The Economics of Land Use

Final Report

Redtail Ridge Market Analysis

Prepared for:
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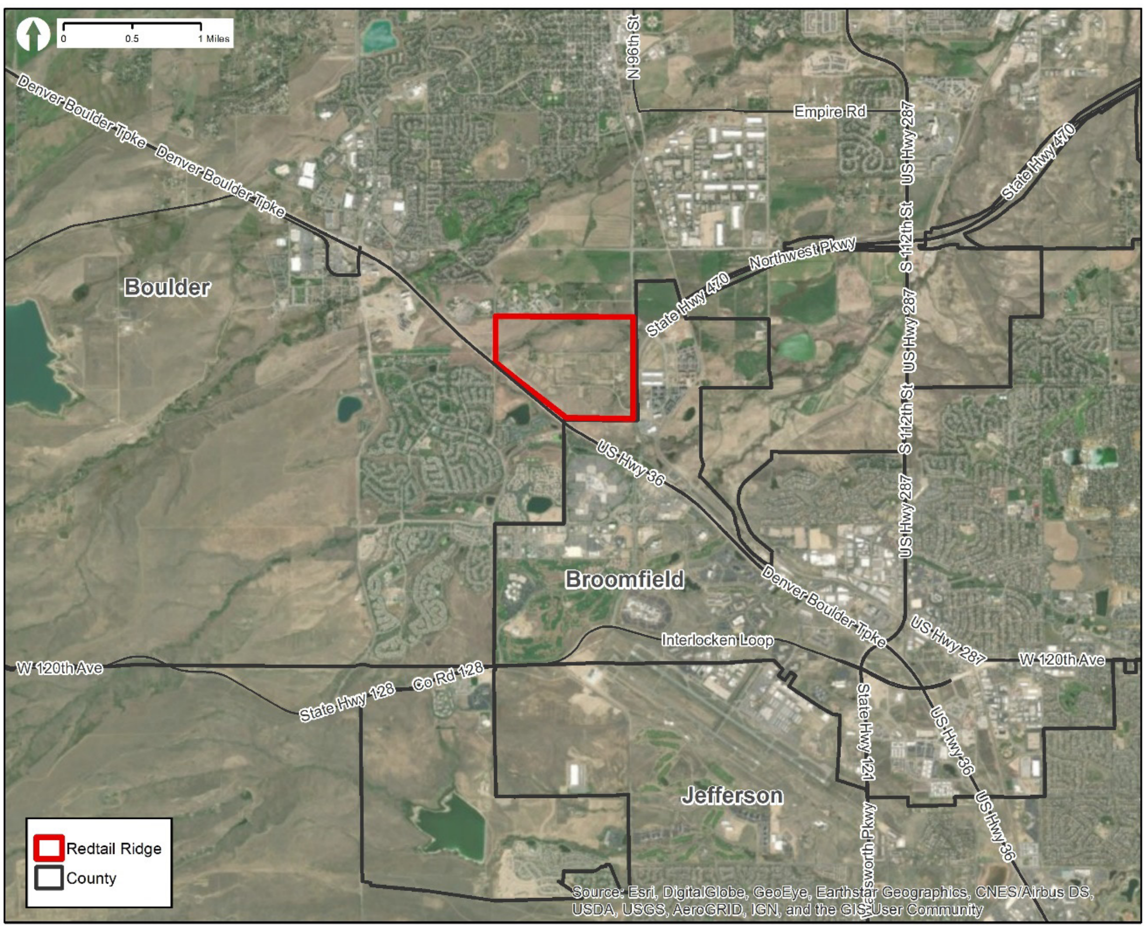
1. Introduction and Summary of Findings

Background

Brue Baukol Capital Partners (Developer) is planning for the development of Redtail Ridge, a project to be built on 390-acres owned by ConocoPhillips located at the intersection of US-36 and Northwest Parkway in Louisville, Colorado. The site shown in **Figure 1** represents the Redtail Ridge project area and does not include the full extent of the site owned by ConocoPhillips. ConocoPhillips had previously proposed to build a corporate research campus on the property. Prior to ConocoPhillips acquisition, the site contained the corporate headquarters and manufacturing facilities of StorageTek Corporation, which were subsequently demolished.

Figure 1. Redtail Ridge



The Developer is planning a corporate business park with office and industrial development, and a small increment of complementary retail space. The 390-acre site is located in the City of Louisville for which the Developer is seeking approval of a General Development Plan (GDP). (An additional 40 acres are located in the City and County of Broomfield and 47 acres are located in unincorporated Boulder County.) The proposed GDP contains approximately 290 acres of developable land and is being planned for 3.1 million square feet of proposed commercial development.

Scope of Work

Economic & Planning Systems (EPS) was retained by Brue Baukol to complete a market analysis and development forecasts for commercial uses including office, industrial, Flex/R&D, and retail uses.

EPS has completed a number of projects in the Louisville area over the last five years and is familiar and knowledgeable with current economic and real estate market conditions. Most recently, EPS was retained by the City of Louisville for a market and feasibility analysis for Parcel O in the Centennial Valley GDP located in the McCaslin Avenue commercial corridor. In that study, EPS analyzed retail market trends and forecasts for the trade area including and surrounding the City of Louisville and evaluated reuse and redevelopment options for the vacant and underutilized large format retail space in Parcel O and elsewhere in the market area. More limited market research was also completed on the hotel, office, and multifamily development sectors as input to redevelopment options. EPS has also completed other retail market and development studies for the Town of Superior and City and County of Broomfield within the trade area of Louisville and the Redtail Ridge property.

Some of the data from these previous studies are of relevance to this market study and are included as previously presented or updated, as cited. However, it is important to note that the location, site conditions, and proposed development plan for the Redtail Ridge property are distinctly different from the major retail nodes in the McCaslin Corridor and elsewhere in the Louisville trade area as further discussed in this study.

The report is presented in six chapters following this Introduction and Summary of Findings as follows:

- **Economic and Demographic Framework –** This chapter provides updated economic and demographic trends and forecasts affecting development opportunities in Louisville and the surrounding market area including population and households, demographic characteristics, and employment by land use category.

- **Office Development Potential –** This chapter tracks office development trends and conditions over the 2000 to 2020 time period for the Denver-Boulder metro areas and for the major submarkets in the region. Forecasts for construction are then developed for the 2020 to 2035 time period based on the demand for space derived from employment forecasts, historic trends, and existing land and development capacity. The share of future space demand that can be captured by the project is estimated given the competitive assets of the property and existing and future competition.
- **Industrial and Flex/R&D Development Potential –** This chapter tracks industrial, flex, and research and development (R&D) development trends and conditions over the 2000 to 2020 time period for the Denver-Boulder metro areas and for the major submarkets in the region. Forecasts for industrial construction are then developed for the 2020 to 2040 time period based on demand for space derived from employment forecasts, historical trends, and existing land and development capacity.
- **Retail Development Potential –** This chapter analyzes the local retail market area along the US-36 Corridor identifying current and historic trends in inventory, rental rates, and vacancy rates.
- **Development Plan and Strategy –** This chapter summarizes the market findings by land use category and provides input to the proposed development program. Competitive business parks are summarized by land use to support the mix of uses in Redtail Ridge and the attraction of Flex/R&D space.
- **COVID-19 Impacts –** This chapter addresses the temporal (short-term) and potential structural (long-term) impacts of the COVID-19 pandemic on real estate development and absorption, employment, and general economic impacts nationally and in Colorado and Boulder County.

Proposed Development Program

The GDP application proposes 3.1 million square feet of total commercial development. The preliminary development program includes 1.72 million square feet of office development (55 percent), 1.38 million square feet of industrial development (44 percent), and 15,000 square feet of retail development (0.5 percent), shown in **Table 1**. The development is estimated by the Developer to be built out in three phases from 2023 to 2035. The bulk of the development is proposed to be built in Phase Two with 1.4 million square feet of commercial development.

Table 1. Preliminary Development Program, 2023-2035

Program	Phase 1 2023-2025	Phase 2 2026-2030	Phase 3 2031-2035	2023-2035 Total	2023-2035 Ann. #	2023-2035 % Total
Total Space (sq. ft.)						
Office	286,666	716,665	716,665	1,720,000	143,333	55.2%
Industrial	414,000	690,000	276,000	1,380,000	115,000	44.3%
Retail	0	15,000	0	15,000	1,250	0.5%
Total	**700,666**	**1,421,665**	**992,665**	**3,115,000**	**259,583**	**100.0%**
Space per Year (sq. ft.)						
Office	95,555	143,333	143,333			
Industrial	138,000	138,000	55,200			
Retail	0	3,000	0			
Total	**233,555**	**284,333**	**198,533**			

Source: Brue Baukol; Economic & Planning Systems

Summary of Findings

The major findings from the Redtail Ridge Market Analysis are summarized below.

1. ***The Redtail Ridge development has the potential to become a major office and business location in the US-36 Corridor.***

   Compared to existing competition, the Redtail Ridge development will have superior access and visibility and will be positioned to attract emerging knowledge-based companies and employees seeking space in Boulder County. The Project is forecast to capture 608,000 square feet of office space by 2030 and over the 2030 to 2040 time period, the site is forecast to capture an additional 1.1 million square feet resulting in total office demand for 1.7 million square feet over the next 20 years. This forecast is with no anchor office tenant. If the Project is successful attracting one or more anchor tenants during its early stages of development, these capture rates are likely to increase and the Project may fill space quicker than otherwise forecasted. In addition, the Project is forecast to capture 937,000 square feet of industrial space by 2030 and an additional 716,000 square feet from 2030 to 2040. Redtail Ridge is estimated to have a total industrial demand of 1.6 million square feet by 2040.

2. ***The Redtail Ridge development has the potential to attract Boulder-based companies that cannot find adequate space to expand in that city.***

   The subject property contains nearly 400 acres at the intersection of US-36 and Northwest Parkway across the highway from FlatIron Mall and Interlocken Business Park. In addition to Interlocken, the US-36 Corridor market area has several business parks including Centennial Valley Business Park, Westmoor Technology Park, Colorado Technology Center, and Lafayette Tech Center that have captured a significant amount of office and R&D users that have expanded out of Boulder due to the lack of available space. The Redtail Ridge property is well positioned to capture this demand from Boulder-based R&D and bioscience companies at the University of Colorado and federal government laboratories.

3. ***The Redtail Ridge development will attract a mix of office and industrial uses including Flex/R&D.***

   The Louisville/Lafayette area has been capturing the Boulder R&D spin-off and this trend is expected to continue. The US-36 Corridor has historically captured approximately 22 percent of the total Flex/R&D development from 2000 to 2020 within the Denver metro area. The corridor gained over 2 million square feet since 2000, which is an average of 101,000 square feet annually. Flex/R&D buildings have been integrated into existing competitive business parks in the corridor and creates a similar opportunity for Flex/R&D to locate at Redtail Ridge.

4. ***The development of a major office and industrial based employment center will create demand for complementary retail and restaurant uses.***

   The development of a major business park with up to 3.1 million square feet of office and industrial based employment will support an increment of restaurant and small-scale retail space. It is also beneficial to employees to have restaurants, coffee shops, and convenience retail on-site to reduce unnecessary auto trips.

5. ***The COVID-19 induced recession has had a moderate impact on employment and on real estate development in the Denver metro area and Boulder County markets that is expected to be mitigated within one to three years.***

   The office market has experienced a modest increase in vacancy over the last year (from 6.7 percent to 9.7 percent) that may slow construction until the excess space is absorbed. However, growth rates prior to the recession indicate a short recovery period. Additionally, the ongoing strength of the industrial and R&D sectors are not expected to be impacted by these conditions. Additionally, this short-term softness in traditional office demand is not expected to impact the market for industrial and flex space.

2. Economic and Demographic Framework

This section provides an overview of the economic and demographic conditions within the City of Louisville and surrounding area. Population, households, and employment trends and forecasts are documented to set the context for, and to provide inputs to, the real estate market demand analysis that follows this chapter.

Population and Household Trends

In 2020, the City of Louisville's population totaled 20,867 residents, shown in **Table 2**. From 2010 to 2020, Louisville has gained 2,473 residents or 247 residents per year, which is an annual growth rate of 1.3 percent. During this same time period, households in Louisville increased by 1,039 households or 104 households per year, which is an annual growth rate of 1.3 percent. These recent trends follow closely with the 7-County Denver metro area, which had population growth at an annual rate of 1.6 percent and household growth at an annual rate of 1.5 percent.

Table 2. Population and Household Trends, 2000-2020

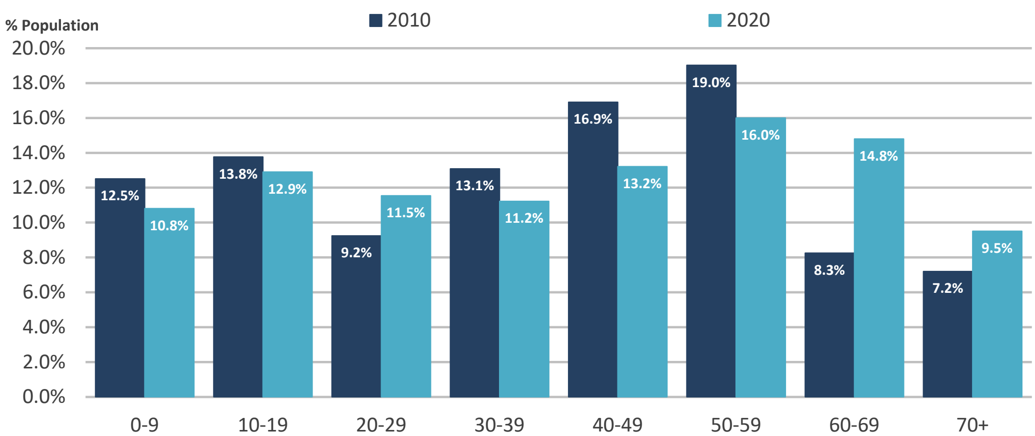
				2000-2010			2010-2020		
Description	**2000**	**2010**	**2020**	**Total**	**Ann. #**	**Ann. %**	**Total**	**Ann. #**	**Ann. %**
Population									
Louisville	19,222	18,394	20,867	-828	-83	-0.4%	2,473	247	1.3%
Lafayette	23,256	24,427	30,567	1,171	117	0.5%	6,140	614	2.3%
Superior	8,984	12,431	13,509	3,447	345	3.3%	1,078	108	0.8%
Broomfield	39,525	56,066	73,629	16,541	1,654	3.6%	17,563	1,756	2.8%
Boulder County	269,713	294,567	333,476	24,854	2,485	0.9%	38,909	3,891	1.2%
Denver Metro Area[1]	2,400,606	2,784,510	3,261,487	383,904	38,390	1.5%	476,977	47,698	1.6%
Households									
Louisville	7,382	7,543	8,582	161	16	0.2%	1,039	104	1.3%
Lafayette	8,808	9,625	11,778	817	82	0.9%	2,153	215	2.0%
Superior	3,373	4,474	4,812	1,101	110	2.9%	338	34	0.7%
Broomfield	14,290	21,471	28,334	7,181	718	4.2%	6,863	686	2.8%
Boulder County	106,495	119,300	132,787	12,805	1,281	1.1%	13,487	1,349	1.1%
Denver Metro Area[1]	940,089	1,102,068	1,282,714	161,979	16,198	1.6%	180,646	18,065	1.5%

Source: U.S. Census; ESRI Business Analyst; Economic & Planning Systems
[1]Counties: Adams, Arapahoe, Boulder, Broomfield, Denver, Douglas, and Jefferson

The City and County of Broomfield reached a population of 73,629 residents in 2020. From 2000 to 2010, Broomfield increased by a total of 16,541 residents at an annual growth rate of 3.6 percent. The growth has slowed slightly the past 10 years, but Broomfield is still growing at a faster pace than Louisville and Boulder County. From 2010 to 2020, Broomfield gained 17,536 residents at an annual growth rate of 2.8 percent and 6,836 households at an annual growth rate of 2.8 percent.

In 2020, the majority of City of Louisville residents were between the ages of 30 and 69, shown in **Figure 2**. The younger population, 19 years old and below, have decreased since 2010 by a total of 2.6 percentage points. While the older age cohorts have increased since 2010, residents ages 60 to 69 have increased by 6.5 percentage points and residents 70 years old and older have increased by 2.3 percentage points.

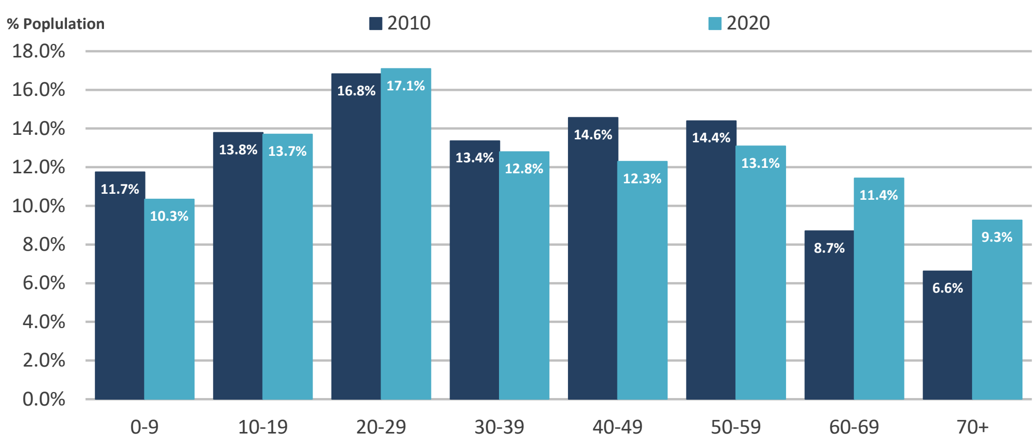
Figure 2. Louisville Age Distribution, 2010-2020



Source: ESRI; Economic & Planning Systems

Similar to Louisville, Boulder County has an increasing aging population including the 60 to 69 age cohort increasing by 2.7 percentage points and residents aged 70 and older increasing by 2.6 percentage points, as shown in **Figure 3**.

