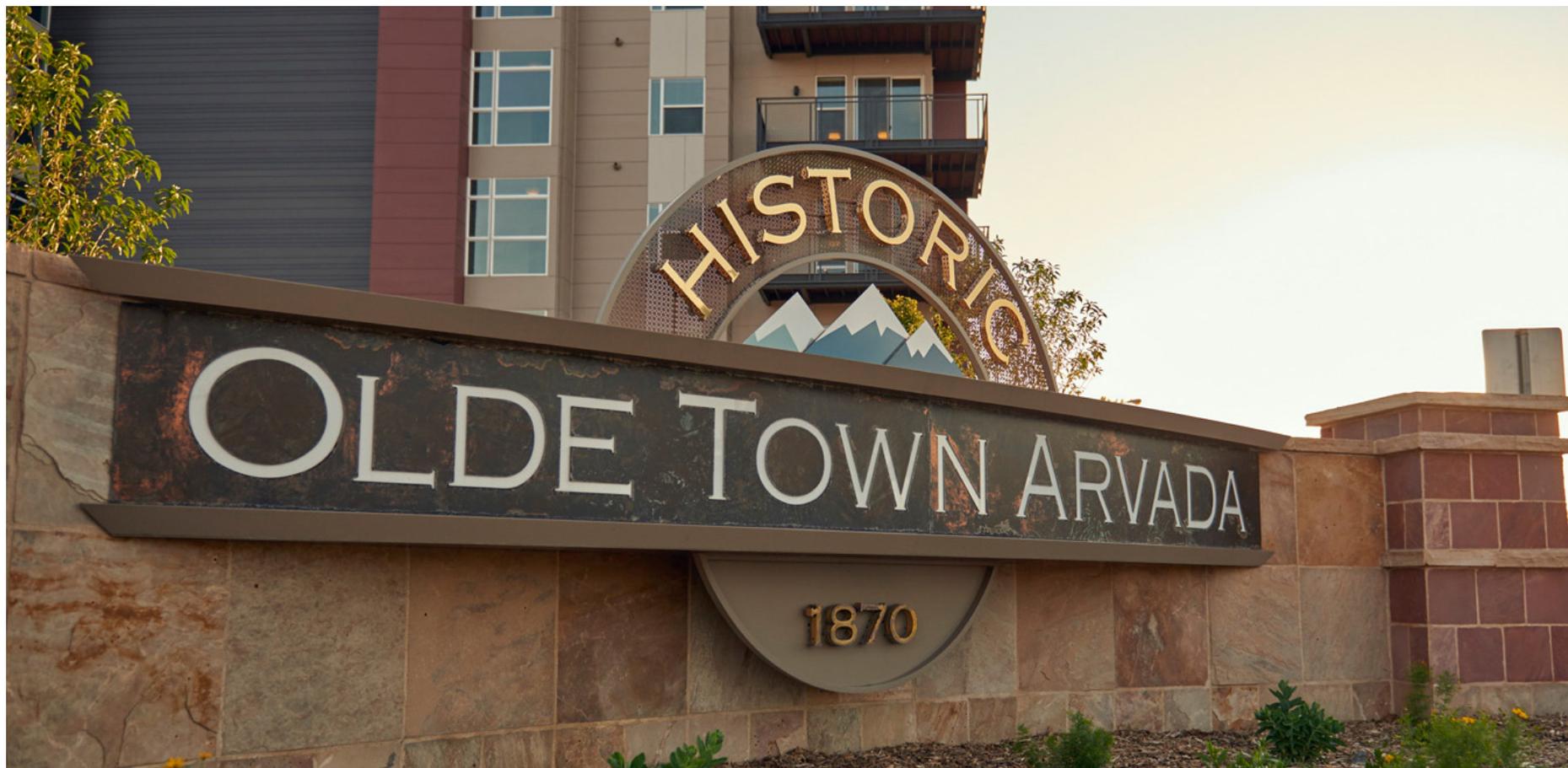

OLDE TOWN ARVADA TRAVEL DEMAND MANAGEMENT STUDY

Arvada, Colorado, Spring 2018

HOMETOWN COLORADO INITIATIVE

A Collaboration between the City of Arvada and the University of Colorado Denver



(Source: arvadaurbanrenewal.org)

PROJECT PARTNERS



THE CITY OF ARVADA was founded in 1870 and incorporated in 1904. They are proud of their rich past and strive to enhance their community. The City of Arvada has willingly allowed University of Colorado Denver students to participate in enriching the lives of the residents of Arvada.



UNIVERSITY OF COLORADO DENVER is one of the nation's top public urban research universities, offering more than 100 academic degrees and programs. The university boasts a diverse teaching and learning community that creates, discovers and applies knowledge to improve the lives of Coloradans and people around the world.



HOMETOWN COLORADO INITIATIVE is a cross-disciplinary initiative led by the University of Colorado Denver that channels higher education resources toward the public good. Faculty and students work directly on topics developed jointly by faculty and city staff. The city benefits from 20,000 to 40,000 student hours to advance livability goals. Students and faculty benefit from opportunities to work with a client on real world projects.

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EXECUTIVE SUMMARY

This report summarizes the findings from six separate, but related studies focused on travel, parking, and redevelopment in Olde Town Arvada. The six studies include:

1. Market demand for urban living in Olde Town Arvada
2. Travel survey of visitors and employees in Olde Town
3. Parking Inventory
4. Parking Observations
5. Grocery store market study
6. Case studies of other cities' Transportation Demand Management (TDM) strategies

I. PURPOSE OF STUDY

Olde Town Arvada (OTA) is a destination for novelty shopping, dining, and entertainment for both residents of Arvada and the surrounding suburbs, as well as Denver. It is also a small employment center for these areas, employing about 1,200 employees. For perspective, there are 14,000 jobs in Arvada and 1.4 million jobs in the Denver Metro Region. As an inner ring suburb located between the cities and counties of Denver and Boulders, Arvada is also an attractive housing location for workers who work in north and northwest metro Denver. Additionally, Olde Town possesses a lively and historic atmosphere. Thus, the City expects continued growth and redevelopment in Olde Town. However, the City is looking long term on how to handle increased housing and business redevelopment in Olde Town, and to do so without causing a parking or traffic problem. Their goal is to create travel alternatives through a comprehensive Transportation Demand Management strategy. To that end, this study looked at several existing conditions and best practices to help the city determine how and where to put some of their TDM efforts.

II. KEY FINDINGS

The following section highlights the key findings from each chapter. These are followed by a consolidated list of recommendations from these findings.

1. Market demand for urban living in Olde Town Arvada: Demographic and travel characteristics of Olde Town residents

This study drew upon several data sources about workers, jobs, residents, properties, travel to work, and transit to assess the current development and demographics in Olde Town. The goal was to understand whether the current demographic in Arvada is representative of a population that prefers to live in more dense, walkable, and urban environments. If so, how might Arvada accommodate the current residents' demand for this lifestyle and also attract more residents with the same orientation.

- Parking in Olde Town, including at the transit park-n-rides, is free and accessible for drivers, but other modes of travel are inconvenient or absent. For instance, there are no bus stops within the Olde Town boundaries, potentially creating difficulty for those with disabilities, tight schedules, children-in-tow, etc. Walking to the bus stops from Olde Town residences could add 10-20 minutes travel time to the trip time.
- Within the Olde Town boundaries, according to this analysis, about 20 parcels may be prospects for redevelopment, based on the value of their current structures and land.
- Residents in Olde Town are both older and younger, and have a lower median income than the Arvada median. These residents, as a group, are more similar to Denver than Arvada. The Olde Town demographics reflect the housing stock, which is mostly multi-family, and thus Olde Town residents have smaller households, are

EXECUTIVE SUMMARY

II. KEY FINDINGS (CONT.)

early in- or post careers. Additional multifamily construction in Arvada would likely continue to attract this demographic, which is a sizable share of the region.

2. Travel Preferences Survey

The survey was distributed in 1 week in March to approximately 35 businesses. We received 67 responses. Survey questions covered travel and parking habits, location of residence and employment, demographic information, and interest in alternative modes of travel and potential parking interventions. The intent was to find out what consensus there might be in finding solutions to parking in Old Town.

- Most survey respondents (81%) drove alone to Olde Town. Half of all respondents both live and work in Arvada, but still drive alone to work. Very few walk or bike to work, and no respondents reported taking public transit. Of the 24 respondents who live AND work in OTA but drive alone, almost all (22) live in the adjacent zip codes and would consider walking, cycling, taking transit, or using ride-share if conditions improved. While the total survey sample was small (67), to the extent it is representative of at least some other employees and visitors in OTA, shifting some of these travelers to different modes could have a positive impact on parking.
- The free RTD garage is currently an underutilized resource that should be better leveraged. The garage currently feels disconnected from Olde Town and is difficult to navigate into and out of. Yet, 13 of the respondents noted they parked there.
- Although we heard from other sources that parking is an issue that many people have strong opinions about, only 30% of the respondents found it difficult to find parking the day they completed the survey, and the majority of respondents do not perceive a parking problem. Catering parking policies to 30% or less of the daytime population may be limiting Olde Town's potential for future

redevelopment. These individuals may need more information on where to park, not more parking.

- Safety and lack of time are the most given answers for not bicycling, but connectivity is also noted as an issue.

3. Parking Inventory

This study conducted a parking inventory five times on five different days. On-site field workers recorded whether the 1,217 spots in Olde Town are vacant or occupied at the time of the observation. The design allowed the count to be conducted twice to ensure reliability.

- Olde Town Arvada has a parking space surplus, ranging from 670 open spots during weekdays to 547 open on weekend evenings, not including the parking garage. Currently, before the commuter rail line opens, the garage adds hundreds of additional spots to the surplus.
- While Olde Town Arvada has a surplus of parking spaces, few of them are located immediately adjacent to the city's most important amenities. This puts a high demand on spaces in the Olde Town Core (the five blocks adjacent to Olde Wadsworth Boulevard), primarily along Olde Wadsworth, which results in high occupancy of those spaces, while spaces and lots outside of these five square blocks remain underutilized.
- Through anecdotes from passers-by during the inventory, and the inventory analysis we heard and observed gaps in parking enforcement. Visitors and employees park throughout Olde Town beyond the stated times and do not receive tickets. On the other hand, some nearby residents noted they were happy with the enforcement. It appears that the enforcement may be focused on certain areas in response to complaints.

EXECUTIVE SUMMARY

II. KEY FINDINGS (CONT.)

4. Parking Observations

This goal of this study was to understand people's parking behavior in real-time, e.g. were people "cruising" for parking, parking for short or long period of times, etc. It complements the parking inventory since the inventory was a static count of available or parked spaces, while this study observed for how long spaces were open or occupied in two key, prime parking areas and the West Lot.

- Parking issues in Olde Town Arvada are more perceived than real. Though prime parking in the core, both on-street parking and the West Lot, are generally full, which leads to people "cruising" the same blocks for parking, many nearby surface lots and the RTD parking garage remain underutilized. One problem is the lack of information for drivers about the availability and location of this parking.

5. Grocery Store Market Study

The purpose of this study was to understand whether Olde Town could support a grocery store given the current permanent residents and daytime population (workers and visitors), and, if so, what type of grocery. The results are intended to find if necessary services, such as grocery, can succeed within a walkable distance of Old Town residents therefore allowing for a car-free lifestyle.

- A number of trends in the grocery industry such as ready-made meal kits, online ordering with delivery, and in-store eating and drinking may offer opportunities for smaller grocers and specialty food stores. However, caution is required as supermarkets and super centers pick up on trends quickly and can out compete smaller stores in most markets.
- Supermarkets, which require a minimum store size of 30,000

square feet, require much larger and denser populations and more disposable income than is currently present within walking distance of Olde Town. To support a supermarket or traditional grocery, 10,000 more households would need to be added within walking distance of the store. However, since these large markets see the biggest difference between automobile and non-automobile consumers in expenditure by transportation mode, it may be far fetched to assume a walkable supermarket may be a feasible product at all. A supermarket would expect parking and high traffic volumes if they were to locate in Olde Town.

- There are currently ten stores offering grocery sales within three miles of Olde Town. These are large super centers (3), traditional supermarkets (6), and convenience stores (3).
- In cities within the region, small-scale specialty stores with local items and fresh groceries have been able to survive with moderate densities.

