MEMORANDUM

1725 PEORIA – PARKING NEEDS ANALYSIS

5350 S. Roslyn Street, Suite 220
Greenwood Village, CO 80111

Office: 303.694.6622
Fax: 888.502.5726
www.walkerparking.com

DATE:	March 23, 2017
TO:	Mr. Rob Longsworth
COMPANY:	Ovis Capital, LLC
ADDRESS:	18 East 48th Street, 19th Floor
CITY/STATE:	New York, NY 10017
CC:	Jeremiah Simpson (Walker)
HARD COPY TO FOLLOW:	No
FROM:	Kramer, Ezra
PROJECT NAME:	1725 Peoria Street Parking Needs Analysis
PROJECT NUMBER:	23-7741.00
SUBJECT:	1725 Peoria – Parking Needs Analysis - Final

Walker Parking Consultants ("Walker") is pleased to provide the following *Parking Needs Analysis* to Ovis Capital LLC ("Ovis") for a proposed apartment and retail mixed-use development, to be located at 1725 Peoria Street in Aurora, CO.

EXECUTIVE SUMMARY

The following are our findings and conclusions. These items are discussed in more detail in later sections of this memorandum:

- City code suggests the site include 141 resident parking spaces, 19 resident guest parking spaces, and 16 retail parking spaces; a total of **176 spaces**.
- City code allows for a reduction if the site provides parking for more than one land use type, and suggests reductions throughout the day based on typical activity levels; accounting for these factors a total of **160 spaces** is required.
- Based on our shared parking and market analysis, Walker recommends that the developer provide a minimum of **96 spaces for the entire program (if all spaces are shared)**; support for this number follows.
- If unshared, Walker found that the develop should provide **96 spaces** for the residential dwellings (residents and guests), and an additional **4 spaces** for the on-site retail.
- Surveys of comparable sites, both national and local, suggest a **blended residential parking ratio of around 1 space per unit**.
- The site falls within the Fitzsimons Boundary Area District, which does not have reduced parking requirements for any uses; the boundaries of **two TOD districts (with reduced parking requirements to encourage transit usage) and the Colfax Urban Activity Corridor (regional desire for transit-oriented development) are within ¼ mile from the 1725 Peoria site**[1]. Were the site within those TOD districts the parking requirement would be **104 spaces or fewer.**

[1] See Figure 2, Page 11.

- **The site is adjacent to the Anschutz Medical Campus**, which is the largest employment area within Aurora and has a deficit of residential units under current conditions; **the number of employees and students in the area is anticipated to continue to grow at a rapid pace and nearby housing will continue to be needed for these groups.**
- The Means of Transportation to Work data sets show that those living within 1 mile of this site tend to use alternative modes of transportation at a higher rate than those arriving to the area for work; **those both living and working within 1 mile of the site have a drive ratio of nearly half when compared to people who live within 20 miles and work within 1 mile of the site**.
- When parking is **unbundled** (separate lease for parking and residential unit) and **shared** (unreserved), the development **attracts proportionally more residents who do not own personal vehicles** and resident vehicle ownership is reduced accordingly.

1 PROJECT DESCRIPTION

Ovis is currently working with their team of design professionals to plan a new multi-family residential project to be developed at Peoria Street and East 17th Avenue adjacent to the Anschutz Medical Campus in Aurora, Colorado. The 8-story building will accommodate 96 rental residential units on floors 4 through 8, and 4,000 SF of ground floor retail. Per the concept plans, parking for the project will be provided through 9 tuck-under spaces at-grade, and 101 spaces located in a gated parking facility (partial floors 1 and 2; full floor 3). The breakdown of the proposed program data for the site is provided in Table 1 (on the following page).

Parking within the garage will be available to residential tenants as the highest priority user group and allocated based on market-appropriate ratios, influenced by factors such as unit size, pricing, market demands, and anticipated tenant demographics. Residential parking may be either reserved or unreserved, and may be priced differently for different types of parking permits available.

Although the retail space is believed to draw primarily from site tenants and nearby neighborhood (pedestrian and bicycle arrivals), 9 tuck-under parking spaces along the alley will provide on-site parking for the retail space and residential guests. Additional spaces within the structure may be utilized by retail employee as well, if needed and available (unreserved residential spaces may tend to be less utilized during the daytime).

Table 1: Program Summary

RESIDENTIAL		
Unit Name	**Type**	**Count**
S1	studio	30
A0	1br/1ba	10
A1	1br/1ba	2
A2	1br/1ba	18
A3	1br/1ba	8
A4	1br/1ba/den	5
B1	2br/2ba	23
Total Units		**96**

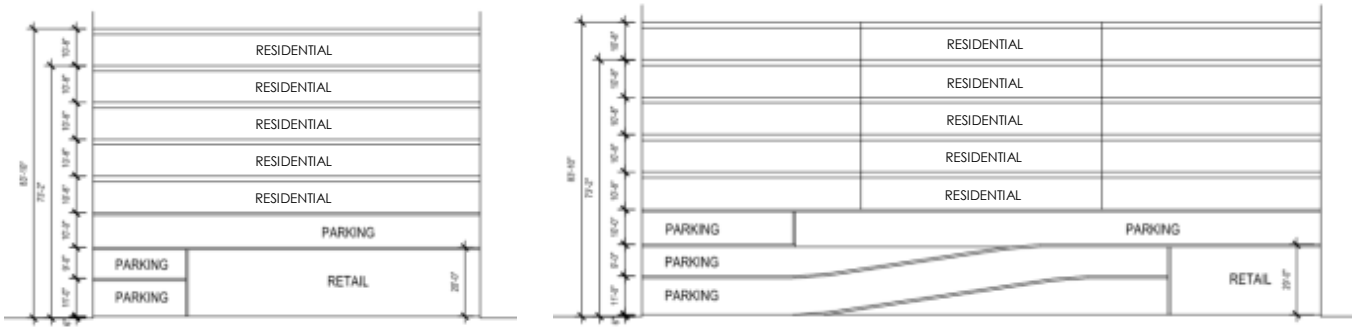
RETAIL	Sq. Ft.
Neighborhood/Convenience	4,000

PARKING	Spaces
Total for Retail	9
Total for Residential	101
Total Provided	**110**
Spaces per Residential Unit	1.05

Source: Humphreys & Partners Architects, L.P., 2018

Figure 1 provides a basic understanding of the site layout via building cross-sections showing how each level will be used. More detailed site plans are found as an attachment at the end of this memo, and provide context for the discussion of parking orientation and parking space management.

Figure 1: 1725 Peoria Program (Cross-sections)



From East 17th Avenue **From alley toward Peoria Street**

Source: Humphreys & Partners Architects, L.P., 2018

Ovis is in the process of preparing project submittals for City of Aurora consideration. A pre-application meeting took place on June 1, 2017 and generated some comments from City staff. Pertinent to parking, staff noted a desire for the development to be at least a 1:1 ratio for parking and residential units. Staff requested a parking analysis of at least three (3) similar developments in the Denver Metro Area to determine the required parking count and provide justification for the number of spaces provided. Staff noted that typical on-site parking requirements are found in section 146-1504 of the zoning code, and if a parking reduction waiver is to be requested, that the parking analysis should follow the requirements in section 146-1505 of the zoning code.

As such, Ovis requested that Walker prepare a *Parking Needs Analysis* to quantify the number of parking spaces appropriate to serve the 1725 Peoria site to meet the requests of City staff.

2 REQUIRED PARKING PER CITY OF AURORA CODE

Per the City of Aurora municipal code (Sections 708-712, Article 7, Chapter 46), the 1725 Peoria site is located within the Fitzsimons Boundary Area District ("FBAD") in an FBAD 1 subarea. This district is intended to include the important redevelopment area surrounding the former Fitzsimons Army Medical Center. It is intended to be a mixed-use zone that will link the University of Colorado Health Sciences Center and the area being developed by the Fitzsimons Redevelopment Authority with the surrounding neighborhoods. FBAD zoning criteria are intended to promote needed services for both the university and the neighborhoods. In addition, FBAD zoning is intended to provide for activities that will develop a unique identity for the area and enhance the city's tax base. This boundary area will constitute a primary entrance to the city for visitors from around the world.

There are no special notes within the FBAD code section discussing on the required number of parking spaces for land uses, therefore we assume that the parking requirements found in code section 146-1504 and the parking reduction waivers of section 146-1505 are applicable to the area.

The requirements pertaining to the subject site are summarized and calculated below in Table 2 based on the program quantities found in Table 1.