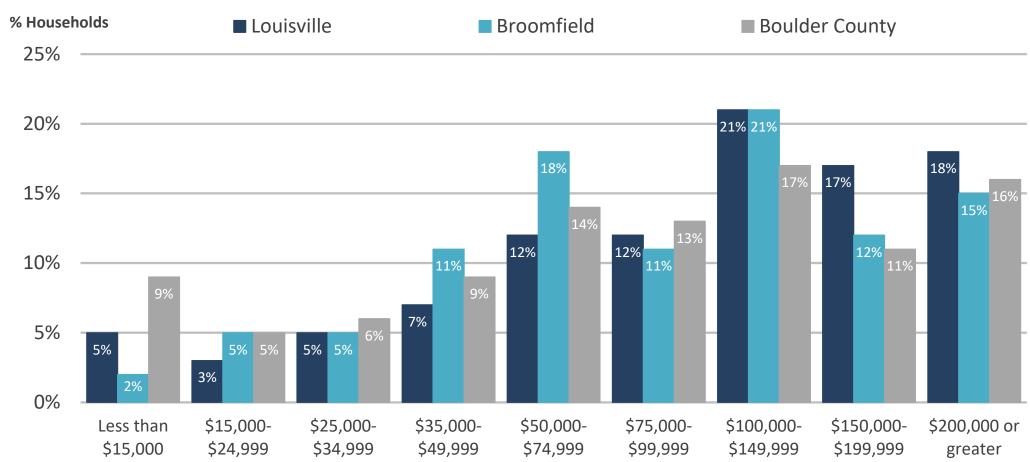
Figure 3. Boulder County Age Distribution, 2010-2020



Source: ESRI; Economic & Planning Systems

Louisville has above average incomes for the region, in 2020, the median household income in Louisville was $109,800. About 56 percent of Louisville households have incomes over $100,000, as shown in **Figure 4**. By comparison, the median household income in Broomfield in 2020 was $95,900 and approximately 48 percent of households have incomes of $100,000 or more. Boulder County has lower household incomes compared to Louisville and Broomfield with a median household income of $85,100 in 2020. Approximately 44 percent of households in Boulder County have incomes of $100,000 or more. Additionally, 29 percent of households in Boulder County have an annual income below $50,000. In Louisville and Broomfield there are 20 percent and 23 percent of households, respectively, making below $50,000 annually.

Figure 4. Household Income Distribution, 2020



Source: ESRI; Economic & Planning Systems

Employment Trends

Denver Metro Area

The Denver metro area is defined in this report as the 7-County Metro Area, which includes Adams County, Arapahoe County, Boulder County, City and County of Broomfield, City and County of Denver, Douglas County, and Jefferson County. In 2019, the Denver metro area had a total of 1.69 million wage and salary jobs, as shown in **Table 3**. The largest industry sector in the Denver metro area is Health Care with 208,866 jobs or 12.3 percent of total employment. This is followed by Professional and Technical Services with 176,637 (10.4 percent), Hotel and Restaurant Services with 159,162 jobs (9.4 percent), and Retail Trade with 155,365 jobs (9.2 percent). From 2000 to 2010 there was a decline in employment of nearly 32,000 jobs largely due to the impacts of the Great Recession in 2008 to 2010. Over the recent decade, job growth increased by a total of 379,000 jobs or an average of 42,100 jobs per year at a 2.9 percent annual growth rate.

Table 3. Denver Metro Employment by Industry, 2000-2019

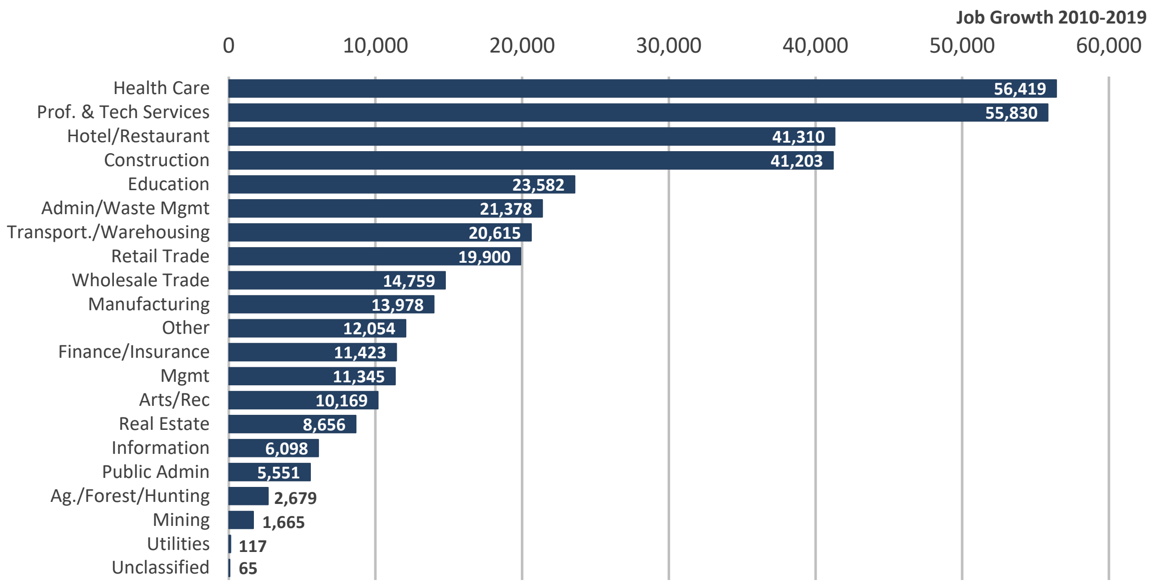
				2000-2010			2010-2019		
Industry	2000	2010	2019	Total	Ann. #	Ann. %	Total	Ann. #	Ann. %
Ag./Forest/Hunting	2,663	1,915	4,594*	-748	-75	-3.2%	2,679	298	10.2%
Mining	5,053	8,916	10,581	3,863	386	5.8%	1,665	185	1.9%
Utilities	5,828	6,048	6,165	220	22	0.4%	117	13	0.2%
Construction	98,182	65,383	106,586	-32,799	-3,280	-4.0%	41,203	4,578	5.6%
Manufacturing	113,699	76,542	90,520	-37,157	-3,716	-3.9%	13,978	1,553	1.9%
Wholesale Trade	74,010	66,103	80,862	-7,907	-791	-1.1%	14,759	1,640	2.3%
Retail Trade	139,712	135,465	155,365	-4,247	-425	-0.3%	19,900	2,211	1.5%
Transport./Warehousing	62,551	50,746	71,361	-11,805	-1,181	-2.1%	20,615	2,291	3.9%
Information	84,673	54,138	60,236	-30,535	-3,054	-4.4%	6,098	678	1.2%
Finance/Insurance	73,624	70,906	82,329	-2,718	-272	-0.4%	11,423	1,269	1.7%
Real Estate	28,717	25,560	34,216	-3,157	-316	-1.2%	8,656	962	3.3%
Prof. & Tech Services	111,265	120,807	176,637	9,542	954	0.8%	55,830	6,203	4.3%
Mgmt	14,650	24,484	35,829	9,834	983	5.3%	11,345	1,261	4.3%
Admin/Waste Mgmt	98,208	85,312	106,690	-12,896	-1,290	-1.4%	21,378	2,375	2.5%
Education	82,284*	110,274	133,856	27,990	2,799	3.0%	23,582	2,620	2.2%
Health Care	109,758	152,447	208,866	42,689	4,269	3.3%	56,419	6,269	3.6%
Arts/Rec	18,944	23,249	33,418	4,305	431	2.1%	10,169	1,130	4.1%
Hotel/Restaurant	107,466	117,852	159,162	10,386	1,039	0.9%	41,310	4,590	3.4%
Other	40,096	40,230	52,284	134	13	0.0%	12,054	1,339	3.0%
Public Admin	68,635	75,790*	81,341*	7,155	716	1.0%	5,551	617	0.8%
Unclassified	6*	85*	150	79	8	30.4%	65	7	6.5%
Total	**1,345,092**	**1,313,339**	**1,692,451**	**-31,753**	**-3,175**	**-0.2%**	**379,112**	**42,124**	**2.9%**

*Nondisclosed Information

Source: Bureau of Labor Statistics QCEW; Economic & Planning Systems

From 2010 to 2019, the Health Care industry grew the fastest adding 56,419 jobs, which accounts for 14.9 percent of the total employment growth in the Denver metro area, as shown in **Figure 5**. Professional and Technical Services closely followed with the addition of 55,830 jobs or 14.7 percent. Other growing industries include Hotel and Restaurant Services with 41,310 jobs (10.9 percent) and Construction with 41,203 jobs (10.9 percent).

Figure 5. Denver Metro Employment Growth by Industry, 2010-2019



Source: Bureau of Labor Statistics QCEW; Economic & Planning Systems

Boulder County

As of 2019, Boulder County had 188,461 wage and salary jobs, which is 11 percent of the Denver region's total, as shown in **Table 4**. The largest industry is Professional and Technical Services with 30,085 jobs, which accounts for 16 percent of Boulder County's total employment. This is followed by Health Care with 23,357 jobs or 12.4 percent and Education with 23,172 jobs or 12.3 percent. From 2000 to 2010 there was a decline in employment of about 27,600 jobs. Employment increased from 2010 to 2019 by a total of 36,345 jobs or an average of 4,038 jobs per year at a growth rate of 2.4 percent annually.

Table 4. Boulder County Employment by Industry, 2000-2019

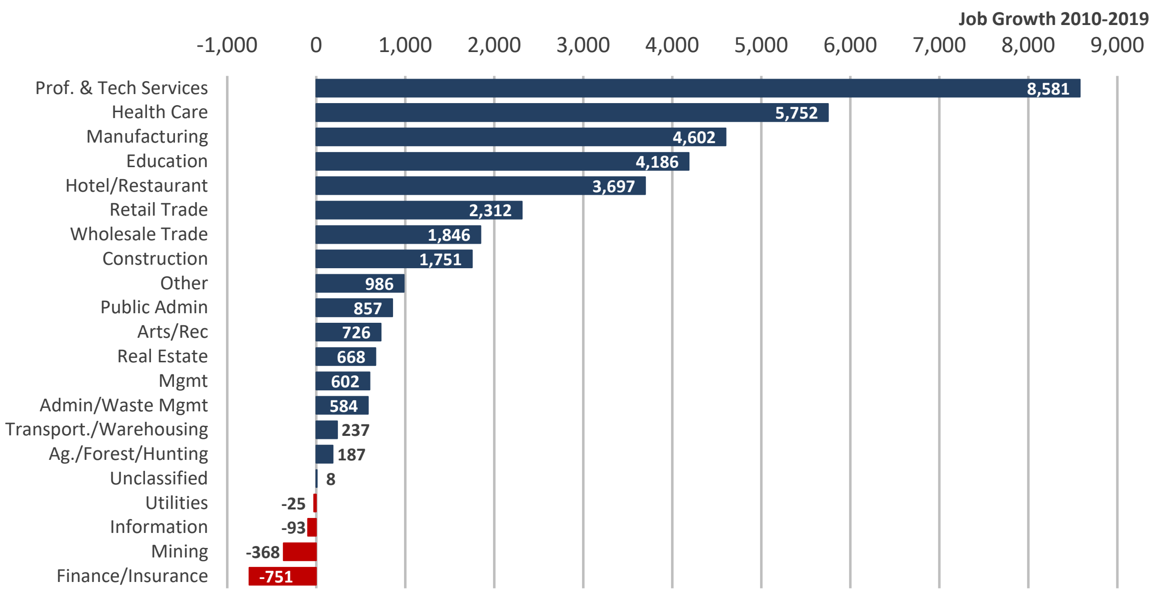
				2000-2010			2010-2019		
Industry	2000	2010	2019	Total	Ann. #	Ann. %	Total	Ann. #	Ann. %
Ag./Forest/Hunting	442	382	569	-60	-6	-1.4%	187	21	4.5%
Mining	228	545	177	317	32	9.1%	-368	-41	-11.7%
Utilities	312	332	307	20	2	0.6%	-25	-3	-0.9%
Construction	8,613	4,086	5,837	-4,527	-453	-7.2%	1,751	195	4.0%
Manufacturing	29,186	15,202	19,804	-13,984	-1,398	-6.3%	4,602	511	3.0%
Wholesale Trade	5,757	4,884	6,730	-873	-87	-1.6%	1,846	205	3.6%
Retail Trade	19,337	15,181	17,493	-4,156	-416	-2.4%	2,312	257	1.6%
Transport./Warehousing	3,532	1,940	2,177	-1,592	-159	-5.8%	237	26	1.3%
Information	15,243	8,696	8,603	-6,547	-655	-5.5%	-93	-10	-0.1%
Finance/Insurance	4,507	4,869	4,118	362	36	0.8%	-751	-83	-1.8%
Real Estate	3,097	2,114	2,782	-983	-98	-3.7%	668	74	3.1%
Prof. & Tech Services	22,119	21,504	30,085	-615	-62	-0.3%	8,581	953	3.8%
Mgmt	1,226	923	1,525	-303	-30	-2.8%	602	67	5.7%
Admin/Waste Mgmt	8,666	5,832	6,416	-2,834	-283	-3.9%	584	65	1.1%
Education	15,591	18,986	23,172	3,395	340	2.0%	4,186	465	2.2%
Health Care	12,735	17,605	23,357	4,870	487	3.3%	5,752	639	3.2%
Arts/Rec	2,200	2,749	3,475	549	55	2.3%	726	81	2.6%
Hotel/Restaurant	15,587	14,259	17,956	-1,328	-133	-0.9%	3,697	411	2.6%
Other	4,704	4,429	5,415	-275	-28	-0.6%	986	110	2.3%
Public Admin	6,636	7,590	8,447	954	95	1.4%	857	95	1.2%
Unclassified	0*	9	17	9	1	---	8	1	7.3%
Total	**179,719**	**152,116**	**188,461**	**-27,603**	**-2,760**	**-1.7%**	**36,345**	**4,038**	**2.4%**

*Nondisclosed Information

Source: Bureau of Labor Statistics QCEW; Economic & Planning Systems

From 2010 to 2019, the Professional and Technical Services sector grew the most with the addition of 8,581 jobs, which accounts for 23.6 percent of Boulder County's total employment growth, as shown in **Figure 6**. Other growing industries include Health Care with 5,752 jobs or 15.8 percent, Manufacturing with 4,602 jobs or 12.7 percent, and Education with 4,186 jobs or 11.5 percent. The growth in Manufacturing over the last nine years is in contrast to the loss of a much greater number of jobs during the 2000 to 2010 time period.

Figure 6. Boulder County Employment Growth by Industry, 2010-2019

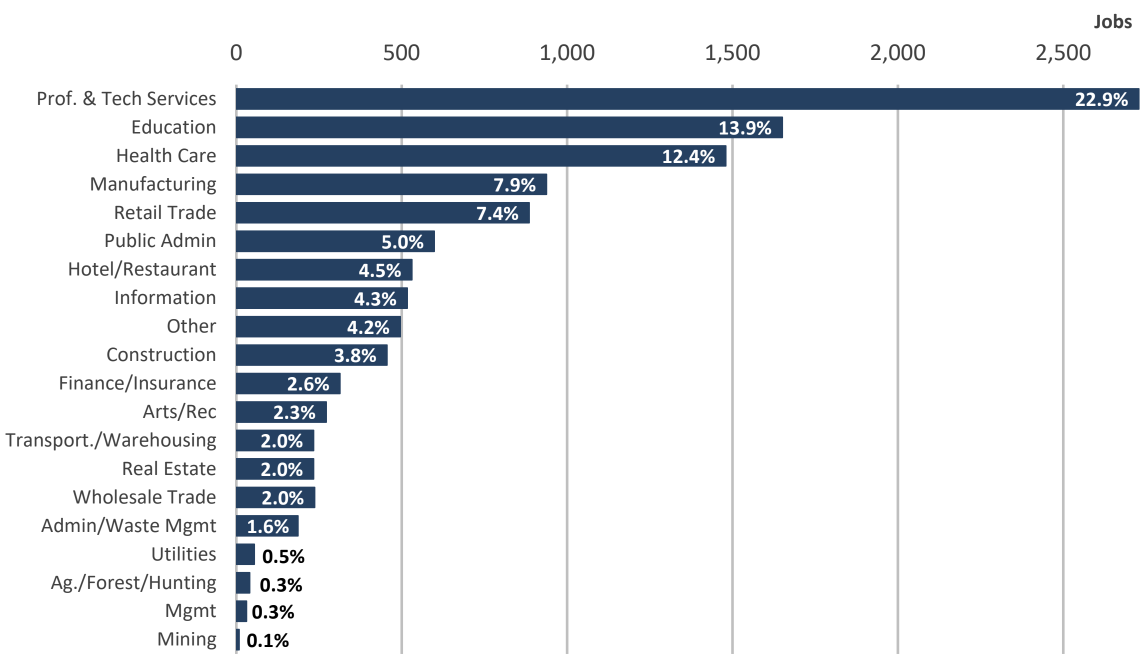


Source: Bureau of Labor Statistics QCEW; Economic & Planning Systems

Louisville

The BLS employment data previously presented is published at the county level and not available at the city level. ESRI tracks employment at the city level from U.S. Census data. Using this slightly different dataset, the largest industry in Louisville is Professional and Technological Services with 2,729 jobs and 23 percent of the total employment, as shown in **Figure 7**. This is followed by Education with 1,651 jobs (14 percent), Health Care with 1,480 jobs (12 percent), and Manufacturing with 938 jobs (8 percent).

Figure 7. Louisville Employment by Industry, 2020



Source: ESRI Business Analyst; Economic & Planning Systems

Largest Employers

The largest (non-retail) private sector employers are listed for Boulder and Broomfield counties in **Table 5**. The largest employer in Boulder County is Medtronic with 2,470 employees, followed by Boulder Community Health with 2,380 employees, and Ball Aerospace & Technologies Corporation with 1,590 employees. Centura Health has 1,280 employees at Longmont United Hospital and Avista Adventist Hospital, which is located adjacent to the site. Avista Adventist Hospital is the largest employer in Louisville. The largest employer in Broomfield is CenturyLink with 1,850 employees, followed by Oracle with 1,620 employees and SCL Health Revenue Service Center with 1,530 employees.