6. Case Studies

This study investigated TDM and parking strategies in other suburban municipalities with similar historic downtown areas. The team used interviews and Internet searches to identify specific best practices that may apply to Arvada. Specifically, the team interviewed planners from four municipalities in Colorado: Breckenridge, Lakewood, Littleton, and Parker.

- Researchers recommend that Transportation Demand Management (TDM) programs that are data-based are more effective and comprehensive than relying on anecdotal evidence of travel demand. However, the towns we studied in Denver are not yet doing this.

EXECUTIVE SUMMARY

II. KEY FINDINGS (CONT.)

- Employers can be instrumental in achieving substantial reductions in parking demands through [what kinds of] travel programs that encourage multi-modal travel, such as through transit subsidies, flexible work schedules, and bicycle accommodations. In Breckenridge, CO, downtown employees can park in an off-street lot and take a free shuttle to their jobs. This has successfully opened on-street spaces for visitors.
- Parking prices should accurately reflect the demand and encourage efficient use of the parking supplies, including setting higher prices in retail areas. Priced parking blended with “smart” technology makes finding appropriate parking easier on drivers. Breckenridge, CO has seen a 15% availability rate in their on-street parking after instituting a fee for parking.
- Parking minimums are inefficient, tending to inflate supplies and making it difficult to implement and set priced parking. In areas with mixed land uses, it is efficient for parking to be shared among uses, during different times of the day, or during different days of the week. For instance, in Marlborough, MA, allowing developers to meet parking minimums off-site and through shared parking has led to a decrease in the oversupply of parking.

III. KEY RECOMMENDATIONS

Our recommendations fall under two distinct categories: 1) managing parking assets, and 2) facilitating travel modes that do not require parking.

1. Managing parking assets

a. Amend current parking requirements: To make development of underused or vacant sites feasible, Arvada should consider amending the current parking requirements from minimum requirements to

flexible minimums, and to allow off-site, and shared allowances. Encouraging carshare spaces can reduce a development’s parking by five spaces for every one carshare space provided.

b. Well-branded way finding and information signage: Use branded messaging throughout OTA to steer drivers toward available parking and to clearly state the policies of any given parking location. Most importantly, inform drivers of the availability and location of the free parking in the RTD Garage, the free facilities along the perimeter of the district, and, when applicable, shared parking lots. Conduct additional research into using “smart” parking technologies (such as ParkiFi), which monitor spaces for availability and send messages to an App or to digital signs, to improve parking efficiency and lower driver frustration around parking issues.

c. Physical enhancements to the Parking Garage: Consider constructing an overpass from the parking garage to the light rail station to improve connectivity and to make the commute more seamless. Additionally, find a way to make the parking garage more noticeable to visitors through public art, landscaping, better lighting, improved way finding, etc. These types of elements could help to make the garage an inviting and attractive option for visitors, rather than a hidden unknown that seems more distant and confusing than it actually is. A study for an overpass would need to look at the entry/exit landing points to determine who owns the land if the overpass is not solely on the station and parking garage property, as well as the necessary slope/incline and span to determine feasibility, materials, safety, and costs.

d. Use market-based parking management tools: To improve turn-over and availability of high-demand spaces, change the 2-hour limit on the highest demand spaces to 1-hour, or institute a parking fee. Along with these changes, ensure strict enforcement of the parking

EXECUTIVE SUMMARY

III. KEY RECOMMENDATIONS (CONT.)

on the highest demand spaces to 1-hour, or institute a parking fee. Along with these changes, ensure strict enforcement of the parking policies. This will not only improve turnover, it will encourage long-term parking in off-street facilities such as the surface lots and the RTD Garage.

e. Encourage and remove obstacles to shared parking agreements: Partner with the private lot owners to provide shared parking solutions, whereby parking that is not used for much of a day or a week can be used as public parking. This will bring more parking online from underutilized parking spaces. This can be brokered and administered by a parking district, possibly run by the BID. Also, to overcome public objections, create a marketing campaign to educate residents, business owners, and employees of OTA on the benefits of consolidated and shared parking. To further facilitate shared parking, encourage mixed-use development where parking needs for the different uses occur at different times of day or different days of the week.

f. Incentivize employees to park off-street: Partner with employers to implement programs that encourage employees to park in perimeter surface lots or the RTD garage. Designate specific areas as employee parking and offer discounts or coupons to local businesses when they use the designated spots.

g. Encourage or actively pursue the formation of a parking district: A special parking district could market the parking assets, broker shared parking, set prices, perform ongoing evaluation of the parking demand and supply, and spend parking revenues for improvements throughout OTA.

2. Facilitating travel modes that do not require parking

a. Offer more convenient bus routes: Study the feasibility of adding one or two bus routes through Olde Town to improve convenience and accessibility. Currently, there are no buses that pass through Olde Town. Improve north-south transit connections to enhance the east-west transit access. Work with Denver and Boulder to investigate urban (intracity) transit improvements through or in place-of RTD.

b. Study existing connections: Identify existing and potential local pedestrian, bike, and transit connections from Olde Town to the rest of Arvada. The gaps should be identified since they are inhibiting the use of alternative modes of transportation for those living in Arvada and working or visiting Olde Town. Also study multi-modal transportation options citywide to address the low use of modes other than driving for local trips.

c. Recruit essential services: Ensure the availability of necessary services, such as groceries, within walkable distances of OTA residences. Arvada should focus on attracting a unique grocery service, potentially locally- and/or municipally-owned—traditional or large-scale formats would not generate enough revenue to compete with surrounding supermarkets. Small-scale, specialty markets such as local, organic grocers, ethnic foods stores, or other small grocery concepts would be the most feasible options, and would provide a walkable resource to the local residents. Having these services would make a car-free lifestyle feasible, thereby reducing parking needs. Locating these services near transit would reduce parking requirements even further. Fresh Market in Denver, the bodega and toiletry store in The Source (in Denver), and other small food and specialty stores like this may be interested in opening a second location with support from Arvada and the BID.

EXECUTIVE SUMMARY

III. KEY RECOMMENDATIONS (CONT.)

d. Incentivize employees to use alternative modes of travel: Offering free or subsidized RTD EcoPasses (or similar) to downtown employees could be done through creating an EcoPass district/group for Olde Town BID members. Pending RTD's new fare system, businesses could either be required or permitted to opt in to the bulk purchase so that employees could purchase the discount pass through the BID.

e. Amend policies that will encourage employees to live closer to their jobs: Conduct further research to determine why most OTA employees live outside of OTA, then amend policies to overcome this. If the reason is affordability, encourage a more diverse range of housing prices. If there is a different reason, find what would help OTA employees live within walkable and bike-able ranges, such as different types of housing, thereby reducing the demand for parking.

f. Encourage carshare: Carshare has the potential to reduce the number of parking spaces needed, since the car will not necessarily stay parked for the full duration of the original driver's stay. Reserving several high-priority spots for carshare vehicles could incentivize taking these shared vehicles over personal ones. Similarly, the City could offer subsidies to employees who use carshare options, thereby freeing up spaces once the car is rented by the next person. Implementing meter and other parking fees could be a way to fund this or a similar program.

g. Partner with developers to facilitate alternative travel modes: Encourage developers to include amenities for non-parked travel modes such as bike racks, designated spaces for car share vehicles, a two-month transit pass (as an incentive to try transit), or rideshare pick-up/ drop-off locations.

PROJECT INTRODUCTION

Since 2011, the Denver metropolitan area has been experiencing a real estate boom that has exerted significant pressure on communities in the area. Arvada, an inner-ring suburb of Denver has not been immune to this. In the past few years, Arvada has seen growth and investment, particularly, in the Olde Town district. As market conditions have changed, demand for new commercial tenants in Olde Town has increased. In the near future, a new commuter rail line will open which will connect Olde Town to Wheat Ridge and Denver. These transformations will continue to change the dynamic of the area, especially in terms of the parking landscape. In the midst of Olde Town's evolution, now is an opportune time to assess the area's parking and transportation needs for future redevelopment.

Currently, there is a gap between the development types the real estate market is demanding and Arvada's existing conditions. Developers are interested in higher-density infill development -- which are fairly new uses for Olde Town and attract higher levels of activity, cause land value increases, and both create and help to meet the demand for a more urban lifestyle. Arvada's current built environment and transportation options are not in a position to sustain these trends. Arvada's Olde Town currently lacks a robust multi-modal transportation infrastructure and is still an auto-oriented area with most residents, visitors, and employees driving to their Olde Town destinations. The abundance of free parking supports the status quo, as does the absence of regular transit within the Olde Town boundaries and designated bike lanes that connect the surrounding neighborhoods.

As these development trends continue, Arvada will need to adjust their current parking requirements to bridge this gap. These adjustments will help to ensure that future infill development can occur in a sustainable manner - not occurring in the same auto-centric fashion, which would ultimately result in higher levels of traffic, parking challenges, and subsequent concerns from existing residents and businesses. Not addressing this gap could be detrimental to the city and would diminish the quaint character of the area, further provoking anti-growth sentiment among the residents and counteracting the benefits of the multi-billion-dollar investment in the region's rail transit system.

In order to better understand the parking issues faced by Olde Town Arvada, our class designed and performed a transportation demand management study that focused on a parking inventory and management analysis. We did this through a current and future demographic and travel behavior analysis; a parking inventory; a travel observation study; a travel behavior survey; a grocery store market analysis; and case studies of other similar cities. The goal for these separate sections was to understand how parking supply and demand are currently matched and how both may change as the area continues to redevelop with more businesses, residents, and local-serving amenities. This report presents the findings and recommendations from these studies.

URBAN LIVING STUDY - CHAPTER ONE



(Source: Christine Malara)

URBAN LIVING STUDY

I. INTRODUCTION

The purpose of this analysis is to understand the trends in higher density living and how those trends correspond with or inform the nature of residential and travel patterns in Olde Town Arvada (OTA), now and in the future. This analysis could be used to inform adjustments to existing parking requirements; changes to the zoning code to accommodate more mixed use and higher density areas and a more unique mix of new uses; investments in transportation facilities; and educational materials for residents of OTA who are concerned about development.

This chapter consists of three types of analysis that allowed us to determine capacity of OTA to support urban living and the demand from current and future residents for urban living. These are as follows:

- Plan analysis to determine City's goals that support urban living
- Demographic analysis of Olde Town compared to the rest of Arvada
- Parcel analysis for future development: underutilized and vacant parcels

II. BACKGROUND

CITY OF ARVADA COMPREHENSIVE PLAN

The city of Arvada 2014 Comprehensive

Plan lists a set of goals for future planned development. The plan states that increasing commercial redevelopment is necessary to ensure success in the coming years. The plan notes that Arvada must be proactive to stay competitive with the new downtown Westminster and the redevelopment of 38th Street in Wheat Ridge. The plan recognizes that it is imperative to provide more efficient and abundant transit opportunities in order to successfully compete with neighboring communities and cities.

The Arvada 2014 Comprehensive plan includes the following development goals:

- Design for Pedestrian and Bicycles
- Include Housing Where Appropriate
- Include Community Facilities and Services where Appropriate
- Design for Multi-modal Access
- Enhance the Culture Corridor

Most importantly, the plan sets out to support the enhancement of the culture corridor, which runs from the Arvada Center to OTA. One recommendation was the redevelopment of a large parcel of land adjacent to the Arvada Center into a facility that supports the arts. Through the City's discussions with stakeholders, they identified a collective desire to create a walkable area with arts, retail, restaurants, and galleries.

The plan recognizes that the redevelopment opportunities proposed would be long-term due to the multitude of challenges facing the City. These include, shallow lot depths, high cost of infill development, and the need for transit connections to and from other cities and towns.

EXISTING MARKET STUDIES

To inform the market analysis for urban living in OTA, the team reviewed existing market studies examining related topics. One example is the Gold Line Corridor Opportunities and Challenges to TOD report released by Reconnecting America in 2013. This report analyzes the corridor's readiness for transit-oriented development (TOD), and the Olde Town Arvada Station was called out specifically for its potential to be a "destination" station. Additionally, the report identified a strong market demand because many residents desire to live near an "authentic Downtown". However, the report lists expensive real estate, parking demand, and limited accommodations for a grocery store as some of the station's challenges inhibiting TOD.