Table 2: Amount of Parking Required (Excerpt from Code Table 15.1)

LAND USE CLASSIFICATIONS	PARKING SPACE REQUIREMENTS
Residential Dwellings (Multi-family)	1 space per efficiency unit 1.5 spaces per one-bedroom unit 2 spaces for each two-and three-bedroom unit 2.5 spaces for each unit of 4 bedrooms or more Any one-bedroom unit with den, office, or loft shall be classified as a two-bedroom unit for these purposes. 1 space per dwelling unit plus 1 space per 5 dwelling units as guest parking.
Single-user Retail (Convenience)	1 space per 250 gfa

UNIT NAME	UNIT TYPE	UNIT COUNT	RATIO	SPACES
S1	studio	30	1.0/DU	30.0
A0	1br/1ba	10	1.5/DU	15.0
A1	1br/1ba	2	1.5/DU	3.0
A2	1br/1ba	18	1.5/DU	27.0
A3	1br/1ba	8	1.5/DU	12.0
A4	1br/1ba/den	5	1.5/DU	7.5
B1	2br/2ba	23	2.0/DU	46.0
RESIDENT TOTALS		96		140.5
RESIDENT GUEST		96	0.2/DU	19.2
RETAIL		4,000	4/Ksf GFA	16.0
TOTAL PARKING REQUIRED				**175.7**

Source: City of Aurora Zoning Code / Calculations per Walker, 2018

Section 146-1504. (B) of the zoning code allows for a reduction of permanent parking supply where multiple uses are located together in a common building containing a minimum of 20,000 SF of GFA. 1725 Peoria will contain over 70,000 SF of GFA and therefore qualifies for this reduction. The reductions for the included land uses and a calculation of those factors applied to the base parking requirements are found in Table 3.

Table 3: Schedule of Shared Parking (Excerpt from Code Table 15.2)

LAND USE CLASSIFICATIONS	BASE PARKING REQUIREMENTS	*Weekdays*			*Weekends*		
		Midnight - 7 AM	*7 AM - 6 PM*	*6 PM - Midnight*	*Midnight - 7 AM*	*7 AM - 6 PM*	*6 PM - Midnight*
Residential Dwellings (Multi-family)	159.7	*100%*	*50%*	*80%*	*100%*	*75%*	*75%*
		160	*80*	*128*	*160*	*120*	*120*
Single-user Retail (Convenience)	16	*0%*	*100%*	*80%*	*0%*	*100%*	*60%*
		0	*16*	*13*	*0*	*16*	*10*
SHARED PARKING TOTALS		**160**	**96**	**141**	**160**	**136**	**129**

Source: City of Aurora Zoning Code / Calculations per Walker, 2018

OTHER POSSIBLE PARKING REDUCTIONS

Section 146-1504. (D) describes another possible reduction where an unusual classification situation exists such that an applicant believes the actual demand for parking spaces will be less than the totals required by Table 15.1 within the code. The requirements of this provision are found in code section 146-1505. Those allowances and provisions for allowances pertaining to the subject site are summarized below:

- A parking reduction report meeting the requirements of the section must be submitted to the planning director.
- Non-residential parking reductions of up to 10% may be approved by the planning director administratively; All other reduction waivers require approval by the planning commission.
- The parking reduction report must include:
    - In the case of non-residential reduction of 10% or less, at minimum a document citing at least 3 other comparable instances of similar land uses in comparable settings in the Denver metropolitan area where a reduced amount of parking has proven successful.
    - In all other cases, the report should include the comparables report (above), plus a traffic generation study prepared by a professional traffic engineer.
- Approval of the waiver request is subject to whether the approving authority finds the parking needs of the use will be adequately served and at least one of the following:
    - The character of the use lowers the anticipated need for off-street parking, and data from similar uses establishes that there is not a present need for the parking;
    - A mix of residential uses with either office or retail uses is proposed, and the parking needs of all uses will be accommodated through shared parking;
    - If joint use of common parking areas is proposed, varying time periods of use will accommodate proposed parking needs; or,
    - The applicant provides an acceptable proposal for an alternate modes of transportation program, including a description of existing and proposed facilities and assurances that the use of alternate modes of transportation will continue to reduce the need for on-site parking on an ongoing basis.

3 RESIDENTIAL RESEARCH – COMPARATIVE STUDY

As requested by City staff and outlined in code section 146-1505, Walker gathered data for several local (Denver metropolitan area) multi-family projects that we have surveyed in recent years. We tailored the list of local comps to those with similar setting and program.

Over the past several years, Walker has also performed a significant amount of research regarding parking needs for residential projects across the country. We categorized the market areas and locations of each residential project to better understand the relationship with nearby land uses and availability of a robust public transportation system.

Walker has performed numerous studies throughout the country that reflect similar settings to 1725 Peoria. Residential projects similar to this specific project and location were tabulated within the following few pages.

LOCAL COMPS

Walker has performed both planning and design services for many multi-family projects in the Denver metropolitan area. Some of these projects have similar characteristics, but many do not match the unique setting of AMC-adjacent sites. Therefore, from our list of past projects, local comps were selected based on the following criteria:

- Smaller units (1-bedroom and 2-bedroom primarily)
- Located near to a transit corridor
- Located near to a large employment center such as Anschutz Medical Center, downtown Denver, or the University of Denver campus.

Data was collected using a variety of methods including field surveys, observations, calls to property managers, and unit counts and occupancy data from the Greystar real estate database, and provided within Table 4. Each of the three local comparable sites demonstrated parking demand ratios of less than 1.0/unit.

Table 4: Residential Parking Ratios – Local Comps

Name	Address	Units	Occupied	Avg. Size (SF)	Unit Type	Parking Supply	Avg. Overnight Occupancy	Ratio (per occupied unit)	Parking Price
21 Fitzsimons II	2200 Ursula St.	188	96%	746	40 studios; 91-1 bdr; 43 2 bdr; 14- 3 bdr	95	~95%	0.51 / unit	$35/ mo carport; $125/mo garage
Griffis Fitzsimons South	325 Sable Blvd.	288	95%	930	143-1 bdr; 106-2 bdr; 30-3 bdr	~290	~90%	0.91 / unit	$40/ mo carport; $50/mo garage; $150/mo detached garage
Station at Riverfront Park (Denver)	1460 Little Raven St.	275	85%	n/a	24 studio; 153- 1 bdr; 98 2 bdr	338	~55%	0.77 / unit	unknown rates (though adjacent comps are $150/mo +); valet parking avail.

Source: Walker Consultants, 2017

NATIONAL COMPS

Similarly, Walker maintains a database of parking demand ratios for multi-family housing projects we have surveyed across the United States. This database was sorted to include only projects that meet the following criteria:

- Suburban and urban non-CBD sites only (urban CBD sites excluded)
- Average commuter drive ratios of 60%-92%
- Projects containing a majority of smaller unit types – 1-bedromm, 2-bedroom (those with 3-bdroom and larger were excluded)

The remaining survey set contained 27 properties is provided in Table 5 (following page). We find an average parking supply ratio of 1.49 spaces / unit and an average peak demand ratio of 1.02 spaces/unit. Based on this data set, we recommend a parking supply ratio of 1.0/unit for projects located in an urban non-CBD context but closer to transit options and employment centers (Such as the Anschutz Medical Campus).

Table 5: Residential Parking Ratios – National Comps

Area Type	Drive Ratio	City	State	Complex Units	Studio	1-Bdrm	2-Bdrm	Peak Demand Ratio	Supply Demand Ratio
Suburban	92%	Indianapolis	IN	384	0	176	208	1.65	1.82
Urban-non CBD	60%	Los Angeles	CA	17				1.65	1.88
Suburban	95%	Indianapolis	IN	424	0	144	280	1.31	1.85
Suburban	-	Schaumburg	IL	528				1.29	2.38
Suburban	93%	Indianapolis	IN	252	0	96	156	1.25	1.58
Suburban	-	Newnan	GA	248	0	82	128	1.22	2.02
Suburban	86%	Encino	CA	154	18	110	26	1.22	1.23
Suburban	92%	Greenwood	IN	267	0	100	167	1.19	1.87
Urban-non CBD	60%	Los Angeles	CA	18	0	0	18	1.17	2.33
Urban-non CBD	70%	Los Angeles	CA	9				1.11	0.89
Suburban	90%	Woburn	MA	104	0	64	40	1.07	1.41
Urban-non CBD	87%	Los Angeles	CA	4		2	2	1.00	1.00
Urban-non CBD	83%	Los Angeles	CA	6				1.00	1.67
Urban-non CBD	73%	Los Angeles	CA	4				1.00	1.50
Urban-non CBD	60%	Los Angeles	CA	9				1.00	1.78
Suburban	90%	Woburn	MA	48	0	40	8	0.92	1.81
Urban-non CBD	60%	Los Angeles	CA	33				0.82	0.85
Urban-non CBD	60%	Los Angeles	CA	10				0.80	1.20
Urban-non CBD	83%	Los Angeles	CA	14	0	0	14	0.79	2.00
Urban-non CBD	95%	Denver	CO	275	24	153	96	0.77	1.00
Suburban	-	Abington	MA	192	0	64	64	0.76	1.03
Suburban	-	Abington	MA	213	0	106	107	0.72	1.00
Urban-non CBD	73%	Los Angeles	CA	10				0.70	1.10
Urban-non CBD	60%	Los Angeles	CA	6	0	0	6	0.67	1.83
Urban-non CBD	70%	Los Angeles	CA	10	0	10	0	0.60	1.10
Urban-non CBD	60%	Los Angeles	CA	5				0.60	1.00
Urban-non CBD	83%	Los Angeles	CA	19	0	19	0	0.53	1.16
Average								**1.02**	**1.49**
Median								**1.00**	**1.40**

Source: Walker Consultants, 2017

In addition to these projects, which are completed and occupied, there are several others within the Denver metropolitan area planned or under construction, which have parking ratios around 1:1. A few of these Denver-area projects are provided in Table 6 (following page).