Table 5. Boulder County and Broomfield Largest Employers, 2020

Company	Product/Service	Employment
Boulder County		
Medtronic PLC	Medical Devices & Products	2,470
Boulder Community Health	Healthcare	2,380
Ball Aerospace & Technologies Corp.	Aerospace, Tech, & Services	1,590
IBM Corporation	Computer Systems & Services	1,460
Good Samaritan Medical Center	Healthcare	1,450
Seagate Technology	Computer Hard Drives	1,430
Google	Internet Services & Products	1,350
Centura Health[1]	Healthcare	1,280
Micro Motion	Flow Meters	790
West Safety Services (Intrado)	911 Database Services	760
Total		**14,960**
Broomfield		
CenturyLink	Communication & Internet Systems	1,850
Oracle	Software & Network Computer Systems	1,620
SCL Health Revenue Service Center	Healthcare	1,530
Hunter Douglas Window Fashions	Window Coverings Manufacturing	980
Ball Corporation	Aerospace, Containers	960
Vail Resorts	Leisure & Hospitality	740
Danone North America	Food & Beverage	670
TSYS	Transaction Processing Services	580
VMware	Cloud Computing	500
Broadcom Inc.	Semiconductor Components	500
Total		**9,930**

[1] Longmont United Hospital & Avista Adventist Hospital

Source: Metro Denver EDC; Economic & Planning Systems

Boulder is one the of fastest growing tech hubs in the country with an abundance of startups and investors. Additionally, the Boulder and Denver markets are attracting companies through expansions and relocations from Silicon Valley. The City of Boulder is constrained on available commercial space and these companies are moving outward from the city within Boulder County to Colorado Tech Center and Lafayette Tech Center. Land and commercial space in each of these tech centers is nearly built out. Demand for Flex/R&D, office, and industrial space along the US-36 Corridor between Boulder and Denver is anticipated to continue.

Additionally, Boulder County is experiencing a boom in the bioscience industry including medical devices with major employers, including Medtronic, AstraZeneca, Covidien, and Somalogic located in the county. Denver metro area has one of the fastest growing bioscience markets in the county and is an incubator for startup companies by offering access to bioscience infrastructure. In 2019, Denver metro area had 11,320 jobs in medical devices and diagnostics, of which 35 percent were located in Boulder County. Denver metro also had 5,660 jobs in pharmaceuticals and biotechnology, of which 31 percent were located in Boulder County. Boulder County had the largest share of these jobs than any other county in the region. Bioscience companies are attracting capital to Boulder County with innovation and technology. In 2019, Clovis Oncology raised $175 million in clinical trial financing, Inscripta received $125 million in Series D financing, and Pfizer acquired Array BioPharma Inc. for $11.4 billion.

Commuting Patterns

The Longitudinal Employer-Household Dynamics (LEHD) program provides Census data on resident-based commuting patterns. The City of Louisville has a small portion of residents that live and work in the city—just under 11 percent. These 1,144 residents make up about 8 percent of Louisville's employment base, as shown in **Table 6**. Louisville has 13,570 people who commute into Louisville for work and approximately 9,628 residents commute out of Louisville for work.

Table 6. Commuting Patterns of Residents and Workers in Louisville, 2018

Commuting	Total	Percent
Louisville Residents		
Work in Louisville	1,144	10.6%
Out-Commuters	9,628	89.4%
Total Residents	**10,772**	**100.0%**
Louisville Workers		
Live in Louisville	1,144	7.8%
In-Commuters	13,570	92.2%
Total Workers	**14,714**	**100.0%**

Source: LEHD; Economic & Planning Systems

The out-commuting locations of where Louisville residents work is shown in **Table 7** below. About 50 percent of Louisville residents work within Boulder County, which includes about 28 percent in the City of Boulder, and 3 percent work in Lafayette. Approximately 14 percent work in Denver and 5 percent work in Broomfield.

Table 7. Where Louisville Residents Work (Out-Commuters), 2018

Work Destination	Jobs	Percent
Boulder County	5,397	50.1%
Denver County	1,482	13.8%
Jefferson County	827	7.7%
Adams County	753	7.0%
Arapahoe County	630	5.8%
Broomfield County	503	4.7%
Douglas County	243	2.3%
Larimer County	224	2.1%
Weld County	181	1.7%
El Paso County	150	1.4%
All Other Locations	382	3.5%
Total	**10,772**	**100.0%**

Source: LEHD; Economic & Planning Systems

The in-commuting locations of the Louisville workforce are shown below in **Table 8**. About 34 percent of Louisville workers live in Boulder County; this includes about 8 percent in Louisville, 6 percent in the City of Boulder, and 6 percent in Lafayette. Approximately 15 percent live in Adams County, 12 percent live in Jefferson County, and 7 percent in Broomfield County.

Table 8. Where Louisville Workers Live (In-Commuters), 2018

Home Destination	Jobs	Percent
Boulder County	4,967	33.8%
Adams County	2,226	15.1%
Jefferson County	1,789	12.2%
Denver County	1,165	7.9%
Broomfield County	1,054	7.2%
Weld County	1,053	7.2%
Arapahoe County	724	4.9%
Larimer County	482	3.3%
Douglas County	430	2.9%
El Paso County	333	2.3%
All Other Locations	491	3.3%
Total	**14,714**	**100.0%**

Source: LEHD; Economic & Planning Systems

Employment Forecasts

Employment forecasts for the Denver metro area are presented in **Table 9**. The forecasts are based on the Denver Regional Council of Governments (DRCOG) 2015 to 2040 regional growth model totals. DRCOG prepares employment forecasts in six aggregated industry sectors; Production, Retail, Services, Restaurants, Entertainment, and Education. This forecast was converted to forecasts for the 21 NAICS industries using DRCOG's aggregation scheme that lists the individual industries in the six aggregated sectors.

Total employment is estimated to grow at an annual average of 24,300 jobs from 2015 to 2030 to reach 2.05 million jobs, which is a 1.3 percent annual growth rate. Applying the same growth rates from 2030 to 2040 would add a total of 302,720 jobs or an average of 30,300 jobs per year as shown.

Table 9. Employment Forecast by Industry, 2015-2040

					2015-2030			2030-2040		
NAICS Industry	2015	2020	2030	2040	Change	Ann. #	Ann. Rate	Change	Ann. #	Ann. Rate
Ag./Forest/Hunting	3,305	3,539	4,057	4,745	752	50	1.4%	688	69	1.6%
Mining	13,369	14,314	16,410	19,193	3,040	203	1.4%	2,783	278	1.6%
Utilities	7,030	7,526	8,628	10,092	1,599	107	1.4%	1,463	146	1.6%
Construction	101,675	108,862	124,796	145,964	23,121	1,541	1.4%	21,167	2,117	1.6%
Manufacturing	99,261	106,277	121,833	142,498	22,572	1,505	1.4%	20,665	2,066	1.6%
Wholesale Trade	87,230	93,395	107,066	125,226	19,836	1,322	1.4%	18,160	1,816	1.6%
Retail Trade	138,603	149,602	174,289	201,791	35,686	2,379	1.5%	27,502	2,750	1.5%
Transport./Warehousing	62,187	66,097	74,669	85,544	12,482	832	1.2%	10,875	1,088	1.4%
Information	58,871	62,572	70,687	80,983	11,816	788	1.2%	10,295	1,030	1.4%
Finance/Insurance	83,989	89,269	100,847	115,535	16,858	1,124	1.2%	14,688	1,469	1.4%
Real Estate	31,717	33,711	38,083	43,630	6,366	424	1.2%	5,547	555	1.4%
Prof. & Tech Services	164,763	175,121	197,833	226,647	33,070	2,205	1.2%	28,814	2,881	1.4%
Mgmt	33,749	35,870	40,522	46,424	6,774	452	1.2%	5,902	590	1.4%
Admin/Waste Mgmt	111,424	118,429	133,788	153,274	22,364	1,491	1.2%	19,486	1,949	1.4%
Education	112,574	118,489	131,268	139,315	18,694	1,246	1.0%	8,047	805	0.6%
Health Care	205,166	218,065	246,346	282,225	41,179	2,745	1.2%	35,880	3,588	1.4%
Arts/Rec	31,916	33,128	35,692	38,927	3,776	252	0.7%	3,235	323	0.9%
Accommodations	201,222	218,577	257,908	301,846	56,686	3,779	1.7%	43,938	4,394	1.6%
Other	51,019	54,227	61,260	70,182	10,240	683	1.2%	8,922	892	1.4%
Public Admin	83,835	89,106	100,662	115,323	16,827	1,122	1.2%	14,661	1,466	1.4%
Unclassified	0	0	0	0	0	0	---	0	0	---
Total	**1,682,905**	**1,796,291**	**2,046,643**	**2,349,363**	**363,738**	**24,249**	**1.3%**	**302,720**	**30,272**	**1.4%**

Source: Denver Regional Council of Governments (DRCOG); Economic & Planning Systems

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3. Office Development Potential

This chapter begins with a summary of office market trends in the Denver metro area by county over the 2000 to 2020 time period. The office data is also compiled by major business park to illustrate historical market capture. Office demand forecasts are then developed starting with the employment forecasts presented in Chapter 2 and then estimated using the percent of employment office space by sector and applying an average space factor per employee.

Office Development

The Denver metro area had a total of approximately 198 million square feet of office space in 2020, as shown in **Table 10**. From 2000 to 2020, the region gained a total of 39.4 million square feet. The City and County of Denver has gained the most office space with a total of 11.2 million square feet during this time period or 562,000 square feet annually. Denver also holds the largest share of office space in the metro area with 39 percent of the total inventory. Boulder County currently has about 10 percent of the total share of office space with approximately 19.3 million square feet.

Since 2000, Boulder County has added nearly 4.5 million square feet of office space or 225,000 square feet annually. The City and County of Broomfield currently has 7.0 million square feet or 3.6 percent of the total. Since 2000, Broomfield has gained a total of 2.8 million square feet of office space or 140,000 square feet annually.

Table 10. Office Development Inventory by County, 2000-2020

	2000		2010		2020		2000-2020		
Denver Metro	Inventory Sq. Ft.	% Total	Inventory Sq. Ft.	% Total	Inventory Sq. Ft.	% Total	New Sq. Ft.	Ann. # Sq. Ft.	% Total
Adams County	6,579,574	4.1%	9,611,140	5.2%	10,277,620	5.2%	3,698,046	184,902	9.4%
Arapahoe County	39,340,609	24.8%	43,284,769	23.6%	45,376,167	22.9%	6,035,558	301,778	15.3%
Boulder County	14,811,428	9.3%	17,698,147	9.7%	19,301,352	9.7%	4,489,924	224,496	11.4%
Broomfield	4,235,739	2.7%	6,276,264	3.4%	7,033,162	3.6%	2,797,423	139,871	7.1%
Denver	66,697,220	42.0%	71,108,736	38.8%	77,944,606	39.3%	11,247,386	562,369	28.5%
Douglas County	6,759,359	4.3%	11,596,451	6.3%	13,419,955	6.8%	6,660,596	333,030	16.9%
Jefferson County	20,244,824	12.8%	23,582,917	12.9%	24,747,732	12.5%	4,502,908	225,145	11.4%
Total	**158,668,753**	**100.0%**	**183,158,424**	**100.0%**	**198,100,594**	**100.0%**	**39,431,841**	**1,971,592**	**100.0%**

Source: CoStar; Economic & Planning Systems

The office inventory in the Denver metro area is shown by major office and business park subareas including the US-36 Corridor, South I-25 Corridor, City of Boulder, and Downtown Denver. The US-36 Corridor had 12 million square feet of office space in 2020, which consists of 6.1 percent of the Denver metro area total, shown in **Table 11**. Since 2000, the US-36 Corridor has gained 4.7 million square feet of office space or 238,000 square feet annually, which equates to 12 percent of the total growth. South I-25 Corridor had 37 million square feet office in 2020, which consists of 19 percent of the total.

Since 2000, South I-25 Corridor has gained 8.1 million square feet of office space, or over 400,000 square feet annually which equals 21 percent of the total office market. By comparison, Downtown Denver had 39.0 million square feet of office space in 2020, which consists of 20 percent of the total inventory. Since 2000, Downtown Denver has gained 5.7 million square feet of space or approximately 283,000 square feet annually and a 14 percent market share. The City of Boulder gained 2.1 million square feet of office development since 2000 to reach a total of 12.6 million square feet in 2020. This growth represents 5.5 percent of the metro area total with an average of 107,000 square feet per year.

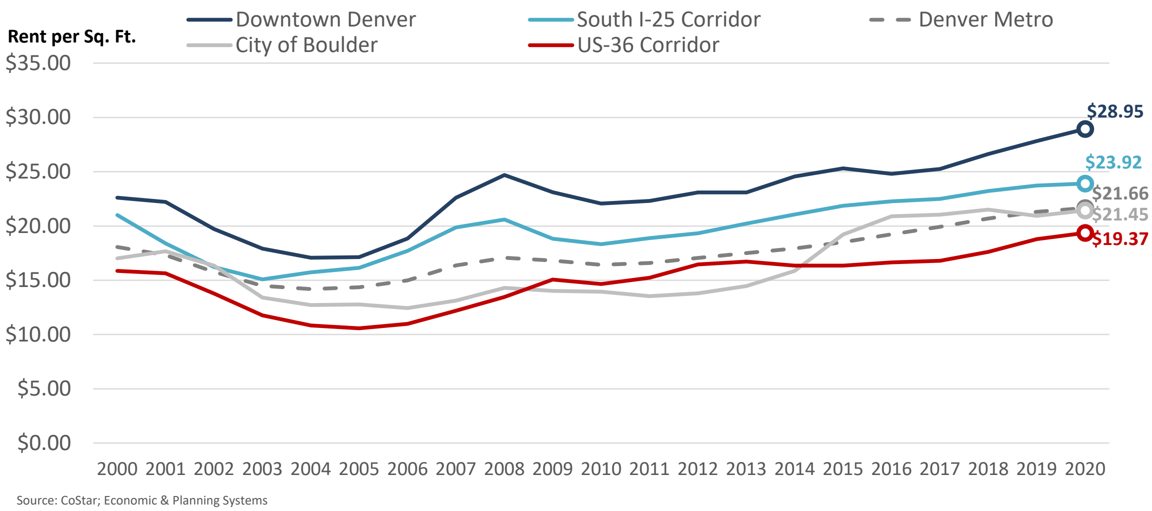
Table 11. Office Development Inventory by Area, 2000-2020

Office Inventory	2000		2010		2020		2000-2020		
	Inventory *Sq. Ft.*	% Total	Inventory *Sq. Ft.*	% Total	Inventory *Sq. Ft.*	% Total	New *Sq. Ft.*	Ann. # *Sq. Ft.*	% Total
US-36 Corridor	7,264,415	4.6%	10,813,117	5.9%	12,031,655	6.1%	4,767,240	238,362	12.1%
City of Boulder	10,408,616	6.6%	11,542,009	6.3%	12,558,416	6.3%	2,149,800	107,490	5.5%
South I-25 Corridor	29,148,059	18.4%	33,977,812	18.6%	37,305,628	18.8%	8,157,569	407,878	20.7%
Downtown Denver	33,396,039	21.0%	35,515,899	19.4%	39,061,603	19.7%	5,665,564	283,278	14.4%
Other Areas	78,451,624	49.4%	91,309,587	49.9%	97,143,292	49.0%	18,691,668	934,583	47.4%
Denver Metro Total	**158,668,753**	**100.0%**	**183,158,424**	**100.0%**	**198,100,594**	**100.0%**	**39,431,841**	**1,971,592**	**100.0%**

Source: CoStar; Economic & Planning Systems

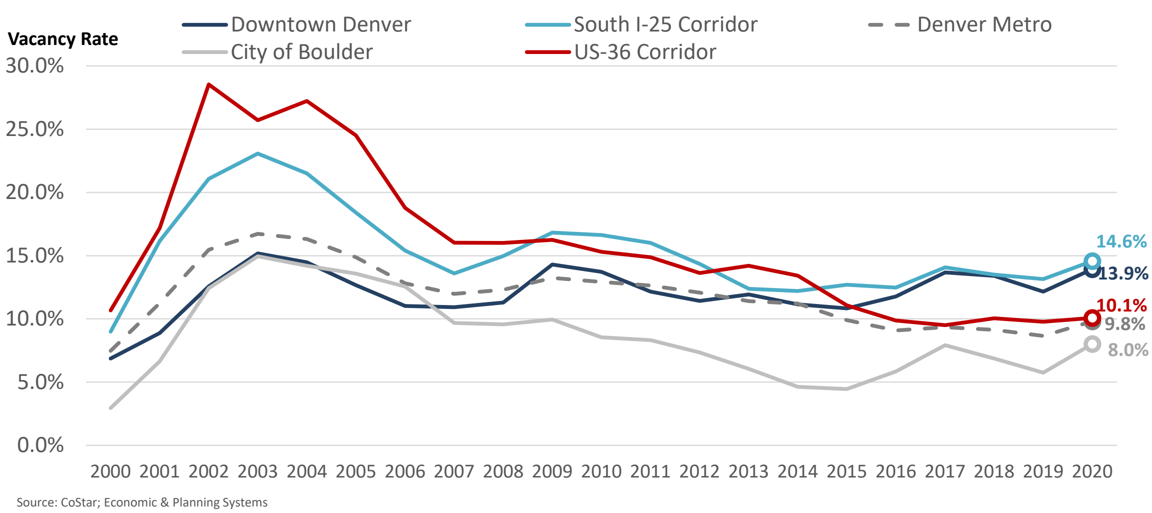
The average 2020 office rental rate in the Denver metro area was $21.66 per square foot, shown in **Figure 8**. All of the areas follow a similar trend, with the US-36 Corridor having the lowest office rental rate at $19.37 per square foot and Downtown Denver having the highest at $28.95 per square foot.