Additionally, the Gold Corridor Housing Strategy conducted by CU Denver's Department of Urban and Regional Planning for the Denver Regional Council of

URBAN LIVING STUDY

II. BACKGROUND (CONT.)

Governments (DRCOG) is quick to highlight OTA's rich mix of amenities and services. The report, which evaluates the challenges outlined in existing market studies as they relate to readiness for urban living in OTA, calls attention to a wide selection of services to accommodate various needs, including food, health, education and childcare services. The distribution of community resources throughout the transit zone is fairly well dispersed. However, the report calls attention to the limited availability of affordable housing near OTA. The primary recommendation was to increase affordable housing options and connect this housing to existing services throughout Arvada.

III. METHODS AND DATA

METHODS

We used several data sources for our analysis. For each source, we identified the appropriate geographic boundaries, gathered data, and then analyzed that data to identify themes about current and future population characteristics of Arvada.

DATA SOURCES

- Arvada Open Data Catalog (April 2018)
- Bureau of Labor Statistics Consumer Expenditure Survey (CES), 2017: the CES provides detailed consumer expenditures for U.S. households by region, income, household size, age, etc. We used the latest available year, 2017, and analyzed the data by income, region, age, and household size. These categories correspond to the size of households that may be interested in living in multi-family developments in OTA.
- Jefferson County Assessor Property Records Search
- United States Census Bureau, via Social Explorer. American Community Survey 2015 5-Year Estimates (2011-2015).

- Longitudinal Employer-Household Dynamics (LEHD) OnTheMap
- Regional Transportation District, open source Geographic information systems (GIS) database on bus, and light rail routes, bus stops, park n rides, and light rail stops. (April 2018)
- Regional Transportation District planning department - Bus ridership data. (August 2017 - December 2018).

IV. FINDINGS AND RESULTS

ARVADA TODAY

We compared the demographics of OTA to the rest of Arvada (minus OTA census blocks) and to the County of Denver. For several demographic characteristics, we found that the population of OTA looks more similar to Denver than the rest of Arvada. Specifically, OTA and Denver are more alike in terms of population density, age, and household income, more urban, and with more residents in rental housing that are either young adults or seniors. However, OTA households generally do not have children and are less affluent than their counterparts in Arvada and Denver County.

DENSITY

	Olde Town	Arvada	Denver County
Total Population	3,960	122,350	663,303
Population Density (Per Sq. Mile)	3,636	964	4,326

Figure 1.1 Population Count and Density

URBAN LIVING STUDY

IV. FINDINGS AND RESULTS (CONT.)

GENDER

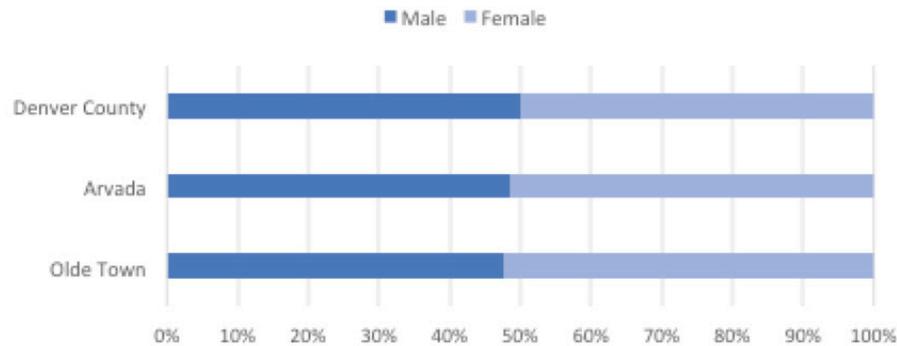


Figure 1.2: Sex of Population

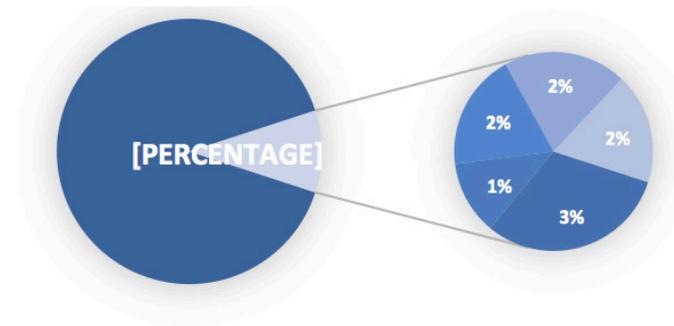
All our comparison areas had a similar breakdown of male and female populations, roughly 50/50.

RACE

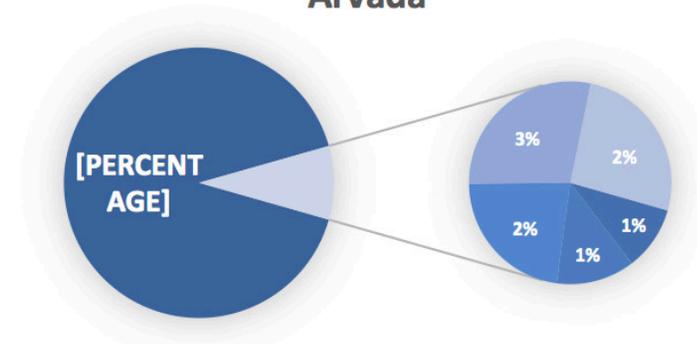
OTA and Arvada are similarly both majority white (around 90%) while Denver County is only 77% white. The largest minority racial group in OTA is Asian (3%).

Left: Figure 1.3: Race distribution in Olde Town, Arvada, and Denver

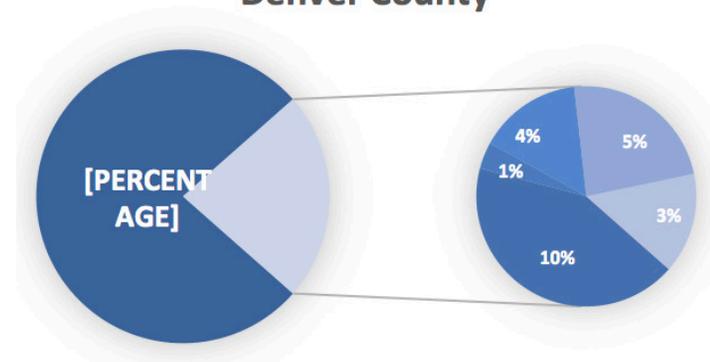
- White Alone
- Black or African American Alone
- American Indian/Alaska Native Alone
- Asian Alone
- Some Other Race Alone
- Two or More Races



Arvada



Denver County



URBAN LIVING STUDY

IV. FINDINGS AND RESULTS (CONT.)

AGE

Olde Town:	37.8
Arvada:	41.2
Denver County:	34.2

Figure 1.4 Median Age

Denver and OTA both have a higher share of younger adults (18-44) than the rest of Arvada. The median age in Denver is 34.2, while in OTA it is 37.8. This is nearly a four-year difference from the rest of Arvada, which has a median age of 41.2. Denver and Arvada also have higher shares of children. On the other hand, OTA has the highest share of adults who are 65-74 years old (10%), compared to Arvada (8%) and Denver (6.5%). In conclusion, OTA appears to be attracting both the Millennial and Baby Boom generations.

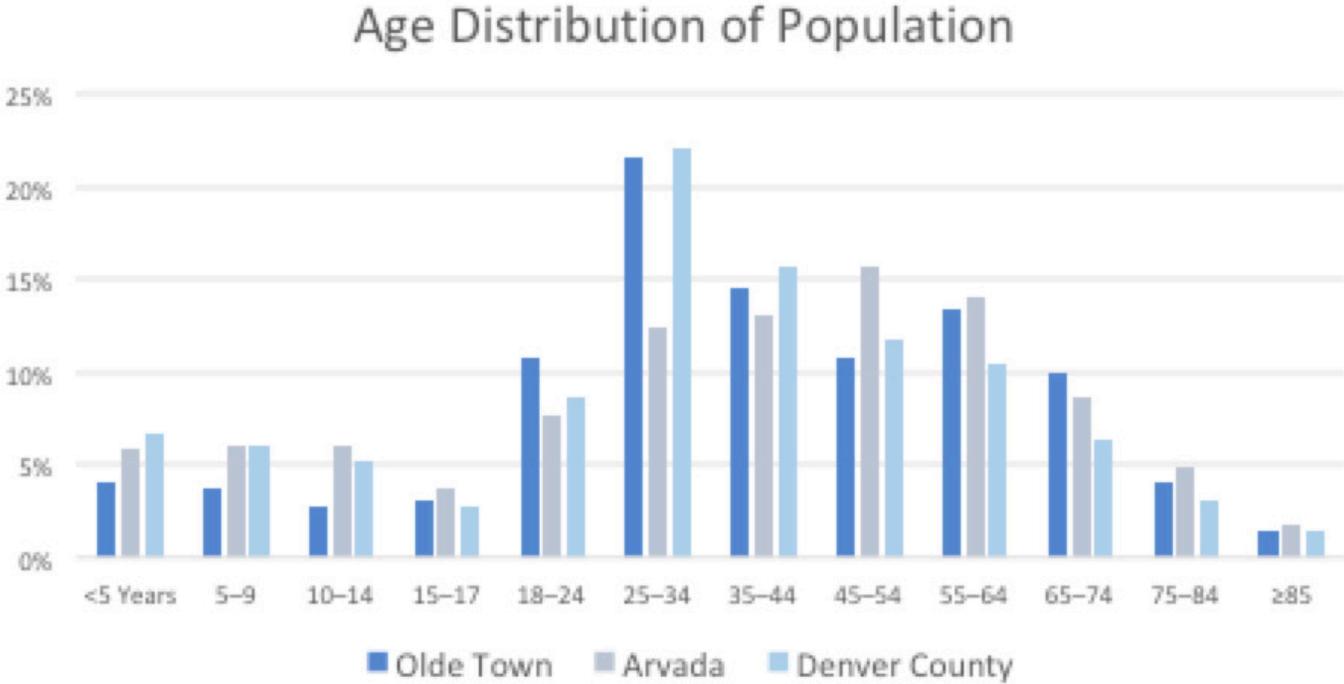


Figure 1.5 Age Distribution

URBAN LIVING STUDY

IV. FINDINGS AND RESULTS (CONT.)

	Olde Town		Arvada		Denver County	
	Count	Percent	Count	Percent	Count	Percent
<5 Years	163	4.1%	7,226	5.9%	44,205	6.7%
5–9	151	3.8%	7,445	6.1%	40,676	6.1%
10–14	105	2.7%	7,466	6.1%	34,624	5.2%
15–17	122	3.1%	4,658	3.8%	17,832	2.7%
18–24	425	10.7%	9,292	7.6%	57,703	8.7%
25–34	856	21.6%	15,196	12.4%	146,081	22.0%
35–44	573	14.5%	16,003	13.1%	103,126	15.6%
45–54	429	10.8%	19,103	15.6%	77,629	11.7%
55–64	526	13.3%	17,182	14.0%	69,377	10.5%
65–74	396	10.0%	10,592	8.7%	41,654	6.3%
75–84	158	4.0%	6,041	4.9%	20,331	3.1%
≥85	56	1.4%	2,146	1.8%	10,065	1.5%

Figure 1.6 Age Distribution Table

URBAN LIVING STUDY

IV. FINDINGS AND RESULTS (CONT.)

EDUCATION

Educational Attainment for Population 25 Years and Over

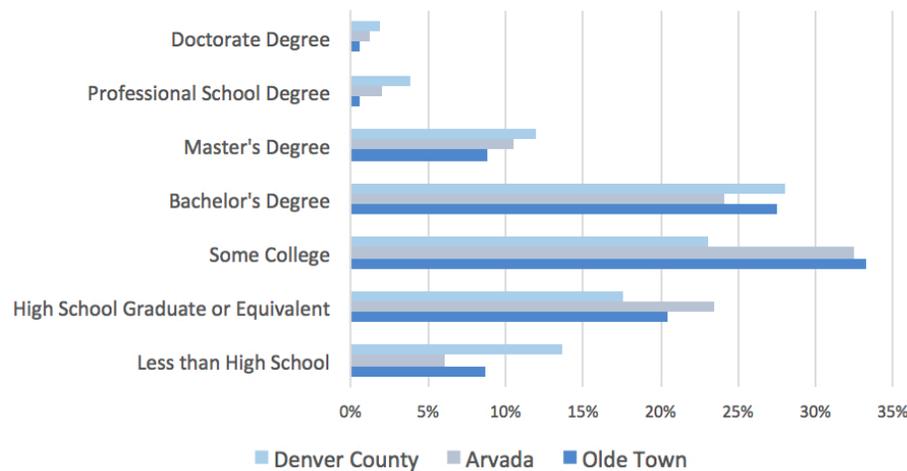


Figure 1.7: Education

Residents of OTA and Arvada have similar levels of education, which skews slightly less educated than Denver. The most common peak level of education in OTA and Arvada is some college education (around 32.5%), while Denver has a larger share of residents who have bachelor's degrees and higher. At the same time, Denver has the highest percentage of residents with no high school diploma. This shows a wider range and greater diversity of education levels in Denver than either OTA or Arvada.

