolling Hour Total
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:15 PM		0	0	318	1	1	0	283	0	0	0	0	1	0	0	0	2	606	0
4:30 PM		0	0	293	0	2	0	264	2	0	0	0	0	0	0	0	0	561	0
4:45 PM		0	0	400	0	1	0	256	3	0	0	0	0	0	0	0	1	661	0
5:00 PM		0	0	379	1	3	0	257	1	0	0	0	2	0	0	0	4	647	2,475
Pk Hr	All	0	0	1,390	2	7	0	1,060	6	0	0	0	3	0	0	0	7	2,475	
	HV	0	0	34	0	0	0	9	0	0	0	0	1	0	0	0	0	44	
	HV%	-	-	2%	0%	0%	-	1%	0%	-	-	-	33%	-	-	-	0%	2%	

Note: For complete count summary (all intervals), see following pages.
*** Heavy Vehicle Classifications include FHWA Classes 4-13.*
*** Count Summaries include heavy vehicles, but exclude bicycles in overall count.*

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	E	W	N	S	Total
4:15 PM	16	1	0	0	*17*	1	0	0	0	*1*	0	0	1	3	*4*
4:30 PM	11	2	0	0	*13*	1	0	0	0	*1*	0	0	1	0	*1*
4:45 PM	5	1	0	0	*6*	0	0	0	0	*0*	0	0	1	0	*1*
5:00 PM	2	5	1	0	*8*	0	0	0	0	*0*	0	0	0	5	*5*
Peak Hour	34	9	1	0	*44*	2	0	0	0	*2*	0	0	3	8	*11*

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Count Summaries - All Vehicles

Interval Start	S Boulder Rd Eastbound				S Boulder Rd Westbound				Access Northbound				Access Southbound				15-min Total	Rolling Hour Total
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	352	0	0	2	238	0	0	0	0	2	0	0	0	2	596	0
4:15 PM	**0**	**0**	**318**	**1**	**1**	**0**	**283**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**2**	**606**	**0**
4:30 PM	**0**	**0**	**293**	**0**	**2**	**0**	**264**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**561**	**0**
4:45 PM	**0**	**0**	**400**	**0**	**1**	**0**	**256**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**661**	**2,424**
5:00 PM	**0**	**0**	**379**	**1**	**3**	**0**	**257**	**1**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**4**	**647**	**2,475**
5:15 PM	0	0	331	3	0	0	250	0	0	0	0	3	0	0	0	0	587	2,456
5:30 PM	0	0	294	0	0	0	231	0	0	0	0	0	0	0	0	2	527	2,422
5:45 PM	0	0	261	1	0	0	208	3	0	0	0	0	0	0	0	4	477	2,238
Count Total	0	0	2,628	6	7	2	1,987	9	0	0	0	8	0	0	0	15	4,662	
Pk Hr **All**	**0**	**0**	**1,390**	**2**	**7**	**0**	**1,060**	**6**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**7**	**2,475**	
Pk Hr **HV**	**0**	**0**	**34**	**0**	**0**	**0**	**9**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**44**	
Pk Hr **HV%**	**-**	**-**	**2%**	**0%**	**0%**	**-**	**1%**	**0%**	**-**	**-**	**-**	**33%**	**-**	**-**	**-**	**0%**	**2%**	

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	E	W	N	S	Total
4:00 PM	11	6	0	0	*17*	0	1	0	0	*1*	1	1	1	0	*3*
4:15 PM	**16**	**1**	**0**	**0**	**17**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**3**	**4**
4:30 PM	**11**	**2**	**0**	**0**	**13**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**1**
4:45 PM	**5**	**1**	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**
5:00 PM	**2**	**5**	**1**	**0**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**5**
5:15 PM	1	2	0	0	*3*	0	0	0	0	*0*	0	0	0	1	*1*
5:30 PM	3	1	0	0	*4*	0	0	0	0	*0*	0	0	1	0	*1*
5:45 PM	3	3	0	0	*6*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	52	21	1	0	*74*	2	1	0	0	*3*	1	1	5	9	*16*
Peak Hour	**34**	**9**	**1**	**0**	***44***	**2**	**0**	**0**	**0**	**2**	**0**	**0**	**3**	**8**	**11**

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Count Summaries - Heavy Vehicles

Interval Start	S Boulder Rd				S Boulder Rd				Access				Access				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	11	0	0	0	6	0	0	0	0	0	0	0	0	0	17	0
4:15 PM	**0**	**0**	**16**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**17**	**0**
4:30 PM	**0**	**0**	**11**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**13**	**0**
4:45 PM	**0**	**0**	**5**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6**	**53**
5:00 PM	**0**	**0**	**2**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**8**	**44**
5:15 PM	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	3	30
5:30 PM	0	0	3	0	0	0	1	0	0	0	0	0	0	0	0	0	4	21
5:45 PM	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	6	21
Count Total	0	0	52	0	0	0	21	0	0	0	0	1	0	0	0	0	74	
Pk Hr Heavy	**0**	**0**	**34**	**0**	**0**	**0**	**9**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**44**	

Count Summaries - Bikes

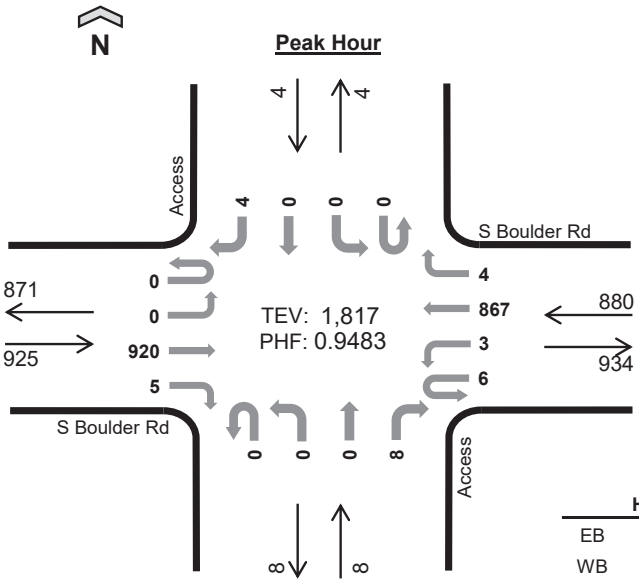
Interval Start	S Boulder Rd				S Boulder Rd				Access				Access				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0
4:15 PM	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**
4:30 PM	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	3	
Pk Hr Bike	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	

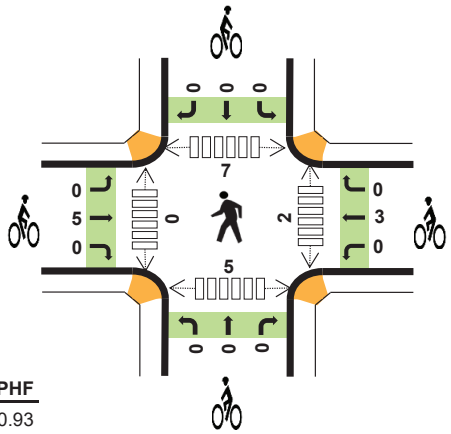
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Access
S Boulder Rd

Date: 11/2/2024
Count Period: 11:00 AM to 1:00 PM
Peak Hour: 11:15 AM to 12:15 PM





	HV%	PHF
EB	2%	0.93
WB	1%	0.90
NB	0%	0.50
SB	0%	0.25
TOTAL	1%	0.95

Peak Hour Count Summaries

Peak Hour Interval Start		S Boulder Rd Eastbound				S Boulder Rd Westbound				Access Northbound				Access Southbound				15-min Total	Rolling Hour Total
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
11:15 AM		0	0	246	3	3	0	193	1	0	0	0	4	0	0	0	4	454	0
11:30 AM		0	0	205	1	0	2	242	0	0	0	0	2	0	0	0	0	452	0
11:45 AM		0	0	247	0	2	1	225	3	0	0	0	1	0	0	0	0	479	0
12:00 PM		0	0	222	1	1	0	207	0	0	0	0	1	0	0	0	0	432	1,817
Pk Hr	All	0	0	920	5	6	3	867	4	0	0	0	8	0	0	0	4	1,817	
	HV	0	0	14	0	0	0	10	0	0	0	0	0	0	0	0	0	24	
	HV%	-	-	2%	0%	0%	0%	1%	0%	-	-	-	0%	-	-	-	0%	1%	

Note: For complete count summary (all intervals), see following pages.
*** Heavy Vehicle Classifications include FHWA Classes 4-13.*
*** Count Summaries include heavy vehicles, but exclude bicycles in overall count.*

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	E	W	N	S	Total
11:15 AM	3	7	0	0	*10*	2	0	0	0	*2*	0	0	2	0	*2*
11:30 AM	4	0	0	0	*4*	0	3	0	0	*3*	0	0	0	2	*2*
11:45 AM	4	2	0	0	*6*	1	0	0	0	*1*	0	0	4	1	*5*
12:00 PM	3	1	0	0	*4*	2	0	0	0	*2*	2	0	1	2	*5*
Peak Hour	14	10	0	0	*24*	5	3	0	0	*8*	2	0	7	5	*14*

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Count Summaries - All Vehicles

Interval Start	S Boulder Rd Eastbound				S Boulder Rd Westbound				Access Northbound				Access Southbound				15-min Total	Rolling Hour Total
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
11:00 AM	0	0	182	3	2	1	225	1	0	0	0	2	0	0	0	1	417	0
11:15 AM	**0**	**0**	**246**	**3**	**3**	**0**	**193**	**1**	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**4**	**454**	**0**
11:30 AM	**0**	**0**	**205**	**1**	**0**	**2**	**242**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**452**	**0**
11:45 AM	**0**	**0**	**247**	**0**	**2**	**1**	**225**	**3**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**479**	**1,802**
12:00 PM	**0**	**0**	**222**	**1**	**1**	**0**	**207**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**432**	**1,817**
12:15 PM	0	0	221	1	0	1	184	1	0	0	0	1	0	0	0	1	410	1,773
12:30 PM	0	0	206	0	0	1	232	1	0	0	0	2	0	0	0	3	445	1,766
12:45 PM	0	0	222	1	0	1	207	1	0	0	0	0	0	0	0	0	432	1,719
Count Total	0	0	1,751	10	8	7	1,715	8	0	0	0	13	0	0	0	9	3,521	
Pk Hr **All**	**0**	**0**	**920**	**5**	**6**	**3**	**867**	**4**	**0**	**0**	**0**	**8**	**0**	**0**	**0**	**4**	**1,817**	
Pk Hr **HV**	**0**	**0**	**14**	**0**	**0**	**0**	**10**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**24**	
Pk Hr **HV%**	**-**	**-**	**2%**	**0%**	**0%**	**0%**	**1%**	**0%**	**-**	**-**	**-**	**0%**	**-**	**-**	**-**	**0%**	**1%**	

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	E	W	N	S	Total
11:00 AM	1	4	0	0	*5*	0	0	0	0	*0*	0	0	1	0	*1*
11:15 AM	**3**	**7**	**0**	**0**	**10**	**2**	**0**	**0**	**0**	**2**	**0**	**0**	**2**	**0**	**2**
11:30 AM	**4**	**0**	**0**	**0**	**4**	**0**	**3**	**0**	**0**	**3**	**0**	**0**	**0**	**2**	**2**
11:45 AM	**4**	**2**	**0**	**0**	**6**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**4**	**1**	**5**
12:00 PM	**3**	**1**	**0**	**0**	**4**	**2**	**0**	**0**	**0**	**2**	**2**	**0**	**1**	**2**	**5**
12:15 PM	1	2	0	0	*3*	1	0	0	0	*1*	0	0	1	0	*1*
12:30 PM	5	1	0	0	*6*	2	1	0	0	*3*	0	0	3	0	*3*
12:45 PM	1	2	0	0	*3*	3	0	0	0	*3*	0	0	1	0	*1*
Count Total	22	19	0	0	*41*	11	4	0	0	*15*	2	0	13	5	*20*
Peak Hour	**14**	**10**	**0**	**0**	***24***	**5**	**3**	**0**	**0**	***8***	**2**	**0**	**7**	**5**	**14**

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Count Summaries - Heavy Vehicles

Interval Start	S Boulder Rd				S Boulder Rd				Access				Access				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
11:00 AM	0	0	1	0	0	0	4	0	0	0	0	0	0	0	0	0	5	0
11:15 AM	**0**	**0**	**3**	**0**	**0**	**0**	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**10**	**0**
11:30 AM	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**0**
11:45 AM	**0**	**0**	**4**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6**	**25**
12:00 PM	**0**	**0**	**3**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**24**
12:15 PM	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	3	17
12:30 PM	0	0	5	0	0	0	1	0	0	0	0	0	0	0	0	0	6	19
12:45 PM	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	3	16
Count Total	0	0	22	0	0	0	19	0	0	0	0	0	0	0	0	0	41	
Pk Hr Heavy	**0**	**0**	**14**	**0**	**0**	**0**	**10**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**24**	

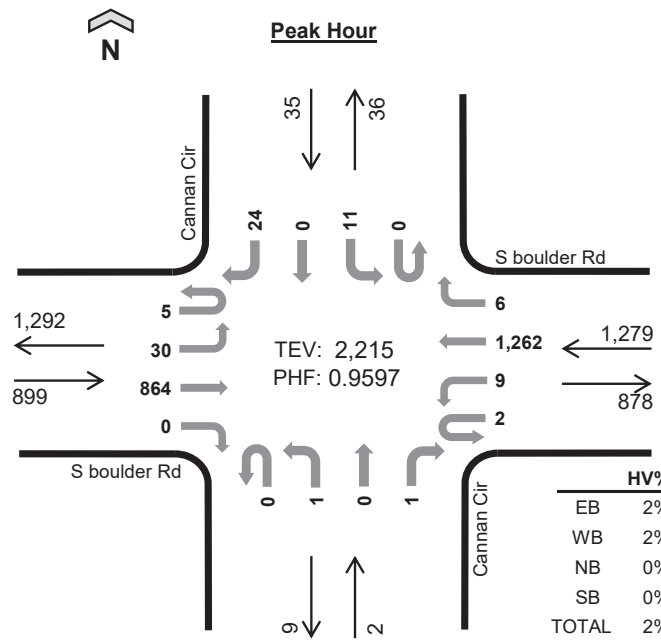
Count Summaries - Bikes

Interval Start	S Boulder Rd				S Boulder Rd				Access				Access				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**
11:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**
11:45 AM	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**6**
12:00 PM	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**8**
12:15 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	7
12:30 PM	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	3	7
12:45 PM	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3	9
Count Total	0	0	11	0	0	0	4	0	0	0	0	0	0	0	0	0	15	
Pk Hr Bike	**0**	**0**	**5**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**8**	

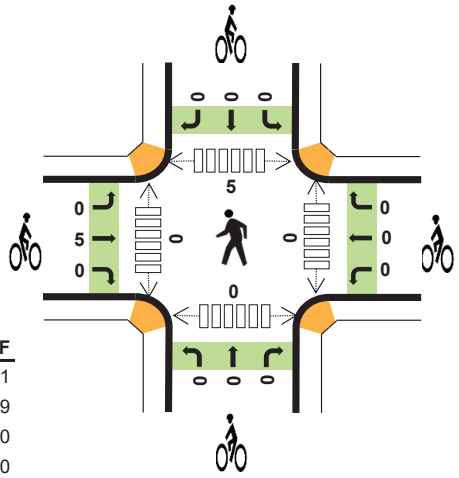
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Cannan Cir
S boulder Rd

Date: 11/5/2024
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 8:00 AM to 9:00 AM



	HV%	PHF
EB	2%	0.91
WB	2%	0.99
NB	0%	0.50
SB	0%	0.80
TOTAL	2%	0.96



Peak Hour Count Summaries

Peak Hour Interval Start		S boulder Rd Eastbound				S boulder Rd Westbound				Cannan Cir Northbound				Cannan Cir Southbound				15-min Total	Rolling Hour Total
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
8:00 AM		1	3	239	0	0	1	314	2	0	0	0	0	0	5	0	5	570	0
8:15 AM		2	6	239	0	0	0	321	1	0	0	0	0	0	0	0	8	577	0
8:30 AM		1	6	199	0	1	3	315	2	0	0	0	1	0	1	0	5	534	0
8:45 AM		1	15	187	0	1	5	312	1	0	1	0	0	0	5	0	6	534	2,215
Pk Hr	All	5	30	864	0	2	9	1,262	6	0	1	0	1	0	11	0	24	2,215	
	HV	0	0	20	0	0	1	21	0	0	0	0	0	0	0	0	0	42	
	HV%	0%	0%	2%	-	0%	11%	2%	0%	-	0%	-	0%	-	0%	-	0%	2%	

Note: For complete count summary (all intervals), see following pages.
*** Heavy Vehicle Classifications include FHWA Classes 4-13.*
*** Count Summaries include heavy vehicles, but exclude bicycles in overall count.*

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) E	W	N	S	Total
8:00 AM	3	5	0	0	*8*	1	0	0	0	*1*	0	0	2	0	*2*
8:15 AM	7	4	0	0	*11*	2	0	0	0	*2*	0	0	0	0	*0*
8:30 AM	4	3	0	0	*7*	2	0	0	0	*2*	0	0	0	0	*0*
8:45 AM	6	10	0	0	*16*	0	0	0	0	*0*	0	0	3	0	*3*
Peak Hour	20	22	0	0	*42*	5	0	0	0	*5*	0	0	5	0	*5*

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Count Summaries - All Vehicles

Interval Start	S boulder Rd				S boulder Rd				Cannan Cir				Cannan Cir				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	1	4	87	0	0	0	139	1	0	0	0	1	0	6	0	12	251	0
7:15 AM	1	3	135	0	0	0	174	2	0	0	0	0	0	2	0	7	324	0
7:30 AM	2	3	173	0	1	2	273	1	0	0	0	0	0	3	0	5	463	0
7:45 AM	2	6	176	0	0	2	299	3	0	0	0	0	0	2	0	10	500	1,538
8:00 AM	**1**	**3**	**239**	**0**	**0**	**1**	**314**	**2**	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**5**	**570**	**1,857**
8:15 AM	**2**	**6**	**239**	**0**	**0**	**0**	**321**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**8**	**577**	**2,110**
8:30 AM	**1**	**6**	**199**	**0**	**1**	**3**	**315**	**2**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**5**	**534**	**2,181**
8:45 AM	**1**	**15**	**187**	**0**	**1**	**5**	**312**	**1**	**0**	**1**	**0**	**0**	**0**	**5**	**0**	**6**	**534**	**2,215**
Count Total	11	46	1,435	0	3	13	2,147	13	0	1	0	2	0	24	0	58	3,753	
Pk Hr **All**	**5**	**30**	**864**	**0**	**2**	**9**	**1,262**	**6**	**0**	**1**	**0**	**1**	**0**	**11**	**0**	**24**	**2,215**	
Pk Hr **HV**	**0**	**0**	**20**	**0**	**0**	**1**	**21**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**42**	
Pk Hr **HV%**	**0%**	**0%**	**2%**	**-**	**0%**	**11%**	**2%**	**0%**	**-**	**0%**	**-**	**0%**	**-**	**0%**	**-**	**0%**	**2%**	

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	E	W	N	S	Total
7:00 AM	3	3	0	0	*6*	0	0	0	0	*0*	0	1	0	0	*1*
7:15 AM	3	9	0	0	*12*	0	0	0	0	*0*	0	0	0	0	*0*
7:30 AM	6	0	0	0	*6*	0	0	0	0	*0*	0	0	2	1	*3*
7:45 AM	3	5	0	0	*8*	0	0	0	0	*0*	0	0	0	0	*0*
8:00 AM	**3**	**5**	**0**	**0**	**8**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**2**	**0**	**2**
8:15 AM	**7**	**4**	**0**	**0**	**11**	**2**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**
8:30 AM	**4**	**3**	**0**	**0**	**7**	**2**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**
8:45 AM	**6**	**10**	**0**	**0**	**16**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**3**
Count Total	35	39	0	0	*74*	5	0	0	0	*5*	0	1	7	1	*9*
Peak Hour	**20**	**22**	**0**	**0**	***42***	**5**	**0**	**0**	**0**	***5***	**0**	**0**	**5**	**0**	**5**

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Count Summaries - Heavy Vehicles

Interval Start	S boulder Rd				S boulder Rd				Cannan Cir				Cannan Cir				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	6	0
7:15 AM	0	0	3	0	0	0	9	0	0	0	0	0	0	0	0	0	12	0
7:30 AM	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0
7:45 AM	0	0	3	0	0	0	5	0	0	0	0	0	0	0	0	0	8	32
8:00 AM	**0**	**0**	**3**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**8**	**34**
8:15 AM	**0**	**0**	**7**	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**11**	**33**
8:30 AM	**0**	**0**	**4**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**7**	**34**
8:45 AM	**0**	**0**	**6**	**0**	**0**	**1**	**9**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**16**	**42**
Count Total	0	0	35	0	0	1	38	0	0	0	0	0	0	0	0	0	74	
Pk Hr Heavy	**0**	**0**	**20**	**0**	**0**	**1**	**21**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**42**	

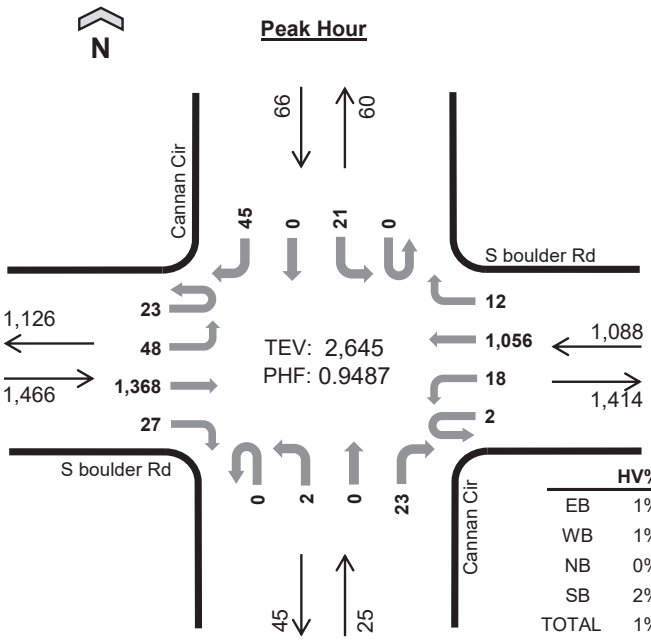
Count Summaries - Bikes

Interval Start	S boulder Rd				S boulder Rd				Cannan Cir				Cannan Cir				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**
8:15 AM	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**3**
8:30 AM	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**5**
8:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**
Count Total	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	5	
Pk Hr Bike	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	

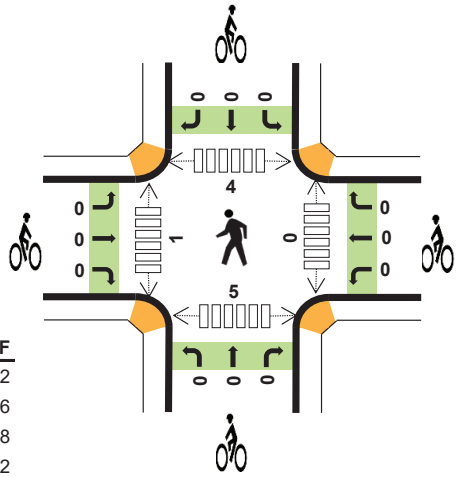
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Cannan Cir
S boulder Rd

Date: 11/5/2024
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:00 PM to 5:00 PM



	HV%	PHF
EB	1%	0.92
WB	1%	0.96
NB	0%	0.48
SB	2%	0.72
TOTAL	1%	0.95



Peak Hour Count Summaries

Peak Hour Interval Start		S boulder Rd Eastbound				S boulder Rd Westbound				Cannan Cir Northbound				Cannan Cir Southbound				15-min Total	Rolling Hour Total
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		**2**	**15**	**372**	**10**	**0**	**8**	**261**	**4**	**0**	**1**	**0**	**3**	**0**	**2**	**0**	**19**	**697**	**0**
4:15 PM		**5**	**8**	**339**	**8**	**0**	**2**	**280**	**1**	**0**	**1**	**0**	**12**	**0**	**7**	**0**	**6**	**669**	**0**
4:30 PM		**10**	**11**	**325**	**4**	**0**	**3**	**256**	**5**	**0**	**0**	**0**	**3**	**0**	**5**	**0**	**4**	**626**	**0**
4:45 PM		**6**	**14**	**332**	**5**	**2**	**5**	**259**	**2**	**0**	**0**	**0**	**5**	**0**	**7**	**0**	**16**	**653**	**2,645**
Pk Hr	**All**	**23**	**48**	**1,368**	**27**	**2**	**18**	**1,056**	**12**	**0**	**2**	**0**	**23**	**0**	**21**	**0**	**45**	**2,645**	
	HV	**0**	**0**	**21**	**0**	**0**	**0**	**10**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**32**	
	HV%	**0%**	**0%**	**2%**	**0%**	**0%**	**0%**	**1%**	**0%**	**-**	**0%**	**-**	**0%**	**-**	**0%**	**-**	**2%**	**1%**	

Note: For complete count summary (all intervals), see following pages.
*** Heavy Vehicle Classifications include FHWA Classes 4-13.*
*** Count Summaries include heavy vehicles, but exclude bicycles in overall count.*

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) E	W	N	S	Total
4:00 PM	**4**	**3**	**0**	**1**	***8***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**1**	**2**	***3***
4:15 PM	**6**	**3**	**0**	**0**	***9***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**1**	**0**	***1***
4:30 PM	**7**	**3**	**0**	**0**	***10***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**1**	**1**	***2***
4:45 PM	**4**	**1**	**0**	**0**	***5***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**1**	**2**	***4***
Peak Hour	**21**	**10**	**0**	**1**	***32***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**4**	**5**	***10***

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Count Summaries - All Vehicles

Interval Start	S boulder Rd				S boulder Rd				Cannan Cir				Cannan Cir				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	**2**	**15**	**372**	**10**	**0**	**8**	**261**	**4**	**0**	**1**	**0**	**3**	**0**	**2**	**0**	**19**	**697**	0
4:15 PM	**5**	**8**	**339**	**8**	**0**	**2**	**280**	**1**	**0**	**1**	**0**	**12**	**0**	**7**	**0**	**6**	**669**	**0**
4:30 PM	**10**	**11**	**325**	**4**	**0**	**3**	**256**	**5**	**0**	**0**	**0**	**3**	**0**	**5**	**0**	**4**	**626**	**0**
4:45 PM	**6**	**14**	**332**	**5**	**2**	**5**	**259**	**2**	**0**	**0**	**0**	**5**	**0**	**7**	**0**	**16**	**653**	**2,645**
5:00 PM	10	21	326	5	1	3	286	9	0	0	1	3	0	6	0	14	685	2,633
5:15 PM	4	9	311	3	1	2	250	5	0	3	0	3	0	5	0	24	620	2,584
5:30 PM	7	3	311	5	0	0	236	3	0	2	0	0	0	7	0	6	580	2,538
5:45 PM	4	13	260	0	0	2	212	5	0	1	0	1	0	5	0	14	517	2,402
Count Total	48	94	2,576	40	4	25	2,040	34	0	8	1	30	0	44	0	103	5,047	
Pk Hr **All**	**23**	**48**	**1,368**	**27**	**2**	**18**	**1,056**	**12**	**0**	**2**	**0**	**23**	**0**	**21**	**0**	**45**	**2,645**	
Pk Hr **HV**	**0**	**0**	**21**	**0**	**0**	**0**	**10**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**32**	
Pk Hr **HV%**	**0%**	**0%**	**2%**	**0%**	**0%**	**0%**	**1%**	**0%**	**-**	**0%**	**-**	**0%**	**-**	**0%**	**-**	**2%**	**1%**	

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	E	W	N	S	Total
4:00 PM	**4**	**3**	**0**	**1**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**2**	**3**
4:15 PM	**6**	**3**	**0**	**0**	**9**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**
4:30 PM	**7**	**3**	**0**	**0**	**10**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**2**
4:45 PM	**4**	**1**	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**2**	**4**
5:00 PM	1	2	0	0	*3*	0	0	0	0	*0*	0	0	0	1	*1*
5:15 PM	6	1	0	0	*7*	1	0	0	0	*1*	0	0	0	1	*1*
5:30 PM	3	1	0	0	*4*	0	0	0	0	*0*	0	0	1	0	*1*
5:45 PM	3	1	0	0	*4*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	34	15	0	1	*50*	1	0	0	0	*1*	0	1	5	7	*13*
Peak Hour	**21**	**10**	**0**	**1**	***32***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**4**	**5**	**10**

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Count Summaries - Heavy Vehicles

Interval Start	S boulder Rd				S boulder Rd				Cannan Cir				Cannan Cir				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	**0**	**0**	**4**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**8**	0
4:15 PM	**0**	**0**	**6**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**9**	**0**
4:30 PM	**0**	**0**	**7**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**10**	**0**
4:45 PM	**0**	**0**	**4**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**32**
5:00 PM	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	3	27
5:15 PM	0	0	6	0	0	0	1	0	0	0	0	0	0	0	0	0	7	25
5:30 PM	0	0	3	0	0	0	1	0	0	0	0	0	0	0	0	0	4	19
5:45 PM	0	0	3	0	0	0	1	0	0	0	0	0	0	0	0	0	4	18
Count Total	0	0	34	0	0	0	15	0	0	0	0	0	0	0	0	1	50	
Pk Hr Heavy	**0**	**0**	**21**	**0**	**0**	**0**	**10**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**32**	

Count Summaries - Bikes

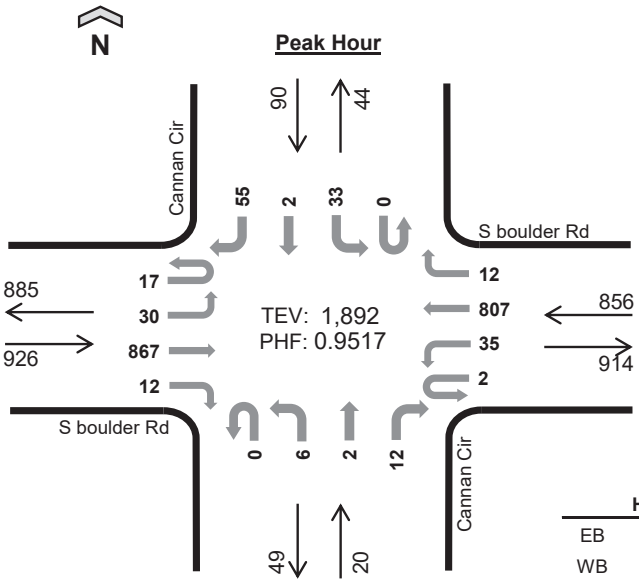
Interval Start	S boulder Rd				S boulder Rd				Cannan Cir				Cannan Cir				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Count Total	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Pk Hr Bike	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	

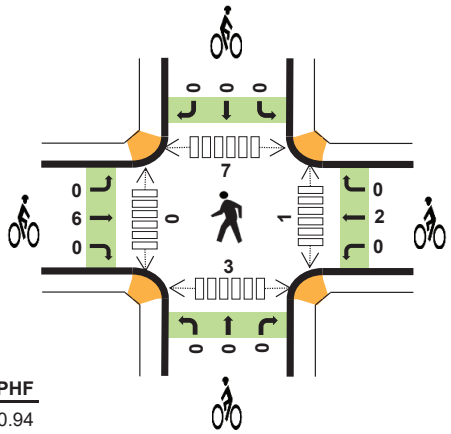
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Cannan Cir
S boulder Rd

Date: 11/2/2024
Count Period: 11:00 AM to 1:00 PM
Peak Hour: 11:15 AM to 12:15 PM





	HV%	PHF
EB	1%	0.94
WB	1%	0.93
NB	0%	0.83
SB	0%	0.75
TOTAL	1%	0.95

Peak Hour Count Summaries

Peak Hour Interval Start		S boulder Rd Eastbound				S boulder Rd Westbound				Cannan Cir Northbound				Cannan Cir Southbound				15-min Total	Rolling Hour Total
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
11:15 AM		4	9	232	2	1	9	187	4	0	0	1	3	0	10	0	8	470	0
11:30 AM		6	6	193	0	0	8	219	4	0	2	0	3	0	12	1	17	471	0
11:45 AM		4	9	229	4	0	8	212	3	0	2	0	4	0	7	1	14	497	0
12:00 PM		3	6	213	6	1	10	189	1	0	2	1	2	0	4	0	16	454	1,892
Pk Hr	All	17	30	867	12	2	35	807	12	0	6	2	12	0	33	2	55	1,892	
	HV	0	0	13	0	0	0	10	0	0	0	0	0	0	0	0	0	23	
	HV%	0%	0%	1%	0%	0%	0%	1%	0%	-	0%	0%	0%	-	0%	0%	0%	1%	

Note: For complete count summary (all intervals), see following pages.
*** Heavy Vehicle Classifications include FHWA Classes 4-13.*
*** Count Summaries include heavy vehicles, but exclude bicycles in overall count.*

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	E	W	N	S	Total
11:15 AM	2	7	0	0	*9*	3	0	0	0	*3*	0	0	2	0	*2*
11:30 AM	4	0	0	0	*4*	0	2	0	0	*2*	1	0	1	1	*3*
11:45 AM	4	2	0	0	*6*	1	0	0	0	*1*	0	0	0	2	*2*
12:00 PM	3	1	0	0	*4*	2	0	0	0	*2*	0	0	4	0	*4*
Peak Hour	13	10	0	0	*23*	6	2	0	0	*8*	1	0	7	3	*11*

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Count Summaries - All Vehicles

Interval Start	S boulder Rd				S boulder Rd				Cannan Cir				Cannan Cir				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
11:00 AM	5	5	177	2	0	7	208	3	0	1	0	3	0	11	0	14	436	0
11:15 AM	**4**	**9**	**232**	**2**	**1**	**9**	**187**	**4**	**0**	**0**	**1**	**3**	**0**	**10**	**0**	**8**	**470**	**0**
11:30 AM	**6**	**6**	**193**	**0**	**0**	**8**	**219**	**4**	**0**	**2**	**0**	**3**	**0**	**12**	**1**	**17**	**471**	**0**
11:45 AM	**4**	**9**	**229**	**4**	**0**	**8**	**212**	**3**	**0**	**2**	**0**	**4**	**0**	**7**	**1**	**14**	**497**	**1,874**
12:00 PM	**3**	**6**	**213**	**6**	**1**	**10**	**189**	**1**	**0**	**2**	**1**	**2**	**0**	**4**	**0**	**16**	**454**	**1,892**
12:15 PM	2	7	205	5	0	8	176	4	0	2	0	4	0	0	1	9	423	1,845
12:30 PM	7	5	200	4	0	9	215	2	0	1	0	5	0	5	0	3	456	1,830
12:45 PM	2	7	205	2	1	8	199	5	0	3	0	6	0	2	0	8	448	1,781
Count Total	33	54	1,654	25	3	67	1,605	26	0	13	2	30	0	51	3	89	3,655	
Pk Hr **All**	**17**	**30**	**867**	**12**	**2**	**35**	**807**	**12**	**0**	**6**	**2**	**12**	**0**	**33**	**2**	**55**	**1,892**	
Pk Hr **HV**	**0**	**0**	**13**	**0**	**0**	**0**	**10**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**23**	
Pk Hr **HV%**	**0%**	**0%**	**1%**	**0%**	**0%**	**0%**	**1%**	**0%**	**-**	**0%**	**0%**	**0%**	**-**	**0%**	**0%**	**0%**	**1%**	

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	E	W	N	S	Total
11:00 AM	1	4	0	0	*5*	1	0	0	0	*1*	0	0	1	1	*2*
11:15 AM	**2**	**7**	**0**	**0**	**9**	**3**	**0**	**0**	**0**	**3**	**0**	**0**	**2**	**0**	**2**
11:30 AM	**4**	**0**	**0**	**0**	**4**	**0**	**2**	**0**	**0**	**2**	**1**	**0**	**1**	**1**	**3**
11:45 AM	**4**	**2**	**0**	**0**	**6**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**2**	**2**
12:00 PM	**3**	**1**	**0**	**0**	**4**	**2**	**0**	**0**	**0**	**2**	**0**	**0**	**4**	**0**	**4**
12:15 PM	1	2	0	0	*3*	1	0	0	0	*1*	0	0	1	0	*1*
12:30 PM	6	1	0	0	*7*	2	0	0	0	*2*	0	0	3	0	*3*
12:45 PM	1	2	0	0	*3*	3	0	0	0	*3*	0	0	2	0	*2*
Count Total	22	19	0	0	*41*	13	2	0	0	*15*	1	0	14	4	*19*
Peak Hour	**13**	**10**	**0**	**0**	***23***	**6**	**2**	**0**	**0**	***8***	**1**	**0**	**7**	**3**	**11**

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Count Summaries - Heavy Vehicles

Interval Start	S boulder Rd				S boulder Rd				Cannan Cir				Cannan Cir				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
11:00 AM	0	0	1	0	0	0	4	0	0	0	0	0	0	0	0	0	5	0
11:15 AM	**0**	**0**	**2**	**0**	**0**	**0**	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**9**	**0**
11:30 AM	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**0**
11:45 AM	**0**	**0**	**4**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6**	**24**
12:00 PM	**0**	**0**	**3**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**23**
12:15 PM	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	3	17
12:30 PM	0	0	6	0	0	0	1	0	0	0	0	0	0	0	0	0	7	20
12:45 PM	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	3	17
Count Total	0	0	22	0	0	0	19	0	0	0	0	0	0	0	0	0	41	
Pk Hr Heavy	**0**	**0**	**13**	**0**	**0**	**0**	**10**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**23**	

Count Summaries - Bikes

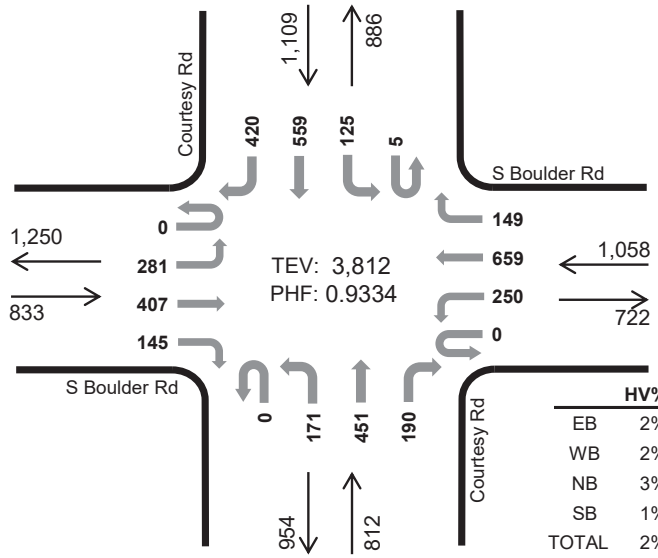
Interval Start	S boulder Rd				S boulder Rd				Cannan Cir				Cannan Cir				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
11:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
11:15 AM	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**
11:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**
11:45 AM	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**7**
12:00 PM	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**8**
12:15 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	6
12:30 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	6
12:45 PM	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	3	8
Count Total	0	0	12	1	0	0	2	0	0	0	0	0	0	0	0	0	15	
Pk Hr Bike	**0**	**0**	**6**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**8**	

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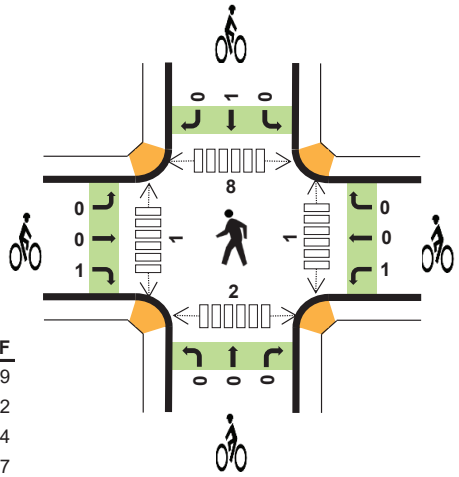
Courtesy Rd
S Boulder Rd

Peak Hour

Date: 11/5/2024
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:45 AM to 8:45 AM



	HV%	PHF
EB	2%	0.89
WB	2%	0.92
NB	3%	0.94
SB	1%	0.97
TOTAL	2%	0.93



Peak Hour Count Summaries

Peak Hour Interval Start		S Boulder Rd Eastbound				S Boulder Rd Westbound				Courtesy Rd Northbound				Courtesy Rd Southbound				15-min Total	Rolling Hour Total
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:45 AM		0	56	87	37	0	58	177	24	0	39	99	43	1	14	161	91	887	0
8:00 AM		0	78	115	40	0	49	158	39	0	36	125	45	1	33	146	106	971	0
8:15 AM		0	72	122	38	0	78	173	38	0	55	100	60	2	64	115	104	1,021	0
8:30 AM		0	75	83	30	0	65	151	48	0	41	127	42	1	14	137	119	933	3,812
Pk Hr	All	0	281	407	145	0	250	659	149	0	171	451	190	5	125	559	420	3,812	
	HV	0	6	9	3	0	6	16	2	0	5	20	1	0	6	4	5	83	
	HV%	-	2%	2%	2%	-	2%	2%	1%	-	3%	4%	1%	0%	5%	1%	1%	2%	

Note: For complete count summary (all intervals), see following pages.
*** Heavy Vehicle Classifications include FHWA Classes 4-13.*
*** Count Summaries include heavy vehicles, but exclude bicycles in overall count.*

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	E	W	N	S	Total
7:45 AM	3	8	4	4	*19*	0	0	0	0	*0*	0	0	3	1	*4*
8:00 AM	2	6	8	4	*20*	0	0	0	0	*0*	1	0	3	1	*5*
8:15 AM	8	6	3	4	*21*	0	0	0	1	*1*	0	0	0	0	*0*
8:30 AM	5	4	11	3	*23*	1	1	0	0	*2*	0	1	2	0	*3*
Peak Hour	18	24	26	15	*83*	1	1	0	1	*3*	1	1	8	2	*12*

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Count Summaries - All Vehicles

Interval Start	S Boulder Rd				S Boulder Rd				Courtesy Rd				Courtesy Rd				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	34	38	15	0	23	60	13	0	17	47	25	1	14	85	47	419	0
7:15 AM	0	30	93	28	0	42	118	21	0	24	53	26	0	21	120	54	630	0
7:30 AM	0	65	73	38	0	61	131	34	0	30	80	29	0	15	155	110	821	0
7:45 AM	**0**	**56**	**87**	**37**	**0**	**58**	**177**	**24**	**0**	**39**	**99**	**43**	**1**	**14**	**161**	**91**	**887**	**2,757**
8:00 AM	**0**	**78**	**115**	**40**	**0**	**49**	**158**	**39**	**0**	**36**	**125**	**45**	**1**	**33**	**146**	**106**	**971**	**3,309**
8:15 AM	**0**	**72**	**122**	**38**	**0**	**78**	**173**	**38**	**0**	**55**	**100**	**60**	**2**	**64**	**115**	**104**	**1,021**	**3,700**
8:30 AM	**0**	**75**	**83**	**30**	**0**	**65**	**151**	**48**	**0**	**41**	**127**	**42**	**1**	**14**	**137**	**119**	**933**	**3,812**
8:45 AM	0	57	98	39	0	56	162	26	1	65	104	40	1	19	123	96	887	3,812
Count Total	0	467	709	265	0	432	1,130	243	1	307	735	310	7	194	1,042	727	6,569	
Pk Hr All	**0**	**281**	**407**	**145**	**0**	**250**	**659**	**149**	**0**	**171**	**451**	**190**	**5**	**125**	**559**	**420**	**3,812**	
Pk Hr HV	**0**	**6**	**9**	**3**	**0**	**6**	**16**	**2**	**0**	**5**	**20**	**1**	**0**	**6**	**4**	**5**	**83**	
Pk Hr HV%	**-**	**2%**	**2%**	**2%**	**-**	**2%**	**2%**	**1%**	**-**	**3%**	**4%**	**1%**	**0%**	**5%**	**1%**	**1%**	**2%**	

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	E	W	N	S	Total
7:00 AM	4	4	2	4	*14*	0	0	0	1	*1*	0	0	1	0	*1*
7:15 AM	3	7	3	6	*19*	0	0	0	0	*0*	0	0	0	0	*0*
7:30 AM	6	6	5	5	*22*	0	0	0	0	*0*	0	0	2	0	*2*
7:45 AM	**3**	**8**	**4**	**4**	**19**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**1**	**4**
8:00 AM	**2**	**6**	**8**	**4**	**20**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**3**	**1**	**5**
8:15 AM	**8**	**6**	**3**	**4**	**21**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**
8:30 AM	**5**	**4**	**11**	**3**	**23**	**1**	**1**	**0**	**0**	**2**	**0**	**1**	**2**	**0**	**3**
8:45 AM	3	9	8	3	*23*	0	0	0	0	*0*	0	0	1	0	*1*
Count Total	34	50	44	33	*161*	1	1	0	2	*4*	1	1	12	2	*16*
Peak Hour	**18**	**24**	**26**	**15**	***83***	**1**	**1**	**0**	**1**	***3***	**1**	**1**	**8**	**2**	**12**

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Count Summaries - Heavy Vehicles

Interval Start	S Boulder Rd				S Boulder Rd				Courtesy Rd				Courtesy Rd				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	2	2	0	0	0	1	3	0	0	0	2	0	0	2	2	14	0
7:15 AM	0	0	3	0	0	1	6	0	0	0	3	0	0	0	2	4	19	0
7:30 AM	0	2	4	0	0	1	5	0	0	0	4	1	0	1	2	2	22	0
7:45 AM	**0**	**1**	**1**	**1**	**0**	**1**	**6**	**1**	**0**	**0**	**4**	**0**	**0**	**1**	**1**	**2**	**19**	**74**
8:00 AM	**0**	**1**	**0**	**1**	**0**	**1**	**5**	**0**	**0**	**2**	**5**	**1**	**0**	**2**	**1**	**1**	**20**	**80**
8:15 AM	**0**	**2**	**5**	**1**	**0**	**4**	**2**	**0**	**0**	**1**	**2**	**0**	**0**	**2**	**1**	**1**	**21**	**82**
8:30 AM	**0**	**2**	**3**	**0**	**0**	**0**	**3**	**1**	**0**	**2**	**9**	**0**	**0**	**1**	**1**	**1**	**23**	**83**
8:45 AM	0	0	3	0	0	4	3	2	0	3	5	0	0	0	2	1	23	87
Count Total	0	10	21	3	0	12	31	7	0	8	32	4	0	7	12	14	161	
Pk Hr Heavy	**0**	**6**	**9**	**3**	**0**	**6**	**16**	**2**	**0**	**5**	**20**	**1**	**0**	**6**	**4**	**5**	**83**	

Count Summaries - Bikes

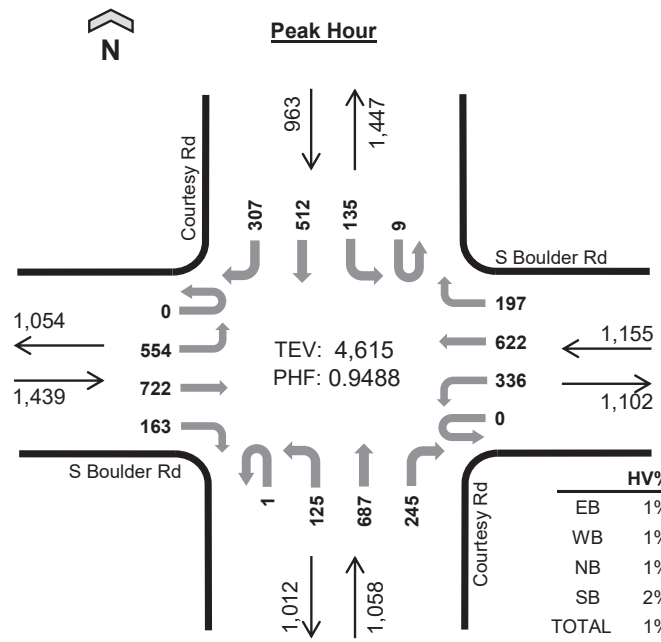
Interval Start	S Boulder Rd				S Boulder Rd				Courtesy Rd				Courtesy Rd				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**1**
8:30 AM	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**3**
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Count Total	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1	1	4	
Pk Hr Bike	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**3**	

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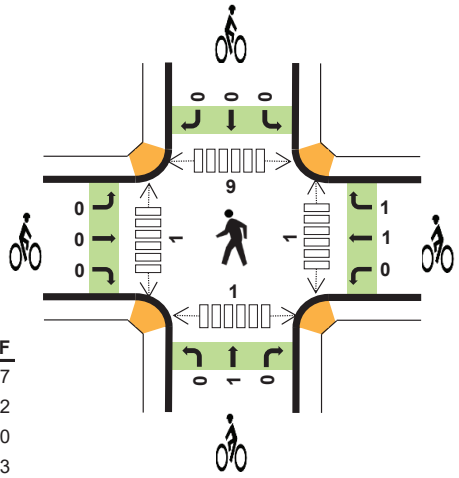
tj.wethington@idaxdata.com

Courtesy Rd
S Boulder Rd

Date: 11/5/2024
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:00 PM to 5:00 PM



	HV%	PHF
EB	1%	0.97
WB	1%	0.92
NB	1%	0.90
SB	2%	0.93
TOTAL	1%	0.95



Peak Hour Count Summaries

Peak Hour Interval Start		S Boulder Rd Eastbound				S Boulder Rd Westbound				Courtesy Rd Northbound				Courtesy Rd Southbound				15-min Total	Rolling Hour Total
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	140	182	49	0	95	160	57	0	29	173	57	3	35	135	66	1,181	0
4:15 PM		0	139	173	54	0	90	172	53	1	36	196	62	3	31	129	77	1,216	0
4:30 PM		0	133	200	24	0	86	130	43	0	32	166	59	2	35	114	74	1,098	0
4:45 PM		0	142	167	36	0	65	160	44	0	28	152	67	1	34	134	90	1,120	4,615
Pk Hr	All	0	554	722	163	0	336	622	197	1	125	687	245	9	135	512	307	4,615	
	HV	0	7	6	5	0	3	5	0	0	2	8	5	0	4	10	3	58	
	HV%	-	1%	1%	3%	-	1%	1%	0%	0%	2%	1%	2%	0%	3%	2%	1%	1%	

Note: For complete count summary (all intervals), see following pages.
*** Heavy Vehicle Classifications include FHWA Classes 4-13.*
*** Count Summaries include heavy vehicles, but exclude bicycles in overall count.*

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	E	W	N	S	Total
4:00 PM	3	1	5	10	*19*	0	1	0	0	*1*	0	0	1	0	*1*
4:15 PM	5	1	4	4	*14*	0	0	0	0	*0*	0	0	2	0	*2*
4:30 PM	7	4	5	2	*18*	0	1	1	0	*2*	1	1	4	1	*7*
4:45 PM	3	2	1	1	*7*	0	0	0	0	*0*	0	0	2	0	*2*
Peak Hour	18	8	15	17	*58*	0	2	1	0	*3*	1	1	9	1	*12*

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Count Summaries - All Vehicles

Interval Start	S Boulder Rd Eastbound				S Boulder Rd Westbound				Courtesy Rd Northbound				Courtesy Rd Southbound				15-min Total	Rolling Hour Total
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	**0**	**140**	**182**	**49**	**0**	**95**	**160**	**57**	**0**	**29**	**173**	**57**	**3**	**35**	**135**	**66**	**1,181**	0
4:15 PM	**0**	**139**	**173**	**54**	**0**	**90**	**172**	**53**	**1**	**36**	**196**	**62**	**3**	**31**	**129**	**77**	**1,216**	**0**
4:30 PM	**0**	**133**	**200**	**24**	**0**	**86**	**130**	**43**	**0**	**32**	**166**	**59**	**2**	**35**	**114**	**74**	**1,098**	**0**
4:45 PM	**0**	**142**	**167**	**36**	**0**	**65**	**160**	**44**	**0**	**28**	**152**	**67**	**1**	**34**	**134**	**90**	**1,120**	**4,615**
5:00 PM	0	127	176	22	0	75	164	47	1	31	169	72	2	42	166	84	1,178	4,612
5:15 PM	1	121	143	38	0	63	137	38	0	30	163	58	2	64	109	70	1,037	4,433
5:30 PM	1	102	163	37	0	72	119	27	1	36	170	81	1	38	119	60	1,027	4,362
5:45 PM	0	107	126	36	0	63	138	19	0	22	126	68	1	49	116	50	921	4,163
Count Total	2	1,011	1,330	296	0	609	1,180	328	3	244	1,315	524	15	328	1,022	571	8,778	
Pk Hr **All**	**0**	**554**	**722**	**163**	**0**	**336**	**622**	**197**	**1**	**125**	**687**	**245**	**9**	**135**	**512**	**307**	**4,615**	
Pk Hr **HV**	**0**	**7**	**6**	**5**	**0**	**3**	**5**	**0**	**0**	**2**	**8**	**5**	**0**	**4**	**10**	**3**	**58**	
Pk Hr **HV%**	**-**	**1%**	**1%**	**3%**	**-**	**1%**	**1%**	**0%**	**0%**	**2%**	**1%**	**2%**	**0%**	**3%**	**2%**	**1%**	**1%**	

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	E	W	N	S	Total
4:00 PM	**3**	**1**	**5**	**10**	**19**	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**1**
4:15 PM	**5**	**1**	**4**	**4**	**14**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**2**
4:30 PM	**7**	**4**	**5**	**2**	**18**	**0**	**1**	**1**	**0**	**2**	**1**	**1**	**4**	**1**	**7**
4:45 PM	**3**	**2**	**1**	**1**	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**2**
5:00 PM	1	0	1	0	*2*	0	0	0	0	*0*	0	0	1	1	*2*
5:15 PM	6	2	1	4	*13*	0	0	0	0	*0*	1	0	1	0	*2*
5:30 PM	3	1	2	1	*7*	0	0	0	0	*0*	0	0	0	0	*0*
5:45 PM	3	2	1	1	*7*	0	0	0	0	*0*	0	1	1	0	*2*
Count Total	31	13	20	23	*87*	0	2	1	0	*3*	2	2	12	2	*18*
Peak Hour	**18**	**8**	**15**	**17**	***58***	**0**	**2**	**1**	**0**	***3***	**1**	**1**	**9**	**1**	**12**

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Count Summaries - Heavy Vehicles

Interval Start	S Boulder Rd Eastbound				S Boulder Rd Westbound				Courtesy Rd Northbound				Courtesy Rd Southbound				15-min Total	Rolling Hour Total
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	**0**	**0**	**2**	**1**	**0**	**1**	**0**	**0**	**0**	**1**	**2**	**2**	**0**	**1**	**7**	**2**	**19**	0
4:15 PM	**0**	**1**	**1**	**3**	**0**	**0**	**1**	**0**	**0**	**1**	**1**	**2**	**0**	**1**	**2**	**1**	**14**	**0**
4:30 PM	**0**	**5**	**1**	**1**	**0**	**1**	**3**	**0**	**0**	**0**	**4**	**1**	**0**	**2**	**0**	**0**	**18**	**0**
4:45 PM	**0**	**1**	**2**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**7**	**58**
5:00 PM	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	2	41
5:15 PM	0	2	1	3	0	0	1	1	0	0	1	0	0	0	2	2	13	40
5:30 PM	0	2	0	1	0	1	0	0	0	1	0	1	0	0	1	0	7	29
5:45 PM	0	0	1	2	0	1	1	0	0	0	1	0	0	0	1	0	7	29
Count Total	0	11	9	11	0	5	7	1	0	3	11	6	0	4	14	5	87	
Pk Hr Heavy	**0**	**7**	**6**	**5**	**0**	**3**	**5**	**0**	**0**	**2**	**8**	**5**	**0**	**4**	**10**	**3**	**58**	

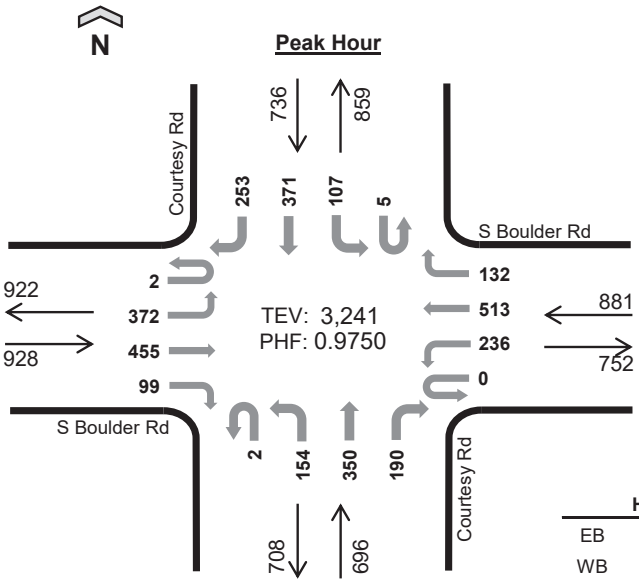
Count Summaries - Bikes

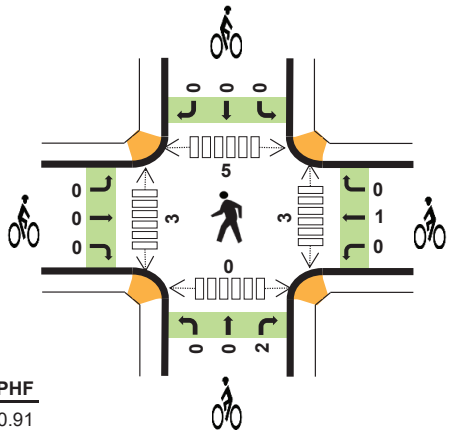
Interval Start	S Boulder Rd Eastbound				S Boulder Rd Westbound				Courtesy Rd Northbound				Courtesy Rd Southbound				15-min Total	Rolling Hour Total
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	0
4:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**2**	**0**
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	1	1	0	0	1	0	0	0	0	0	3	
Pk Hr Bike	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**3**	

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Courtesy Rd
S Boulder Rd

Date: 11/2/2024
Count Period: 11:00 AM to 1:00 PM
Peak Hour: 11:30 AM to 12:30 PM





	HV%	PHF
EB	1%	0.91
WB	1%	0.95
NB	1%	0.82
SB	1%	0.89
TOTAL	1%	0.98

Peak Hour Count Summaries

Peak Hour Interval Start		S Boulder Rd Eastbound				S Boulder Rd Westbound				Courtesy Rd Northbound				Courtesy Rd Southbound				15-min Total	Rolling Hour Total
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
11:30 AM		1	95	103	25	0	52	151	27	0	44	68	38	2	38	87	79	810	0
11:45 AM		1	102	122	29	0	59	134	34	1	37	75	54	0	25	88	59	820	0
12:00 PM		0	84	106	29	0	59	120	52	1	37	119	55	1	24	92	52	831	0
12:15 PM		0	91	124	16	0	66	108	19	0	36	88	43	2	20	104	63	780	3,241
Pk Hr	All	2	372	455	99	0	236	513	132	2	154	350	190	5	107	371	253	3,241	
	HV	0	4	7	0	0	3	4	1	0	0	4	4	0	1	4	2	34	
	HV%	0%	1%	2%	0%	-	1%	1%	1%	0%	0%	1%	2%	0%	1%	1%	1%	1%	

Note: For complete count summary (all intervals), see following pages.
*** Heavy Vehicle Classifications include FHWA Classes 4-13.*
*** Count Summaries include heavy vehicles, but exclude bicycles in overall count.*

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	E	W	N	S	Total
11:30 AM	3	1	1	2	*7*	0	1	2	0	*3*	0	1	3	0	*4*
11:45 AM	5	2	4	0	*11*	0	0	0	0	*0*	3	0	0	0	*3*
12:00 PM	3	3	2	1	*9*	0	0	0	0	*0*	0	2	2	0	*4*
12:15 PM	0	2	1	4	*7*	0	0	0	0	*0*	0	0	0	0	*0*
Peak Hour	11	8	8	7	*34*	0	1	2	0	*3*	3	3	5	0	*11*

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Count Summaries - All Vehicles

Interval Start	S Boulder Rd Eastbound				S Boulder Rd Westbound				Courtesy Rd Northbound				Courtesy Rd Southbound				15-min Total	Rolling Hour Total
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
11:00 AM	0	103	89	32	0	38	118	20	0	37	75	71	1	23	115	84	806	0
11:15 AM	0	110	113	32	0	53	112	23	0	32	97	38	3	14	63	70	760	0
11:30 AM	**1**	**95**	**103**	**25**	**0**	**52**	**151**	**27**	**0**	**44**	**68**	**38**	**2**	**38**	**87**	**79**	**810**	**0**
11:45 AM	**1**	**102**	**122**	**29**	**0**	**59**	**134**	**34**	**1**	**37**	**75**	**54**	**0**	**25**	**88**	**59**	**820**	**3,196**
12:00 PM	**0**	**84**	**106**	**29**	**0**	**59**	**120**	**52**	**1**	**37**	**119**	**55**	**1**	**24**	**92**	**52**	**831**	**3,221**
12:15 PM	**0**	**91**	**124**	**16**	**0**	**66**	**108**	**19**	**0**	**36**	**88**	**43**	**2**	**20**	**104**	**63**	**780**	**3,241**
12:30 PM	0	78	95	27	0	66	117	25	0	32	92	48	1	22	120	73	796	3,227
12:45 PM	0	92	117	29	0	68	132	25	0	28	87	55	0	19	83	67	802	3,209
Count Total	2	755	869	219	0	461	992	225	2	283	701	402	10	185	752	547	6,405	
Pk Hr All	**2**	**372**	**455**	**99**	**0**	**236**	**513**	**132**	**2**	**154**	**350**	**190**	**5**	**107**	**371**	**253**	**3,241**	
Pk Hr HV	**0**	**4**	**7**	**0**	**0**	**3**	**4**	**1**	**0**	**0**	**4**	**4**	**0**	**1**	**4**	**2**	**34**	
Pk Hr HV%	**0%**	**1%**	**2%**	**0%**	**-**	**1%**	**1%**	**1%**	**0%**	**0%**	**1%**	**2%**	**0%**	**1%**	**1%**	**1%**	**1%**	

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	E	W	N	S	Total
11:00 AM	1	2	0	3	*6*	0	1	0	0	*1*	4	0	1	0	*5*
11:15 AM	1	4	1	3	*9*	1	0	1	0	*2*	0	1	2	0	*3*
11:30 AM	**3**	**1**	**1**	**2**	**7**	**0**	**1**	**2**	**0**	**3**	**0**	**1**	**3**	**0**	**4**
11:45 AM	**5**	**2**	**4**	**0**	**11**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**3**
12:00 PM	**3**	**3**	**2**	**1**	**9**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**2**	**0**	**4**
12:15 PM	**0**	**2**	**1**	**4**	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
12:30 PM	2	2	0	3	*7*	0	0	0	1	*1*	1	0	0	0	*1*
12:45 PM	2	2	1	1	*6*	0	0	0	0	*0*	0	0	3	0	*3*
Count Total	17	18	10	17	*62*	1	2	3	1	*7*	8	4	11	0	*23*
Peak Hour	**11**	**8**	**8**	**7**	***34***	**0**	**1**	**2**	**0**	***3***	**3**	**3**	**5**	**0**	**11**

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Count Summaries - Heavy Vehicles

Interval Start	S Boulder Rd				S Boulder Rd				Courtesy Rd				Courtesy Rd				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
11:00 AM	0	0	1	0	0	0	2	0	0	0	0	0	0	0	1	2	6	0
11:15 AM	0	0	1	0	0	0	4	0	0	1	0	0	0	0	1	2	9	0
11:30 AM	**0**	**1**	**2**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**1**	**7**	**0**
11:45 AM	**0**	**3**	**2**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**3**	**1**	**0**	**0**	**0**	**0**	**11**	**33**
12:00 PM	**0**	**0**	**3**	**0**	**0**	**0**	**2**	**1**	**0**	**0**	**0**	**2**	**0**	**0**	**1**	**0**	**9**	**36**
12:15 PM	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**3**	**1**	**7**	**34**
12:30 PM	0	1	1	0	0	0	2	0	0	0	0	0	0	1	2	0	7	34
12:45 PM	0	0	0	2	0	0	2	0	0	1	0	0	0	0	0	1	6	29
Count Total	0	5	10	2	0	3	14	1	0	2	4	4	0	2	8	7	62	
Pk Hr Heavy	**0**	**4**	**7**	**0**	**0**	**3**	**4**	**1**	**0**	**0**	**4**	**4**	**0**	**1**	**4**	**2**	**34**	

Count Summaries - Bikes

Interval Start	S Boulder Rd				S Boulder Rd				Courtesy Rd				Courtesy Rd				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
11:00 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0
11:15 AM	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	2	0
11:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**3**	**0**
11:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6**
12:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**
12:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Count Total	0	0	1	0	0	0	2	0	0	0	0	3	0	0	0	1	7	
Pk Hr Bike	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**3**	

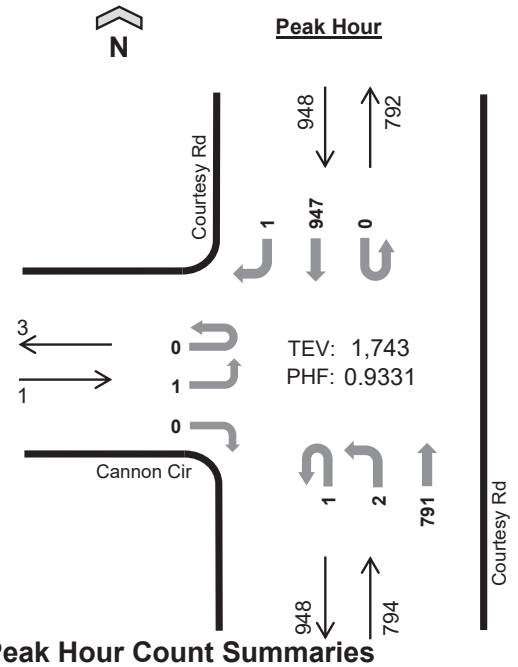
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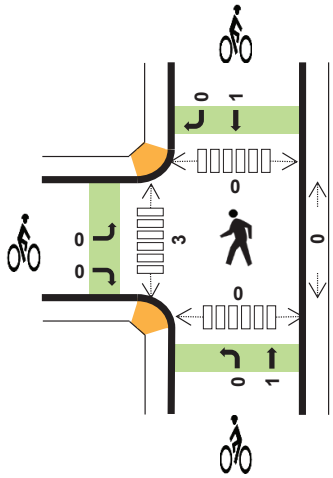
Courtesy Rd
Cannon Cir

Peak Hour

Date: 11/5/2024
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:45 AM to 8:45 AM



	HV%	PHF
EB	0%	0.25
WB	--	--
NB	3%	0.88
SB	1%	0.93
TOTAL	2%	0.93



Peak Hour Count Summaries

Peak Hour Interval Start		Cannon Cir Eastbound				n/a Westbound				Courtesy Rd Northbound				Courtesy Rd Southbound				15-min Total	Rolling Hour Total
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:45 AM		0	0	0	0	0	0	0	0	1	0	187	0	0	0	255	0	443	0
8:00 AM		0	1	0	0	0	0	0	0	0	0	191	0	0	0	227	1	420	0
8:15 AM		0	0	0	0	0	0	0	0	0	1	224	0	0	0	242	0	467	0
8:30 AM		0	0	0	0	0	0	0	0	0	1	189	0	0	0	223	0	413	1,743
Pk Hr	All	0	1	0	0	0	0	0	0	1	2	791	0	0	0	947	1	1,743	
	HV	0	0	0	0	0	0	0	0	0	0	21	0	0	0	13	0	34	
	HV%	-	0%	-	-	-	-	-	-	0%	0%	3%	-	-	-	1%	0%	2%	

Note: For complete count summary (all intervals), see following pages.
*** Heavy Vehicle Classifications include FHWA Classes 4-13.*
*** Count Summaries include heavy vehicles, but exclude bicycles in overall count.*

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	E	W	N	S	Total
7:45 AM	0	0	2	2	*4*	0	0	0	0	*0*	0	1	0	0	*1*
8:00 AM	0	0	7	3	*10*	0	0	0	0	*0*	0	0	0	0	*0*
8:15 AM	0	0	3	5	*8*	0	0	0	1	*1*	0	1	0	0	*1*
8:30 AM	0	0	9	3	*12*	0	0	1	0	*1*	0	1	0	0	*1*
Peak Hour	0	0	21	13	*34*	0	0	1	1	*2*	0	3	0	0	*3*

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Count Summaries - All Vehicles

Interval Start	Cannon Cir				n/a				Courtesy Rd				Courtesy Rd				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	1	88	0	0	0	122	0	211	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	108	0	0	0	194	0	302	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	137	0	0	0	238	0	375	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**187**	**0**	**0**	**0**	**255**	**0**	**443**	**1,331**
8:00 AM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**191**	**0**	**0**	**0**	**227**	**1**	**420**	**1,540**
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**224**	**0**	**0**	**0**	**242**	**0**	**467**	**1,705**
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**189**	**0**	**0**	**0**	**223**	**0**	**413**	**1,743**
8:45 AM	0	1	0	0	0	0	0	0	0	1	227	0	0	0	208	2	439	1,739
Count Total	0	2	0	0	0	0	0	0	1	4	1,351	0	0	0	1,709	3	3,070	
Pk Hr **All**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**2**	**791**	**0**	**0**	**0**	**947**	**1**	**1,743**	
Pk Hr **HV**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**21**	**0**	**0**	**0**	**13**	**0**	**34**	
Pk Hr **HV%**	**-**	**0%**	**-**	**-**	**-**	**-**	**-**	**-**	**0%**	**0%**	**3%**	**-**	**-**	**-**	**1%**	**0%**	**2%**	

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	E	W	N	S	Total
7:00 AM	0	0	2	3	*5*	0	0	0	0	*0*	0	0	0	0	*0*
7:15 AM	0	0	4	2	*6*	0	0	0	0	*0*	0	0	0	0	*0*
7:30 AM	0	0	4	3	*7*	0	0	0	0	*0*	0	1	0	0	*1*
7:45 AM	**0**	**0**	**2**	**2**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**
8:00 AM	**0**	**0**	**7**	**3**	**10**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
8:15 AM	**0**	**0**	**3**	**5**	**8**	**0**	**0**	**0**	**1**	**1**	**0**	**1**	**0**	**0**	**1**
8:30 AM	**0**	**0**	**9**	**3**	**12**	**0**	**0**	**1**	**0**	**1**	**0**	**1**	**0**	**0**	**1**
8:45 AM	0	0	11	5	*16*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	0	0	42	26	*68*	0	0	1	1	*2*	0	4	0	0	*4*
Peak Hour	**0**	**0**	**21**	**13**	***34***	**0**	**0**	**1**	**1**	**2**	**0**	**3**	**0**	**0**	**3**

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Count Summaries - Heavy Vehicles

Interval Start	Cannon Cir				n/a				Courtesy Rd				Courtesy Rd				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	3	0	5	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	2	0	6	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	3	0	7	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**2**	**0**	**4**	**22**
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**7**	**0**	**0**	**0**	**3**	**0**	**10**	**27**
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**5**	**0**	**8**	**29**
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**9**	**0**	**0**	**0**	**3**	**0**	**12**	**34**
8:45 AM	0	0	0	0	0	0	0	0	0	0	11	0	0	0	5	0	16	46
Count Total	0	0	0	0	0	0	0	0	0	0	42	0	0	0	26	0	68	
Pk Hr Heavy	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**21**	**0**	**0**	**0**	**13**	**0**	**34**	

Count Summaries - Bikes

Interval Start	Cannon Cir				n/a				Courtesy Rd				Courtesy Rd				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**1**
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**2**
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Count Total	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2	
Pk Hr Bike	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**2**	

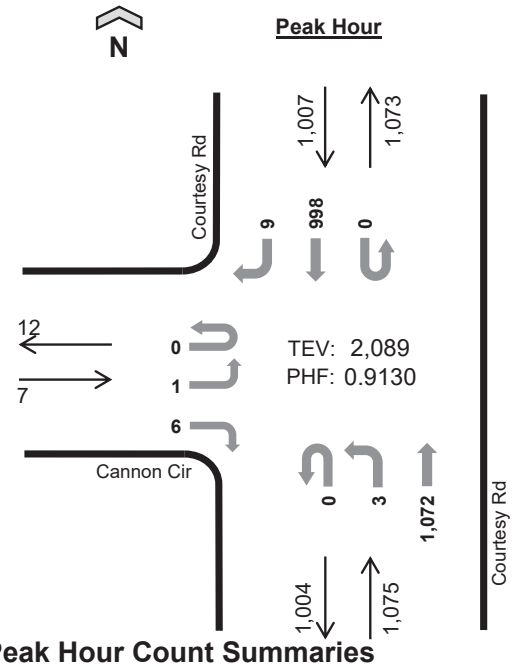
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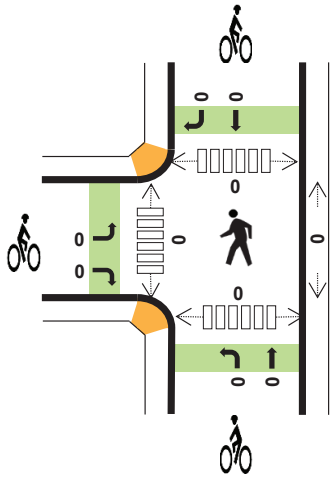
Courtesy Rd
Cannon Cir

Peak Hour

Date: 11/5/2024
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:00 PM to 5:00 PM



	HV%	PHF
EB	0%	0.29
WB	--	--
NB	1%	0.92
SB	1%	0.92
TOTAL	1%	0.91



Peak Hour Count Summaries

Peak Hour Interval Start		Cannon Cir				n/a				Courtesy Rd				Courtesy Rd				15-min Total	Rolling Hour Total
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	0	0	1	0	0	0	0	0	1	254	0	0	0	255	2	513	0
4:15 PM		0	1	0	5	0	0	0	0	0	0	292	0	0	0	272	2	572	0
4:30 PM		0	0	0	0	0	0	0	0	0	1	254	0	0	0	218	3	476	0
4:45 PM		0	0	0	0	0	0	0	0	0	1	272	0	0	0	253	2	528	2,089
Pk Hr	All	0	1	0	6	0	0	0	0	0	3	1,072	0	0	0	998	9	2,089	
	HV	0	0	0	0	0	0	0	0	0	0	15	0	0	0	15	0	30	
	HV%	-	0%	-	0%	-	-	-	-	-	0%	1%	-	-	-	2%	0%	1%	

Note: For complete count summary (all intervals), see following pages.
*** Heavy Vehicle Classifications include FHWA Classes 4-13.*
*** Count Summaries include heavy vehicles, but exclude bicycles in overall count.*

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	E	W	N	S	Total
4:00 PM	0	0	5	7	*12*	0	0	0	0	*0*	0	0	0	0	*0*
4:15 PM	0	0	4	4	*8*	0	0	0	0	*0*	0	0	0	0	*0*
4:30 PM	0	0	5	3	*8*	0	0	0	0	*0*	0	0	0	0	*0*
4:45 PM	0	0	1	1	*2*	0	0	0	0	*0*	0	0	0	0	*0*
Peak Hour	0	0	15	15	*30*	0	0	0	0	*0*	0	0	0	0	*0*

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Count Summaries - All Vehicles

Interval Start	Cannon Cir				n/a				Courtesy Rd				Courtesy Rd				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**254**	**0**	**0**	**0**	**255**	**2**	**513**	0
4:15 PM	**0**	**1**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**292**	**0**	**0**	**0**	**272**	**2**	**572**	**0**
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**254**	**0**	**0**	**0**	**218**	**3**	**476**	**0**
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**272**	**0**	**0**	**0**	**253**	**2**	**528**	**2,089**
5:00 PM	0	2	0	5	0	0	0	0	0	1	253	0	0	0	235	1	497	2,073
5:15 PM	0	0	0	4	0	0	0	0	0	1	263	0	0	0	238	2	508	2,009
5:30 PM	0	1	0	5	0	0	0	0	0	1	277	0	0	0	210	3	497	2,030
5:45 PM	0	1	0	2	0	0	0	0	0	0	216	0	0	0	222	1	442	1,944
Count Total	0	5	0	22	0	0	0	0	0	6	2,081	0	0	0	1,903	16	4,033	
Pk Hr **All**	**0**	**1**	**0**	**6**	**0**	**0**	**0**	**0**	**0**	**3**	**1,072**	**0**	**0**	**0**	**998**	**9**	**2,089**	
Pk Hr **HV**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**15**	**0**	**0**	**0**	**15**	**0**	**30**	
Pk Hr **HV%**	**-**	**0%**	**-**	**0%**	**-**	**-**	**-**	**-**	**-**	**0%**	**1%**	**-**	**-**	**-**	**2%**	**0%**	**1%**	

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	E	W	N	S	Total
4:00 PM	**0**	**0**	**5**	**7**	**12**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
4:15 PM	**0**	**0**	**4**	**4**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
4:30 PM	**0**	**0**	**5**	**3**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
4:45 PM	**0**	**0**	**1**	**1**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
5:00 PM	0	0	1	0	*1*	0	0	0	0	*0*	0	0	0	0	*0*
5:15 PM	0	0	0	4	*4*	0	0	0	0	*0*	0	0	0	0	*0*
5:30 PM	0	0	2	3	*5*	0	0	0	0	*0*	0	0	0	0	*0*
5:45 PM	0	0	3	2	*5*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	0	0	21	24	*45*	0	0	0	0	*0*	0	0	0	0	*0*
Peak Hour	**0**	**0**	**15**	**15**	***30***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	**0**

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Count Summaries - Heavy Vehicles

Interval Start	Cannon Cir				n/a				Courtesy Rd				Courtesy Rd				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**7**	**0**	**12**	0
4:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**4**	**0**	**8**	**0**
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**3**	**0**	**8**	**0**
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**2**	**30**
5:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	19
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4	15
5:30 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	3	0	5	12
5:45 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	2	0	5	15
Count Total	0	0	0	0	0	0	0	0	0	0	21	0	0	0	24	0	45	
Pk Hr Heavy	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**15**	**0**	**0**	**0**	**15**	**0**	**30**	

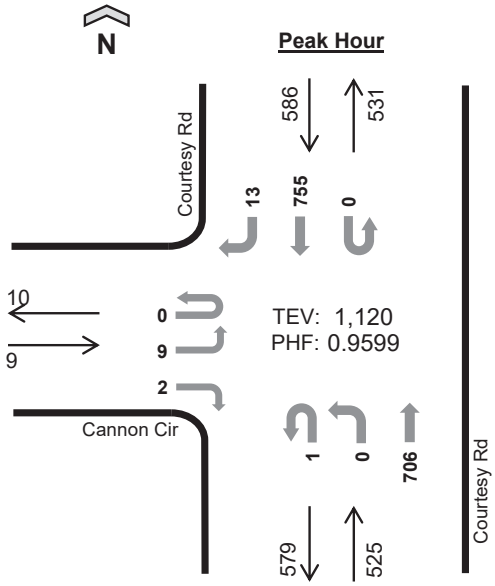
Count Summaries - Bikes

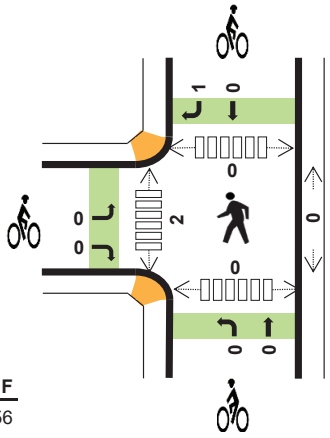
Interval Start	Cannon Cir				n/a				Courtesy Rd				Courtesy Rd				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pk Hr Bike	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	

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Courtesy Rd
Cannon Cir

Date: 11/2/2024
Count Period: 11:00 AM to 1:00 PM
Peak Hour: 11:45 AM to 12:45 PM





	HV%	PHF
EB	0%	0.56
WB	--	--
NB	1%	0.71
SB	1%	0.67
TOTAL	1%	0.96

Peak Hour Count Summaries

Peak Hour Interval Start		Cannon Cir				n/a				Courtesy Rd				Courtesy Rd				15-min Total	Rolling Hour Total
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
11:45 AM		0	2	0	0	0	0	0	0	0	0	182	0	0	0	179	3	366	0
12:00 PM		0	2	0	0	0	0	0	0	0	0	175	0	0	0	176	1	354	0
12:15 PM		0	3	0	1	0	0	0	0	1	0	184	0	0	0	185	5	379	0
12:30 PM		0	2	0	1	0	0	0	0	0	0	165	0	0	0	215	4	387	1,486
Pk Hr	All	0	9	0	2	0	0	0	0	1	0	706	0	0	0	755	13	1,486	
	HV	0	0	0	0	0	0	0	0	0	0	5	0	0	0	4	0	9	
	HV%	-	0%	-	0%	-	-	-	-	0%	-	1%	-	-	-	1%	0%	1%	

Note: For complete count summary (all intervals), see following pages.
*** Heavy Vehicle Classifications include FHWA Classes 4-13.*
*** Count Summaries include heavy vehicles, but exclude bicycles in overall count.*

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	E	W	N	S	Total
11:45 AM	0	0	2	0	*2*	0	0	0	0	*0*	0	0	0	0	*0*
12:00 PM	0	0	1	2	*3*	0	0	0	0	*0*	0	1	0	0	*1*
12:15 PM	0	0	2	2	*4*	0	0	0	1	*1*	0	1	0	0	*1*
12:30 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
Peak Hour	0	0	5	4	*9*	0	0	0	1	*1*	0	2	0	0	*2*

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Count Summaries - All Vehicles

Interval Start	Cannon Cir				n/a				Courtesy Rd				Courtesy Rd				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
11:00 AM	0	1	0	3	0	0	0	0	1	1	195	0	0	0	174	0	375	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	161	0	0	0	171	1	333	0
11:30 AM	0	1	0	0	0	0	0	0	0	0	148	0	0	0	155	1	305	0
11:45 AM	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**182**	**0**	**0**	**0**	**179**	**3**	**366**	**1,379**
12:00 PM	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**175**	**0**	**0**	**0**	**176**	**1**	**354**	**1,358**
12:15 PM	**0**	**3**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**184**	**0**	**0**	**0**	**185**	**5**	**379**	**1,404**
12:30 PM	**0**	**2**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**165**	**0**	**0**	**0**	**215**	**4**	**387**	**1,486**
12:45 PM	0	2	0	1	0	0	0	0	0	0	168	0	0	0	182	2	355	1,475
Count Total	0	13	0	6	0	0	0	0	2	1	1,378	0	0	0	1,437	17	2,854	
Pk Hr All	**0**	**9**	**0**	**2**	**0**	**0**	**0**	**0**	**1**	**0**	**706**	**0**	**0**	**0**	**755**	**13**	**1,486**	
Pk Hr HV	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**4**	**0**	**9**	
Pk Hr HV%	**-**	**0%**	**-**	**0%**	**-**	**-**	**-**	**-**	**0%**	**-**	**1%**	**-**	**-**	**-**	**1%**	**0%**	**1%**	

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	E	W	N	S	Total
11:00 AM	0	0	0	1	*1*	0	0	0	0	*0*	0	4	0	0	*4*
11:15 AM	0	0	1	1	*2*	0	0	0	0	*0*	0	1	0	0	*1*
11:30 AM	0	0	1	1	*2*	0	0	2	0	*2*	0	1	0	0	*1*
11:45 AM	**0**	**0**	**2**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
12:00 PM	**0**	**0**	**1**	**2**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**
12:15 PM	**0**	**0**	**2**	**2**	**4**	**0**	**0**	**0**	**1**	**1**	**0**	**1**	**0**	**0**	**1**
12:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
12:45 PM	0	0	1	2	*3*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	0	0	8	9	*17*	0	0	2	1	*3*	0	8	0	0	*8*
Peak Hour	**0**	**0**	**5**	**4**	***9***	**0**	**0**	**0**	**1**	***1***	**0**	**2**	**0**	**0**	**2**

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Count Summaries - Heavy Vehicles

Interval Start	Cannon Cir				n/a				Courtesy Rd				Courtesy Rd				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2	0
11:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**2**	**7**
12:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**2**	**0**	**3**	**9**
12:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**2**	**0**	**4**	**11**
12:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**9**
12:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	3	10
Count Total	0	0	0	0	0	0	0	0	0	0	8	0	0	0	9	0	17	
Pk Hr Heavy	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**4**	**0**	**9**	

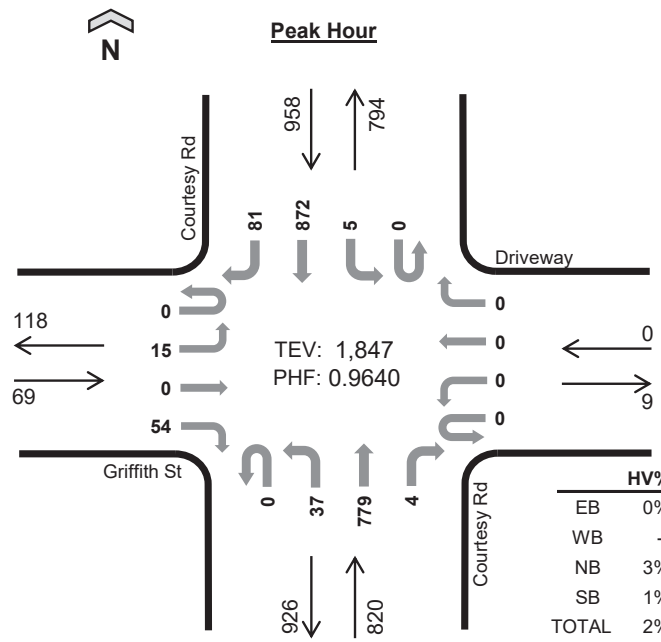
Count Summaries - Bikes

Interval Start	Cannon Cir				n/a				Courtesy Rd				Courtesy Rd				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	0
11:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**
12:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**
12:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**3**
12:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Count Total	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	3	
Pk Hr Bike	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	

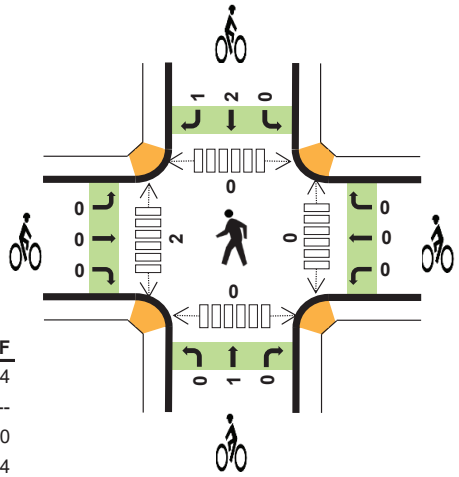
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Courtesy Rd
Driveway

Date: 11/5/2024
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:45 AM to 8:45 AM



	HV%	PHF
EB	0%	0.54
WB	--	--
NB	3%	0.90
SB	1%	0.94
TOTAL	2%	0.96



Peak Hour Count Summaries

Peak Hour Interval Start		Griffith St (Eastbound)				Driveway (Westbound)				Courtesy Rd (Northbound)				Courtesy Rd (Southbound)				15-min Total	Rolling Hour Total
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:45 AM		0	2	0	5	0	0	0	0	0	7	168	1	0	1	236	19	439	0
8:00 AM		0	1	0	13	0	0	0	0	0	10	199	2	0	1	213	20	459	0
8:15 AM		0	2	0	14	0	0	0	0	0	11	217	1	0	2	212	20	479	0
8:30 AM		0	10	0	22	0	0	0	0	0	9	195	0	0	1	211	22	470	1,847
Pk Hr	All	0	15	0	54	0	0	0	0	0	37	779	4	0	5	872	81	1,847	
	HV	0	0	0	0	0	0	0	0	0	1	22	0	0	0	11	2	36	
	HV%	-	0%	-	0%	-	-	-	-	-	3%	3%	0%	-	0%	1%	2%	2%	

Note: For complete count summary (all intervals), see following pages.
*** Heavy Vehicle Classifications include FHWA Classes 4-13.*
*** Count Summaries include heavy vehicles, but exclude bicycles in overall count.*

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	E	W	N	S	Total
7:45 AM	0	0	4	4	*8*	0	0	0	0	*0*	0	1	0	0	*1*
8:00 AM	0	0	7	3	*10*	0	0	0	0	*0*	0	1	0	0	*1*
8:15 AM	0	0	3	6	*9*	0	0	0	1	*1*	0	0	0	0	*0*
8:30 AM	0	0	9	0	*9*	0	0	1	2	*3*	0	0	0	0	*0*
Peak Hour	0	0	23	13	*36*	0	0	1	3	*4*	0	2	0	0	*2*

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Count Summaries - All Vehicles

Interval Start	Griffith St				Driveway				Courtesy Rd				Courtesy Rd				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	1	0	4	0	1	0	0	0	4	84	0	0	1	127	1	223	0
7:15 AM	0	0	0	7	0	0	0	0	0	1	104	2	0	0	176	10	300	0
7:30 AM	0	2	1	5	0	0	1	0	0	4	129	2	0	0	240	15	399	0
7:45 AM	**0**	**2**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**7**	**168**	**1**	**0**	**1**	**236**	**19**	**439**	**1,361**
8:00 AM	**0**	**1**	**0**	**13**	**0**	**0**	**0**	**0**	**0**	**10**	**199**	**2**	**0**	**1**	**213**	**20**	**459**	**1,597**
8:15 AM	**0**	**2**	**0**	**14**	**0**	**0**	**0**	**0**	**0**	**11**	**217**	**1**	**0**	**2**	**212**	**20**	**479**	**1,776**
8:30 AM	**0**	**10**	**0**	**22**	**0**	**0**	**0**	**0**	**0**	**9**	**195**	**0**	**0**	**1**	**211**	**22**	**470**	**1,847**
8:45 AM	0	1	0	7	0	0	0	0	0	3	210	3	0	1	196	16	437	1,845
Count Total	0	19	1	77	0	1	1	0	0	49	1,306	11	0	7	1,611	123	3,206	
Pk Hr All	**0**	**15**	**0**	**54**	**0**	**0**	**0**	**0**	**0**	**37**	**779**	**4**	**0**	**5**	**872**	**81**	**1,847**	
Pk Hr HV	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**22**	**0**	**0**	**0**	**11**	**2**	**36**	
Pk Hr HV%	**-**	**0%**	**-**	**0%**	**-**	**-**	**-**	**-**	**-**	**3%**	**3%**	**0%**	**-**	**0%**	**1%**	**2%**	**2%**	

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	E	W	N	S	Total
7:00 AM	0	1	2	2	*5*	0	0	0	0	*0*	0	0	0	0	*0*
7:15 AM	0	0	3	3	*6*	0	1	0	0	*1*	0	0	0	0	*0*
7:30 AM	0	0	4	3	*7*	0	0	0	0	*0*	0	0	0	0	*0*
7:45 AM	**0**	**0**	**4**	**4**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**
8:00 AM	**0**	**0**	**7**	**3**	**10**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**
8:15 AM	**0**	**0**	**3**	**6**	**9**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**
8:30 AM	**0**	**0**	**9**	**0**	**9**	**0**	**0**	**1**	**2**	**3**	**0**	**0**	**0**	**0**	**0**
8:45 AM	0	0	7	5	*12*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	0	1	39	26	*66*	0	1	1	3	*5*	0	2	0	0	*2*
Peak Hour	**0**	**0**	**23**	**13**	***36***	**0**	**0**	**1**	**3**	***4***	**0**	**2**	**0**	**0**	**2**

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Count Summaries - Heavy Vehicles

Interval Start	Griffith St				Driveway				Courtesy Rd				Courtesy Rd				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	1	0	0	0	0	2	0	0	0	2	0	5	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	0	6	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	3	0	7	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**3**	**0**	**0**	**0**	**3**	**1**	**8**	**26**
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**7**	**0**	**0**	**0**	**3**	**0**	**10**	**31**
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**5**	**1**	**9**	**34**
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**9**	**0**	**0**	**0**	**0**	**0**	**9**	**36**
8:45 AM	0	0	0	0	0	0	0	0	0	0	6	1	0	0	5	0	12	40
Count Total	0	0	0	0	0	1	0	0	0	1	37	1	0	0	24	2	66	
Pk Hr Heavy	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**22**	**0**	**0**	**0**	**11**	**2**	**36**	

Count Summaries - Bikes

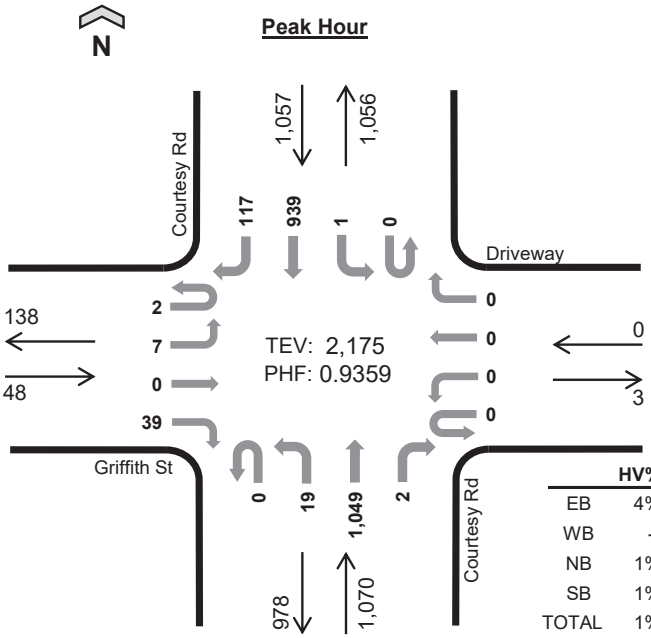
Interval Start	Griffith St				Driveway				Courtesy Rd				Courtesy Rd				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**1**
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**1**	**3**	**4**
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Count Total	0	0	0	0	0	0	1	0	0	0	1	0	0	0	2	1	5	
Pk Hr Bike	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**2**	**1**	**4**	

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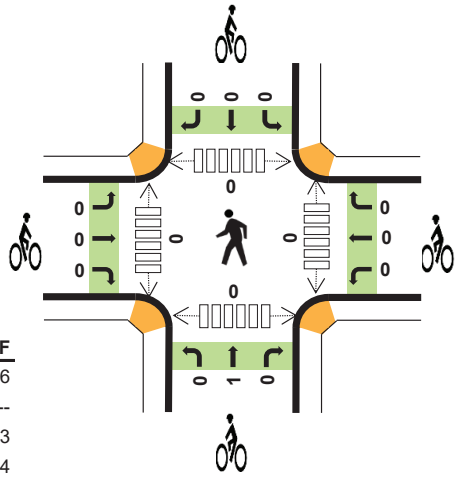
Courtesy Rd
Driveway

Peak Hour

Date: 11/5/2024
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:00 PM to 5:00 PM



	HV%	PHF
EB	4%	0.86
WB	--	--
NB	1%	0.93
SB	1%	0.94
TOTAL	1%	0.94



Peak Hour Count Summaries

Peak Hour Interval Start		Griffith St (Eastbound)				Driveway (Westbound)				Courtesy Rd (Northbound)				Courtesy Rd (Southbound)				15-min Total	Rolling Hour Total
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	2	0	12	0	0	0	0	0	5	259	1	0	0	253	27	559	0
4:15 PM		0	2	0	12	0	0	0	0	0	2	286	1	0	0	242	36	581	0
4:30 PM		0	1	0	5	0	0	0	0	0	6	245	0	0	0	216	24	497	0
4:45 PM		2	2	0	10	0	0	0	0	0	6	259	0	0	1	228	30	538	2,175
Pk Hr	All	2	7	0	39	0	0	0	0	0	19	1,049	2	0	1	939	117	2,175	
	HV	0	1	0	1	0	0	0	0	0	1	15	0	0	0	12	0	30	
	HV%	0%	14%	-	3%	-	-	-	-	-	5%	1%	0%	-	0%	1%	0%	1%	

Note: For complete count summary (all intervals), see following pages.
*** Heavy Vehicle Classifications include FHWA Classes 4-13.*
*** Count Summaries include heavy vehicles, but exclude bicycles in overall count.*

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	E	W	N	S	Total
4:00 PM	1	0	7	4	*12*	0	0	0	0	*0*	0	0	0	0	*0*
4:15 PM	1	0	2	4	*7*	0	0	0	0	*0*	0	0	0	0	*0*
4:30 PM	0	0	5	3	*8*	0	0	1	0	*1*	0	0	0	0	*0*
4:45 PM	0	0	2	1	*3*	0	0	0	0	*0*	0	0	0	0	*0*
Peak Hour	2	0	16	12	*30*	0	0	1	0	*1*	0	0	0	0	*0*

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Count Summaries - All Vehicles

Interval Start	Griffith St				Driveway				Courtesy Rd				Courtesy Rd				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	**0**	**2**	**0**	**12**	**0**	**0**	**0**	**0**	**0**	**5**	**259**	**1**	**0**	**0**	**253**	**27**	**559**	0
4:15 PM	**0**	**2**	**0**	**12**	**0**	**0**	**0**	**0**	**0**	**2**	**286**	**1**	**0**	**0**	**242**	**36**	**581**	**0**
4:30 PM	**0**	**1**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**6**	**245**	**0**	**0**	**0**	**216**	**24**	**497**	**0**
4:45 PM	**2**	**2**	**0**	**10**	**0**	**0**	**0**	**0**	**0**	**6**	**259**	**0**	**0**	**1**	**228**	**30**	**538**	**2,175**
5:00 PM	0	2	0	7	0	0	0	0	0	4	250	1	0	0	247	26	537	2,153
5:15 PM	0	1	0	4	0	0	0	1	0	5	259	0	0	0	217	15	502	2,074
5:30 PM	0	4	1	3	0	0	0	0	0	6	260	0	0	0	219	15	508	2,085
5:45 PM	0	3	0	6	0	0	0	0	0	5	193	0	0	0	197	24	428	1,975
Count Total	2	17	1	59	0	0	0	1	0	39	2,011	3	0	1	1,819	197	4,150	
Pk Hr **All**	**2**	**7**	**0**	**39**	**0**	**0**	**0**	**0**	**0**	**19**	**1,049**	**2**	**0**	**1**	**939**	**117**	**2,175**	
Pk Hr **HV**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**15**	**0**	**0**	**0**	**12**	**0**	**30**	
Pk Hr **HV%**	**0%**	**14%**	**-**	**3%**	**-**	**-**	**-**	**-**	**-**	**5%**	**1%**	**0%**	**-**	**0%**	**1%**	**0%**	**1%**	

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	E	W	N	S	Total
4:00 PM	**1**	**0**	**7**	**4**	**12**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
4:15 PM	**1**	**0**	**2**	**4**	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
4:30 PM	**0**	**0**	**5**	**3**	**8**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**
4:45 PM	**0**	**0**	**2**	**1**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
5:00 PM	0	0	0	0	*0*	2	0	0	1	*3*	0	0	0	0	*0*
5:15 PM	0	0	0	4	*4*	0	0	0	0	*0*	0	0	0	0	*0*
5:30 PM	0	0	2	4	*6*	0	0	0	0	*0*	0	0	0	0	*0*
5:45 PM	0	0	0	4	*4*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	2	0	18	24	*44*	2	0	1	1	*4*	0	0	0	0	*0*
Peak Hour	**2**	**0**	**16**	**12**	***30***	**0**	**0**	**1**	**0**	***1***	**0**	**0**	**0**	**0**	**0**

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Count Summaries - Heavy Vehicles

Interval Start	Griffith St				Driveway				Courtesy Rd				Courtesy Rd				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**6**	**0**	**0**	**0**	**4**	**0**	**12**	0
4:15 PM	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**4**	**0**	**7**	**0**
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**3**	**0**	**8**	**0**
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**1**	**0**	**3**	**30**
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4	15
5:30 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	4	0	6	13
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4	14
Count Total	0	1	0	1	0	0	0	0	0	1	17	0	0	0	24	0	44	
Pk Hr Heavy	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**15**	**0**	**0**	**0**	**12**	**0**	**30**	

Count Summaries - Bikes

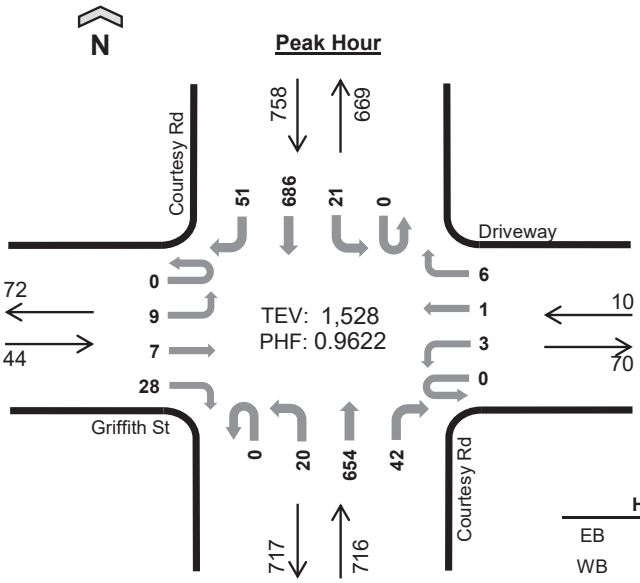
Interval Start	Griffith St				Driveway				Courtesy Rd				Courtesy Rd				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**0**
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
5:00 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	0	3	4
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Count Total	0	1	0	1	0	0	0	0	0	0	1	0	0	1	0	0	4	
Pk Hr Bike	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	

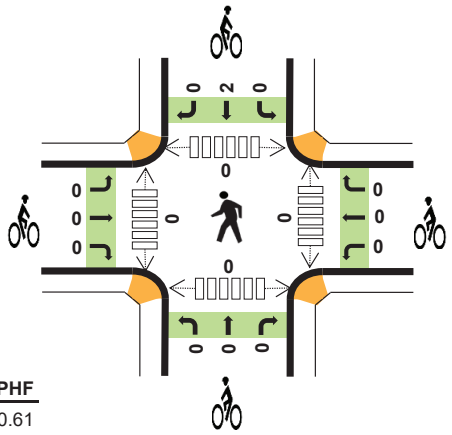
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Courtesy Rd
Driveway

Date: 11/2/2024
Count Period: 11:00 AM to 1:00 PM
Peak Hour: 12:00 PM to 1:00 PM





	HV%	PHF
EB	0%	0.61
WB	0%	0.63
NB	0%	0.92
SB	1%	0.89
TOTAL	1%	0.96

Peak Hour Count Summaries

Peak Hour Interval Start		Griffith St (Eastbound)				Driveway (Westbound)				Courtesy Rd (Northbound)				Courtesy Rd (Southbound)				15-min Total	Rolling Hour Total
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
12:00 PM		0	5	1	11	0	0	1	3	0	7	167	13	0	4	168	11	391	0
12:15 PM		0	0	1	3	0	0	0	0	0	3	160	10	0	0	177	8	362	0
12:30 PM		0	2	4	12	0	1	0	2	0	6	147	9	0	12	191	11	397	0
12:45 PM		0	2	1	2	0	2	0	1	0	4	180	10	0	5	150	21	378	1,528
Pk Hr	All	0	9	7	28	0	3	1	6	0	20	654	42	0	21	686	51	1,528	
	HV	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	2	8	
	HV%	-	0%	0%	0%	-	0%	0%	0%	-	0%	0%	0%	-	0%	0%	4%	1%	

Note: For complete count summary (all intervals), see following pages.
*** Heavy Vehicle Classifications include FHWA Classes 4-13.*
*** Count Summaries include heavy vehicles, but exclude bicycles in overall count.*

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	E	W	N	S	Total
12:00 PM	0	0	1	1	*2*	0	0	0	0	*0*	0	0	0	0	*0*
12:15 PM	0	0	1	2	*3*	0	0	0	1	*1*	0	0	0	0	*0*
12:30 PM	0	0	0	1	*1*	0	0	0	0	*0*	0	0	0	0	*0*
12:45 PM	0	0	1	1	*2*	0	0	0	1	*1*	0	0	0	0	*0*
Peak Hour	0	0	3	5	*8*	0	0	0	2	*2*	0	0	0	0	*0*

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Count Summaries - All Vehicles

Interval Start	Griffith St				Driveway				Courtesy Rd				Courtesy Rd				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
11:00 AM	0	6	3	3	0	1	0	2	0	3	187	3	0	6	182	8	404	0
11:15 AM	0	0	3	11	0	0	1	2	0	9	153	8	0	7	145	8	347	0
11:30 AM	0	0	3	4	0	0	0	3	0	5	154	9	0	4	148	8	338	0
11:45 AM	0	5	2	3	0	2	0	0	0	6	161	11	0	3	160	11	364	1,453
12:00 PM	**0**	**5**	**1**	**11**	**0**	**0**	**1**	**3**	**0**	**7**	**167**	**13**	**0**	**4**	**168**	**11**	**391**	**1,440**
12:15 PM	**0**	**0**	**1**	**3**	**0**	**0**	**0**	**0**	**0**	**3**	**160**	**10**	**0**	**0**	**177**	**8**	**362**	**1,455**
12:30 PM	**0**	**2**	**4**	**12**	**0**	**1**	**0**	**2**	**0**	**6**	**147**	**9**	**0**	**12**	**191**	**11**	**397**	**1,514**
12:45 PM	**0**	**2**	**1**	**2**	**0**	**2**	**0**	**1**	**0**	**4**	**180**	**10**	**0**	**5**	**150**	**21**	**378**	**1,528**
Count Total	0	20	18	49	0	6	2	13	0	43	1,309	73	0	41	1,321	86	2,981	
Pk Hr All	**0**	**9**	**7**	**28**	**0**	**3**	**1**	**6**	**0**	**20**	**654**	**42**	**0**	**21**	**686**	**51**	**1,528**	
Pk Hr HV	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**3**	**2**	**8**	
Pk Hr HV%	**-**	**0%**	**0%**	**0%**	**-**	**0%**	**0%**	**0%**	**-**	**0%**	**0%**	**0%**	**-**	**0%**	**0%**	**4%**	**1%**	

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	E	W	N	S	Total
11:00 AM	0	0	2	1	*3*	2	0	0	0	*2*	0	0	0	0	*0*
11:15 AM	0	0	1	1	*2*	0	0	0	0	*0*	0	0	0	0	*0*
11:30 AM	0	0	1	0	*1*	0	0	1	0	*1*	0	0	0	0	*0*
11:45 AM	0	0	4	1	*5*	0	0	0	0	*0*	0	1	0	0	*1*
12:00 PM	**0**	**0**	**1**	**1**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
12:15 PM	**0**	**0**	**1**	**2**	**3**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**
12:30 PM	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
12:45 PM	**0**	**0**	**1**	**1**	**2**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**
Count Total	0	0	11	8	*19*	2	0	1	2	*5*	0	1	0	0	*1*
Peak Hour	**0**	**0**	**3**	**5**	***8***	**0**	**0**	**0**	**2**	**2**	**0**	**0**	**0**	**0**	**0**

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Count Summaries - Heavy Vehicles

Interval Start	Griffith St				Driveway				Courtesy Rd				Courtesy Rd				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
11:00 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	3	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	1	0	5	11
12:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**2**	**10**
12:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**1**	**3**	**11**
12:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**11**
12:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**2**	**8**
Count Total	0	0	0	0	0	0	0	0	0	0	11	0	0	0	6	2	19	
Pk Hr Heavy	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**3**	**2**	**8**	

Count Summaries - Bikes

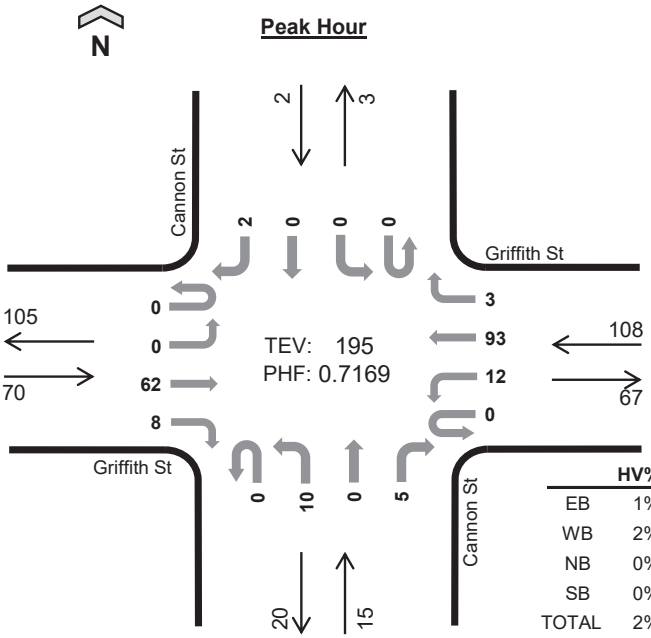
Interval Start	Griffith St				Driveway				Courtesy Rd				Courtesy Rd				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
11:00 AM	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
12:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
12:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**2**
12:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
12:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**2**
Count Total	1	0	1	0	0	0	0	0	0	0	1	0	0	0	2	0	5	
Pk Hr Bike	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**2**	

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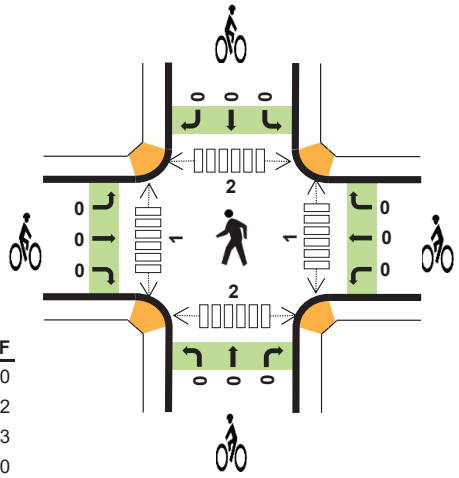
Cannon St
Griffith St

Peak Hour

Date: 11/5/2024
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 8:00 AM to 9:00 AM



	HV%	PHF
EB	1%	0.60
WB	2%	0.82
NB	0%	0.63
SB	0%	0.50
TOTAL	2%	0.72



Peak Hour Count Summaries

Peak Hour Interval Start		Griffith St Eastbound				Griffith St Westbound				Cannon St Northbound				Cannon St Southbound				15-min Total	Rolling Hour Total
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
8:00 AM		0	0	16	1	0	2	22	0	0	3	0	0	0	0	0	0	44	0
8:15 AM		0	0	13	2	0	5	22	1	0	4	0	0	0	0	0	1	48	0
8:30 AM		0	0	27	2	0	3	29	1	0	2	0	4	0	0	0	0	68	0
8:45 AM		0	0	6	3	0	2	20	1	0	1	0	1	0	0	0	1	35	195
Pk Hr	All	0	0	62	8	0	12	93	3	0	10	0	5	0	0	0	2	195	
	HV	0	0	0	1	0	0	2	0	0	0	0	0	0	0	0	0	3	
	HV%	-	-	0%	13%	-	0%	2%	0%	-	0%	-	0%	-	-	-	0%	2%	

Note: For complete count summary (all intervals), see following pages.
*** Heavy Vehicle Classifications include FHWA Classes 4-13.*
*** Count Summaries include heavy vehicles, but exclude bicycles in overall count.*

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) E	W	N	S	Total
8:00 AM	0	1	0	0	*1*	0	0	0	0	*0*	0	0	0	2	*2*
8:15 AM	1	0	0	0	*1*	0	0	0	0	*0*	0	1	0	0	*1*
8:30 AM	0	1	0	0	*1*	0	0	0	0	*0*	1	0	2	0	*3*
8:45 AM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
Peak Hour	1	2	0	0	*3*	0	0	0	0	*0*	1	1	2	2	*6*

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Count Summaries - All Vehicles

Interval Start	Griffith St				Griffith St				Cannon St				Cannon St				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	5	1	0	0	7	0	0	1	0	1	0	0	0	0	15	0
7:15 AM	0	0	7	1	1	0	10	1	0	4	0	1	0	0	0	1	26	0
7:30 AM	0	0	7	2	0	1	16	0	0	0	0	1	0	0	0	0	27	0
7:45 AM	0	0	5	2	0	2	17	0	0	1	0	1	0	0	0	0	28	96
8:00 AM	**0**	**0**	**16**	**1**	**0**	**2**	**22**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**44**	**125**
8:15 AM	**0**	**0**	**13**	**2**	**0**	**5**	**22**	**1**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**1**	**48**	**147**
8:30 AM	**0**	**0**	**27**	**2**	**0**	**3**	**29**	**1**	**0**	**2**	**0**	**4**	**0**	**0**	**0**	**0**	**68**	**188**
8:45 AM	**0**	**0**	**6**	**3**	**0**	**2**	**20**	**1**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**1**	**35**	**195**
Count Total	0	0	86	14	1	15	143	4	0	16	0	9	0	0	0	3	291	
Pk Hr **All**	**0**	**0**	**62**	**8**	**0**	**12**	**93**	**3**	**0**	**10**	**0**	**5**	**0**	**0**	**0**	**2**	**195**	
Pk Hr **HV**	**0**	**0**	**0**	**1**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	
Pk Hr **HV%**	**-**	**-**	**0%**	**13%**	**-**	**0%**	**2%**	**0%**	**-**	**0%**	**-**	**0%**	**-**	**-**	**-**	**0%**	**2%**	

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	E	W	N	S	Total
7:00 AM	0	0	0	0	*0*	0	0	0	0	*0*	1	0	0	1	*2*
7:15 AM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
7:30 AM	0	0	0	0	*0*	0	1	0	0	*1*	0	0	0	0	*0*
7:45 AM	0	1	0	0	*1*	0	0	0	0	*0*	0	0	2	0	*2*
8:00 AM	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**2**
8:15 AM	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**
8:30 AM	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**2**	**0**	**3**
8:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Count Total	1	3	0	0	*4*	0	1	0	0	*1*	2	1	4	3	*10*
Peak Hour	**1**	**2**	**0**	**0**	***3***	**0**	**0**	**0**	**0**	***0***	**1**	**1**	**2**	**2**	**6**

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Count Summaries - Heavy Vehicles

Interval Start	Griffith St				Griffith St				Cannon St				Cannon St				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**2**
8:15 AM	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**3**
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**4**
8:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**
Count Total	0	0	0	1	0	0	3	0	0	0	0	0	0	0	0	0	4	
Pk Hr Heavy	**0**	**0**	**0**	**1**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	

Count Summaries - Bikes

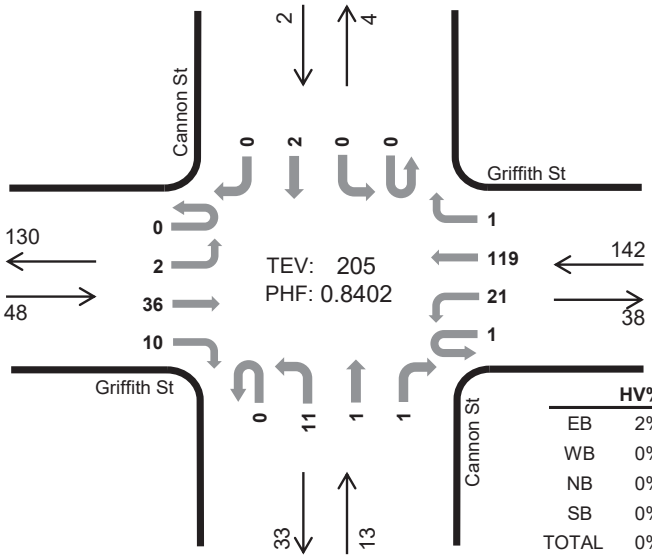
Interval Start	Griffith St				Griffith St				Cannon St				Cannon St				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
8:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Count Total	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	
Pk Hr Bike	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	

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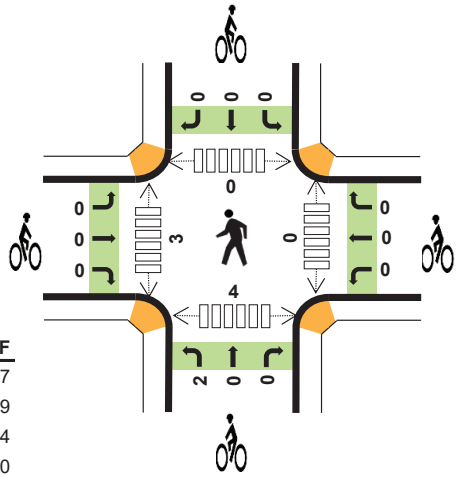
Cannon St
Griffith St

Peak Hour

Date: 11/5/2024
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:00 PM to 5:00 PM



	HV%	PHF
EB	2%	0.67
WB	0%	0.89
NB	0%	0.54
SB	0%	0.50
TOTAL	0%	0.84



Peak Hour Count Summaries

Peak Hour Interval Start		Griffith St Eastbound				Griffith St Westbound				Cannon St Northbound				Cannon St Southbound				15-min Total	Rolling Hour Total
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	2	13	3	0	2	28	0	0	0	0	0	0	0	1	0	49	0
4:15 PM		0	0	9	5	0	8	32	0	0	5	1	0	0	0	1	0	61	0
4:30 PM		0	0	5	2	0	7	25	1	0	2	0	1	0	0	0	0	43	0
4:45 PM		0	0	9	0	1	4	34	0	0	4	0	0	0	0	0	0	52	205
Pk Hr	All	0	2	36	10	1	21	119	1	0	11	1	1	0	0	2	0	205	
	HV	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
	HV%	-	0%	3%	0%	0%	0%	0%	0%	-	0%	0%	0%	-	-	0%	-	0%	

Note: For complete count summary (all intervals), see following pages.
*** Heavy Vehicle Classifications include FHWA Classes 4-13.*
*** Count Summaries include heavy vehicles, but exclude bicycles in overall count.*

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	E	W	N	S	Total
4:00 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
4:15 PM	1	0	0	0	*1*	0	0	0	0	*0*	0	0	0	2	*2*
4:30 PM	0	0	0	0	*0*	0	0	2	0	*2*	0	1	0	2	*3*
4:45 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	2	0	0	*2*
Peak Hour	1	0	0	0	*1*	0	0	2	0	*2*	0	3	0	4	*7*

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Count Summaries - All Vehicles

Interval Start	Griffith St				Griffith St				Cannon St				Cannon St				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	**0**	**2**	**13**	**3**	**0**	**2**	**28**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**49**	0
4:15 PM	**0**	**0**	**9**	**5**	**0**	**8**	**32**	**0**	**0**	**5**	**1**	**0**	**0**	**0**	**1**	**0**	**61**	**0**
4:30 PM	**0**	**0**	**5**	**2**	**0**	**7**	**25**	**1**	**0**	**2**	**0**	**1**	**0**	**0**	**0**	**0**	**43**	**0**
4:45 PM	**0**	**0**	**9**	**0**	**1**	**4**	**34**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**52**	**205**
5:00 PM	0	0	5	2	0	3	26	0	0	3	0	0	0	1	0	1	41	197
5:15 PM	0	0	4	1	0	3	20	0	0	4	0	2	0	0	0	0	34	170
5:30 PM	0	0	5	3	0	3	17	0	0	5	1	1	0	1	0	0	36	163
5:45 PM	1	0	4	0	0	3	22	0	0	5	1	1	0	1	0	1	39	150
Count Total	1	2	54	16	1	33	204	1	0	28	3	5	0	3	2	2	355	
Pk Hr **All**	**0**	**2**	**36**	**10**	**1**	**21**	**119**	**1**	**0**	**11**	**1**	**1**	**0**	**0**	**2**	**0**	**205**	
Pk Hr **HV**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	
Pk Hr **HV%**	**-**	**0%**	**3%**	**0%**	**0%**	**0%**	**0%**	**0%**	**-**	**0%**	**0%**	**0%**	**-**	**-**	**0%**	**-**	**0%**	

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	E	W	N	S	Total
4:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
4:15 PM	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**2**
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**2**	**0**	**1**	**0**	**2**	**3**
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**2**
5:00 PM	0	0	0	0	*0*	2	0	0	0	*2*	0	0	0	0	*0*
5:15 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
5:30 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
5:45 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	1	*1*
Count Total	1	0	0	0	*1*	2	0	2	0	*4*	0	3	0	5	*8*
Peak Hour	**1**	**0**	**0**	**0**	***1***	**0**	**0**	**2**	**0**	***2***	**0**	**3**	**0**	**4**	**7**

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Count Summaries - Heavy Vehicles

Interval Start	Griffith St				Griffith St				Cannon St				Cannon St				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:15 PM	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Pk Hr Heavy	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	

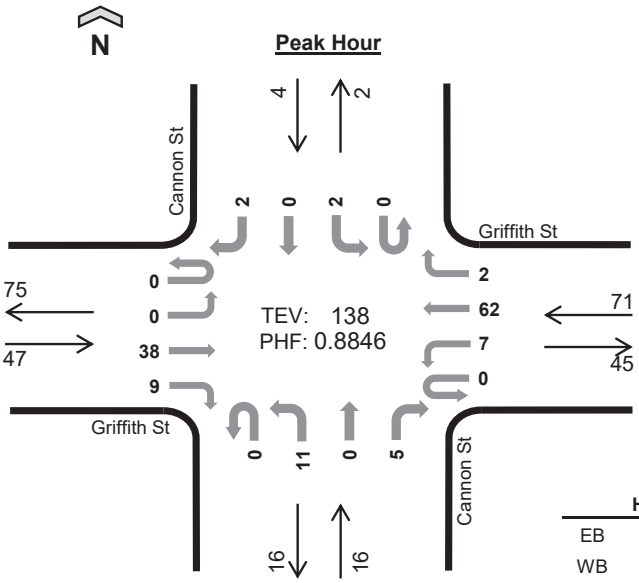
Count Summaries - Bikes

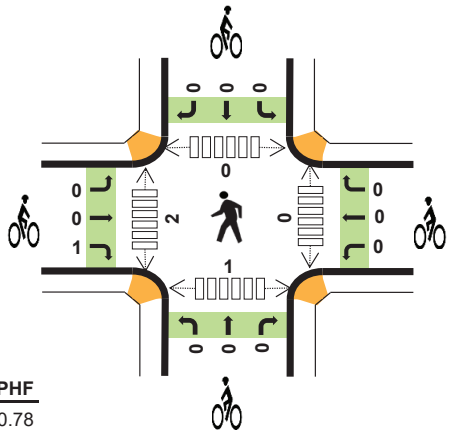
Interval Start	Griffith St				Griffith St				Cannon St				Cannon St				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**
5:00 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	4
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Count Total	0	0	2	0	0	0	0	0	0	2	0	0	0	0	0	0	4	
Pk Hr Bike	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	

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Cannon St
Griffith St

Date: 11/2/2024
Count Period: 11:00 AM to 1:00 PM
Peak Hour: 11:15 AM to 12:15 PM





	HV%	PHF
EB	0%	0.78
WB	1%	0.89
NB	0%	0.80
SB	0%	0.50
TOTAL	1%	0.88

Peak Hour Count Summaries

Peak Hour Interval Start		Griffith St Eastbound				Griffith St Westbound				Cannon St Northbound				Cannon St Southbound				15-min Total	Rolling Hour Total
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
11:15 AM		**0**	**0**	**13**	**2**	**0**	**1**	**15**	**1**	**0**	**5**	**0**	**0**	**0**	**1**	**0**	**1**	**39**	**0**
11:30 AM		**0**	**0**	**6**	**2**	**0**	**3**	**12**	**1**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**27**	**0**
11:45 AM		**0**	**0**	**8**	**2**	**0**	**3**	**15**	**0**	**0**	**1**	**0**	**3**	**0**	**0**	**0**	**1**	**33**	**0**
12:00 PM		**0**	**0**	**11**	**3**	**0**	**0**	**20**	**0**	**0**	**2**	**0**	**2**	**0**	**1**	**0**	**0**	**39**	**138**
Pk Hr	**All**	**0**	**0**	**38**	**9**	**0**	**7**	**62**	**2**	**0**	**11**	**0**	**5**	**0**	**2**	**0**	**2**	**138**	
	HV	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	
	HV%	**-**	**-**	**0%**	**0%**	**-**	**0%**	**2%**	**0%**	**-**	**0%**	**-**	**0%**	**-**	**0%**	**-**	**0%**	**1%**	

Note: For complete count summary (all intervals), see following pages.
*** Heavy Vehicle Classifications include FHWA Classes 4-13.*
*** Count Summaries include heavy vehicles, but exclude bicycles in overall count.*

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	E	W	N	S	Total
11:15 AM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**1**	***1***
11:30 AM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**0**	**0**	***1***
11:45 AM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**0**	**0**	***1***
12:00 PM	**0**	**1**	**0**	**0**	***1***	**1**	**0**	**0**	**0**	***1***	**0**	**0**	**0**	**0**	***0***
Peak Hour	**0**	**1**	**0**	**0**	***1***	**1**	**0**	**0**	**0**	***1***	**0**	**2**	**0**	**1**	***3***

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Count Summaries - All Vehicles

Interval Start	Griffith St Eastbound				Griffith St Westbound				Cannon St Northbound				Cannon St Southbound				15-min Total	Rolling Hour Total
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
11:00 AM	0	0	10	3	0	1	9	1	0	0	0	2	0	0	1	0	27	0
11:15 AM	**0**	**0**	**13**	**2**	**0**	**1**	**15**	**1**	**0**	**5**	**0**	**0**	**0**	**1**	**0**	**1**	**39**	**0**
11:30 AM	**0**	**0**	**6**	**2**	**0**	**3**	**12**	**1**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**27**	**0**
11:45 AM	**0**	**0**	**8**	**2**	**0**	**3**	**15**	**0**	**0**	**1**	**0**	**3**	**0**	**0**	**0**	**1**	**33**	**126**
12:00 PM	**0**	**0**	**11**	**3**	**0**	**0**	**20**	**0**	**0**	**2**	**0**	**2**	**0**	**1**	**0**	**0**	**39**	**138**
12:15 PM	0	0	6	1	0	3	10	0	0	0	0	1	0	0	0	0	21	120
12:30 PM	0	0	15	3	0	2	14	1	0	2	0	1	0	0	0	0	38	131
12:45 PM	0	0	6	2	0	6	19	0	0	1	0	1	0	0	0	2	37	135
Count Total	0	0	75	18	0	19	114	4	0	14	0	10	0	2	1	4	261	
Pk Hr **All**	**0**	**0**	**38**	**9**	**0**	**7**	**62**	**2**	**0**	**11**	**0**	**5**	**0**	**2**	**0**	**2**	**138**	
Pk Hr **HV**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	
Pk Hr **HV%**	**-**	**-**	**0%**	**0%**	**-**	**0%**	**2%**	**0%**	**-**	**0%**	**-**	**0%**	**-**	**0%**	**-**	**0%**	**1%**	

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	E	W	N	S	Total
11:00 AM	0	0	0	0	*0*	0	0	1	0	*1*	0	2	1	0	*3*
11:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**
11:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**
11:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**
12:00 PM	**0**	**1**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**
12:15 PM	0	1	0	0	*1*	0	0	0	0	*0*	0	1	1	0	*2*
12:30 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	1	0	*1*
12:45 PM	0	0	0	0	*0*	0	1	0	0	*1*	0	0	0	0	*0*
Count Total	0	2	0	0	*2*	1	1	1	0	*3*	0	5	3	1	*9*
Peak Hour	**0**	**1**	**0**	**0**	***1***	**1**	**0**	**0**	**0**	***1***	**0**	**2**	**0**	**1**	**3**

TJ Wethington
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Count Summaries - Heavy Vehicles

Interval Start	Griffith St				Griffith St				Cannon St				Cannon St				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
11:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
11:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
12:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**
12:15 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	2
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Count Total	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	
Pk Hr Heavy	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	

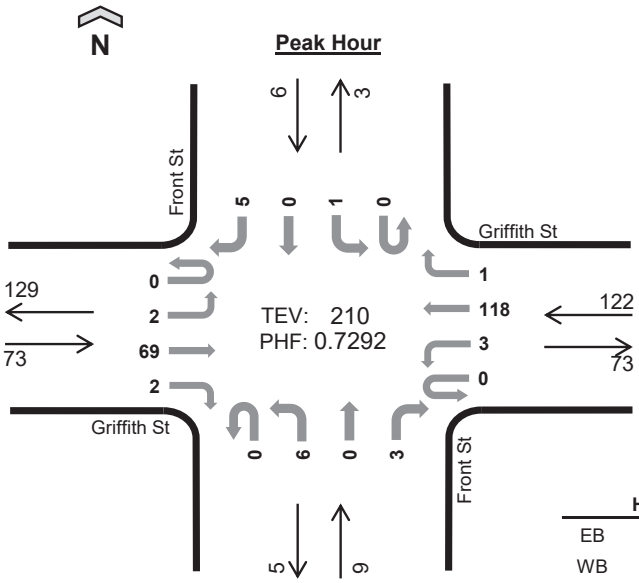
Count Summaries - Bikes

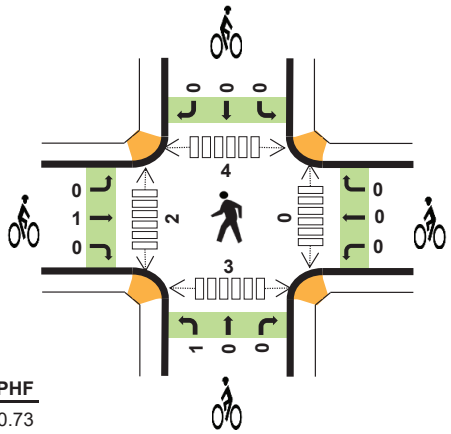
Interval Start	Griffith St				Griffith St				Cannon St				Cannon St				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0
11:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
11:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
11:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
12:00 PM	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
12:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	2
Count Total	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0	3	
Pk Hr Bike	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	

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Front St
Griffith St

Date: 11/14/2024
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:45 AM to 8:45 AM





	HV%	PHF
EB	0%	0.73
WB	2%	0.73
NB	0%	0.56
SB	0%	0.50
TOTAL	1%	0.73

Peak Hour Count Summaries

Peak Hour Interval Start		Griffith St Eastbound				Griffith St Westbound				Front St Northbound				Front St Southbound				15-min Total	Rolling Hour Total
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:45 AM		0	1	15	0	0	1	25	0	0	3	0	1	0	0	0	0	46	0
8:00 AM		0	0	15	0	0	1	20	0	0	1	0	1	0	0	0	3	41	0
8:15 AM		0	0	16	1	0	0	32	1	0	0	0	1	0	0	0	0	51	0
8:30 AM		0	1	23	1	0	1	41	0	0	2	0	0	0	1	0	2	72	210
Pk Hr	All	0	2	69	2	0	3	118	1	0	6	0	3	0	1	0	5	210	
	HV	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	2	
	HV%	-	0%	0%	0%	-	33%	1%	0%	-	0%	-	0%	-	0%	-	0%	1%	

Note: For complete count summary (all intervals), see following pages.
*** Heavy Vehicle Classifications include FHWA Classes 4-13.*
*** Count Summaries include heavy vehicles, but exclude bicycles in overall count.*

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	E	W	N	S	Total
7:45 AM	0	0	0	0	*0*	0	0	1	0	*1*	0	1	1	0	*2*
8:00 AM	0	1	0	0	*1*	0	0	0	0	*0*	0	0	1	2	*3*
8:15 AM	0	0	0	0	*0*	1	0	0	0	*1*	0	0	1	0	*1*
8:30 AM	0	1	0	0	*1*	0	0	0	0	*0*	0	1	1	1	*3*
Peak Hour	0	2	0	0	*2*	1	0	1	0	*2*	0	2	4	3	*9*

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Count Summaries - All Vehicles

Interval Start	Griffith St Eastbound				Griffith St Westbound				Front St Northbound				Front St Southbound				15-min Total	Rolling Hour Total
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	7	0	0	0	4	0	0	4	0	0	0	0	0	0	15	0
7:15 AM	0	0	6	0	0	0	5	0	0	3	0	1	0	0	0	0	15	0
7:30 AM	0	0	7	0	0	0	15	0	0	5	0	0	0	0	0	1	28	0
7:45 AM	**0**	**1**	**15**	**0**	**0**	**1**	**25**	**0**	**0**	**3**	**0**	**1**	**0**	**0**	**0**	**0**	**46**	**104**
8:00 AM	**0**	**0**	**15**	**0**	**0**	**1**	**20**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**3**	**41**	**130**
8:15 AM	**0**	**0**	**16**	**1**	**0**	**0**	**32**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**51**	**166**
8:30 AM	**0**	**1**	**23**	**1**	**0**	**1**	**41**	**0**	**0**	**2**	**0**	**0**	**0**	**1**	**0**	**2**	**72**	**210**
8:45 AM	0	0	9	0	0	0	15	0	0	5	0	0	0	0	0	0	29	193
Count Total	0	2	98	2	0	3	157	1	0	23	0	4	0	1	0	6	297	
Pk Hr **All**	**0**	**2**	**69**	**2**	**0**	**3**	**118**	**1**	**0**	**6**	**0**	**3**	**0**	**1**	**0**	**5**	**210**	
Pk Hr **HV**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	
Pk Hr **HV%**	**-**	**0%**	**0%**	**0%**	**-**	**33%**	**1%**	**0%**	**-**	**0%**	**-**	**0%**	**-**	**0%**	**-**	**0%**	**1%**	

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) E	W	N	S	Total
7:00 AM	0	0	0	0	*0*	0	0	0	0	*0*	0	1	0	1	*2*
7:15 AM	0	1	0	0	*1*	0	0	0	0	*0*	0	1	0	0	*1*
7:30 AM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	1	*1*
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**1**	**1**	**0**	**2**
8:00 AM	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**2**	**3**
8:15 AM	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**1**
8:30 AM	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**1**	**3**
8:45 AM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	2	*2*
Count Total	0	3	0	0	*3*	1	0	1	0	*2*	0	4	4	7	*15*
Peak Hour	**0**	**2**	**0**	**0**	**2**	**1**	**0**	**1**	**0**	**2**	**0**	**2**	**4**	**3**	**9**

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Count Summaries - Heavy Vehicles

Interval Start	Griffith St				Griffith St				Front St				Front St				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
8:00 AM	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**2**
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**2**
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Count Total	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	3	
Pk Hr Heavy	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	

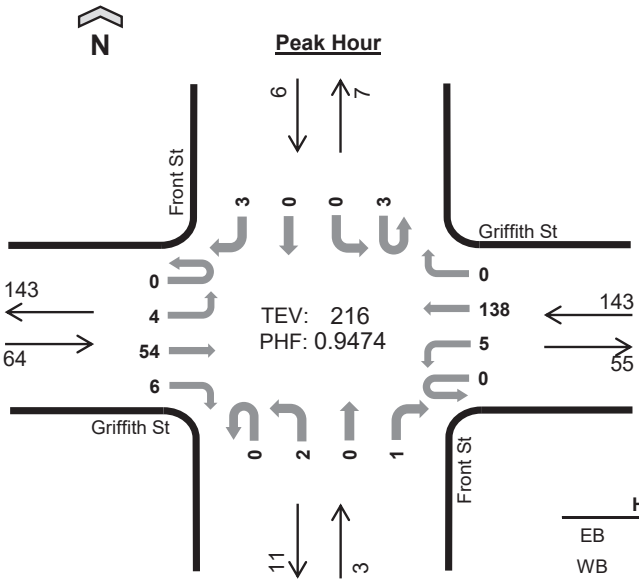
Count Summaries - Bikes

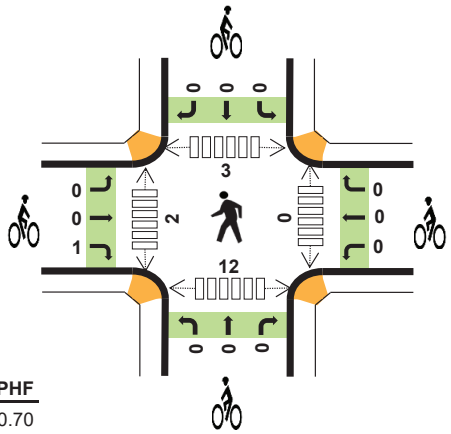
Interval Start	Griffith St				Griffith St				Front St				Front St				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
8:15 AM	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**2**
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Count Total	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	2	
Pk Hr Bike	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	

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Front St
Griffith St

Date: 11/14/2024
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:00 PM to 5:00 PM





	HV%	PHF
EB	2%	0.70
WB	1%	0.94
NB	0%	0.38
SB	0%	0.50
TOTAL	1%	0.95

Peak Hour Count Summaries

Peak Hour Interval Start		Griffith St Eastbound				Griffith St Westbound				Front St Northbound				Front St Southbound				15-min Total	Rolling Hour Total
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		**0**	**2**	**18**	**3**	**0**	**1**	**32**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**57**	**0**
4:15 PM		**0**	**1**	**14**	**1**	**0**	**3**	**34**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**55**	**0**
4:30 PM		**0**	**1**	**7**	**1**	**0**	**1**	**37**	**0**	**0**	**1**	**0**	**1**	**2**	**0**	**0**	**1**	**52**	**0**
4:45 PM		**0**	**0**	**15**	**1**	**0**	**0**	**35**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**52**	**216**
Pk Hr	**All**	**0**	**4**	**54**	**6**	**0**	**5**	**138**	**0**	**0**	**2**	**0**	**1**	**3**	**0**	**0**	**3**	**216**	
	HV	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	
	HV%	**-**	**0%**	**2%**	**0%**	**-**	**0%**	**1%**	**-**	**-**	**0%**	**-**	**0%**	**0%**	**-**	**-**	**0%**	**1%**	

Note: For complete count summary (all intervals), see following pages.
*** Heavy Vehicle Classifications include FHWA Classes 4-13.*
*** Count Summaries include heavy vehicles, but exclude bicycles in overall count.*

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	E	W	N	S	Total
4:00 PM	**1**	**0**	**0**	**0**	***1***	**1**	**0**	**0**	**0**	***1***	**0**	**0**	**0**	**3**	***3***
4:15 PM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**0**	**2**	**1**	**4**	***7***
4:30 PM	**0**	**1**	**0**	**0**	***1***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
4:45 PM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**2**	**5**	***7***
Peak Hour	**1**	**1**	**0**	**0**	***2***	**1**	**0**	**0**	**0**	***1***	**0**	**2**	**3**	**12**	***17***

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Count Summaries - All Vehicles

Interval Start	Griffith St Eastbound				Griffith St Westbound				Front St Northbound				Front St Southbound				15-min Total	Rolling Hour Total
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	**0**	**2**	**18**	**3**	**0**	**1**	**32**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**57**	0
4:15 PM	**0**	**1**	**14**	**1**	**0**	**3**	**34**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**55**	**0**
4:30 PM	**0**	**1**	**7**	**1**	**0**	**1**	**37**	**0**	**0**	**1**	**0**	**1**	**2**	**0**	**0**	**1**	**52**	**0**
4:45 PM	**0**	**0**	**15**	**1**	**0**	**0**	**35**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**52**	**216**
5:00 PM	0	0	13	2	0	0	31	1	0	1	0	0	0	2	0	0	50	209
5:15 PM	0	1	6	4	0	1	30	2	0	2	0	1	0	0	0	2	49	203
5:30 PM	0	0	12	1	0	1	34	1	0	2	0	0	0	0	0	5	56	207
5:45 PM	0	1	7	2	0	0	30	0	0	2	0	0	0	0	0	1	43	198
Count Total	0	6	92	15	0	7	263	4	0	9	0	2	3	2	0	11	414	
Pk Hr **All**	**0**	**4**	**54**	**6**	**0**	**5**	**138**	**0**	**0**	**2**	**0**	**1**	**3**	**0**	**0**	**3**	**216**	
Pk Hr **HV**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	
Pk Hr **HV%**	**-**	**0%**	**2%**	**0%**	**-**	**0%**	**1%**	**-**	**-**	**0%**	**-**	**0%**	**0%**	**-**	**-**	**0%**	**1%**	

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	E	W	N	S	Total
4:00 PM	**1**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**3**	**3**
4:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**1**	**4**	**7**
4:30 PM	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**5**	**7**
5:00 PM	1	0	0	0	*1*	0	0	0	0	*0*	0	0	2	0	*2*
5:15 PM	0	0	0	0	*0*	0	0	1	0	*1*	0	0	0	0	*0*
5:30 PM	1	0	0	0	*1*	0	0	0	0	*0*	0	0	0	0	*0*
5:45 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	1	0	1	*2*
Count Total	3	1	0	0	*4*	1	0	1	0	*2*	0	3	5	13	*21*
Peak Hour	**1**	**1**	**0**	**0**	***2***	**1**	**0**	**0**	**0**	***1***	**0**	**2**	**3**	**12**	**17**

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Count Summaries - Heavy Vehicles

Interval Start	Griffith St Eastbound				Griffith St Westbound				Front St Northbound				Front St Southbound				15-min Total	Rolling Hour Total
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	0
4:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**
5:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
5:30 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Count Total	0	0	3	0	0	0	1	0	0	0	0	0	0	0	0	0	4	
Pk Hr Heavy	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	

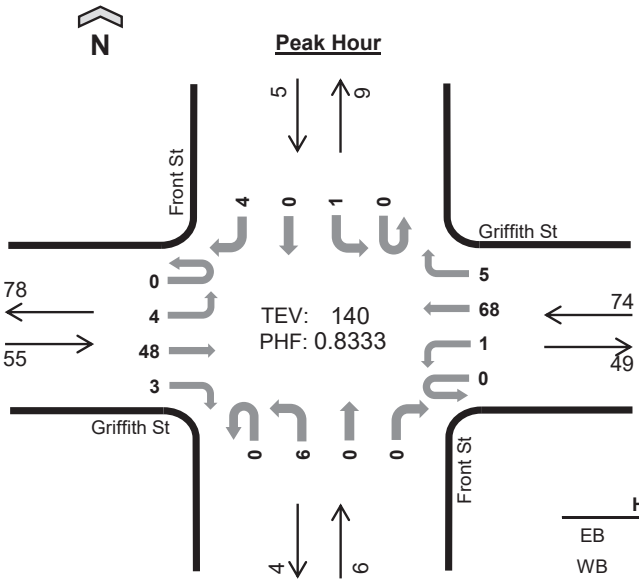
Count Summaries - Bikes

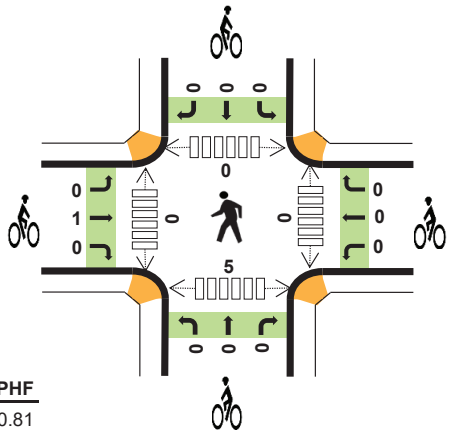
Interval Start	Griffith St Eastbound				Griffith St Westbound				Front St Northbound				Front St Southbound				15-min Total	Rolling Hour Total
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	0
4:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Count Total	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	2	
Pk Hr Bike	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	

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Front St
Griffith St

Date: 11/2/2024
Count Period: 11:00 AM to 1:00 PM
Peak Hour: 11:15 AM to 12:15 PM