Figure 8. Office Rental Rate, 2000-2020



The Denver metro area had an office vacancy rate of 9.8 percent in 2020, shown in **Figure 9**. US-36 Corridor had a vacancy rate of 10.1 percent and South I-25 Corridor had the highest rate at 14.6 percent. The City of Boulder had the lowest office vacancy rate at 8.0 percent.

Figure 9. Office Vacancy Rate, 2000-2020



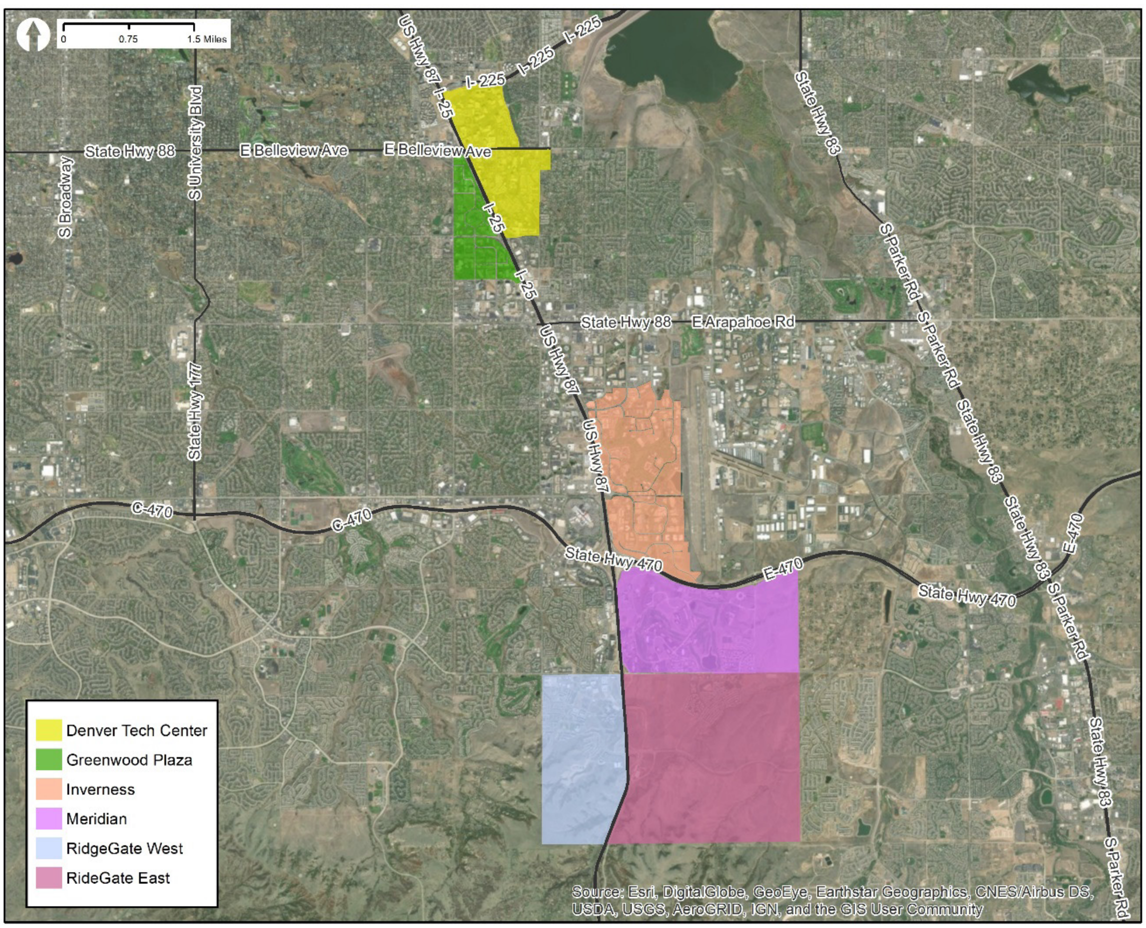
Major Office and Business Parks

The major office and business parks within the Denver metro area are tabulated by corridor or subarea in **Table 12** on page 27 and summarized below.

South I-25 Corridor

The South I-25 Corridor extends approximately eight miles along South I-25 from the Denver Technological Center (DTC) at Belleview Avenue south to RidgeGate in the City of Lone Tree south of Lincoln Avenue. Since DTC began development in 1962, the corridor has been the most significant suburban office concentration in the region. In addition to DTC, the major office and business parks include Greenwood Plaza that opened in 1965, Inverness that opened in 1973, and Meridian that began development in 1983, as shown in **Figure 10**. The most recent development is RidgeGate West that began development in 2004. RidgeGate East, on the east side of I-25, is just now being developed in concert with the Southeast Extension of RTD's Southeast Corridor line.

Figure 10. South I-25 Corridor Business Parks



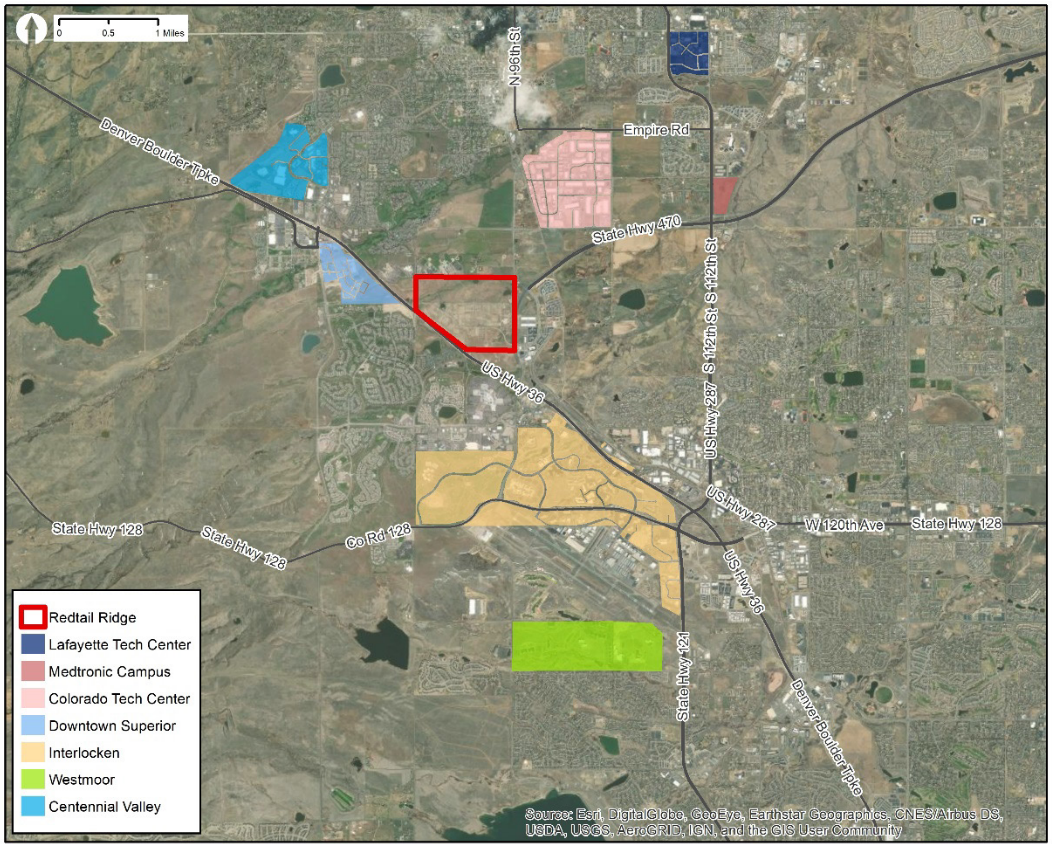
The five major office/business parks currently contain 25.3 million square feet of office development of the approximately 37.3 million total square feet of office space in the corridor. DTC and Inverness are largely built out and are undergoing some infill and redevelopment. The corridor is expected to continue to capture a significant market share as Meridian and especially RidgeGate have extensive additional capacity. The corridor's market position has also been enhanced by the completion of RTD's Southeast Corridor light rail line in 2006, which has spurred additional transit-oriented development (TOD) around the light rail stations both within the listed business parks as well as in new developments including Belleview Station and Arapahoe Station.

US-36 Corridor

The second most significant office and business corridor in the region (outside of downtown Denver) is the US-36 Corridor extending from Broomfield Arista north to McCaslin Boulevard in Louisville/Superior as shown in **Figure 11**. The largest office/business park is Interlocken that began development in 1986. The 963-acre park currently has 6.3 million square feet of office space and an additional 350,000 square feet of Flex/R&D space and 406 hotel rooms. It lacks any significant retail space as it is located next to the FlatIron Mall and adjacent FlatIron retail centers, which together comprise the largest concentration of regional retail space in the northwest metro area. The StorageTek campus preceded the development of major office and retail development in the corridor. Founded in 1969, StorageTek built and expanded its headquarters and manufacturing facilities on the Redtail Ridge property on the north side of US-36 across from FlatIron Mall before its acquisition by Sun Microsystems in 2005.

Medtronic is in the process of planning a new Medtronic Office Campus in Lafayette at the northeast corner of US-287 and Dillon Road. The 42-acre site is planned for two phases of development. The first phase includes over 400,000 square feet of office space in two five-story buildings. The second phase is proposed to include another five-story building and a parking garage. Medtronic recently applied for rezoning and is currently under review by the City. This illustrates the Boulder exodus from the city to other areas of Boulder County, and specifically to the US-36 Corridor, to find and develop space to accommodate growth within the market area.

Figure 11. US-36 Corridor Business Parks



Other significant office and business park developments in the US-36 Corridor include Centennial Valley Business Park started in 1996, Westmoor Tech Park started in 1998, Lafayette Tech Center in 1995, and Colorado Tech Center started in 1984. These business parks, as well as Interlocken, have a Flex/R&D space component in addition to office uses. The market for these spaces is driven by manufacturing and technology companies moving out of Boulder when they reach a size for which there is inadequate space available, generally exceeding 150,000 square feet.

Downtown Superior is also listed in the inventory of potential office locations. It is a 157-acre mixed use development that is entitled for up to 373,000 square feet of office space and 500 hotel rooms. Although not specifically an office or business park, it can be considered part of the competitive inventory.

At nearly 400 acres, the Redtail Ridge project will provide a significant additional location for office and business park development in the US-36 Corridor. It is larger than both Centennial Valley and Westmoor Tech Park and has superior highway visibility and access from US-36 and Northwest Parkway.

Table 12. Major Business Parks in Denver Metro Area

Description	Year	Size *Acres*	Office *Sq. Ft.*	Flex/R&D *Sq. Ft.*	Industrial *Sq. Ft.*	Retail *Sq. Ft.*	Hotel[1] *Sq. Ft.*	Hotel[1] *Rooms*	Developed[2] *Sq. Ft.*	Undeveloped *Acres*	Undeveloped *Percent*	Major Tenants
Southeast Corridor												
Denver Tech Center	1962	909	9,489,155	0	0	630,296	1,154,984	1,580	11,274,435	0	0.0%	U.S. Bank; WSF, AECOM, Hyatt Regency
Inverness	1973	1,117	4,827,885	1,929,865	376,111	170,179	632,052	683	7,936,092	173	15.5%	Aveanna Healthcare; RMG Engineers; EchoStar
Meridian	1983	1,685	3,749,210	0	0	165,357	316,641	516	4,231,208	557	33.1%	Keysight Tech; Sling; Cognizant Tech Solutions
RidgeGate West	2004	550	1,484,572	0	0	453,488	141,562	227	2,079,622	15	2.7%	Sky Ridge Medical Center; Charles Schwab
RidgeGate East	2030	2,200	0	0	0	0	0	0	0	2,200	100.0%	Lone Tree City Center 12 million sq. ft. commercia
Greenwood Plaza	1965	363	5,744,746	0	0	385,114	281,681	445	6,411,541	17	4.7%	Prometric; Bellco Corporate; AECOM
Total		**6,824**	**25,295,568**	**1,929,865**	**376,111**	**1,804,434**	**2,526,920**	**3,451**	**31,932,898**	**2,962**	**43.4%**	
US-36 Corridor												
Interlocken	1986	963	6,329,600	348,155	96,195	38,750	1,131,465	1,511	7,944,165	162	16.8%	Vail Resorts; Orcale; Level 3 Communications
Westmoor Tech Park	1998	455	2,392,843	40,000	345,000	0	0	0	2,777,843	196	43.1%	Ball Aerospace; Cabela's Corp; Trimble
Centennial Valley	1996	444	687,611	242,348	411,485	138,044	317,333	575	1,796,821	93	20.9%	AntriaBio; Servtech; Westcon Group Inc
Colorado Tech Center	1984	500	278,653	2,193,395	2,323,383	0	0	0	4,795,431	34	6.8%	Lockheed Martin, Sierra Nevada Corporation
Downtown Superior	2018	157	373,000	0	0	444,600	---	500	817,600	140	89.2%	Superior Medical Center
Lafayette Tech Center	1995	95	313,961	103,047	7,800	247,520	0	0	672,328	23	24.2%	Clinica Family Health; Krishna Grocery
Medtronic Campus	N/A	42	400,000	0	0	0	0	0	400,000	0	0.0%	Medtronic
Redtail Ridge	2023	392	1,720,000	0	1,380,000	15,000	0	0	3,115,000	0	0.0%	
Total		**3,048**	**12,495,668**	**2,926,945**	**4,563,863**	**883,914**	**1,448,798**	**2,586**	**22,319,188**	**648**	**21.3%**	

[1]Within or adjacent to business park

[2]Includes buildings under construction or proposed

Source: CoStar; County Assessor; Economic & Planning Systems

Office Demand Forecasts

Regional Demand 2020 to 2040

This section presents the estimated demand for office space in the Denver metro area for the 2020 to 2040 time period based on the employment forecasts previously presented in **Table 9**. The percent of employment using office space by NAICS is estimated based on data from the National Association of Realtors, as shown in **Table 13** on the following page.

For office space this ranges from 6 percent of Wholesale Trade and 10 percent of Retail Trade employment on the low side to 80 percent of Finance and Insurance and Management on the high side. An average gross space of 275 square feet per employee is then applied to the net employment growth in each sector to estimate the demand for new office space. The employment based office space demand is factored up to total required construction by applying the current office vacancy factor of 9 percent. Based on these factors, the Denver region is estimated to demand a total of 25.3 million square feet of office space over the 2020 to 2030 time period or an average of 2.5 million square feet per year as shown in **Table 13**. This compares to average construction of 2.3 million square feet over the last decade. Total demand is forecast to increase to 31.0 million over the 2030 to 2040 time period or an average of 3.1 million square feet per year.

Table 13. Office Space Demand Forecast, 2020-2040

Industry	Percent in Office Space	Sq. Ft./ Empl.	2020	2030	2035	2040	2020-2030 Change	2020-2030 Ann. #	2020-2030 Ann. Rate	2030-2040 Change	2030-2040 Ann. #	2030-2040 Ann. Rate
Ag./Forest/Hunting	5.0%	275	49,000	56,000	60,000	65,000	7,000	700	1.3%	9,000	900	1.5%
Mining	30.0%	275	1,181,000	1,354,000	1,464,000	1,583,000	173,000	17,300	1.4%	229,000	22,900	1.6%
Utilities	25.0%	275	517,000	593,000	642,000	694,000	76,000	7,600	1.4%	101,000	10,100	1.6%
Construction	20.0%	275	5,987,000	6,864,000	7,423,000	8,028,000	877,000	87,700	1.4%	1,164,000	116,400	1.6%
Manufacturing	30.0%	275	8,768,000	10,051,000	10,870,000	11,756,000	1,283,000	128,300	1.4%	1,705,000	170,500	1.6%
Wholesale Trade	6.0%	275	1,541,000	1,767,000	1,911,000	2,066,000	226,000	22,600	1.4%	299,000	29,900	1.6%
Retail Trade	10.0%	275	4,114,000	4,793,000	5,157,000	5,549,000	679,000	67,900	1.5%	756,000	75,600	1.5%
Transport./Warehousing	30.0%	275	5,453,000	6,160,000	6,594,000	7,057,000	707,000	70,700	1.2%	897,000	89,700	1.4%
Information	65.0%	275	11,185,000	12,635,000	13,524,000	14,476,000	1,450,000	145,000	1.2%	1,841,000	184,100	1.4%
Finance/Insurance	80.0%	275	19,639,000	22,186,000	23,747,000	25,418,000	2,547,000	254,700	1.2%	3,232,000	323,200	1.4%
Real Estate	60.0%	275	5,562,000	6,284,000	6,726,000	7,199,000	722,000	72,200	1.2%	915,000	91,500	1.4%
Prof. & Tech Services	65.0%	275	31,303,000	35,363,000	37,850,000	40,513,000	4,060,000	406,000	1.2%	5,150,000	515,000	1.4%
Mgmt	80.0%	275	7,891,000	8,915,000	9,542,000	10,213,000	1,024,000	102,400	1.2%	1,298,000	129,800	1.4%
Admin/Waste Mgmt	70.0%	275	22,798,000	25,754,000	27,566,000	29,505,000	2,956,000	295,600	1.2%	3,751,000	375,100	1.4%
Education	40.0%	275	13,034,000	14,439,000	14,875,000	15,325,000	1,405,000	140,500	1.0%	886,000	88,600	0.6%
Health Care	30.0%	275	17,990,000	20,324,000	21,753,000	23,284,000	2,334,000	233,400	1.2%	2,960,000	296,000	1.4%
Arts/Rec	10.0%	275	911,000	982,000	1,025,000	1,070,000	71,000	7,100	0.8%	88,000	8,800	0.9%
Accommodations	10.0%	275	6,011,000	7,092,000	7,673,000	8,301,000	1,081,000	108,100	1.7%	1,209,000	120,900	1.6%
Other	40.0%	275	5,965,000	6,739,000	7,213,000	7,720,000	774,000	77,400	1.2%	981,000	98,100	1.4%
Public Admin	25.0%	275	6,126,000	6,920,000	7,407,000	7,928,000	794,000	79,400	1.2%	1,008,000	100,800	1.4%
Unclassified	0.0%	275	0	0	0	0	0	0	---	0	0	---
Total Occupied Space	**36.3%**		**176,025,000**	**199,271,000**	**213,022,000**	**227,750,000**	**23,246,000**	**2,324,600**	**1.2%**	**28,479,000**	**2,847,900**	**1.3%**
CoStar Office Inventory												
Vacancy Rate			9.0%	9.0%	9.0%	9.0%						
Total Space Demand			**191,867,250**	**217,205,390**	**232,193,980**	**248,247,500**	**25,338,140**	**2,533,814**	**1.2%**	**31,042,110**	**3,104,211**	**1.3%**

Source: Nat'l Assoc. of Realtors and John Burns Consulting; DRCOG; Economic & Planning Systems

US-36 Office Capture

The US-36 Corridor has captured approximately 238,300 square feet of office space per year over the 2000 to 2020 time period which equates to 12 percent of the Denver region's annual average office space construction of 1.9 million square feet, shown in **Table 11** above. From 2000-2010, the corridor captured 15 percent of total office construction. Since 2010, the corridor has captured 8 percent of office construction due in large part to the resurgence of downtown Denver office development, as well as the emergence of new locations such as the River North (RiNo) District north of downtown, and an acceleration of demand in the South I-25 associated with TOD projects located at RTD light rail stations.