HOUSEHOLD CHARACTERISTICS

Household median income in OTA is dramatically lower than our comparison areas. Notably, median income for OTA is only 60% of the median income for the rest of Arvada.

Household Composition



Figure 1.8: Households and Families

Olde Town	\$43,849
Arvada	\$73,521
Denver County	\$56,258

Figure 1.9: Median Household Income

The vast majority of Olde Town residents are in non-family households, meaning there are no children in the household. The share, at 69.9%, is even higher than in Denver (51.3%), and much higher than the rest of Arvada (31.5%).

URBAN LIVING STUDY

IV. FINDINGS AND RESULTS (CONT.)

Olde Town residents are also overwhelmingly renters. The home ownership rate is just 28%, compared to 76% and 50% in the rest of Arvada and Denver.

	Olde Town		Arvada		Denver County	
	Count	Percent	Count	Percent	Count	Percent
Married-Couple Family	502	21.7%	25,825	53.9%	95,195	33.9%
Single Parent Family	193	8.4%	6,990	14.6%	41,828	14.9%
Nonfamily Households	1,615	69.9%	15,060	31.5%	144,049	51.3%

Figure 1.10 Households and Families Table

	Olde Town		Arvada		Denver County	
	Count	Percent	Count	Percent	Count	Percent
Owner Occupied	645	27.9%	36,239	75.7%	138,870	49.4%
Renter Occupied	1,665	72.1%	11,636	24.3%	142,202	50.6%
Total	2,310	100%	47,875	100%	281,072	100%

Figure 1.11: Occupied Units by Tenure

URBAN LIVING STUDY

IV. FINDINGS AND RESULTS (CONT.)

HOUSING STOCK

In terms of building structures, OTA has a higher share of multifamily housing than either Arvada or Denver County. The majority of residents of Denver and Arvada live in single family housing. While the most common category of housing in OTA is still single family (30%), the rest of OTA residents live in housing with two or more units. The most common multifamily housing type in OTA is buildings with 20 to 49 units (25%).

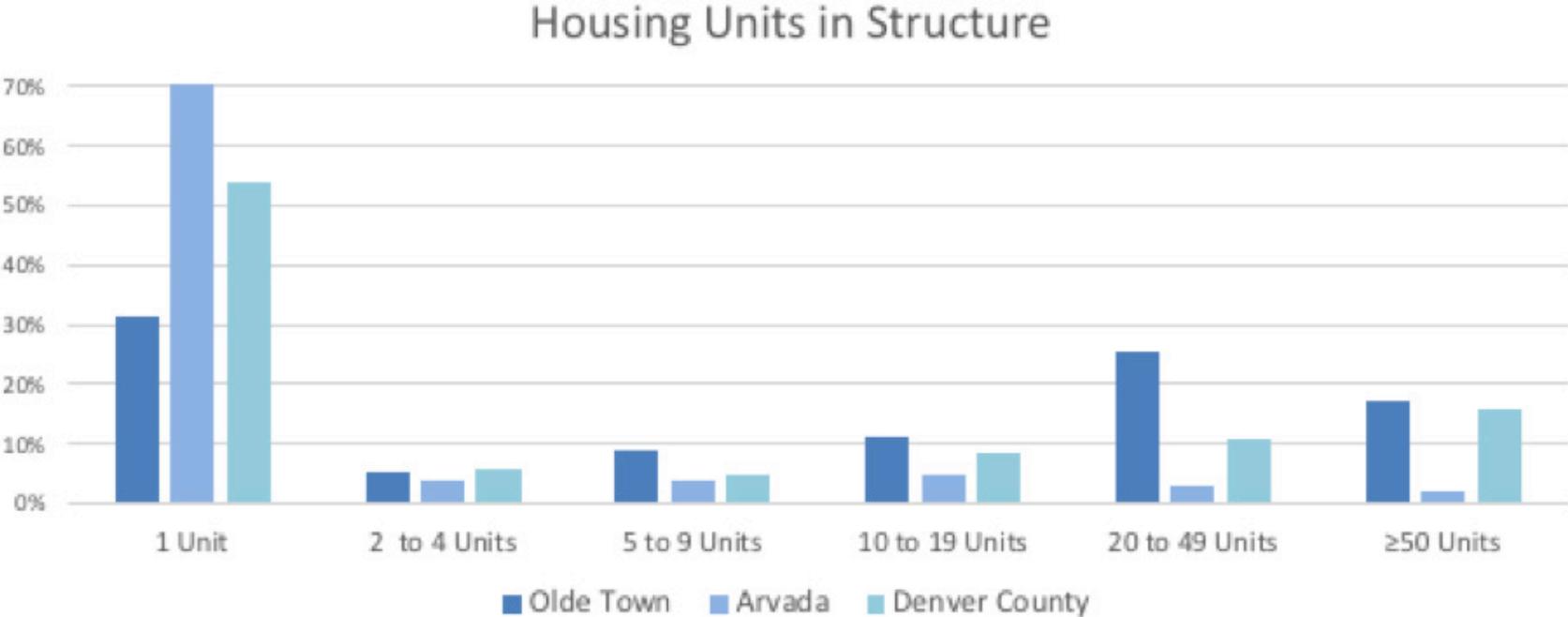


Figure 1.12 Distribution of Housing Units by Units in Structure

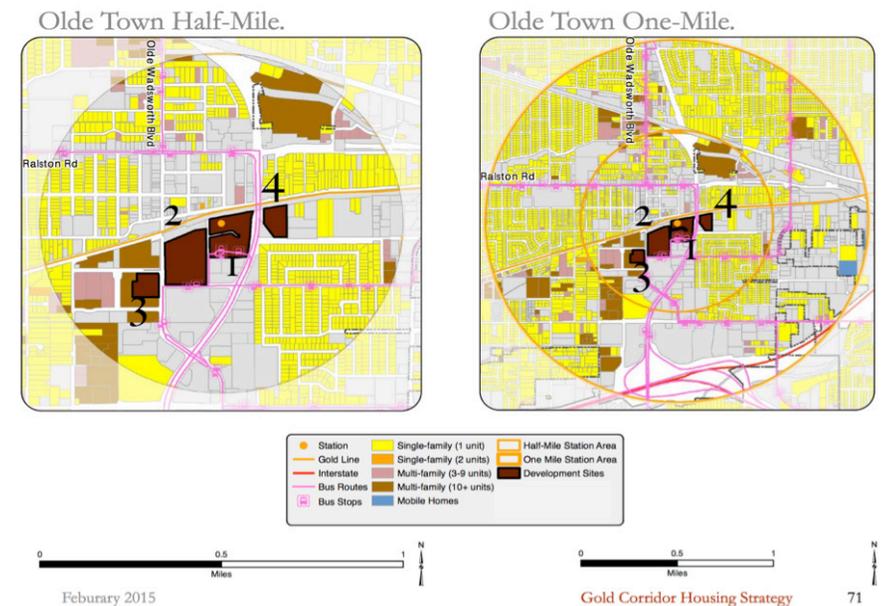
URBAN LIVING STUDY

IV. FINDINGS AND RESULTS (CONT.)

Lastly, we can see that house value, median gross rent, and poverty levels are generally consistent across all three comparison areas, with the exception of poverty status in Denver, which is over twice the poverty rate of both OTA and Arvada.

	Olde Town		Arvada		Denver	
	Count	Percent	Count	Percent	Count	Percent
1 Unit	725	31.4%	39,653	80.5%	161,657	54.0%
2 to 4 Units	108	5.1%	1,936	3.9%	17,517	5.9%
5 to 9 Units	207	9.0%	2,036	4.1%	14,371	4.8%
10 to 19 Units	263	11.4%	2,309	4.7%	25,646	8.6%
20 to 49 Units	587	25.4%	1,595	3.2%	32,068	10.7%
≥50 Units	395	17.1%	1,119	2.3%	47,129	15.7%
Mobile Home	15	0.7%	562	1.1%	847	0.3%
Boat, Rv, Van, Etc.	0	0.0%	28	0.1%	103	0.0%
Total	2,310	100%	49,238	100%	299,338	100%

Figure 1.13: Distribution of Housing Units by Units in Structure Table Figure



1.14: Map of Housing Units in Structure surrounding the Olde Town rail transit station (Source: University of Colorado Denver. 2015. Gold Corridor Housing Strategy.)

	Median House Value (Owner-Occupied)	Median Gross Rent	Median Gross Rent as a Percentage of Household Income in Past 12 mos.	Poverty Status
Olde Town:	\$231,210	\$1,108	29.5%	5.9%
Arvada City:	\$266,478	\$1,109	29.9%	5.4%
Denver County:	\$292,700	\$1,035	29.6%	12.2%

Figure 1.15. Comparison of housing values, rents, rental affordability, and poverty in Olde Town, Arvada, and Denver

URBAN LIVING STUDY

IV. FINDINGS AND RESULTS (CONT.)

EMPLOYMENT AND COMMUTING HABITS

Figure 1.16 shows the inflow/outflow counts for primary jobs in the three block groups that make up Olde Town Arvada. Only 79 people both live and work in the three block groups, while 3,781 people work in the area but live outside. In Arvada, 88% of people commute to work via automobile, and if the majority of people commuting into Olde Town are doing so via automobile, existing parking resources will be strained. One strategy the City of Arvada can pursue is to build more housing around Olde Town so that more people can live close to their place of employment. However, people must be able to afford their housing. According to the Gold Corridor Housing Study, 45% of households near the Olde Town Station pay more than 30% of their income on housing, and 30% of households pay more than 35% of their income on housing (p. 29). The Olde Town Station has a higher percentage of nearby residents paying more than 35% of their household income on housing than any other station along the G Line (p. 29). While there are existing affordable housing units in Arvada, none are within a half-mile to the Olde Town Station. More housing within a half-mile to the Olde Town Station will enable more people to live near their place of employment or near a rail line that goes directly to Downtown Denver, the largest employment center in the region.