	HV%	PHF
EB	0%	0.81
WB	1%	0.84
NB	0%	0.75
SB	0%	0.63
TOTAL	1%	0.83

Peak Hour Count Summaries

Peak Hour Interval Start		Griffith St Eastbound				Griffith St Westbound				Front St Northbound				Front St Southbound				15-min Total	Rolling Hour Total
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
11:15 AM		0	0	13	0	0	0	18	2	0	0	0	0	0	1	0	0	34	0
11:30 AM		0	2	9	2	0	1	13	2	0	2	0	0	0	0	0	2	33	0
11:45 AM		0	2	10	0	0	0	16	0	0	2	0	0	0	0	0	1	31	0
12:00 PM		0	0	16	1	0	0	21	1	0	2	0	0	0	0	0	1	42	140
Pk Hr	All	0	4	48	3	0	1	68	5	0	6	0	0	0	1	0	4	140	
	HV	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	
	HV%	-	0%	0%	0%	-	0%	1%	0%	-	0%	-	-	-	0%	-	0%	1%	

Note: For complete count summary (all intervals), see following pages.
*** Heavy Vehicle Classifications include FHWA Classes 4-13.*
*** Count Summaries include heavy vehicles, but exclude bicycles in overall count.*

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	E	W	N	S	Total
11:15 AM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	1	*1*
11:30 AM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	2	*2*
11:45 AM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
12:00 PM	0	1	0	0	*1*	1	0	0	0	*1*	0	0	0	2	*2*
Peak Hour	0	1	0	0	*1*	1	0	0	0	*1*	0	0	0	5	*5*

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Count Summaries - All Vehicles

Interval Start	Griffith St Eastbound				Griffith St Westbound				Front St Northbound				Front St Southbound				15-min Total	Rolling Hour Total
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
11:00 AM	0	1	11	1	1	0	8	0	0	2	0	0	0	2	0	0	26	0
11:15 AM	**0**	**0**	**13**	**0**	**0**	**0**	**18**	**2**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**34**	**0**
11:30 AM	**0**	**2**	**9**	**2**	**0**	**1**	**13**	**2**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**2**	**33**	**0**
11:45 AM	**0**	**2**	**10**	**0**	**0**	**0**	**16**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**1**	**31**	**124**
12:00 PM	**0**	**0**	**16**	**1**	**0**	**0**	**21**	**1**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**1**	**42**	**140**
12:15 PM	0	2	6	0	0	0	10	0	0	2	0	0	0	0	0	0	20	126
12:30 PM	0	1	18	1	0	1	14	1	0	0	0	1	0	1	0	0	38	131
12:45 PM	0	0	7	0	0	1	20	1	0	3	0	0	0	0	0	0	32	132
Count Total	0	8	90	5	1	3	120	7	0	13	0	1	0	4	0	4	256	
Pk Hr **All**	**0**	**4**	**48**	**3**	**0**	**1**	**68**	**5**	**0**	**6**	**0**	**0**	**0**	**1**	**0**	**4**	**140**	
Pk Hr **HV**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	
Pk Hr **HV%**	**-**	**0%**	**0%**	**0%**	**-**	**0%**	**1%**	**0%**	**-**	**0%**	**-**	**-**	**-**	**0%**	**-**	**0%**	**1%**	

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	E	W	N	S	Total
11:00 AM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	1	*1*
11:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**
11:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**2**
11:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
12:00 PM	**0**	**1**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**2**	**2**
12:15 PM	0	1	0	0	*1*	0	0	0	1	*1*	0	0	0	3	*3*
12:30 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	1	2	*3*
12:45 PM	1	0	0	0	*1*	1	0	0	0	*1*	0	0	0	0	*0*
Count Total	1	2	0	0	*3*	2	0	0	1	*3*	0	0	1	11	*12*
Peak Hour	**0**	**1**	**0**	**0**	***1***	**1**	**0**	**0**	**0**	***1***	**0**	**0**	**0**	**5**	**5**

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Count Summaries - Heavy Vehicles

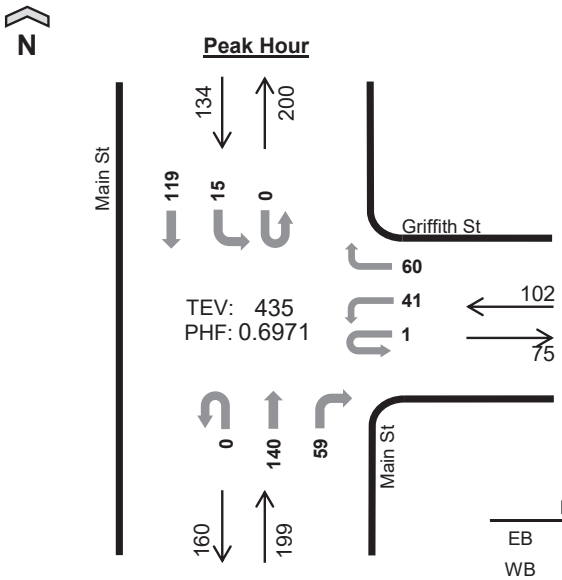
Interval Start	Griffith St Eastbound				Griffith St Westbound				Front St Northbound				Front St Southbound				15-min Total	Rolling Hour Total
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
11:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
11:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
12:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**
12:15 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	2
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
12:45 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3
Count Total	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	3	
Pk Hr Heavy	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	

Count Summaries - Bikes

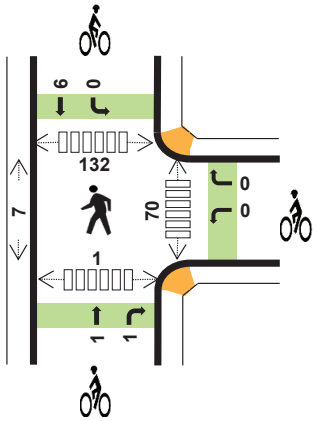
Interval Start	Griffith St Eastbound				Griffith St Westbound				Front St Northbound				Front St Southbound				15-min Total	Rolling Hour Total
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
11:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
11:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
12:00 PM	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
12:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3
Count Total	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	3	
Pk Hr Bike	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	

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Main St
Griffith St



Date: 11/12/2024
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 8:00 AM to 9:00 AM



	HV%	PHF
EB	--	--
WB	2%	0.82
NB	4%	0.67
SB	4%	0.60
TOTAL	3%	0.70

Peak Hour Count Summaries

Peak Hour Interval Start		n/a				Griffith St				Main St				Main St				15-min Total	Rolling Hour Total
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
8:00 AM		0	0	0	0	0	14	0	17	0	0	29	15	0	3	23	0	101	0
8:15 AM		0	0	0	0	1	5	0	13	0	0	28	16	0	5	24	0	92	0
8:30 AM		0	0	0	0	0	8	0	18	0	0	54	20	0	6	50	0	156	0
8:45 AM		0	0	0	0	0	14	0	12	0	0	29	8	0	1	22	0	86	435
Pk Hr	All	0	0	0	0	1	41	0	60	0	0	140	59	0	15	119	0	435	
	HV	0	0	0	0	0	1	0	1	0	0	7	0	0	1	4	0	14	
	HV%	-	-	-	-	0%	2%	-	2%	-	-	5%	0%	-	7%	3%	-	3%	

Note: For complete count summary (all intervals), see following pages.
*** Heavy Vehicle Classifications include FHWA Classes 4-13.*
*** Count Summaries include heavy vehicles, but exclude bicycles in overall count.*

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	E	W	N	S	Total
8:00 AM	0	0	0	3	*3*	0	0	2	0	*2*	1	0	1	0	*2*
8:15 AM	0	0	2	1	*3*	0	0	0	4	*4*	28	3	48	0	*79*
8:30 AM	0	1	5	0	*6*	0	0	0	2	*2*	37	3	79	0	*119*
8:45 AM	0	1	0	1	*2*	0	0	0	0	*0*	4	1	4	1	*10*
Peak Hour	0	2	7	5	*14*	0	0	2	6	*8*	70	7	132	1	*210*

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Count Summaries - All Vehicles

Interval Start	n/a				Griffith St				Main St				Main St				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	5	0	5	0	0	11	6	0	1	5	0	33	0
7:15 AM	0	0	0	0	0	6	0	6	0	0	16	6	0	2	9	0	45	0
7:30 AM	0	0	0	0	0	8	0	14	0	0	30	6	0	3	14	0	75	0
7:45 AM	0	0	0	0	0	8	0	9	1	0	40	6	0	4	16	0	84	237
8:00 AM	**0**	**0**	**0**	**0**	**0**	**14**	**0**	**17**	**0**	**0**	**29**	**15**	**0**	**3**	**23**	**0**	**101**	**305**
8:15 AM	**0**	**0**	**0**	**0**	**1**	**5**	**0**	**13**	**0**	**0**	**28**	**16**	**0**	**5**	**24**	**0**	**92**	**352**
8:30 AM	**0**	**0**	**0**	**0**	**0**	**8**	**0**	**18**	**0**	**0**	**54**	**20**	**0**	**6**	**50**	**0**	**156**	**433**
8:45 AM	**0**	**0**	**0**	**0**	**0**	**14**	**0**	**12**	**0**	**0**	**29**	**8**	**0**	**1**	**22**	**0**	**86**	**435**
Count Total	0	0	0	0	1	68	0	94	1	0	237	83	0	25	163	0	672	
Pk Hr All	**0**	**0**	**0**	**0**	**1**	**41**	**0**	**60**	**0**	**0**	**140**	**59**	**0**	**15**	**119**	**0**	**435**	
Pk Hr HV	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**7**	**0**	**0**	**1**	**4**	**0**	**14**	
Pk Hr HV%	-	-	-	-	**0%**	**2%**	-	**2%**	-	-	**5%**	**0%**	-	**7%**	**3%**	-	**3%**	

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	E	W	N	S	Total
7:00 AM	0	0	1	0	*1*	0	0	2	1	*3*	0	0	0	0	*0*
7:15 AM	0	0	0	1	*1*	0	0	0	0	*0*	1	1	1	0	*3*
7:30 AM	0	0	1	1	*2*	0	1	0	2	*3*	4	3	2	2	*11*
7:45 AM	0	1	0	1	*2*	0	1	0	2	*3*	0	1	0	0	*1*
8:00 AM	**0**	**0**	**0**	**3**	**3**	**0**	**0**	**2**	**0**	**2**	**1**	**0**	**1**	**0**	**2**
8:15 AM	**0**	**0**	**2**	**1**	**3**	**0**	**0**	**0**	**4**	**4**	**28**	**3**	**48**	**0**	**79**
8:30 AM	**0**	**1**	**5**	**0**	**6**	**0**	**0**	**0**	**2**	**2**	**37**	**3**	**79**	**0**	**119**
8:45 AM	**0**	**1**	**0**	**1**	**2**	**0**	**0**	**0**	**0**	**0**	**4**	**1**	**4**	**1**	**10**
Count Total	0	3	9	8	*20*	0	2	4	11	*17*	75	12	135	3	*225*
Peak Hour	**0**	**2**	**7**	**5**	***14***	**0**	**0**	**2**	**6**	***8***	**70**	**7**	**132**	**1**	**210**

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Count Summaries - Heavy Vehicles

Interval Start	n/a				Griffith St				Main St				Main St				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2	0
7:45 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	2	6
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**2**	**0**	**3**	**8**
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**1**	**0**	**3**	**10**
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**6**	**14**
8:45 AM	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**2**	**14**
Count Total	0	0	0	0	0	1	0	2	0	0	9	0	0	1	7	0	20	
Pk Hr Heavy	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**7**	**0**	**0**	**1**	**4**	**0**	**14**	

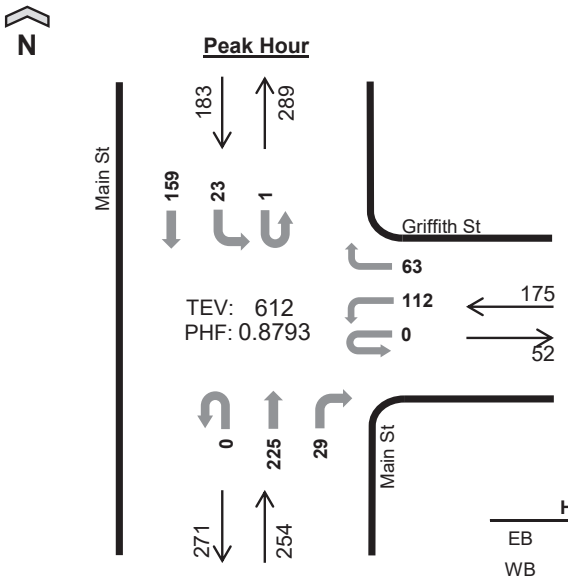
Count Summaries - Bikes

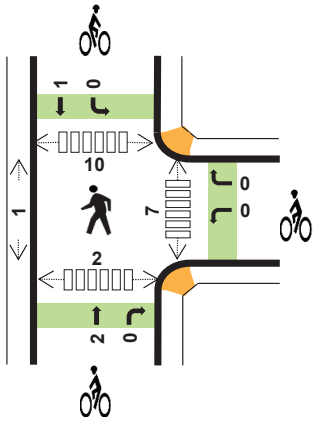
Interval Start	n/a				Griffith St				Main St				Main St				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	3	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2	0	3	0
7:45 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2	0	3	9
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**2**	**8**
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**4**	**12**
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**2**	**11**
8:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**8**
Count Total	0	0	0	0	0	0	0	2	0	0	3	1	0	0	11	0	17	
Pk Hr Bike	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**6**	**0**	**8**	

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Main St
Griffith St

Date: 11/12/2024
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM





	HV%	PHF
EB	--	--
WB	1%	0.69
NB	2%	0.77
SB	2%	0.85
TOTAL	2%	0.88

Peak Hour Count Summaries

Peak Hour Interval Start		n/a				Griffith St				Main St				Main St				15-min Total	Rolling Hour Total
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:30 PM		0	0	0	0	0	15	0	17	0	0	44	5	0	3	37	0	121	0
4:45 PM		0	0	0	0	0	22	0	15	0	0	73	10	1	10	43	0	174	0
5:00 PM		0	0	0	0	0	48	0	15	0	0	60	9	0	7	33	0	172	0
5:15 PM		0	0	0	0	0	27	0	16	0	0	48	5	0	3	46	0	145	612
Pk Hr	All	0	0	0	0	0	112	0	63	0	0	225	29	1	23	159	0	612	
	HV	0	0	0	0	0	1	0	0	0	0	6	0	0	0	3	0	10	
	HV%	-	-	-	-	-	1%	-	0%	-	-	3%	0%	0%	0%	2%	-	2%	

Note: For complete count summary (all intervals), see following pages.
*** Heavy Vehicle Classifications include FHWA Classes 4-13.*
*** Count Summaries include heavy vehicles, but exclude bicycles in overall count.*

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	E	W	N	S	Total
4:30 PM	0	0	2	1	*3*	0	0	1	0	*1*	0	0	1	0	*1*
4:45 PM	0	0	1	1	*2*	0	0	1	1	*2*	4	1	5	0	*10*
5:00 PM	0	1	1	0	*2*	0	0	0	0	*0*	3	0	4	2	*9*
5:15 PM	0	0	2	1	*3*	0	0	0	0	*0*	0	0	0	0	*0*
Peak Hour	0	1	6	3	*10*	0	0	2	1	*3*	7	1	10	2	*20*

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Count Summaries - All Vehicles

Interval Start	n/a				Griffith St				Main St				Main St				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	12	0	11	0	0	54	7	0	15	41	0	140	0
4:15 PM	0	0	0	0	0	25	0	3	0	0	35	9	0	4	23	0	99	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**15**	**0**	**17**	**0**	**0**	**44**	**5**	**0**	**3**	**37**	**0**	**121**	**0**
4:45 PM	**0**	**0**	**0**	**0**	**0**	**22**	**0**	**15**	**0**	**0**	**73**	**10**	**1**	**10**	**43**	**0**	**174**	**534**
5:00 PM	**0**	**0**	**0**	**0**	**0**	**48**	**0**	**15**	**0**	**0**	**60**	**9**	**0**	**7**	**33**	**0**	**172**	**566**
5:15 PM	**0**	**0**	**0**	**0**	**0**	**27**	**0**	**16**	**0**	**0**	**48**	**5**	**0**	**3**	**46**	**0**	**145**	**612**
5:30 PM	0	0	0	0	0	19	0	9	0	0	30	6	0	4	31	0	99	590
5:45 PM	0	0	0	0	0	12	0	12	0	0	43	8	0	1	41	0	117	533
Count Total	0	0	0	0	0	180	0	98	0	0	387	59	1	47	295	0	1,067	
Pk Hr All	**0**	**0**	**0**	**0**	**0**	**112**	**0**	**63**	**0**	**0**	**225**	**29**	**1**	**23**	**159**	**0**	**612**	
Pk Hr HV	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**6**	**0**	**0**	**0**	**3**	**0**	**10**	
Pk Hr HV%	**-**	**-**	**-**	**-**	**-**	**1%**	**-**	**0%**	**-**	**-**	**3%**	**0%**	**0%**	**0%**	**2%**	**-**	**2%**	

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	E	W	N	S	Total
4:00 PM	0	1	3	0	*4*	0	0	3	3	*6*	0	1	1	3	*5*
4:15 PM	0	0	2	1	*3*	0	0	1	0	*1*	1	1	3	0	*5*
4:30 PM	**0**	**0**	**2**	**1**	**3**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**1**	**0**	**1**
4:45 PM	**0**	**0**	**1**	**1**	**2**	**0**	**0**	**1**	**1**	**2**	**4**	**1**	**5**	**0**	**10**
5:00 PM	**0**	**1**	**1**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**4**	**2**	**9**
5:15 PM	**0**	**0**	**2**	**1**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
5:30 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
5:45 PM	0	0	1	1	*2*	0	0	2	0	*2*	2	1	2	0	*5*
Count Total	0	2	12	5	*19*	0	0	8	4	*12*	10	4	16	5	*35*
Peak Hour	**0**	**1**	**6**	**3**	***10***	**0**	**0**	**2**	**1**	***3***	**7**	**1**	**10**	**2**	**20**

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Count Summaries - Heavy Vehicles

Interval Start	n/a				Griffith St				Main St				Main St				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	1	0	0	1	2	0	0	0	0	4	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	3	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**1**	**0**	**3**	**0**
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**2**	**12**
5:00 PM	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**2**	**10**
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**1**	**0**	**3**	**10**
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
5:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2	7
Count Total	0	0	0	0	0	1	0	1	0	0	10	2	0	0	5	0	19	
Pk Hr Heavy	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**6**	**0**	**0**	**0**	**3**	**0**	**10**	

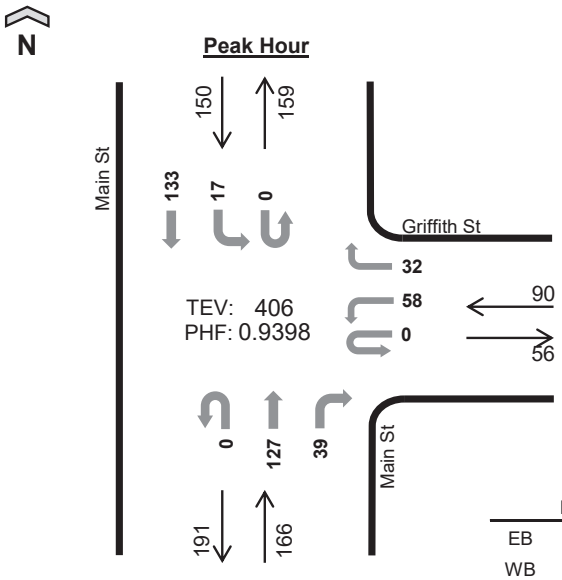
Count Summaries - Bikes

Interval Start	n/a				Griffith St				Main St				Main St				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	1	2	0	6	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**0**
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**2**	**10**
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
5:45 PM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	2	2
Count Total	0	0	0	0	0	0	0	0	0	0	6	2	0	1	3	0	12	
Pk Hr Bike	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**1**	**0**	**3**	

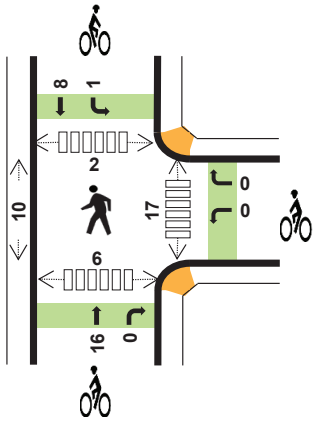
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Main St
Griffith St

Date: 2/11/2024
Count Period: 11:00 AM to 1:00 PM
Peak Hour: 11:15 AM to 12:15 PM



	HV%	PHF
EB	--	--
WB	1%	0.87
NB	2%	0.78
SB	3%	0.80
TOTAL	2%	0.94



Peak Hour Count Summaries

Peak Hour Interval Start		n/a				Griffith St				Main St				Main St				15-min Total	Rolling Hour Total
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
11:15 AM		0	0	0	0	0	15	0	10	0	0	31	7	0	7	27	0	97	0
11:30 AM		0	0	0	0	0	11	0	5	0	0	30	10	0	3	37	0	96	0
11:45 AM		0	0	0	0	0	16	0	7	0	0	26	9	0	4	43	0	105	0
12:00 PM		0	0	0	0	0	16	0	10	0	0	40	13	0	3	26	0	108	406
Pk Hr	All	0	0	0	0	0	58	0	32	0	0	127	39	0	17	133	0	406	
	HV	0	0	0	0	0	1	0	0	0	0	3	0	0	0	5	0	9	
	HV%	-	-	-	-	-	2%	-	0%	-	-	2%	0%	-	0%	4%	-	2%	

Note: For complete count summary (all intervals), see following pages.
*** Heavy Vehicle Classifications include FHWA Classes 4-13.*
*** Count Summaries include heavy vehicles, but exclude bicycles in overall count.*

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	E	W	N	S	Total
11:15 AM	0	0	1	1	*2*	0	0	3	4	*7*	3	2	0	1	*6*
11:30 AM	0	0	1	0	*1*	0	0	0	1	*1*	3	1	1	3	*8*
11:45 AM	0	0	0	3	*3*	0	0	10	1	*11*	3	4	0	0	*7*
12:00 PM	0	1	1	1	*3*	0	0	3	3	*6*	8	3	1	2	*14*
Peak Hour	0	1	3	5	*9*	0	0	16	9	*25*	17	10	2	6	*35*

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Count Summaries - All Vehicles

Interval Start	n/a				Griffith St				Main St				Main St				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
11:00 AM	0	0	0	0	0	12	0	0	0	0	39	11	0	1	28	0	91	0
11:15 AM	**0**	**0**	**0**	**0**	**0**	**15**	**0**	**10**	**0**	**0**	**31**	**7**	**0**	**7**	**27**	**0**	**97**	**0**
11:30 AM	**0**	**0**	**0**	**0**	**0**	**11**	**0**	**5**	**0**	**0**	**30**	**10**	**0**	**3**	**37**	**0**	**96**	**0**
11:45 AM	**0**	**0**	**0**	**0**	**0**	**16**	**0**	**7**	**0**	**0**	**26**	**9**	**0**	**4**	**43**	**0**	**105**	**389**
12:00 PM	**0**	**0**	**0**	**0**	**0**	**16**	**0**	**10**	**0**	**0**	**40**	**13**	**0**	**3**	**26**	**0**	**108**	**406**
12:15 PM	0	0	0	0	0	8	0	3	0	0	34	6	0	1	32	0	84	393
12:30 PM	0	0	0	0	0	9	0	4	0	0	38	11	0	7	20	0	89	386
12:45 PM	0	0	0	0	0	13	0	9	0	0	37	4	0	5	34	0	102	383
Count Total	0	0	0	0	0	100	0	48	0	0	275	71	0	31	247	0	772	
Pk Hr All	**0**	**0**	**0**	**0**	**0**	**58**	**0**	**32**	**0**	**0**	**127**	**39**	**0**	**17**	**133**	**0**	**406**	
Pk Hr HV	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**5**	**0**	**9**	
Pk Hr HV%	**-**	**-**	**-**	**-**	**-**	**2%**	**-**	**0%**	**-**	**-**	**2%**	**0%**	**-**	**0%**	**4%**	**-**	**2%**	

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	E	W	N	S	Total
11:00 AM	0	0	1	0	*1*	0	0	2	0	*2*	1	0	0	0	*1*
11:15 AM	**0**	**0**	**1**	**1**	**2**	**0**	**0**	**3**	**4**	**7**	**3**	**2**	**0**	**1**	**6**
11:30 AM	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**1**	**1**	**3**	**1**	**1**	**3**	**8**
11:45 AM	**0**	**0**	**0**	**3**	**3**	**0**	**0**	**10**	**1**	**11**	**3**	**4**	**0**	**0**	**7**
12:00 PM	**0**	**1**	**1**	**1**	**3**	**0**	**0**	**3**	**3**	**6**	**8**	**3**	**1**	**2**	**14**
12:15 PM	0	1	0	0	*1*	0	0	5	1	*6*	3	0	0	1	*4*
12:30 PM	0	0	2	0	*2*	0	0	4	6	*10*	4	2	0	0	*6*
12:45 PM	0	0	0	2	*2*	0	0	1	2	*3*	2	3	1	0	*6*
Count Total	0	2	6	7	*15*	0	0	28	18	*46*	27	15	3	7	*52*
Peak Hour	**0**	**1**	**3**	**5**	***9***	**0**	**0**	**16**	**9**	***25***	**17**	**10**	**2**	**6**	**35**

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Count Summaries - Heavy Vehicles

Interval Start	n/a				Griffith St				Main St				Main St				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
11:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0
11:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**2**	**0**
11:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**0**
11:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**3**	**7**
12:00 PM	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**3**	**9**
12:15 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	8
12:30 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	9
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	8
Count Total	0	0	0	0	0	2	0	0	0	0	6	0	0	1	6	0	15	
Pk Hr Heavy	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**5**	**0**	**9**	

Count Summaries - Bikes

Interval Start	n/a				Griffith St				Main St				Main St				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
11:00 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	0
11:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**4**	**0**	**7**	**0**
11:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**0**
11:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**10**	**0**	**0**	**0**	**1**	**0**	**11**	**21**
12:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**1**	**2**	**0**	**6**	**25**
12:15 PM	0	0	0	0	0	0	0	0	0	0	5	0	0	0	1	0	6	24
12:30 PM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	6	0	10	33
12:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	3	25
Count Total	0	0	0	0	0	0	0	0	0	0	28	0	0	1	17	0	46	
Pk Hr Bike	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**16**	**0**	**0**	**1**	**8**	**0**	**25**	

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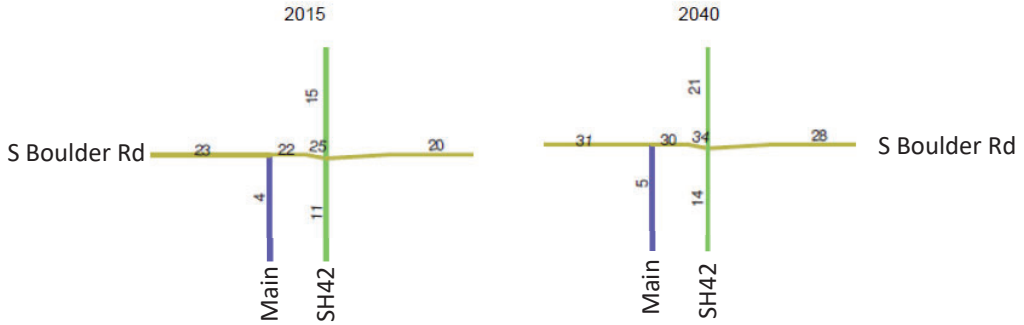
Appendix D: Background Growth Rate Calculations per DRCOG

Traffic Growth Rates

Road Segment	2020 Projected ADT	2045 Projected ADT	Growth Rate Per Year
South Boulder Road – West of SH 42	29,000	44,000	1.30%
South Boulder Road – East of SH 42	25,000	36,000	1.30%
SH 42 – North of South Boulder Road	19,000	27,000	1.30%
SH 42 – South of South Boulder Road	12,000	16,000	1.30%

Growth Rate Calculator

Scenario					
Current Year	2015	2015	2015	2015	2015
Current Traffic	23.00	22.00	20.00	15.00	11.00
Future Year	2040	2040	2040	2040	2040
Future Traffic	31.00	30.00	28.00	21.00	14.00
Growth Rate/Year	**1.20%**	**1.25%**	**1.35%**	**1.35%**	**0.97%**
	west leg 1	west leg 2	east leg 1	north leg 1	south leg 1



Notes:

1. Diagrams are from DRCOG 2015 and 2040 projected traffic volumes (in 1000's vpd) for their Focus2.2 Model.[1]
2. West Leg 1 is the S Boulder Rd segment west of the SH42/S Boulder Rd intersection west of Main Street. West Leg 2 is the S Boulder Rd segment between Main and SH42.
3. East Leg 1, North Leg 1, and South Leg 1 represent the comparative volumes between the 2015 and 2040 projected traffic volumes.
4. Annual growth rates are calculated for each segment to establish a baseline.
5. An annual growth rate of 1.30% was calculated based upon the above percentages.

[1] https://drcog.org/sites/default/files/acc/TPO-GF-TRAVELMODEL101-EN-ACC-24-05-16-V1.pdf

Appendix E: Internal Reduction Calculations

Multi-Use Trip Generation Calculation

Analyst: KJS
Date: 3/10/2025

Name of Dvlpt.: Coal Creek Station
Time Period: Avg Weekday

LAND USE A

ITE LU Code #822 Retail Plaza
Size 13.5 KSF

	Total	Internal	External
Enter	381	43	338
Exit	380	50	330
Total	761	93	668
%	100%	12%	88%

Exit to External 330
338 *Enter from External*

30% 114 *Demand*
8 *Balanced*
28% 8 *Demand*

28% 107 *Demand* 11% 42 *Demand*
9 *Balanced*
30% 9 *Demand*

42 *Balanced*
33% 201 *Demand*

9% 34 *Demand*
34 *Balanced*
38% 231 *Demand*

LAND USE B

ITE LU Code Empanada Shop (Derived Rate Eq.)
Size 430 SF

	Total	Internal	External
Enter	30	11	19
Exit	30	12	18
Total	60	23	37
%	100%	38%	62%

Exit to External 18
19 *Enter from External*

Demand *Balanced* *Demand*
9% 3 3 38% 231
Demand *Balanced* *Demand*
11% 3 3 33% 201

LAND USE C

ITE LU Code #220 Multifamily Housing
Size 188 DU

	Total	Internal	External
Enter	608	45	563
Exit	608	37	571
Total	1216	82	1134
%	100%	7%	93%

Exit to External 563
571 *Enter from External*

Net External Trips for Multi-Use Development					
	LAND A	**LAND B**	**LAND C**	**Total**	
Enter	338	19	563	920	
Exit	330	18	571	919	
Total	668	37	1134	1839	
Single Use Trip Gen.	761	60	1216	2037	8.2%

McDOWELL ENGINEERING, LLC

Internal capture reductions were calculated using methodology from the ITE *Trip Generation Handbook* , Second Edition, June 2004.

Internal Trip Reduction Calculation Model

Analyst: KJS

Date: 3/10/2025

Name of Dvlpt.: Coal Creek Station

Time Period: AM Peak

LAND USE A

ITE LU Code #822 Retail Plaza

Size 13.5 KSF

	Total	Internal	External
Enter	48	3	45
Exit	48	4	44
Total	96	7	89
%	100%	7%	93%

Exit to External 44

Enter from External 45

29% 14 *Demand*

31% 15 *Demand* 7% 3 *Demand*

5% 2 *Demand*

0 *Balanced*

0 *Balanced*

3 *Balanced*

2 *Balanced*

31% 0 *Demand*

29% 0 *Demand*

37% 8 *Demand*

34% 23 *Demand*

LAND USE B

ITE LU Code Empanada Shop (Derived Rate Eq.)

Size 430 SF

	Total	Internal	External
Enter	1	0	1
Exit	1	0	1
Total	2	0	2
%	100%	0%	100%

Exit to External 1

Enter from External 1

Demand 5% 0 *Balanced* 0 *Demand* 34% 23

Demand 7% 0 *Balanced* 0 *Demand* 37% 8

LAND USE C

ITE LU Code #220 Multifamily Housing

Size 188 DU

	Total	Internal	External
Enter	22	3	19
Exit	67	2	65
Total	89	5	84
%	100%	6%	94%

Exit to External 19

Enter from External 65

Net External Trips for Multi-Use Development				
	LAND A	**LAND B**	**LAND C**	**Total**
Enter	45	1	19	65
Exit	44	1	65	110
Total	89	2	84	175
Single Use Trip Gen.	96	2	89	187

5.5%

McDOWELL ENGINEERING, LLC

Internal capture reductions were calculated using methodology from the ITE *Trip Generation Handbook* , Second Edition, June 2004.

Internal Trip Reduction Calculation Model

Analyst: KJS

Date: 3/10/2025

Name of Dvlpt.: Coal Creek Station

Time Period: PM Peak

LAND USE A

ITE LU Code #822 Retail Plaza

Size 13.5 kSF

	Total	Internal	External
Enter	92	9	83
Exit	78	10	68
Total	170	19	151
%	100%	11%	89%

Exit to External 68

83 *Enter from External*

20% 16 *Demand*

1 *Balanced*

20% 1 *Demand*

20% 18 *Demand* 12% 9 *Demand*

1 *Balanced*

20% 1 *Demand*

9% 8 *Demand*

8 *Balanced*

9 *Balanced*

31% 21 *Demand*

53% 22 *Demand*

LAND USE B

ITE LU Code Empanada Shop (Derived Rate Eq.)

Size 430 SF

	Total	Internal	External
Enter	3	1	2
Exit	3	1	2
Total	6	2	4
%	100%	33%	67%

Exit to External 2

2 *Enter from External*

Demand *Balanced* *Demand*

9% 0 0 53% 22

Demand *Balanced* *Demand*

12% 0 0 31% 21

LAND USE C

ITE LU Code #220 Multifamily Housing

Size 188 DU

	Total	Internal	External
Enter	67	10	57
Exit	41	9	32
Total	108	19	89
%	100%	18%	82%

Exit to External 57

32 *Enter from External*

Net External Trips for Multi-Use Development				
	LAND A	**LAND B**	**LAND C**	**Total**
Enter	83	2	57	142
Exit	68	2	32	102
Total	151	4	89	244
Single Use Trip Gen.	170	6	108	284

18.4%

McDOWELL ENGINEERING, LLC

Internal capture reductions were calculated using methodology from the ITE *Trip Generation Handbook* , Second Edition, June 2004.

Internal Trip Reduction Calculation Model

Analyst: KJS

Date: 3/10/2025

Name of Dvlpt.: Coal Creek Station

Time Period: SAT Peak

LAND USE A

ITE LU Code #822 Retail Plaza

Size 13.5 kSF

	Total	Internal	External
Enter	43	5	38
Exit	42	6	36
Total	85	11	74
%	100%	13%	87%

Exit to External 36

Enter from External 38

20% 8 *Demand*

1 *Balanced*

20% 1 *Demand*

20% 9 *Demand* 12% 5 *Demand*

1 *Balanced*

20% 1 *Demand*

5 *Balanced*

31% 11 *Demand*

9% 4 *Demand*

4 *Balanced*

53% 19 *Demand*

LAND USE B

ITE LU Code Empanada Shop (Derived Rate Eq.)

Size 430 SF

	Total	Internal	External
Enter	7	2	5
Exit	5	2	3
Total	12	4	8
%	100%	33%	67%

Exit to External 3

Enter from External 5

Demand 9% 1 *Balanced* 1 *Demand* 53% 19

Demand 12% 1 *Balanced* 1 *Demand* 31% 11

LAND USE C

ITE LU Code #220 Multifamily Housing

Size 188 DU

	Total	Internal	External
Enter	37	6	31
Exit	36	5	31
Total	73	11	62
%	100%	15%	85%

Exit to External 31

Enter from External 31

Net External Trips for Multi-Use Development				
	LAND A	**LAND B**	**LAND C**	**Total**
Enter	38	5	31	74
Exit	36	3	31	70
Total	74	8	62	144
Single Use Trip Gen.	85	12	73	170

17.6%

McDOWELL ENGINEERING, LLC

Internal capture reductions were calculated using methodology from the ITE *Trip Generation Handbook* , Second Edition, June 2004.

Appendix F: Signal Timing Plans

Louisville - HWY42 & S Boulder Rd

Configuration Phase Sequence Page 1

Phase Ring (MM)1-1-1

Phase															
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	1	1	1	2	2	2	2	1	1	2	2	1	1	2	2

Hardware Alternate Sequence Enable: No

Phase Ring Sequence

Sequence	Ring	Phase															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	1	1	2	3	4	9	10	13	14	0	0	0	0	0	0	0	0
1	2	6	5	8	7	11	12	15	16	0	0	0	0	0	0	0	0
2	1	2	1	3	4	10	9	13	14	0	0	0	0	0	0	0	0
2	2	5	6	8	7	11	12	15	16	0	0	0	0	0	0	0	0
3	1	1	2	4	3	9	10	14	13	0	0	0	0	0	0	0	0
3	2	5	6	7	8	11	12	15	16	0	0	0	0	0	0	0	0
4	1	2	1	4	3	10	9	14	13	0	0	0	0	0	0	0	0
4	2	5	6	7	8	11	12	15	16	0	0	0	0	0	0	0	0
5	1	1	2	3	4	9	10	13	14	0	0	0	0	0	0	0	0
5	2	6	5	7	8	12	11	15	16	0	0	0	0	0	0	0	0
6	1	2	1	3	4	10	9	13	14	0	0	0	0	0	0	0	0
6	2	6	5	7	8	12	11	15	16	0	0	0	0	0	0	0	0
7	1	1	2	4	3	9	10	14	13	0	0	0	0	0	0	0	0
7	2	6	5	7	8	12	11	15	16	0	0	0	0	0	0	0	0
8	1	2	1	4	3	10	9	14	13	0	0	0	0	0	0	0	0
8	2	6	5	7	8	12	11	15	16	0	0	0	0	0	0	0	0
9	1	1	2	3	4	9	10	13	14	0	0	0	0	0	0	0	0
9	2	5	6	8	7	11	12	16	15	0	0	0	0	0	0	0	0
10	1	2	1	3	4	10	9	13	14	0	0	0	0	0	0	0	0
10	2	5	6	8	7	11	12	16	15	0	0	0	0	0	0	0	0
11	1	1	2	4	3	9	10	14	13	0	0	0	0	0	0	0	0
11	2	5	6	8	7	11	12	16	15	0	0	0	0	0	0	0	0
12	1	2	1	4	3	10	9	14	13	0	0	0	0	0	0	0	0
12	2	5	6	8	7	11	12	16	15	0	0	0	0	0	0	0	0
13	1	1	2	3	4	9	10	13	14	0	0	0	0	0	0	0	0
13	2	6	5	8	7	12	11	16	15	0	0	0	0	0	0	0	0
14	1	2	1	3	4	10	9	13	14	0	0	0	0	0	0	0	0
14	2	6	5	8	7	12	11	16	15	0	0	0	0	0	0	0	0
15	1	1	2	4	3	9	10	14	13	0	0	0	0	0	0	0	0
15	2	6	5	8	7	12	11	16	15	0	0	0	0	0	0	0	0
16	1	2	1	4	3	10	9	14	13	0	0	0	0	0	0	0	0
16	2	6	5	8	7	12	11	16	15	0	0	0	0	0	0	0	0

Phase Compatibility (MM)1-1-2

Phase 1	Phase 2
1	5
1	6
2	5
2	6
3	7
3	8
4	7
4	8
9	11
9	12
10	11
10	12
13	15
13	16
14	15
14	16

Phase Direction Descriptions

Phase Description

Overlap Direction Descriptions

Overlap Description

Administration (MM)1-7-1

Enable CRC Check: No

CRC: 0000

Request Download Program Data: No

Louisville - HWY42 & S Boulder Rd

Configuration Phase Sequence Page 2

Phases In Use	In Use(MM)1-2	Exclusive Ped(MM)1-2	Backup Prevent(MM)1-1-3		Simultaneous Gap(MM)1-1-4		Disable(MM)1-1-4
	Phase	Phase Timing	Phase Backup		Phase	Must Gap with Phase	Phase
1							
2							
3							
4							
5							
6							
7							
8							

Load Switch Assignments (MMU Channel) (MM)1-3

Phase	Overlap	Type	Dim				Auto		Flash Together
			R	Y	G	D	R	Y	
1	1	V				+	Yes		
2	2	V				+	Yes		Yes
3	3	V				+	Yes		
4	4	V				+	Yes		Yes
5	5	V				-	Yes		
6	6	V				-	Yes		Yes
7	7	V				-	Yes		
8	8	V				-	Yes		Yes
9	2	P				+			
10	4	P				+			
11	6	P				-			
12	8	P				-			
13	1	O				+	Yes		
14	2	O				-	Yes		Yes
15	3	O				+	Yes		
16	4	O				-	Yes		Yes

Louisville - HWY42 & S Boulder Rd

Configuration Port 1 (SDLC)

SDLC Options (MM)1-4-1

Bus Interface Terminal/Facilities

BIU	Term and Facility Enable	Detector Rack Enable
1	Yes	Yes
2	Yes	No
3	No	No
4	No	No
5	No	No
6	No	No
7	No	No
8	No	No

Enable TS2/MMU Type Cabinet: Yes
Enable MMU Extended Status: No
Enable SDLC Stop Time: No
Enable 3 Critical RFE's Lockup: Yes
Diagonstics (Test Fixture) Enable: No

Secondary To Secondary Addressing

ID	Term and Facility Enable	Detector Rack Enable
1	No	No
2	No	No
3	No	No
4	No	No
5	No	No
6	No	No
7	No	No
8	No	No

Secondary To Secondary Addressing MMU: No
Secondary To Secondary Addressing Diagonstics: No

MMU Program (MM)1-4-2

Channel Can Serve with Channel

Channel 1 Channel 2

Color Check Enable (MM)1-4-3
Enable Color Check: Yes

Color Check Enable

MMU Channel	Green	Yellow	Red
1	Yes	Yes	Yes
2	Yes	Yes	Yes
3	Yes	Yes	Yes
4	Yes	Yes	Yes
5	Yes	Yes	Yes
6	Yes	Yes	Yes
7	Yes	Yes	Yes
8	Yes	Yes	Yes
9	Yes	Yes	Yes
10	Yes	Yes	Yes
11	Yes	Yes	Yes

12	Yes	Yes	Yes
13	Yes	Yes	Yes
14	Yes	Yes	Yes
15	Yes	Yes	Yes
16	Yes	Yes	Yes

Louisville - HWY42 & S Boulder Rd

Configuration Communications

Ethernet Port Configuration (MM)1-5-1

Controller IP:	172.16.10.111
Subnet Mask:	255.255.252.0
Default Gateway IP:	172.16.11.254
Server IP:	172.16.50.1

NTCIP Parameters (MM)1-5-5

Backup Time:	0
UDP Port:	501
Ethernet Priority:	1
Port 2 Priority:	4
Port 3A Priority:	2
Port 3B Priority:	3

Note for 2070: Port 2 is C50S, Port 3A is C21S, and Port 3B is C22S

Port Configuration (MM)1-5-2 to 1-5-4

Port	Protocol	Enable	Data Rate	Data Parity Stop	Modem Setup String	User String	Comm Port Address	System Detector 9-1	Telemetry Response Delay	Duplex Half/Full	Flow Control	AB3418 NTCIP Group Address	AB3418 NTCIP Single Flag Enable	RTS to CTS Delay	RTS Turn Off Delay	Droupout Time	Early RTS	FSK Hardware
2	NTCIP	Yes	9600	8 N 1	None		1	0	0.0	Half	Yes	0	No	0.0	0.0	10	No	Yes
3A	ECPIP	No	9600	8 0 1	None		0	0	0.0	Full	No	0	No	0.0	0.0	10	No	Yes
3B	AB3418	No	1200	8 0 1	None		7	0	0.9	Full	Yes	0	No	3.0	2.0	300	No	Yes

ECPIP Parameters (MM)1-5-6

Expanded System Detector Address: 0

Local System Detector

Local System Detector	Number

Louisville - HWY42 & S Boulder Rd

Configuration Logging/Display

Enable Event Logs (MM)1-6-1		**Alarm Logs (MM)1-6-1**	**Display Options (MM)1-7-2**
Critical RFE's:	Yes	Enabled: 12345678910111213141516	Key Click Enable: Yes
3 Critical RFE's in 24 Hours:	Yes		Backlight Enable: Yes
MMU Flash Faults:	Yes		
Local Flash Faults:	Yes		
Non-Critical RFE's (Det/Test):	Yes		
Detector Errors:	Yes		
Coordination Errors:	Yes		
Controller Download:	Yes		
Preempt:	Yes		
TSP:	Yes		
Power On/Off:	Yes		
Low Battery:	Yes		
Access:	Yes		
Data Change:	Yes		

Louisville - HWY42 & S Boulder Rd

Logic Processor Page 1

Statement Control (MM)1-8-1

LP Statement Control

Louisville - HWY42 & S Boulder Rd

Logic Processor Page 2

Logic Statements (MM)1-8-2

Louisville - HWY42 & S Boulder Rd

Controller Timing Plan (MM)2-1

Plan 1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Min Green	5	10	5	6	5	10	5	6	0	0	0	0	0	0	0	0
BK Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	4	0	4	0	4	0	4	0	0	0	0	0	0	0	0
Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	30	0	27	0	26	0	27	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	2.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max 1	15	30	15	30	15	30	15	30	0	0	0	0	0	0	0	0
Max 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Stp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPT Duc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Plan 2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Min Green	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
BK Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	10	0	10	0	10	0	10	0	10	0	10	0	10	0	10
Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	16	0	16	0	16	0	16	0	16	0	16	0	16	0	16
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max 1	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
Max 2	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
Max 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Stp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPT Duc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Plan 3

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Min Green	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
BK Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	10	0	10	0	10	0	10	0	10	0	10	0	10	0	10
Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	16	0	16	0	16	0	16	0	16	0	16	0	16	0	16
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max 1	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
Max 2	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
Max 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Stp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPT Duc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Plan 4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Min Green	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
BK Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	10	0	10	0	10	0	10	0	10	0	10	0	10	0	10
Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	16	0	16	0	16	0	16	0	16	0	16	0	16	0	16
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max 1	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
Max 2	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
Max 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Stp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPT Duc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Louisville - HWY42 & S Boulder Rd

Controller Overlaps

Vehicle Overlaps (MM)2-2

Overlap	Type	Lag Green	Yellow	Red	Advance Green

Phases

Overlap	Phase	Included	Protect	Modifier	Ped Protect	Not Overlap	Lag X Phase	Lag 2 Phase	Flash Green

Guaranteed Minimum Time Data (MM) 2-4

Phase Time Data

Phase	Min Green	Walk	Ped Clear	Yellow	Red Clear	Overlap Green
A01	5	0	7	3.0	0.0	5
B02	5	0	7	3.0	0.0	5
C03	5	0	7	3.0	0.0	5
D04	5	0	7	3.0	0.0	5
E05	5	0	7	3.0	0.0	5
F06	5	0	7	3.0	0.0	5
G07	5	0	7	3.0	0.0	5
H08	5	0	7	3.0	0.0	5
I09	5	0	7	3.0	0.0	5
J10	5	0	7	3.0	0.0	5
K11	5	0	7	3.0	0.0	5
L12	5	0	7	3.0	0.0	5
M13	5	0	7	3.0	0.0	5
N14	5	0	7	3.0	0.0	5
O15	5	0	7	3.0	0.0	5
P16	5	0	7	3.0	0.0	5

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Controller Pedestrian Overlaps
Pedestrian Overlaps (MM) 2-3
Included Phase Ped Overlap

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Controller Start/Fash (MM) 2-5

Startup

Phase	Phase Setting
2	Y
6	Y

Overlap
A
B
C
D

Flash > Mon:	No
Flash Time:	0
All Red:	0
Power Start Sequence:	1

Automatic Flash

Entry Phase
2
6

Exit Phase
2
6

Overlap Exit
A
B
C
D

Flash > Mon:	No
Exit Flash Interval:	W
Minimum Auto Flash:	7
Minimumin Recall:	No
Cycle Through Phase:	No

Louisville - HWY42 & S Boulder Rd

Controller Options

Controller Options (MM)2-6-1

Phase	Flashing Green Phase	Guaranteed Passage	Non Act 1	Non Act 2	Dual Entry	Conditional Service	Conditional Reservice	Ped Reservice	Rest In Walk	Flashing Walk	Ped Clear Yellow	Ped Clear Red	IGRN + Veh Ext
2	No	No	Yes	No	Yes	No	No	No	No	No	No	No	No
4	No	No	No	Yes	Yes	No	No	No	No	No	No	No	No
6	No	No	Yes	No	Yes	No	No	No	No	No	No	No	No
8	No	No	No	Yes	Yes	No	No	No	No	No	No	No	No

Ped Clear Protect: Off Red Revert: 2.0

Act Pre-Time (MM)2-7

Pre-Time Mode Enable: No Free Input Enables Pre-Timed: Yes

Pre-Timed Phase

Phase Recall Options (MM)2-8

Plan	Phase	Lock Detector	Vehicle Recall	Ped Recall	Max Recall	Soft Recall	No Rest	AI Calc
1	2	No	No	No	Yes	No	No	No
1	6	No	No	No	Yes	No	No	No
2	1	Yes	No	No	No	No	No	No
2	2	Yes	No	No	No	No	No	No
2	3	Yes	No	No	No	No	No	No
2	4	Yes	No	No	No	No	No	No
2	5	Yes	No	No	No	No	No	No
2	6	Yes	No	No	No	No	No	No
2	7	Yes	No	No	No	No	No	No
2	8	Yes	No	No	No	No	No	No
2	9	Yes	No	No	No	No	No	No
2	10	Yes	No	No	No	No	No	No
2	11	Yes	No	No	No	No	No	No
2	12	Yes	No	No	No	No	No	No
2	13	Yes	No	No	No	No	No	No
2	14	Yes	No	No	No	No	No	No
2	15	Yes	No	No	No	No	No	No
2	16	Yes	No	No	No	No	No	No
3	1	Yes	No	No	No	No	No	No
3	2	Yes	No	No	No	No	No	No
3	3	Yes	No	No	No	No	No	No
3	4	Yes	No	No	No	No	No	No
3	5	Yes	No	No	No	No	No	No
3	6	Yes	No	No	No	No	No	No
3	7	Yes	No	No	No	No	No	No
3	8	Yes	No	No	No	No	No	No
3	9	Yes	No	No	No	No	No	No
3	10	Yes	No	No	No	No	No	No
3	11	Yes	No	No	No	No	No	No
3	12	Yes	No	No	No	No	No	No
3	13	Yes	No	No	No	No	No	No
3	14	Yes	No	No	No	No	No	No
3	15	Yes	No	No	No	No	No	No
3	16	Yes	No	No	No	No	No	No
4	1	Yes	No	No	No	No	No	No
4	2	Yes	No	No	No	No	No	No
4	3	Yes	No	No	No	No	No	No

4	4	Yes	No	No	No	No	No	No
4	5	Yes	No	No	No	No	No	No
4	6	Yes	No	No	No	No	No	No
4	7	Yes	No	No	No	No	No	No
4	8	Yes	No	No	No	No	No	No
4	9	Yes	No	No	No	No	No	No
4	10	Yes	No	No	No	No	No	No
4	11	Yes	No	No	No	No	No	No
4	12	Yes	No	No	No	No	No	No
4	13	Yes	No	No	No	No	No	No
4	14	Yes	No	No	No	No	No	No
4	15	Yes	No	No	No	No	No	No
4	16	Yes	No	No	No	No	No	No

Louisville - HWY42 & S Boulder Rd

Coordination Options
Coordination Options (MM)3-1

Manual Pattern:	Auto
ECPI Coord:	Yes
System Source:	TBC
System Format:	STD
Splits In:	Seconds
Offsets In:	Seconds
Transition:	Smooth
Max Select:	MAXINH
Dwell/Add Time:	0
Dly Coord Wz-Lz:	No
Force Off:	Float
Offset Reference:	Yell
Use Ped Time:	Yes
Ped Recall:	No
Ped Resv:	No
Local Zero Ovrd:	No
Fo Add Ini Green:	No
Re-sync Count:	0
Multisync:	No

Split Demand (MM)3-5

Demand 1 Phase	Demand 2 Phase

Demand	Detector	Call Time	Cycle Count

Auto Perm Minimum Green (Seconds) (MM)3-4

Phase	Min Green

Louisville - HWY42 & S Boulder Rd

Coordination Pattern Data

Pattern Data (MM)3-2

Pattern	Split Pattern	TS2	Cycle	Std(COS)	Offset Value	Splits In	Offsets In	Actuated Coord
1	1	0-1	120	111	15	Seconds	Seconds	No
2	2	0-2	100	211	17	Seconds	Seconds	No
3	3	0-3	120	311	113	Seconds	Seconds	No

Pattern	Timing Plan	Actuated Walk Rest	Sequence	Phase Reservice	Action Plan	XArt Pattern	Vehicle Perm 1	Vehicle Perm 2	Vehicle Perm 3
1	1	No	1	No	1	0	0	0	0
2	1	No	2	No	2	0	0	0	0
3	1	No	1	No	3	0	0	0	0

Pattern	Ring Split Ext 1	Ring Split Ext 2	Ring Split Ext 3	Ring Split Ext 4	Split Demand Pattern 1	Split Demand Pattern 2	Ring Displ 2	Ring Displ 3	Ring Displ 4
1	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0

Split Preference Phases

Pattern	Phase	Preference 1	Preference 2

Special Functions

Pattern	Function	Output

Split Pattern Data (MM)3-3

Coord Phases

Split Pattern	Phase	Split
1	1	20
1	2	41
1	3	16
1	4	43
1	5	20
1	6	41
1	7	12
1	8	47
2	1	14
2	2	38
2	3	12
2	4	36
2	5	18
2	6	34
2	7	12
2	8	36
3	1	18
3	2	43
3	3	18
3	4	41
3	5	24
3	6	37
3	7	18
3	8	41

Split/Modes

Split Pattern	Mode	Phase 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
1	Coord	X X
1	Vehicle Recall	X
2	Coord	X X
2	Vehicle Recall	X X
3	Coord	X X
3	Vehicle Recall	X X

AM Peak = Action Plan 1

Sat = Action Plan 2

PM Peak = Action Plan 3

Louisville - HWY42 & S Boulder Rd

Preemptor Preempt Plan (MM)4-1

Preempt Phases

Preempt	Phase	Track Clear Veh	Dwell Veh	Dwell Ped	Cycling Veh	Cycling Ped	Exit Phase	Exit Calls	Special Function
3	2	No	Yes	No	No	No	Yes	No	No
3	5	No	Yes	No	No	No	No	No	No
3	6	No	No	No	No	No	Yes	No	No
4	1	No	Yes	No	No	No	No	No	No
4	2	No	No	No	No	No	Yes	No	No
4	6	No	Yes	No	No	No	Yes	No	No
5	4	No	Yes	No	No	No	Yes	No	No
5	7	No	Yes	No	No	No	No	No	No
5	8	No	No	No	No	No	Yes	No	No
6	3	No	Yes	No	No	No	No	No	No
6	4	No	No	No	No	No	Yes	No	No
6	8	No	Yes	No	No	No	Yes	No	No

Preempt Overlaps

Preempt	Overlap	Track Clear	Enable Trailing	Dwell Overlap	Cycling Overlap
1	A	No	No	No	No
1	B	No	No	No	No
1	C	No	No	No	No
1	D	No	No	No	No
1	E	No	No	No	No
1	F	No	No	No	No
1	G	No	No	No	No
1	H	No	No	No	No
1	I	No	No	No	No
2	A	No	No	No	No
2	C	No	No	No	No
2	D	No	No	No	No
2	E	No	No	No	No
2	F	No	No	No	No
3	A	No	No	No	No
3	B	No	No	No	No
3	C	No	No	No	No
3	D	No	No	No	No
3	E	No	No	No	No
3	F	No	No	No	No
3	G	No	No	No	No
3	H	No	No	No	No
3	I	No	No	No	No
3	J	No	No	No	No
3	K	No	No	No	No
3	L	No	No	No	No
3	M	No	No	No	No
3	N	No	No	No	No
3	O	No	No	No	No
3	P	No	No	No	No
4	A	No	No	No	No
4	B	No	No	No	No
4	C	No	No	No	No
4	D	No	No	No	No
4	E	No	No	No	No
4	F	No	No	No	No

4	G	No	No	No	No
4	H	No	No	No	No
4	I	No	No	No	No
4	J	No	No	No	No
4	K	No	No	No	No
4	L	No	No	No	No
4	M	No	No	No	No
4	N	No	No	No	No
4	O	No	No	No	No
4	P	No	No	No	No
5	A	No	No	No	No
5	B	No	No	No	No
5	C	No	No	No	No
5	D	No	No	No	No
5	E	No	No	No	No
5	F	No	No	No	No
5	G	No	No	No	No
5	H	No	No	No	No
5	I	No	No	No	No
5	J	No	No	No	No
5	K	No	No	No	No
5	L	No	No	No	No
5	M	No	No	No	No
5	N	No	No	No	No
5	O	No	No	No	No
5	P	No	No	No	No
6	A	No	No	No	No
6	B	No	No	No	No
6	C	No	No	No	No
6	D	No	No	No	No
6	E	No	No	No	No
6	F	No	No	No	No
6	G	No	No	No	No
6	H	No	No	No	No
6	I	No	No	No	No
6	J	No	No	No	No
6	K	No	No	No	No
6	L	No	No	No	No
6	M	No	No	No	No
6	N	No	No	No	No
6	O	No	No	No	No
6	P	No	No	No	No

Preempt	Enable	Preempt Override	Interlock Enable	Detector Lock	Delay	Inhibit	Override Flash	Duration	CLR > GRN
1	No	Yes	No	Yes	0	0	No	0	No
2	No	Yes	No	Yes	0	0	No	0	No
3	Standard	Yes	No	Yes	0	0	No	10	No
4	Standard	Yes	No	Yes	0	0	No	10	No
5	Standard	Yes	No	Yes	0	0	No	10	No
6	Standard	Yes	No	Yes	0	0	No	10	No
7	No	Yes	No	Yes	0	0	No	0	No
8	No	Yes	No	Yes	0	0	No	0	No
9	No	Yes	No	Yes	0	0	No	0	No
10	No	Yes	No	Yes	0	0	No	0	No

Preempt	Term Overlap Asap	PC Through Yellow	Terminate Phase	Ped Dark	Track Clearance Re-service	Dwell Flash	Linked Pmt	Flash Exit Color	Preempt To Coord
1	No	No	No	No	No	Off	0	Red	No

2	No	No	No	No	No	Off	0	Green	No
3	No	Yes	No	No	No	Off	0	Green	No
4	No	Yes	No	No	No	Off	0	Green	No
5	No	Yes	No	No	No	Off	0	Green	No
6	No	Yes	No	No	No	Off	0	Green	No
7	No	No	No	No	No	Off	0	Green	No
8	No	No	No	No	No	Off	0	Green	No
9	No	No	No	No	No	Off	0	Green	No
10	No	No	No	No	No	Off	0	Green	No

Preempt	Exit Timing Plan	Reservice	Free During Pmt Ring 1	Free During Pmt Ring 2	Free During Pmt Ring 3	Free During Pmt Ring 4
1	0	0	No	No	No	No
2	0	0	No	No	No	No
3	0	0	No	No	No	No
4	0	0	No	No	No	No
5	0	0	No	No	No	No
6	0	0	No	No	No	No
7	0	0	No	No	No	No
8	0	0	No	No	No	No
9	0	0	No	No	No	No
10	0	0	No	No	No	No

Preempt	Entrance Walk	Entrance Ped Clear	Entrance Min Green	Entrance Yellow	Entrance Red	Track Clear Min Green	Gate Down Ext Green	Gate Down Max Green	Track Clear Yellow	Track Clear Red
1	0	255	5	4.0	1.0	0	0	0	4.0	1.0
2	0	255	5	4.0	1.0	0	0	0	4.0	1.0
3	0	7	5	4.0	1.0	0	0	0	4.0	1.0
4	0	7	5	4.0	1.0	0	0	0	4.0	1.0
5	0	7	5	4.0	1.0	0	0	0	4.0	1.0
6	0	7	5	4.0	1.0	0	0	0	4.0	1.0
7	0	255	5	4.0	1.0	0	0	0	4.0	1.0
8	0	255	5	4.0	1.0	0	0	0	4.0	1.0
9	0	255	5	4.0	1.0	0	0	0	4.0	1.0
10	0	255	5	4.0	1.0	0	0	0	4.0	1.0

Preempt	Min Dwell Time	Extend Preempt Input Time	Max Preempt Call Time	Exit Yellow Time	Exit Red Time	Preempt Active Out	Preempt Active Dwell	Other Priority Preempt	Non-Priority Preempt
1	0	0.0	0	4.0	1.0	On	No	Off	Off
2	0	0.0	0	4.0	1.0	On	No	Off	Off
3	0	0.0	240	3.0	1.0	On	No	Off	Off
4	0	0.0	240	3.0	1.0	On	No	Off	Off
5	0	0.0	240	3.0	1.0	On	No	Off	Off
6	0	0.0	240	3.0	1.0	On	No	Off	Off
7	0	0.0	0	4.0	1.0	On	No	Off	Off
8	0	0.0	0	4.0	1.0	On	No	Off	Off
9	0	0.0	0	4.0	1.0	On	No	Off	Off
10	0	0.0	0	4.0	1.0	On	No	Off	Off

Louisville - HWY42 & S Boulder Rd

Preemptor Preempt Filtering

Enable Preempt Filtering and TSP/SCP (MM)4-2

Input	Solid	Pulsing
3	Preemption -3	Preemption -7
4	Preemption -4	Preemption -8
5	Preemption -5	Preemption -9
6	Preemption -6	Preemption -10

Louisville - HWY42 & S Boulder Rd

Time Base Clock/Calendar

Clock/Calendar Options (MM)5-1

Enable Action Plan:	0
Sync Reference Time:	12:00 AM
Sync Reference:	Reference Time
Day Light Savings:	No
Time Reset Input Set Time:	3:30:00
Standard Time From GMT:	0

Louisville - HWY42 & S Boulder Rd

Time Base Action Plan

Action Plan (MM)5-2

Plan	Pattern	Veh Det Plan	Flash	Red Reset	Controller Seq	Timing Plan	System Override	Detector Log	Veh Det Diag Plan	Ped Det Diag Plan	Dimming Enable
1	1	1	No	No	1	1	Yes	15	1	1	No
2	2	1	No	No	1	1	Yes	15	2	2	No
3	3	1	No	No	1	1	Yes	15	1	1	No
4	4	1	No	No	1	1	Yes	None	0	0	No
20	254 - FREE	1	No	No	1	1	No	None	0	0	No

Action Plan Phases

Plan	Phase	Red Rcl	Walk 2	Vex 2	Veh Rcl	Max Rcl	Max 2	Max 3	CS Inhibit	Omit

Acion Plan Special Functions

Plan	Function

Action Plan Auxiliary Functions

Plan	Function

Logic Statement Control

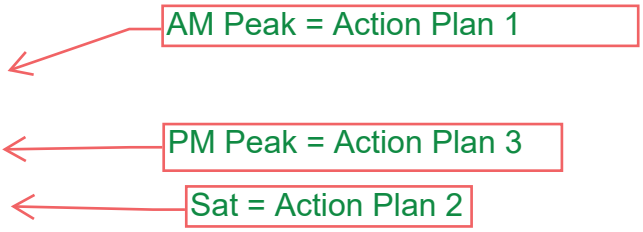
Plan	LP	Statement Control

Louisville - HWY42 & S Boulder Rd

Time Base Day Plan/Schedule

Day Plan (MM)5-3

Plan	Event	Action Plan	Start Time
1	1	1	6:30 AM
1	2	2	9:30 AM
1	3	3	3:00 PM
1	4	2	7:30 PM
2	1	2	8:00 AM



Schedule (MM)5-4

Schedule Number	Day Plan Number	Months	Days of Week	Days of Month
1	1	Jan, Feb, Mar, Apr, May, Jun, Jul, Aug, Sept, Oct, Nov, Dec	Mon, Tues, Wed, Thurs, Fri	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31
2	2	Jan, Feb, Mar, Apr, May, Jun, Jul, Aug, Sept, Oct, Nov, Dec	Sun, Sat	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31

Louisville - HWY42 & S Boulder Rd

Time Base Exceptions

Exception Day Program (MM)5-5

Day	Fixed/Float	Month	Day of Week/Month	Week of Month/Year	Day Plan
1	FLOAT	0	0	0	0
2	FLOAT	0	0	0	0
3	FLOAT	0	0	0	0
4	FLOAT	0	0	0	0
5	FLOAT	0	0	0	0
6	FLOAT	0	0	0	0
7	FLOAT	0	0	0	0
8	FLOAT	0	0	0	0
9	FLOAT	0	0	0	0
10	FLOAT	0	0	0	0
11	FLOAT	0	0	0	0
12	FLOAT	0	0	0	0
13	FLOAT	0	0	0	0
14	FLOAT	0	0	0	0
15	FLOAT	0	0	0	0
16	FLOAT	0	0	0	0
17	FLOAT	0	0	0	0
18	FLOAT	0	0	0	0
19	FLOAT	0	0	0	0
20	FLOAT	0	0	0	0
21	FLOAT	0	0	0	0
22	FLOAT	0	0	0	0
23	FLOAT	0	0	0	0
24	FLOAT	0	0	0	0
25	FLOAT	0	0	0	0
26	FLOAT	0	0	0	0
27	FLOAT	0	0	0	0
28	FLOAT	0	0	0	0
29	FLOAT	0	0	0	0
30	FLOAT	0	0	0	0
31	FLOAT	0	0	0	0
32	FLOAT	0	0	0	0
33	FLOAT	0	0	0	0
34	FLOAT	0	0	0	0
35	FLOAT	0	0	0	0
36	FLOAT	0	0	0	0

Louisville - HWY42 & S Boulder Rd

Detectors

Detectors Page 1

Vehicle Detectors Setup (MM)6-1

Vehicle Plan	Detector Number	Called
1	1	2
1	3	5
1	5	6
1	7	1
1	9	8
1	11	3
1	13	4
1	15	7

Vehicle Detector Setup (MM)6-2 continued

Detector Number	ECPI	TS2 Detector	Detector Description

Vehicle Detector Setup (MM)6-2 continued

Detector Number	Vehicle Plan	Assigned Phase	Switch Phase	Extend Time	Delay Time	Queue Limit	Yellow Lock	Added Option	Call Option	Passage Option	Queue Option	NTCIP Occupancy	NTCIP Volume	ECPI Log	Red Lock
1	1	2	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
1	2	1	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
1	3	1	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
1	4	1	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
2	1	2	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
2	2	2	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
2	3	2	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
2	4	2	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
3	1	5	0	0.0	0.0	0	No	No	Yes	Yes	No	Yes	Yes	No	No
3	2	3	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
3	3	3	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
3	4	3	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
4	1	4	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
4	2	4	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
4	3	4	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
4	4	4	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
5	1	6	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
5	2	5	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
5	3	5	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
5	4	5	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
6	1	6	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
6	2	6	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
6	3	6	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
6	4	6	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
7	1	1	0	0.0	0.0	0	No	No	Yes	Yes	No	Yes	Yes	No	No
7	2	7	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
7	3	7	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
7	4	7	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
8	1	8	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
8	2	8	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
8	3	8	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
8	4	8	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
9	1	8	0	0.0	0.0	0	No	No	Yes	Yes	No	Yes	Yes	No	No
9	2	9	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
9	3	9	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
9	4	9	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
10	1	10	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
10	2	10	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
10	3	10	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
10	4	10	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
11	1	3	0	0.0	0.0	0	No	No	Yes	Yes	No	Yes	Yes	No	No
11	2	11	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
11	3	11	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
11	4	11	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
12	1	12	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
12	2	12	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
12	3	12	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
12	4	12	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
13	1	4	0	0.0	0.0	0	No	No	Yes	Yes	No	Yes	Yes	No	No
13	2	13	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
13	3	13	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
13	4	13	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No

14	1	14	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
14	2	14	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
14	3	14	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
14	4	14	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
15	1	7	0	0.0	0.0	0	No	No	Yes	Yes	No	Yes	Yes	No	No
15	2	15	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
15	3	15	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
15	4	15	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
16	1	16	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
16	2	16	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
16	3	16	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
16	4	16	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No

Ped and System Detector Options
(MM)6-4

Phase Ped Detector

Local Ped Detector	Number
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
13	13
14	14
15	15
16	16

Local System Detector

Local System Detector	Number

Louisville - HWY42 & S Boulder Rd

Detectors

Detectors Page 2

Log - Speed Detector Setup (MM)6-5

NTCIP Log Period: 60	ECPI Log Period: TBAP	Length Unit: Inch

Speed Detector	Local Detector	One/Two Detector	Vehicle Length	Trap Length	Enable Log
1	0	1	0	0	No
2	0	1	0	0	No
3	0	1	0	0	No
4	0	1	0	0	No
5	0	1	0	0	No
6	0	1	0	0	No
7	0	1	0	0	No
8	0	1	0	0	No
9	0	1	0	0	No
10	0	1	0	0	No
11	0	1	0	0	No
12	0	1	0	0	No
13	0	1	0	0	No
14	0	1	0	0	No
15	0	1	0	0	No
16	0	1	0	0	No

Vehicle Detector Diagnostics (MM)6-6

Plan	Detector	Counts	Act	Pres	Multiplier	Failed Time	Failed Call Delay
1	1	0	0	0	1	255	0
1	2	0	0	0	1	255	0
1	3	0	0	240	2	0	0
1	4	0	0	0	1	255	0
1	5	0	0	0	1	255	0
1	6	0	0	0	1	255	0
1	7	0	0	240	2	0	0
1	8	0	0	0	1	255	0
1	9	0	0	15	1	255	0
1	10	0	0	0	1	255	0
1	11	0	0	240	2	0	0
1	12	0	0	0	1	255	0
1	13	0	0	240	2	0	0
1	14	0	0	0	1	255	0
1	15	0	0	240	2	0	0
1	16	0	0	0	1	255	0
1	17	0	0	0	1	255	0
1	18	0	0	0	1	255	0
1	19	0	0	0	1	255	0
1	20	0	0	0	1	255	0
1	21	0	0	0	1	255	0
1	22	0	0	0	1	255	0
1	23	0	0	0	1	255	0
1	24	0	0	0	1	255	0
1	25	0	0	0	1	255	0
1	26	0	0	0	1	255	0
1	27	0	0	0	1	255	0
1	28	0	0	0	1	255	0

1	29	0	0	0	1	255	0
1	30	0	0	0	1	255	0
1	31	0	0	0	1	255	0
1	32	0	0	0	1	255	0
1	33	0	0	0	1	255	0
1	34	0	0	0	1	255	0
1	35	0	0	0	1	255	0
1	36	0	0	0	1	255	0
1	37	0	0	0	1	255	0
1	38	0	0	0	1	255	0
1	39	0	0	0	1	255	0
1	40	0	0	0	1	255	0
1	41	0	0	0	1	255	0
1	42	0	0	0	1	255	0
1	43	0	0	0	1	255	0
1	44	0	0	0	1	255	0
1	45	0	0	0	1	255	0
1	46	0	0	0	1	255	0
1	47	0	0	0	1	255	0
1	48	0	0	0	1	255	0
1	49	0	0	0	1	255	0
1	50	0	0	0	1	255	0
1	51	0	0	0	1	255	0
1	52	0	0	0	1	255	0
1	53	0	0	0	1	255	0
1	54	0	0	0	1	255	0
1	55	0	0	0	1	255	0
1	56	0	0	0	1	255	0
1	57	0	0	0	1	255	0
1	58	0	0	0	1	255	0
1	59	0	0	0	1	255	0
1	60	0	0	0	1	255	0
1	61	0	0	0	1	255	0
1	62	0	0	0	1	255	0
1	63	0	0	0	1	255	0
1	64	0	0	0	1	255	0
2	1	0	0	0	1	255	0
2	2	0	0	0	1	255	0
2	3	0	0	0	1	255	0
2	4	0	0	0	1	255	0
2	5	0	0	0	1	255	0
2	6	0	0	0	1	255	0
2	7	0	0	0	1	255	0
2	8	0	0	0	1	255	0
2	9	0	0	0	1	255	0
2	10	0	0	0	1	255	0
2	11	0	0	0	1	255	0
2	12	0	0	0	1	255	0
2	13	0	0	0	1	255	0
2	14	0	0	0	1	255	0
2	15	0	0	0	1	255	0
2	16	0	0	0	1	255	0
2	17	0	0	0	1	255	0
2	18	0	0	0	1	255	0
2	19	0	0	0	1	255	0
2	20	0	0	0	1	255	0
2	21	0	0	0	1	255	0
2	22	0	0	0	1	255	0
2	23	0	0	0	1	255	0
2	24	0	0	0	1	255	0

2	25	0	0	0	1	255	0
2	26	0	0	0	1	255	0
2	27	0	0	0	1	255	0
2	28	0	0	0	1	255	0
2	29	0	0	0	1	255	0
2	30	0	0	0	1	255	0
2	31	0	0	0	1	255	0
2	32	0	0	0	1	255	0
2	33	0	0	0	1	255	0
2	34	0	0	0	1	255	0
2	35	0	0	0	1	255	0
2	36	0	0	0	1	255	0
2	37	0	0	0	1	255	0
2	38	0	0	0	1	255	0
2	39	0	0	0	1	255	0
2	40	0	0	0	1	255	0
2	41	0	0	0	1	255	0
2	42	0	0	0	1	255	0
2	43	0	0	0	1	255	0
2	44	0	0	0	1	255	0
2	45	0	0	0	1	255	0
2	46	0	0	0	1	255	0
2	47	0	0	0	1	255	0
2	48	0	0	0	1	255	0
2	49	0	0	0	1	255	0
2	50	0	0	0	1	255	0
2	51	0	0	0	1	255	0
2	52	0	0	0	1	255	0
2	53	0	0	0	1	255	0
2	54	0	0	0	1	255	0
2	55	0	0	0	1	255	0
2	56	0	0	0	1	255	0
2	57	0	0	0	1	255	0
2	58	0	0	0	1	255	0
2	59	0	0	0	1	255	0
2	60	0	0	0	1	255	0
2	61	0	0	0	1	255	0
2	62	0	0	0	1	255	0
2	63	0	0	0	1	255	0
2	64	0	0	0	1	255	0
3	1	0	0	0	1	255	0
3	2	0	0	0	1	255	0
3	3	0	0	0	1	255	0
3	4	0	0	0	1	255	0
3	5	0	0	0	1	255	0
3	6	0	0	0	1	255	0
3	7	0	0	0	1	255	0
3	8	0	0	0	1	255	0
3	9	0	0	0	1	255	0
3	10	0	0	0	1	255	0
3	11	0	0	0	1	255	0
3	12	0	0	0	1	255	0
3	13	0	0	0	1	255	0
3	14	0	0	0	1	255	0
3	15	0	0	0	1	255	0
3	16	0	0	0	1	255	0
3	17	0	0	0	1	255	0
3	18	0	0	0	1	255	0
3	19	0	0	0	1	255	0
3	20	0	0	0	1	255	0

3	21	0	0	0	1	255	0
3	22	0	0	0	1	255	0
3	23	0	0	0	1	255	0
3	24	0	0	0	1	255	0
3	25	0	0	0	1	255	0
3	26	0	0	0	1	255	0
3	27	0	0	0	1	255	0
3	28	0	0	0	1	255	0
3	29	0	0	0	1	255	0
3	30	0	0	0	1	255	0
3	31	0	0	0	1	255	0
3	32	0	0	0	1	255	0
3	33	0	0	0	1	255	0
3	34	0	0	0	1	255	0
3	35	0	0	0	1	255	0
3	36	0	0	0	1	255	0
3	37	0	0	0	1	255	0
3	38	0	0	0	1	255	0
3	39	0	0	0	1	255	0
3	40	0	0	0	1	255	0
3	41	0	0	0	1	255	0
3	42	0	0	0	1	255	0
3	43	0	0	0	1	255	0
3	44	0	0	0	1	255	0
3	45	0	0	0	1	255	0
3	46	0	0	0	1	255	0
3	47	0	0	0	1	255	0
3	48	0	0	0	1	255	0
3	49	0	0	0	1	255	0
3	50	0	0	0	1	255	0
3	51	0	0	0	1	255	0
3	52	0	0	0	1	255	0
3	53	0	0	0	1	255	0
3	54	0	0	0	1	255	0
3	55	0	0	0	1	255	0
3	56	0	0	0	1	255	0
3	57	0	0	0	1	255	0
3	58	0	0	0	1	255	0
3	59	0	0	0	1	255	0
3	60	0	0	0	1	255	0
3	61	0	0	0	1	255	0
3	62	0	0	0	1	255	0
3	63	0	0	0	1	255	0
3	64	0	0	0	1	255	0
4	1	0	0	0	1	255	0
4	2	0	0	0	1	255	0
4	3	0	0	0	1	255	0
4	4	0	0	0	1	255	0
4	5	0	0	0	1	255	0
4	6	0	0	0	1	255	0
4	7	0	0	0	1	255	0
4	8	0	0	0	1	255	0
4	9	0	0	0	1	255	0
4	10	0	0	0	1	255	0
4	11	0	0	0	1	255	0
4	12	0	0	0	1	255	0
4	13	0	0	0	1	255	0
4	14	0	0	0	1	255	0
4	15	0	0	0	1	255	0
4	16	0	0	0	1	255	0

4	17	0	0	0	1	255	0
4	18	0	0	0	1	255	0
4	19	0	0	0	1	255	0
4	20	0	0	0	1	255	0
4	21	0	0	0	1	255	0
4	22	0	0	0	1	255	0
4	23	0	0	0	1	255	0
4	24	0	0	0	1	255	0
4	25	0	0	0	1	255	0
4	26	0	0	0	1	255	0
4	27	0	0	0	1	255	0
4	28	0	0	0	1	255	0
4	29	0	0	0	1	255	0
4	30	0	0	0	1	255	0
4	31	0	0	0	1	255	0
4	32	0	0	0	1	255	0
4	33	0	0	0	1	255	0
4	34	0	0	0	1	255	0
4	35	0	0	0	1	255	0
4	36	0	0	0	1	255	0
4	37	0	0	0	1	255	0
4	38	0	0	0	1	255	0
4	39	0	0	0	1	255	0
4	40	0	0	0	1	255	0
4	41	0	0	0	1	255	0
4	42	0	0	0	1	255	0
4	43	0	0	0	1	255	0
4	44	0	0	0	1	255	0
4	45	0	0	0	1	255	0
4	46	0	0	0	1	255	0
4	47	0	0	0	1	255	0
4	48	0	0	0	1	255	0
4	49	0	0	0	1	255	0
4	50	0	0	0	1	255	0
4	51	0	0	0	1	255	0
4	52	0	0	0	1	255	0
4	53	0	0	0	1	255	0
4	54	0	0	0	1	255	0
4	55	0	0	0	1	255	0
4	56	0	0	0	1	255	0
4	57	0	0	0	1	255	0
4	58	0	0	0	1	255	0
4	59	0	0	0	1	255	0
4	60	0	0	0	1	255	0
4	61	0	0	0	1	255	0
4	62	0	0	0	1	255	0
4	63	0	0	0	1	255	0
4	64	0	0	0	1	255	0

Pedestrian Detector Diagnotics (MM)6-7

Plan	Detector	Counts	Act	Pres	Multiplier
1	2	0	0	240	1
1	4	0	0	240	1
1	6	0	0	240	1
1	8	0	0	240	1

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Configuration Phase Sequence Page 1

Phase Ring (MM)1-1-1

Phase															
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	1	1	1	2	2	2	2	1	1	2	2	1	1	2	2

Hardware Alternate Sequence Enable: No

Phase Ring Sequence

Sequence	Ring	Phase															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	1	2	1	3	4	9	10	13	14	0	0	0	0	0	0	0	0
1	2	6	5	8	7	11	12	15	16	0	0	0	0	0	0	0	0
2	1	2	1	3	4	10	9	13	14	0	0	0	0	0	0	0	0
2	2	5	6	7	8	11	12	15	16	0	0	0	0	0	0	0	0
3	1	1	2	4	3	9	10	14	13	0	0	0	0	0	0	0	0
3	2	5	6	7	8	11	12	15	16	0	0	0	0	0	0	0	0
4	1	2	1	4	3	10	9	14	13	0	0	0	0	0	0	0	0
4	2	5	6	7	8	11	12	15	16	0	0	0	0	0	0	0	0
5	1	1	2	3	4	9	10	13	14	0	0	0	0	0	0	0	0
5	2	6	5	7	8	12	11	15	16	0	0	0	0	0	0	0	0
6	1	2	1	3	4	10	9	13	14	0	0	0	0	0	0	0	0
6	2	6	5	7	8	12	11	15	16	0	0	0	0	0	0	0	0
7	1	1	2	4	3	9	10	14	13	0	0	0	0	0	0	0	0
7	2	6	5	7	8	12	11	15	16	0	0	0	0	0	0	0	0
8	1	2	1	4	3	10	9	14	13	0	0	0	0	0	0	0	0
8	2	6	5	7	8	12	11	15	16	0	0	0	0	0	0	0	0
9	1	1	2	3	4	9	10	13	14	0	0	0	0	0	0	0	0
9	2	5	6	8	7	11	12	16	15	0	0	0	0	0	0	0	0
10	1	2	1	3	4	10	9	13	14	0	0	0	0	0	0	0	0
10	2	5	6	8	7	11	12	16	15	0	0	0	0	0	0	0	0
11	1	1	2	4	3	9	10	14	13	0	0	0	0	0	0	0	0
11	2	5	6	8	7	11	12	16	15	0	0	0	0	0	0	0	0
12	1	2	1	4	3	10	9	14	13	0	0	0	0	0	0	0	0
12	2	5	6	8	7	11	12	16	15	0	0	0	0	0	0	0	0
13	1	1	2	3	4	9	10	13	14	0	0	0	0	0	0	0	0
13	2	6	5	8	7	12	11	16	15	0	0	0	0	0	0	0	0
14	1	2	1	3	4	10	9	13	14	0	0	0	0	0	0	0	0
14	2	6	5	8	7	12	11	16	15	0	0	0	0	0	0	0	0
15	1	1	2	4	3	9	10	14	13	0	0	0	0	0	0	0	0
15	2	6	5	8	7	12	11	16	15	0	0	0	0	0	0	0	0
16	1	2	1	4	3	10	9	14	13	0	0	0	0	0	0	0	0
16	2	6	5	8	7	12	11	16	15	0	0	0	0	0	0	0	0

Phase Compatibility (MM)1-1-2

Phase 1	Phase 2
1	5
1	6
2	5
2	6
3	7
3	8
4	7
4	8
9	11
9	12
10	11
10	12
13	15
13	16
14	15
14	16

Phase Direction Descriptions

Phase Description

Overlap Direction Descriptions

Overlap Description

Administration (MM)1-7-1

Enable CRC Check: No

CRC: 0000

Request Download Program Data: No

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Configuration Phase Sequence Page 2

In Use(MM)1-2 Phases In Use	Exclusive Ped(MM)1-2 Phase	Backup Prevent(MM)1-1-3 Phase Timing Phase Backup	Simultaneous Gap(MM)1-1-4 Phase	Must Gap with Phase	Disable(MM)1-1-4 Phase
1					
2					
4					
5					
6					
7					
8					

Load Switch Assignments (MMU Channel) (MM)1-3

Phase	Overlap	Type	Dim R	Y	G	D	Auto R	Y	Flash Together
1	1	V				+	Yes		
2	2	V				+	Yes		Yes
3	3	O				+	Yes		
4	4	V				+	Yes		Yes
5	5	V				-	Yes		
6	2	O				-	Yes		Yes
7	4	O				-	Yes		
8	8	V				-	Yes		Yes
9	2	P				+			
10	4	P				+			
11	6	P				-			
12	8	P				-			
13	1	O				+	Yes		
14	5	O				-	Yes		Yes
15	15					+	Yes		
16	16					-	Yes		Yes

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Configuration Port 1 (SDLC)

SDLC Options (MM)1-4-1

Bus Interface Terminal/Facilities

BIU	Term and Facility Enable	Detector Rack Enable
1	Yes	Yes
2	Yes	No
3	No	No
4	No	No
5	No	No
6	No	No
7	No	No
8	No	No

Enable TS2/MMU Type Cabinet: Yes
Enable MMU Extended Status: No
Enable SDLC Stop Time: No
Enable 3 Critical RFE's Lockup: Yes
Diagonstics (Test Fixture) Enable: No

Secondary To Secondary Addressing

ID	Term and Facility Enable	Detector Rack Enable
1	No	No
2	No	No
3	No	No
4	No	No
5	No	No
6	No	No
7	No	No
8	No	No

Secondary To Secondary Addressing MMU: No
Secondary To Secondary Addressing Diagonstics: No

MMU Program (MM)1-4-2

Channel Can Serve with Channel

Channel 1 Channel 2

Color Check Enable (MM)1-4-3
Enable Color Check: No

Color Check Enable

MMU Channel	Green	Yellow	Red
1	Yes	Yes	Yes
2	Yes	Yes	Yes
3	Yes	Yes	Yes
4	Yes	Yes	Yes
5	Yes	Yes	Yes
6	Yes	Yes	Yes
7	Yes	Yes	Yes
8	Yes	Yes	Yes
9	Yes	Yes	Yes
10	Yes	Yes	Yes
11	Yes	Yes	Yes

12	Yes	Yes	Yes
13	Yes	Yes	Yes
14	Yes	Yes	Yes
15	Yes	Yes	Yes
16	Yes	Yes	Yes

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Configuration Communications

Ethernet Port Configuration (MM)1-5-1

Controller IP:	172.16.10.113
Subnet Mask:	255.255.252.0
Default Gateway IP:	172.16.11.254
Server IP:	172.16.50.1

NTCIP Parameters (MM)1-5-5

Backup Time:	0
UDP Port:	501
Ethernet Priority:	1
Port 2 Priority:	2
Port 3A Priority:	3
Port 3B Priority:	4

Note for 2070: Port 2 is C50S, Port 3A is C21S, and Port 3B is C22S

Port Configuration (MM)1-5-2 to 1-5-4

Port	Protocol	Enable	Data Rate	Data Parity Stop	Modem Setup String	User String	Comm Port Address	System Detector 9-1	Telemetry Response Delay	Duplex Half/Full	Flow Control	AB3418 NTCIP Group Address	AB3418 NTCIP Single Flag Enable	RTS to CTS Delay	RTS Turn Off Delay	Droupout Time	Early RTS	FSK Hardware
2	NTCIP	Yes	9600	8 N 1	None		1	0	0.0	Half	Yes	0	No	0.0	0.0	0	No	Yes
3A	ECPIP	No	9600	8 0 1	None		0	0	0.0	Full	No	0	No	0.0	0.0	10	No	Yes
3B	AB3418	No	1200	8 0 1	None		1	0	0.9	Full	Yes	0	No	3.0	2.0	300	No	Yes

ECPIP Parameters (MM)1-5-6

Expanded System Detector Address: 0

Local System Detector

Local System Detector	Number

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Configuration Logging/Display

Enable Event Logs (MM)1-6-1		**Alarm Logs (MM)1-6-1**	**Display Options (MM)1-7-2**
Critical RFE's:	Yes	Enabled: 123456789101112131415 16	Key Click Enable: Yes
3 Critical RFE's in 24 Hours:	Yes		Backlight Enable: Yes
MMU Flash Faults:	Yes		
Local Flash Faults:	Yes		
Non-Critical RFE's (Det/Test):	Yes		
Detector Errors:	Yes		
Coordination Errors:	Yes		
Controller Download:	Yes		
Preempt:	Yes		
TSP:	Yes		
Power On/Off:	Yes		
Low Battery:	Yes		
Access:	Yes		
Data Change:	Yes		

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Logic Processor Page 1

Statement Control (MM)1-8-1

LP	Statement Control
2	E
3	E
4	E

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Logic Processor Page 2

Logic Statements (MM)1-8-2

Statement Number: 1

IF:

	Assignment	#		State
IF	PREEMPT ACTIVE	1	IS	ON

THEN:

Assignment	#	State
IS	9	Sec ON

ELSE:

Assignment	#	State

Statement Number: 2

IF:

	Assignment	#		State
IF	WALK ON PHASE	6	IS	ON
OR	PED CLEAR ON PHASE	6	IS	ON

THEN:

Assignment	#	State
SET OVLP GREEN	5	ON

ELSE:

Assignment	#	State
SET OVLP GREEN	5	OFF

Statement Number: 3

IF:

	Assignment	#		State
IF	WALK ON PHASE	2	IS	ON
OR	PED CLEAR ON PHASE	2	IS	ON

THEN:

Assignment	#	State
SET OVLP GREEN	6	ON

ELSE:

Assignment	#	State
SET OVLP GREEN	6	OFF

Statement Number: 4

IF:

	Assignment	#		State
IF	WALK ON PHASE	4	IS	ON
OR	PED CLEAR ON PHASE	4	IS	ON

THEN:

Assignment	#	State
SET OVLP GREEN	7	ON

ELSE:

Assignment	#	State
SET OVLP GREEN	7	OFF

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Controller Timing Plan (MM)2-1

Plan 1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Min Green	5	35	0	5	3	35	5	5	0	0	0	0	0	0	0	0
BK Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	6	0	6	0	6	0	6	0	0	0	0	0	0	0	0
Walk	0	6	0	6	0	6	0	6	0	0	0	0	0	0	0	0
Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	17	0	32	0	17	0	24	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	5.0	5.0	0.0	2.0	2.0	5.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max 1	12	76	0	15	6	76	15	15	0	0	0	0	0	0	0	0
Max 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Stp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	4.0	4.0	0.0	3.0	4.0	4.0	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPT Duc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Plan 2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Min Green	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
BK Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	10	0	10	0	10	0	10	0	10	0	10	0	10	0	10
Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	16	0	16	0	16	0	16	0	16	0	16	0	16	0	16
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max 1	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
Max 2	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
Max 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Stp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPT Duc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Plan 3

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Min Green	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
BK Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	10	0	10	0	10	0	10	0	10	0	10	0	10	0	10
Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	16	0	16	0	16	0	16	0	16	0	16	0	16	0	16
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max 1	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
Max 2	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
Max 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Stp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPT Duc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Plan 4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Min Green	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
BK Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	10	0	10	0	10	0	10	0	10	0	10	0	10	0	10
Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	16	0	16	0	16	0	16	0	16	0	16	0	16	0	16
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max 1	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
Max 2	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
Max 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Stp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPT Duc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Louisville - S Boulder Rd & Main

Controller Overlaps

Vehicle Overlaps (MM)2-2

Overlap	Type	Lag Green	Yellow	Red	Advance Green
A	Normal	0.0	0.0	0.0	0.0
B	Normal	0.0	0.0	0.0	0.0
C	Normal	0.0	0.0	0.0	0.0
D	Normal	0.0	0.0	0.0	0.0

Phases

Overlap	Phase	Included	Protect	Modifier	Ped Protect	Not Overlap	Lag X Phase	Lag 2 Phase	Flash Green
A	1	Yes	No	No	No	No	No	No	0
A	6	Yes	No	No	No	No	No	No	0
B	6	Yes	No	No	No	No	No	No	0
B	7	Yes	No	No	No	No	No	No	0
C	7	Yes	No	No	No	No	No	No	0
C	8	Yes	No	No	No	No	No	No	0
D	1	Yes	No	No	No	No	No	No	0
D	2	Yes	No	No	No	No	No	No	0
D	7	Yes	No	No	No	No	No	No	0

Guaranteed Minimum Time Data (MM) 2-4
Phase Time Data

Phase	Min Green	Walk	Ped Clear	Yellow	Red Clear	Overlap Green
A01	5	0	7	3.0	0.0	5
B02	5	0	7	3.0	0.0	5
C03	5	0	7	3.0	0.0	5
D04	5	0	7	3.0	0.0	5
E05	5	0	7	3.0	0.0	5
F06	5	0	7	3.0	0.0	5
G07	5	0	7	3.0	0.0	5
H08	5	0	7	3.0	0.0	5
I09	5	0	7	3.0	0.0	5
J10	5	0	7	3.0	0.0	5
K11	5	0	7	3.0	0.0	5
L12	5	0	7	3.0	0.0	5
M13	5	0	7	3.0	0.0	5
N14	5	0	7	3.0	0.0	5
O15	5	0	7	3.0	0.0	5
P16	5	0	7	3.0	0.0	5

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Controller Pedestrian Overlaps
Pedestrian Overlaps (MM) 2-3
Included Phase Ped Overlap

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Controller Start/Fash (MM) 2-5

Startup

Phase	Phase Setting
2	Y
6	Y

Overlap
A
B
C
D

Flash > Mon:	No
Flash Time:	0
All Red:	0
Power Start Sequence:	1

Automatic Flash

Entry Phase
2
6

Exit Phase
2
6

Overlap Exit
A
B
C
D

Flash > Mon:	No
Exit Flash Interval:	W
Minimum Auto Flash:	8
Minimumin Recall:	No
Cycle Through Phase:	No

Louisville - S Boulder Rd & Main

Controller Options

Controller Options (MM)2-6-1

Phase	Flashing Green Phase	Guaranteed Passage	Non Act 1	Non Act 2	Dual Entry	Conditional Service	Conditional Reservice	Ped Reservice	Rest In Walk	Flashing Walk	Ped Clear Yellow	Ped Clear Red	IGRN + Veh Ext
2	No	No	Yes	No	Yes	No	No	No	Yes	No	No	No	No
4	No	No	No	Yes	Yes	No	No	No	No	No	No	No	No
6	No	No	Yes	No	Yes	No	No	No	Yes	No	No	No	No
8	No	No	No	Yes	Yes	No	No	No	No	No	No	No	No

Ped Clear Protect: Off Red Revert: 2.0

Act Pre-Time (MM)2-7

Pre-Time Mode Enable: No Free Input Enables Pre-Timed: Yes

Pre-Timed Phase

Phase Recall Options (MM)2-8

Plan	Phase	Lock Detector	Vehicle Recall	Ped Recall	Max Recall	Soft Recall	No Rest	AI Calc
1	2	No	No	No	Yes	No	No	No
1	6	No	No	No	Yes	No	No	No
2	1	Yes	No	No	No	No	No	No
2	2	Yes	No	No	No	No	No	No
2	3	Yes	No	No	No	No	No	No
2	4	Yes	No	No	No	No	No	No
2	5	Yes	No	No	No	No	No	No
2	6	Yes	No	No	No	No	No	No
2	7	Yes	No	No	No	No	No	No
2	8	Yes	No	No	No	No	No	No
2	9	Yes	No	No	No	No	No	No
2	10	Yes	No	No	No	No	No	No
2	11	Yes	No	No	No	No	No	No
2	12	Yes	No	No	No	No	No	No
2	13	Yes	No	No	No	No	No	No
2	14	Yes	No	No	No	No	No	No
2	15	Yes	No	No	No	No	No	No
2	16	Yes	No	No	No	No	No	No
3	1	Yes	No	No	No	No	No	No
3	2	Yes	No	No	No	No	No	No
3	3	Yes	No	No	No	No	No	No
3	4	Yes	No	No	No	No	No	No
3	5	Yes	No	No	No	No	No	No
3	6	Yes	No	No	No	No	No	No
3	7	Yes	No	No	No	No	No	No
3	8	Yes	No	No	No	No	No	No
3	9	Yes	No	No	No	No	No	No
3	10	Yes	No	No	No	No	No	No
3	11	Yes	No	No	No	No	No	No
3	12	Yes	No	No	No	No	No	No
3	13	Yes	No	No	No	No	No	No
3	14	Yes	No	No	No	No	No	No
3	15	Yes	No	No	No	No	No	No
3	16	Yes	No	No	No	No	No	No
4	1	Yes	No	No	No	No	No	No
4	2	Yes	No	No	No	No	No	No
4	3	Yes	No	No	No	No	No	No

4	4	Yes	No	No	No	No	No	No
4	5	Yes	No	No	No	No	No	No
4	6	Yes	No	No	No	No	No	No
4	7	Yes	No	No	No	No	No	No
4	8	Yes	No	No	No	No	No	No
4	9	Yes	No	No	No	No	No	No
4	10	Yes	No	No	No	No	No	No
4	11	Yes	No	No	No	No	No	No
4	12	Yes	No	No	No	No	No	No
4	13	Yes	No	No	No	No	No	No
4	14	Yes	No	No	No	No	No	No
4	15	Yes	No	No	No	No	No	No
4	16	Yes	No	No	No	No	No	No

Louisville - S Boulder Rd & Main

Coordination Options
Coordination Options (MM)3-1

Manual Pattern:	Auto
ECPI Coord:	Yes
System Source:	TBC
System Format:	STD
Splits In:	Seconds
Offsets In:	Seconds
Transition:	Smooth
Max Select:	MAXINH
Dwell/Add Time:	0
Dly Coord Wz-Lz:	No
Force Off:	Float
Offset Reference:	Yell
Use Ped Time:	Yes
Ped Recall:	No
Ped Resv:	No
Local Zero Ovrd:	No
Fo Add Ini Green:	No
Re-sync Count:	0
Multisync:	No

Split Demand (MM)3-5

Demand 1 Phase	Demand 2 Phase

Demand	Detector	Call Time	Cycle Count

Auto Perm Minimum Green (Seconds) (MM)3-4

Phase	Min Green

Louisville - S Boulder Rd & Main

Coordination Pattern Data

Pattern Data (MM)3-2

Pattern	Split Pattern	TS2	Cycle	Std(COS)	Offset Value	Splits In	Offsets In	Actuated Coord
1	1	0-1	120	111	38	Seconds	Seconds	Yes
2	2	0-2	100	211	76	Seconds	Seconds	Yes
3	3	0-3	120	311	15	Seconds	Seconds	Yes

Pattern	Timing Plan	Actuated Walk Rest	Sequence	Phase Reservice	Action Plan	XArt Pattern	Vehicle Perm 1	Vehicle Perm 2	Vehicle Perm 3
1	1	No	1	No	1	0	0	0	0
2	1	No	1	No	2	0	0	0	0
3	1	No	1	No	3	0	0	0	0

Pattern	Ring Split Ext 1	Ring Split Ext 2	Ring Split Ext 3	Ring Split Ext 4	Split Demand Pattern 1	Split Demand Pattern 2	Ring Displ 2	Ring Displ 3	Ring Displ 4
1	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0

Split Preference Phases

Pattern	Phase	Preference 1	Preference 2

Special Functions

Pattern	Function Output

Split Pattern Data (MM)3-3

Coord Phases

Split Pattern	Phase	Split
1	1	14
1	2	67
1	4	39
1	5	14
1	6	67
1	7	18
1	8	21
2	1	12
2	2	53
2	4	35
2	5	12
2	6	53
2	7	17
2	8	18
3	1	14
3	2	67
3	4	39
3	5	14
3	6	67
3	7	18
3	8	21

Split/Modes

Split Pattern	Mode	Phase 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	Coord		X				X										
1	Vehicle Recall	X	X				X										
2	Coord		X				X										
2	Vehicle Recall	X	X				X										
3	Coord		X				X										
3	Vehicle Recall	X	X				X										

AM

Saturday

PM

Louisville - S Boulder Rd & Main

Preemptor Preempt Plan (MM)4-1

Preempt Phases

Preempt	Phase	Track Clear Veh	Dwell Veh	Dwell Ped	Cycling Veh	Cycling Ped	Exit Phase	Exit Calls	Special Function
1	1	Yes	No	No	No	No	No	No	No
1	2	No	No	No	No	No	Yes	Yes	No
1	5	No	No	No	Yes	No	No	No	No
1	6	Yes	No	No	No	No	Yes	Yes	No
1	7	No	No	No	Yes	No	No	No	No
1	8	No	No	No	Yes	No	No	No	No
3	2	No	Yes	No	No	No	No	No	No
3	4	No	No	No	No	No	Yes	No	No
3	5	No	Yes	No	No	No	No	No	No
3	8	No	No	No	No	No	Yes	No	No
4	2	No	No	No	No	No	Yes	No	No
4	6	No	No	No	No	No	Yes	No	No
4	8	No	Yes	No	No	No	No	No	No
5	1	No	Yes	No	No	No	No	No	No
5	4	No	No	No	No	No	Yes	No	No
5	6	No	Yes	No	No	No	No	No	No
5	8	No	No	No	No	No	Yes	No	No
6	2	No	No	No	No	No	Yes	No	No
6	4	No	Yes	No	No	No	No	No	No
6	6	No	No	No	No	No	Yes	No	No
6	7	No	Yes	No	No	No	No	No	No

Preempt Overlaps

Preempt	Overlap	Track Clear	Enable Trailing	Dwell Overlap	Cycling Overlap
1	A	Yes	No	No	No
1	B	Yes	No	No	Yes
1	C	No	No	No	Yes
1	D	No	No	No	No
1	E	No	No	No	No
1	F	No	No	No	No
1	G	No	No	No	No
1	H	No	No	No	No
1	I	No	No	No	No
1	J	No	No	No	No
1	K	No	No	No	No
1	L	No	No	No	No
1	M	No	No	No	No
1	N	No	No	No	No
1	O	No	No	No	No
1	P	No	No	No	No
3	A	No	No	No	No
3	B	No	No	No	No
3	C	No	No	No	No
3	D	No	No	Yes	No
3	E	No	No	No	No
3	F	No	No	No	No
3	G	No	No	No	No
3	H	No	No	No	No
3	I	No	No	No	No
3	J	No	No	No	No
3	K	No	No	No	No

3	L	No	No	No	No
3	M	No	No	No	No
3	N	No	No	No	No
3	O	No	No	No	No
3	P	No	No	No	No
4	A	No	No	No	No
4	B	No	No	No	No
4	C	No	No	No	No
4	D	No	No	No	No
4	E	No	No	No	No
4	F	No	No	No	No
4	G	No	No	No	No
4	H	No	No	No	No
4	I	No	No	No	No
4	J	No	No	No	No
4	K	No	No	No	No
4	L	No	No	No	No
4	M	No	No	No	No
4	N	No	No	No	No
4	O	No	No	No	No
4	P	No	No	No	No
5	A	No	No	Yes	No
5	B	No	No	Yes	No
5	C	No	No	No	No
5	D	No	No	No	No
5	E	No	No	No	No
5	F	No	No	No	No
5	G	No	No	No	No
5	H	No	No	No	No
5	I	No	No	No	No
5	J	No	No	No	No
5	K	No	No	No	No
5	L	No	No	No	No
5	M	No	No	No	No
5	N	No	No	No	No
5	O	No	No	No	No
5	P	No	No	No	No
6	A	No	No	No	No
6	B	No	No	Yes	No
6	C	No	No	Yes	No
6	D	No	No	No	No
6	E	No	No	No	No
6	F	No	No	No	No
6	G	No	No	No	No
6	H	No	No	No	No
6	I	No	No	No	No
6	J	No	No	No	No
6	K	No	No	No	No
6	L	No	No	No	No
6	M	No	No	No	No
6	N	No	No	No	No
6	O	No	No	No	No
6	P	No	No	No	No

Preempt	Enable	Preempt Override	Interlock Enable	Detector Lock	Delay	Inhibit	Override Flash	Duration	CLR > GRN
1	Standard	Yes	No	Yes	0	0	No	10	No
2	No	Yes	No	Yes	0	0	No	0	No
3	Standard	No	No	Yes	0	0	No	10	No

4	Standard	No	No	Yes	0	0	No	10	No
5	Standard	No	No	Yes	0	0	No	10	No
6	Standard	No	No	Yes	0	0	No	10	No
7	No	Yes	No	Yes	0	0	No	0	No
8	No	Yes	No	Yes	0	0	No	0	No
9	No	Yes	No	Yes	0	0	No	0	No
10	No	Yes	No	Yes	0	0	No	0	No

Preempt	Term Overlap Asap	PC Through Yellow	Terminate Phase	Ped Dark	Track Clearance Re-service	Dwell Flash	Linked Pmt	Flash Exit Color	Preempt To Coord
1	No	Yes	No	No	No	Off	0	Green	No
2	No	No	No	No	No	Off	0	Green	No
3	No	Yes	No	No	No	Off	0	Green	No
4	No	Yes	No	No	No	Off	0	Green	No
5	No	Yes	No	No	No	Off	0	Green	No
6	No	Yes	No	No	No	Off	0	Green	No
7	No	No	No	No	No	Off	0	Green	No
8	No	No	No	No	No	Off	0	Green	No
9	No	No	No	No	No	Off	0	Green	No
10	No	No	No	No	No	Off	0	Green	No

Preempt	Exit Timing Plan	Reservice	Free During Pmt Ring 1	Free During Pmt Ring 2	Free During Pmt Ring 3	Free During Pmt Ring 4
1	0	0	No	No	No	No
2	0	0	No	No	No	No
3	0	0	No	No	No	No
4	0	0	No	No	No	No
5	0	0	No	No	No	No
6	0	0	No	No	No	No
7	0	0	No	No	No	No
8	0	0	No	No	No	No
9	0	0	No	No	No	No
10	0	0	No	No	No	No

Preempt	Entrance Walk	Entrance Ped Clear	Entrance Min Green	Entrance Yellow	Entrance Red	Track Clear Min Green	Gate Down Ext Green	Gate Down Max Green	Track Clear Yellow	Track Clear Red
1	0	5	5	4.0	1.0	6	0	0	4.0	1.0
2	0	255	5	4.0	1.0	0	0	0	4.0	1.0
3	0	5	5	4.0	1.0	0	0	0	4.0	1.0
4	0	6	5	4.0	1.0	0	0	0	4.0	1.0
5	0	6	5	4.0	1.0	0	0	0	4.0	1.0
6	0	6	5	4.0	1.0	0	0	0	4.0	1.0
7	0	255	5	4.0	1.0	0	0	0	4.0	1.0
8	0	255	5	4.0	1.0	0	0	0	4.0	1.0
9	0	255	5	4.0	1.0	0	0	0	4.0	1.0
10	0	255	5	4.0	1.0	0	0	0	4.0	1.0

Preempt	Min Dwell Time	Extend Preempt Input Time	Max Preempt Call Time	Exit Yellow Time	Exit Red Time	Preempt Active Out	Preempt Active Dwell	Other Priority Preempt	Non-Priority Preempt
1	0	0.0	0	4.0	1.0	On	No	Off	Off
2	0	0.0	0	4.0	1.0	On	No	Off	Off
3	0	0.0	120	4.0	1.0	On	No	Off	Off
4	0	0.0	120	4.0	1.0	On	No	Off	Off
5	0	0.0	120	4.0	1.0	On	No	Off	Off
6	0	0.0	120	4.0	1.0	On	No	Off	Off
7	0	0.0	0	4.0	1.0	On	No	Off	Off
8	0	0.0	0	4.0	1.0	On	No	Off	Off
9	0	0.0	0	4.0	1.0	On	No	Off	Off
10	0	0.0	0	4.0	1.0	On	No	Off	Off

Louisville - S Boulder Rd & Main

Preemptor Preempt Filtering

Enable Preempt Filtering and TSP/SCP (MM)4-2

Input	Solid	Pulsing
3	Preemption -3	Preemption -7
4	Preemption -4	Preemption -8
5	Preemption -5	Preemption -9
6	Preemption -6	Preemption -10

Louisville - S Boulder Rd & Main

Time Base Clock/Calendar

Clock/Calendar Options (MM)5-1

Enable Action Plan:	0
Sync Reference Time:	12:00 AM
Sync Reference:	Reference Time
Day Light Savings:	No
Time Reset Input Set Time:	3:30:00
Standard Time From GMT:	0

Louisville - S Boulder Rd & Main

Time Base Action Plan

Action Plan (MM)5-2

Plan	Pattern	Veh Det Plan	Flash	Red Reset	Controller Seq	Timing Plan	System Override	Detector Log	Veh Det Diag Plan	Ped Det Diag Plan	Dimming Enable
1	1	1	No	No	1	1	Yes	None	0	0	No
2	2	1	No	No	1	1	Yes	None	0	0	No
3	3	1	No	No	1	1	Yes	None	0	0	No
20	254 - FREE	1	No	No	1	1	Yes	None	0	0	No
100	Auto	2	No	No	1	1	Yes	None	0	0	No

Action Plan Phases

Plan	Phase	Red Rcl	Walk 2	Vex 2	Veh Rcl	Max Rcl	Max 2	Max 3	CS Inhibit	Omit

Acion Plan Special Functions

Plan	Function

Action Plan Auxiliary Functions

Plan	Function

Logic Statement Control

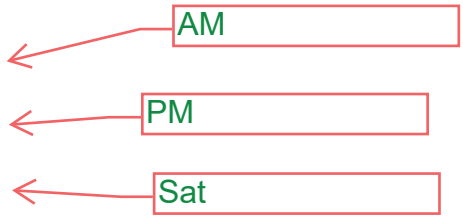
Plan	LP	Statement Control
1	1	E
2	1	E
3	1	E
20	1	E
100	1	E

Louisville - S Boulder Rd & Main

Time Base Day Plan/Schedule

Day Plan (MM)5-3

Plan	Event	Action Plan	Start Time
1	1	1	6:30 AM
1	2	2	9:30 AM
1	3	3	3:00 PM
1	4	20	7:30 PM
2	1	20	8:00 AM



Schedule (MM)5-4

Schedule Number	Day Plan Number	Months	Days of Week	Days of Month
1	1	Jan, Feb, Mar, Apr, May, Jun, Jul, Aug, Sept, Oct, Nov, Dec	Mon, Tues, Wed, Thurs, Fri	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31
2	2	Jan, Feb, Mar, Apr, May, Jun, Jul, Aug, Sept, Oct, Nov, Dec	Sun, Sat	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31

Louisville - S Boulder Rd & Main

Time Base Exceptions

Exception Day Program (MM)5-5

Day	Fixed/Float	Month	Day of Week/Month	Week of Month/Year	Day Plan
1	FLOAT	0	0	0	0
2	FLOAT	0	0	0	0
3	FLOAT	0	0	0	0
4	FLOAT	0	0	0	0
5	FLOAT	0	0	0	0
6	FLOAT	0	0	0	0
7	FLOAT	0	0	0	0
8	FLOAT	0	0	0	0
9	FLOAT	0	0	0	0
10	FLOAT	0	0	0	0
11	FLOAT	0	0	0	0
12	FLOAT	0	0	0	0
13	FLOAT	0	0	0	0
14	FLOAT	0	0	0	0
15	FLOAT	0	0	0	0
16	FLOAT	0	0	0	0
17	FLOAT	0	0	0	0
18	FLOAT	0	0	0	0
19	FLOAT	0	0	0	0
20	FLOAT	0	0	0	0
21	FLOAT	0	0	0	0
22	FLOAT	0	0	0	0
23	FLOAT	0	0	0	0
24	FLOAT	0	0	0	0
25	FLOAT	0	0	0	0
26	FLOAT	0	0	0	0
27	FLOAT	0	0	0	0
28	FLOAT	0	0	0	0
29	FLOAT	0	0	0	0
30	FLOAT	0	0	0	0
31	FLOAT	0	0	0	0
32	FLOAT	0	0	0	0
33	FLOAT	0	0	0	0
34	FLOAT	0	0	0	0
35	FLOAT	0	0	0	0
36	FLOAT	0	0	0	0

Louisville - S Boulder Rd & Main

Detectors

Detectors Page 1

Vehicle Detectors Setup (MM)6-1

Vehicle Plan	Detector Number	Called

Vehicle Detector Setup (MM)6-2 continued

Detector Number	ECPI	TS2 Detector	Detector Description
13	0	No	
14	0	No	
15	0	No	
16	0	No	

Vehicle Detector Setup (MM)6-2 continued

Detector Number	Vehicle Plan	Assigned Phase	Switch Phase	Extend Time	Delay Time	Queue Limit	Yellow Lock	Added Option	Call Option	Passage Option	Queue Option	NTCIP Occupancy	NTCIP Volume	ECPI Log	Red Lock
1	1	1	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
1	2	1	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
1	3	1	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
1	4	1	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
2	1	2	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
2	2	2	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
2	3	2	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
2	4	2	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
3	1	3	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
3	2	3	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
3	3	3	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
3	4	3	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
4	1	4	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
4	2	4	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
4	3	4	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
4	4	4	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
5	1	5	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
5	2	5	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
5	3	5	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
5	4	5	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
6	1	6	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
6	2	6	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
6	3	6	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
6	4	6	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
7	1	7	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
7	2	7	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
7	3	7	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
7	4	7	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
8	1	8	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
8	2	8	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
8	3	8	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
8	4	8	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
9	1	9	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
9	2	9	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
9	3	9	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
9	4	9	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
10	1	10	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
10	2	7	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
10	3	10	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
10	4	10	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
11	2	11	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
11	3	11	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
11	4	11	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
12	2	12	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
12	3	12	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
12	4	12	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
13	2	13	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
13	3	13	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No

13	4	13	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
14	2	14	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
14	3	14	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
14	4	14	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
15	2	15	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
15	3	15	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
15	4	15	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
16	2	16	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
16	3	16	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
16	4	16	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No

Ped and System Detector Options
(MM)6-4

Phase Ped Detector

Local Ped Detector	Number
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
13	13
14	14
15	15
16	16

Local System Detector

Local System Detector	Number

Louisville - S Boulder Rd & Main

Detectors

Detectors Page 2

Log - Speed Detector Setup (MM)6-5

NTCIP Log Period: 60	ECPI Log Period: TBAP	Length Unit: Inch

Speed Detector	Local Detector	One/Two Detector	Vehicle Length	Trap Length	Enable Log
1	0	1	0	0	No
2	0	1	0	0	No
3	0	1	0	0	No
4	0	1	0	0	No
5	0	1	0	0	No
6	0	1	0	0	No
7	0	1	0	0	No
8	0	1	0	0	No
9	0	1	0	0	No
10	0	1	0	0	No
11	0	1	0	0	No
12	0	1	0	0	No
13	0	1	0	0	No
14	0	1	0	0	No
15	0	1	0	0	No
16	0	1	0	0	No

Vehicle Detector Diagnostics (MM)6-6

Plan	Detector	Counts	Act	Pres	Multiplier	Failed Time	Failed Call Delay
1	1	0	0	0	1	255	0
1	2	0	0	0	1	255	0
1	3	0	0	0	1	255	0
1	4	0	0	0	1	255	0
1	5	0	0	0	1	255	0
1	6	0	0	0	1	255	0
1	7	0	0	0	1	255	0
1	8	0	0	0	1	255	0
1	9	0	0	0	1	255	0
1	10	0	0	0	1	255	0
1	11	0	0	0	1	255	0
1	12	0	0	0	1	255	0
1	13	0	0	0	1	255	0
1	14	0	0	0	1	255	0
1	15	0	0	0	1	255	0
1	16	0	0	0	1	255	0
1	17	0	0	0	1	255	0
1	18	0	0	0	1	255	0
1	19	0	0	0	1	255	0
1	20	0	0	0	1	255	0
1	21	0	0	0	1	255	0
1	22	0	0	0	1	255	0
1	23	0	0	0	1	255	0
1	24	0	0	0	1	255	0
1	25	0	0	0	1	255	0
1	26	0	0	0	1	255	0
1	27	0	0	0	1	255	0
1	28	0	0	0	1	255	0

1	29	0	0	0	1	255	0
1	30	0	0	0	1	255	0
1	31	0	0	0	1	255	0
1	32	0	0	0	1	255	0
1	33	0	0	0	1	255	0
1	34	0	0	0	1	255	0
1	35	0	0	0	1	255	0
1	36	0	0	0	1	255	0
1	37	0	0	0	1	255	0
1	38	0	0	0	1	255	0
1	39	0	0	0	1	255	0
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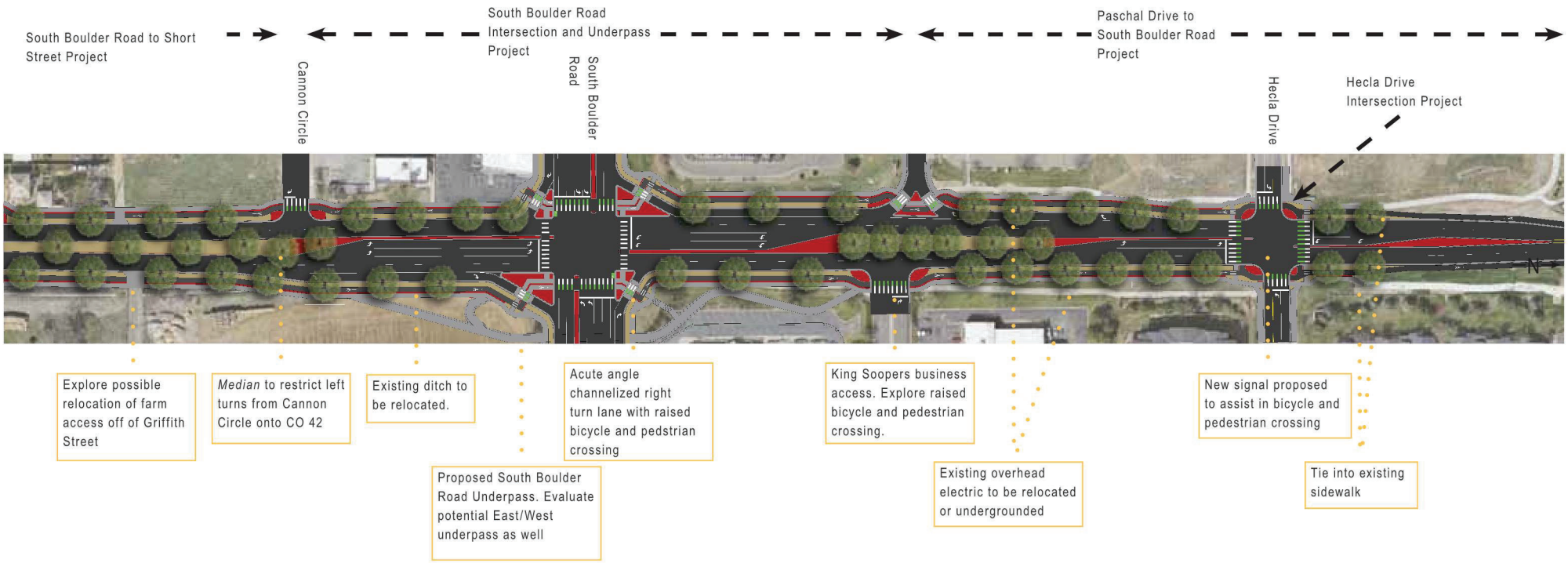
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Pedestrian Detector Diagnotics (MM)6-7

Plan	Detector	Counts	Act	Pres	Multiplier

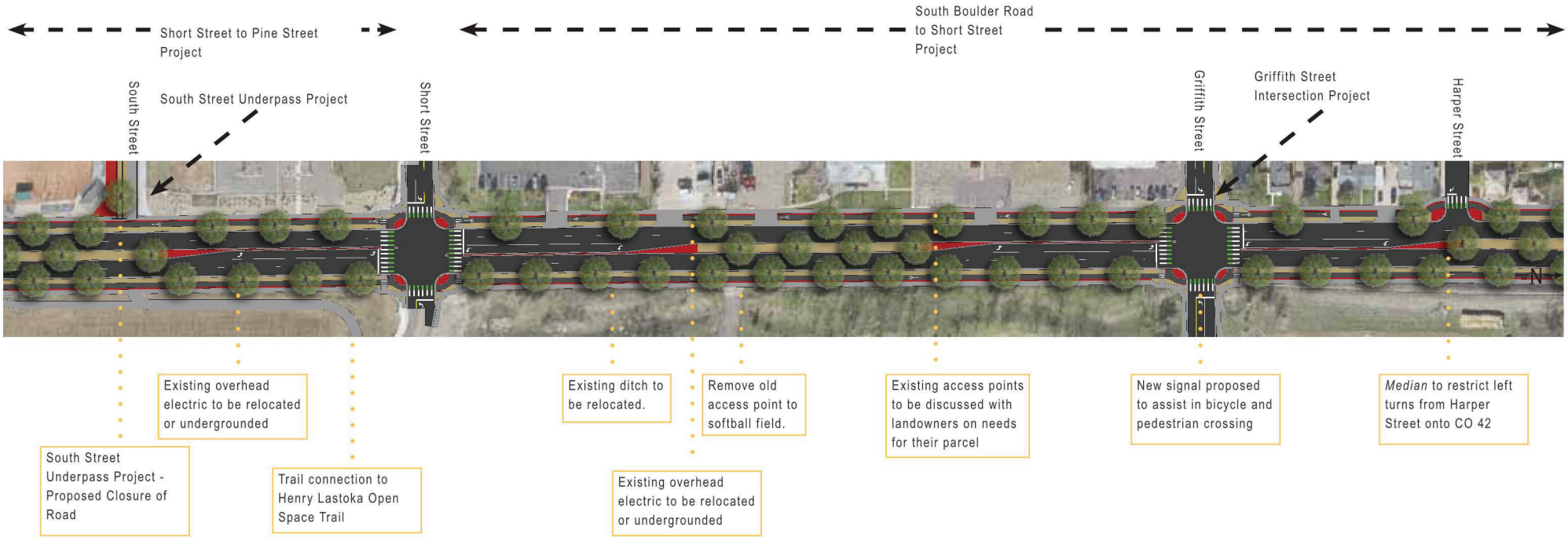
Appendix G: *Future 42* Excerpt of Preferred South Boulder Road and SH 42 Design



Notes for this section:

- South Boulder Road Underpass concept from Summer 2021 is proposed in this section. Explore possiblity of adding east/west underpass further in design.
- Existing ditches to be coordinated with Boulder County Open Space and leasee to relocate in a functional location for better irrigation usage.
- Explore usage of raised crossings for business access points in further design based upon delivery vehicle routes.

Appendix H: *Future 42* Excerpt of Preferred SH 42 and Griffith Street Design



Notes for this section:

- South Street Underpass Concept from Summer 2021 is proposed in this section.
- Existing ditches to be coordinated with Boulder County Open Space and leasee to relocate in a functional location for better irrigation usage.
- Access points anticipated to remain in place, but could be relocated/eliminated based upon conversations with landowners.

Appendix I: *City of Louisville Transportation Master Plan* Excerpt of South Boulder Road Corridor Improvements and Commercial Driveway

PROJECT 1: CORRIDOR IMPROVEMENTS, CONT.

CP5: SOUTH BOULDER ROAD STUDY

Summary

South Boulder Road is a key regional and local corridor that serves neighborhoods and many office and commercial developments along the corridor. Current issues include congestion, safety concerns at intersections, and an uncomfortable bicycle lane.

The City should complete a study in partnership with Boulder County and the Cities of Lafayette and Boulder to develop long-term design and operations for the corridor with a focus on accommodation of improved transit service and multi-modal access and safety improvements.

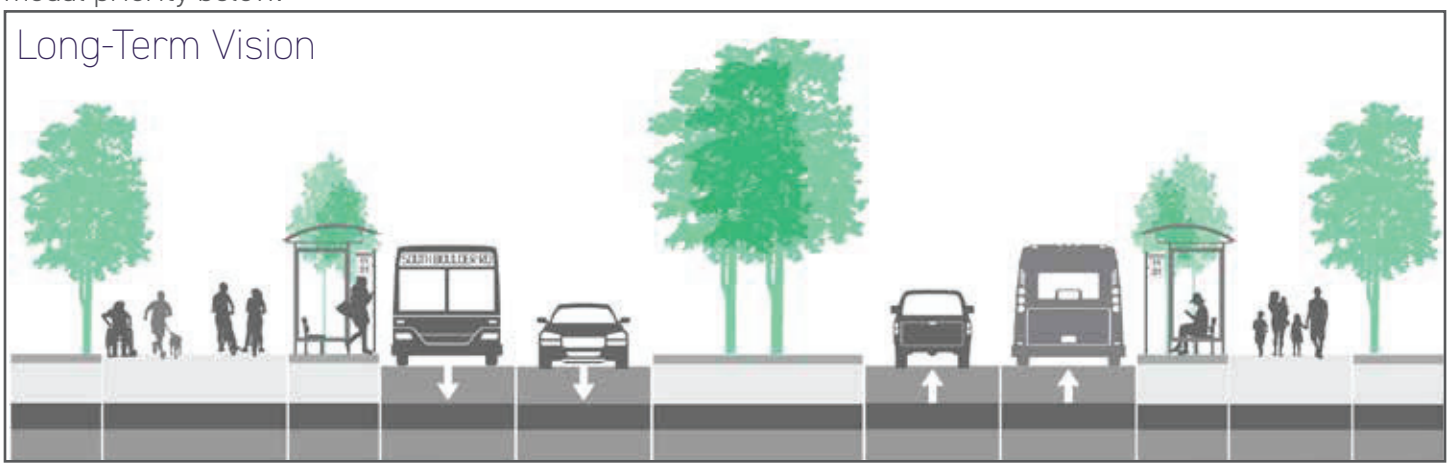
Key Considerations

- South Boulder Road is identified in the Northwest Area Mobility Study (NAMS) for bus rapid transit. This project will evaluate the best options to accommodate bus service within existing right of way.
- Improvements to bus stops and frequency of transit service can help improve ridership and reduce congestion.
- Eliminating the right-turn lanes along the road would have minimal impact on vehicle mobility, while freeing space for sidewalks and a bikeway along the corridor, and decreasing crossing distances for people walking.
- The community desires additional underpasses along the corridor and several at-grade crossing improvements are currently planned as short-term high-priority projects.

Implementation

The City should partner with Lafayette, Boulder County and City of Boulder on a regional study that focuses on how to prioritize transit in the corridor. The study should also focus on preferred allocation of the right-of-way and regional consistency along the corridor for all modes of travel. Funding sources for final implementation will likely include multiple sources.

A vision for the corridor that can be utilized for future consideration and project development is provided in the example cross-section and modal priority below.