Table 6: Residential Parking Ratios – Local Seeking Approval/Under Construction

Name	Location	Status	Units	Parking Supply	Ratio
600 Park Ave	Park Ave W & Welton St	Under Review for SDP Approval	238	213	0.89/Unit
Broadstone Uptown	18th Ave & Marion St	Under Review for SDP Approval	116	112	0.97/Unit
Parkside	1880 Little Raven St	Under Construction	161	169	1.05/Unit
Modera at Josephine Apts	S Josephine St & E Jewell Ave	Under Construction	139	150	1.08/Unit

Source: Harris Kocher Smith, 2017

4 SHARED PARKING

Shared-use parking is a concept in which land uses in close proximity share a "pool" of available spaces in order to reduce the overall parking needs for the site. The concept works well in situations where parking demand for different land uses peak at different times of the day, and for accessory land uses that generate the majority of activity through those who are already on-site.

For this particular project, some shared parking would be feasible assuming that some percentage of residential tenants may vacate their parking spaces during the day (on a typical weekday), and that the same spaces can be used by daytime retail customers or employees working in building. In similar TOD projects, Walker has found that between 40% and 60% of residential tenants tend to leave during the daytime, freeing up a percentage of spaces for shared use.

Using baseline research from Urban Land Institute ("ULI"), and updated research from the National Parking Association ("NPA"), Walker complied the following table (Table 7) of possible parking ratios to be applied for this project site. The TOD Unbundled parking ratios are most appropriate for this project location, based on our research data.

Table 7: Recommended Baseline Parking Ratios

LAND USE	SIZE	UNIT	RECOMMENDED BASE PARKING RATIOS (WEEKDAYS) Suburban Non-TOD[1]	Suburban TOD[2]	TOD Unbundled[3,4]	AURORA CODE MINIMUMS
Parking	110	Spaces				
Retail	4,000	SF	3.6/Ksf GFA	2.0/Ksf GFA	1.0/Ksf GFA	4.0/Ksf GFA
Residential	96	Units				
Residential Breakdown:						
Studio	30	31%	1.2/DU	1.2/DU	0.8/DU	1.2/DU
1 Bdrm	43	45%	1.9/DU	1.5/DU	1.0/DU	1.7/DU
2 Bdrm	23	24%	2.2/DU	1.8/DU	1.25/DU	2.2/DU
TOTAL UNSHARED PARKING NEEDS			**180 Spaces**	**147 Spaces**	**100 Spaces**	**176 Spaces**

1. Updated standards for non-TOD, owner-occupied condominiums per *Zoning Ordinance Provisions for Parking Washington DC:* National Parking Association, 2006; ratios include 0.10 spaces per unit for visitor parking
2. Per Walker research, recommend reductions for units of 1Bdr +
3. Per Walker research, recommend additional reductions of roughly 30% for all unit types
4. Mixed-use commercial (retail) ratio assumes transit usage for employees (Suburban TOD case) and some shared use of parking with unoccupied residential stalls (TOD Unbundled case)

Source: Walker Consultants, 2018

Key results of the unshared parking needs are highlighted below:

- Suburban non-TOD ratios; no shared use of residential stalls = **180 spaces needed**
- Suburban TOD ratios; no shared use of residential stalls = **147 spaces needed**
- TOD Unbundled ratios; no shared use of residential parking = **100 spaces needed**
- Aurora Code; no shared use of residential stalls = **176 spaces needed**

Once shared parking between the residential units and the on-site retail space is considered, we find that the parking needs of the retail space have very little impact on the overall site. Table 8, on the following page, runs each of the scenarios above through the City of Aurora's shared parking adjustments.

Peak space needs for all scenarios occurred during the midnight-7AM period as identified below. Key findings of the shared parking needs analysis are:

- Suburban non-TOD ratios; no shared use of residential stalls = **166 spaces needed**
- Suburban TOD ratios; no shared use of residential stalls = **140 spaces needed**
- TOD Unbundled ratios; no shared use of residential parking = **96 spaces needed**
- Aurora Code; no shared use of residential stalls = **160 spaces needed**

Table 8: Shared Parking Needs

SHARED PARKING	LAND USE CLASSIFICATIONS	BASE PARKING NEEDS	*Weekdays*			*Weekends*		
			Midnight-7AM	*7AM-6PM*	*6PM-Midnight*	*Midnight-7AM*	*7AM-6PM*	*6PM-Midnight*
Suburban Non-TOD	Residential Dwellings (Multi-family)	166	*100%*	*50%*	*80%*	*100%*	*75%*	*75%*
			166	83	133	166	125	125
	Single-user Retail (Convenience)	14	*0%*	*100%*	*80%*	*0%*	*100%*	*60%*
			0	14	11	0	14	8
	SHARED PARKING TOTALS		**166**	**97**	**144**	**166**	**139**	**133**
Suburban TOD	Residential Dwellings (Multi-family)	140	*100%*	*50%*	*80%*	*100%*	*75%*	*75%*
			140	70	112	140	105	105
	Single-user Retail (Convenience)	8	*0%*	*100%*	*80%*	*0%*	*100%*	*60%*
			0	8	6	0	8	5
	SHARED PARKING TOTALS		**140**	**78**	**118**	**140**	**113**	**110**
TOD Unbundled	Residential Dwellings (Multi-family)	96	*100%*	*50%*	*80%*	*100%*	*75%*	*75%*
			96	48	77	96	72	72
	Single-user Retail (Convenience)	4	*0%*	*100%*	*80%*	*0%*	*100%*	*60%*
			0	4	3	0	4	2
	SHARED PARKING TOTALS		**96**	**52**	**80**	**96**	**76**	**74**
Aurora Code Minimums	Residential Dwellings (Multi-family)	160	*100%*	*50%*	*80%*	*100%*	*75%*	*75%*
			160	80	128	160	120	120
	Single-user Retail (Convenience)	16	*0%*	*100%*	*80%*	*0%*	*100%*	*60%*
			0	16	13	0	16	10
	SHARED PARKING TOTALS		**160**	**96**	**141**	**160**	**136**	**130**

Source: Walker Consultants, 2018

5 FINAL RECOMMENDATIONS

Based on Walker's model and the adjustments and assumptions discussed above, we recommend that the development provide a minimum of **96** on-site parking spaces to satisfy the needs of the on-site retail and residential tenants using appropriate residential ratios for TOD areas. Spaces provided in excess of this number could be used for on-site for car share or bike share programs as a tenant amenity.