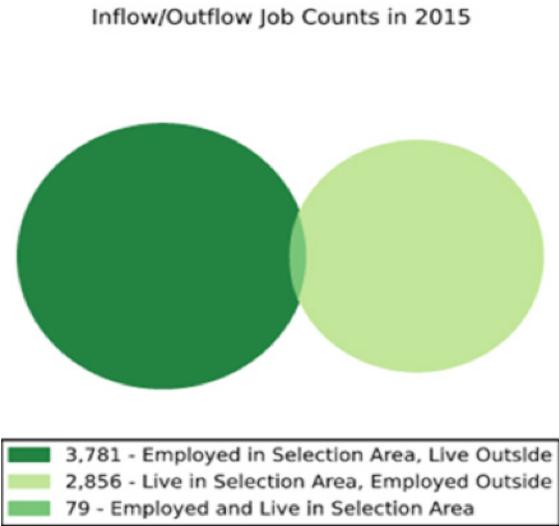


Figure 1.16: Inflow/Outflow for Olde Town Arvada

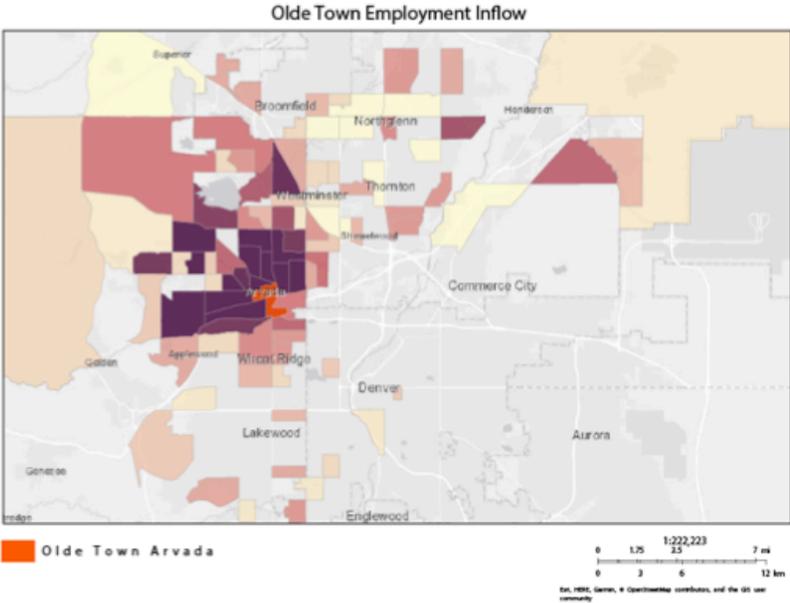


Figure 1.17: Home Tracts of People Employed in Olde Town

Figure 1.17 shows the census tracts in which people live who are employed in OTA. Most commuters into Olde Town live in the census tracts to the north and west of Olde Town, and most of these commuters are not adjacent to the G Line corridor. Without robust bicycle and bus transit options, these people might elect to drive to work. Workers need incentives to either take the bus, carpool, or at a minimum, park in the station's parking garage.

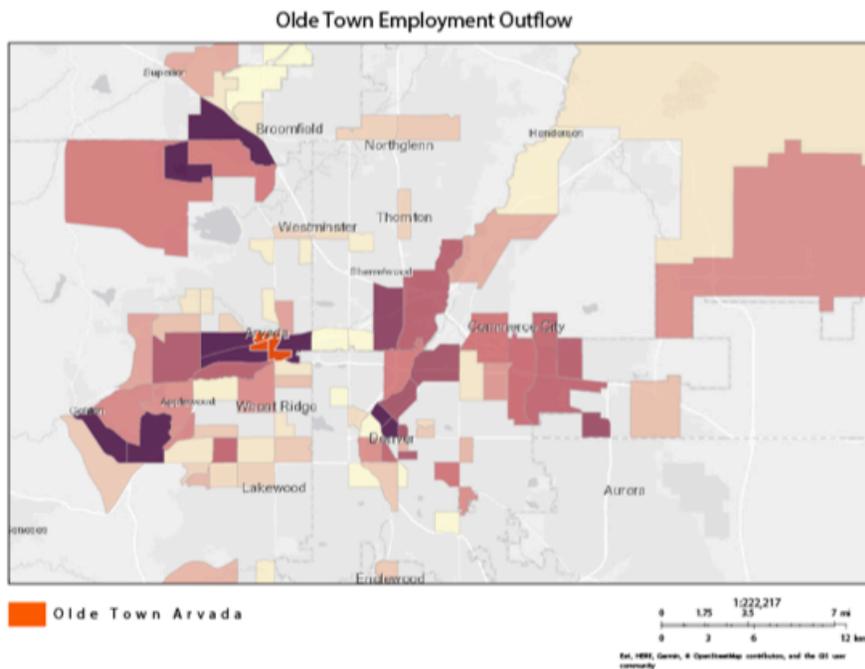
The next map (Figure 18) shows the tracts where Olde Town residents work. The outflow tracts are much more dispersed than the inflow tracts, but many people work in Downtown Denver, tracts adjacent to Downtown, and tracts along the A Line to the airport (and the airport itself). With the G Line set to open in 2018, commuters who work in these tracts will have the option to take the train to Union Station

URBAN LIVING STUDY

IV. FINDINGS AND RESULTS (CONT.)

where they can then walk, take the bus, or transfer to other trains to reach their jobs. These data suggest Olde Town residents may be less dependent upon a car and a place in Olde Town to park it. Currently, 80% of them currently drive alone to work (Figure 19), which is higher than the region's drive-alone share, 75% (Census 2016).

Figure 1.18: Employment Tracts of People Living in Olde Town



Many people living in Olde Town work in Downtown Denver, as can be seen in Figure 18. This population may be able to ride the G Line straight to Union Station once the train is up and running. However, if people do not live within walking/biking distance to the Olde Town Station they will need to utilize other means of transportation to reach

the station. Without more accessible bus and bicycle infrastructure throughout Arvada, people may likely choose to drive to the station and park either in the garage or on nearby streets, especially if there are no parking restrictions on those streets.

Mode to Work	% Of Commuters
Vehicle alone	80.34%
Vehicle carpool	6.50%
Public transport	3.59%
Bike	0.26%
Walk	3.38%
Other	0.97%
Work at home	4.95%

Figure 1.19: Olde Town resident's mode share to work

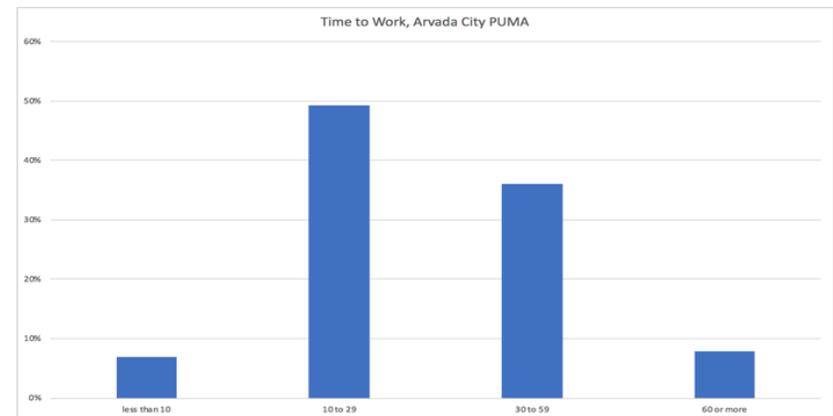


Figure 1.20: Commute time for all workers in Arvada, Colorado

URBAN LIVING STUDY

IV. FINDINGS AND RESULTS (CONT.)

In the next analysis, we compared Arvada residents' commuting patterns to residents in other similar cities: inner-ring suburbs connected to downtown employment centers through commuter rail (see Figure 1.21). Arvada has the highest percentage of workers commuting by automobile at 88%, with Beaverton, OR being the next highest with 80% of commuters. Other than Beaverton, the cities chosen are fairly evenly distributed around the 60% mark, suggesting that availability of rail transit reduces the number of people commuting to work via automobiles. This suggests the share of auto-commuters will decrease when the G Line opens.

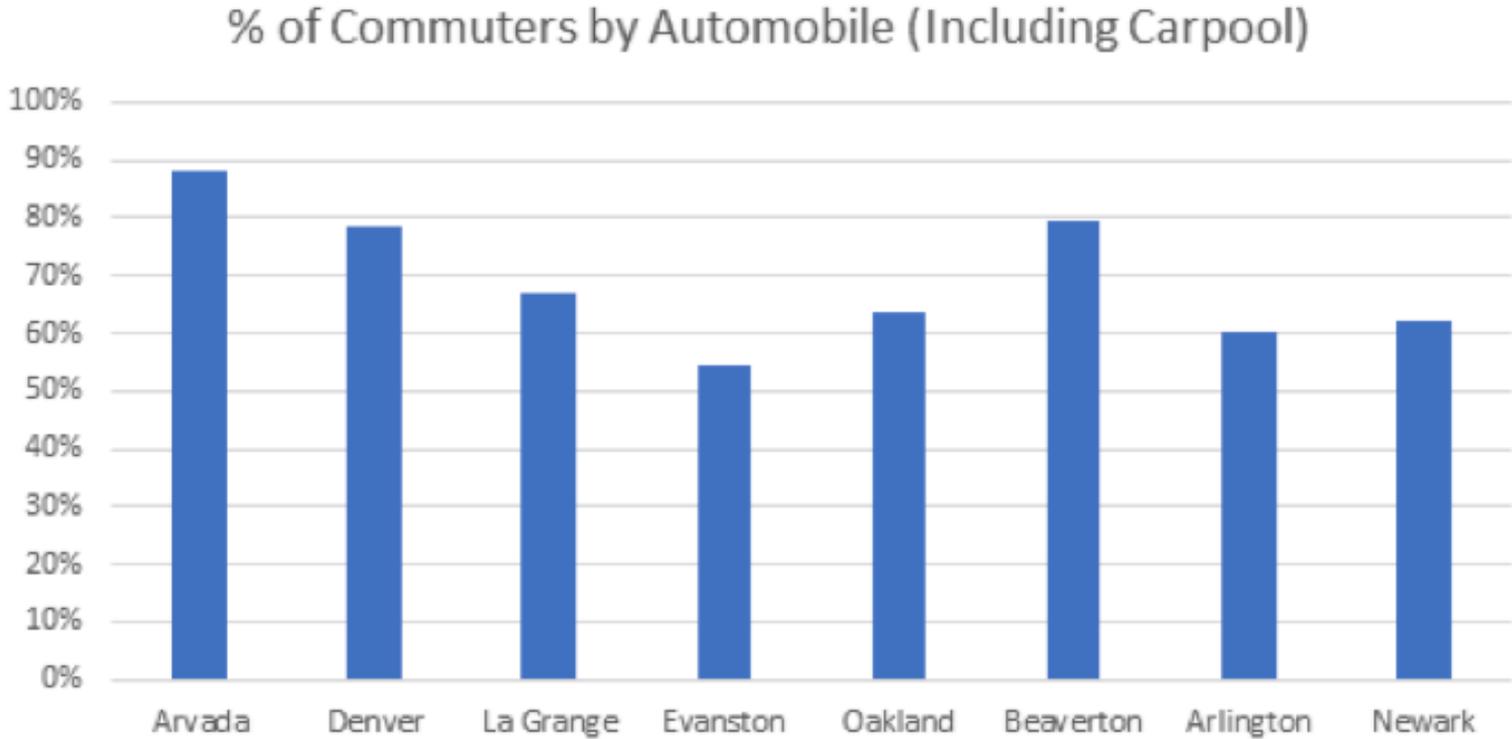


Exhibit 1.21 Comparison of Similar Cities Along Rail Lines Source: ACS Five-year Estimates)

URBAN LIVING STUDY

IV. FINDINGS AND RESULTS (CONT.)

INCOME, HOUSING AND CAR OWNERSHIP

To investigate the relationship between transit availability, income, and car ownership, we used iPUMS to create a series of comparisons between cities along transit corridors near major metro areas. As the 25-35-year-old age bracket, non-family household is the most prevalent household type in Olde Town, we chose this population to investigate. We further narrowed this to those paying under \$1200 a month in rent, since people who pay less for rent also tend to own fewer cars because they often have lower incomes. The “non-drive to work” category includes those who take public transportation, walk, or bike to work.

Denver residents who don't drive to work

vehicles owned per household	Annual Income rounded to the nearest \$10,000						
	\$0	\$10,000	\$20,000	\$30,000	\$40,000	\$50,000	\$60,000
0	42%	33%	31%	35%	21%	19%	6%
1	35%	28%	37%	36%	40%	53%	56%
2+	24%	39%	31%	29%	39%	28%	38%

Oakland, CA residents who don't drive to work

vehicles owned per household	Annual Income rounded to the nearest \$10,000						
	\$0	\$10,000	\$20,000	\$30,000	\$40,000	\$50,000	\$60,000
0	27%	29%	22%	30%	34%	29%	14%
1	44%	36%	46%	35%	50%	47%	33%
2+	29%	35%	32%	35%	17%	24%	53%

Denver residents who drive to work

vehicles owned per household	Annual Income rounded to the nearest \$10,000						
	\$0	\$10,000	\$20,000	\$30,000	\$40,000	\$50,000	\$60,000
0	8%	2%	2%	2%	2%	1%	2%
1	29%	36%	43%	45%	41%	44%	44%
2+	63%	62%	55%	53%	57%	55%	55%

Oakland, CA residents who drive to work

vehicles owned per household	Annual Income rounded to the nearest \$10,000						
	\$0	\$10,000	\$20,000	\$30,000	\$40,000	\$50,000	\$60,000
0	7%	4%	5%	6%	1%	4%	3%
1	35%	38%	42%	47%	49%	60%	63%
2+	58%	58%	54%	48%	50%	36%	34%

Figure 1.22a-b: Comparison of 25-34 year old residents in comparison suburbs by mode to work, income, and vehicle ownership

*To read this table start in any income column and read downwards to see the percent of that income group who's household owns X amount of cars. For example, in the first row in the first table, 42% of households who's income would be rounded to \$0, own 0 cars. 35% of households with an income rounded to \$0 own 1 car, and so on.