Appendix J: *Louisville South Boulder Road Connectivity Plan* Excerpt of South Boulder Road and Main StreetFuture Pedestrian Underpass

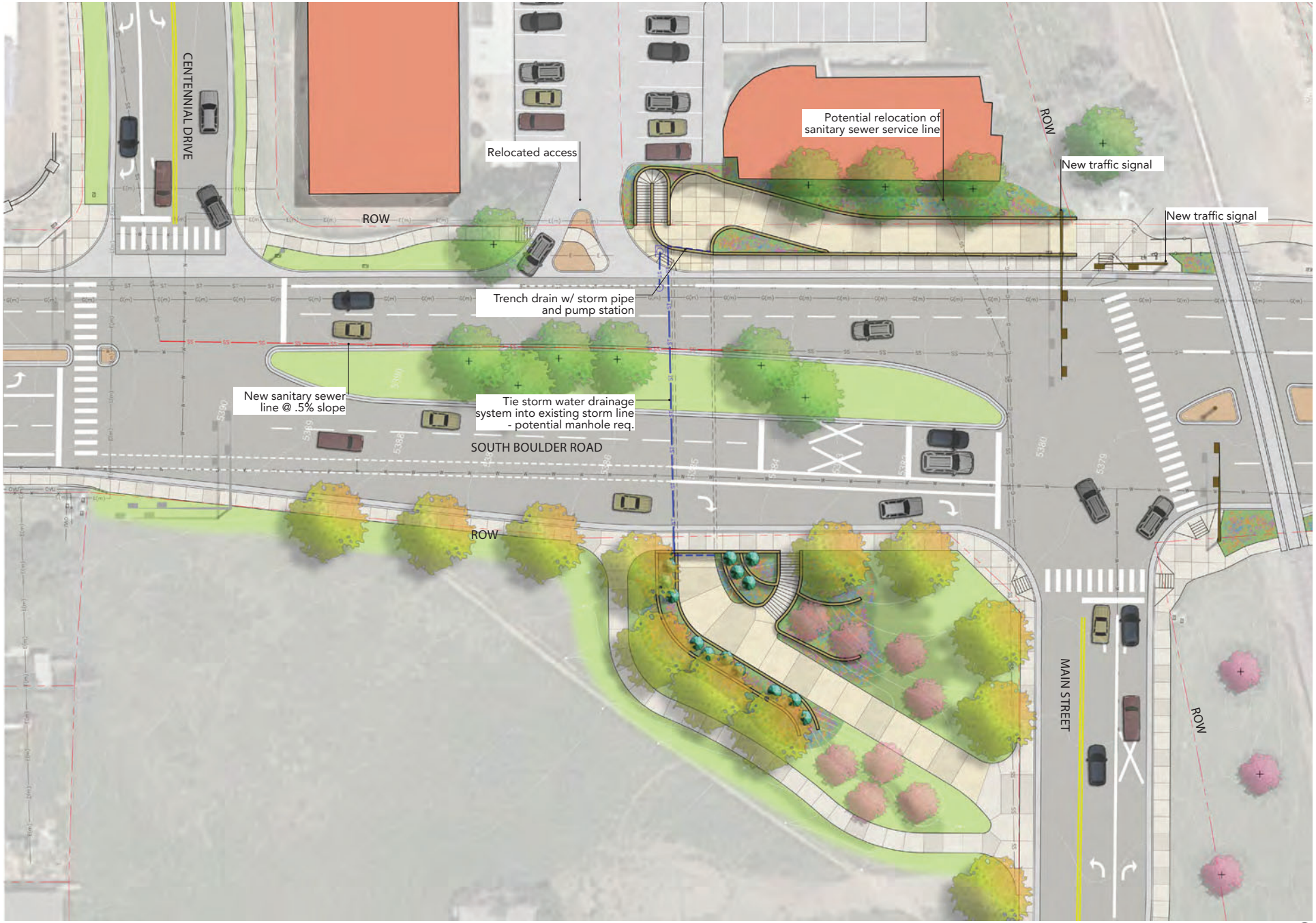
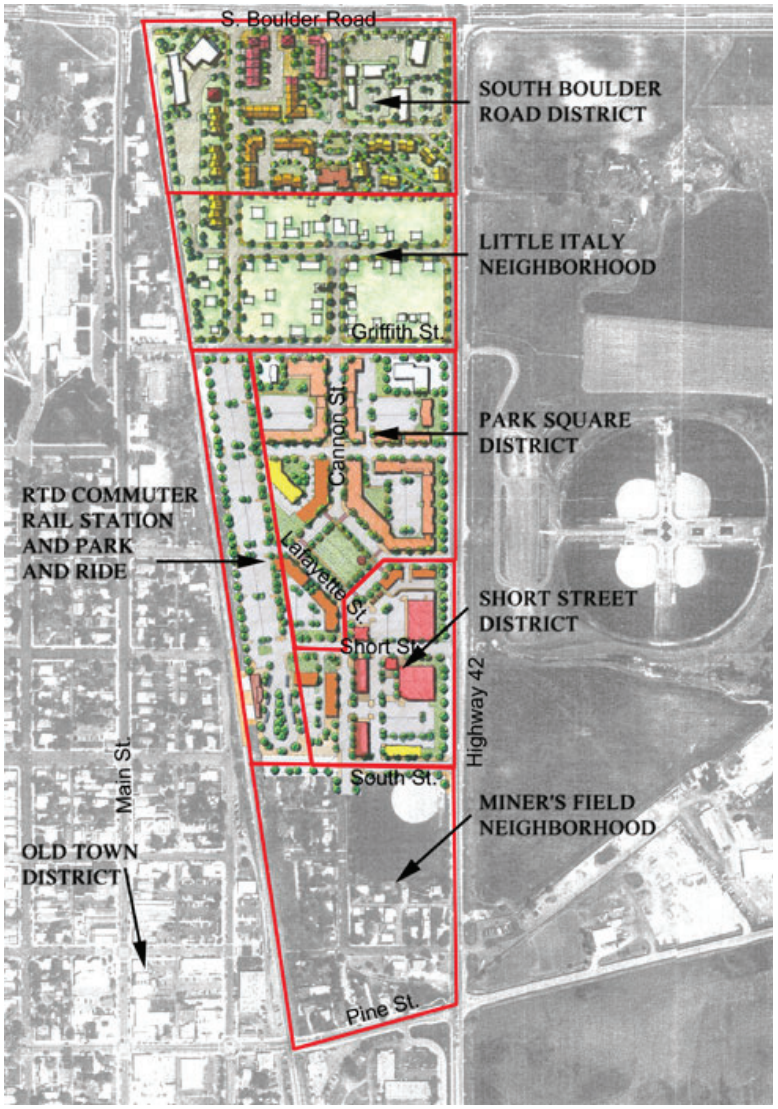


Figure 2: Main Street Undercrossing Plan Rendering

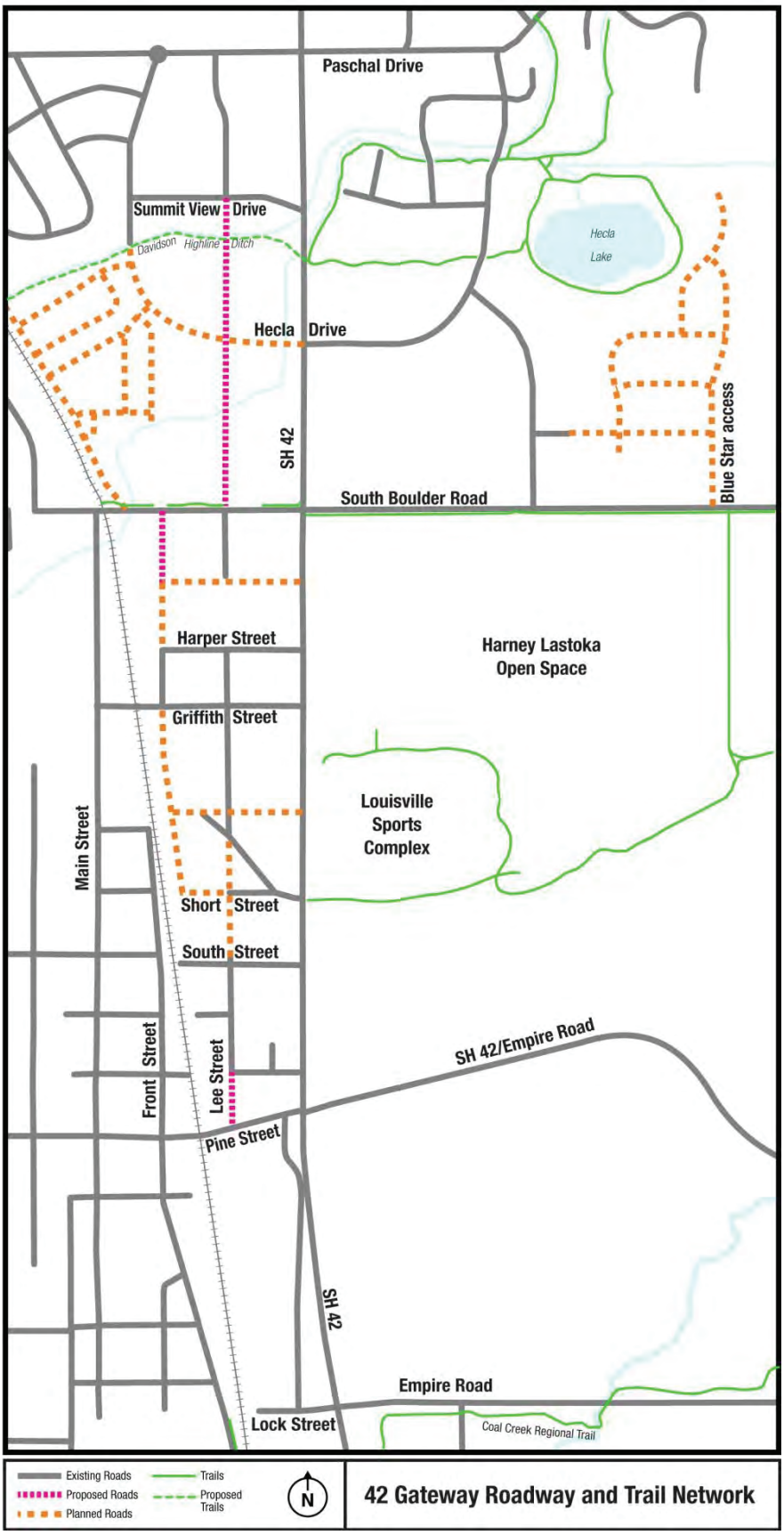
Appendix K: The Highway 42 Revitalization Area Framework Plan Excerpt of Framework Plan



III. The Framework Plan

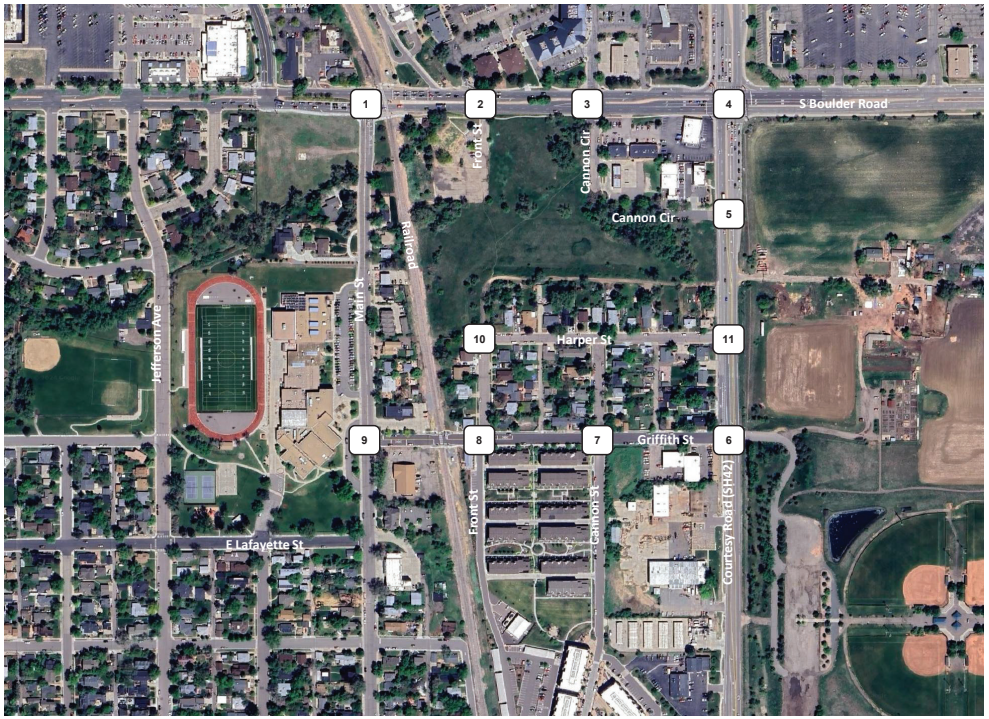
Appendix L: *42 Gateway Alternative Analysis Report*
Excerpt of Future Roadway Network

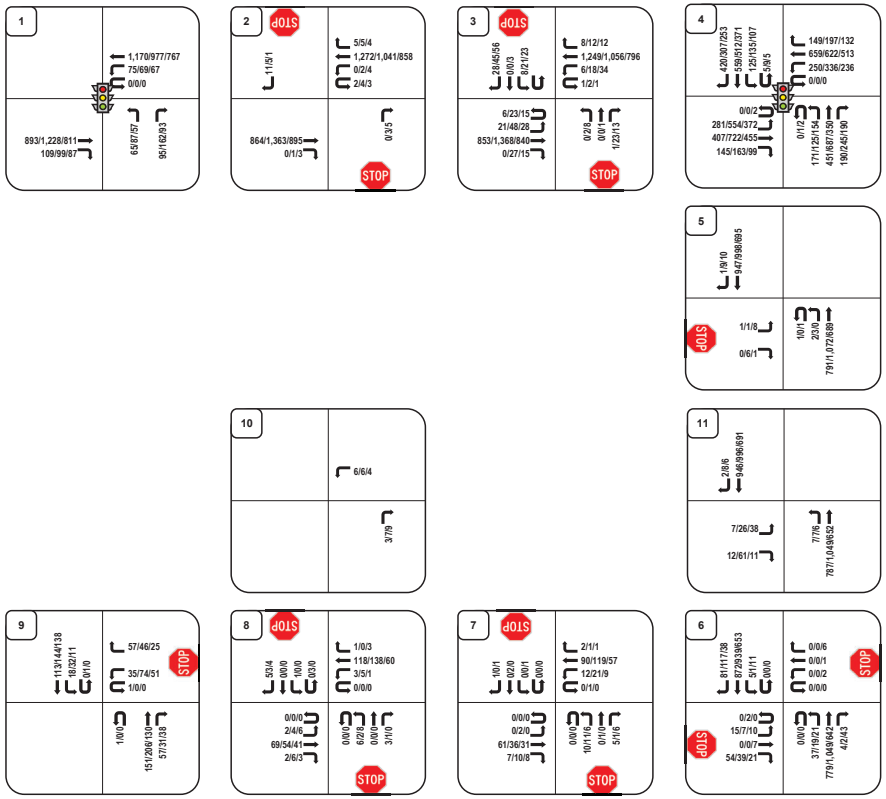
Figure 9. Future Roadway Network



Appendix M: Additional Figures

Figure AP01: Year 2024 Existing Traffic





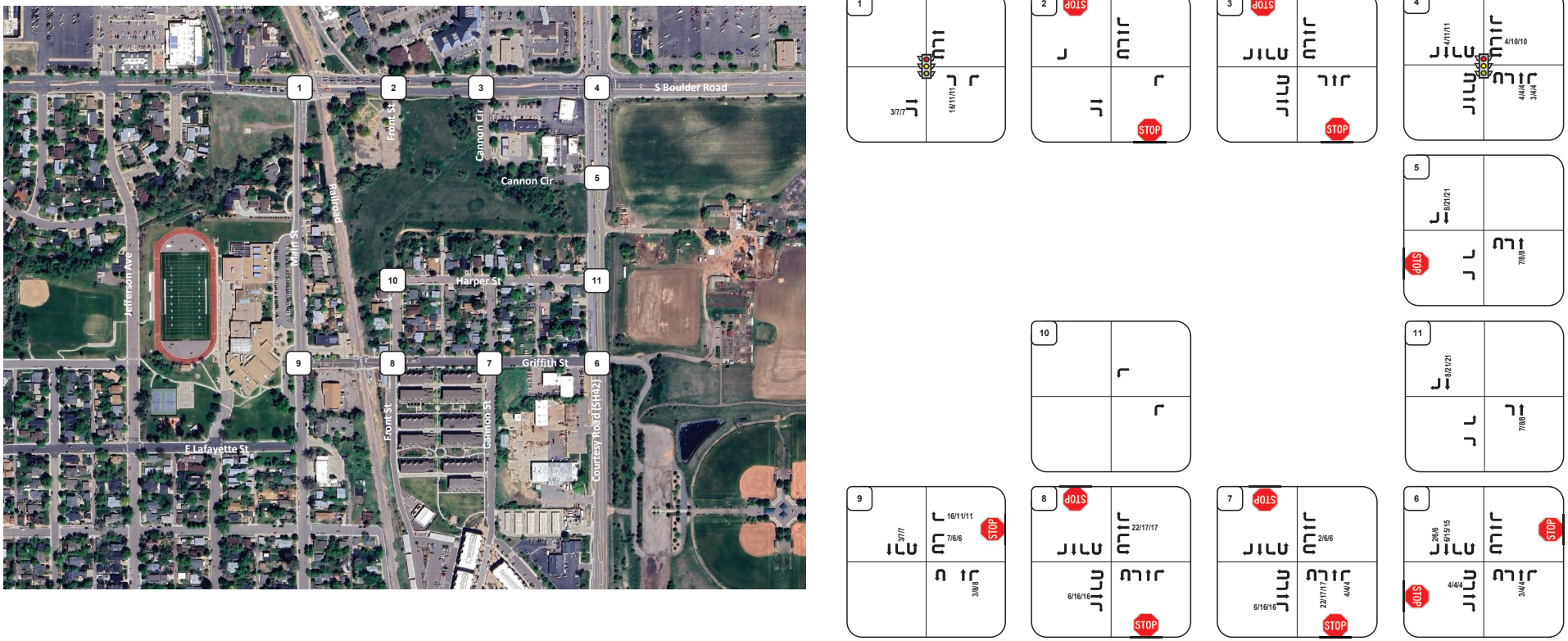
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AM/PM/SAT Volumes = XX/XX/XX VPH (in PCEs)
Turning Movements

McDOWELL ENGINEERING LLC
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Louisville, CO

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4/23/2025

Figure AP02: Year 2026 Background Traffic (Delo Boom Development)



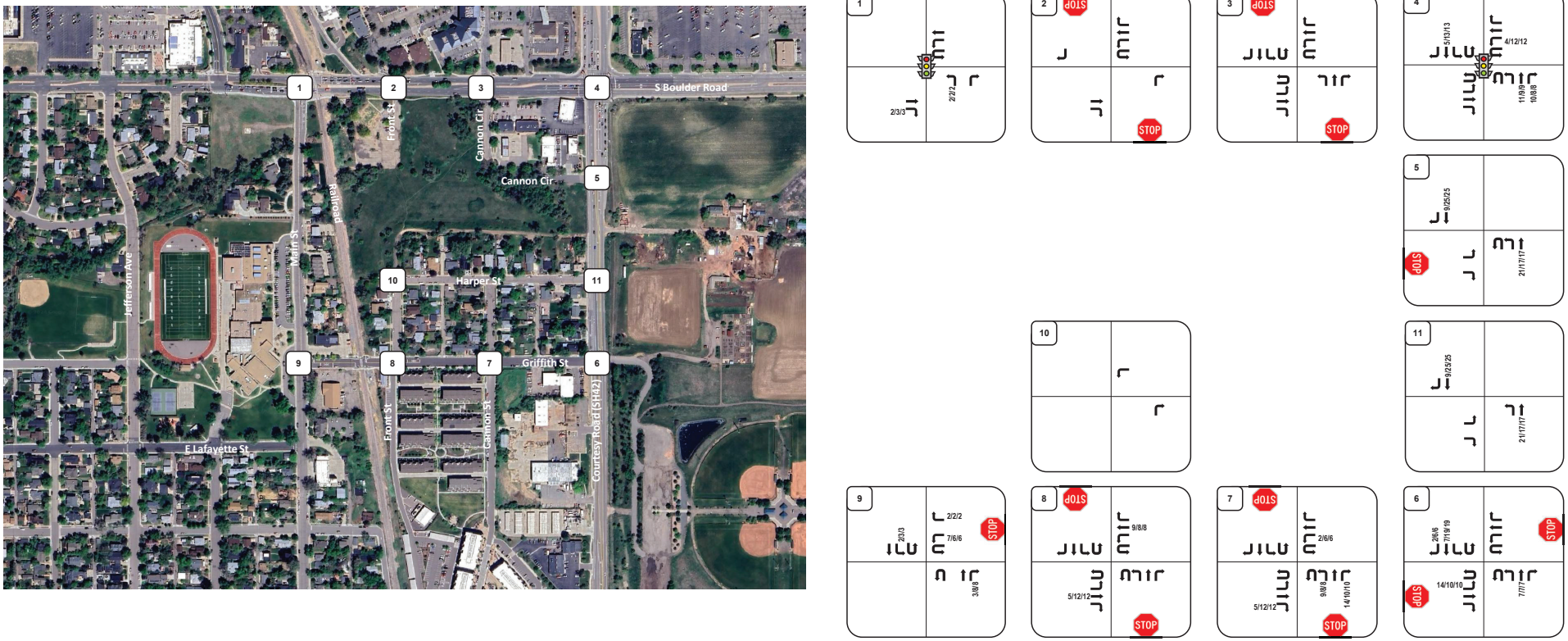
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Turning Movements

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4/23/2025

Figure AP03: Year 2045 Background Traffic (Delo Boom Development)



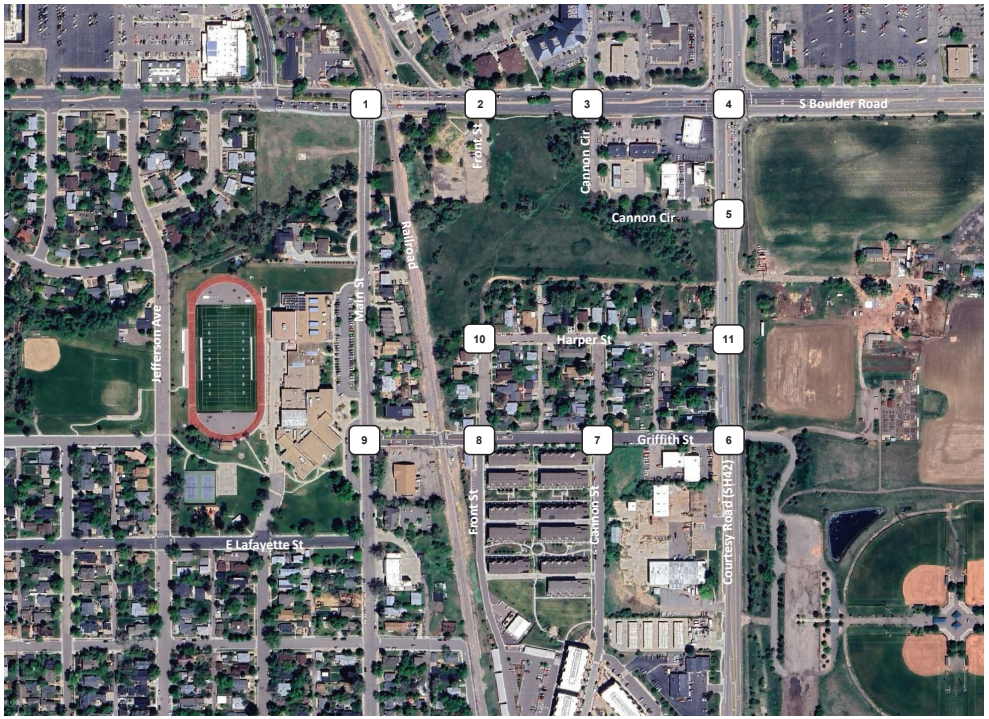
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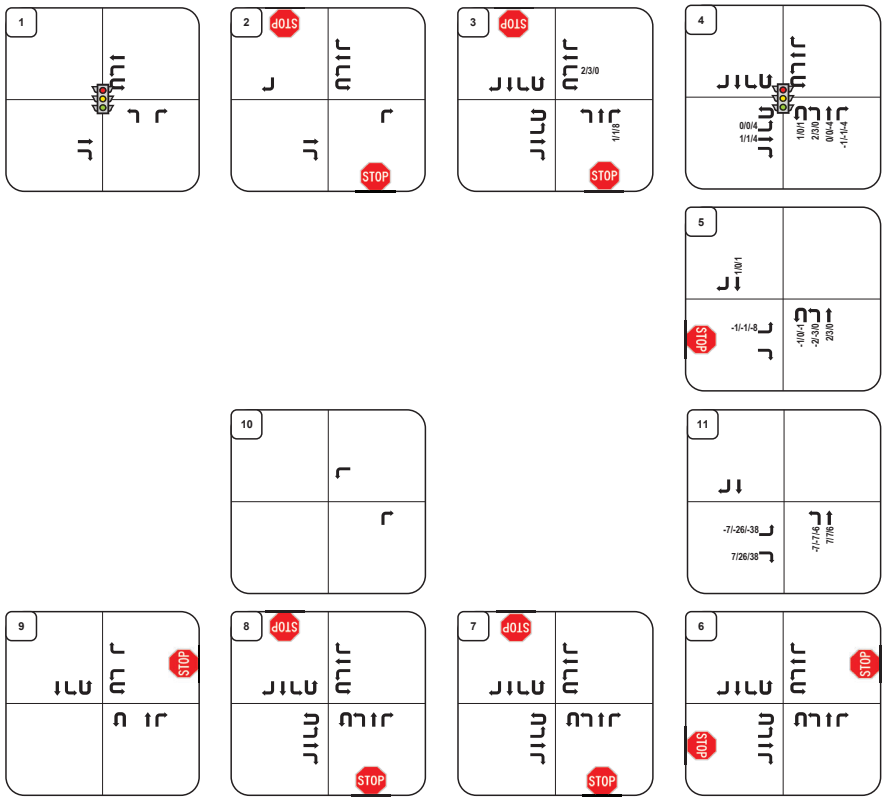
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Figure AP04: Year 2045 Background Adjust (Int #5 & #6 Redistribution)





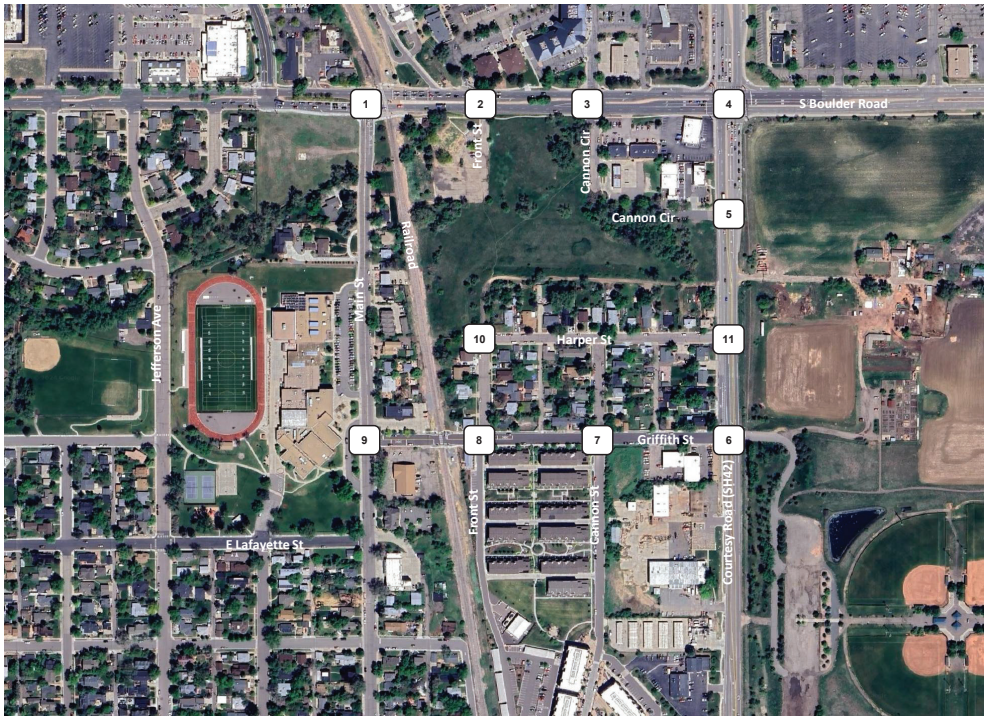
McDowell Engineering LLC
Transportation Engineering Consultants

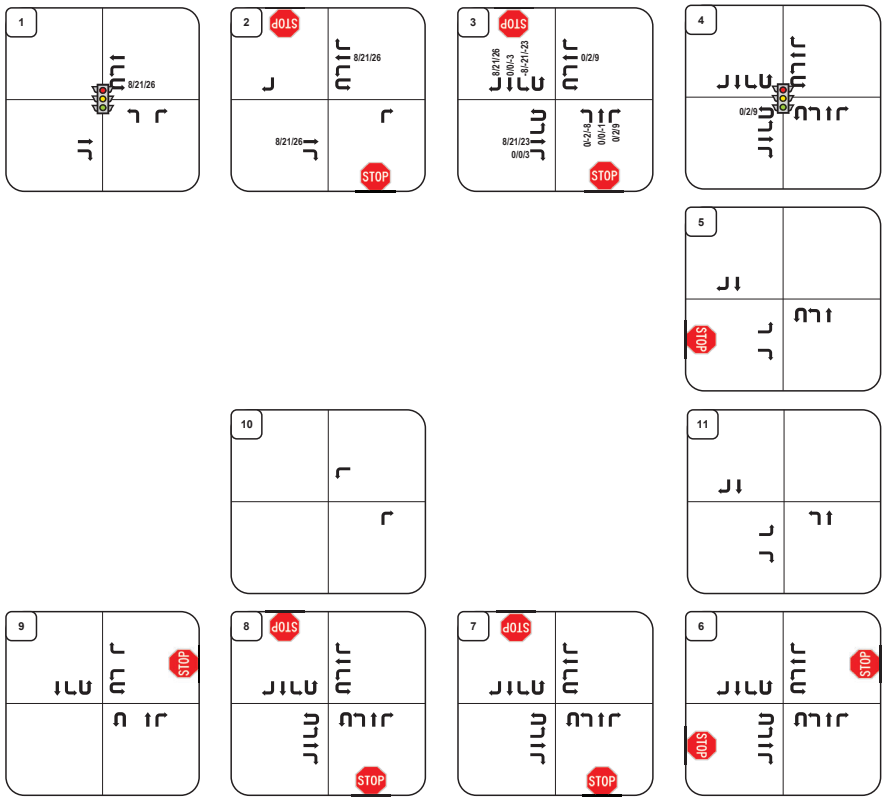
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AM/PM/SAT Volumes = XX/XX/XX VPH (in PCEs)
Turning Movements

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Figure AP05: Background Adjust for Total (Int #3 Redistribution)





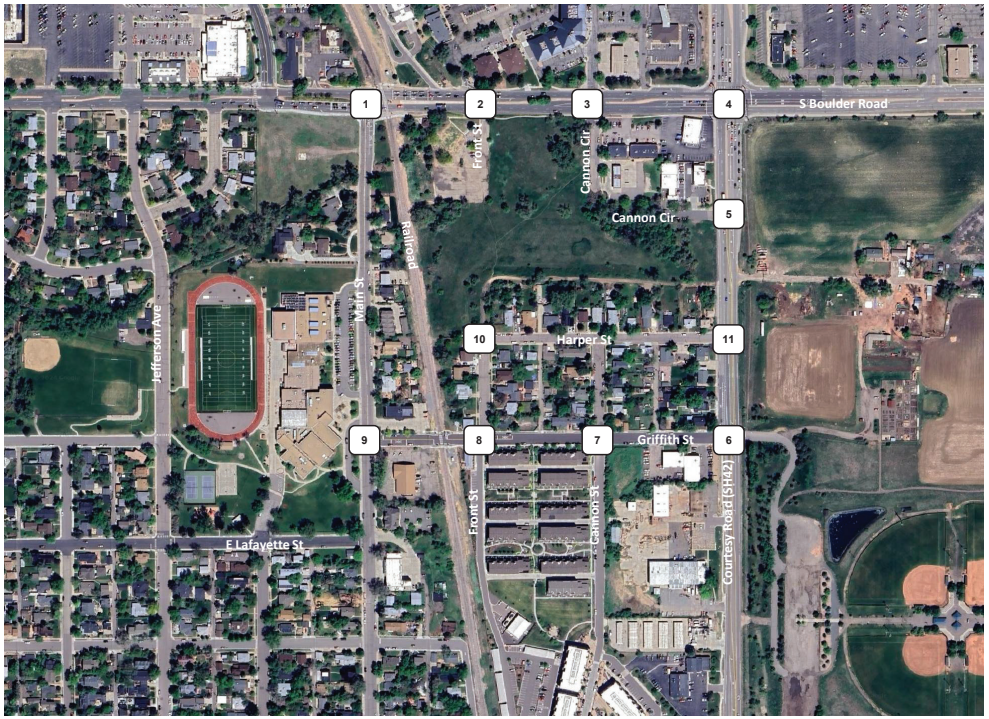
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Directional Distribution = Inbound% (Outbound %)
AM/PM/SAT Volumes = XX/XX/XX VPH (in PCEs)
Turning Movements

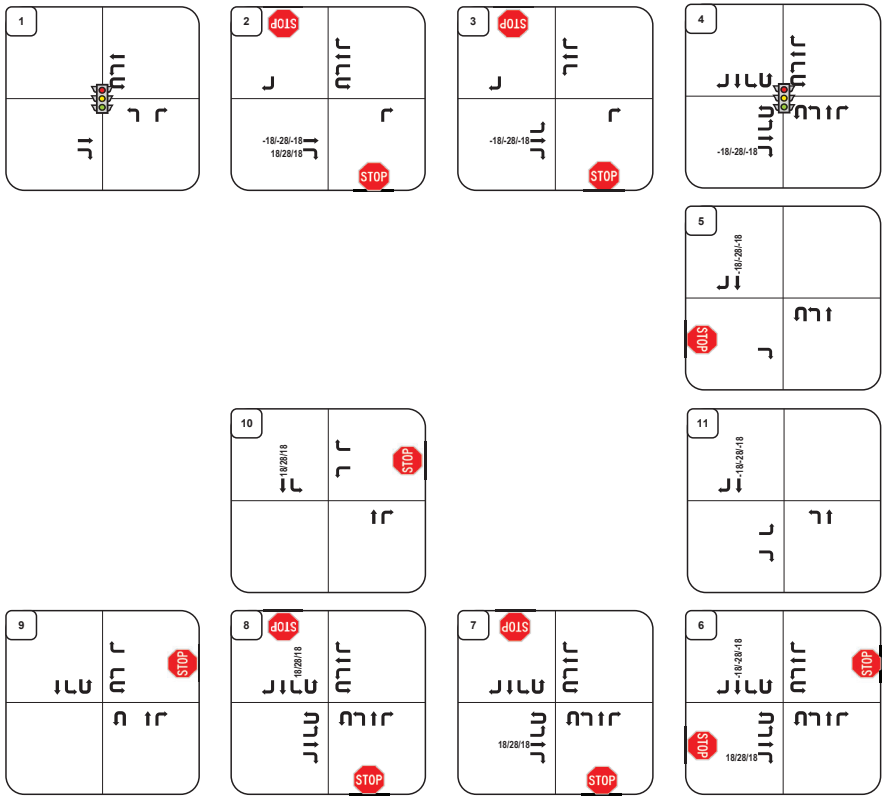
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Figure AP06: Front Street Diverted Traffic (Year 2026)





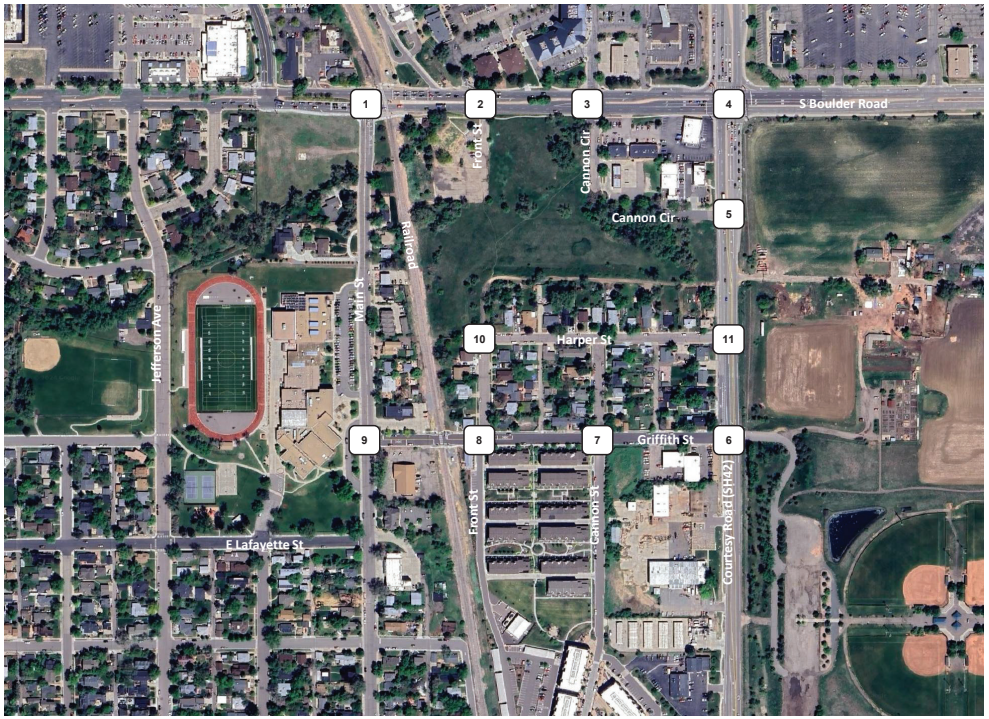
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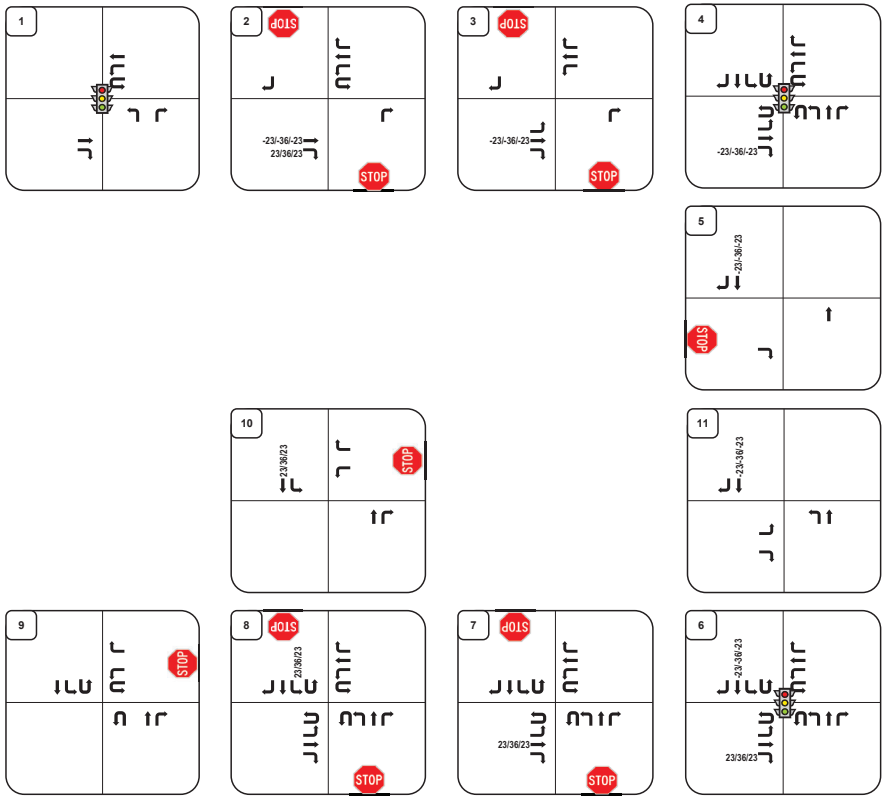
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Figure AP07: Front Street Diverted Traffic (Year 2045)





LEGEND:
Directional Distribution = Inbound% (Outbound %)
AM/PM/SAT Volumes = XX/XX/XX VPH (in PCEs)
Turning Movements

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Project Number M1663
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4/23/2025

Appendix N: Synchro Modeling Reports



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	916	112	75	1201	81	95
Future Volume (vph)	916	112	75	1201	81	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		120	225		0	115
Storage Lanes		1	1		1	1
Taper Length (ft)			25		0	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Ped Bike Factor		0.97	1.00		0.99	0.95
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted			0.244		0.950	
Satd. Flow (perm)	3539	1531	454	3539	1759	1505
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		122				103
Link Speed (mph)	35			35	30	
Link Distance (ft)	636			400	1210	
Travel Time (s)	12.4			7.8	27.5	
Confl. Peds. (#/hr)		5	5		5	32
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	996	122	82	1305	88	103
Turn Type	NA	Perm	pm+pt	NA	Perm	Perm
Protected Phases	2		1	6		
Permitted Phases		2	6		8	8
Detector Phase	2	2	1	6	8	8
Switch Phase						
Minimum Initial (s)	35.0	35.0	5.0	35.0	5.0	5.0
Minimum Split (s)	41.0	41.0	11.0	41.0	35.0	35.0
Total Split (s)	85.0	85.0	14.0	99.0	21.0	21.0
Total Split (%)	70.8%	70.8%	11.7%	82.5%	17.5%	17.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-1.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	5.0
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	C-Max	C-Max	None	C-Max	None	None
Act Effct Green (s)	87.8	87.8	98.1	98.1	13.9	12.9
Actuated g/C Ratio	0.73	0.73	0.82	0.82	0.12	0.11
v/c Ratio	0.38	0.11	0.18	0.45	0.43	0.41
Control Delay	7.5	1.3	5.1	5.9	55.0	13.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.5	1.3	5.1	5.9	55.0	13.9
LOS	A	A	A	A	E	B
Approach Delay	6.8			5.9	32.9	
Approach LOS	A			A	C	
Queue Length 50th (ft)	160	0	16	151	62	0

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Queue Length 95th (ft)	204	19	m30	206	115	52
Internal Link Dist (ft)	556			320	1130	
Turn Bay Length (ft)		120	225			115
Base Capacity (vph)	2589	1152	481	2893	249	289
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	0.38	0.11	0.17	0.45	0.35	0.36

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 23 (19%), Referenced to phase 2:EBT and 6:WBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.45			
Intersection Signal Delay: 8.2		Intersection LOS: A	
Intersection Capacity Utilization 61.3%		ICU Level of Service B	
Analysis Period (min) 15			

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Main Street & S Boulder Road



Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	0	887	0	2	0	1305	5	0	0	0	0	0
Future Volume (vph)	0	887	0	2	0	1305	5	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		50		70		0	0		0	0	
Storage Lanes	0		1		1		0	0		1	0	
Taper Length (ft)	25				75			25			25	
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt						0.999						
Flt Protected					0.950							
Satd. Flow (prot)	0	3539	1863	0	1770	3536	0	0	0	1863	0	0
Flt Permitted					0.950							
Satd. Flow (perm)	0	3539	1863	0	1770	3536	0	0	0	1863	0	0
Link Speed (mph)		35				35			20			20
Link Distance (ft)		400				360			338			476
Travel Time (s)		7.8				7.0			11.5			16.2
Confl. Peds. (#/hr)	10		10	5	10		10	5		5	5	
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	964	0	0	2	1423	0	0	0	0	0	0
Sign Control		Free				Free			Stop			Stop

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 47.8%		ICU Level of Service A	
Analysis Period (min) 15			



Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	11
Future Volume (vph)	11
Ideal Flow (vphpl)	1900
Storage Length (ft)	0
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Ped Bike Factor	
Frt	0.865
Flt Protected	
Satd. Flow (prot)	1611
Flt Permitted	
Satd. Flow (perm)	1611
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	5
Peak Hour Factor	0.92
Shared Lane Traffic (%)	
Lane Group Flow (vph)	12
Sign Control	

Intersection Summary

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	0	887	0	2	0	1305	5	0	0	0	0	0	11
Future Vol, veh/h	0	887	0	2	0	1305	5	0	0	0	0	0	11
Conflicting Peds, #/hr	10	0	10	5	10	0	10	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	-	70	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	964	0	2	0	1418	5	0	0	0	0	0	12

Major/Minor	Major1			Major2				Minor1			Minor2		
Conflicting Flow All	-	0	0	964	974	0	0	-	-	497	-	-	727
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	6.44	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	2.52	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	350	704	-	-	0	0	519	0	0	366
Stage 1	0	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	0	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-			-	-						
Mov Cap-1 Maneuver	-	-	-	350	350	-	-	-	-	512	-	-	361
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	0	15.3
HCM LOS			A	C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	350	-	-	361
HCM Lane V/C Ratio	-	-	-	0.006	-	-	0.033
HCM Control Delay (s)	0	-	-	15.3	-	-	15.3
HCM Lane LOS	A	-	-	C	-	-	C
HCM 95th %tile Q(veh)	-	-	-	0	-	-	0.1

Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	6	21	875	0	1	6	1282	8	0	0	1	8
Future Volume (vph)	6	21	875	0	1	6	1282	8	0	0	1	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		90		0		80		0	0		0	0
Storage Lanes		1		0		1		0	0		0	0
Taper Length (ft)		75				80			25			25
Lane Util. Factor	0.95	1.00	0.95	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt							0.999			0.865		
Flt Protected		0.950				0.950						
Satd. Flow (prot)	0	1770	3539	0	0	1770	3536	0	0	1611	0	0
Flt Permitted		0.950				0.950						
Satd. Flow (perm)	0	1770	3539	0	0	1770	3536	0	0	1611	0	0
Link Speed (mph)			35				35			20		
Link Distance (ft)			360				465			339		
Travel Time (s)			7.0				9.1			11.6		
Confl. Peds. (#/hr)	5	10		10	5	10		10	5		5	5
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	30	951	0	0	8	1402	0	0	1	0	0
Sign Control			Free				Free			Stop		

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 52.2%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	0	28
Future Volume (vph)	0	28
Ideal Flow (vphpl)	1900	1900
Storage Length (ft)		0
Storage Lanes		0
Taper Length (ft)		
Lane Util. Factor	1.00	1.00
Ped Bike Factor		
Frt	0.896	
Flt Protected	0.989	
Satd. Flow (prot)	1651	0
Flt Permitted	0.989	
Satd. Flow (perm)	1651	0
Link Speed (mph)	20	
Link Distance (ft)	431	
Travel Time (s)	14.7	
Confl. Peds. (#/hr)		5
Peak Hour Factor	0.92	0.92
Shared Lane Traffic (%)		
Lane Group Flow (vph)	39	0
Sign Control	Stop	

Intersection Summary

Intersection	
Int Delay, s/veh	1.1

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	6	21	875	0	1	6	1282	8	0	0	1	8	0	28
Future Vol, veh/h	6	21	875	0	1	6	1282	8	0	0	1	8	0	28
Conflicting Peds, #/hr	5	10	0	10	5	10	0	10	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	90	-	-	-	80	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	23	951	0	1	7	1393	9	0	0	1	9	0	30

Major/Minor	Major1				Major2				Minor1			Minor2		
Conflicting Flow All	1402	1412	0	0	951	961	0	0	1739	2449	491	1965	2445	716
Stage 1	-	-	-	-	-	-	-	-	1021	1021	-	1424	1424	-
Stage 2	-	-	-	-	-	-	-	-	718	1428	-	541	1021	-
Critical Hdwy	6.44	4.14	-	-	6.44	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.52	2.22	-	-	2.52	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	183	479	-	-	357	712	-	-	56	31	523	38	31	373
Stage 1	-	-	-	-	-	-	-	-	253	312	-	143	200	-
Stage 2	-	-	-	-	-	-	-	-	386	199	-	493	312	-
Platoon blocked, %			-	-			-	-						
Mov Cap-1 Maneuver	338	338	-	-	618	618	-	-	47	27	516	35	27	368
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	47	27	-	35	27	-
Stage 1	-	-	-	-	-	-	-	-	229	282	-	130	195	-
Stage 2	-	-	-	-	-	-	-	-	348	194	-	448	282	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.1	12	50
HCM LOS			B	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	516	338	-	-	618	-	-	118
HCM Lane V/C Ratio	0.002	0.087	-	-	0.012	-	-	0.332
HCM Control Delay (s)	12	16.6	-	-	10.9	-	-	50
HCM Lane LOS	B	C	-	-	B	-	-	F
HCM 95th %tile Q(veh)	0	0.3	-	-	0	-	-	1.3

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	288	418	149	261	676	153	175	467	198	5	128	578
Future Volume (vph)	288	418	149	261	676	153	175	467	198	5	128	578
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	225		270	0		0		185	
Storage Lanes	2		0	2		1	2		0		2	
Taper Length (ft)	80			135			70				155	
Lane Util. Factor	0.97	0.95	0.95	0.97	0.95	1.00	0.97	0.95	0.95	0.95	0.97	0.95
Ped Bike Factor		1.00				0.98		0.99				
Frt		0.961				0.850		0.955				
Flt Protected	0.950			0.950			0.950				0.950	
Satd. Flow (prot)	3433	3385	0	3433	3539	1583	3433	3363	0	0	3433	3539
Flt Permitted	0.950			0.950			0.950				0.571	
Satd. Flow (perm)	3433	3385	0	3433	3539	1546	3433	3363	0	0	2063	3539
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)		42				182		59				
Link Speed (mph)		35			35			45				45
Link Distance (ft)		465			1815			418				1337
Travel Time (s)		9.1			35.4			6.3				20.3
Confl. Peds. (#/hr)			5			10			5			
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	313	616	0	284	735	166	190	723	0	0	144	628
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA		custom	Prot	NA
Protected Phases	5	2		1	6		3	8			7	4
Permitted Phases						6				7		
Detector Phase	5	2		1	6	6	3	8		7	7	4
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	6.0		5.0	5.0	6.0
Minimum Split (s)	10.0	37.0		10.0	37.0	37.0	10.0	40.0		10.0	10.0	36.0
Total Split (s)	20.0	41.0		20.0	41.0	41.0	16.0	47.0		12.0	12.0	43.0
Total Split (%)	16.7%	34.2%		16.7%	34.2%	34.2%	13.3%	39.2%		10.0%	10.0%	35.8%
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0		3.0	3.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Lost Time (s)	5.0	6.0		5.0	6.0	6.0	5.0	6.0			5.0	6.0
Lead/Lag	Lag	Lag		Lead	Lead	Lead	Lead	Lead		Lag	Lag	Lag
Lead-Lag Optimize?												
Recall Mode	None	C-Max		None	Max	Max	None	Max		None	None	Max
Act Effct Green (s)	15.0	36.1		13.9	35.0	35.0	10.4	41.0			7.0	37.6
Actuated g/C Ratio	0.12	0.30		0.12	0.29	0.29	0.09	0.34			0.06	0.31
v/c Ratio	0.73	0.59		0.71	0.71	0.29	0.64	0.61			1.20	0.57
Control Delay	55.1	30.2		61.5	42.5	4.9	63.0	32.6			193.3	37.0
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay	55.1	30.2		61.5	42.5	4.9	63.0	32.6			193.3	37.0
LOS	E	C		E	D	A	E	C			F	D
Approach Delay		38.6			41.8			38.9				47.6
Approach LOS		D			D			D				D
Queue Length 50th (ft)	122	201		109	267	0	74	224			~69	214

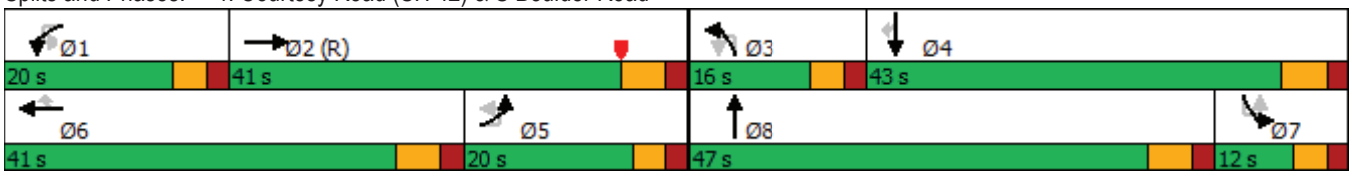


Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	431
Future Volume (vph)	431
Ideal Flow (vphpl)	1900
Storage Length (ft)	270
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Ped Bike Factor	0.98
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1583
Flt Permitted	
Satd. Flow (perm)	1555
Right Turn on Red	Yes
Satd. Flow (RTOR)	309
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	5
Peak Hour Factor	0.92
Shared Lane Traffic (%)	
Lane Group Flow (vph)	468
Turn Type	Perm
Protected Phases	
Permitted Phases	4
Detector Phase	4
Switch Phase	
Minimum Initial (s)	6.0
Minimum Split (s)	36.0
Total Split (s)	43.0
Total Split (%)	35.8%
Yellow Time (s)	4.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.0
Lead/Lag	Lag
Lead-Lag Optimize?	
Recall Mode	Max
Act Effct Green (s)	37.6
Actuated g/C Ratio	0.31
v/c Ratio	0.67
Control Delay	17.0
Queue Delay	0.0
Total Delay	17.0
LOS	B
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	103

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Queue Length 95th (ft)	172	266		156	338	41	113	289			#138	276
Internal Link Dist (ft)		385			1735			338				1257
Turn Bay Length (ft)	150			225		270					185	
Base Capacity (vph)	429	1047		429	1032	579	314	1187			120	1107
Starvation Cap Reductn	0	0		0	0	0	0	0			0	0
Spillback Cap Reductn	0	0		0	0	0	0	0			0	0
Storage Cap Reductn	0	0		0	0	0	0	0			0	0
Reduced v/c Ratio	0.73	0.59		0.66	0.71	0.29	0.61	0.61			1.20	0.57

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow, Master Intersection			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.20			
Intersection Signal Delay: 42.2		Intersection LOS: D	
Intersection Capacity Utilization 84.9%		ICU Level of Service E	
Analysis Period (min) 15			
~ 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.			

Splits and Phases: 4: Courtesy Road (SH 42) & S Boulder Road





Lane Group	SBR
Queue Length 95th (ft)	229
Internal Link Dist (ft)	
Turn Bay Length (ft)	270
Base Capacity (vph)	699
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.67

Intersection Summary

Lane Group	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1	0	1	2	819	980	1
Future Volume (vph)	1	0	1	2	819	980	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		140			0
Storage Lanes	1	0		1			0
Taper Length (ft)	25			100			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor							
Frt							
Flt Protected	0.950			0.950			
Satd. Flow (prot)	1770	0	0	1770	1863	3539	0
Flt Permitted	0.950			0.950			
Satd. Flow (perm)	1770	0	0	1770	1863	3539	0
Link Speed (mph)	20				45	45	
Link Distance (ft)	418				420	418	
Travel Time (s)	14.3				6.4	6.3	
Confl. Peds. (#/hr)				5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)							
Lane Group Flow (vph)	1	0	0	3	890	1066	0
Sign Control	Stop				Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	53.1%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Vol, veh/h	1	0	1	2	819	980	1
Future Vol, veh/h	1	0	1	2	819	980	1
Conflicting Peds, #/hr	0	0	0	5	0	0	5
Sign Control	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	None	-	-	None	-	None
Storage Length	0	-	-	140	-	-	-
Veh in Median Storage, #	0	-	-	-	0	0	-
Grade, %	0	-	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	1	0	1	2	890	1065	1

Major/Minor	Minor2		Major1			Major2	
Conflicting Flow All	1965	538	1066	1071	0	-	0
Stage 1	1071	-	-	-	-	-	-
Stage 2	894	-	-	-	-	-	-
Critical Hdwy	6.63	6.93	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	3.119	2.219	-	-	-
Pot Cap-1 Maneuver	62	488	227	649	-	-	-
Stage 1	291	-	-	-	-	-	-
Stage 2	398	-	-	-	-	-	-
Platoon blocked, %					-	-	-
Mov Cap-1 Maneuver	61	486	400	400	-	-	-
Mov Cap-2 Maneuver	61	-	-	-	-	-	-
Stage 1	287	-	-	-	-	-	-
Stage 2	396	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	65.1	0.1	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	400	-	61	-	-
HCM Lane V/C Ratio	0.008	-	0.018	-	-
HCM Control Delay (s)	14.1	-	65.1	-	-
HCM Lane LOS	B	-	F	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	0	54	1	1	1	37	802	4	5	901	83
Future Volume (vph)	19	0	54	1	1	1	37	802	4	5	901	83
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		60	225		0	500		0
Storage Lanes	0		0	0		1	1		0	1		1
Taper Length (ft)	0			0			25			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.900				0.850		0.999				0.850
Flt Protected		0.987			0.976		0.950			0.950		
Satd. Flow (prot)	0	1655	0	0	1818	1583	1770	1861	0	1770	1863	1583
Flt Permitted		0.987			0.976		0.950			0.950		
Satd. Flow (perm)	0	1655	0	0	1818	1583	1770	1861	0	1770	1863	1583
Link Speed (mph)		30			20			45			45	
Link Distance (ft)		439			281			380			369	
Travel Time (s)		10.0			9.6			5.8			5.6	
Confl. Bikes (#/hr)												5
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	80	0	0	2	1	40	876	0	5	979	90
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 65.1%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	19	0	54	1	1	1	37	802	4	5	901	83
Future Vol, veh/h	19	0	54	1	1	1	37	802	4	5	901	83
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	60	225	-	-	500	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	0	59	1	1	1	40	872	4	5	979	90

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1944	1945	979	2018	2033	874	1069	0	0	876	0	0
Stage 1	989	989	-	954	954	-	-	-	-	-	-	-
Stage 2	955	956	-	1064	1079	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	49	65	303	43	57	349	652	-	-	771	-	-
Stage 1	297	325	-	311	337	-	-	-	-	-	-	-
Stage 2	310	336	-	270	295	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	46	61	303	33	53	349	652	-	-	771	-	-
Mov Cap-2 Maneuver	46	61	-	33	53	-	-	-	-	-	-	-
Stage 1	279	323	-	292	316	-	-	-	-	-	-	-
Stage 2	289	316	-	216	293	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	76.4	70.2	0.5	0
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	652	-	-	123	41	349	771	-	-
HCM Lane V/C Ratio	0.062	-	-	0.645	0.053	0.003	0.007	-	-
HCM Control Delay (s)	10.9	-	-	76.4	97.7	15.3	9.7	-	-
HCM Lane LOS	B	-	-	F	F	C	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	3.4	0.2	0	0	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	61	13	14	90	2	32	0	9	0	0	1
Future Volume (vph)	0	61	13	14	90	2	32	0	9	0	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	150		150	150		150	150		150
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.976			0.998			0.970			0.865	
Flt Protected					0.994			0.963				
Satd. Flow (prot)	0	1818	0	0	1848	0	0	1740	0	0	1611	0
Flt Permitted					0.994			0.963				
Satd. Flow (perm)	0	1818	0	0	1848	0	0	1740	0	0	1611	0
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		390			439			346			362	
Travel Time (s)		8.9			10.0			9.4			9.9	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	80	0	0	115	0	0	45	0	0	1	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 28.9%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	61	13	14	90	2	32	0	9	0	0	1
Future Vol, veh/h	0	61	13	14	90	2	32	0	9	0	0	1
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	66	14	15	98	2	35	0	10	0	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	105	0	0	85	0	0	213	213	83	217	219	109
Stage 1	-	-	-	-	-	-	78	78	-	134	134	-
Stage 2	-	-	-	-	-	-	135	135	-	83	85	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1486	-	-	1512	-	-	744	684	976	739	679	945
Stage 1	-	-	-	-	-	-	931	830	-	869	785	-
Stage 2	-	-	-	-	-	-	868	785	-	925	824	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1479	-	-	1505	-	-	730	670	967	718	665	936
Mov Cap-2 Maneuver	-	-	-	-	-	-	730	670	-	718	665	-
Stage 1	-	-	-	-	-	-	926	826	-	865	772	-
Stage 2	-	-	-	-	-	-	853	772	-	911	820	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1	9.9	8.9
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	772	1479	-	-	1505	-	-	936
HCM Lane V/C Ratio	0.058	-	-	-	0.01	-	-	0.001
HCM Control Delay (s)	9.9	0	-	-	7.4	0	-	8.9
HCM Lane LOS	A	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	75	2	3	140	1	6	0	3	1	0	5
Future Volume (vph)	2	75	2	3	140	1	6	0	3	1	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	150		150	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.997			0.999			0.959			0.887	
Flt Protected		0.999			0.999			0.966			0.992	
Satd. Flow (prot)	0	1855	0	0	1859	0	0	1726	0	0	1639	0
Flt Permitted		0.999			0.999			0.966			0.992	
Satd. Flow (perm)	0	1855	0	0	1859	0	0	1726	0	0	1639	0
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		405			390			333			365	
Travel Time (s)		9.2			8.9			9.1			10.0	
Confl. Peds. (#/hr)	5		10	10		5	5		5	5		5
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	86	0	0	156	0	0	10	0	0	6	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 21.0%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	2	75	2	3	140	1	6	0	3	1	0	5
Future Vol, veh/h	2	75	2	3	140	1	6	0	3	1	0	5
Conflicting Peds, #/hr	5	0	10	10	0	5	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	82	2	3	152	1	7	0	3	1	0	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	158	0	0	94	0	0	263	261	98	258	262	163
Stage 1	-	-	-	-	-	-	97	97	-	164	164	-
Stage 2	-	-	-	-	-	-	166	164	-	94	98	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1422	-	-	1500	-	-	690	644	958	695	643	882
Stage 1	-	-	-	-	-	-	910	815	-	838	762	-
Stage 2	-	-	-	-	-	-	836	762	-	913	814	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1415	-	-	1486	-	-	674	632	944	685	631	874
Mov Cap-2 Maneuver	-	-	-	-	-	-	674	632	-	685	631	-
Stage 1	-	-	-	-	-	-	900	806	-	833	757	-
Stage 2	-	-	-	-	-	-	825	757	-	905	805	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.2	9.9	9.3
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	745	1415	-	-	1486	-	-	836
HCM Lane V/C Ratio	0.013	0.002	-	-	0.002	-	-	0.008
HCM Control Delay (s)	9.9	7.5	0	-	7.4	0	-	9.3
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0



Lane Group	WBU	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	1	42	73	1	151	60	21	113
Future Volume (vph)	1	42	73	1	151	60	21	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								
Frt		0.915			0.962			
Flt Protected		0.982						0.992
Satd. Flow (prot)	0	1674	0	0	1792	0	0	1848
Flt Permitted		0.982						0.992
Satd. Flow (perm)	0	1674	0	0	1792	0	0	1848
Link Speed (mph)		30			30			30
Link Distance (ft)		405			350			1210
Travel Time (s)		9.2			8.0			27.5
Confl. Peds. (#/hr)	70	5	132	5		70	70	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	126	0	0	230	0	0	146
Sign Control		Stop			Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 41.9%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	3.9

Movement	WBU	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations								
Traffic Vol, veh/h	1	42	73	1	151	60	21	113
Future Vol, veh/h	1	42	73	1	151	60	21	113
Conflicting Peds, #/hr	70	5	132	5	0	70	70	0
Sign Control	Stop	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	None
Storage Length	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0
Grade, %	-	0	-	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2
Mvmt Flow	1	46	79	1	164	65	23	123

Major/Minor	Minor1			Major1			Major2	
Conflicting Flow All	0	441	399	-	0	0	299	0
Stage 1	0	267	-	-	-	-	-	-
Stage 2	0	174	-	-	-	-	-	-
Critical Hdwy	-	6.42	6.22	-	-	-	4.12	-
Critical Hdwy Stg 1	-	5.42	-	-	-	-	-	-
Critical Hdwy Stg 2	-	5.42	-	-	-	-	-	-
Follow-up Hdwy	-	3.518	3.318	-	-	-	2.218	-
Pot Cap-1 Maneuver	0	574	651	-	-	-	1262	-
Stage 1	0	778	-	-	-	-	-	-
Stage 2	0	856	-	-	-	-	-	-
Platoon blocked, %	-				-	-		-
Mov Cap-1 Maneuver	0	522	531	-	-	-	1178	-
Mov Cap-2 Maneuver	0	522	-	-	-	-	-	-
Stage 1	0	710	-	-	-	-	-	-
Stage 2	0	852	-	-	-	-	-	-

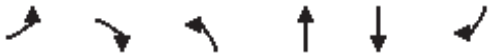
Approach	WB	NB	SB
HCM Control Delay, s	13.9		1.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	528	1178	-
HCM Lane V/C Ratio	-	-	0.237	0.019	-
HCM Control Delay (s)	-	-	13.9	8.1	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.9	0.1	-



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	6	0	0	3	0	0
Future Volume (vph)	6	0	0	3	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt				0.865		
Flt Protected	0.950					
Satd. Flow (prot)	1770	0	0	1611	0	0
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	0	1611	0	0
Link Speed (mph)	25		25			25
Link Distance (ft)	380		365			210
Travel Time (s)	10.4		10.0			5.7
Confl. Peds. (#/hr)	5	132		70	70	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	7	0	0	3	0	0
Sign Control	Free		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 16.5%		ICU Level of Service A	
Analysis Period (min) 15			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	7	12	7	787	946	2
Future Volume (vph)	7	12	7	787	946	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95
Frt	0.916					
Flt Protected	0.981					
Satd. Flow (prot)	1674	0	0	1863	3539	0
Flt Permitted	0.981					
Satd. Flow (perm)	1674	0	0	1863	3539	0
Link Speed (mph)	30			45	45	
Link Distance (ft)	217			369	420	
Travel Time (s)	4.9			5.6	6.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	21	0	0	863	1030	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 57.0%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	7	12	7	787	946	2
Future Vol, veh/h	7	12	7	787	946	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	13	8	855	1028	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1900	515	1030	0	-	0
Stage 1	1029	-	-	-	-	-
Stage 2	871	-	-	-	-	-
Critical Hdwy	6.63	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	68	506	672	-	-	-
Stage 1	307	-	-	-	-	-
Stage 2	408	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	66	506	672	-	-	-
Mov Cap-2 Maneuver	66	-	-	-	-	-
Stage 1	300	-	-	-	-	-
Stage 2	408	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	33.7	0.1	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	672	-	146	-	-
HCM Lane V/C Ratio	0.011	-	0.141	-	-
HCM Control Delay (s)	10.4	0	33.7	-	-
HCM Lane LOS	B	A	D	-	-
HCM 95th %tile Q(veh)	0	-	0.5	-	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1260	106	69	1003	98	162
Future Volume (vph)	1260	106	69	1003	98	162
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		120	225		0	115
Storage Lanes		1	1		1	1
Taper Length (ft)			25		0	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Ped Bike Factor		0.97			0.99	0.95
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted			0.146		0.950	
Satd. Flow (perm)	3539	1531	272	3539	1759	1505
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		85				165
Link Speed (mph)	35			35	30	
Link Distance (ft)	636			400	1210	
Travel Time (s)	12.4			7.8	27.5	
Confl. Peds. (#/hr)		5	5		5	32
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1370	115	75	1090	107	176
Turn Type	NA	Perm	pm+pt	NA	Perm	Perm
Protected Phases	2		1	6		
Permitted Phases		2	6		8	8
Detector Phase	2	2	1	6	8	8
Switch Phase						
Minimum Initial (s)	35.0	35.0	5.0	35.0	5.0	5.0
Minimum Split (s)	41.0	41.0	11.0	41.0	35.0	35.0
Total Split (s)	85.0	85.0	14.0	99.0	21.0	21.0
Total Split (%)	70.8%	70.8%	11.7%	82.5%	17.5%	17.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-1.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	5.0
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	C-Max	C-Max	None	C-Max	None	None
Act Effct Green (s)	86.4	86.4	96.7	96.7	15.3	14.3
Actuated g/C Ratio	0.72	0.72	0.81	0.81	0.13	0.12
v/c Ratio	0.54	0.10	0.23	0.38	0.48	0.54
Control Delay	9.6	2.4	7.4	6.6	55.3	15.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.6	2.4	7.4	6.6	55.3	15.3
LOS	A	A	A	A	E	B
Approach Delay	9.0			6.7	30.4	
Approach LOS	A			A	C	
Queue Length 50th (ft)	258	7	17	144	77	8

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Queue Length 95th (ft)	322	26	m30	m192	135	75
Internal Link Dist (ft)	556			320	1130	
Turn Bay Length (ft)		120	225			115
Base Capacity (vph)	2548	1126	344	2850	249	343
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	0.10	0.22	0.38	0.43	0.51

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 22 (18%), Referenced to phase 2:EBT and 6:WBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.54			
Intersection Signal Delay: 10.2		Intersection LOS: B	
Intersection Capacity Utilization 67.3%		ICU Level of Service C	
Analysis Period (min) 15			

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Main Street & S Boulder Road





Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	0	1399	1	4	2	1068	5	0	0	3	0	0
Future Volume (vph)	0	1399	1	4	2	1068	5	0	0	3	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		50		70		0	0		0	0	
Storage Lanes	0		1		1		0	0		1	0	
Taper Length (ft)	25				75			25			25	
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.850			0.999				0.865		
Flt Protected					0.950							
Satd. Flow (prot)	0	3539	1583	0	1770	3536	0	0	0	1611	0	0
Flt Permitted					0.950							
Satd. Flow (perm)	0	3539	1583	0	1770	3536	0	0	0	1611	0	0
Link Speed (mph)		35				35			20			20
Link Distance (ft)		400				360			338			476
Travel Time (s)		7.8				7.0			11.5			16.2
Confl. Peds. (#/hr)	10		10	5	10		10	5		5	5	
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1521	1	0	6	1166	0	0	0	3	0	0
Sign Control		Free				Free			Stop			Stop

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 50.2%		ICU Level of Service A	
Analysis Period (min) 15			



Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	5
Future Volume (vph)	5
Ideal Flow (vphpl)	1900
Storage Length (ft)	0
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Ped Bike Factor	
Frt	0.865
Flt Protected	
Satd. Flow (prot)	1611
Flt Permitted	
Satd. Flow (perm)	1611
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	5
Peak Hour Factor	0.92
Shared Lane Traffic (%)	
Lane Group Flow (vph)	5
Sign Control	

Intersection Summary

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	0	1399	1	4	2	1068	5	0	0	3	0	0	5
Future Vol, veh/h	0	1399	1	4	2	1068	5	0	0	3	0	0	5
Conflicting Peds, #/hr	10	0	10	5	10	0	10	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	-	70	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1521	1	4	2	1161	5	0	0	3	0	0	5

Major/Minor	Major1			Major2				Minor1			Minor2		
Conflicting Flow All	-	0	0	1521	1532	0	0	-	-	776	-	-	598
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	6.44	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	2.52	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	153	430	-	-	0	0	340	0	0	445
Stage 1	0	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	0	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-			-	-						
Mov Cap-1 Maneuver	-	-	-	193	193	-	-	-	-	335	-	-	439
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.1	15.9	13.3
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	335	-	-	193	-	-	439
HCM Lane V/C Ratio	0.01	-	-	0.034	-	-	0.012
HCM Control Delay (s)	15.9	-	-	24.3	-	-	13.3
HCM Lane LOS	C	-	-	C	-	-	B
HCM 95th %tile Q(veh)	0	-	-	0.1	-	-	0

Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	23	48	1404	27	2	18	1084	12	2	0	23	21
Future Volume (vph)	23	48	1404	27	2	18	1084	12	2	0	23	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		90		0		80		0	0		0	0
Storage Lanes		1		0		1		0	0		0	0
Taper Length (ft)		75				80			25			25
Lane Util. Factor	0.95	1.00	0.95	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.997				0.998			0.875		
Flt Protected		0.950				0.950				0.996		
Satd. Flow (prot)	0	1770	3529	0	0	1770	3532	0	0	1623	0	0
Flt Permitted		0.950				0.950				0.996		
Satd. Flow (perm)	0	1770	3529	0	0	1770	3532	0	0	1623	0	0
Link Speed (mph)			35				35			20		
Link Distance (ft)			360				465			339		
Travel Time (s)			7.0				9.1			11.6		
Confl. Peds. (#/hr)	5	10		10	5	10		10	5		5	5
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	77	1555	0	0	22	1191	0	0	27	0	0
Sign Control			Free				Free			Stop		

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 63.8%		ICU Level of Service B	
Analysis Period (min) 15			

Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	0	45
Future Volume (vph)	0	45
Ideal Flow (vphpl)	1900	1900
Storage Length (ft)		0
Storage Lanes		0
Taper Length (ft)		
Lane Util. Factor	1.00	1.00
Ped Bike Factor		
Frt	0.908	
Flt Protected	0.984	
Satd. Flow (prot)	1664	0
Flt Permitted	0.984	
Satd. Flow (perm)	1664	0
Link Speed (mph)	20	
Link Distance (ft)	431	
Travel Time (s)	14.7	
Confl. Peds. (#/hr)		5
Peak Hour Factor	0.92	0.92
Shared Lane Traffic (%)		
Lane Group Flow (vph)	72	0
Sign Control	Stop	

Intersection Summary

Intersection	
Int Delay, s/veh	8.9

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	23	48	1404	27	2	18	1084	12	2	0	23	21	0	45
Future Vol, veh/h	23	48	1404	27	2	18	1084	12	2	0	23	21	0	45
Conflicting Peds, #/hr	5	10	0	10	5	10	0	10	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	90	-	-	-	80	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	25	52	1526	29	2	20	1178	13	2	0	25	23	0	49

Major/Minor	Major1				Major2				Minor1			Minor2		
Conflicting Flow All	1191	1201	0	0	1555	1565	0	0	2343	2950	793	2161	2958	611
Stage 1	-	-	-	-	-	-	-	-	1705	1705	-	1239	1239	-
Stage 2	-	-	-	-	-	-	-	-	638	1245	-	922	1719	-
Critical Hdwy	6.44	4.14	-	-	6.44	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.52	2.22	-	-	2.52	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	250	577	-	-	145	418	-	-	19	14	331	27	14	437
Stage 1	-	-	-	-	-	-	-	-	95	145	-	186	246	-
Stage 2	-	-	-	-	-	-	-	-	431	244	-	291	143	-
Platoon blocked, %			-	-			-	-						
Mov Cap-1 Maneuver	381	381	-	-	343	343	-	-	13	10	326	~ 20	10	431
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	13	10	-	~ 20	10	-
Stage 1	-	-	-	-	-	-	-	-	75	115	-	147	228	-
Stage 2	-	-	-	-	-	-	-	-	356	226	-	213	113	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0.3	47.6	$ 324.2
HCM LOS			E	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	111	381	-	-	343	-	-	57
HCM Lane V/C Ratio	0.245	0.203	-	-	0.063	-	-	1.259
HCM Control Delay (s)	47.6	16.9	-	-	16.2	-	-	$ 324.2
HCM Lane LOS	E	C	-	-	C	-	-	F
HCM 95th %tile Q(veh)	0.9	0.7	-	-	0.2	-	-	6.2

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	568	741	167	355	638	202	1	128	709	255	9	139
Future Volume (vph)	568	741	167	355	638	202	1	128	709	255	9	139
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	225		270		0		0		185
Storage Lanes	2		0	2		1		2		0		2
Taper Length (ft)	80			135				70				155
Lane Util. Factor	0.97	0.95	0.95	0.97	0.95	1.00	0.95	0.97	0.95	0.95	0.95	0.97
Ped Bike Factor		1.00				0.98			1.00			
Frt		0.972				0.850			0.960			
Flt Protected	0.950			0.950				0.950				0.950
Satd. Flow (prot)	3433	3429	0	3433	3539	1583	0	3433	3382	0	0	3433
Flt Permitted	0.950			0.950				0.308				0.308
Satd. Flow (perm)	3433	3429	0	3433	3539	1546	0	1113	3382	0	0	1113
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)		23				210			43			
Link Speed (mph)		35			35				45			
Link Distance (ft)		465			1815				418			
Travel Time (s)		9.1			35.4				6.3			
Confl. Peds. (#/hr)			5			10				5		
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	617	987	0	386	693	220	0	140	1048	0	0	161
Turn Type	Prot	NA		Prot	NA	Perm	custom	Prot	NA		custom	Prot
Protected Phases	5	2		1	6			3	8			7
Permitted Phases						6	3				7	
Detector Phase	5	2		1	6	6	3	3	8		7	7
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	5.0	6.0		5.0	5.0
Minimum Split (s)	10.0	37.0		10.0	37.0	37.0	10.0	10.0	40.0		10.0	10.0
Total Split (s)	24.0	43.0		18.0	37.0	37.0	18.0	18.0	41.0		18.0	18.0
Total Split (%)	20.0%	35.8%		15.0%	30.8%	30.8%	15.0%	15.0%	34.2%		15.0%	15.0%
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	3.0	4.0		3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0			0.0
Total Lost Time (s)	5.0	6.0		5.0	6.0	6.0		5.0	6.0			5.0
Lead/Lag	Lag	Lag		Lead	Lead	Lead	Lead	Lead	Lead		Lag	Lag
Lead-Lag Optimize?												
Recall Mode	None	C-Max		None	Max	Max	None	None	Max		None	None
Act Effct Green (s)	19.0	37.0		13.0	31.0	31.0		13.0	35.0			13.0
Actuated g/C Ratio	0.16	0.31		0.11	0.26	0.26		0.11	0.29			0.11
v/c Ratio	1.14	0.92		1.04	0.76	0.40		1.17	1.03			1.34
Control Delay	121.1	46.2		109.4	47.3	7.8		180.8	76.8			240.4
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0	0.0			0.0
Total Delay	121.1	46.2		109.4	47.3	7.8		180.8	76.8			240.4
LOS	F	D		F	D	A		F	E			F
Approach Delay		75.0			59.1				89.1			
Approach LOS		E			E				F			
Queue Length 50th (ft)	~288	380		~165	261	6		~66	~444			~83

Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	536	315
Future Volume (vph)	536	315
Ideal Flow (vphpl)	1900	1900
Storage Length (ft)		270
Storage Lanes		1
Taper Length (ft)		
Lane Util. Factor	0.95	1.00
Ped Bike Factor		0.98
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3539	1583
Flt Permitted		
Satd. Flow (perm)	3539	1555
Right Turn on Red		Yes
Satd. Flow (RTOR)		342
Link Speed (mph)	45	
Link Distance (ft)	1337	
Travel Time (s)	20.3	
Confl. Peds. (#/hr)		5
Peak Hour Factor	0.92	0.92
Shared Lane Traffic (%)		
Lane Group Flow (vph)	583	342
Turn Type	NA	Perm
Protected Phases	4	
Permitted Phases		4
Detector Phase	4	4
Switch Phase		
Minimum Initial (s)	6.0	6.0
Minimum Split (s)	36.0	36.0
Total Split (s)	41.0	41.0
Total Split (%)	34.2%	34.2%
Yellow Time (s)	4.0	4.0
All-Red Time (s)	2.0	2.0
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.0	6.0
Lead/Lag	Lag	Lag
Lead-Lag Optimize?		
Recall Mode	Max	Max
Act Effct Green (s)	35.0	35.0
Actuated g/C Ratio	0.29	0.29
v/c Ratio	0.56	0.49
Control Delay	38.6	6.0
Queue Delay	0.0	0.0
Total Delay	38.6	6.0
LOS	D	A
Approach Delay	58.3	
Approach LOS	E	
Queue Length 50th (ft)	201	0

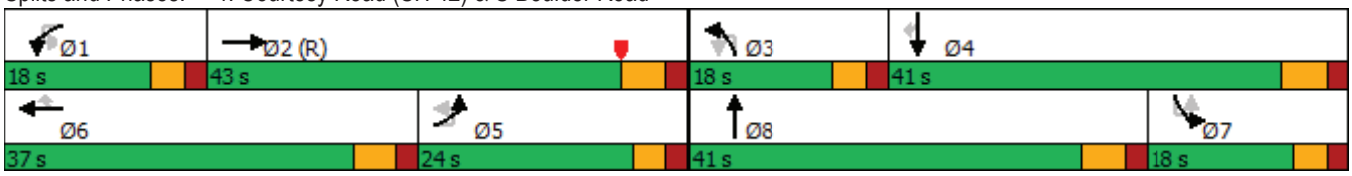
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Queue Length 95th (ft)	#407	#508		#267	332	68		#134	#581			#156
Internal Link Dist (ft)		385			1735				338			
Turn Bay Length (ft)	150			225		270						185
Base Capacity (vph)	543	1073		371	914	555		120	1016			120
Starvation Cap Reductn	0	0		0	0	0		0	0			0
Spillback Cap Reductn	0	0		0	0	0		0	0			0
Storage Cap Reductn	0	0		0	0	0		0	0			0
Reduced v/c Ratio	1.14	0.92		1.04	0.76	0.40		1.17	1.03			1.34

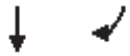
Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow, Master Intersection	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.34	
Intersection Signal Delay: 70.7	Intersection LOS: E
Intersection Capacity Utilization 92.9%	ICU Level of Service F
Analysis Period (min) 15	

~ 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.

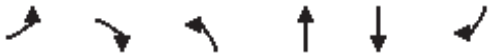
Splits and Phases: 4: Courtesy Road (SH 42) & S Boulder Road





Lane Group	SBT	SBR
Queue Length 95th (ft)	261	70
Internal Link Dist (ft)	1257	
Turn Bay Length (ft)		270
Base Capacity (vph)	1032	695
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.56	0.49

Intersection Summary



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1	6	3	1108	1045	9
Future Volume (vph)	1	6	3	1108	1045	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	140			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		100			
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor						
Frt	0.882				0.999	
Flt Protected	0.994		0.950			
Satd. Flow (prot)	1633	0	1770	1863	3536	0
Flt Permitted	0.994		0.950			
Satd. Flow (perm)	1633	0	1770	1863	3536	0
Link Speed (mph)	20			45	45	
Link Distance (ft)	418			420	418	
Travel Time (s)	14.3			6.4	6.3	
Confl. Peds. (#/hr)			5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	8	0	3	1204	1146	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	68.3%	ICU Level of Service	C
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	6	3	1108	1045	9
Future Vol, veh/h	1	6	3	1108	1045	9
Conflicting Peds, #/hr	0	0	5	0	0	5
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	140	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	7	3	1204	1136	10

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2356	578	1151	0	-	0
Stage 1	1146	-	-	-	-	-
Stage 2	1210	-	-	-	-	-
Critical Hdwy	6.63	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	34	460	605	-	-	-
Stage 1	266	-	-	-	-	-
Stage 2	281	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	33	458	602	-	-	-
Mov Cap-2 Maneuver	33	-	-	-	-	-
Stage 1	263	-	-	-	-	-
Stage 2	280	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	28.5	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	602	-	161	-	-
HCM Lane V/C Ratio	0.005	-	0.047	-	-
HCM Control Delay (s)	11	-	28.5	-	-
HCM Lane LOS	B	-	D	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	0	39	1	1	1	19	1080	2	1	979	123
Future Volume (vph)	11	0	39	1	1	1	19	1080	2	1	979	123
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		60	225		0	500		0
Storage Lanes	0		0	0		1	1		0	1		1
Taper Length (ft)	0			0			25			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.895				0.850						0.850
Flt Protected		0.989			0.976		0.950			0.950		
Satd. Flow (prot)	0	1649	0	0	1818	1583	1770	1863	0	1770	1863	1583
Flt Permitted		0.989			0.976		0.950			0.950		
Satd. Flow (perm)	0	1649	0	0	1818	1583	1770	1863	0	1770	1863	1583
Link Speed (mph)		30			20			45			45	
Link Distance (ft)		439			281			380			369	
Travel Time (s)		10.0			9.6			5.8			5.6	
Confl. Bikes (#/hr)												5
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	54	0	0	2	1	21	1176	0	1	1064	134
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 73.6%		ICU Level of Service D	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	0	39	1	1	1	19	1080	2	1	979	123
Future Vol, veh/h	11	0	39	1	1	1	19	1080	2	1	979	123
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	60	225	-	-	500	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	0	42	1	1	1	21	1174	2	1	1064	134

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2284	2284	1064	2371	2417	1175	1198	0	0	1176	0	0
Stage 1	1066	1066	-	1217	1217	-	-	-	-	-	-	-
Stage 2	1218	1218	-	1154	1200	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	28	40	271	24	33	233	583	-	-	594	-	-
Stage 1	269	299	-	221	253	-	-	-	-	-	-	-
Stage 2	221	253	-	240	258	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	26	38	271	20	32	233	583	-	-	594	-	-
Mov Cap-2 Maneuver	26	38	-	20	32	-	-	-	-	-	-	-
Stage 1	259	298	-	213	244	-	-	-	-	-	-	-
Stage 2	211	244	-	202	257	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	96.9	115	0.2	0
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	583	-	-	88	25	233	594	-	-
HCM Lane V/C Ratio	0.035	-	-	0.618	0.087	0.005	0.002	-	-
HCM Control Delay (s)	11.4	-	-	96.9	162.3	20.5	11.1	-	-
HCM Lane LOS	B	-	-	F	F	C	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-	2.9	0.3	0	0	-	-

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	2	36	26	1	27	119	1	28	1	5	0	2
Future Volume (vph)	2	36	26	1	27	119	1	28	1	5	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150		150		150	150		150	150	
Storage Lanes	0		0		0		0	0		0	0	
Taper Length (ft)	25				25			25			25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.945				0.999			0.981			
Flt Protected		0.999				0.991			0.960			
Satd. Flow (prot)	0	1759	0	0	0	1844	0	0	1754	0	0	1863
Flt Permitted		0.999				0.991			0.960			
Satd. Flow (perm)	0	1759	0	0	0	1844	0	0	1754	0	0	1863
Link Speed (mph)		30				30			25			25
Link Distance (ft)		390				439			346			362
Travel Time (s)		8.9				10.0			9.4			9.9
Confl. Peds. (#/hr)	5		5		5		5	5		5	5	
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	69	0	0	0	160	0	0	36	0	0	2
Sign Control		Free				Free			Stop			Stop

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 30.6%		ICU Level of Service A	
Analysis Period (min) 15			



Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	0
Future Volume (vph)	0
Ideal Flow (vphpl)	1900
Storage Length (ft)	150
Storage Lanes	0
Taper Length (ft)	
Lane Util. Factor	1.00
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	5
Peak Hour Factor	0.92
Shared Lane Traffic (%)	
Lane Group Flow (vph)	0
Sign Control	

Intersection Summary

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕				↕			↕			↕	
Traffic Vol, veh/h	2	36	26	1	27	119	1	28	1	5	0	2	0
Future Vol, veh/h	2	36	26	1	27	119	1	28	1	5	0	2	0
Conflicting Peds, #/hr	5	0	5	0	5	0	5	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	39	28	1	29	129	1	30	1	5	0	2	0

Major/Minor	Major1			Major2				Minor1			Minor2		
Conflicting Flow All	135	0	0	-	72	0	0	256	257	63	258	271	140
Stage 1	-	-	-	-	-	-	-	62	62	-	193	195	-
Stage 2	-	-	-	-	-	-	-	194	195	-	65	76	-
Critical Hdwy	4.12	-	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1449	-	-	-	1528	-	-	697	647	1002	695	636	908
Stage 1	-	-	-	-	-	-	-	949	843	-	809	739	-
Stage 2	-	-	-	-	-	-	-	808	739	-	946	832	-
Platoon blocked, %		-	-			-	-						
Mov Cap-1 Maneuver	1442	-	-	~ -29	~ -29	-	-	688	640	992	683	629	899
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	688	640	-	683	629	-
Stage 1	-	-	-	-	-	-	-	943	838	-	804	735	-
Stage 2	-	-	-	-	-	-	-	802	735	-	934	827	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2		10.3	10.7
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	719	1442	-	-	+	-	-	629
HCM Lane V/C Ratio	0.051	0.002	-	-	-	-	-	0.003
HCM Control Delay (s)	10.3	7.5	0	-	-	-	-	10.7
HCM Lane LOS	B	A	A	-	-	-	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	-	-	-	0

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	4	70	6	5	155	0	2	0	1	3	0	0
Future Volume (vph)	4	70	6	5	155	0	2	0	1	3	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	150		150	0		0		0	
Storage Lanes	0		0	0		0	0		0		0	
Taper Length (ft)	25			25			25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.989						0.955				0.932
Flt Protected		0.998			0.999			0.968				0.976
Satd. Flow (prot)	0	1839	0	0	1861	0	0	1722	0	0	0	1694
Flt Permitted		0.998			0.999			0.968				0.976
Satd. Flow (perm)	0	1839	0	0	1861	0	0	1722	0	0	0	1694
Link Speed (mph)		30			30			25				25
Link Distance (ft)		405			390			333				365
Travel Time (s)		9.2			8.9			9.1				10.0
Confl. Peds. (#/hr)	5		10	10		5	5		5		5	
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	87	0	0	173	0	0	3	0	0	0	6
Sign Control		Free			Free			Stop				Stop

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 21.9%		ICU Level of Service A	
Analysis Period (min) 15			



Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	3
Future Volume (vph)	3
Ideal Flow (vphpl)	1900
Storage Length (ft)	0
Storage Lanes	0
Taper Length (ft)	
Lane Util. Factor	1.00
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	5
Peak Hour Factor	0.92
Shared Lane Traffic (%)	
Lane Group Flow (vph)	0
Sign Control	

Intersection Summary

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations		↕			↕			↕				↕	
Traffic Vol, veh/h	4	70	6	5	155	0	2	0	1	3	0	0	3
Future Vol, veh/h	4	70	6	5	155	0	2	0	1	3	0	0	3
Conflicting Peds, #/hr	5	0	10	10	0	5	5	0	5	0	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	76	7	5	168	0	2	0	1	3	0	0	3

Major/Minor	Major1			Major2			Minor1			Minor2			
Conflicting Flow All	173	0	0	93	0	0	283	281	95	0	276	284	178
Stage 1	-	-	-	-	-	-	98	98	-	0	183	183	-
Stage 2	-	-	-	-	-	-	185	183	-	0	93	101	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1404	-	-	1501	-	-	669	627	962	0	676	625	865
Stage 1	-	-	-	-	-	-	908	814	-	0	819	748	-
Stage 2	-	-	-	-	-	-	817	748	-	0	914	811	-
Platoon blocked, %		-	-		-	-				-			
Mov Cap-1 Maneuver	1397	-	-	1487	-	-	654	613	948	0	665	611	857
Mov Cap-2 Maneuver	-	-	-	-	-	-	654	613	-	0	665	611	-
Stage 1	-	-	-	-	-	-	897	803	-	0	812	741	-
Stage 2	-	-	-	-	-	-	807	741	-	0	906	800	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.2	10	9.2
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	729	1397	-	-	1487	-	-	857
HCM Lane V/C Ratio	0.004	0.003	-	-	0.004	-	-	0.004
HCM Control Delay (s)	10	7.6	0	-	7.4	0	-	9.2
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0



Lane Group	WBL	WBR	NBT	NBR	SBU	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	80	57	206	39	1	39	144
Future Volume (vph)	80	57	206	39	1	39	144
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor							
Frt	0.944		0.979				
Flt Protected	0.972						0.989
Satd. Flow (prot)	1709	0	1824	0	0	0	1842
Flt Permitted	0.972						0.989
Satd. Flow (perm)	1709	0	1824	0	0	0	1842
Link Speed (mph)	30		30				30
Link Distance (ft)	405		350				1210
Travel Time (s)	9.2		8.0				27.5
Confl. Peds. (#/hr)	5	10		7	10	7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)							
Lane Group Flow (vph)	149	0	266	0	0	0	200
Sign Control	Stop		Free				Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 42.9%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	3.1

Movement	WBL	WBR	NBT	NBR	SBU	SBL	SBT
Lane Configurations							
Traffic Vol, veh/h	80	57	206	39	1	39	144
Future Vol, veh/h	80	57	206	39	1	39	144
Conflicting Peds, #/hr	5	10	0	7	10	7	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	-	None
Storage Length	0	-	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	-	0
Grade, %	0	-	0	-	-	-	0
Peak Hour Factor	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	87	62	224	42	1	42	157

Major/Minor	Minor1		Major1		Major2		
Conflicting Flow All	498	262	0	0	-	273	0
Stage 1	252	-	-	-	-	-	-
Stage 2	246	-	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	-	2.218	-
Pot Cap-1 Maneuver	532	777	-	-	-	1290	-
Stage 1	790	-	-	-	-	-	-
Stage 2	795	-	-	-	-	-	-
Platoon blocked, %			-	-			-
Mov Cap-1 Maneuver	526	764	-	-	~ -41	~ -41	-
Mov Cap-2 Maneuver	526	-	-	-	-	-	-
Stage 1	784	-	-	-	-	-	-
Stage 2	791	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.9	0	
HCM LOS	B		

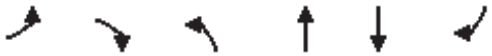
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	604	+	-
HCM Lane V/C Ratio	-	-	0.247	-	-
HCM Control Delay (s)	-	-	12.9	-	-
HCM Lane LOS	-	-	B	-	-
HCM 95th %tile Q(veh)	-	-	1	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	6	0	0	7	0	0
Future Volume (vph)	6	0	0	7	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt				0.865		
Flt Protected	0.950					
Satd. Flow (prot)	1770	0	0	1611	0	0
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	0	1611	0	0
Link Speed (mph)	25		25			25
Link Distance (ft)	380		365			210
Travel Time (s)	10.4		10.0			5.7
Confl. Peds. (#/hr)	5	132		70	70	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	7	0	0	8	0	0
Sign Control	Free		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 16.5%		ICU Level of Service A	
Analysis Period (min) 15			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	26	61	7	1049	996	8
Future Volume (vph)	26	61	7	1049	996	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95
Frt	0.905				0.999	
Flt Protected	0.985					
Satd. Flow (prot)	1660	0	0	1863	3536	0
Flt Permitted	0.985					
Satd. Flow (perm)	1660	0	0	1863	3536	0
Link Speed (mph)	30			45	45	
Link Distance (ft)	247			369	420	
Travel Time (s)	5.6			5.6	6.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	94	0	0	1148	1092	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 72.6%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	4.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	26	61	7	1049	996	8
Future Vol, veh/h	26	61	7	1049	996	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	28	66	8	1140	1083	9

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2244	546	1092	0	-	0
Stage 1	1088	-	-	-	-	-
Stage 2	1156	-	-	-	-	-
Critical Hdwy	6.63	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	41	483	637	-	-	-
Stage 1	285	-	-	-	-	-
Stage 2	299	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	40	483	637	-	-	-
Mov Cap-2 Maneuver	40	-	-	-	-	-
Stage 1	275	-	-	-	-	-
Stage 2	299	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	118	0.1	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	637	-	112	-	-
HCM Lane V/C Ratio	0.012	-	0.844	-	-
HCM Control Delay (s)	10.7	0	118	-	-
HCM Lane LOS	B	A	F	-	-
HCM 95th %tile Q(veh)	0	-	5	-	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	832	94	67	787	68	93
Future Volume (vph)	832	94	67	787	68	93
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		120	225		0	115
Storage Lanes		1	1		1	1
Taper Length (ft)			25		0	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Ped Bike Factor		0.97	1.00		0.99	0.95
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted			0.271		0.950	
Satd. Flow (perm)	3539	1535	504	3539	1761	1504
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		102				101
Link Speed (mph)	35			35	30	
Link Distance (ft)	636			400	1210	
Travel Time (s)	12.4			7.8	27.5	
Confl. Peds. (#/hr)		5	5		5	39
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	904	102	73	855	74	101
Turn Type	NA	Perm	pm+pt	NA	Perm	Perm
Protected Phases	2		1	6		
Permitted Phases		2	6		8	8
Detector Phase	2	2	1	6	8	8
Switch Phase						
Minimum Initial (s)	35.0	35.0	5.0	35.0	5.0	5.0
Minimum Split (s)	41.0	41.0	11.0	41.0	35.0	35.0
Total Split (s)	70.0	70.0	12.0	82.0	18.0	18.0
Total Split (%)	70.0%	70.0%	12.0%	82.0%	18.0%	18.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-1.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	5.0
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	C-Max	C-Max	None	C-Max	None	None
Act Effct Green (s)	71.8	71.8	81.5	81.5	10.5	9.5
Actuated g/C Ratio	0.72	0.72	0.82	0.82	0.10	0.10
v/c Ratio	0.36	0.09	0.14	0.30	0.40	0.43
Control Delay	6.6	1.4	3.1	3.2	47.5	14.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.6	1.4	3.1	3.2	47.5	14.4
LOS	A	A	A	A	D	B
Approach Delay	6.1			3.2	28.4	
Approach LOS	A			A	C	
Queue Length 50th (ft)	110	0	10	66	45	0

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Queue Length 95th (ft)	159	16	m17	m94	87	47
Internal Link Dist (ft)	556			320	1130	
Turn Bay Length (ft)		120	225			115
Base Capacity (vph)	2540	1130	514	2885	246	283
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	0.36	0.09	0.14	0.30	0.30	0.36

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 59 (59%), Referenced to phase 2:EBT and 6:WBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.43			
Intersection Signal Delay: 6.7		Intersection LOS: A	
Intersection Capacity Utilization 62.7%		ICU Level of Service B	
Analysis Period (min) 15			

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Main Street & S Boulder Road





Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	0	918	3	3	4	880	4	0	0	5	0	0
Future Volume (vph)	0	918	3	3	4	880	4	0	0	5	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		50		70		0	0		0	0	
Storage Lanes	0		1		1		0	0		1	0	
Taper Length (ft)	25				75			25			25	
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.850			0.999				0.865		
Flt Protected					0.950							
Satd. Flow (prot)	0	3539	1583	0	1770	3536	0	0	0	1611	0	0
Flt Permitted					0.950							
Satd. Flow (perm)	0	3539	1583	0	1770	3536	0	0	0	1611	0	0
Link Speed (mph)		35				35			20			20
Link Distance (ft)		400				360			338			476
Travel Time (s)		7.8				7.0			11.5			16.2
Confl. Peds. (#/hr)	10		10	5	10		10	5		5	5	
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	998	3	0	7	961	0	0	0	5	0	0
Sign Control		Free				Free			Stop			Stop

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 36.9%		ICU Level of Service A	
Analysis Period (min) 15			



Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	1
Future Volume (vph)	1
Ideal Flow (vphpl)	1900
Storage Length (ft)	0
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Ped Bike Factor	
Frt	0.865
Flt Protected	
Satd. Flow (prot)	1611
Flt Permitted	
Satd. Flow (perm)	1611
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	5
Peak Hour Factor	0.92
Shared Lane Traffic (%)	
Lane Group Flow (vph)	1
Sign Control	

Intersection Summary

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	0	918	3	3	4	880	4	0	0	5	0	0	1
Future Vol, veh/h	0	918	3	3	4	880	4	0	0	5	0	0	1
Conflicting Peds, #/hr	10	0	10	5	10	0	10	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	-	70	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	998	3	3	4	957	4	0	0	5	0	0	1

Major/Minor	Major1			Major2				Minor1			Minor2		
Conflicting Flow All	-	0	0	998	1011	0	0	-	-	514	-	-	496
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	6.44	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	2.52	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	333	681	-	-	0	0	505	0	0	519
Stage 1	0	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	0	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-			-	-						
Mov Cap-1 Maneuver	-	-	-	466	466	-	-	-	-	498	-	-	512
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.1	12.3	12
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	498	-	-	466	-	-	512
HCM Lane V/C Ratio	0.011	-	-	0.016	-	-	0.002
HCM Control Delay (s)	12.3	-	-	12.9	-	-	12
HCM Lane LOS	B	-	-	B	-	-	B
HCM 95th %tile Q(veh)	0	-	-	0.1	-	-	0

Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	15	28	862	15	1	34	817	12	8	1	13	23
Future Volume (vph)	15	28	862	15	1	34	817	12	8	1	13	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		90		0		80		0	0		0	0
Storage Lanes		1		0		1		0	0		0	0
Taper Length (ft)		75				80			25			25
Lane Util. Factor	0.95	1.00	0.95	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.997				0.998			0.921		
Flt Protected		0.950				0.950				0.982		
Satd. Flow (prot)	0	1770	3529	0	0	1770	3532	0	0	1685	0	0
Flt Permitted		0.950				0.950				0.982		
Satd. Flow (perm)	0	1770	3529	0	0	1770	3532	0	0	1685	0	0
Link Speed (mph)			35				35			20		
Link Distance (ft)			360				465			339		
Travel Time (s)			7.0				9.1			11.6		
Confl. Peds. (#/hr)	5	10		10	5	10		10	5		5	5
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	46	953	0	0	38	901	0	0	24	0	0
Sign Control			Free				Free			Stop		

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 45.0%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	3	56
Future Volume (vph)	3	56
Ideal Flow (vphpl)	1900	1900
Storage Length (ft)		0
Storage Lanes		0
Taper Length (ft)		
Lane Util. Factor	1.00	1.00
Ped Bike Factor		
Frt	0.907	
Flt Protected	0.986	
Satd. Flow (prot)	1666	0
Flt Permitted	0.986	
Satd. Flow (perm)	1666	0
Link Speed (mph)	20	
Link Distance (ft)	431	
Travel Time (s)	14.7	
Confl. Peds. (#/hr)		5
Peak Hour Factor	0.92	0.92
Shared Lane Traffic (%)		
Lane Group Flow (vph)	89	0
Sign Control	Stop	

Intersection Summary

Intersection	
Int Delay, s/veh	3.3

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	15	28	862	15	1	34	817	12	8	1	13	23	3	56
Future Vol, veh/h	15	28	862	15	1	34	817	12	8	1	13	23	3	56
Conflicting Peds, #/hr	5	10	0	10	5	10	0	10	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	90	-	-	-	80	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	30	937	16	1	37	888	13	9	1	14	25	3	61

Major/Minor	Major1				Major2				Minor1			Minor2		
Conflicting Flow All	901	911	0	0	953	963	0	0	1574	2034	492	1547	2036	466
Stage 1	-	-	-	-	-	-	-	-	1047	1047	-	981	981	-
Stage 2	-	-	-	-	-	-	-	-	527	987	-	566	1055	-
Critical Hdwy	6.44	4.14	-	-	6.44	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.52	2.22	-	-	2.52	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	384	743	-	-	356	711	-	-	74	56	522	78	56	543
Stage 1	-	-	-	-	-	-	-	-	244	303	-	268	326	-
Stage 2	-	-	-	-	-	-	-	-	502	324	-	476	301	-
Platoon blocked, %			-	-			-	-						
Mov Cap-1 Maneuver	527	527	-	-	684	684	-	-	55	47	515	66	47	535
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	55	47	-	66	47	-
Stage 1	-	-	-	-	-	-	-	-	220	273	-	242	305	-
Stage 2	-	-	-	-	-	-	-	-	414	303	-	418	272	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.4	44.3	53.2
HCM LOS			E	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	115	527	-	-	684	-	-	159
HCM Lane V/C Ratio	0.208	0.089	-	-	0.056	-	-	0.561
HCM Control Delay (s)	44.3	12.5	-	-	10.6	-	-	53.2
HCM Lane LOS	E	B	-	-	B	-	-	F
HCM 95th %tile Q(veh)	0.7	0.3	-	-	0.2	-	-	2.9

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
Lane Configurations												
Traffic Volume (vph)	2	382	467	102	252	526	135	2	158	363	199	5
Future Volume (vph)	2	382	467	102	252	526	135	2	158	363	199	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		150		0	225		270		0		0	
Storage Lanes		2		0	2		1		2		0	
Taper Length (ft)		80			135				70			
Lane Util. Factor	0.95	0.97	0.95	0.95	0.97	0.95	1.00	0.95	0.97	0.95	0.95	0.95
Ped Bike Factor			1.00				0.98			0.99		
Frt			0.973				0.850			0.947		
Flt Protected		0.950			0.950				0.950			
Satd. Flow (prot)	0	3433	3433	0	3433	3539	1583	0	3433	3332	0	0
Flt Permitted		0.437			0.950				0.571			
Satd. Flow (perm)	0	1579	3433	0	3433	3539	1549	0	2063	3332	0	0
Right Turn on Red				Yes			Yes				Yes	
Satd. Flow (RTOR)			27				218			105		
Link Speed (mph)			35			35				45		
Link Distance (ft)			465			1815				418		
Travel Time (s)			9.1			35.4				6.3		
Confl. Peds. (#/hr)				5			10				5	
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	417	619	0	274	572	147	0	174	611	0	0
Turn Type	custom	Prot	NA		Prot	NA	Perm	custom	Prot	NA		custom
Protected Phases		5	2		1	6			3	8		
Permitted Phases	5						6	3				7
Detector Phase	5	5	2		1	6	6	3	3	8		7
Switch Phase												
Minimum Initial (s)	5.0	5.0	10.0		5.0	10.0	10.0	5.0	5.0	6.0		5.0
Minimum Split (s)	10.0	10.0	37.0		10.0	37.0	37.0	10.0	10.0	40.0		10.0
Total Split (s)	18.0	18.0	38.0		14.0	34.0	34.0	12.0	12.0	36.0		12.0
Total Split (%)	18.0%	18.0%	38.0%		14.0%	34.0%	34.0%	12.0%	12.0%	36.0%		12.0%
Yellow Time (s)	3.0	3.0	4.0		3.0	4.0	4.0	3.0	3.0	4.0		3.0
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0		2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0		0.0	0.0		
Total Lost Time (s)		5.0	6.0		5.0	6.0	6.0		5.0	6.0		
Lead/Lag	Lag	Lag	Lag		Lead	Lead	Lead	Lead	Lead	Lead		Lag
Lead-Lag Optimize?												
Recall Mode	None	None	C-Max		None	Max	Max	None	None	Max		None
Act Effct Green (s)		13.0	32.0		9.0	28.0	28.0		7.0	30.0		
Actuated g/C Ratio		0.13	0.32		0.09	0.28	0.28		0.07	0.30		
v/c Ratio		2.03	0.55		0.89	0.58	0.25		1.21	0.57		
Control Delay		505.8	25.2		75.6	33.7	1.8		183.0	26.6		
Queue Delay		0.0	0.0		0.0	0.0	0.0		0.0	0.0		
Total Delay		505.8	25.2		75.6	33.7	1.8		183.0	26.6		
LOS		F	C		E	C	A		F	C		
Approach Delay			218.6			40.5				61.3		
Approach LOS			F			D				E		
Queue Length 50th (ft)		~219	113		90	164	0		~70	142		

Lane Group	SBL	SBT	SBR
Lane Configurations			
Traffic Volume (vph)	110	392	260
Future Volume (vph)	110	392	260
Ideal Flow (vphpl)	1900	1900	1900
Storage Length (ft)	185		270
Storage Lanes	2		1
Taper Length (ft)	155		
Lane Util. Factor	0.97	0.95	1.00
Ped Bike Factor			0.98
Frt			0.850
Flt Protected	0.950		
Satd. Flow (prot)	3433	3539	1583
Flt Permitted	0.571		
Satd. Flow (perm)	2063	3539	1557
Right Turn on Red			Yes
Satd. Flow (RTOR)			283
Link Speed (mph)		45	
Link Distance (ft)		1337	
Travel Time (s)		20.3	
Confl. Peds. (#/hr)			5
Peak Hour Factor	0.92	0.92	0.92
Shared Lane Traffic (%)			
Lane Group Flow (vph)	125	426	283
Turn Type	Prot	NA	Perm
Protected Phases	7	4	
Permitted Phases			4
Detector Phase	7	4	4
Switch Phase			
Minimum Initial (s)	5.0	6.0	6.0
Minimum Split (s)	10.0	36.0	36.0
Total Split (s)	12.0	36.0	36.0
Total Split (%)	12.0%	36.0%	36.0%
Yellow Time (s)	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0
Lead/Lag	Lag	Lag	Lag
Lead-Lag Optimize?			
Recall Mode	None	Max	Max
Act Effct Green (s)	7.0	30.0	30.0
Actuated g/C Ratio	0.07	0.30	0.30
v/c Ratio	0.87	0.40	0.43
Control Delay	94.1	29.2	5.4
Queue Delay	0.0	0.0	0.0
Total Delay	94.1	29.2	5.4
LOS	F	C	A
Approach Delay		30.9	
Approach LOS		C	
Queue Length 50th (ft)	41	113	0

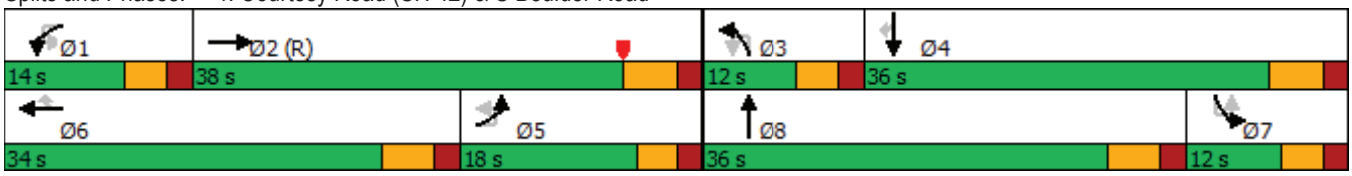
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
Queue Length 95th (ft)		#311	149		#163	221	10		#138	199		
Internal Link Dist (ft)			385			1735				338		
Turn Bay Length (ft)		150			225		270					
Base Capacity (vph)		205	1116		308	990	590		144	1073		
Starvation Cap Reductn		0	0		0	0	0		0	0		
Spillback Cap Reductn		0	0		0	0	0		0	0		
Storage Cap Reductn		0	0		0	0	0		0	0		
Reduced v/c Ratio		2.03	0.55		0.89	0.58	0.25		1.21	0.57		

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow, Master Intersection	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 2.03	
Intersection Signal Delay: 93.4	Intersection LOS: F
Intersection Capacity Utilization 87.6%	ICU Level of Service E
Analysis Period (min) 15	

~ 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.

Splits and Phases: 4: Courtesy Road (SH 42) & S Boulder Road





Lane Group	SBL	SBT	SBR
Queue Length 95th (ft)	#96	157	58
Internal Link Dist (ft)		1257	
Turn Bay Length (ft)	185		270
Base Capacity (vph)	144	1061	665
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.87	0.40	0.43

Intersection Summary



Lane Group	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	8	1	1	0	715	734	10
Future Volume (vph)	8	1	1	0	715	734	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		140			0
Storage Lanes	1	0		1			0
Taper Length (ft)	25			100			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor							
Frt	0.986					0.998	
Flt Protected	0.957			0.950			
Satd. Flow (prot)	1758	0	0	1770	1863	3532	0
Flt Permitted	0.957			0.950			
Satd. Flow (perm)	1758	0	0	1770	1863	3532	0
Link Speed (mph)	20				45	45	
Link Distance (ft)	418				420	418	
Travel Time (s)	14.3				6.4	6.3	
Confl. Peds. (#/hr)				5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)							
Lane Group Flow (vph)	10	0	0	1	777	809	0
Sign Control	Stop				Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	47.6%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Vol, veh/h	8	1	1	0	715	734	10
Future Vol, veh/h	8	1	1	0	715	734	10
Conflicting Peds, #/hr	0	0	0	5	0	0	5
Sign Control	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	None	-	-	None	-	None
Storage Length	0	-	-	140	-	-	-
Veh in Median Storage, #	0	-	-	-	0	0	-
Grade, %	0	-	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	9	1	1	0	777	798	11

Major/Minor	Minor2		Major1			Major2	
Conflicting Flow All	1586	410	809	814	0	-	0
Stage 1	809	-	-	-	-	-	-
Stage 2	777	-	-	-	-	-	-
Critical Hdwy	6.63	6.93	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	3.119	2.219	-	-	-
Pot Cap-1 Maneuver	108	592	338	811	-	-	-
Stage 1	399	-	-	-	-	-	-
Stage 2	452	-	-	-	-	-	-
Platoon blocked, %					-	-	-
Mov Cap-1 Maneuver	107	589	337	337	-	-	-
Mov Cap-2 Maneuver	107	-	-	-	-	-	-
Stage 1	396	-	-	-	-	-	-
Stage 2	450	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	38.2	0	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	337	-	118	-	-
HCM Lane V/C Ratio	0.003	-	0.083	-	-
HCM Control Delay (s)	15.7	-	38.2	-	-
HCM Lane LOS	C	-	E	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	7	21	2	1	6	21	663	43	11	685	44
Future Volume (vph)	14	7	21	2	1	6	21	663	43	11	685	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		60	225		0	500		0
Storage Lanes	0		0	0		1	1		0	1		1
Taper Length (ft)	0			0			25			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.932				0.850		0.991				0.850
Flt Protected		0.984			0.968		0.950			0.950		
Satd. Flow (prot)	0	1708	0	0	1803	1583	1770	1846	0	1770	1863	1583
Flt Permitted		0.984			0.968		0.950			0.950		
Satd. Flow (perm)	0	1708	0	0	1803	1583	1770	1846	0	1770	1863	1583
Link Speed (mph)		30			20			45			45	
Link Distance (ft)		439			281			380			369	
Travel Time (s)		10.0			9.6			5.8			5.6	
Confl. Bikes (#/hr)												5
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	46	0	0	3	7	23	768	0	12	745	48
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 54.2%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	14	7	21	2	1	6	21	663	43	11	685	44
Future Vol, veh/h	14	7	21	2	1	6	21	663	43	11	685	44
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	60	225	-	-	500	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	15	8	23	2	1	7	23	721	47	12	745	48

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1564	1583	745	1600	1608	745	793	0	0	768	0	0
Stage 1	769	769	-	791	791	-	-	-	-	-	-	-
Stage 2	795	814	-	809	817	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	91	109	414	85	105	414	828	-	-	846	-	-
Stage 1	394	411	-	383	401	-	-	-	-	-	-	-
Stage 2	381	391	-	374	390	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	86	104	414	73	101	414	828	-	-	846	-	-
Mov Cap-2 Maneuver	86	104	-	73	101	-	-	-	-	-	-	-
Stage 1	383	405	-	372	390	-	-	-	-	-	-	-
Stage 2	364	380	-	342	385	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	39.2	26.5	0.3	0.1
HCM LOS	E	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	828	-	-	150	80	414	846	-	-
HCM Lane V/C Ratio	0.028	-	-	0.304	0.041	0.016	0.014	-	-
HCM Control Delay (s)	9.5	-	-	39.2	51.9	13.8	9.3	-	-
HCM Lane LOS	A	-	-	E	F	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	1.2	0.1	0	0	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	31	24	15	57	1	23	0	10	1	0	1
Future Volume (vph)	0	31	24	15	57	1	23	0	10	1	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	150		150	150		150	150		150
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.941			0.998			0.959			0.932	
Flt Protected					0.990			0.966			0.976	
Satd. Flow (prot)	0	1753	0	0	1840	0	0	1726	0	0	1694	0
Flt Permitted					0.990			0.966			0.976	
Satd. Flow (perm)	0	1753	0	0	1840	0	0	1726	0	0	1694	0
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		390			439			346			362	
Travel Time (s)		8.9			10.0			9.4			9.9	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	60	0	0	79	0	0	36	0	0	2	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 22.5%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	31	24	15	57	1	23	0	10	1	0	1
Future Vol, veh/h	0	31	24	15	57	1	23	0	10	1	0	1
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	34	26	16	62	1	25	0	11	1	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	68	0	0	65	0	0	152	152	57	158	165	73
Stage 1	-	-	-	-	-	-	52	52	-	100	100	-
Stage 2	-	-	-	-	-	-	100	100	-	58	65	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1533	-	-	1537	-	-	815	740	1009	808	728	989
Stage 1	-	-	-	-	-	-	961	852	-	906	812	-
Stage 2	-	-	-	-	-	-	906	812	-	954	841	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1526	-	-	1530	-	-	800	724	999	785	713	980
Mov Cap-2 Maneuver	-	-	-	-	-	-	800	724	-	785	713	-
Stage 1	-	-	-	-	-	-	956	848	-	901	799	-
Stage 2	-	-	-	-	-	-	891	799	-	939	837	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1.5	9.4	9.1
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	851	1526	-	-	1530	-	-	872
HCM Lane V/C Ratio	0.042	-	-	-	0.011	-	-	0.002
HCM Control Delay (s)	9.4	0	-	-	7.4	0	-	9.1
HCM Lane LOS	A	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	57	3	1	77	3	8	0	0	0	0	4
Future Volume (vph)	6	57	3	1	77	3	8	0	0	0	0	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	150		150	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.994			0.995						0.865	
Flt Protected		0.995			0.999			0.950				
Satd. Flow (prot)	0	1842	0	0	1852	0	0	1770	0	0	1611	0
Flt Permitted		0.995			0.999			0.950				
Satd. Flow (perm)	0	1842	0	0	1852	0	0	1770	0	0	1611	0
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		405			390			333			365	
Travel Time (s)		9.2			8.9			9.1			10.0	
Confl. Peds. (#/hr)	5		10	10		5	5		5	5		5
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	72	0	0	88	0	0	9	0	0	4	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 23.1%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	57	3	1	77	3	8	0	0	0	0	4
Future Vol, veh/h	6	57	3	1	77	3	8	0	0	0	0	4
Conflicting Peds, #/hr	5	0	10	10	0	5	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	62	3	1	84	3	9	0	0	0	0	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	92	0	0	75	0	0	183	182	79	176	182	96
Stage 1	-	-	-	-	-	-	88	88	-	93	93	-
Stage 2	-	-	-	-	-	-	95	94	-	83	89	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1503	-	-	1524	-	-	778	712	981	786	712	960
Stage 1	-	-	-	-	-	-	920	822	-	914	818	-
Stage 2	-	-	-	-	-	-	912	817	-	925	821	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1496	-	-	1509	-	-	760	697	967	775	697	951
Mov Cap-2 Maneuver	-	-	-	-	-	-	760	697	-	775	697	-
Stage 1	-	-	-	-	-	-	907	810	-	905	813	-
Stage 2	-	-	-	-	-	-	903	812	-	916	809	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0.1	9.8	8.8
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	760	1496	-	-	1509	-	-	951
HCM Lane V/C Ratio	0.011	0.004	-	-	0.001	-	-	0.005
HCM Control Delay (s)	9.8	7.4	0	-	7.4	0	-	8.8
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	57	36	130	46	18	138
Future Volume (vph)	57	36	130	46	18	138
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.948		0.965			
Flt Protected	0.970					0.994
Satd. Flow (prot)	1713	0	1798	0	0	1852
Flt Permitted	0.970					0.994
Satd. Flow (perm)	1713	0	1798	0	0	1852
Link Speed (mph)	30		30			30
Link Distance (ft)	405		350			1210
Travel Time (s)	9.2		8.0			27.5
Confl. Peds. (#/hr)	1	2		17	17	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	101	0	191	0	0	170
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 35.0%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	2.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	57	36	130	46	18	138
Future Vol, veh/h	57	36	130	46	18	138
Conflicting Peds, #/hr	1	2	0	17	17	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	62	39	141	50	20	150

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	374	185	0	0	208	0
Stage 1	183	-	-	-	-	-
Stage 2	191	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	627	857	-	-	1363	-
Stage 1	848	-	-	-	-	-
Stage 2	841	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	606	842	-	-	1341	-
Mov Cap-2 Maneuver	606	-	-	-	-	-
Stage 1	821	-	-	-	-	-
Stage 2	840	-	-	-	-	-

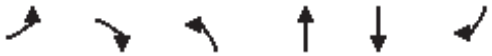
Approach	WB	NB	SB
HCM Control Delay, s	11.2	0	0.9
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	680	1341	-
HCM Lane V/C Ratio	-	-	0.149	0.015	-
HCM Control Delay (s)	-	-	11.2	7.7	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.5	0	-



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	4	0	0	9	0	0
Future Volume (vph)	4	0	0	9	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt				0.865		
Flt Protected	0.950					
Satd. Flow (prot)	1770	0	0	1611	0	0
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	0	1611	0	0
Link Speed (mph)	25		25			25
Link Distance (ft)	380		365			210
Travel Time (s)	10.4		10.0			5.7
Confl. Peds. (#/hr)	5	132		70	70	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	4	0	0	10	0	0
Sign Control	Free		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 16.5%		ICU Level of Service A	
Analysis Period (min) 15			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	38	11	6	652	691	6
Future Volume (vph)	38	11	6	652	691	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95
Frt	0.969				0.999	
Flt Protected	0.963					
Satd. Flow (prot)	1738	0	0	1863	3536	0
Flt Permitted	0.963					
Satd. Flow (perm)	1738	0	0	1863	3536	0
Link Speed (mph)	30			45	45	
Link Distance (ft)	244			369	420	
Travel Time (s)	5.5			5.6	6.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	53	0	0	716	758	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 49.1%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	38	11	6	652	691	6
Future Vol, veh/h	38	11	6	652	691	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	41	12	7	709	751	7

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1478	379	758	0	-	0
Stage 1	755	-	-	-	-	-
Stage 2	723	-	-	-	-	-
Critical Hdwy	6.63	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	127	620	851	-	-	-
Stage 1	426	-	-	-	-	-
Stage 2	479	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	125	620	851	-	-	-
Mov Cap-2 Maneuver	125	-	-	-	-	-
Stage 1	420	-	-	-	-	-
Stage 2	479	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	40.9	0.1	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	851	-	152	-	-
HCM Lane V/C Ratio	0.008	-	0.35	-	-
HCM Control Delay (s)	9.3	0	40.9	-	-
HCM Lane LOS	A	A	E	-	-
HCM 95th %tile Q(veh)	0	-	1.4	-	-



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1171	111	75	1535	67	95
Future Volume (vph)	1171	111	75	1535	67	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		120	225		0	115
Storage Lanes		1	1		1	1
Taper Length (ft)			25		0	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Ped Bike Factor		0.97			0.99	0.95
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted			0.171		0.950	
Satd. Flow (perm)	3539	1531	319	3539	1759	1505
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		97				103
Link Speed (mph)	35			35	30	
Link Distance (ft)	636			400	1210	
Travel Time (s)	12.4			7.8	27.5	
Confl. Peds. (#/hr)		5	5		5	32
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1273	121	82	1668	73	103
Turn Type	NA	Perm	pm+pt	NA	Perm	Perm
Protected Phases	2		1	6		
Permitted Phases		2	6		8	8
Detector Phase	2	2	1	6	8	8
Switch Phase						
Minimum Initial (s)	35.0	35.0	5.0	35.0	5.0	5.0
Minimum Split (s)	41.0	41.0	11.0	41.0	35.0	35.0
Total Split (s)	85.0	85.0	14.0	99.0	21.0	21.0
Total Split (%)	70.8%	70.8%	11.7%	82.5%	17.5%	17.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-1.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	5.0
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	C-Max	C-Max	None	C-Max	None	None
Act Effct Green (s)	88.1	88.1	98.4	98.4	13.6	12.6
Actuated g/C Ratio	0.73	0.73	0.82	0.82	0.11	0.10
v/c Ratio	0.49	0.11	0.22	0.57	0.37	0.41
Control Delay	8.5	2.1	5.1	7.3	53.1	14.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.5	2.1	5.1	7.3	53.1	14.1
LOS	A	A	A	A	D	B
Approach Delay	7.9			7.2	30.3	
Approach LOS	A			A	C	
Queue Length 50th (ft)	230	5	20	239	51	0

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Queue Length 95th (ft)	288	25	m24	m265	98	52
Internal Link Dist (ft)	556			320	1130	
Turn Bay Length (ft)		120	225			115
Base Capacity (vph)	2598	1149	382	2901	249	289
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	0.49	0.11	0.21	0.57	0.29	0.36

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 23 (19%), Referenced to phase 2:EBT and 6:WBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.57			
Intersection Signal Delay: 8.8		Intersection LOS: A	
Intersection Capacity Utilization 66.9%		ICU Level of Service C	
Analysis Period (min) 15			

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Main Street & S Boulder Road





Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	0	1133	0	2	0	1668	5	0	0	0	0	0
Future Volume (vph)	0	1133	0	2	0	1668	5	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		50		70		0	0		0	0	
Storage Lanes	0		1		1		0	0		1	0	
Taper Length (ft)	25				25			25			25	
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt												
Flt Protected					0.950							
Satd. Flow (prot)	0	3539	1863	0	1770	3539	0	0	0	1863	0	0
Flt Permitted					0.950							
Satd. Flow (perm)	0	3539	1863	0	1770	3539	0	0	0	1863	0	0
Link Speed (mph)		35				35			20			20
Link Distance (ft)		400				360			338			476
Travel Time (s)		7.8				7.0			11.5			16.2
Confl. Peds. (#/hr)	10		10	5	10		10	5		5	5	
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1232	0	0	2	1818	0	0	0	0	0	0
Sign Control		Free				Free			Stop			Stop

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 57.8%		ICU Level of Service B	
Analysis Period (min) 15			



Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	11
Future Volume (vph)	11
Ideal Flow (vphpl)	1900
Storage Length (ft)	0
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Ped Bike Factor	
Frt	0.865
Flt Protected	
Satd. Flow (prot)	1611
Flt Permitted	
Satd. Flow (perm)	1611
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	5
Peak Hour Factor	0.92
Shared Lane Traffic (%)	
Lane Group Flow (vph)	12
Sign Control	

Intersection Summary

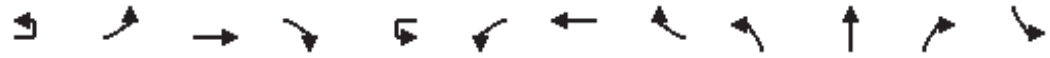
Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	0	1133	0	2	0	1668	5	0	0	0	0	0	11
Future Vol, veh/h	0	1133	0	2	0	1668	5	0	0	0	0	0	11
Conflicting Peds, #/hr	10	0	10	5	10	0	10	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	-	70	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1232	0	2	0	1813	5	0	0	0	0	0	12

Major/Minor	Major1			Major2				Minor1			Minor2		
Conflicting Flow All	-	0	0	1232	1242	0	0	-	-	631	-	-	924
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	6.44	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	2.52	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	235	556	-	-	0	0	424	0	0	271
Stage 1	0	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	0	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-			-	-						
Mov Cap-1 Maneuver	-	-	-	235	235	-	-	-	-	418	-	-	267
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	0	19.1
HCM LOS			A	C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	235	-	-	267
HCM Lane V/C Ratio	-	-	-	0.009	-	-	0.045
HCM Control Delay (s)	0	-	-	20.5	-	-	19.1
HCM Lane LOS	A	-	-	C	-	-	C
HCM 95th %tile Q(veh)	-	-	-	0	-	-	0.1



Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	6	21	1119	0	1	8	1638	8	0	0	2	8
Future Volume (vph)	6	21	1119	0	1	8	1638	8	0	0	2	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		90		0		80		0	0		0	0
Storage Lanes		1		0		1		0	0		0	0
Taper Length (ft)		25				25			25			25
Lane Util. Factor	0.95	1.00	0.95	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt							0.999			0.865		
Flt Protected		0.950				0.950						
Satd. Flow (prot)	0	1770	3539	0	0	1770	3536	0	0	1611	0	0
Flt Permitted		0.950				0.950						
Satd. Flow (perm)	0	1770	3539	0	0	1770	3536	0	0	1611	0	0
Link Speed (mph)			35				35			20		
Link Distance (ft)			360				465			339		
Travel Time (s)			7.0				9.1			11.6		
Confl. Peds. (#/hr)	5	10		10	5	10		10	5		5	5
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	30	1216	0	0	10	1789	0	0	2	0	0
Sign Control			Free				Free			Stop		

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 62.1%		ICU Level of Service B	
Analysis Period (min) 15			

Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	0	28
Future Volume (vph)	0	28
Ideal Flow (vphpl)	1900	1900
Storage Length (ft)		0
Storage Lanes		0
Taper Length (ft)		
Lane Util. Factor	1.00	1.00
Ped Bike Factor		
Frt	0.896	
Flt Protected	0.989	
Satd. Flow (prot)	1651	0
Flt Permitted	0.989	
Satd. Flow (perm)	1651	0
Link Speed (mph)	20	
Link Distance (ft)	431	
Travel Time (s)	14.7	
Confl. Peds. (#/hr)		5
Peak Hour Factor	0.92	0.92
Shared Lane Traffic (%)		
Lane Group Flow (vph)	39	0
Sign Control	Stop	

Intersection Summary

Intersection	
Int Delay, s/veh	2.8

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	6	21	1119	0	1	8	1638	8	0	0	2	8	0	28
Future Vol, veh/h	6	21	1119	0	1	8	1638	8	0	0	2	8	0	28
Conflicting Peds, #/hr	5	10	0	10	5	10	0	10	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	90	-	-	-	80	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	23	1216	0	1	9	1780	9	0	0	2	9	0	30

Major/Minor	Major1				Major2				Minor1			Minor2		
Conflicting Flow All	1789	1799	0	0	1216	1226	0	0	2201	3105	623	2488	3101	910
Stage 1	-	-	-	-	-	-	-	-	1286	1286	-	1815	1815	-
Stage 2	-	-	-	-	-	-	-	-	915	1819	-	673	1286	-
Critical Hdwy	6.44	4.14	-	-	6.44	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.52	2.22	-	-	2.52	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	102	339	-	-	241	564	-	-	25	11	429	15	11	277
Stage 1	-	-	-	-	-	-	-	-	174	233	-	81	128	-
Stage 2	-	-	-	-	-	-	-	-	294	127	-	411	233	-
Platoon blocked, %			-	-			-	-						
Mov Cap-1 Maneuver	211	211	-	-	487	487	-	-	19	9	423	13	9	273
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	19	9	-	13	9	-
Stage 1	-	-	-	-	-	-	-	-	149	199	-	69	124	-
Stage 2	-	-	-	-	-	-	-	-	255	123	-	351	199	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.1	13.6	194.7
HCM LOS			B	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	423	211	-	-	487	-	-	50
HCM Lane V/C Ratio	0.005	0.139	-	-	0.02	-	-	0.783
HCM Control Delay (s)	13.6	24.8	-	-	12.5	-	-	194.7
HCM Lane LOS	B	C	-	-	B	-	-	F
HCM 95th %tile Q(veh)	0	0.5	-	-	0.1	-	-	3.2

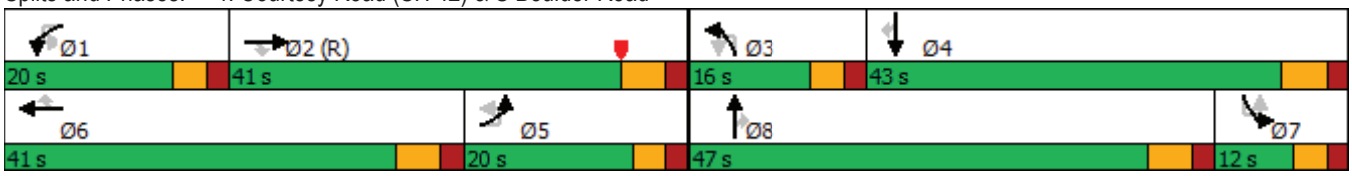
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	369	535	190	332	864	195	1	226	603	258	7	164
Future Volume (vph)	369	535	190	332	864	195	1	226	603	258	7	164
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		100	225		270		0		0		185
Storage Lanes	2		1	2		1		2		1		2
Taper Length (ft)	25			25				25				25
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.95	0.97	0.95	1.00	0.95	0.97
Ped Bike Factor			0.98			0.98				0.98		
Frt			0.850			0.850				0.850		
Flt Protected	0.950			0.950				0.950				0.950
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	0	3433	3539	1583	0	3433
Flt Permitted	0.950			0.950				0.333				0.500
Satd. Flow (perm)	3433	3539	1555	3433	3539	1546	0	1203	3539	1556	0	1807
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)			173			182				280		
Link Speed (mph)		35			35				45			
Link Distance (ft)		465			1815				418			
Travel Time (s)		9.1			35.4				6.3			
Confl. Peds. (#/hr)			5			10				5		
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	401	582	207	361	939	212	0	247	655	280	0	186
Turn Type	Prot	NA	Perm	Prot	NA	Perm	custom	Prot	NA	Perm	custom	Prot
Protected Phases	5	2		1	6			3	8			7
Permitted Phases			2			6	3			8	7	
Detector Phase	5	2	2	1	6	6	3	3	8	8	7	7
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	5.0	6.0	6.0	5.0	5.0
Minimum Split (s)	10.0	37.0	37.0	10.0	37.0	37.0	10.0	10.0	40.0	40.0	10.0	10.0
Total Split (s)	20.0	41.0	41.0	20.0	41.0	41.0	16.0	16.0	47.0	47.0	12.0	12.0
Total Split (%)	16.7%	34.2%	34.2%	16.7%	34.2%	34.2%	13.3%	13.3%	39.2%	39.2%	10.0%	10.0%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	3.0	4.0	4.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-2.0	-2.0	-1.0	-2.0	-2.0		-1.0	-2.0	-2.0		-1.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0		4.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lead	Lead	Lead	Lag	Lag
Lead-Lag Optimize?												
Recall Mode	None	C-Max	C-Max	None	Max	Max	None	None	Max	Max	None	None
Act Effct Green (s)	16.0	37.3	37.3	15.7	37.0	37.0		12.0	43.0	43.0		8.0
Actuated g/C Ratio	0.13	0.31	0.31	0.13	0.31	0.31		0.10	0.36	0.36		0.07
v/c Ratio	0.88	0.53	0.34	0.80	0.86	0.35		2.06	0.52	0.38		1.55
Control Delay	63.8	29.4	11.3	65.1	48.4	8.5		529.6	35.5	9.4		321.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0
Total Delay	63.8	29.4	11.3	65.1	48.4	8.5		529.6	35.5	9.4		321.4
LOS	E	C	B	E	D	A		F	D	A		F
Approach Delay		37.9			46.8				132.6			
Approach LOS		D			D				F			
Queue Length 50th (ft)	158	196	58	141	360	16		~157	241	6		~104

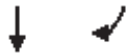
Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	738	551
Future Volume (vph)	738	551
Ideal Flow (vphpl)	1900	1900
Storage Length (ft)		270
Storage Lanes		1
Taper Length (ft)		
Lane Util. Factor	0.95	1.00
Ped Bike Factor		0.98
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3539	1583
Flt Permitted		
Satd. Flow (perm)	3539	1555
Right Turn on Red		Yes
Satd. Flow (RTOR)		294
Link Speed (mph)	45	
Link Distance (ft)	1337	
Travel Time (s)	20.3	
Confl. Peds. (#/hr)		5
Peak Hour Factor	0.92	0.92
Shared Lane Traffic (%)		
Lane Group Flow (vph)	802	599
Turn Type	NA	Perm
Protected Phases	4	
Permitted Phases		4
Detector Phase	4	4
Switch Phase		
Minimum Initial (s)	6.0	6.0
Minimum Split (s)	36.0	36.0
Total Split (s)	43.0	43.0
Total Split (%)	35.8%	35.8%
Yellow Time (s)	4.0	4.0
All-Red Time (s)	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0
Total Lost Time (s)	4.0	4.0
Lead/Lag	Lag	Lag
Lead-Lag Optimize?		
Recall Mode	Max	Max
Act Effct Green (s)	39.0	39.0
Actuated g/C Ratio	0.32	0.32
v/c Ratio	0.70	0.85
Control Delay	39.2	31.8
Queue Delay	0.0	0.0
Total Delay	39.2	31.8
LOS	D	C
Approach Delay	69.5	
Approach LOS	E	
Queue Length 50th (ft)	284	239

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Queue Length 95th (ft)	#245	256	115	#207	#447	75		#236	309	88		#180
Internal Link Dist (ft)		385			1735				338			
Turn Bay Length (ft)	150		100	225		270						185
Base Capacity (vph)	457	1099	602	457	1091	602		120	1268	737		120
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	0.88	0.53	0.34	0.79	0.86	0.35		2.06	0.52	0.38		1.55

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow, Master Intersection			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 2.06			
Intersection Signal Delay: 70.0		Intersection LOS: E	
Intersection Capacity Utilization 90.8%		ICU Level of Service E	
Analysis Period (min) 15			
~ 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.			

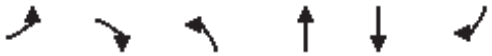
Splits and Phases: 4: Courtesy Road (SH 42) & S Boulder Road





Lane Group	SBT	SBR
Queue Length 95th (ft)	356	#458
Internal Link Dist (ft)	1257	
Turn Bay Length (ft)		270
Base Capacity (vph)	1150	703
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.70	0.85

Intersection Summary



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	1060	1252	1
Future Volume (vph)	0	0	0	1060	1252	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	140			0
Storage Lanes	0	1	0			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor						
Frt						
Flt Protected						
Satd. Flow (prot)	0	1863	0	3539	3539	0
Flt Permitted						
Satd. Flow (perm)	0	1863	0	3539	3539	0
Link Speed (mph)	20			45	45	
Link Distance (ft)	418			420	418	
Travel Time (s)	14.3			6.4	6.3	
Confl. Peds. (#/hr)			5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	1152	1362	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	38.0%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	1060	1252	1
Future Vol, veh/h	0	0	0	1060	1252	1
Conflicting Peds, #/hr	0	0	5	0	0	5
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	1152	1361	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	686	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	390	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	388	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	0	-	-
HCM Lane LOS	-	A	-	-
HCM 95th %tile Q(veh)	-	-	-	-

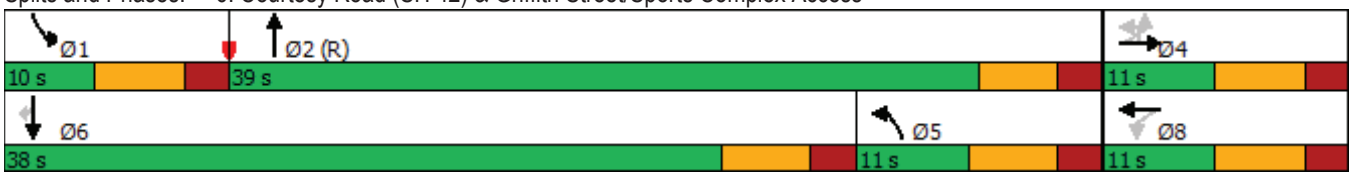
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	0	54	1	1	1	37	1029	4	5	1151	83
Future Volume (vph)	29	0	54	1	1	1	37	1029	4	5	1151	83
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		0	50		0	225		0	500		273
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor												0.98
Frt		0.850			0.925			0.999				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1583	0	1770	1723	0	1770	3536	0	1770	3539	1583
Flt Permitted	0.800			0.800			0.950			0.950		
Satd. Flow (perm)	1490	1583	0	1490	1723	0	1770	3536	0	1770	3539	1546
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		273			1			1				164
Link Speed (mph)		30			20			45			45	
Link Distance (ft)		439			281			380			369	
Travel Time (s)		10.0			9.6			5.8			5.6	
Confl. Bikes (#/hr)												5
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	32	59	0	1	2	0	40	1122	0	5	1251	90
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								6
Detector Phase	4	4		8	8		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	25.0	25.0		25.0	25.0		11.0	24.5		11.0	25.0	25.0
Total Split (s)	11.0	11.0		11.0	11.0		11.0	39.0		10.0	38.0	38.0
Total Split (%)	18.3%	18.3%		18.3%	18.3%		18.3%	65.0%		16.7%	63.3%	63.3%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	3.5		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-1.5		-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lead/Lag							Lag	Lag		Lead	Lead	Lead
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None		None	C-Max		None	Max	Max
Act Effct Green (s)	7.0	7.0		7.0	7.0		7.0	49.0		6.6	46.6	46.6
Actuated g/C Ratio	0.12	0.12		0.12	0.12		0.12	0.82		0.11	0.78	0.78
v/c Ratio	0.18	0.14		0.01	0.01		0.19	0.39		0.03	0.46	0.07
Control Delay	26.7	0.7		24.0	21.0		26.5	3.9		28.8	4.4	0.6
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	26.7	0.7		24.0	21.0		26.5	3.9		28.8	4.4	0.6
LOS	C	A		C	C		C	A		C	A	A
Approach Delay		9.8			22.0			4.7			4.2	
Approach LOS		A			C			A			A	
Queue Length 50th (ft)	11	0		0	0		13	53		3	159	2

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (ft)	26	0		4	6		38	160		m4	274	m3
Internal Link Dist (ft)		359			201			300			289	
Turn Bay Length (ft)	50			50			225			500		273
Base Capacity (vph)	173	425		173	201		206	2888		195	2748	1237
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.18	0.14		0.01	0.01		0.19	0.39		0.03	0.46	0.07

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 43 (72%), Referenced to phase 2:NBT, Start of Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.46			
Intersection Signal Delay: 4.6		Intersection LOS: A	
Intersection Capacity Utilization 46.8%		ICU Level of Service A	
Analysis Period (min) 15			

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Courtesy Road (SH 42) & Griffith Street/Sports Complex Access





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	61	12	14	90	2	19	0	19	0	0	1
Future Volume (vph)	0	61	12	14	90	2	19	0	19	0	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	150		150	150		150	150		150
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.978			0.998			0.932			0.865	
Flt Protected					0.994			0.976				
Satd. Flow (prot)	0	1822	0	0	1848	0	0	1694	0	0	1611	0
Flt Permitted					0.994			0.976				
Satd. Flow (perm)	0	1822	0	0	1848	0	0	1694	0	0	1611	0
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		390			439			346			362	
Travel Time (s)		8.9			10.0			9.4			9.9	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	79	0	0	115	0	0	42	0	0	1	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 28.9%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	61	12	14	90	2	19	0	19	0	0	1
Future Vol, veh/h	0	61	12	14	90	2	19	0	19	0	0	1
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	66	13	15	98	2	21	0	21	0	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	105	0	0	84	0	0	213	213	83	222	218	109
Stage 1	-	-	-	-	-	-	78	78	-	134	134	-
Stage 2	-	-	-	-	-	-	135	135	-	88	84	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1486	-	-	1513	-	-	744	684	976	734	680	945
Stage 1	-	-	-	-	-	-	931	830	-	869	785	-
Stage 2	-	-	-	-	-	-	868	785	-	920	825	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1479	-	-	1506	-	-	730	670	967	705	666	936
Mov Cap-2 Maneuver	-	-	-	-	-	-	730	670	-	705	666	-
Stage 1	-	-	-	-	-	-	926	826	-	865	772	-
Stage 2	-	-	-	-	-	-	853	772	-	896	821	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1	9.6	8.9
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	832	1479	-	-	1506	-	-	936
HCM Lane V/C Ratio	0.05	-	-	-	0.01	-	-	0.001
HCM Control Delay (s)	9.6	0	-	-	7.4	0	-	8.9
HCM Lane LOS	A	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	74	2	3	127	1	6	0	3	1	0	5
Future Volume (vph)	2	74	2	3	127	1	6	0	3	1	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	150		150	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.997			0.999			0.959			0.887	
Flt Protected		0.999			0.999			0.966			0.992	
Satd. Flow (prot)	0	1855	0	0	1859	0	0	1726	0	0	1639	0
Flt Permitted		0.999			0.999			0.966			0.992	
Satd. Flow (perm)	0	1855	0	0	1859	0	0	1726	0	0	1639	0
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		405			390			333			365	
Travel Time (s)		9.2			8.9			9.1			10.0	
Confl. Peds. (#/hr)	5		10	10		5	5		5	5		5
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	84	0	0	142	0	0	10	0	0	6	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 20.5%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	74	2	3	127	1	6	0	3	1	0	5
Future Vol, veh/h	2	74	2	3	127	1	6	0	3	1	0	5
Conflicting Peds, #/hr	5	0	10	10	0	5	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	80	2	3	138	1	7	0	3	1	0	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	144	0	0	92	0	0	247	245	96	242	246	149
Stage 1	-	-	-	-	-	-	95	95	-	150	150	-
Stage 2	-	-	-	-	-	-	152	150	-	92	96	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1438	-	-	1503	-	-	707	657	960	712	656	898
Stage 1	-	-	-	-	-	-	912	816	-	853	773	-
Stage 2	-	-	-	-	-	-	850	773	-	915	815	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1431	-	-	1489	-	-	691	645	946	701	644	889
Mov Cap-2 Maneuver	-	-	-	-	-	-	691	645	-	701	644	-
Stage 1	-	-	-	-	-	-	902	807	-	848	768	-
Stage 2	-	-	-	-	-	-	839	768	-	907	806	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.2	9.8	9.3
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	759	1431	-	-	1489	-	-	851
HCM Lane V/C Ratio	0.013	0.002	-	-	0.002	-	-	0.008
HCM Control Delay (s)	9.8	7.5	0	-	7.4	0	-	9.3
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0



Lane Group	WBU	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	1	42	59	1	151	60	20	113
Future Volume (vph)	1	42	59	1	151	60	20	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								
Frt		0.922			0.962			
Flt Protected		0.979						0.992
Satd. Flow (prot)	0	1681	0	0	1792	0	0	1848
Flt Permitted		0.979						0.992
Satd. Flow (perm)	0	1681	0	0	1792	0	0	1848
Link Speed (mph)		30			30			30
Link Distance (ft)		405			350			1210
Travel Time (s)		9.2			8.0			27.5
Confl. Peds. (#/hr)	70	5	132	5		70	70	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	111	0	0	230	0	0	145
Sign Control		Stop			Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 41.1%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	3.5

Movement	WBU	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations								
Traffic Vol, veh/h	1	42	59	1	151	60	20	113
Future Vol, veh/h	1	42	59	1	151	60	20	113
Conflicting Peds, #/hr	70	5	132	5	0	70	70	0
Sign Control	Stop	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	None
Storage Length	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0
Grade, %	-	0	-	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2
Mvmt Flow	1	46	64	1	164	65	22	123

Major/Minor	Minor1			Major1			Major2	
Conflicting Flow All	0	439	399	-	0	0	299	0
Stage 1	0	267	-	-	-	-	-	-
Stage 2	0	172	-	-	-	-	-	-
Critical Hdwy	-	6.42	6.22	-	-	-	4.12	-
Critical Hdwy Stg 1	-	5.42	-	-	-	-	-	-
Critical Hdwy Stg 2	-	5.42	-	-	-	-	-	-
Follow-up Hdwy	-	3.518	3.318	-	-	-	2.218	-
Pot Cap-1 Maneuver	0	575	651	-	-	-	1262	-
Stage 1	0	778	-	-	-	-	-	-
Stage 2	0	858	-	-	-	-	-	-
Platoon blocked, %	-				-	-		-
Mov Cap-1 Maneuver	0	523	531	-	-	-	1178	-
Mov Cap-2 Maneuver	0	523	-	-	-	-	-	-
Stage 1	0	711	-	-	-	-	-	-
Stage 2	0	854	-	-	-	-	-	-

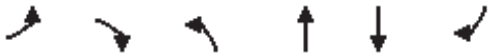
Approach	WB	NB	SB
HCM Control Delay, s	13.6		1.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	528	1178	-
HCM Lane V/C Ratio	-	-	0.208	0.018	-
HCM Control Delay (s)	-	-	13.6	8.1	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.8	0.1	-



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	6	0	0	3	0	0
Future Volume (vph)	6	0	0	3	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt				0.865		
Flt Protected	0.950					
Satd. Flow (prot)	1770	0	0	1611	0	0
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	0	1611	0	0
Link Speed (mph)	25		25			25
Link Distance (ft)	380		365			210
Travel Time (s)	10.4		10.0			5.7
Confl. Peds. (#/hr)	5	132		70	70	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	7	0	0	3	0	0
Sign Control	Free		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 16.5%		ICU Level of Service A	
Analysis Period (min) 15			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	19	0	1060	1250	2
Future Volume (vph)	0	19	0	1060	1250	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.865				
Flt Protected						
Satd. Flow (prot)	0	1611	0	3539	3539	0
Flt Permitted						
Satd. Flow (perm)	0	1611	0	3539	3539	0
Link Speed (mph)	30			45	45	
Link Distance (ft)	213			369	420	
Travel Time (s)	4.8			5.6	6.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	21	0	1152	1361	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	44.6%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	19	0	1060	1250	2
Future Vol, veh/h	0	19	0	1060	1250	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	21	0	1152	1359	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	681	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	393	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	393	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.7	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	393	-	-
HCM Lane V/C Ratio	-	0.053	-	-
HCM Control Delay (s)	-	14.7	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.2	-	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1611	102	69	1281	89	162
Future Volume (vph)	1611	102	69	1281	89	162
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		120	225		0	115
Storage Lanes		1	1		1	1
Taper Length (ft)			25		0	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Ped Bike Factor		0.97			0.99	0.94
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted			0.085		0.950	
Satd. Flow (perm)	3539	1531	158	3539	1759	1484
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		64				129
Link Speed (mph)	35			35	30	
Link Distance (ft)	636			400	1210	
Travel Time (s)	12.4			7.8	27.5	
Confl. Peds. (#/hr)		5	5		5	43
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1751	111	75	1392	97	176
Turn Type	NA	Perm	pm+pt	NA	Perm	Perm
Protected Phases	2		1	6		
Permitted Phases		2	6		8	8
Detector Phase	2	2	1	6	8	8
Switch Phase						
Minimum Initial (s)	35.0	35.0	5.0	35.0	5.0	5.0
Minimum Split (s)	41.0	41.0	11.0	41.0	35.0	35.0
Total Split (s)	85.0	85.0	14.0	99.0	21.0	21.0
Total Split (%)	70.8%	70.8%	11.7%	82.5%	17.5%	17.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-1.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	5.0
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	C-Max	C-Max	None	C-Max	None	None
Act Effct Green (s)	89.0	89.0	99.2	99.2	12.8	11.8
Actuated g/C Ratio	0.74	0.74	0.83	0.83	0.11	0.10
v/c Ratio	0.67	0.10	0.31	0.48	0.52	0.67
Control Delay	10.8	3.0	9.5	7.9	59.8	29.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.8	3.0	9.5	7.9	59.8	29.0
LOS	B	A	A	A	E	C
Approach Delay	10.3			8.0	39.9	
Approach LOS	B			A	D	
Queue Length 50th (ft)	346	9	23	227	72	34

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Queue Length 95th (ft)	502	30	m34	m252	124	107
Internal Link Dist (ft)	556			320	1130	
Turn Bay Length (ft)		120	225			115
Base Capacity (vph)	2623	1151	264	2924	249	309
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	0.10	0.28	0.48	0.39	0.57

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 22 (18%), Referenced to phase 2:EBT and 6:WBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.67			
Intersection Signal Delay: 11.6		Intersection LOS: B	
Intersection Capacity Utilization 78.9%		ICU Level of Service D	
Analysis Period (min) 15			

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Main Street & S Boulder Road





Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	0	1788	1	4	2	1365	5	0	0	3	0	0
Future Volume (vph)	0	1788	1	4	2	1365	5	0	0	3	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		50		70		0	0		0	0	
Storage Lanes	0		1		1		0	0		1	0	
Taper Length (ft)	25				25			25			25	
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.850			0.999				0.865		
Flt Protected					0.950							
Satd. Flow (prot)	0	3539	1583	0	1770	3536	0	0	0	1611	0	0
Flt Permitted					0.950							
Satd. Flow (perm)	0	3539	1583	0	1770	3536	0	0	0	1611	0	0
Link Speed (mph)		35				35			20			20
Link Distance (ft)		400				360			338			476
Travel Time (s)		7.8				7.0			11.5			16.2
Confl. Peds. (#/hr)	10		10	5	10		10	5		5	5	
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1943	1	0	6	1489	0	0	0	3	0	0
Sign Control		Free				Free			Stop			Stop

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 61.0%		ICU Level of Service B	
Analysis Period (min) 15			



Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	5
Future Volume (vph)	5
Ideal Flow (vphpl)	1900
Storage Length (ft)	0
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Ped Bike Factor	
Frt	0.865
Flt Protected	
Satd. Flow (prot)	1611
Flt Permitted	
Satd. Flow (perm)	1611
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	5
Peak Hour Factor	0.92
Shared Lane Traffic (%)	
Lane Group Flow (vph)	5
Sign Control	

Intersection Summary

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	0	1788	1	4	2	1365	5	0	0	3	0	0	5
Future Vol, veh/h	0	1788	1	4	2	1365	5	0	0	3	0	0	5
Conflicting Peds, #/hr	10	0	10	5	10	0	10	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	-	70	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1943	1	4	2	1484	5	0	0	3	0	0	5

Major/Minor	Major1			Major2				Minor1			Minor2		
Conflicting Flow All	-	0	0	1943	1954	0	0	-	-	987	-	-	760
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	6.44	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	2.52	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	81	295	-	-	0	0	246	0	0	349
Stage 1	0	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	0	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-			-	-						
Mov Cap-1 Maneuver	-	-	-	106	106	-	-	-	-	242	-	-	344
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.2	20.1	15.6
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	242	-	-	106	-	-	344
HCM Lane V/C Ratio	0.013	-	-	0.062	-	-	0.016
HCM Control Delay (s)	20.1	-	-	41.3	-	-	15.6
HCM Lane LOS	C	-	-	E	-	-	C
HCM 95th %tile Q(veh)	0	-	-	0.2	-	-	0



Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	23	48	1794	27	2	21	1385	12	2	0	24	21
Future Volume (vph)	23	48	1794	27	2	21	1385	12	2	0	24	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		90		0		80		0	0		0	0
Storage Lanes		1		0		1		0	0		0	0
Taper Length (ft)		25				25			25			25
Lane Util. Factor	0.95	1.00	0.95	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.998				0.999			0.875		
Flt Protected		0.950				0.950				0.996		
Satd. Flow (prot)	0	1770	3532	0	0	1770	3536	0	0	1623	0	0
Flt Permitted		0.950				0.950				0.996		
Satd. Flow (perm)	0	1770	3532	0	0	1770	3536	0	0	1623	0	0
Link Speed (mph)			35				35			20		
Link Distance (ft)			360				465			339		
Travel Time (s)			7.0				9.1			11.6		
Confl. Peds. (#/hr)	5	10		10	5	10		10	5		5	5
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	77	1979	0	0	25	1518	0	0	28	0	0
Sign Control			Free				Free			Stop		

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	74.8%	ICU Level of Service	D
Analysis Period (min)	15		

Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	0	45
Future Volume (vph)	0	45
Ideal Flow (vphpl)	1900	1900
Storage Length (ft)		0
Storage Lanes		0
Taper Length (ft)		
Lane Util. Factor	1.00	1.00
Ped Bike Factor		
Frt	0.908	
Flt Protected	0.984	
Satd. Flow (prot)	1664	0
Flt Permitted	0.984	
Satd. Flow (perm)	1664	0
Link Speed (mph)	20	
Link Distance (ft)	431	
Travel Time (s)	14.7	
Confl. Peds. (#/hr)		5
Peak Hour Factor	0.92	0.92
Shared Lane Traffic (%)		
Lane Group Flow (vph)	72	0
Sign Control	Stop	

Intersection Summary

Intersection	
Int Delay, s/veh	36.6

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	23	48	1794	27	2	21	1385	12	2	0	24	21	0	45
Future Vol, veh/h	23	48	1794	27	2	21	1385	12	2	0	24	21	0	45
Conflicting Peds, #/hr	5	10	0	10	5	10	0	10	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	90	-	-	-	80	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	25	52	1950	29	2	23	1505	13	2	0	26	23	0	49

Major/Minor	Major1				Major2				Minor1			Minor2		
Conflicting Flow All	1518	1528	0	0	1979	1989	0	0	2937	3707	1005	2706	3715	774
Stage 1	-	-	-	-	-	-	-	-	2129	2129	-	1572	1572	-
Stage 2	-	-	-	-	-	-	-	-	808	1578	-	1134	2143	-
Critical Hdwy	6.44	4.14	-	-	6.44	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.52	2.22	-	-	2.52	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	153	432	-	-	77	286	-	-	7	4	240	~ 10	4	341
Stage 1	-	-	-	-	-	-	-	-	51	89	-	115	169	-
Stage 2	-	-	-	-	-	-	-	-	341	168	-	216	87	-
Platoon blocked, %			-	-			-	-						
Mov Cap-1 Maneuver	249	249	-	-	223	223	-	-	4	2	237	~ 6	2	336
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	4	2	-	~ 6	2	-
Stage 1	-	-	-	-	-	-	-	-	35	61	-	79	149	-
Stage 2	-	-	-	-	-	-	-	-	257	148	-	132	60	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	0.4	186.8	$ 1776.7
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	43	249	-	-	223	-	-	18
HCM Lane V/C Ratio	0.657	0.31	-	-	0.112	-	-	3.986
HCM Control Delay (s)	186.8	25.8	-	-	23.2	-	-	$ 1776.7
HCM Lane LOS	F	D	-	-	C	-	-	F
HCM 95th %tile Q(veh)	2.5	1.3	-	-	0.4	-	-	9.5

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	727	948	214	453	816	258	1	167	910	328	12	177
Future Volume (vph)	727	948	214	453	816	258	1	167	910	328	12	177
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		100	225		270		0		0		185
Storage Lanes	2		1	2		1		2		1		2
Taper Length (ft)	25			25				25				25
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.95	0.97	0.95	1.00	0.95	0.97
Ped Bike Factor			0.98			0.98				0.98		
Frt			0.850			0.850				0.850		
Flt Protected	0.950			0.950				0.950				0.950
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	0	3433	3539	1583	0	3433
Flt Permitted	0.950			0.950				0.286				0.290
Satd. Flow (perm)	3433	3539	1555	3433	3539	1546	0	1034	3539	1556	0	1048
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)			173			196				287		
Link Speed (mph)		35			35				45			
Link Distance (ft)		465			1815				418			
Travel Time (s)		9.1			35.4				6.3			
Confl. Peds. (#/hr)			5			10				5		
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	790	1030	233	492	887	280	0	183	989	357	0	205
Turn Type	Prot	NA	Perm	Prot	NA	Perm	custom	Prot	NA	Perm	custom	Prot
Protected Phases	5	2		1	6			3	8			7
Permitted Phases			2			6	3			8	7	
Detector Phase	5	2	2	1	6	6	3	3	8	8	7	7
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	5.0	6.0	6.0	5.0	5.0
Minimum Split (s)	10.0	37.0	37.0	10.0	37.0	37.0	10.0	10.0	40.0	40.0	10.0	10.0
Total Split (s)	24.0	43.0	43.0	18.0	37.0	37.0	18.0	18.0	41.0	41.0	18.0	18.0
Total Split (%)	20.0%	35.8%	35.8%	15.0%	30.8%	30.8%	15.0%	15.0%	34.2%	34.2%	15.0%	15.0%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	3.0	4.0	4.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-2.0	-2.0	-1.0	-2.0	-2.0		-1.0	-2.0	-2.0		-1.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0		4.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lead	Lead	Lead	Lag	Lag
Lead-Lag Optimize?												
Recall Mode	None	C-Max	C-Max	None	Max	Max	None	None	Max	Max	None	None
Act Effct Green (s)	20.0	39.0	39.0	14.0	33.0	33.0		14.0	37.0	37.0		14.0
Actuated g/C Ratio	0.17	0.32	0.32	0.12	0.28	0.28		0.12	0.31	0.31		0.12
v/c Ratio	1.38	0.90	0.37	1.23	0.91	0.49		1.52	0.91	0.53		1.68
Control Delay	215.3	41.7	9.1	167.8	56.6	14.5		305.6	48.8	12.2		372.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0
Total Delay	215.3	41.7	9.1	167.8	56.6	14.5		305.6	48.8	12.2		372.3
LOS	F	D	A	F	E	B		F	D	B		F
Approach Delay		104.8			82.5				71.0			
Approach LOS		F			F				E			
Queue Length 50th (ft)	~422	400	60	~242	350	50		~102	395	66		~119

Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	685	403
Future Volume (vph)	685	403
Ideal Flow (vphpl)	1900	1900
Storage Length (ft)		270
Storage Lanes		1
Taper Length (ft)		
Lane Util. Factor	0.95	1.00
Ped Bike Factor		0.98
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3539	1583
Flt Permitted		
Satd. Flow (perm)	3539	1555
Right Turn on Red		Yes
Satd. Flow (RTOR)		381
Link Speed (mph)	45	
Link Distance (ft)	1337	
Travel Time (s)	20.3	
Confl. Peds. (#/hr)		5
Peak Hour Factor	0.92	0.92
Shared Lane Traffic (%)		
Lane Group Flow (vph)	745	438
Turn Type	NA	Perm
Protected Phases	4	
Permitted Phases		4
Detector Phase	4	4
Switch Phase		
Minimum Initial (s)	6.0	6.0
Minimum Split (s)	36.0	36.0
Total Split (s)	41.0	41.0
Total Split (%)	34.2%	34.2%
Yellow Time (s)	4.0	4.0
All-Red Time (s)	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0
Total Lost Time (s)	4.0	4.0
Lead/Lag	Lag	Lag
Lead-Lag Optimize?		
Recall Mode	Max	Max
Act Effct Green (s)	37.0	37.0
Actuated g/C Ratio	0.31	0.31
v/c Ratio	0.68	0.59
Control Delay	40.2	9.2
Queue Delay	0.0	0.0
Total Delay	40.2	9.2
LOS	D	A
Approach Delay	79.4	
Approach LOS	E	
Queue Length 50th (ft)	265	32

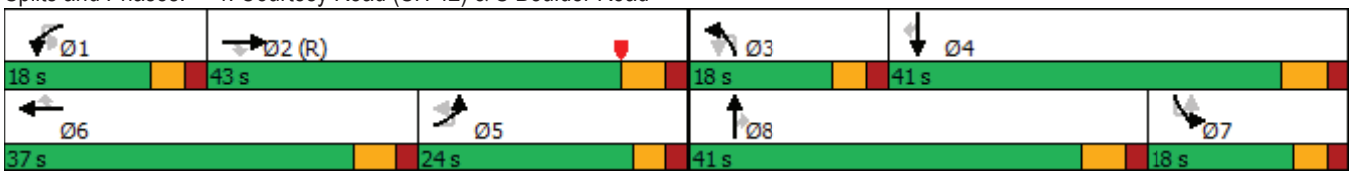
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Queue Length 95th (ft)	#548	#521	102	#351	#469	133		#177	#515	126		#199
Internal Link Dist (ft)		385			1735				338			
Turn Bay Length (ft)	150		100	225		270						185
Base Capacity (vph)	572	1150	622	400	973	567		120	1091	678		122
Starvation Cap 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	1.38	0.90	0.37	1.23	0.91	0.49		1.52	0.91	0.53		1.68

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow, Master Intersection	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.68	
Intersection Signal Delay: 86.1	Intersection LOS: F
Intersection Capacity Utilization 93.6%	ICU Level of Service F
Analysis Period (min) 15	

~ 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.