We recommend that the developer plan for allocations of parking by unit size and type. Based on our research into parking ratios (and supported by our market findings) we recommend planning for the following allocations:

- On-Site Retail parking = roughly 1.00 / 1,000 SF, access to additional stalls for employees shared with unreserved residential
- Studio Unit = 0.80 / unit (unbundled)
- 1 Bedroom units = 1.0 / unit (unbundled)
- 2 Bedroom Units = 1.25 / unit (unbundled)

6 FURTHER SUPPORT - MARKET AREA PARKING REDUCTION CONSIDERATIONS

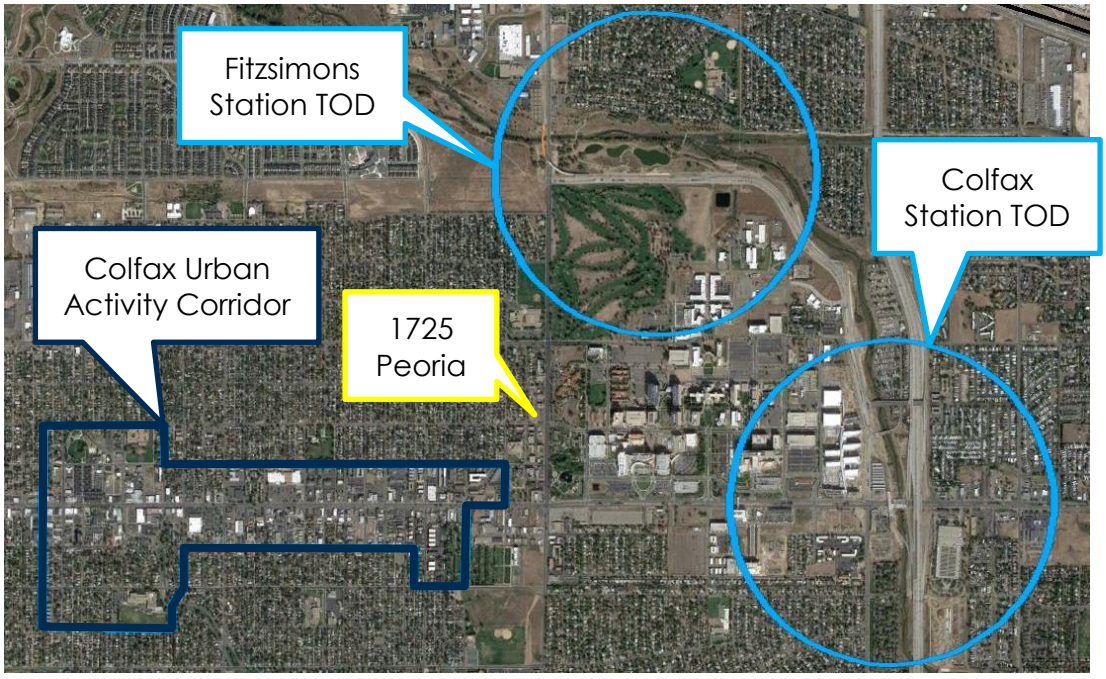
Aside from the shared parking reduction provided for within the zoning code, other considerations related to the market area and specific site should be considered. The City has already identified and developed special rules and requirements for Transit-oriented development ("TOD") districts, which account for considerable public transportation options in the near vicinity. The location of this site adjacent to the largest employment base in the city - Anschutz Medical Campus - should also be considered. And combining those market and site specifics we can also look at historical data from the U.S. Census Bureau related to Means of Transportation to Work. The following section provides more discussion on these topics.

TRANSIT ORIENTED DEVELOPMENT & URBAN ACTIVITY CENTERS / CORRIDORS

Transit-oriented development ("TOD") districts exist within the City of Aurora. These districts have modified development standards that encourage and support the use of public transportation (as opposed to single-occupant vehicles). This site is located just outside two such districts – Fitzsimons R-Line Station, Colfax R-Line Station. The TOD districts for the R-Line stations are specifically located within ½ mile of each station.

Urban Activity Centers and Corridors are designated by the Denver Regional Council of Governments ("DRCOG") to become pedestrian and transit-oriented locations of intense activity, which provide a range of retail, business, civic, cultural, and residential opportunities for their surrounding trade areas. The vision is that these areas would be increasingly linked by mass transit providing bus and rail options and stations accessible on foot, bicycle, local bus, or private automobile. These centers and corridors are important not only to Aurora but also have regional significance due to their integration into the regional transit and roadway system. The Colfax Avenue Corridor spans roughly one block north and south of Colfax Avenue from Oswego Street (east) to Dallas Street (west).

Figure 2: Nearby TOD Districts & Urban Centers



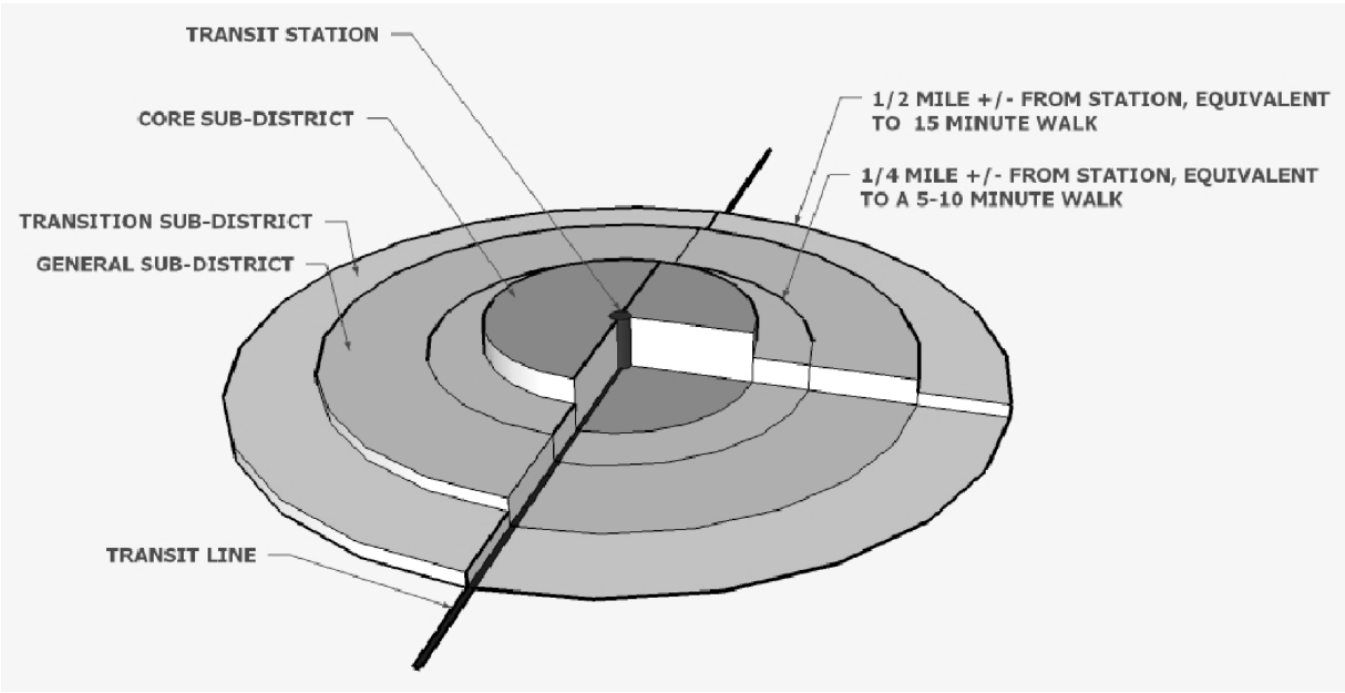
Source: Google Earth, City of Aurora, 2018

The Fitzsimons Station Area Plan (2016) provides details related to the market area surrounding the Fitzsimons R-Line Station. The plan lists proposed land use and employment increases, real estate statistics, and student survey findings. The document notes redevelopment plans (Colorado Science and Technology Park Urban Renewal Area) from Fitzsimons Parkway south to the Anschutz Medical Campus, which would increase local density with new employment opportunities, residences and services. The plan also notes a current need for additional nearby housing for students at the Anschutz Medical Campus. The plan suggests that the ½ mile area around the transit station is the minimum area of influence from the transit station.

Fitzsimons-Colfax and 13th Avenue Station Area Plan (2009) was a combined plan for both R-Line stations. The character of the area surrounding the Colfax Station was described as an employment center. New development is expected to be medical office with ground floor retail. It was also noted that the station will function as a bus transfer station for transit patrons accessing the regional rail system, and as a destination station for employees and visitors to the various hospitals, medical offices, and university buildings. This area has significant employment opportunities, and is well-served by public transportation (bus and rail with connections between).

TOD Districts are segmented in concentric rings from the station location as shown in Figure 3. The code suggests that each ¼ mile the impact of the station diminishes, which results in different requirements.

Figure 3: TOD Sub-District Description



Source: City of Aurora TOD District Zoning Code Section, 2008

As these requirements relate to parking, we pulled the minimum parking requirements for the land uses proposed for 1725 Peoria and calculated the parking requirement for each sub-district to see what the requirement would be if the project were located nearer to the identified TOD districts.

Table 9: TOD District Parking Requirements (Excerpt from Table 7-12)

USE GROUP	TOD ZONING SUB-DISTRICT		
	Core	General	Transition
Retail & Personal Service Uses	1.5/Ksf GFA	2.0/Ksf GFA	2.0/Ksf GFA
Residential (Multi-family)	0.5/DU	1.0/DU	1.0/DU
Required Retail Parking	6	8	8
Required Residential Parking	48	96	96
TOTAL REQUIRED PARKING	**54**	**104**	**104**

Source: City of Aurora TOD District Zoning Code Section, 2008; Calculations per Walker, 2018

The Colfax Urban Area Corridor is a DRCOG designated area, which is intended to be similar TOD with higher density and better connectivity for non-automobile travellers. A write-up describing more about urban activity centers and corridors was found in the Aurora Comprehensive Plan. This section describes the intended character and connectivity of these areas, as well as their regional importance. Colfax is currently a significant east-west corridor leading directly to downtown Denver. Commercial land use runs from the location of this site west into Denver and beyond. The corridor is served by regular bus service.