Moving forward, the corridor is expected to be able to achieve its historical capture rate from 2000 to 2020 of 12 percent, which equates to 3.0 million total square feet or 304,000 square feet per year from 2020 to 2030 and 3.7 million total square feet or 372,500 square feet per year from 2030 to 2040, as shown in **Table 14**. Contributing to this uptick is market capture over the recent decade is the introduction of new business parks including Redtail Ridge and Medtronic Corporate Campus.

Table 14. Office Demand Capture, 2020-2040

	2020-2030			2030-2040			2020-2040
Demand Capture	% Capture	Total	Ann. #	% Capture	Total	Ann. #	Total
Office (sq. ft.)							
Denver Metro		25,338,140	2,533,814		31,042,110	3,104,211	56,380,250
US-36 Corridor	12.0%	3,040,577	304,058	12.0%	3,725,053	372,505	6,765,630
Redtail Ridge	**20.0%**	**608,115**	**60,812**	**30.0%**	**1,117,516**	**111,752**	**1,725,631**

Source: Economic & Planning Systems

Redtail Ridge Office Potential

The Redtail Ridge project will provide a new major office/business park project in the US-36 Corridor. The project is located at the intersection of Northwest Parkway and US-36 with superior visibility and exposure to the highway corridor, and close access to the RTD Flatiron Flyer BRT Station.

The project is estimated to capture 20 percent of the corridor demand over the 2020 to 2030 time period, which equates to 608,000 square feet or 60,800 square feet per year, shown in **Table 14**. The project is expected to continue to gain market momentum as it matures in the 2030 to 2040 timeframe and as other area office parks become more built out. The project's capture of office demand in the corridor is therefore expected to increase from 20 percent to 30 percent in the second decade of development resulting in a total of over 1.1 million square feet of space or an average of 112,000 square feet per year 2030 to 2040. The total estimated demand for office space on-site is 1.7 million square feet.

Target Industries

The office and R&D market in Boulder County, and specifically in the US-36 Corridor, has been fueled by the growth in the Denver metro area's success in attracting and growing life science industries. According to Jones Lang LaSalle's 2019 Life Sciences Outlook, Metro Denver had the second-fastest life sciences industry employment growth among other top markets. Metro Denver also had the 11th-strongest life sciences market in the nation for the second year in a row. Boulder County was specifically ranked among the top metro regions with a concentration in the following subsectors:

- **Medical Devices and Diagnostics** – This sector includes companies that engineer, research, design, and manufacture medical equipment. Jobs in these companies have grown by 22 percent over the last five years (2014-2019). Boulder County employs 35 percent of the region's 11,320 jobs in this subsector.
- **Pharmaceuticals and Biotechnology** – This subcluster includes companies that manufacture, research, and develop pharmaceutical drugs. Biotechnology companies utilize cellular and molecular biology and medicinal chemistry to develop and commercialize therapeutic medicines. Jobs in these companies have grown by 6.5 percent over the last five years. Boulder County employs 31 percent of the region's 5,660 jobs in this subsector.

A number of significant company locations in the US-36 Corridor are evidence of the area's attractiveness for these industries, including Medtronic's proposed campus in Lafayette. Also included is Swisslog Healthcare Solutions, a global robotics company that moved its North American headquarters from Denver to Interpark in Broomfield. Also expanding at Interpark is MKS Instruments, a global manufacturer of instruments for the life and health sciences, from the western headquarters in Boulder. Charlotte's Web (CBD manufacturer) is another Boulder-based manufacturer that expanded out of the city to a new 137,000 square foot facility at Colorado Technology Center in Louisville.

The biotech industry is expected to continue to be growth sector for the US-36 Corridor and specifically for Redtail Ridge as it is well positioned to capture these businesses for which there is inadequate space for growth within the City of Boulder proper.

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4. Industrial and Flex/R&D Development Potential

This chapter begins with a summary of the industrial and Flex/R&D market trends in the Denver metro area by county over the 2000 to 2020 time period. The inventory is also compiled by major industrial and tech park areas to illustrate historical market capture. Industrial demand forecasts are then developed starting with the employment forecasts presented in Chapter 2 and estimated using the percent of employment using industrial space by sector and applying an average space factor per employee.

Industrial Development

In 2020, Denver metro area had nearly 233 million square feet of industrial space, as shown in **Table 15**. Since 2000, the region gained over 39 million square feet of industrial space or 1.9 million square feet per year. The majority of this new development occurred in Adams County, which gained 28.7 million square feet of space or 74 percent of the Denver metro total. Large amounts of industrial space have developed around the Denver International Airport in Adams County over the past two decades. The City and County has the largest amount of industrial development with nearly 86.8 million square feet representing 37 percent of the metro area total.

The industrial inventory has been fueled by the growth of logistics firms led by Amazon building new distribution facilities throughout the Front Range including Thornton, Aurora, Westminster and Loveland.

Table 15. Industrial Development Inventory by County, 2000-2020

Denver Metro	2000		2010		2020		2000-2020		
	Inventory *Sq. Ft.*	% Total	Inventory *Sq. Ft.*	% Total	Inventory *Sq. Ft.*	% Total	New *Sq. Ft.*	Ann. # *Sq. Ft.*	% Total
Adams County	49,522,358	25.5%	60,368,465	28.7%	78,265,854	33.6%	28,743,496	1,437,175	73.6%
Arapahoe County	17,550,657	9.1%	18,253,171	8.7%	19,253,734	8.3%	1,703,077	85,154	4.4%
Boulder County	15,434,128	8.0%	14,442,640	6.9%	15,590,971	6.7%	156,843	7,842	0.4%
Broomfield	3,476,762	1.8%	3,400,566	1.6%	3,921,825	1.7%	445,063	22,253	1.1%
Denver	85,425,593	44.1%	87,659,011	41.7%	86,795,159	37.3%	1,369,566	68,478	3.5%
Douglas County	3,735,841	1.9%	5,707,921	2.7%	7,746,371	3.3%	4,010,530	200,527	10.3%
Jefferson County	18,776,999	9.7%	20,175,938	9.6%	21,383,138	9.2%	2,606,139	130,307	6.7%
Total	**193,922,338**	**100.0%**	**210,007,712**	**100.0%**	**232,957,052**	**100.0%**	**39,034,714**	**1,951,736**	**100.0%**

Source: CoStar; Economic & Planning Systems

Boulder County had 15.4 million square feet of industrial development in 2020, which is 6.7 percent of the Denver metro total. Since 2000, Boulder County gained 156,800 square feet of industrial development or 7,800 square feet annually. The City and County of Broomfield had 3.9 million square feet of industrial development in 2020, which is 1.7 percent of the Denver metro total. Since 2000, Broomfield gained 445,000 square feet of industrial space or 22,200 square feet per year.

The industrial inventory in the Denver metro area is shown for selected industrial and tech park areas including the US-36 Corridor, City of Boulder, Dove Valley (including Centennial Airport area and Arapahoe Road), Arvada/Wheat Ridge Corridor along I-70, and the I-76 Corridor, which includes areas of Commerce City and Unincorporated Adams County. The US-36 Corridor had 7.5 million square feet of industrial development in 2020, which is 3.2 percent of the Denver metro area's total, shown in **Table 16**. Since 2000, this corridor gained 561,700 square feet of industrial development or 28,000 square feet annually, which equates to 1.4 percent of the total growth.

Table 16. Industrial Development Inventory by Area, 2000-2020

Industrial Inventory	2000		2010		2020		2000-2020		
	Inventory *Sq. Ft.*	% Total	Inventory *Sq. Ft.*	% Total	Inventory *Sq. Ft.*	% Total	New *Sq. Ft.*	Ann. # *Sq. Ft.*	% Total
US-36 Corridor	6,957,822	3.6%	5,801,856	2.8%	7,519,585	3.2%	561,763	28,088	1.4%
City of Boulder	6,180,615	3.2%	6,273,273	3.0%	6,162,080	2.6%	-18,535	-927	0.0%
Dove Valley	3,088,958	1.6%	5,365,685	2.6%	7,778,164	3.3%	4,689,206	234,460	12.0%
Arvada/Wheat Ridge Corridor	8,714,823	4.5%	9,767,357	4.7%	10,087,074	4.3%	1,372,251	68,613	3.5%
I-76 Corridor	4,677,875	2.4%	6,003,064	2.9%	7,066,807	3.0%	2,388,932	119,447	6.1%
Denver Metro Total	**193,922,338**	**15.3%**	**210,007,712**	**15.8%**	**232,957,052**	**16.6%**	**39,034,714**	**1,951,736**	**23.0%**

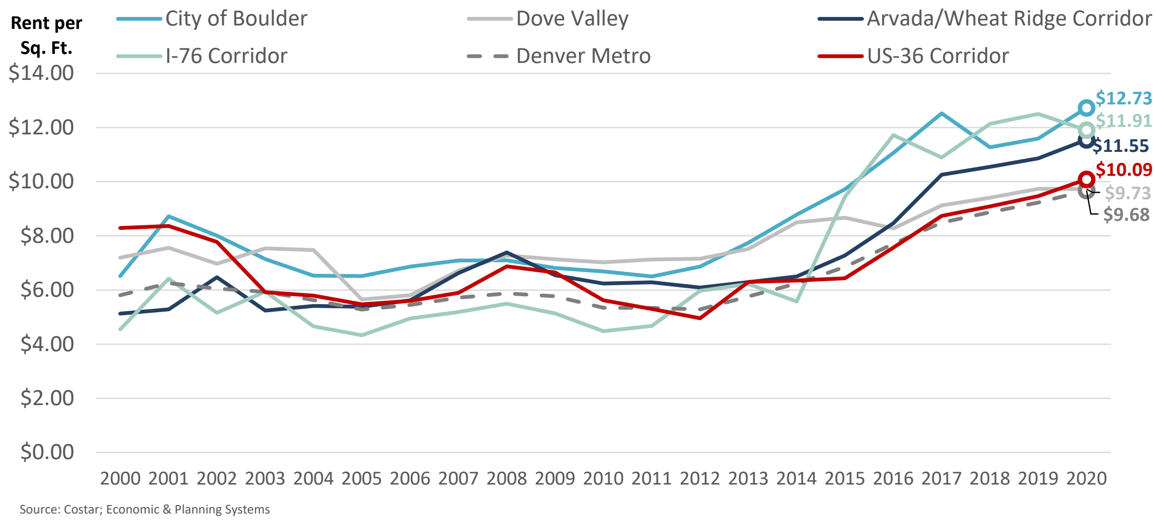
Source: CoStar; Economic & Planning Systems

The City of Boulder's industrial development has declined by a small amount since 2000. The City had a total of 6.2 million square feet of industrial development in 2020 or 2.6 percent of metro area total. The city is constrained for space and as of recent, industrial users have moved out of the city into the surrounding areas in Boulder County, including along the US-36 Corridor.

Dove Valley has doubled the amount of industrial space over the past 20 years gaining over 4.7 million square feet to reach a total of 7.8 million square feet. This is an average of 234,400 square feet per year and accounts for 12 percent of the Denver metro area's total growth. The Arvada/Wheat Ridge Corridor had over 10.0 million square feet of industrial space in 2020 representing 4.3 percent of the Denver metro area total. From 2000 to 2020, the corridor gained 1.4 million square feet of space or an average of 68,600 square feet per year. The I-76 Corridor located in Adams County had over 7.0 square feet of industrial space in 2020. This corridor gained 2.4 million square feet of space since 2000 or an average of 119,400 square feet per year, which accounts for 6.1 percent of the Denver metro area's total growth.

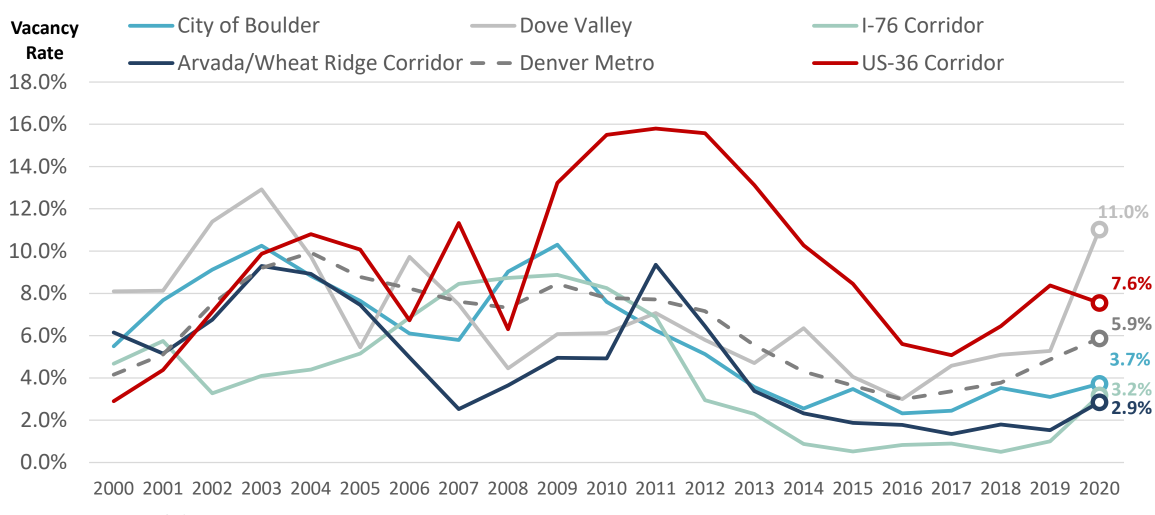
In 2020, the average industrial rental rate in the Denver metro area was $9.68 per square foot, shown in **Figure 12**. The US-36 Corridor and Dove Valley had similar rental rates in 2020 of $10.09 and $9.73, respectively. Arvada/Wheat Ridge Corridor, I-76 Corridor, and City of Boulder had slightly higher rental rates ranging from $11.55 to $12.73 per square foot.

Figure 12. Industrial Rental Rate, 2000-2020



The Denver metro area had an industrial vacancy rate of 5.9 percent in 2020, shown in **Figure 13**. The US-36 Corridor had a higher vacancy rate than the Denver metro average at 7.6 percent and Dove Valley had the highest rate at 11.0 percent. The Arvada/Wheat Ridge Corridor, I-76 Corridor, and City of Boulder had much lower rates ranging from 2.9 to 3.7 percent.

Figure 13. Industrial Vacancy Rate, 2000-2020



Flex/R&D Development

In the CoStar inventory, Flex/R&D development is a subset of industrial space designed to be versatile to accommodate a variety of uses. It can be used as office, medical, manufacturing, fabrication, processing, assembly of products, quasi-retail, or research and development (R&D) space. To be categorized as Flex/R&D space at least half of the rentable building area must be office space.

In 2020, the Denver metro area had a total of 48.0 million square feet of Flex/R&D space shown in **Table 17**. This is approximately 17 percent of the total industrial and Flex/R&D space in the metro area.

Table 17. Flex/R&D Development Inventory by County, 2000-2020

	2000		2010		2020		2000-2020		
Denver Metro	Sq. Ft.	% Total	Sq. Ft.	% Total	Sq. Ft.	% Total	Total	Ann. #	% Total
Adams County	3,511,319	9.1%	3,791,990	8.6%	4,512,958	9.4%	1,001,639	50,082	10.8%
Arapahoe County	10,369,749	26.8%	11,358,233	25.7%	11,971,134	24.9%	1,601,385	80,069	17.2%
Boulder County	10,867,539	28.0%	11,742,951	26.6%	12,445,847	25.9%	1,578,308	78,915	17.0%
Broomfield	641,772	1.7%	1,037,654	2.3%	1,648,912	3.4%	1,007,140	50,357	10.8%
Denver	3,671,444	9.5%	4,209,900	9.5%	4,274,710	8.9%	603,266	30,163	6.5%
Douglas County	1,236,091	3.2%	2,209,071	5.0%	2,586,253	5.4%	1,350,162	67,508	14.5%
Jefferson County	8,459,770	21.8%	9,822,241	22.2%	10,610,764	22.1%	2,150,994	107,550	23.1%
Total	**38,757,684**	**100.0%**	**44,172,040**	**100.0%**	**48,050,578**	**100.0%**	**9,292,894**	**464,645**	**100.0%**

Source: CoStar; Economic & Planning Systems

In 2020, Boulder County had approximately 12.4 million square feet of Flex/R&D space, which represents 26 percent of the Denver metro area total inventory. In 2020, the City and County of Broomfield had a total of 1.6 million square feet. Since 2000, Broomfield has gained over 1 million square feet of space, or 50,400 square feet annually. From 2000 to 2020, the metro area gained a total of 9.3 million square feet of Flex/R&D development, of which 1.6 million square feet or 17 percent was in Boulder County.