URBAN LIVING STUDY

IV. FINDINGS AND RESULTS (CONT.)

In each of these cities, when alternative commuting modes are an option, those who take them own fewer cars per household. This trend cuts across all income levels, from \$0 to \$60,000 per year. This indicates that lower car ownership -- in conditions that allow for it -- is a decision many people will make, both out of necessity and by choice. Creating land use patterns and transportation systems that promote this choice, will lead to an increase in the number of Olde Town residents who need, or want, to own fewer cars.

Arlington, VA residents who don't drive to work

vehicles owned per household	Annual Income rounded to the nearest \$10,000						
	\$0	\$10,000	\$20,000	\$30,000	\$40,000	\$50,000	\$60,000
0	44%	25%	45%	28%	27%	28%	20%
1	34%	40%	33%	37%	35%	39%	42%
2+	22%	35%	22%	35%	38%	34%	38%

Newark, NJ residents who don't drive to work

vehicles owned per household	Annual Income rounded to the nearest \$10,000						
	\$0	\$10,000	\$20,000	\$30,000	\$40,000	\$50,000	\$60,000
0	81%	77%	68%	66%	58%	75%	60%
1	18%	16%	24%	20%	29%	16%	35%
2+	2%	7%	9%	14%	13%	9%	5%

Arlington, VA residents who drive to work

vehicles owned per household	Annual Income rounded to the nearest \$10,000						
	\$0	\$10,000	\$20,000	\$30,000	\$40,000	\$50,000	\$60,000
0	0%	2%	5%	0%	2%	0%	3%
1	56%	30%	33%	32%	38%	40%	41%
2+	44%	68%	62%	68%	61%	60%	57%

Newark, NJ residents who drive to work

vehicles owned per household	Annual Income rounded to the nearest \$10,000						
	\$0	\$10,000	\$20,000	\$30,000	\$40,000	\$50,000	\$60,000
0	20%	17%	23%	15%	6%	4%	0%
1	31%	51%	46%	59%	66%	66%	53%
2+	49%	33%	31%	26%	28%	30%	47%

Figure 1.22c-d: Comparison of 25-34 year old residents in comparison suburbs by mode to work, income, and vehicle ownership

URBAN LIVING STUDY

IV. FINDINGS AND RESULTS (CONT.)

AUTO TRAVEL TO AND FROM OLDE TOWN

The following map of Arvada (Figure 23) was developed with data from the Housing & Transportation Affordability Index. The developer of the index, the Center for Neighborhood Technology (CNT), uses census data, including access to public transportation, urban form, employment density, and housing tenure and density, to estimate probable car ownership, vehicle miles traveled, and transit use. As shown in the map, western Arvada has fewer bus lines and a more suburban and exurban context. This predicts higher vehicle use and ownership rates.



Figure 1.23. Predicted car ownership throughout Arvada (Source: Housing & Transportation Affordability Index, www.htaindex.cnt.org)

The next map is a Google search for restaurants and bars in the Arvada Area. While there are other restaurants scattered throughout Arvada, Olde Town has by-far the largest concentration and diversity. While residents to the South and East of Olde Town may head to Tennyson Street in Denver, Olde Town is the closest and most amenity-filled destination for those living in the west side of Arvada and in cities to

the north. It is the residents in these areas without transit options who will continue to drive into Olde Town, unless there are other travel options, such as east-west and north-south public transit buses that run all week and throughout the day.

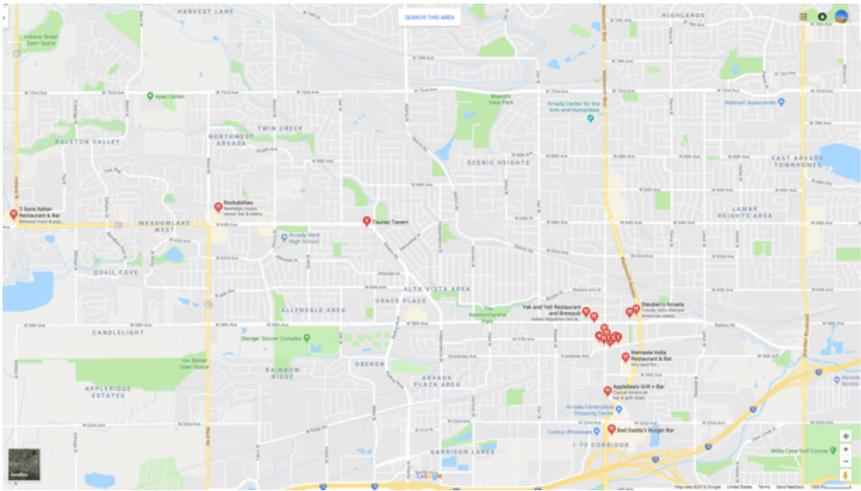


Figure 1.24. Google maps search for restaurants and bars near Arvada, CO

PUBLIC TRANSPORTATION

Near the Olde town limits there are eight major bus stops and a future light rail station. The bus lines that are within walkable access to OTA are the Olde Town Arvada Park n' Ride Gates - A, B, and C; Ralston Road & Upham Street, Ralston Road & Wadsworth Boulevard, West 58th Avenue & Upham Street, West 58th Avenue & Wadsworth Boulevard, and West 58th Avenue & Allison Street.

The following tables show the most recent ridership information for each of these stops for weekdays, Saturdays and Sundays. The data for these tables are based on ridership data provided by the Regional

URBAN LIVING STUDY

IV. FINDINGS AND RESULTS (CONT.)

Department. The data was joined with 'Bus Route' and 'Bus Stop' GIS boundaries provided by the RTD GIS open source, last updated on April 16, 2018. The join serves to display specific ridership information for the bus stops within proximity to OTA. The bus stops with the greatest ridership are the three park and rides, about 500-1000 riders per day, whereas the other routes have about 50 passengers per weekday. The ridership on the weekends drops to about one-third or one half of the weekday ridership.

Weekday Bus Ridership

Route Name/Bus Number	Avg. Total Daily Passengers: On	Avg. Total Daily Passengers: Off	Avg. Ridership at Stop: On	Avg. Ridership at Stop: Off	Avg. # of Seats Per trip/At Stop
<i>Olde Town Arvada PnR Gate A</i>	0.15	60.31	0.01	4.31	523.74
76: Wadsworth Blvd	0.15	60.31	0.01	4.31	523.74
<i>Olde Town Arvada PnR Gate B</i>	477.30	482.36	18.00	19.23	6463.43
52: W 52nd Avenue / South Bannock	65.65	75.05	1.77	2.03	1371.31
55L: Olde Town Arvada Limited	230.16	227.99	10.96	12.00	1515.56
72: 72nd Avenue	60.42	59.66	2.08	2.06	2157.88
76: Wadsworth Blvd	121.07	119.66	3.19	3.15	1418.67
<i>Olde Town Arvada PnR Gate C</i>	428.45	311.58	18.28	10.00	6212.43
50: Lakes Crosstown	80.09	83.35	3.08	3.21	1930.18
52: W 52nd Avenue / South Bannock	95.30	58.08	5.53	1.66	1370.97
72: 72nd Avenue	82.68	76.99	2.95	2.75	1041.70
76: Wadsworth Blvd	170.38	93.17	6.72	2.39	1869.59
<i>Ralston Rd/Upham St</i>	30.53	24.90	0.87	0.71	3794.55
52: W 52nd Avenue / South Bannock	11.74	5.67	0.34	0.16	1296.06
72: 72nd Avenue	5.37	5.67	0.19	0.20	1041.70
76: Wadsworth Blvd	13.43	13.56	0.34	0.35	1456.79
<i>Ralston Rd/Wadsworth Blvd</i>	20.71	62.24	0.60	1.82	3794.55
52: W 52nd Avenue / South Bannock	7.30	12.09	0.21	0.35	1296.06
72: 72nd Avenue	4.77	18.59	0.17	0.66	1041.70
76: Wadsworth Blvd	8.65	31.56	0.22	0.81	1456.79
<i>W 58th Ave/Upham St</i>	28.69	33.90	0.82	0.95	3832.09
52: W 52nd Avenue / South Bannock	6.57	11.88	0.18	0.33	1334.48
72: 72nd Avenue	7.06	5.00	0.24	0.17	1078.94
76: Wadsworth Blvd	15.06	17.02	0.40	0.45	1418.67
<i>W 58th Ave/Wadsworth Blvd</i>	26.79	16.58	0.85	0.50	2413.42
52: W 52nd Avenue / South Bannock	10.35	10.51	0.29	0.29	1334.48
72: 72nd Avenue	16.44	6.07	0.57	0.21	1078.94
<i>W 58th Ave/Allison St</i>	9.55	8.95	0.30	0.27	4751.17
52: W 52nd Avenue / South Bannock	5.22	5.58	0.15	0.16	2630.53
72: 72nd Avenue	4.33	3.37	0.15	0.12	2120.64

Figure 1.25: Weekday bus ridership on RTD Bus Routes that service Olde Town

URBAN LIVING STUDY

IV. FINDINGS AND RESULTS (CONT.)

Saturday Bus Ridership						
Route Name/Bus Number	Avg. Total Daily Passengers: On	Avg. Total Daily Passengers: Off	Avg. Ridership at Stop: On	Avg. Ridership at Stop: Off	Avg. # of Seats Per Trip/At Stop	
<i>Olde Town Arvada PnR Gate A</i>	0.00	6.00	0.00	1.50	37.10	
76: Wadsworth Blvd	0.00	6.00	0.00	1.50	37.10	
<i>Olde Town Arvada PnR Gate B</i>	194.85	232.75	9.66	10.88	301.52	
52: W 52nd Avenue / South Bannock	61.57	63.37	2.05	2.11	74.89	
55L: Olde Town Arvada Limited	47.89	45.50	3.68	3.25	114.00	
72: 72nd Avenue	16.21	20.88	1.62	2.09	75.53	
76: Wadsworth Blvd	69.18	103.00	2.31	3.43	37.10	
<i>Olde Town Arvada PnR Gate C</i>	194.81	128.56	11.46	5.25	187.71	
52: W 52nd Avenue / South Bannock	70.76	59.53	3.46	1.98	75.44	
72: 72nd Avenue	22.97	14.47	2.30	1.45	37.77	
76: Wadsworth Blvd	101.09	54.56	5.70	1.82	74.50	
<i>Ralston Rd/Upham St</i>	19.96	17.46	0.84	0.69	112.36	
52: W 52nd Avenue / South Bannock	7.71	7.80	0.26	0.26	37.44	
72: 72nd Avenue	2.60	1.63	0.26	0.16	37.77	
76: Wadsworth Blvd	9.65	8.03	0.32	0.27	37.15	
<i>Ralston Rd/Wadsworth Blvd</i>	10.63	43.89	0.45	1.83	112.36	
52: W 52nd Avenue / South Bannock	5.26	19.04	0.18	0.63	37.44	
72: 72nd Avenue	1.47	5.52	0.15	0.55	37.77	
76: Wadsworth Blvd	3.89	19.33	0.13	0.64	37.15	
<i>W 58th Ave/Upham St</i>	16.61	23.46	0.73	1.01	112.30	
52: W 52nd Avenue / South Bannock	5.97	7.99	0.20	0.27	37.44	
72: 72nd Avenue	2.65	3.47	0.26	0.35	37.77	
76: Wadsworth Blvd	7.98	12.01	0.27	0.40	37.10	
<i>W 58th Ave/Wadsworth Blvd</i>	20.66	10.47	1.14	0.54	75.21	
52: W 52nd Avenue / South Bannock	13.85	7.57	0.46	0.25	37.44	
72: 72nd Avenue	6.81	2.90	0.68	0.29	37.77	
<i>W 58th Ave/Allison St</i>	5.03	4.39	0.27	0.22	150.42	
52: W 52nd Avenue / South Bannock	3.55	3.24	0.12	0.11	74.88	
72: 72nd Avenue	1.48	1.15	0.15	0.12	75.53	
<i>Olde Town Arvada PnR Gate A</i>	0.00	53.47	0.00	2.81	712.04	
76: Wadsworth Blvd	0.00	53.47	0.00	2.81	712.04	
<i>Olde Town Arvada PnR Gate B</i>	128.52	116.38	9.42	8.31	2585.17	
52: W 52nd Avenue / South Bannock	33.76	20.71	2.41	1.48	521.25	
55L: Olde Town Arvada Limited	44.47	42.02	3.42	3.00	1539.00	
76: Wadsworth Blvd	50.29	53.65	3.59	3.83	524.92	
<i>Olde Town Arvada PnR Gate C</i>	138.33	73.63	9.10	5.09	1719.73	
52: W 52nd Avenue / South Bannock	34.04	35.55	2.27	2.37	558.34	
76: Wadsworth Blvd	104.29	38.08	6.83	2.72	1161.40	
<i>Ralston Rd/Upham St</i>	10.37	10.56	0.71	0.73	1082.72	
52: W 52nd Avenue / South Bannock	6.39	5.10	0.43	0.34	558.34	
76: Wadsworth Blvd	3.98	5.46	0.28	0.39	524.38	
<i>Ralston Rd/Wadsworth Blvd</i>	6.93	21.67	0.47	1.49	1082.72	
52: W 52nd Avenue / South Bannock	4.92	11.91	0.33	0.79	558.34	
76: Wadsworth Blvd	2.01	9.75	0.14	0.70	524.38	
<i>W 58th Ave/Upham St</i>	9.90	11.63	0.71	0.83	1046.17	
52: W 52nd Avenue / South Bannock	3.55	5.42	0.25	0.39	521.25	
76: Wadsworth Blvd	6.36	6.21	0.45	0.44	524.92	
<i>W 58th Ave/Wadsworth Blvd</i>	10.01	6.04	0.71	0.43	521.25	
52: W 52nd Avenue / South Bannock	10.01	6.04	0.71	0.43	521.25	
<i>W 58th Ave/Allison St</i>	2.17	0.44	0.15	0.03	1079.59	
52: W 52nd Avenue / South Bannock	2.17	0.44	0.15	0.03	1079.59	