ANSCHUTZ MEDICAL CAMPUS

The Fitzsimons Army Medical Center was decommissioned in 1999 and became known as the Fitzsimons Medical Campus. The name of the portion of Fitzsimons Medical Campus that houses the university facilities was changed to its current name (Anschutz Medical Campus) in 2006 after the Anschutz family provided a significant donation to construct the Anschutz Centers for Advanced Medicine, which include the Anschutz Outpatient and Cancer Pavilions, and the Anschutz Inpatient Pavilion, all located on the campus.

The University of Colorado Anschutz Medical Campus, or AMC, is the campus containing the University of Colorado's health sciences-related schools and colleges, such as the University of Colorado School of Medicine, the CU School of Pharmacy, the CU College of Nursing, the University of Colorado School of Dentistry, and the Colorado School of Public Health, as well as the graduate school for various fields in the biological and biomedical sciences.

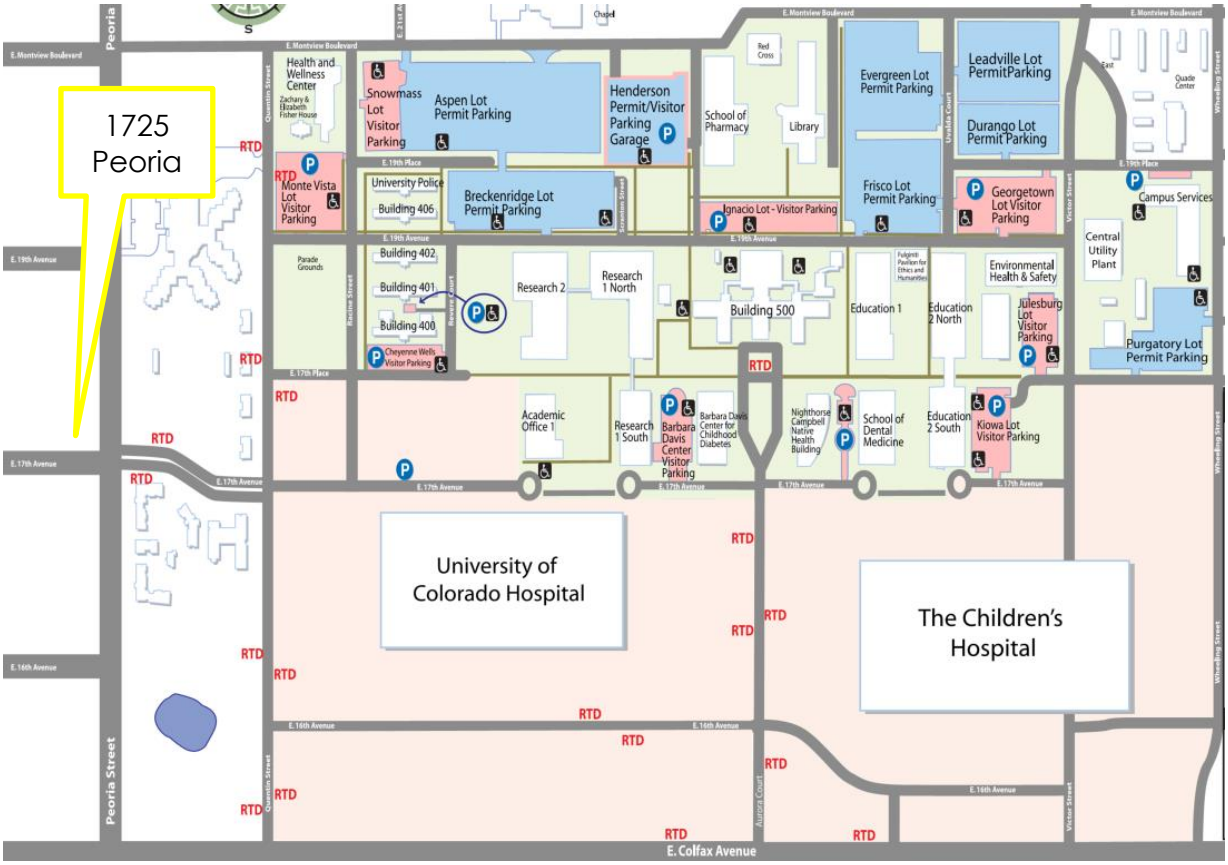
The remainder of the former base is now called the Fitzsimons Life Science District and includes a 184-acre Colorado Science+Technology Park, the Children's Hospital, the future Veterans Affairs hospital, and a residential/retail town center known as 21 Fitzsimons.

The AMC was recently documented as having an employee and student population of over 40,000. Projections suggest that the campus will reach 60,000 employees and students within the next six (6) to eight (8) years. Market reports and surveys suggest a current housing shortfall for those who would like to live in the immediate vicinity of the AMC. This condition is likely to be compounded by the rapid growth of the AMC in the next few years.

As depicted within Figure 4, there are several bus stop locations (denoted as “RTD”) around the campus and adjacent to 1725 Peoria. With adjacency to the AMC, it is likely that a most if not all of the future residents of

1725 Peoria will work or study at the AMC (market rate, rental, student and employee housing). This proximity both to their place of work, and nearby transit options should reduce personal vehicle dependency.

Figure 4: Nearby RTD Bus Stops & Location Adjacent to Anschutz Medical Campus



Source: AMC Website, 2017

MEANS OF TRANSPORTATION DATA

The American Community Survey is an ongoing effort performed by the U.S. Census Bureau that gathers various data points from U.S. citizens. The survey provides insight into jobs and occupation, educational attainment, veterans, whether people own or rent their home, and many other topics. This information is used by public officials, planner and entrepreneurs to assess the past and to plan for the future.

One data set that helps inform transportation planning is the Means of Transportation to Work data set. This data set was developed by compiling data related to place of residence, place of work, and primary mode of transportation between the two. The most recent compiled data set runs from 2006 to 2010.

We pulled information from the data set to review a few scenarios. The scenarios include:

- Those living within a few blocks of the site and working within 20 miles;
- Those living within a few blocks of the site and working within 5 miles;

- Those living within a few blocks of the site and working within that same area;
- Those working within a few blocks of the site and living within 5 miles; and,
- Those working within a few blocks of the site and living within 20 miles.

Evaluating how proximity to Anschutz impacts commuter choice may provide valuable insight into how people arrived, which in turn would educate planning decisions. A summary of the data sets is provided in Table 10. More detailed summary tables relating actual means of transportation and quantities of respondents is found in the attachments.

Table 10: Means of Transportation to Work Summary – Drive Ratios

Live within __ miles	Work within 1 mile	Work within 5 miles	Work within 20 miles
20	83%		
5	82%		
1	44%	63%	68%

Source: U.S. Census Bureau – ACS 2006-2010

The correlation of drive ratio and distance between work and home for this area is evident. Those who live in the immediate vicinity of 1725 Peoria tend to drive less than those travelling the same distance from other places. This suggests that residents of the area favor alternative modes of transportation in a higher proportion than residents of other areas who work within the immediate vicinity. Those travelling within 5 miles generated a vehicle for 63% of trips if they lived nearby, and 82% of trips if they worked nearby. Those travelling within 20 miles generated a vehicle for 68% of trips if they lived nearby, and 83% of trips if they worked nearby.

Because we understand there to be a housing shortage for employees and students of the AMC, it is likely that the future residents would be AMC employees and students and would therefore fall within the group that lives and works within 1 mile of the site. Therefore, we provide more detail for that group within Table 11, below.