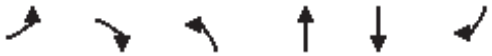
Splits and Phases: 4: Courtesy Road (SH 42) & S Boulder Road





Lane Group	SBT	SBR
Queue Length 95th (ft)	335	129
Internal Link Dist (ft)	1257	
Turn Bay Length (ft)		270
Base Capacity (vph)	1091	742
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.68	0.59

Intersection Summary



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	6	0	1426	1334	9
Future Volume (vph)	0	6	0	1426	1334	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	140			0
Storage Lanes	0	1	0			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor						
Frt		0.865			0.999	
Flt Protected						
Satd. Flow (prot)	0	1611	0	3539	3536	0
Flt Permitted						
Satd. Flow (perm)	0	1611	0	3539	3536	0
Link Speed (mph)	20			45	45	
Link Distance (ft)	418			420	418	
Travel Time (s)	14.3			6.4	6.3	
Confl. Peds. (#/hr)			5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	7	0	1550	1460	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	47.2%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	6	0	1426	1334	9
Future Vol, veh/h	0	6	0	1426	1334	9
Conflicting Peds, #/hr	0	0	5	0	0	5
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	7	0	1550	1450	10

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	735	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	362	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	360	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.2	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	360	-	-
HCM Lane V/C Ratio	-	0.018	-	-
HCM Control Delay (s)	-	15.2	-	-
HCM Lane LOS	-	C	-	-
HCM 95th %tile Q(veh)	-	0.1	-	-

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	2	17	0	39	1	1	1	19	1383	2	1	1251
Future Volume (vph)	2	17	0	39	1	1	1	19	1383	2	1	1251
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		50		0	50		0	225		0	500	
Storage Lanes		1		0	1		0	1		0	1	
Taper Length (ft)		25			25			25			25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95
Ped Bike Factor												
Frt			0.850			0.925						
Flt Protected		0.950			0.950			0.950			0.950	
Satd. Flow (prot)	0	1770	1583	0	1770	1723	0	1770	3539	0	1770	3539
Flt Permitted		0.800			0.800			0.950			0.950	
Satd. Flow (perm)	0	1490	1583	0	1490	1723	0	1770	3539	0	1770	3539
Right Turn on Red				Yes			Yes			Yes		
Satd. Flow (RTOR)			273			1						
Link Speed (mph)			30			20			45			45
Link Distance (ft)			439			281			380			369
Travel Time (s)			10.0			9.6			5.8			5.6
Confl. Bikes (#/hr)												
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	20	42	0	1	2	0	21	1505	0	1	1360
Turn Type	Perm	Perm	NA		Perm	NA		Prot	NA		Prot	NA
Protected Phases			4			8		5	2		1	6
Permitted Phases	4	4			8							
Detector Phase	4	4	4		8	8		5	2		1	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0		5.0	5.0		5.0	5.0		5.0	5.0
Minimum Split (s)	25.0	25.0	25.0		25.0	25.0		11.0	24.5		11.0	25.0
Total Split (s)	11.0	11.0	11.0		11.0	11.0		11.0	39.0		10.0	38.0
Total Split (%)	18.3%	18.3%	18.3%		18.3%	18.3%		18.3%	65.0%		16.7%	63.3%
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0		4.0	3.5		4.0	4.0
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0		-2.0	-1.5		-2.0	-2.0
Total Lost Time (s)		4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0
Lead/Lag								Lag	Lag		Lead	Lead
Lead-Lag Optimize?								Yes	Yes		Yes	Yes
Recall Mode	None	None	None		None	None		None	C-Max		None	Max
Act Effct Green (s)		7.0	7.0		7.0	7.0		7.0	49.0		6.6	48.8
Actuated g/C Ratio		0.12	0.12		0.12	0.12		0.12	0.82		0.11	0.81
v/c Ratio		0.12	0.10		0.01	0.01		0.10	0.52		0.01	0.47
Control Delay		25.3	0.5		24.0	21.0		25.1	4.9		30.0	5.1
Queue Delay		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0
Total Delay		25.3	0.5		24.0	21.0		25.1	4.9		30.0	5.1
LOS		C	A		C	C		C	A		C	A
Approach Delay			8.5			22.0			5.2			4.8
Approach LOS			A			C			A			A
Queue Length 50th (ft)		7	0		0	0		7	86		1	239



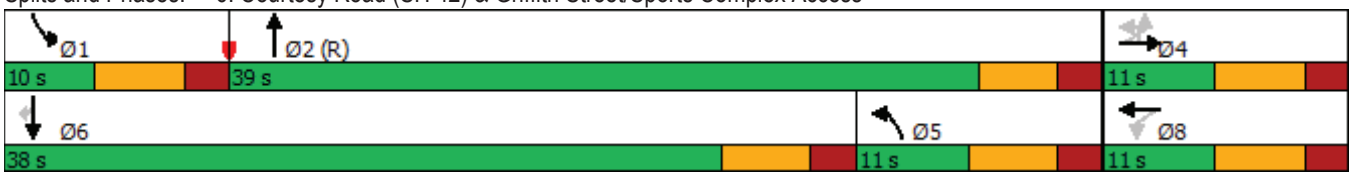
Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	123
Future Volume (vph)	123
Ideal Flow (vphpl)	1900
Storage Length (ft)	273
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Ped Bike Factor	0.98
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1583
Flt Permitted	
Satd. Flow (perm)	1546
Right Turn on Red	Yes
Satd. Flow (RTOR)	164
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Bikes (#/hr)	5
Peak Hour Factor	0.92
Shared Lane Traffic (%)	
Lane Group Flow (vph)	134
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Detector Phase	6
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	25.0
Total Split (s)	38.0
Total Split (%)	63.3%
Yellow Time (s)	4.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	-2.0
Total Lost Time (s)	4.0
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Recall Mode	Max
Act Effct Green (s)	48.8
Actuated g/C Ratio	0.81
v/c Ratio	0.10
Control Delay	1.7
Queue Delay	0.0
Total Delay	1.7
LOS	A
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	14

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Queue Length 95th (ft)		19	0		4	6		24	254		m1	m276
Internal Link Dist (ft)			359			201			300			289
Turn Bay Length (ft)		50			50			225			500	
Base Capacity (vph)		173	425		173	201		206	2890		195	2878
Starvation Cap Reductn		0	0		0	0		0	0		0	0
Spillback Cap Reductn		0	0		0	0		0	0		0	0
Storage Cap Reductn		0	0		0	0		0	0		0	0
Reduced v/c Ratio		0.12	0.10		0.01	0.01		0.10	0.52		0.01	0.47

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 48 (80%), Referenced to phase 2:NBT, Start of Green	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.52	
Intersection Signal Delay: 5.1	Intersection LOS: A
Intersection Capacity Utilization 52.7%	ICU Level of Service A
Analysis Period (min) 15	

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Courtesy Road (SH 42) & Griffith Street/Sports Complex Access





Lane Group	SBR
Queue Length 95th (ft)	m23
Internal Link Dist (ft)	
Turn Bay Length (ft)	273
Base Capacity (vph)	1288
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.10

Intersection Summary



Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	2	36	22	1	27	119	1	19	1	11	0	2
Future Volume (vph)	2	36	22	1	27	119	1	19	1	11	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150		150		150	150		150	150	
Storage Lanes	0		0		0		0	0		0	0	
Taper Length (ft)	25				25			25			25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.950				0.999			0.952			
Flt Protected		0.998				0.991			0.970			
Satd. Flow (prot)	0	1766	0	0	0	1844	0	0	1720	0	0	1863
Flt Permitted		0.998				0.991			0.970			
Satd. Flow (perm)	0	1766	0	0	0	1844	0	0	1720	0	0	1863
Link Speed (mph)		30				30			25			25
Link Distance (ft)		390				439			346			362
Travel Time (s)		8.9				10.0			9.4			9.9
Confl. Peds. (#/hr)	5		5		5		5	5		5	5	
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	65	0	0	0	160	0	0	34	0	0	2
Sign Control		Free				Free			Stop			Stop

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 30.6%		ICU Level of Service A	
Analysis Period (min) 15			



Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	0
Future Volume (vph)	0
Ideal Flow (vphpl)	1900
Storage Length (ft)	150
Storage Lanes	0
Taper Length (ft)	
Lane Util. Factor	1.00
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	5
Peak Hour Factor	0.92
Shared Lane Traffic (%)	
Lane Group Flow (vph)	0
Sign Control	

Intersection Summary

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕				↕			↕			↕	
Traffic Vol, veh/h	2	36	22	1	27	119	1	19	1	11	0	2	0
Future Vol, veh/h	2	36	22	1	27	119	1	19	1	11	0	2	0
Conflicting Peds, #/hr	5	0	5	0	5	0	5	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	39	24	1	29	129	1	21	1	12	0	2	0

Major/Minor	Major1			Major2				Minor1			Minor2		
Conflicting Flow All	135	0	0	-	68	0	0	254	255	61	260	267	140
Stage 1	-	-	-	-	-	-	-	60	60	-	193	195	-
Stage 2	-	-	-	-	-	-	-	194	195	-	67	72	-
Critical Hdwy	4.12	-	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1449	-	-	-	1533	-	-	699	649	1004	693	639	908
Stage 1	-	-	-	-	-	-	-	951	845	-	809	739	-
Stage 2	-	-	-	-	-	-	-	808	739	-	943	835	-
Platoon blocked, %		-	-			-	-						
Mov Cap-1 Maneuver	1442	-	-	~ -29	~ -29	-	-	690	642	994	677	632	899
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	690	642	-	677	632	-
Stage 1	-	-	-	-	-	-	-	945	840	-	804	735	-
Stage 2	-	-	-	-	-	-	-	802	735	-	925	830	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3		9.9	10.7
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	772	1442	-	-	+	-	-	632
HCM Lane V/C Ratio	0.044	0.002	-	-	-	-	-	0.003
HCM Control Delay (s)	9.9	7.5	0	-	-	-	-	10.7
HCM Lane LOS	A	A	A	-	-	-	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	-	-	-	0

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	4	66	6	5	146	0	2	0	1	3	0	0
Future Volume (vph)	4	66	6	5	146	0	2	0	1	3	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	150		150	0		0		0	
Storage Lanes	0		0	0		0	0		0		0	
Taper Length (ft)	25			25			25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.989						0.955				0.932
Flt Protected		0.998			0.998			0.968				0.976
Satd. Flow (prot)	0	1839	0	0	1859	0	0	1722	0	0	0	1694
Flt Permitted		0.998			0.998			0.968				0.976
Satd. Flow (perm)	0	1839	0	0	1859	0	0	1722	0	0	0	1694
Link Speed (mph)		30			30			25				25
Link Distance (ft)		405			390			333				365
Travel Time (s)		9.2			8.9			9.1				10.0
Confl. Peds. (#/hr)	5		10	10		5	5		5		5	
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	83	0	0	164	0	0	3	0	0	0	6
Sign Control		Free			Free			Stop				Stop

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 21.4%		ICU Level of Service A	
Analysis Period (min) 15			



Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	3
Future Volume (vph)	3
Ideal Flow (vphpl)	1900
Storage Length (ft)	0
Storage Lanes	0
Taper Length (ft)	
Lane Util. Factor	1.00
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	5
Peak Hour Factor	0.92
Shared Lane Traffic (%)	
Lane Group Flow (vph)	0
Sign Control	

Intersection Summary

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations		↕			↕			↕				↕	
Traffic Vol, veh/h	4	66	6	5	146	0	2	0	1	3	0	0	3
Future Vol, veh/h	4	66	6	5	146	0	2	0	1	3	0	0	3
Conflicting Peds, #/hr	5	0	10	10	0	5	5	0	5	0	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	72	7	5	159	0	2	0	1	3	0	0	3

Major/Minor	Major1			Major2			Minor1			Minor2			
Conflicting Flow All	164	0	0	89	0	0	270	268	91	0	263	271	169
Stage 1	-	-	-	-	-	-	94	94	-	0	174	174	-
Stage 2	-	-	-	-	-	-	176	174	-	0	89	97	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1414	-	-	1506	-	-	683	638	967	0	690	636	875
Stage 1	-	-	-	-	-	-	913	817	-	0	828	755	-
Stage 2	-	-	-	-	-	-	826	755	-	0	918	815	-
Platoon blocked, %		-	-		-	-				-			
Mov Cap-1 Maneuver	1407	-	-	1492	-	-	667	624	953	0	679	622	867
Mov Cap-2 Maneuver	-	-	-	-	-	-	667	624	-	0	679	622	-
Stage 1	-	-	-	-	-	-	902	806	-	0	821	748	-
Stage 2	-	-	-	-	-	-	816	748	-	0	910	804	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.2	9.9	9.2
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	741	1407	-	-	1492	-	-	867
HCM Lane V/C Ratio	0.004	0.003	-	-	0.004	-	-	0.004
HCM Control Delay (s)	9.9	7.6	0	-	7.4	0	-	9.2
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0



Lane Group	WBL	WBR	NBT	NBR	SBU	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	80	48	206	39	1	35	144
Future Volume (vph)	80	48	206	39	1	35	144
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor							
Frt	0.949		0.979				
Flt Protected	0.970						0.990
Satd. Flow (prot)	1715	0	1824	0	0	0	1844
Flt Permitted	0.970						0.990
Satd. Flow (perm)	1715	0	1824	0	0	0	1844
Link Speed (mph)	30		30				30
Link Distance (ft)	405		350				1210
Travel Time (s)	9.2		8.0				27.5
Confl. Peds. (#/hr)	5	10		7	10	7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)							
Lane Group Flow (vph)	139	0	266	0	0	0	196
Sign Control	Stop		Free				Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 42.2%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	3

Movement	WBL	WBR	NBT	NBR	SBU	SBL	SBT
Lane Configurations							
Traffic Vol, veh/h	80	48	206	39	1	35	144
Future Vol, veh/h	80	48	206	39	1	35	144
Conflicting Peds, #/hr	5	10	0	7	10	7	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	-	None
Storage Length	0	-	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	-	0
Grade, %	0	-	0	-	-	-	0
Peak Hour Factor	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	87	52	224	42	1	38	157

Major/Minor	Minor1		Major1		Major2		
Conflicting Flow All	490	262	0	0	-	273	0
Stage 1	252	-	-	-	-	-	-
Stage 2	238	-	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	-	2.218	-
Pot Cap-1 Maneuver	537	777	-	-	-	1290	-
Stage 1	790	-	-	-	-	-	-
Stage 2	802	-	-	-	-	-	-
Platoon blocked, %			-	-			-
Mov Cap-1 Maneuver	531	764	-	-	~ -37	~ -37	-
Mov Cap-2 Maneuver	531	-	-	-	-	-	-
Stage 1	784	-	-	-	-	-	-
Stage 2	798	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.8	0	
HCM LOS	B		

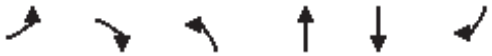
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	600	+	-
HCM Lane V/C Ratio	-	-	0.232	-	-
HCM Control Delay (s)	-	-	12.8	-	-
HCM Lane LOS	-	-	B	-	-
HCM 95th %tile Q(veh)	-	-	0.9	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	6	0	0	7	0	0
Future Volume (vph)	6	0	0	7	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt				0.865		
Flt Protected	0.950					
Satd. Flow (prot)	1770	0	0	1611	0	0
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	0	1611	0	0
Link Speed (mph)	25		25			25
Link Distance (ft)	380		365			210
Travel Time (s)	10.4		10.0			5.7
Confl. Peds. (#/hr)	5	132		70	70	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	7	0	0	8	0	0
Sign Control	Free		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 16.5%		ICU Level of Service A	
Analysis Period (min) 15			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	87	0	1400	1331	8
Future Volume (vph)	0	87	0	1400	1331	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.865			0.999	
Flt Protected						
Satd. Flow (prot)	0	1611	0	3539	3536	0
Flt Permitted						
Satd. Flow (perm)	0	1611	0	3539	3536	0
Link Speed (mph)	30			45	45	
Link Distance (ft)	207			369	420	
Travel Time (s)	4.7			5.6	6.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	95	0	1522	1456	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	49.1%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	87	0	1400	1331	8
Future Vol, veh/h	0	87	0	1400	1331	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	95	0	1522	1447	9

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	728	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	366	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	366	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18.2	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	366	-	-
HCM Lane V/C Ratio	-	0.258	-	-
HCM Control Delay (s)	-	18.2	-	-
HCM Lane LOS	-	C	-	-
HCM 95th %tile Q(veh)	-	1	-	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1064	90	67	1006	59	93
Future Volume (vph)	1064	90	67	1006	59	93
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		120	225		0	115
Storage Lanes		1	1		1	1
Taper Length (ft)			25		0	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Ped Bike Factor		0.97	1.00		0.99	0.95
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted			0.199		0.950	
Satd. Flow (perm)	3539	1535	370	3539	1761	1504
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		98				101
Link Speed (mph)	35			35	30	
Link Distance (ft)	636			400	1210	
Travel Time (s)	12.4			7.8	27.5	
Confl. Peds. (#/hr)		5	5		5	39
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1157	98	73	1093	64	101
Turn Type	NA	Perm	pm+pt	NA	Perm	Perm
Protected Phases	2		1	6		
Permitted Phases		2	6		8	8
Detector Phase	2	2	1	6	8	8
Switch Phase						
Minimum Initial (s)	35.0	35.0	5.0	35.0	5.0	5.0
Minimum Split (s)	41.0	41.0	11.0	41.0	35.0	35.0
Total Split (s)	70.0	70.0	12.0	82.0	18.0	18.0
Total Split (%)	70.0%	70.0%	12.0%	82.0%	18.0%	18.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-1.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	5.0
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	C-Max	C-Max	None	C-Max	None	None
Act Effct Green (s)	75.1	75.1	84.1	84.9	10.0	9.0
Actuated g/C Ratio	0.75	0.75	0.84	0.85	0.10	0.09
v/c Ratio	0.44	0.08	0.17	0.36	0.36	0.44
Control Delay	7.0	1.4	2.9	2.9	47.0	15.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.0	1.4	2.9	2.9	47.0	15.0
LOS	A	A	A	A	D	B
Approach Delay	6.6			2.9	27.4	
Approach LOS	A			A	C	
Queue Length 50th (ft)	152	0	10	91	39	0

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Queue Length 95th (ft)	222	16	m15	m112	78	47
Internal Link Dist (ft)	556			320	1130	
Turn Bay Length (ft)		120	225			115
Base Capacity (vph)	2656	1176	427	3005	246	283
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	0.44	0.08	0.17	0.36	0.26	0.36

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 59 (59%), Referenced to phase 2:EBT and 6:WBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.44			
Intersection Signal Delay: 6.3		Intersection LOS: A	
Intersection Capacity Utilization 62.9%		ICU Level of Service B	
Analysis Period (min) 15			

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Main Street & S Boulder Road



Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	0	1174	3	3	4	1125	4	0	0	5	0	0
Future Volume (vph)	0	1174	3	3	4	1125	4	0	0	5	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		50		70		0	0		0	0	
Storage Lanes	0		1		1		0	0		1	0	
Taper Length (ft)	25				25			25			25	
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.850							0.865		
Flt Protected					0.950							
Satd. Flow (prot)	0	3539	1583	0	1770	3539	0	0	0	1611	0	0
Flt Permitted					0.950							
Satd. Flow (perm)	0	3539	1583	0	1770	3539	0	0	0	1611	0	0
Link Speed (mph)		35				35			20			20
Link Distance (ft)		400				360			338			476
Travel Time (s)		7.8				7.0			11.5			16.2
Confl. Peds. (#/hr)	10		10	5	10		10	5		5	5	
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1276	3	0	7	1227	0	0	0	5	0	0
Sign Control		Free				Free			Stop			Stop

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 44.0%		ICU Level of Service A	
Analysis Period (min) 15			



Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	1
Future Volume (vph)	1
Ideal Flow (vphpl)	1900
Storage Length (ft)	0
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Ped Bike Factor	
Frt	0.865
Flt Protected	
Satd. Flow (prot)	1611
Flt Permitted	
Satd. Flow (perm)	1611
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	5
Peak Hour Factor	0.92
Shared Lane Traffic (%)	
Lane Group Flow (vph)	1
Sign Control	

Intersection Summary

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	0	1174	3	3	4	1125	4	0	0	5	0	0	1
Future Vol, veh/h	0	1174	3	3	4	1125	4	0	0	5	0	0	1
Conflicting Peds, #/hr	10	0	10	5	10	0	10	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	-	70	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1276	3	3	4	1223	4	0	0	5	0	0	1

Major/Minor	Major1			Major2				Minor1			Minor2		
Conflicting Flow All	-	0	0	1276	1289	0	0	-	-	653	-	-	629
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	6.44	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	2.52	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	220	534	-	-	0	0	410	0	0	425
Stage 1	0	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	0	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-			-	-						
Mov Cap-1 Maneuver	-	-	-	327	327	-	-	-	-	404	-	-	419
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.1	14	13.6
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	404	-	-	327	-	-	419
HCM Lane V/C Ratio	0.013	-	-	0.023	-	-	0.003
HCM Control Delay (s)	14	-	-	16.3	-	-	13.6
HCM Lane LOS	B	-	-	C	-	-	B
HCM 95th %tile Q(veh)	0	-	-	0.1	-	-	0

Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	15	28	1102	15	1	34	1044	12	8	1	21	23
Future Volume (vph)	15	28	1102	15	1	34	1044	12	8	1	21	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		90		0		80		0	0		0	0
Storage Lanes		1		0		1		0	0		0	0
Taper Length (ft)		25				25			25			25
Lane Util. Factor	0.95	1.00	0.95	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.998				0.998			0.906		
Flt Protected		0.950				0.950				0.987		
Satd. Flow (prot)	0	1770	3532	0	0	1770	3532	0	0	1666	0	0
Flt Permitted		0.950				0.950				0.987		
Satd. Flow (perm)	0	1770	3532	0	0	1770	3532	0	0	1666	0	0
Link Speed (mph)			35				35			20		
Link Distance (ft)			360				465			339		
Travel Time (s)			7.0				9.1			11.6		
Confl. Peds. (#/hr)	5	10		10	5	10		10	5		5	5
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	46	1214	0	0	38	1148	0	0	33	0	0
Sign Control			Free				Free			Stop		

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 50.4%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	3	56
Future Volume (vph)	3	56
Ideal Flow (vphpl)	1900	1900
Storage Length (ft)		0
Storage Lanes		0
Taper Length (ft)		
Lane Util. Factor	1.00	1.00
Ped Bike Factor		
Frt	0.907	
Flt Protected	0.986	
Satd. Flow (prot)	1666	0
Flt Permitted	0.986	
Satd. Flow (perm)	1666	0
Link Speed (mph)	20	
Link Distance (ft)	431	
Travel Time (s)	14.7	
Confl. Peds. (#/hr)		5
Peak Hour Factor	0.92	0.92
Shared Lane Traffic (%)		
Lane Group Flow (vph)	89	0
Sign Control	Stop	

Intersection Summary

Intersection	
Int Delay, s/veh	9.1

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	15	28	1102	15	1	34	1044	12	8	1	21	23	3	56
Future Vol, veh/h	15	28	1102	15	1	34	1044	12	8	1	21	23	3	56
Conflicting Peds, #/hr	5	10	0	10	5	10	0	10	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	90	-	-	-	80	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	30	1198	16	1	37	1135	13	9	1	23	25	3	61

Major/Minor	Major1				Major2				Minor1			Minor2		
Conflicting Flow All	1148	1158	0	0	1214	1224	0	0	1958	2542	622	1925	2544	589
Stage 1	-	-	-	-	-	-	-	-	1308	1308	-	1228	1228	-
Stage 2	-	-	-	-	-	-	-	-	650	1234	-	697	1316	-
Critical Hdwy	6.44	4.14	-	-	6.44	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.52	2.22	-	-	2.52	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	267	599	-	-	242	565	-	-	38	27	430	40	27	452
Stage 1	-	-	-	-	-	-	-	-	168	228	-	189	249	-
Stage 2	-	-	-	-	-	-	-	-	424	247	-	398	226	-
Platoon blocked, %			-	-			-	-						
Mov Cap-1 Maneuver	385	385	-	-	538	538	-	-	25	22	424	31	22	446
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	25	22	-	31	22	-
Stage 1	-	-	-	-	-	-	-	-	146	198	-	164	229	-
Stage 2	-	-	-	-	-	-	-	-	334	227	-	327	196	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.4	91.1	216.3
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	72	385	-	-	538	-	-	82
HCM Lane V/C Ratio	0.453	0.121	-	-	0.071	-	-	1.087
HCM Control Delay (s)	91.1	15.6	-	-	12.2	-	-	216.3
HCM Lane LOS	F	C	-	-	B	-	-	F
HCM 95th %tile Q(veh)	1.8	0.4	-	-	0.2	-	-	6.2

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
Lane Configurations												
Traffic Volume (vph)	3	492	601	130	322	673	173	4	202	464	253	7
Future Volume (vph)	3	492	601	130	322	673	173	4	202	464	253	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		150		100	225		270		0		0	
Storage Lanes		2		1	2		1		2		1	
Taper Length (ft)		25			25				25			
Lane Util. Factor	0.95	0.97	0.95	1.00	0.97	0.95	1.00	0.95	0.97	0.95	1.00	0.95
Ped Bike Factor				0.98			0.98				0.98	
Frt				0.850			0.850				0.850	
Flt Protected		0.950			0.950				0.950			
Satd. Flow (prot)	0	3433	3539	1583	3433	3539	1583	0	3433	3539	1583	0
Flt Permitted		0.374			0.950				0.500			
Satd. Flow (perm)	0	1352	3539	1557	3433	3539	1549	0	1807	3539	1557	0
Right Turn on Red				Yes			Yes				Yes	
Satd. Flow (RTOR)				207			218				275	
Link Speed (mph)			35			35				45		
Link Distance (ft)			465			1815				418		
Travel Time (s)			9.1			35.4				6.3		
Confl. Peds. (#/hr)				5			10				5	
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	538	653	141	350	732	188	0	224	504	275	0
Turn Type	custom	Prot	NA	Perm	Prot	NA	Perm	custom	Prot	NA	Perm	custom
Protected Phases		5	2		1	6			3	8		
Permitted Phases	5			2			6	3			8	7
Detector Phase	5	5	2	2	1	6	6	3	3	8	8	7
Switch Phase												
Minimum Initial (s)	5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	5.0	6.0	6.0	5.0
Minimum Split (s)	10.0	10.0	37.0	37.0	10.0	37.0	37.0	10.0	10.0	40.0	40.0	10.0
Total Split (s)	18.0	18.0	38.0	38.0	14.0	34.0	34.0	12.0	12.0	36.0	36.0	12.0
Total Split (%)	18.0%	18.0%	38.0%	38.0%	14.0%	34.0%	34.0%	12.0%	12.0%	36.0%	36.0%	12.0%
Yellow Time (s)	3.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	3.0	4.0	4.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		-1.0	-2.0	-2.0	-1.0	-2.0	-2.0		-1.0	-2.0	-2.0	
Total Lost Time (s)		4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	
Lead/Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lead	Lead	Lead	Lag
Lead-Lag Optimize?												
Recall Mode	None	None	C-Max	C-Max	None	Max	Max	None	None	Max	Max	None
Act Effct Green (s)		14.0	34.0	34.0	10.0	30.0	30.0		8.0	32.0	32.0	
Actuated g/C Ratio		0.14	0.34	0.34	0.10	0.30	0.30		0.08	0.32	0.32	
v/c Ratio		2.85	0.54	0.21	1.02	0.69	0.30		1.56	0.45	0.40	
Control Delay		863.0	25.8	1.8	99.5	34.9	3.7		313.5	25.0	7.4	
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	
Total Delay		863.0	25.8	1.8	99.5	34.9	3.7		313.5	25.0	7.4	
LOS		F	C	A	F	C	A		F	C	A	
Approach Delay			361.4			48.1				84.6		
Approach LOS			F			D				F		
Queue Length 50th (ft)		~309	122	0	~119	215	0		~105	134	1	



Lane Group	SBL	SBT	SBR
Lane Configurations			
Traffic Volume (vph)	140	500	332
Future Volume (vph)	140	500	332
Ideal Flow (vphpl)	1900	1900	1900
Storage Length (ft)	185		270
Storage Lanes	2		1
Taper Length (ft)	25		
Lane Util. Factor	0.97	0.95	1.00
Ped Bike Factor			0.98
Frt			0.850
Flt Protected	0.950		
Satd. Flow (prot)	3433	3539	1583
Flt Permitted	0.500		
Satd. Flow (perm)	1807	3539	1557
Right Turn on Red			Yes
Satd. Flow (RTOR)			328
Link Speed (mph)		45	
Link Distance (ft)		1337	
Travel Time (s)		20.3	
Confl. Peds. (#/hr)			5
Peak Hour Factor	0.92	0.92	0.92
Shared Lane Traffic (%)			
Lane Group Flow (vph)	160	543	361
Turn Type	Prot	NA	Perm
Protected Phases	7	4	
Permitted Phases			4
Detector Phase	7	4	4
Switch Phase			
Minimum Initial (s)	5.0	6.0	6.0
Minimum Split (s)	10.0	36.0	36.0
Total Split (s)	12.0	36.0	36.0
Total Split (%)	12.0%	36.0%	36.0%
Yellow Time (s)	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0
Lead/Lag	Lag	Lag	Lag
Lead-Lag Optimize?			
Recall Mode	None	Max	Max
Act Effct Green (s)	8.0	32.0	32.0
Actuated g/C Ratio	0.08	0.32	0.32
v/c Ratio	1.11	0.48	0.50
Control Delay	152.0	29.1	6.9
Queue Delay	0.0	0.0	0.0
Total Delay	152.0	29.1	6.9
LOS	F	C	A
Approach Delay		40.0	
Approach LOS		D	
Queue Length 50th (ft)	~60	145	15

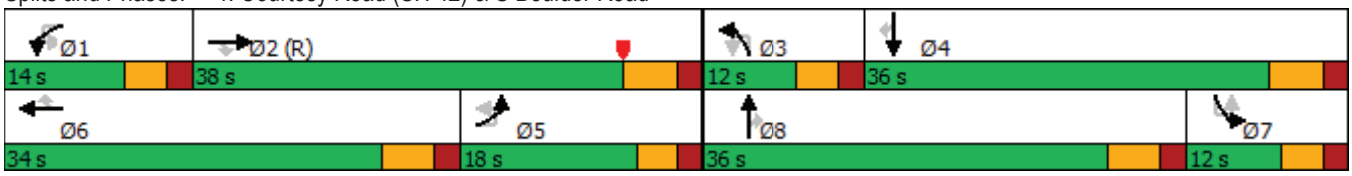
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
Queue Length 95th (ft)		#405	170	12	#213	282	34		#186	128	86	
Internal Link Dist (ft)			385			1735				338		
Turn Bay Length (ft)		150		100	225		270					
Base Capacity (vph)		189	1203	666	343	1061	617		144	1132	685	
Starvation Cap Reductn		0	0	0	0	0	0		0	0	0	
Spillback Cap Reductn		0	0	0	0	0	0		0	0	0	
Storage Cap Reductn		0	0	0	0	0	0		0	0	0	
Reduced v/c Ratio		2.85	0.54	0.21	1.02	0.69	0.30		1.56	0.45	0.40	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow, Master Intersection			
Natural Cycle: 120			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 2.85			
Intersection Signal Delay: 143.5		Intersection LOS: F	
Intersection Capacity Utilization 85.8%		ICU Level of Service E	
Analysis Period (min) 15			

~ 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.

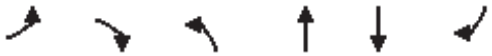
Splits and Phases: 4: Courtesy Road (SH 42) & S Boulder Road





Lane Group	SBL	SBT	SBR
Queue Length 95th (ft)	#126	196	85
Internal Link Dist (ft)		1257	
Turn Bay Length (ft)	185		270
Base Capacity (vph)	144	1132	721
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	1.11	0.48	0.50

Intersection Summary



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	1	0	921	938	10
Future Volume (vph)	0	1	0	921	938	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	140			0
Storage Lanes	0	1	0			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor						
Frt		0.865			0.998	
Flt Protected						
Satd. Flow (prot)	0	1611	0	3539	3532	0
Flt Permitted						
Satd. Flow (perm)	0	1611	0	3539	3532	0
Link Speed (mph)	20			45	45	
Link Distance (ft)	418			420	418	
Travel Time (s)	14.3			6.4	6.3	
Confl. Peds. (#/hr)			5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1	0	1001	1031	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	36.3%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	1	0	921	938	10
Future Vol, veh/h	0	1	0	921	938	10
Conflicting Peds, #/hr	0	0	5	0	0	5
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1	0	1001	1020	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	521	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	500	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	498	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.2	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	498	-	-
HCM Lane V/C Ratio	-	0.002	-	-
HCM Control Delay (s)	-	12.2	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0	-	-

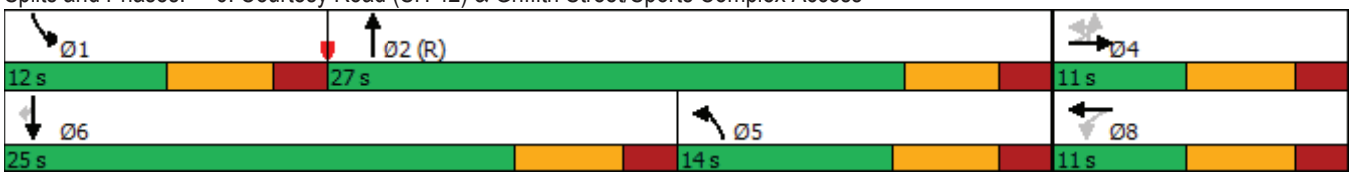
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	7	21	2	1	6	21	849	43	11	875	44
Future Volume (vph)	20	7	21	2	1	6	21	849	43	11	875	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		0	50		0	225		0	500		273
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor												0.98
Frt		0.889			0.869			0.993				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1656	0	1770	1619	0	1770	3514	0	1770	3539	1583
Flt Permitted	0.800			0.800			0.950			0.950		
Satd. Flow (perm)	1490	1656	0	1490	1619	0	1770	3514	0	1770	3539	1545
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		23			7			14				196
Link Speed (mph)		30			20			45			45	
Link Distance (ft)		439			281			380			369	
Travel Time (s)		10.0			9.6			5.8			5.6	
Confl. Bikes (#/hr)												5
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	22	31	0	2	8	0	23	970	0	12	951	48
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								6
Detector Phase	4	4		8	8		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	25.0	25.0		25.0	25.0		11.0	24.5		11.0	25.0	25.0
Total Split (s)	11.0	11.0		11.0	11.0		14.0	27.0		12.0	25.0	25.0
Total Split (%)	22.0%	22.0%		22.0%	22.0%		28.0%	54.0%		24.0%	50.0%	50.0%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	3.5		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-1.5		-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lead/Lag							Lag	Lag		Lead	Lead	Lead
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None		None	C-Max		None	Max	Max
Act Effct Green (s)	7.0	7.0		7.0	7.0		8.3	38.6		7.8	38.2	38.2
Actuated g/C Ratio	0.14	0.14		0.14	0.14		0.17	0.77		0.16	0.76	0.76
v/c Ratio	0.11	0.12		0.01	0.03		0.08	0.36		0.04	0.35	0.04
Control Delay	20.5	11.0		18.5	13.3		17.7	4.8		17.6	4.7	0.6
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	20.5	11.0		18.5	13.3		17.7	4.8		17.6	4.7	0.6
LOS	C	B		B	B		B	A		B	A	A
Approach Delay		15.0			14.3			5.1			4.7	
Approach LOS		B			B			A			A	
Queue Length 50th (ft)	6	3		1	0		6	43		5	116	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (ft)	17	15		5	9		20	149		m10	m166	m3
Internal Link Dist (ft)		359			201			300			289	
Turn Bay Length (ft)	50			50			225			500		273
Base Capacity (vph)	208	251		208	232		354	2716		283	2704	1226
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.11	0.12		0.01	0.03		0.06	0.36		0.04	0.35	0.04

Intersection Summary			
Area Type:	Other		
Cycle Length: 50			
Actuated Cycle Length: 50			
Offset: 48 (96%), Referenced to phase 2:NBT, Start of Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.36			
Intersection Signal Delay: 5.2		Intersection LOS: A	
Intersection Capacity Utilization 39.3%		ICU Level of Service A	
Analysis Period (min) 15			

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Courtesy Road (SH 42) & Griffith Street/Sports Complex Access





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	31	20	15	57	1	14	0	16	1	0	1
Future Volume (vph)	0	31	20	15	57	1	14	0	16	1	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	150		150	150		150	150		150
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.947			0.998			0.928			0.932	
Flt Protected					0.990			0.977			0.976	
Satd. Flow (prot)	0	1764	0	0	1840	0	0	1689	0	0	1694	0
Flt Permitted					0.990			0.977			0.976	
Satd. Flow (perm)	0	1764	0	0	1840	0	0	1689	0	0	1694	0
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		390			439			346			362	
Travel Time (s)		8.9			10.0			9.4			9.9	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	56	0	0	79	0	0	32	0	0	2	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 22.5%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	31	20	15	57	1	14	0	16	1	0	1
Future Vol, veh/h	0	31	20	15	57	1	14	0	16	1	0	1
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	34	22	16	62	1	15	0	17	1	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	68	0	0	61	0	0	150	150	55	159	161	73
Stage 1	-	-	-	-	-	-	50	50	-	100	100	-
Stage 2	-	-	-	-	-	-	100	100	-	59	61	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1533	-	-	1542	-	-	818	742	1012	807	731	989
Stage 1	-	-	-	-	-	-	963	853	-	906	812	-
Stage 2	-	-	-	-	-	-	906	812	-	953	844	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1526	-	-	1535	-	-	802	726	1002	779	716	980
Mov Cap-2 Maneuver	-	-	-	-	-	-	802	726	-	779	716	-
Stage 1	-	-	-	-	-	-	958	849	-	901	799	-
Stage 2	-	-	-	-	-	-	891	799	-	932	840	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1.5	9.2	9.2
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	898	1526	-	-	1535	-	-	868
HCM Lane V/C Ratio	0.036	-	-	-	0.011	-	-	0.003
HCM Control Delay (s)	9.2	0	-	-	7.4	0	-	9.2
HCM Lane LOS	A	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	53	3	1	68	3	8	0	0	0	0	4
Future Volume (vph)	6	53	3	1	68	3	8	0	0	0	0	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	150		150	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.994			0.995						0.865	
Flt Protected		0.995			0.999			0.950				
Satd. Flow (prot)	0	1842	0	0	1852	0	0	1770	0	0	1611	0
Flt Permitted		0.995			0.999			0.950				
Satd. Flow (perm)	0	1842	0	0	1852	0	0	1770	0	0	1611	0
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		405			390			333			365	
Travel Time (s)		9.2			8.9			9.1			10.0	
Confl. Peds. (#/hr)	5		10	10		5	5		5	5		5
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	68	0	0	78	0	0	9	0	0	4	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 22.9%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	53	3	1	68	3	8	0	0	0	0	4
Future Vol, veh/h	6	53	3	1	68	3	8	0	0	0	0	4
Conflicting Peds, #/hr	5	0	10	10	0	5	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	58	3	1	74	3	9	0	0	0	0	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	82	0	0	71	0	0	169	168	75	162	168	86
Stage 1	-	-	-	-	-	-	84	84	-	83	83	-
Stage 2	-	-	-	-	-	-	85	84	-	79	85	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1515	-	-	1529	-	-	795	725	986	803	725	973
Stage 1	-	-	-	-	-	-	924	825	-	925	826	-
Stage 2	-	-	-	-	-	-	923	825	-	930	824	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1508	-	-	1514	-	-	777	710	972	792	710	964
Mov Cap-2 Maneuver	-	-	-	-	-	-	777	710	-	792	710	-
Stage 1	-	-	-	-	-	-	911	813	-	916	821	-
Stage 2	-	-	-	-	-	-	914	820	-	921	812	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0.1	9.7	8.8
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	777	1508	-	-	1514	-	-	964
HCM Lane V/C Ratio	0.011	0.004	-	-	0.001	-	-	0.005
HCM Control Delay (s)	9.7	7.4	0	-	7.4	0	-	8.8
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	57	27	130	46	14	138
Future Volume (vph)	57	27	130	46	14	138
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.957		0.965			
Flt Protected	0.967					0.995
Satd. Flow (prot)	1724	0	1798	0	0	1853
Flt Permitted	0.967					0.995
Satd. Flow (perm)	1724	0	1798	0	0	1853
Link Speed (mph)	30		30			30
Link Distance (ft)	405		350			1210
Travel Time (s)	9.2		8.0			27.5
Confl. Peds. (#/hr)	6	2		17	17	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	91	0	191	0	0	165
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 31.0%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	2.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	57	27	130	46	14	138
Future Vol, veh/h	57	27	130	46	14	138
Conflicting Peds, #/hr	6	2	0	17	17	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	62	29	141	50	15	150

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	369	185	0	0	208	0
Stage 1	183	-	-	-	-	-
Stage 2	186	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	631	857	-	-	1363	-
Stage 1	848	-	-	-	-	-
Stage 2	846	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	610	842	-	-	1341	-
Mov Cap-2 Maneuver	610	-	-	-	-	-
Stage 1	824	-	-	-	-	-
Stage 2	841	-	-	-	-	-

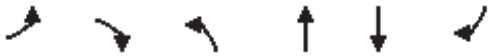
Approach	WB	NB	SB
HCM Control Delay, s	11.2	0	0.7
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	669	1341	-
HCM Lane V/C Ratio	-	-	0.136	0.011	-
HCM Control Delay (s)	-	-	11.2	7.7	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.5	0	-



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	4	0	0	9	0	0
Future Volume (vph)	4	0	0	9	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt				0.865		
Flt Protected	0.950					
Satd. Flow (prot)	1770	0	0	1611	0	0
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	0	1611	0	0
Link Speed (mph)	25		25			25
Link Distance (ft)	380		365			210
Travel Time (s)	10.4		10.0			5.7
Confl. Peds. (#/hr)	5	132		70	70	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	4	0	0	10	0	0
Sign Control	Free		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 16.5%		ICU Level of Service A	
Analysis Period (min) 15			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	49	0	878	931	6
Future Volume (vph)	0	49	0	878	931	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.865			0.999	
Flt Protected						
Satd. Flow (prot)	0	1611	0	3539	3536	0
Flt Permitted						
Satd. Flow (perm)	0	1611	0	3539	3536	0
Link Speed (mph)	30			45	45	
Link Distance (ft)	193			369	420	
Travel Time (s)	4.4			5.6	6.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	53	0	954	1019	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 35.9%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	49	0	878	931	6
Future Vol, veh/h	0	49	0	878	931	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	53	0	954	1012	7

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	510	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	509	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	509	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.9	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	509	-	-
HCM Lane V/C Ratio	-	0.105	-	-
HCM Control Delay (s)	-	12.9	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.3	-	-

Lane Group	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Volume (vph)	936	112	8	79	1210	103	104
Future Volume (vph)	936	112	8	79	1210	103	104
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		120		225		0	115
Storage Lanes		1		1		1	1
Taper Length (ft)				25		0	
Lane Util. Factor	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Ped Bike Factor		0.97		1.00		0.99	0.95
Frt		0.850					0.850
Flt Protected				0.950		0.950	
Satd. Flow (prot)	3539	1583	0	1770	3539	1770	1583
Flt Permitted				0.235		0.950	
Satd. Flow (perm)	3539	1531	0	437	3539	1759	1505
Right Turn on Red		Yes					Yes
Satd. Flow (RTOR)		122					113
Link Speed (mph)	35				35	30	
Link Distance (ft)	636				400	1210	
Travel Time (s)	12.4				7.8	27.5	
Confl. Peds. (#/hr)		5		5		5	32
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)							
Lane Group Flow (vph)	1017	122	0	95	1315	112	113
Turn Type	NA	Perm	custom	pm+pt	NA	Perm	Perm
Protected Phases	2			1	6		
Permitted Phases		2	1	6		8	8
Detector Phase	2	2	1	1	6	8	8
Switch Phase							
Minimum Initial (s)	35.0	35.0	5.0	5.0	35.0	5.0	5.0
Minimum Split (s)	41.0	41.0	11.0	11.0	41.0	35.0	35.0
Total Split (s)	85.0	85.0	14.0	14.0	99.0	21.0	21.0
Total Split (%)	70.8%	70.8%	11.7%	11.7%	82.5%	17.5%	17.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0	-1.0	0.0
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	5.0
Lead/Lag	Lag	Lag	Lead	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			
Recall Mode	C-Max	C-Max	None	None	C-Max	None	None
Act Effct Green (s)	84.8	84.8		97.6	97.6	14.4	13.4
Actuated g/C Ratio	0.71	0.71		0.81	0.81	0.12	0.11
v/c Ratio	0.41	0.11		0.21	0.46	0.53	0.42
Control Delay	8.2	1.4		5.2	5.8	58.4	13.7
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay	8.2	1.4		5.2	5.8	58.4	13.7
LOS	A	A		A	A	E	B
Approach Delay	7.5				5.7	35.9	
Approach LOS	A				A	D	
Queue Length 50th (ft)	166	0		19	148	81	0

Lane Group	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Queue Length 95th (ft)	212	19		m33	203	140	54
Internal Link Dist (ft)	556				320	1130	
Turn Bay Length (ft)		120		225			115
Base Capacity (vph)	2500	1117		466	2878	249	298
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	0.41	0.11		0.20	0.46	0.45	0.38

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 23 (19%), Referenced to phase 2:EBT and 6:WBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.53			
Intersection Signal Delay: 8.9		Intersection LOS: A	
Intersection Capacity Utilization 64.4%		ICU Level of Service C	
Analysis Period (min) 15			

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Main Street & S Boulder Road



Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	0	886	36	2	7	1326	5	0	0	22	0	0
Future Volume (vph)	0	886	36	2	7	1326	5	0	0	22	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		50		70		0	0		0	0	
Storage Lanes	0		1		1		0	0		1	0	
Taper Length (ft)	25				75			25			25	
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.850			0.999				0.865		
Flt Protected					0.950							
Satd. Flow (prot)	0	3539	1583	0	1770	3536	0	0	0	1611	0	0
Flt Permitted					0.950							
Satd. Flow (perm)	0	3539	1583	0	1770	3536	0	0	0	1611	0	0
Link Speed (mph)		35				35			20			20
Link Distance (ft)		400				360			338			476
Travel Time (s)		7.8				7.0			11.5			16.2
Confl. Peds. (#/hr)	10		10	5	10		10	5		5	5	
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	963	39	0	10	1446	0	0	0	24	0	0
Sign Control		Free				Free			Stop			Stop

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	48.4%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	11
Future Volume (vph)	11
Ideal Flow (vphpl)	1900
Storage Length (ft)	0
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Ped Bike Factor	
Frt	0.865
Flt Protected	
Satd. Flow (prot)	1611
Flt Permitted	
Satd. Flow (perm)	1611
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	5
Peak Hour Factor	0.92
Shared Lane Traffic (%)	
Lane Group Flow (vph)	12
Sign Control	

Intersection Summary

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	0	886	36	2	7	1326	5	0	0	22	0	0	11
Future Vol, veh/h	0	886	36	2	7	1326	5	0	0	22	0	0	11
Conflicting Peds, #/hr	10	0	10	5	10	0	10	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	-	70	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	963	39	2	8	1441	5	0	0	24	0	0	12

Major/Minor	Major1			Major2			Minor1			Minor2			
Conflicting Flow All	-	0	0	963	1012	0	0	-	-	497	-	-	738
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	6.44	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	2.52	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	351	681	-	-	0	0	519	0	0	360
Stage 1	0	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	0	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-			-	-						
Mov Cap-1 Maneuver	-	-	-	551	551	-	-	-	-	512	-	-	355
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.1	12.4	15.5
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	512	-	-	551	-	-	355
HCM Lane V/C Ratio	0.047	-	-	0.018	-	-	0.034
HCM Control Delay (s)	12.4	-	-	11.6	-	-	15.5
HCM Lane LOS	B	-	-	B	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-	-	0.1

Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	6	21	887	11	1	21	1300	8	0	0	32	0
Future Volume (vph)	6	21	887	11	1	21	1300	8	0	0	32	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		90		0		80		0	0		0	0
Storage Lanes		1		0		1		0	0		1	0
Taper Length (ft)		75				80			25			25
Lane Util. Factor	0.95	1.00	0.95	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.998				0.999				0.865	
Flt Protected		0.950				0.950						
Satd. Flow (prot)	0	1770	3532	0	0	1770	3536	0	0	0	1611	0
Flt Permitted		0.950				0.950						
Satd. Flow (perm)	0	1770	3532	0	0	1770	3536	0	0	0	1611	0
Link Speed (mph)			35				35			20		
Link Distance (ft)			360				465			339		
Travel Time (s)			7.0				9.1			11.6		
Confl. Peds. (#/hr)	5	10		10	5	10		10	5		5	5
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	30	976	0	0	24	1422	0	0	0	35	0
Sign Control			Free				Free			Stop		

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	47.7%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	0	36
Future Volume (vph)	0	36
Ideal Flow (vphpl)	1900	1900
Storage Length (ft)		0
Storage Lanes		1
Taper Length (ft)		
Lane Util. Factor	1.00	1.00
Ped Bike Factor		
Frt		0.865
Flt Protected		
Satd. Flow (prot)	0	1611
Flt Permitted		
Satd. Flow (perm)	0	1611
Link Speed (mph)	20	
Link Distance (ft)	431	
Travel Time (s)	14.7	
Confl. Peds. (#/hr)		5
Peak Hour Factor	0.92	0.92
Shared Lane Traffic (%)		
Lane Group Flow (vph)	0	39
Sign Control	Stop	

Intersection Summary

Intersection	
Int Delay, s/veh	0.7

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	6	21	887	11	1	21	1300	8	0	0	32	0	0	36
Future Vol, veh/h	6	21	887	11	1	21	1300	8	0	0	32	0	0	36
Conflicting Peds, #/hr	5	10	0	10	5	10	0	10	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	90	-	-	-	80	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	23	964	12	1	23	1413	9	0	0	35	0	0	39

Major/Minor	Major1				Major2				Minor1			Minor2		
Conflicting Flow All	1422	1432	0	0	976	986	0	0	-	-	503	-	-	726
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	6.44	4.14	-	-	6.44	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.52	2.22	-	-	2.52	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	177	470	-	-	344	696	-	-	0	0	514	0	0	367
Stage 1	-	-	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %			-	-			-	-						
Mov Cap-1 Maneuver	326	326	-	-	655	655	-	-	-	-	507	-	-	362
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.2	12.6	16.1
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	507	326	-	-	655	-	-	362
HCM Lane V/C Ratio	0.069	0.09	-	-	0.037	-	-	0.108
HCM Control Delay (s)	12.6	17.1	-	-	10.7	-	-	16.1
HCM Lane LOS	B	C	-	-	B	-	-	C
HCM 95th %tile Q(veh)	0.2	0.3	-	-	0.1	-	-	0.4

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	13	312	429	135	261	683	153	177	467	198	5	128
Future Volume (vph)	13	312	429	135	261	683	153	177	467	198	5	128
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		150		0	225		270	0		0		185
Storage Lanes		2		0	2		1	2		0		2
Taper Length (ft)		80			135			70				155
Lane Util. Factor	0.95	0.97	0.95	0.95	0.97	0.95	1.00	0.97	0.95	0.95	0.95	0.97
Ped Bike Factor			1.00				0.98		0.99			
Frt			0.964				0.850		0.955			
Flt Protected		0.950			0.950			0.950				0.950
Satd. Flow (prot)	0	3433	3397	0	3433	3539	1583	3433	3363	0	0	3433
Flt Permitted		0.370			0.950			0.950				0.571
Satd. Flow (perm)	0	1337	3397	0	3433	3539	1546	3433	3363	0	0	2063
Right Turn on Red				Yes			Yes			Yes		
Satd. Flow (RTOR)			35				182		59			
Link Speed (mph)			35			35			45			
Link Distance (ft)			465			1815			418			
Travel Time (s)			9.1			35.4			6.3			
Confl. Peds. (#/hr)				5			10			5		
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	353	613	0	284	742	166	192	723	0	0	144
Turn Type	custom	Prot	NA		Prot	NA	Perm	Prot	NA		custom	Prot
Protected Phases		5	2		1	6		3	8			7
Permitted Phases	5						6				7	
Detector Phase	5	5	2		1	6	6	3	8		7	7
Switch Phase												
Minimum Initial (s)	5.0	5.0	10.0		5.0	10.0	10.0	5.0	6.0		5.0	5.0
Minimum Split (s)	10.0	10.0	37.0		10.0	37.0	37.0	10.0	40.0		10.0	10.0
Total Split (s)	20.0	20.0	41.0		20.0	41.0	41.0	16.0	47.0		12.0	12.0
Total Split (%)	16.7%	16.7%	34.2%		16.7%	34.2%	34.2%	13.3%	39.2%		10.0%	10.0%
Yellow Time (s)	3.0	3.0	4.0		3.0	4.0	4.0	3.0	4.0		3.0	3.0
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0			0.0
Total Lost Time (s)		5.0	6.0		5.0	6.0	6.0	5.0	6.0			5.0
Lead/Lag	Lag	Lag	Lag		Lead	Lead	Lead	Lead	Lead		Lag	Lag
Lead-Lag Optimize?												
Recall Mode	None	None	C-Max		None	Max	Max	None	Max		None	None
Act Effct Green (s)		15.0	36.1		13.9	35.0	35.0	10.5	41.0			7.0
Actuated g/C Ratio		0.12	0.30		0.12	0.29	0.29	0.09	0.34			0.06
v/c Ratio		2.11	0.59		0.71	0.72	0.29	0.64	0.61			1.20
Control Delay		545.3	30.5		61.5	42.8	4.9	63.3	32.6			193.3
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0			0.0
Total Delay		545.3	30.5		61.5	42.8	4.9	63.3	32.6			193.3
LOS		F	C		E	D	A	E	C			F
Approach Delay			218.6			42.0			39.0			
Approach LOS			F			D			D			
Queue Length 50th (ft)		~226	202		109	271	0	75	224			~69



Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	578	444
Future Volume (vph)	578	444
Ideal Flow (vphpl)	1900	1900
Storage Length (ft)		270
Storage Lanes		1
Taper Length (ft)		
Lane Util. Factor	0.95	1.00
Ped Bike Factor		0.98
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3539	1583
Flt Permitted		
Satd. Flow (perm)	3539	1555
Right Turn on Red		Yes
Satd. Flow (RTOR)		272
Link Speed (mph)	45	
Link Distance (ft)	1337	
Travel Time (s)	20.3	
Confl. Peds. (#/hr)		5
Peak Hour Factor	0.92	0.92
Shared Lane Traffic (%)		
Lane Group Flow (vph)	628	483
Turn Type	NA	Perm
Protected Phases	4	
Permitted Phases		4
Detector Phase	4	4
Switch Phase		
Minimum Initial (s)	6.0	6.0
Minimum Split (s)	36.0	36.0
Total Split (s)	43.0	43.0
Total Split (%)	35.8%	35.8%
Yellow Time (s)	4.0	4.0
All-Red Time (s)	2.0	2.0
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.0	6.0
Lead/Lag	Lag	Lag
Lead-Lag Optimize?		
Recall Mode	Max	Max
Act Effct Green (s)	37.5	37.5
Actuated g/C Ratio	0.31	0.31
v/c Ratio	0.57	0.72
Control Delay	37.0	22.3
Queue Delay	0.0	0.0
Total Delay	37.0	22.3
LOS	D	C
Approach Delay	49.3	
Approach LOS	D	
Queue Length 50th (ft)	214	147

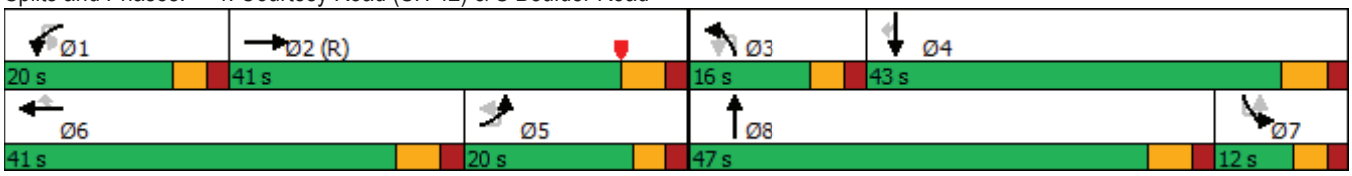
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL
Queue Length 95th (ft)		#326	267		156	342	41	114	289			#138
Internal Link Dist (ft)			385			1735			338			
Turn Bay Length (ft)		150			225		270					185
Base Capacity (vph)		167	1045		429	1032	579	314	1187			120
Starvation Cap Reductn		0	0		0	0	0	0	0			0
Spillback Cap Reductn		0	0		0	0	0	0	0			0
Storage Cap Reductn		0	0		0	0	0	0	0			0
Reduced v/c Ratio		2.11	0.59		0.66	0.72	0.29	0.61	0.61			1.20

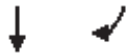
Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow, Master Intersection	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 2.11	
Intersection Signal Delay: 82.9	Intersection LOS: F
Intersection Capacity Utilization 86.5%	ICU Level of Service E
Analysis Period (min) 15	

~ 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.

Splits and Phases: 4: Courtesy Road (SH 42) & S Boulder Road





Lane Group	SBT	SBR
Queue Length 95th (ft)	276	282
Internal Link Dist (ft)	1257	
Turn Bay Length (ft)		270
Base Capacity (vph)	1107	673
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.57	0.72

Intersection Summary

Lane Group	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1	17	1	10	821	966	1
Future Volume (vph)	1	17	1	10	821	966	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		140			0
Storage Lanes	0	1		1			0
Taper Length (ft)	25			100			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor							
Frt		0.865					
Flt Protected	0.950			0.950			
Satd. Flow (prot)	0	1611	0	1770	1863	3539	0
Flt Permitted	0.950			0.950			
Satd. Flow (perm)	0	1611	0	1770	1863	3539	0
Link Speed (mph)	20				45	45	
Link Distance (ft)	418				420	418	
Travel Time (s)	14.3				6.4	6.3	
Confl. Peds. (#/hr)				5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)							
Lane Group Flow (vph)	1	18	0	12	892	1051	0
Sign Control	Stop				Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Vol, veh/h	1	17	1	10	821	966	1
Future Vol, veh/h	1	17	1	10	821	966	1
Conflicting Peds, #/hr	0	0	0	5	0	0	5
Sign Control	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	None	-	-	None	-	None
Storage Length	-	0	-	140	-	-	-
Veh in Median Storage, #	0	-	-	-	0	0	-
Grade, %	0	-	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	1	18	1	11	892	1050	1

Major/Minor	Minor2		Major1			Major2	
Conflicting Flow All	1970	531	1051	1056	0	-	0
Stage 1	1056	-	-	-	-	-	-
Stage 2	914	-	-	-	-	-	-
Critical Hdwy	6.63	6.93	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	3.119	2.219	-	-	-
Pot Cap-1 Maneuver	61	494	233	657	-	-	-
Stage 1	297	-	-	-	-	-	-
Stage 2	390	-	-	-	-	-	-
Platoon blocked, %					-	-	-
Mov Cap-1 Maneuver	59	492	557	557	-	-	-
Mov Cap-2 Maneuver	59	-	-	-	-	-	-
Stage 1	289	-	-	-	-	-	-
Stage 2	388	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.6	0.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	557	-	492	-	-
HCM Lane V/C Ratio	0.021	-	0.038	-	-
HCM Control Delay (s)	11.6	-	12.6	-	-
HCM Lane LOS	B	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	0	72	0	0	0	40	812	4	5	905	83
Future Volume (vph)	19	0	72	0	0	0	40	812	4	5	905	83
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		60	225		0	500		0
Storage Lanes	0		0	0		1	1		0	1		1
Taper Length (ft)	0			0			25			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.894						0.999				0.850
Flt Protected		0.990					0.950			0.950		
Satd. Flow (prot)	0	1649	0	0	1863	1863	1770	1861	0	1770	1863	1583
Flt Permitted		0.990					0.950			0.950		
Satd. Flow (perm)	0	1649	0	0	1863	1863	1770	1861	0	1770	1863	1583
Link Speed (mph)		30			20			45			45	
Link Distance (ft)		439			281			380			369	
Travel Time (s)		10.0			9.6			5.8			5.6	
Confl. Bikes (#/hr)												5
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	99	0	0	0	0	43	887	0	5	984	90
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 59.8%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	19	0	72	0	0	0	40	812	4	5	905	83
Future Vol, veh/h	19	0	72	0	0	0	40	812	4	5	905	83
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	60	225	-	-	500	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	0	78	0	0	0	43	883	4	5	984	90

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1965	1967	984	2049	2055	885	1074	0	0	887	0	0
Stage 1	994	994	-	971	971	-	-	-	-	-	-	-
Stage 2	971	973	-	1078	1084	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	47	63	301	41	55	344	649	-	-	763	-	-
Stage 1	295	323	-	304	331	-	-	-	-	-	-	-
Stage 2	304	330	-	265	293	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	44	58	301	29	51	344	649	-	-	763	-	-
Mov Cap-2 Maneuver	44	58	-	29	51	-	-	-	-	-	-	-
Stage 1	276	321	-	284	309	-	-	-	-	-	-	-
Stage 2	284	308	-	195	291	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	81.6	0	0.5	0
HCM LOS	F	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	649	-	-	136	-	-	763	-	-
HCM Lane V/C Ratio	0.067	-	-	0.727	-	-	0.007	-	-
HCM Control Delay (s)	10.9	-	-	81.6	0	0	9.8	-	-
HCM Lane LOS	B	-	-	F	A	A	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	4.2	-	-	0	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	79	13	14	93	2	32	0	9	0	0	1
Future Volume (vph)	0	79	13	14	93	2	32	0	9	0	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	150		150	150		150	150		150
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.981			0.998			0.970			0.865	
Flt Protected					0.994			0.963				
Satd. Flow (prot)	0	1827	0	0	1848	0	0	1740	0	0	1611	0
Flt Permitted					0.994			0.963				
Satd. Flow (perm)	0	1827	0	0	1848	0	0	1740	0	0	1611	0
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		390			439			346			362	
Travel Time (s)		8.9			10.0			9.4			9.9	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	100	0	0	118	0	0	45	0	0	1	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 29.0%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	79	13	14	93	2	32	0	9	0	0	1
Future Vol, veh/h	0	79	13	14	93	2	32	0	9	0	0	1
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	86	14	15	101	2	35	0	10	0	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	108	0	0	105	0	0	236	236	103	240	242	112
Stage 1	-	-	-	-	-	-	98	98	-	137	137	-
Stage 2	-	-	-	-	-	-	138	138	-	103	105	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1483	-	-	1486	-	-	718	665	952	714	660	941
Stage 1	-	-	-	-	-	-	908	814	-	866	783	-
Stage 2	-	-	-	-	-	-	865	782	-	903	808	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1476	-	-	1479	-	-	704	651	943	694	646	932
Mov Cap-2 Maneuver	-	-	-	-	-	-	704	651	-	694	646	-
Stage 1	-	-	-	-	-	-	903	810	-	862	770	-
Stage 2	-	-	-	-	-	-	850	769	-	889	804	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1	10.1	8.9
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	745	1476	-	-	1479	-	-	932
HCM Lane V/C Ratio	0.06	-	-	-	0.01	-	-	0.001
HCM Control Delay (s)	10.1	0	-	-	7.5	0	-	8.9
HCM Lane LOS	B	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	75	2	3	140	4	6	0	3	19	0	45
Future Volume (vph)	6	75	2	3	140	4	6	0	3	19	0	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	150		150	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.997			0.997			0.959			0.905	
Flt Protected		0.996			0.999			0.966			0.985	
Satd. Flow (prot)	0	1850	0	0	1855	0	0	1726	0	0	1660	0
Flt Permitted		0.996			0.999			0.966			0.985	
Satd. Flow (perm)	0	1850	0	0	1855	0	0	1726	0	0	1660	0
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		405			390			333			365	
Travel Time (s)		9.2			8.9			9.1			10.0	
Confl. Peds. (#/hr)	5		10	10		5	5		5	5		5
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	91	0	0	159	0	0	10	0	0	70	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 21.4%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	6	75	2	3	140	4	6	0	3	19	0	45
Future Vol, veh/h	6	75	2	3	140	4	6	0	3	19	0	45
Conflicting Peds, #/hr	5	0	10	10	0	5	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	82	2	3	152	4	7	0	3	21	0	49

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	161	0	0	94	0	0	297	274	98	269	273	164
Stage 1	-	-	-	-	-	-	107	107	-	165	165	-
Stage 2	-	-	-	-	-	-	190	167	-	104	108	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1418	-	-	1500	-	-	655	633	958	684	634	881
Stage 1	-	-	-	-	-	-	898	807	-	837	762	-
Stage 2	-	-	-	-	-	-	812	760	-	902	806	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1411	-	-	1486	-	-	607	619	944	672	620	873
Mov Cap-2 Maneuver	-	-	-	-	-	-	607	619	-	672	620	-
Stage 1	-	-	-	-	-	-	885	795	-	829	757	-
Stage 2	-	-	-	-	-	-	761	755	-	890	794	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.2	10.3	9.9
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	689	1411	-	-	1486	-	-	802
HCM Lane V/C Ratio	0.014	0.005	-	-	0.002	-	-	0.087
HCM Control Delay (s)	10.3	7.6	0	-	7.4	0	-	9.9
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.3



Lane Group	WBU	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	1	59	95	1	160	64	21	117
Future Volume (vph)	1	59	95	1	160	64	21	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								
Frt		0.917			0.961			
Flt Protected		0.981						0.992
Satd. Flow (prot)	0	1676	0	0	1790	0	0	1848
Flt Permitted		0.981						0.992
Satd. Flow (perm)	0	1676	0	0	1790	0	0	1848
Link Speed (mph)		30			30			30
Link Distance (ft)		405			350			1210
Travel Time (s)		9.2			8.0			27.5
Confl. Peds. (#/hr)	70	1	132	1		70	70	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	168	0	0	245	0	0	150
Sign Control		Stop			Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 42.2%		ICU Level of Service A	
Analysis Period (min) 15			

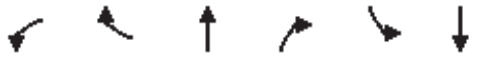
Intersection	
Int Delay, s/veh	4.9

Movement	WBU	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations								
Traffic Vol, veh/h	1	59	95	1	160	64	21	117
Future Vol, veh/h	1	59	95	1	160	64	21	117
Conflicting Peds, #/hr	70	1	132	1	0	70	70	0
Sign Control	Stop	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	None
Storage Length	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0
Grade, %	-	0	-	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2
Mvmt Flow	1	64	103	1	174	70	23	127

Major/Minor	Minor1			Major1			Major2	
Conflicting Flow All	0	453	411	-	0	0	314	0
Stage 1	0	279	-	-	-	-	-	-
Stage 2	0	174	-	-	-	-	-	-
Critical Hdwy	-	6.42	6.22	-	-	-	4.12	-
Critical Hdwy Stg 1	-	5.42	-	-	-	-	-	-
Critical Hdwy Stg 2	-	5.42	-	-	-	-	-	-
Follow-up Hdwy	-	3.518	3.318	-	-	-	2.218	-
Pot Cap-1 Maneuver	0	565	641	-	-	-	1246	-
Stage 1	0	768	-	-	-	-	-	-
Stage 2	0	856	-	-	-	-	-	-
Platoon blocked, %	-				-	-		-
Mov Cap-1 Maneuver	0	515	523	-	-	-	1163	-
Mov Cap-2 Maneuver	0	515	-	-	-	-	-	-
Stage 1	0	701	-	-	-	-	-	-
Stage 2	0	855	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.2		1.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	520	1163	-
HCM Lane V/C Ratio	-	-	0.322	0.02	-
HCM Control Delay (s)	-	-	15.2	8.2	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	1.4	0.1	-



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	6	0	7	3	0	58
Future Volume (vph)	6	0	7	3	0	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.963			
Flt Protected	0.950					
Satd. Flow (prot)	1770	0	1794	0	0	1863
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	1794	0	0	1863
Link Speed (mph)	25		25			25
Link Distance (ft)	380		365			210
Travel Time (s)	10.4		10.0			5.7
Confl. Peds. (#/hr)	5	132		70	70	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	7	0	11	0	0	63
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 32.2%		ICU Level of Service A	
Analysis Period (min) 15			

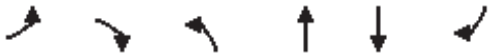
Intersection	
Int Delay, s/veh	0.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	6	0	7	3	0	58
Future Vol, veh/h	6	0	7	3	0	58
Conflicting Peds, #/hr	5	132	0	70	70	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	0	8	3	0	63

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	148	212	0	0	81	0
Stage 1	80	-	-	-	-	-
Stage 2	68	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	844	828	-	-	1517	-
Stage 1	943	-	-	-	-	-
Stage 2	955	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	783	676	-	-	1416	-
Mov Cap-2 Maneuver	783	-	-	-	-	-
Stage 1	880	-	-	-	-	-
Stage 2	950	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.6	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	783	1416	-
HCM Lane V/C Ratio	-	-	0.008	-	-
HCM Control Delay (s)	-	-	9.6	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	7	12	7	787	946	2
Future Volume (vph)	7	12	7	787	946	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95
Frt	0.916					
Flt Protected	0.981					
Satd. Flow (prot)	1674	0	0	1863	3539	0
Flt Permitted	0.981					
Satd. Flow (perm)	1674	0	0	1863	3539	0
Link Speed (mph)	30			45	45	
Link Distance (ft)	257			369	420	
Travel Time (s)	5.8			5.6	6.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	21	0	0	863	1030	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 57.0%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	7	12	7	787	946	2
Future Vol, veh/h	7	12	7	787	946	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	13	8	855	1028	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1900	515	1030	0	-	0
Stage 1	1029	-	-	-	-	-
Stage 2	871	-	-	-	-	-
Critical Hdwy	6.63	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	68	506	672	-	-	-
Stage 1	307	-	-	-	-	-
Stage 2	408	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	66	506	672	-	-	-
Mov Cap-2 Maneuver	66	-	-	-	-	-
Stage 1	300	-	-	-	-	-
Stage 2	408	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	33.7	0.1	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	672	-	146	-	-
HCM Lane V/C Ratio	0.011	-	0.141	-	-
HCM Control Delay (s)	10.4	0	33.7	-	-
HCM Lane LOS	B	A	D	-	-
HCM 95th %tile Q(veh)	0	-	0.5	-	-

Lane Group	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Volume (vph)	1302	106	21	76	1016	111	178
Future Volume (vph)	1302	106	21	76	1016	111	178
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		120		225		0	115
Storage Lanes		1		1		1	1
Taper Length (ft)				25		0	
Lane Util. Factor	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Ped Bike Factor		0.97				0.99	0.94
Frt		0.850					0.850
Flt Protected				0.950		0.950	
Satd. Flow (prot)	3539	1583	0	1770	3539	1770	1583
Flt Permitted				0.137		0.950	
Satd. Flow (perm)	3539	1531	0	255	3539	1759	1484
Right Turn on Red		Yes					Yes
Satd. Flow (RTOR)		83					128
Link Speed (mph)	35				35	30	
Link Distance (ft)	636				400	1210	
Travel Time (s)	12.4				7.8	27.5	
Confl. Peds. (#/hr)		5		5		5	43
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)							
Lane Group Flow (vph)	1415	115	0	106	1104	121	193
Turn Type	NA	Perm	custom	pm+pt	NA	Perm	Perm
Protected Phases	2			1	6		
Permitted Phases		2	1	6		8	8
Detector Phase	2	2	1	1	6	8	8
Switch Phase							
Minimum Initial (s)	35.0	35.0	5.0	5.0	35.0	5.0	5.0
Minimum Split (s)	41.0	41.0	11.0	11.0	41.0	35.0	35.0
Total Split (s)	85.0	85.0	14.0	14.0	99.0	21.0	21.0
Total Split (%)	70.8%	70.8%	11.7%	11.7%	82.5%	17.5%	17.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0	-1.0	0.0
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	5.0
Lead/Lag	Lag	Lag	Lead	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			
Recall Mode	C-Max	C-Max	None	None	C-Max	None	None
Act Effct Green (s)	85.1	85.1		98.0	98.0	14.0	13.0
Actuated g/C Ratio	0.71	0.71		0.82	0.82	0.12	0.11
v/c Ratio	0.56	0.10		0.33	0.38	0.59	0.70
Control Delay	10.0	2.5		9.3	6.2	61.8	32.8
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay	10.0	2.5		9.3	6.2	61.8	32.8
LOS	A	A		A	A	E	C
Approach Delay	9.4				6.4	44.0	
Approach LOS	A				A	D	
Queue Length 50th (ft)	253	7		29	142	90	48

Lane Group	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Queue Length 95th (ft)	344	27		m48	m192	150	127
Internal Link Dist (ft)	556				320	1130	
Turn Bay Length (ft)		120		225			115
Base Capacity (vph)	2509	1109		334	2890	249	308
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	0.56	0.10		0.32	0.38	0.49	0.63

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 22 (18%), Referenced to phase 2:EBT and 6:WBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay: 11.8		Intersection LOS: B	
Intersection Capacity Utilization 74.7%		ICU Level of Service D	
Analysis Period (min) 15			

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Main Street & S Boulder Road





Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	0	1408	65	4	16	1109	5	0	0	29	0	0
Future Volume (vph)	0	1408	65	4	16	1109	5	0	0	29	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		50		70		0	0		0	0	
Storage Lanes	0		1		1		0	0		1	0	
Taper Length (ft)	25				75			25			25	
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.850			0.999				0.865		
Flt Protected					0.950							
Satd. Flow (prot)	0	3539	1583	0	1770	3536	0	0	0	1611	0	0
Flt Permitted					0.950							
Satd. Flow (perm)	0	3539	1583	0	1770	3536	0	0	0	1611	0	0
Link Speed (mph)		35				35			20			20
Link Distance (ft)		400				360			338			476
Travel Time (s)		7.8				7.0			11.5			16.2
Confl. Peds. (#/hr)	10		10	5	10		10	5		5	5	
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1530	71	0	21	1210	0	0	0	32	0	0
Sign Control		Free				Free			Stop			Stop

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 50.5%		ICU Level of Service A	
Analysis Period (min) 15			



Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	5
Future Volume (vph)	5
Ideal Flow (vphpl)	1900
Storage Length (ft)	0
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Ped Bike Factor	
Frt	0.865
Flt Protected	
Satd. Flow (prot)	1611
Flt Permitted	
Satd. Flow (perm)	1611
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	5
Peak Hour Factor	0.92
Shared Lane Traffic (%)	
Lane Group Flow (vph)	5
Sign Control	

Intersection Summary

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	0	1408	65	4	16	1109	5	0	0	29	0	0	5
Future Vol, veh/h	0	1408	65	4	16	1109	5	0	0	29	0	0	5
Conflicting Peds, #/hr	10	0	10	5	10	0	10	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	-	70	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1530	71	4	17	1205	5	0	0	32	0	0	5

Major/Minor	Major1			Major2				Minor1			Minor2		
Conflicting Flow All	-	0	0	1530	1611	0	0	-	-	780	-	-	620
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	6.44	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	2.52	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	151	401	-	-	0	0	338	0	0	431
Stage 1	0	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	0	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-			-	-						
Mov Cap-1 Maneuver	-	-	-	289	289	-	-	-	-	333	-	-	425
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.3	16.9	13.6
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	333	-	-	289	-	-	425
HCM Lane V/C Ratio	0.095	-	-	0.075	-	-	0.013
HCM Control Delay (s)	16.9	-	-	18.5	-	-	13.6
HCM Lane LOS	C	-	-	C	-	-	B
HCM 95th %tile Q(veh)	0.3	-	-	0.2	-	-	0

Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	23	48	1423	49	2	50	1114	12	0	0	58	0
Future Volume (vph)	23	48	1423	49	2	50	1114	12	0	0	58	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		90		0		80		0	0		0	0
Storage Lanes		1		0		1		0	0		1	0
Taper Length (ft)		75				80			25			25
Lane Util. Factor	0.95	1.00	0.95	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.995				0.998				0.865	
Flt Protected		0.950				0.950						
Satd. Flow (prot)	0	1770	3522	0	0	1770	3532	0	0	0	1611	0
Flt Permitted		0.950				0.950						
Satd. Flow (perm)	0	1770	3522	0	0	1770	3532	0	0	0	1611	0
Link Speed (mph)			35				35			20		
Link Distance (ft)			360				465			339		
Travel Time (s)			7.0				9.1			11.6		
Confl. Peds. (#/hr)	5	10		10	5	10		10	5		5	5
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	77	1600	0	0	56	1224	0	0	0	63	0
Sign Control			Free				Free			Stop		

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 59.8%		ICU Level of Service B	
Analysis Period (min) 15			

Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	0	66
Future Volume (vph)	0	66
Ideal Flow (vphpl)	1900	1900
Storage Length (ft)		0
Storage Lanes		1
Taper Length (ft)		
Lane Util. Factor	1.00	1.00
Ped Bike Factor		
Frt		0.865
Flt Protected		
Satd. Flow (prot)	0	1611
Flt Permitted		
Satd. Flow (perm)	0	1611
Link Speed (mph)	20	
Link Distance (ft)	431	
Travel Time (s)	14.7	
Confl. Peds. (#/hr)		5
Peak Hour Factor	0.92	0.92
Shared Lane Traffic (%)		
Lane Group Flow (vph)	0	72
Sign Control	Stop	

Intersection Summary

Intersection	
Int Delay, s/veh	1.5

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	23	48	1423	49	2	50	1114	12	0	0	58	0	0	66
Future Vol, veh/h	23	48	1423	49	2	50	1114	12	0	0	58	0	0	66
Conflicting Peds, #/hr	5	10	0	10	5	10	0	10	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	90	-	-	-	80	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	25	52	1547	53	2	54	1211	13	0	0	63	0	0	72

Major/Minor	Major1				Major2				Minor1			Minor2		
Conflicting Flow All	1224	1234	0	0	1600	1610	0	0	-	-	815	-	-	627
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	6.44	4.14	-	-	6.44	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.52	2.22	-	-	2.52	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	238	560	-	-	136	402	-	-	0	0	321	0	0	426
Stage 1	-	-	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %			-	-			-	-						
Mov Cap-1 Maneuver	353	353	-	-	362	362	-	-	-	-	316	-	-	420
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0.7	19.2	15.3
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	316	353	-	-	362	-	-	420
HCM Lane V/C Ratio	0.2	0.219	-	-	0.156	-	-	0.171
HCM Control Delay (s)	19.2	18	-	-	16.8	-	-	15.3
HCM Lane LOS	C	C	-	-	C	-	-	C
HCM 95th %tile Q(veh)	0.7	0.8	-	-	0.5	-	-	0.6

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
Lane Configurations												
Traffic Volume (vph)	22	591	751	146	355	652	202	1	132	709	255	9
Future Volume (vph)	22	591	751	146	355	652	202	1	132	709	255	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		150		0	225		270		0		0	
Storage Lanes		2		0	2		1		2		0	
Taper Length (ft)		80			135				70			
Lane Util. Factor	0.95	0.97	0.95	0.95	0.97	0.95	1.00	0.95	0.97	0.95	0.95	0.95
Ped Bike Factor			1.00				0.98			1.00		
Frt			0.976				0.850			0.960		
Flt Protected		0.950			0.950				0.950			
Satd. Flow (prot)	0	3433	3444	0	3433	3539	1583	0	3433	3382	0	0
Flt Permitted		0.382			0.950				0.308			
Satd. Flow (perm)	0	1380	3444	0	3433	3539	1546	0	1113	3382	0	0
Right Turn on Red				Yes			Yes				Yes	
Satd. Flow (RTOR)			19				210			43		
Link Speed (mph)			35			35				45		
Link Distance (ft)			465			1815				418		
Travel Time (s)			9.1			35.4				6.3		
Confl. Peds. (#/hr)				5			10				5	
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	666	975	0	386	709	220	0	144	1048	0	0
Turn Type	custom	Prot	NA		Prot	NA	Perm	custom	Prot	NA		custom
Protected Phases		5	2		1	6			3	8		
Permitted Phases	5						6	3				7
Detector Phase	5	5	2		1	6	6	3	3	8		7
Switch Phase												
Minimum Initial (s)	5.0	5.0	10.0		5.0	10.0	10.0	5.0	5.0	6.0		5.0
Minimum Split (s)	10.0	10.0	37.0		10.0	37.0	37.0	10.0	10.0	40.0		10.0
Total Split (s)	24.0	24.0	43.0		18.0	37.0	37.0	18.0	18.0	41.0		18.0
Total Split (%)	20.0%	20.0%	35.8%		15.0%	30.8%	30.8%	15.0%	15.0%	34.2%		15.0%
Yellow Time (s)	3.0	3.0	4.0		3.0	4.0	4.0	3.0	3.0	4.0		3.0
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0		2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0		0.0	0.0		
Total Lost Time (s)		5.0	6.0		5.0	6.0	6.0		5.0	6.0		
Lead/Lag	Lag	Lag	Lag		Lead	Lead	Lead	Lead	Lead	Lead		Lag
Lead-Lag Optimize?												
Recall Mode	None	None	C-Max		None	Max	Max	None	None	Max		None
Act Effct Green (s)		19.0	37.0		13.0	31.0	31.0		13.0	35.0		
Actuated g/C Ratio		0.16	0.31		0.11	0.26	0.26		0.11	0.29		
v/c Ratio		3.06	0.91		1.04	0.78	0.40		1.20	1.03		
Control Delay		953.6	45.8		109.4	48.1	7.8		191.3	76.8		
Queue Delay		0.0	0.0		0.0	0.0	0.0		0.0	0.0		
Total Delay		953.6	45.8		109.4	48.1	7.8		191.3	76.8		
LOS		F	D		F	D	A		F	E		
Approach Delay			414.2			59.3				90.6		
Approach LOS			F			E				F		
Queue Length 50th (ft)		~469	376		~165	268	6		~69	~444		



Lane Group	SBL	SBT	SBR
Lane Configurations			
Traffic Volume (vph)	139	536	342
Future Volume (vph)	139	536	342
Ideal Flow (vphpl)	1900	1900	1900
Storage Length (ft)	185		270
Storage Lanes	2		1
Taper Length (ft)	155		
Lane Util. Factor	0.97	0.95	1.00
Ped Bike Factor			0.98
Frt			0.850
Flt Protected	0.950		
Satd. Flow (prot)	3433	3539	1583
Flt Permitted	0.308		
Satd. Flow (perm)	1113	3539	1555
Right Turn on Red			Yes
Satd. Flow (RTOR)			339
Link Speed (mph)		45	
Link Distance (ft)		1337	
Travel Time (s)		20.3	
Confl. Peds. (#/hr)			5
Peak Hour Factor	0.92	0.92	0.92
Shared Lane Traffic (%)			
Lane Group Flow (vph)	161	583	372
Turn Type	Prot	NA	Perm
Protected Phases	7	4	
Permitted Phases			4
Detector Phase	7	4	4
Switch Phase			
Minimum Initial (s)	5.0	6.0	6.0
Minimum Split (s)	10.0	36.0	36.0
Total Split (s)	18.0	41.0	41.0
Total Split (%)	15.0%	34.2%	34.2%
Yellow Time (s)	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0
Lead/Lag	Lag	Lag	Lag
Lead-Lag Optimize?			
Recall Mode	None	Max	Max
Act Effct Green (s)	13.0	35.0	35.0
Actuated g/C Ratio	0.11	0.29	0.29
v/c Ratio	1.34	0.56	0.54
Control Delay	240.4	38.6	8.2
Queue Delay	0.0	0.0	0.0
Total Delay	240.4	38.6	8.2
LOS	F	D	A
Approach Delay		57.6	
Approach LOS		E	
Queue Length 50th (ft)	~83	201	19

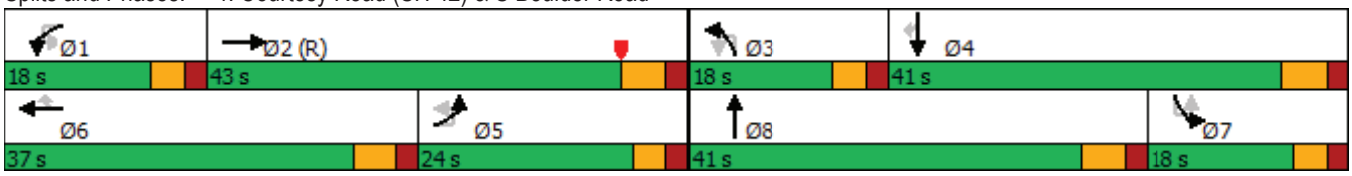
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
Queue Length 95th (ft)		#590	#499		#267	341	68		#138	#581		
Internal Link Dist (ft)			385			1735				338		
Turn Bay Length (ft)		150			225		270					
Base Capacity (vph)		218	1075		371	914	555		120	1016		
Starvation Cap Reductn		0	0		0	0	0		0	0		
Spillback Cap Reductn		0	0		0	0	0		0	0		
Storage Cap Reductn		0	0		0	0	0		0	0		
Reduced v/c Ratio		3.06	0.91		1.04	0.78	0.40		1.20	1.03		

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow, Master Intersection			
Natural Cycle: 130			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 3.06			
Intersection Signal Delay: 176.7		Intersection LOS: F	
Intersection Capacity Utilization 94.2%		ICU Level of Service F	
Analysis Period (min) 15			

~ 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.

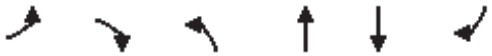
Splits and Phases: 4: Courtesy Road (SH 42) & S Boulder Road





Lane Group	SBL	SBT	SBR
Queue Length 95th (ft)	#156	261	102
Internal Link Dist (ft)		1257	
Turn Bay Length (ft)	185		270
Base Capacity (vph)	120	1032	693
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	1.34	0.56	0.54

Intersection Summary



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1	19	20	1112	1024	9
Future Volume (vph)	1	19	20	1112	1024	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	140			0
Storage Lanes	0	1	1			0
Taper Length (ft)	25		100			
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor						
Frt		0.865			0.999	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	0	1611	1770	1863	3536	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	0	1611	1770	1863	3536	0
Link Speed (mph)	20			45	45	
Link Distance (ft)	418			420	418	
Travel Time (s)	14.3			6.4	6.3	
Confl. Peds. (#/hr)			5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1	21	22	1209	1123	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization Err%		ICU Level of Service H	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	19	20	1112	1024	9
Future Vol, veh/h	1	19	20	1112	1024	9
Conflicting Peds, #/hr	0	0	5	0	0	5
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	140	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	21	22	1209	1113	10

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2376	567	1128	0	-	0
Stage 1	1123	-	-	-	-	-
Stage 2	1253	-	-	-	-	-
Critical Hdwy	6.63	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	33	468	617	-	-	-
Stage 1	273	-	-	-	-	-
Stage 2	268	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	31	466	614	-	-	-
Mov Cap-2 Maneuver	31	-	-	-	-	-
Stage 1	262	-	-	-	-	-
Stage 2	267	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.1	0.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	614	-	466	-	-
HCM Lane V/C Ratio	0.035	-	0.044	-	-
HCM Control Delay (s)	11.1	-	13.1	-	-
HCM Lane LOS	B	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	2	11	0	67	0	0	0	26	1101	2	1	970
Future Volume (vph)	2	11	0	67	0	0	0	26	1101	2	1	970
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0		0	0		60	225		0	500	
Storage Lanes		0		0	0		1	1		0	1	
Taper Length (ft)		0			0			25			50	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.887									
Flt Protected			0.992					0.950			0.950	
Satd. Flow (prot)	0	0	1639	0	0	1863	1863	1770	1863	0	1770	1863
Flt Permitted			0.992					0.950			0.950	
Satd. Flow (perm)	0	0	1639	0	0	1863	1863	1770	1863	0	1770	1863
Link Speed (mph)			30			20			45			45
Link Distance (ft)			439			281			380			369
Travel Time (s)			10.0			9.6			5.8			5.6
Confl. Bikes (#/hr)												
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	87	0	0	0	0	28	1199	0	1	1054
Sign Control			Stop			Stop			Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	69.6%	ICU Level of Service	C
Analysis Period (min)	15		



Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	123
Future Volume (vph)	123
Ideal Flow (vphpl)	1900
Storage Length (ft)	0
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Ped Bike Factor	
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1583
Flt Permitted	
Satd. Flow (perm)	1583
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Bikes (#/hr)	5
Peak Hour Factor	0.92
Shared Lane Traffic (%)	
Lane Group Flow (vph)	134
Sign Control	

Intersection Summary

Intersection	
Int Delay, s/veh	3.3

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	2	11	0	67	0	0	0	26	1101	2	1	970	123
Future Vol, veh/h	2	11	0	67	0	0	0	26	1101	2	1	970	123
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	60	225	-	-	500	-	0
Veh in Median Storage, #	-	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	12	0	73	0	0	0	28	1197	2	1	1054	134

Major/Minor	Minor2			Minor1			Major1			Major2			
Conflicting Flow All	0	2310	2311	1054	2414	2444	1198	1188	0	0	1199	0	0
Stage 1	0	1056	1056	-	1254	1254	-	-	-	-	-	-	-
Stage 2	0	1254	1255	-	1160	1190	-	-	-	-	-	-	-
Critical Hdwy	-	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	-	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	-	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	0	27	38	275	23	31	226	588	-	-	582	-	-
Stage 1	0	272	302	-	211	243	-	-	-	-	-	-	-
Stage 2	0	211	243	-	238	261	-	-	-	-	-	-	-
Platoon blocked, %	-								-	-		-	-
Mov Cap-1 Maneuver	0	26	36	275	16	29	226	588	-	-	582	-	-
Mov Cap-2 Maneuver	0	26	36	-	16	29	-	-	-	-	-	-	-
Stage 1	0	259	301	-	201	231	-	-	-	-	-	-	-
Stage 2	0	201	231	-	175	260	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	91.6	0	0.3	0
HCM LOS	F	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	588	-	-	117	-	-	582	-	-
HCM Lane V/C Ratio	0.048	-	-	0.725	-	-	0.002	-	-
HCM Control Delay (s)	11.4	-	-	91.6	0	0	11.2	-	-
HCM Lane LOS	B	-	-	F	A	A	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-	4	-	-	0	-	-

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	2	64	26	1	27	126	1	28	1	5	0	2
Future Volume (vph)	2	64	26	1	27	126	1	28	1	5	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150		150		150	150		150	150	
Storage Lanes	0		0		0		0	0		0	0	
Taper Length (ft)	25				25			25			25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.962				0.999			0.981			
Flt Protected		0.999				0.991			0.960			
Satd. Flow (prot)	0	1790	0	0	0	1844	0	0	1754	0	0	1863
Flt Permitted		0.999				0.991			0.960			
Satd. Flow (perm)	0	1790	0	0	0	1844	0	0	1754	0	0	1863
Link Speed (mph)		30				30			25			25
Link Distance (ft)		390				439			346			362
Travel Time (s)		8.9				10.0			9.4			9.9
Confl. Peds. (#/hr)	5		5		5		5	5		5	5	
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	100	0	0	0	168	0	0	36	0	0	2
Sign Control		Free				Free			Stop			Stop

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 30.9%		ICU Level of Service A	
Analysis Period (min) 15			



Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	0
Future Volume (vph)	0
Ideal Flow (vphpl)	1900
Storage Length (ft)	150
Storage Lanes	0
Taper Length (ft)	
Lane Util. Factor	1.00
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	5
Peak Hour Factor	0.92
Shared Lane Traffic (%)	
Lane Group Flow (vph)	0
Sign Control	

Intersection Summary

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕				↕			↕			↕	
Traffic Vol, veh/h	2	64	26	1	27	126	1	28	1	5	0	2	0
Future Vol, veh/h	2	64	26	1	27	126	1	28	1	5	0	2	0
Conflicting Peds, #/hr	5	0	5	0	5	0	5	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	70	28	1	29	137	1	30	1	5	0	2	0

Major/Minor	Major1			Major2				Minor1			Minor2		
Conflicting Flow All	143	0	0	-	103	0	0	295	296	94	297	310	148
Stage 1	-	-	-	-	-	-	-	93	93	-	201	203	-
Stage 2	-	-	-	-	-	-	-	202	203	-	96	107	-
Critical Hdwy	4.12	-	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1440	-	-	-	1489	-	-	657	616	963	655	605	899
Stage 1	-	-	-	-	-	-	-	914	818	-	801	733	-
Stage 2	-	-	-	-	-	-	-	800	733	-	911	807	-
Platoon blocked, %		-	-			-	-						
Mov Cap-1 Maneuver	1433	-	-	~ -29	~ -29	-	-	648	609	954	644	598	890
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	648	609	-	644	598	-
Stage 1	-	-	-	-	-	-	-	909	813	-	796	729	-
Stage 2	-	-	-	-	-	-	-	794	729	-	899	802	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2		10.6	11
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	679	1433	-	-	+	-	-	598
HCM Lane V/C Ratio	0.054	0.002	-	-	-	-	-	0.004
HCM Control Delay (s)	10.6	7.5	0	-	-	-	-	11
HCM Lane LOS	B	A	A	-	-	-	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	-	-	-	0

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	15	70	6	5	155	7	2	0	1	3	28	0
Future Volume (vph)	15	70	6	5	155	7	2	0	1	3	28	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	150		150	0		0		0	
Storage Lanes	0		0	0		0	0		0		0	
Taper Length (ft)	25			25			25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.990			0.994			0.955				0.934
Flt Protected		0.992			0.999			0.968				0.975
Satd. Flow (prot)	0	1829	0	0	1850	0	0	1722	0	0	0	1696
Flt Permitted		0.992			0.999			0.968				0.975
Satd. Flow (perm)	0	1829	0	0	1850	0	0	1722	0	0	0	1696
Link Speed (mph)		30			30			25				25
Link Distance (ft)		405			390			333				365
Travel Time (s)		9.2			8.9			9.1				10.0
Confl. Peds. (#/hr)	5		10	10		5	5		5		5	
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	99	0	0	181	0	0	3	0	0	0	65
Sign Control		Free			Free			Stop				Stop

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 24.1%		ICU Level of Service A	
Analysis Period (min) 15			



Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	29
Future Volume (vph)	29
Ideal Flow (vphpl)	1900
Storage Length (ft)	0
Storage Lanes	0
Taper Length (ft)	
Lane Util. Factor	1.00
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	5
Peak Hour Factor	0.92
Shared Lane Traffic (%)	
Lane Group Flow (vph)	0
Sign Control	

Intersection Summary

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕				⇕	
Traffic Vol, veh/h	15	70	6	5	155	7	2	0	1	3	28	0	29
Future Vol, veh/h	15	70	6	5	155	7	2	0	1	3	28	0	29
Conflicting Peds, #/hr	5	0	10	10	0	5	5	0	5	0	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	76	7	5	168	8	2	0	1	3	30	0	32

Major/Minor	Major1			Major2			Minor1			Minor2			
Conflicting Flow All	181	0	0	93	0	0	325	313	95	0	304	312	182
Stage 1	-	-	-	-	-	-	122	122	-	0	187	187	-
Stage 2	-	-	-	-	-	-	203	191	-	0	117	125	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1394	-	-	1501	-	-	628	602	962	0	648	603	861
Stage 1	-	-	-	-	-	-	882	795	-	0	815	745	-
Stage 2	-	-	-	-	-	-	799	742	-	0	888	792	-
Platoon blocked, %		-	-		-	-				-			
Mov Cap-1 Maneuver	1387	-	-	1487	-	-	589	583	948	0	633	584	853
Mov Cap-2 Maneuver	-	-	-	-	-	-	589	583	-	0	633	584	-
Stage 1	-	-	-	-	-	-	863	778	-	0	801	738	-
Stage 2	-	-	-	-	-	-	763	735	-	0	872	775	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.3	0.2	10.4	10.4
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	674	1387	-	-	1487	-	-	729
HCM Lane V/C Ratio	0.005	0.012	-	-	0.004	-	-	0.085
HCM Control Delay (s)	10.4	7.6	0	-	7.4	0	-	10.4
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.3



Lane Group	WBL	WBR	NBT	NBR	SBU	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	93	70	222	50	1	39	151
Future Volume (vph)	93	70	222	50	1	39	151
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor							
Frt	0.942		0.975				
Flt Protected	0.972						0.990
Satd. Flow (prot)	1706	0	1816	0	0	0	1844
Flt Permitted	0.972						0.990
Satd. Flow (perm)	1706	0	1816	0	0	0	1844
Link Speed (mph)	30		30				30
Link Distance (ft)	405		350				1210
Travel Time (s)	9.2		8.0				27.5
Confl. Peds. (#/hr)	2	10		7	10	7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)							
Lane Group Flow (vph)	177	0	295	0	0	0	207
Sign Control	Stop		Free				Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 45.9%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	3.6

Movement	WBL	WBR	NBT	NBR	SBU	SBL	SBT
Lane Configurations							
Traffic Vol, veh/h	93	70	222	50	1	39	151
Future Vol, veh/h	93	70	222	50	1	39	151
Conflicting Peds, #/hr	2	10	0	7	10	7	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	-	None
Storage Length	0	-	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	-	0
Grade, %	0	-	0	-	-	-	0
Peak Hour Factor	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	101	76	241	54	1	42	164

Major/Minor	Minor1		Major1		Major2		
Conflicting Flow All	525	285	0	0	-	302	0
Stage 1	275	-	-	-	-	-	-
Stage 2	250	-	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	-	2.218	-
Pot Cap-1 Maneuver	513	754	-	-	-	1259	-
Stage 1	771	-	-	-	-	-	-
Stage 2	792	-	-	-	-	-	-
Platoon blocked, %			-	-			-
Mov Cap-1 Maneuver	508	742	-	-	~ -41	~ -41	-
Mov Cap-2 Maneuver	508	-	-	-	-	-	-
Stage 1	766	-	-	-	-	-	-
Stage 2	790	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.7	0	
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	588	+	-
HCM Lane V/C Ratio	-	-	0.301	-	-
HCM Control Delay (s)	-	-	13.7	-	-
HCM Lane LOS	-	-	B	-	-
HCM 95th %tile Q(veh)	-	-	1.3	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	6	0	18	7	0	54
Future Volume (vph)	6	0	18	7	0	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.961			
Flt Protected	0.950					
Satd. Flow (prot)	1770	0	1790	0	0	1863
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	1790	0	0	1863
Link Speed (mph)	25		25			25
Link Distance (ft)	380		365			210
Travel Time (s)	10.4		10.0			5.7
Confl. Peds. (#/hr)	5	132		70	70	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	7	0	28	0	0	59
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 32.2%		ICU Level of Service A	
Analysis Period (min) 15			

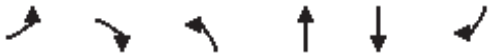
Intersection	
Int Delay, s/veh	0.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	6	0	18	7	0	54
Future Vol, veh/h	6	0	18	7	0	54
Conflicting Peds, #/hr	5	132	0	70	70	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	0	20	8	0	59

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	158	226	0	0	98	0
Stage 1	94	-	-	-	-	-
Stage 2	64	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	833	813	-	-	1495	-
Stage 1	930	-	-	-	-	-
Stage 2	959	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	773	663	-	-	1395	-
Mov Cap-2 Maneuver	773	-	-	-	-	-
Stage 1	868	-	-	-	-	-
Stage 2	954	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.7	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	773	1395	-
HCM Lane V/C Ratio	-	-	0.008	-	-
HCM Control Delay (s)	-	-	9.7	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	26	61	7	1049	996	8
Future Volume (vph)	26	61	7	1049	996	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95
Frt	0.905				0.999	
Flt Protected	0.985					
Satd. Flow (prot)	1660	0	0	1863	3536	0
Flt Permitted	0.985					
Satd. Flow (perm)	1660	0	0	1863	3536	0
Link Speed (mph)	30			45	45	
Link Distance (ft)	254			369	420	
Travel Time (s)	5.8			5.6	6.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	94	0	0	1148	1092	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 72.6%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	4.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	26	61	7	1049	996	8
Future Vol, veh/h	26	61	7	1049	996	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	28	66	8	1140	1083	9

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2244	546	1092	0	-	0
Stage 1	1088	-	-	-	-	-
Stage 2	1156	-	-	-	-	-
Critical Hdwy	6.63	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	41	483	637	-	-	-
Stage 1	285	-	-	-	-	-
Stage 2	299	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	40	483	637	-	-	-
Mov Cap-2 Maneuver	40	-	-	-	-	-
Stage 1	275	-	-	-	-	-
Stage 2	299	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	118	0.1	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	637	-	112	-	-
HCM Lane V/C Ratio	0.012	-	0.844	-	-
HCM Control Delay (s)	10.7	0	118	-	-
HCM Lane LOS	B	A	F	-	-
HCM 95th %tile Q(veh)	0	-	5	-	-

Lane Group	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Volume (vph)	852	94	26	70	794	79	100
Future Volume (vph)	852	94	26	70	794	79	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		120		225		0	115
Storage Lanes		1		1		1	1
Taper Length (ft)				25		0	
Lane Util. Factor	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Ped Bike Factor		0.97		1.00		0.99	0.95
Frt		0.850					0.850
Flt Protected				0.950		0.950	
Satd. Flow (prot)	3539	1583	0	1770	3539	1770	1583
Flt Permitted				0.262		0.950	
Satd. Flow (perm)	3539	1535	0	487	3539	1761	1504
Right Turn on Red		Yes					Yes
Satd. Flow (RTOR)		102					109
Link Speed (mph)	35				35	30	
Link Distance (ft)	636				400	1210	
Travel Time (s)	12.4				7.8	27.5	
Confl. Peds. (#/hr)		5		5		5	39
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)							
Lane Group Flow (vph)	926	102	0	104	863	86	109
Turn Type	NA	Perm	custom	pm+pt	NA	Perm	Perm
Protected Phases	2			1	6		
Permitted Phases		2	1	6		8	8
Detector Phase	2	2	1	1	6	8	8
Switch Phase							
Minimum Initial (s)	35.0	35.0	5.0	5.0	35.0	5.0	5.0
Minimum Split (s)	41.0	41.0	11.0	11.0	41.0	35.0	35.0
Total Split (s)	70.0	70.0	12.0	12.0	82.0	18.0	18.0
Total Split (%)	70.0%	70.0%	12.0%	12.0%	82.0%	18.0%	18.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0	-1.0	0.0
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	5.0
Lead/Lag	Lag	Lag	Lead	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			
Recall Mode	C-Max	C-Max	None	None	C-Max	None	None
Act Effct Green (s)	71.0	71.0		81.0	81.0	11.0	10.0
Actuated g/C Ratio	0.71	0.71		0.81	0.81	0.11	0.10
v/c Ratio	0.37	0.09		0.21	0.30	0.45	0.44
Control Delay	7.0	1.5		3.4	3.3	48.4	13.9
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay	7.0	1.5		3.4	3.3	48.4	13.9
LOS	A	A		A	A	D	B
Approach Delay	6.4				3.3	29.1	
Approach LOS	A				A	C	
Queue Length 50th (ft)	118	0		14	67	52	0

Lane Group	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Queue Length 95th (ft)	163	16		m23	m90	98	49
Internal Link Dist (ft)	556				320	1130	
Turn Bay Length (ft)		120		225			115
Base Capacity (vph)	2513	1119		502	2867	246	290
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	0.37	0.09		0.21	0.30	0.35	0.38

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 59 (59%), Referenced to phase 2:EBT and 6:WBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.45			
Intersection Signal Delay: 7.1		Intersection LOS: A	
Intersection Capacity Utilization 66.1%		ICU Level of Service C	
Analysis Period (min) 15			

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Main Street & S Boulder Road





Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	0	933	38	3	11	916	4	0	0	20	0	0
Future Volume (vph)	0	933	38	3	11	916	4	0	0	20	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		50		70		0	0		0	0	
Storage Lanes	0		1		1		0	0		1	0	
Taper Length (ft)	25				75			25			25	
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.850			0.999				0.865		
Flt Protected					0.950							
Satd. Flow (prot)	0	3539	1583	0	1770	3536	0	0	0	1611	0	0
Flt Permitted					0.950							
Satd. Flow (perm)	0	3539	1583	0	1770	3536	0	0	0	1611	0	0
Link Speed (mph)		35				35			20			20
Link Distance (ft)		400				360			338			476
Travel Time (s)		7.8				7.0			11.5			16.2
Confl. Peds. (#/hr)	10		10	5	10		10	5		5	5	
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1014	41	0	15	1000	0	0	0	22	0	0
Sign Control		Free				Free			Stop			Stop

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 37.3%		ICU Level of Service A	
Analysis Period (min) 15			



Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	1
Future Volume (vph)	1
Ideal Flow (vphpl)	1900
Storage Length (ft)	0
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Ped Bike Factor	
Frt	0.865
Flt Protected	
Satd. Flow (prot)	1611
Flt Permitted	
Satd. Flow (perm)	1611
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	5
Peak Hour Factor	0.92
Shared Lane Traffic (%)	
Lane Group Flow (vph)	1
Sign Control	

Intersection Summary

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	0	933	38	3	11	916	4	0	0	20	0	0	1
Future Vol, veh/h	0	933	38	3	11	916	4	0	0	20	0	0	1
Conflicting Peds, #/hr	10	0	10	5	10	0	10	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	-	70	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1014	41	3	12	996	4	0	0	22	0	0	1

Major/Minor	Major1			Major2				Minor1			Minor2		
Conflicting Flow All	-	0	0	1014	1065	0	0	-	-	522	-	-	515
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	6.44	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	2.52	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	325	650	-	-	0	0	499	0	0	505
Stage 1	0	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	0	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-			-	-						
Mov Cap-1 Maneuver	-	-	-	524	524	-	-	-	-	492	-	-	498
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.2	12.7	12.2
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	492	-	-	524	-	-	498
HCM Lane V/C Ratio	0.044	-	-	0.029	-	-	0.002
HCM Control Delay (s)	12.7	-	-	12.1	-	-	12.2
HCM Lane LOS	B	-	-	B	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-	-	0

Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	15	28	882	28	1	49	840	12	0	0	42	0
Future Volume (vph)	15	28	882	28	1	49	840	12	0	0	42	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		90		0		80		0	0		0	0
Storage Lanes		1		0		1		0	0		1	0
Taper Length (ft)		75				80			25			25
Lane Util. Factor	0.95	1.00	0.95	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.995				0.998				0.865	
Flt Protected		0.950				0.950						
Satd. Flow (prot)	0	1770	3522	0	0	1770	3532	0	0	0	1611	0
Flt Permitted		0.950				0.950						
Satd. Flow (perm)	0	1770	3522	0	0	1770	3532	0	0	0	1611	0
Link Speed (mph)			35				35			20		
Link Distance (ft)			360				465			339		
Travel Time (s)			7.0				9.1			11.6		
Confl. Peds. (#/hr)	5	10		10	5	10		10	5		5	5
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	46	989	0	0	54	926	0	0	0	46	0
Sign Control			Free				Free			Stop		

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	43.7%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	0	82
Future Volume (vph)	0	82
Ideal Flow (vphpl)	1900	1900
Storage Length (ft)		0
Storage Lanes		1
Taper Length (ft)		
Lane Util. Factor	1.00	1.00
Ped Bike Factor		
Frt		0.865
Flt Protected		
Satd. Flow (prot)	0	1611
Flt Permitted		
Satd. Flow (perm)	0	1611
Link Speed (mph)	20	
Link Distance (ft)	431	
Travel Time (s)	14.7	
Confl. Peds. (#/hr)		5
Peak Hour Factor	0.92	0.92
Shared Lane Traffic (%)		
Lane Group Flow (vph)	0	89
Sign Control	Stop	

Intersection Summary

Intersection	
Int Delay, s/veh	1.4

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	15	28	882	28	1	49	840	12	0	0	42	0	0	82
Future Vol, veh/h	15	28	882	28	1	49	840	12	0	0	42	0	0	82
Conflicting Peds, #/hr	5	10	0	10	5	10	0	10	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	90	-	-	-	80	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	30	959	30	1	53	913	13	0	0	46	0	0	89

Major/Minor	Major1				Major2				Minor1			Minor2		
Conflicting Flow All	926	936	0	0	989	999	0	0	-	-	510	-	-	478
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	6.44	4.14	-	-	6.44	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.52	2.22	-	-	2.52	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	370	727	-	-	337	689	-	-	0	0	509	0	0	534
Stage 1	-	-	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %			-	-			-	-						
Mov Cap-1 Maneuver	494	494	-	-	666	666	-	-	-	-	502	-	-	526
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.6	12.9	13.2
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	502	494	-	-	666	-	-	526
HCM Lane V/C Ratio	0.091	0.095	-	-	0.082	-	-	0.169
HCM Control Delay (s)	12.9	13	-	-	10.9	-	-	13.2
HCM Lane LOS	B	B	-	-	B	-	-	B
HCM 95th %tile Q(veh)	0.3	0.3	-	-	0.3	-	-	0.6

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
Lane Configurations												
Traffic Volume (vph)	21	397	473	87	252	533	135	2	160	363	199	5
Future Volume (vph)	21	397	473	87	252	533	135	2	160	363	199	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		150		0	225		270		0		0	
Storage Lanes		2		0	2		1		2		0	
Taper Length (ft)		80			135				70			
Lane Util. Factor	0.95	0.97	0.95	0.95	0.97	0.95	1.00	0.95	0.97	0.95	0.95	0.95
Ped Bike Factor			1.00				0.98			0.99		
Frt			0.977				0.850			0.947		
Flt Protected		0.950			0.950				0.950			
Satd. Flow (prot)	0	3433	3449	0	3433	3539	1583	0	3433	3332	0	0
Flt Permitted		0.434			0.950				0.571			
Satd. Flow (perm)	0	1568	3449	0	3433	3539	1549	0	2063	3332	0	0
Right Turn on Red				Yes			Yes				Yes	
Satd. Flow (RTOR)			22				218			105		
Link Speed (mph)			35			35				45		
Link Distance (ft)			465			1815				418		
Travel Time (s)			9.1			35.4				6.3		
Confl. Peds. (#/hr)				5			10				5	
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	455	609	0	274	579	147	0	176	611	0	0
Turn Type	custom	Prot	NA		Prot	NA	Perm	custom	Prot	NA		custom
Protected Phases		5	2		1	6			3	8		
Permitted Phases	5						6	3				7
Detector Phase	5	5	2		1	6	6	3	3	8		7
Switch Phase												
Minimum Initial (s)	5.0	5.0	10.0		5.0	10.0	10.0	5.0	5.0	6.0		5.0
Minimum Split (s)	10.0	10.0	37.0		10.0	37.0	37.0	10.0	10.0	40.0		10.0
Total Split (s)	18.0	18.0	38.0		14.0	34.0	34.0	12.0	12.0	36.0		12.0
Total Split (%)	18.0%	18.0%	38.0%		14.0%	34.0%	34.0%	12.0%	12.0%	36.0%		12.0%
Yellow Time (s)	3.0	3.0	4.0		3.0	4.0	4.0	3.0	3.0	4.0		3.0
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0		2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0		0.0	0.0		
Total Lost Time (s)		5.0	6.0		5.0	6.0	6.0		5.0	6.0		
Lead/Lag	Lag	Lag	Lag		Lead	Lead	Lead	Lead	Lead	Lead		Lag
Lead-Lag Optimize?												
Recall Mode	None	None	C-Max		None	Max	Max	None	None	Max		None
Act Effct Green (s)		13.0	32.0		9.0	28.0	28.0		7.0	30.0		
Actuated g/C Ratio		0.13	0.32		0.09	0.28	0.28		0.07	0.30		
v/c Ratio		2.24	0.54		0.89	0.58	0.25		1.22	0.57		
Control Delay		596.3	25.7		75.6	33.8	1.8		187.7	26.6		
Queue Delay		0.0	0.0		0.0	0.0	0.0		0.0	0.0		
Total Delay		596.3	25.7		75.6	33.8	1.8		187.7	26.6		
LOS		F	C		E	C	A		F	C		
Approach Delay			269.7			40.6				62.6		
Approach LOS			F			D				E		
Queue Length 50th (ft)		~246	116		90	166	0		~71	142		



Lane Group	SBL	SBT	SBR
Lane Configurations			
Traffic Volume (vph)	110	392	273
Future Volume (vph)	110	392	273
Ideal Flow (vphpl)	1900	1900	1900
Storage Length (ft)	185		270
Storage Lanes	2		1
Taper Length (ft)	155		
Lane Util. Factor	0.97	0.95	1.00
Ped Bike Factor			0.98
Frt			0.850
Flt Protected	0.950		
Satd. Flow (prot)	3433	3539	1583
Flt Permitted	0.571		
Satd. Flow (perm)	2063	3539	1557
Right Turn on Red			Yes
Satd. Flow (RTOR)			289
Link Speed (mph)		45	
Link Distance (ft)		1337	
Travel Time (s)		20.3	
Confl. Peds. (#/hr)			5
Peak Hour Factor	0.92	0.92	0.92
Shared Lane Traffic (%)			
Lane Group Flow (vph)	125	426	297
Turn Type	Prot	NA	Perm
Protected Phases	7	4	
Permitted Phases			4
Detector Phase	7	4	4
Switch Phase			
Minimum Initial (s)	5.0	6.0	6.0
Minimum Split (s)	10.0	36.0	36.0
Total Split (s)	12.0	36.0	36.0
Total Split (%)	12.0%	36.0%	36.0%
Yellow Time (s)	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0
Lead/Lag	Lag	Lag	Lag
Lead-Lag Optimize?			
Recall Mode	None	Max	Max
Act Effct Green (s)	7.0	30.0	30.0
Actuated g/C Ratio	0.07	0.30	0.30
v/c Ratio	0.87	0.40	0.44
Control Delay	94.1	29.2	6.0
Queue Delay	0.0	0.0	0.0
Total Delay	94.1	29.2	6.0
LOS	F	C	A
Approach Delay		30.6	
Approach LOS		C	
Queue Length 50th (ft)	41	113	4

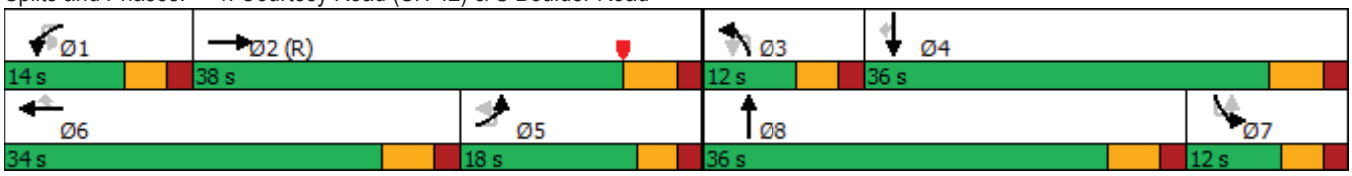
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
Queue Length 95th (ft)		#339	152		#163	223	10		#140	199		
Internal Link Dist (ft)			385			1735				338		
Turn Bay Length (ft)		150			225		270					
Base Capacity (vph)		203	1118		308	990	590		144	1073		
Starvation Cap Reductn		0	0		0	0	0		0	0		
Spillback Cap Reductn		0	0		0	0	0		0	0		
Storage Cap Reductn		0	0		0	0	0		0	0		
Reduced v/c Ratio		2.24	0.54		0.89	0.58	0.25		1.22	0.57		

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow, Master Intersection	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 2.24	
Intersection Signal Delay: 108.9	Intersection LOS: F
Intersection Capacity Utilization 88.6%	ICU Level of Service E
Analysis Period (min) 15	

~ 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.

Splits and Phases: 4: Courtesy Road (SH 42) & S Boulder Road





Lane Group	SBL	SBT	SBR
Queue Length 95th (ft)	#96	157	64
Internal Link Dist (ft)		1257	
Turn Bay Length (ft)	185		270
Base Capacity (vph)	144	1061	669
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.87	0.40	0.44

Intersection Summary

Lane Group	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	8	10	1	9	717	719	10
Future Volume (vph)	8	10	1	9	717	719	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		140			0
Storage Lanes	0	1		1			0
Taper Length (ft)	25			100			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor							
Frt		0.865				0.998	
Flt Protected	0.950			0.950			
Satd. Flow (prot)	0	1611	0	1770	1863	3532	0
Flt Permitted	0.950			0.950			
Satd. Flow (perm)	0	1611	0	1770	1863	3532	0
Link Speed (mph)	20				45	45	
Link Distance (ft)	418				420	418	
Travel Time (s)	14.3				6.4	6.3	
Confl. Peds. (#/hr)				5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)							
Lane Group Flow (vph)	9	11	0	11	779	793	0
Sign Control	Stop				Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Vol, veh/h	8	10	1	9	717	719	10
Future Vol, veh/h	8	10	1	9	717	719	10
Conflicting Peds, #/hr	0	0	0	5	0	0	5
Sign Control	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	None	-	-	None	-	None
Storage Length	-	0	-	140	-	-	-
Veh in Median Storage, #	0	-	-	-	0	0	-
Grade, %	0	-	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	9	11	1	10	779	782	11

Major/Minor	Minor2		Major1			Major2	
Conflicting Flow All	1592	402	792	798	0	-	0
Stage 1	793	-	-	-	-	-	-
Stage 2	799	-	-	-	-	-	-
Critical Hdwy	6.63	6.93	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	3.119	2.219	-	-	-
Pot Cap-1 Maneuver	108	599	347	822	-	-	-
Stage 1	407	-	-	-	-	-	-
Stage 2	442	-	-	-	-	-	-
Platoon blocked, %					-	-	-
Mov Cap-1 Maneuver	105	596	718	718	-	-	-
Mov Cap-2 Maneuver	105	-	-	-	-	-	-
Stage 1	399	-	-	-	-	-	-
Stage 2	440	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.2	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	718	-	596	-	-
HCM Lane V/C Ratio	0.015	-	0.018	-	-
HCM Control Delay (s)	10.1	-	11.2	-	-
HCM Lane LOS	B	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	7	39	2	1	6	25	673	43	11	680	44
Future Volume (vph)	14	7	39	2	1	6	25	673	43	11	680	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		60	225		0	500		0
Storage Lanes	0		0	0		1	1		0	1		1
Taper Length (ft)	0			0			25			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.913				0.850		0.991				0.850
Flt Protected		0.989			0.968		0.950			0.950		
Satd. Flow (prot)	0	1682	0	0	1803	1583	1770	1846	0	1770	1863	1583
Flt Permitted		0.989			0.968		0.950			0.950		
Satd. Flow (perm)	0	1682	0	0	1803	1583	1770	1846	0	1770	1863	1583
Link Speed (mph)		30			20			45			45	
Link Distance (ft)		439			281			380			369	
Travel Time (s)		10.0			9.6			5.8			5.6	
Confl. Bikes (#/hr)												5
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	65	0	0	3	7	27	779	0	12	739	48
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 54.9%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	14	7	39	2	1	6	25	673	43	11	680	44
Future Vol, veh/h	14	7	39	2	1	6	25	673	43	11	680	44
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	60	225	-	-	500	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	15	8	42	2	1	7	27	732	47	12	739	48

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1577	1596	739	1622	1621	756	787	0	0	779	0	0
Stage 1	763	763	-	810	810	-	-	-	-	-	-	-
Stage 2	814	833	-	812	811	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	89	107	417	82	103	408	832	-	-	838	-	-
Stage 1	397	413	-	374	393	-	-	-	-	-	-	-
Stage 2	372	384	-	373	393	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	84	102	417	67	98	408	832	-	-	838	-	-
Mov Cap-2 Maneuver	84	102	-	67	98	-	-	-	-	-	-	-
Stage 1	384	407	-	362	380	-	-	-	-	-	-	-
Stage 2	353	372	-	324	387	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	35.4	27.7	0.3	0.1
HCM LOS	E	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	832	-	-	182	75	408	838	-	-
HCM Lane V/C Ratio	0.033	-	-	0.358	0.043	0.016	0.014	-	-
HCM Control Delay (s)	9.5	-	-	35.4	55.2	14	9.4	-	-
HCM Lane LOS	A	-	-	E	F	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	1.5	0.1	0	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	49	24	15	61	1	23	0	10	1	0	1
Future Volume (vph)	0	49	24	15	61	1	23	0	10	1	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	150		150	150		150	150		150
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.956			0.998			0.959			0.932	
Flt Protected					0.990			0.966			0.976	
Satd. Flow (prot)	0	1781	0	0	1840	0	0	1726	0	0	1694	0
Flt Permitted					0.990			0.966			0.976	
Satd. Flow (perm)	0	1781	0	0	1840	0	0	1726	0	0	1694	0
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		390			439			346			362	
Travel Time (s)		8.9			10.0			9.4			9.9	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	79	0	0	83	0	0	36	0	0	2	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 22.7%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	49	24	15	61	1	23	0	10	1	0	1
Future Vol, veh/h	0	49	24	15	61	1	23	0	10	1	0	1
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	53	26	16	66	1	25	0	11	1	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	72	0	0	84	0	0	175	175	76	181	188	77
Stage 1	-	-	-	-	-	-	71	71	-	104	104	-
Stage 2	-	-	-	-	-	-	104	104	-	77	84	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1528	-	-	1513	-	-	788	718	985	781	707	984
Stage 1	-	-	-	-	-	-	939	836	-	902	809	-
Stage 2	-	-	-	-	-	-	902	809	-	932	825	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1521	-	-	1506	-	-	773	703	976	758	692	975
Mov Cap-2 Maneuver	-	-	-	-	-	-	773	703	-	758	692	-
Stage 1	-	-	-	-	-	-	934	832	-	897	796	-
Stage 2	-	-	-	-	-	-	887	796	-	917	821	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1.4	9.6	9.2
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	825	1521	-	-	1506	-	-	853
HCM Lane V/C Ratio	0.043	-	-	-	0.011	-	-	0.003
HCM Control Delay (s)	9.6	0	-	-	7.4	0	-	9.2
HCM Lane LOS	A	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	57	3	1	77	7	8	0	0	18	0	25
Future Volume (vph)	12	57	3	1	77	7	8	0	0	18	0	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	150		150	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.995			0.988						0.922	
Flt Protected		0.992			0.999			0.950			0.979	
Satd. Flow (prot)	0	1839	0	0	1839	0	0	1770	0	0	1681	0
Flt Permitted		0.992			0.999			0.950			0.979	
Satd. Flow (perm)	0	1839	0	0	1839	0	0	1770	0	0	1681	0
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		405			390			333			365	
Travel Time (s)		9.2			8.9			9.1			10.0	
Confl. Peds. (#/hr)	5		10	10		5	5		5	5		5
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	78	0	0	93	0	0	9	0	0	47	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 22.9%		ICU Level of Service A	
Analysis Period (min) 15			

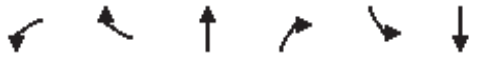
Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	12	57	3	1	77	7	8	0	0	18	0	25
Future Vol, veh/h	12	57	3	1	77	7	8	0	0	18	0	25
Conflicting Peds, #/hr	5	0	10	10	0	5	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	62	3	1	84	8	9	0	0	20	0	27

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	97	0	0	75	0	0	209	199	79	190	196	98
Stage 1	-	-	-	-	-	-	100	100	-	95	95	-
Stage 2	-	-	-	-	-	-	109	99	-	95	101	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1496	-	-	1524	-	-	748	697	981	770	699	958
Stage 1	-	-	-	-	-	-	906	812	-	912	816	-
Stage 2	-	-	-	-	-	-	896	813	-	912	811	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1489	-	-	1509	-	-	711	680	967	757	682	949
Mov Cap-2 Maneuver	-	-	-	-	-	-	711	680	-	757	682	-
Stage 1	-	-	-	-	-	-	890	797	-	899	811	-
Stage 2	-	-	-	-	-	-	865	808	-	899	796	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.2	0.1	10.1	9.4
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	711	1489	-	-	1509	-	-	858
HCM Lane V/C Ratio	0.012	0.009	-	-	0.001	-	-	0.054
HCM Control Delay (s)	10.1	7.4	0	-	7.4	0	-	9.4
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.2



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	66	47	137	52	18	141
Future Volume (vph)	66	47	137	52	18	141
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.944		0.963			
Flt Protected	0.972					0.994
Satd. Flow (prot)	1709	0	1794	0	0	1852
Flt Permitted	0.972					0.994
Satd. Flow (perm)	1709	0	1794	0	0	1852
Link Speed (mph)	30		30			30
Link Distance (ft)	405		350			1210
Travel Time (s)	9.2		8.0			27.5
Confl. Peds. (#/hr)	6	2		17	17	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	123	0	206	0	0	173
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 36.3%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	3.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	66	47	137	52	18	141
Future Vol, veh/h	66	47	137	52	18	141
Conflicting Peds, #/hr	6	2	0	17	17	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	72	51	149	57	20	153

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	394	197	0	0	223	0
Stage 1	195	-	-	-	-	-
Stage 2	199	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	611	844	-	-	1346	-
Stage 1	838	-	-	-	-	-
Stage 2	835	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	587	829	-	-	1324	-
Mov Cap-2 Maneuver	587	-	-	-	-	-
Stage 1	810	-	-	-	-	-
Stage 2	830	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.6	0	0.9
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	668	1324	-
HCM Lane V/C Ratio	-	-	0.184	0.015	-
HCM Control Delay (s)	-	-	11.6	7.8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.7	0	-



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	4	0	10	9	0	39
Future Volume (vph)	4	0	10	9	0	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.936			
Flt Protected	0.950					
Satd. Flow (prot)	1770	0	1744	0	0	1863
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	1744	0	0	1863
Link Speed (mph)	25		25			25
Link Distance (ft)	380		365			210
Travel Time (s)	10.4		10.0			5.7
Confl. Peds. (#/hr)	5	132		70	70	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	4	0	21	0	0	42
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 32.2%		ICU Level of Service A	
Analysis Period (min) 15			

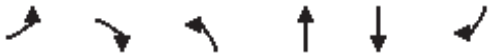
Intersection	
Int Delay, s/veh	0.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	0	10	9	0	39
Future Vol, veh/h	4	0	10	9	0	39
Conflicting Peds, #/hr	5	132	0	70	70	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	0	11	10	0	42

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	133	218	0	0	91	0
Stage 1	86	-	-	-	-	-
Stage 2	47	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	861	822	-	-	1504	-
Stage 1	937	-	-	-	-	-
Stage 2	975	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	799	671	-	-	1404	-
Mov Cap-2 Maneuver	799	-	-	-	-	-
Stage 1	874	-	-	-	-	-
Stage 2	970	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.5	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	799	1404	-
HCM Lane V/C Ratio	-	-	0.005	-	-
HCM Control Delay (s)	-	-	9.5	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	38	11	6	652	691	6
Future Volume (vph)	38	11	6	652	691	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95
Frt	0.969				0.999	
Flt Protected	0.963					
Satd. Flow (prot)	1738	0	0	1863	3536	0
Flt Permitted	0.963					
Satd. Flow (perm)	1738	0	0	1863	3536	0
Link Speed (mph)	30			45	45	
Link Distance (ft)	242			369	420	
Travel Time (s)	5.5			5.6	6.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	53	0	0	716	758	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	49.1%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	38	11	6	652	691	6
Future Vol, veh/h	38	11	6	652	691	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	41	12	7	709	751	7

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1478	379	758	0	-	0
Stage 1	755	-	-	-	-	-
Stage 2	723	-	-	-	-	-
Critical Hdwy	6.63	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	127	620	851	-	-	-
Stage 1	426	-	-	-	-	-
Stage 2	479	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	125	620	851	-	-	-
Mov Cap-2 Maneuver	125	-	-	-	-	-
Stage 1	420	-	-	-	-	-
Stage 2	479	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	40.9	0.1	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	851	-	152	-	-
HCM Lane V/C Ratio	0.008	-	0.35	-	-
HCM Control Delay (s)	9.3	0	40.9	-	-
HCM Lane LOS	A	A	E	-	-
HCM 95th %tile Q(veh)	0	-	1.4	-	-

Lane Group	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Volume (vph)	1191	111	8	79	1544	89	104
Future Volume (vph)	1191	111	8	79	1544	89	104
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		120		225		0	115
Storage Lanes		1		1		1	1
Taper Length (ft)				25		0	
Lane Util. Factor	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Ped Bike Factor		0.97				0.99	0.95
Frt		0.850					0.850
Flt Protected				0.950		0.950	
Satd. Flow (prot)	3539	1583	0	1770	3539	1770	1583
Flt Permitted				0.162		0.950	
Satd. Flow (perm)	3539	1531	0	302	3539	1759	1505
Right Turn on Red		Yes					Yes
Satd. Flow (RTOR)		95					113
Link Speed (mph)	35				35	30	
Link Distance (ft)	636				400	1210	
Travel Time (s)	12.4				7.8	27.5	
Confl. Peds. (#/hr)		5		5		5	32
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)							
Lane Group Flow (vph)	1295	121	0	95	1678	97	113
Turn Type	NA	Perm	custom	pm+pt	NA	Perm	Perm
Protected Phases	2			1	6		
Permitted Phases		2	1	6		8	8
Detector Phase	2	2	1	1	6	8	8
Switch Phase							
Minimum Initial (s)	35.0	35.0	5.0	5.0	35.0	5.0	5.0
Minimum Split (s)	41.0	41.0	11.0	11.0	41.0	35.0	35.0
Total Split (s)	85.0	85.0	14.0	14.0	99.0	21.0	21.0
Total Split (%)	70.8%	70.8%	11.7%	11.7%	82.5%	17.5%	17.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0	-1.0	0.0
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	5.0
Lead/Lag	Lag	Lag	Lead	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			
Recall Mode	C-Max	C-Max	None	None	C-Max	None	None
Act Effct Green (s)	85.1	85.1		97.9	97.9	14.1	13.1
Actuated g/C Ratio	0.71	0.71		0.82	0.82	0.12	0.11
v/c Ratio	0.52	0.11		0.27	0.58	0.47	0.43
Control Delay	9.4	2.2		4.9	7.0	56.2	13.8
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay	9.4	2.2		4.9	7.0	56.2	13.8
LOS	A	A		A	A	E	B
Approach Delay	8.8				6.9	33.4	
Approach LOS	A				A	C	
Queue Length 50th (ft)	238	6		23	235	69	0

Lane Group	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Queue Length 95th (ft)	298	25		m27	m259	124	54
Internal Link Dist (ft)	556				320	1130	
Turn Bay Length (ft)		120		225			115
Base Capacity (vph)	2509	1113		368	2887	249	298
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	0.52	0.11		0.26	0.58	0.39	0.38

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 23 (19%), Referenced to phase 2:EBT and 6:WBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.58			
Intersection Signal Delay: 9.3		Intersection LOS: A	
Intersection Capacity Utilization 68.2%		ICU Level of Service C	
Analysis Period (min) 15			

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Main Street & S Boulder Road



Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	0	1127	41	2	12	1689	5	0	0	22	0	0
Future Volume (vph)	0	1127	41	2	12	1689	5	0	0	22	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		50		70		0	0		0	0	
Storage Lanes	0		1		1		0	0		1	0	
Taper Length (ft)	25				25			25			25	
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.850							0.865		
Flt Protected					0.950							
Satd. Flow (prot)	0	3539	1583	0	1770	3539	0	0	0	1611	0	0
Flt Permitted					0.950							
Satd. Flow (perm)	0	3539	1583	0	1770	3539	0	0	0	1611	0	0
Link Speed (mph)		35				35			20			20
Link Distance (ft)		400				360			338			476
Travel Time (s)		7.8				7.0			11.5			16.2
Confl. Peds. (#/hr)	10		10	5	10		10	5		5	5	
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1225	45	0	15	1841	0	0	0	24	0	0
Sign Control		Free				Free			Stop			Stop

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 58.4%		ICU Level of Service B	
Analysis Period (min) 15			



Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	11
Future Volume (vph)	11
Ideal Flow (vphpl)	1900
Storage Length (ft)	0
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Ped Bike Factor	
Frt	0.865
Flt Protected	
Satd. Flow (prot)	1611
Flt Permitted	
Satd. Flow (perm)	1611
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	5
Peak Hour Factor	0.92
Shared Lane Traffic (%)	
Lane Group Flow (vph)	12
Sign Control	

Intersection Summary

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	0	1127	41	2	12	1689	5	0	0	22	0	0	11
Future Vol, veh/h	0	1127	41	2	12	1689	5	0	0	22	0	0	11
Conflicting Peds, #/hr	10	0	10	5	10	0	10	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	-	70	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1225	45	2	13	1836	5	0	0	24	0	0	12

Major/Minor	Major1			Major2				Minor1			Minor2		
Conflicting Flow All	-	0	0	1225	1280	0	0	-	-	628	-	-	936
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	6.44	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	2.52	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	238	538	-	-	0	0	426	0	0	266
Stage 1	0	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	0	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-			-	-						
Mov Cap-1 Maneuver	-	-	-	446	446	-	-	-	-	420	-	-	262
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.1	14.1	19.4
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	420	-	-	446	-	-	262
HCM Lane V/C Ratio	0.057	-	-	0.034	-	-	0.046
HCM Control Delay (s)	14.1	-	-	13.3	-	-	19.4
HCM Lane LOS	B	-	-	B	-	-	C
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-	-	0.1



Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	6	21	1126	11	1	25	1663	8	0	0	33	0
Future Volume (vph)	6	21	1126	11	1	25	1663	8	0	0	33	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		90		0		80		0	0		0	0
Storage Lanes		1		0		1		0	0		1	0
Taper Length (ft)		25				25			25			25
Lane Util. Factor	0.95	1.00	0.95	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.999				0.999				0.865	
Flt Protected		0.950				0.950						
Satd. Flow (prot)	0	1770	3536	0	0	1770	3536	0	0	0	1611	0
Flt Permitted		0.950				0.950						
Satd. Flow (perm)	0	1770	3536	0	0	1770	3536	0	0	0	1611	0
Link Speed (mph)			35				35			20		
Link Distance (ft)			360				465			339		
Travel Time (s)			7.0				9.1			11.6		
Confl. Peds. (#/hr)	5	10		10	5	10		10	5		5	5
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	30	1236	0	0	28	1817	0	0	0	36	0
Sign Control			Free				Free			Stop		

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 57.8%		ICU Level of Service B	
Analysis Period (min) 15			

Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	0	36
Future Volume (vph)	0	36
Ideal Flow (vphpl)	1900	1900
Storage Length (ft)		0
Storage Lanes		1
Taper Length (ft)		
Lane Util. Factor	1.00	1.00
Ped Bike Factor		
Frt		0.865
Flt Protected		
Satd. Flow (prot)	0	1611
Flt Permitted		
Satd. Flow (perm)	0	1611
Link Speed (mph)	20	
Link Distance (ft)	431	
Travel Time (s)	14.7	
Confl. Peds. (#/hr)		5
Peak Hour Factor	0.92	0.92
Shared Lane Traffic (%)		
Lane Group Flow (vph)	0	39
Sign Control	Stop	

Intersection Summary

Intersection	
Int Delay, s/veh	0.8

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	6	21	1126	11	1	25	1663	8	0	0	33	0	0	36
Future Vol, veh/h	6	21	1126	11	1	25	1663	8	0	0	33	0	0	36
Conflicting Peds, #/hr	5	10	0	10	5	10	0	10	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	90	-	-	-	80	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	23	1224	12	1	27	1808	9	0	0	36	0	0	39

Major/Minor	Major1				Major2				Minor1			Minor2		
Conflicting Flow All	1816	1827	0	0	1236	1246	0	0	-	-	633	-	-	924
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	6.44	4.14	-	-	6.44	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.52	2.22	-	-	2.52	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	98	331	-	-	234	554	-	-	0	0	422	0	0	271
Stage 1	-	-	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %			-	-			-	-						
Mov Cap-1 Maneuver	201	201	-	-	518	518	-	-	-	-	416	-	-	267
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.2	14.5	20.8
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	416	201	-	-	518	-	-	267
HCM Lane V/C Ratio	0.086	0.146	-	-	0.055	-	-	0.147
HCM Control Delay (s)	14.5	26	-	-	12.3	-	-	20.8
HCM Lane LOS	B	D	-	-	B	-	-	C
HCM 95th %tile Q(veh)	0.3	0.5	-	-	0.2	-	-	0.5

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
Lane Configurations												
Traffic Volume (vph)	13	393	546	171	332	871	195	1	236	603	258	7
Future Volume (vph)	13	393	546	171	332	871	195	1	236	603	258	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		150		100	225		270		0		0	
Storage Lanes		2		1	2		1		2		1	
Taper Length (ft)		25			25				25			
Lane Util. Factor	0.95	0.97	0.95	1.00	0.97	0.95	1.00	0.95	0.97	0.95	1.00	0.95
Ped Bike Factor				0.98			0.98				0.98	
Frt				0.850			0.850				0.850	
Flt Protected		0.950			0.950				0.950			
Satd. Flow (prot)	0	3433	3539	1583	3433	3539	1583	0	3433	3539	1583	0
Flt Permitted		0.302			0.950				0.333			
Satd. Flow (perm)	0	1091	3539	1555	3433	3539	1546	0	1203	3539	1556	0
Right Turn on Red				Yes			Yes				Yes	
Satd. Flow (RTOR)				173			182				280	
Link Speed (mph)			35			35				45		
Link Distance (ft)			465			1815				418		
Travel Time (s)			9.1			35.4				6.3		
Confl. Peds. (#/hr)				5			10				5	
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	441	593	186	361	947	212	0	258	655	280	0
Turn Type	custom	Prot	NA	Perm	Prot	NA	Perm	custom	Prot	NA	Perm	custom
Protected Phases		5	2		1	6			3	8		
Permitted Phases	5			2			6	3			8	7
Detector Phase	5	5	2	2	1	6	6	3	3	8	8	7
Switch Phase												
Minimum Initial (s)	5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	5.0	6.0	6.0	5.0
Minimum Split (s)	10.0	10.0	37.0	37.0	10.0	37.0	37.0	10.0	10.0	40.0	40.0	10.0
Total Split (s)	20.0	20.0	41.0	41.0	20.0	41.0	41.0	16.0	16.0	47.0	47.0	12.0
Total Split (%)	16.7%	16.7%	34.2%	34.2%	16.7%	34.2%	34.2%	13.3%	13.3%	39.2%	39.2%	10.0%
Yellow Time (s)	3.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	3.0	4.0	4.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		-1.0	-2.0	-2.0	-1.0	-2.0	-2.0		-1.0	-2.0	-2.0	
Total Lost Time (s)		4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	
Lead/Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lead	Lead	Lead	Lag
Lead-Lag Optimize?												
Recall Mode	None	None	C-Max	C-Max	None	Max	Max	None	None	Max	Max	None
Act Effct Green (s)		16.0	37.3	37.3	15.7	37.0	37.0		12.0	43.0	43.0	
Actuated g/C Ratio		0.13	0.31	0.31	0.13	0.31	0.31		0.10	0.36	0.36	
v/c Ratio		3.04	0.54	0.31	0.80	0.87	0.35		2.15	0.52	0.38	
Control Delay		953.0	29.3	9.8	65.1	49.0	8.5		568.5	36.8	10.0	
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	
Total Delay		953.0	29.3	9.8	65.1	49.0	8.5		568.5	36.8	10.0	
LOS		F	C	A	E	D	A		F	D	B	
Approach Delay			360.3			47.2				145.5		
Approach LOS			F			D				F		
Queue Length 50th (ft)		~309	200	45	141	364	16		~166	241	6	



Lane Group	SBL	SBT	SBR
Lane Configurations			
Traffic Volume (vph)	164	738	564
Future Volume (vph)	164	738	564
Ideal Flow (vphpl)	1900	1900	1900
Storage Length (ft)	185		270
Storage Lanes	2		1
Taper Length (ft)	25		
Lane Util. Factor	0.97	0.95	1.00
Ped Bike Factor			0.98
Frt			0.850
Flt Protected	0.950		
Satd. Flow (prot)	3433	3539	1583
Flt Permitted	0.500		
Satd. Flow (perm)	1807	3539	1555
Right Turn on Red			Yes
Satd. Flow (RTOR)			258
Link Speed (mph)		45	
Link Distance (ft)		1337	
Travel Time (s)		20.3	
Confl. Peds. (#/hr)			5
Peak Hour Factor	0.92	0.92	0.92
Shared Lane Traffic (%)			
Lane Group Flow (vph)	186	802	613
Turn Type	Prot	NA	Perm
Protected Phases	7	4	
Permitted Phases			4
Detector Phase	7	4	4
Switch Phase			
Minimum Initial (s)	5.0	6.0	6.0
Minimum Split (s)	10.0	36.0	36.0
Total Split (s)	12.0	43.0	43.0
Total Split (%)	10.0%	35.8%	35.8%
Yellow Time (s)	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0
Lead/Lag	Lag	Lag	Lag
Lead-Lag Optimize?			
Recall Mode	None	Max	Max
Act Effct Green (s)	8.0	39.0	39.0
Actuated g/C Ratio	0.07	0.32	0.32
v/c Ratio	1.55	0.70	0.90
Control Delay	321.4	39.2	40.4
Queue Delay	0.0	0.0	0.0
Total Delay	321.4	39.2	40.4
LOS	F	D	D
Approach Delay		72.4	
Approach LOS		E	
Queue Length 50th (ft)	~104	284	288

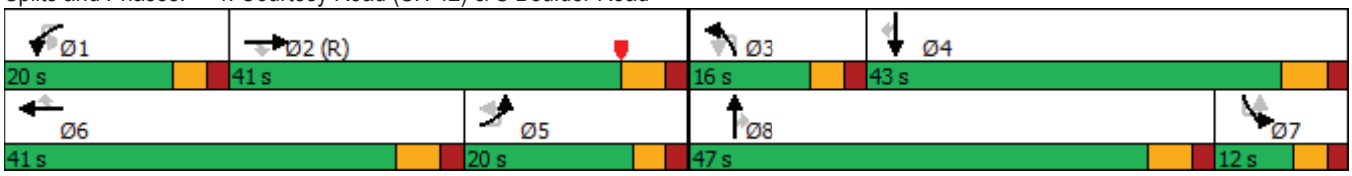
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
Queue Length 95th (ft)		#417	262	97	#207	#456	75		#249	308	87	
Internal Link Dist (ft)			385			1735				338		
Turn Bay Length (ft)		150		100	225		270					
Base Capacity (vph)		145	1099	602	457	1091	602		120	1268	737	
Starvation Cap Reductn		0	0	0	0	0	0		0	0	0	
Spillback Cap Reductn		0	0	0	0	0	0		0	0	0	
Storage Cap Reductn		0	0	0	0	0	0		0	0	0	
Reduced v/c Ratio		3.04	0.54	0.31	0.79	0.87	0.35		2.15	0.52	0.38	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow, Master Intersection	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 3.04	
Intersection Signal Delay: 144.7	Intersection LOS: F
Intersection Capacity Utilization 93.0%	ICU Level of Service F
Analysis Period (min) 15	

~ 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.