Figure 1.26: Weekend bus ridership on RTD Bus Routes (Source: RTD Planning Department)

URBAN LIVING STUDY

IV. FINDINGS AND RESULTS (CONT.)

The following two maps (Figures 1.27 and 1.28) give a general overview of the public transit options available within walking distance of OTA. They show the current bus routes and bus stations, as well as the future G Line including the Park n' Ride locations. Though Figure 27 displays the individual light rail stations within proximity to Arvada, because the line is not currently operational, the amount of data that can be displayed is limited. Also note, secondary stop locations on two of the bus routes (West 58th & Allison and Ralston & Wadsworth) are removed for ease of visual communication.

An urban living context implies a decreased reliance on automobiles, with easy availability of alternative modes of transportation. Based on ridership numbers and the availability of alternative transportation options, the area is beginning to support this, and the impending rail service will improve on this further. However, some limitations must be overcome. For one, the bus stops that service Olde Town are just outside of the Olde Town limits, meaning less convenient access to and from the OTA core. Also, additional residential density may be required to support both additional transit and other necessary amenities and services for car-free living.

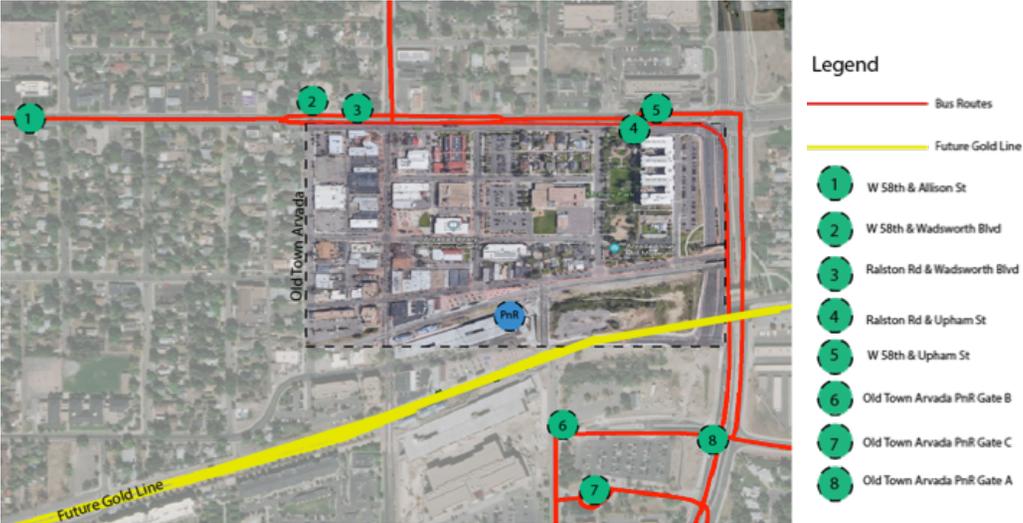


Figure 1.27: Public transportation routes and stops (bus and rail) near Olde Town (Source: RTD GIS open source data, April 16, 2018.)

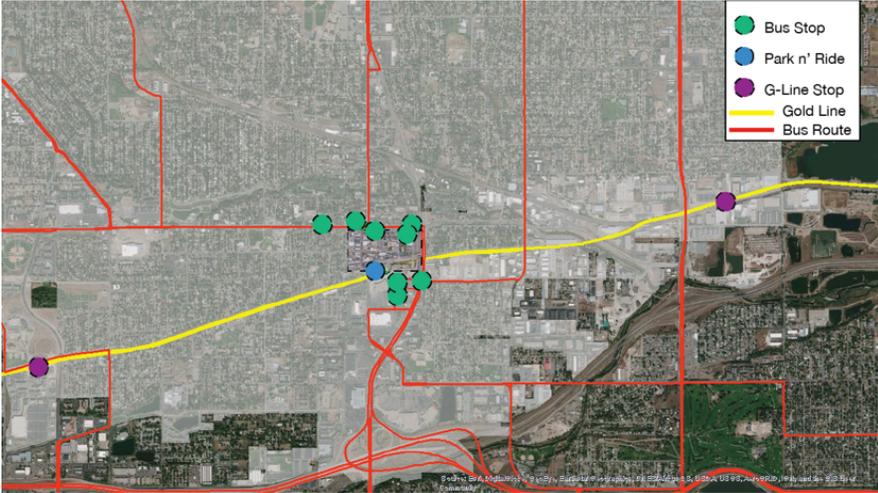


Figure 1.28: Public transportation routes and stops (bus and rail) Zoomed Out Source: RTD GIS open source data, April 16, 2018.)

URBAN LIVING STUDY

IV. FINDINGS AND RESULTS (CONT.)

FUTURE DEVELOPMENT: VACANT OR UNDERUTILIZED PROPERTIES

Using GIS data from Arvada OpenData and records from the Jefferson County Assessor Property Records Search, we analyzed each parcel in Olde Town to determine if the parcel had development potential. We used ArcGIS to identify the parcels that fall within the study area boundary; Ralston Road to the north, Zephyr Street to the west, Grandview Avenue to the south and Old Wadsworth Boulevard to the east. After identifying the appropriate parcels, we researched each parcel's zoning and property records. We found the vacant parcels to hold the highest development potential, so identified those first. Then, we used the zoning code to identify allowable uses for the rest of the parcels and compared these uses to the current use. Through this analysis we established the best and highest use for each parcel (and highlighted those with a lower use as suitable for redevelopment).

Next, we researched the land value and improvement value for each parcel. First, we investigated parcels with especially low improvement values, using Google Street View and the Assessor's website, to determine if the structures were of poor quality and flagged those that were. Second, we compared the land and improvement values. Generally, if a parcel's land value is higher than its improvement values, and the zoning allows greater intensity than the current use, the parcel is attractive for redevelopment. Last, we disqualified any parcels where institutions like schools or libraries were located and any parcels with homes within the residential districts.

Given each of the above conditions we then categorized each parcel into two categories based on if they had high development potential or not, using the following criteria:

- Vacant
- Underutilized (i.e. residential use in a mixed-use district)
- Improvement value less than land value
- Poor quality building

Figure 1.29 highlights the parcels which we determined have a high re/development potential. This map can be used by the City to begin to prepare for developer proposals for these lots as infill developers continue to look for redevelopment opportunities in Olde Town.

Several parcels that were identified as vacant or underutilized were further profiled as particularly attractive areas for redevelopment to achieve the goals of the city's comprehensive plan, including providing additional housing, where appropriate, and increasing commercial uses. The zoning code's parking requirements may be barriers to redevelopment in these sites, therefore, off-site, shared parking should be considered as an alternative to the parking requirements. The three profiled parcels are located on the following page.

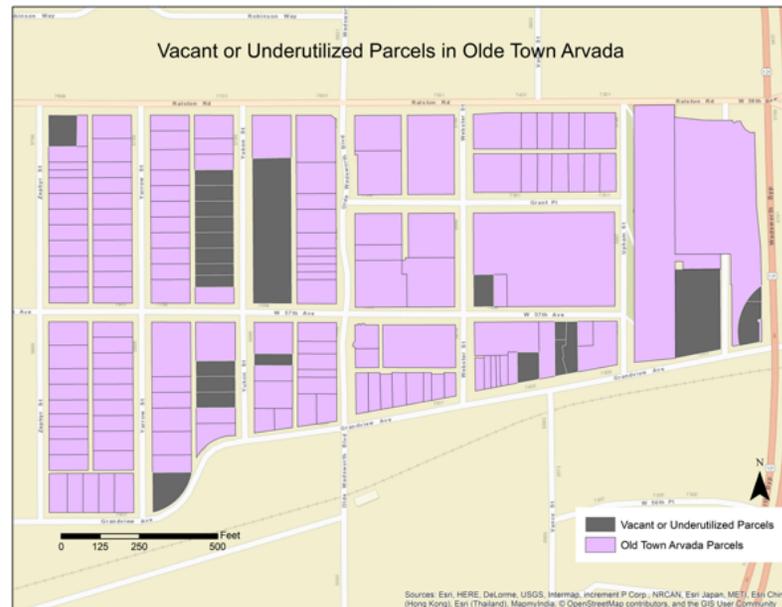


Figure 1.29: Map of vacant or underutilized parcels in Olde Town

URBAN LIVING STUDY

IV. FINDINGS AND RESULTS (CONT.)

5700 Yukon Street

This parcel was identified as underutilized based on its institutional use in OT-EY Mixed Use Zoning District. It is currently underused, as it includes a large surface parking lot. It appears to be an attractive investment for developers. Developers could potentially build a mixed-use multi-family housing and commercial development in this area.