Table 11: Means of Transportation to Work Summary – Living/Working within 1 Mile

Form of Transportation	Number of Employees	Parked Vehicle Generation Veh. Occ.	Veh. Gen.
Drove Car Alone	229	1	229
Carpooled:			
In a 2-person carpool	75	2	38
In a 3-person carpool	10	3	3
In a 4-person carpool	10	4	3
In a 5 or 6-person carpool	0	5.5	0
In a 7-or-more-person carpool	0	7	0
Bicycle	35		
Walked	260		
Total Employees*	**619**	**Total Vehicles**	**273**
		Drive Ratio	**44%**

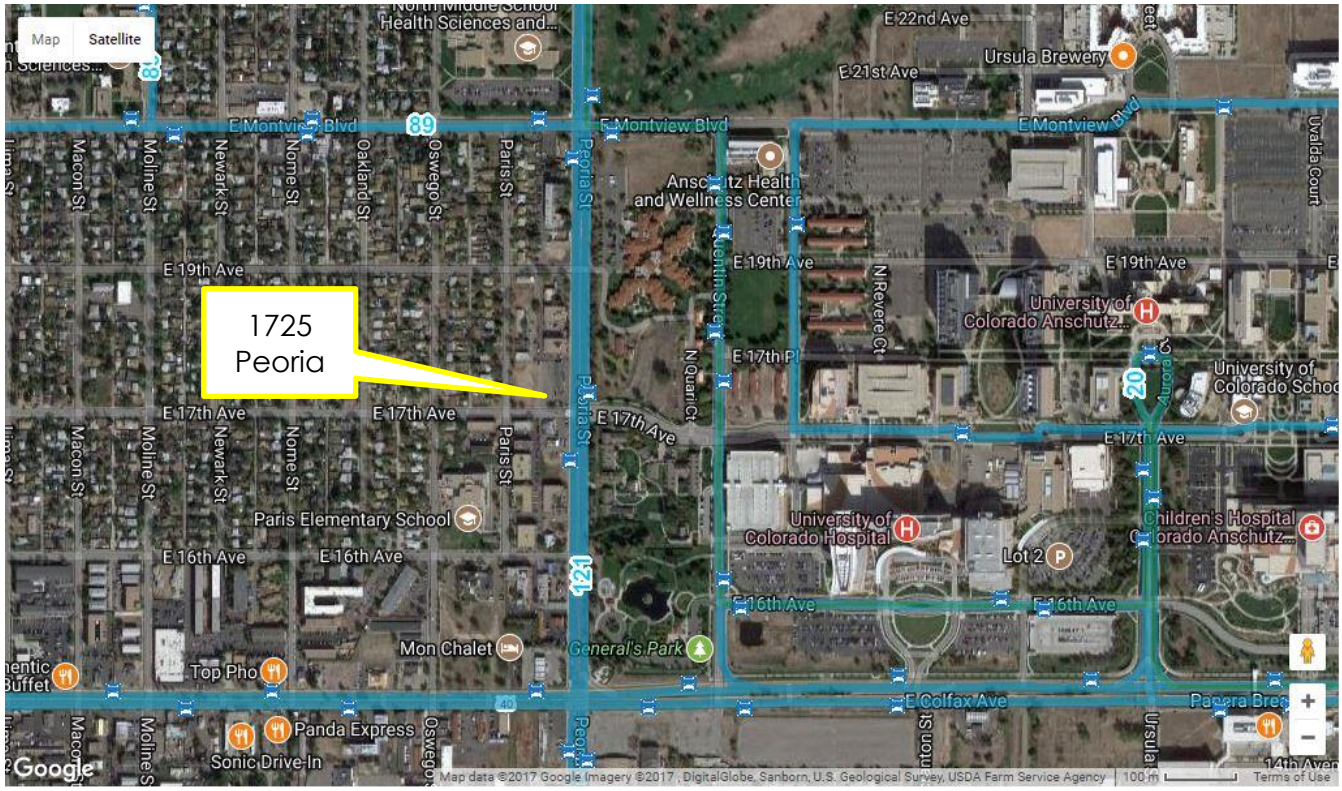
*Total Employees who commute to work; those working from home are removed for this analysis

Source: U.S. Census Bureau – ACS 2006-2010

The Means of Transportation to Work data is historical, and does not include the recent rise of transportation network companies ("TNCs") such as Uber and Lyft. The addition of these on-demand app-based transportation options in a community often shifts trips from single-occupant vehicles, rental cars, taxi rides. Although it is unclear what the impact has been on Aurora (and Greater Denver), the impact would lower drive ratio and may reduce vehicle ownership over time.

Even the historical Means of Transportation to Work data supports Walker's belief that most residents of the area who work nearby will not generate a vehicle. And for those who do not work nearby, the transit options available to them impact their commute options, much like in the transition sub-districts of the nearby TOD districts. The parking needs for this site likely fall between the range of 44% and 68%, but would be skewed to the lower end of the range due to most residential serving those working at AMC.

Figure 5: Area Public Transportation Routes/Stops



Anschutz Shuttle - Free service on campus to Fitzsimons R-Line Station (5:40AM-8:00PM; 8min headways)
Bus 20 - 20th Ave to Denver and AMC Campus (6:00AM-Midnight; variable headways)
Bus 89 - Stapleton R-Line Station to AMC (6:00AM-10:00PM; hourly headways)
Bus 121 - Peoria St Airport Blvd Station to Nine Mile Station (3:00AM-1:00AM; variable headways)
Bus 15/15L - Colfax Ave to Denver and Colfax/Tower (24/7; variable headways)
FF5 - Flatiron Flyer from Boulder to Anschutz (Commuter timing in both directions)

Source: RTD Website, 2017

In general, having multiple transit options tends to reduce parking demand for commercial uses in an area by reducing the number of "destination" trips that are generated by single-occupancy vehicles ("SOV"). The same

case is not always applicable to multi-family residential projects, as many commuters will tend to utilize local transit to commute to work but will still need a parking space available for vehicle storage at their home address.

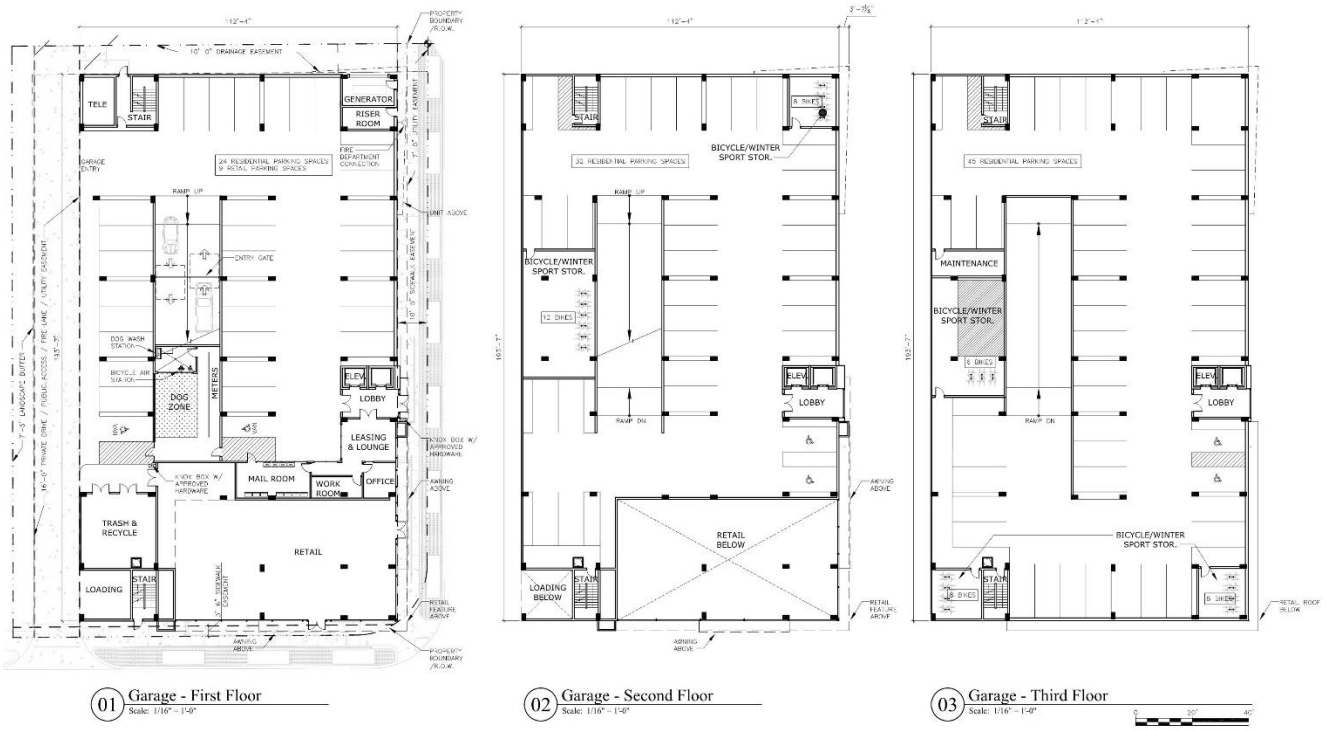
One trend that Walker has seen for TOD residential projects is that some workers will opt to reduce the number of vehicles that they own per household because of the convenient transit alternatives located. This trend is more prevalent for the projects that unbundle and price their parking spaces separately from the residential unit. This leaves the decision up to the tenant to make an economic decision as to the cost of the parking spaces versus the convenience of having a first or second vehicle.