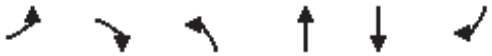
Splits and Phases: 4: Courtesy Road (SH 42) & S Boulder Road





Lane Group	SBL	SBT	SBR
Queue Length 95th (ft)	#180	356	#521
Internal Link Dist (ft)		1257	
Turn Bay Length (ft)	185		270
Base Capacity (vph)	120	1150	679
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	1.55	0.70	0.90

Intersection Summary



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	17	0	1070	1233	1
Future Volume (vph)	0	17	0	1070	1233	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	140			0
Storage Lanes	0	1	0			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor						
Frt		0.865				
Flt Protected						
Satd. Flow (prot)	0	1611	0	3539	3539	0
Flt Permitted						
Satd. Flow (perm)	0	1611	0	3539	3539	0
Link Speed (mph)	20			45	45	
Link Distance (ft)	418			420	418	
Travel Time (s)	14.3			6.4	6.3	
Confl. Peds. (#/hr)			5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	18	0	1163	1341	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	44.1%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	17	0	1070	1233	1
Future Vol, veh/h	0	17	0	1070	1233	1
Conflicting Peds, #/hr	0	0	5	0	0	5
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	18	0	1163	1340	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	676	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	396	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	394	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.6	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	394	-	-
HCM Lane V/C Ratio	-	0.047	-	-
HCM Control Delay (s)	-	14.6	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.1	-	-

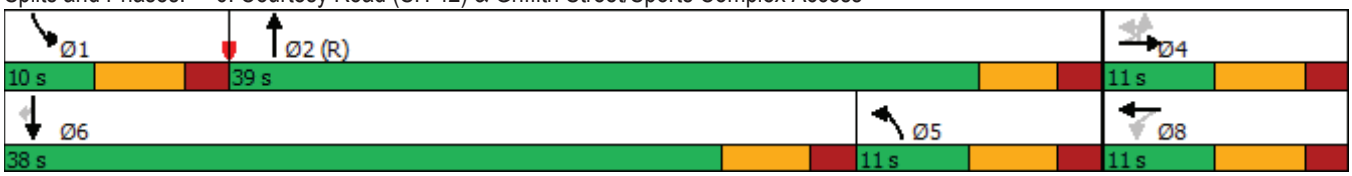
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	0	77	1	1	1	40	1039	4	5	1150	83
Future Volume (vph)	29	0	77	1	1	1	40	1039	4	5	1150	83
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		0	50		0	225		0	500		273
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor												0.98
Frt		0.850			0.925			0.999				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1583	0	1770	1723	0	1770	3536	0	1770	3539	1583
Flt Permitted	0.757			0.702			0.950			0.950		
Satd. Flow (perm)	1410	1583	0	1308	1723	0	1770	3536	0	1770	3539	1546
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		273			1			1				164
Link Speed (mph)		30			20			45			45	
Link Distance (ft)		439			281			380			369	
Travel Time (s)		10.0			9.6			5.8			5.6	
Confl. Bikes (#/hr)												5
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	32	84	0	1	2	0	43	1133	0	5	1250	90
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								6
Detector Phase	4	4		8	8		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	25.0	25.0		25.0	25.0		11.0	24.5		11.0	25.0	25.0
Total Split (s)	11.0	11.0		11.0	11.0		11.0	39.0		10.0	38.0	38.0
Total Split (%)	18.3%	18.3%		18.3%	18.3%		18.3%	65.0%		16.7%	63.3%	63.3%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	3.5		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-1.5		-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lead/Lag							Lag	Lag		Lead	Lead	Lead
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None		None	C-Max		None	Max	Max
Act Effct Green (s)	7.0	7.0		7.0	7.0		7.0	46.0		6.3	43.6	43.6
Actuated g/C Ratio	0.12	0.12		0.12	0.12		0.12	0.77		0.10	0.73	0.73
v/c Ratio	0.20	0.20		0.01	0.01		0.21	0.42		0.03	0.49	0.08
Control Delay	27.1	1.0		24.0	21.0		26.8	4.4		28.0	5.1	0.6
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	27.1	1.0		24.0	21.0		26.8	4.4		28.0	5.1	0.6
LOS	C	A		C	C		C	A		C	A	A
Approach Delay		8.2			22.0			5.3			4.9	
Approach LOS		A			C			A			A	
Queue Length 50th (ft)	11	0		0	0		14	54		3	161	2

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (ft)	26	0		4	6		40	162		m5	278	m3
Internal Link Dist (ft)		359			201			300			289	
Turn Bay Length (ft)	50			50			225			500		273
Base Capacity (vph)	164	425		152	201		206	2711		186	2571	1168
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.20	0.20		0.01	0.01		0.21	0.42		0.03	0.49	0.08

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 43 (72%), Referenced to phase 2:NBT, Start of Green	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.49	
Intersection Signal Delay: 5.2	Intersection LOS: A
Intersection Capacity Utilization 48.2%	ICU Level of Service A
Analysis Period (min) 15	

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Courtesy Road (SH 42) & Griffith Street/Sports Complex Access





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	84	12	14	93	2	19	0	19	0	0	1
Future Volume (vph)	0	84	12	14	93	2	19	0	19	0	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	150		150	150		150	150		150
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.983			0.998			0.932			0.865	
Flt Protected					0.994			0.976				
Satd. Flow (prot)	0	1831	0	0	1848	0	0	1694	0	0	1611	0
Flt Permitted					0.994			0.976				
Satd. Flow (perm)	0	1831	0	0	1848	0	0	1694	0	0	1611	0
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		390			439			346			362	
Travel Time (s)		8.9			10.0			9.4			9.9	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	104	0	0	118	0	0	42	0	0	1	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 29.1%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	84	12	14	93	2	19	0	19	0	0	1
Future Vol, veh/h	0	84	12	14	93	2	19	0	19	0	0	1
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	91	13	15	101	2	21	0	21	0	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	108	0	0	109	0	0	241	241	108	250	246	112
Stage 1	-	-	-	-	-	-	103	103	-	137	137	-
Stage 2	-	-	-	-	-	-	138	138	-	113	109	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1483	-	-	1481	-	-	713	660	946	703	656	941
Stage 1	-	-	-	-	-	-	903	810	-	866	783	-
Stage 2	-	-	-	-	-	-	865	782	-	892	805	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1476	-	-	1474	-	-	699	646	937	676	642	932
Mov Cap-2 Maneuver	-	-	-	-	-	-	699	646	-	676	642	-
Stage 1	-	-	-	-	-	-	898	806	-	862	770	-
Stage 2	-	-	-	-	-	-	850	769	-	868	801	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1	9.7	8.9
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	801	1476	-	-	1474	-	-	932
HCM Lane V/C Ratio	0.052	-	-	-	0.01	-	-	0.001
HCM Control Delay (s)	9.7	0	-	-	7.5	0	-	8.9
HCM Lane LOS	A	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	74	2	3	127	4	6	0	3	24	0	45
Future Volume (vph)	6	74	2	3	127	4	6	0	3	24	0	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	150		150	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.997			0.996			0.959			0.912	
Flt Protected		0.996			0.999			0.966			0.983	
Satd. Flow (prot)	0	1850	0	0	1853	0	0	1726	0	0	1670	0
Flt Permitted		0.996			0.999			0.966			0.983	
Satd. Flow (perm)	0	1850	0	0	1853	0	0	1726	0	0	1670	0
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		405			390			333			365	
Travel Time (s)		9.2			8.9			9.1			10.0	
Confl. Peds. (#/hr)	5		10	10		5	5		5	5		5
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	89	0	0	145	0	0	10	0	0	75	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 21.4%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	6	74	2	3	127	4	6	0	3	24	0	45
Future Vol, veh/h	6	74	2	3	127	4	6	0	3	24	0	45
Conflicting Peds, #/hr	5	0	10	10	0	5	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	80	2	3	138	4	7	0	3	26	0	49

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	147	0	0	92	0	0	281	258	96	253	257	150
Stage 1	-	-	-	-	-	-	105	105	-	151	151	-
Stage 2	-	-	-	-	-	-	176	153	-	102	106	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1435	-	-	1503	-	-	671	646	960	700	647	896
Stage 1	-	-	-	-	-	-	901	808	-	851	772	-
Stage 2	-	-	-	-	-	-	826	771	-	904	807	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1428	-	-	1489	-	-	621	632	946	687	633	887
Mov Cap-2 Maneuver	-	-	-	-	-	-	621	632	-	687	633	-
Stage 1	-	-	-	-	-	-	888	796	-	842	767	-
Stage 2	-	-	-	-	-	-	775	766	-	892	795	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.2	10.2	9.9
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	701	1428	-	-	1489	-	-	805
HCM Lane V/C Ratio	0.014	0.005	-	-	0.002	-	-	0.093
HCM Control Delay (s)	10.2	7.5	0	-	7.4	0	-	9.9
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.3



Lane Group	WBU	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	1	59	81	1	160	64	20	117
Future Volume (vph)	1	59	81	1	160	64	20	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								
Frt		0.922			0.961			
Flt Protected		0.979						0.993
Satd. Flow (prot)	0	1681	0	0	1790	0	0	1850
Flt Permitted		0.979						0.993
Satd. Flow (perm)	0	1681	0	0	1790	0	0	1850
Link Speed (mph)		30			30			30
Link Distance (ft)		405			350			1210
Travel Time (s)		9.2			8.0			27.5
Confl. Peds. (#/hr)	70	1	132	1		70	70	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	153	0	0	245	0	0	149
Sign Control		Stop			Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 41.4%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	4.5

Movement	WBU	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations								
Traffic Vol, veh/h	1	59	81	1	160	64	20	117
Future Vol, veh/h	1	59	81	1	160	64	20	117
Conflicting Peds, #/hr	70	1	132	1	0	70	70	0
Sign Control	Stop	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	None
Storage Length	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0
Grade, %	-	0	-	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2
Mvmt Flow	1	64	88	1	174	70	22	127

Major/Minor	Minor1			Major1			Major2	
Conflicting Flow All	0	451	411	-	0	0	314	0
Stage 1	0	279	-	-	-	-	-	-
Stage 2	0	172	-	-	-	-	-	-
Critical Hdwy	-	6.42	6.22	-	-	-	4.12	-
Critical Hdwy Stg 1	-	5.42	-	-	-	-	-	-
Critical Hdwy Stg 2	-	5.42	-	-	-	-	-	-
Follow-up Hdwy	-	3.518	3.318	-	-	-	2.218	-
Pot Cap-1 Maneuver	0	566	641	-	-	-	1246	-
Stage 1	0	768	-	-	-	-	-	-
Stage 2	0	858	-	-	-	-	-	-
Platoon blocked, %	-				-	-		-
Mov Cap-1 Maneuver	0	517	523	-	-	-	1163	-
Mov Cap-2 Maneuver	0	517	-	-	-	-	-	-
Stage 1	0	702	-	-	-	-	-	-
Stage 2	0	857	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.8		1.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	520	1163	-
HCM Lane V/C Ratio	-	-	0.293	0.019	-
HCM Control Delay (s)	-	-	14.8	8.2	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	1.2	0.1	-



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	6	0	7	3	0	63
Future Volume (vph)	6	0	7	3	0	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.963			
Flt Protected	0.950					
Satd. Flow (prot)	1770	0	1794	0	0	1863
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	1794	0	0	1863
Link Speed (mph)	25		25			25
Link Distance (ft)	380		365			210
Travel Time (s)	10.4		10.0			5.7
Confl. Peds. (#/hr)	5	132		70	70	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	7	0	11	0	0	68
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 32.2%		ICU Level of Service A	
Analysis Period (min) 15			

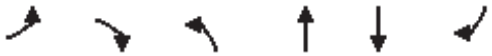
Intersection	
Int Delay, s/veh	0.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	6	0	7	3	0	63
Future Vol, veh/h	6	0	7	3	0	63
Conflicting Peds, #/hr	5	132	0	70	70	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	0	8	3	0	68

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	153	212	0	0	81	0
Stage 1	80	-	-	-	-	-
Stage 2	73	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	839	828	-	-	1517	-
Stage 1	943	-	-	-	-	-
Stage 2	950	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	779	676	-	-	1416	-
Mov Cap-2 Maneuver	779	-	-	-	-	-
Stage 1	880	-	-	-	-	-
Stage 2	945	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.7	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	779	1416	-
HCM Lane V/C Ratio	-	-	0.008	-	-
HCM Control Delay (s)	-	-	9.7	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	19	0	1060	1227	2
Future Volume (vph)	0	19	0	1060	1227	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.865				
Flt Protected						
Satd. Flow (prot)	0	1611	0	3539	3539	0
Flt Permitted						
Satd. Flow (perm)	0	1611	0	3539	3539	0
Link Speed (mph)	30			45	45	
Link Distance (ft)	189			369	420	
Travel Time (s)	4.3			5.6	6.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	21	0	1152	1336	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	44.0%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	19	0	1060	1227	2
Future Vol, veh/h	0	19	0	1060	1227	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	21	0	1152	1334	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	668	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	401	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	401	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.5	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	401	-	-
HCM Lane V/C Ratio	-	0.052	-	-
HCM Control Delay (s)	-	14.5	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.2	-	-

Lane Group	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Volume (vph)	1653	102	21	76	1294	102	178
Future Volume (vph)	1653	102	21	76	1294	102	178
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		120		225		0	115
Storage Lanes		1		1		1	1
Taper Length (ft)				25		0	
Lane Util. Factor	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Ped Bike Factor		0.97				0.99	0.94
Frt		0.850					0.850
Flt Protected				0.950		0.950	
Satd. Flow (prot)	3539	1583	0	1770	3539	1770	1583
Flt Permitted				0.072		0.950	
Satd. Flow (perm)	3539	1531	0	134	3539	1759	1484
Right Turn on Red		Yes					Yes
Satd. Flow (RTOR)		63					93
Link Speed (mph)	35				35	30	
Link Distance (ft)	636				400	1210	
Travel Time (s)	12.4				7.8	27.5	
Confl. Peds. (#/hr)		5		5		5	43
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)							
Lane Group Flow (vph)	1797	111	0	106	1407	111	193
Turn Type	NA	Perm	custom	pm+pt	NA	Perm	Perm
Protected Phases	2			1	6		
Permitted Phases		2	1	6		8	8
Detector Phase	2	2	1	1	6	8	8
Switch Phase							
Minimum Initial (s)	35.0	35.0	5.0	5.0	35.0	5.0	5.0
Minimum Split (s)	41.0	41.0	11.0	11.0	41.0	35.0	35.0
Total Split (s)	85.0	85.0	14.0	14.0	99.0	21.0	21.0
Total Split (%)	70.8%	70.8%	11.7%	11.7%	82.5%	17.5%	17.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0	-1.0	0.0
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	5.0
Lead/Lag	Lag	Lag	Lead	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			
Recall Mode	C-Max	C-Max	None	None	C-Max	None	None
Act Effct Green (s)	85.0	85.0		98.0	98.0	14.0	13.0
Actuated g/C Ratio	0.71	0.71		0.82	0.82	0.12	0.11
v/c Ratio	0.72	0.10		0.46	0.49	0.54	0.79
Control Delay	13.1	3.3		12.8	7.6	59.2	49.3
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay	13.1	3.3		12.8	7.6	59.2	49.3
LOS	B	A		B	A	E	D
Approach Delay	12.5				8.0	52.9	
Approach LOS	B				A	D	
Queue Length 50th (ft)	403	10		39	224	81	75

Lane Group	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Queue Length 95th (ft)	531	30		m47	m235	139	#170
Internal Link Dist (ft)	556				320	1130	
Turn Bay Length (ft)		120		225			115
Base Capacity (vph)	2506	1102		245	2889	249	278
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	0.10		0.43	0.49	0.45	0.69

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 22 (18%), Referenced to phase 2:EBT and 6:WBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.79			
Intersection Signal Delay: 14.0		Intersection LOS: B	
Intersection Capacity Utilization 84.4%		ICU Level of Service E	
Analysis Period (min) 15			

\# 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.

Splits and Phases: 1: Main Street & S Boulder Road





Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	0	1789	73	4	27	1406	5	0	0	29	0	0
Future Volume (vph)	0	1789	73	4	27	1406	5	0	0	29	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		50		70		0	0		0	0	
Storage Lanes	0		1		1		0	0		1	0	
Taper Length (ft)	25				25			25			25	
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.850							0.865		
Flt Protected					0.950							
Satd. Flow (prot)	0	3539	1583	0	1770	3539	0	0	0	1611	0	0
Flt Permitted					0.950							
Satd. Flow (perm)	0	3539	1583	0	1770	3539	0	0	0	1611	0	0
Link Speed (mph)		35				35			20			20
Link Distance (ft)		400				360			338			476
Travel Time (s)		7.8				7.0			11.5			16.2
Confl. Peds. (#/hr)	10		10	5	10		10	5		5	5	
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1945	79	0	33	1533	0	0	0	32	0	0
Sign Control		Free				Free			Stop			Stop

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	61.0%	ICU Level of Service	B
Analysis Period (min)	15		



Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	5
Future Volume (vph)	5
Ideal Flow (vphpl)	1900
Storage Length (ft)	0
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Ped Bike Factor	
Frt	0.865
Flt Protected	
Satd. Flow (prot)	1611
Flt Permitted	
Satd. Flow (perm)	1611
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	5
Peak Hour Factor	0.92
Shared Lane Traffic (%)	
Lane Group Flow (vph)	5
Sign Control	

Intersection Summary

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	0	1789	73	4	27	1406	5	0	0	29	0	0	5
Future Vol, veh/h	0	1789	73	4	27	1406	5	0	0	29	0	0	5
Conflicting Peds, #/hr	10	0	10	5	10	0	10	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	-	70	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1945	79	4	29	1528	5	0	0	32	0	0	5

Major/Minor	Major1			Major2				Minor1			Minor2		
Conflicting Flow All	-	0	0	1945	2034	0	0	-	-	988	-	-	782
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	6.44	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	2.52	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	81	274	-	-	0	0	246	0	0	337
Stage 1	0	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	0	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-			-	-						
Mov Cap-1 Maneuver	-	-	-	199	199	-	-	-	-	242	-	-	332
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.6	22.1	16
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	242	-	-	199	-	-	332
HCM Lane V/C Ratio	0.13	-	-	0.169	-	-	0.016
HCM Control Delay (s)	22.1	-	-	26.8	-	-	16
HCM Lane LOS	C	-	-	D	-	-	C
HCM 95th %tile Q(veh)	0.4	-	-	0.6	-	-	0.1

Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	23	48	1805	49	2	59	1433	12	0	0	59	0
Future Volume (vph)	23	48	1805	49	2	59	1433	12	0	0	59	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		90		0		80		0	0		0	0
Storage Lanes		1		0		1		0	0		1	0
Taper Length (ft)		25				25			25			25
Lane Util. Factor	0.95	1.00	0.95	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.996				0.999				0.865	
Flt Protected		0.950				0.950						
Satd. Flow (prot)	0	1770	3525	0	0	1770	3536	0	0	0	1611	0
Flt Permitted		0.950				0.950						
Satd. Flow (perm)	0	1770	3525	0	0	1770	3536	0	0	0	1611	0
Link Speed (mph)			35				35			20		
Link Distance (ft)			360				465			339		
Travel Time (s)			7.0				9.1			11.6		
Confl. Peds. (#/hr)	5	10		10	5	10		10	5		5	5
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	77	2015	0	0	66	1571	0	0	0	64	0
Sign Control			Free				Free			Stop		

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 70.5%		ICU Level of Service C	
Analysis Period (min) 15			

Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	0	66
Future Volume (vph)	0	66
Ideal Flow (vphpl)	1900	1900
Storage Length (ft)		0
Storage Lanes		1
Taper Length (ft)		
Lane Util. Factor	1.00	1.00
Ped Bike Factor		
Frt		0.865
Flt Protected		
Satd. Flow (prot)	0	1611
Flt Permitted		
Satd. Flow (perm)	0	1611
Link Speed (mph)	20	
Link Distance (ft)	431	
Travel Time (s)	14.7	
Confl. Peds. (#/hr)		5
Peak Hour Factor	0.92	0.92
Shared Lane Traffic (%)		
Lane Group Flow (vph)	0	72
Sign Control	Stop	

Intersection Summary

Intersection	
Int Delay, s/veh	1.8

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	23	48	1805	49	2	59	1433	12	0	0	59	0	0	66
Future Vol, veh/h	23	48	1805	49	2	59	1433	12	0	0	59	0	0	66
Conflicting Peds, #/hr	5	10	0	10	5	10	0	10	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	90	-	-	-	80	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	25	52	1962	53	2	64	1558	13	0	0	64	0	0	72

Major/Minor	Major1				Major2				Minor1			Minor2		
Conflicting Flow All	1571	1581	0	0	2015	2025	0	0	-	-	1023	-	-	801
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	6.44	4.14	-	-	6.44	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.52	2.22	-	-	2.52	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	142	412	-	-	72	277	-	-	0	0	233	0	0	327
Stage 1	-	-	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %			-	-			-	-						
Mov Cap-1 Maneuver	221	221	-	-	242	242	-	-	-	-	230	-	-	322
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.1	1	26.6	19.4
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	230	221	-	-	242	-	-	322
HCM Lane V/C Ratio	0.279	0.349	-	-	0.274	-	-	0.223
HCM Control Delay (s)	26.6	29.8	-	-	25.4	-	-	19.4
HCM Lane LOS	D	D	-	-	D	-	-	C
HCM 95th %tile Q(veh)	1.1	1.5	-	-	1.1	-	-	0.8

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
Lane Configurations												
Traffic Volume (vph)	22	750	958	185	453	830	258	1	188	910	328	12
Future Volume (vph)	22	750	958	185	453	830	258	1	188	910	328	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		150		100	225		270		0		0	
Storage Lanes		2		1	2		1		2		1	
Taper Length (ft)		25			25				25			
Lane Util. Factor	0.95	0.97	0.95	1.00	0.97	0.95	1.00	0.95	0.97	0.95	1.00	0.95
Ped Bike Factor				0.98			0.98				0.98	
Frt				0.850			0.850				0.850	
Flt Protected		0.950			0.950				0.950			
Satd. Flow (prot)	0	3433	3539	1583	3433	3539	1583	0	3433	3539	1583	0
Flt Permitted		0.316			0.950				0.286			
Satd. Flow (perm)	0	1142	3539	1555	3433	3539	1546	0	1034	3539	1556	0
Right Turn on Red				Yes			Yes				Yes	
Satd. Flow (RTOR)				173			196				287	
Link Speed (mph)			35			35				45		
Link Distance (ft)			465			1815				418		
Travel Time (s)			9.1			35.4				6.3		
Confl. Peds. (#/hr)				5			10				5	
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	839	1041	201	492	902	280	0	205	989	357	0
Turn Type	custom	Prot	NA	Perm	Prot	NA	Perm	custom	Prot	NA	Perm	custom
Protected Phases		5	2		1	6			3	8		
Permitted Phases	5			2			6	3			8	7
Detector Phase	5	5	2	2	1	6	6	3	3	8	8	7
Switch Phase												
Minimum Initial (s)	5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	5.0	6.0	6.0	5.0
Minimum Split (s)	10.0	10.0	37.0	37.0	10.0	37.0	37.0	10.0	10.0	40.0	40.0	10.0
Total Split (s)	24.0	24.0	43.0	43.0	18.0	37.0	37.0	18.0	18.0	41.0	41.0	18.0
Total Split (%)	20.0%	20.0%	35.8%	35.8%	15.0%	30.8%	30.8%	15.0%	15.0%	34.2%	34.2%	15.0%
Yellow Time (s)	3.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	3.0	4.0	4.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		-1.0	-2.0	-2.0	-1.0	-2.0	-2.0		-1.0	-2.0	-2.0	
Total Lost Time (s)		4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	
Lead/Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lead	Lead	Lead	Lag
Lead-Lag Optimize?												
Recall Mode	None	None	C-Max	C-Max	None	Max	Max	None	None	Max	Max	None
Act Effct Green (s)		20.0	39.0	39.0	14.0	33.0	33.0		14.0	37.0	37.0	
Actuated g/C Ratio		0.17	0.32	0.32	0.12	0.28	0.28		0.12	0.31	0.31	
v/c Ratio		4.42	0.91	0.32	1.23	0.93	0.49		1.71	0.91	0.53	
Control Delay		1559.4	41.9	6.7	167.8	58.5	14.5		379.3	48.3	13.1	
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	
Total Delay		1559.4	41.9	6.7	167.8	58.5	14.5		379.3	48.3	13.1	
LOS		F	D	A	F	E	B		F	D	B	
Approach Delay			650.3			83.3				83.9		
Approach LOS			F			F				F		
Queue Length 50th (ft)		~627	407	44	~242	358	50		~121	395	63	



Lane Group	SBL	SBT	SBR
Lane Configurations			
Traffic Volume (vph)	177	685	430
Future Volume (vph)	177	685	430
Ideal Flow (vphpl)	1900	1900	1900
Storage Length (ft)	185		270
Storage Lanes	2		1
Taper Length (ft)	25		
Lane Util. Factor	0.97	0.95	1.00
Ped Bike Factor			0.98
Frt			0.850
Flt Protected	0.950		
Satd. Flow (prot)	3433	3539	1583
Flt Permitted	0.290		
Satd. Flow (perm)	1048	3539	1555
Right Turn on Red			Yes
Satd. Flow (RTOR)			316
Link Speed (mph)		45	
Link Distance (ft)		1337	
Travel Time (s)		20.3	
Confl. Peds. (#/hr)			5
Peak Hour Factor	0.92	0.92	0.92
Shared Lane Traffic (%)			
Lane Group Flow (vph)	205	745	467
Turn Type	Prot	NA	Perm
Protected Phases	7	4	
Permitted Phases			4
Detector Phase	7	4	4
Switch Phase			
Minimum Initial (s)	5.0	6.0	6.0
Minimum Split (s)	10.0	36.0	36.0
Total Split (s)	18.0	41.0	41.0
Total Split (%)	15.0%	34.2%	34.2%
Yellow Time (s)	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0
Lead/Lag	Lag	Lag	Lag
Lead-Lag Optimize?			
Recall Mode	None	Max	Max
Act Effct Green (s)	14.0	37.0	37.0
Actuated g/C Ratio	0.12	0.31	0.31
v/c Ratio	1.68	0.68	0.67
Control Delay	372.3	40.2	16.4
Queue Delay	0.0	0.0	0.0
Total Delay	372.3	40.2	16.4
LOS	F	D	B
Approach Delay		80.4	
Approach LOS		F	
Queue Length 50th (ft)	~119	265	97

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
Queue Length 95th (ft)		#757	#531	m63	#351	#483	133		#199	#516	125	
Internal Link Dist (ft)			385			1735				338		
Turn Bay Length (ft)		150		100	225		270					
Base Capacity (vph)		190	1150	622	400	973	567		120	1091	678	
Starvation Cap Reductn		0	0	0	0	0	0		0	0	0	
Spillback Cap Reductn		0	0	0	0	0	0		0	0	0	
Storage Cap Reductn		0	0	0	0	0	0		0	0	0	
Reduced v/c Ratio		4.42	0.91	0.32	1.23	0.93	0.49		1.71	0.91	0.53	

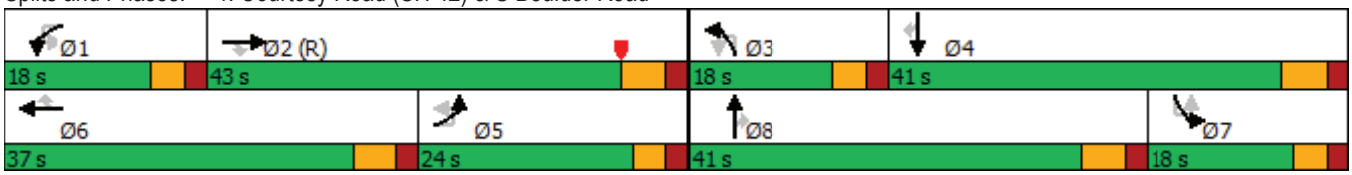
Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow, Master Intersection			
Natural Cycle: 130			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 4.42			
Intersection Signal Delay: 258.3		Intersection LOS: F	
Intersection Capacity Utilization 94.9%		ICU Level of Service F	
Analysis Period (min) 15			

~ 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.

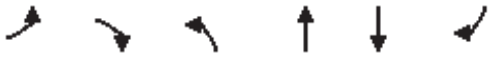
Splits and Phases: 4: Courtesy Road (SH 42) & S Boulder Road





Lane Group	SBL	SBT	SBR
Queue Length 95th (ft)	#199	335	222
Internal Link Dist (ft)		1257	
Turn Bay Length (ft)	185		270
Base Capacity (vph)	122	1091	698
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	1.68	0.68	0.67

Intersection Summary



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	19	0	1447	1305	9
Future Volume (vph)	0	19	0	1447	1305	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	140			0
Storage Lanes	0	1	0			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor						
Frt		0.865			0.999	
Flt Protected						
Satd. Flow (prot)	0	1611	0	3539	3536	0
Flt Permitted						
Satd. Flow (perm)	0	1611	0	3539	3536	0
Link Speed (mph)	20			45	45	
Link Distance (ft)	418			420	418	
Travel Time (s)	14.3			6.4	6.3	
Confl. Peds. (#/hr)			5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	21	0	1573	1428	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	46.4%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	19	0	1447	1305	9
Future Vol, veh/h	0	19	0	1447	1305	9
Conflicting Peds, #/hr	0	0	5	0	0	5
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	21	0	1573	1418	10

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	719	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	371	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	369	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.3	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	369	-	-
HCM Lane V/C Ratio	-	0.056	-	-
HCM Control Delay (s)	-	15.3	-	-
HCM Lane LOS	-	C	-	-
HCM 95th %tile Q(veh)	-	0.2	-	-

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	2	17	0	75	1	1	1	26	1404	2	1	1234
Future Volume (vph)	2	17	0	75	1	1	1	26	1404	2	1	1234
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		50		0	50		0	225		0	500	
Storage Lanes		1		0	1		0	1		0	1	
Taper Length (ft)		25			25			25			25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95
Ped Bike Factor												
Frt			0.850			0.925						
Flt Protected		0.950			0.950			0.950			0.950	
Satd. Flow (prot)	0	1770	1583	0	1770	1723	0	1770	3539	0	1770	3539
Flt Permitted		0.757			0.704			0.950			0.950	
Satd. Flow (perm)	0	1410	1583	0	1311	1723	0	1770	3539	0	1770	3539
Right Turn on Red				Yes			Yes			Yes		
Satd. Flow (RTOR)			273			1						
Link Speed (mph)			30			20			45			45
Link Distance (ft)			439			281			380			369
Travel Time (s)			10.0			9.6			5.8			5.6
Confl. Bikes (#/hr)												
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	20	82	0	1	2	0	28	1528	0	1	1341
Turn Type	Perm	Perm	NA		Perm	NA		Prot	NA		Prot	NA
Protected Phases			4			8		5	2		1	6
Permitted Phases	4	4			8							
Detector Phase	4	4	4		8	8		5	2		1	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0		5.0	5.0		5.0	5.0		5.0	5.0
Minimum Split (s)	25.0	25.0	25.0		25.0	25.0		11.0	24.5		11.0	25.0
Total Split (s)	11.0	11.0	11.0		11.0	11.0		11.0	39.0		10.0	38.0
Total Split (%)	18.3%	18.3%	18.3%		18.3%	18.3%		18.3%	65.0%		16.7%	63.3%
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0		4.0	3.5		4.0	4.0
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0		-2.0	-1.5		-2.0	-2.0
Total Lost Time (s)		4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0
Lead/Lag								Lag	Lag		Lead	Lead
Lead-Lag Optimize?								Yes	Yes		Yes	Yes
Recall Mode	None	None	None		None	None		None	C-Max		None	Max
Act Effct Green (s)		7.0	7.0		7.0	7.0		7.0	46.0		6.3	43.6
Actuated g/C Ratio		0.12	0.12		0.12	0.12		0.12	0.77		0.10	0.73
v/c Ratio		0.12	0.19		0.01	0.01		0.14	0.56		0.01	0.52
Control Delay		25.6	1.0		24.0	21.0		25.6	5.7		29.0	6.8
Queue Delay		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0
Total Delay		25.6	1.0		24.0	21.0		25.6	5.7		29.0	6.8
LOS		C	A		C	C		C	A		C	A
Approach Delay			5.8			22.0			6.1			6.3
Approach LOS			A			C			A			A
Queue Length 50th (ft)		7	0		0	0		9	88		1	231



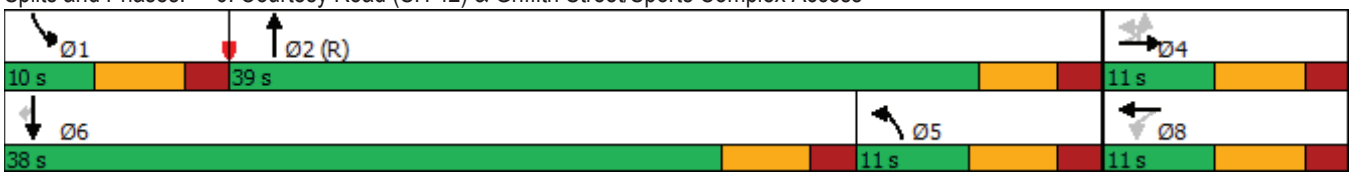
Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	123
Future Volume (vph)	123
Ideal Flow (vphpl)	1900
Storage Length (ft)	273
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Ped Bike Factor	0.98
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1583
Flt Permitted	
Satd. Flow (perm)	1546
Right Turn on Red	Yes
Satd. Flow (RTOR)	164
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Bikes (#/hr)	5
Peak Hour Factor	0.92
Shared Lane Traffic (%)	
Lane Group Flow (vph)	134
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Detector Phase	6
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	25.0
Total Split (s)	38.0
Total Split (%)	63.3%
Yellow Time (s)	4.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	-2.0
Total Lost Time (s)	4.0
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Recall Mode	Max
Act Effct Green (s)	43.6
Actuated g/C Ratio	0.73
v/c Ratio	0.11
Control Delay	1.9
Queue Delay	0.0
Total Delay	1.9
LOS	A
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	15

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Queue Length 95th (ft)		m19	0		4	6		30	261		m1	m268
Internal Link Dist (ft)			359			201			300			289
Turn Bay Length (ft)		50			50			225			500	
Base Capacity (vph)		164	425		152	201		206	2713		186	2571
Starvation Cap Reductn		0	0		0	0		0	0		0	0
Spillback Cap Reductn		0	0		0	0		0	0		0	0
Storage Cap Reductn		0	0		0	0		0	0		0	0
Reduced v/c Ratio		0.12	0.19		0.01	0.01		0.14	0.56		0.01	0.52

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 48 (80%), Referenced to phase 2:NBT, Start of Green			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.56			
Intersection Signal Delay: 6.2		Intersection LOS: A	
Intersection Capacity Utilization 53.3%		ICU Level of Service A	
Analysis Period (min) 15			

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Courtesy Road (SH 42) & Griffith Street/Sports Complex Access





Lane Group	SBR
Queue Length 95th (ft)	m23
Internal Link Dist (ft)	
Turn Bay Length (ft)	273
Base Capacity (vph)	1168
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.11

Intersection Summary

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	2	72	22	1	27	126	1	19	1	11	0	2
Future Volume (vph)	2	72	22	1	27	126	1	19	1	11	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150		150		150	150		150	150	
Storage Lanes	0		0		0		0	0		0	0	
Taper Length (ft)	25				25			25			25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.969				0.999			0.952			
Flt Protected		0.999				0.991			0.970			
Satd. Flow (prot)	0	1803	0	0	0	1844	0	0	1720	0	0	1863
Flt Permitted		0.999				0.991			0.970			
Satd. Flow (perm)	0	1803	0	0	0	1844	0	0	1720	0	0	1863
Link Speed (mph)		30				30			25			25
Link Distance (ft)		390				439			346			362
Travel Time (s)		8.9				10.0			9.4			9.9
Confl. Peds. (#/hr)	5		5		5		5	5		5	5	
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	104	0	0	0	168	0	0	34	0	0	2
Sign Control		Free				Free			Stop			Stop

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 30.9%		ICU Level of Service A	
Analysis Period (min) 15			



Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	0
Future Volume (vph)	0
Ideal Flow (vphpl)	1900
Storage Length (ft)	150
Storage Lanes	0
Taper Length (ft)	
Lane Util. Factor	1.00
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	5
Peak Hour Factor	0.92
Shared Lane Traffic (%)	
Lane Group Flow (vph)	0
Sign Control	

Intersection Summary

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕				↕			↕			↕	
Traffic Vol, veh/h	2	72	22	1	27	126	1	19	1	11	0	2	0
Future Vol, veh/h	2	72	22	1	27	126	1	19	1	11	0	2	0
Conflicting Peds, #/hr	5	0	5	0	5	0	5	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	78	24	1	29	137	1	21	1	12	0	2	0

Major/Minor	Major1			Major2				Minor1			Minor2		
Conflicting Flow All	143	0	0	-	107	0	0	301	302	100	307	314	148
Stage 1	-	-	-	-	-	-	-	99	99	-	201	203	-
Stage 2	-	-	-	-	-	-	-	202	203	-	106	111	-
Critical Hdwy	4.12	-	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1440	-	-	-	1484	-	-	651	611	956	645	601	899
Stage 1	-	-	-	-	-	-	-	907	813	-	801	733	-
Stage 2	-	-	-	-	-	-	-	800	733	-	900	804	-
Platoon blocked, %		-	-			-	-						
Mov Cap-1 Maneuver	1433	-	-	~ -29	~ -29	-	-	643	604	947	630	594	890
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	643	604	-	630	594	-
Stage 1	-	-	-	-	-	-	-	902	808	-	796	729	-
Stage 2	-	-	-	-	-	-	-	794	729	-	882	799	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2		10.2	11.1
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	724	1433	-	-	+	-	-	594
HCM Lane V/C Ratio	0.047	0.002	-	-	-	-	-	0.004
HCM Control Delay (s)	10.2	7.5	0	-	-	-	-	11.1
HCM Lane LOS	B	A	A	-	-	-	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	-	-	-	0

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	15	66	6	5	146	7	2	0	1	3	36	0
Future Volume (vph)	15	66	6	5	146	7	2	0	1	3	36	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	150		150	0		0		0	
Storage Lanes	0		0	0		0	0		0		0	
Taper Length (ft)	25			25			25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.990			0.994			0.955				0.942
Flt Protected		0.992			0.999			0.968				0.972
Satd. Flow (prot)	0	1829	0	0	1850	0	0	1722	0	0	0	1706
Flt Permitted		0.992			0.999			0.968				0.972
Satd. Flow (perm)	0	1829	0	0	1850	0	0	1722	0	0	0	1706
Link Speed (mph)		30			30			25				25
Link Distance (ft)		405			390			333				365
Travel Time (s)		9.2			8.9			9.1				10.0
Confl. Peds. (#/hr)	5		10	10		5	5		5		5	
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	95	0	0	172	0	0	3	0	0	0	74
Sign Control		Free			Free			Stop				Stop

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 24.3%		ICU Level of Service A	
Analysis Period (min) 15			



Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	29
Future Volume (vph)	29
Ideal Flow (vphpl)	1900
Storage Length (ft)	0
Storage Lanes	0
Taper Length (ft)	
Lane Util. Factor	1.00
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	5
Peak Hour Factor	0.92
Shared Lane Traffic (%)	
Lane Group Flow (vph)	0
Sign Control	

Intersection Summary

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕				⇕	
Traffic Vol, veh/h	15	66	6	5	146	7	2	0	1	3	36	0	29
Future Vol, veh/h	15	66	6	5	146	7	2	0	1	3	36	0	29
Conflicting Peds, #/hr	5	0	10	10	0	5	5	0	5	0	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	72	7	5	159	8	2	0	1	3	39	0	32

Major/Minor	Major1			Major2			Minor1			Minor2			
Conflicting Flow All	172	0	0	89	0	0	312	300	91	0	291	299	173
Stage 1	-	-	-	-	-	-	118	118	-	0	178	178	-
Stage 2	-	-	-	-	-	-	194	182	-	0	113	121	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1405	-	-	1506	-	-	641	612	967	0	661	613	871
Stage 1	-	-	-	-	-	-	887	798	-	0	824	752	-
Stage 2	-	-	-	-	-	-	808	749	-	0	892	796	-
Platoon blocked, %		-	-		-	-				-			
Mov Cap-1 Maneuver	1398	-	-	1492	-	-	601	593	953	0	646	594	863
Mov Cap-2 Maneuver	-	-	-	-	-	-	601	593	-	0	646	594	-
Stage 1	-	-	-	-	-	-	868	780	-	0	810	745	-
Stage 2	-	-	-	-	-	-	772	742	-	0	876	778	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.3	0.2	10.3	10.5
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	685	1398	-	-	1492	-	-	728
HCM Lane V/C Ratio	0.005	0.012	-	-	0.004	-	-	0.097
HCM Control Delay (s)	10.3	7.6	0	-	7.4	0	-	10.5
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.3



Lane Group	WBL	WBR	NBT	NBR	SBU	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	93	61	222	50	1	35	151
Future Volume (vph)	93	61	222	50	1	35	151
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor							
Frt	0.947		0.975				
Flt Protected	0.971						0.990
Satd. Flow (prot)	1713	0	1816	0	0	0	1844
Flt Permitted	0.971						0.990
Satd. Flow (perm)	1713	0	1816	0	0	0	1844
Link Speed (mph)	30		30				30
Link Distance (ft)	405		350				1210
Travel Time (s)	9.2		8.0				27.5
Confl. Peds. (#/hr)	2	10		7	10	7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)							
Lane Group Flow (vph)	167	0	295	0	0	0	203
Sign Control	Stop		Free				Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 45.2%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	3.4

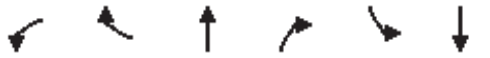
Movement	WBL	WBR	NBT	NBR	SBU	SBL	SBT
Lane Configurations							
Traffic Vol, veh/h	93	61	222	50	1	35	151
Future Vol, veh/h	93	61	222	50	1	35	151
Conflicting Peds, #/hr	2	10	0	7	10	7	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	-	None
Storage Length	0	-	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	-	0
Grade, %	0	-	0	-	-	-	0
Peak Hour Factor	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	101	66	241	54	1	38	164

Major/Minor	Minor1		Major1		Major2		
Conflicting Flow All	517	285	0	0	-	302	0
Stage 1	275	-	-	-	-	-	-
Stage 2	242	-	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	-	2.218	-
Pot Cap-1 Maneuver	518	754	-	-	-	1259	-
Stage 1	771	-	-	-	-	-	-
Stage 2	798	-	-	-	-	-	-
Platoon blocked, %			-	-			-
Mov Cap-1 Maneuver	513	742	-	-	~ -37	~ -37	-
Mov Cap-2 Maneuver	513	-	-	-	-	-	-
Stage 1	766	-	-	-	-	-	-
Stage 2	796	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.6	0	
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	584	+	-
HCM Lane V/C Ratio	-	-	0.287	-	-
HCM Control Delay (s)	-	-	13.6	-	-
HCM Lane LOS	-	-	B	-	-
HCM 95th %tile Q(veh)	-	-	1.2	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	6	0	18	7	0	62
Future Volume (vph)	6	0	18	7	0	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.961			
Flt Protected	0.950					
Satd. Flow (prot)	1770	0	1790	0	0	1863
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	1790	0	0	1863
Link Speed (mph)	25		25			25
Link Distance (ft)	380		365			210
Travel Time (s)	10.4		10.0			5.7
Confl. Peds. (#/hr)	5	132		70	70	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	7	0	28	0	0	67
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 32.2%		ICU Level of Service A	
Analysis Period (min) 15			

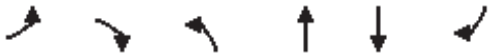
Intersection	
Int Delay, s/veh	0.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	6	0	18	7	0	62
Future Vol, veh/h	6	0	18	7	0	62
Conflicting Peds, #/hr	5	132	0	70	70	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	0	20	8	0	67

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	166	226	0	0	98	0
Stage 1	94	-	-	-	-	-
Stage 2	72	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	824	813	-	-	1495	-
Stage 1	930	-	-	-	-	-
Stage 2	951	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	765	663	-	-	1395	-
Mov Cap-2 Maneuver	765	-	-	-	-	-
Stage 1	868	-	-	-	-	-
Stage 2	946	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.7	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	765	1395	-
HCM Lane V/C Ratio	-	-	0.009	-	-
HCM Control Delay (s)	-	-	9.7	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	87	0	1400	1295	8
Future Volume (vph)	0	87	0	1400	1295	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.865			0.999	
Flt Protected						
Satd. Flow (prot)	0	1611	0	3539	3536	0
Flt Permitted						
Satd. Flow (perm)	0	1611	0	3539	3536	0
Link Speed (mph)	30			45	45	
Link Distance (ft)	223			369	420	
Travel Time (s)	5.1			5.6	6.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	95	0	1522	1417	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	48.1%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	87	0	1400	1295	8
Future Vol, veh/h	0	87	0	1400	1295	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	95	0	1522	1408	9

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	709	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	377	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	377	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	17.7	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	377	-	-
HCM Lane V/C Ratio	-	0.251	-	-
HCM Control Delay (s)	-	17.7	-	-
HCM Lane LOS	-	C	-	-
HCM 95th %tile Q(veh)	-	1	-	-

Lane Group	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Volume (vph)	1084	90	26	70	1013	70	100
Future Volume (vph)	1084	90	26	70	1013	70	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		120		225		0	115
Storage Lanes		1		1		1	1
Taper Length (ft)				25		0	
Lane Util. Factor	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Ped Bike Factor		0.97		1.00		0.99	0.95
Frt		0.850					0.850
Flt Protected				0.950		0.950	
Satd. Flow (prot)	3539	1583	0	1770	3539	1770	1583
Flt Permitted				0.189		0.950	
Satd. Flow (perm)	3539	1535	0	352	3539	1761	1504
Right Turn on Red		Yes					Yes
Satd. Flow (RTOR)		97					109
Link Speed (mph)	35				35	30	
Link Distance (ft)	636				400	1210	
Travel Time (s)	12.4				7.8	27.5	
Confl. Peds. (#/hr)		5		5		5	39
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)							
Lane Group Flow (vph)	1178	98	0	104	1101	76	109
Turn Type	NA	Perm	custom	pm+pt	NA	Perm	Perm
Protected Phases	2			1	6		
Permitted Phases		2	1	6		8	8
Detector Phase	2	2	1	1	6	8	8
Switch Phase							
Minimum Initial (s)	35.0	35.0	5.0	5.0	35.0	5.0	5.0
Minimum Split (s)	41.0	41.0	11.0	11.0	41.0	35.0	35.0
Total Split (s)	70.0	70.0	12.0	12.0	82.0	18.0	18.0
Total Split (%)	70.0%	70.0%	12.0%	12.0%	82.0%	18.0%	18.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0	-1.0	0.0
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	5.0
Lead/Lag	Lag	Lag	Lead	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			
Recall Mode	C-Max	C-Max	None	None	C-Max	None	None
Act Effct Green (s)	71.5	71.5		81.4	81.4	10.6	9.6
Actuated g/C Ratio	0.72	0.72		0.81	0.81	0.11	0.10
v/c Ratio	0.47	0.09		0.26	0.38	0.41	0.45
Control Delay	7.7	1.5		3.5	3.4	47.7	14.3
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay	7.7	1.5		3.5	3.4	47.7	14.3
LOS	A	A		A	A	D	B
Approach Delay	7.2				3.4	28.0	
Approach LOS	A				A	C	
Queue Length 50th (ft)	163	0		14	94	46	0

Lane Group	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Queue Length 95th (ft)	227	16		m20	m110	88	49
Internal Link Dist (ft)	556				320	1130	
Turn Bay Length (ft)		120		225			115
Base Capacity (vph)	2528	1124		405	2882	246	290
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	0.47	0.09		0.26	0.38	0.31	0.38

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 59 (59%), Referenced to phase 2:EBT and 6:WBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.47			
Intersection Signal Delay: 6.9		Intersection LOS: A	
Intersection Capacity Utilization 66.9%		ICU Level of Service C	
Analysis Period (min) 15			

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Main Street & S Boulder Road



Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	0	1184	43	3	16	1161	4	0	0	20	0	0
Future Volume (vph)	0	1184	43	3	16	1161	4	0	0	20	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		50		70		0	0		0	0	
Storage Lanes	0		1		1		0	0		1	0	
Taper Length (ft)	25				25			25			25	
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.850							0.865		
Flt Protected					0.950							
Satd. Flow (prot)	0	3539	1583	0	1770	3539	0	0	0	1611	0	0
Flt Permitted					0.950							
Satd. Flow (perm)	0	3539	1583	0	1770	3539	0	0	0	1611	0	0
Link Speed (mph)		35				35			20			20
Link Distance (ft)		400				360			338			476
Travel Time (s)		7.8				7.0			11.5			16.2
Confl. Peds. (#/hr)	10		10	5	10		10	5		5	5	
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1287	47	0	20	1266	0	0	0	22	0	0
Sign Control		Free				Free			Stop			Stop

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	44.3%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	1
Future Volume (vph)	1
Ideal Flow (vphpl)	1900
Storage Length (ft)	0
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Ped Bike Factor	
Frt	0.865
Flt Protected	
Satd. Flow (prot)	1611
Flt Permitted	
Satd. Flow (perm)	1611
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	5
Peak Hour Factor	0.92
Shared Lane Traffic (%)	
Lane Group Flow (vph)	1
Sign Control	

Intersection Summary

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	0	1184	43	3	16	1161	4	0	0	20	0	0	1
Future Vol, veh/h	0	1184	43	3	16	1161	4	0	0	20	0	0	1
Conflicting Peds, #/hr	10	0	10	5	10	0	10	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	-	70	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1287	47	3	17	1262	4	0	0	22	0	0	1

Major/Minor	Major1			Major2				Minor1			Minor2		
Conflicting Flow All	-	0	0	1287	1344	0	0	-	-	659	-	-	648
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	6.44	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	2.52	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	217	509	-	-	0	0	406	0	0	413
Stage 1	0	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	0	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-			-	-						
Mov Cap-1 Maneuver	-	-	-	410	410	-	-	-	-	400	-	-	407
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.2	14.5	13.9
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	400	-	-	410	-	-	407
HCM Lane V/C Ratio	0.054	-	-	0.05	-	-	0.003
HCM Control Delay (s)	14.5	-	-	14.2	-	-	13.9
HCM Lane LOS	B	-	-	B	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	0.2	-	-	0

Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	15	28	1117	28	1	52	1075	12	0	0	50	0
Future Volume (vph)	15	28	1117	28	1	52	1075	12	0	0	50	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		90		0		80		0	0		0	0
Storage Lanes		1		0		1		0	0		1	0
Taper Length (ft)		25				25			25			25
Lane Util. Factor	0.95	1.00	0.95	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.996				0.998				0.865	
Flt Protected		0.950				0.950						
Satd. Flow (prot)	0	1770	3525	0	0	1770	3532	0	0	0	1611	0
Flt Permitted		0.950				0.950						
Satd. Flow (perm)	0	1770	3525	0	0	1770	3532	0	0	0	1611	0
Link Speed (mph)			35				35			20		
Link Distance (ft)			360				465			339		
Travel Time (s)			7.0				9.1			11.6		
Confl. Peds. (#/hr)	5	10		10	5	10		10	5		5	5
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	46	1244	0	0	58	1181	0	0	0	54	0
Sign Control			Free				Free			Stop		

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 50.2%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	0	82
Future Volume (vph)	0	82
Ideal Flow (vphpl)	1900	1900
Storage Length (ft)		0
Storage Lanes		1
Taper Length (ft)		
Lane Util. Factor	1.00	1.00
Ped Bike Factor		
Frt		0.865
Flt Protected		
Satd. Flow (prot)	0	1611
Flt Permitted		
Satd. Flow (perm)	0	1611
Link Speed (mph)	20	
Link Distance (ft)	431	
Travel Time (s)	14.7	
Confl. Peds. (#/hr)		5
Peak Hour Factor	0.92	0.92
Shared Lane Traffic (%)		
Lane Group Flow (vph)	0	89
Sign Control	Stop	

Intersection Summary

Intersection	
Int Delay, s/veh	1.4

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	15	28	1117	28	1	52	1075	12	0	0	50	0	0	82
Future Vol, veh/h	15	28	1117	28	1	52	1075	12	0	0	50	0	0	82
Conflicting Peds, #/hr	5	10	0	10	5	10	0	10	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	90	-	-	-	80	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	30	1214	30	1	57	1168	13	0	0	54	0	0	89

Major/Minor	Major1				Major2				Minor1			Minor2		
Conflicting Flow All	1182	1191	0	0	1245	1254	0	0	-	-	637	-	-	606
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	6.44	4.14	-	-	6.44	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.52	2.22	-	-	2.52	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	253	582	-	-	231	551	-	-	0	0	420	0	0	440
Stage 1	-	-	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %			-	-			-	-						
Mov Cap-1 Maneuver	353	353	-	-	529	529	-	-	-	-	414	-	-	434
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.6	15	15.4
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	414	353	-	-	529	-	-	434
HCM Lane V/C Ratio	0.131	0.132	-	-	0.109	-	-	0.205
HCM Control Delay (s)	15	16.7	-	-	12.6	-	-	15.4
HCM Lane LOS	C	C	-	-	B	-	-	C
HCM 95th %tile Q(veh)	0.4	0.5	-	-	0.4	-	-	0.8

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
Lane Configurations												
Traffic Volume (vph)	22	507	607	110	322	680	173	4	212	464	253	7
Future Volume (vph)	22	507	607	110	322	680	173	4	212	464	253	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		150		100	225		270		0		0	
Storage Lanes		2		1	2		1		2		1	
Taper Length (ft)		25			25				25			
Lane Util. Factor	0.95	0.97	0.95	1.00	0.97	0.95	1.00	0.95	0.97	0.95	1.00	0.95
Ped Bike Factor				0.98			0.98				0.98	
Frt				0.850			0.850				0.850	
Flt Protected		0.950			0.950				0.950			
Satd. Flow (prot)	0	3433	3539	1583	3433	3539	1583	0	3433	3539	1583	0
Flt Permitted		0.371			0.950				0.500			
Satd. Flow (perm)	0	1341	3539	1557	3433	3539	1549	0	1807	3539	1557	0
Right Turn on Red				Yes			Yes				Yes	
Satd. Flow (RTOR)				207			218				275	
Link Speed (mph)			35			35				45		
Link Distance (ft)			465			1815				418		
Travel Time (s)			9.1			35.4				6.3		
Confl. Peds. (#/hr)				5			10				5	
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	575	660	120	350	739	188	0	234	504	275	0
Turn Type	custom	Prot	NA	Perm	Prot	NA	Perm	custom	Prot	NA	Perm	custom
Protected Phases		5	2		1	6			3	8		
Permitted Phases	5			2			6	3			8	7
Detector Phase	5	5	2	2	1	6	6	3	3	8	8	7
Switch Phase												
Minimum Initial (s)	5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	5.0	6.0	6.0	5.0
Minimum Split (s)	10.0	10.0	37.0	37.0	10.0	37.0	37.0	10.0	10.0	40.0	40.0	10.0
Total Split (s)	18.0	18.0	38.0	38.0	14.0	34.0	34.0	12.0	12.0	36.0	36.0	12.0
Total Split (%)	18.0%	18.0%	38.0%	38.0%	14.0%	34.0%	34.0%	12.0%	12.0%	36.0%	36.0%	12.0%
Yellow Time (s)	3.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	3.0	4.0	4.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		-1.0	-2.0	-2.0	-1.0	-2.0	-2.0		-1.0	-2.0	-2.0	
Total Lost Time (s)		4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	
Lead/Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lead	Lead	Lead	Lag
Lead-Lag Optimize?												
Recall Mode	None	None	C-Max	C-Max	None	Max	Max	None	None	Max	Max	None
Act Effct Green (s)		14.0	34.0	34.0	10.0	30.0	30.0		8.0	32.0	32.0	
Actuated g/C Ratio		0.14	0.34	0.34	0.10	0.30	0.30		0.08	0.32	0.32	
v/c Ratio		3.07	0.55	0.18	1.02	0.70	0.30		1.62	0.45	0.40	
Control Delay		964.2	26.1	1.2	99.5	35.1	3.7		341.8	25.0	7.4	
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	
Total Delay		964.2	26.1	1.2	99.5	35.1	3.7		341.8	25.0	7.4	
LOS		F	C	A	F	D	A		F	C	A	
Approach Delay			422.0			48.1				93.4		
Approach LOS			F			D				F		
Queue Length 50th (ft)		~336	126	0	~119	218	0		~112	134	1	



Lane Group	SBL	SBT	SBR
Lane Configurations			
Traffic Volume (vph)	140	500	345
Future Volume (vph)	140	500	345
Ideal Flow (vphpl)	1900	1900	1900
Storage Length (ft)	185		270
Storage Lanes	2		1
Taper Length (ft)	25		
Lane Util. Factor	0.97	0.95	1.00
Ped Bike Factor			0.98
Frt			0.850
Flt Protected	0.950		
Satd. Flow (prot)	3433	3539	1583
Flt Permitted	0.500		
Satd. Flow (perm)	1807	3539	1557
Right Turn on Red			Yes
Satd. Flow (RTOR)			274
Link Speed (mph)		45	
Link Distance (ft)		1337	
Travel Time (s)		20.3	
Confl. Peds. (#/hr)			5
Peak Hour Factor	0.92	0.92	0.92
Shared Lane Traffic (%)			
Lane Group Flow (vph)	160	543	375
Turn Type	Prot	NA	Perm
Protected Phases	7	4	
Permitted Phases			4
Detector Phase	7	4	4
Switch Phase			
Minimum Initial (s)	5.0	6.0	6.0
Minimum Split (s)	10.0	36.0	36.0
Total Split (s)	12.0	36.0	36.0
Total Split (%)	12.0%	36.0%	36.0%
Yellow Time (s)	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0
Lead/Lag	Lag	Lag	Lag
Lead-Lag Optimize?			
Recall Mode	None	Max	Max
Act Effct Green (s)	8.0	32.0	32.0
Actuated g/C Ratio	0.08	0.32	0.32
v/c Ratio	1.11	0.48	0.55
Control Delay	152.0	29.1	11.1
Queue Delay	0.0	0.0	0.0
Total Delay	152.0	29.1	11.1
LOS	F	C	B
Approach Delay		41.1	
Approach LOS		D	
Queue Length 50th (ft)	~60	145	47

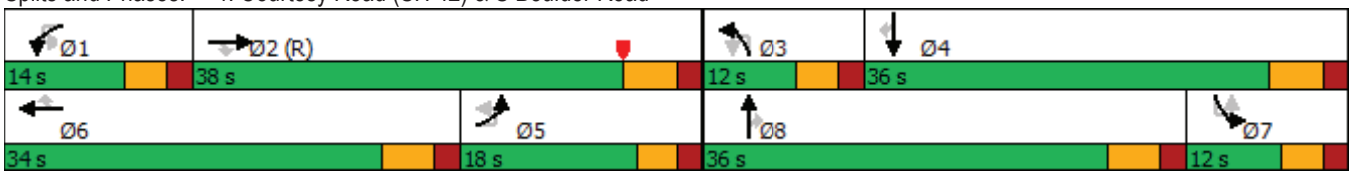
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
Queue Length 95th (ft)		#433	176	0	#213	284	34		#196	128	85	
Internal Link Dist (ft)			385			1735				338		
Turn Bay Length (ft)		150		100	225		270					
Base Capacity (vph)		187	1203	666	343	1061	617		144	1132	685	
Starvation Cap Reductn		0	0	0	0	0	0		0	0	0	
Spillback Cap Reductn		0	0	0	0	0	0		0	0	0	
Storage Cap Reductn		0	0	0	0	0	0		0	0	0	
Reduced v/c Ratio		3.07	0.55	0.18	1.02	0.70	0.30		1.63	0.45	0.40	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow, Master Intersection			
Natural Cycle: 130			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 3.07			
Intersection Signal Delay: 163.5		Intersection LOS: F	
Intersection Capacity Utilization 86.8%		ICU Level of Service E	
Analysis Period (min) 15			

~ 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.

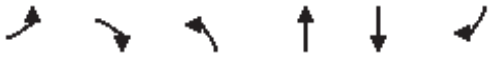
Splits and Phases: 4: Courtesy Road (SH 42) & S Boulder Road





Lane Group	SBL	SBT	SBR
Queue Length 95th (ft)	#126	196	133
Internal Link Dist (ft)		1257	
Turn Bay Length (ft)	185		270
Base Capacity (vph)	144	1132	684
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	1.11	0.48	0.55

Intersection Summary



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	10	0	931	918	10
Future Volume (vph)	0	10	0	931	918	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	140			0
Storage Lanes	0	1	0			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor						
Frt		0.865			0.998	
Flt Protected						
Satd. Flow (prot)	0	1611	0	3539	3532	0
Flt Permitted						
Satd. Flow (perm)	0	1611	0	3539	3532	0
Link Speed (mph)	20			45	45	
Link Distance (ft)	418			420	418	
Travel Time (s)	14.3			6.4	6.3	
Confl. Peds. (#/hr)			5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	11	0	1012	1009	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 35.7%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	10	0	931	918	10
Future Vol, veh/h	0	10	0	931	918	10
Conflicting Peds, #/hr	0	0	5	0	0	5
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	11	0	1012	998	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	510	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	509	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	507	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.3	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	507	-	-
HCM Lane V/C Ratio	-	0.021	-	-
HCM Control Delay (s)	-	12.3	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.1	-	-

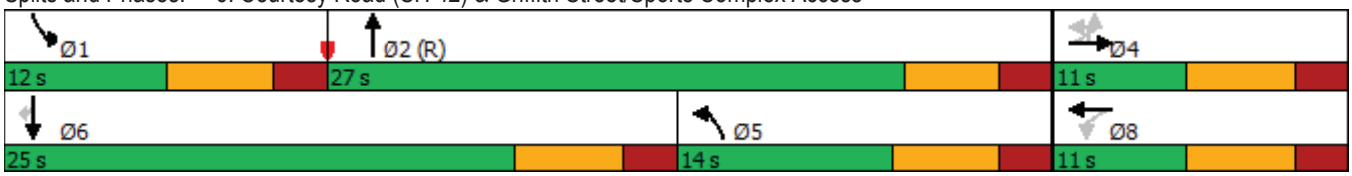
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	7	44	2	1	6	25	859	43	11	865	44
Future Volume (vph)	20	7	44	2	1	6	25	859	43	11	865	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		0	50		0	225		0	500		273
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor												0.98
Frt		0.871			0.869			0.993				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1622	0	1770	1619	0	1770	3514	0	1770	3539	1583
Flt Permitted	0.800			0.800			0.950			0.950		
Satd. Flow (perm)	1490	1622	0	1490	1619	0	1770	3514	0	1770	3539	1545
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		48			7			13				196
Link Speed (mph)		30			20			45			45	
Link Distance (ft)		439			281			380			369	
Travel Time (s)		10.0			9.6			5.8			5.6	
Confl. Bikes (#/hr)												5
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	22	56	0	2	8	0	27	981	0	12	940	48
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								6
Detector Phase	4	4		8	8		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	25.0	25.0		25.0	25.0		11.0	24.5		11.0	25.0	25.0
Total Split (s)	11.0	11.0		11.0	11.0		14.0	27.0		12.0	25.0	25.0
Total Split (%)	22.0%	22.0%		22.0%	22.0%		28.0%	54.0%		24.0%	50.0%	50.0%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	3.5		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-1.5		-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lead/Lag							Lag	Lag		Lead	Lead	Lead
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None		None	C-Max		None	Max	Max
Act Effct Green (s)	7.0	7.0		7.0	7.0		8.4	38.6		7.8	38.2	38.2
Actuated g/C Ratio	0.14	0.14		0.14	0.14		0.17	0.77		0.16	0.76	0.76
v/c Ratio	0.11	0.21		0.01	0.03		0.09	0.36		0.04	0.35	0.04
Control Delay	20.4	9.1		18.5	13.3		17.8	4.8		17.6	4.7	0.6
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	20.4	9.1		18.5	13.3		17.8	4.8		17.6	4.7	0.6
LOS	C	A		B	B		B	A		B	A	A
Approach Delay		12.3			14.3			5.2			4.6	
Approach LOS		B			B			A			A	
Queue Length 50th (ft)	6	2		1	0		7	44		5	116	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (ft)	17	19		5	9		22	152		m12	m164	m3
Internal Link Dist (ft)		359			201			300			289	
Turn Bay Length (ft)	50			50			225			500		273
Base Capacity (vph)	208	268		208	232		354	2715		283	2704	1226
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.11	0.21		0.01	0.03		0.08	0.36		0.04	0.35	0.04

Intersection Summary	
Area Type:	Other
Cycle Length: 50	
Actuated Cycle Length: 50	
Offset: 48 (96%), Referenced to phase 2:NBT, Start of Green	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.36	
Intersection Signal Delay: 5.2	Intersection LOS: A
Intersection Capacity Utilization 39.6%	ICU Level of Service A
Analysis Period (min) 15	

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Courtesy Road (SH 42) & Griffith Street/Sports Complex Access





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	54	20	15	61	1	14	0	16	1	0	1
Future Volume (vph)	0	54	20	15	61	1	14	0	16	1	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	150		150	150		150	150		150
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.963			0.998			0.928			0.932	
Flt Protected					0.990			0.977			0.976	
Satd. Flow (prot)	0	1794	0	0	1840	0	0	1689	0	0	1694	0
Flt Permitted					0.990			0.977			0.976	
Satd. Flow (perm)	0	1794	0	0	1840	0	0	1689	0	0	1694	0
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		390			439			346			362	
Travel Time (s)		8.9			10.0			9.4			9.9	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	81	0	0	83	0	0	32	0	0	2	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 22.7%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	0	54	20	15	61	1	14	0	16	1	0	1
Future Vol, veh/h	0	54	20	15	61	1	14	0	16	1	0	1
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	59	22	16	66	1	15	0	17	1	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	72	0	0	86	0	0	179	179	80	188	190	77
Stage 1	-	-	-	-	-	-	75	75	-	104	104	-
Stage 2	-	-	-	-	-	-	104	104	-	84	86	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1528	-	-	1510	-	-	783	715	980	772	705	984
Stage 1	-	-	-	-	-	-	934	833	-	902	809	-
Stage 2	-	-	-	-	-	-	902	809	-	924	824	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1521	-	-	1503	-	-	768	700	971	745	690	975
Mov Cap-2 Maneuver	-	-	-	-	-	-	768	700	-	745	690	-
Stage 1	-	-	-	-	-	-	929	829	-	897	796	-
Stage 2	-	-	-	-	-	-	887	796	-	903	820	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1.4	9.3	9.3
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	864	1521	-	-	1503	-	-	845
HCM Lane V/C Ratio	0.038	-	-	-	0.011	-	-	0.003
HCM Control Delay (s)	9.3	0	-	-	7.4	0	-	9.3
HCM Lane LOS	A	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	53	3	1	68	7	8	0	0	23	0	25
Future Volume (vph)	12	53	3	1	68	7	8	0	0	23	0	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	150		150	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.995			0.987						0.930	
Flt Protected		0.991			0.999			0.950			0.977	
Satd. Flow (prot)	0	1837	0	0	1837	0	0	1770	0	0	1693	0
Flt Permitted		0.991			0.999			0.950			0.977	
Satd. Flow (perm)	0	1837	0	0	1837	0	0	1770	0	0	1693	0
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		405			390			333			365	
Travel Time (s)		9.2			8.9			9.1			10.0	
Confl. Peds. (#/hr)	5		10	10		5	5		5	5		5
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	74	0	0	83	0	0	9	0	0	52	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 22.7%		ICU Level of Service A	
Analysis Period (min) 15			

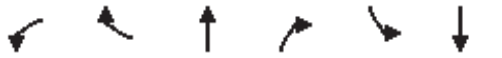
Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	12	53	3	1	68	7	8	0	0	23	0	25
Future Vol, veh/h	12	53	3	1	68	7	8	0	0	23	0	25
Conflicting Peds, #/hr	5	0	10	10	0	5	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	58	3	1	74	8	9	0	0	25	0	27

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	87	0	0	71	0	0	195	185	75	176	182	88
Stage 1	-	-	-	-	-	-	96	96	-	85	85	-
Stage 2	-	-	-	-	-	-	99	89	-	91	97	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1509	-	-	1529	-	-	764	709	986	786	712	970
Stage 1	-	-	-	-	-	-	911	815	-	923	824	-
Stage 2	-	-	-	-	-	-	907	821	-	916	815	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1502	-	-	1514	-	-	727	691	972	773	694	961
Mov Cap-2 Maneuver	-	-	-	-	-	-	727	691	-	773	694	-
Stage 1	-	-	-	-	-	-	895	800	-	910	819	-
Stage 2	-	-	-	-	-	-	876	816	-	903	800	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.3	0.1	10	9.5
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	727	1502	-	-	1514	-	-	861
HCM Lane V/C Ratio	0.012	0.009	-	-	0.001	-	-	0.061
HCM Control Delay (s)	10	7.4	0	-	7.4	0	-	9.5
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.2



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	66	38	137	52	14	141
Future Volume (vph)	66	38	137	52	14	141
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.951		0.963			
Flt Protected	0.969					0.996
Satd. Flow (prot)	1717	0	1794	0	0	1855
Flt Permitted	0.969					0.996
Satd. Flow (perm)	1717	0	1794	0	0	1855
Link Speed (mph)	30		30			30
Link Distance (ft)	405		350			1210
Travel Time (s)	9.2		8.0			27.5
Confl. Peds. (#/hr)	6	2		17	17	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	113	0	206	0	0	168
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 32.3%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	2.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	66	38	137	52	14	141
Future Vol, veh/h	66	38	137	52	14	141
Conflicting Peds, #/hr	6	2	0	17	17	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	72	41	149	57	15	153

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	384	197	0	0	223	0
Stage 1	195	-	-	-	-	-
Stage 2	189	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	619	844	-	-	1346	-
Stage 1	838	-	-	-	-	-
Stage 2	843	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	598	829	-	-	1324	-
Mov Cap-2 Maneuver	598	-	-	-	-	-
Stage 1	815	-	-	-	-	-
Stage 2	838	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.5	0	0.7
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	666	1324	-
HCM Lane V/C Ratio	-	-	0.17	0.011	-
HCM Control Delay (s)	-	-	11.5	7.8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.6	0	-



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	4	0	10	9	0	44
Future Volume (vph)	4	0	10	9	0	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.936			
Flt Protected	0.950					
Satd. Flow (prot)	1770	0	1744	0	0	1863
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	1744	0	0	1863
Link Speed (mph)	25		25			25
Link Distance (ft)	380		365			210
Travel Time (s)	10.4		10.0			5.7
Confl. Peds. (#/hr)	5	132		70	70	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	4	0	21	0	0	48
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 32.2%		ICU Level of Service A	
Analysis Period (min) 15			

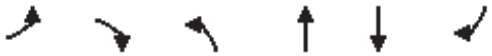
Intersection	
Int Delay, s/veh	0.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	0	10	9	0	44
Future Vol, veh/h	4	0	10	9	0	44
Conflicting Peds, #/hr	5	132	0	70	70	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	0	11	10	0	48

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	139	218	0	0	91	0
Stage 1	86	-	-	-	-	-
Stage 2	53	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	854	822	-	-	1504	-
Stage 1	937	-	-	-	-	-
Stage 2	970	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	793	671	-	-	1404	-
Mov Cap-2 Maneuver	793	-	-	-	-	-
Stage 1	874	-	-	-	-	-
Stage 2	965	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.6	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	793	1404	-
HCM Lane V/C Ratio	-	-	0.005	-	-
HCM Control Delay (s)	-	-	9.6	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	49	0	878	908	6
Future Volume (vph)	0	49	0	878	908	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.865			0.999	
Flt Protected						
Satd. Flow (prot)	0	1611	0	3539	3536	0
Flt Permitted						
Satd. Flow (perm)	0	1611	0	3539	3536	0
Link Speed (mph)	30			45	45	
Link Distance (ft)	214			369	420	
Travel Time (s)	4.9			5.6	6.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	53	0	954	994	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 35.3%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	49	0	878	908	6
Future Vol, veh/h	0	49	0	878	908	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	53	0	954	987	7

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	497	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	519	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	519	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.7	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	519	-	-
HCM Lane V/C Ratio	-	0.103	-	-
HCM Control Delay (s)	-	12.7	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.3	-	-

Lane Group	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Volume (vph)	936	112	8	75	1232	81	108
Future Volume (vph)	936	112	8	75	1232	81	108
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		120		225		0	115
Storage Lanes		1		1		1	1
Taper Length (ft)				25		0	
Lane Util. Factor	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Ped Bike Factor		0.97		1.00		0.99	0.95
Frt		0.850					0.850
Flt Protected				0.950		0.950	
Satd. Flow (prot)	3539	1583	0	1770	3539	1770	1583
Flt Permitted				0.236		0.950	
Satd. Flow (perm)	3539	1531	0	439	3539	1759	1505
Right Turn on Red		Yes					Yes
Satd. Flow (RTOR)		122					117
Link Speed (mph)	35				35	30	
Link Distance (ft)	636				400	1210	
Travel Time (s)	12.4				7.8	27.5	
Confl. Peds. (#/hr)		5		5		5	32
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)							
Lane Group Flow (vph)	1017	122	0	91	1339	88	117
Turn Type	NA	Perm	custom	pm+pt	NA	Perm	Perm
Protected Phases	2			1	6		
Permitted Phases		2	1	6		8	8
Detector Phase	2	2	1	1	6	8	8
Switch Phase							
Minimum Initial (s)	35.0	35.0	5.0	5.0	35.0	5.0	5.0
Minimum Split (s)	41.0	41.0	11.0	11.0	41.0	35.0	35.0
Total Split (s)	85.0	85.0	14.0	14.0	99.0	21.0	21.0
Total Split (%)	70.8%	70.8%	11.7%	11.7%	82.5%	17.5%	17.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0	-1.0	0.0
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	5.0
Lead/Lag	Lag	Lag	Lead	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			
Recall Mode	C-Max	C-Max	None	None	C-Max	None	None
Act Effct Green (s)	85.4	85.4		98.1	98.1	13.9	12.9
Actuated g/C Ratio	0.71	0.71		0.82	0.82	0.12	0.11
v/c Ratio	0.40	0.11		0.20	0.46	0.43	0.44
Control Delay	8.0	1.4		5.0	5.5	55.0	13.9
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay	8.0	1.4		5.0	5.5	55.0	13.9
LOS	A	A		A	A	E	B
Approach Delay	7.3				5.5	31.5	
Approach LOS	A				A	C	
Queue Length 50th (ft)	165	0		17	147	62	0

Lane Group	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Queue Length 95th (ft)	211	19		m30	m205	115	55
Internal Link Dist (ft)	556				320	1130	
Turn Bay Length (ft)		120		225			115
Base Capacity (vph)	2518	1124		469	2893	249	302
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	0.40	0.11		0.19	0.46	0.35	0.39

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 23 (19%), Referenced to phase 2:EBT and 6:WBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.46			
Intersection Signal Delay: 8.2		Intersection LOS: A	
Intersection Capacity Utilization 64.3%		ICU Level of Service C	
Analysis Period (min) 15			

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Main Street & S Boulder Road



Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	0	904	24	2	7	1344	5	0	0	48	0	0
Future Volume (vph)	0	904	24	2	7	1344	5	0	0	48	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		50		70		0	0		0	0	
Storage Lanes	0		1		1		0	0		1	0	
Taper Length (ft)	25				75			25			25	
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.850			0.999				0.865		
Flt Protected					0.950							
Satd. Flow (prot)	0	3539	1583	0	1770	3536	0	0	0	1611	0	0
Flt Permitted					0.950							
Satd. Flow (perm)	0	3539	1583	0	1770	3536	0	0	0	1611	0	0
Link Speed (mph)		35				35			20			20
Link Distance (ft)		400				360			338			476
Travel Time (s)		7.8				7.0			11.5			16.2
Confl. Peds. (#/hr)	10		10	5	10		10	5		5	5	
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	983	26	0	10	1466	0	0	0	52	0	0
Sign Control		Free				Free			Stop			Stop

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 48.8%		ICU Level of Service A	
Analysis Period (min) 15			



Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	11
Future Volume (vph)	11
Ideal Flow (vphpl)	1900
Storage Length (ft)	0
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Ped Bike Factor	
Frt	0.865
Flt Protected	
Satd. Flow (prot)	1611
Flt Permitted	
Satd. Flow (perm)	1611
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	5
Peak Hour Factor	0.92
Shared Lane Traffic (%)	
Lane Group Flow (vph)	12
Sign Control	

Intersection Summary

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	0	904	24	2	7	1344	5	0	0	48	0	0	11
Future Vol, veh/h	0	904	24	2	7	1344	5	0	0	48	0	0	11
Conflicting Peds, #/hr	10	0	10	5	10	0	10	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	-	70	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	983	26	2	8	1461	5	0	0	52	0	0	12

Major/Minor	Major1			Major2				Minor1			Minor2		
Conflicting Flow All	-	0	0	983	1019	0	0	-	-	507	-	-	748
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	6.44	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	2.52	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	340	677	-	-	0	0	511	0	0	355
Stage 1	0	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	0	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-			-	-						
Mov Cap-1 Maneuver	-	-	-	532	532	-	-	-	-	504	-	-	350
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.1	13	15.6
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	504	-	-	532	-	-	350
HCM Lane V/C Ratio	0.104	-	-	0.018	-	-	0.034
HCM Control Delay (s)	13	-	-	11.9	-	-	15.6
HCM Lane LOS	B	-	-	B	-	-	C
HCM 95th %tile Q(veh)	0.3	-	-	0.1	-	-	0.1

Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	6	21	931	9	1	17	1319	8	0	0	45	0
Future Volume (vph)	6	21	931	9	1	17	1319	8	0	0	45	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		90		0		80		0	0		0	0
Storage Lanes		1		0		1		0	0		1	0
Taper Length (ft)		75				80			25			25
Lane Util. Factor	0.95	1.00	0.95	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.999				0.999				0.865	
Flt Protected		0.950				0.950						
Satd. Flow (prot)	0	1770	3536	0	0	1770	3536	0	0	0	1611	0
Flt Permitted		0.950				0.950						
Satd. Flow (perm)	0	1770	3536	0	0	1770	3536	0	0	0	1611	0
Link Speed (mph)			35				35			20		
Link Distance (ft)			360				465			339		
Travel Time (s)			7.0				9.1			11.6		
Confl. Peds. (#/hr)	5	10		10	5	10		10	5		5	5
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	30	1022	0	0	19	1443	0	0	0	49	0
Sign Control			Free				Free			Stop		

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	48.3%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	0	36
Future Volume (vph)	0	36
Ideal Flow (vphpl)	1900	1900
Storage Length (ft)		0
Storage Lanes		1
Taper Length (ft)		
Lane Util. Factor	1.00	1.00
Ped Bike Factor		
Frt		0.865
Flt Protected		
Satd. Flow (prot)	0	1611
Flt Permitted		
Satd. Flow (perm)	0	1611
Link Speed (mph)	20	
Link Distance (ft)	431	
Travel Time (s)	14.7	
Confl. Peds. (#/hr)		5
Peak Hour Factor	0.92	0.92
Shared Lane Traffic (%)		
Lane Group Flow (vph)	0	39
Sign Control	Stop	

Intersection Summary

Intersection	
Int Delay, s/veh	0.8

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	6	21	931	9	1	17	1319	8	0	0	45	0	0	36
Future Vol, veh/h	6	21	931	9	1	17	1319	8	0	0	45	0	0	36
Conflicting Peds, #/hr	5	10	0	10	5	10	0	10	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	90	-	-	-	80	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	23	1012	10	1	18	1434	9	0	0	49	0	0	39

Major/Minor	Major1				Major2				Minor1			Minor2		
Conflicting Flow All	1442	1453	0	0	1022	1032	0	0	-	-	526	-	-	737
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	6.44	4.14	-	-	6.44	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.52	2.22	-	-	2.52	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	172	462	-	-	321	669	-	-	0	0	496	0	0	361
Stage 1	-	-	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %			-	-			-	-						
Mov Cap-1 Maneuver	319	319	-	-	619	619	-	-	-	-	489	-	-	356
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.1	13.2	16.4
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	489	319	-	-	619	-	-	356
HCM Lane V/C Ratio	0.1	0.092	-	-	0.032	-	-	0.11
HCM Control Delay (s)	13.2	17.4	-	-	11	-	-	16.4
HCM Lane LOS	B	C	-	-	B	-	-	C
HCM 95th %tile Q(veh)	0.3	0.3	-	-	0.1	-	-	0.4

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	31	312	429	175	261	683	153	177	467	198	5	128
Future Volume (vph)	31	312	429	175	261	683	153	177	467	198	5	128
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		150		0	225		270	0		0		185
Storage Lanes		2		0	2		1	2		0		2
Taper Length (ft)		80			135			70				155
Lane Util. Factor	0.95	0.97	0.95	0.95	0.97	0.95	1.00	0.97	0.95	0.95	0.95	0.97
Ped Bike Factor			0.99				0.98		0.99			
Frt			0.957				0.850		0.955			
Flt Protected		0.950			0.950			0.950				0.950
Satd. Flow (prot)	0	3433	3370	0	3433	3539	1583	3433	3363	0	0	3433
Flt Permitted		0.370			0.950			0.950				0.571
Satd. Flow (perm)	0	1337	3370	0	3433	3539	1546	3433	3363	0	0	2063
Right Turn on Red				Yes			Yes			Yes		
Satd. Flow (RTOR)			52				182		59			
Link Speed (mph)			35			35			45			
Link Distance (ft)			465			1815			418			
Travel Time (s)			9.1			35.4			6.3			
Confl. Peds. (#/hr)				5			10			5		
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	373	656	0	284	742	166	192	723	0	0	144
Turn Type	custom	Prot	NA		Prot	NA	Perm	Prot	NA		custom	Prot
Protected Phases		5	2		1	6		3	8			7
Permitted Phases	5						6				7	
Detector Phase	5	5	2		1	6	6	3	8		7	7
Switch Phase												
Minimum Initial (s)	5.0	5.0	10.0		5.0	10.0	10.0	5.0	6.0		5.0	5.0
Minimum Split (s)	10.0	10.0	37.0		10.0	37.0	37.0	10.0	40.0		10.0	10.0
Total Split (s)	20.0	20.0	41.0		20.0	41.0	41.0	16.0	47.0		12.0	12.0
Total Split (%)	16.7%	16.7%	34.2%		16.7%	34.2%	34.2%	13.3%	39.2%		10.0%	10.0%
Yellow Time (s)	3.0	3.0	4.0		3.0	4.0	4.0	3.0	4.0		3.0	3.0
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0			0.0
Total Lost Time (s)		5.0	6.0		5.0	6.0	6.0	5.0	6.0			5.0
Lead/Lag	Lag	Lag	Lag		Lead	Lead	Lead	Lead	Lead		Lag	Lag
Lead-Lag Optimize?												
Recall Mode	None	None	C-Max		None	Max	Max	None	Max		None	None
Act Effct Green (s)		15.0	36.1		13.9	35.0	35.0	10.5	41.0			7.0
Actuated g/C Ratio		0.12	0.30		0.12	0.29	0.29	0.09	0.34			0.06
v/c Ratio		2.23	0.63		0.71	0.72	0.29	0.64	0.61			1.20
Control Delay		597.4	30.9		61.5	42.8	4.9	63.3	32.6			193.3
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0			0.0
Total Delay		597.4	30.9		61.5	42.8	4.9	63.3	32.6			193.3
LOS		F	C		E	D	A	E	C			F
Approach Delay			236.2			42.0			39.0			
Approach LOS			F			D			D			
Queue Length 50th (ft)		~243	214		109	271	0	75	224			~69

Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	582	440
Future Volume (vph)	582	440
Ideal Flow (vphpl)	1900	1900
Storage Length (ft)		270
Storage Lanes		1
Taper Length (ft)		
Lane Util. Factor	0.95	1.00
Ped Bike Factor		0.98
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3539	1583
Flt Permitted		
Satd. Flow (perm)	3539	1555
Right Turn on Red		Yes
Satd. Flow (RTOR)		227
Link Speed (mph)	45	
Link Distance (ft)	1337	
Travel Time (s)	20.3	
Confl. Peds. (#/hr)		5
Peak Hour Factor	0.92	0.92
Shared Lane Traffic (%)		
Lane Group Flow (vph)	633	478
Turn Type	NA	Perm
Protected Phases	4	
Permitted Phases		4
Detector Phase	4	4
Switch Phase		
Minimum Initial (s)	6.0	6.0
Minimum Split (s)	36.0	36.0
Total Split (s)	43.0	43.0
Total Split (%)	35.8%	35.8%
Yellow Time (s)	4.0	4.0
All-Red Time (s)	2.0	2.0
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.0	6.0
Lead/Lag	Lag	Lag
Lead-Lag Optimize?		
Recall Mode	Max	Max
Act Effct Green (s)	37.5	37.5
Actuated g/C Ratio	0.31	0.31
v/c Ratio	0.57	0.74
Control Delay	37.1	27.1
Queue Delay	0.0	0.0
Total Delay	37.1	27.1
LOS	D	C
Approach Delay	51.2	
Approach LOS	D	
Queue Length 50th (ft)	216	180

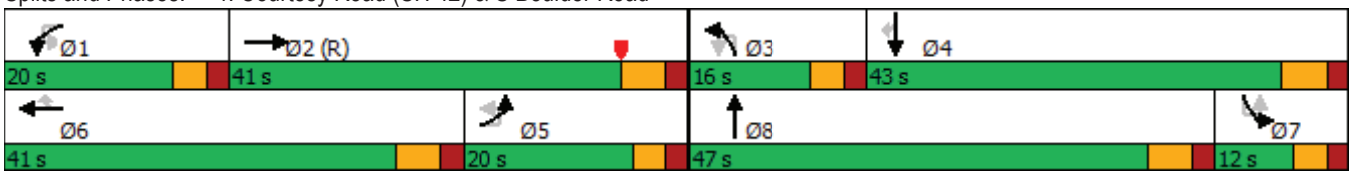
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL
Queue Length 95th (ft)		#343	283		156	342	41	114	289			#138
Internal Link Dist (ft)			385			1735			338			
Turn Bay Length (ft)		150			225		270					185
Base Capacity (vph)		167	1049		429	1032	579	314	1187			120
Starvation Cap Reductn		0	0		0	0	0	0	0			0
Spillback Cap Reductn		0	0		0	0	0	0	0			0
Storage Cap Reductn		0	0		0	0	0	0	0			0
Reduced v/c Ratio		2.23	0.63		0.66	0.72	0.29	0.61	0.61			1.20

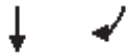
Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow, Master Intersection			
Natural Cycle: 120			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 2.23			
Intersection Signal Delay: 89.5		Intersection LOS: F	
Intersection Capacity Utilization 86.8%		ICU Level of Service E	
Analysis Period (min) 15			

~ 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.

Splits and Phases: 4: Courtesy Road (SH 42) & S Boulder Road





Lane Group	SBT	SBR
Queue Length 95th (ft)	278	319
Internal Link Dist (ft)	1257	
Turn Bay Length (ft)		270
Base Capacity (vph)	1107	642
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.57	0.74

Intersection Summary

Lane Group	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	1	17	1	13	821	1006	5
Future Volume (vph)	1	17	1	13	821	1006	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		140			0
Storage Lanes	0	1		1			0
Taper Length (ft)	25			100			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor							
Frt		0.865				0.999	
Flt Protected	0.950			0.950			
Satd. Flow (prot)	0	1611	0	1770	1863	3536	0
Flt Permitted	0.950			0.950			
Satd. Flow (perm)	0	1611	0	1770	1863	3536	0
Link Speed (mph)	20				45	45	
Link Distance (ft)	418				430	418	
Travel Time (s)	14.3				6.5	6.3	
Confl. Peds. (#/hr)				5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)							
Lane Group Flow (vph)	1	18	0	15	892	1098	0
Sign Control	Stop				Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Vol, veh/h	1	17	1	13	821	1006	5
Future Vol, veh/h	1	17	1	13	821	1006	5
Conflicting Peds, #/hr	0	0	0	5	0	0	5
Sign Control	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	None	-	-	None	-	None
Storage Length	-	0	-	140	-	-	-
Veh in Median Storage, #	0	-	-	-	0	0	-
Grade, %	0	-	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	1	18	1	14	892	1093	5

Major/Minor	Minor2		Major1			Major2	
Conflicting Flow All	2021	554	1099	1103	0	-	0
Stage 1	1101	-	-	-	-	-	-
Stage 2	920	-	-	-	-	-	-
Critical Hdwy	6.63	6.93	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	3.119	2.219	-	-	-
Pot Cap-1 Maneuver	57	477	216	631	-	-	-
Stage 1	281	-	-	-	-	-	-
Stage 2	387	-	-	-	-	-	-
Platoon blocked, %					-	-	-
Mov Cap-1 Maneuver	55	475	549	549	-	-	-
Mov Cap-2 Maneuver	55	-	-	-	-	-	-
Stage 1	272	-	-	-	-	-	-
Stage 2	385	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.9	0.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	549	-	475	-	-
HCM Lane V/C Ratio	0.028	-	0.039	-	-
HCM Control Delay (s)	11.7	-	12.9	-	-
HCM Lane LOS	B	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	0	54	0	0	0	37	815	4	5	934	94
Future Volume (vph)	19	0	54	0	0	0	37	815	4	5	934	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		60	225		0	500		0
Storage Lanes	0		0	0		1	1		0	1		1
Taper Length (ft)	0			0			25			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.900						0.999				0.850
Flt Protected		0.987					0.950			0.950		
Satd. Flow (prot)	0	1655	0	0	1863	1863	1770	1861	0	1770	1863	1583
Flt Permitted		0.987					0.950			0.950		
Satd. Flow (perm)	0	1655	0	0	1863	1863	1770	1861	0	1770	1863	1583
Link Speed (mph)		30			20			45			45	
Link Distance (ft)		439			281			380			359	
Travel Time (s)		10.0			9.6			5.8			5.4	
Confl. Bikes (#/hr)												5
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	80	0	0	0	0	40	890	0	5	1015	102
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 60.2%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	19	0	54	0	0	0	37	815	4	5	934	94
Future Vol, veh/h	19	0	54	0	0	0	37	815	4	5	934	94
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	60	225	-	-	500	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	0	59	0	0	0	40	886	4	5	1015	102

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1993	1995	1015	2074	2095	888	1117	0	0	890	0	0
Stage 1	1025	1025	-	968	968	-	-	-	-	-	-	-
Stage 2	968	970	-	1106	1127	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	45	60	289	40	52	343	625	-	-	761	-	-
Stage 1	284	312	-	305	332	-	-	-	-	-	-	-
Stage 2	305	331	-	255	280	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	43	56	289	30	48	343	625	-	-	761	-	-
Mov Cap-2 Maneuver	43	56	-	30	48	-	-	-	-	-	-	-
Stage 1	266	310	-	285	311	-	-	-	-	-	-	-
Stage 2	285	310	-	202	278	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	85.8	0	0.5	0
HCM LOS	F	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	625	-	-	116	-	-	761	-	-
HCM Lane V/C Ratio	0.064	-	-	0.684	-	-	0.007	-	-
HCM Control Delay (s)	11.2	-	-	85.8	0	0	9.8	-	-
HCM Lane LOS	B	-	-	F	A	A	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	3.6	-	-	0	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	61	13	14	101	2	32	0	9	0	0	1
Future Volume (vph)	0	61	13	14	101	2	32	0	9	0	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	150		150	150		150	150		150
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.976			0.998			0.970			0.865	
Flt Protected					0.994			0.963				
Satd. Flow (prot)	0	1818	0	0	1848	0	0	1740	0	0	1611	0
Flt Permitted					0.994			0.963				
Satd. Flow (perm)	0	1818	0	0	1848	0	0	1740	0	0	1611	0
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		390			439			346			362	
Travel Time (s)		8.9			10.0			9.4			9.9	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	80	0	0	127	0	0	45	0	0	1	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 29.4%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	61	13	14	101	2	32	0	9	0	0	1
Future Vol, veh/h	0	61	13	14	101	2	32	0	9	0	0	1
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	66	14	15	110	2	35	0	10	0	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	117	0	0	85	0	0	225	225	83	229	231	121
Stage 1	-	-	-	-	-	-	78	78	-	146	146	-
Stage 2	-	-	-	-	-	-	147	147	-	83	85	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1471	-	-	1512	-	-	730	674	976	726	669	930
Stage 1	-	-	-	-	-	-	931	830	-	857	776	-
Stage 2	-	-	-	-	-	-	856	775	-	925	824	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1464	-	-	1505	-	-	716	660	967	706	655	921
Mov Cap-2 Maneuver	-	-	-	-	-	-	716	660	-	706	655	-
Stage 1	-	-	-	-	-	-	926	826	-	853	764	-
Stage 2	-	-	-	-	-	-	842	763	-	911	820	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.9	10	8.9
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	759	1464	-	-	1505	-	-	921
HCM Lane V/C Ratio	0.059	-	-	-	0.01	-	-	0.001
HCM Control Delay (s)	10	0	-	-	7.4	0	-	8.9
HCM Lane LOS	B	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	75	2	3	151	1	6	0	3	1	0	5
Future Volume (vph)	2	75	2	3	151	1	6	0	3	1	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	150		150	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.997			0.999			0.959			0.887	
Flt Protected		0.999			0.999			0.966			0.992	
Satd. Flow (prot)	0	1855	0	0	1859	0	0	1726	0	0	1639	0
Flt Permitted		0.999			0.999			0.966			0.992	
Satd. Flow (perm)	0	1855	0	0	1859	0	0	1726	0	0	1639	0
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		405			390			333			365	
Travel Time (s)		9.2			8.9			9.1			10.0	
Confl. Peds. (#/hr)	5		10	10		5	5		5	5		5
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	86	0	0	168	0	0	10	0	0	6	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 21.5%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	75	2	3	151	1	6	0	3	1	0	5
Future Vol, veh/h	2	75	2	3	151	1	6	0	3	1	0	5
Conflicting Peds, #/hr	5	0	10	10	0	5	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	82	2	3	164	1	7	0	3	1	0	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	170	0	0	94	0	0	275	273	98	270	274	175
Stage 1	-	-	-	-	-	-	97	97	-	176	176	-
Stage 2	-	-	-	-	-	-	178	176	-	94	98	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1407	-	-	1500	-	-	677	634	958	683	633	868
Stage 1	-	-	-	-	-	-	910	815	-	826	753	-
Stage 2	-	-	-	-	-	-	824	753	-	913	814	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1400	-	-	1486	-	-	661	623	944	673	622	860
Mov Cap-2 Maneuver	-	-	-	-	-	-	661	623	-	673	622	-
Stage 1	-	-	-	-	-	-	900	806	-	821	748	-
Stage 2	-	-	-	-	-	-	813	748	-	905	805	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.1	10	9.4
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	734	1400	-	-	1486	-	-	822
HCM Lane V/C Ratio	0.013	0.002	-	-	0.002	-	-	0.008
HCM Control Delay (s)	10	7.6	0	-	7.4	0	-	9.4
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0



Lane Group	WBU	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	1	53	73	1	164	60	21	113
Future Volume (vph)	1	53	73	1	164	60	21	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								
Frt		0.923			0.964			
Flt Protected		0.979						0.992
Satd. Flow (prot)	0	1683	0	0	1796	0	0	1848
Flt Permitted		0.979						0.992
Satd. Flow (perm)	0	1683	0	0	1796	0	0	1848
Link Speed (mph)		30			30			30
Link Distance (ft)		405			350			1210
Travel Time (s)		9.2			8.0			27.5
Confl. Peds. (#/hr)	70	1	132	1		70	70	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	138	0	0	244	0	0	146
Sign Control		Stop			Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 42.0%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	4.1

Movement	WBU	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations								
Traffic Vol, veh/h	1	53	73	1	164	60	21	113
Future Vol, veh/h	1	53	73	1	164	60	21	113
Conflicting Peds, #/hr	70	1	132	1	0	70	70	0
Sign Control	Stop	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	None
Storage Length	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0
Grade, %	-	0	-	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2
Mvmt Flow	1	58	79	1	178	65	23	123

Major/Minor	Minor1			Major1			Major2	
Conflicting Flow All	0	451	413	-	0	0	313	0
Stage 1	0	281	-	-	-	-	-	-
Stage 2	0	170	-	-	-	-	-	-
Critical Hdwy	-	6.42	6.22	-	-	-	4.12	-
Critical Hdwy Stg 1	-	5.42	-	-	-	-	-	-
Critical Hdwy Stg 2	-	5.42	-	-	-	-	-	-
Follow-up Hdwy	-	3.518	3.318	-	-	-	2.218	-
Pot Cap-1 Maneuver	0	566	639	-	-	-	1247	-
Stage 1	0	767	-	-	-	-	-	-
Stage 2	0	860	-	-	-	-	-	-
Platoon blocked, %	-				-	-		-
Mov Cap-1 Maneuver	0	516	521	-	-	-	1164	-
Mov Cap-2 Maneuver	0	516	-	-	-	-	-	-
Stage 1	0	700	-	-	-	-	-	-
Stage 2	0	859	-	-	-	-	-	-

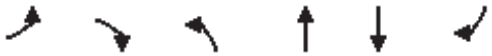
Approach	WB	NB	SB
HCM Control Delay, s	14.4		1.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	519	1164	-
HCM Lane V/C Ratio	-	-	0.264	0.02	-
HCM Control Delay (s)	-	-	14.4	8.2	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	1.1	0.1	-



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	6	0	0	3	0	0
Future Volume (vph)	6	0	0	3	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt				0.865		
Flt Protected	0.950					
Satd. Flow (prot)	1770	0	0	1611	0	0
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	0	1611	0	0
Link Speed (mph)	25		25			25
Link Distance (ft)	380		365			210
Travel Time (s)	10.4		10.0			5.7
Confl. Peds. (#/hr)	5	132		70	70	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	7	0	0	3	0	0
Sign Control	Free		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 16.5%		ICU Level of Service A	
Analysis Period (min) 15			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	7	12	7	787	946	2
Future Volume (vph)	7	12	7	787	946	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95
Frt	0.916					
Flt Protected	0.981					
Satd. Flow (prot)	1674	0	0	1863	3539	0
Flt Permitted	0.981					
Satd. Flow (perm)	1674	0	0	1863	3539	0
Link Speed (mph)	30			45	45	
Link Distance (ft)	317			359	430	
Travel Time (s)	7.2			5.4	6.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	21	0	0	863	1030	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 57.0%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	7	12	7	787	946	2
Future Vol, veh/h	7	12	7	787	946	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	13	8	855	1028	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1900	515	1030	0	-	0
Stage 1	1029	-	-	-	-	-
Stage 2	871	-	-	-	-	-
Critical Hdwy	6.63	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	68	506	672	-	-	-
Stage 1	307	-	-	-	-	-
Stage 2	408	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	66	506	672	-	-	-
Mov Cap-2 Maneuver	66	-	-	-	-	-
Stage 1	300	-	-	-	-	-
Stage 2	408	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	33.7	0.1	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	672	-	146	-	-
HCM Lane V/C Ratio	0.011	-	0.141	-	-
HCM Control Delay (s)	10.4	0	33.7	-	-
HCM Lane LOS	B	A	D	-	-
HCM 95th %tile Q(veh)	0	-	0.5	-	-

Lane Group	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Volume (vph)	1302	106	21	69	1030	98	189
Future Volume (vph)	1302	106	21	69	1030	98	189
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		120		225		0	115
Storage Lanes		1		1		1	1
Taper Length (ft)				25		0	
Lane Util. Factor	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Ped Bike Factor		0.97				0.99	0.94
Frt		0.850					0.850
Flt Protected				0.950		0.950	
Satd. Flow (prot)	3539	1583	0	1770	3539	1770	1583
Flt Permitted				0.138		0.950	
Satd. Flow (perm)	3539	1531	0	257	3539	1759	1484
Right Turn on Red		Yes					Yes
Satd. Flow (RTOR)		83					128
Link Speed (mph)	35				35	30	
Link Distance (ft)	636				400	1210	
Travel Time (s)	12.4				7.8	27.5	
Confl. Peds. (#/hr)		5		5		5	43
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)							
Lane Group Flow (vph)	1415	115	0	98	1120	107	205
Turn Type	NA	Perm	custom	pm+pt	NA	Perm	Perm
Protected Phases	2			1	6		
Permitted Phases		2	1	6		8	8
Detector Phase	2	2	1	1	6	8	8
Switch Phase							
Minimum Initial (s)	35.0	35.0	5.0	5.0	35.0	5.0	5.0
Minimum Split (s)	41.0	41.0	11.0	11.0	41.0	35.0	35.0
Total Split (s)	85.0	85.0	14.0	14.0	99.0	21.0	21.0
Total Split (%)	70.8%	70.8%	11.7%	11.7%	82.5%	17.5%	17.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0	-1.0	0.0
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	5.0
Lead/Lag	Lag	Lag	Lead	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			
Recall Mode	C-Max	C-Max	None	None	C-Max	None	None
Act Effct Green (s)	85.7	85.7		98.5	98.5	13.5	12.5
Actuated g/C Ratio	0.71	0.71		0.82	0.82	0.11	0.10
v/c Ratio	0.56	0.10		0.31	0.39	0.54	0.76
Control Delay	9.7	2.4		8.4	6.1	59.9	38.7
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay	9.7	2.4		8.4	6.1	59.9	38.7
LOS	A	A		A	A	E	D
Approach Delay	9.2				6.3	46.0	
Approach LOS	A				A	D	
Queue Length 50th (ft)	243	6		24	142	79	57

Lane Group	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Queue Length 95th (ft)	344	27		m42	m195	135	141
Internal Link Dist (ft)	556				320	1130	
Turn Bay Length (ft)		120		225			115
Base Capacity (vph)	2527	1117		337	2904	249	308
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	0.56	0.10		0.29	0.39	0.43	0.67

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 22 (18%), Referenced to phase 2:EBT and 6:WBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay: 11.8		Intersection LOS: B	
Intersection Capacity Utilization 74.5%		ICU Level of Service D	
Analysis Period (min) 15			

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Main Street & S Boulder Road





Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	0	1438	53	4	16	1116	5	0	0	50	0	0
Future Volume (vph)	0	1438	53	4	16	1116	5	0	0	50	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		50		70		0	0		0	0	
Storage Lanes	0		1		1		0	0		1	0	
Taper Length (ft)	25				75			25			25	
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.850			0.999				0.865		
Flt Protected					0.950							
Satd. Flow (prot)	0	3539	1583	0	1770	3536	0	0	0	1611	0	0
Flt Permitted					0.950							
Satd. Flow (perm)	0	3539	1583	0	1770	3536	0	0	0	1611	0	0
Link Speed (mph)		35				35			20			20
Link Distance (ft)		400				360			338			476
Travel Time (s)		7.8				7.0			11.5			16.2
Confl. Peds. (#/hr)	10		10	5	10		10	5		5	5	
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1563	58	0	21	1218	0	0	0	54	0	0
Sign Control		Free				Free			Stop			Stop

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 51.5%		ICU Level of Service A	
Analysis Period (min) 15			



Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	5
Future Volume (vph)	5
Ideal Flow (vphpl)	1900
Storage Length (ft)	0
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Ped Bike Factor	
Frt	0.865
Flt Protected	
Satd. Flow (prot)	1611
Flt Permitted	
Satd. Flow (perm)	1611
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	5
Peak Hour Factor	0.92
Shared Lane Traffic (%)	
Lane Group Flow (vph)	5
Sign Control	

Intersection Summary

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	0	1438	53	4	16	1116	5	0	0	50	0	0	5
Future Vol, veh/h	0	1438	53	4	16	1116	5	0	0	50	0	0	5
Conflicting Peds, #/hr	10	0	10	5	10	0	10	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	-	70	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1563	58	4	17	1213	5	0	0	54	0	0	5

Major/Minor	Major1			Major2			Minor1			Minor2			
Conflicting Flow All	-	0	0	1563	1631	0	0	-	-	797	-	-	624
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	6.44	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	2.52	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	143	394	-	-	0	0	329	0	0	428
Stage 1	0	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	0	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-			-	-						
Mov Cap-1 Maneuver	-	-	-	270	270	-	-	-	-	324	-	-	422
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.3	18.3	13.6
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	324	-	-	270	-	-	422
HCM Lane V/C Ratio	0.168	-	-	0.081	-	-	0.013
HCM Control Delay (s)	18.3	-	-	19.5	-	-	13.6
HCM Lane LOS	C	-	-	C	-	-	B
HCM 95th %tile Q(veh)	0.6	-	-	0.3	-	-	0



Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	23	48	1472	45	2	40	1126	12	0	0	65	0
Future Volume (vph)	23	48	1472	45	2	40	1126	12	0	0	65	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		90		0		80		0	0		0	0
Storage Lanes		1		0		1		0	0		1	0
Taper Length (ft)		75				80			25			25
Lane Util. Factor	0.95	1.00	0.95	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.996				0.998				0.865	
Flt Protected		0.950				0.950						
Satd. Flow (prot)	0	1770	3525	0	0	1770	3532	0	0	0	1611	0
Flt Permitted		0.950				0.950						
Satd. Flow (perm)	0	1770	3525	0	0	1770	3532	0	0	0	1611	0
Link Speed (mph)			35				35			20		
Link Distance (ft)			360				465			339		
Travel Time (s)			7.0				9.1			11.6		
Confl. Peds. (#/hr)	5	10		10	5	10		10	5		5	5
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	77	1649	0	0	45	1237	0	0	0	71	0
Sign Control			Free				Free			Stop		

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	61.4%	ICU Level of Service	B
Analysis Period (min)	15		

Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	0	66
Future Volume (vph)	0	66
Ideal Flow (vphpl)	1900	1900
Storage Length (ft)		0
Storage Lanes		1
Taper Length (ft)		
Lane Util. Factor	1.00	1.00
Ped Bike Factor		
Frt		0.865
Flt Protected		
Satd. Flow (prot)	0	1611
Flt Permitted		
Satd. Flow (perm)	0	1611
Link Speed (mph)	20	
Link Distance (ft)	431	
Travel Time (s)	14.7	
Confl. Peds. (#/hr)		5
Peak Hour Factor	0.92	0.92
Shared Lane Traffic (%)		
Lane Group Flow (vph)	0	72
Sign Control	Stop	

Intersection Summary

Intersection	
Int Delay, s/veh	1.5

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	23	48	1472	45	2	40	1126	12	0	0	65	0	0	66
Future Vol, veh/h	23	48	1472	45	2	40	1126	12	0	0	65	0	0	66
Conflicting Peds, #/hr	5	10	0	10	5	10	0	10	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	90	-	-	-	80	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	25	52	1600	49	2	43	1224	13	0	0	71	0	0	72

Major/Minor	Major1				Major2				Minor1			Minor2		
Conflicting Flow All	1237	1247	0	0	1649	1659	0	0	-	-	840	-	-	634
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	6.44	4.14	-	-	6.44	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.52	2.22	-	-	2.52	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	234	554	-	-	126	384	-	-	0	0	309	0	0	422
Stage 1	-	-	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %			-	-			-	-						
Mov Cap-1 Maneuver	348	348	-	-	335	335	-	-	-	-	305	-	-	416
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0.6	20.3	15.4
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	305	348	-	-	335	-	-	416
HCM Lane V/C Ratio	0.232	0.222	-	-	0.136	-	-	0.172
HCM Control Delay (s)	20.3	18.3	-	-	17.4	-	-	15.4
HCM Lane LOS	C	C	-	-	C	-	-	C
HCM 95th %tile Q(veh)	0.9	0.8	-	-	0.5	-	-	0.6

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
Lane Configurations												
Traffic Volume (vph)	29	591	751	193	355	652	202	1	132	709	255	9
Future Volume (vph)	29	591	751	193	355	652	202	1	132	709	255	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		150		0	225		270		0		0	
Storage Lanes		2		0	2		1		2		0	
Taper Length (ft)		80			135				70			
Lane Util. Factor	0.95	0.97	0.95	0.95	0.97	0.95	1.00	0.95	0.97	0.95	0.95	0.95
Ped Bike Factor			1.00				0.98			1.00		
Frt			0.969				0.850			0.960		
Flt Protected		0.950			0.950				0.950			
Satd. Flow (prot)	0	3433	3417	0	3433	3539	1583	0	3433	3382	0	0
Flt Permitted		0.382			0.950				0.308			
Satd. Flow (perm)	0	1380	3417	0	3433	3539	1546	0	1113	3382	0	0
Right Turn on Red				Yes			Yes				Yes	
Satd. Flow (RTOR)			28				210			43		
Link Speed (mph)			35			35				45		
Link Distance (ft)			465			1815				418		
Travel Time (s)			9.1			35.4				6.3		
Confl. Peds. (#/hr)				5			10				5	
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	674	1026	0	386	709	220	0	144	1048	0	0
Turn Type	custom	Prot	NA		Prot	NA	Perm	custom	Prot	NA		custom
Protected Phases		5	2		1	6			3	8		
Permitted Phases	5						6	3				7
Detector Phase	5	5	2		1	6	6	3	3	8		7
Switch Phase												
Minimum Initial (s)	5.0	5.0	10.0		5.0	10.0	10.0	5.0	5.0	6.0		5.0
Minimum Split (s)	10.0	10.0	37.0		10.0	37.0	37.0	10.0	10.0	40.0		10.0
Total Split (s)	24.0	24.0	43.0		18.0	37.0	37.0	18.0	18.0	41.0		18.0
Total Split (%)	20.0%	20.0%	35.8%		15.0%	30.8%	30.8%	15.0%	15.0%	34.2%		15.0%
Yellow Time (s)	3.0	3.0	4.0		3.0	4.0	4.0	3.0	3.0	4.0		3.0
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0		2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0		0.0	0.0		
Total Lost Time (s)		5.0	6.0		5.0	6.0	6.0		5.0	6.0		
Lead/Lag	Lag	Lag	Lag		Lead	Lead	Lead	Lead	Lead	Lead		Lag
Lead-Lag Optimize?												
Recall Mode	None	None	C-Max		None	Max	Max	None	None	Max		None
Act Effct Green (s)		19.0	37.0		13.0	31.0	31.0		13.0	35.0		
Actuated g/C Ratio		0.16	0.31		0.11	0.26	0.26		0.11	0.29		
v/c Ratio		3.09	0.96		1.04	0.78	0.40		1.20	1.03		
Control Delay		969.9	52.9		109.4	48.1	7.8		191.3	76.8		
Queue Delay		0.0	0.0		0.0	0.0	0.0		0.0	0.0		
Total Delay		969.9	52.9		109.4	48.1	7.8		191.3	76.8		
LOS		F	D		F	D	A		F	E		
Approach Delay			416.5			59.3				90.6		
Approach LOS			F			E				F		
Queue Length 50th (ft)		~475	401		~165	268	6		~69	~444		



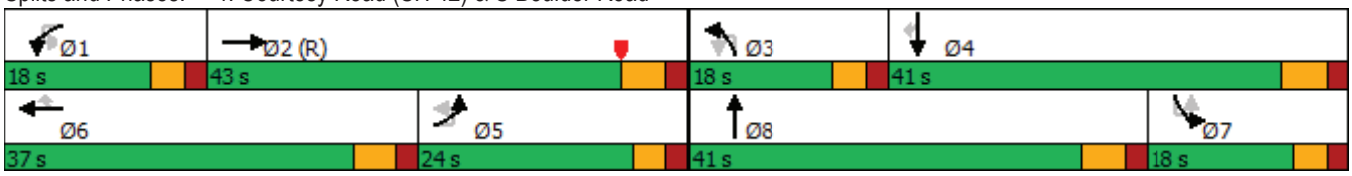
Lane Group	SBL	SBT	SBR
Lane Configurations			
Traffic Volume (vph)	139	546	333
Future Volume (vph)	139	546	333
Ideal Flow (vphpl)	1900	1900	1900
Storage Length (ft)	185		270
Storage Lanes	2		1
Taper Length (ft)	155		
Lane Util. Factor	0.97	0.95	1.00
Ped Bike Factor			0.98
Frt			0.850
Flt Protected	0.950		
Satd. Flow (prot)	3433	3539	1583
Flt Permitted	0.308		
Satd. Flow (perm)	1113	3539	1555
Right Turn on Red			Yes
Satd. Flow (RTOR)			321
Link Speed (mph)		45	
Link Distance (ft)		1337	
Travel Time (s)		20.3	
Confl. Peds. (#/hr)			5
Peak Hour Factor	0.92	0.92	0.92
Shared Lane Traffic (%)			
Lane Group Flow (vph)	161	593	362
Turn Type	Prot	NA	Perm
Protected Phases	7	4	
Permitted Phases			4
Detector Phase	7	4	4
Switch Phase			
Minimum Initial (s)	5.0	6.0	6.0
Minimum Split (s)	10.0	36.0	36.0
Total Split (s)	18.0	41.0	41.0
Total Split (%)	15.0%	34.2%	34.2%
Yellow Time (s)	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0
Lead/Lag	Lag	Lag	Lag
Lead-Lag Optimize?			
Recall Mode	None	Max	Max
Act Effct Green (s)	13.0	35.0	35.0
Actuated g/C Ratio	0.11	0.29	0.29
v/c Ratio	1.34	0.57	0.53
Control Delay	240.4	38.8	8.8
Queue Delay	0.0	0.0	0.0
Total Delay	240.4	38.8	8.8
LOS	F	D	A
Approach Delay		58.2	
Approach LOS		E	
Queue Length 50th (ft)	~83	205	23

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
Queue Length 95th (ft)		#597	#544		#267	341	68		#138	#581		
Internal Link Dist (ft)			385			1735				338		
Turn Bay Length (ft)		150			225		270					
Base Capacity (vph)		218	1072		371	914	555		120	1016		
Starvation Cap Reductn		0	0		0	0	0		0	0		
Spillback Cap Reductn		0	0		0	0	0		0	0		
Storage Cap Reductn		0	0		0	0	0		0	0		
Reduced v/c Ratio		3.09	0.96		1.04	0.78	0.40		1.20	1.03		

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow, Master Intersection			
Natural Cycle: 130			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 3.09			
Intersection Signal Delay: 180.2		Intersection LOS: F	
Intersection Capacity Utilization 94.4%		ICU Level of Service F	
Analysis Period (min) 15			

~ 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.

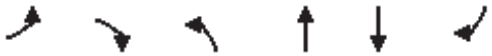
Splits and Phases: 4: Courtesy Road (SH 42) & S Boulder Road





Lane Group	SBL	SBT	SBR
Queue Length 95th (ft)	#156	266	107
Internal Link Dist (ft)		1257	
Turn Bay Length (ft)	185		270
Base Capacity (vph)	120	1032	680
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	1.34	0.57	0.53

Intersection Summary



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1	19	26	1112	1071	19
Future Volume (vph)	1	19	26	1112	1071	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	140			0
Storage Lanes	0	1	1			0
Taper Length (ft)	25		100			
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor						
Frt		0.865			0.997	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	0	1611	1770	1863	3529	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	0	1611	1770	1863	3529	0
Link Speed (mph)	20			45	45	
Link Distance (ft)	418			424	418	
Travel Time (s)	14.3			6.4	6.3	
Confl. Peds. (#/hr)			5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1	21	28	1209	1185	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization Err%		ICU Level of Service H	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	19	26	1112	1071	19
Future Vol, veh/h	1	19	26	1112	1071	19
Conflicting Peds, #/hr	0	0	5	0	0	5
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	140	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	21	28	1209	1164	21

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2445	598	1190	0	-	0
Stage 1	1180	-	-	-	-	-
Stage 2	1265	-	-	-	-	-
Critical Hdwy	6.63	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	30	446	585	-	-	-
Stage 1	255	-	-	-	-	-
Stage 2	264	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	28	444	582	-	-	-
Mov Cap-2 Maneuver	28	-	-	-	-	-
Stage 1	241	-	-	-	-	-
Stage 2	263	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.5	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	582	-	444	-	-
HCM Lane V/C Ratio	0.049	-	0.047	-	-
HCM Control Delay (s)	11.5	-	13.5	-	-
HCM Lane LOS	B	-	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.1	-	-

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	2	11	0	39	1	1	1	19	1107	2	1	1009
Future Volume (vph)	2	11	0	39	1	1	1	19	1107	2	1	1009
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0		0	0		60	225		0	500	
Storage Lanes		0		0	0		1	1		0	1	
Taper Length (ft)		0			0			25			50	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.899				0.850					
Flt Protected			0.988			0.976		0.950			0.950	
Satd. Flow (prot)	0	0	1655	0	0	1818	1583	1770	1863	0	1770	1863
Flt Permitted			0.988			0.976		0.950			0.950	
Satd. Flow (perm)	0	0	1655	0	0	1818	1583	1770	1863	0	1770	1863
Link Speed (mph)			30			20			45			45
Link Distance (ft)			439			281			380			365
Travel Time (s)			10.0			9.6			5.8			5.5
Confl. Bikes (#/hr)												
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	56	0	0	2	1	21	1205	0	1	1097
Sign Control			Stop			Stop			Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	75.1%	ICU Level of Service	D
Analysis Period (min)	15		



Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	133
Future Volume (vph)	133
Ideal Flow (vphpl)	1900
Storage Length (ft)	0
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Ped Bike Factor	
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1583
Flt Permitted	
Satd. Flow (perm)	1583
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Bikes (#/hr)	5
Peak Hour Factor	0.92
Shared Lane Traffic (%)	
Lane Group Flow (vph)	145
Sign Control	

Intersection Summary

Intersection	
Int Delay, s/veh	2.9

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	2	11	0	39	1	1	1	19	1107	2	1	1009	133
Future Vol, veh/h	2	11	0	39	1	1	1	19	1107	2	1	1009	133
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	60	225	-	-	500	-	0
Veh in Median Storage, #	-	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	12	0	42	1	1	1	21	1203	2	1	1097	145

Major/Minor	Minor2			Minor1			Major1			Major2			
Conflicting Flow All	0	2346	2346	1097	2439	2490	1204	1242	0	0	1205	0	0
Stage 1	0	1099	1099	-	1246	1246	-	-	-	-	-	-	-
Stage 2	0	1247	1247	-	1193	1244	-	-	-	-	-	-	-
Critical Hdwy	-	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	-	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	-	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	0	25	36	259	22	29	224	561	-	-	579	-	-
Stage 1	0	258	288	-	213	246	-	-	-	-	-	-	-
Stage 2	0	213	245	-	228	246	-	-	-	-	-	-	-
Platoon blocked, %	-								-	-		-	-
Mov Cap-1 Maneuver	0	23	35	259	18	28	224	561	-	-	579	-	-
Mov Cap-2 Maneuver	0	23	35	-	18	28	-	-	-	-	-	-	-
Stage 1	0	248	287	-	205	237	-	-	-	-	-	-	-
Stage 2	0	203	236	-	190	246	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	115.6	130.9	0.2	0
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	561	-	-	80	22	224	579	-	-
HCM Lane V/C Ratio	0.037	-	-	0.679	0.099	0.005	0.002	-	-
HCM Control Delay (s)	11.7	-	-	115.6	185.8	21.2	11.2	-	-
HCM Lane LOS	B	-	-	F	F	C	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-	3.2	0.3	0	0	-	-

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	2	36	26	1	27	129	1	28	1	5	0	2
Future Volume (vph)	2	36	26	1	27	129	1	28	1	5	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150		150		150	150		150	150	
Storage Lanes	0		0		0		0	0		0	0	
Taper Length (ft)	25				25			25			25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.945				0.999			0.981			
Flt Protected		0.999				0.991			0.960			
Satd. Flow (prot)	0	1759	0	0	0	1844	0	0	1754	0	0	1863
Flt Permitted		0.999				0.991			0.960			
Satd. Flow (perm)	0	1759	0	0	0	1844	0	0	1754	0	0	1863
Link Speed (mph)		30				30			25			25
Link Distance (ft)		390				439			346			362
Travel Time (s)		8.9				10.0			9.4			9.9
Confl. Peds. (#/hr)	5		5		5		5	5		5	5	
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	69	0	0	0	171	0	0	36	0	0	2
Sign Control		Free				Free			Stop			Stop

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 31.1%		ICU Level of Service A	
Analysis Period (min) 15			



Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	0
Future Volume (vph)	0
Ideal Flow (vphpl)	1900
Storage Length (ft)	150
Storage Lanes	0
Taper Length (ft)	
Lane Util. Factor	1.00
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	5
Peak Hour Factor	0.92
Shared Lane Traffic (%)	
Lane Group Flow (vph)	0
Sign Control	

Intersection Summary

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕				↕			↕			↕	
Traffic Vol, veh/h	2	36	26	1	27	129	1	28	1	5	0	2	0
Future Vol, veh/h	2	36	26	1	27	129	1	28	1	5	0	2	0
Conflicting Peds, #/hr	5	0	5	0	5	0	5	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	39	28	1	29	140	1	30	1	5	0	2	0

Major/Minor	Major1			Major2				Minor1			Minor2		
Conflicting Flow All	146	0	0	-	72	0	0	267	268	63	269	282	151
Stage 1	-	-	-	-	-	-	-	62	62	-	204	206	-
Stage 2	-	-	-	-	-	-	-	205	206	-	65	76	-
Critical Hdwy	4.12	-	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1436	-	-	-	1528	-	-	686	638	1002	684	627	895
Stage 1	-	-	-	-	-	-	-	949	843	-	798	731	-
Stage 2	-	-	-	-	-	-	-	797	731	-	946	832	-
Platoon blocked, %		-	-			-	-						
Mov Cap-1 Maneuver	1429	-	-	~ -29	~ -29	-	-	677	631	992	672	620	886
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	677	631	-	672	620	-
Stage 1	-	-	-	-	-	-	-	943	838	-	793	727	-
Stage 2	-	-	-	-	-	-	-	791	727	-	934	827	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2		10.4	10.8
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	709	1429	-	-	+	-	-	620
HCM Lane V/C Ratio	0.052	0.002	-	-	-	-	-	0.004
HCM Control Delay (s)	10.4	7.5	0	-	-	-	-	10.8
HCM Lane LOS	B	A	A	-	-	-	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	-	-	-	0

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	4	70	6	5	165	0	2	0	1	3	0	0
Future Volume (vph)	4	70	6	5	165	0	2	0	1	3	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	150		150	0		0		0	
Storage Lanes	0		0	0		0	0		0		0	
Taper Length (ft)	25			25			25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.989						0.955				0.932
Flt Protected		0.998			0.999			0.968				0.976
Satd. Flow (prot)	0	1839	0	0	1861	0	0	1722	0	0	0	1694
Flt Permitted		0.998			0.999			0.968				0.976
Satd. Flow (perm)	0	1839	0	0	1861	0	0	1722	0	0	0	1694
Link Speed (mph)		30			30			25				25
Link Distance (ft)		405			390			333				365
Travel Time (s)		9.2			8.9			9.1				10.0
Confl. Peds. (#/hr)	5		10	10		5	5		5		5	
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	87	0	0	184	0	0	3	0	0	0	6
Sign Control		Free			Free			Stop				Stop

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 22.3%		ICU Level of Service A	
Analysis Period (min) 15			



Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	3
Future Volume (vph)	3
Ideal Flow (vphpl)	1900
Storage Length (ft)	0
Storage Lanes	0
Taper Length (ft)	
Lane Util. Factor	1.00
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	5
Peak Hour Factor	0.92
Shared Lane Traffic (%)	
Lane Group Flow (vph)	0
Sign Control	

Intersection Summary

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations		↕			↕			↕				↕	
Traffic Vol, veh/h	4	70	6	5	165	0	2	0	1	3	0	0	3
Future Vol, veh/h	4	70	6	5	165	0	2	0	1	3	0	0	3
Conflicting Peds, #/hr	5	0	10	10	0	5	5	0	5	0	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	76	7	5	179	0	2	0	1	3	0	0	3

Major/Minor	Major1			Major2			Minor1			Minor2			
Conflicting Flow All	184	0	0	93	0	0	294	292	95	0	287	295	189
Stage 1	-	-	-	-	-	-	98	98	-	0	194	194	-
Stage 2	-	-	-	-	-	-	196	194	-	0	93	101	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1391	-	-	1501	-	-	658	619	962	0	665	616	853
Stage 1	-	-	-	-	-	-	908	814	-	0	808	740	-
Stage 2	-	-	-	-	-	-	806	740	-	0	914	811	-
Platoon blocked, %		-	-		-	-				-			
Mov Cap-1 Maneuver	1384	-	-	1487	-	-	643	605	948	0	654	602	845
Mov Cap-2 Maneuver	-	-	-	-	-	-	643	605	-	0	654	602	-
Stage 1	-	-	-	-	-	-	897	803	-	0	802	733	-
Stage 2	-	-	-	-	-	-	796	733	-	0	906	800	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.2	10	9.3
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	720	1384	-	-	1487	-	-	845
HCM Lane V/C Ratio	0.005	0.003	-	-	0.004	-	-	0.004
HCM Control Delay (s)	10	7.6	0	-	7.4	0	-	9.3
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0



Lane Group	WBL	WBR	NBT	NBR	SBU	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	90	57	233	39	1	39	144
Future Volume (vph)	90	57	233	39	1	39	144
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor							
Frt	0.948		0.981				
Flt Protected	0.970						0.989
Satd. Flow (prot)	1713	0	1827	0	0	0	1842
Flt Permitted	0.970						0.989
Satd. Flow (perm)	1713	0	1827	0	0	0	1842
Link Speed (mph)	30		30				30
Link Distance (ft)	405		350				1210
Travel Time (s)	9.2		8.0				27.5
Confl. Peds. (#/hr)	2	10		7	10	7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)							
Lane Group Flow (vph)	160	0	295	0	0	0	200
Sign Control	Stop		Free				Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 44.7%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	3.3

Movement	WBL	WBR	NBT	NBR	SBU	SBL	SBT
Lane Configurations							
Traffic Vol, veh/h	90	57	233	39	1	39	144
Future Vol, veh/h	90	57	233	39	1	39	144
Conflicting Peds, #/hr	2	10	0	7	10	7	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	-	None
Storage Length	0	-	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	-	0
Grade, %	0	-	0	-	-	-	0
Peak Hour Factor	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	98	62	253	42	1	42	157

Major/Minor	Minor1		Major1		Major2		
Conflicting Flow All	524	291	0	0	-	302	0
Stage 1	281	-	-	-	-	-	-
Stage 2	243	-	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	-	2.218	-
Pot Cap-1 Maneuver	514	748	-	-	-	1259	-
Stage 1	767	-	-	-	-	-	-
Stage 2	797	-	-	-	-	-	-
Platoon blocked, %			-	-			-
Mov Cap-1 Maneuver	509	736	-	-	~ -41	~ -41	-
Mov Cap-2 Maneuver	509	-	-	-	-	-	-
Stage 1	762	-	-	-	-	-	-
Stage 2	795	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.6	0	
HCM LOS	B		

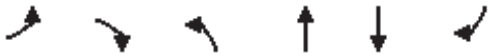
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	578	+	-
HCM Lane V/C Ratio	-	-	0.276	-	-
HCM Control Delay (s)	-	-	13.6	-	-
HCM Lane LOS	-	-	B	-	-
HCM 95th %tile Q(veh)	-	-	1.1	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	6	0	0	7	0	0
Future Volume (vph)	6	0	0	7	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt				0.865		
Flt Protected	0.950					
Satd. Flow (prot)	1770	0	0	1611	0	0
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	0	1611	0	0
Link Speed (mph)	25		25			25
Link Distance (ft)	380		365			210
Travel Time (s)	10.4		10.0			5.7
Confl. Peds. (#/hr)	5	132		70	70	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	7	0	0	8	0	0
Sign Control	Free		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 16.5%		ICU Level of Service A	
Analysis Period (min) 15			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	26	61	7	1049	996	8
Future Volume (vph)	26	61	7	1049	996	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95
Frt	0.905				0.999	
Flt Protected	0.985					
Satd. Flow (prot)	1660	0	0	1863	3536	0
Flt Permitted	0.985					
Satd. Flow (perm)	1660	0	0	1863	3536	0
Link Speed (mph)	30			45	45	
Link Distance (ft)	263			365	424	
Travel Time (s)	6.0			5.5	6.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	94	0	0	1148	1092	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 72.6%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	4.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	26	61	7	1049	996	8
Future Vol, veh/h	26	61	7	1049	996	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	28	66	8	1140	1083	9

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2244	546	1092	0	-	0
Stage 1	1088	-	-	-	-	-
Stage 2	1156	-	-	-	-	-
Critical Hdwy	6.63	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	41	483	637	-	-	-
Stage 1	285	-	-	-	-	-
Stage 2	299	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	40	483	637	-	-	-
Mov Cap-2 Maneuver	40	-	-	-	-	-
Stage 1	275	-	-	-	-	-
Stage 2	299	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	118	0.1	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	637	-	112	-	-
HCM Lane V/C Ratio	0.012	-	0.844	-	-
HCM Control Delay (s)	10.7	0	118	-	-
HCM Lane LOS	B	A	F	-	-
HCM 95th %tile Q(veh)	0	-	5	-	-

Lane Group	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Volume (vph)	852	94	26	67	805	68	106
Future Volume (vph)	852	94	26	67	805	68	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		120		225		0	115
Storage Lanes		1		1		1	1
Taper Length (ft)				25		0	
Lane Util. Factor	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Ped Bike Factor		0.97		1.00		0.99	0.95
Frt		0.850					0.850
Flt Protected				0.950		0.950	
Satd. Flow (prot)	3539	1583	0	1770	3539	1770	1583
Flt Permitted				0.263		0.950	
Satd. Flow (perm)	3539	1535	0	489	3539	1761	1504
Right Turn on Red		Yes					Yes
Satd. Flow (RTOR)		102					115
Link Speed (mph)	35				35	30	
Link Distance (ft)	636				400	1210	
Travel Time (s)	12.4				7.8	27.5	
Confl. Peds. (#/hr)		5		5		5	39
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)							
Lane Group Flow (vph)	926	102	0	101	875	74	115
Turn Type	NA	Perm	custom	pm+pt	NA	Perm	Perm
Protected Phases	2			1	6		
Permitted Phases		2	1	6		8	8
Detector Phase	2	2	1	1	6	8	8
Switch Phase							
Minimum Initial (s)	35.0	35.0	5.0	5.0	35.0	5.0	5.0
Minimum Split (s)	41.0	41.0	11.0	11.0	41.0	35.0	35.0
Total Split (s)	70.0	70.0	12.0	12.0	82.0	18.0	18.0
Total Split (%)	70.0%	70.0%	12.0%	12.0%	82.0%	18.0%	18.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0	-1.0	0.0
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	5.0
Lead/Lag	Lag	Lag	Lead	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			
Recall Mode	C-Max	C-Max	None	None	C-Max	None	None
Act Effct Green (s)	71.6	71.6		81.5	81.5	10.5	9.5
Actuated g/C Ratio	0.72	0.72		0.82	0.82	0.10	0.10
v/c Ratio	0.37	0.09		0.20	0.30	0.40	0.47
Control Delay	6.8	1.4		3.2	3.1	47.5	14.4
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay	6.8	1.4		3.2	3.1	47.5	14.4
LOS	A	A		A	A	D	B
Approach Delay	6.2				3.1	27.4	
Approach LOS	A				A	C	
Queue Length 50th (ft)	115	0		13	68	45	0

Lane Group	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Queue Length 95th (ft)	163	16		m22	m90	87	50
Internal Link Dist (ft)	556				320	1130	
Turn Bay Length (ft)		120		225			115
Base Capacity (vph)	2532	1127		505	2885	246	295
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	0.37	0.09		0.20	0.30	0.30	0.39

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 59 (59%), Referenced to phase 2:EBT and 6:WBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.47			
Intersection Signal Delay: 6.7		Intersection LOS: A	
Intersection Capacity Utilization 66.0%		ICU Level of Service C	
Analysis Period (min) 15			

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Main Street & S Boulder Road



Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	0	952	28	3	11	924	4	0	0	34	0	0
Future Volume (vph)	0	952	28	3	11	924	4	0	0	34	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		50		70		0	0		0	0	
Storage Lanes	0		1		1		0	0		1	0	
Taper Length (ft)	25				75			25			25	
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.850			0.999				0.865		
Flt Protected					0.950							
Satd. Flow (prot)	0	3539	1583	0	1770	3536	0	0	0	1611	0	0
Flt Permitted					0.950							
Satd. Flow (perm)	0	3539	1583	0	1770	3536	0	0	0	1611	0	0
Link Speed (mph)		35				35			20			20
Link Distance (ft)		400				360			338			476
Travel Time (s)		7.8				7.0			11.5			16.2
Confl. Peds. (#/hr)	10		10	5	10		10	5		5	5	
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1035	30	0	15	1008	0	0	0	37	0	0
Sign Control		Free				Free			Stop			Stop

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 37.9%		ICU Level of Service A	
Analysis Period (min) 15			



Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	1
Future Volume (vph)	1
Ideal Flow (vphpl)	1900
Storage Length (ft)	0
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Ped Bike Factor	
Frt	0.865
Flt Protected	
Satd. Flow (prot)	1611
Flt Permitted	
Satd. Flow (perm)	1611
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	5
Peak Hour Factor	0.92
Shared Lane Traffic (%)	
Lane Group Flow (vph)	1
Sign Control	

Intersection Summary

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	0	952	28	3	11	924	4	0	0	34	0	0	1
Future Vol, veh/h	0	952	28	3	11	924	4	0	0	34	0	0	1
Conflicting Peds, #/hr	10	0	10	5	10	0	10	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	-	70	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1035	30	3	12	1004	4	0	0	37	0	0	1

Major/Minor	Major1			Major2			Minor1			Minor2			
Conflicting Flow All	-	0	0	1035	1075	0	0	-	-	533	-	-	519
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	6.44	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	2.52	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	315	644	-	-	0	0	491	0	0	502
Stage 1	0	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	0	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-			-	-						
Mov Cap-1 Maneuver	-	-	-	509	509	-	-	-	-	484	-	-	495
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.2	13.1	12.3
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	484	-	-	509	-	-	495
HCM Lane V/C Ratio	0.076	-	-	0.03	-	-	0.002
HCM Control Delay (s)	13.1	-	-	12.3	-	-	12.3
HCM Lane LOS	B	-	-	B	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-	-	0

Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	15	28	914	26	1	44	850	12	0	0	48	0
Future Volume (vph)	15	28	914	26	1	44	850	12	0	0	48	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		90		0		80		0	0		0	0
Storage Lanes		1		0		1		0	0		1	0
Taper Length (ft)		75				80			25			25
Lane Util. Factor	0.95	1.00	0.95	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.996				0.998				0.865	
Flt Protected		0.950				0.950						
Satd. Flow (prot)	0	1770	3525	0	0	1770	3532	0	0	0	1611	0
Flt Permitted		0.950				0.950						
Satd. Flow (perm)	0	1770	3525	0	0	1770	3532	0	0	0	1611	0
Link Speed (mph)			35				35			20		
Link Distance (ft)			360				465			339		
Travel Time (s)			7.0				9.1			11.6		
Confl. Peds. (#/hr)	5	10		10	5	10		10	5		5	5
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	46	1021	0	0	49	937	0	0	0	52	0
Sign Control			Free				Free			Stop		

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	44.5%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	0	82
Future Volume (vph)	0	82
Ideal Flow (vphpl)	1900	1900
Storage Length (ft)		0
Storage Lanes		1
Taper Length (ft)		
Lane Util. Factor	1.00	1.00
Ped Bike Factor		
Frt		0.865
Flt Protected		
Satd. Flow (prot)	0	1611
Flt Permitted		
Satd. Flow (perm)	0	1611
Link Speed (mph)	20	
Link Distance (ft)	431	
Travel Time (s)	14.7	
Confl. Peds. (#/hr)		5
Peak Hour Factor	0.92	0.92
Shared Lane Traffic (%)		
Lane Group Flow (vph)	0	89
Sign Control	Stop	

Intersection Summary

Intersection	
Int Delay, s/veh	1.4

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	15	28	914	26	1	44	850	12	0	0	48	0	0	82
Future Vol, veh/h	15	28	914	26	1	44	850	12	0	0	48	0	0	82
Conflicting Peds, #/hr	5	10	0	10	5	10	0	10	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	90	-	-	-	80	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	30	993	28	1	48	924	13	0	0	52	0	0	89

Major/Minor	Major1				Major2				Minor1			Minor2		
Conflicting Flow All	937	947	0	0	1022	1031	0	0	-	-	526	-	-	484
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	6.44	4.14	-	-	6.44	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.52	2.22	-	-	2.52	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	364	721	-	-	321	670	-	-	0	0	496	0	0	529
Stage 1	-	-	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %			-	-			-	-						
Mov Cap-1 Maneuver	488	488	-	-	645	645	-	-	-	-	489	-	-	521
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.5	13.2	13.3
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	489	488	-	-	645	-	-	521
HCM Lane V/C Ratio	0.107	0.096	-	-	0.076	-	-	0.171
HCM Control Delay (s)	13.2	13.2	-	-	11	-	-	13.3
HCM Lane LOS	B	B	-	-	B	-	-	B
HCM 95th %tile Q(veh)	0.4	0.3	-	-	0.2	-	-	0.6

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
Lane Configurations												
Traffic Volume (vph)	29	397	473	118	252	533	135	2	160	363	199	5
Future Volume (vph)	29	397	473	118	252	533	135	2	160	363	199	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		150		0	225		270		0		0	
Storage Lanes		2		0	2		1		2		0	
Taper Length (ft)		80			135				70			
Lane Util. Factor	0.95	0.97	0.95	0.95	0.97	0.95	1.00	0.95	0.97	0.95	0.95	0.95
Ped Bike Factor			1.00				0.98			0.99		
Frt			0.970				0.850			0.947		
Flt Protected		0.950			0.950				0.950			
Satd. Flow (prot)	0	3433	3422	0	3433	3539	1583	0	3433	3332	0	0
Flt Permitted		0.434			0.950				0.571			
Satd. Flow (perm)	0	1568	3422	0	3433	3539	1549	0	2063	3332	0	0
Right Turn on Red				Yes			Yes				Yes	
Satd. Flow (RTOR)			32				218			105		
Link Speed (mph)			35			35				45		
Link Distance (ft)			465			1815				418		
Travel Time (s)			9.1			35.4				6.3		
Confl. Peds. (#/hr)				5			10				5	
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	464	642	0	274	579	147	0	176	611	0	0
Turn Type	custom	Prot	NA		Prot	NA	Perm	custom	Prot	NA		custom
Protected Phases		5	2		1	6			3	8		
Permitted Phases	5						6	3				7
Detector Phase	5	5	2		1	6	6	3	3	8		7
Switch Phase												
Minimum Initial (s)	5.0	5.0	10.0		5.0	10.0	10.0	5.0	5.0	6.0		5.0
Minimum Split (s)	10.0	10.0	37.0		10.0	37.0	37.0	10.0	10.0	40.0		10.0
Total Split (s)	18.0	18.0	38.0		14.0	34.0	34.0	12.0	12.0	36.0		12.0
Total Split (%)	18.0%	18.0%	38.0%		14.0%	34.0%	34.0%	12.0%	12.0%	36.0%		12.0%
Yellow Time (s)	3.0	3.0	4.0		3.0	4.0	4.0	3.0	3.0	4.0		3.0
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0		2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0		0.0	0.0		
Total Lost Time (s)		5.0	6.0		5.0	6.0	6.0		5.0	6.0		
Lead/Lag	Lag	Lag	Lag		Lead	Lead	Lead	Lead	Lead	Lead		Lag
Lead-Lag Optimize?												
Recall Mode	None	None	C-Max		None	Max	Max	None	None	Max		None
Act Effct Green (s)		13.0	32.0		9.0	28.0	28.0		7.0	30.0		
Actuated g/C Ratio		0.13	0.32		0.09	0.28	0.28		0.07	0.30		
v/c Ratio		2.29	0.58		0.89	0.58	0.25		1.22	0.57		
Control Delay		615.7	25.8		75.6	33.8	1.8		187.7	26.6		
Queue Delay		0.0	0.0		0.0	0.0	0.0		0.0	0.0		
Total Delay		615.7	25.8		75.6	33.8	1.8		187.7	26.6		
LOS		F	C		E	C	A		F	C		
Approach Delay			273.3			40.6				62.6		
Approach LOS			F			D				E		
Queue Length 50th (ft)		~253	121		90	166	0		~71	142		



Lane Group	SBL	SBT	SBR
Lane Configurations			
Traffic Volume (vph)	110	397	268
Future Volume (vph)	110	397	268
Ideal Flow (vphpl)	1900	1900	1900
Storage Length (ft)	185		270
Storage Lanes	2		1
Taper Length (ft)	155		
Lane Util. Factor	0.97	0.95	1.00
Ped Bike Factor			0.98
Frt			0.850
Flt Protected	0.950		
Satd. Flow (prot)	3433	3539	1583
Flt Permitted	0.571		
Satd. Flow (perm)	2063	3539	1557
Right Turn on Red			Yes
Satd. Flow (RTOR)			268
Link Speed (mph)		45	
Link Distance (ft)		1337	
Travel Time (s)		20.3	
Confl. Peds. (#/hr)			5
Peak Hour Factor	0.92	0.92	0.92
Shared Lane Traffic (%)			
Lane Group Flow (vph)	125	432	291
Turn Type	Prot	NA	Perm
Protected Phases	7	4	
Permitted Phases			4
Detector Phase	7	4	4
Switch Phase			
Minimum Initial (s)	5.0	6.0	6.0
Minimum Split (s)	10.0	36.0	36.0
Total Split (s)	12.0	36.0	36.0
Total Split (%)	12.0%	36.0%	36.0%
Yellow Time (s)	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0
Lead/Lag	Lag	Lag	Lag
Lead-Lag Optimize?			
Recall Mode	None	Max	Max
Act Effct Green (s)	7.0	30.0	30.0
Actuated g/C Ratio	0.07	0.30	0.30
v/c Ratio	0.87	0.41	0.44
Control Delay	94.1	29.3	6.9
Queue Delay	0.0	0.0	0.0
Total Delay	94.1	29.3	6.9
LOS	F	C	A
Approach Delay		31.2	
Approach LOS		C	
Queue Length 50th (ft)	41	115	10

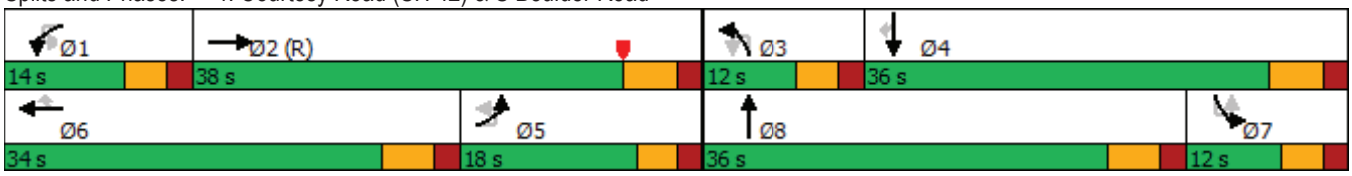
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
Queue Length 95th (ft)		#346	158		#163	223	10		#140	199		
Internal Link Dist (ft)			385			1735				338		
Turn Bay Length (ft)		150			225		270					
Base Capacity (vph)		203	1116		308	990	590		144	1073		
Starvation Cap Reductn		0	0		0	0	0		0	0		
Spillback Cap Reductn		0	0		0	0	0		0	0		
Storage Cap Reductn		0	0		0	0	0		0	0		
Reduced v/c Ratio		2.29	0.58		0.89	0.58	0.25		1.22	0.57		

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow, Master Intersection			
Natural Cycle: 120			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 2.29			
Intersection Signal Delay: 111.9		Intersection LOS: F	
Intersection Capacity Utilization 88.8%		ICU Level of Service E	
Analysis Period (min) 15			

~ 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.