The Flex/R&D inventory in the Denver metro area is tabulated for the same industrial and tech park areas as industrial inventory. The US-36 Corridor had 3.7 million square feet of Flex/R&D space in 2020, which consists of 7.6 percent of the Denver metro total, shown in **Table 18**. Since 2000, the US-36 Corridor has gained 2.0 million square feet or 102,000 square feet annually, which is 22 percent of total development. The City of Boulder had 5.5 million square feet in 2020, which represents 11.4 percent of the total regional inventory. From 2000 to 2020, Boulder gained 407,700 square feet of space or an average of 20,300 square feet annually. Dove Valley had 3.5 million square feet of Flex/R&D space in 2020, which is 7.3 percent of the regional total. Since 2000, Dove Valley gained 1.5 million square feet or an average of 72,900 square feet per year accounting for 15.7 percent of Denver metro area’s total growth. The Arvada/Wheat Ridge

Corridor had 2.2 million square feet of Flex/R&D space in 2020 and gained 468,200 square feet since 2000 or an annual average of 23,400 square feet. The I-76 Corridor has a small amount of Flex/R&D space with 113,600 square feet and gained 7,200 square feet over the past 20 years.

Table 18. Flex/R&D Development Inventory by Area, 2000-2020

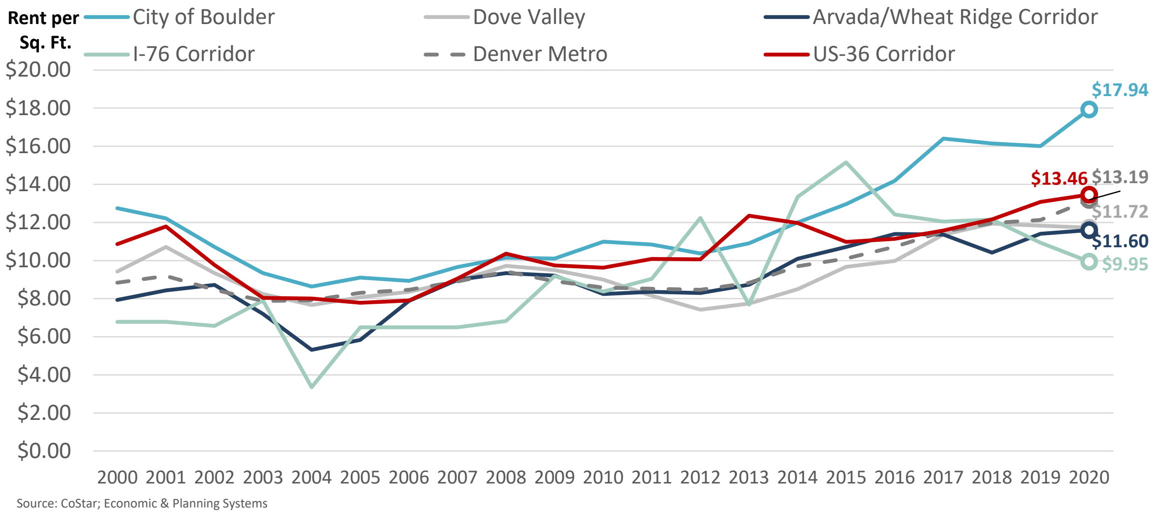
Flex/R&D Inventory	2000 Inventory Sq. Ft.	2000 % Total	2010 Inventory Sq. Ft.	2010 % Total	2020 Inventory Sq. Ft.	2020 % Total	2000-2020 New Sq. Ft.	2000-2020 Ann. # Sq. Ft.	2000-2020 % Total
US-36 Corridor	1,625,713	4.2%	2,953,478	6.7%	3,662,748	7.6%	2,037,035	101,852	21.9%
City of Boulder	5,089,360	13.1%	5,412,112	12.3%	5,497,133	11.4%	407,773	20,389	4.4%
Dove Valley	2,056,704	5.3%	3,065,336	6.9%	3,514,930	7.3%	1,458,226	72,911	15.7%
Arvada/Wheat Ridge Corridor	1,773,800	4.6%	2,110,027	4.8%	2,242,041	4.7%	468,241	23,412	5.0%
I-76 Corridor	106,422	0.3%	113,622	0.3%	113,622	0.2%	7,200	360	0.1%
Denver Metro Total	**38,757,684**	**27.5%**	**44,172,040**	**30.9%**	**48,050,578**	**31.3%**	**9,292,894**	**464,645**	**47.1%**

Source: CoStar; Economic & Planning Systems

The Colorado Technology Center (CTC) in Louisville has the largest amount of Flex/R&D space in the US-36 Corridor with 2 million square feet occupied by manufacturing and high-tech companies. From 2016 to 2019, CTC gained a total of 250,000 square feet of Flex/R&D space. Many of these companies were initially in Boulder but have moved out of the city due to the lack of available space. Similarly, Centennial Valley Business Park has nearly 250,000 square feet of Flex/R&D space along with office and manufacturing uses and Lafayette Tech Center has over 100,000 square feet of Flex/R&D space, as shown in **Table 12** on page 27. For example, Medtronic is expanding from the City of Boulder to Lafayette in order to build its corporate campus with a mix of office, flex, and R&D space. Other companies are searching for similar space in Boulder County and want to be within the Boulder and Denver markets.

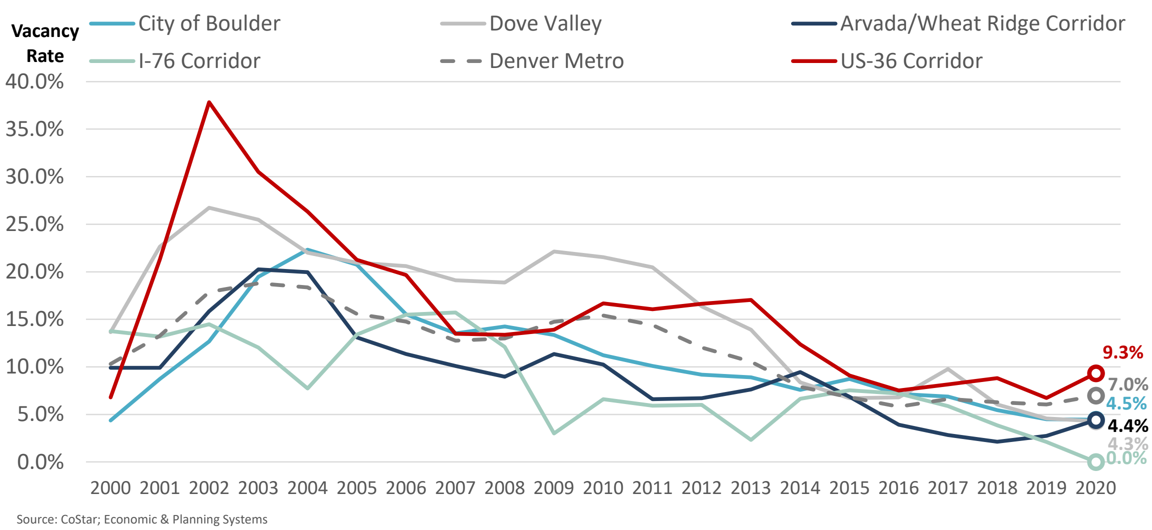
The average Flex/R&D rental rate in Denver metro area was $13.19 per square foot in 2020, shown in **Figure 14**. The US-36 had a similar rate at $13.46 per square foot. The City of Boulder had the highest rate at $17.94 per square foot and I-76 Corridor had the lowest at $9.95 per square foot.

Figure 14. Flex/R&D Rental Rate, 2000-2020



Flex/R&D vacancy rates have been on a downward trend since the early 2000s. In 2020, the Denver metro area had a Flex/R&D vacancy rate of 7.0 percent, shown in **Figure 15**. The US-36 Corridor had a higher rate compared to Denver metro at 9.3 percent. Dove Valley, Arvada/Wheat Ridge Corridor, and City of Boulder had similar vacancy rates ranging from 4.3 percent to 4.5 percent. The I-76 Corridor with its limited inventory had no vacancy in 2020.

Figure 15. Flex/R&D Vacancy Rate, 2000-2020



Industrial Demand Forecast

Regional Demand 2020 to 2040

This section presents the estimated demand for industrial space in the Denver metro area for the 2020 to 2040 time period based on the employment forecasts previously presented in **Table 9**. The percent of employment using industrial space by NAICS is estimated based on data from the National Association of Realtors, as shown in **Table 19** on the following page.

For industrial space, the percent of employment ranges from 10 percent of Information, Professional and Technical Services, Health Care, and Public Administration on the low side to 70 percent of Manufacturing on the high side. An average gross space of 800 square feet per employee is then applied to the net employment growth in each sector to estimate demand for new industrial space. The employment based industrial space demand is factored up to total required construction by applying the historical average vacancy factor from 2015 to 2020 of 4 percent. Based on these factors, the Denver region is estimated to demand a total of 83.2 square feet of office space over the 2020 to 2030 time period or an average of 8.3 million square feet per years as shown **Table 19**. Total demand is forecast to decrease to 47.7 million over the 2030 to 2040 time period or an average of 4.7 million square feet per year.

Table 19. Industrial Space Demand Forecast, 2020-2040

Industry	% Industrial Space	Sq. Ft./ Empl.	2020	2030	2035	2040	2020-2030 Change	2020-2030 Ann. #	2020-2030 Ann. Rate	2030-2040 Change	2030-2040 Ann. #	2030-2040 Ann. Rate
Ag./Forest/Hunting	10.0%	800	283,000	325,000	351,000	380,000	42,000	4,200	1.4%	55,000	5,500	1.6%
Mining	20.0%	800	2,290,000	2,626,000	2,839,000	3,071,000	336,000	33,600	1.4%	445,000	44,500	1.6%
Utilities	40.0%	800	2,408,000	2,761,000	2,986,000	3,229,000	353,000	35,300	1.4%	468,000	46,800	1.6%
Construction	30.0%	800	26,127,000	29,951,000	32,392,000	35,031,000	3,824,000	382,400	1.4%	5,080,000	508,000	1.6%
Manufacturing	70.0%	800	59,515,000	68,227,000	73,786,000	79,799,000	8,712,000	871,200	1.4%	11,572,000	1,157,200	1.6%
Wholesale Trade	50.0%	800	37,358,000	42,826,000	46,316,000	50,090,000	5,468,000	546,800	1.4%	7,264,000	726,400	1.6%
Retail Trade	20.0%	800	23,936,000	27,886,000	30,006,000	32,287,000	3,950,000	395,000	1.5%	4,401,000	440,100	1.5%
Transport./Warehousing	50.0%	800	26,439,000	29,867,000	31,969,000	34,218,000	3,428,000	342,800	1.2%	4,351,000	435,100	1.4%
Information	10.0%	800	5,006,000	5,655,000	6,053,000	6,479,000	649,000	64,900	1.2%	824,000	82,400	1.4%
Finance/Insurance	0.0%	800	0	0	0	0	0	0	---	0	0	---
Real Estate	0.0%	800	0	0	0	0	0	0	---	0	0	---
Prof. & Tech Services	10.0%	800	14,010,000	15,827,000	16,940,000	18,132,000	1,817,000	181,700	1.2%	2,305,000	230,500	1.4%
Mgmt	0.0%	800	0	0	0	0	0	0	---	0	0	---
Admin/Waste Mgmt	20.0%	800	18,949,000	21,406,000	22,912,000	24,524,000	2,457,000	245,700	1.2%	3,118,000	311,800	1.4%
Education	0.0%	800	0	0	0	0	0	0	---	0	0	---
Health Care	10.0%	800	17,445,000	19,708,000	21,094,000	22,578,000	2,263,000	226,300	1.2%	2,870,000	287,000	1.4%
Arts/Rec	20.0%	800	5,300,000	5,711,000	5,964,000	6,228,000	411,000	41,100	0.7%	517,000	51,700	0.9%
Accommodations	0.0%	800	0	0	0	0	0	0	---	0	0	---
Other	20.0%	800	8,676,000	9,802,000	10,491,000	11,229,000	1,126,000	112,600	1.2%	1,427,000	142,700	1.4%
Public Admin	10.0%	800	7,128,000	8,053,000	8,619,000	9,226,000	925,000	92,500	1.2%	1,173,000	117,300	1.4%
Unclassified	0.0%	800	0	0	0	0	0	0	---	0	0	---
Total Occupied Space	**17.6%**		**254,870,000**	**290,631,000**	**312,718,000**	**336,501,000**	**35,761,000**	**3,576,100**	**1.3%**	**45,870,000**	**4,587,000**	**1.5%**
Vacancy Rate			6.0%	4.0%	4.0%	4.0%						
Total Space Demand			**219,000,000**	**302,256,240**	**325,226,720**	**349,961,040**	**83,256,240**	**8,325,624**	**3.3%**	**47,704,800**	**4,770,480**	**1.5%**

Source: Nat'l Assoc. of Realtors and John Burns Consulting; DRCOG; Economic & Planning Systems

US-36 Industrial Capture

From 2000 to 2020, the US-36 Corridor captured approximately 28,000 square feet of industrial space per year, which is 1.4 percent of the Denver region's annual average industrial space construction of 1.9 million square feet, shown in **Table 16** above. The corridor experienced a decline in industrial development from 2000 to 2010, although over the past decade US-36 Corridor captured 171,000 square feet of industrial development per year or 7.5 percent of the Denver metro annual average industrial construction of 2.2 million square feet.

The US-36 Corridor is estimated to achieve the historical capture rate from 2010 to 2020 of 7.5 percent, which equates to 6.2 million total square feet or 624,000 per year from 2020 to 2030. From 2030 to 2040, the corridor is estimated to gained 3.6 million square feet of industrial space or 358,000 per year, as shown in **Table 20**.

Table 20. Industrial Demand Capture, 2020-2040

	2020-2030			2030-2040			2020-2040
Demand Capture	% Capture	Total	Ann. #	% Capture	Total	Ann. #	Total
Industrial (sq. ft.)							
Denver Metro		83,256,240	8,325,624		47,704,800	4,770,480	130,961,040
US-36 Corridor	7.5%	6,244,218	624,422	7.5%	3,577,860	357,786	9,822,078
Redtail Ridge	**15.0%**	**936,633**	**93,663**	**20.0%**	**715,572**	**71,557**	**1,652,205**

Source: Economic & Planning Systems

Redtail Ridge Industrial Potential

The US-36 Corridor is anticipated to absorb an increasing amount industrial and Flex/R&D space from the Boulder and Denver markets from the growing technological hub of jobs.

Redtail Ridge is estimated to capture 15 percent of the US-36 Corridor demand over the 2020 to 2030 time period, which equates to 937,000 square feet or 93,700 square feet per year, shown in **Table 20**. As the project matures and the City of Boulder's industrial development reaches capacity the capture rate increases to 20 percent for the 2030 to 2040 time period. This results in an estimated 716,000 square feet of industrial development or an average of 72,000 square feet per year. The total estimated demand for industrial space on site is 1.6 million square feet.

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5. Retail Development Potential

This chapter summarizes retail development trends in Louisville and the local market area along the US-36 Corridor including cities in Boulder County and the City and County of Broomfield. Inventory, rental rates, and vacancy rates are examined to identify local market area conditions. Additionally, active and proposed retail development projects along the US-36 Corridor are summarized.

Retail Development Trends

In 2020, Louisville had a total of over 1.5 million square feet of retail development, shown in **Table 21**, which accounts for approximately 9 percent of the total 17.8 million square feet of retail development in Boulder County. There has been no new retail construction in Louisville since 2017. Lafayette had over 2 million square feet of retail space in 2020 and accounts for 12 percent of Boulder County's retail development. Since 2010, Lafayette gained 269,000 square feet of retail space or 26,900 square feet per year. In 2020, Superior had 792,000 square feet of retail and gained 41,600 square feet since 2010 or an average of 4,200 square feet per year.

From 2010 to 2020, the City of Boulder gained 27,600 square feet of retail space, which is an average of 2,800 square feet per year to reach a total of 6.8 million square feet of retail space. The City and County of Broomfield gained 462,000 square feet of retail development since 2010 or an average of 46,300 square feet per year to reach at total of 5.1 million square feet of retail space.

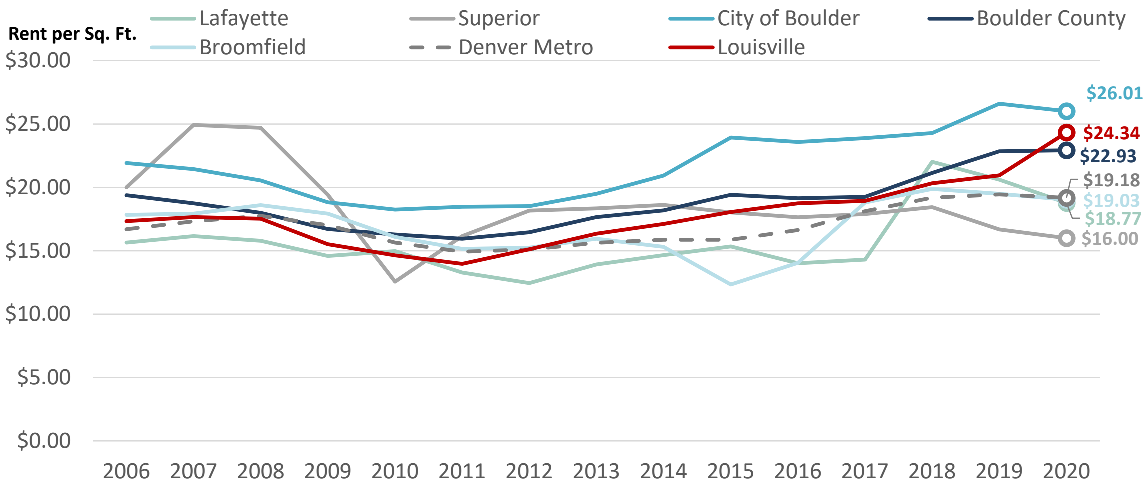
Table 21. Retail Development Inventory, 2010-2020

				2010-2020		
Retail Inventory (Sq. Ft.)	2010	2015	2020	Total	Ann. #	Ann. %
Louisville	1,526,141	1,553,152	1,524,997	-1,144	-114	0.0%
Lafayette	1,794,633	1,882,961	2,063,508	268,875	26,888	1.4%
Superior	750,844	750,844	792,414	41,570	4,157	0.5%
City of Boulder	6,831,375	6,839,963	6,858,993	27,618	2,762	0.0%
Boulder County	17,628,506	17,399,858	17,821,288	192,782	19,278	0.1%
Broomfield	4,673,358	4,717,813	5,136,150	462,792	46,279	0.9%

Source: CoStar; Economic & Planning Systems

In 2020, the average retail rental rate in Denver Metro was $19.18 per square foot, shown in **Figure 16**. Louisville's rental rate was higher than the Denver Metro at $24.34 per square foot. The highest rental rate was in the City of Boulder at $26.01 and the lowest in Superior at $16.00 per square foot.