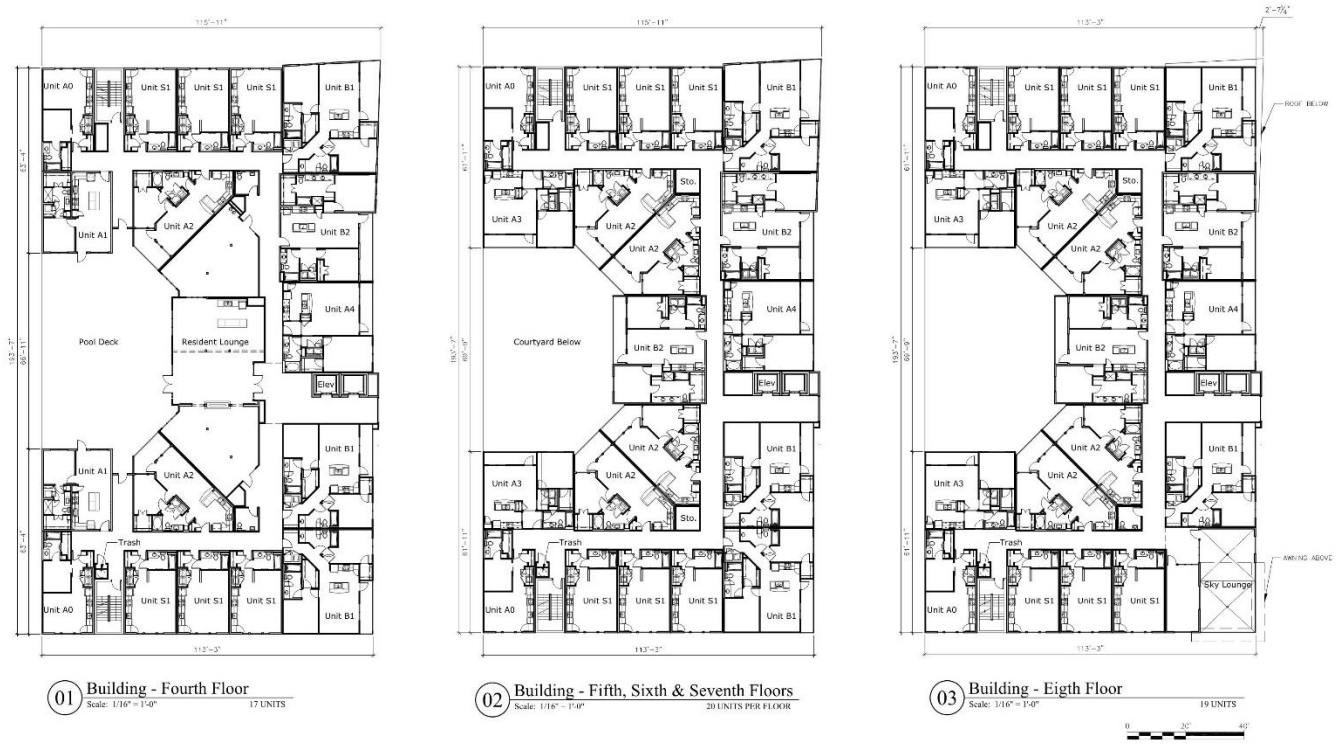
Based on these trends, Ovis would like the residential parking stalls to be unbundled and shared to improve parking efficiencies for the site. A case study is provided as an attachment to this memo that highlights the benefits of unbundling parking spaces from residential leases. The Shared Parking section of this memorandum will discuss the benefits of the S.U.M.P principal for residential parking (shared, unbundled, managed, and paid); this strategy has become increasingly common for transit-oriented development (TOD) and urban residential projects in many major cities. Some of the comparable sites identified within the following section have applied the S.U.M.P. principal to encourage use of alternative means of transportation, and to reduce reliance on personal vehicles (or reduce encouraging/supporting reliance on personal vehicles).

ATTACHMENTS

- Program Summary of Units
- Pre-Submission Notes from Staff
- Means of Transportation to Work Scenarios
- Market Research – Unbundled Parking

PROGRAM SUMMARY OF UNITS (Source: JHP Architecture / Urban Design, 2018)





PRE-SUBMISSION NOTES FROM STAFF

KEY ISSUES:
On-site Parking: In further analysis of this site and your proposed plan, staff would suggest that you refine your current proposal to get at least a 1:1 ratio for parking given that you're close to reaching that ratio. Staff will evaluate the parking on the overall need for the entire project instead of calculating each individual use, but a waiver could still be required. As part of the site plan process you'll need to provide a parking analysis of at least three (3) similar developments in the Denver Metro Area to determine the required parking count and provide justification for the number of parking spaces you are providing. In order for staff to feel comfortable taking this development plan to Planning Commission with less parking than required by code, please work on your site design or unit counts to provide at least a 1 parking space per dwelling unit. Please see Planning comments on page seven for more information.

P7, 3B. Parking
Onsite parking is required by Section 146-1504 of the Zoning Code. Staff will evaluate the parking on the overall need for the entire project instead of calculating each individual use, but a waiver will likely still be required. Please provide a parking analysis of at least three similar developments in the Denver Metro Area to determine the required parking count and provide justification for the number of spaces you are providing. The content of the parking analysis should follow the requirements in Section 146-1505. In order for staff to feel comfortable supporting the proposed development with less parking than required by code please work on your site design or unit counts to provide at least 1 parking space per dwelling unit.

The Parking Analysis/Study must be sent to Robert Ferrin for review at rferrin@auroragov.org and must also be uploaded to the development site with the rest of the site plan submittal.

In addition, staff would like more information about how the parking will be managed, particularly related to retail and guest parking. Per the City's Parking manager, Robert Ferrin, the applicant is strongly encouraged to develop parking management strategies to help mitigate parking overspill effects into the adjacent single-family neighborhood. Parking management strategies include, but are not limited to:

- On-site car share;
- On-site secure bicycle parking;
- Eco Pass or Flex Pass Transit programs;
- Carpool; and,
- Unbundled, shared parking.

Live – 1 MI; Work – 20 MI

Form of Transportation	Number of Employees	Parked Vehicle Generation Veh. Occ.	Veh. Gen.
Drove Car Alone	3,614	1	3614
Carpooled:			
In a 2-person carpool	1,101	2	551
In a 3-person carpool	308	3	103
In a 4-person carpool	47	4	12
In a 5 or 6-person carpool	10	5.5	2
In a 7-or-more-person carpool	0	7	0
Bus or trolley bus	746		
Streetcar or trolley car	0		
Subway or elevated	0		
Bicycle	70		
Walked	354		
Taxicab	0		
Motorcycle	20		
Other method	10		
Total Employees*	6,280	Total Vehicles	4,282
		Drive Ratio	**68%**

*Total Employees who commute to work; those working from home are removed for this analysis

Live – 1 MI; Work – 5 MI

Form of Transportation	Number of Employees	Parked Vehicle Generation Veh. Occ.	Veh. Gen.
Drove Car Alone	1,445	1	1445
Carpooled:			
In a 2-person carpool	401	2	201
In a 3-person carpool	184	3	61
In a 4-person carpool	39	4	10
In a 5 or 6-person carpool	0	5.5	0
In a 7-or-more-person carpool	0	7	0
Bus or trolley bus	303		
Streetcar or trolley car	0		
Subway or elevated	0		
Bicycle	35		
Walked	319		
Taxicab	0		
Motorcycle	0		
Other method	10		
Total Employees*	2,736	Total Vehicles	1,717
		Drive Ratio	**63%**

*Total Employees who commute to work; those working from home are removed for this analysis

Live – 1 MI; Work – 1 MI

Form of Transportation	Number of Employees	Parked Vehicle Generation Veh. Occ.	Veh. Gen.
Drove Car Alone	229	1	229
Carpooled:			
In a 2-person carpool	75	2	38
In a 3-person carpool	10	3	3
In a 4-person carpool	10	4	3
In a 5 or 6-person carpool	0	5.5	0
In a 7-or-more-person carpool	0	7	0
Bus or trolley bus	0		
Streetcar or trolley car	0		
Subway or elevated	0		
Bicycle	35		
Walked	260		
Taxicab	0		
Motorcycle	0		
Other method	0		
Total Employees*	619	Total Vehicles	273
		Drive Ratio	**44%**

*Total Employees who commute to work; those working from home are removed for this analysis

Live – 5 MI; Work – 1 MI

Form of Transportation	Number of Employees	Parked Vehicle Generation Veh. Occ.	Veh. Gen.
Drove Car Alone	5,832	1	5832
Carpooled:			
In a 2-person carpool	513	2	257
In a 3-person carpool	35	3	12
In a 4-person carpool	44	4	11
In a 5 or 6-person carpool	0	5.5	0
In a 7-or-more-person carpool	0	7	0
Bus or trolley bus	475		
Streetcar or trolley car	0		
Subway or elevated	0		
Bicycle	148		
Walked	425		
Taxicab	0		
Motorcycle	15		
Other method	4		
Total Employees*	7,491	Total Vehicles	6,112
		Drive Ratio	**82%**