Splits and Phases: 4: Courtesy Road (SH 42) & S Boulder Road





Lane Group	SBL	SBT	SBR
Queue Length 95th (ft)	#96	160	73
Internal Link Dist (ft)		1257	
Turn Bay Length (ft)	185		270
Base Capacity (vph)	144	1061	654
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.87	0.41	0.44

Intersection Summary



Lane Group	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	8	10	1	11	717	750	15
Future Volume (vph)	8	10	1	11	717	750	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		140			0
Storage Lanes	0	1		1			0
Taper Length (ft)	25			100			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor							
Frt		0.865				0.997	
Flt Protected	0.950			0.950			
Satd. Flow (prot)	0	1611	0	1770	1863	3529	0
Flt Permitted	0.950			0.950			
Satd. Flow (perm)	0	1611	0	1770	1863	3529	0
Link Speed (mph)	20				45	45	
Link Distance (ft)	418				420	418	
Travel Time (s)	14.3				6.4	6.3	
Confl. Peds. (#/hr)				5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)							
Lane Group Flow (vph)	9	11	0	13	779	831	0
Sign Control	Stop				Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Vol, veh/h	8	10	1	11	717	750	15
Future Vol, veh/h	8	10	1	11	717	750	15
Conflicting Peds, #/hr	0	0	0	5	0	0	5
Sign Control	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	None	-	-	None	-	None
Storage Length	-	0	-	140	-	-	-
Veh in Median Storage, #	0	-	-	-	0	0	-
Grade, %	0	-	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	9	11	1	12	779	815	16

Major/Minor	Minor2		Major1			Major2	
Conflicting Flow All	1631	421	832	836	0	-	0
Stage 1	828	-	-	-	-	-	-
Stage 2	803	-	-	-	-	-	-
Critical Hdwy	6.63	6.93	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	3.119	2.219	-	-	-
Pot Cap-1 Maneuver	102	582	327	796	-	-	-
Stage 1	390	-	-	-	-	-	-
Stage 2	440	-	-	-	-	-	-
Platoon blocked, %					-	-	-
Mov Cap-1 Maneuver	99	579	706	706	-	-	-
Mov Cap-2 Maneuver	99	-	-	-	-	-	-
Stage 1	381	-	-	-	-	-	-
Stage 2	438	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.3	0.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	706	-	579	-	-
HCM Lane V/C Ratio	0.018	-	0.019	-	-
HCM Control Delay (s)	10.2	-	11.3	-	-
HCM Lane LOS	B	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	7	21	2	1	6	21	676	43	11	704	50
Future Volume (vph)	14	7	21	2	1	6	21	676	43	11	704	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		60	225		0	500		0
Storage Lanes	0		0	0		1	1		0	1		1
Taper Length (ft)	0			0			25			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.932				0.850		0.991				0.850
Flt Protected		0.984			0.968		0.950			0.950		
Satd. Flow (prot)	0	1708	0	0	1803	1583	1770	1846	0	1770	1863	1583
Flt Permitted		0.984			0.968		0.950			0.950		
Satd. Flow (perm)	0	1708	0	0	1803	1583	1770	1846	0	1770	1863	1583
Link Speed (mph)		30			20			45			45	
Link Distance (ft)		439			281			380			369	
Travel Time (s)		10.0			9.6			5.8			5.6	
Confl. Bikes (#/hr)												5
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	46	0	0	3	7	23	782	0	12	765	54
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 54.9%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	14	7	21	2	1	6	21	676	43	11	704	50
Future Vol, veh/h	14	7	21	2	1	6	21	676	43	11	704	50
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	60	225	-	-	500	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	15	8	23	2	1	7	23	735	47	12	765	54

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1598	1617	765	1637	1648	759	819	0	0	782	0	0
Stage 1	789	789	-	805	805	-	-	-	-	-	-	-
Stage 2	809	828	-	832	843	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	86	103	403	81	99	406	810	-	-	836	-	-
Stage 1	384	402	-	376	395	-	-	-	-	-	-	-
Stage 2	374	386	-	363	380	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	81	99	403	70	95	406	810	-	-	836	-	-
Mov Cap-2 Maneuver	81	99	-	70	95	-	-	-	-	-	-	-
Stage 1	373	396	-	365	384	-	-	-	-	-	-	-
Stage 2	357	375	-	331	375	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	41.9	27.3	0.3	0.1
HCM LOS	E	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	810	-	-	142	77	406	836	-	-
HCM Lane V/C Ratio	0.028	-	-	0.321	0.042	0.016	0.014	-	-
HCM Control Delay (s)	9.6	-	-	41.9	53.8	14	9.4	-	-
HCM Lane LOS	A	-	-	E	F	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	1.3	0.1	0	0	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	31	24	15	63	1	23	0	10	1	0	1
Future Volume (vph)	0	31	24	15	63	1	23	0	10	1	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	150		150	150		150	150		150
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.941			0.998			0.959			0.932	
Flt Protected					0.991			0.966			0.976	
Satd. Flow (prot)	0	1753	0	0	1842	0	0	1726	0	0	1694	0
Flt Permitted					0.991			0.966			0.976	
Satd. Flow (perm)	0	1753	0	0	1842	0	0	1726	0	0	1694	0
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		390			439			346			362	
Travel Time (s)		8.9			10.0			9.4			9.9	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	60	0	0	85	0	0	36	0	0	2	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 22.8%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	31	24	15	63	1	23	0	10	1	0	1
Future Vol, veh/h	0	31	24	15	63	1	23	0	10	1	0	1
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	34	26	16	68	1	25	0	11	1	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	74	0	0	65	0	0	158	158	57	164	171	79
Stage 1	-	-	-	-	-	-	52	52	-	106	106	-
Stage 2	-	-	-	-	-	-	106	106	-	58	65	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1526	-	-	1537	-	-	808	734	1009	801	722	981
Stage 1	-	-	-	-	-	-	961	852	-	900	807	-
Stage 2	-	-	-	-	-	-	900	807	-	954	841	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1519	-	-	1530	-	-	793	719	999	779	707	972
Mov Cap-2 Maneuver	-	-	-	-	-	-	793	719	-	779	707	-
Stage 1	-	-	-	-	-	-	956	848	-	896	794	-
Stage 2	-	-	-	-	-	-	885	794	-	939	837	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1.4	9.4	9.2
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	846	1519	-	-	1530	-	-	865
HCM Lane V/C Ratio	0.042	-	-	-	0.011	-	-	0.003
HCM Control Delay (s)	9.4	0	-	-	7.4	0	-	9.2
HCM Lane LOS	A	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	57	3	1	83	3	8	0	0	0	0	4
Future Volume (vph)	6	57	3	1	83	3	8	0	0	0	0	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	150		150	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.994			0.996						0.865	
Flt Protected		0.995			0.999			0.950				
Satd. Flow (prot)	0	1842	0	0	1853	0	0	1770	0	0	1611	0
Flt Permitted		0.995			0.999			0.950				
Satd. Flow (perm)	0	1842	0	0	1853	0	0	1770	0	0	1611	0
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		405			390			333			365	
Travel Time (s)		9.2			8.9			9.1			10.0	
Confl. Peds. (#/hr)	5		10	10		5	5		5	5		5
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	72	0	0	94	0	0	9	0	0	4	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 23.2%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	57	3	1	83	3	8	0	0	0	0	4
Future Vol, veh/h	6	57	3	1	83	3	8	0	0	0	0	4
Conflicting Peds, #/hr	5	0	10	10	0	5	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	62	3	1	90	3	9	0	0	0	0	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	98	0	0	75	0	0	189	188	79	182	188	102
Stage 1	-	-	-	-	-	-	88	88	-	99	99	-
Stage 2	-	-	-	-	-	-	101	100	-	83	89	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1495	-	-	1524	-	-	771	707	981	779	707	953
Stage 1	-	-	-	-	-	-	920	822	-	907	813	-
Stage 2	-	-	-	-	-	-	905	812	-	925	821	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1488	-	-	1509	-	-	753	692	967	768	692	944
Mov Cap-2 Maneuver	-	-	-	-	-	-	753	692	-	768	692	-
Stage 1	-	-	-	-	-	-	907	810	-	898	808	-
Stage 2	-	-	-	-	-	-	896	807	-	916	809	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0.1	9.8	8.8
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	753	1488	-	-	1509	-	-	944
HCM Lane V/C Ratio	0.012	0.004	-	-	0.001	-	-	0.005
HCM Control Delay (s)	9.8	7.4	0	-	7.4	0	-	8.8
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	63	36	143	46	18	138
Future Volume (vph)	63	36	143	46	18	138
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.951		0.967			
Flt Protected	0.969					0.994
Satd. Flow (prot)	1717	0	1801	0	0	1852
Flt Permitted	0.969					0.994
Satd. Flow (perm)	1717	0	1801	0	0	1852
Link Speed (mph)	30		30			30
Link Distance (ft)	405		350			1210
Travel Time (s)	9.2		8.0			27.5
Confl. Peds. (#/hr)	6	2		17	17	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	107	0	205	0	0	170
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 35.3%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	2.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	63	36	143	46	18	138
Future Vol, veh/h	63	36	143	46	18	138
Conflicting Peds, #/hr	6	2	0	17	17	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	68	39	155	50	20	150

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	393	199	0	0	222	0
Stage 1	197	-	-	-	-	-
Stage 2	196	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	611	842	-	-	1347	-
Stage 1	836	-	-	-	-	-
Stage 2	837	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	588	827	-	-	1325	-
Mov Cap-2 Maneuver	588	-	-	-	-	-
Stage 1	809	-	-	-	-	-
Stage 2	832	-	-	-	-	-

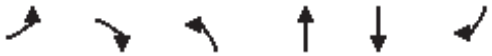
Approach	WB	NB	SB
HCM Control Delay, s	11.6	0	0.9
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	657	1325	-
HCM Lane V/C Ratio	-	-	0.164	0.015	-
HCM Control Delay (s)	-	-	11.6	7.8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.6	0	-



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	4	0	0	9	0	0
Future Volume (vph)	4	0	0	9	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt				0.865		
Flt Protected	0.950					
Satd. Flow (prot)	1770	0	0	1611	0	0
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	0	1611	0	0
Link Speed (mph)	25		25			25
Link Distance (ft)	380		365			210
Travel Time (s)	10.4		10.0			5.7
Confl. Peds. (#/hr)	5	132		70	70	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	4	0	0	10	0	0
Sign Control	Free		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 16.5%		ICU Level of Service A	
Analysis Period (min) 15			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	38	11	6	652	691	6
Future Volume (vph)	38	11	6	652	691	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95
Frt	0.969				0.999	
Flt Protected	0.963					
Satd. Flow (prot)	1738	0	0	1863	3536	0
Flt Permitted	0.963					
Satd. Flow (perm)	1738	0	0	1863	3536	0
Link Speed (mph)	30			45	45	
Link Distance (ft)	248			369	420	
Travel Time (s)	5.6			5.6	6.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	53	0	0	716	758	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 49.1%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	38	11	6	652	691	6
Future Vol, veh/h	38	11	6	652	691	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	41	12	7	709	751	7

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1478	379	758	0	-	0
Stage 1	755	-	-	-	-	-
Stage 2	723	-	-	-	-	-
Critical Hdwy	6.63	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	127	620	851	-	-	-
Stage 1	426	-	-	-	-	-
Stage 2	479	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	125	620	851	-	-	-
Mov Cap-2 Maneuver	125	-	-	-	-	-
Stage 1	420	-	-	-	-	-
Stage 2	479	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	40.9	0.1	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	851	-	152	-	-
HCM Lane V/C Ratio	0.008	-	0.35	-	-
HCM Control Delay (s)	9.3	0	40.9	-	-
HCM Lane LOS	A	A	E	-	-
HCM 95th %tile Q(veh)	0	-	1.4	-	-

Lane Group	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Volume (vph)	1199	111	8	75	1559	67	113
Future Volume (vph)	1199	111	8	75	1559	67	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		120		225		0	115
Storage Lanes		1		1		1	1
Taper Length (ft)				25		0	
Lane Util. Factor	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Ped Bike Factor		0.97				0.99	0.95
Frt		0.850					0.850
Flt Protected				0.950		0.950	
Satd. Flow (prot)	3539	1583	0	1770	3539	1770	1583
Flt Permitted				0.162		0.950	
Satd. Flow (perm)	3539	1531	0	302	3539	1759	1505
Right Turn on Red		Yes					Yes
Satd. Flow (RTOR)		94					123
Link Speed (mph)	35				35	30	
Link Distance (ft)	636				400	1210	
Travel Time (s)	12.4				7.8	27.5	
Confl. Peds. (#/hr)		5		5		5	32
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)							
Lane Group Flow (vph)	1303	121	0	91	1695	73	123
Turn Type	NA	Perm	custom	pm+pt	NA	Perm	Perm
Protected Phases	2			1	6		
Permitted Phases		2	1	6		8	8
Detector Phase	2	2	1	1	6	8	8
Switch Phase							
Minimum Initial (s)	35.0	35.0	5.0	5.0	35.0	5.0	5.0
Minimum Split (s)	41.0	41.0	11.0	11.0	41.0	35.0	35.0
Total Split (s)	85.0	85.0	14.0	14.0	99.0	21.0	21.0
Total Split (%)	70.8%	70.8%	11.7%	11.7%	82.5%	17.5%	17.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0	-1.0	0.0
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	5.0
Lead/Lag	Lag	Lag	Lead	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			
Recall Mode	C-Max	C-Max	None	None	C-Max	None	None
Act Effct Green (s)	85.7	85.7		98.4	98.4	13.6	12.6
Actuated g/C Ratio	0.71	0.71		0.82	0.82	0.11	0.10
v/c Ratio	0.52	0.11		0.26	0.58	0.37	0.46
Control Delay	9.2	2.3		4.7	6.8	53.1	14.0
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay	9.2	2.3		4.7	6.8	53.1	14.0
LOS	A	A		A	A	D	B
Approach Delay	8.6				6.7	28.6	
Approach LOS	A				A	C	
Queue Length 50th (ft)	240	6		22	238	51	0

Lane Group	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Queue Length 95th (ft)	300	26		m24	m258	98	56
Internal Link Dist (ft)	556				320	1130	
Turn Bay Length (ft)		120		225			115
Base Capacity (vph)	2526	1119		369	2901	249	307
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	0.52	0.11		0.25	0.58	0.29	0.40

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 23 (19%), Referenced to phase 2:EBT and 6:WBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.58			
Intersection Signal Delay: 8.8		Intersection LOS: A	
Intersection Capacity Utilization 68.4%		ICU Level of Service C	
Analysis Period (min) 15			

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Main Street & S Boulder Road





Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	0	1153	34	2	16	1700	5	0	0	40	0	0
Future Volume (vph)	0	1153	34	2	16	1700	5	0	0	40	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		50		70		0	0		0	0	
Storage Lanes	0		1		1		0	0		1	0	
Taper Length (ft)	25				25			25			25	
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.850							0.865		
Flt Protected					0.950							
Satd. Flow (prot)	0	3539	1583	0	1770	3539	0	0	0	1611	0	0
Flt Permitted					0.950							
Satd. Flow (perm)	0	3539	1583	0	1770	3539	0	0	0	1611	0	0
Link Speed (mph)		35				35			20			20
Link Distance (ft)		400				360			338			476
Travel Time (s)		7.8				7.0			11.5			16.2
Confl. Peds. (#/hr)	10		10	5	10		10	5		5	5	
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1253	37	0	19	1853	0	0	0	43	0	0
Sign Control		Free				Free			Stop			Stop

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 58.7%		ICU Level of Service B	
Analysis Period (min) 15			



Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	11
Future Volume (vph)	11
Ideal Flow (vphpl)	1900
Storage Length (ft)	0
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Ped Bike Factor	
Frt	0.865
Flt Protected	
Satd. Flow (prot)	1611
Flt Permitted	
Satd. Flow (perm)	1611
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	5
Peak Hour Factor	0.92
Shared Lane Traffic (%)	
Lane Group Flow (vph)	12
Sign Control	

Intersection Summary

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	0	1153	34	2	16	1700	5	0	0	40	0	0	11
Future Vol, veh/h	0	1153	34	2	16	1700	5	0	0	40	0	0	11
Conflicting Peds, #/hr	10	0	10	5	10	0	10	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	-	70	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1253	37	2	17	1848	5	0	0	43	0	0	12

Major/Minor	Major1			Major2			Minor1			Minor2			
Conflicting Flow All	-	0	0	1253	1300	0	0	-	-	642	-	-	942
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	6.44	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	2.52	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	228	529	-	-	0	0	417	0	0	264
Stage 1	0	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	0	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-			-	-						
Mov Cap-1 Maneuver	-	-	-	447	447	-	-	-	-	411	-	-	260
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.1	14.8	19.5
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	411	-	-	447	-	-	260
HCM Lane V/C Ratio	0.106	-	-	0.044	-	-	0.046
HCM Control Delay (s)	14.8	-	-	13.4	-	-	19.5
HCM Lane LOS	B	-	-	B	-	-	C
HCM 95th %tile Q(veh)	0.4	-	-	0.1	-	-	0.1

Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	6	21	1167	12	1	31	1678	8	0	0	38	0
Future Volume (vph)	6	21	1167	12	1	31	1678	8	0	0	38	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		90		0		80		0	0		0	0
Storage Lanes		1		0		1		0	0		1	0
Taper Length (ft)		25				25			25			25
Lane Util. Factor	0.95	1.00	0.95	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.998				0.999				0.865	
Flt Protected		0.950				0.950						
Satd. Flow (prot)	0	1770	3532	0	0	1770	3536	0	0	0	1611	0
Flt Permitted		0.950				0.950						
Satd. Flow (perm)	0	1770	3532	0	0	1770	3536	0	0	0	1611	0
Link Speed (mph)			35				35			20		
Link Distance (ft)			360				465			339		
Travel Time (s)			7.0				9.1			11.6		
Confl. Peds. (#/hr)	5	10		10	5	10		10	5		5	5
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	30	1281	0	0	35	1833	0	0	0	41	0
Sign Control			Free				Free			Stop		

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 58.2%		ICU Level of Service B	
Analysis Period (min) 15			

Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	0	36
Future Volume (vph)	0	36
Ideal Flow (vphpl)	1900	1900
Storage Length (ft)		0
Storage Lanes		1
Taper Length (ft)		
Lane Util. Factor	1.00	1.00
Ped Bike Factor		
Frt		0.865
Flt Protected		
Satd. Flow (prot)	0	1611
Flt Permitted		
Satd. Flow (perm)	0	1611
Link Speed (mph)	20	
Link Distance (ft)	431	
Travel Time (s)	14.7	
Confl. Peds. (#/hr)		5
Peak Hour Factor	0.92	0.92
Shared Lane Traffic (%)		
Lane Group Flow (vph)	0	39
Sign Control	Stop	

Intersection Summary

Intersection	
Int Delay, s/veh	0.8

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	6	21	1167	12	1	31	1678	8	0	0	38	0	0	36
Future Vol, veh/h	6	21	1167	12	1	31	1678	8	0	0	38	0	0	36
Conflicting Peds, #/hr	5	10	0	10	5	10	0	10	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	90	-	-	-	80	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	23	1268	13	1	34	1824	9	0	0	41	0	0	39

Major/Minor	Major1				Major2				Minor1			Minor2		
Conflicting Flow All	1833	1843	0	0	1282	1291	0	0	-	-	656	-	-	932
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	6.44	4.14	-	-	6.44	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.52	2.22	-	-	2.52	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	96	326	-	-	218	533	-	-	0	0	408	0	0	268
Stage 1	-	-	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %			-	-			-	-						
Mov Cap-1 Maneuver	197	197	-	-	502	502	-	-	-	-	402	-	-	264
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.2	15	21
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	402	197	-	-	502	-	-	264
HCM Lane V/C Ratio	0.103	0.149	-	-	0.069	-	-	0.148
HCM Control Delay (s)	15	26.5	-	-	12.7	-	-	21
HCM Lane LOS	C	D	-	-	B	-	-	C
HCM 95th %tile Q(veh)	0.3	0.5	-	-	0.2	-	-	0.5

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
Lane Configurations												
Traffic Volume (vph)	24	389	543	212	332	874	195	1	244	603	258	7
Future Volume (vph)	24	389	543	212	332	874	195	1	244	603	258	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		150		100	225		270		0		0	
Storage Lanes		2		1	2		1		2		1	
Taper Length (ft)		25			25				25			
Lane Util. Factor	0.95	0.97	0.95	1.00	0.97	0.95	1.00	0.95	0.97	0.95	1.00	0.95
Ped Bike Factor				0.98			0.98				0.98	
Frt				0.850			0.850				0.850	
Flt Protected		0.950			0.950				0.950			
Satd. Flow (prot)	0	3433	3539	1583	3433	3539	1583	0	3433	3539	1583	0
Flt Permitted		0.301			0.950				0.333			
Satd. Flow (perm)	0	1088	3539	1555	3433	3539	1546	0	1203	3539	1556	0
Right Turn on Red				Yes			Yes				Yes	
Satd. Flow (RTOR)				173			182				280	
Link Speed (mph)			35			35				45		
Link Distance (ft)			465			1815				418		
Travel Time (s)			9.1			35.4				6.3		
Confl. Peds. (#/hr)				5			10				5	
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	449	590	230	361	950	212	0	266	655	280	0
Turn Type	custom	Prot	NA	Perm	Prot	NA	Perm	custom	Prot	NA	Perm	custom
Protected Phases		5	2		1	6			3	8		
Permitted Phases	5			2			6	3			8	7
Detector Phase	5	5	2	2	1	6	6	3	3	8	8	7
Switch Phase												
Minimum Initial (s)	5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	5.0	6.0	6.0	5.0
Minimum Split (s)	10.0	10.0	37.0	37.0	10.0	37.0	37.0	10.0	10.0	40.0	40.0	10.0
Total Split (s)	20.0	20.0	41.0	41.0	20.0	41.0	41.0	16.0	16.0	47.0	47.0	12.0
Total Split (%)	16.7%	16.7%	34.2%	34.2%	16.7%	34.2%	34.2%	13.3%	13.3%	39.2%	39.2%	10.0%
Yellow Time (s)	3.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	3.0	4.0	4.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		-1.0	-2.0	-2.0	-1.0	-2.0	-2.0		-1.0	-2.0	-2.0	
Total Lost Time (s)		4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	
Lead/Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lead	Lead	Lead	Lag
Lead-Lag Optimize?												
Recall Mode	None	None	C-Max	C-Max	None	Max	Max	None	None	Max	Max	None
Act Effct Green (s)		16.0	37.3	37.3	15.7	37.0	37.0		12.0	43.0	43.0	
Actuated g/C Ratio		0.13	0.31	0.31	0.13	0.31	0.31		0.10	0.36	0.36	
v/c Ratio		3.10	0.54	0.38	0.80	0.87	0.35		2.22	0.52	0.38	
Control Delay		977.5	29.6	11.9	65.1	49.2	8.5		597.6	35.4	9.3	
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	
Total Delay		977.5	29.6	11.9	65.1	49.2	8.5		597.6	35.4	9.3	
LOS		F	C	B	E	D	A		F	D	A	
Approach Delay			361.8			47.3				153.9		
Approach LOS			F			D				F		
Queue Length 50th (ft)		~317	199	67	141	365	16		~172	241	7	

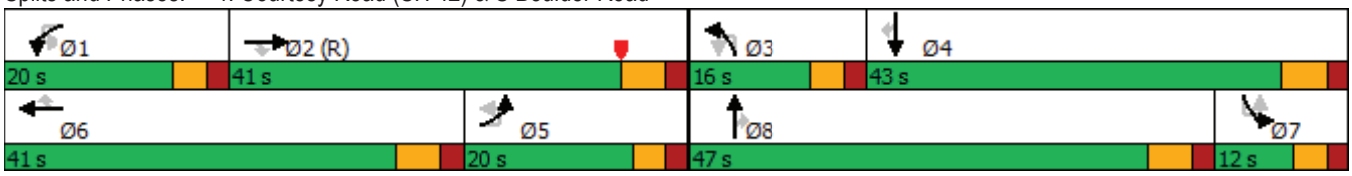


Lane Group	SBL	SBT	SBR
Lane Configurations			
Traffic Volume (vph)	164	745	563
Future Volume (vph)	164	745	563
Ideal Flow (vphpl)	1900	1900	1900
Storage Length (ft)	185		270
Storage Lanes	2		1
Taper Length (ft)	25		
Lane Util. Factor	0.97	0.95	1.00
Ped Bike Factor			0.98
Frt			0.850
Flt Protected	0.950		
Satd. Flow (prot)	3433	3539	1583
Flt Permitted	0.500		
Satd. Flow (perm)	1807	3539	1555
Right Turn on Red			Yes
Satd. Flow (RTOR)			231
Link Speed (mph)		45	
Link Distance (ft)		1337	
Travel Time (s)		20.3	
Confl. Peds. (#/hr)			5
Peak Hour Factor	0.92	0.92	0.92
Shared Lane Traffic (%)			
Lane Group Flow (vph)	186	810	612
Turn Type	Prot	NA	Perm
Protected Phases	7	4	
Permitted Phases			4
Detector Phase	7	4	4
Switch Phase			
Minimum Initial (s)	5.0	6.0	6.0
Minimum Split (s)	10.0	36.0	36.0
Total Split (s)	12.0	43.0	43.0
Total Split (%)	10.0%	35.8%	35.8%
Yellow Time (s)	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0
Lead/Lag	Lag	Lag	Lag
Lead-Lag Optimize?			
Recall Mode	None	Max	Max
Act Effct Green (s)	8.0	39.0	39.0
Actuated g/C Ratio	0.07	0.32	0.32
v/c Ratio	1.55	0.70	0.93
Control Delay	321.4	39.4	45.7
Queue Delay	0.0	0.0	0.0
Total Delay	321.4	39.4	45.7
LOS	F	D	D
Approach Delay		74.5	
Approach LOS		E	
Queue Length 50th (ft)	~104	288	311

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
Queue Length 95th (ft)		#424	261	127	#207	#460	75		#255	308	87	
Internal Link Dist (ft)			385			1735				338		
Turn Bay Length (ft)		150		100	225		270					
Base Capacity (vph)		145	1099	602	457	1091	602		120	1268	737	
Starvation Cap Reductn		0	0	0	0	0	0		0	0	0	
Spillback Cap Reductn		0	0	0	0	0	0		0	0	0	
Storage Cap Reductn		0	0	0	0	0	0		0	0	0	
Reduced v/c Ratio		3.10	0.54	0.38	0.79	0.87	0.35		2.22	0.52	0.38	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow, Master Intersection			
Natural Cycle: 120			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 3.10			
Intersection Signal Delay: 149.2		Intersection LOS: F	
Intersection Capacity Utilization 93.3%		ICU Level of Service F	
Analysis Period (min) 15			
~ 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.			

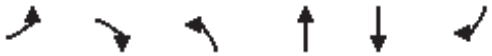
Splits and Phases: 4: Courtesy Road (SH 42) & S Boulder Road





Lane Group	SBL	SBT	SBR
Queue Length 95th (ft)	#180	361	#552
Internal Link Dist (ft)		1257	
Turn Bay Length (ft)	185		270
Base Capacity (vph)	120	1150	661
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	1.55	0.70	0.93

Intersection Summary



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	13	0	1078	1274	8
Future Volume (vph)	0	13	0	1078	1274	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	140			0
Storage Lanes	0	1	0			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor						
Frt		0.865			0.999	
Flt Protected						
Satd. Flow (prot)	0	1611	0	3539	3536	0
Flt Permitted						
Satd. Flow (perm)	0	1611	0	3539	3536	0
Link Speed (mph)	20			45	45	
Link Distance (ft)	418			420	418	
Travel Time (s)	14.3			6.4	6.3	
Confl. Peds. (#/hr)			5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	14	0	1172	1394	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	45.5%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	13	0	1078	1274	8
Future Vol, veh/h	0	13	0	1078	1274	8
Conflicting Peds, #/hr	0	0	5	0	0	5
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	14	0	1172	1385	9

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	702	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	381	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	379	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.9	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	379	-	-
HCM Lane V/C Ratio	-	0.037	-	-
HCM Control Delay (s)	-	14.9	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.1	-	-

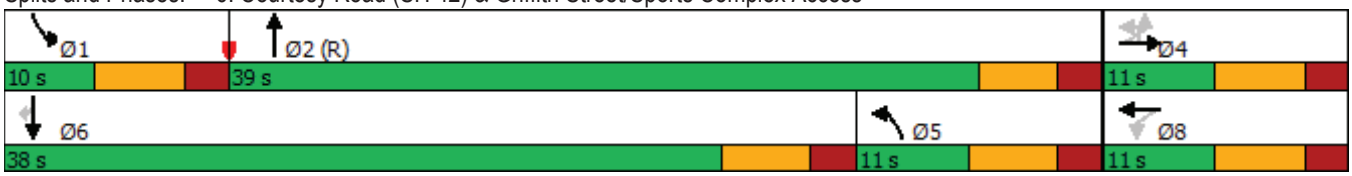
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	0	54	1	1	1	37	1047	4	5	1177	91
Future Volume (vph)	29	0	54	1	1	1	37	1047	4	5	1177	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		0	50		0	225		0	500		273
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor												0.98
Frt		0.850			0.925			0.999				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1583	0	1770	1723	0	1770	3536	0	1770	3539	1583
Flt Permitted	0.800			0.800			0.950			0.950		
Satd. Flow (perm)	1490	1583	0	1490	1723	0	1770	3536	0	1770	3539	1546
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		273			1			1				164
Link Speed (mph)		30			20			45			45	
Link Distance (ft)		439			281			380			369	
Travel Time (s)		10.0			9.6			5.8			5.6	
Confl. Bikes (#/hr)												5
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	32	59	0	1	2	0	40	1142	0	5	1279	99
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								6
Detector Phase	4	4		8	8		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	25.0	25.0		25.0	25.0		11.0	24.5		11.0	25.0	25.0
Total Split (s)	11.0	11.0		11.0	11.0		11.0	39.0		10.0	38.0	38.0
Total Split (%)	18.3%	18.3%		18.3%	18.3%		18.3%	65.0%		16.7%	63.3%	63.3%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	3.5		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-1.5		-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lead/Lag							Lag	Lag		Lead	Lead	Lead
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None		None	C-Max		None	Max	Max
Act Effct Green (s)	7.0	7.0		7.0	7.0		7.0	49.0		6.6	46.6	46.6
Actuated g/C Ratio	0.12	0.12		0.12	0.12		0.12	0.82		0.11	0.78	0.78
v/c Ratio	0.18	0.14		0.01	0.01		0.19	0.40		0.03	0.47	0.08
Control Delay	26.7	0.7		24.0	21.0		26.5	3.9		29.2	4.4	0.6
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	26.7	0.7		24.0	21.0		26.5	3.9		29.2	4.4	0.6
LOS	C	A		C	C		C	A		C	A	A
Approach Delay		9.8			22.0			4.7			4.2	
Approach LOS		A			C			A			A	
Queue Length 50th (ft)	11	0		0	0		13	55		3	158	2

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (ft)	26	0		4	6		38	164		m5	279	m3
Internal Link Dist (ft)		359			201			300			289	
Turn Bay Length (ft)	50			50			225			500		273
Base Capacity (vph)	173	425		173	201		206	2888		195	2748	1237
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.18	0.14		0.01	0.01		0.19	0.40		0.03	0.47	0.08

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 43 (72%), Referenced to phase 2:NBT, Start of Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.47			
Intersection Signal Delay: 4.7		Intersection LOS: A	
Intersection Capacity Utilization 47.5%		ICU Level of Service A	
Analysis Period (min) 15			

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Courtesy Road (SH 42) & Griffith Street/Sports Complex Access





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	61	12	14	98	2	19	0	19	0	0	1
Future Volume (vph)	0	61	12	14	98	2	19	0	19	0	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	150		150	150		150	150		150
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.978			0.998			0.932			0.865	
Flt Protected					0.994			0.976				
Satd. Flow (prot)	0	1822	0	0	1848	0	0	1694	0	0	1611	0
Flt Permitted					0.994			0.976				
Satd. Flow (perm)	0	1822	0	0	1848	0	0	1694	0	0	1611	0
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		390			439			346			362	
Travel Time (s)		8.9			10.0			9.4			9.9	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	79	0	0	124	0	0	42	0	0	1	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 29.3%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	0	61	12	14	98	2	19	0	19	0	0	1
Future Vol, veh/h	0	61	12	14	98	2	19	0	19	0	0	1
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	66	13	15	107	2	21	0	21	0	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	114	0	0	84	0	0	222	222	83	231	227	118
Stage 1	-	-	-	-	-	-	78	78	-	143	143	-
Stage 2	-	-	-	-	-	-	144	144	-	88	84	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1475	-	-	1513	-	-	734	677	976	724	672	934
Stage 1	-	-	-	-	-	-	931	830	-	860	779	-
Stage 2	-	-	-	-	-	-	859	778	-	920	825	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1468	-	-	1506	-	-	720	663	967	696	658	925
Mov Cap-2 Maneuver	-	-	-	-	-	-	720	663	-	696	658	-
Stage 1	-	-	-	-	-	-	926	826	-	856	767	-
Stage 2	-	-	-	-	-	-	845	766	-	896	821	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.9	9.6	8.9
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	825	1468	-	-	1506	-	-	925
HCM Lane V/C Ratio	0.05	-	-	-	0.01	-	-	0.001
HCM Control Delay (s)	9.6	0	-	-	7.4	0	-	8.9
HCM Lane LOS	A	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	74	2	3	135	1	6	0	3	1	0	5
Future Volume (vph)	2	74	2	3	135	1	6	0	3	1	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	150		150	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.997			0.999			0.959			0.887	
Flt Protected		0.999			0.999			0.966			0.992	
Satd. Flow (prot)	0	1855	0	0	1859	0	0	1726	0	0	1639	0
Flt Permitted		0.999			0.999			0.966			0.992	
Satd. Flow (perm)	0	1855	0	0	1859	0	0	1726	0	0	1639	0
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		405			390			333			365	
Travel Time (s)		9.2			8.9			9.1			10.0	
Confl. Peds. (#/hr)	5		10	10		5	5		5	5		5
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	84	0	0	151	0	0	10	0	0	6	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 20.8%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	74	2	3	135	1	6	0	3	1	0	5
Future Vol, veh/h	2	74	2	3	135	1	6	0	3	1	0	5
Conflicting Peds, #/hr	5	0	10	10	0	5	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	80	2	3	147	1	7	0	3	1	0	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	153	0	0	92	0	0	256	254	96	251	255	158
Stage 1	-	-	-	-	-	-	95	95	-	159	159	-
Stage 2	-	-	-	-	-	-	161	159	-	92	96	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1428	-	-	1503	-	-	697	650	960	702	649	887
Stage 1	-	-	-	-	-	-	912	816	-	843	766	-
Stage 2	-	-	-	-	-	-	841	766	-	915	815	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1421	-	-	1489	-	-	681	638	946	691	637	879
Mov Cap-2 Maneuver	-	-	-	-	-	-	681	638	-	691	637	-
Stage 1	-	-	-	-	-	-	902	807	-	838	761	-
Stage 2	-	-	-	-	-	-	830	761	-	907	806	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.2	9.9	9.3
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	751	1421	-	-	1489	-	-	841
HCM Lane V/C Ratio	0.013	0.002	-	-	0.002	-	-	0.008
HCM Control Delay (s)	9.9	7.5	0	-	7.4	0	-	9.3
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0



Lane Group	WBU	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	1	50	59	1	169	60	20	113
Future Volume (vph)	1	50	59	1	169	60	20	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								
Frt		0.927			0.965			
Flt Protected		0.977						0.992
Satd. Flow (prot)	0	1687	0	0	1798	0	0	1848
Flt Permitted		0.977						0.992
Satd. Flow (perm)	0	1687	0	0	1798	0	0	1848
Link Speed (mph)		30			30			30
Link Distance (ft)		405			350			1210
Travel Time (s)		9.2			8.0			27.5
Confl. Peds. (#/hr)	70	1	132	1		7	70	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	119	0	0	250	0	0	145
Sign Control		Stop			Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 41.2%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	3.6

Movement	WBU	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations								
Traffic Vol, veh/h	1	50	59	1	169	60	20	113
Future Vol, veh/h	1	50	59	1	169	60	20	113
Conflicting Peds, #/hr	70	1	132	1	0	7	70	0
Sign Control	Stop	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	None
Storage Length	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0
Grade, %	-	0	-	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2
Mvmt Flow	1	54	64	1	184	65	22	123

Major/Minor	Minor1			Major1			Major2	
Conflicting Flow All	0	455	419	-	0	0	319	0
Stage 1	0	287	-	-	-	-	-	-
Stage 2	0	168	-	-	-	-	-	-
Critical Hdwy	-	6.42	6.22	-	-	-	4.12	-
Critical Hdwy Stg 1	-	5.42	-	-	-	-	-	-
Critical Hdwy Stg 2	-	5.42	-	-	-	-	-	-
Follow-up Hdwy	-	3.518	3.318	-	-	-	2.218	-
Pot Cap-1 Maneuver	0	563	634	-	-	-	1241	-
Stage 1	0	762	-	-	-	-	-	-
Stage 2	0	862	-	-	-	-	-	-
Platoon blocked, %	-				-	-		-
Mov Cap-1 Maneuver	0	514	517	-	-	-	1158	-
Mov Cap-2 Maneuver	0	514	-	-	-	-	-	-
Stage 1	0	696	-	-	-	-	-	-
Stage 2	0	861	-	-	-	-	-	-

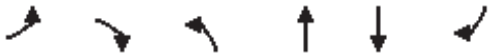
Approach	WB	NB	SB
HCM Control Delay, s	14		1.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	516	1158	-
HCM Lane V/C Ratio	-	-	0.23	0.019	-
HCM Control Delay (s)	-	-	14	8.2	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.9	0.1	-



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	6	0	0	3	0	0
Future Volume (vph)	6	0	0	3	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt				0.865		
Flt Protected	0.950					
Satd. Flow (prot)	1770	0	0	1611	0	0
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	0	1611	0	0
Link Speed (mph)	25		25			25
Link Distance (ft)	380		365			210
Travel Time (s)	10.4		10.0			5.7
Confl. Peds. (#/hr)	5	132		70	70	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	7	0	0	3	0	0
Sign Control	Free		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 16.5%		ICU Level of Service A	
Analysis Period (min) 15			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	19	0	1060	1250	2
Future Volume (vph)	0	19	0	1060	1250	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.865				
Flt Protected						
Satd. Flow (prot)	0	1611	0	3539	3539	0
Flt Permitted						
Satd. Flow (perm)	0	1611	0	3539	3539	0
Link Speed (mph)	30			45	45	
Link Distance (ft)	189			369	420	
Travel Time (s)	4.3			5.6	6.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	21	0	1152	1361	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	44.6%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	19	0	1060	1250	2
Future Vol, veh/h	0	19	0	1060	1250	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	21	0	1152	1359	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	681	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	393	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	393	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.7	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	393	-	-
HCM Lane V/C Ratio	-	0.053	-	-
HCM Control Delay (s)	-	14.7	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.2	-	-

Lane Group	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Volume (vph)	1661	102	21	69	1318	89	194
Future Volume (vph)	1661	102	21	69	1318	89	194
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		120		225		0	115
Storage Lanes		1		1		1	1
Taper Length (ft)				25		0	
Lane Util. Factor	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Ped Bike Factor		0.97				0.99	0.95
Frt		0.850					0.850
Flt Protected				0.950		0.950	
Satd. Flow (prot)	3539	1583	0	1770	3539	1770	1583
Flt Permitted				0.070		0.950	
Satd. Flow (perm)	3539	1531	0	130	3539	1759	1505
Right Turn on Red		Yes					Yes
Satd. Flow (RTOR)		63					92
Link Speed (mph)	35				35	30	
Link Distance (ft)	636				400	1210	
Travel Time (s)	12.4				7.8	27.5	
Confl. Peds. (#/hr)		5		5		5	32
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)							
Lane Group Flow (vph)	1805	111	0	98	1433	97	211
Turn Type	NA	Perm	custom	pm+pt	NA	Perm	Perm
Protected Phases	2			1	6		
Permitted Phases		2	1	6		8	8
Detector Phase	2	2	1	1	6	8	8
Switch Phase							
Minimum Initial (s)	35.0	35.0	5.0	5.0	35.0	5.0	5.0
Minimum Split (s)	41.0	41.0	11.0	11.0	41.0	35.0	35.0
Total Split (s)	85.0	85.0	14.0	14.0	99.0	21.0	21.0
Total Split (%)	70.8%	70.8%	11.7%	11.7%	82.5%	17.5%	17.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0	-1.0	0.0
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	5.0
Lead/Lag	Lag	Lag	Lead	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			
Recall Mode	C-Max	C-Max	None	None	C-Max	None	None
Act Effct Green (s)	84.4	84.4		97.3	97.3	14.7	13.7
Actuated g/C Ratio	0.70	0.70		0.81	0.81	0.12	0.11
v/c Ratio	0.73	0.10		0.43	0.50	0.45	0.84
Control Delay	13.6	3.3		11.6	7.7	55.1	55.7
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay	13.6	3.3		11.6	7.7	55.1	55.7
LOS	B	A		B	A	E	E
Approach Delay	13.0				7.9	55.5	
Approach LOS	B				A	E	
Queue Length 50th (ft)	430	11		35	229	69	90

Lane Group	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Queue Length 95th (ft)	535	30		m41	m234	124	#205
Internal Link Dist (ft)	556				320	1130	
Turn Bay Length (ft)		120		225			115
Base Capacity (vph)	2487	1094		242	2870	249	280
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	0.73	0.10		0.40	0.50	0.39	0.75

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 22 (18%), Referenced to phase 2:EBT and 6:WBTL, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay: 14.4		Intersection LOS: B	
Intersection Capacity Utilization 83.2%		ICU Level of Service E	
Analysis Period (min) 15			

\# 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.

Splits and Phases: 1: Main Street & S Boulder Road





Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	0	1829	63	4	30	1423	5	0	0	64	0	0
Future Volume (vph)	0	1829	63	4	30	1423	5	0	0	64	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		50		70		0	0		0	0	
Storage Lanes	0		1		1		0	0		1	0	
Taper Length (ft)	25				25			25			25	
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.850							0.865		
Flt Protected					0.950							
Satd. Flow (prot)	0	3539	1583	0	1770	3539	0	0	0	1611	0	0
Flt Permitted					0.950							
Satd. Flow (perm)	0	3539	1583	0	1770	3539	0	0	0	1611	0	0
Link Speed (mph)		35				35			20			20
Link Distance (ft)		400				360			338			476
Travel Time (s)		7.8				7.0			11.5			16.2
Confl. Peds. (#/hr)	10		10	5	10		10	5		5	5	
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1988	68	0	37	1552	0	0	0	70	0	0
Sign Control		Free				Free			Stop			Stop

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 63.1%		ICU Level of Service B	
Analysis Period (min) 15			



Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	5
Future Volume (vph)	5
Ideal Flow (vphpl)	1900
Storage Length (ft)	0
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Ped Bike Factor	
Frt	0.865
Flt Protected	
Satd. Flow (prot)	1611
Flt Permitted	
Satd. Flow (perm)	1611
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	5
Peak Hour Factor	0.92
Shared Lane Traffic (%)	
Lane Group Flow (vph)	5
Sign Control	

Intersection Summary

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	0	1829	63	4	30	1423	5	0	0	64	0	0	5
Future Vol, veh/h	0	1829	63	4	30	1423	5	0	0	64	0	0	5
Conflicting Peds, #/hr	10	0	10	5	10	0	10	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	-	70	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1988	68	4	33	1547	5	0	0	70	0	0	5

Major/Minor	Major1			Major2			Minor1			Minor2			
Conflicting Flow All	-	0	0	1988	2066	0	0	-	-	1009	-	-	791
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	6.44	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	2.52	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	76	267	-	-	0	0	238	0	0	332
Stage 1	0	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	0	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-			-	-						
Mov Cap-1 Maneuver	-	-	-	182	182	-	-	-	-	235	-	-	327
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.7	26.6	16.2
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	235	-	-	182	-	-	327
HCM Lane V/C Ratio	0.296	-	-	0.203	-	-	0.017
HCM Control Delay (s)	26.6	-	-	29.7	-	-	16.2
HCM Lane LOS	D	-	-	D	-	-	C
HCM 95th %tile Q(veh)	1.2	-	-	0.7	-	-	0.1

Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	23	48	1876	47	2	62	1453	12	0	0	80	0
Future Volume (vph)	23	48	1876	47	2	62	1453	12	0	0	80	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		90		0		80		0	0		0	0
Storage Lanes		1		0		1		0	0		1	0
Taper Length (ft)		25				25			25			25
Lane Util. Factor	0.95	1.00	0.95	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.996				0.999				0.865	
Flt Protected		0.950				0.950						
Satd. Flow (prot)	0	1770	3525	0	0	1770	3536	0	0	0	1611	0
Flt Permitted		0.950				0.950						
Satd. Flow (perm)	0	1770	3525	0	0	1770	3536	0	0	0	1611	0
Link Speed (mph)			35				35			20		
Link Distance (ft)			360				465			339		
Travel Time (s)			7.0				9.1			11.6		
Confl. Peds. (#/hr)	5	10		10	5	10		10	5		5	5
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	77	2090	0	0	69	1592	0	0	0	87	0
Sign Control			Free				Free			Stop		

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	72.4%	ICU Level of Service	C
Analysis Period (min)	15		

Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	0	66
Future Volume (vph)	0	66
Ideal Flow (vphpl)	1900	1900
Storage Length (ft)		0
Storage Lanes		1
Taper Length (ft)		
Lane Util. Factor	1.00	1.00
Ped Bike Factor		
Frt		0.865
Flt Protected		
Satd. Flow (prot)	0	1611
Flt Permitted		
Satd. Flow (perm)	0	1611
Link Speed (mph)	20	
Link Distance (ft)	431	
Travel Time (s)	14.7	
Confl. Peds. (#/hr)		5
Peak Hour Factor	0.92	0.92
Shared Lane Traffic (%)		
Lane Group Flow (vph)	0	72
Sign Control	Stop	

Intersection Summary

Intersection	
Int Delay, s/veh	2.2

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	23	48	1876	47	2	62	1453	12	0	0	80	0	0	66
Future Vol, veh/h	23	48	1876	47	2	62	1453	12	0	0	80	0	0	66
Conflicting Peds, #/hr	5	10	0	10	5	10	0	10	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	90	-	-	-	80	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	25	52	2039	51	2	67	1579	13	0	0	87	0	0	72

Major/Minor	Major1				Major2				Minor1			Minor2		
Conflicting Flow All	1592	1602	0	0	2090	2100	0	0	-	-	1060	-	-	811
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	6.44	4.14	-	-	6.44	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.52	2.22	-	-	2.52	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	137	404	-	-	65	258	-	-	0	0	220	0	0	322
Stage 1	-	-	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %			-	-			-	-						
Mov Cap-1 Maneuver	213	213	-	-	220	220	-	-	-	-	217	-	-	317
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.1	1.2	32.3	19.6
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	217	213	-	-	220	-	-	317
HCM Lane V/C Ratio	0.401	0.362	-	-	0.316	-	-	0.226
HCM Control Delay (s)	32.3	31.2	-	-	28.8	-	-	19.6
HCM Lane LOS	D	D	-	-	D	-	-	C
HCM 95th %tile Q(veh)	1.8	1.6	-	-	1.3	-	-	0.9

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
Lane Configurations												
Traffic Volume (vph)	39	757	962	247	453	832	258	1	199	910	328	12
Future Volume (vph)	39	757	962	247	453	832	258	1	199	910	328	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		150		100	225		270		0		0	
Storage Lanes		2		1	2		1		2		1	
Taper Length (ft)		25			25				25			
Lane Util. Factor	0.95	0.97	0.95	1.00	0.97	0.95	1.00	0.95	0.97	0.95	1.00	0.95
Ped Bike Factor				0.98			0.98				0.98	
Frt				0.850			0.850				0.850	
Flt Protected		0.950			0.950				0.950			
Satd. Flow (prot)	0	3433	3539	1583	3433	3539	1583	0	3433	3539	1583	0
Flt Permitted		0.315			0.950				0.286			
Satd. Flow (perm)	0	1138	3539	1555	3433	3539	1546	0	1034	3539	1556	0
Right Turn on Red				Yes			Yes				Yes	
Satd. Flow (RTOR)				173			196				287	
Link Speed (mph)			35			35				45		
Link Distance (ft)			465			1815				418		
Travel Time (s)			9.1			35.4				6.3		
Confl. Peds. (#/hr)				5			10				5	
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	865	1046	268	492	904	280	0	217	989	357	0
Turn Type	custom	Prot	NA	Perm	Prot	NA	Perm	custom	Prot	NA	Perm	custom
Protected Phases		5	2		1	6			3	8		
Permitted Phases	5			2			6	3			8	7
Detector Phase	5	5	2	2	1	6	6	3	3	8	8	7
Switch Phase												
Minimum Initial (s)	5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	5.0	6.0	6.0	5.0
Minimum Split (s)	10.0	10.0	37.0	37.0	10.0	37.0	37.0	10.0	10.0	40.0	40.0	10.0
Total Split (s)	24.0	24.0	43.0	43.0	18.0	37.0	37.0	18.0	18.0	41.0	41.0	18.0
Total Split (%)	20.0%	20.0%	35.8%	35.8%	15.0%	30.8%	30.8%	15.0%	15.0%	34.2%	34.2%	15.0%
Yellow Time (s)	3.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	3.0	4.0	4.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		-1.0	-2.0	-2.0	-1.0	-2.0	-2.0		-1.0	-2.0	-2.0	
Total Lost Time (s)		4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	
Lead/Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lead	Lead	Lead	Lag
Lead-Lag Optimize?												
Recall Mode	None	None	C-Max	C-Max	None	Max	Max	None	None	Max	Max	None
Act Effct Green (s)		20.0	39.0	39.0	14.0	33.0	33.0		14.0	37.0	37.0	
Actuated g/C Ratio		0.17	0.32	0.32	0.12	0.28	0.28		0.12	0.31	0.31	
v/c Ratio		4.58	0.91	0.43	1.23	0.93	0.49		1.81	0.91	0.53	
Control Delay		1631.4	42.6	9.6	167.8	58.8	14.5		421.8	48.8	12.1	
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	
Total Delay		1631.4	42.6	9.6	167.8	58.8	14.5		421.8	48.8	12.1	
LOS		F	D	A	F	E	B		F	D	B	
Approach Delay			669.2			83.4				92.2		
Approach LOS			F			F				F		
Queue Length 50th (ft)		~650	410	76	~242	359	50		~131	395	63	



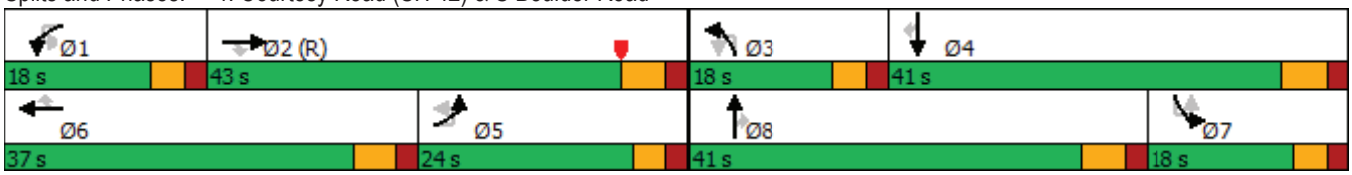
Lane Group	SBL	SBT	SBR
Lane Configurations			
Traffic Volume (vph)	177	697	423
Future Volume (vph)	177	697	423
Ideal Flow (vphpl)	1900	1900	1900
Storage Length (ft)	185		270
Storage Lanes	2		1
Taper Length (ft)	25		
Lane Util. Factor	0.97	0.95	1.00
Ped Bike Factor			0.98
Frt			0.850
Flt Protected	0.950		
Satd. Flow (prot)	3433	3539	1583
Flt Permitted	0.290		
Satd. Flow (perm)	1048	3539	1555
Right Turn on Red			Yes
Satd. Flow (RTOR)			276
Link Speed (mph)		45	
Link Distance (ft)		1337	
Travel Time (s)		20.3	
Confl. Peds. (#/hr)			5
Peak Hour Factor	0.92	0.92	0.92
Shared Lane Traffic (%)			
Lane Group Flow (vph)	205	758	460
Turn Type	Prot	NA	Perm
Protected Phases	7	4	
Permitted Phases			4
Detector Phase	7	4	4
Switch Phase			
Minimum Initial (s)	5.0	6.0	6.0
Minimum Split (s)	10.0	36.0	36.0
Total Split (s)	18.0	41.0	41.0
Total Split (%)	15.0%	34.2%	34.2%
Yellow Time (s)	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0
Lead/Lag	Lag	Lag	Lag
Lead-Lag Optimize?			
Recall Mode	None	Max	Max
Act Effct Green (s)	14.0	37.0	37.0
Actuated g/C Ratio	0.12	0.31	0.31
v/c Ratio	1.68	0.69	0.69
Control Delay	372.3	40.6	19.9
Queue Delay	0.0	0.0	0.0
Total Delay	372.3	40.6	19.9
LOS	F	D	B
Approach Delay		81.7	
Approach LOS		F	
Queue Length 50th (ft)	~119	271	124

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
Queue Length 95th (ft)		#780	#534	m109	#351	#484	133		#211	#516	124	
Internal Link Dist (ft)			385			1735				338		
Turn Bay Length (ft)		150		100	225		270					
Base Capacity (vph)		189	1150	622	400	973	567		120	1091	678	
Starvation Cap Reductn		0	0	0	0	0	0		0	0	0	
Spillback Cap Reductn		0	0	0	0	0	0		0	0	0	
Storage Cap Reductn		0	0	0	0	0	0		0	0	0	
Reduced v/c Ratio		4.58	0.91	0.43	1.23	0.93	0.49		1.81	0.91	0.53	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow, Master Intersection
Natural Cycle: 140
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 4.58
Intersection Signal Delay: 271.7 Intersection LOS: F
Intersection Capacity Utilization 95.6% ICU Level of Service F
Analysis Period (min) 15
~ 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.

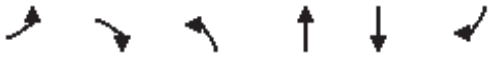
Splits and Phases: 4: Courtesy Road (SH 42) & S Boulder Road





Lane Group	SBL	SBT	SBR
Queue Length 95th (ft)	#199	342	250
Internal Link Dist (ft)		1257	
Turn Bay Length (ft)	185		270
Base Capacity (vph)	122	1091	670
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	1.68	0.69	0.69

Intersection Summary



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	26	0	1458	1367	21
Future Volume (vph)	0	26	0	1458	1367	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	140			0
Storage Lanes	0	1	0			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor						
Frt		0.865			0.998	
Flt Protected						
Satd. Flow (prot)	0	1611	0	3539	3532	0
Flt Permitted						
Satd. Flow (perm)	0	1611	0	3539	3532	0
Link Speed (mph)	20			45	45	
Link Distance (ft)	418			430	418	
Travel Time (s)	14.3			6.5	6.3	
Confl. Peds. (#/hr)			5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	28	0	1585	1509	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	48.5%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	26	0	1458	1367	21
Future Vol, veh/h	0	26	0	1458	1367	21
Conflicting Peds, #/hr	0	0	5	0	0	5
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	28	0	1585	1486	23

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	760	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	349	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	347	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.3	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	347	-	-
HCM Lane V/C Ratio	-	0.081	-	-
HCM Control Delay (s)	-	16.3	-	-
HCM Lane LOS	-	C	-	-
HCM 95th %tile Q(veh)	-	0.3	-	-

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	2	17	0	39	1	1	1	19	1415	2	1	1291
Future Volume (vph)	2	17	0	39	1	1	1	19	1415	2	1	1291
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		50		0	50		0	225		0	500	
Storage Lanes		1		0	1		0	1		0	1	
Taper Length (ft)		25			25			25			25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95
Ped Bike Factor												
Frt			0.850			0.925						
Flt Protected		0.950			0.950			0.950			0.950	
Satd. Flow (prot)	0	1770	1583	0	1770	1723	0	1770	3539	0	1770	3539
Flt Permitted		0.800			0.800			0.950			0.950	
Satd. Flow (perm)	0	1490	1583	0	1490	1723	0	1770	3539	0	1770	3539
Right Turn on Red				Yes			Yes			Yes		
Satd. Flow (RTOR)			273			1						
Link Speed (mph)			30			20			45			45
Link Distance (ft)			439			281			380			359
Travel Time (s)			10.0			9.6			5.8			5.4
Confl. Bikes (#/hr)												
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	20	42	0	1	2	0	21	1540	0	1	1403
Turn Type	Perm	Perm	NA		Perm	NA		Prot	NA		Prot	NA
Protected Phases			4			8		5	2		1	6
Permitted Phases	4	4			8							
Detector Phase	4	4	4		8	8		5	2		1	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0		5.0	5.0		5.0	5.0		5.0	5.0
Minimum Split (s)	25.0	25.0	25.0		25.0	25.0		11.0	24.5		11.0	25.0
Total Split (s)	11.0	11.0	11.0		11.0	11.0		11.0	39.0		10.0	38.0
Total Split (%)	18.3%	18.3%	18.3%		18.3%	18.3%		18.3%	65.0%		16.7%	63.3%
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0		4.0	3.5		4.0	4.0
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0
Lost Time Adjust (s)		-2.0	-2.0		-2.0	-2.0		-2.0	-1.5		-2.0	-2.0
Total Lost Time (s)		4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0
Lead/Lag								Lag	Lag		Lead	Lead
Lead-Lag Optimize?								Yes	Yes		Yes	Yes
Recall Mode	None	None	None		None	None		None	C-Max		None	Max
Act Effct Green (s)		7.0	7.0		7.0	7.0		7.0	49.0		6.6	48.8
Actuated g/C Ratio		0.12	0.12		0.12	0.12		0.12	0.82		0.11	0.81
v/c Ratio		0.12	0.10		0.01	0.01		0.10	0.53		0.01	0.49
Control Delay		24.9	0.5		24.0	21.0		25.1	5.0		31.0	5.1
Queue Delay		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0
Total Delay		24.9	0.5		24.0	21.0		25.1	5.0		31.0	5.1
LOS		C	A		C	C		C	A		C	A
Approach Delay			8.3			22.0			5.3			4.8
Approach LOS			A			C			A			A
Queue Length 50th (ft)		7	0		0	0		7	90		1	245



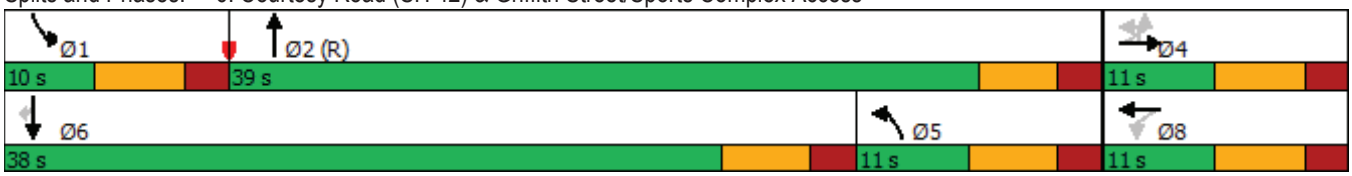
Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	137
Future Volume (vph)	137
Ideal Flow (vphpl)	1900
Storage Length (ft)	273
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Ped Bike Factor	0.98
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1583
Flt Permitted	
Satd. Flow (perm)	1546
Right Turn on Red	Yes
Satd. Flow (RTOR)	164
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Bikes (#/hr)	5
Peak Hour Factor	0.92
Shared Lane Traffic (%)	
Lane Group Flow (vph)	149
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Detector Phase	6
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	25.0
Total Split (s)	38.0
Total Split (%)	63.3%
Yellow Time (s)	4.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	-2.0
Total Lost Time (s)	4.0
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Recall Mode	Max
Act Effct Green (s)	48.8
Actuated g/C Ratio	0.81
v/c Ratio	0.12
Control Delay	1.7
Queue Delay	0.0
Total Delay	1.7
LOS	A
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	16

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Queue Length 95th (ft)		m19	0		4	6		24	265		m1	m282
Internal Link Dist (ft)			359			201			300			279
Turn Bay Length (ft)		50			50			225			500	
Base Capacity (vph)		173	425		173	201		206	2890		195	2878
Starvation Cap Reductn		0	0		0	0		0	0		0	0
Spillback Cap Reductn		0	0		0	0		0	0		0	0
Storage Cap Reductn		0	0		0	0		0	0		0	0
Reduced v/c Ratio		0.12	0.10		0.01	0.01		0.10	0.53		0.01	0.49

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 48 (80%), Referenced to phase 2:NBT, Start of Green			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.53			
Intersection Signal Delay: 5.1		Intersection LOS: A	
Intersection Capacity Utilization 53.6%		ICU Level of Service A	
Analysis Period (min) 15			

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Courtesy Road (SH 42) & Griffith Street/Sports Complex Access





Lane Group	SBR
Queue Length 95th (ft)	m26
Internal Link Dist (ft)	
Turn Bay Length (ft)	273
Base Capacity (vph)	1288
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.12

Intersection Summary

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations		✣				✣			✣			✣
Traffic Volume (vph)	2	36	22	1	27	133	1	19	1	11	0	2
Future Volume (vph)	2	36	22	1	27	133	1	19	1	11	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150		150		150	150		150	150	
Storage Lanes	0		0		0		0	0		0	0	
Taper Length (ft)	25				25			25			25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.950				0.999			0.952			
Flt Protected		0.998				0.992			0.970			
Satd. Flow (prot)	0	1766	0	0	0	1846	0	0	1720	0	0	1863
Flt Permitted		0.998				0.992			0.970			
Satd. Flow (perm)	0	1766	0	0	0	1846	0	0	1720	0	0	1863
Link Speed (mph)		30				30			25			25
Link Distance (ft)		390				439			346			362
Travel Time (s)		8.9				10.0			9.4			9.9
Confl. Peds. (#/hr)	5		5		5		5	5		5	5	
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	65	0	0	0	176	0	0	34	0	0	2
Sign Control		Free				Free			Stop			Stop

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 31.3%		ICU Level of Service A	
Analysis Period (min) 15			



Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	0
Future Volume (vph)	0
Ideal Flow (vphpl)	1900
Storage Length (ft)	150
Storage Lanes	0
Taper Length (ft)	
Lane Util. Factor	1.00
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	5
Peak Hour Factor	0.92
Shared Lane Traffic (%)	
Lane Group Flow (vph)	0
Sign Control	

Intersection Summary

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕				⇕			⇕			⇕	
Traffic Vol, veh/h	2	36	22	1	27	133	1	19	1	11	0	2	0
Future Vol, veh/h	2	36	22	1	27	133	1	19	1	11	0	2	0
Conflicting Peds, #/hr	5	0	5	0	5	0	5	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	39	24	1	29	145	1	21	1	12	0	2	0

Major/Minor	Major1			Major2				Minor1			Minor2		
Conflicting Flow All	151	0	0	-	68	0	0	270	271	61	276	283	156
Stage 1	-	-	-	-	-	-	-	60	60	-	209	211	-
Stage 2	-	-	-	-	-	-	-	210	211	-	67	72	-
Critical Hdwy	4.12	-	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1430	-	-	-	1533	-	-	683	636	1004	676	626	890
Stage 1	-	-	-	-	-	-	-	951	845	-	793	728	-
Stage 2	-	-	-	-	-	-	-	792	728	-	943	835	-
Platoon blocked, %		-	-			-	-						
Mov Cap-1 Maneuver	1423	-	-	~ -29	~ -29	-	-	674	629	994	660	619	882
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	674	629	-	660	619	-
Stage 1	-	-	-	-	-	-	-	945	840	-	788	724	-
Stage 2	-	-	-	-	-	-	-	786	724	-	925	830	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3		10	10.8
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	759	1423	-	-	+	-	-	619
HCM Lane V/C Ratio	0.044	0.002	-	-	-	-	-	0.004
HCM Control Delay (s)	10	7.5	0	-	-	-	-	10.8
HCM Lane LOS	B	A	A	-	-	-	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	-	-	-	0

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations		↕			↕			↕				↕
Traffic Volume (vph)	4	66	6	5	160	0	2	0	1	3	0	0
Future Volume (vph)	4	66	6	5	160	0	2	0	1	3	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	150		150	0		0		0	
Storage Lanes	0		0	0		0	0		0		0	
Taper Length (ft)	25			25			25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.989						0.955				0.932
Flt Protected		0.998			0.999			0.968				0.976
Satd. Flow (prot)	0	1839	0	0	1861	0	0	1722	0	0	0	1694
Flt Permitted		0.998			0.999			0.968				0.976
Satd. Flow (perm)	0	1839	0	0	1861	0	0	1722	0	0	0	1694
Link Speed (mph)		30			30			25				25
Link Distance (ft)		405			390			333				365
Travel Time (s)		9.2			8.9			9.1				10.0
Confl. Peds. (#/hr)	5		10	10		5	5		5		5	
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	83	0	0	179	0	0	3	0	0	0	6
Sign Control		Free			Free			Stop				Stop

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 22.1%		ICU Level of Service A	
Analysis Period (min) 15			



Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	3
Future Volume (vph)	3
Ideal Flow (vphpl)	1900
Storage Length (ft)	0
Storage Lanes	0
Taper Length (ft)	
Lane Util. Factor	1.00
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	5
Peak Hour Factor	0.92
Shared Lane Traffic (%)	
Lane Group Flow (vph)	0
Sign Control	

Intersection Summary

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations		↕			↕			↕				↕	
Traffic Vol, veh/h	4	66	6	5	160	0	2	0	1	3	0	0	3
Future Vol, veh/h	4	66	6	5	160	0	2	0	1	3	0	0	3
Conflicting Peds, #/hr	5	0	10	10	0	5	5	0	5	0	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	72	7	5	174	0	2	0	1	3	0	0	3

Major/Minor	Major1			Major2			Minor1			Minor2			
Conflicting Flow All	179	0	0	89	0	0	285	283	91	0	278	286	184
Stage 1	-	-	-	-	-	-	94	94	-	0	189	189	-
Stage 2	-	-	-	-	-	-	191	189	-	0	89	97	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1397	-	-	1506	-	-	667	626	967	0	674	623	858
Stage 1	-	-	-	-	-	-	913	817	-	0	813	744	-
Stage 2	-	-	-	-	-	-	811	744	-	0	918	815	-
Platoon blocked, %		-	-		-	-				-			
Mov Cap-1 Maneuver	1390	-	-	1492	-	-	652	612	953	0	663	609	850
Mov Cap-2 Maneuver	-	-	-	-	-	-	652	612	-	0	663	609	-
Stage 1	-	-	-	-	-	-	902	806	-	0	806	737	-
Stage 2	-	-	-	-	-	-	801	737	-	0	910	804	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.2	10	9.3
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	729	1390	-	-	1492	-	-	850
HCM Lane V/C Ratio	0.004	0.003	-	-	0.004	-	-	0.004
HCM Control Delay (s)	10	7.6	0	-	7.4	0	-	9.3
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0



Lane Group	WBL	WBR	NBT	NBR	SBU	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	94	48	238	39	1	35	144
Future Volume (vph)	94	48	238	39	1	35	144
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor							
Frt	0.954		0.981				
Flt Protected	0.968						0.990
Satd. Flow (prot)	1720	0	1827	0	0	0	1844
Flt Permitted	0.968						0.990
Satd. Flow (perm)	1720	0	1827	0	0	0	1844
Link Speed (mph)	30		30				30
Link Distance (ft)	405		350				1210
Travel Time (s)	9.2		8.0				27.5
Confl. Peds. (#/hr)	2	10		7	10	7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)							
Lane Group Flow (vph)	154	0	301	0	0	0	196
Sign Control	Stop		Free				Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 44.4%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	3.2

Movement	WBL	WBR	NBT	NBR	SBU	SBL	SBT
Lane Configurations							
Traffic Vol, veh/h	94	48	238	39	1	35	144
Future Vol, veh/h	94	48	238	39	1	35	144
Conflicting Peds, #/hr	2	10	0	7	10	7	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	-	None
Storage Length	0	-	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	-	0
Grade, %	0	-	0	-	-	-	0
Peak Hour Factor	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	102	52	259	42	1	38	157

Major/Minor	Minor1		Major1		Major2		
Conflicting Flow All	522	297	0	0	-	308	0
Stage 1	287	-	-	-	-	-	-
Stage 2	235	-	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	-	2.218	-
Pot Cap-1 Maneuver	515	742	-	-	-	1253	-
Stage 1	762	-	-	-	-	-	-
Stage 2	804	-	-	-	-	-	-
Platoon blocked, %			-	-			-
Mov Cap-1 Maneuver	510	730	-	-	~ -37	~ -37	-
Mov Cap-2 Maneuver	510	-	-	-	-	-	-
Stage 1	757	-	-	-	-	-	-
Stage 2	802	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.7	0	
HCM LOS	B		

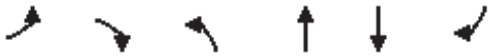
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	568	+	-
HCM Lane V/C Ratio	-	-	0.272	-	-
HCM Control Delay (s)	-	-	13.7	-	-
HCM Lane LOS	-	-	B	-	-
HCM 95th %tile Q(veh)	-	-	1.1	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	6	0	0	7	0	0
Future Volume (vph)	6	0	0	7	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt				0.865		
Flt Protected	0.950					
Satd. Flow (prot)	1770	0	0	1611	0	0
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	0	1611	0	0
Link Speed (mph)	25		25			25
Link Distance (ft)	380		365			210
Travel Time (s)	10.4		10.0			5.7
Confl. Peds. (#/hr)	5	132		70	70	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	7	0	0	8	0	0
Sign Control	Free		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 16.5%		ICU Level of Service A	
Analysis Period (min) 15			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	87	0	1400	1331	8
Future Volume (vph)	0	87	0	1400	1331	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.865			0.999	
Flt Protected						
Satd. Flow (prot)	0	1611	0	3539	3536	0
Flt Permitted						
Satd. Flow (perm)	0	1611	0	3539	3536	0
Link Speed (mph)	30			45	45	
Link Distance (ft)	209			359	430	
Travel Time (s)	4.8			5.4	6.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	95	0	1522	1456	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	49.1%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	87	0	1400	1331	8
Future Vol, veh/h	0	87	0	1400	1331	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	95	0	1522	1447	9

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	728	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	366	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	366	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18.2	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	366	-	-
HCM Lane V/C Ratio	-	0.258	-	-
HCM Control Delay (s)	-	18.2	-	-
HCM Lane LOS	-	C	-	-
HCM 95th %tile Q(veh)	-	1	-	-

Lane Group	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Volume (vph)	1086	90	26	67	1025	59	107
Future Volume (vph)	1086	90	26	67	1025	59	107
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		120		225		0	115
Storage Lanes		1		1		1	1
Taper Length (ft)				25		0	
Lane Util. Factor	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Ped Bike Factor		0.97		1.00		0.99	0.95
Frt		0.850					0.850
Flt Protected				0.950		0.950	
Satd. Flow (prot)	3539	1583	0	1770	3539	1770	1583
Flt Permitted				0.190		0.950	
Satd. Flow (perm)	3539	1535	0	353	3539	1761	1504
Right Turn on Red		Yes					Yes
Satd. Flow (RTOR)		97					116
Link Speed (mph)	35				35	30	
Link Distance (ft)	636				400	1210	
Travel Time (s)	12.4				7.8	27.5	
Confl. Peds. (#/hr)		5		5		5	39
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)							
Lane Group Flow (vph)	1180	98	0	101	1114	64	116
Turn Type	NA	Perm	custom	pm+pt	NA	Perm	Perm
Protected Phases	2			1	6		
Permitted Phases		2	1	6		8	8
Detector Phase	2	2	1	1	6	8	8
Switch Phase							
Minimum Initial (s)	35.0	35.0	5.0	5.0	35.0	5.0	5.0
Minimum Split (s)	41.0	41.0	11.0	11.0	41.0	35.0	35.0
Total Split (s)	70.0	70.0	12.0	12.0	82.0	18.0	18.0
Total Split (%)	70.0%	70.0%	12.0%	12.0%	82.0%	18.0%	18.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0	-1.0	0.0
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	5.0
Lead/Lag	Lag	Lag	Lead	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			
Recall Mode	C-Max	C-Max	None	None	C-Max	None	None
Act Effct Green (s)	72.0	72.0		82.0	82.0	10.0	9.0
Actuated g/C Ratio	0.72	0.72		0.82	0.82	0.10	0.09
v/c Ratio	0.46	0.09		0.25	0.38	0.36	0.48
Control Delay	7.5	1.5		3.2	3.3	47.0	15.0
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay	7.5	1.5		3.2	3.3	47.0	15.0
LOS	A	A		A	A	D	B
Approach Delay	7.0				3.2	26.4	
Approach LOS	A				A	C	
Queue Length 50th (ft)	158	0		13	91	39	0

Lane Group	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Queue Length 95th (ft)	227	16		m19	m106	78	50
Internal Link Dist (ft)	556				320	1130	
Turn Bay Length (ft)		120		225			115
Base Capacity (vph)	2546	1132		409	2901	246	296
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	0.46	0.09		0.25	0.38	0.26	0.39

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 59 (59%), Referenced to phase 2:EBT and 6:WBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.48			
Intersection Signal Delay: 6.6		Intersection LOS: A	
Intersection Capacity Utilization 66.9%		ICU Level of Service C	
Analysis Period (min) 15			

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Main Street & S Boulder Road



Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	0	1209	30	3	16	1170	4	0	0	36	0	0
Future Volume (vph)	0	1209	30	3	16	1170	4	0	0	36	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		50		70		0	0		0	0	
Storage Lanes	0		1		1		0	0		1	0	
Taper Length (ft)	25				25			25			25	
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.850							0.865		
Flt Protected					0.950							
Satd. Flow (prot)	0	3539	1583	0	1770	3539	0	0	0	1611	0	0
Flt Permitted					0.950							
Satd. Flow (perm)	0	3539	1583	0	1770	3539	0	0	0	1611	0	0
Link Speed (mph)		35				35			20			20
Link Distance (ft)		400				360			338			476
Travel Time (s)		7.8				7.0			11.5			16.2
Confl. Peds. (#/hr)	10		10	5	10		10	5		5	5	
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1314	33	0	20	1276	0	0	0	39	0	0
Sign Control		Free				Free			Stop			Stop

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 45.0%		ICU Level of Service A	
Analysis Period (min) 15			



Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	1
Future Volume (vph)	1
Ideal Flow (vphpl)	1900
Storage Length (ft)	0
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Ped Bike Factor	
Frt	0.865
Flt Protected	
Satd. Flow (prot)	1611
Flt Permitted	
Satd. Flow (perm)	1611
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	5
Peak Hour Factor	0.92
Shared Lane Traffic (%)	
Lane Group Flow (vph)	1
Sign Control	

Intersection Summary

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	0	1209	30	3	16	1170	4	0	0	36	0	0	1
Future Vol, veh/h	0	1209	30	3	16	1170	4	0	0	36	0	0	1
Conflicting Peds, #/hr	10	0	10	5	10	0	10	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	-	70	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1314	33	3	17	1272	4	0	0	39	0	0	1

Major/Minor	Major1			Major2			Minor1			Minor2			
Conflicting Flow All	-	0	0	1314	1357	0	0	-	-	672	-	-	653
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	6.44	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	2.52	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	208	503	-	-	0	0	398	0	0	410
Stage 1	0	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	0	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-			-	-						
Mov Cap-1 Maneuver	-	-	-	396	396	-	-	-	-	392	-	-	404
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.2	15.2	13.9
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	392	-	-	396	-	-	404
HCM Lane V/C Ratio	0.1	-	-	0.052	-	-	0.003
HCM Control Delay (s)	15.2	-	-	14.6	-	-	13.9
HCM Lane LOS	C	-	-	B	-	-	B
HCM 95th %tile Q(veh)	0.3	-	-	0.2	-	-	0



Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	15	28	1156	27	1	52	1084	12	0	0	58	0
Future Volume (vph)	15	28	1156	27	1	52	1084	12	0	0	58	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		90		0		80		0	0		0	0
Storage Lanes		1		0		1		0	0		1	0
Taper Length (ft)		25				25			25			25
Lane Util. Factor	0.95	1.00	0.95	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.997				0.998				0.865	
Flt Protected		0.950				0.950						
Satd. Flow (prot)	0	1770	3529	0	0	1770	3532	0	0	0	1611	0
Flt Permitted		0.950				0.950						
Satd. Flow (perm)	0	1770	3529	0	0	1770	3532	0	0	0	1611	0
Link Speed (mph)			35				35			20		
Link Distance (ft)			360				465			339		
Travel Time (s)			7.0				9.1			11.6		
Confl. Peds. (#/hr)	5	10		10	5	10		10	5		5	5
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	46	1286	0	0	58	1191	0	0	0	63	0
Sign Control			Free				Free			Stop		

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 51.7%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	0	82
Future Volume (vph)	0	82
Ideal Flow (vphpl)	1900	1900
Storage Length (ft)		0
Storage Lanes		1
Taper Length (ft)		
Lane Util. Factor	1.00	1.00
Ped Bike Factor		
Frt		0.865
Flt Protected		
Satd. Flow (prot)	0	1611
Flt Permitted		
Satd. Flow (perm)	0	1611
Link Speed (mph)	20	
Link Distance (ft)	431	
Travel Time (s)	14.7	
Confl. Peds. (#/hr)		5
Peak Hour Factor	0.92	0.92
Shared Lane Traffic (%)		
Lane Group Flow (vph)	0	89
Sign Control	Stop	

Intersection Summary

Intersection	
Int Delay, s/veh	1.4

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	15	28	1156	27	1	52	1084	12	0	0	58	0	0	82
Future Vol, veh/h	15	28	1156	27	1	52	1084	12	0	0	58	0	0	82
Conflicting Peds, #/hr	5	10	0	10	5	10	0	10	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	90	-	-	-	80	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	30	1257	29	1	57	1178	13	0	0	63	0	0	89

Major/Minor	Major1				Major2				Minor1			Minor2		
Conflicting Flow All	1191	1201	0	0	1286	1296	0	0	-	-	658	-	-	611
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	6.44	4.14	-	-	6.44	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.52	2.22	-	-	2.52	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	250	577	-	-	217	531	-	-	0	0	407	0	0	437
Stage 1	-	-	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %			-	-			-	-						
Mov Cap-1 Maneuver	349	349	-	-	508	508	-	-	-	-	401	-	-	431
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.6	15.6	15.5
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	401	349	-	-	508	-	-	431
HCM Lane V/C Ratio	0.157	0.134	-	-	0.113	-	-	0.207
HCM Control Delay (s)	15.6	16.9	-	-	13	-	-	15.5
HCM Lane LOS	C	C	-	-	B	-	-	C
HCM 95th %tile Q(veh)	0.6	0.5	-	-	0.4	-	-	0.8

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
Lane Configurations												
Traffic Volume (vph)	31	508	607	147	322	681	173	4	216	464	253	7
Future Volume (vph)	31	508	607	147	322	681	173	4	216	464	253	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		150		100	225		270		0		0	
Storage Lanes		2		1	2		1		2		1	
Taper Length (ft)		25			25				25			
Lane Util. Factor	0.95	0.97	0.95	1.00	0.97	0.95	1.00	0.95	0.97	0.95	1.00	0.95
Ped Bike Factor				0.98			0.98				0.98	
Frt				0.850			0.850				0.850	
Flt Protected		0.950			0.950				0.950			
Satd. Flow (prot)	0	3433	3539	1583	3433	3539	1583	0	3433	3539	1583	0
Flt Permitted		0.371			0.950				0.500			
Satd. Flow (perm)	0	1341	3539	1557	3433	3539	1549	0	1807	3539	1557	0
Right Turn on Red				Yes			Yes				Yes	
Satd. Flow (RTOR)				207			218				275	
Link Speed (mph)			35			35				45		
Link Distance (ft)			465			1815				418		
Travel Time (s)			9.1			35.4				6.3		
Confl. Peds. (#/hr)				5			10				5	
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	586	660	160	350	740	188	0	239	504	275	0
Turn Type	custom	Prot	NA	Perm	Prot	NA	Perm	custom	Prot	NA	Perm	custom
Protected Phases		5	2		1	6			3	8		
Permitted Phases	5			2			6	3			8	7
Detector Phase	5	5	2	2	1	6	6	3	3	8	8	7
Switch Phase												
Minimum Initial (s)	5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	5.0	6.0	6.0	5.0
Minimum Split (s)	10.0	10.0	37.0	37.0	10.0	37.0	37.0	10.0	10.0	40.0	40.0	10.0
Total Split (s)	18.0	18.0	38.0	38.0	14.0	34.0	34.0	12.0	12.0	36.0	36.0	12.0
Total Split (%)	18.0%	18.0%	38.0%	38.0%	14.0%	34.0%	34.0%	12.0%	12.0%	36.0%	36.0%	12.0%
Yellow Time (s)	3.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	3.0	4.0	4.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		-1.0	-2.0	-2.0	-1.0	-2.0	-2.0		-1.0	-2.0	-2.0	
Total Lost Time (s)		4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	
Lead/Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lead	Lead	Lead	Lag
Lead-Lag Optimize?												
Recall Mode	None	None	C-Max	C-Max	None	Max	Max	None	None	Max	Max	None
Act Effct Green (s)		14.0	34.0	34.0	10.0	30.0	30.0		8.0	32.0	32.0	
Actuated g/C Ratio		0.14	0.34	0.34	0.10	0.30	0.30		0.08	0.32	0.32	
v/c Ratio		3.13	0.55	0.24	1.02	0.70	0.30		1.66	0.45	0.40	
Control Delay		990.3	26.2	2.6	99.5	35.2	3.7		356.1	25.0	7.3	
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	
Total Delay		990.3	26.2	2.6	99.5	35.2	3.7		356.1	25.0	7.3	
LOS		F	C	A	F	D	A		F	C	A	
Approach Delay			425.3			48.1				98.0		
Approach LOS			F			D				F		
Queue Length 50th (ft)		~344	127	0	~119	218	0		~116	134	1	



Lane Group	SBL	SBT	SBR
Lane Configurations			
Traffic Volume (vph)	140	506	341
Future Volume (vph)	140	506	341
Ideal Flow (vphpl)	1900	1900	1900
Storage Length (ft)	185		270
Storage Lanes	2		1
Taper Length (ft)	25		
Lane Util. Factor	0.97	0.95	1.00
Ped Bike Factor			0.98
Frt			0.850
Flt Protected	0.950		
Satd. Flow (prot)	3433	3539	1583
Flt Permitted	0.500		
Satd. Flow (perm)	1807	3539	1557
Right Turn on Red			Yes
Satd. Flow (RTOR)			251
Link Speed (mph)		45	
Link Distance (ft)		1337	
Travel Time (s)		20.3	
Confl. Peds. (#/hr)			5
Peak Hour Factor	0.92	0.92	0.92
Shared Lane Traffic (%)			
Lane Group Flow (vph)	160	550	371
Turn Type	Prot	NA	Perm
Protected Phases	7	4	
Permitted Phases			4
Detector Phase	7	4	4
Switch Phase			
Minimum Initial (s)	5.0	6.0	6.0
Minimum Split (s)	10.0	36.0	36.0
Total Split (s)	12.0	36.0	36.0
Total Split (%)	12.0%	36.0%	36.0%
Yellow Time (s)	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0
Lead/Lag	Lag	Lag	Lag
Lead-Lag Optimize?			
Recall Mode	None	Max	Max
Act Effct Green (s)	8.0	32.0	32.0
Actuated g/C Ratio	0.08	0.32	0.32
v/c Ratio	1.11	0.49	0.56
Control Delay	152.0	29.2	12.5
Queue Delay	0.0	0.0	0.0
Total Delay	152.0	29.2	12.5
LOS	F	C	B
Approach Delay		41.6	
Approach LOS		D	
Queue Length 50th (ft)	~60	147	56

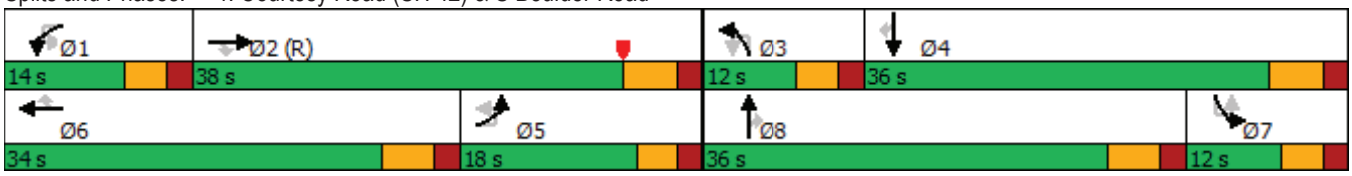
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
Queue Length 95th (ft)		#441	177	21	#213	285	34		#201	129	85	
Internal Link Dist (ft)			385			1735				338		
Turn Bay Length (ft)		150		100	225		270					
Base Capacity (vph)		187	1203	666	343	1061	617		144	1132	685	
Starvation Cap Reductn		0	0	0	0	0	0		0	0	0	
Spillback Cap Reductn		0	0	0	0	0	0		0	0	0	
Storage Cap Reductn		0	0	0	0	0	0		0	0	0	
Reduced v/c Ratio		3.13	0.55	0.24	1.02	0.70	0.30		1.66	0.45	0.40	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow, Master Intersection			
Natural Cycle: 130			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 3.13			
Intersection Signal Delay: 168.2		Intersection LOS: F	
Intersection Capacity Utilization 87.1%		ICU Level of Service E	
Analysis Period (min) 15			

~ 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.

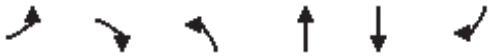
Splits and Phases: 4: Courtesy Road (SH 42) & S Boulder Road





Lane Group	SBL	SBT	SBR
Queue Length 95th (ft)	#126	198	146
Internal Link Dist (ft)		1257	
Turn Bay Length (ft)	185		270
Base Capacity (vph)	144	1132	668
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	1.11	0.49	0.56

Intersection Summary



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	11	0	935	955	16
Future Volume (vph)	0	11	0	935	955	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	140			0
Storage Lanes	0	1	0			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor						
Frt		0.865			0.998	
Flt Protected						
Satd. Flow (prot)	0	1611	0	3539	3532	0
Flt Permitted						
Satd. Flow (perm)	0	1611	0	3539	3532	0
Link Speed (mph)	20			45	45	
Link Distance (ft)	418			420	418	
Travel Time (s)	14.3			6.4	6.3	
Confl. Peds. (#/hr)			5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	12	0	1016	1055	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	36.9%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	11	0	935	955	16
Future Vol, veh/h	0	11	0	935	955	16
Conflicting Peds, #/hr	0	0	5	0	0	5
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	12	0	1016	1038	17

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	533	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	491	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	489	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.5	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	489	-	-
HCM Lane V/C Ratio	-	0.024	-	-
HCM Control Delay (s)	-	12.5	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.1	-	-

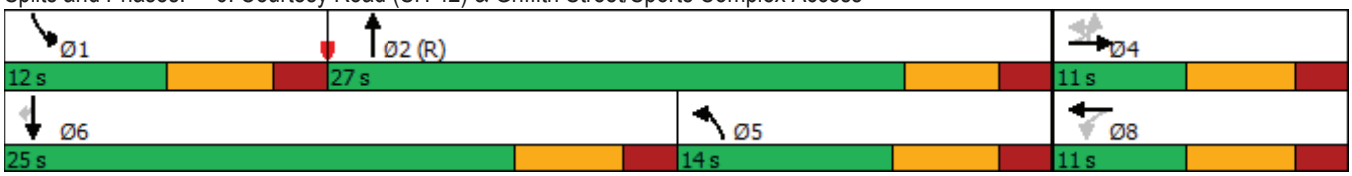
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	7	21	2	1	6	21	863	43	11	895	50
Future Volume (vph)	20	7	21	2	1	6	21	863	43	11	895	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		0	50		0	225		0	500		273
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor												0.98
Frt		0.889			0.869			0.993				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1656	0	1770	1619	0	1770	3514	0	1770	3539	1583
Flt Permitted	0.800			0.800			0.950			0.950		
Satd. Flow (perm)	1490	1656	0	1490	1619	0	1770	3514	0	1770	3539	1545
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		23			7			13				196
Link Speed (mph)		30			20			45			45	
Link Distance (ft)		439			281			380			369	
Travel Time (s)		10.0			9.6			5.8			5.6	
Confl. Bikes (#/hr)												5
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	22	31	0	2	8	0	23	985	0	12	973	54
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								6
Detector Phase	4	4		8	8		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	25.0	25.0		25.0	25.0		11.0	24.5		11.0	25.0	25.0
Total Split (s)	11.0	11.0		11.0	11.0		14.0	27.0		12.0	25.0	25.0
Total Split (%)	22.0%	22.0%		22.0%	22.0%		28.0%	54.0%		24.0%	50.0%	50.0%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	3.5		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-1.5		-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lead/Lag							Lag	Lag		Lead	Lead	Lead
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None		None	C-Max		None	Max	Max
Act Effct Green (s)	7.0	7.0		7.0	7.0		8.3	38.6		7.8	38.2	38.2
Actuated g/C Ratio	0.14	0.14		0.14	0.14		0.17	0.77		0.16	0.76	0.76
v/c Ratio	0.11	0.12		0.01	0.03		0.08	0.36		0.04	0.36	0.04
Control Delay	20.4	11.0		18.5	13.3		17.7	4.8		17.5	4.7	0.7
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	20.4	11.0		18.5	13.3		17.7	4.8		17.5	4.7	0.7
LOS	C	B		B	B		B	A		B	A	A
Approach Delay		14.9			14.3			5.1			4.7	
Approach LOS		B			B			A			A	
Queue Length 50th (ft)	6	3		1	0		6	44		5	116	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (ft)	17	15		5	9		20	153		m11	m171	m3
Internal Link Dist (ft)		359			201			300			289	
Turn Bay Length (ft)	50			50			225			500		273
Base Capacity (vph)	208	251		208	232		354	2715		283	2704	1226
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.11	0.12		0.01	0.03		0.06	0.36		0.04	0.36	0.04

Intersection Summary			
Area Type:	Other		
Cycle Length: 50			
Actuated Cycle Length: 50			
Offset: 48 (96%), Referenced to phase 2:NBT, Start of Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.36			
Intersection Signal Delay: 5.2		Intersection LOS: A	
Intersection Capacity Utilization 39.7%		ICU Level of Service A	
Analysis Period (min) 15			

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Courtesy Road (SH 42) & Griffith Street/Sports Complex Access





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	31	20	15	63	1	14	0	16	1	0	1
Future Volume (vph)	0	31	20	15	63	1	14	0	16	1	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	150		150	150		150	150		150
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.947			0.998			0.928			0.932	
Flt Protected					0.991			0.977			0.976	
Satd. Flow (prot)	0	1764	0	0	1842	0	0	1689	0	0	1694	0
Flt Permitted					0.991			0.977			0.976	
Satd. Flow (perm)	0	1764	0	0	1842	0	0	1689	0	0	1694	0
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		390			439			346			362	
Travel Time (s)		8.9			10.0			9.4			9.9	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	56	0	0	85	0	0	32	0	0	2	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 22.8%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	31	20	15	63	1	14	0	16	1	0	1
Future Vol, veh/h	0	31	20	15	63	1	14	0	16	1	0	1
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	34	22	16	68	1	15	0	17	1	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	74	0	0	61	0	0	156	156	55	165	167	79
Stage 1	-	-	-	-	-	-	50	50	-	106	106	-
Stage 2	-	-	-	-	-	-	106	106	-	59	61	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1526	-	-	1542	-	-	810	736	1012	800	726	981
Stage 1	-	-	-	-	-	-	963	853	-	900	807	-
Stage 2	-	-	-	-	-	-	900	807	-	953	844	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1519	-	-	1535	-	-	795	721	1002	772	711	972
Mov Cap-2 Maneuver	-	-	-	-	-	-	795	721	-	772	711	-
Stage 1	-	-	-	-	-	-	958	849	-	896	794	-
Stage 2	-	-	-	-	-	-	885	794	-	932	840	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1.4	9.2	9.2
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	893	1519	-	-	1535	-	-	861
HCM Lane V/C Ratio	0.037	-	-	-	0.011	-	-	0.003
HCM Control Delay (s)	9.2	0	-	-	7.4	0	-	9.2
HCM Lane LOS	A	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	53	3	1	74	3	8	0	0	0	0	4
Future Volume (vph)	6	53	3	1	74	3	8	0	0	0	0	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	150		150	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.994			0.995						0.865	
Flt Protected		0.995			0.999			0.950				
Satd. Flow (prot)	0	1842	0	0	1852	0	0	1770	0	0	1611	0
Flt Permitted		0.995			0.999			0.950				
Satd. Flow (perm)	0	1842	0	0	1852	0	0	1770	0	0	1611	0
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		405			390			333			365	
Travel Time (s)		9.2			8.9			9.1			10.0	
Confl. Peds. (#/hr)	5		10	10		5	5		5	5		5
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	68	0	0	84	0	0	9	0	0	4	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 23.0%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	53	3	1	74	3	8	0	0	0	0	4
Future Vol, veh/h	6	53	3	1	74	3	8	0	0	0	0	4
Conflicting Peds, #/hr	5	0	10	10	0	5	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	58	3	1	80	3	9	0	0	0	0	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	88	0	0	71	0	0	175	174	75	168	174	92
Stage 1	-	-	-	-	-	-	84	84	-	89	89	-
Stage 2	-	-	-	-	-	-	91	90	-	79	85	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1508	-	-	1529	-	-	788	719	986	796	719	965
Stage 1	-	-	-	-	-	-	924	825	-	918	821	-
Stage 2	-	-	-	-	-	-	916	820	-	930	824	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1501	-	-	1514	-	-	770	704	972	785	704	956
Mov Cap-2 Maneuver	-	-	-	-	-	-	770	704	-	785	704	-
Stage 1	-	-	-	-	-	-	911	813	-	909	816	-
Stage 2	-	-	-	-	-	-	907	815	-	921	812	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0.1	9.7	8.8
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	770	1501	-	-	1514	-	-	956
HCM Lane V/C Ratio	0.011	0.004	-	-	0.001	-	-	0.005
HCM Control Delay (s)	9.7	7.4	0	-	7.4	0	-	8.8
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	63	27	144	46	14	138
Future Volume (vph)	63	27	144	46	14	138
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.960		0.967			
Flt Protected	0.966					0.995
Satd. Flow (prot)	1727	0	1801	0	0	1853
Flt Permitted	0.966					0.995
Satd. Flow (perm)	1727	0	1801	0	0	1853
Link Speed (mph)	30		30			30
Link Distance (ft)	405		350			1210
Travel Time (s)	9.2		8.0			27.5
Confl. Peds. (#/hr)	6	2		17	17	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	97	0	207	0	0	165
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 31.3%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	2.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	63	27	144	46	14	138
Future Vol, veh/h	63	27	144	46	14	138
Conflicting Peds, #/hr	6	2	0	17	17	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	68	29	157	50	15	150

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	385	201	0	0	224	0
Stage 1	199	-	-	-	-	-
Stage 2	186	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	618	840	-	-	1345	-
Stage 1	835	-	-	-	-	-
Stage 2	846	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	597	825	-	-	1323	-
Mov Cap-2 Maneuver	597	-	-	-	-	-
Stage 1	812	-	-	-	-	-
Stage 2	841	-	-	-	-	-

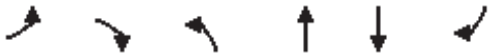
Approach	WB	NB	SB
HCM Control Delay, s	11.5	0	0.7
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	651	1323	-
HCM Lane V/C Ratio	-	-	0.15	0.012	-
HCM Control Delay (s)	-	-	11.5	7.8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.5	0	-



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	4	0	0	9	0	0
Future Volume (vph)	4	0	0	9	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt				0.865		
Flt Protected	0.950					
Satd. Flow (prot)	1770	0	0	1611	0	0
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	0	1611	0	0
Link Speed (mph)	25		25			25
Link Distance (ft)	380		365			210
Travel Time (s)	10.4		10.0			5.7
Confl. Peds. (#/hr)	5	132		70	70	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	4	0	0	10	0	0
Sign Control	Free		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 16.5%		ICU Level of Service A	
Analysis Period (min) 15			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	49	0	878	931	6
Future Volume (vph)	0	49	0	878	931	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.865			0.999	
Flt Protected						
Satd. Flow (prot)	0	1611	0	3539	3536	0
Flt Permitted						
Satd. Flow (perm)	0	1611	0	3539	3536	0
Link Speed (mph)	30			45	45	
Link Distance (ft)	201			369	420	
Travel Time (s)	4.6			5.6	6.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	53	0	954	1019	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 35.9%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	49	0	878	931	6
Future Vol, veh/h	0	49	0	878	931	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	53	0	954	1012	7

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	510	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	509	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	509	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

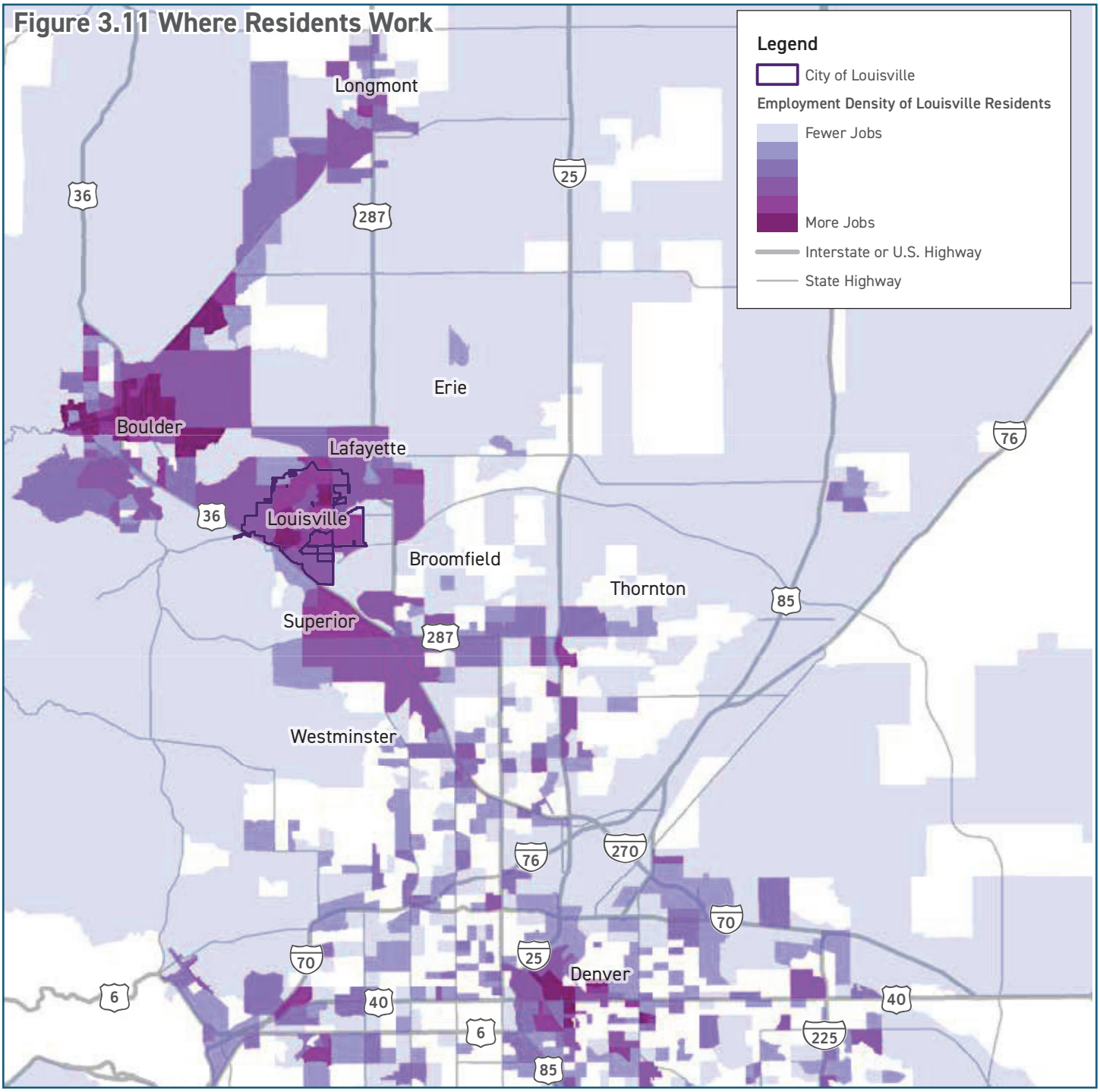
Approach	EB	NB	SB
HCM Control Delay, s	12.9	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	509	-	-
HCM Lane V/C Ratio	-	0.105	-	-
HCM Control Delay (s)	-	12.9	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.3	-	-

Appendix O: Louisville TMP Pages

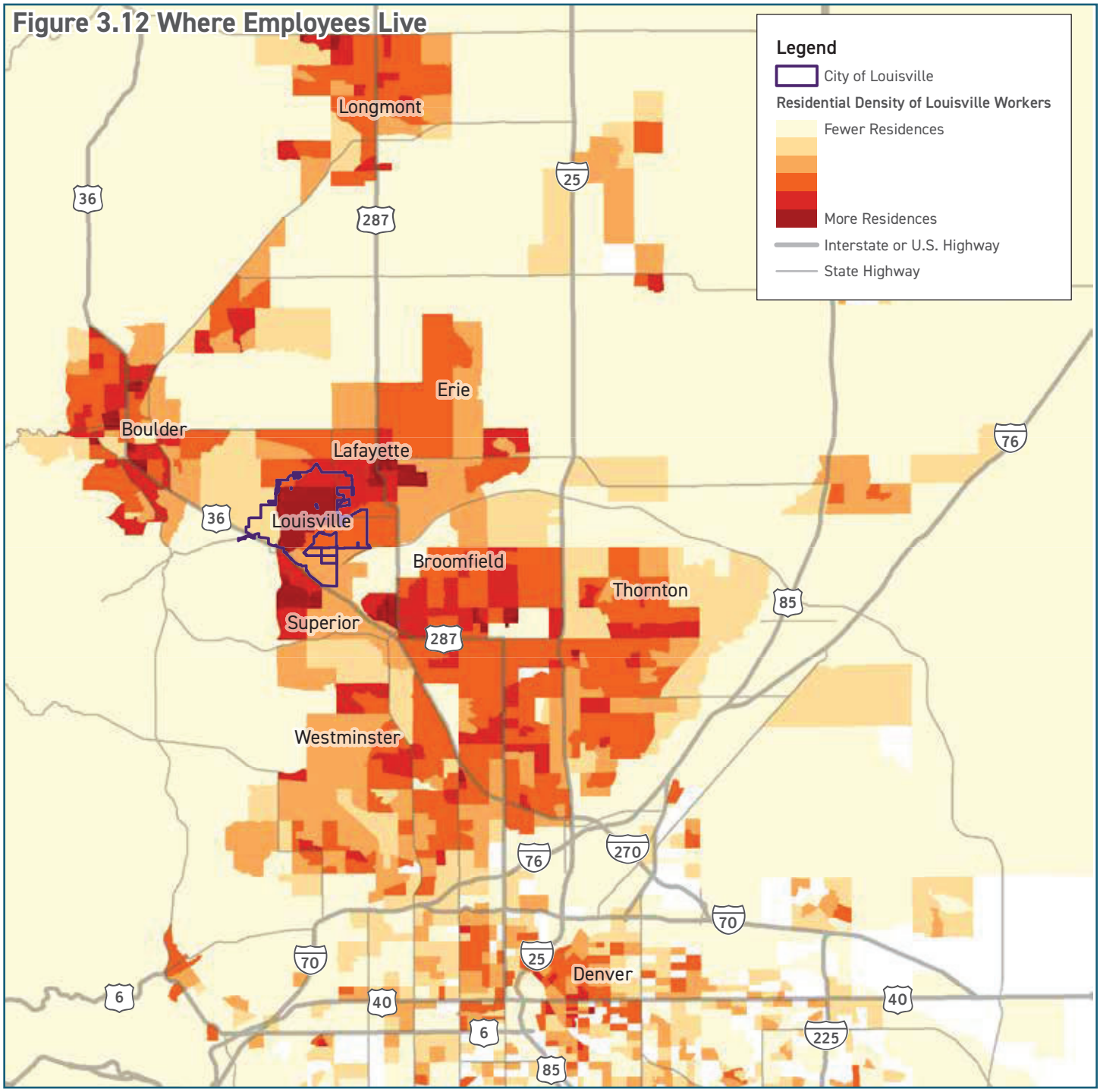
Where Louisville Residents Work

Figure 3.11 uses US Census data to show where Louisville residents work. Areas with a darker color have a larger density of residents working in that area. The majority of residents work within Boulder County, with a high number also working in Denver and lesser amounts spread throughout the north metro region. The highest areas of employment for Louisville residents are in the Cities of Boulder (28%) and Denver (14%). Approximately 89% of employed residents work outside of Louisville. This data helps identify key commuting corridors such as US 36, US 287, and Highway 119.



Where Louisville Employees Live

Figure 3.12 maps the location of where Louisville employees live. Only 7% of employees live in Louisville, while the rest live in cities across the region. Approximately 7% of workers live in each of the following: Denver, Broomfield, Boulder, and Westminster. Thornton and Lafayette account for another 6%, each. Strong regional corridors and connections allow Louisville to attract employees who live in other locations throughout the Denver region. Direct access via the Northwest Parkway, US 36, US 287, and Highway 7 provide key connections to Louisville. Approximately 93% of employees live outside of Louisville, adding stress on the transportation network from daily commuting.



HOW PEOPLE MOVE IN LOUISVILLE

This section uses Census data paired with transportation demand model (TDM) data from DRCOG to identify trip types and modes for travel occurring within Louisville.

Trips in Louisville

The TDM separates travel into two key types based on the origin and destination and are then divided into work-based and nonwork-based trips. The TDM is an activity based model that factors in all trips made between an origin and destination. For example, a trip that begins at home, stops for coffee, and goes to a school before traveling to work would ultimately be counted as a work-based trip. A trip that begins at home, goes to the gym, goes to the grocery store, then back home would be classified as a nonwork-based trip.

Currently, only 40.1% of all trips made within, to, or from Louisville are work related. This proportion is projected to generally stay the same (39.5%) over the next 20 years. This means a significant portion of trips occurring on the network are not related to commuting to work.

Transportation planning is often focused on the needs of commuting trips. To adequately plan for the functionality of the transportation system as a whole, however, it is important to address the variety of trip types and distances. Commuting trips are some of the longest trips that people make on a regular basis, and are therefore more likely to be completed by car than by walking or biking. Nonwork-based trips are typically much shorter. These shorter trips can be more strongly influenced by enhancing modal options, particularly walking and biking.

What is a Travel Demand Model?

The Denver Regional Council of Governments (DRCOG) develops a travel demand model (TDM) that estimates trip types, origins and destinations, modes, and trip lengths for all trips occurring in the region. This information is based on population, employment and development patterns, and multiple surveys estimate travel patterns. The TDM is a useful tool to help understand current and future demand and impacts on the transportation network.

Linking Trips and Land Use

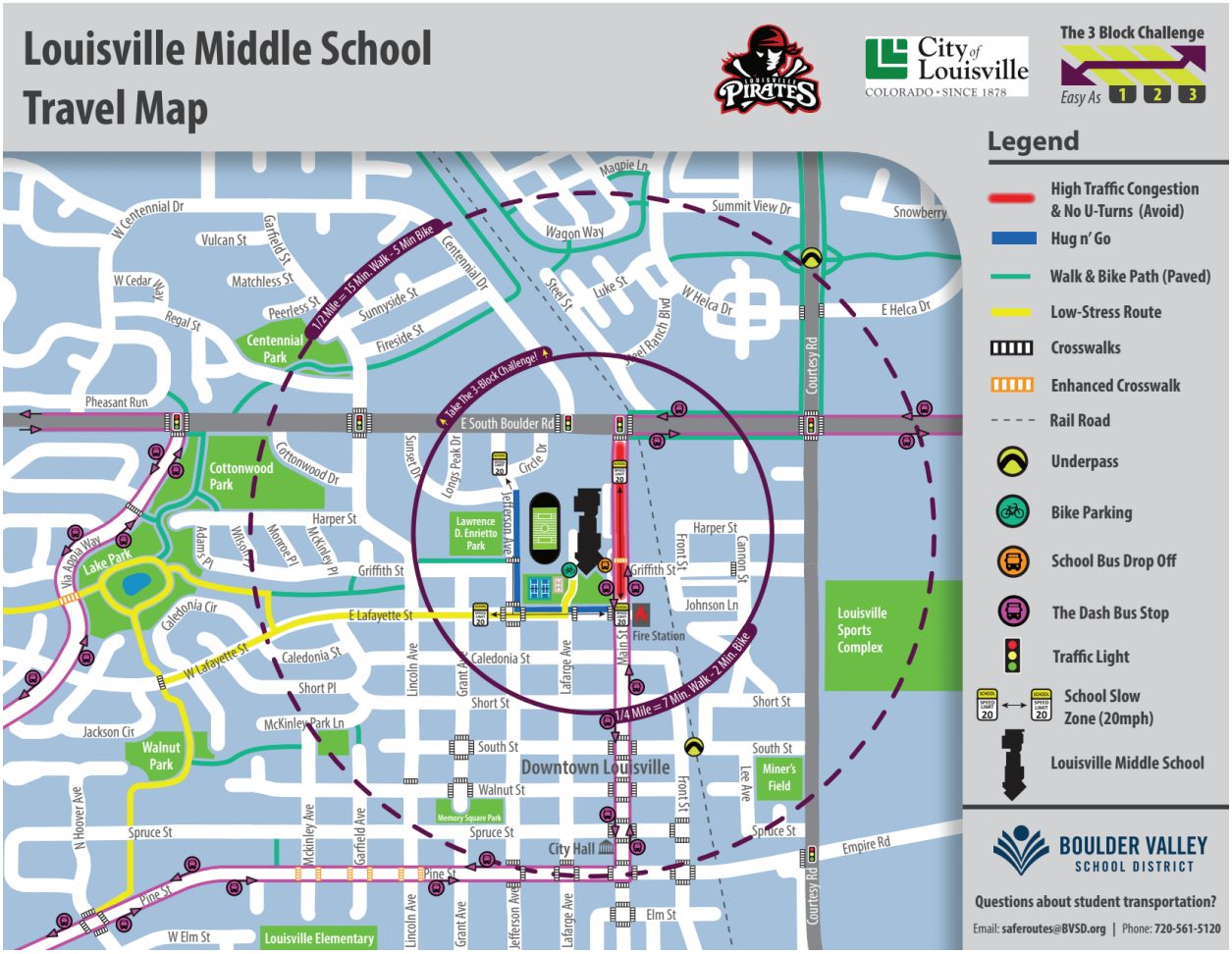
As housing costs continue to rise, more growth is occurring further out in the region, resulting in more, and longer commutes. This places additional stress on the transportation network leading to increased congestion. Allowing transit supportive development patterns and land uses, such as mixed use development at higher densities, can accommodate a variety of trips without the need for driving, therefore reducing stress on the transportation network. An example is the DELO development developed under the City's mixed use zoning standards.

Appendix P: Railroad Queue Calculations

Train Queue Calculations

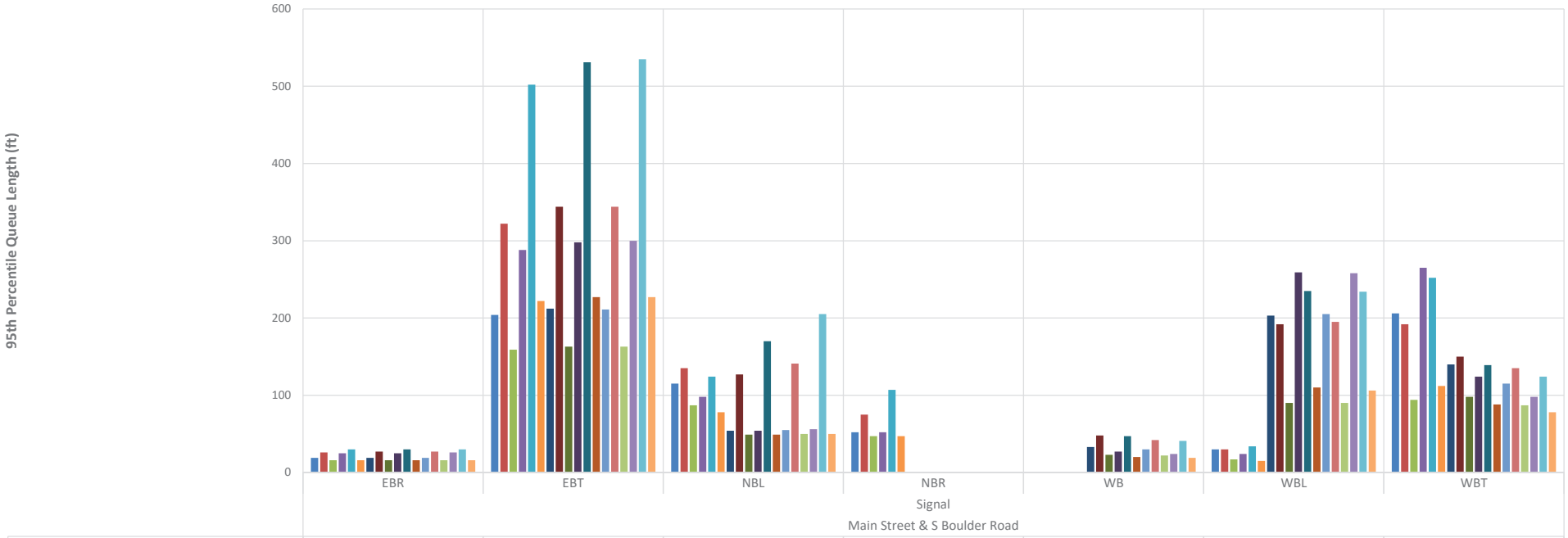
FullScenario	Int Dir	Volume (vph)	Train Delay (min)	Avg # of Vehicles per Train Event	(95th Percentile) Cumulative Poisson Distribution	(95th Percentile) Vehicles in Queue	(50th Percentile) Cumulative Poisson Distribution	(50th Percentile) Vehicles in Queue	(95th Percentile) Queue Length (ft.)	(50th Percentile) Queue Length (ft.)
Total 2026 With Front Street AM	EB	88	3	4.4	0.964	**8**	0.551	**4**	200	100
Total 2026 With Front Street PM	EB	93	3	4.7	0.952	**8**	0.504	**4**	200	100
Total 2026 With Front Street SAT	EB	72	3	3.6	0.969	**7**	0.515	**3**	175	75
Total 2026 With Front Street AM	WB	167	3	8.4	0.954	**13**	0.544	**8**	325	200
Total 2026 With Front Street PM	WB	179	3	9.0	0.960	**14**	0.594	**9**	350	225
Total 2026 With Front Street SAT	WB	122	3	6.1	0.953	**10**	0.590	**6**	250	150
Total 2026 With Front Street AM	EB	88	5	7.3	0.963	**12**	0.549	**7**	300	175
Total 2026 With Front Street PM	EB	93	5	7.8	0.973	**13**	0.627	**8**	325	200
Total 2026 With Front Street SAT	EB	72	5	6.0	0.957	**10**	0.606	**6**	250	150
Total 2026 With Front Street AM	WB	167	5	13.9	0.954	**20**	0.579	**14**	500	350
Total 2026 With Front Street PM	WB	179	5	14.9	0.969	**22**	0.577	**15**	550	375
Total 2026 With Front Street SAT	WB	122	5	10.2	0.969	**16**	0.562	**10**	400	250
Total 2026 Without Front Street AM	EB	82	3	4.1	0.976	**8**	0.609	**4**	200	100
Total 2026 Without Front Street PM	EB	78	3	3.9	0.955	**7**	0.648	**4**	175	100
Total 2026 Without Front Street SAT	EB	64	3	3.2	0.955	**6**	0.603	**3**	150	75
Total 2026 Without Front Street AM	WB	127	3	6.4	0.971	**11**	0.550	**6**	275	150
Total 2026 Without Front Street PM	WB	147	3	7.4	0.963	**12**	0.547	**7**	300	175
Total 2026 Without Front Street SAT	WB	99	3	5.0	0.970	**9**	0.625	**5**	225	125
Total 2026 Without Front Street AM	EB	82	5	6.8	0.954	**11**	0.624	**7**	275	175
Total 2026 Without Front Street PM	EB	78	5	6.5	0.966	**11**	0.527	**6**	275	150
Total 2026 Without Front Street SAT	EB	64	5	5.3	0.954	**9**	0.558	**5**	225	125
Total 2026 Without Front Street AM	WB	127	5	10.6	0.958	**16**	0.510	**10**	400	250
Total 2026 Without Front Street PM	WB	147	5	12.3	0.956	**18**	0.547	**12**	450	300
Total 2026 Without Front Street SAT	WB	99	5	8.3	0.958	**13**	0.558	**8**	325	200
Total 2045 With Front Street AM	EB	87	3	4.4	0.966	**8**	0.561	**4**	200	100
Total 2045 With Front Street PM	EB	89	3	4.5	0.962	**8**	0.542	**4**	200	100
Total 2045 With Front Street SAT	EB	68	3	3.4	0.977	**7**	0.558	**3**	175	75
Total 2045 With Front Street AM	WB	153	3	7.7	0.952	**12**	0.503	**7**	300	175
Total 2045 With Front Street PM	WB	170	3	8.5	0.973	**14**	0.523	**8**	350	200
Total 2045 With Front Street SAT	WB	113	3	5.7	0.970	**10**	0.503	**5**	250	125
Total 2045 With Front Street AM	EB	87	5	7.3	0.966	**12**	0.562	**7**	300	175
Total 2045 With Front Street PM	EB	89	5	7.4	0.960	**12**	0.537	**7**	300	175
Total 2045 With Front Street SAT	EB	68	5	5.7	0.970	**10**	0.501	**5**	250	125
Total 2045 With Front Street AM	WB	153	5	12.8	0.964	**19**	0.601	**13**	475	325
Total 2045 With Front Street PM	WB	170	5	14.2	0.968	**21**	0.553	**14**	525	350
Total 2045 With Front Street SAT	WB	113	5	9.4	0.969	**15**	0.533	**9**	375	225
Total 2045 Without Front Street AM	EB	81	3	4.1	0.977	**8**	0.619	**4**	200	100
Total 2045 Without Front Street PM	EB	74	3	3.7	0.965	**7**	0.687	**4**	175	100
Total 2045 Without Front Street SAT	EB	60	3	3.0	0.966	**6**	0.647	**3**	150	75
Total 2045 Without Front Street AM	WB	110	3	5.5	0.975	**10**	0.529	**5**	250	125
Total 2045 Without Front Street PM	WB	142	3	7.1	0.970	**12**	0.584	**7**	300	175
Total 2045 Without Front Street SAT	WB	90	3	4.5	0.960	**8**	0.532	**4**	200	100
Total 2045 Without Front Street AM	EB	81	5	6.8	0.957	**11**	0.636	**7**	275	175
Total 2045 Without Front Street PM	EB	74	5	6.2	0.950	**10**	0.580	**6**	250	150
Total 2045 Without Front Street SAT	EB	60	5	5.0	0.968	**9**	0.616	**5**	225	125
Total 2045 Without Front Street AM	WB	110	5	9.2	0.953	**14**	0.565	**9**	350	225
Total 2045 Without Front Street PM	WB	142	5	11.8	0.967	**18**	0.595	**12**	450	300
Total 2045 Without Front Street SAT	WB	90	5	7.5	0.957	**12**	0.525	**7**	300	175
Background 2026 AM	EB	82	3	4.1	0.976	**8**	0.609	**4**	200	100
Background 2026 PM	EB	78	3	3.9	0.955	**7**	0.648	**4**	175	100
Background 2026 SAT	EB	64	3	3.2	0.955	**6**	0.603	**3**	150	75
Background 2026 AM	WB	116	3	5.8	0.965	**10**	0.638	**6**	250	150
Background 2026 PM	WB	137	3	6.9	0.953	**11**	0.621	**7**	275	175
Background 2026 SAT	WB	93	3	4.7	0.952	**8**	0.504	**4**	200	100
Background 2026 AM	EB	82	5	6.8	0.954	**11**	0.624	**7**	275	175
Background 2026 PM	EB	78	5	6.5	0.966	**11**	0.527	**6**	275	150
Background 2026 SAT	EB	64	5	5.3	0.954	**9**	0.558	**5**	225	125
Background 2026 AM	WB	116	5	9.7	0.962	**15**	0.500	**9**	375	225
Background 2026 PM	WB	137	5	11.4	0.957	**17**	0.530	**11**	425	275
Background 2026 SAT	WB	93	5	7.8	0.973	**13**	0.627	**8**	325	200
Background 2045 AM	EB	81	3	4.1	0.977	**8**	0.619	**4**	200	100
Background 2045 PM	EB	74	3	3.7	0.965	**7**	0.687	**4**	175	100
Background 2045 SAT	EB	60	3	3.0	0.966	**6**	0.647	**3**	150	75
Background 2045 AM	WB	102	3	5.1	0.964	**9**	0.598	**5**	225	125
Background 2045 PM	WB	128	3	6.4	0.969	**11**	0.542	**6**	275	150
Background 2045 SAT	WB	84	3	4.2	0.972	**8**	0.590	**4**	200	100
Background 2045 AM	EB	81	5	6.8	0.957	**11**	0.636	**7**	275	175
Background 2045 PM	EB	74	5	6.2	0.950	**10**	0.580	**6**	250	150
Background 2045 SAT	EB	60	5	5.0	0.968	**9**	0.616	**5**	225	125
Background 2045 AM	WB	102	5	8.5	0.973	**14**	0.523	**8**	350	200
Background 2045 PM	WB	128	5	10.7	0.955	**16**	0.500	**10**	400	250
Background 2045 SAT	WB	84	5	7.0	0.973	**12**	0.599	**7**	300	175

Appendix Q: Louisville Middle School Travel Map



Appendix R: Intersection Queues

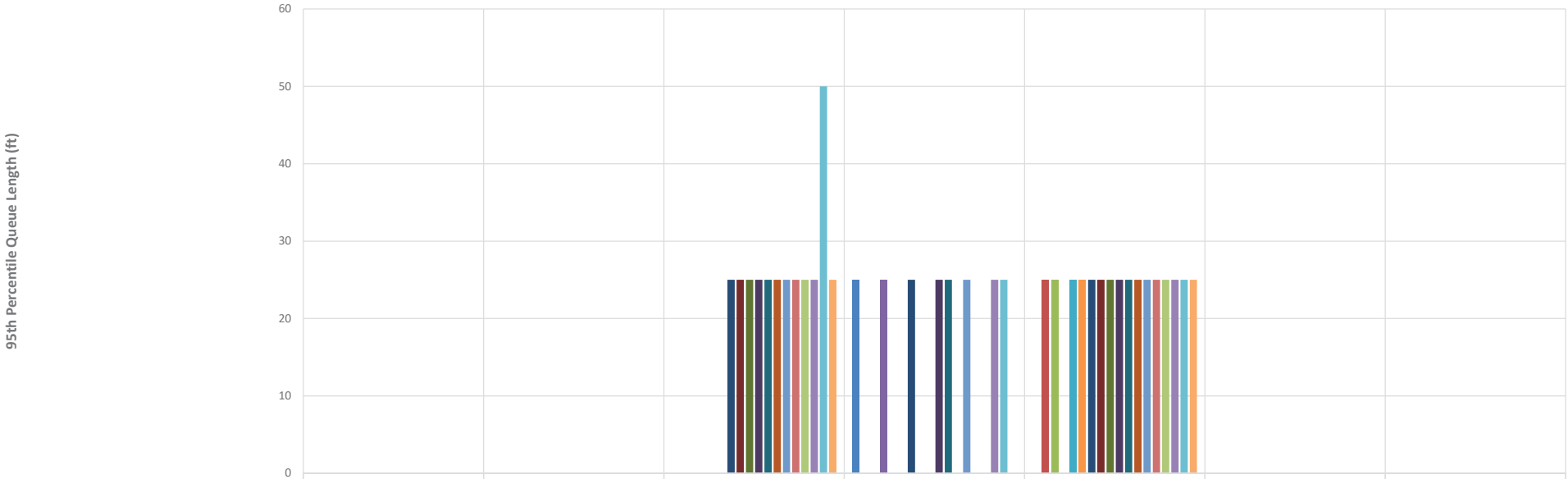
Queue Lengths - Intersection 1: Main Street & S Boulder Road



	EBR	EBT	NBL	NBR	WB	WBL	WBT
2026 Background AM	19	204	115	52	0	30	206
2026 Background PM	26	322	135	75	0	30	192
2026 Background SAT	16	159	87	47	0	17	94
2045 Background AM	25	288	98	52	0	24	265
2045 Background PM	30	502	124	107	0	34	252
2045 Background SAT	16	222	78	47	0	15	112
2026 Total AM with Front Street Connection	19	212	54	0	33	203	140
2026 Total PM with Front Street Connection	27	344	127	0	48	192	150
2026 Total SAT with Front Street Connection	16	163	49	0	23	90	98
2045 Total AM with Front Street Connection	25	298	54	0	27	259	124
2045 Total PM with Front Street Connection	30	531	170	0	47	235	139
2045 Total SAT with Front Street Connection	16	227	49	0	20	110	88
2026 Total AM without Front Street Connection	19	211	55	0	30	205	115
2026 Total PM without Front Street Connection	27	344	141	0	42	195	135
2026 Total SAT without Front Street Connection	16	163	50	0	22	90	87
2045 Total AM without Front Street Connection	26	300	56	0	24	258	98
2045 Total PM without Front Street Connection	30	535	205	0	41	234	124
2045 Total SAT without Front Street Connection	16	227	50	0	19	106	78

Movement

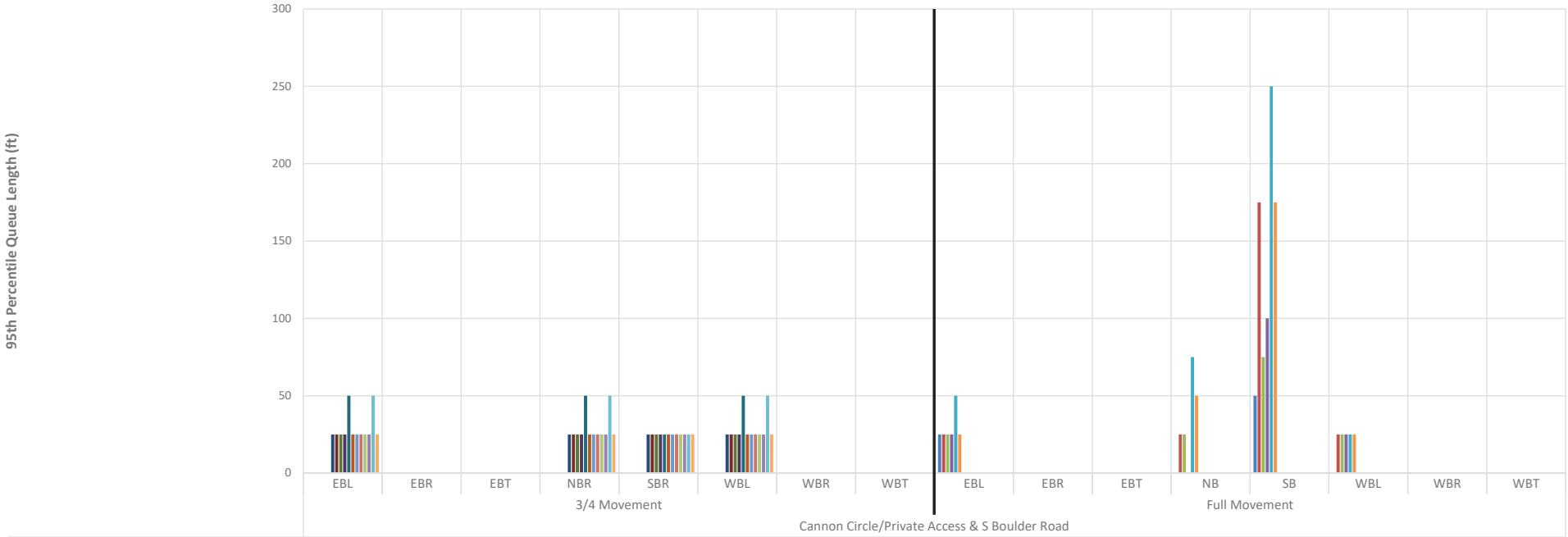
Queue Lengths - Intersection 2: Front Street/Private Access & S Boulder Road



	EBR	EBT	NBR	SBR	WBL	WBR	WBT
2026 Background AM	0	0	0	25	0	0	0
2026 Background PM	0	0	0	0	25	0	0
2026 Background SAT	0	0	0	0	25	0	0
2045 Background AM	0	0	0	25	0	0	0
2045 Background PM	0	0	0	0	25	0	0
2045 Background SAT	0	0	0	0	25	0	0
2026 Total AM with Front Street Connection	0	0	25	25	25	0	0
2026 Total PM with Front Street Connection	0	0	25	0	25	0	0
2026 Total SAT with Front Street Connection	0	0	25	0	25	0	0
2045 Total AM with Front Street Connection	0	0	25	25	25	0	0
2045 Total PM with Front Street Connection	0	0	25	25	25	0	0
2045 Total SAT with Front Street Connection	0	0	25	0	25	0	0
2026 Total AM without Front Street Connection	0	0	25	25	25	0	0
2026 Total PM without Front Street Connection	0	0	25	0	25	0	0
2026 Total SAT without Front Street Connection	0	0	25	0	25	0	0
2045 Total AM without Front Street Connection	0	0	25	25	25	0	0
2045 Total PM without Front Street Connection	0	0	50	25	25	0	0
2045 Total SAT without Front Street Connection	0	0	25	0	25	0	0

Movement

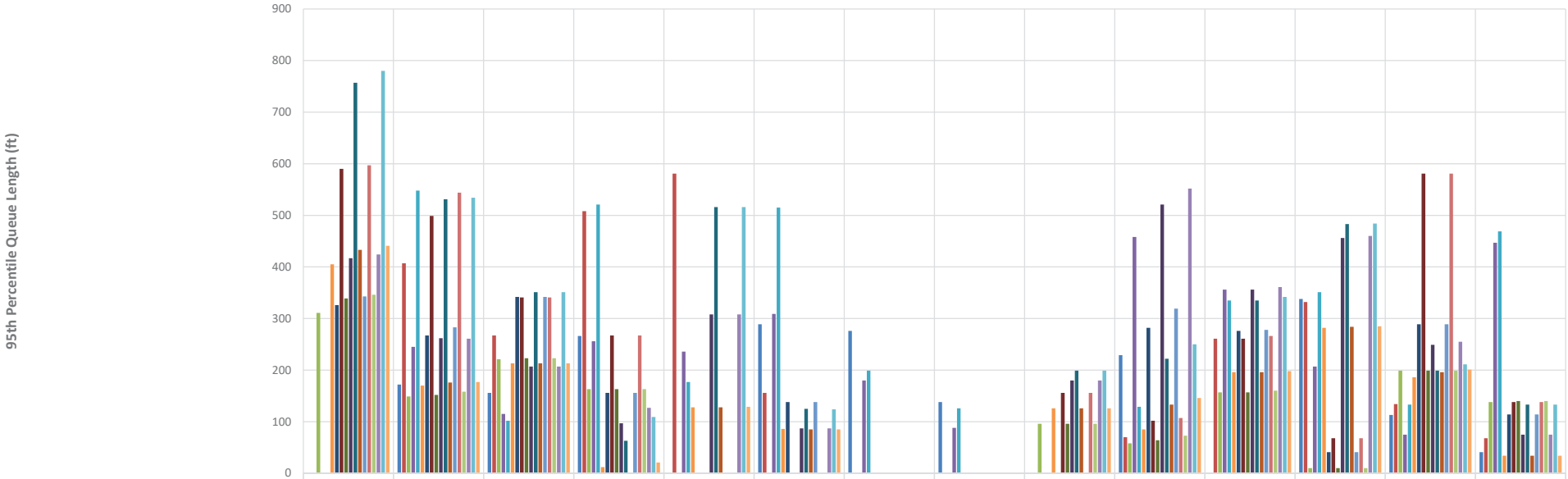
Queue Lengths - Intersection 3: Cannon Circle/Private Access & S Boulder Road



	EBL	EBR	EBT	NBR	SBR	WBL	WBR	WBT	EBL	EBR	EBT	NB	SB	WBL	WBR	WBT
2026 Background AM	0	0	0	0	0	0	0	0	25	0	0	0	50	0	0	0
2026 Background PM	0	0	0	0	0	0	0	0	25	0	0	25	175	25	0	0
2026 Background SAT	0	0	0	0	0	0	0	0	25	0	0	25	75	25	0	0
2045 Background AM	0	0	0	0	0	0	0	0	25	0	0	0	100	25	0	0
2045 Background PM	0	0	0	0	0	0	0	0	50	0	0	75	250	25	0	0
2045 Background SAT	0	0	0	0	0	0	0	0	25	0	0	50	175	25	0	0
2026 Total AM with Front Street Connection	25	0	0	25	25	25	0	0	0	0	0	0	0	0	0	0
2026 Total PM with Front Street Connection	25	0	0	25	25	25	0	0	0	0	0	0	0	0	0	0
2026 Total SAT with Front Street Connection	25	0	0	25	25	25	0	0	0	0	0	0	0	0	0	0
2045 Total AM with Front Street Connection	25	0	0	25	25	25	0	0	0	0	0	0	0	0	0	0
2045 Total PM with Front Street Connection	50	0	0	50	25	50	0	0	0	0	0	0	0	0	0	0
2045 Total SAT with Front Street Connection	25	0	0	25	25	25	0	0	0	0	0	0	0	0	0	0
2026 Total AM without Front Street Connection	25	0	0	25	25	25	0	0	0	0	0	0	0	0	0	0
2026 Total PM without Front Street Connection	25	0	0	25	25	25	0	0	0	0	0	0	0	0	0	0
2026 Total SAT without Front Street Connection	25	0	0	25	25	25	0	0	0	0	0	0	0	0	0	0
2045 Total AM without Front Street Connection	25	0	0	25	25	25	0	0	0	0	0	0	0	0	0	0
2045 Total PM without Front Street Connection	50	0	0	50	25	50	0	0	0	0	0	0	0	0	0	0
2045 Total SAT without Front Street Connection	25	0	0	25	25	25	0	0	0	0	0	0	0	0	0	0

Movement

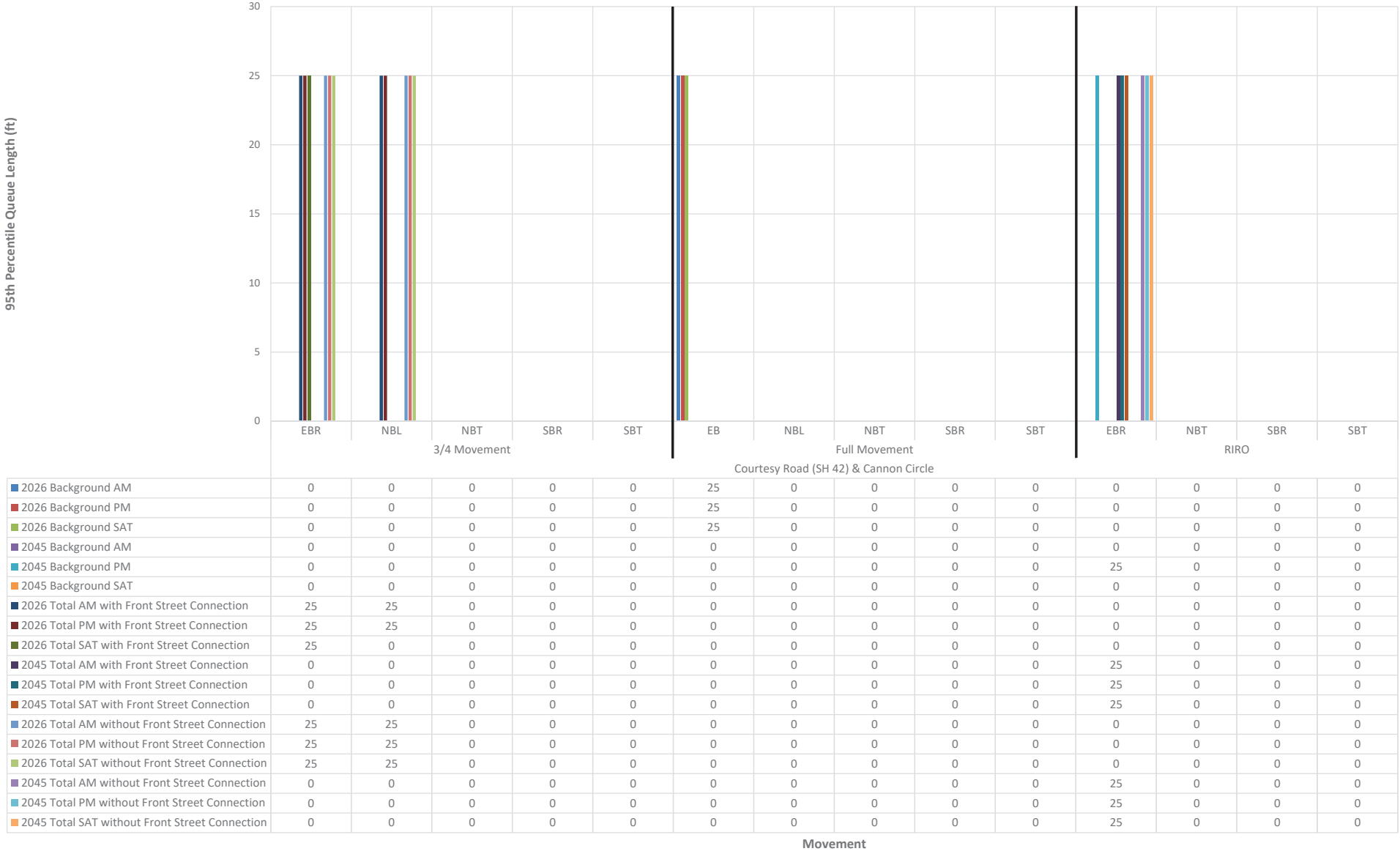
Queue Lengths - Intersection 4: Courtesy Road (SH 42) & S Boulder Road



	EB	EBL	EBR	EBT	NB	NBL	NBR	NBT	SBL	SBR	SBT	WBL	WBR	WBT
2026 Background AM	0	172	156	266	0	289	276	138	0	229	0	338	113	41
2026 Background PM	0	407	267	508	581	156	0	0	0	70	261	332	134	68
2026 Background SAT	311	149	221	163	0	0	0	0	96	58	157	10	199	138
2045 Background AM	0	245	115	256	236	309	180	88	0	458	356	207	75	447
2045 Background PM	0	548	102	521	177	515	199	126	0	129	335	351	133	469
2045 Background SAT	405	170	213	12	128	86	0	0	126	85	196	282	186	34
2026 Total AM with Front Street Connection	326	267	342	156	0	138	0	0	0	282	276	41	289	114
2026 Total PM with Front Street Connection	590	499	341	267	0	0	0	0	156	102	261	68	581	138
2026 Total SAT with Front Street Connection	339	152	223	163	0	0	0	0	96	64	157	10	199	140
2045 Total AM with Front Street Connection	417	262	207	97	308	87	0	0	180	521	356	456	249	75
2045 Total PM with Front Street Connection	757	531	351	63	516	125	0	0	199	222	335	483	199	133
2045 Total SAT with Front Street Connection	433	176	213	0	128	85	0	0	126	133	196	284	196	34
2026 Total AM without Front Street Connection	343	283	342	156	0	138	0	0	0	319	278	41	289	114
2026 Total PM without Front Street Connection	597	544	341	267	0	0	0	0	156	107	266	68	581	138
2026 Total SAT without Front Street Connection	346	158	223	163	0	0	0	0	96	73	160	10	199	140
2045 Total AM without Front Street Connection	424	261	207	127	308	87	0	0	180	552	361	460	255	75
2045 Total PM without Front Street Connection	780	534	351	109	516	124	0	0	199	250	342	484	211	133
2045 Total SAT without Front Street Connection	441	177	213	21	129	85	0	0	126	146	198	285	201	34