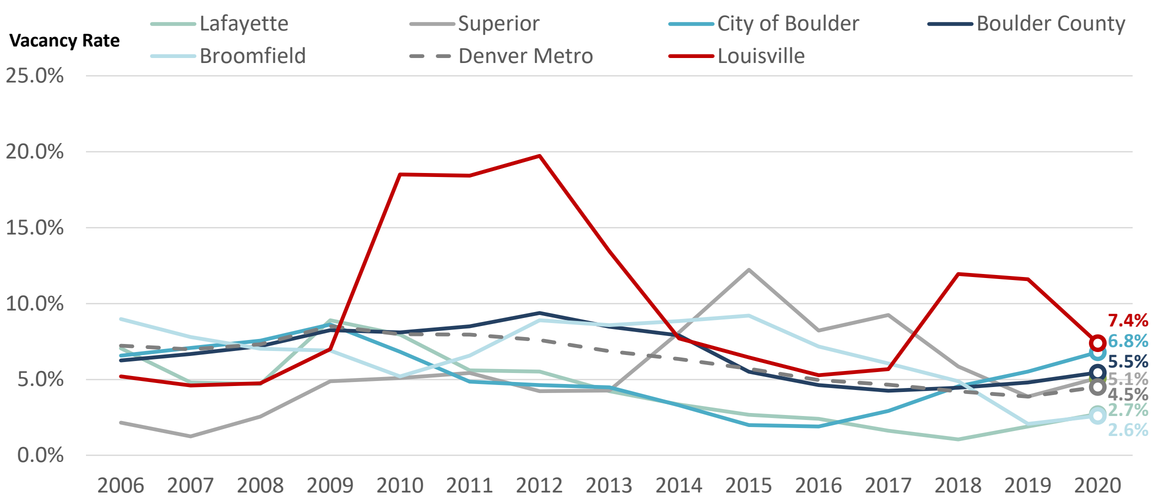
Figure 16. Retail Rental Rate, 2006-2020



Source: CoStar; Economic & Planning Systems

Louisville experienced a widely varying retail vacancy rate from 2010 to 2020 compared to the surrounding communities with a high of 19.7 percent in 2012 and a low of 5.3 percent in 2016, shown in **Figure 17**. In 2020, the average vacancy rate in Louisville was 7.4 percent, which is slightly higher than the City of Boulder at 6.8 percent. The Denver Metro had an average vacancy rate of 4.5 percent. The lowest rates were in Lafayette at 2.6 percent and Broomfield at 2.7 percent.

Figure 17. Retail Vacancy Rate, 2006-2020



Source: CoStar; Economic & Planning Systems

Louisville gained small amounts of retail development since 2006, with no new construction since 2017. The retail space planned for Redtail Ridge will be supported by the local employment on site generated by the office and industrial development. The planned 15,000 square feet of retail space in Phase 2 of the project is anticipated to include small restaurant, quick serve, and coffee establishments for employees. The retail space will also be supported via pass-through traffic along Northwest Parkway.

Active and Planned Projects

Planned retail development projects within the approximate 2-mile community trade area include the North End Market—a small infill retail project with approximately 7,400 square feet of space, and Arista—a 200-acre mixed use development with 42,000 square feet of existing and planned retail space.

The Downtown Superior project, which is just outside the trade area on McCaslin, is the most ambitious planned retail project. The 157-acre mixed use project is proposed to include up to 1,400 new housing units, 444,600 square feet of retail, 373,000 square feet of office and 500 hotel rooms. The project to date has mainly built housing. The commercial uses include the Sports Stable, an ice rink and recreation center, a 66,000 square foot medical office building, and a 130-room Element Hotel. The ability to build this much commercial space as planned will be contingent on the ability to attract destination anchor uses to the site as shown in **Figure 18**.

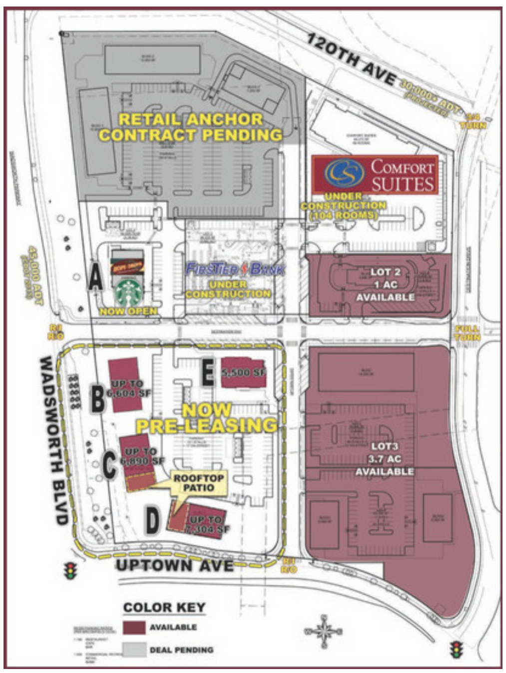
Planned development projects also include projects where outmoded retail space is being redeveloped with other uses. Flatiron Marketplace is a 300,000 square foot power center that is being redeveloped as a mixed-use project with 1,200 apartment units and 12,000 square feet of food and beverage retail.

Figure 18. Planned Retail and Mixed-Use Developments

Planned Retail and Mixed-Use Developments

North End Market
Blue Star Lane & S. Boulder Rd., Louisville

- 4,000 SF retail
- 3,350 SF restaurant building



Arista

US-36 & Interlocken Loop
Broomfield

- 200 acres
- 42,000 SF retail
- 1,600 residential units
- 90,000 SF (52-bed) University of Colorado Hospital facility

Additionally, Turnpike Shops at Arista is currently under construction with 26,000 square feet of restaurant and retail pad space. A larger retail anchor pad is available for sale.

Downtown Superior

- 157 acres
- 1,400 residential units
- 444,600 SF retail/commercial, including 150,000 SF indoor recreation
- 373,000 SF office
- 500 hotel rooms

There are currently 565 homes, 66,000 square foot medical office building, 130-hotel rooms, and a 165,000 square foot Sports Stable recreation facility.

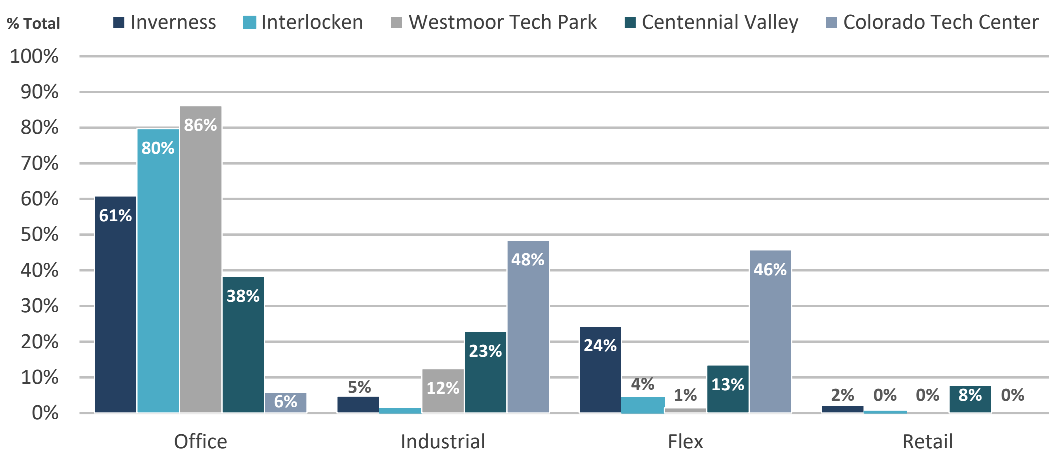
6. Development Plan and Strategy

This chapter summarizes the market findings by land use category and provides input to the proposed development program. It begins with a summary of current office and business park development trends and applications for the Redtail Ridge property.

Redtail Ridge Development Program

EPS recommendations for the Redtail Ridge development program are based on the market potentials by land use category presented above as well as a consideration of the existing development mix in competitive office/business parks. The land use mix for five of the existing established office/business parks are profiled in **Figure 19** below including Inverness, Interlocken, Westmoor Tech Park, Centennial Valley, and Colorado Tech Center.

Figure 19. Space Allocation by Type in Existing Business Parks



Source: CoStar; Economic & Planning Systems

Office uses are the predominant land use with 61 to 86 percent of total space in Inverness, Interlocken, and Westmoor Tech Park. These three business parks have lower amounts of industrial and Flex/R&D space and very minimal retail space. Flex/R&D space is not a significant land use in the South I-25 Corridor parks but is found elsewhere in the corridor in lower value locations primarily east in Compark and Dove Valley. Centennial Valley and Colorado Tech Center, both along the US-36 Corridor, have larger amounts of industrial space, 23 and 48 percent respectively and larger amounts of Flex/R&D space at 13 and 46 percent, respectively. Both business parks therefore have much lower amounts of office space with 38 percent in Centennial Valley and only 6 percent in Colorado Tech

Center. Retail space accounts for a small portion of these business parks and acts as a complimentary use to the employment centers. Redtail Ridge is expected to achieve a similar land use plan as Centennial Valley and Colorado Tech Center as Flex/R&D space is attracted to the site and derived from the office and industrial development.

The Redtail Ridge commercial development by land use category is summarized in **Table 22** below. The site's greatest potential is for office development, which is planned at 1.72 million square feet or 55 percent of the total development program. Industrial development is also a significant land use for the Project with 1.38 million square feet planned. Based on historic development in the corridor, the office and industrial development is expected to include Flex/R&D space in addition to traditional office and industrial space. Business relocations are anticipated from Boulder R&D spin-off businesses to the Louisville/Lafayette area. Retail uses are expected to be complementary. Retail space is planned at 15,000 square feet or less than 1 percent of the total commercial development. The total commercial development is planned to be 3.1 million square feet by 2035 as shown.

Table 22. Redtail Ridge Commercial Space Allocation, 2035

Redtail Ridge	Sq. Ft.	% Total
Office	1,720,000	55.2%
Industrial	1,380,000	44.3%
Retail	15,000	0.5%
Total	**3,115,000**	**100.0%**

Source: Brue Baukol; Economic & Planning Systems

This market study used a 20-year forecast period for estimating supportable development. The estimates are for 1.72 million square feet of office and 1.65 million square feet of industrial space. It is certainly possible that these amounts would be reached sooner by 2035, especially if one or more anchor tenant is attracted to the Project. If the Project is able to attain an anchor during its development the capture rates are likely to increase and the Project will fill space quicker than forecasted. Annual fluctuations in demand are affected by shorter term growth and recessionary cycles that are not easily forecast.

7. COVID-19 Impacts

This chapter addresses the temporal (short-term) and potential structural (long-term) impacts of the COVID-19 pandemic on real estate development and absorption, employment, and general economic impacts nationally and in Colorado and Boulder County.

COVID-19 Employment Impacts

Since peaking at 10 percent during the Great Recession, the national unemployment rate declined gradually over the past decade, reaching a near-historic low of 3.5 percent in February 2020. Since March of 2020, however, the COVID-19 pandemic has triggered a major impact on labor markets, with major contractions in employment and unemployment rates rising to near-historic highs.

Employment and Unemployment

In April 2020, the number of people receiving unemployment benefits in Colorado surged to 369,700, representing an increase of 279,500 or 310 percent over the January baseline. This equated to an unemployment rate of 12.2 percent. At its peak, new unemployment insurance claims reached 213,600 in April. Employment levels experienced a recovery between April and July, with nonfarm payroll employment adding 204,800 jobs, the number of unemployed persons decreased by 139,300 to 230,300 and the unemployment rate declined by 4.8 percentage points to 7.4 percent. After July, the economy continued to recover, but at a slower pace. By November, overall employment had increased by 99,700 jobs since July, the number of unemployed persons fell by 33,600, and the unemployment rate decreased to 6.2 percent, as shown in **Table 23**.

Boulder County and Denver metro similarly experienced a spike in unemployment. The number of people receiving unemployment benefits in April increased to 18,817 in Boulder County and to 216,235 in Denver metro, equating to unemployment rates of 9.7 and 12.1 percent, respectively, which represent the highest rates of unemployment since the Great Depression. After its peak, the unemployment rate in Boulder County and Denver metro gradually declined, reaching 5.1 percent and 6.3 percent, respectively, by November 2020. However, in both Boulder County and Denver metro, the unemployment rate continues to be significantly higher than its pre-pandemic level, indicating ongoing economic struggles.

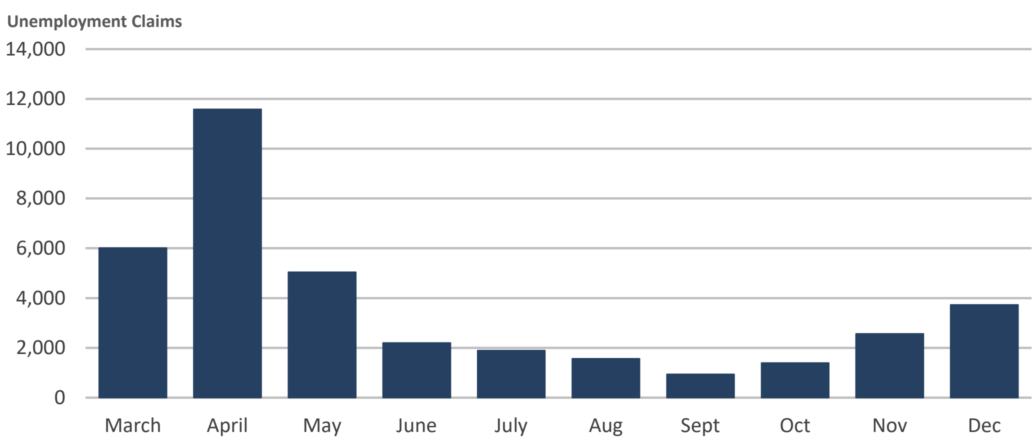
Table 23. Employment and Unemployment, January – November 2020

Description	Jan	April	July	Nov	Jan-July Total	Jan-July % Change	July-Nov Total	July-Nov % Change
Employment								
Boulder County	191,678	174,179	177,051	182,467	-14,627	-7.6%	5,416	3.1%
Denver Metro Area	1,805,100	1,577,054	1,689,356	1,737,106	-115,744	-6.4%	47,750	2.8%
Colorado	3,079,301	2,669,804	2,874,675	2,974,383	-204,626	-6.6%	99,708	3.5%
Unemployment								
Boulder County	4,648	18,817	12,660	9,723	8,012	172.4%	-2,937	-23.2%
Denver Metro Area	49,671	216,235	142,230	115,994	92,559	186.3%	-26,236	-18.4%
Colorado	90,179	369,691	230,335	196,649	140,156	155.4%	-33,686	-14.6%
Unemployment Rate								
Boulder County	2.4%	9.7%	6.7%	5.1%	4.3%	179.2%	-1.6%	-23.9%
Denver Metro Area	2.7%	12.1%	7.8%	6.3%	5.1%	190.0%	-1.5%	-19.4%
Colorado	2.8%	12.2%	7.4%	6.2%	4.6%	164.3%	-1.2%	-16.2%

Source: Bureau of Labor Statistics; Economic & Planning Systems

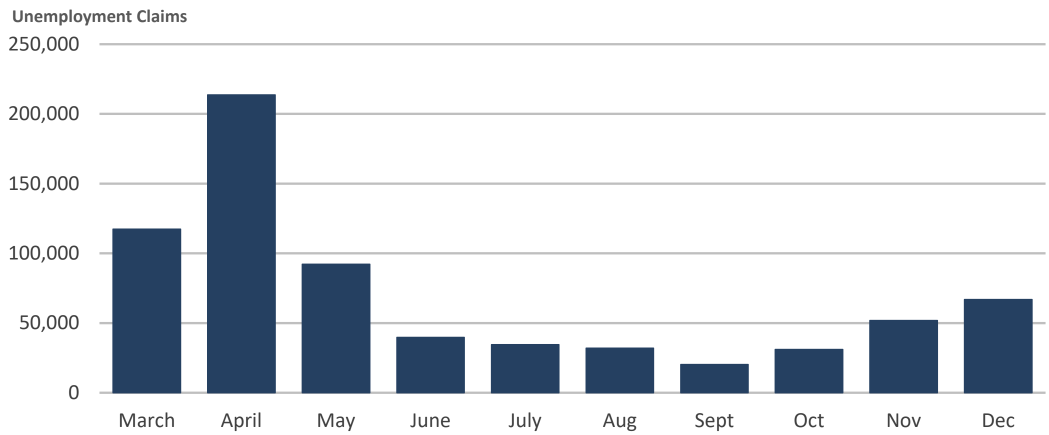
Unemployment insurance claims in Boulder County and Colorado followed a similar trajectory to claims nationwide. After peaking at nearly 213,700 claims in Colorado and 11,582 claims in Boulder County in April, the number of claims gradually declined, bottoming out at 20,346 claims in Colorado and 944 claims in Boulder County in September as shown in **Figure 20** and **Figure 21**. Over the past three months, there has been an uptick in the number of claims with 3,731 claims in Boulder County and 66,886 claims statewide during the month of December. While the current level of unemployment claims represents a significant reduction over the peak, it is still much higher than the average weekly claims in 2019, which averaged 83 in Boulder County and 2,044 in the state.