*Total Employees who commute to work; those working from home are removed for this analysis

Live – 20 MI; Work – 1 MI

Form of Transportation	Number of Employees	Parked Vehicle Generation Veh. Occ.	Veh. Gen.
Drove Car Alone	8,107	1	8107
Carpooled:			
In a 2-person carpool	807	2	404
In a 3-person carpool	45	3	15
In a 4-person carpool	44	4	11
In a 5 or 6-person carpool	0	5.5	0
In a 7-or-more-person carpool	0	7	0
Bus or trolley bus	645		
Streetcar or trolley car	0		
Subway or elevated	0		
Bicycle	148		
Walked	425		
Taxicab	25		
Motorcycle	15		
Other method	4		
Total Employees*	10,265	Total Vehicles	8,537
		Drive Ratio	**83%**

*Total Employees who commute to work; those working from home are removed for this analysis

Source: U.S. Census Bureau – ACS 2006-2010

MARKET RESEARCH – UNBUNDLED PARKING

The purpose of unbundling parking is to expand the array of housing choices within cities, as not every resident wants or requires parking. This is especially true in areas that are served by high levels of transit. Minimum parking requirements encourage car ownership, and cause vehicle-less citizens to pay for parking that they do not use and may not need, thus promulgating the effects of low-density development. This of course may hinder a developer's ability to increase a city's housing stock. By separating the cost of parking from that of housing, more housing choices are created, and as such more affordable housing is offered. In turn, more people are able and willing to rent or purchase homes that suit their needs. Additionally, other benefits like a reduction in traffic congestion and reductions in vehicle emissions may result from unbundled parking.

Parking can be unbundled in several ways, but the most common methods are:

- Parking can be purchased or leased separately when the apartment or condo is purchased or leased.
- Tenants can be offered discounts on their rent for not using parking spaces.
- Parking costs can be listed as separate line items in lease agreements to show prospective renters the cost and enable them to opt out of parking.
- Unbundling can occur informally, for example, tenants that have extra spaces that they do not use can offer them up for rent, and they can be managed by the property management.[2]

Additionally, for condominiums, rather than folding the cost of parking into the deed, the condominium association could take ownership of the parking spaces. The association could then lease the spaces to residents if they desire them or need them now or at some point in the future.[3] This flexibility allows for a broadened market of potential buyers including those that need or desire parking and those that do not.

MARKET STUDY

To understand the market for dwellings with unbundled parking, Walker conducted a survey of comparable projects, to explore costs as they relate to these developments. Table 1 illustrates the cost of renting a first and second parking space in market rate condominium developments with unbundled parking. Table 2 shows the costs for apartments developments.

In analyzing the results of the survey (Table 1), there is a large range in the cost of leasing a parking space at condominium developments. For example, in the Buckman Heights development in Portland, Oregon, the cost of leasing a parking space is as low as $15.00 a month on a surface lot; whereas on the opposite side of the spectrum, the cost of leasing a garage space in the North End of Boston, Massachusetts, ranges from $320.00 (unreserved) to $525.00 (reserved) per month. While this is a large range, the bulk of the prices hover around $150.00 per month.

Also, in all condominium properties studied, the cost of leasing a second space onsite is the same as the cost of leasing the first parking space. In speaking to the property management of some of the sites, Walker determined that most them do not expect tenants of these developments to lease a second space.

[2] http://www.mapc.org/resources/parking-toolkit/strategies-topic/unbundled-parking
[3] Ibid.

Case Study Table 1: Monthly Parking Costs of Comparable Projects (Condominiums)

City/Market	Property Name	Address	Residential Type	# of Units	# of Parking Spaces	Parking Ratio	First Space	Second Space
Boston	Lovejoy Wharf	131 Beverly Street	Condo	175	150*	0.86	$320 - $375 (Unreserved), $395-$525 (Reserved)	Same as 1st
Los Angeles	The Market Lofts	645 West 9th Street	Condo	267	120	0.45	$150 (unreserved), $170 (reserved)	Same as 1st
Los Angeles	Old Bank District (El Dorado)	415 South Main	Condo	Unknown	Unknown	Unknown	$150 or $200 reserved	Same as 1st
Miami	Centro Lofts	151 SE 1st St Miami	Condo	352	352**	1	$135 - $150	Same as 1st
Portland	Buckman Heights	430 Northeast 16th Avenue	Condo	144	50 (covered), 18 (surface)	0.47	$15 - $30 (Varies between surface and covered)	Same as 1st
Portland	The Civic	1926 W Burnside St	Condo	261	409	1.57	$130 - $150	Same as 1st

*Note: The Lovejoy Wharf does not have parking onsite, the number of spaces shown are those for a nearby garage (1 level of reserved spaces).

**Note: There is 1 space offered per unit in an offsite garage for one year.

Source: Walker Parking Consultants, 2014

Similar to the condominium projects, parking leased at apartment developments range from $50.00 to $350.00, with most hovering around $150.00 per month (Table 2).

As part of the survey Walker also researched the costs of purchasing parking spaces rather than leasing them. The results varied tremendously. This is because the price of parking is very much tied to the market it is in, and it is dictated by the availability of parking. For example, in Manhattan the cost of parking can be quite expensive as there are few spaces available, thus the prices are high. A recent article in the New York Times by Michelle Higgins, discusses the selling of a parking space in Manhattan for $1,000,000[4]. In contrast, a Chicago parking space was put up for sale in a condominium development for only $25,000[5] (which is typically close to the cost of construction). As, such the price at which the parking spaces are sold closely match the cost of constructing the space.

For example, in the Portland area, the cost of construction for surface spaces ranged between $5,000 and $7,000, up to $15,000 for above ground structured spaces, and between $25,000 and $30,000 for subterranean spaces, around the time the Buckman Heights and Buckman Terrace Apartments were built.[6] The construction costs per parking space in downtown Seattle were similar to those in Portland. Linda Baker of the *New York Times* in an

[4] Michelle Higgins, "Buy Condo, Then Add Parking Spot for $1 Million", *New York Times*, Sep 9, 2014 http://www.nytimes.com/2014/09/10/realestate/million-dollar-parking-spot.html
[5] http://www.wesellchicagoland.com/homes/IL/CHICAGO/60605/1503_S_STATE_Street/16808764554/
[6] http://www.epa.gov/smartgrowth/pdf/EPAParkingSpaces06.pdf

article about unbundled parking stated that the "Moda units with parking cost about $30,000 more than units without."[7] This means that at the Moda development the price per parking space was approximately $30,000.

Case Study Table 2: Monthly Parking Costs of Comparable Projects (Apartments)

City/Market	Property Name	Address	Residential Type	# of Units	# of Parking Spaces	Parking Ratio	First Space	Second Space
Berkeley	New Californian	1988 Martin Luther King Jr. Way	Apt	148	155	1.05	$100 (ground), $150 (automated)	Same as 1st
Los Angeles	Met Lofts	1050 South Flower	Apt	268	400	1.49	$50 reserved	Same as 1st
Los Angeles	South Park Lofts	818 South Grand Avenue	Apt	49	18 (reserved/underground), 36 (offsite surface lot)	0.91	$200 reserved on site, $125 reserved off site	Same as 1st
Los Angeles	Pegasus	612 South Flower	Apt	322	200	0.62	$160 - $400 reserved	$100 offsite
Mountain View	Madera Apartments	455 West Evelyn Avenue	Apt	203	279	1.37	$0*	$100
Portland	Buckman Terrace	303 Northeast 16th Avenue	Apt	123	62	0.50	$65 (Structured)	Same as 1st
Oakland	The Uptown	500 William Street	Apt	665	531	0.80	$75 (unreserved), $200 (reserved)	Same as 1st
San Francisco	Fox Plaza	1390 Market Street	Apt	443	343	0.77	$275 (unreserved), $350 (reserved)	Same as 1st
San Jose	Waterford Place	1700 North 1st St.	Apt	238	381	1.60	$0*	$25
San Jose	Esplanade Apartments	350 E. Taylor St	Apt	278	412	1.48	$0*	$45
Seattle	Moda	2312 3rd Street	Apt	251	170	0.68	$165	Same as 1st

*Note: Development was tagged as unbundled parking, but no price was given for a first space.

Source: Walker Parking Consultants, 2014

[7] Linda Baker, "No Parking: Condos Leave Out Cars", *New York Times*, Nov 12, 2006, http://www.nytimes.com/2006/11/12/realestate/12nati.html?pagewanted=all