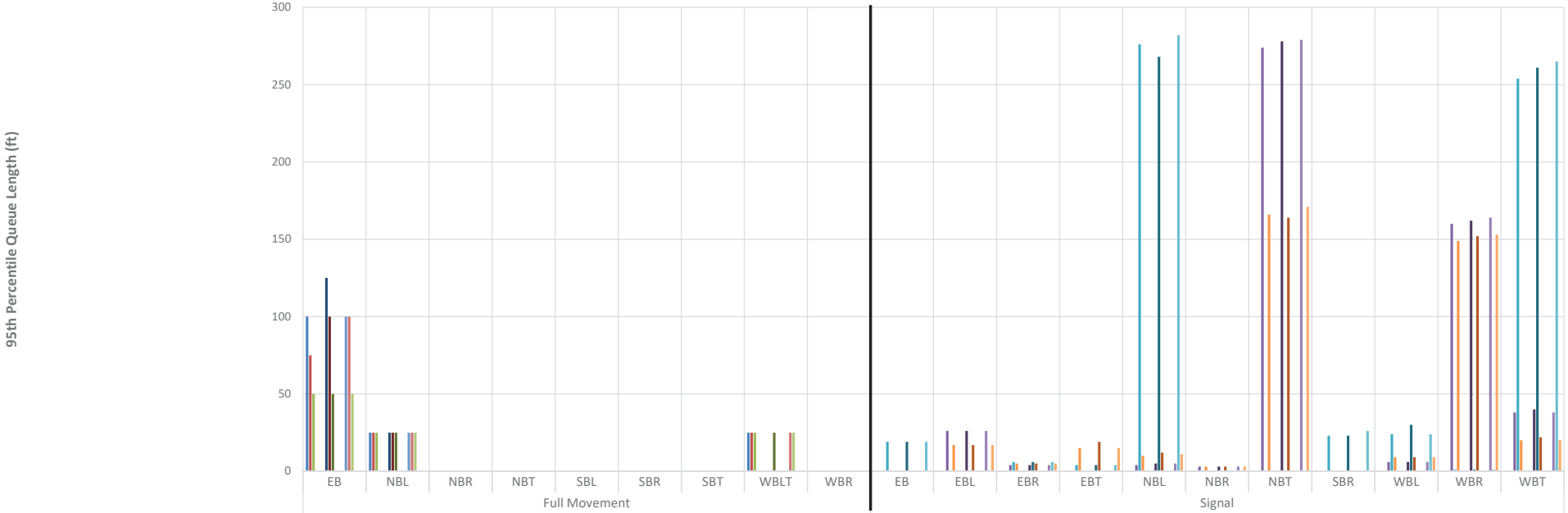
Movement

Queue Lengths - Intersection 5: Courtesy Road (SH 42) & Cannon Circle



	EBR	NBL	NBT	SBR	SBT	EB	NBL	NBT	SBR	SBT	EBR	NBT	SBR	SBT
2026 Background AM	0	0	0	0	0	25	0	0	0	0	0	0	0	0
2026 Background PM	0	0	0	0	0	25	0	0	0	0	0	0	0	0
2026 Background SAT	0	0	0	0	0	25	0	0	0	0	0	0	0	0
2045 Background AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2045 Background PM	0	0	0	0	0	0	0	0	0	0	25	0	0	0
2045 Background SAT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2026 Total AM with Front Street Connection	25	25	0	0	0	0	0	0	0	0	0	0	0	0
2026 Total PM with Front Street Connection	25	25	0	0	0	0	0	0	0	0	0	0	0	0
2026 Total SAT with Front Street Connection	25	0	0	0	0	0	0	0	0	0	0	0	0	0
2045 Total AM with Front Street Connection	0	0	0	0	0	0	0	0	0	0	25	0	0	0
2045 Total PM with Front Street Connection	0	0	0	0	0	0	0	0	0	0	25	0	0	0
2045 Total SAT with Front Street Connection	0	0	0	0	0	0	0	0	0	0	25	0	0	0
2026 Total AM without Front Street Connection	25	25	0	0	0	0	0	0	0	0	0	0	0	0
2026 Total PM without Front Street Connection	25	25	0	0	0	0	0	0	0	0	0	0	0	0
2026 Total SAT without Front Street Connection	25	25	0	0	0	0	0	0	0	0	0	0	0	0
2045 Total AM without Front Street Connection	0	0	0	0	0	0	0	0	0	0	25	0	0	0
2045 Total PM without Front Street Connection	0	0	0	0	0	0	0	0	0	0	25	0	0	0
2045 Total SAT without Front Street Connection	0	0	0	0	0	0	0	0	0	0	25	0	0	0

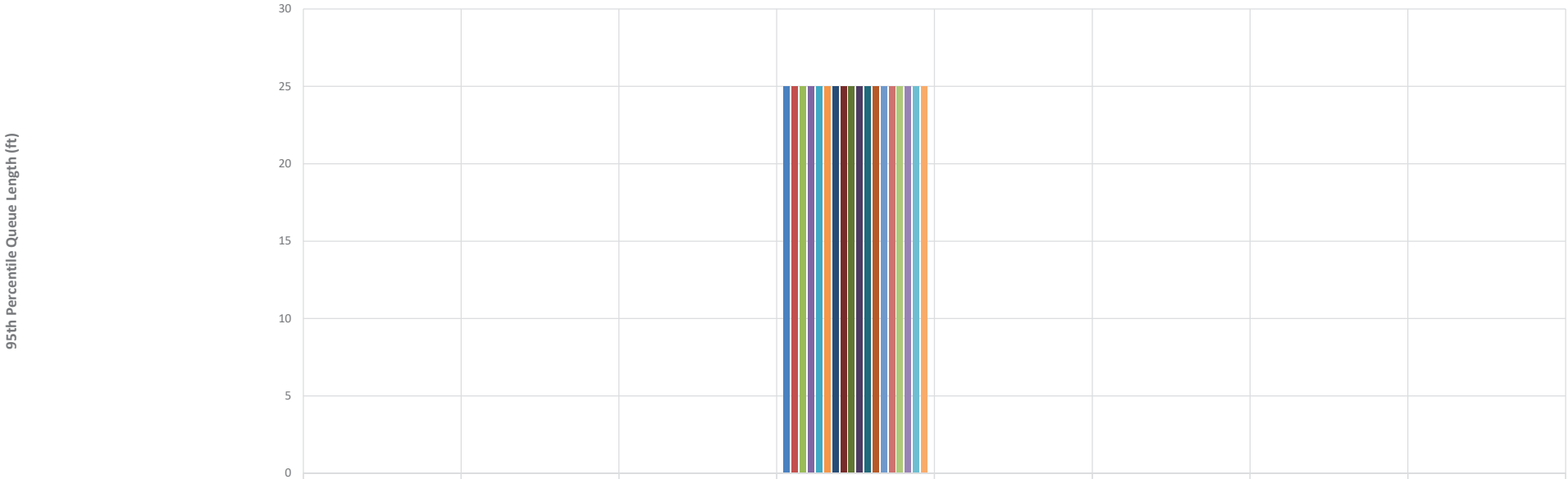
Queue Lengths - Intersection 6: Courtesy Road (SH 42) & Griffith Street/Sports Complex Access



2026 Background AM	100	25	0	0	0	0	0	25	0	0	0	0	0	0	0	0	0	0	0	0
2026 Background PM	75	25	0	0	0	0	0	25	0	0	0	0	0	0	0	0	0	0	0	0
2026 Background SAT	50	25	0	0	0	0	0	25	0	0	0	0	0	0	0	0	0	0	0	0
2045 Background AM	0	0	0	0	0	0	0	0	0	0	26	4	0	4	3	274	0	6	160	38
2045 Background PM	0	0	0	0	0	0	0	0	0	19	0	6	4	276	0	0	23	24	1	254
2045 Background SAT	0	0	0	0	0	0	0	0	0	0	17	5	15	10	3	166	0	9	149	20
2026 Total AM with Front Street Connection	125	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2026 Total PM with Front Street Connection	100	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2026 Total SAT with Front Street Connection	50	25	0	0	0	0	0	25	0	0	0	0	0	0	0	0	0	0	0	0
2045 Total AM with Front Street Connection	0	0	0	0	0	0	0	0	0	0	26	4	0	5	3	278	0	6	162	40
2045 Total PM with Front Street Connection	0	0	0	0	0	0	0	0	0	19	0	6	4	268	0	0	23	30	1	261
2045 Total SAT with Front Street Connection	0	0	0	0	0	0	0	0	0	0	17	5	19	12	3	164	0	9	152	22
2026 Total AM without Front Street Connection	100	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2026 Total PM without Front Street Connection	100	25	0	0	0	0	0	25	0	0	0	0	0	0	0	0	0	0	0	0
2026 Total SAT without Front Street Connection	50	25	0	0	0	0	0	25	0	0	0	0	0	0	0	0	0	0	0	0
2045 Total AM without Front Street Connection	0	0	0	0	0	0	0	0	0	0	26	4	0	5	3	279	0	6	164	38
2045 Total PM without Front Street Connection	0	0	0	0	0	0	0	0	0	19	0	6	4	282	0	0	26	24	1	265
2045 Total SAT without Front Street Connection	0	0	0	0	0	0	0	0	0	0	17	5	15	11	3	171	0	9	153	20

Movement

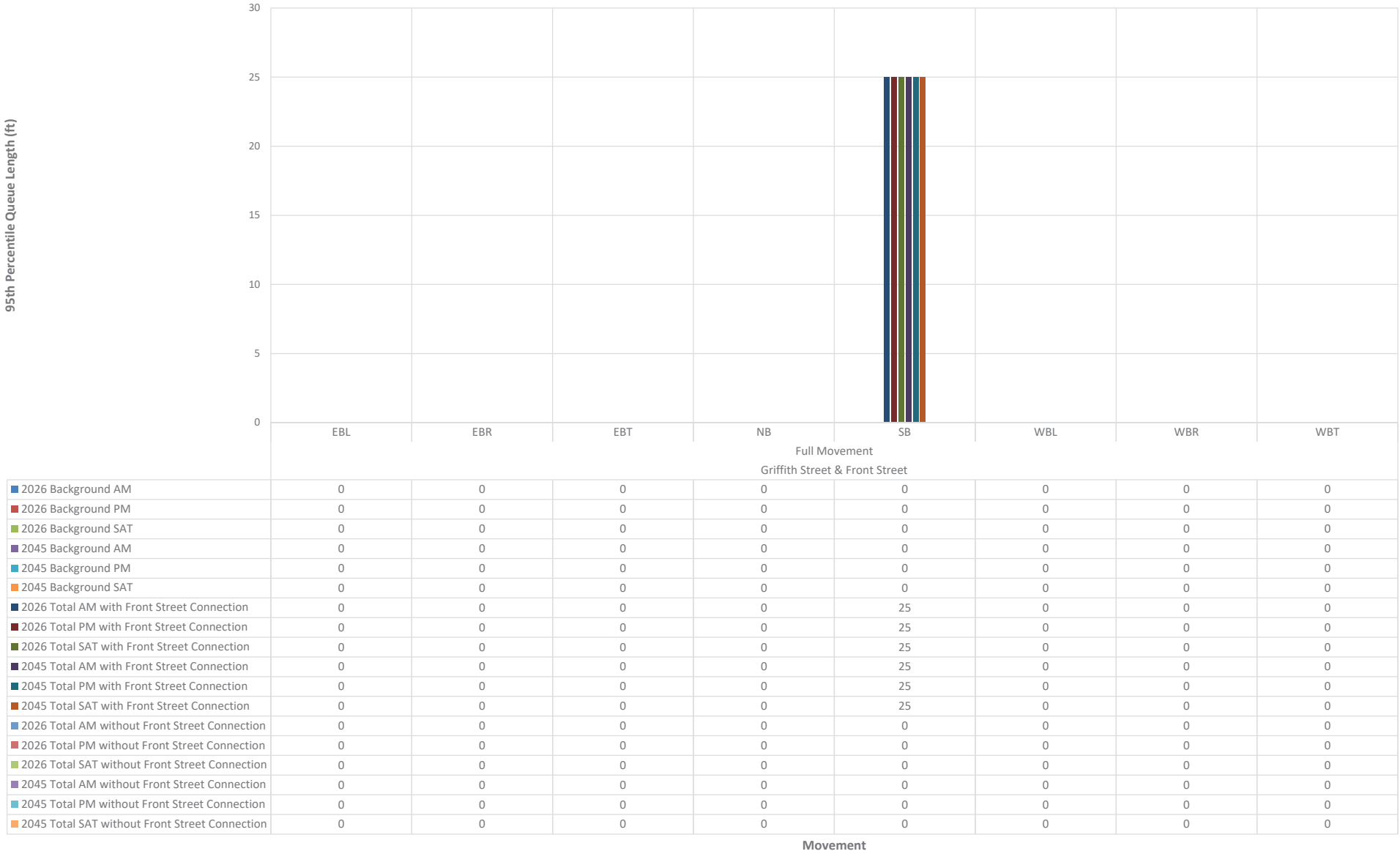
Queue Lengths - Intersection 7: Cannon Street & Griffith Street



	EBL	EBR	EBT	NB	SB	WBL	WBR	WBT
2026 Background AM	0	0	0	25	0	0	0	0
2026 Background PM	0	0	0	25	0	0	0	0
2026 Background SAT	0	0	0	25	0	0	0	0
2045 Background AM	0	0	0	25	0	0	0	0
2045 Background PM	0	0	0	25	0	0	0	0
2045 Background SAT	0	0	0	25	0	0	0	0
2026 Total AM with Front Street Connection	0	0	0	25	0	0	0	0
2026 Total PM with Front Street Connection	0	0	0	25	0	0	0	0
2026 Total SAT with Front Street Connection	0	0	0	25	0	0	0	0
2045 Total AM with Front Street Connection	0	0	0	25	0	0	0	0
2045 Total PM with Front Street Connection	0	0	0	25	0	0	0	0
2045 Total SAT with Front Street Connection	0	0	0	25	0	0	0	0
2026 Total AM without Front Street Connection	0	0	0	25	0	0	0	0
2026 Total PM without Front Street Connection	0	0	0	25	0	0	0	0
2026 Total SAT without Front Street Connection	0	0	0	25	0	0	0	0
2045 Total AM without Front Street Connection	0	0	0	25	0	0	0	0
2045 Total PM without Front Street Connection	0	0	0	25	0	0	0	0
2045 Total SAT without Front Street Connection	0	0	0	25	0	0	0	0

Movement

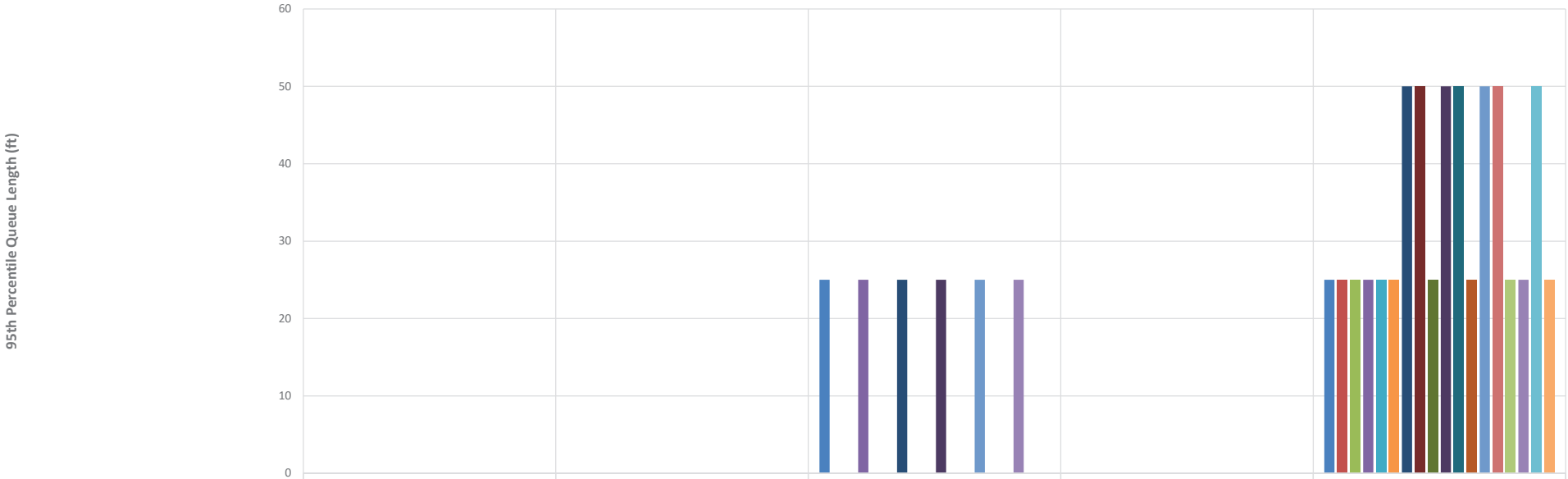
Queue Lengths - Intersection 8: Griffith Street & Front Street



	EBL	EBR	EBT	NB	SB	WBL	WBR	WBT
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2026 Background PM	0	0	0	0	0	0	0	0
2026 Background SAT	0	0	0	0	0	0	0	0
2045 Background AM	0	0	0	0	0	0	0	0
2045 Background PM	0	0	0	0	0	0	0	0
2045 Background SAT	0	0	0	0	0	0	0	0
2026 Total AM with Front Street Connection	0	0	0	0	25	0	0	0
2026 Total PM with Front Street Connection	0	0	0	0	25	0	0	0
2026 Total SAT with Front Street Connection	0	0	0	0	25	0	0	0
2045 Total AM with Front Street Connection	0	0	0	0	25	0	0	0
2045 Total PM with Front Street Connection	0	0	0	0	25	0	0	0
2045 Total SAT with Front Street Connection	0	0	0	0	25	0	0	0
2026 Total AM without Front Street Connection	0	0	0	0	0	0	0	0
2026 Total PM without Front Street Connection	0	0	0	0	0	0	0	0
2026 Total SAT without Front Street Connection	0	0	0	0	0	0	0	0
2045 Total AM without Front Street Connection	0	0	0	0	0	0	0	0
2045 Total PM without Front Street Connection	0	0	0	0	0	0	0	0
2045 Total SAT without Front Street Connection	0	0	0	0	0	0	0	0

Movement

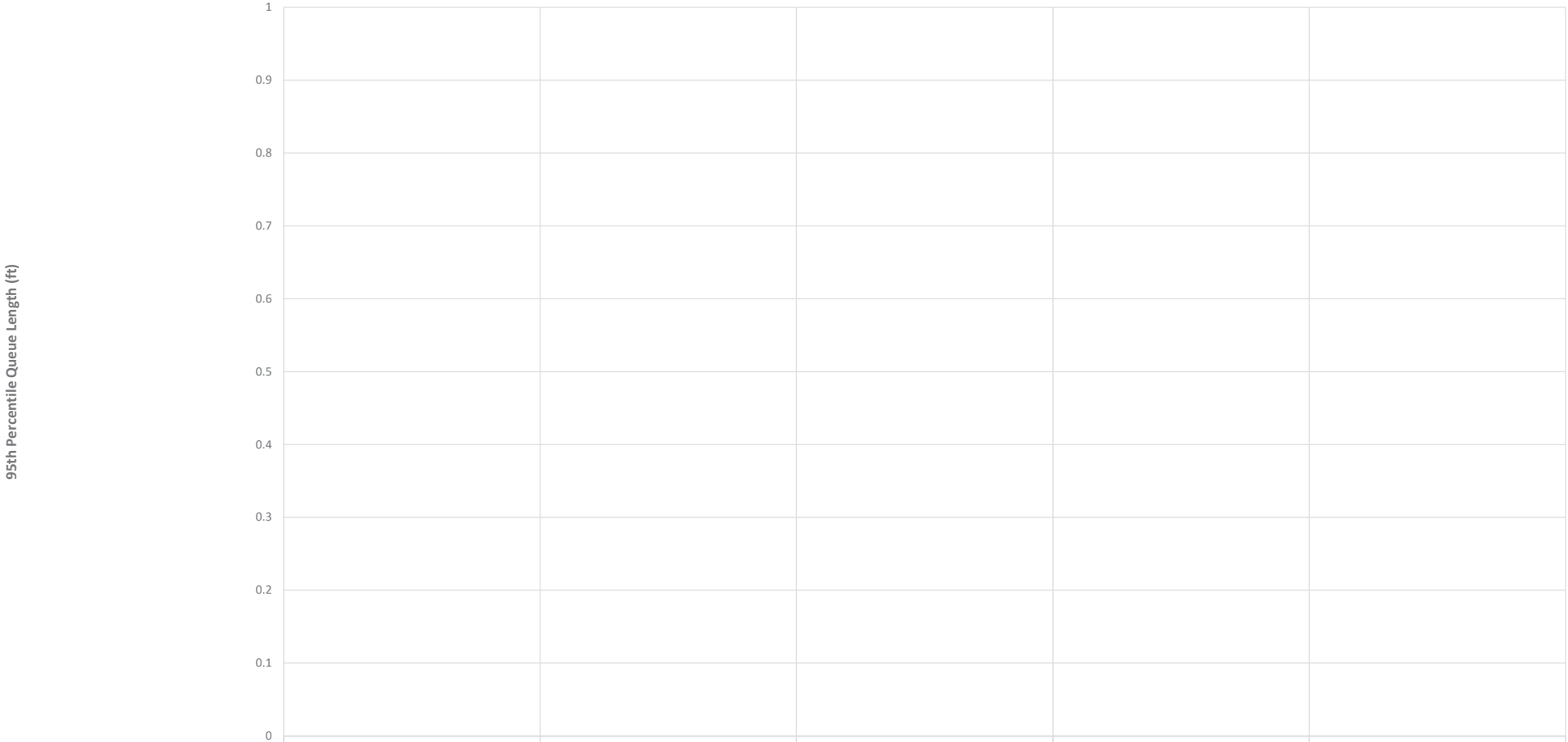
Queue Lengths - Intersection 9: Main Street & Griffith Street



	NBR	NBT	SBL	SBT	WB
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2026 Background PM	0	0	0	0	25
2026 Background SAT	0	0	0	0	25
2045 Background AM	0	0	25	0	25
2045 Background PM	0	0	0	0	25
2045 Background SAT	0	0	0	0	25
2026 Total AM with Front Street Connection	0	0	25	0	50
2026 Total PM with Front Street Connection	0	0	0	0	50
2026 Total SAT with Front Street Connection	0	0	0	0	25
2045 Total AM with Front Street Connection	0	0	25	0	50
2045 Total PM with Front Street Connection	0	0	0	0	50
2045 Total SAT with Front Street Connection	0	0	0	0	25
2026 Total AM without Front Street Connection	0	0	25	0	50
2026 Total PM without Front Street Connection	0	0	0	0	50
2026 Total SAT without Front Street Connection	0	0	0	0	25
2045 Total AM without Front Street Connection	0	0	25	0	25
2045 Total PM without Front Street Connection	0	0	0	0	50
2045 Total SAT without Front Street Connection	0	0	0	0	25

Movement

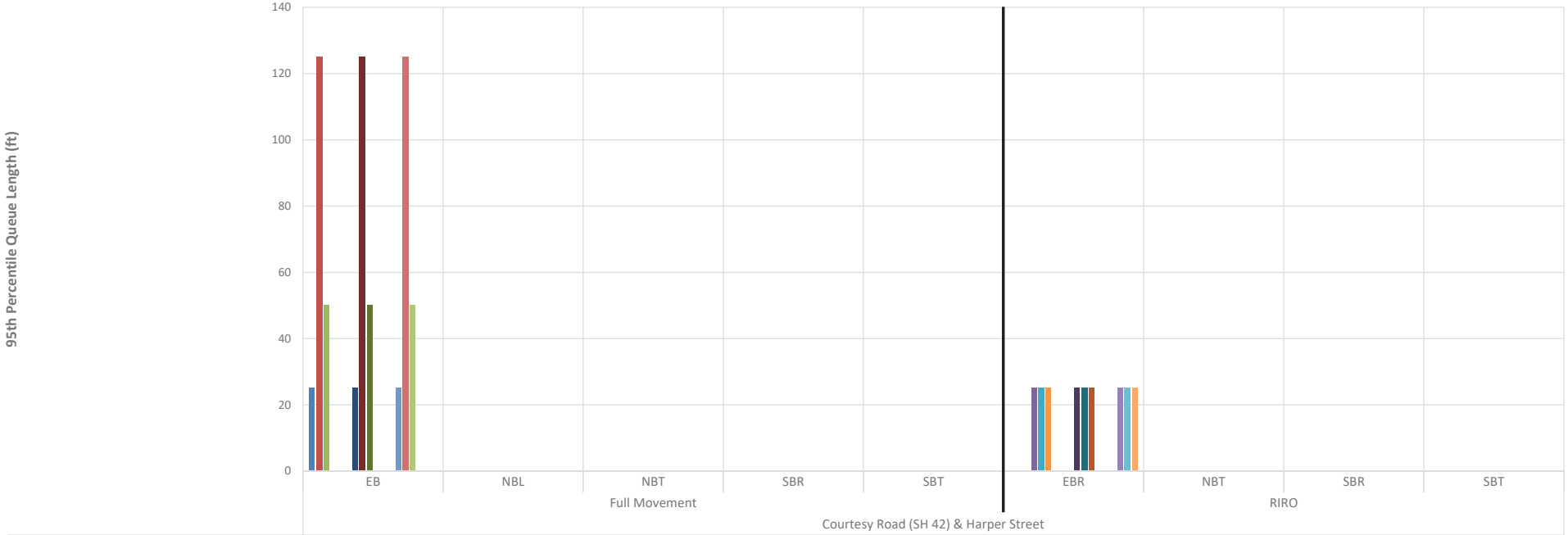
Queue Lengths - Intersection 10: Front Street & Harper Street



	NBR	NBT	SBL	SBT	WB
	Full Movement				
	Front Street & Harper Street				
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2026 Total PM with Front Street Connection	0	0	0	0	0
2026 Total SAT with Front Street Connection	0	0	0	0	0
2045 Total AM with Front Street Connection	0	0	0	0	0
2045 Total PM with Front Street Connection	0	0	0	0	0
2045 Total SAT with Front Street Connection	0	0	0	0	0

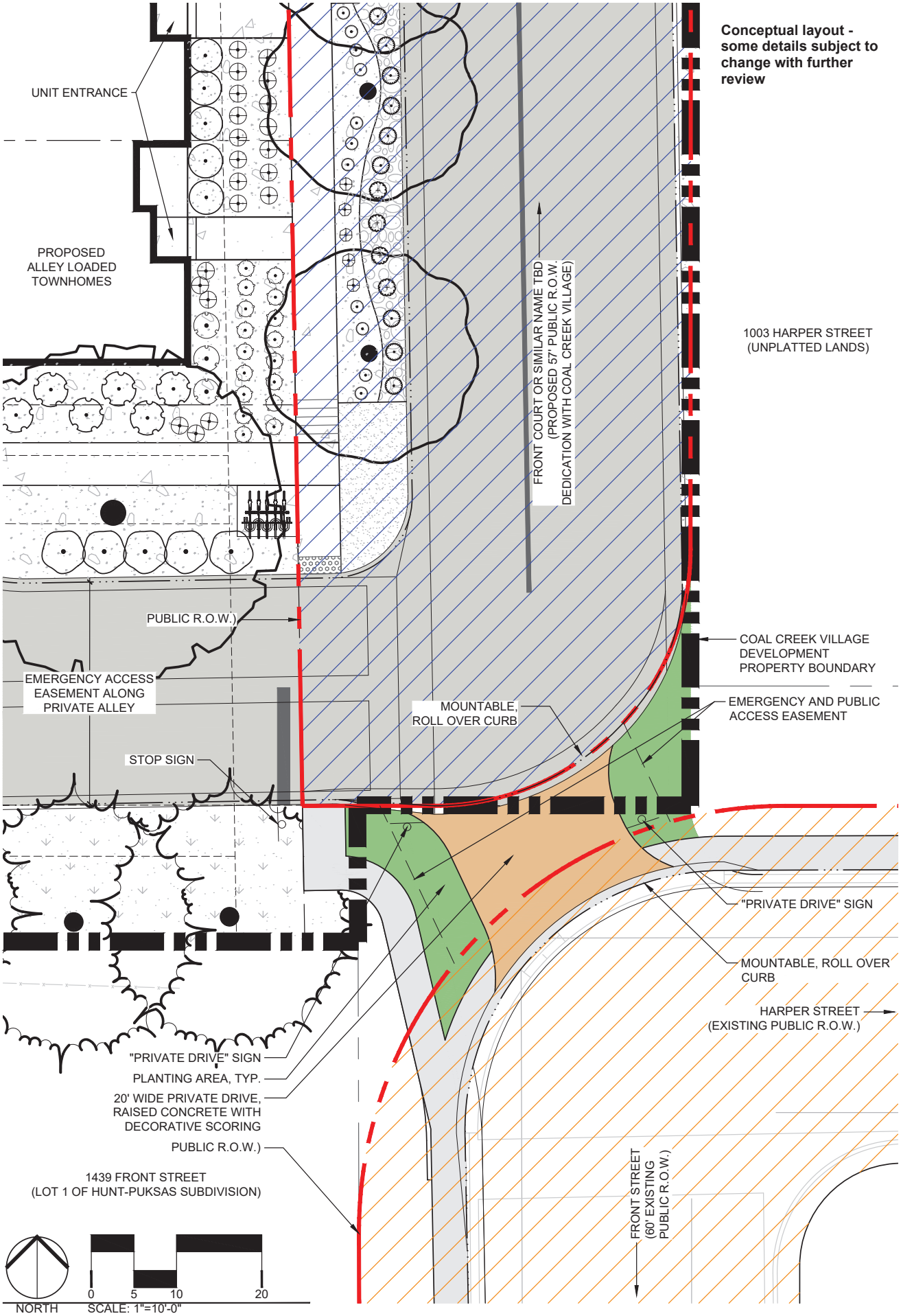
Movement

Queue Lengths - Intersection 11: Courtesy Road (SH 42) & Harper Street



	EB	NBL	NBT	SBR	SBT	EBR	NBT	SBR	SBT
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2026 Background PM	125	0	0	0	0	0	0	0	0
2026 Background SAT	50	0	0	0	0	0	0	0	0
2045 Background AM	0	0	0	0	0	25	0	0	0
2045 Background PM	0	0	0	0	0	25	0	0	0
2045 Background SAT	0	0	0	0	0	25	0	0	0
2026 Total AM with Front Street Connection	25	0	0	0	0	0	0	0	0
2026 Total PM with Front Street Connection	125	0	0	0	0	0	0	0	0
2026 Total SAT with Front Street Connection	50	0	0	0	0	0	0	0	0
2045 Total AM with Front Street Connection	0	0	0	0	0	25	0	0	0
2045 Total PM with Front Street Connection	0	0	0	0	0	25	0	0	0
2045 Total SAT with Front Street Connection	0	0	0	0	0	25	0	0	0
2026 Total AM without Front Street Connection	25	0	0	0	0	0	0	0	0
2026 Total PM without Front Street Connection	125	0	0	0	0	0	0	0	0
2026 Total SAT without Front Street Connection	50	0	0	0	0	0	0	0	0
2045 Total AM without Front Street Connection	0	0	0	0	0	25	0	0	0
2045 Total PM without Front Street Connection	0	0	0	0	0	25	0	0	0
2045 Total SAT without Front Street Connection	0	0	0	0	0	25	0	0	0

Movement



ripley design
LANDSCAPE ARCHITECTURE, LAND PLANNING

FRONT STREET CONNECTION
PRIVATE DRIVE CONCEPT

236 Linden Street, Suite A
Fort Collins, Colorado 80524
970.224.5828
ripleydesigninc.com

McDowell Engineering LLC
Transportation Engineering Consultants

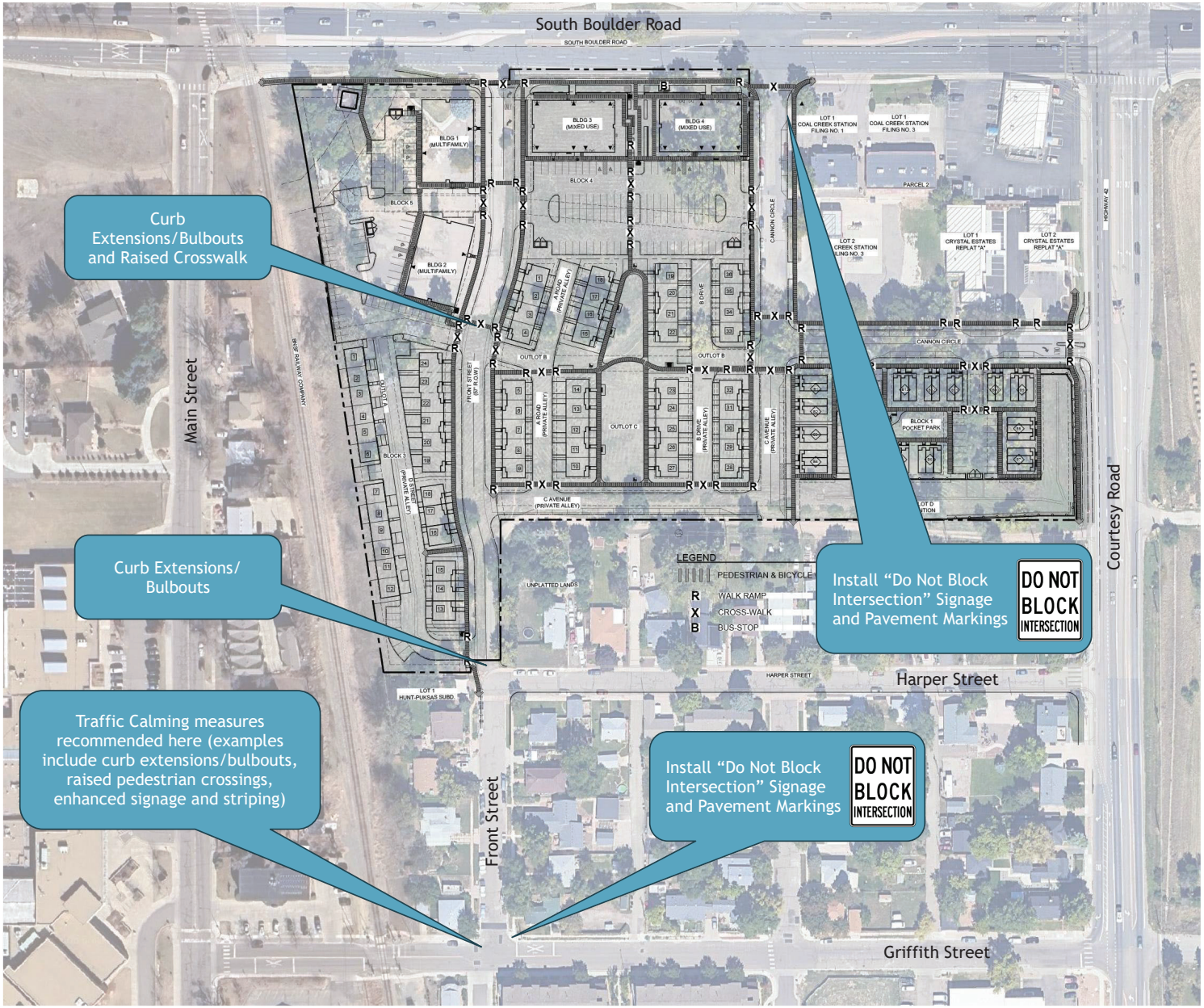
Coal Creek Village

Traffic Calming Concepts

June 3, 2025

Revised July 18, 2025

Revised August 25, 2025



ORDINANCE NO. 1641
SERIES 2013

AN ORDINANCE APPROVING A REZONING OF A 10.97-ACRE PARCEL OF LAND LOCATED AT 1035 E SOUTH BOULDER ROAD FROM CITY OF LOUISVILLE COMMERCIAL BUSINESS (CB) ZONING TO CITY OF LOUISVILLE MIXED-USE RESIDENTIAL (MU-R), COMMERCIAL COMMUNITY (CC), AND RESIDENTIAL MEDIUM DENSITY (RM)

WHEREAS, Coal Creek Station Properties, LLC is the owner of certain real property totaling approximately 10.97 acres, which property is designated as a portion of the Caledonia Place and Coal Creek Station subdivisions of the Highway 42 Revitalization Area and the legal description of which is attached hereto as Exhibit A (the "Property"); and

WHEREAS, the landowner of the Property has submitted to the City of Louisville a request to approve a rezoning of the Property from Commercial Business (CB) to Mixed-Use Residential (MU-R), Community Commercial (CC), and Residential Medium Density (RM); and

WHEREAS, the Louisville Planning Commission has held a public hearing on the proposed rezoning and has forwarded a recommendation to the City Council to approve the rezoning, and the City Council has duly considered the Commission's recommendation; and

WHEREAS, the City Staff and Louisville Planning Commission have reviewed the proposed rezoning and found it to comply with the City of Louisville comprehensive plan, Louisville zoning regulations and other applicable sections of the Louisville Municipal Code; and

WHEREAS, the City Council finds the request complies with the Land Use Plan incorporated as Exhibit A in Chapter 17.14 of the Louisville Municipal Code; and

WHEREAS, the City Council has held a public hearing on the proposed rezoning and has provided notice of the public hearing as provided by law; and

WHEREAS, no protests were received by the City pursuant to C.R.S. §31-23-305; and

WHEREAS, the Mixed-Use Residential (MU-R), Community Commercial (CC), and Residential Medium Density (RM) zoning classifications for the Property are consistent with the City of Louisville comprehensive plan, Louisville zoning regulations and other applicable sections of the Louisville Municipal Code.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF LOUISVILLE, COLORADO:

Section 1. Pursuant to the zoning ordinances of the City, that certain Property legally described on Exhibit A, attached hereto and incorporated herein by reference, is hereby rezoned from Commercial Business (CB) to Mixed-Use Residential (MU-R), Community Commercial (CC), and Residential Medium Density (RM), with the area zoned into each such district as described in Exhibit A, and the City zoning map shall be amended accordingly.

INTRODUCED, READ, PASSED ON FIRST READING, AND ORDERED PUBLISHED this 20th day of August, 2013.

Robert P. Muckle, Mayor

ATTEST:

Nancy Carra, City Clerk

APPROVED AS TO FORM:

Light, Kelly & Dawes, P.C.
City Attorney

PASSED AND ADOPTED ON SECOND AND FINAL READING, this 3rd day of September, 2013.

Robert P. Muckle, Mayor

ATTEST:

Nancy Carra, City Clerk

Exhibit A

LEGAL DESCRIPTION FOR AREA TO BE ZONED CC

PCOMMENCING AT THE NORTHEAST CORNER OF SECTION 8, TOWNSHIP 1 SOUTH, RANGE 69 WEST OF THE 6TH PRINCIPAL MERIDIAN; THENCE S00°17'50"E ALONG THE EAST LINE OF SAID SECTION 8, A DISTANCE OF 50.00 FEET; THENCE N89°58'20"W, A DISTANCE OF 30.03 FEET TO A POINT ON WEST RIGHT-OF-WAY LINE OF STATE HIGHWAY 42, THENCE ALONG SAID WEST RIGHT-OF-WAY LINE S00°17'50"E, A DISTANCE OF 310.00 FEET TO THE POINT OF BEGINNING; THENCE CONTINUING ALONG SAID WEST RIGHT-OF-WAY LINE S00°17'50"E, A DISTANCE OF 211.01 FEET; THENCE DEPARTING FROM SAID WEST RIGHT-OF-WAY LINE N90°00'00"W, A DISTANCE OF 211.13 FEET; THENCE ALONG A CURVE TO THE RIGHT 333.02 FEET, SAID CURVE HAVING A RADIUS OF 217.33 FEET WITH A DELTA OF 87°47'48" AND A CHORD THAT BEARS N45°30'36"W, A DISTANCE OF 301.38 FEET; THENCE N00°17'50"W, A DISTANCE OF 96.52 FEET; THENCE N89°58'20"W, A DISTANCE OF 295.96 FEET; THENCE N02°41'43"W, A DISTANCE OF 28.94 FEET; THENCE N00°00'00"E, A DISTANCE OF 184.57 FEET TO A POINT ON THE SOUTH RIGHT-OF-WAY LINE OF SOUTH BOULDER ROAD; THENCE ALONG SAID SOUTH RIGHT-OF-WAY LINE THE FOLLOWING THREE (3) COURSES: (1) S89°58'20"E, A DISTANCE OF 436.22 FEET; (2) S00°17'50"E, A DISTANCE OF 10.00 FEET; (3) S89°58'20"E, A DISTANCE OF 110.00 FEET TO THE NORTHEAST CORNER OF LOT 1, COAL CREEK STATION FILING NO. 3; THENCE S00°17'50"E ALONG THE EAST LINE OF SAID LOT 1, A DISTANCE OF 140.00 FEET TO THE NORTHEAST CORNER OF LOT 2, COAL CREEK STATION FILING NO. 3; THENCE ALONG THE NORTH LINE OF SAID LOT 2 N89°58'20"W, A DISTANCE OF 190.00 FEET TO A POINT ON THE RIGHT-OF-WAY LINE OF CANNON CIRCLE; THENCE ALONG SAID RIGHT-OF-WAY THE FOLLOWING TWO (2) COURSES: (1) S00°17'50"E, A DISTANCE OF 160.00 FEET; (2) S89°58'20"E, A DISTANCE OF 365.00 FEET TO THE POINT OF BEGINNING.

LEGAL DESCRIPTION FOR AREA TO BE ZONED MU-R

PCOMMENCING AT THE NORTHEAST CORNER OF SECTION 8, TOWNSHIP 1 SOUTH, RANGE 69 WEST OF THE 6TH PRINCIPAL MERIDIAN; THENCE S00°17'50"E ALONG THE EAST LINE OF SAID SECTION 8, A DISTANCE OF 50.00 FEET; THENCE N89°58'20"W, A DISTANCE OF 30.03 FEET TO A POINT ON WEST RIGHT-OF-WAY LINE OF STATE HIGHWAY 42; THENCE S00°17'50"E ALONG SAID WEST RIGHT-OF-WAY LINE, A DISTANCE OF 521.01 FEET TO THE POINT OF BEGINNING; THENCE CONTINUING ALONG SAID WEST RIGHT-OF-WAY LINE S00°17'50"E, A DISTANCE OF 48.68 FEET TO A POINT ON THE NORTH LINE OF THE ALLEY LOCATED IN THE ROBERT DIGIACOMO ADDITION AS RECORDED AT BOOK 5, PAGE 17; THENCE ALONG SAID NORTH LINE AND NORTH LINE EXTENDED S89°49'59"W, A DISTANCE OF 937.78 FEET TO A POINT ON THE EAST RIGHT-OF-WAY LINE OF THE COLORADO AND SOUTHERN RAILROAD; THENCE ALONG SAID EAST RIGHT-OF-WAY LINE THE FOLLOWING SEVEN (7) COURSE: (1) N08°30'12"W, A DISTANCE OF 272.50 FEET; (2) N08°28'40"W, A DISTANCE OF 81.59 FEET; (3) N08°52'07"W, A DISTANCE OF 79.23 FEET; (4) N09°23'12"W, A DISTANCE OF 43.90 FEET; (5) N09°49'41"W, A DISTANCE OF 43.90 FEET; (6) N10°34'58"W, A DISTANCE OF 43.90 FEET; (7) N11°44'18"W, A DISTANCE OF 15.01 FEET TO A POINT ON THE SOUTH RIGHT-OF-WAY LINE OF SOUTH BOULDER ROAD; THENCE ALONG SAID SOUTH RIGHT-OF-WAY LINE S89°58'20"E, A DISTANCE OF 303.88 FEET; THENCE DEPARTING SAID SOUTH

RIGHT-OF-WAY LINE S00°00'00"W, A DISTANCE OF 184.57 FEET; THENCE S02°41'43"E, A DISTANCE OF 28.94 FEET; THENCE S89°58'20"E, A DISTANCE OF 295.96 FEET; THENCE S00°17'50"E, A DISTANCE OF 96.52 FEET; THENCE ALONG A CURVE TO THE LEFT 333.02 FEET, SAID CURVE HAVING A RADIUS OF 217.33 FEET WITH A DELTA OF 87°47'48" AND A CHORD THAT BEARS S45°30'36"E, A DISTANCE OF 301.38 FEET; THENCE S90°00'00"E, A DISTANCE OF 211.13 FEET TO THE POINT OF BEGINNING.

LEGAL DESCRIPTION FOR AREA TO BE ZONED RM

COMMENCING AT THE NORTHEAST CORNER OF SECTION 8, TOWNSHIP 1 SOUTH, RANGE 69 WEST OF THE 6TH PRINCIPAL MERIDIAN; THENCE S00°17'50"E ALONG THE EAST LINE OF SAID SECTION 8, A DISTANCE OF 50.00 FEET; THENCE N89°58'20"W, A DISTANCE OF 30.03 FEET TO A POINT ON WEST RIGHT-OF-WAY LINE OF STATE HIGHWAY 42; THENCE S00°17'50"E ALONG SAID WEST RIGHT-OF-WAY LINE, A DISTANCE OF 569.69 FEET TO A POINT ON THE NORTH LINE OF THE ALLEY LOCATED IN THE ROBERT DIGIACOMO ADDITION AS RECORDED AT BOOK 5, PAGE 17; THENCE ALONG SAID NORTH LINE AND NORTH LINE EXTENDED S89°49'59"W, A DISTANCE OF 754.53 FEET TO THE NORTHWEST CORNER OF THAT PROPERTY RECORDED AT BOOK 46, PAGE 505; THENCE S00°10'01"E ALONG THE WEST LINE OF SAID PROPERTY DESCRIBED IN BOOK 46, PAGE 505, A DISTANCE OF 184.00 FEET TO THE NORTH RIGHT-OF-WAY LINE OF HARPER STREET; THENCE S89°49'59"W ALONG SAID NORTH RIGHT-OF-WAY, A DISTANCE OF 40.00 FEET TO THE WEST RIGHT-OF-WAY LINE OF FRONT STREET; THENCE S00°10'01"E ALONG SAID WEST RIGHT-OF-WAY, A DISTANCE OF 15.63 FEET TO THE NORTHEAST CORNER OF LOT 1, HUNT-PUSKAS SUBDIVISION AS RECORDED AT RECEPTION NO. 483037; THENCE S89°39'16"W ALONG THE NORTH LINE OF SAID LOT 1, A DISTANCE OF 113.96 FEET TO A POINT ON THE EAST RIGHT-OF-WAY LINE OF THE COLORADO AND SOUTHERN RAILROAD; THENCE ALONG SAID EAST RIGHT-OF-WAY LINE N08°30'12"W, A DISTANCE OF 201.77 FEET; THENCE DEPARTING SAID EAST RIGHT-OF-WAY LINE N89°49'59"E, A DISTANCE OF 183.25 FEET TO THE POINT OF BEGINNING.

Rocky Ridge Civil Engineering

Cover Letter

To: Cameron Fowlkes, PE, City of Louisville

From: Joel Seamons, PE, Rocky Ridge Civil Engineering

Date: March 25, 2024

Re: Cover Letter for Preliminary Drainage Design of Coal Creek Village

---

On behalf of Markel Homes, Rocky Ridge Civil Engineering would like to present the preliminary drainage report of Coal Creek Village to the City of Louisville for review. The Preliminary Drainage Report/design has been engineered according to the City of Louisville Design Standards and Specifications.

PRELIMINARY DRAINAGE REPORT

COAL CREEK VILLAGE

LOUISVILLE, COLORADO

Prepared for:

MARKEL HOMES
1805 BLUE STAR LN
LOUISVILLE, CO 80027
(303) 604-9196

Prepared by:

ROCKY RIDGE CIVIL ENGINEERING
420 21st STREET SUITE 101
LONGMONT, COLORADO 80501
(303) 651-6626

June 2022
Revised December 2022
Revised August 2023
Revised March 2024

Filename: 2941PDR.doc

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A. Maps & Figures
B. Hydrologic Calculations
C. Detention Pond Calculations
D. Websoil Report
E. Excerpt of Mine Subsidence Report
F. Offsite Flows from North

Map Pocket – Historic Drainage Plan
Preliminary Drainage Plan

"I hereby certify that this report (plan) for the preliminary drainage design of the Coal Creek Village was prepared by me (or under my direct supervision) in accordance with the provisions of City of Louisville Storm Drainage Design and Technical Criteria for the owners thereof."

_____

Registered Professional Engineer
State of Colorado No. 37162

I. GENERAL LOCATION AND DESCRIPTION

A. Location

The site's general location is shown on the vicinity map provided in the *Maps & Figures Section* of the Appendix (**Appendix A)**.

The boundaries of the site are as follows:

- East: Cannon Circle and Hwy 42
- West: Colorado and Southern Railroad Right-of-Way
- North: S. Boulder Road
- South: Harper Street

1. City and County

This development is located in the City of Louisville, Boulder County.

2. Township, Range, Section, ¼ Section

This preliminary drainage report is for Coal Creek Village, Louisville, Colorado which is located in the northeast quarter of Section 8, Township 1 South, and Range 69 West of the 6th Principal Meridian.

3. Major Drainage Facilities

There are no Major Drainage Facilities located on the site; however, offsite drainage flows are conveyed through the property from northern developments, a portion of S. Boulder Road and the Goodhue Ditch that carries stormwater that may have historically overtopped its banks thereby contributing to flow through the site.

City of Louisville Drainage Way 7-1 begins just southeast of this development, on the east side of Hwy 42. Drainage Way 7-1 is the major drainage way that ultimately receives runoff from this site. There is a proposed City of Louisville Project to install two- 54" storm sewer culverts under Hwy 42 in order to replace the existing 30" culvert per the Lafayette-Louisville Boundary Outfall System Plan, Conceptual Design Report although these drainage improvements proposed in the 1982 Drexel Barrell report haven't been constructed yet.

There is a Detention/Water Quality Pond being proposed at the southeast corner of the development where all the onsite flows from this development will be conveyed for water quality and detention.

There is also a bypass storm sewer being proposed through the site for the Goodhue Ditch and for offsite flows from a storm sewer system on the north half of S. Boulder Rd Right-of-way. Discussion of the offsite flows to the north is located in Section IV.A.2. of this report.

4. **Surrounding Developments**

South Boulder Road borders the site on the north boundary and State Highway 42 on the east, excluding a portion of the currently developed lands north and east of Cannon Circle.

The Colorado and Southern Railroad borders the site on the west and the Robert DiGiacomo Addition borders the site on the south.

There is also a surrounding development that contributes flow through the property. The developments and flows expected to pass through the site are detailed in **Appendix F**. These developments include:

- Kestrel
- Steel Ranch South
- Christopher Village/Plaza
- Garden City
- Norwest

B. Description of Property

1. **Area -** The development's area consists of approximately 10.11 acres in the Plat and 14.74 acres if the lots on the southwest corner of Hwy 42 and South Boulder Road are included as offsite basins.

2. **Ground Cover (trees, shrubs, vegetation)**

There are three existing buildings and a parking lot in the northwest corner of the site. Two of the buildings and the parking lot are on the southeast side of the Goodhue Ditch. The remainder of the site is a vacant lot overgrown with grass and weeds. Cannon Circle changes from a north-south alignment to an east-west alignment. The 390 linear feet of the north-south leg is paved with asphalt.

3. **Hydrologic Soil Group**

The hydrologic type soil for the area (as described by NRCS Report located in the *Websoil Report* Section, **Appendix D,** of this report) is 90% Type B and 10% Type C. This means that the majority of the existing soil on the site is more sandy than clayey soils.

4. **Major Drainage Channels**

The Goodhue Ditch cuts across the northwest corner of the site, forming a triangle of approximately 0.20 acres. City of Louisville Major Drainage Way 7-1 begins across Hwy 42, just southeast of the site. This drainage way is where all runoff from this property is ultimately conveyed.

5. **General Topography**

The topography of the site consists of slopes varying from 2.5% to 5%, generally sloping from the northwest corner to the southeast corner of the site.

II. HISTORIC DRAINAGE

A. Major Basin Description

1. Reference to Basin-wide Planning Study

The Basin-wide Planning Study is the Lafayette-Louisville Boundary Outfall System Plan, Conceptual Design Report by Merrick & Company from December 2012.

2. Major Basin Drainage Characteristics

This site is located in the City of Louisville DW7 Watershed, per the Lafayette-Louisville Boundary Outfall Systems Plan. Drainage Way 7-1 is the major drainage way that ultimately receives runoff from this site.

3. Identification of all nearby irrigation facilities which will influence or be influenced by the local drainage

The Goodhue Ditch is the only irrigation facility within the property boundaries, which crosses the northwest corner of the site, forming a triangle of approximately 0.20 acres.

B. Sub-Basin Description

1. Discussion of historic drainage patterns offsite

Historically, runoff from this site sheet flows southeast until it reaches an existing 18" RCP on a headwall on the southeast corner of the site. From this pipe, it is conveyed east across Hwy 42 through City Storm Sewer into Drainage Way 7-1.

2. Discussion of offsite drainage flow patterns and impact on development

Developed flows from the existing development to the north and east of Cannon Circle, as well as the south half of South Boulder Road, from Highway 42 to the west property line, also enter the site and combine with onsite flows in the southeast portion of the site. The car wash site, Lot 2, Coal Creek Station Filing No.3, has a detention pond in the southeast corner of the lot. Runoff from the development to the northeast and the rear of the existing buildings to the north flows into this pond. An 8" pipe releases flows into the southeast portion onsite. Fordyce Auto Center also has onsite detentioning and a controlled release. Released flows pass under a sidewalk chase into the gutter of Cannon Circle. The storm sewer release from the ponds that serve those properties are proposed to be piped and conveyed to the north side of the proposed detention/water quality pond onsite.

Both off-site and onsite flows are routed through the existing 18" pipe in the southeast corner of the site and exit into a roadside ditch, flowing south for approximately 50 feet, before flowing east into the existing 30" pipe under Highway 42 into Drainage Way 7-1. Flows continue east under an irrigation ditch berm to the Lastoka Open Space on the east side of Highway 42. This development will continue to utilize the existing 30" pipe under

Highway 42. This is the limiting factor for offsite flows passing through the site. Currently, it can pass 43 cfs under the highway per calculations located in the *Hydrologic Calculations* Section (**Appendix B)** of this report.

3. Identify historic flows and volumes for all sub-basins.

The historic flows from this site are shown on the *Hydrologic Calculations* Section (**Appendix B)** of this report.

III. DRAINAGE DESIGN CRITERIA

A. Regulations

1. Reference to City and County subdivision regulations

The drainage design criteria for this project is in conformance with the City of Louisville Storm Drainage and Technical Criteria Manual. (SDTCM)

2. Discussion of compliance with or deviation (including a request for variance from the standard) from the City of Louisville Basinwide Major Drainageway Planning Report (Water Resources Consultants 1982a), the Lafayette-Louisville Boundary Outfall System Plan (McLaughlin Water Engineers 2011) and Urban Storm Drainage Design and Technical Criteria Manual

This proposal complies with the Basin-wide Planning Study of the Lafayette-Louisville Boundary Outfall System Plan, Conceptual Design Report.

B. Development Criteria Reference and Constraints

1. Discussion of previous drainage studies for the site that influence or are influenced by the drainage design

The drainage design was based on MHFD criteria while the "Final Drainage Report for Coal Creek Station Subdivision", prepared by Drexel, Barrell & Co was used as a supplemental reference.

2. Discussion of the drainage impact of site constraints such as streets, irrigation ditches, utilities, railroads, existing structures, and development or site plans

There are no impacts from onsite drainage to public streets, ditches, etc. outside of street conveyance of flow allowed by City Standards.

C. Hydrological Criteria

1. Identify design rainfall source

The hour point precipitation values were obtained from RA1-6 in the USDCM per SDTCM.

2. Identify design storms recurrence intervals

The design frequencies utilized for the report were 10-year for the minor storm and 100-year for the major storm.

3. **Identify runoff calculation method**

   The Hydrologic Criteria used for this Report is the Rational Method as described in the USDCM.

4. **Identify detention and water quality volumes and discharges and storage calculation method**

   The Mile High Flood District (MHFD) provided a detention pond sizing sheet (version 4.03) which was used in this report. Calculations are provided in **Appendix C** along with the related tables and figures.

   The USDCM MHFD-Detention_v4 03 Excel software was used to calculate the detention volumes and worksheets are included in **Appendix C.**

D. Hydraulic Criteria

1. **Identify various capacity references**

   The drainage design concepts of this project are intended to be in conformance with the City of Louisville Storm Drainage and Technical Criteria Manual. (SDTCM)

2. **Identify detention and water quality outlet design method**

   The USDCM MHFD-Detention_v4 03 Excel software was used to calculate the detention and water quality outlet design. Worksheets are included in **Appendix C.**

3. **Discussion of other drainage facility design criteria used that are not presented in or referenced by the Storm Drainage Design and Technical Criteria**

   The drainage design was based on the "Final Drainage Report for Coal Creek Station Subdivision", prepared by Drexel, Barrell & Co, and the "City of Louisville Storm Drainage Design and Technical Criteria Manual."

IV. DRAINAGE FACILITY DESIGN

A. General Concept

1. Discussion of concept and typical drainage patterns

The current design is based on the Final Drainage Report for Coal Creek Station Subdivision completed in 1982 for this site. Calculations based on full build-out to the north and east of Cannon Circle were used in the original report. Flows from the additional development that has taken place on the north side of South Boulder Road since the original report was written, have been added to this report. The existing outfall point on the west side of Highway 42 will continue to be used. Calculations performed in this report were based on an overall building and hard surface coverage. The actual impervious factor for the Site is 71%.

Several onsite basins have been identified for this development. Specific flows for each of these sub-basins are calculated in the *Hydrologic Calculation* (**Appendix B).** Per the landscape architect, the proposed development has a proposed landscape area of 31%, therefore, our impervious percentage for all on-site basins will be 69% (and rounded up to 70% for flows as shown on Table 3 of the SDTCM).

Basin A is 0.63 acres and is located directly north of the east portion of the proposed detention pond. It consists of several smaller units clustered together in the east portion of the development (west of State Hwy 42). The 10-yr & 100-yr detained runoff rates are 2.0 cfs and 3.7 cfs respectively (hereafter formatted at 2.0/3.7cfs). This stormwater will drain to two riprap rundowns into the north side of the proposed detention pond to Design Point 3 (hereafter formatted as DP3).

Just west of Basin A is Basin B which contains the same smaller unit clusters. This area has 0.37 acres. Neither Basin A nor Basin B include pavement in the Cannon Circle ROW – those are Basin OS-9 & OS-10. The stormwater generated by Basin B is 1.2/2.2 cfs and runs down into the pond in the same manner (riprap rundowns) at DP4.

Basin C includes 0.46 acres of area just south of the existing bend in Cannon Circle (or runoff in the east leg of Private Drive C. The stormwater generated by Basin C is 1.5/2.8cfs and runs through a 2’ wide curb chase into the west end of the proposed detention pond. Like Basins A & B, it will us a proposed riprap rundown to the pond.

Basin D contains the flow of the middle section of residential for the site and most of Outlot C. There will be a series of drains design in the final plans that will capture and convey the stormwater generated in this 0.95 acre basin. The stormwater will be 3.0/5.6cfs and will have at least a 10’ Type R inlet located at the south end of the basin at DP8.

Basin E (0.61 acres) is between Basins C & D and will convey and collect stormwater flowing in Private Drive B to the proposed 10’ Type R inlet at DP7. The stormwater generated from this basin is 1.9/3.6cfs.

Basin F (0.77 acres) will have similar hydrologic characteristics as Basin E as it conveys and collects stormwater flowing in Private Drive A. The total amount of proposed stormwater flow of 2.4/4.6cfs will collect at the south end of the site at DP9 into a 10' Type R inlet.

Basin G (1.30 acres) contain the multiunit townhomes on the southwest corner of the site where all of the proposed stormwater flow (4.1/7.7cfs) will be conveyed in an alley to DP29 which is an inlet in the west flowline of Front Street.

The parking area of the proposed commercial buildings with some portion of the roofs (southern portion) is the 1.06 acres of Basin I. This flow (3.3/6.3cfs) will enter a series of proposed inlets to be located at the south end of this parking area at DP11. The stormwater will continue to flow southward in a pipe through the park area labeled as Outlot C (Basin D).

Basin J is the eastern half of Front Street northward the north portion of the site. This stormwater that flows in this area will be conveyed in the east curb and gutter system (public ROW) to the proposed inlet at DP13. The proposed stormwater that will be generated from this basin is 0.9/1.8cfs.

Basin K is the area immediately south of the existing Gooding Hollow Ditch. It has 1.3 acres of area mainly covered in proposed rooftop, parking, and perimeter landscaping. The stormwater that will be generated from this basin (4.1/7.7cfs) will flow into the public ROW (west flowline of Front Street) and into the proposed inlet at DP14.

There is a small area between Basins F & J that collects stormwater in the east flowline of Front Street. This area is marked as Basin M and it will generate 0.5/0.9cfs in the 10-yr and 100-yr events and flow into a proposed inlet at DP16.

Basins N1, N2, and N3 are 3 mini basins that capture the north rooftop and area between South Boulder Road and the proposed commercial buildings. The stormwater flow generated in all 3 of these areas is very small (0.3/0.6cfs, 0.9/1.9cfs, 0.3/0.6cfs respectively). This stormwater will go into the proposed parking lot south of the buildings. Their design points are DP26, DP25, and DP24 respectively.

Basin P has 0.6 acres and is the detention/water quality pond. It mostly consists of the detention pond and the gravel maintenance access to the pond. The 10-yr & 100-yr detained runoff are estimated to be 1.9/3.6cfs draining to the proposed outlet structure at DP1.

Basin Q is a 0.76 area between Basins K & G that drain to the east into the Front Street ROW. Stormwater from this basin (2.4/4.5cfs) will be conveyed by proposed curb and gutter until it reaches the proposed storm inlet at DP28.

2. Discussion of compliance with offsite runoff considerations

There is a bypass storm sewer being proposed through the site for the Goodhue Ditch and for offsite flows from a storm sewer system on the north half of S. Boulder Rd Right-of-way. This proposed storm sewer system is conveyed through the site, under Hwy 42, and

then conveyed into Regional Drainageway 7-1. Discussion of the offsite flows to the north is located in **Appendix F**.

A summary of these offsite flows that flow into this pipe is shown below:

Basin name	**Basin Abbrev.**	**Release rate** (cfs)	**Design Point**	**Notes**
Steel Ranch South	SR	24.89	West of 32	Steel Ranch South contributes flow
Kestrel	K	14.5	North of 32	Kestrel contributes flow. Include bypass flows
Christopher Village	CV	4.2	32	Christopher Plaza and Village contribute flow
Garden City	GC	2.0	North of 33	Christopher Plaza II contributes all flow
Norwest	NW	3.66	33	Coal Trail Square contributes flow Combined flow at DP33 is 5.66cfs

All flows from DP 32 are offsite stormwater rates that flow from South Boulder Road, into a proposed storm line at the north side of the site, flow to the east parallel to South Boulder Road, then south underground in the west half of Cannon Circle, eventually crossing Hwy 42 and discharging at DP 2.

All flows from DP 33 are rerouted west and flow south in a new storm sewer pipe crossing South Boulder Road to the south directly across from Cannon Circle. This flow is conveyed via RCP TO the west, joins the flow from DP 32 and then flows through the site underground as previously described.

The developer's responsibility for the pipe cost would be a percentage found by the DP 32 flow divided by the total of flow from the overflow of Goodhue Ditch (unknown), DP 32, and DP 33 flow.

3. Discussion of the content of tables, figures, or drawings presented in the report

The historic flows will continue to follow the historical drainage pattern of the site. The proposed development will substantially improve the existing drainage conditions by installing bypass storm infrastructure for the Goodhue Ditch and offsite storm flows that run east along the north ROW of South Boulder Road.

Additionally, a storm sewer is being proposed along the north side of Cannon Circle that will capture the stormwater release from the existing detention ponds of the developments north of Cannon Circle. This proposed storm sewer will convey those release rates into the proposed detention/water quality pond.

B. Specific Details

1. Discussions of drainage problems encountered and solutions at specific design points

All the drainage requirements for this site have been properly accounted for and designed in the site storm sewer design.

The detention/water quality pond, will be designed per the latest Mile High Flood District requirements in order to meet water quality regulations and to provide adequate detention in order to match the historical 10-yr and 100-yr flows.

The City of Louisville has indicated that it will participate in the cost of the Goodhue Ditch bypass storm sewer that is being proposed across this development.

2. **Discussion of detention storage, water quality enhancement, and outlet design**

   There is a detention/water quality pond proposed on this site. It will have a water quality plate for water quality release control, an orifice for the 10-year release. The pond sizing was done using the MHFD-Detention, Version 4.03 (May 2020) spreadsheet from Mile High Drainage. These calculations are included in the *Detention Pond* Section (**Appendix C).** Water quality will be provided in forebay, micropools and water quality outlet plate orifices that will be detailed in the Final Drainage Report.

3. **Comparison of historic flows and all developed flows released from the site (detained and undetained)**

   Release rates from the Detention/Water Quality Pond will be set to match the historic and allowable release rates for this development.

V. CONCLUSION

A. Compliance with Standards

1. Storm Drainage Design and Technical Criteria

The drainage concepts for this project are consistent with current policies and practices for storm drainage management as outlined in the City of Louisville Design Criteria and City Code.

2. Basin-wide Major Drainageway Planning Study

This report complies with the Basin-wide Planning Study is the Lafayette-Louisville Boundary Outfall System Plan, Conceptual Design Report prepared by Merrick & Company on December 2012.

3. Lafayette-Louisville Boundary Outfall System Plan

This study has been prepared in accordance with City of Louisville Standards and Specifications as outlined in the Merrick & Company. December 2012. Lafayette-Louisville Boundary Outfall System Plan, Conceptual Design Report.

4. City of Louisville Subdivision Regulations

This study has been prepared in accordance with City of Louisville Standards and Specifications as outlined in the City of Louisville Storm Drainage and Technical Criteria Manual.

5. Urban Storm Drainage Criteria Manual

This study has been prepared in accordance with Urban Drainage and Flood Control District (USDCM). online. Drainage Criteria Manual, Volume I, II & III.

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6. Other master drainage reports

This study has been prepared in accordance with Drexel, Barrell & Co, June 1, 1982. Final Drainage Report for Coal Creek Station Subdivision

B. Drainage Concept

1. **Effectiveness of drainage design to control damage from storm runoff**

   The undeveloped 10.71-acre site of the Coal Creek Village will be developed assuming business and residential uses. The complete site will be detained for stormwater and it will be provided with water quality treatment in a proposed extended detention basin (EDB).

   The drainage from the Site (and the area on the southwest corner of Hwy 42 and South Boulder) will release into the existing drainage system in the southeast portion of the site which will have detention ponds sized for the build out condition. The results of this study indicate that the proposed development will safely convey runoff from the site with no adverse effects or impacts on the surrounding developments.

VI. REFERENCES

Drexel, Barrell & Co, June 1, 1982. Final Drainage Report for Coal Creek Station Subdivision

WHPacific, Inc. August 2013. City of Louisville Storm Drainage and Technical Criteria Manual (SDTCM)

Western Environment and Ecology, Inc, August 24, 2005. Mine Subsidence Investigation – Coal Creek Station Development – see **Appendix F**.

Merrick & Company. December 2012. Lafayette-Louisville Boundary Outfall System Plan, Conceptual Design Report.

Urban Drainage and Flood Control District (USCDM). online. Drainage Criteria Manual, Volume I, II & III.

The FEMA Flood Map Service Center (MSC) msc.fema.gov/portal/home

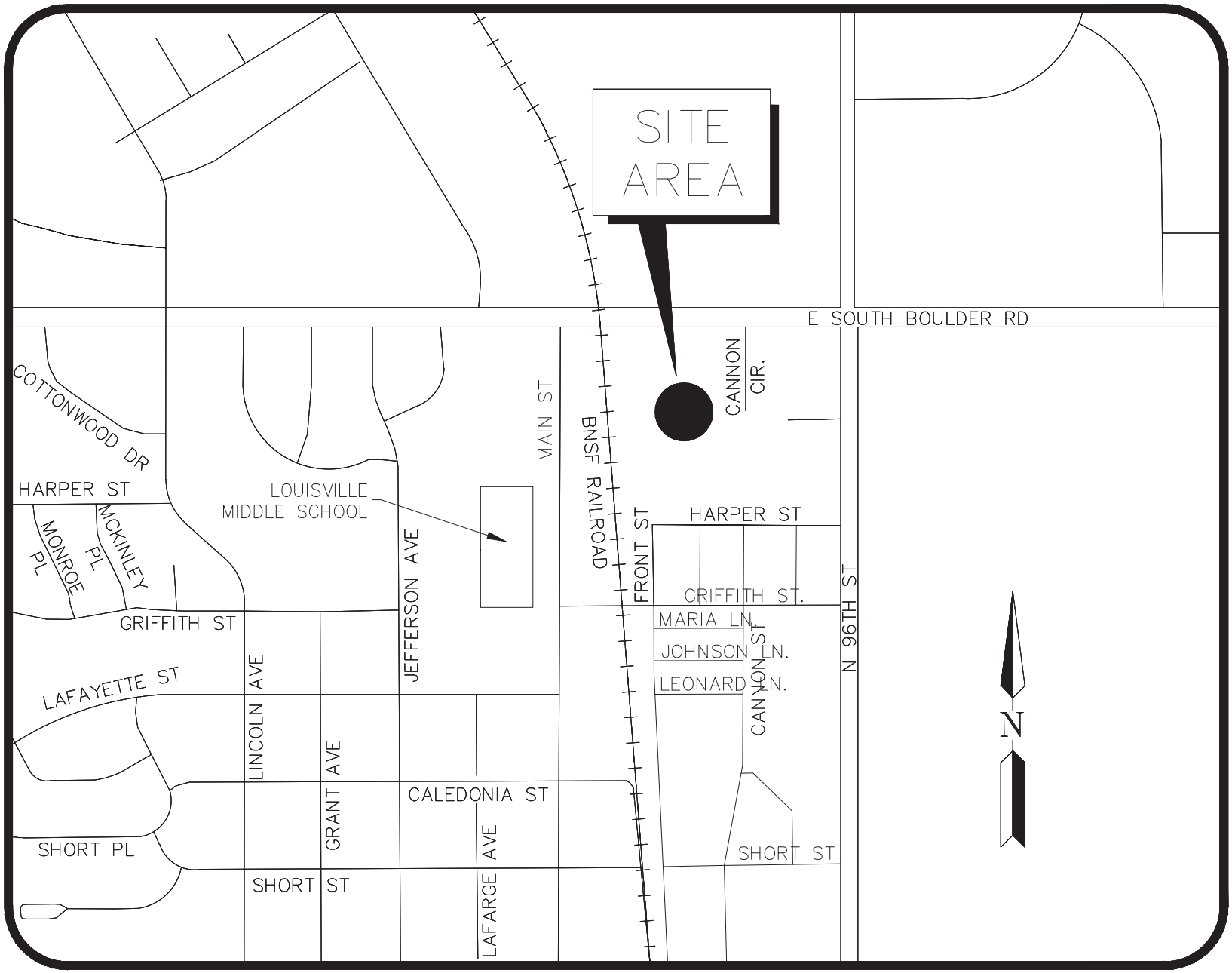
USDA United States Department of Agriculture NRCS Natural Resources Conservation Service

APPENDIX

Rocky Ridge Civil Engineering

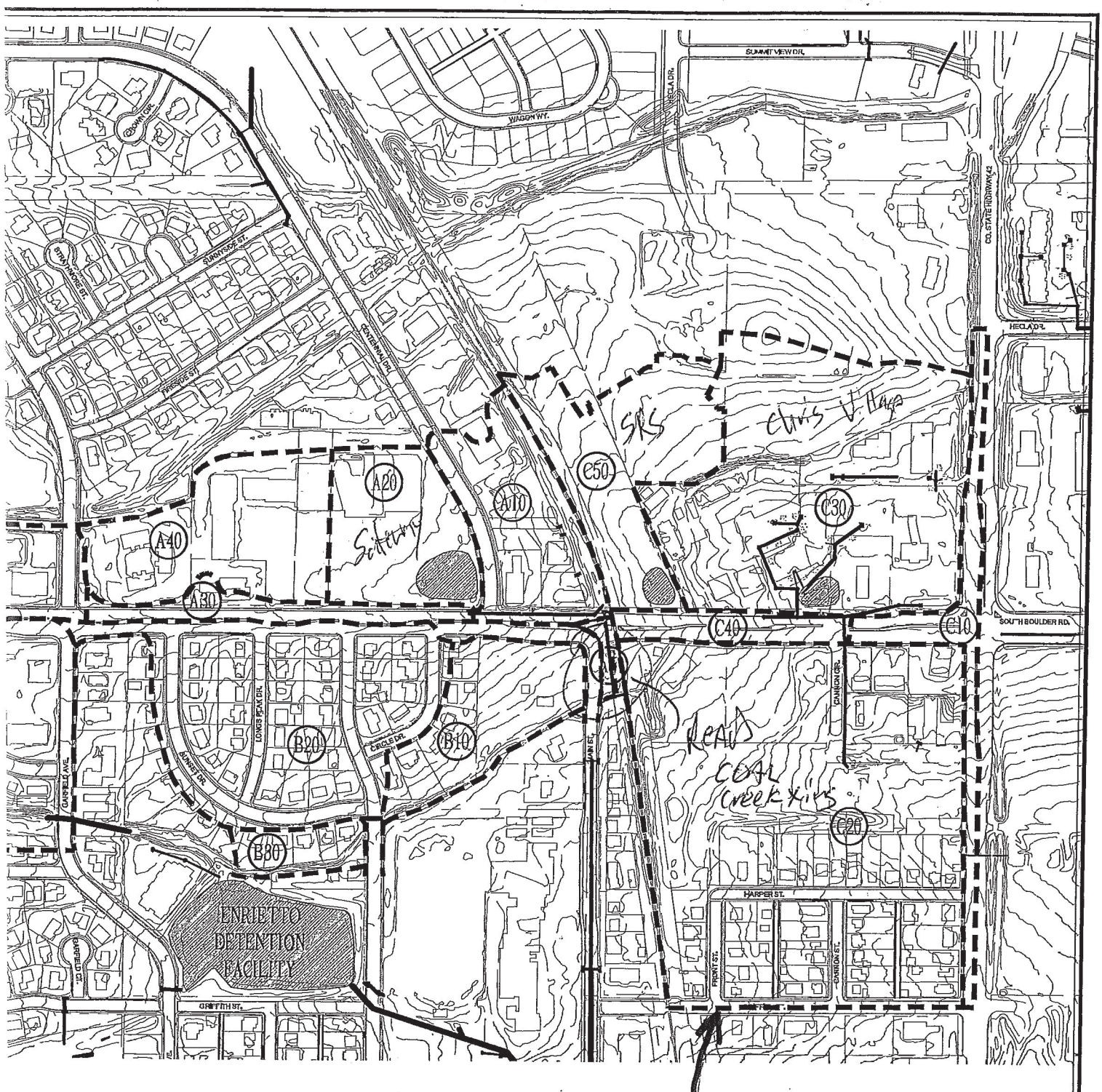
Appendix A

Maps and Figures



VICINITY MAP

Not to scale



GEND

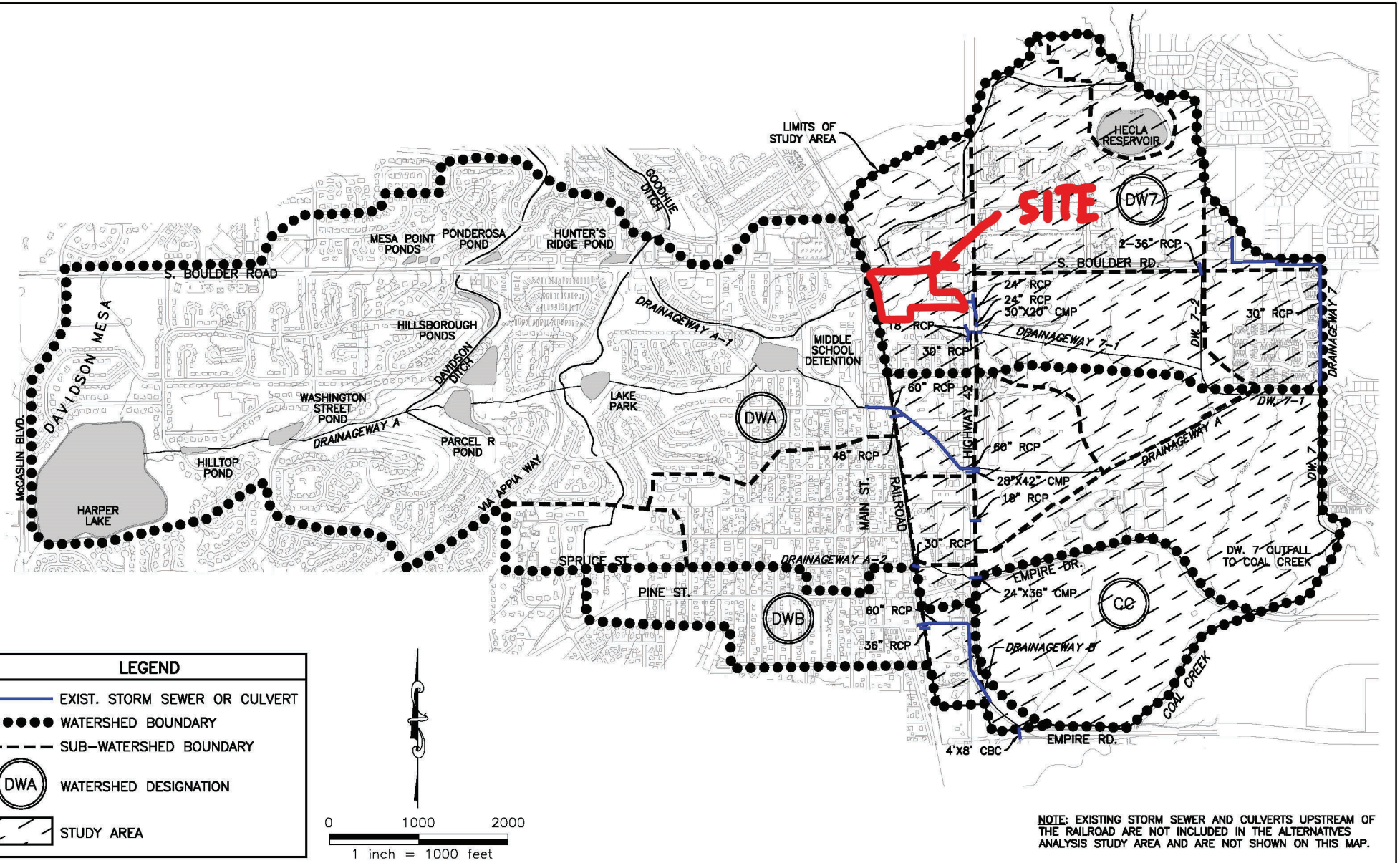
- 2" AND 4" LINE
- 6" AND 8" LINE
- 10" AND 12" LINE
- 14" AND 16" LINE
- 18" – 20" LINE
- 21" – 24" LINE
- 27" LINE
- 30" – 36" LINE
- 42" – 60" LINE

200 0 200 400
1 inch = 200 feet

From Lafayette-Louisville Boundary OSP (May 2011)

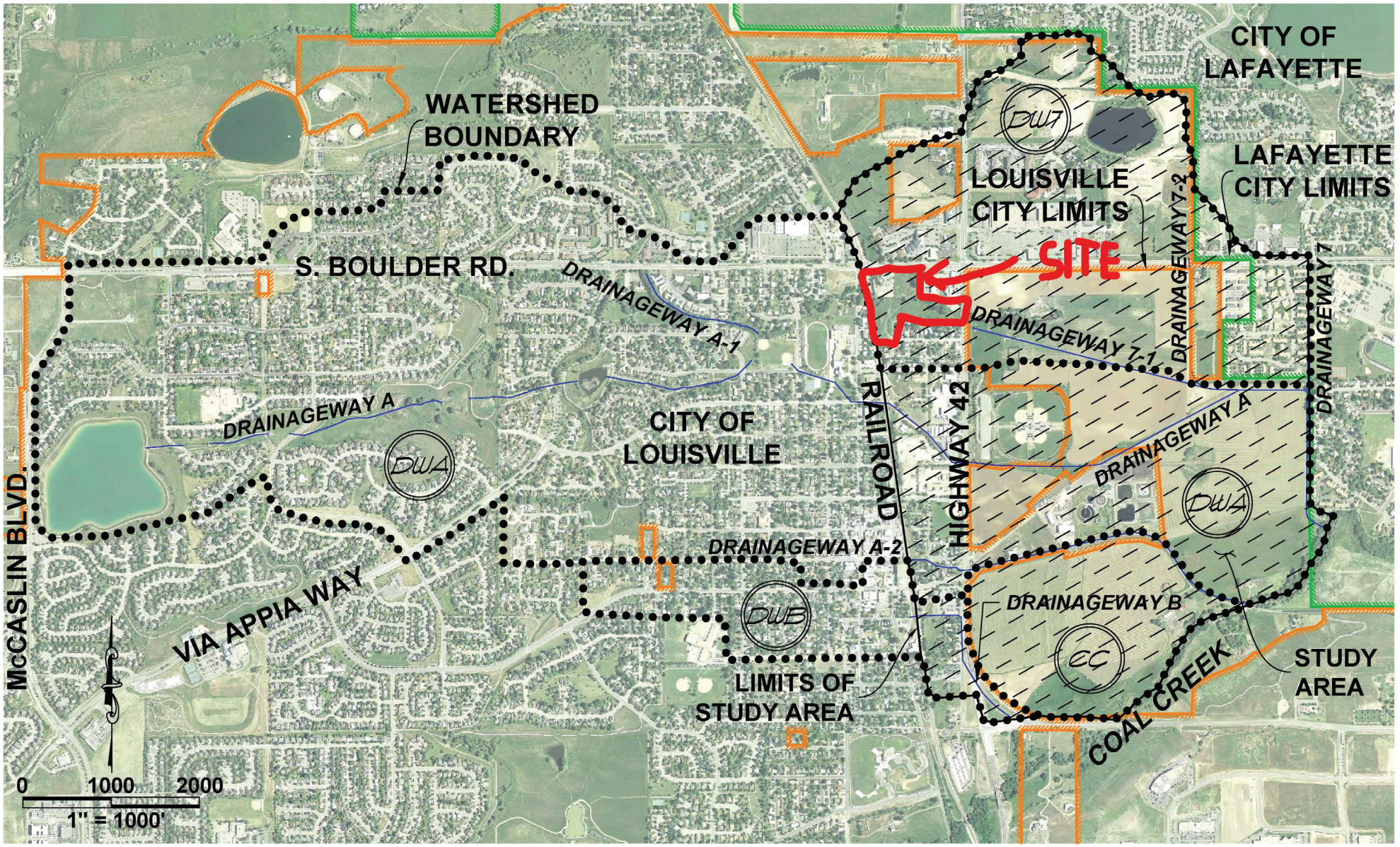
LYSIS	PARTIAL PLAN BASIN MAP A	MERRICK & COMPANY	DESIGN: AKA DETAIL: AKA, RDL CHECK: XXX DATE: DECEMBER, 2012	PROJECT NUMBER 65417624	Drawing Number: 1

LOUISVILLE / AKA-DELINEATION.DWG /DECEMBER 4, 2012 / PROJ. 6511737598

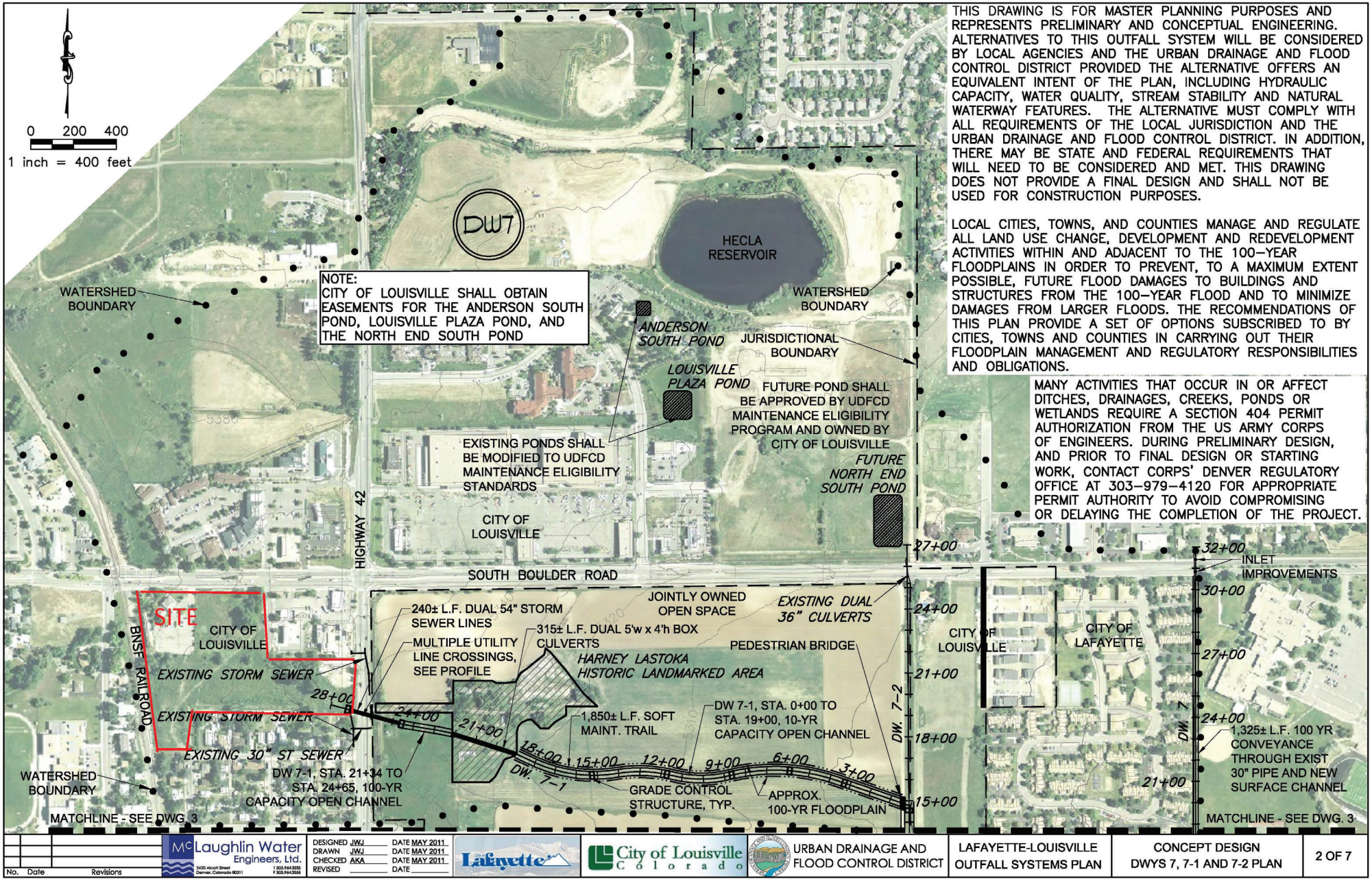


NOTE: EXISTING STORM SEWER AND CULVERTS UPSTREAM OF THE RAILROAD ARE NOT INCLUDED IN THE ALTERNATIVES ANALYSIS STUDY AREA AND ARE NOT SHOWN ON THIS MAP.

McLaughlin Water Engineers, Ltd.	DESIGNED BCS, AKA, JWJ DATE 12-22-10 DRAWN JWJ DATE 12-22-10 CHECKED AKA DATE REVISED DATE	CITY OF LAFAYETTE AND CITY OF LOUISVILLE URBAN DRAINAGE AND FLOOD CONTROL DISTRICT	LAFAYETTE-LOUISVILLE BOUNDARY OUTFALL SYSTEMS PLAN	EXISTING DRAINAGE FEATURES MAP	FIGURE 2



McLaughlin Water Engineers, Ltd.	DESIGNED JWJ BCS AKA DATE 12-01-08 DRAWN BCS DATE 9-12-09 CHECKED AKA DATE 01-13-11 REVISED DATE	CITY OF LAFAYETTE AND CITY OF LOUISVILLE URBAN DRAINAGE AND FLOOD CONTROL DISTRICT	LAFAYETTE-LOUISVILLE BOUNDARY OUTFALL SYSTEMS PLAN	STUDY AREA MAP	FIGURE 1



THIS DRAWING IS FOR MASTER PLANNING PURPOSES AND REPRESENTS PRELIMINARY AND CONCEPTUAL ENGINEERING. ALTERNATIVES TO THIS OUTFALL SYSTEM WILL BE CONSIDERED BY LOCAL AGENCIES AND THE URBAN DRAINAGE AND FLOOD CONTROL DISTRICT PROVIDED THE ALTERNATIVE OFFERS AN EQUIVALENT INTENT OF THE PLAN, INCLUDING HYDRAULIC CAPACITY, WATER QUALITY, STREAM STABILITY AND NATURAL WATERWAY FEATURES. THE ALTERNATIVE MUST COMPLY WITH ALL REQUIREMENTS OF THE LOCAL JURISDICTION AND THE URBAN DRAINAGE AND FLOOD CONTROL DISTRICT. IN ADDITION, THERE MAY BE STATE AND FEDERAL REQUIREMENTS THAT WILL NEED TO BE CONSIDERED AND MET. THIS DRAWING DOES NOT PROVIDE A FINAL DESIGN AND SHALL NOT BE USED FOR CONSTRUCTION PURPOSES.

LOCAL CITIES, TOWNS, AND COUNTIES MANAGE AND REGULATE ALL LAND USE CHANGE, DEVELOPMENT AND REDEVELOPMENT ACTIVITIES WITHIN AND ADJACENT TO THE 100-YEAR FLOODPLAINS IN ORDER TO PREVENT, TO A MAXIMUM EXTENT POSSIBLE, FUTURE FLOOD DAMAGES TO BUILDINGS AND STRUCTURES FROM THE 100-YEAR FLOOD AND TO MINIMIZE DAMAGES FROM LARGER FLOODS. THE RECOMMENDATIONS OF THIS PLAN PROVIDE A SET OF OPTIONS SUBSCRIBED TO BY CITIES, TOWNS AND COUNTIES IN CARRYING OUT THEIR FLOODPLAIN MANAGEMENT AND REGULATORY RESPONSIBILITIES AND OBLIGATIONS.

MANY ACTIVITIES THAT OCCUR IN OR AFFECT DITCHES, DRAINAGES, CREEKS, PONDS OR WETLANDS REQUIRE A SECTION 404 PERMIT AUTHORIZATION FROM THE US ARMY CORPS OF ENGINEERS. DURING PRELIMINARY DESIGN, AND PRIOR TO FINAL DESIGN OR STARTING WORK, CONTACT CORPS' DENVER REGULATORY OFFICE AT 303-979-4120 FOR APPROPRIATE PERMIT AUTHORITY TO AVOID COMPROMISING OR DELAYING THE COMPLETION OF THE PROJECT.

No.	Date	Revisions			
McLaughlin Water Engineers, Ltd.	DESIGNED JWJ	DATE MAY 2011	URBAN DRAINAGE AND FLOOD CONTROL DISTRICT	LAFAYETTE-LOUISVILLE OUTFALL SYSTEMS PLAN	CONCEPT DESIGN DWYS 7, 7-1 AND 7-2 PLAN	2 OF 7
	DRAWN JWJ	DATE MAY 2011				
	CHECKED AKA	DATE MAY 2011				
	REVISED	DATE				

Rocky Ridge
Civil Engineering

Appendix B

Hydrologic Calculations

CITY OF LOUISVILLE
STORM DRAINAGE DESIGN AND TECHNICAL CRITERIA

TABLE 3

RUNOFF COEFFICIENTS FOR RATIONAL METHOD

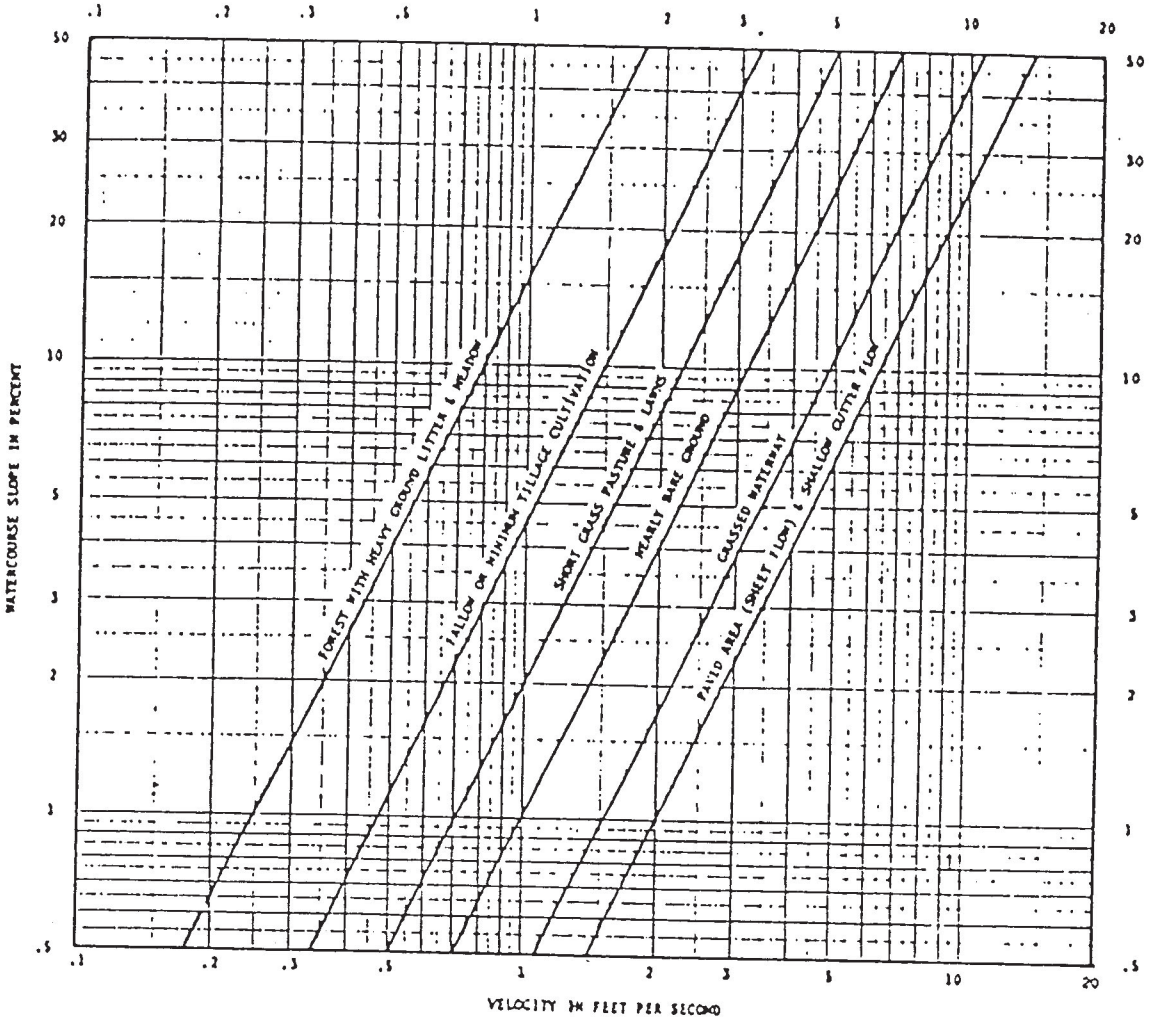
LAND USE OR SURFACE CHARACTERISTICS	PERCENT IMPERVIOUS	FREQUENCY 2	5	10	100
Business:					
Commercial Areas	95	.87	.88	.90	.93
Neighborhood Areas	65	.60	.65	.70	.80
Residential:					
Single-Family	40	.40	.45	.50	.70
Multi-Unit (detached)	50	.50	.55	.60	.75
Multi-Unit (attached)	70	.65	.70	.70	.80
1/2 Acre Lot or Larger	30	.30	.40	.45	.65
Apartments	70	.65	.70	.70	.80
Industrial:					
Light Areas	80	.75	.80	.80	.85
Heavy Areas	90	.80	.80	.85	.90
Parks, Cemetaries	7	.15	.25	.35	.60
Playgrounds	13	.20	.30	.40	.70
Schools	50	.50	.55	.60	.75
Railroad Yard Areas	40	.40	.45	.50	.70
Undeveloped Areas:					
Historic Flow Analysis Greenbelts, Agricultural	2	.10	.20	.30	.60
Offsite Flow Analysis (when land use not defined)	45	.45	.50	.55	.72
Streets:					
Paved	100	.87	.88	.90	.93
Gravel	7	.15	.25	.35	.65
Drives and Walks	96	.85	.87	.90	.92
Roofs	90	.80	.85	.90	.90
Lawns, Sandy Soil	0	.00	.10	.20	.50
Lawns, Clayey Soil	0	.10	.20	.30	.60

NOTE: These Rational Formula coefficients do not apply for larger basins where the time-of-concentration exceeds 60 minutes.

WRC, Inc.
Date: Dec, 1981

Reference: Urban Drainage & Flood Control District Rational Formula Procedure, Hydrology Research Program, August 1979.

TIME OF TRAVEL



NOTE: 1. The curves can be used with the Rational Method to estimate the time of travel (t_t) portion of the concentration time.

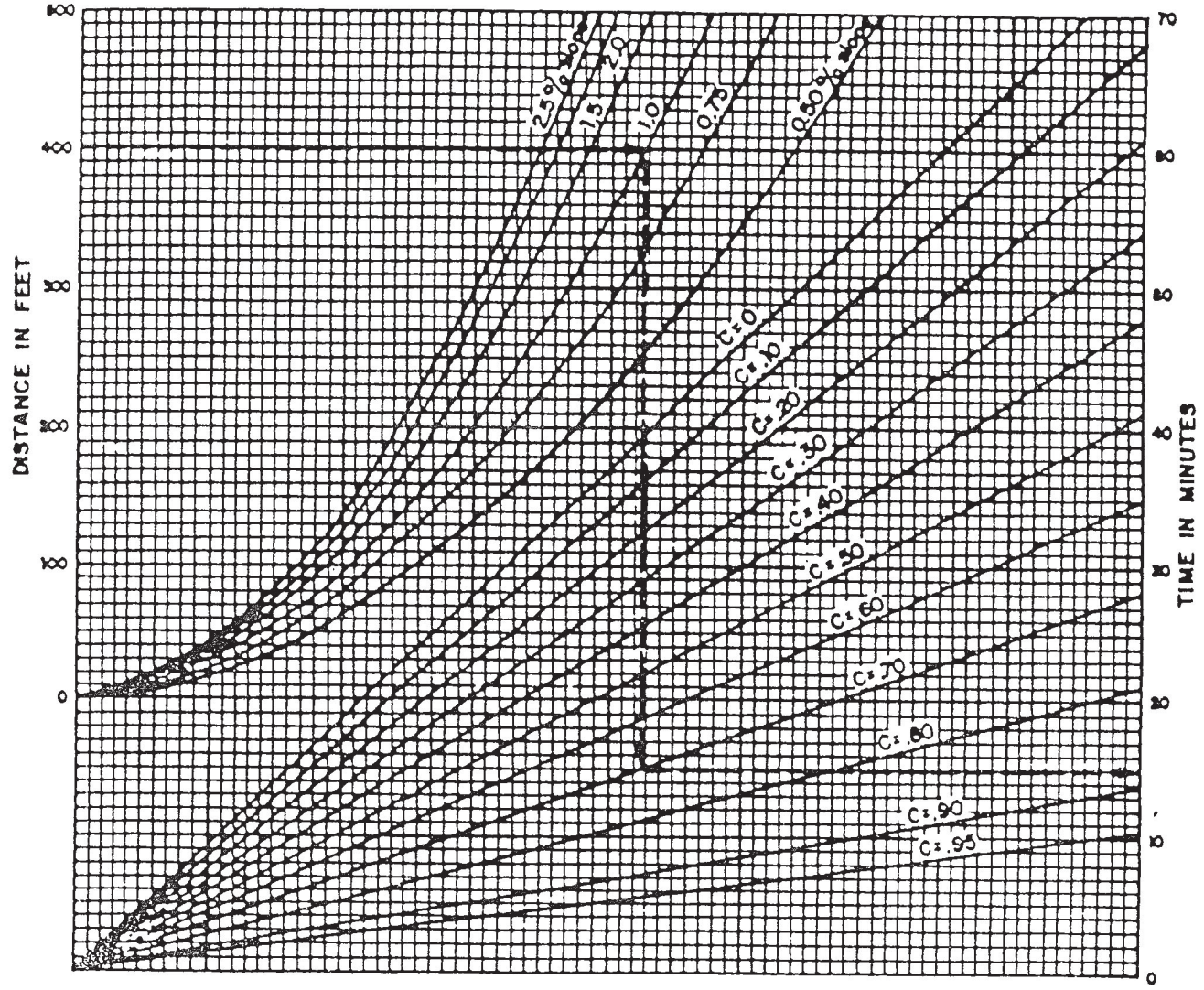
2. See Text, Section 4.3.2 for further explanation.

Reference: "Urban Hydrology For Small Watersheds" Technical Release No. 55, USDA, SCS Jan. 1975.

CITY OF LOUISVILLE
STORM DRAINAGE DESIGN AND TECHNICAL CRITERIA

FIGURE 2

OVERLAND TIME OF FLOW



THE ABOVE CURVES ARE A SOLUTION OF THE FOLLOWING EQUATION:

$$t_i = \frac{1.8\,(1.1 - C_5)\,\sqrt{L}}{\sqrt[3]{S}}$$

where: t_i = initial flow time (min.)
S = slope of basin (%)
C_5 = runoff coeficient for 5 year frequency (Table 3)
L = length of basin (ft.)

NOTES:
1. The curves are for use with the Rational Method, see Text Section 4·3·2.
2. The curves shall not be used for distances in excess of 300'.
3. See Figure 3 for additional information

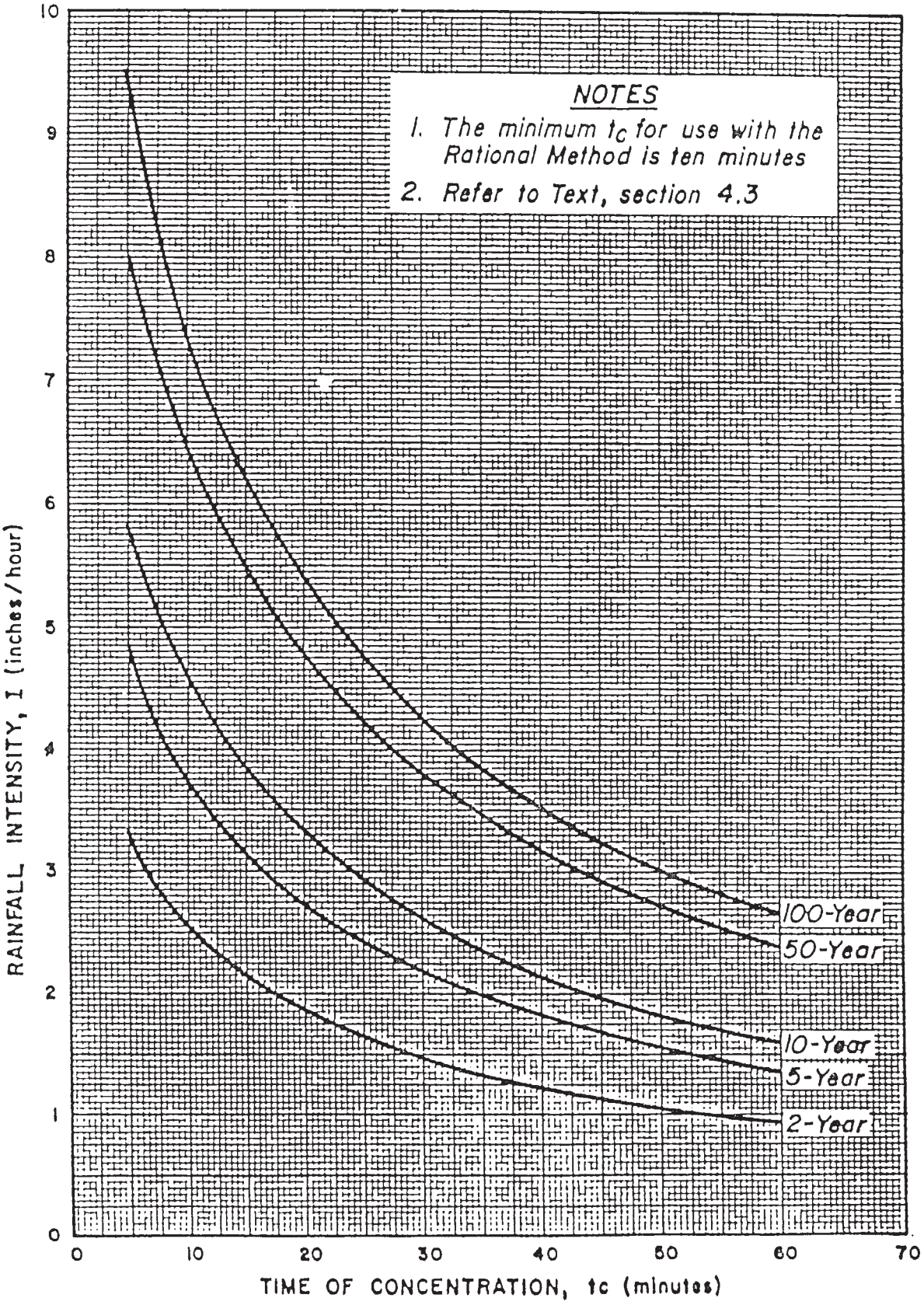
WRC, Inc.	Reference: "Urban Storm Drainage Criteria Manual" DRCOG, Denver Colo. 1969
Date: Dec, 1981	

10

CITY OF LOUISVILLE
STORM DRAINAGE DESIGN AND TECHNICAL CRITERIA

FIGURE 1

TIME-INTENSITY-FREQUENCY CURVES



WRC, Inc.

Date: Dec, 1981

Reference: NOAA Atlas 2, Precipitation-Frequency Atlas of the Western United States, Volume III - Colorado.

C factors & Impervious % - Offsite

Coal Creek Village

JN - 294-1

ALL (ONSITE + OFFSITE)	AREA (sf)	C2	C5	C10	C100	% IMPERV
ASPHALT ROAD / PARKING	206727	0.84	0.86	0.86	0.89	100
CONCRETE DRIVES & WALKS	54392	0.74	0.76	0.78	0.84	90
GRAVEL (PACKED)	2614	0.29	0.32	0.38	0.61	40
ROOFS	112966	0.74	0.76	0.78	0.84	90
LAWNS (CLAYEY)	263746	0.01	0.01	0.07	0.44	2

C2= 0.47
C5= 0.48
C10= 0.51
C100= 0.69

Total Basin Area (Includes Offsite Basins)
14.70 ac 640,444 sq.ft.
Basin Impervious
57%

ONSITE BASINS ONLY	AREA (sf)	C2	C5	C10	C100	% IMPERV
ASPHALT ROAD / PARKING	149498	0.84	0.86	0.86	0.89	100
CONCRETE DRIVES & WALKS	47597	0.74	0.76	0.78	0.84	90
GRAVEL (PACKED)	5227	0.29	0.32	0.38	0.61	40
ROOFS	107346	0.74	0.76	0.78	0.84	90
LAWNS (CLAYEY)	141206	0.01	0.01	0.07	0.44	2

C2= 0.54
C5= 0.55
C10= 0.58
C100= 0.73

Total Basin Area
10.11 ac 440,392 sq.ft.
Basin Impervious
65%

BASIN A	AREA (sf)	C2	C5	C10	C100	% IMPERV
ASPHALT ROAD / PARKING	10977	0.84	0.86	0.86	0.89	100
CONCRETE DRIVES & WALKS	1372	0.74	0.76	0.78	0.84	90
GRAVEL (PACKED)	0	0.29	0.32	0.38	0.61	40
ROOFS	8233	0.74	0.76	0.78	0.84	90
LAWNS (CLAYEY)	6861	0.01	0.01	0.07	0.44	2

C2= 0.60
C5= 0.61
C10= 0.63
C100= 0.76

Total Basin Area (Includes Offsite Basins)
0.63 ac 27,443 sq.ft.
Basin Impervious
72%

C factors & Impervious % - Offsite

Coal Creek Village

JN - 294-1

BASIN B	AREA (sf)	C2	C5	C10	C100	% IMPERV
ASPHALT ROAD / PARKING	8059	0.84	0.86	0.86	0.89	100
CONCRETE DRIVES & WALKS	806	0.74	0.76	0.78	0.84	90
GRAVEL (PACKED)	0	0.29	0.32	0.38	0.61	40
ROOFS	4029	0.74	0.76	0.78	0.84	90
LAWNS (CLAYEY)	3223	0.01	0.01	0.07	0.44	2

C2= 0.64
C5= 0.66
C10= 0.68
C100= 0.79

Total Basin Area (Includes Offsite Basins)

0.37 ac 16,117 sq.ft.

Basin Impervious

77%

BASIN C	AREA (sf)	C2	C5	C10	C100	% IMPERV
ASPHALT ROAD / PARKING	8538	0.84	0.86	0.86	0.89	100
CONCRETE DRIVES & WALKS	2439	0.74	0.76	0.78	0.84	90
GRAVEL (PACKED)	0	0.29	0.32	0.38	0.61	40
ROOFS	4879	0.74	0.76	0.78	0.84	90
LAWNS (CLAYEY)	5238	0.01	0.01	0.07	0.44	2

C2= 0.60
C5= 0.61
C10= 0.64
C100= 0.76

Total Basin Area (Includes Offsite Basins)

0.48 ac 21,094 sq.ft.

Basin Impervious

72%

BASIN D	AREA (sf)	C2	C5	C10	C100	% IMPERV
ASPHALT ROAD / PARKING	11892	0.84	0.86	0.86	0.89	100
CONCRETE DRIVES & WALKS	3964	0.74	0.76	0.78	0.84	90
GRAVEL (PACKED)	0	0.29	0.32	0.38	0.61	40
ROOFS	11892	0.74	0.76	0.78	0.84	90
LAWNS (CLAYEY)	13582	0.01	0.01	0.07	0.44	2

C2= 0.53
C5= 0.54
C10= 0.57
C100= 0.72

Total Basin Area (Includes Offsite Basins)

0.95 ac 41,330 sq.ft.

Basin Impervious

64%

C factors & Impervious % - Offsite

Coal Creek Village

JN - 294-1

BASIN E	AREA (sf)	C2	C5	C10	C100	% IMPERV
ASPHALT ROAD / PARKING	3723	0.84	0.86	0.86	0.89	100
CONCRETE DRIVES & WALKS	3189	0.74	0.76	0.78	0.84	90
GRAVEL (PACKED)	0	0.29	0.32	0.38	0.61	40
ROOFS	6539	0.74	0.76	0.78	0.84	90
LAWNS (CLAYEY)	13250	0.01	0.01	0.07	0.44	2

C2= 0.39
C5= 0.40
C10= 0.44
C100= 0.65

Total Basin Area (Includes Offsite Basins)
0.61 ac 26,701 sq.ft.
Basin Impervious
48%

BASIN F	AREA (sf)	C2	C5	C10	C100	% IMPERV
ASPHALT ROAD / PARKING	13288	0.84	0.86	0.86	0.89	100
CONCRETE DRIVES & WALKS	3572	0.74	0.76	0.78	0.84	90
GRAVEL (PACKED)	0	0.29	0.32	0.38	0.61	40
ROOFS	8790	0.74	0.76	0.78	0.84	90
LAWNS (CLAYEY)	8030	0.01	0.01	0.07	0.44	2

C2= 0.61
C5= 0.62
C10= 0.64
C100= 0.76

Total Basin Area (Includes Offsite Basins)
0.77 ac 33,680 sq.ft.
Basin Impervious
73%

BASIN G	AREA (sf)	C2	C5	C10	C100	% IMPERV
ASPHALT ROAD / PARKING	14800	0.84	0.86	0.86	0.89	100
CONCRETE DRIVES & WALKS	6273	0.74	0.76	0.78	0.84	90
GRAVEL (PACKED)	0	0.29	0.32	0.38	0.61	40
ROOFS	15682	0.74	0.76	0.78	0.84	90
LAWNS (CLAYEY)	19800	0.01	0.01	0.07	0.44	2

C2= 0.51
C5= 0.52
C10= 0.55
C100= 0.71

Total Basin Area (Includes Offsite Basins)
1.30 ac 56,554 sq.ft.
Basin Impervious
62%

C factors & Impervious % - Offsite

Coal Creek Village

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BASIN I	AREA (sf)	C2	C5	C10	C100	% IMPERV
ASPHALT ROAD / PARKING	24305	0.84	0.86	0.86	0.89	100
CONCRETE DRIVES & WALKS	6229	0.74	0.76	0.78	0.84	90
GRAVEL (PACKED)	0	0.29	0.32	0.38	0.61	40
ROOFS	9344	0.74	0.76	0.78	0.84	90
LAWNS (CLAYEY)	6229	0.01	0.01	0.07	0.44	2

C2= 0.69
C5= 0.71
C10= 0.73
C100= 0.81

Total Basin Area (Includes Offsite Basins)

1.06 ac 46,107 sq.ft.

Basin Impervious

83%

BASIN J	AREA (sf)	C2	C5	C10	C100	% IMPERV
ASPHALT ROAD / PARKING	6590	0.84	0.86	0.86	0.89	100
CONCRETE DRIVES & WALKS	1915	0.74	0.76	0.78	0.84	90
GRAVEL (PACKED)	0	0.29	0.32	0.38	0.61	40
ROOFS	1215	0.74	0.76	0.78	0.84	90
LAWNS (CLAYEY)	3230	0.01	0.01	0.07	0.44	2

C2= 0.61
C5= 0.62
C10= 0.64
C100= 0.77

Total Basin Area (Includes Offsite Basins)

0.30 ac 12,950 sq.ft.

Basin Impervious

73%

BASIN K	AREA (sf)	C2	C5	C10	C100	% IMPERV
ASPHALT ROAD / PARKING	28314	0.84	0.86	0.86	0.89	100
CONCRETE DRIVES & WALKS	5663	0.74	0.76	0.78	0.84	90
GRAVEL (PACKED)	0	0.29	0.32	0.38	0.61	40
ROOFS	16988	0.74	0.76	0.78	0.84	90
LAWNS (CLAYEY)	5663	0.01	0.01	0.07	0.44	2

C2= 0.72
C5= 0.74
C10= 0.75
C100= 0.83

Total Basin Area (Includes Offsite Basins)

1.30 ac 56,628 sq.ft.

Basin Impervious

86%

C factors & Impervious % - Offsite

Coal Creek Village

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BASIN Q	AREA (sf)	C2	C5	C10	C100	% IMPERV
ASPHALT ROAD / PARKING	15593	0.84	0.86	0.86	0.89	100
CONCRETE DRIVES & WALKS	2919	0.74	0.76	0.78	0.84	90
GRAVEL (PACKED)	0	0.29	0.32	0.38	0.61	40
ROOFS	8756	0.74	0.76	0.78	0.84	90
LAWNS (CLAYEY)	5919	0.01	0.01	0.07	0.44	2

C2= 0.66
C5= 0.67
C10= 0.69
C100= 0.79

Total Basin Area (Includes Offsite Basins)
0.76 ac 33,186 sq.ft.
Basin Impervious
79%

BASIN M	AREA (sf)	C2	C5	C10	C100	% IMPERV
ASPHALT ROAD / PARKING	3420	0.84	0.86	0.86	0.89	100
CONCRETE DRIVES & WALKS	784	0.74	0.76	0.78	0.84	90
GRAVEL (PACKED)	0	0.29	0.32	0.38	0.61	40
ROOFS	1352	0.74	0.76	0.78	0.84	90
LAWNS (CLAYEY)	784	0.01	0.01	0.07	0.44	2

C2= 0.70
C5= 0.72
C10= 0.74
C100= 0.82

Total Basin Area (Includes Offsite Basins)
0.15 ac 6,340 sq.ft.
Basin Impervious
85%

BASIN N1	AREA (sf)	C2	C5	C10	C100	% IMPERV
ASPHALT ROAD / PARKING	0	0.84	0.86	0.86	0.89	100
CONCRETE DRIVES & WALKS	871	0.74	0.76	0.78	0.84	90
GRAVEL (PACKED)	0	0.29	0.32	0.38	0.61	40
ROOFS	2178	0.74	0.76	0.78	0.84	90
LAWNS (CLAYEY)	1307	0.01	0.01	0.07	0.44	2

C2= 0.52
C5= 0.54
C10= 0.57
C100= 0.72

Total Basin Area (Includes Offsite Basins)
0.10 ac 4,356 sq.ft.
Basin Impervious
64%

C factors & Impervious % - Offsite

Coal Creek Village

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BASIN N2	AREA (sf)	C2	C5	C10	C100	% IMPERV
ASPHALT ROAD / PARKING	0	0.84	0.86	0.86	0.89	100
CONCRETE DRIVES & WALKS	4116	0.74	0.76	0.78	0.84	90
GRAVEL (PACKED)	0	0.29	0.32	0.38	0.61	40
ROOFS	5293	0.74	0.76	0.78	0.84	90
LAWNS (CLAYEY)	2352	0.01	0.01	0.07	0.44	2

C2= 0.59
C5= 0.61
C10= 0.64
C100= 0.76

Total Basin Area (Includes Offsite Basins)
0.27 ac 11,761 sq.ft.
Basin Impervious
72%

BASIN N3	AREA (sf)	C2	C5	C10	C100	% IMPERV
ASPHALT ROAD / PARKING	0	0.84	0.86	0.86	0.89	100
CONCRETE DRIVES & WALKS	871	0.74	0.76	0.78	0.84	90
GRAVEL (PACKED)	0	0.29	0.32	0.38	0.61	40
ROOFS	2178	0.74	0.76	0.78	0.84	90
LAWNS (CLAYEY)	1307	0.01	0.01	0.07	0.44	2

C2= 0.52
C5= 0.54
C10= 0.57
C100= 0.72

Total Basin Area (Includes Offsite Basins)
0.10 ac 4,356 sq.ft.
Basin Impervious
64%

BASIN P	AREA (sf)	C2	C5	C10	C100	% IMPERV
ASPHALT ROAD / PARKING	0	0.84	0.86	0.86	0.89	100
CONCRETE DRIVES & WALKS	1307	0.74	0.76	0.78	0.84	90
GRAVEL (PACKED)	2614	0.29	0.32	0.38	0.61	40
ROOFS	0	0.74	0.76	0.78	0.84	90
LAWNS (CLAYEY)	22216	0.01	0.01	0.07	0.44	2

C2= 0.07
C5= 0.08
C10= 0.14
C100= 0.48

Total Basin Area (Includes Offsite Basins)
0.60 ac 26,136 sq.ft.
Basin Impervious
10%

C factors & Impervious % - Offsite

Coal Creek Village

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BASIN OS1	AREA (sf)	C2	C5	C10	C100	% IMPERV
ASPHALT ROAD / PARKING	3311	0.84	0.86	0.86	0.89	100
CONCRETE DRIVES & WALKS	331	0.74	0.76	0.78	0.84	90
GRAVEL (PACKED)	0	0.29	0.32	0.38	0.61	40
ROOFS	1655	0.74	0.76	0.78	0.84	90
LAWNS (CLAYEY)	27809	0.01	0.01	0.07	0.44	2

C2= 0.14
C5= 0.14
C10= 0.19
C100= 0.51

Total Basin Area (Includes Offsite Basins)
0.76 ac 33,106 sq.ft.
Basin Impervious
17%

BASIN OS2	AREA (sf)	C2	C5	C10	C100	% IMPERV
ASPHALT ROAD / PARKING	3964	0.84	0.86	0.86	0.89	100
CONCRETE DRIVES & WALKS	793	0.74	0.76	0.78	0.84	90
GRAVEL (PACKED)	0	0.29	0.32	0.38	0.61	40
ROOFS	3964	0.74	0.76	0.78	0.84	90
LAWNS (CLAYEY)	70558	0.01	0.01	0.07	0.44	2

C2= 0.10
C5= 0.10
C10= 0.15
C100= 0.49

Total Basin Area (Includes Offsite Basins)
1.82 ac 79,279 sq.ft.
Basin Impervious
12%

BASIN OS3	AREA (sf)	C2	C5	C10	C100	% IMPERV
ASPHALT ROAD / PARKING	13242	0.84	0.86	0.86	0.89	100
CONCRETE DRIVES & WALKS	1655	0.74	0.76	0.78	0.84	90
GRAVEL (PACKED)	0	0.29	0.32	0.38	0.61	40
ROOFS	0	0.74	0.76	0.78	0.84	90
LAWNS (CLAYEY)	1655	0.01	0.01	0.07	0.44	2

C2= 0.75
C5= 0.77
C10= 0.77
C100= 0.84

Total Basin Area (Includes Offsite Basins)
0.38 ac 16,553 sq.ft.
Basin Impervious
89%

C factors & Impervious % - Offsite

Coal Creek Village

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BASIN OS4	AREA (sf)	C2	C5	C10	C100	% IMPERV
ASPHALT ROAD / PARKING	0	0.84	0.86	0.86	0.89	100
CONCRETE DRIVES & WALKS	0	0.74	0.76	0.78	0.84	90
GRAVEL (PACKED)	0	0.29	0.32	0.38	0.61	40
ROOFS	0	0.74	0.76	0.78	0.84	90
LAWNS (CLAYEY)	21950	0.01	0.01	0.07	0.44	2

C2= 0.01
C5= 0.01
C10= 0.07
C100= 0.44

Total Basin Area (Includes Offsite Basins)

0.50 ac 21,950 sq.ft.

Basin Impervious

2%

BASIN OS5	AREA (sf)	C2	C5	C10	C100	% IMPERV
ASPHALT ROAD / PARKING	0	0.84	0.86	0.86	0.89	100
CONCRETE DRIVES & WALKS	0	0.74	0.76	0.78	0.84	90
GRAVEL (PACKED)	0	0.29	0.32	0.38	0.61	40
ROOFS	0	0.74	0.76	0.78	0.84	90
LAWNS (CLAYEY)	8854	0.01	0.01	0.07	0.44	2

C2= 0.01
C5= 0.01
C10= 0.07
C100= 0.44

Total Basin Area (Includes Offsite Basins)

0.20 ac 8,854 sq.ft.

Basin Impervious

2%

BASIN OS6	AREA (sf)	C2	C5	C10	C100	% IMPERV
ASPHALT ROAD / PARKING	0	0.84	0.86	0.86	0.89	100
CONCRETE DRIVES & WALKS	784	0.74	0.76	0.78	0.84	90
GRAVEL (PACKED)	0	0.29	0.32	0.38	0.61	40
ROOFS	0	0.74	0.76	0.78	0.84	90
LAWNS (CLAYEY)	7057	0.01	0.01	0.07	0.44	2

C2= 0.08
C5= 0.09
C10= 0.14
C100= 0.48

Total Basin Area (Includes Offsite Basins)

0.18 ac 7,841 sq.ft.

Basin Impervious

11%

C factors & Impervious % - Offsite

Coal Creek Village

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BASIN OS7	AREA (sf)	C2	C5	C10	C100	% IMPERV
ASPHALT ROAD / PARKING	20156	0.84	0.86	0.86	0.89	100
CONCRETE DRIVES & WALKS	1220	0.74	0.76	0.78	0.84	90
GRAVEL (PACKED)	0	0.29	0.32	0.38	0.61	40
ROOFS	0	0.74	0.76	0.78	0.84	90
LAWNS (CLAYEY)	2235	0.01	0.01	0.07	0.44	2

C2= 0.76
C5= 0.77
C10= 0.78
C100= 0.84

Total Basin Area (Includes Offsite Basins)

0.54 ac 23,611 sq.ft.

Basin Impervious

90%

BASIN OS8	AREA (sf)	C2	C5	C10	C100	% IMPERV
ASPHALT ROAD / PARKING	8054	0.84	0.86	0.86	0.89	100
CONCRETE DRIVES & WALKS	375	0.74	0.76	0.78	0.84	90
GRAVEL (PACKED)	0	0.29	0.32	0.38	0.61	40
ROOFS	0	0.74	0.76	0.78	0.84	90
LAWNS (CLAYEY)	1025	0.01	0.01	0.07	0.44	2

C2= 0.75
C5= 0.76
C10= 0.77
C100= 0.84

Total Basin Area (Includes Offsite Basins)

0.22 ac 9,454 sq.ft.

Basin Impervious

89%

BASIN OS9	AREA (sf)	C2	C5	C10	C100	% IMPERV
ASPHALT ROAD / PARKING	2962	0.84	0.86	0.86	0.89	100
CONCRETE DRIVES & WALKS	174	0.74	0.76	0.78	0.84	90
GRAVEL (PACKED)	0	0.29	0.32	0.38	0.61	40
ROOFS	0	0.74	0.76	0.78	0.84	90
LAWNS (CLAYEY)	348	0.01	0.01	0.07	0.44	2

C2= 0.75
C5= 0.77
C10= 0.78
C100= 0.84

Total Basin Area (Includes Offsite Basins)

0.08 ac 3,485 sq.ft.

Basin Impervious

90%

C factors & Impervious % - Offsite

Coal Creek Village

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BASIN OS10	AREA (sf)	C2	C5	C10	C100	% IMPERV
ASPHALT ROAD / PARKING	5184	0.84	0.86	0.86	0.89	100
CONCRETE DRIVES & WALKS	305	0.74	0.76	0.78	0.84	90
GRAVEL (PACKED)	0	0.29	0.32	0.38	0.61	40
ROOFS	0	0.74	0.76	0.78	0.84	90
LAWNS (CLAYEY)	610	0.01	0.01	0.07	0.44	2

C2= 0.75
C5= 0.77
C10= 0.78
C100= 0.84

Total Basin Area (Includes Offsite Basins)

0.14 ac 6,098 sq.ft.

Basin Impervious

90%

BASIN OS11	AREA (sf)	C2	C5	C10	C100	% IMPERV
ASPHALT ROAD / PARKING	356	0.84	0.86	0.86	0.89	100
CONCRETE DRIVES & WALKS	2465	0.74	0.76	0.78	0.84	90
GRAVEL (PACKED)	0	0.29	0.32	0.38	0.61	40
ROOFS	0	0.74	0.76	0.78	0.84	90
LAWNS (CLAYEY)	2654	0.01	0.01	0.07	0.44	2

C2= 0.39
C5= 0.40
C10= 0.44
C100= 0.65

Total Basin Area (Includes Offsite Basins)

0.13 ac 5,475 sq.ft.

Basin Impervious

48%

Runoff

Coal Creek Village

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SUB-BASIN DATA				T_c CHECK			T_c	10-yr event			100-yr event			
BASIN	AREA	VEL.	T_t	COMP T_c	TOTAL	T_c =	MIN	C	I	Q	C	I	Q	DESIGN
	(Ac)	(fps)	(min)	(min)	LENGTH (ft)	(L/180)+10	(min)		in/hr	cfs		in/hr	cfs	POINT
Historical Basins														
H1	7.76	this is a conservative estimate for time of conc.					10.0	0.07	4.5	2.4	0.44	7.4	25.3	1
H2	0.66	this is a conservative estimate for time of conc.					10.0	0.07	4.5	0.2	0.44	7.4	2.1	17
H3	1.04	this is a conservative estimate for time of conc.					10.0	0.07	4.5	0.3	0.44	7.4	3.4	18
H4	0.55	this is a conservative estimate for time of conc.					10.0	0.07	4.5	0.2	0.44	7.4	1.8	1
Onsite Developed Basins														
A	0.63	this is a conservative estimate for time of conc.					10.0	0.70	4.5	2.0	0.80	7.4	3.7	3
B	0.37	this is a conservative estimate for time of conc.					10.0	0.70	4.5	1.2	0.80	7.4	2.2	4
C	0.48	this is a conservative estimate for time of conc.					10.0	0.70	4.5	1.5	0.80	7.4	2.8	6
D	0.95	this is a conservative estimate for time of conc.					10.0	0.70	4.5	3.0	0.80	7.4	5.6	8
E	0.61	this is a conservative estimate for time of conc.					10.0	0.70	4.5	1.9	0.80	7.4	3.6	7
F	0.77	this is a conservative estimate for time of conc.					10.0	0.70	4.5	2.4	0.80	7.4	4.6	9
G	1.30	this is a conservative estimate for time of conc.					10.0	0.70	4.5	4.1	0.80	7.4	7.7	29
I	1.06	this is a conservative estimate for time of conc.					10.0	0.70	4.5	3.3	0.80	7.4	6.3	11
J	0.30	this is a conservative estimate for time of conc.					10.0	0.70	4.5	0.9	0.80	7.4	1.8	13
K	1.30	this is a conservative estimate for time of conc.					10.0	0.70	4.5	4.1	0.80	7.4	7.7	14
M	0.15	this is a conservative estimate for time of conc.					10.0	0.70	4.5	0.5	0.80	7.4	0.9	16
N1	0.10	this is a conservative estimate for time of conc.					10.0	0.70	4.5	0.3	0.80	7.4	0.6	26
N2	0.27	this is a conservative estimate for time of conc.					10.0	0.70	4.5	0.9	0.80	7.4	1.6	25
N3	0.10	this is a conservative estimate for time of conc.					10.0	0.70	4.5	0.3	0.80	7.4	0.6	24
P	0.60	this is a conservative estimate for time of conc.					10.0	0.70	4.5	1.9	0.80	7.4	3.6	1
Q	0.76	this is a conservative estimate for time of conc.					10.0	0.70	4.5	2.4	0.80	7.4	4.5	28
Offsite Developed Basins														
OS1	0.76	this is a conservative estimate for time of conc.					10.0	0.19	4.5	0.6	0.51	7.4	2.9	19
OS2	1.82	this is a conservative estimate for time of conc.					10.0	0.15	4.5	1.2	0.49	7.4	6.6	20
OS3	0.38	this is a conservative estimate for time of conc.					10.0	0.77	4.5	1.3	0.84	7.4	2.4	30
OS4	0.50	this is a conservative estimate for time of conc.					10.0	0.07	4.5	0.2	0.44	7.4	1.6	18
OS5	0.20	this is a conservative estimate for time of conc.					10.0	0.07	4.5	0.1	0.44	7.4	0.7	17
OS6	0.18	this is a conservative estimate for time of conc.					10.0	0.14	4.5	0.1	0.48	7.4	0.6	31
OS7	0.54	this is a conservative estimate for time of conc.					10.0	0.76	4.5	1.8	0.84	7.4	3.4	12
OS8	0.22	this is a conservative estimate for time of conc.					10.0	0.76	4.5	0.8	0.84	7.4	1.4	21
OS9	0.08	this is a conservative estimate for time of conc.					10.0	0.76	4.5	0.3	0.84	7.4	0.5	22
OS10	0.14	this is a conservative estimate for time of conc.					10.0	0.76	4.5	0.5	0.84	7.4	0.9	23
OS11	0.13	this is a conservative estimate for time of conc.					10.0	0.43	4.5	0.3	0.64	7.4	0.6	35

Rocky Ridge Civil Engineering

Appendix C

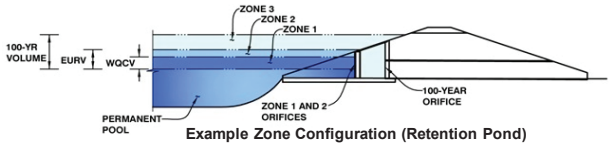
Detention Pond Calculations

DETENTION BASIN STAGE-STORAGE TABLE BUILDER

MHFD-Detention, Version 4.03 (May 2020)

Project: 294-1 - Coal Creek Village

Basin ID: All - Onsite Basins



Example Zone Configuration (Retention Pond)

Watershed Information

Selected BMP Type =	EDB	
Watershed Area =	10.71	acres
Watershed Length =	1,010	ft
Watershed Length to Centroid =	850	ft
Watershed Slope =	0.020	ft/ft
Watershed Imperviousness =	69%	percent
Percentage Hydrologic Soil Group A =	0.0%	percent
Percentage Hydrologic Soil Group B =	90.0%	percent
Percentage Hydrologic Soil Groups C/D =	10.0%	percent
Target WQCV Drain Time =	40.0	hours
Location for 1-hr Rainfall Depths =	Louisville - City Hall	

After providing required inputs above including 1-hour rainfall depths, click 'Run CUHP' to generate runoff hydrographs using the embedded Colorado Urban Hydrograph Procedure.

			Optional User Overrides	
Water Quality Capture Volume (WQCV) =	0.280	acre-feet	0.280	acre-feet
Excess Urban Runoff Volume (EURV) =	0.801	acre-feet		acre-feet
2-yr Runoff Volume (P1 = 0.8 in.) =	0.449	acre-feet		inches
5-yr Runoff Volume (P1 = 1.09 in.) =	0.647	acre-feet		inches
10-yr Runoff Volume (P1 = 1.35 in.) =	0.860	acre-feet		inches
25-yr Runoff Volume (P1 = 1.78 in.) =	1.273	acre-feet		inches
50-yr Runoff Volume (P1 = 2.14 in.) =	1.600	acre-feet		inches
100-yr Runoff Volume (P1 = 2.54 in.) =	1.992	acre-feet		inches
500-yr Runoff Volume (P1 = 3.63 in.) =	3.017	acre-feet		inches
Approximate 2-yr Detention Volume =	0.428	acre-feet		
Approximate 5-yr Detention Volume =	0.617	acre-feet		
Approximate 10-yr Detention Volume =	0.821	acre-feet		
Approximate 25-yr Detention Volume =	1.017	acre-feet		
Approximate 50-yr Detention Volume =	1.129	acre-feet		
Approximate 100-yr Detention Volume =	1.285	acre-feet		

Define Zones and Basin Geometry

Zone 1 Volume (WQCV) =	0.280	acre-feet
Zone 2 Volume (10-year - Zone 1) =	0.540	acre-feet
Zone 3 (100yr + 1 / 2 WQCV - Zones 1 & 2) =	0.605	acre-feet
Total Detention Basin Volume =	1.425	acre-feet
Initial Surcharge Volume (ISV) =	user	ft^3
Initial Surcharge Depth (ISD) =	user	ft
Total Available Detention Depth (H_{total}) =	user	ft
Depth of Trickle Channel (H_{TC}) =	user	ft
Slope of Trickle Channel (S_{TC}) =	user	ft/ft
Slopes of Main Basin Sides (S_{main}) =	user	H:V
Basin Length-to-Width Ratio ($R_{L/W}$) =	user	

Depth Increment = ft

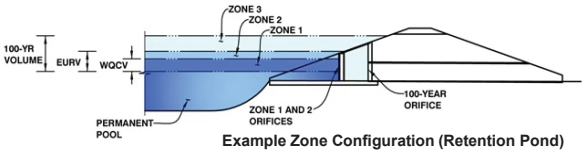
Stage - Storage Description	Stage (ft)	Optional Override Stage (ft)	Length (ft)	Width (ft)	Area (ft^2)	Optional Override Area (ft^2)	Area (acre)	Volume (ft^3)	Volume (ac-ft)
Top of Micropool	--	0.00	--	--	--	0	0.000		
5332	--	0.09	--	--	--	30	0.001	1	0.000
5333	--	1.09	--	--	--	3,261	0.075	1,647	0.038
5334	--	2.09	--	--	--	9,045	0.208	7,800	0.179
5335	--	3.09	--	--	--	13,488	0.310	19,066	0.438
5336	--	4.09	--	--	--	18,233	0.419	34,927	0.802
5337	--	5.09	--	--	--	20,449	0.469	54,268	1.246
5337.8	--	5.89	--	--	--	22,124	0.508	71,297	1.637
5338.55	--	6.64	--	--	--	23,145	0.531	88,273	2.026

DETENTION BASIN OUTLET STRUCTURE DESIGN

MHFD-Detention, Version 4.03 (May 2020)

Project: 294-1 - Coal Creek Village

Basin ID: All - Onsite Basins



Example Zone Configuration (Retention Pond)

	Estimated Stage (ft)	Estimated Volume (ac-ft)	Outlet Type
Zone 1 (WQCV)	2.54	0.280	Orifice Plate
Zone 2 (10-year)	4.14	0.540	Circular Orifice
3 (100+1/2WQCV)	5.47	0.605	Weir&Pipe (Restrict)
Total (all zones)		1.425	

User Input: Orifice at Underdrain Outlet (typically used to drain WQCV in a Filtration BMP)

Underdrain Orifice Invert Depth =	N/A	ft (distance below the filtration media surface)	Underdrain Orifice Area =	N/A	ft^2
Underdrain Orifice Diameter =	N/A	inches	Underdrain Orifice Centroid =	N/A	feet

Calculated Parameters for Underdrain

User Input: Orifice Plate with one or more orifices or Elliptical Slot Weir (typically used to drain WQCV and/or EURV in a sedimentation BMP)

Invert of Lowest Orifice =	0.00	ft (relative to basin bottom at Stage = 0 ft)	WQ Orifice Area per Row =	7.222E-03	ft^2
Depth at top of Zone using Orifice Plate =	2.54	ft (relative to basin bottom at Stage = 0 ft)	Elliptical Half-Width =	N/A	feet
Orifice Plate: Orifice Vertical Spacing =	10.00	inches	Elliptical Slot Centroid =	N/A	feet
Orifice Plate: Orifice Area per Row =	1.04	sq. inches (diameter = 1-1/8 inches)	Elliptical Slot Area =	N/A	ft^2

Calculated Parameters for Plate

User Input: Stage and Total Area of Each Orifice Row (numbered from lowest to highest)

	Row 1 (required)	Row 2 (optional)	Row 3 (optional)	Row 4 (optional)	Row 5 (optional)	Row 6 (optional)	Row 7 (optional)	Row 8 (optional)
Stage of Orifice Centroid (ft)	0.00	0.80	1.60					
Orifice Area (sq. inches)	1.04	1.04	1.04					

	Row 9 (optional)	Row 10 (optional)	Row 11 (optional)	Row 12 (optional)	Row 13 (optional)	Row 14 (optional)	Row 15 (optional)	Row 16 (optional)
Stage of Orifice Centroid (ft)								
Orifice Area (sq. inches)								

User Input: Vertical Orifice (Circular or Rectangular)

	Zone 2 Circular	Not Selected			Zone 2 Circular	Not Selected	
Invert of Vertical Orifice =	2.54	N/A	ft (relative to basin bottom at Stage = 0 ft)	Vertical Orifice Area =	0.27	N/A	ft^2
Depth at top of Zone using Vertical Orifice =	4.23	N/A	ft (relative to basin bottom at Stage = 0 ft)	Vertical Orifice Centroid =	0.29	N/A	feet
Vertical Orifice Diameter =	7.00	N/A	inches				

Calculated Parameters for Vertical Orifice

User Input: Overflow Weir (Dropbox with Flat or Sloped Grate and Outlet Pipe OR Rectangular/Trapezoidal Weir (and No Outlet Pipe)

	Zone 3 Weir	Not Selected			Zone 3 Weir	Not Selected	
Overflow Weir Front Edge Height, Ho =	4.23	N/A	ft (relative to basin bottom at Stage = 0 ft)	Height of Grate Upper Edge, H_t =	4.98	N/A	feet
Overflow Weir Front Edge Length =	4.00	N/A	feet	Overflow Weir Slope Length =	3.09	N/A	feet
Overflow Weir Grate Slope =	4.00	N/A	H:V	Grate Open Area / 100-yr Orifice Area =	4.90	N/A	
Horiz. Length of Weir Sides =	3.00	N/A	feet	Overflow Grate Open Area w/o Debris =	8.66	N/A	ft^2
Overflow Grate Open Area % =	70%	N/A	%, grate open area/total area	Overflow Grate Open Area w/ Debris =	4.33	N/A	ft^2
Debris Clogging % =	50%	N/A	%				

Calculated Parameters for Overflow Weir

User Input: Outlet Pipe w/ Flow Restriction Plate (Circular Orifice, Restrictor Plate, or Rectangular Orifice)

	Zone 3 Restrictor	Not Selected			Zone 3 Restrictor	Not Selected	
Depth to Invert of Outlet Pipe =	0.00	N/A	ft (distance below basin bottom at Stage = 0 ft)	Outlet Orifice Area =	1.77	N/A	ft^2
Outlet Pipe Diameter =	18.00	N/A	inches	Outlet Orifice Centroid =	0.75	N/A	feet
Restrictor Plate Height Above Pipe Invert =	18.00		inches	Half-Central Angle of Restrictor Plate on Pipe =	3.14	N/A	radians

Calculated Parameters for Outlet Pipe w/ Flow Restriction Plate

User Input: Emergency Spillway (Rectangular or Trapezoidal)

Spillway Invert Stage=	5.89	ft (relative to basin bottom at Stage = 0 ft)	Spillway Design Flow Depth=	0.36	feet
Spillway Crest Length =	45.00	feet	Stage at Top of Freeboard =	6.75	feet
Spillway End Slopes =	4.00	H:V	Basin Area at Top of Freeboard =	0.53	acres
Freeboard above Max Water Surface =	0.50	feet	Basin Volume at Top of Freeboard =	2.03	acre-ft

Calculated Parameters for Spillway

Routed Hydrograph Results

The user can override the default CUHP hydrographs and runoff volumes by entering new values in the Inflow Hydrographs table (Columns W through AF).