Figure 20. Boulder County Unemployment Claims, March-December 2020



Source: Colorado Department of Labor and Employment; Economic & Planning Systems

Figure 21. Colorado Unemployment Claims, March-December 2020



Source: Colorado Department of Labor and Employment; Economic & Planning Systems

Employment Effects by Sector

Employment sectors have been disparately affected by COVID-19. While overall employment has experienced a decline, lower-wage, service-oriented sectors, specifically Leisure and Hospitality and Retail Trade, have experienced steep declines. The reasons behind this are varied, but much of the disparity can be attributed to the necessity of in-person contact and the reductions in consumer spending on personal services and discretionary retail goods. As shown in **Table 24**, overall payroll employment declined by 7.4 percent between January and July, with Leisure and Hospitality experiencing the steepest drop, losing approximately 2.94 million or 18.3 percent of total jobs. Employment in Retail Trade, Education and Health, and Professional and Business Services also decreased considerably. Between July and December, overall employment rebounded, but the gains were not evenly distributed between sectors. Leisure and Hospitality declined by 440,000 jobs, while Retail Trade, Education and Health, Professional and Business Services experienced significant increases in employment. As of December, several industry sectors have employment levels above pre-pandemic levels, including Mining, Logging, and Construction; Transportation, Warehousing, and Utilities; and Retail Trade.

Table 24. United States Monthly Employment by Sector (In Thousands), 2020

United States	Jan	April	July	Dec	Jan-July Total	Jan-July % Change	July-Dec Total	July-Dec % Change
Mining, Logging and Construction	7,941	7,108	8,057	7,952	116	1.5%	-105	-1.3%
Information	2,857	2,607	2,583	2,640	-274	-9.6%	57	2.2%
Manufacturing	12,766	11,432	12,175	12,331	-591	-4.6%	156	1.3%
Transport, Warehousing, and Utilities	6,256	5,558	5,681	6,466	-575	-9.2%	785	13.8%
Wholesale Trade	5,905	5,520	5,619	5,700	-286	-4.8%	80	1.4%
Retail Trade	15,573	13,175	14,794	15,731	-779	-5.0%	936	6.3%
Financial Acitivites	8,762	8,523	8,681	8,758	-81	-0.9%	77	0.9%
Professional and Business Services	21,139	19,215	20,010	20,800	-1,129	-5.3%	790	3.9%
Education and Health	24,403	21,972	22,646	23,470	-1,757	-7.2%	824	3.6%
Leisure and Hospitality	16,092	8,485	13,152	12,712	-2,940	-18.3%	-440	-3.3%
Other Services	5,862	4,564	5,409	5,468	-453	-7.7%	59	1.1%
Government	22,597	22,158	20,268	21,750	-2,329	-10.3%	1,482	7.3%
Total	**150,153**	**130,317**	**139,076**	**143,777**	**-11,077**	**-7.4%**	**4,701**	**3.4%**

Source: Bureau of Labor Statistics; Economic & Planning Systems

Colorado lost a smaller share of total jobs between January and July than the United States as a whole, as overall employment declined by 150,600 or 5.4 percent, as shown in **Table 25**. Leisure and Hospitality was hit the hardest, losing 56,500 or 16.4 percent of total jobs. Employment in the state's second and third largest sectors, Government and Education and Health Services experienced significant declines of 45,000 jobs and 22,600 jobs, or 10.0 percent and 6.4 percent of their total employment, respectively.

Between July and December, employment in Colorado continued to recover, adding 52,000 jobs. Much of this gain was concentrated in the Transportation, Warehousing, and Utilities, which added 20,300 jobs, and Government, which added 25,900 jobs (likely the result of employees returning from furlough). However, the Leisure and Hospitality continued to contract over this time, losing 33,100 jobs or 11.5 percent of total employment, showing its continued struggles through the pandemic. As of December, employment in several industries are above pre-pandemic levels, including Manufacturing; Transportation, Warehousing, and Utilities; Retail Trade; Financial Activities; and Professional and Business Services.

Table 25. Colorado Monthly Employment by Sector (In Thousands), 2020

Colorado	Jan	April	July	Dec	Jan-July Total	Jan-July % Change	July-Dec Total	July-Dec % Change
Mining, Logging and Construction	202.5	186.9	202.6	196.8	0.1	0.0%	-5.8	-2.9%
Information	75.1	75.3	72.8	72.8	-2.3	-3.1%	0.0	0.0%
Manufacturing	150.6	138.1	151.2	152.6	0.6	0.4%	1.4	0.9%
Transport, Warehousing, and Utilities	100.5	88.8	87.4	107.7	-13.1	-13.0%	20.3	23.2%
Wholesale Trade	110.5	106.4	106.9	108.2	-3.6	-3.3%	1.3	1.2%
Retail Trade	269.7	236.6	262.9	282.0	-6.8	-2.5%	19.1	7.3%
Financial Activities	172.1	167.4	171.1	173.9	-1.0	-0.6%	2.8	1.6%
Prof and Business Services	438.8	424.1	446.7	456.4	7.9	1.8%	9.7	2.2%
Education and Health	352.4	305.6	329.8	339.4	-22.6	-6.4%	9.6	2.9%
Leisure and Hospitality	345.0	180.7	288.5	255.4	-56.5	-16.4%	-33.1	-11.5%
Other Services	112.3	91.5	104.0	104.8	-8.3	-7.4%	0.8	0.8%
Government	451.4	458.1	406.4	432.3	-45.0	-10.0%	25.9	6.4%
Total	**2,780.9**	**2,459.5**	**2,630.3**	**2,682.3**	**-150.6**	**-5.4%**	**52.0**	**2.0%**

Source: Bureau of Labor Statistics; Economic & Planning Systems

Economic Outlook

As the economy begins to re-open and economic activity begins to recover, the demand for workers will gradually increase and the pace of layoffs will slow. The number of payroll employees in Colorado increased monthly from May to October suggesting that businesses have started to hire and recall workers. However, the extent and speed of this recovery is uncertain. It will depend on several factors including how quickly social distancing restrictions ease, how quickly consumer and business confidence rebound, how quickly the vaccine is distributed, and how effective the vaccine will be.

One metric that will be critical to monitor going forward is the number of unemployment claims. As previously noted, the number of claims steadily fell from its peak in April but saw an uptick in November and December. Unemployment claims remain at a much higher level than a normal year, and the overall number of people receiving unemployment benefits has not yet declined significantly, indicating that job gains are being mostly offset by continued layoffs. The continued pace of layoffs will be a good indicator of the extent to which job losses during the pandemic will be permanent.

According to forecasts from the Congressional Budget Office (CBO), employment conditions were expected to improve after the fourth quarter of 2020. In 2021, the CBO projects payroll employment to increase by approximately 600,000 per month, resulting in an employment level by the end of 2021 that is 7 to 10 percent below its pre-pandemic level.

COVID-19 Real Estate Impacts

The Covid-19 induced recession is impacting real estate sectors to differing degrees in the short term and may result in a different set of long-term impacts as further discussed below.

Short Term Impacts

The level of impact on type of development is expected to vary, but the length of the period of recovery is still unclear. The current outlook by secondary sources tracked by EPS is that these economic and fiscal impacts are expected to dissipate over a one to three-year period.

Over the last nine months since the initial shutdown of the economy in March 2020, the sectors most impacted have been discretionary retail stores and hospitality. Discretionary retail, including specialty retail, dining and entertainment, and other non-essential retail/commercial businesses were completely closed for periods of time and operating at reduced capacity for the remainder of the year. Hotels and other hospitality related businesses have been impacted by closures as well as reductions in business and leisure travel, conventions and meetings, and other group related businesses.

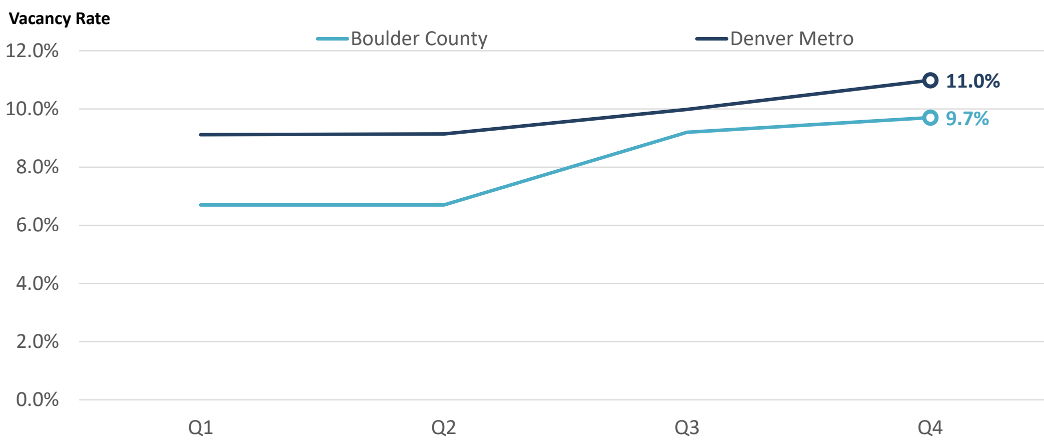
The residential sector has remained surprisingly resilient, with single family permits at their highest level nationally since 2007. This has been fueled by historically low interest rates. It is also reflective of the disproportionate impact of the recession on low-and moderate-income workers who have suffered the majority of the job losses.

Figure 22. Potential Impact on Real Estate by Sector

Type of Market Impact	Potential Impact by Real Estate Sector						
	Single-Family Residential	Multifamily Residential	Office / R&D Flex	Essential Retail	Discretionary Retail	Warehouse / Industrial	Hospitality
Short-term	↔	↔	↓	↑	↓	↑	↓
Structural	↔	↑	↔	↑	↓	↑	↓

The office sector has also experienced some softening of demand as vacancy rates have increased due at least in part to large numbers of private companies and professional services firms continuing to work remotely. In Boulder County, office vacancy increased by 3.0 percentage points over the course of 2020 from 6.7 percent in the first quarter to 9.7 percent in the fourth quarter, as shown in **Figure 23**. The Denver metro area had a 9.1 percent office vacancy in the first quarter of 2020 and increased by 1.9 percentage points to reach 11.0 percent in the fourth quarter.

Figure 23. Office Quarterly Vacancy Rate, 2020

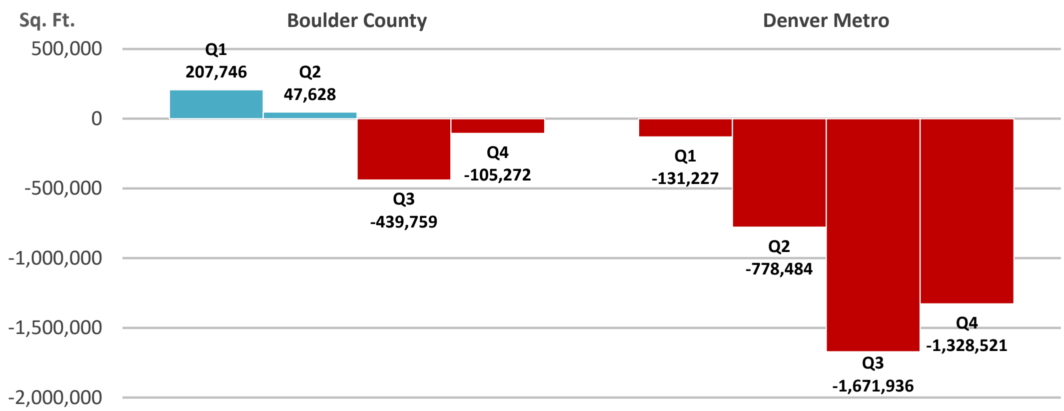


Source: CoStar; Economic & Planning Systems

The net office absorption in Boulder County was relatively strong in the years before the pandemic with annual net absorption from 2016 to 2019 ranging from 85,000 to 606,000 square feet. Boulder County experienced positive net office absorption during the first two quarters of 2020 with a total of 255,000 square feet, as shown in **Figure 24**. The third quarter had the largest decline in office space with the loss of nearly 440,000 square feet of space followed by a decline of 105,000 square feet in the fourth quarter.

The Denver metro area has not had a negative annual net office absorption since the Great Recession in 2009. In 2020, the metro area experienced a decline in net office absorption each quarter with the largest decline of 1.6 million square feet in the third quarter. This trend of a loss in office space is a short-term impact of the pandemic and is not anticipated to continue in the long term. While office jobs may develop a hybrid model of work from home and in-office work, the need for office space will still be present. Additionally, the current decline in traditional office demand creates consideration for flex space that can be used as office product and is more versatile for future needs.

Figure 24. Office Quarterly Net Absorption, 2020

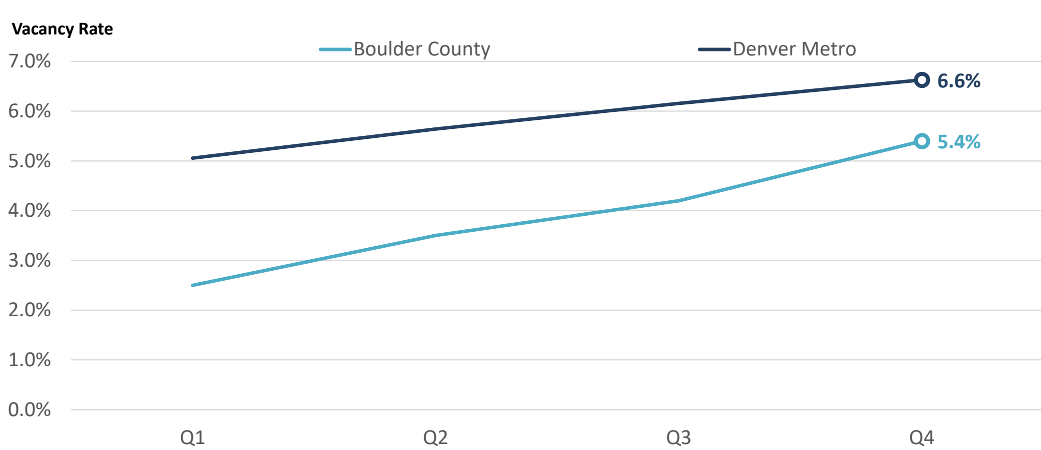


Source: CoStar; Economic & Planning Systems

On the positive side, the industrial sector has experienced the largest growth led by an increase in demand for logistics space by e-commerce companies, delivery providers, and home improvement retailers. There has also been modest growth in demand for essential retail including grocery, drug, liquor, and home improvement stores.

Industrial vacancy rates in 2020 have increased a similar amount as office, although industrial rates are at a lower overall level. In Boulder County, industrial vacancy increased by 2.9 percentage points over the course of 2020 from 2.5 percent in the first quarter to 5.4 percent in the fourth quarter, as shown in **Figure 25**. The Denver metro area had a 5.1 percent vacancy rate in the first quarter of 2020 and increased by 1.6 percentage points to reach 6.6 percent in the fourth quarter.

Figure 25. Industrial Quarterly Vacancy Rate, 2020



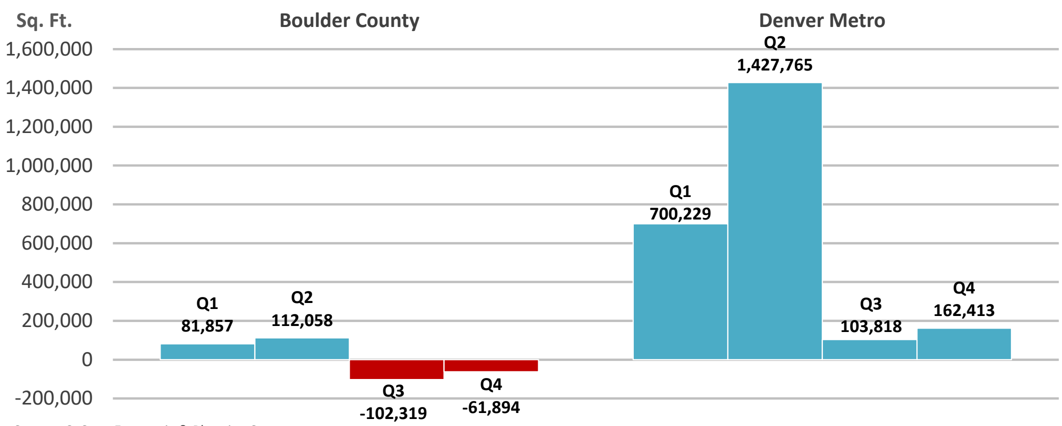
Source: CoStar; Economic & Planning Systems

Industrial development has not been impacted as drastically as office development. Boulder County experienced positive net office absorption during the first two quarters of 2020 with a total of 193,900 square feet, as shown in

Figure 26. The third quarter had the largest decline in industrial space with the loss of over 102,300 square feet of space followed by another decline of 61,900 square feet in the fourth quarter.

The Denver metro area's industrial development has been strong despite the pandemic. In 2020, the metro area experienced industrial growth each quarter with the largest net increase of 1.4 million square feet in the second quarter. While the third and fourth quarters were small net increases compared to the first half of the year, both quarters gained a total of 266,200 square feet of industrial space.

Figure 26. Industrial Quarterly Net Absorption, 2020



Source: CoStar; Economic & Planning Systems

Structural Impacts

Over the longer term, which is estimated as one to three years, employment levels should improve, and unemployment return to more normal rates. This should allow real estate markets to normalize or to realize a "new normal." Many experts expect discretionary retail to continue to be challenged by the fundamental shifts in retailing that were only exacerbated by this recession including the growth of e-commerce, bricks and mortar store closings and consolidations, and reductions in store sizes. There is an expectation that the growth of dining and entertainment and experiential retailing will return when the pandemic restrictions are diminished. This would also apply to the hospitality sector, but the recovery period is expected to be longer.

The office sector may also experience a longer recovery period as there will be a large amount of inventory that needs to be leased before vacancy rates drop to a level triggering new construction. However, office vacancies have been offset by the continued positive job growth in office using sectors in the Denver metro area that if continued would shorten this recovery. The industrial sector is forecasted to experience continued growth fueled by logistics but also manufacturing and R&D if the recent rise in tariffs stay in place and reshoring opportunities under consideration by American companies are implemented.