Design Storm Return Period =	WQCV	EURV	2 Year	5 Year	10 Year	25 Year	50 Year	100 Year	500 Year
One-Hour Rainfall Depth (in) =	N/A	N/A	0.80	1.09	1.35	1.78	2.14	2.54	3.63
CUHP Runoff Volume (acre-ft) =	0.280	0.801	0.449	0.647	0.860	1.273	1.600	1.992	3.017
Inflow Hydrograph Volume (acre-ft) =	N/A	N/A	0.449	0.647	0.860	1.273	1.600	1.992	3.017
CUHP Predevelopment Peak Q (cfs) =	N/A	N/A	0.1	0.1	1.5	5.6	8.1	11.6	19.7
OPTIONAL Override Predevelopment Peak Q (cfs) =	N/A	N/A							
Predevelopment Unit Peak Flow, q (cfs/acre) =	N/A	N/A	0.01	0.01	0.14	0.52	0.76	1.08	1.83
Peak Inflow Q (cfs) =	N/A	N/A	6.4	9.2	12.2	19.0	24.0	30.1	45.1
Peak Outflow Q (cfs) =	0.1	1.6	0.5	1.1	1.4	3.2	6.7	12.0	19.3
Ratio Peak Outflow to Predevelopment Q =	N/A	N/A	N/A	8.5	1.0	0.6	0.8	1.0	1.0
Structure Controlling Flow =	Plate	Vertical Orifice 1	Vertical Orifice 1	Vertical Orifice 1	Vertical Orifice 1	Overflow Weir 1	Overflow Weir 1	Overflow Weir 1	Outlet Plate 1
Max Velocity through Grate 1 (fps) =	N/A	N/A	N/A	N/A	N/A	0.1	0.5	1.1	1.9
Max Velocity through Grate 2 (fps) =	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time to Drain 97% of Inflow Volume (hours) =	40	44	46	46	45	44	42	40	35
Time to Drain 99% of Inflow Volume (hours) =	**43**	51	50	51	52	52	50	49	46
Maximum Ponding Depth (ft) =	2.53	4.09	2.96	3.37	3.80	4.52	4.83	5.14	5.87
Area at Maximum Ponding Depth (acres) =	0.25	0.42	0.30	0.34	0.39	0.44	0.46	0.47	0.51
Maximum Volume Stored (acre-ft) =	0.280	0.802	0.395	0.525	0.685	0.986	1.125	1.269	1.627

Rocky Ridge
Civil Engineering

Appendix D

Websoil Report

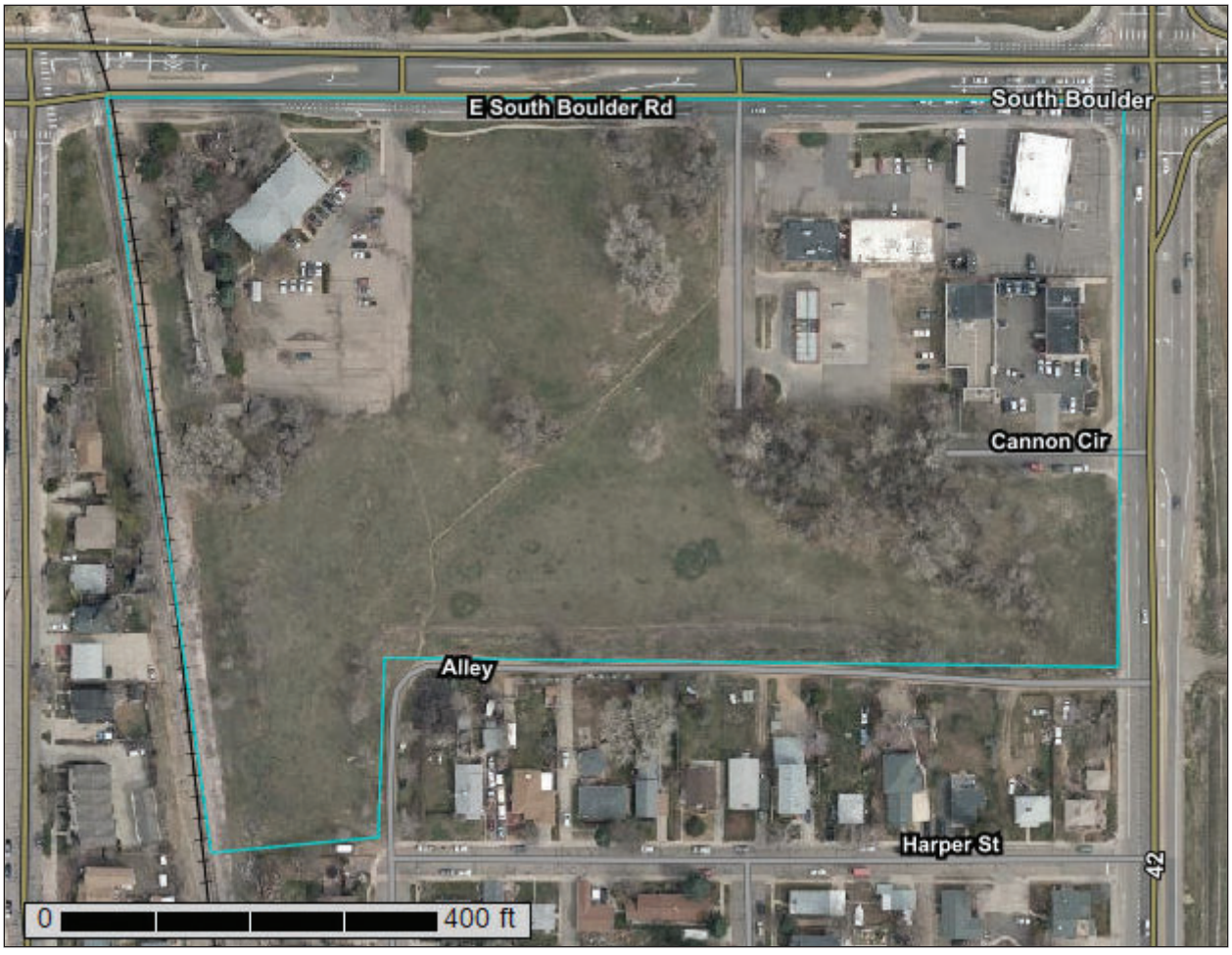
United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Boulder County Area, Colorado



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Boulder County Area, Colorado
Survey Area Data: Version 17, Jun 5, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Sep 25, 2018—Apr 9, 2019

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
AcC	Ascalon sandy loam, 3 to 5 percent slopes	13.4	88.3%
HaD	Hargreave fine sandy loam, 3 to 9 percent slopes	1.8	11.7%
Totals for Area of Interest		**15.2**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however,

onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Boulder County Area, Colorado

AcC—Ascalon sandy loam, 3 to 5 percent slopes

Map Unit Setting

National map unit symbol: 2tlnt
Elevation: 3,550 to 5,970 feet
Mean annual precipitation: 12 to 16 inches
Mean annual air temperature: 46 to 57 degrees F
Frost-free period: 135 to 160 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Ascalon and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Ascalon

Setting

Landform: Interfluves
Landform position (two-dimensional): Shoulder, summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Wind-reworked alluvium and/or calcareous sandy eolian deposits

Typical profile

Ap - 0 to 6 inches: sandy loam
Bt1 - 6 to 12 inches: sandy clay loam
Bt2 - 12 to 19 inches: sandy clay loam
Bk - 19 to 35 inches: sandy clay loam
C - 35 to 80 inches: sandy loam

Properties and qualities

Slope: 3 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Maximum salinity: Nonsaline (0.1 to 1.9 mmhos/cm)
Sodium adsorption ratio, maximum: 1.0
Available water capacity: Moderate (about 6.9 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 4c
Hydrologic Soil Group: B
Ecological site: R072XY111KS - Sandy Plains, R067BY024CO - Sandy Plains
Hydric soil rating: No

Minor Components

Stoneham

Percent of map unit: 10 percent
Landform: Interfluves
Landform position (two-dimensional): Shoulder, summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R072XY100KS - Loamy Tableland , R067BY002CO - Loamy Plains
Hydric soil rating: No

Vona

Percent of map unit: 8 percent
Landform: Interfluves
Landform position (two-dimensional): Backslope, footslope, shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R072XY111KS - Sandy Plains, R067BY024CO - Sandy Plains
Hydric soil rating: No

Platner

Percent of map unit: 2 percent
Landform: Interfluves
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R072XY100KS - Loamy Tableland , R067BY002CO - Loamy Plains
Hydric soil rating: No

HaD—Hargreave fine sandy loam, 3 to 9 percent slopes

Map Unit Setting

National map unit symbol: jprs
Elevation: 4,900 to 5,500 feet
Mean annual precipitation: 12 to 18 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 140 to 155 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Hargreave and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hargreave

Setting

Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy residuum weathered from sandstone

Typical profile

H1 - 0 to 6 inches: fine sandy loam
H2 - 6 to 13 inches: sandy clay loam
H3 - 13 to 27 inches: fine sandy loam
H4 - 27 to 31 inches: weathered bedrock

Properties and qualities

Slope: 3 to 9 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 3.9 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: R067XB042CO - Clayey
Hydric soil rating: No

Minor Components

Terry

Percent of map unit: 8 percent
Hydric soil rating: No

Nelson

Percent of map unit: 6 percent
Hydric soil rating: No

Mollic haplaquepts

Percent of map unit: 1 percent
Landform: Swales
Hydric soil rating: Yes

Rocky Ridge Civil Engineering

Appendix E

Excerpt of Mine Subsidence Report

MINE SUBSIDENCE INVESTIGATION

Coal Creek Station Development
Approximately 11 Acres in the Northeast 1/4 of Section 8,
Township 1 South, Range 69 West,
Louisville, Colorado



WESTERN ENVIRONMENT AND ECOLOGY, INC.
2217 West Powers Avenue
Littleton, Colorado 80210
phone (303) 730-3452
fax (303) 730-3461
www.westernenvironment.com
westernlt@aol.com

WESTERN ENVIRONMENT AND ECOLOGY, INC.

Figure 2A - Site Map
Coal Creek Station

6.0 REGIONAL GEOLOGY

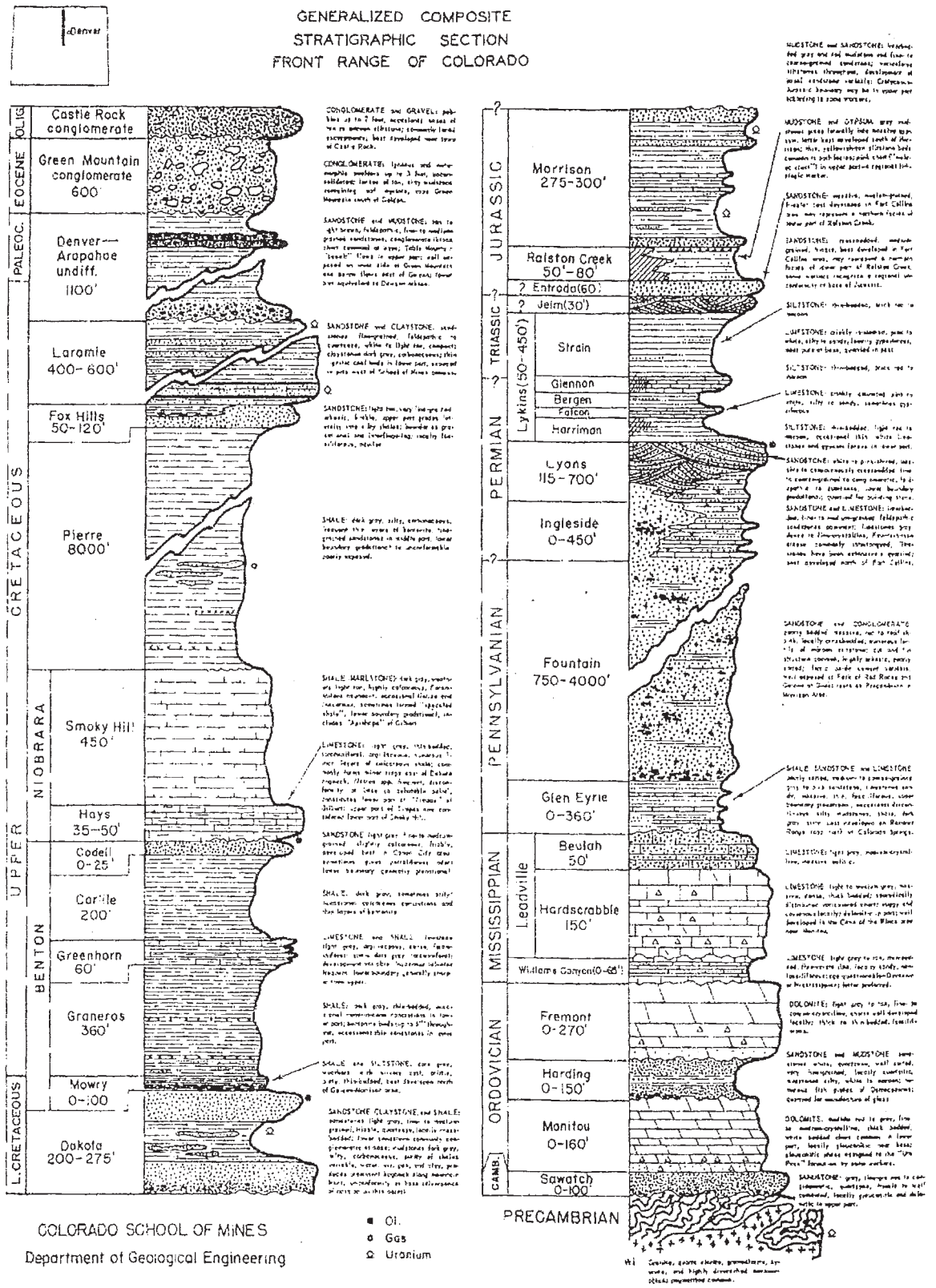
6.1 Outcropping Units

Outcropping units within and surrounding the Lafayette and Louisville area are the Pierre Shale, the Fox Hills Sandstone, the Laramie Formation and Quaternary gravels and soils (Figure 5).

The Pierre Shale is a lead gray to brown and black shale of marine origin. Total thickness in the area is greater than 7,000 feet (Blair 1951), with the majority of the formation made up of shale. Near the top of the Pierre Shale it becomes increasingly sandy and contains beds of fine sandstones and siltstones as it grades into the Fox Hills Sandstone. This unit does not outcrop on the site but can be seen approximately one mile east of Harper Lake on the west side of the Town of Louisville.

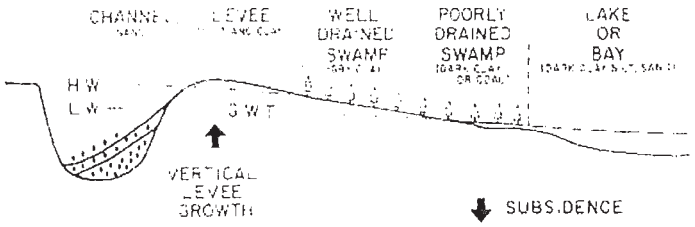
The Fox Hills Sandstone is a massive to crossbedded sandstone. It was deposited in a beach and/or delta-front environment and comfortably overlies the Pierre Shale. The lower two-thirds of the formation is a fine to coarse grained, bluff colored sandstone which weathers to a light tan to tan color. The Fox Hills Sandstone contains numerous iron colored calcareous concretions, ranging in size from fractions of an inch to several feet. The upper one-third of the Fox Hills Sandstone is a fine to medium grained, light grey to pale yellow in color, crossbedded sandstone. The total thickness of the formation near this location is about 140 feet as measured in the NW 1/4 of Section 28, T1S, R70W. Thickness varies from 60 feet near Ralston Creek (Van Horn, 1957) to 250 feet near Baseline Reservoir.

The Laramie Formation, which directly underlies the site is predominantly a fresh water deltaic sequence, consisting of clays, sands, silts and coals (Figure 6). The lower portion is approximately 100 feet thick and is composed of sandstones, sandy shales, claystones, and coal beds. These coals have been economically mined in the past. The upper unit has a thickness of approximately 600 feet and is made up of mostly clay shales, very fine sandy shales, and lenticular beds of sandstone. The shales are largely carbonaceous and in places becomes lignitic. The Laramie Formation lies comfortably on the Fox Hills Sandstone.

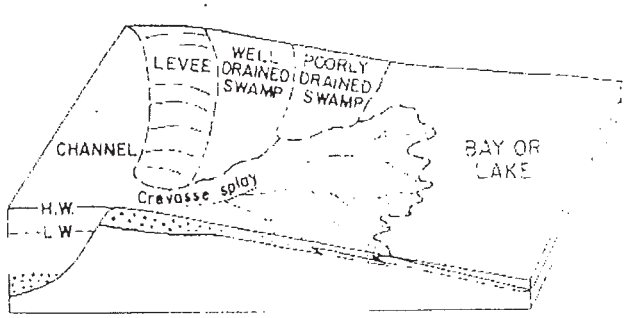


WESTERN ENVIRONMENT AND ECOLOGY, INC
2217 West Powers Avenue
Littleton. Colorado 80120

Figure 5 - Generalized Stratigraphic Section
Coal Creek Station Development
Approximately 11 Acres in Section 8,
Township 1 South, Range 69 West,
Louisville, Colorado

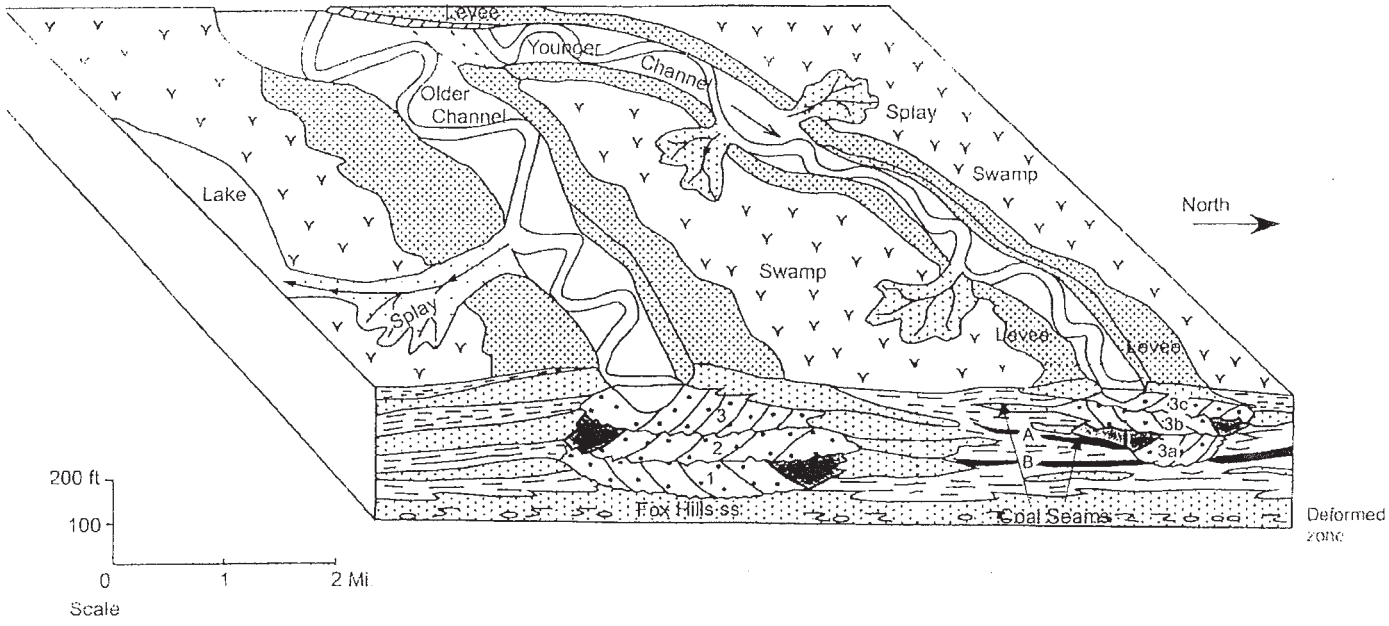


Channel and channel margin environments for lithologies in Laramie Formation.



LARAMIE ENVIRONMENTS OF DEPOSITION

Relationship of channel margin environments to crevasse splay deltas.



Figures from: A Guide to the uppermost Cretaceous stratigraphy, central Front Range Colorado, deltaic sedimentation, growth faulting and early Lamide vertical Movement
Weimer, R.J. 1973

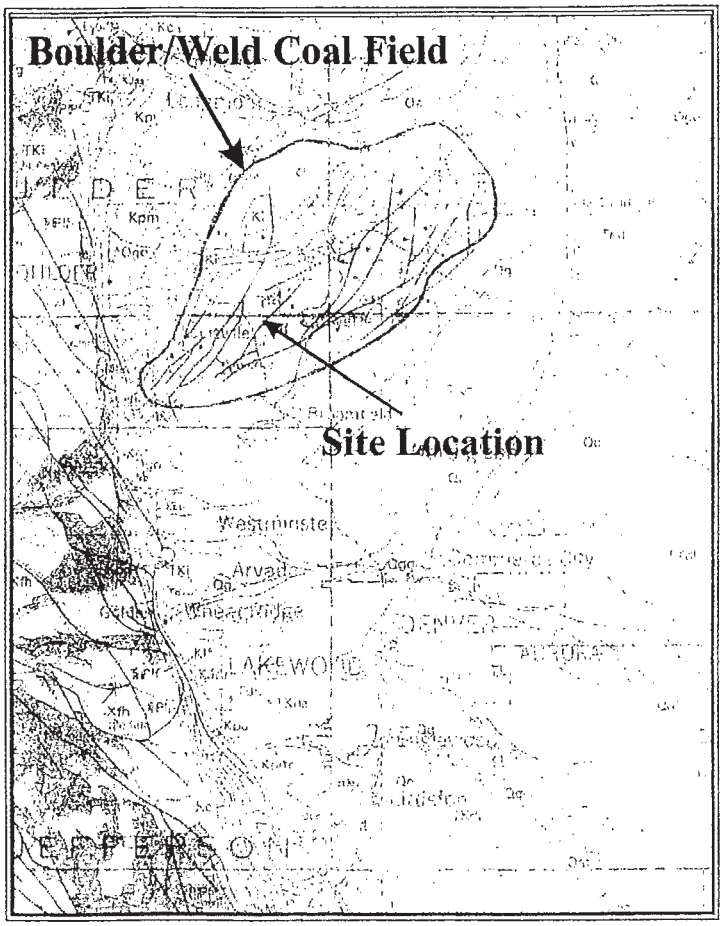
WESTERN ENVIRONMENT AND ECOLOGY, INC
2217 West Powers Avenue
Littleton, Colorado 80120

Figure 6 - Generalized Stratigraphic Models of the Laramie Formation
Coal Creek Station Development
Approximately 11 Acres in Section 8, Township 1 South, Range 69 West, Louisville, Colorado

6.2 Structure

The Coal Creek Station development lies on the western edge of the Denver-Julesberg Basin against the Front Range Uplift. This basin contains up to 13,000 feet of sediments derived from the ancestral Rockies which laid to the west. Two kinds of faulting occur in this portion of the basin. A basement-controlled late Cretaceous Laramide faulting is the most prevalent and is the result of deformation associated with uplift. The second basin has been described by Davis and Weimer (1976) as growth-faulting as a result of differential loading of the deltaic sequence at the time of deposition.

Growth faulting is the major structural feature seen in the area. A zone is present with dominant faults trending in a northeasterly direction. This system is ten miles wide and thirty miles long. These faults are high-angle, normal structures near the surface, but seismic work has shown that they tend to flatten and die out at depth. Work by Davis and Weimer (1976) shows that these listric normal faults do not continue below the Hygiene Member of the Pierre Shale. Antithetic faults resulting from tension then form horst and grabens. This effect had resulted in the increased thickness of sediments in the graben areas. The Fox Hills Sandstone has been reported to have a thickness near a growth fault of 484 feet (Spencer, 1961). The Laramie Formation also has increased thickness in these zones and this is believed to be the reason for the increased thickness of the coal seams in the Boulder-Weld coal field.



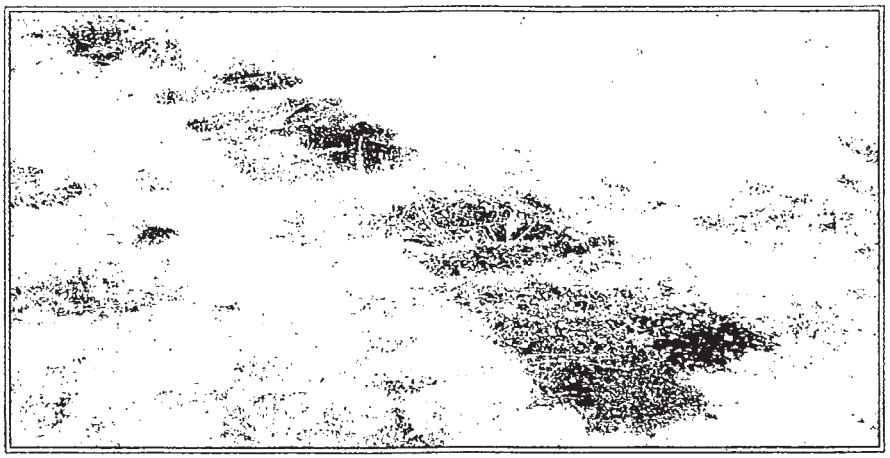
Boulder/Weld Coal Field

7.0 SITE GEOLOGY

Four distinct geological units were encountered during drilling on the Coal Creek Station Development. The uppermost unit is a sandy, argillaceous soil which occurs from a depth of 0 to a maximum of 15 feet below existing grade. A fine to course-grained, water-saturated gravel was the second unit penetrated. When present, it occurred at depths of 15 to 25 feet below existing grade.

The next unit penetrated was the Cretaceous Age Laramie Formation. This unit consists primarily of medium to dark gray claystone. The Laramie Formation claystones are interbedded with minor non-continuous coals and thin, well-cemented, fine grained, gray sandstone and silts. The Rex Mine extracted coal from a seam ranging in depth from 130 to 147 feet, the Hecla seam occurred from 197 to 218 feet. The contact between the Laramie Formation and the Fox Hills Formation was encountered in holes R-6 and R-7, at 260 feet and 255 feet, respectively. The Fox Hills Formation is characterized by fine-grained, well-sorted, gray sandstone.

Two faults are shown on the mine maps to underlay the Coal Creek Station site (Figure 2b). One structure strikes northeast and underlies the western portion of the project. This fault likely was the reason that no undermining occurs on the northwestern corner of the property. The second fault strikes northwest and occurs beneath the central portion of the property. Displacement on these faults appears to be approximately 20 feet.



Lithologic samples

8.0 DESCRIPTION OF HOLES

The description of each rotary hole drilled on the Coal Creek Station Development were derived from the electric logs and the lithologic logs taken from the cutting samples. Geophysical and lithologic logs from the 1984 and current investigations are included as Appendix B.

Hole R-1 Dark brown sandy soil occurred from 5 feet. From 5 to 15 feet, light brown argillaceous sand was penetrated. Light brown medium to coarse grained, water saturated gravel occurred from 15 to 25 feet. From 25 to 55 feet, light brown claystone was present. From 55 to 75 feet, light gray claystone was penetrated. Medium gray siltstone and claystone was drilled from 75 to 96 feet. A hard sandstone ledge was encountered from 96 to 98 feet. Medium gray claystone with carbonaceous intervals was drilled from 98 to 135 feet. Coal (Rex seam) and claystone was penetrated from 135 to 150 feet. Light gray very fine-grained quartzose sandstone was drilled from 150 to 160 feet. A well cemented sandstone was encountered from 150 to 155 feet,. Coal with clay was penetrated from 160 to 175. Light gray very fine-grained, well cemented quartzose sandstone occurred from 175 to 180 feet. Light gray siltstone with claystone was drilled from 180 to 197 feet. Circulation was lost at 197 feet. The drill penetrated 4 feet of loose rubble (Hecla seam interval) from 197 to 201 feet. Total depth of the hole was 208 feet. Due to caving surface gravel, no geophysical log could be completed on this boring.

Hole R-2 From 0 to 5 feet, poorly consolidated fill composed of very fine-grained sand and silt occurred. Light brown claystone was drilled from 5 to 55 feet. From 55 to 80 feet, medium gray claystone was penetrated. Medium gray siltstone and claystone was encountered from 80 to 100 feet. From 100 to 129 feet, medium gray claystone with carbonaceous intervals was penetrated. Six feet of hard vitreous coal (Rex seam) was drilled from 129 to 135 feet. Four feet of medium gray claystone separated this seam from 9 feet of light gray very fine grained quartzose

sandstone which occurred from 139 to 148 feet. From 148 feet to 176 feet, medium to dark gray claystone with carbonaceous intervals was drilled. Light gray very fine grained quartzose sandstone and siltstone was encountered from 176 to 204 feet. The Hecla "main" seam interval occurred from 204 to 209 feet. The caliper log indicated collapse was complete with a maximum deflection of 10 inches. Circulation was lost at 204 feet. Total depth of the hole was 220 feet.

Hole R-3 From 0 to 5 feet, brown argillaceous soil was encountered. Greenish gray claystone was drilled from 5 to 65 feet. From 65 to 100 feet, medium gray claystone was encountered. From 100 to 111 feet, light gray siltstone with claystone was penetrated. Medium gray claystone with minor carbonaceous stringers occurred from 111 to 135 feet. The Rex "main" seam interval occurred from 135 to 141 feet. Circulation was lost at 143 feet. The caliper log indicated collapse was complete with a maximum deflection of 5.75 inches. Total depth of the hole was 160 feet.

Hole R-4 Light brown, silty sand occurred from 0 to17 feet. Light gray to brown claystone was encountered from 17 feet to 55 feet. Interbedded gray claystone and light gray sandstone occurred from 55 to 140 feet. Circulation was lost at 140 feet. The Rex "main" seam interval was penetrated from 138 to144 feet. Maximum caliper deflection was 10.5 inches at 142.5 feet. Total depth of the hole was 160 feet. Collapse was complete with no open voids.

Hole R-5 Light brown, silty sand occurred from 0 to16 feet. Light gray to brown claystone was encountered from 16 feet to 75 feet. Interbedded gray claystones and light gray sandstone occurred from 75 to 206 feet. The Rex seam, which was not mined, was penetrated from 132 to 139 feet. Circulation was lost at 206 feet. The Hecla "main" seam interval was penetrated from 212 to 218 feet. Maximum caliper deflection was 11.75 inches at 215 feet. Total depth of the hole was 240 feet.

Hole R-6 Light brown, silty sand occurred from 0 to10 feet. Fine to coarse grained gravel with sand occurred from 10 to 25 feet. Light gray to brown claystone was encountered from 25 feet to 110 feet. Interbedded gray claystone and light gray sandstone occurred from 110 to 260 feet. The Rex "main" seam was penetrated from 141 to 147 feet. No workings were encountered. The Hecla "main" seam occurred from 218 to 226 feet. Also, no mine workings were penetrated. The Fox Hills Sandstone was occurred at 248 feet. Total depth of the hole was 260 feet.

Hole R-7 Light brown, sandy soil occurred from 0 to12 feet. Light gray to brown claystone was encountered from 20 feet to 66 feet. Interbedded gray claystones and light gray sandstones occurred from 66 to 255 feet. The Fox Hills Formation occurred at 255 feet. The Rex "main" seam was penetrated from 158 to 165 feet. No Hecla seam was identified in this boring. Total depth of the hole was 260 feet. Circulation was not lost. No mine workings were encountered.

Rocky Ridge Civil Engineering

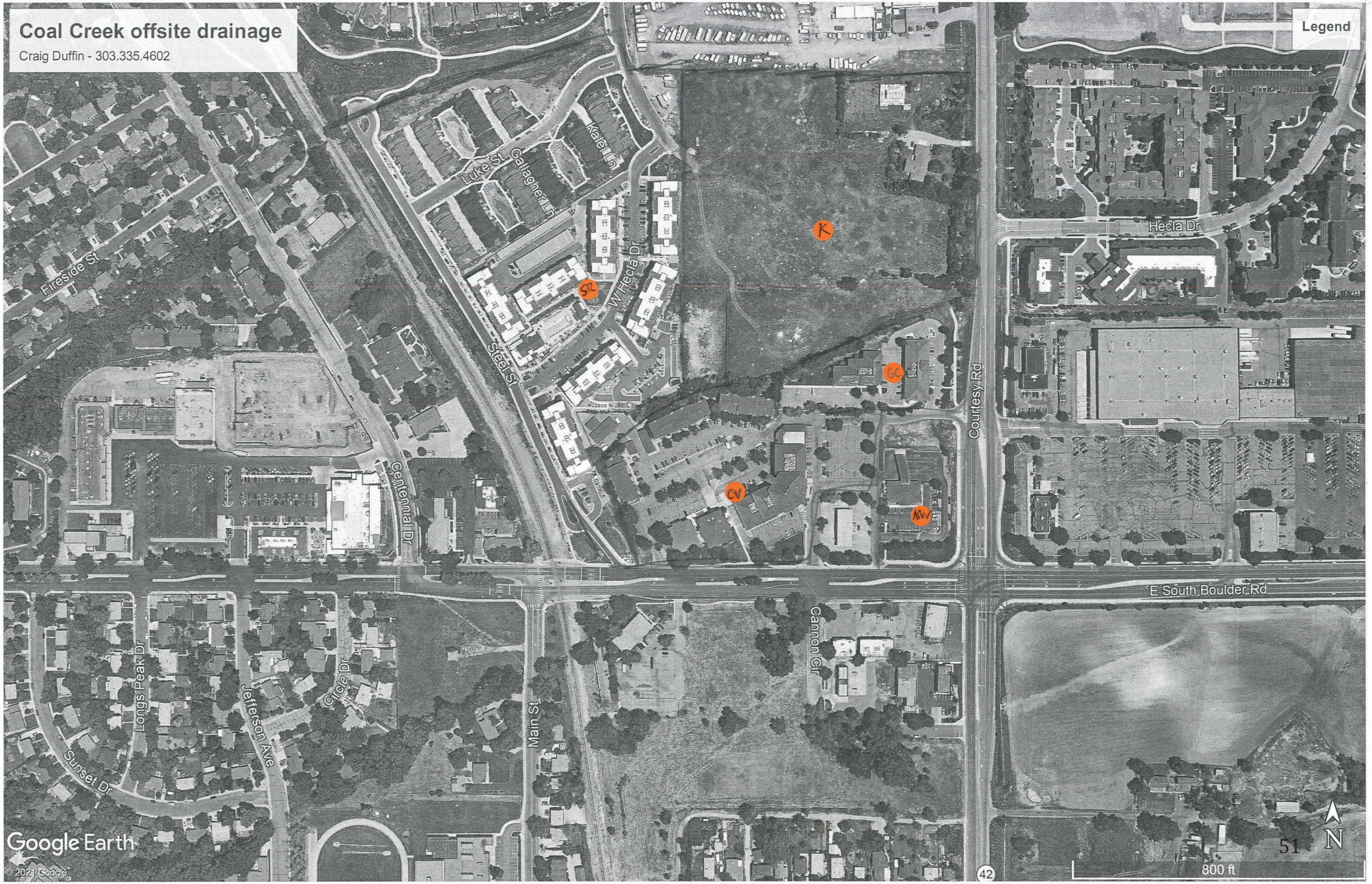
Appendix F

Offsite Flows from North

OFFSITE FLOWS FROM NORTH
(North of South Boulder Road)

SUMMARY

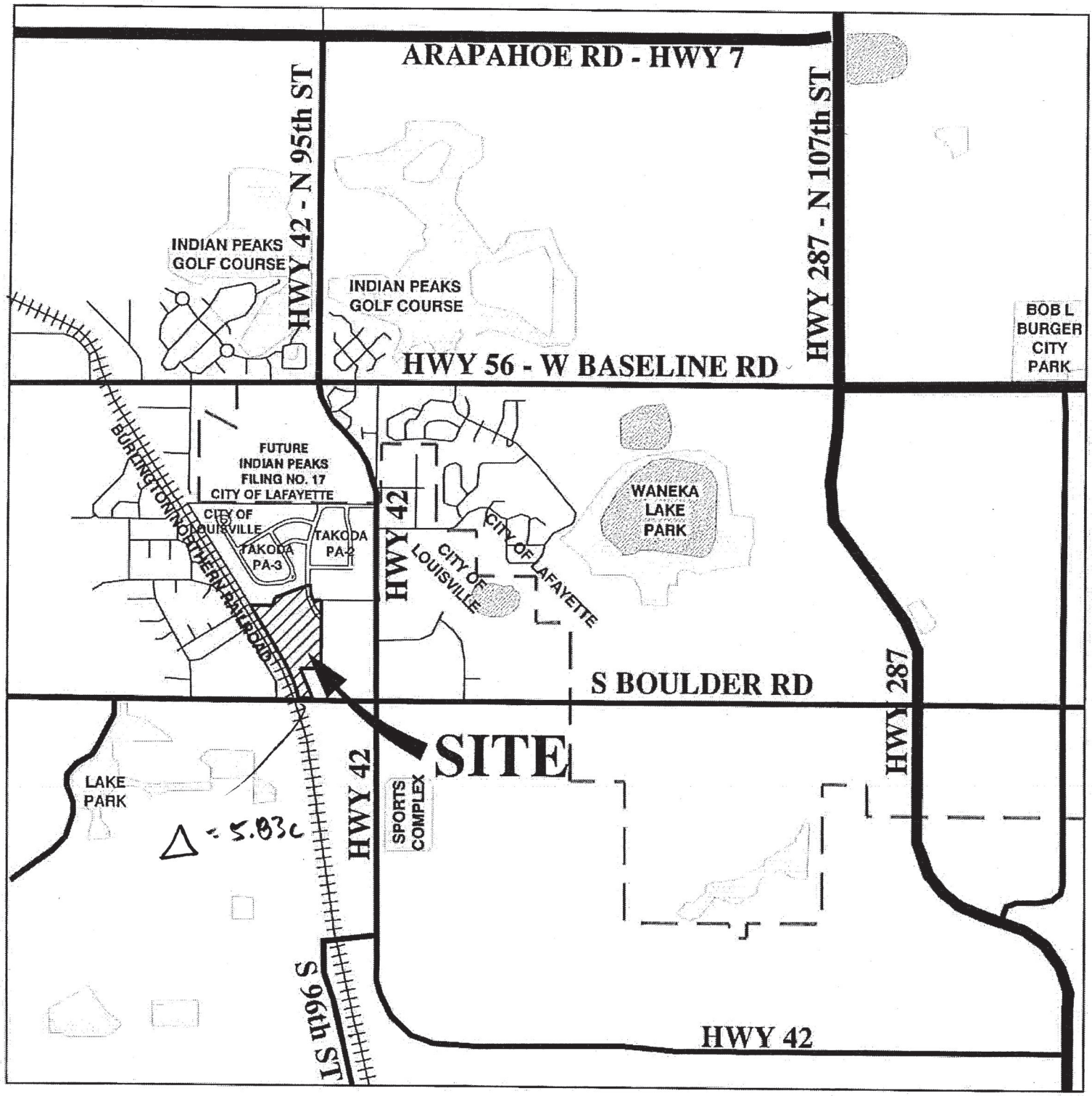
Basin name	**Basin Abbrev.**	**Release rate** (cfs)	**Design Point**	**Notes**
Steel Ranch South	SR	24.89	West of 32	Steel Ranch South contributes flow
Kestrel	K	14.5	North of 32	Kestrel contributes flow. Include bypass flows
Christopher Village	CV	4.2	32	Christopher Plaza and Village contribute flow
Garden City	GC	2.0	North of 33	Christopher Plaza II contributes all flow
Norwest	NW	3.66	33	Coal Trail Square contributes flow Combined flow at DP33 is 5.66cfs


Coal Creek offsite drainage
Craig Duffin - 303.335.4602
Legend
K
SR
GC
CV
ASV
Fireside St
Luke St
Gallagher Ln
Karel Ln
W Hecla Dr
Steel St
Hecla Dr
Courtesy Rd
Centennial Dr
E South Boulder Rd
Cannon Cir
Main St
Longs Peak Dr
Jefferson Ave
Circle D
Sunset D
42
Google Earth
© 2021 Google
800 ft
N
51

OFFSITE FLOWS FROM NORTH
(north of South Boulder Road)

STEEL RANCH SOUTH (SR)

Steel Ranch South



VICINITY MAP

SCALE: 1" = 2000'

FINAL DRAINAGE REPORT
FOR
Steel Ranch South

May 25, 2012

Prepared for:

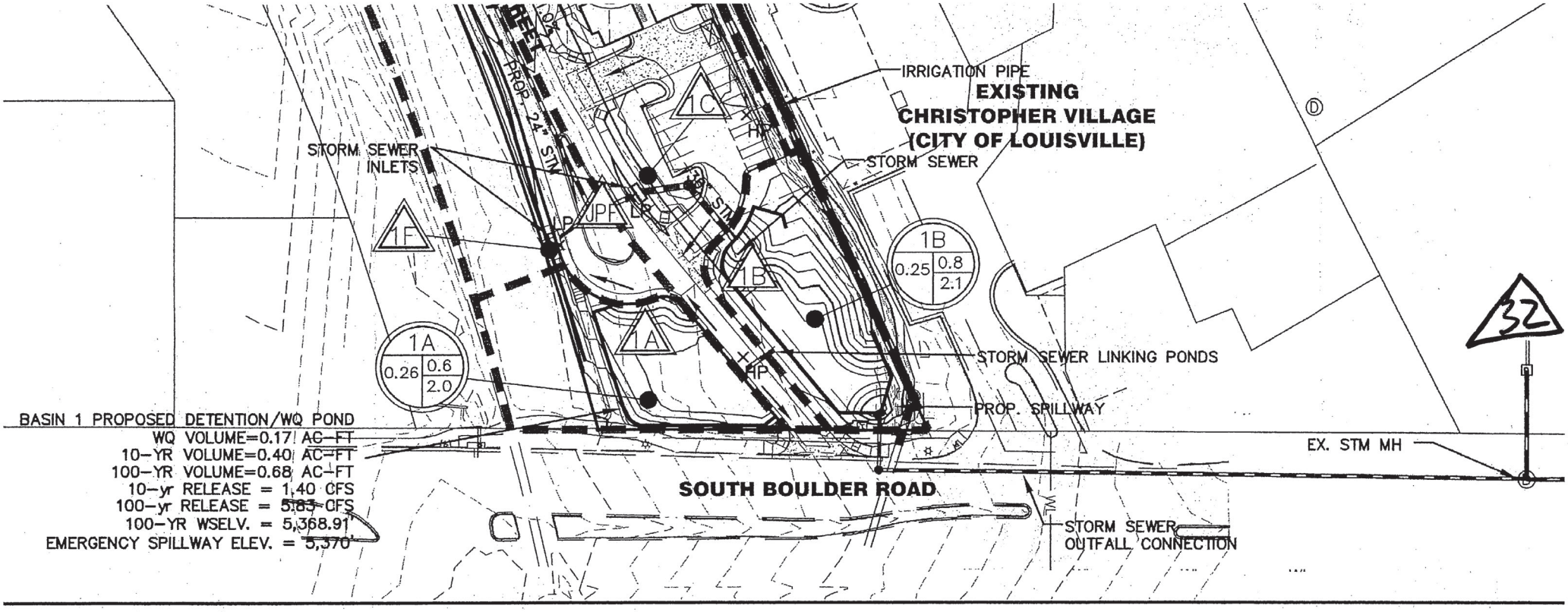
RMCS, LLC
950 Spruce Street, Suite 2A
Louisville CO 80027
Phone: 303-475-2106
Contact: Justin McClure

Prepared by:

ENGINEERING CONSULTANTS

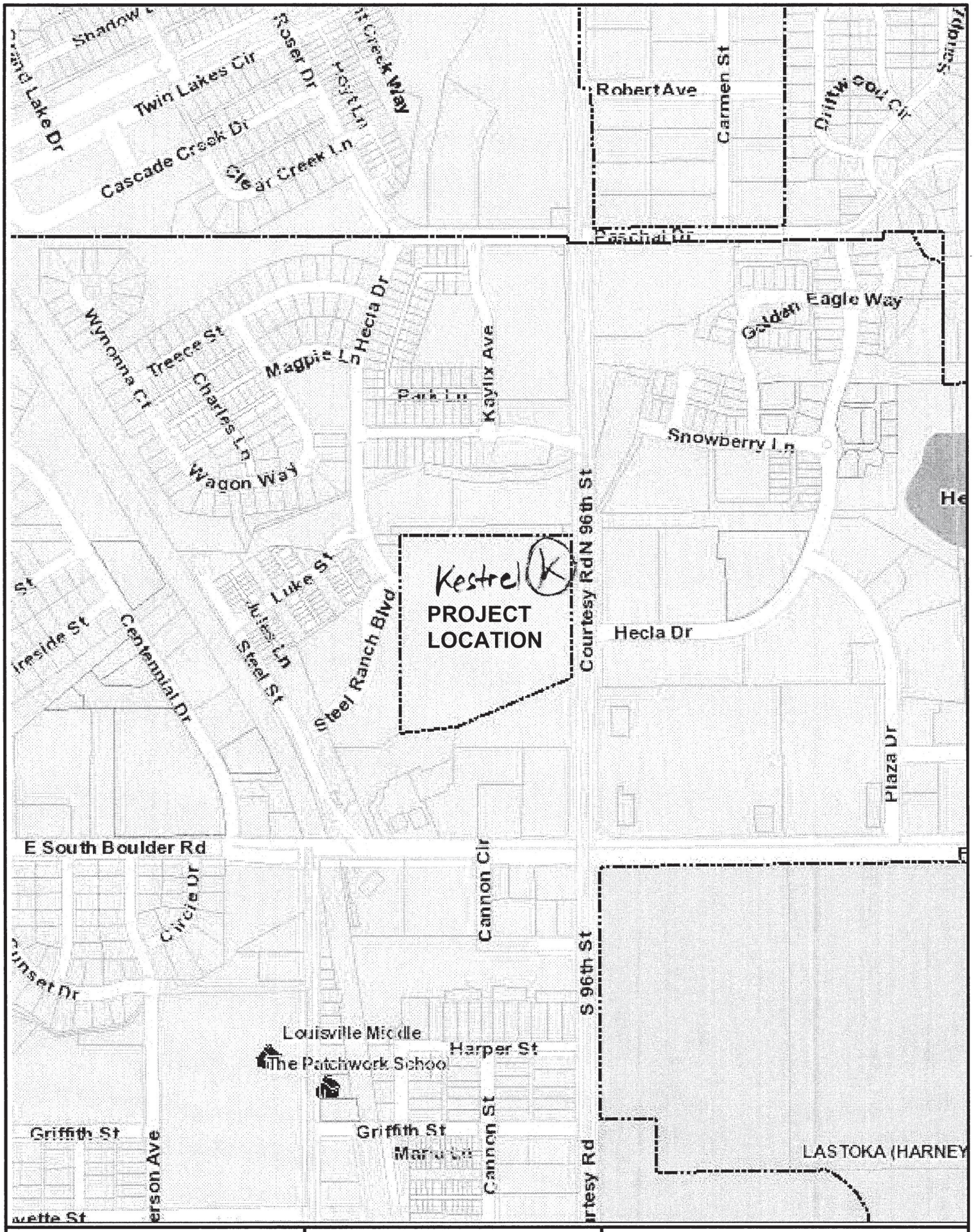
3151 South Vaughn Way
Suite 680
Aurora, Colorado 80014
Phone: 303-368-5601
Fax: 303-368-5603
Contact: Jason Margraf, P.E.

Job No. 03000531


IRRIGATION PIPE
EXISTING
CHRISTOPHER VILLAGE
(CITY OF LOUISVILLE)
STORM SEWER
INLETS
STORM SEWER
PROP. 24" STM
1C
1F
1B
1A
0.25
0.8
2.1
0.26
0.6
2.0
STORM SEWER LINKING PONDS
PROP. SPILLWAY
EX. STM MH
SOUTH BOULDER ROAD
STORM SEWER
OUTFALL CONNECTION
32
BASIN 1 PROPOSED DETENTION/WQ POND
WQ VOLUME=0.17 AC-FT
10-YR VOLUME=0.40 AC-FT
100-YR VOLUME=0.68 AC-FT
10-yr RELEASE = 1.40 CFS
100-yr RELEASE = 5.83 CFS
100-YR WSELV. = 5,368.91'
EMERGENCY SPILLWAY ELEV. = 5,370'

OFFSITE FLOWS FROM NORTH
(north of South Boulder Road)

KESTREL (K)



014-2332	VICINITY MAP	OLSSON ASSOCIATES

5285 McWhinney Boulevard
Suite 160
Loveland, CO 80538
TEL 970.431.7733

KESTREL

245 N. 96TH STREET, LOUISVILLE, CO

FINAL DRAINAGE REPORT

RECEIVED
JUN 13 2016
Public Works

PREPARED FOR:

Milender White Construction Company
12655 W 54th Drive
Arvada, CO 80002
(303) 216-0420
Contact: Bob Hutchinson

Approved
8/15/2016

PREPARED BY:

Olsson Associates
5285 McWhinney Blvd, Suite 160
Loveland, CO 80538
(970) 461-7733
Contact: Josh Erramouspe, PE

June 10, 2016

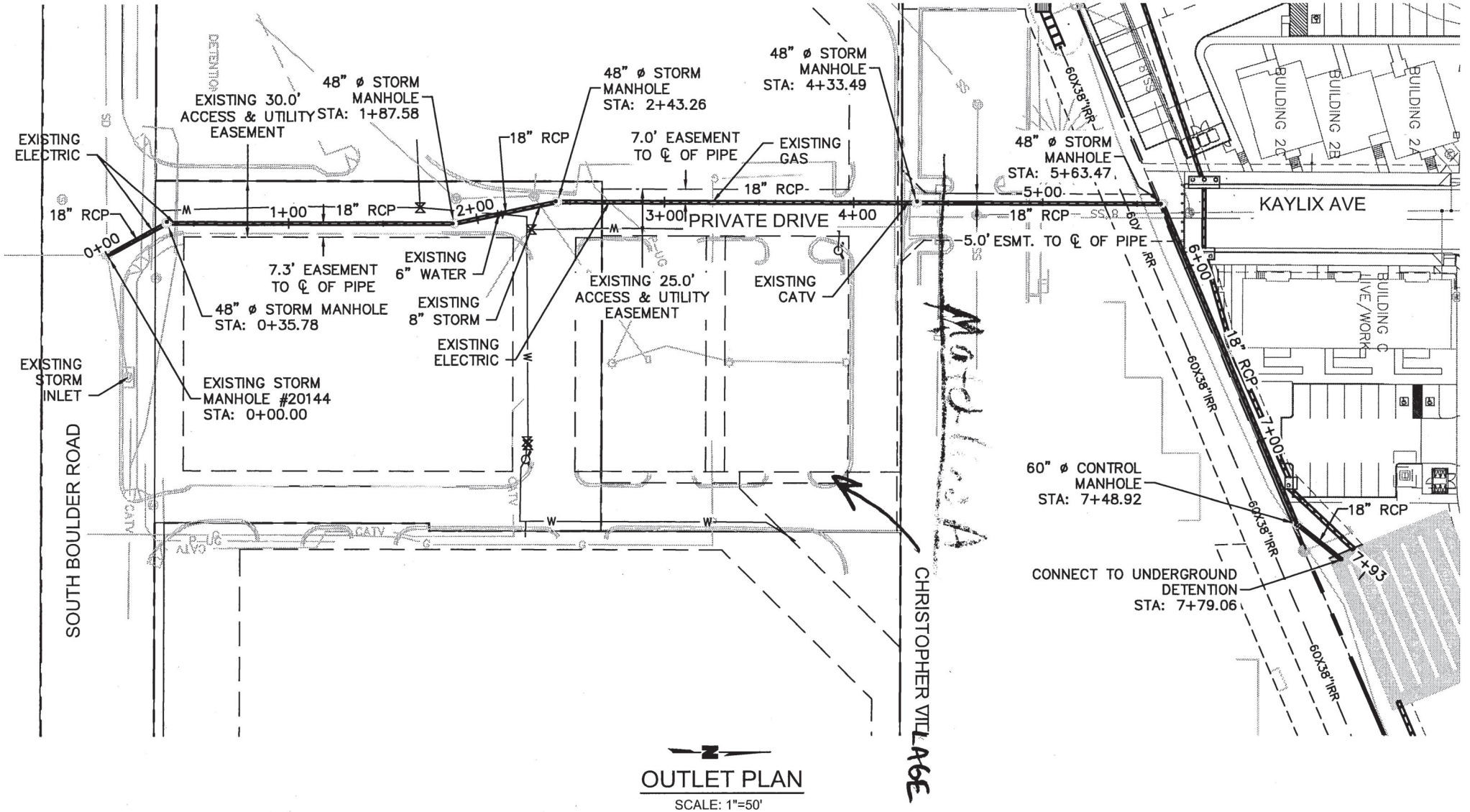
Olsson Project No. 014-2332

OLSSON ASSOCIATES

Table 5.4-1 South Boulder Road Storm Sewer

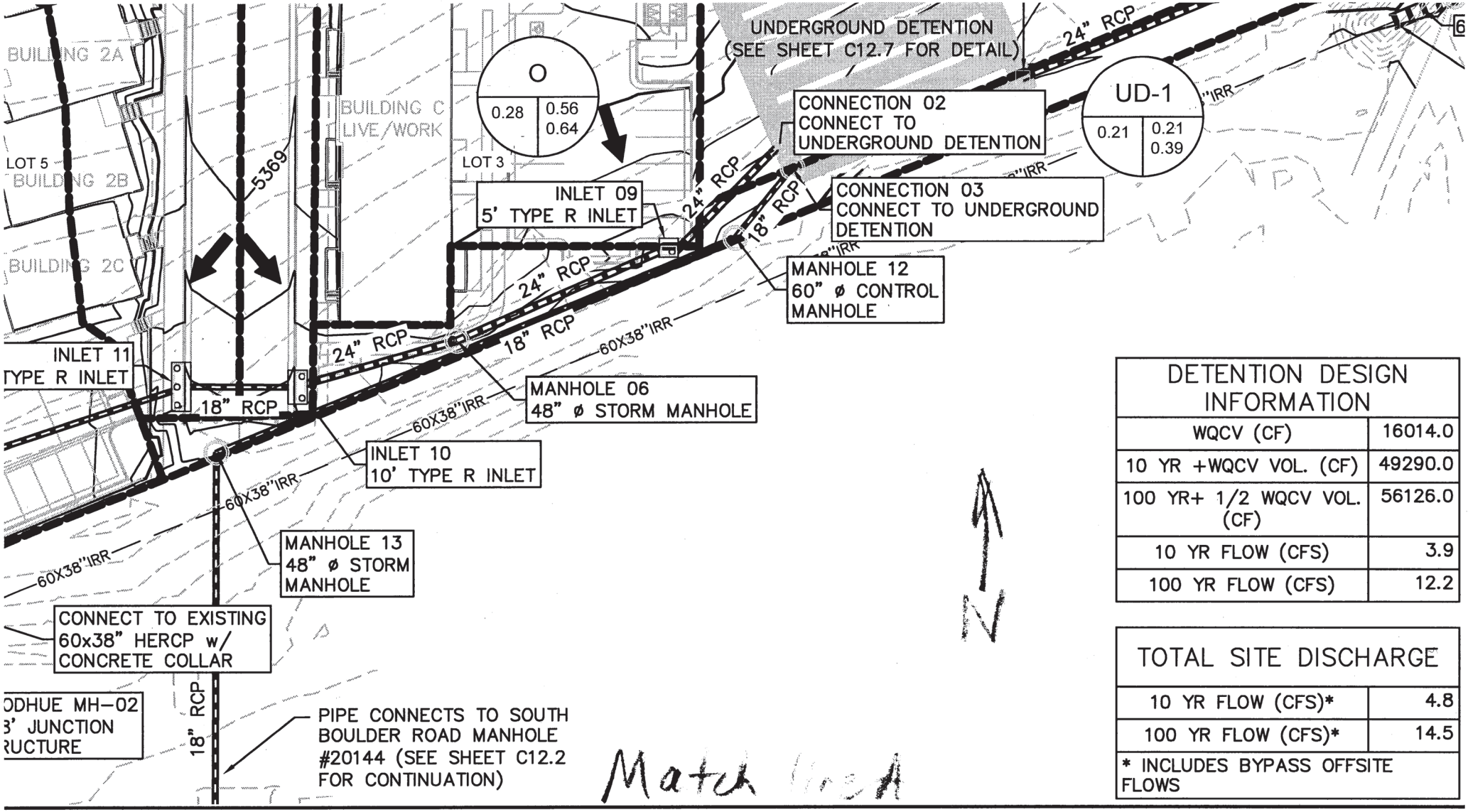
Description	10-Year Flow (cfs)	100-Year Flow (cfs)	Supporting Drainage Study
Kestrel	3.9	12.2	This report
Christopher Village	0.53	2.23	Christopher Village Drainage Study, 1979 (Page 33 of 110)
Christopher Plaza-Lot 8	0.45	1.1	Final Drainage Report for Christopher Plaza –Lot 8, *1995 (Page 10 of 40)*
Norwest Bank (Including flow from Christopher Plaza II)	0.87	3.66	Final Drainage Study for Norwest Bank, 1994. (Page 72 of 72)
Steel Ranch South	11.53	24.89	Final Drainage Report for Steel Ranch South, 2012 (Page 18 of 109, named page 15)
South Boulder Road	3.14	5.15	State Highway No. 42 Intersection at South Boulder Road, Final Hydraulics Report, 2010 (Pages 15-16 of 50)

With the additional flow from the Kestrel site, the existing storm sewer system that discharges south of Cannon Circle is undersized. Our analysis of the downstream infrastructure shows that the existing 18 inch main line would need to be upsized to a 24 inch pipe to convey the needed flows for the 100-year event. For details and routing assumptions please see Appendix C. A



OUTLET PLAN

SCALE: 1"=50'

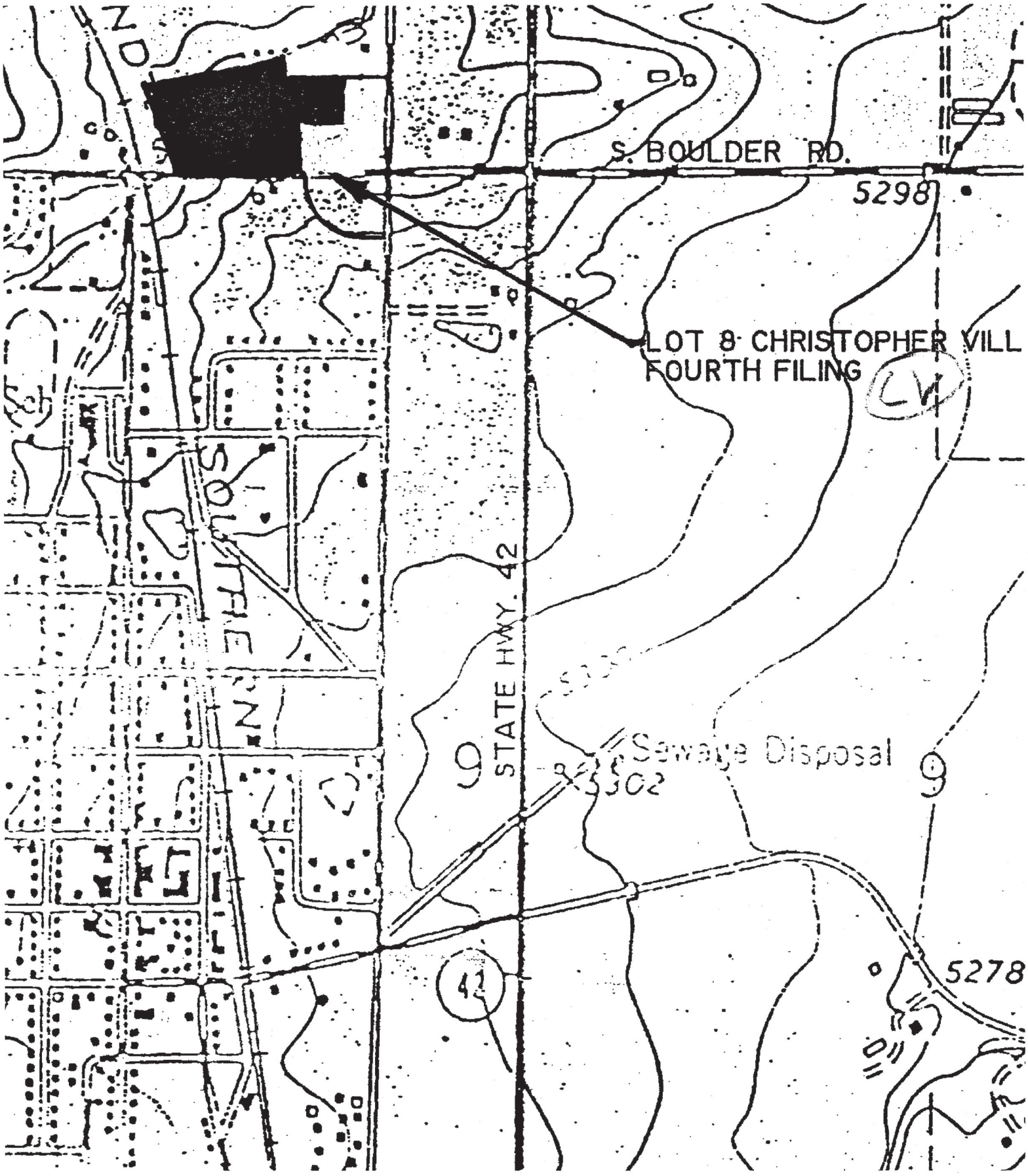


DETENTION DESIGN INFORMATION	
WQCV (CF)	16014.0
10 YR +WQCV VOL. (CF)	49290.0
100 YR+ 1/2 WQCV VOL. (CF)	56126.0
10 YR FLOW (CFS)	3.9
100 YR FLOW (CFS)	12.2

TOTAL SITE DISCHARGE	
10 YR FLOW (CFS)*	4.8
100 YR FLOW (CFS)*	14.5
* INCLUDES BYPASS OFFSITE FLOWS	

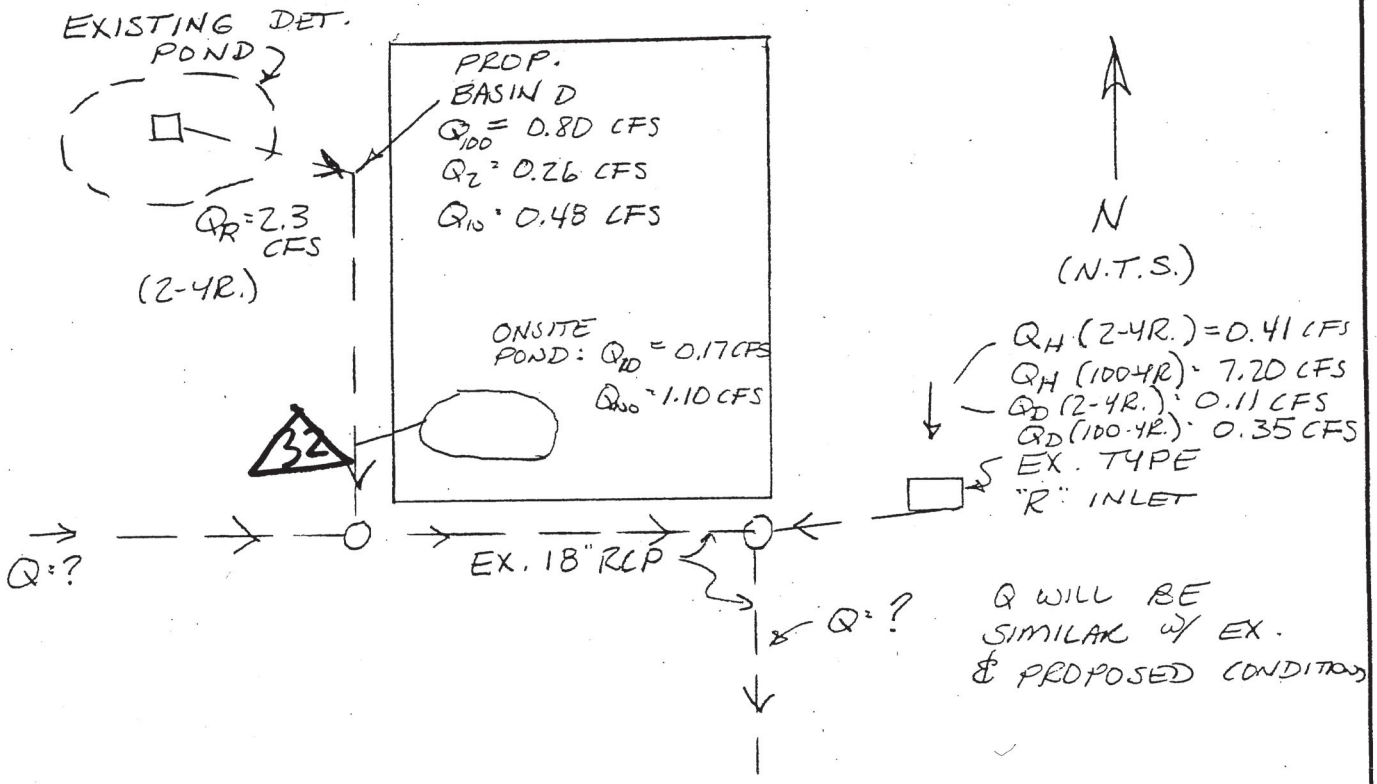
OFFSITE FLOWS FROM NORTH
(north of South Boulder Road)

CHRISTOPHER VILLAGE (CV)


S. BOULDER RD.
5298
LOT 8 CHRISTOPHER VILL
FOURTH FILING
CW
SOUTH 1
STATE HWY. 42
Sewage Disposal
5278
42

Project	Job N°
CHRISTOPHER PLAZA – LOT 8 FINAL DRAINAGE	E-4621
Client HARTRONFT ASSOCIATES	By: RM / Date: 5/31/95

COMPARE EXISTING & PROPOSED CONDITIONS @ OUTFALL



COMPARE FLOW TO TYPE "R" INLET & EASTERLY ST. S.

HISTORIC TO INLET FROM SITE (FROM ENTIRE SITE)

Q_{2H} = 0.41 CFS Q_{100H} = 7.2 CFS

DEVELOPED FROM SITE TO INLET (BASIN B ONLY):

Q_{2D} = 0.11 CFS Q_{100D} = 0.35 CFS

(DEVELOPED < EXISTING TO INLET - OK)

Project: CHRISTOPHER PLAZA - LOT 8
FINAL DRAINAGE
Job N°: E-4621
Client: HARTRONFT ASSOCIATES
By: RM
Date: 5/31/95

COMPARE FLOWS FROM SITE TO WESTERLY STORM SEWER:

EXISTING OFFSITE DET. POND TO WEST Q = 2.3 CFS
(2-YR · 100-YR. SIMILAR DUE TO RESTRICTION)

PROPOSED:

EX. POND TO WEST	Q = 2.3 CFS
BASIN D - 100-YR.	Q = 0.8 CFS
ONSITE POND RELEASE (100-YR.)	Q = 1.1 CFS

APPROX. Q_{100} FROM NORTH = 4.2 CFS (VS. 2.3 EX.) 32

DETAILED INFO. ON DESIGN Q'S & GRADE OF SOUTH BOULDER ROAD ST.S. NOT AVAILABLE ESTIMATE CAPACITY BASED ON ROAD SLOPE

$S \approx 1.25\%$ (@ FLATEST PORTION)
$D = 18"$
$n = .013$
$\Rightarrow Q \approx 25.3$ CFS (CAPACITY)

SYSTEM CAPACITY RELATIVELY HIGH WITH RESPECT TO SITE Q'S - DIFFERENCE SHOULD NOT BE SIGNIFICANT.

TOTAL Q FROM SITE:

HISTORIC - $Q_{2H} = 0.41$ CFS $Q_{10H} = 2.11$ CFS
$Q_{100H} = 7.2$ CFS

DEVELOPED - $Q_{10} = 0.45$ CFS (POND) + 0.48 (D) + 0.21 (B)
$Q_{10} = 1.14$ CFS
$Q_{100} = 1.10$ CFS (POND) + 0.80 (D) + 0.35 (B)
$Q_{100} = 2.25$ CFS

< HIST. FOR ALL CONDITIONS

FINAL DRAINAGE REPORT

FOR

CHRISTOPHER PLAZA - LOT 8

LOUISVILLE, COLORADO

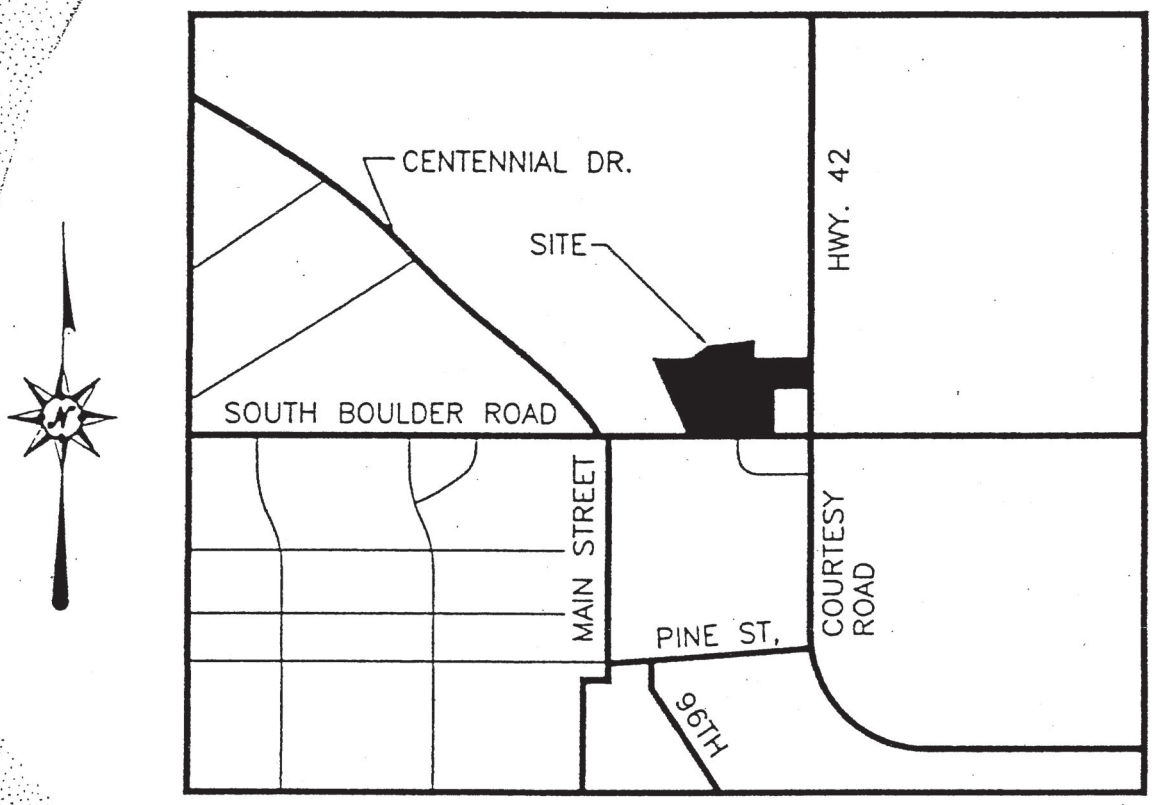
Prepared By:

Drexel Barrell & Co.
4840 Pearl East Circle, Suite #114
Boulder, Colorado 80301
(303) 442-4338

Prepared For:

Hartronft Associates
1021 South Boulder Road, Suite J
Louisville, Colorado 80026
(303) 673-9304

Date: April 28, 1995
Rev: May 31, 1995
Rev. October 10, 1995
Job No.: E4621



VICINITY MAP

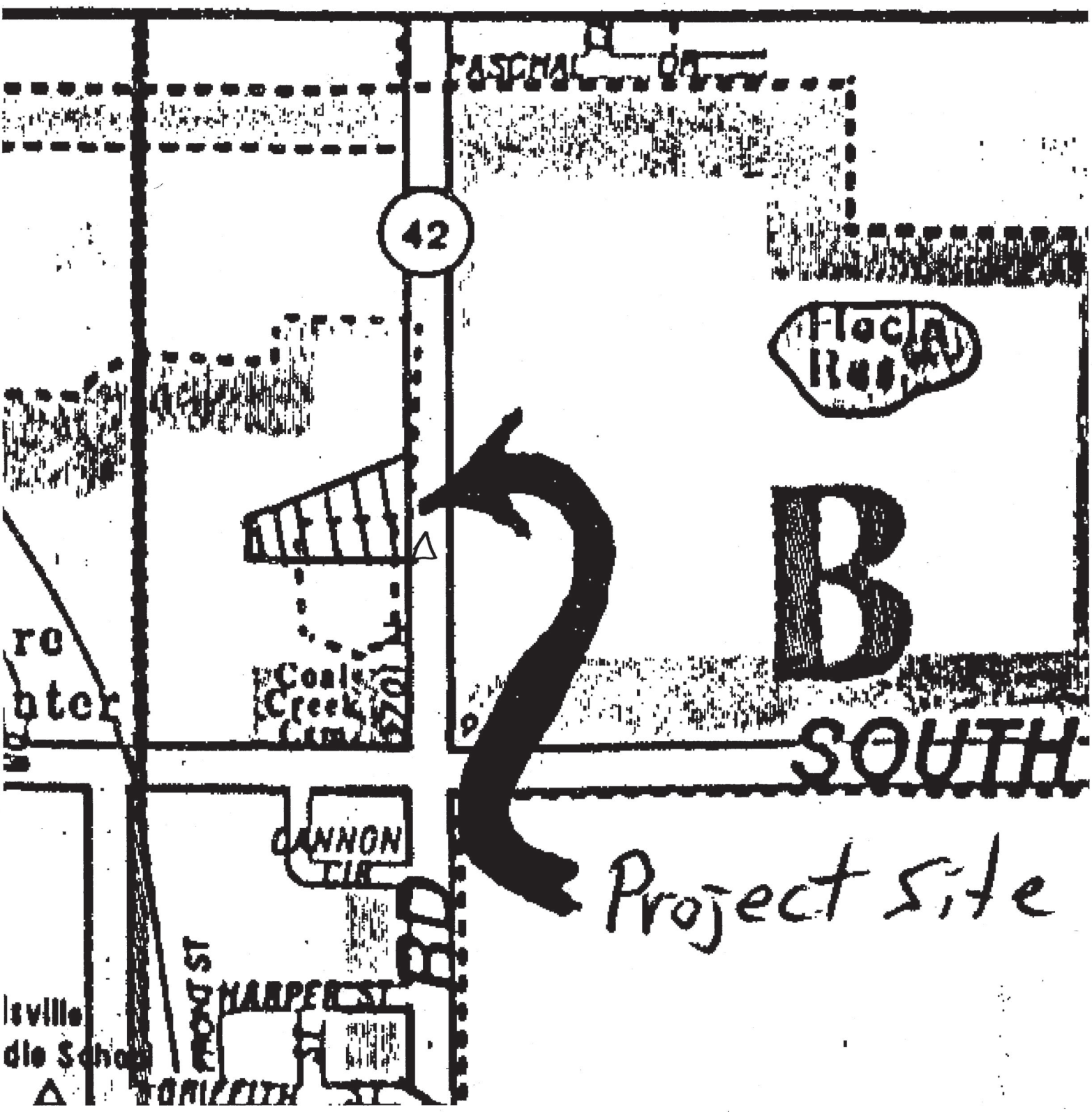
NTS

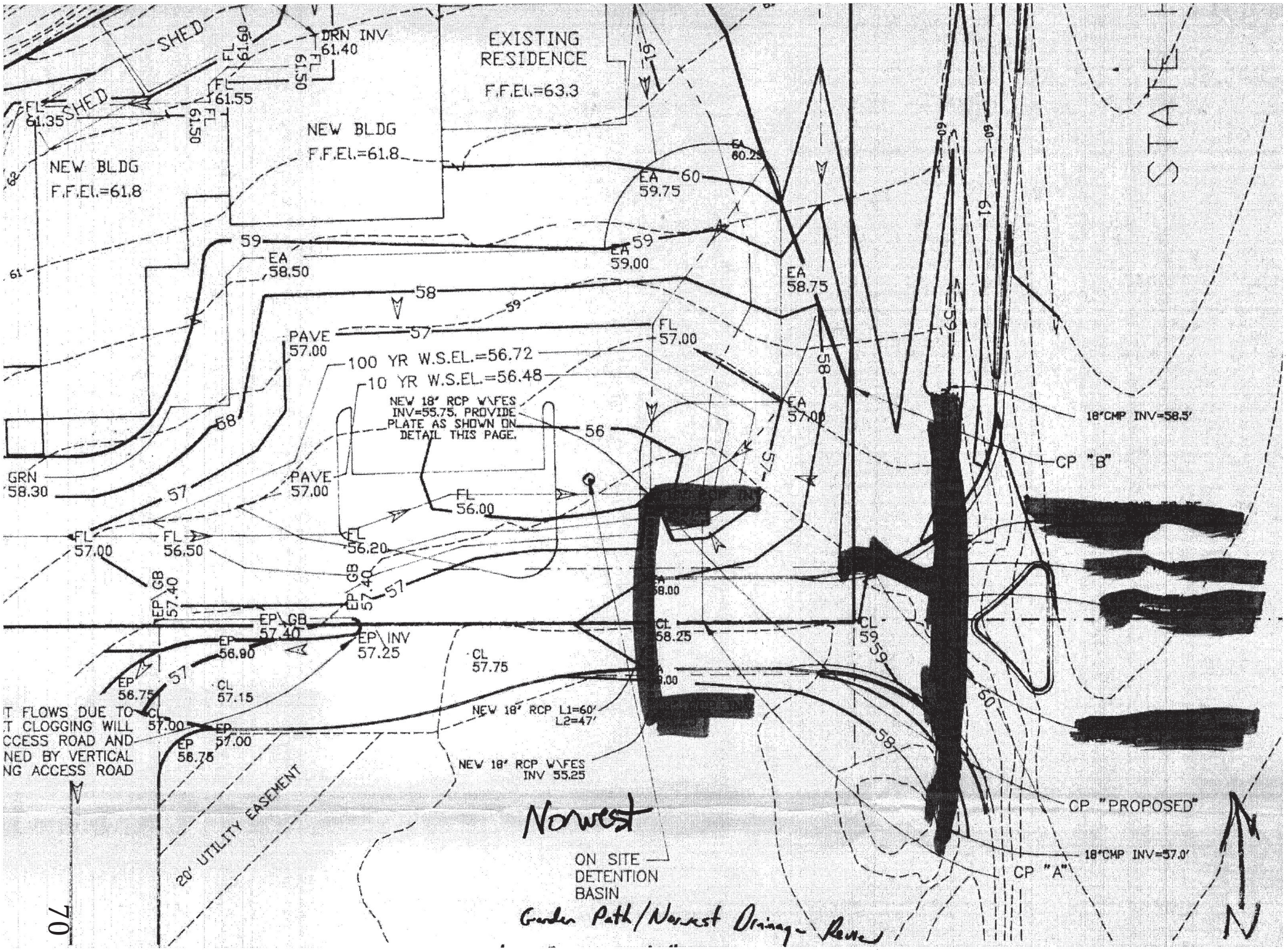
OFFSITE FLOWS FROM NORTH
(north of South Boulder Road)

GARDEN CITY (GC)

CPII or ---> Garden City
1994

Δ = 2ch




SHED
SHED
DRN INV 61.40
EXISTING RESIDENCE
F.F.El.=63.3
NEW BLDG
F.F.El.=61.8
NEW BLDG
F.F.El.=61.8
FL 61.60
FL 61.50
FL 61.55
FL 61.35
FL 61.50
EA 60.25
EA 59.75
EA 59.00
EA 58.50
EA 58.75
PAVE 57.00
100 YR W.S.EL.=56.72
10 YR W.S.EL.=56.48
NEW 18" RCP W\FES INV=55.75, PROVIDE PLATE AS SHOWN ON DETAIL THIS PAGE.
FL 57.00
EA 57.00
18"CMP INV=58.5'
CP "B"
GRN 58.30
PAVE 57.00
FL 56.00
FL 57.00
FL 56.50
FL 56.20
EP GB 57.40
EP GB 57.40
EP GB 57.40
EP INV 57.25
EP 56.90
EP 56.75
CL 57.75
CL 57.15
CL 58.25
CL 59
NEW 18" RCP L1=60' L2=47'
NEW 18" RCP W\FES INV 55.25
IT FLOWS DUE TO
T CLOGGING WILL
CCESS ROAD AND
NED BY VERTICAL
NG ACCESS ROAD
EP 57.00
EP 56.75
20' UTILITY EASEMENT
CP "PROPOSED"
18"CMP INV=57.0'
CP "A"
ON SITE DETENTION BASIN
Norwest
Garden Path/Norwest Drainage Review
STATE
70
N

OFFSITE FLOWS FROM NORTH
(north of South Boulder Road)

NORWEST (NW)

ACKLAM ASSOCIATES, INC.
SURVEYING - ENGINEERING

FINAL DRAINAGE STUDY

NORWEST BANK

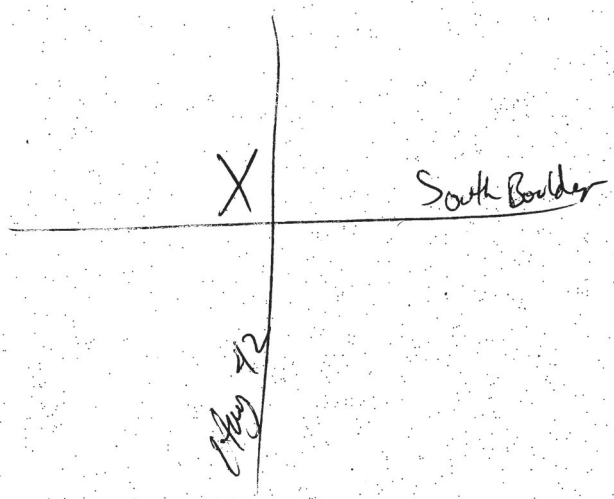
NW

LOUISVILLE, COLORADO
BOULDER COUNTY

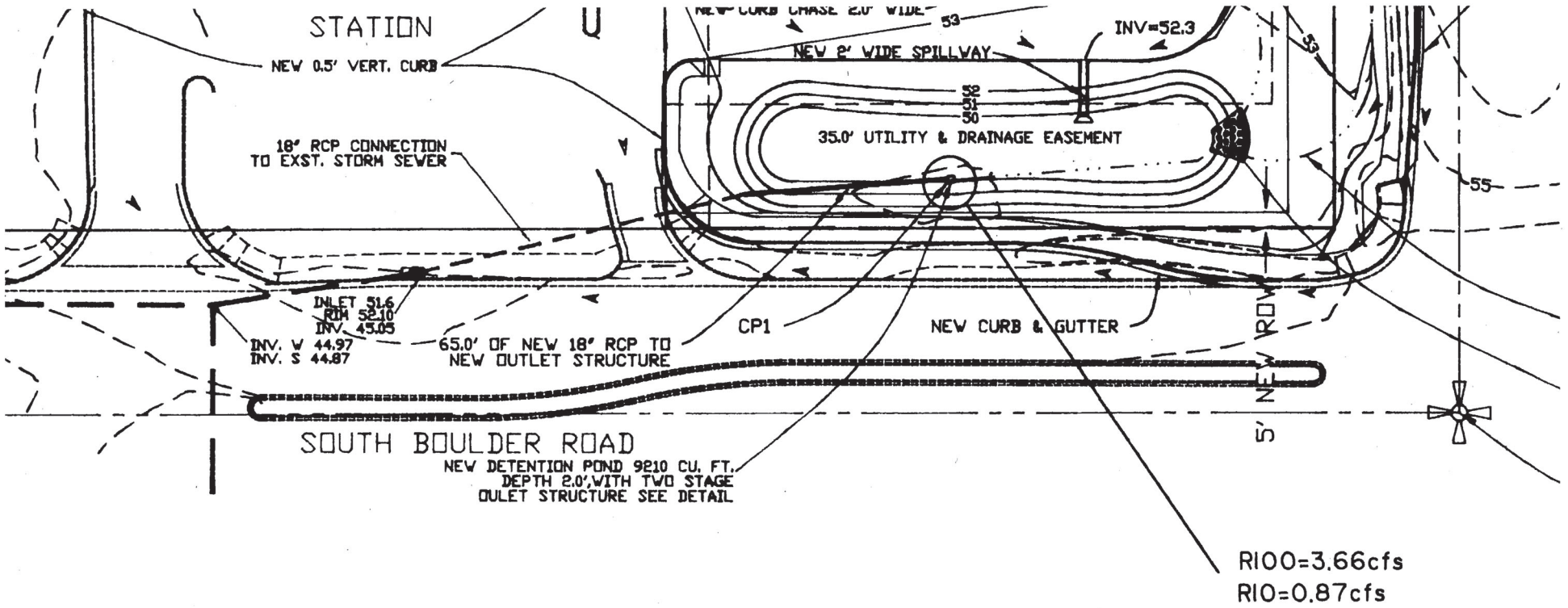
APRIL 14, 1994
REVISED: SEPT. 7, 1994

PROJECT NO. 4120

△ = 3.66 cfs

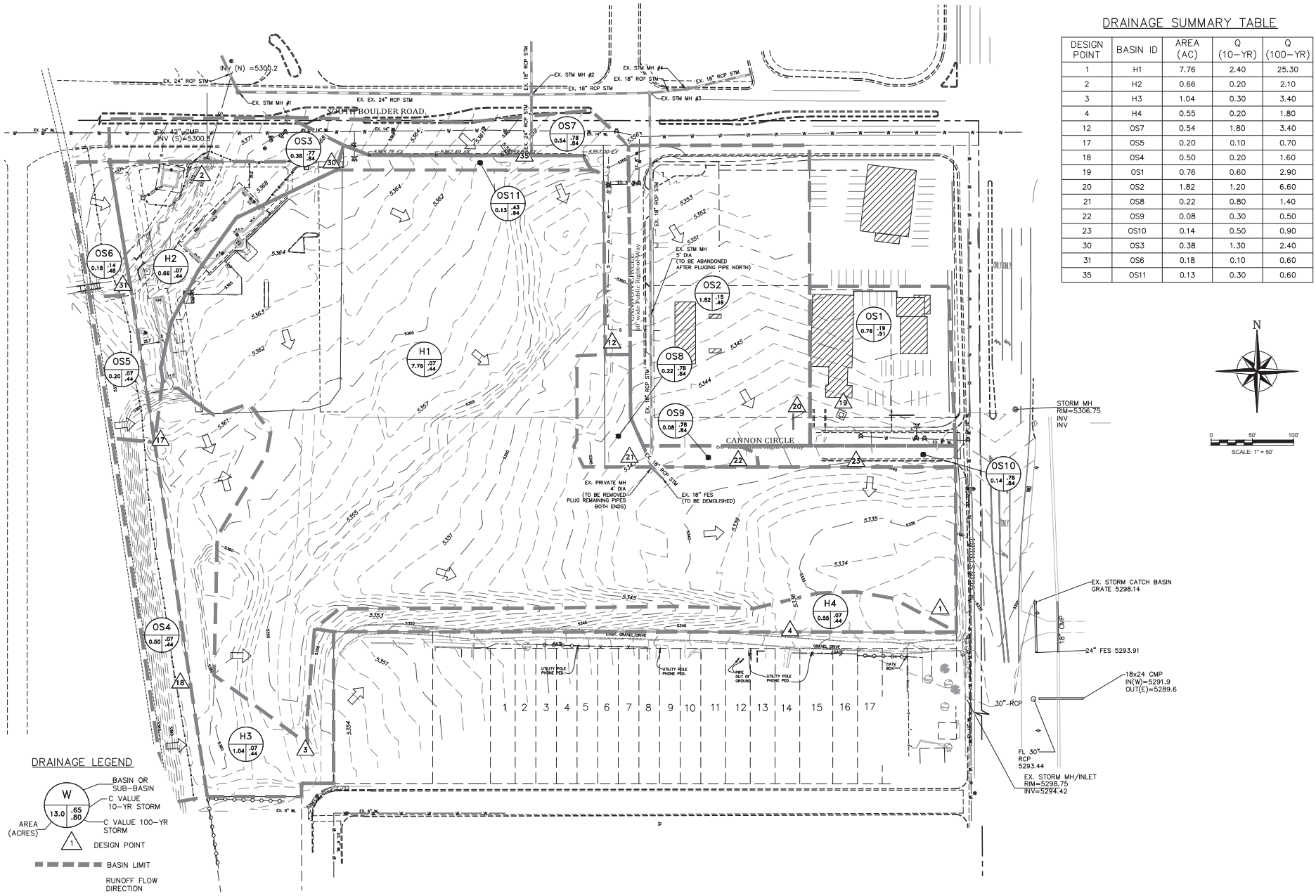


1001 E. BRIDGE ST • P.O. BOX 795 • BRIGHTON, COLORADO 80601
TELEPHONE (303) 659-8546



• Planners	PROJECT NORWEST BANK SITE LOUISVILLE, CO.	SHT. NAME DRAINAGE

PRELIMINARY DRAINAGE PLAN



DRAINAGE SUMMARY TABLE

DESIGN POINT	BASIN ID	AREA (AC)	Q (10-YR)	Q (100-YR)
1	H1	7.76	2.40	25.30
2	H2	0.66	0.20	2.10
3	H3	1.04	0.30	3.40
4	H4	0.55	0.20	1.80
12	OS7	0.54	1.80	3.40
17	OS5	0.20	0.10	0.70
18	OS4	0.50	0.20	1.60
19	OS1	0.76	0.60	2.90
20	OS2	1.82	1.20	6.60
21	OS8	0.22	0.80	1.40
22	OS9	0.08	0.30	0.50
23	OS10	0.14	0.50	0.90
30	OS3	0.38	1.30	2.40
31	OS6	0.18	0.10	0.60
35	OS11	0.13	0.30	0.60

NO.	DATE	DESCRIPTION	BY

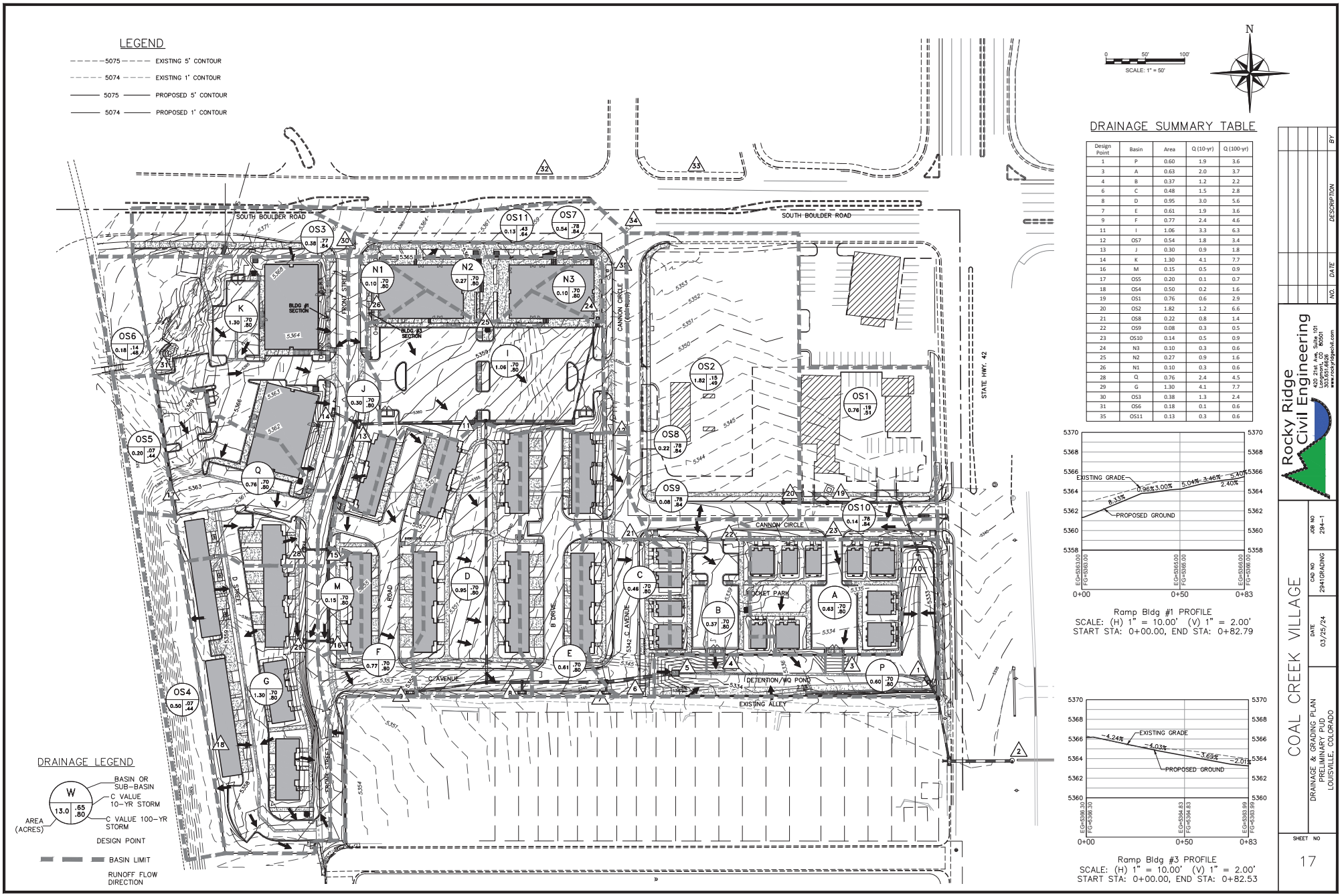
Rocky Ridge Civil Engineering
420 21st Ave, Suite 101
Longmont, CO 80501
303.651.6626
www.rockyridgecivil.com

COAL CREEK VILLAGE

HISTORIC DRAINAGE PLAN
LOUISVILLE, COLORADO

DATE 03/25/24
CAD NO 2941GRADING
JOB NO 294-1

SHEET NO
1



DRAINAGE SUMMARY TABLE

Design Point	Basin	Area	Q (10-yr)	Q (100-yr)
1	P	0.60	1.9	3.6
3	A	0.63	2.0	3.7
4	B	0.37	1.2	2.2
6	C	0.48	1.5	2.8
8	D	0.95	3.0	5.6
7	E	0.61	1.9	3.6
9	F	0.77	2.4	4.6
11	I	1.06	3.3	6.3
12	OS7	0.54	1.8	3.4
13	J	0.30	0.9	1.8
14	K	1.30	4.1	7.7
16	M	0.15	0.5	0.9
17	OS5	0.20	0.1	0.7
18	OS4	0.50	0.2	1.6
19	OS1	0.76	0.6	2.9
20	OS2	1.82	1.2	6.6
21	OS8	0.22	0.8	1.4
22	OS9	0.08	0.3	0.5
23	OS10	0.14	0.5	0.9
24	N3	0.10	0.3	0.6
25	N2	0.27	0.9	1.6
26	N1	0.10	0.3	0.6
28	Q	0.76	2.4	4.5
29	G	1.30	4.1	7.7
30	OS3	0.38	1.3	2.4
31	OS6	0.18	0.1	0.6
35	OS11	0.13	0.3	0.6

Ramp Bldg #1 PROFILE
SCALE: (H) 1" = 10.00' (V) 1" = 2.00'
START STA: 0+00.00, END STA: 0+82.79

Ramp Bldg #3 PROFILE
SCALE: (H) 1" = 10.00' (V) 1" = 2.00'
START STA: 0+00.00, END STA: 0+82.53

Rocky Ridge Civil Engineering
420 21st Ave, Suite 101
Longmont, CO 80501
303.651.6626
www.rockyridgecivil.com

NO.	DATE	DESCRIPTION	BY

COAL CREEK VILLAGE
DRAINAGE & GRADING PLAN
PRELIMINARY PUD
LOUISVILLE, COLORADO

DATE 03/25/24
CAD NO 2941GRADING
JOB NO 294-1

SHEET NO 17

Dear Louisville Planning Commission,

The Louisville residents in the historic Little Italy neighborhood, as well as local community members, are pro-development, but have the following major concerns about the Coal Creek development as it is currently described in the PUD. We urge the planning commission not to approve the Preliminary Plat until the planning department and developer have met with Little Italy residents and considered a few major revisions to preserve existing neighborhood character. Three major items that need amendment before approval of the Preliminary Plat are summarized here and described in detail below:

1. Remove motorway connections to Front St. and the Little Italy alley behind Harper St. These roads are not designed for increased traffic and parking, especially since Louisville Middle School students are expected to walk to school (no bus) within these blocks. These connections should be revised to multi-use pathways with emergency vehicle access only.
2. Reduce the number of townhomes on A Road and B Drive by 4 in order to maintain the existing alley, along with existing Little Italy property access, including unplatted lands. As designed the development could trigger Adverse Possession and delay the development. Moreover, this would safely ensure surface drainage of flood waters to Outlot D, which are currently routed through the existing alley.
3. Increase green space, tree coverage and definitively ensure sufficient drainage within and surrounding Coal Creek village with designs up to a 100-yr flood level.

First, and most importantly, Little Italy is strongly opposed to a connected motorway along Front St. between the Coal Creek development and Little Italy neighborhood. We propose that the road be designed only for emergency vehicle access but restricted to bikes and pedestrians at all other times, either through the use of pylons or a gate. Without this important safety measure, motorists will cut through the Little Italy neighborhood, reducing safety and increasing traffic substantially in a small, historic area that was not designed to accommodate throughway traffic. As currently planned, the Coal Creek development has three entrance and exit locations onto South Boulder Road and Highway 42. There is no need for additional auto traffic through the Little Italy neighborhood. With 188 dwellings planned this would completely alter the character and safety of the historic neighborhood, and impact school drop-off at Louisville Middle School. A previous development on Weldona Way in Louisville created an unsafe accessway and the City had to retroactively close this connection. Little Italy asks that this connection be removed in an amendment before approval is granted, not retroactively once it has become a problem as in the Weldona Way development.

Second, the development provides a connection to the existing alley, which triggers all the concerns described above connecting the development to Front St. Little Italy asks that there be no connection to the existing alley, which is used by many residents to access their properties, particularly alley-facing garages. The plan appears to cut into (or completely cut off) access to the existing alley (which is 20' wide) at the west end near C Avenue. Narrowing the alley is also not an appropriate or necessary development choice and will adversely impact current Louisville residents in Little Italy. If the developer removes only 4 units of the planned 188 on A Road and B Avenue they can proceed with the

development without triggering Adverse Possession by impacting existing Little Italy access to their properties along the alley, which has been maintained in its current configuration since at least 1952.

Third, the plan does not appear to provide enough green infrastructure, and the storm line management is lacking. This is especially important given that the current lot has a small wetland region in the northeast that serves as critical habitat and a migration pathway for birds of prey, and that the entire lot is a major drainage point for the city. As designed, the amount of impermeable surface will increase flood risks to the historic Little Italy neighborhood and nearby major streets of South Boulder Road and especially Highway 42. The developer needs to design the plans to include best management practices for green storm-water infrastructure, including space for stormwater capture to prevent flooding (outlot D is not sufficient given the drainage directions noted on page 17/32 on the PUD). On the current PUD, the existing dirt alley is set up to channel water into outlot D, with drainage directions showing water is directed towards Little Italy and its alleyway along the entire adjoining region. A dirt alley will not be able to route the amount of water without major damage that the City will be responsible for regularly managing, especially as flood risks increase in a changing climate. Little Italy residents would bear the brunt of this poor design.

Besides water and flood management risks, the elevation drawings have no trees on the alley-loaded dwellings, negatively impacting the current residents. Alley loaded units need to be given the same attention as other units by providing trees between the Little Italy neighborhood and new development. The section of the Coal Creek development facing the historic Little Italy neighborhood lists no trees (Block 2 and Block 3), or only 1 tree/300sf (Block 1) as compared to 1 tree per 20 linear foot on Blocks facing South Boulder Road, Highway 42, and- internal to the development- Cannon Circle. While there are trees on the drawing, the requirements listed in the boxes do not include trees. Little Italy would like a commitment from the developer to plant relatively mature trees as is drawn on the landscaping plan, but not listed in the Block requirements on that same page. These greenway adjustments will help to address other resident concerns about a potential heat island and/or the right of quiet enjoyment within the Little Italy neighborhood.

In addition to these three major concerns, the Little Italy neighborhood will be permanently altered by this development. The developer should provide improvement to the existing alleyway, burying of utility lines to connect with the development's proposed updated service, improvement to sewer lines in Little Italy (only 10" diameter on Harper Street and with increase of flood waters from development this will become untenable), and general improvements to the neighborhood, including access to improved utility services coming to the Coal Creek development. Lastly, has there been an analysis of the potential impact of underground mines on construction/development safety?

The City of Louisville, its government and people, are making a lot of changes to accommodate this development including Rezoning and Special Review Use. The above requests are not much to ask, are even supportive of the development, yet bring community care to an otherwise dangerous and unsafe situation for Little Italy, DELO residents and Louisville Middle school families and staff.

Section 17.08.374 of the Louisville municipal code states: "“The planned unit development includes usable, functional open space for the mutual benefit of the entire tract; and is designated to provide variety and diversity through the variance of normal zoning and subdivision standards so that maximum long range benefits can be gained, and the unique features of the development or site preserved and enhanced ***while still being in harmony with the surrounding neighborhood.***” In order to meet this requirement, the developer and planning department must work with Little Italy residents to address their major concerns. If the preliminary plat is approved the city planner has advised that changes involving Front St. and/or the alley used by residents (our highest and foremost concern) will be almost impossible to amend. The charge for a Special Review Use Analysis states: "***External and negative impacts on adjacent properties are controlled for and reduced.***" Existing Louisville residents have not had a voice until now, and more time is needed for their voices to be heard.

Please do not approve this preliminary plat until the planning department and developer negotiate solutions to existing resident concerns. Thank you, and we look forward to finding common ground from one historic residential area to a new (if approved) residential area.

Sincerely,

Residents of Little Italy and Supportive Community Members
(83 signatures collected via change.org petition management):

Name	***City***	***Postal Code***	***Signed On***
Lauren Foster	Louisville	80027	9/5/24
Parke Pleasants	Louisville	80027	9/5/24
Anita Menendez	Louisville	80027	9/6/24
Victoria Facemire	Louisville	80027	9/6/24
Nick Facemire	Louisville	80027	9/6/24
Micah Abram	Louisville	80027	9/6/24
Jerrica Ash	Boulder	80301	9/6/24
Juliane Leckey	Louisville	80027	9/6/24
Moses River	Louisville	80027	9/6/24
Sandra Beranek	Lafayette	80026	9/6/24
Michael Mahan	Louisville	80027	9/6/24
Peter Kostoff	Denver	80231	9/6/24
Ash Colby	Louisville	80027	9/6/24
Lisa Brooke	Portland	97214	9/6/24
Sawyer Pierce	Louisville	80027	9/6/24
Linda Cateora	Louisville	80027	9/7/24
Else Roth	Englewood	80150	9/7/24
MARK Zeman	Louisville	80027	9/7/24
Sondra Hittle	Boulder	80303	9/7/24

Sanam Pejuhesh	Louisville	80027	9/7/24
Tami Cantrel	Denver	80226	9/7/24
Maribel Saldana	Golden	80403	9/7/24
Conrad Zeman	Louisville	80027	9/7/24
Niko Silvis	Luisville	80027	9/7/24
Joan Doolittle	Louisville	80027	9/7/24
Jose Rodriguez	Louisville	80027	9/7/24
Mary Thompson	Louisville	80027	9/7/24
Janice Larson	Louisville	80027	9/7/24
Carol Wilson	Denver	80231	9/7/24
Kelly Brocker	Louisville	80027	9/7/24
Ellen Kirk	Louisville	80027	9/7/24
Kirstan Vaughan	Winder	30680	9/8/24
Julie Maes	Louisville	80027	9/8/24
Rafael Rodriguez	Lafayette	80026	9/8/24
Naeem janjua	Sacramento	95832	9/8/24
Erika Rikhiram	Clermont	34711	9/8/24
Divya Nagendran	Aurora	60505	9/8/24
Adam Kaluba	Burleson	76028	9/8/24
Joyce Goglio	Louisville	80027	9/8/24
Tammy Lastoka	Louisville	80027	9/8/24
Todd Lastoka	Denver	80220	9/8/24
Jayden Lastoka	Louisville	80027	9/9/24
Sara Blumhardt	Louisville	80027	9/9/24
James C. Lastoka	Louisville	80027	9/9/24
Dustin Sagrillo	Louisville	80027	9/9/24
Lauryl Danuff	Louisville	80027	9/9/24
Scott Carey	Louisville	80027	9/9/24
Jody Ash	Louisville	80027	9/9/24
Jennifer Benshoof	Louisville	80027	9/9/24
Kay Weaver	Louisville	80027	9/9/24
Joanna Roberts	Bronx	10461	9/9/24
Andrew w Maass	Louisville	80027	9/9/24
Cynthia Corne	Louisville	80027	9/9/24
Lisa Zavarella-DeBoy	Louisville	80021	9/9/24
Ali Frusciano	Louisville	80027	9/9/24
Marissa Rodrigues	Longmont	80501	9/9/24
Dawn Mcneal	Fergus Falls	56537	9/9/24
Bob Musslewhite	Louisville	80027	9/9/24
Mark Gasper	Louisville	80027	9/9/24

Ella Miller	Louisville	80027	9/10/24
Terri Johnson	Louisville	80027	9/10/24
Bob Tofte	Louisville	80027	9/10/24
Wendy Appel	Louisville	80027	9/10/24
Allyson Stone	Louisville	80027	9/10/24
Allister Layne	Conyers	30094	9/10/24
Chante Ash	Louisville	80027	9/10/24
Steven Morigi	Denver	80234	9/10/24
Wild Heritage Gardens	Louisville	80027	9/10/24
Amber Morelock	Manor	78653	9/10/24
Mary Rizzi	Louisville	80027	9/10/24
Roxann Waneka	Lafayette	80026	9/10/24
Robin Waneka	Louisville	80027	9/10/24
David Brandt	Oklahoma City	73149	9/10/24
will Scherer	Louisville	80027	9/10/24
Abbe Gilroy	Louisville	80027	9/10/24
Bruce Bernhardt	Louisville	80027	9/10/24
Constance Bernhardt	Louisville	80027	9/10/24
Dan Barnes	Louisville	80027	9/10/24
Stephanie Hartstein	Denver	80219	9/10/24
Derek Wood	Louisville	80027	9/11/24
Katie Facemire	San Antonio	78249	9/11/24
Jorge Bautista	Corona	92882	9/11/24
Kirsten LoGalbo	Abbotsford	54405	9/11/24

Major Issues with Coal Creek Development Plan

1. Routing traffic on too small roads into school zone
2. Drainage plan incomplete, high risk flood zone
3. Blocking resident access to homes and garages on alley used and maintained for over 60 years

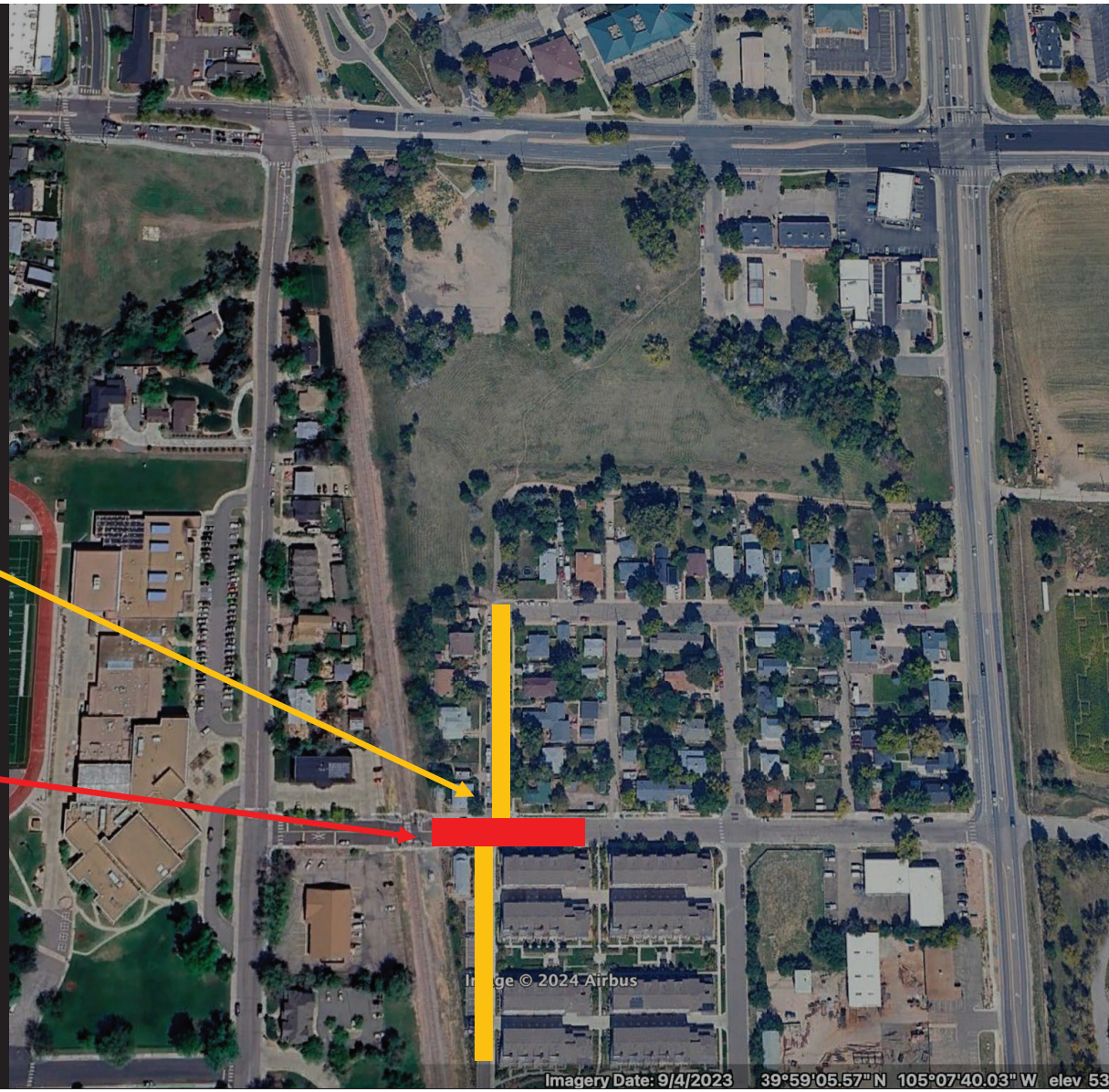
Routing traffic from South Boulder Road through tiny Little Italy, into school safety zone:

- Proposal connects Front St. from South Boulder Road to dead end at DELO



Major concerns:

- Front St. cannot continue because of Delo development, offset and leads to parking lot for Delo
- Only takes 2-4 cars to block intersection at train crossing (already a problematic intersection for small neighborhood residents)



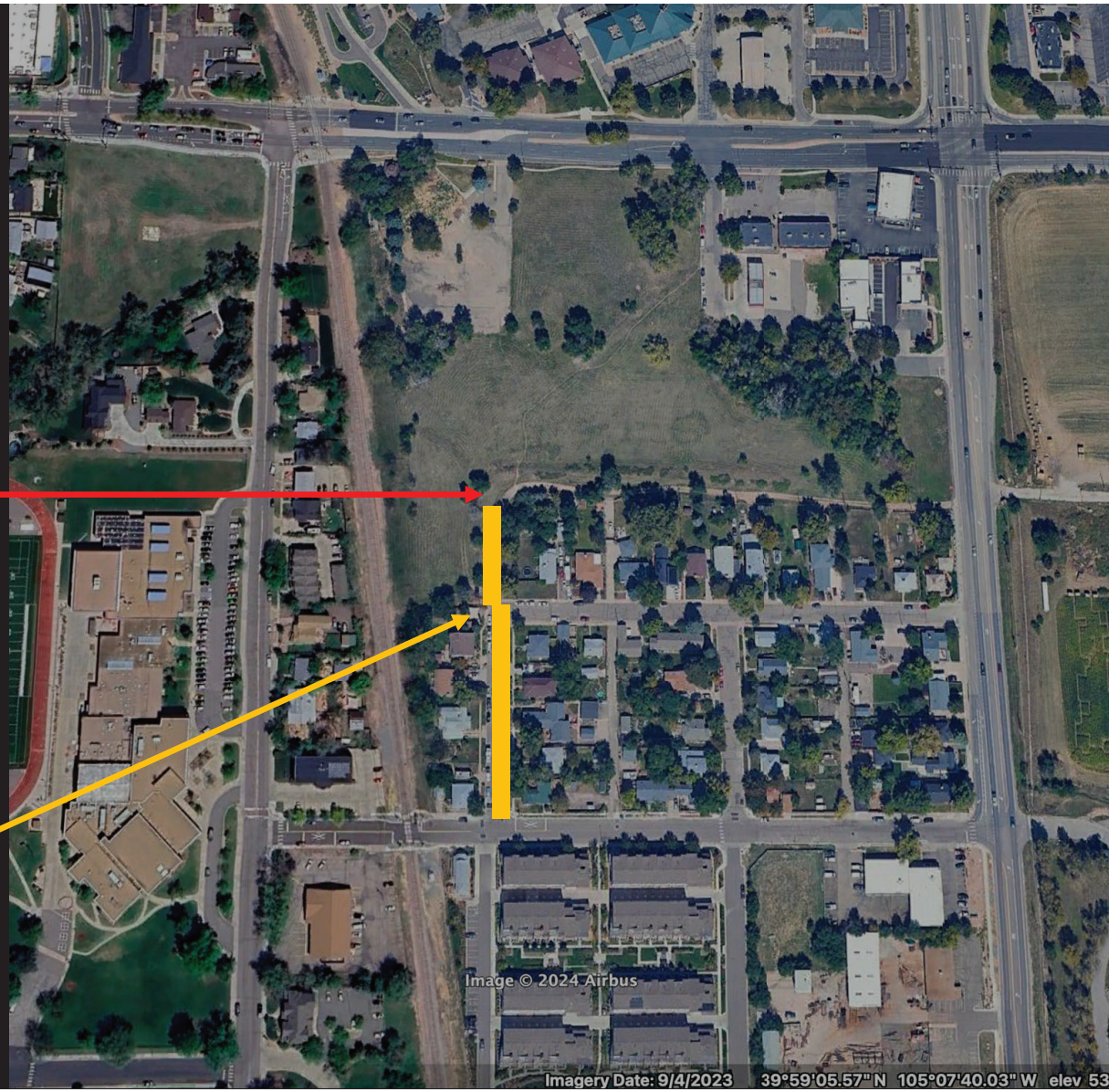
Major concerns:

- Failing intersection at S. Boulder Rd. and 42
- There are already problems with cut-through traffic and increasing safety issues at Louisville Middle School



Major concerns:

- Blocks existing resident access to their properties and garages (existing alley used and maintained for over 60 years by both city and residents)
- Offset due to a lack of land ownership north of Front St. blocks safe continuity of flow.



Developer's traffic study did not include this critical intersection

- Front St. and Griffith St. (clog point, railroad crossing, and major safety + traffic problem) not included in traffic study.
- Recent city investment in quieter train crossings did not anticipate routing thousands more cars/day through intersection.

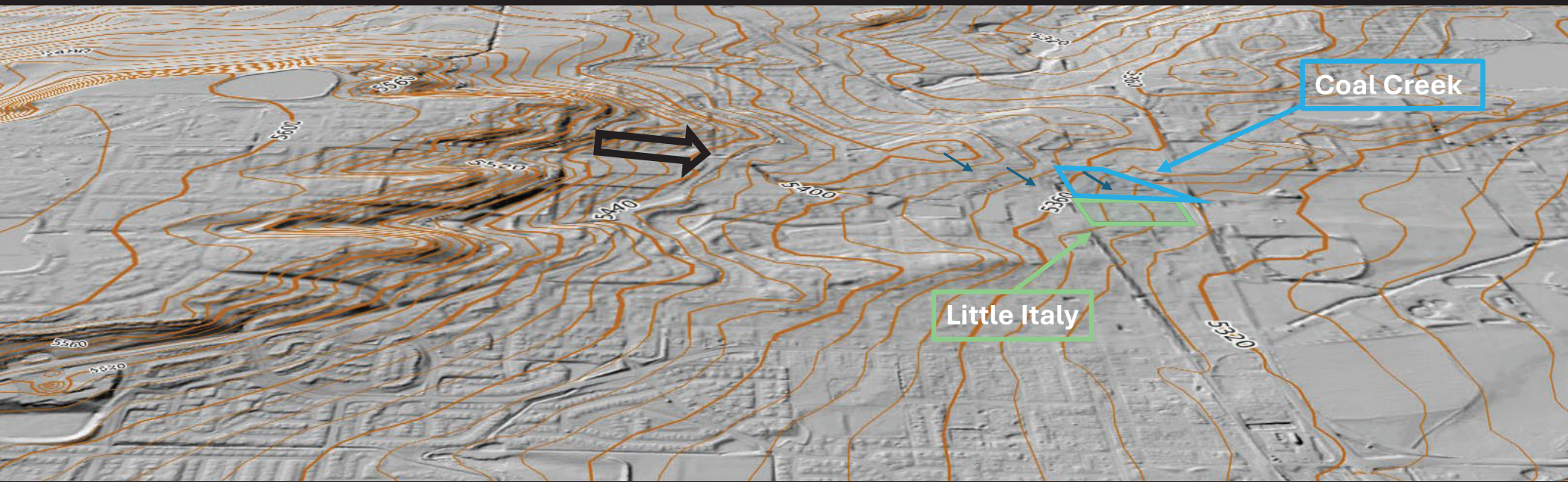


ALL RECENT CITY PLANS oppose proposed connection, only old/very old plans support:

- Opposed and/or not included (see attached document):
  - Transportation Master Plan (2019)
  - Historic Preservation Plan (2015)
  - South Boulder Road Connectivity Plan (2019)
  - Future42 (2022)
- Shown/mentioned by planning department at Sept 12th meeting:
  - 2003 Highway 42 Revitalization Plan (replaced by Future42)
  - 2016 Coal Creek Station Plan (56 units, pre-dated new key planning documents like the TMP 2019, designed pre-Delo with Front reaching Pine in a true gridded street, now only one block long)
  - Caledonia Place Plat (1890)
  - Coal Creek Station Filing (1978)

Coal Creek village is at the bottom of one of the more significant drainage basins in the city, and is a seasonal wetland that helps mitigate flood risks in the surrounding neighborhoods and regional roads (S. Boulder Rd., SH42).

- PUD proposes routing all water TOWARDS Little Italy into underground storage, if these fail, historic houses built on cobbles/cinderblocks will be risked.
- Developer was unwilling to share flood engineering drawings with Little Italy residents.
- Additionally, sewer lines in Little Italy are only 10”, and already have flood issues



City/New Traffic Study concerns (2025):

- Failing intersection at S. Boulder Rd. and 42
- Development must be right out only… the city thinks the SINGLE unconnected block of Front St. (red arrow) will IMPROVE safety on South Boulder Road because that intersection is failing.
- Car traffic on red arrow is over 900% higher on narrow, historic street with pedestrian traffic (also will become walking route for new development to downtown).



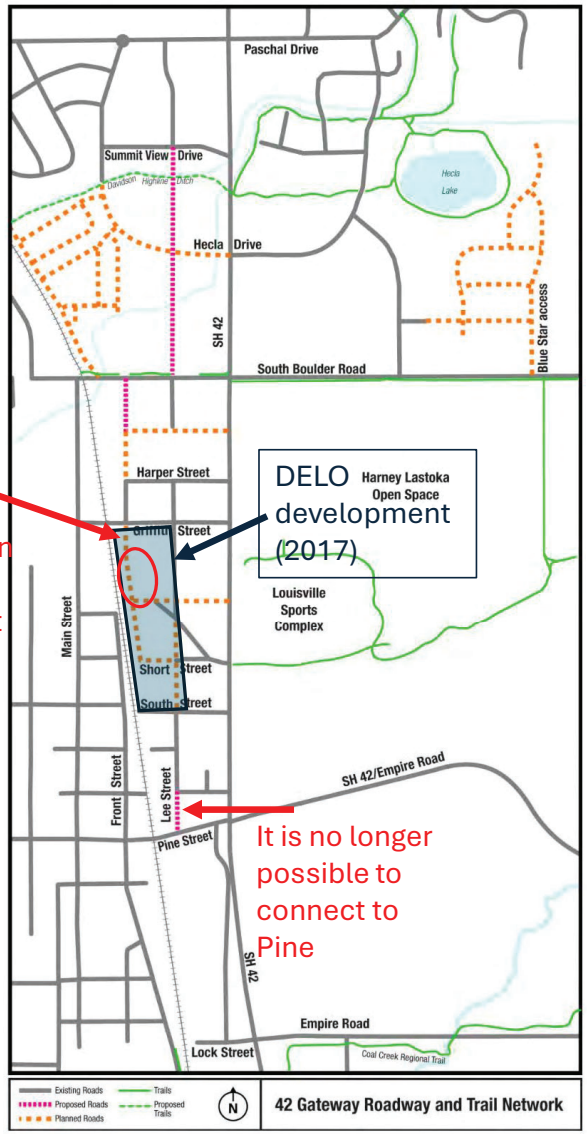
City/traffic study keep citing THIS old (2013) road plan

- City says connection will:

> The Front Street connection provides numerous benefits to the Louisville community. The Front Street connection will allow for transportation redundancy as part of a gridded street network. Gridded networks have more capacity and increase circulation with narrower roadways that are safer for pedestrians and other multimodal traffic. It also aligns with the City's previous planning efforts.

- But this plan DOES NOT EXIST since Delo was built – no grid, no way to connect to Pine/downtown anymore. Front St. is a SINGLE historic block, it does not provide gridded connectivity.
- The Front Street connection CAUSES safety concerns for schools, pedestrians, bikes (increase in traffic >900%), this is not a tradeoff for a 45% reduction in weave maneuvers on SBoRd. The intersection fails w/ or w/o connection (no city benefit/gain).

Figure 9. Future Roadway Network



What about the alley?

- Nearly every other alley in the city of Louisville has been paved and is maintained by the city – neglected in Little Italy
- The alley has been actively used and maintained by residents for over 100 years… over 65 years by current residents (Mary Rizzi).
- Residents access garages and properties through alley, without alley, they lose access.
- Red highlight is NOT formally platted in the two corner houses (Micah/Andy, and Mary Rizzi).
- The house on highway 42 to the NE (blue) regularly floods via the alley (hence concern about development drainage)





Proposed Solutions

- Little Italy wants to collaborate and has suggested solutions.
- To the right is a 12% suggested park (less than the required 15% land dedication that the city is agreeing to WAIVE for this developer).
- Using this area for a park solves ALL issues and blends new/old neighborhoods with shared outdoor space.
  - Helps with drainage (BMP)
  - Stops Front St. connection and allows resident alley access
  - Honors history of Little Italy

From: Planning
To: Matt Post
Subject: FW: Coal Creek Village
Date: Thursday, October 2, 2025 4:02:50 PM

From: LLC LLC <cateoral@gmail.com>
Sent: Wednesday, October 1, 2025 8:27 PM
To: Planning <planning@Louisvilleco.gov>; City Council <Council@louisvilleco.gov>
Subject: Coal Creek Village

[EXTERNAL EMAIL] From outside of City of Louisville DO NOT CLICK links or attachments unless you validate the sender and know the content is safe.

Dear Planning Commission
I'm writing to oppose the PUD for Coal Creek Village.

At the last planning commission meeting a larger traffic study was requested. That new traffic study indicates that connecting Front St to South Boulder Road will increase traffic through Little Italy, the adjacent neighborhood, by 900%. Front St is 1 block long and terminates on Griffith St. at a school corridor and rail crossings. Given Griffith is a main corridor for LMS & Patchwork preschool creating a 900% increase in traffic is simply irresponsible and dangerous for children. Especially dangerous for 12yr olds riding e-bikes!

The developer has said the Front St connection with Little Italy is unnecessary. Without connecting to Little Italy, Coal Creek Village would still have 3 access points. By comparison, Steele Ranch has 2 access points and DELO has 3. The city planners have said they cannot sign off on the development without the connection-creating the 900% traffic increase in Little Italy and onto the school corridor.

The city is going to waive the 15% land dedication. These houses have high density and small pocket park is not enough space for "cabin fever".
Often referred to is the PUD Coal Creek Station which was approved years ago. Land dedication was waived for that development and therefore is waived in this development with 3.5xhigher density. Cherry picking accommodations that are a decade or century old and applying them to a completely different development and calling it precedent

has the tail wagging the dog.

The parcel of land is constricted by SBoulder Rd and Hwy 42 and a simple historic neighborhood. At this time, the infrastructure on the roads can't support the proposed density and forces the unreasonable idea to route traffic through Little Italy.

Attached is an image of the 1 block Front St looking South where it T-bones onto Griffith St. DELO negates any gridded street design by sitting in the middle of Front St.

Attached is Front St looking North to S Boulder Rd. The connection will make a very inviting cut through for traffic wanting to avoid the failing intersection at South Boulder Rd and Hwy42. Again, the result is a 900% increase in traffic in a residential neighborhood. Heavily impacting an adjacent residential neighborhood because the infrastructure can't support the increased traffic isn't the small town, community, pedestrian friendly, safe route to school values that Louisville wants to preserve.

PUD Coal Creek Village isn't the right fit for the constricted challenge of that parcel. Shoe horning the project doesn't make sense.
Linda Cateora


NO
TRAIN HORN



From:	Mark-Linda
To:	Lauren Foster; Micah Abram; lauryl danuff; Matt Post; j33sandoval@gmail.com; Diana Langley
Subject:	Idea for NB and WB traffic from Coal Creek Village
Date:	Friday, September 19, 2025 5:08:50 PM
Attachments:	IMG_9463.png IMG_9464.png

[EXTERNAL EMAIL] From outside of City of Louisville DO NOT CLICK links or attachments unless you validate the sender and know the content is safe.

I found these images that show designated u-turn areas.

In consideration of residents of PUD Coal Creek Village needing to travel N on 96th, Louisville has the Sports Complex parking lot with 3 entrances and one entrance has a traffic light. Perhaps a design similar in concept could utilize part of the parking lot which is often empty (especially on weekday mornings) to allow traffic exiting Coal Creek Village to use the traffic light at Short St for left hand turn to utilize a U-turn lane or area.

For residents needing to travel W on South Boulder Rd, a similar design could utilize southern edge of the parking lot at Burger King/ARC parking lot on South Boulder Rd this would allow more roadway for east bound vehicles to cross into the middle lane on S Boulder Rd to make a U-turn.

This sort of idea would negate the need to route traffic through the Little Italy neighborhood. To a t- intersection at a school corridor, Main St and rail crossing.

Thoughts?
Linda Cateora

google.com



wisconsindot.gov

4



rcut-full-size.JPG (9.1 MB)

Save...

From:	Lauren Foster
To:	Matt Post; Planning; Emily Cline-Gibson; Michael Markel; Jason Markel
Cc:	Lauryl Danuff; Micah Abram; Mark-Linda
Subject:	Partnership Opportunity - Coal Creek Village Development
Date:	Friday, August 8, 2025 7:11:26 AM
Attachments:	image.png

[EXTERNAL EMAIL] From outside of City of Louisville DO NOT CLICK links or attachments unless you validate the sender and know the content is safe.

Dear Markel Homes and City Officials,

We understand Markel is preparing a new development proposal for Coal Creek Village and want to work together to ensure broad community support for your project. We're excited about welcoming new neighbors and supporting Louisville's housing goals, and believe we can find a solution that benefits everyone.

PROPOSED SOLUTION: Public Land Dedication Partnership

We propose that Markel complete the 15% public land dedication requirement using the highlighted green area on the attached map (as shown represents less than 12% of the total property). This approach would expedite approval, ensure community support, and create a win-win outcome for Markel, the City, and Louisville residents.

This single change would address multiple objectives:

For the Community:

- Eliminates through-traffic from South Boulder Road, maintaining safety for Louisville Middle School students who walk through our neighborhood
- Preserves existing Harper alley access for Little Italy residents and historic buildings
- Creates a neighborhood park with a plaque honoring Little Italy's historic significance
- Provides improved flood management through upgraded stormwater infrastructure

For the Development:

- Meets city planning compliance with the 15% public land dedication requirement
- Aligns with Louisville's 2019 Transportation Master Plan, 2015 Preservation Master Plan, and 2022 Future42 Plan
- Addresses Historic Preservation Commission, previously omitted
- Supports the 2024 City of Louisville Housing Plan by incentivizing walkable, bikeable community design with reduced minimum parking requirements

For the City:

- Fulfills multiple planning document objectives simultaneously
- Creates public green space in a high-density area

- Addresses historic preservation and flood management concerns
- Demonstrates successful developer-community collaboration

Background Context

Last year, our community raised concerns centered on three key issues: traffic safety near the school, preservation of historic neighborhood character, and compliance with city planning documents that prioritize walkable communities over cut-through traffic. Over 85 residents signed letters of concern, and more than 20 community members spoke at planning hearings.

Moving Forward Together

We believe this proposal creates an opportunity for Markel to be recognized as a developer who listens to community input and creates developments that enhance existing neighborhoods. We request a brief meeting to discuss this proposal before your submission to ensure we can work together effectively.

We look forward to a collaborative solution that supports both quality development and community well-being.

Thank you for your consideration,

Little Italy Residents:
Amelia Brown
Andy Maass
Anita Menendez
Asher Miller
Chante Ash
Daniel Alejandre
Dustin Sagrillo
Jerrica Ash
Jessica Sandoval
Jim Lastoka
Joyce Goglio
Jody Ash
Lauren Foster
Lauryl Danuff
Linda Cateora
Mark Zeman
Mary Rizzi
Micah Abram
Moses River
Nancy Lastoka
Nick Facemire
Sanam Pejuhesh
Tammy Lastoka
Terri Johnson
Todd Lastoka
Victoria Facemire

Contacts for coordination:

Lauryl Danuff, lrdindustries@gmail.com
Micah Abram, Micah.abram@colorado.edu
Linda Cateora, mlczeman@gmail.com
Lauren Foster, lauren@highbluff.com

Attachment: Proposed public land dedication area map



DETAILS ON RESIDENT CONCERN RESOLUTION:

1. No through traffic from South Boulder Road, solving the traffic safety and conflicts with city plans:
    1. Traffic within the development would remain within the yellow-area of the development and exit to major roads. Following the 2024 Housing Plan, this would incentivize in-town biking and walking with vehicles used for regional transportation only.
2. No loss of Harper alley access for existing residents and historic buildings, including garages in Little Italy accessed by the alley:
    1. Markel and the city planners will work together to officially plat the alley behind Harper Street to bring this historic neighborhood to the level of every other Louisville neighborhood with alley access (most of town).
3. The SW corner would be a park, to be used by the developers future residents and Little

Italy, with a plaque honoring the history of the Little Italy neighborhood, which historically faced discrimination.

1. Designed to meet the city's 15% public land dedication requirement
2. Directly addresses the Historic Preservation Commission (who were omitted from the last round of hearings)
3. Reduces flood risks to Little Italy by providing a larger, upgradient space for BMP and flood management development

From:	Lauren Foster
To:	Diana Langley
Cc:	Lauryl Danuff; mlczeman@gmail.com; Micah.abram@colorado.edu; j33sandoval@gmail.com; Rob Zuccaro; Matt Post; Jeff Hirt; Emily Cline-Gibson; Planning
Subject:	Re: Request for Item To Be Moved To November Meeting
Date:	Friday, September 19, 2025 10:46:40 PM
Attachments:	image001.png

[EXTERNAL EMAIL] From outside of City of Louisville DO NOT CLICK links or attachments unless you validate the sender and know the content is safe.

Hi Diana,

Is moving the meeting impossible even though Matt shared by email that the developer was presenting a new plan at the October meeting that: "This is a new design that Little Italy residents have yet to see, but it will be part the application packet going to the Planning Commission. I am still waiting on a the design concept myself."

Matt shared this by email on September 11th, indicating that in the October meeting the developer will be presenting new material that even staff at planning have not yet seen yet.

We really appreciate your meeting with us.

Thanks,

On Sat, Sep 20, 2025 at 1:50 AM Diana Langley <dlangley@louisvilleco.gov> wrote:

> Good afternoon Lauryl,
>
> Thank you for your patience while I gathered additional information about this project and reviewed the materials provided by Lauren in a separate email. Regarding the timing of the Planning Commission Hearing, the project application was deemed complete by staff in mid-August. Per the City's Municipal Code, once an application is deemed to be approved, the planning commission shall hold a public hearing within 60 days to consider the application. This requires that the project go before the Planning Commission at their October 9th meeting.
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> I cannot defer the Planning Commission meeting, but I am happy to meet with you to discuss your concerns. Please let me know if you are still interested in meeting with me. Thank you.
>
> **Diana Langley** *(she/her)*
>
> City Manager

303.335.4530 (office)

720.762.7488 (cell)

dlangley@LouisvilleCO.gov

LouisvilleCO.gov

City of Louisville
COLORADO • SINCE 1878

From: Diana Langley
Sent: Thursday, September 11, 2025 5:35 PM
To: Lauryl Danuff <laurylita44@yahoo.com>; Emily Cline-Gibson <eclinegibson@louisvilleco.gov>; Planning <planning@Louisvilleco.gov>
Cc: mlczeman@gmail.com; lauren@highbluff.com; Micah.abram@colorado.edu; j33sandoval@gmail.com; Rob Zuccaro <rzuccaro@louisvilleco.gov>; Matt Post <mpost@louisvilleco.gov>; Jeff Hirt <jhirt@louisvilleco.gov>
Subject: RE: Request for Item To Be Moved To November Meeting

Good afternoon Lauryl,

Thank you for your email and for continuing to engage in the planning process for the Coal Creek Village development. I appreciate the time and effort you and your neighbors have taken to outline concerns. Your email will be shared with the City Council and Planning Commission. I am going to talk to staff to obtain more background on this project, review the materials that were provided by Lauren Foster in a separate email, and review the Traffic Impact Study prepared for the project. I will follow up with you early next week. Thank you.

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From: Lauryl Danuff <laurylita44@yahoo.com>
Sent: Wednesday, September 10, 2025 8:43 PM
To: City Council <Council@louisvilleco.gov>; Emily Cline-Gibson <eclinegibson@louisvilleco.gov>; Planning <planning@Louisvilleco.gov>; Diana Langley <dlangley@louisvilleco.gov>
Cc: mlczeman@gmail.com; lauren@highbluff.com; Micah.abram@colorado.edu; j33sandoval@gmail.com
Subject: Request for Item To Be Moved To November Meeting

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Hello Planning Commission Members and City Council Members-

It has come to the attention of I and other Little Italy residents that the developers of Coal Creek Village at 0 South Boulder Rd will be re-submitting their PUD for commission approval at the October 9th meeting.

We would like to respectfully ask that the item be moved to the next meeting in November, in order for the necessary representatives to be given time to plan to be there as well as time to prepare properly.

There are meetings among Matt Post, the Planning Department and the neighborhood that have yet to happen.

We also ask that Public Works personnel and a Historical Preservation representative be present at the meeting. We are also hoping to persuade the City Manager to be present.

To start, Matt Post has committed to internal meetings with members of the city- specifically with his colleagues on the planning board to discuss options around the connection of Front Street to South Boulder Rd. As this is one of the communities major concerns, he pledged to take it to the department and to circle back during a meeting with the neighborhood. His last communication to us indicated this internal meeting had been moved, thus he postponed the neighborhood meeting until a later date. As

we have no concrete date for either of these meetings as of yet, we ask that you extend us and the city employees the time to finish this already in progress piece of the discussion.

Many community members have some concerns regarding this coming meeting and the members of the city and community that should be present. Last year there was a lack of representation by public works for the City of Louisville, as well as no person representing Historical Preservation for the City. We ask that another month be given to be sure the proper representatives can be present this year, as we continue the conversation.

As this development is likely to impact the neighborhood of Little Italy directly to the south of the proposed building site, it is important that someone from public works can speak to the already failing and very "historical" sewer and water systems that would be connected to the new development. Since there is immense concern within the neighborhood about water and drainage issues, including snow removal proposed for the development, a public works representative may be able to speak to how to solve for pushing water towards a neighborhood that already floods regularly. The developer has not shared their engineering plans, so we are anxious to hear what might be acceptable in these areas.

We also have concerns about Louisville's ongoing commitment to preserving the historical nature of the city... Little Italy is one of the oldest neighborhoods in Louisville, is rich with history, and is toured regularly by the Historical Society. The claim by the developers that their plans match and blend with the surrounding neighborhoods should be spoken about by someone who has historical knowledge and an understanding of the bordering neighborhoods.

The developer has already explained to us that the PUD has not changed since last years presentation. Please see attached the neighborhood presentation and letter to the planning commission to remind you of our concerns.

Thanks very much for considering moving the item to the November meeting-

Lauryl Danuff Sagrillo

Little Italy and Front Street Resident

From:	Lauren Foster
To:	Diana Langley
Cc:	Lauryl Danuff; mlczeman@gmail.com; Micah.abram@colorado.edu; j33sandoval@gmail.com; Rob Zuccaro; Matt Post; Jeff Hirt; Emily Cline-Gibson; Planning
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Lauryl Danuff Sagrillo

Little Italy and Front Street Resident

From:	Mark-Linda
To:	Matt Post
Cc:	Lauren Foster; Lauryl Danuff; Micah Abram; j33sandoval@gmail.com
Subject:	Re: Partnership Opportunity - Coal Creek Village Development
Date:	Thursday, August 28, 2025 11:06:41 AM
Attachments:	image001.png image002.png IMG_9464.png IMG_9463.png

[EXTERNAL EMAIL] From outside of City of Louisville DO NOT CLICK links or attachments unless you validate the sender and know the content is safe.

Hello All

In consideration of the child/vehicle accident before school this morning on South Boulder and Main St, I suggest no movement on the development until the school/ pedestrian/ bicycle/ residential concerns are safely addressed. Attempting to alleviate traffic at a F-Rated intersection by creating neighborhood cut-through towards a dead end, railroad crossing, middle school and preschool forfeits safety and are irresponsible and asinine.

This email was in draft when the child was injured.

See attachments. At the meeting, alternate ideas were suggested for increased traffic issues with the proposed development. I have a creative idea to manage the issue of the inability for development traffic to turn the North or West from the development. I've attached 2 images one from (Wisconsin and another from Virginia) to base our collective creativity. I suggest designated U-turn space. I'm proposing one to utilize the ball park parking lot on Hwy 42 between the already present driveways. And a second to utilize Burger King/ARC parking lot between the already present driveways.

These U-turn spaces would be a block from the intersection of S. Boulder Rd and Hwy 42 allowing distance for vehicles to access the L turn lane to enter the U-turn area. The parking lot space at the ball fields is already city property and not utilized on weekday mornings or off-season sports schedules. With good design the U-Turn would encroach upon the parking lot but not go through the parking lot. Similar with the Burger King lot.

Lauren's idea for a green space replacing the Front St connection aligns with Safe Routes to School. As it will keep children in the proposed development off South Boulder and in a low traffic neighborhood.

Linda Cateora

On Thu, Aug 28, 2025 at 09:40 Matt Post <mpost@louisvilleco.gov> wrote:

> Hello All,

I have an internal meeting scheduled next Thursday to discuss the Front St connection on the Coal Creek Village property. We will discuss conditions around the site and the requirement for the Front St connection. I will follow up after that meeting to schedule further discussion with the Little Italy residents.

Lauren – I still have your email on my to-do list. I have two deadlines to meet this week, and I want to take the time to ensure I provide you with a thorough and accurate response where I am able. My goal is to get back to you next week.

Take care,

Matt Post, AICP

Senior Planner

Community Development

303.335.4593

City of Louisville
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LouisvilleCO.gov

From: Lauren Foster <lauren@highbluff.com>
Sent: Friday, August 8, 2025 7:10 AM
To: Matt Post <mpost@louisvilleco.gov>; Planning <planning@Louisvilleco.gov>; Emily Cline-Gibson <eclinegibson@louisvilleco.gov>; Michael Markel <Michael@markelhomes.com>; Jason Markel <Jason@markelhomes.com>
Cc: Lauryl Danuff <lrdindustries@gmail.com>; Micah Abram <Micah.abram@colorado.edu>; Mark-

Linda <mlczeman@gmail.com>
Subject: Partnership Opportunity - Coal Creek Village Development

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Dear Markel Homes and City Officials,

We understand Markel is preparing a new development proposal for Coal Creek Village and want to work together to ensure broad community support for your project. We're excited about welcoming new neighbors and supporting Louisville's housing goals, and believe we can find a solution that benefits everyone.

PROPOSED SOLUTION: Public Land Dedication Partnership

We propose that Markel complete the 15% public land dedication requirement using the highlighted green area on the attached map (as shown represents less than 12% of the total property). This approach would expedite approval, ensure community support, and create a win-win outcome for Markel, the City, and Louisville residents.

This single change would address multiple objectives:

For the Community:

- Eliminates through-traffic from South Boulder Road, maintaining safety for Louisville Middle School students who walk through our neighborhood
- Preserves existing Harper alley access for Little Italy residents and historic buildings
- Creates a neighborhood park with a plaque honoring Little Italy's historic significance
- Provides improved flood management through upgraded stormwater infrastructure

For the Development:

- Meets city planning compliance with the 15% public land dedication requirement
- Aligns with Louisville's 2019 Transportation Master Plan, 2015 Preservation Master Plan, and 2022 Future42 Plan
- Addresses Historic Preservation Commission, previously omitted
- Supports the 2024 City of Louisville Housing Plan by incentivizing walkable, bikeable community design with reduced minimum parking requirements

For the City:

- Fulfills multiple planning document objectives simultaneously
- Creates public green space in a high-density area

Addresses historic preservation and flood management concerns
- Demonstrates successful developer-community collaboration

Background Context

Last year, our community raised concerns centered on three key issues: traffic safety near the school, preservation of historic neighborhood character, and compliance with city planning documents that prioritize walkable communities over cut-through traffic. Over 85 residents signed letters of concern, and more than 20 community members spoke at planning hearings.

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DETAILS ON RESIDENT CONCERN RESOLUTION:

1. No through traffic from South Boulder Road, solving the traffic safety and conflicts with city plans:
    1. Traffic within the development would remain within the yellow-area of the development and exit to major roads. Following the 2024 Housing Plan, this would incentivize in-town biking and walking with vehicles used for regional transportation only.

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    2. Directly addresses the Historic Preservation Commission (who were omitted from the last round of hearings)
    3. Reduces flood risks to Little Italy by providing a larger, upgradient space for BMP and flood management development

From: Planning
To: Matt Post
Subject: FW: PUD Coal Creek Village
Date: Thursday, October 2, 2025 4:02:47 PM

From: Mark-Linda <mlczeman@gmail.com>
Sent: Wednesday, October 1, 2025 8:49 PM
To: Planning <planning@Louisvilleco.gov>; City Council <Council@louisvilleco.gov>
Subject: PUD Coal Creek Village

[EXTERNAL EMAIL] From outside of City of Louisville DO NOT CLICK links or attachments unless you validate the sender and know the content is safe.

Dear Planning Commission
The developer for the Coal Creek Village PUD has said that the Front St Connection is not necessary and has bent over backwards to accommodate the city's desire to create the connection.

This connection will increase traffic through a historical neighborhood by 900%. There was a time, when a train station would have benefited by the connection but the construction of DELO private roads and parking has terminated that idea.

I think even though Coal Creek Village will be all right turn entry and exit, traffic could flow R turn onto Hwy 42-R turn onto Griffith Street-R turn onto Main St without cutting through Little Italy. Entering onto Griffith from Hwy 42 will give full visibility to the upcoming intersection at Main Street. This idea gives the same directional flow without a Front St Connection.

I believe the solution the developer has proposed to connect Front St to an unnamed road would work, IF the connection is emergency access only with a gate. This should satisfy the city's desire for the Front St connection and the current developers ambitions.

Mark Zeman

From: Planning
To: Matt Post
Subject: FW: Coal Creek Village
Date: Thursday, October 2, 2025 4:02:50 PM

From: LLC LLC <cateoral@gmail.com>
Sent: Wednesday, October 1, 2025 8:27 PM
To: Planning <planning@Louisvilleco.gov>; City Council <Council@louisvilleco.gov>
Subject: Coal Creek Village

[EXTERNAL EMAIL] From outside of City of Louisville DO NOT CLICK links or attachments unless you validate the sender and know the content is safe.

Dear Planning Commission
I'm writing to oppose the PUD for Coal Creek Village.

At the last planning commission meeting a larger traffic study was requested. That new traffic study indicates that connecting Front St to South Boulder Road will increase traffic through Little Italy, the adjacent neighborhood, by 900%. Front St is 1 block long and terminates on Griffith St. at a school corridor and rail crossings. Given Griffith is a main corridor for LMS & Patchwork preschool creating a 900% increase in traffic is simply irresponsible and dangerous for children. Especially dangerous for 12yr olds riding e-bikes!

The developer has said the Front St connection with Little Italy is unnecessary. Without connecting to Little Italy, Coal Creek Village would still have 3 access points. By comparison, Steele Ranch has 2 access points and DELO has 3. The city planners have said they cannot sign off on the development without the connection-creating the 900% traffic increase in Little Italy and onto the school corridor.

The city is going to waive the 15% land dedication. These houses have high density and small pocket park is not enough space for "cabin fever".
Often referred to is the PUD Coal Creek Station which was approved years ago. Land dedication was waived for that development and therefore is waived in this development with 3.5xhigher density. Cherry picking accommodations that are a decade or century old and applying them to a completely different development and calling it precedent

has the tail wagging the dog.

The parcel of land is constricted by SBoulder Rd and Hwy 42 and a simple historic neighborhood. At this time, the infrastructure on the roads can't support the proposed density and forces the unreasonable idea to route traffic through Little Italy.

Attached is an image of the 1 block Front St looking South where it T-bones onto Griffith St. DELO negates any gridded street design by sitting in the middle of Front St.

Attached is Front St looking North to S Boulder Rd. The connection will make a very inviting cut through for traffic wanting to avoid the failing intersection at South Boulder Rd and Hwy42. Again, the result is a 900% increase in traffic in a residential neighborhood. Heavily impacting an adjacent residential neighborhood because the infrastructure can't support the increased traffic isn't the small town, community, pedestrian friendly, safe route to school values that Louisville wants to preserve.

PUD Coal Creek Village isn't the right fit for the constricted challenge of that parcel. Shoe horning the project doesn't make sense.
Linda Cateora