- Current Use: Elks Lodge and surface parking
- Current Owner: BP Order Elks of USA Arvada Lodge 2278
- Parcel Size: approximately 1.40 acres
- Land Use Type: Social/Fraternal Hall

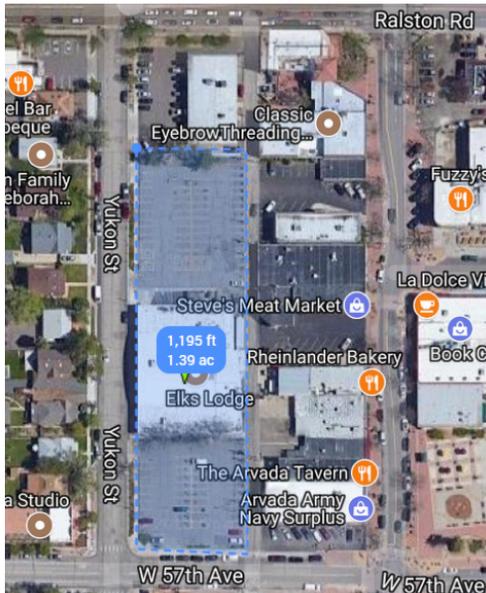


Figure 1.30: 5700 Yukon Street

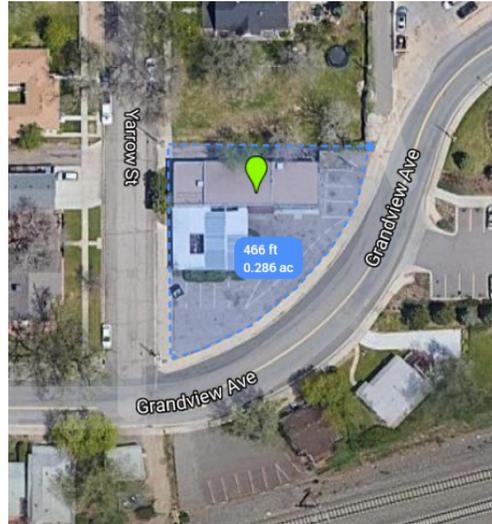


Figure 1.31: 7711 Grandview Avenue

7711 Grandview Avenue

This parcel was identified as underutilized and potentially attractive to developers because the improvement value was less than the land value. It is currently the location of a lawnmower business with surface parking, which may not be the best use of this parcel. It appears to be an attractive investment for developers for commercial development, despite the unique shape of the parcel. It would probably be financially unfeasible to develop if there were parking requirements.

- Current Use: S&N Lawnmower
- Current Owner: 7711 Grandview LLC
- Parcel Size: approximately 0.3 acres
- Land Use Type: Retail

7207 Grandview Avenue

This parcel was identified as underutilized and is potentially attractive to developers because the improvement value was less than the land value. It is currently the location of the Colorado Snoring and Sleep Apnea Center. While there is an attractive structure on the parcel, most of the parcel is underutilized. The town could encourage a developer to preserve the existing structure but to add another use to this parcel, such as mixed use, multi-family housing and commercial development.

- Current Use: Medical Office
- Current Owner: Arvada Motel, LLC
- Parcel Size: approximately 1 acre
- Land Use Type: Commercial



Figure 1.33: 7207 Grandview Avenue

URBAN LIVING STUDY

V. CONCLUSIONS AND RECOMMENDATIONS

Olde Town Arvada is a regional shopping, dining, and entertainment destination for residents of Arvada and its surrounding cities, including Denver. It is also an employment destination for residents from the same areas. Adding more density to the transit station area without adding additional alternative transportation facilities and more parking regulations will eventually affect traffic and parking in OTA if the areas surrounding OTA remain car dependent because there are no other options to access OTA and parking is free and plentiful. Increased housing growth along the gold line and other bus routes could alleviate some of the auto pressures, however a large number of people will continue to choose to travel by car to OTA. Long term visitors and workers to OTA need to be directed to the parking garage or other parking destinations if the OTA area is going to keep its on-street parking for shorter term visitors.

Most OTA workers do not live in Olde Town. Future policy changes should be based on further study that determines whether it is affordability or other reasons. If it is due to housing issues, the City of Arvada should require more affordable housing to be built in or near OTA to ensure that people working in OTA can live close to work if they choose. If workers choose their housing for other reasons, increasing transit availability or carpooling options to these areas could help ease the parking demand created by workers. The City should still look into building more affordable housing near OTA to accommodate new residents who work in Downtown Denver or at the Denver Airport and could ride the G Line straight to Union Station from the Olde Town Arvada Station.

In Arvada, 88% of people commute to work via automobile, and if the majority of people commuting into Olde Town are doing so via automobile, existing parking resources will be strained. One strategy the City of Arvada can pursue is to build more housing around Olde Town so that more people can live close to their place of employment.

However, people must be able to afford their housing. According to the Gold Corridor Housing Study, 45% of households near the Olde Town Station pay more than 30% of their income on housing, and 30% of households pay more than 35% of their income on housing (p. 29). The Olde Town Station has a higher percentage of nearby residents paying more than 35% of their household income on housing than any other station along the G Line (p. 29). While there are existing affordable housing units in Arvada, none are within a half-mile to the Olde Town Station. More housing within a half-mile to the Olde Town Station will enable more people to live near their place of employment or near a rail line that goes directly to Downtown Denver, the largest employment center in the region.

There are 23 parcels identified as vacant or underutilized according to this analysis, and three were profiled as particularly attractive to developers for redevelopment. This presents an opportunity for Arvada to fulfill goals in the Comprehensive Plan. However, the parking requirements may need to be adjusted to allow for these sites to be worthwhile investments for developers. We recommend regulations that are flexible and allow off-site, shared parking. Appropriate locations for shared parking will be further addressed in the parking inventory analysis.

V. CONCLUSIONS AND RECOMMENDATIONS

Currently, Arvada residents are concerned that adding more residents to OTA will worsen parking problems, so they are demanding higher parking ratios for new development. Given the profile of current and future OTA residents, it does not seem as though these residents of OTA are the individuals placing pressure on OTA streets. We will address this further in the parking inventory analysis and the Travel Survey of 67 OTA visitors, most of them workers in OTA. The recommendations in the Arvada TOD Framework Plan remain relevant:

Parking to reflect the impact of transit is one of the most challenging aspects of any TOD. Typical suburban development, with 50 to 75 percent of the site devoted to surface parking, results in land use densities that are too low to support transit service. By creating a more limited parking supply and moving parking from surface parking lots to on-street parking and parking structures, residents, shoppers, and employees are encouraged to use transit to get to the TOD and walk...

Parking in the area is limited, and new uses, such as the Arvada Library, are expected to create an additional demand on the existing supply. Many business owners are concerned about rail users parking for the day in Olde Town, making it difficult for customers to find parking. Balancing the parking needs for existing and future land uses, as well as transit users, is critical to the success of Olde Town. Thus, a parking structure and parking management strategy to serve both the retail core of Olde Town, as well as the transit users, are important elements to address in the next phase of the Arvada Transit Station Planning Project process.

- Arvada TOD Framework Plan, 2007

To stay consistent with Arvada's 2014 Comprehensive Plan of increasing multi-modal transit options, the City of Arvada should consider adding bus stops within the OTA limits. Currently, the bus stops serving OTA are not within the geographically defined OTA limits, thus forcing transit users to access stops on the edges of town which could be limiting for people with disabilities or time constraints. If the City of Arvada is considering increasing residential and commercial density to support an urban living environment, increased bus transit access within the OTA limits could aid in reducing automobile traffic within downtown thus taking pressure off of parking.

Currently, the easiest and most reliable way to access OTA through multi-modal transit is from the East or West. The OTA multi-modal transit options are limited for North or South access to and from OTA. The Gold Line light rail, will aid in increased transit options, and for OTA to more accessible, however the Gold Line will further increase the East and West service, thus increasing the need for increased north - south multi-modal travel options looking forward.

TRAVEL PREFERENCES - CHAPTER TWO



(Source: <https://theknow.denverpost.com/neighborhoods/arvada/>)

TRAVEL PREFERENCES

I. INTRODUCTION

Due to the increased development of Olde Town Arvada and the subsequent increase in demand from visitors and employees for on-street parking in the surrounding areas, there has been a strain on available parking, leading to conflict and complaints regarding the lack of parking. The City of Arvada and the BID commissioned a parking demand analysis in 2016 to obtain more information as to what people would like to see in the future, and what would encourage them to use other methods of transportation.

Overall, there was an overwhelmingly positive reaction to the parking demand study. Many of the local constituents were vocal, responsive, and willing to complete the surveys that were prepared. One topic that was pushed against vehemently was the implementation of metered parking. Almost all people agreed that something needed to be done about the parking, but ideas concerning large scale implementation were across the board, making it hard to reach a consensus.

The purpose of this travel demand survey was to begin to identify the potential demand for travel modes that do not require parking. Providing facilities for these modes can be a strategy to reduce the demand for parking, and thus, avoid the need to implement large scale metering and other pricing strategies. This analysis will summarize the results of 67

surveys collected during the week of April 2, 2018.

II. BACKGROUND

One of the major changes associated with OTA's growth over the years is a simultaneous increase in parking demand and decrease in parking supply. Our travel survey was created to gather information from residents, customers, and employees of OTA to better determine the feasibility of enhancing other travel options in order to reduce the demand for parking.

To inform our topic, we used a transportation study from the City of Boulder as one of our precedents. Boulder's Access Management and Parking Strategy (AMPS) was designed to improve the multi-modal transportation options within Boulder. The practices implemented from AMPS included metered parking, parking code changes, and a suite of Transportation Demand Management (TDM) strategies. Our team used this strategy as partial input to our recommendations for Olde Town Arvada.

We also used elements of AMPS for our survey. For instance, AMPS asked what modes people used to get to their destination and under what circumstances they would use other modes. The response rate to the Boulder

survey was high, therefore, our team believed a travel survey might be more effective than conducting intercept interviews on the street. One of the main findings from the Boulder study was that the majority of the people who took the survey drove alone to work and said that despite a parking shortage, they were not incentivized to take alternate transportation options. Similar to the recommendations in response to the AMPS study, the best practice for these findings, although not favored, was to implement paid/metered parking.

Additionally, we also drew from a parking survey completed by the University of Colorado Denver's Colorado Center for Community Development in Idaho Springs in 2015. The findings of this survey concluded that many of the retail opportunities present in Old Town Idaho Springs were being passed by because of a lack of available parking and a lack of knowledge as to where parking could be found. The recommended solution to this issue was to improve and increase the type and amount of signage and way finding associated with public parking so that visitors to Old Town Idaho Springs could find their way more easily and from any location. This practice also informed our recommendations for Olde Town Arvada.

TRAVEL PREFERENCES

III. METHODS AND DATA

METHODS

Our team distributed about 300, one-page travel preferences surveys to approximately 35 businesses in Olde Town Arvada on Wednesday, April 4, 2018 between 10am and 2pm. We collected the surveys from the businesses a week later, on Wednesday April 11 and Thursday April 12, 2018. See the Appendix for a copy of the full survey. The survey asks respondents how they got to Olde Town that day; the amount of times they regularly use each mode to get to Olde Town; the primary reason they were there; the amount of times they visit Olde Town in a typical week; if they drove where they parked; and how easy it was to find parking.

We analyzed the data using descriptive statistics that include total count and percent total of each value. While we do not conduct predictive statistics, we do attempt to interpret the results to suggest how people might be willing to travel in and around Arvada if the incentives and travel facilities are changed.

SOURCES

- Old Towne Arvada Travel Demand Survey (2016)
- Boulder Employee Transportation Survey (2015)
- CU Denver Idaho Springs Travel Survey (2015)

IV. FINDINGS AND RESULTS

General Survey Results and Key Findings:

- 67 total respondents
- Average age of respondents: 40
- Male respondents: 21 (31%); Female respondents: 39 (58%); 6 respondents did not indicate gender
- 91% of respondents drove to Olde Town on the day of survey

- Roughly 80% of respondents work in Olde Town
- Half of all survey respondents live in Arvada and work in Olde Town.

The tables below summarize survey data, including mode choice, reasons for visiting Olde Town, chosen parking location, and level of difficulty in finding parking. The final table summarizes which conditions must exist for a person to consider using an alternative mode of transportation to travel to Olde Town, such as greater convenience, increased safety, shorter travel times, lower costs, etc..

By far, most respondents (93%) drove to Olde Town, either alone (81%) or with one or more people (12%). This is a higher share of workers both driving and driving alone to work than the rest of the region, which is at 85% driving (76% alone and 9% in carpools) (U.S. Census). However, the carpool share to Olde Town is 3% higher than the region's share of carpoolers. No one took transit. By comparison, the region's transit share to work is 4% (U.S. Census). Of the remaining five respondents, four walked and one took a rideshare.

Mode	Count	% Total
Drove alone	54	80.6%
Drove with one or more	8	11.9%
Walked	4	6.0%
Biked	0	0.0%
Rideshare	1	1.5%
Public Transit	0	0.0%
Total	67	100.0%

Figure 2.1: Respondents' mode choice on day of survey [QUESTION 1]

TRAVEL PREFERENCES

IV. FINDINGS AND RESULTS (CONT.)

Nearly 80% of the respondents were in Olde Town that day for work. The others were there for entertainment (11%), Dining (14%), Shopping (8%) and other reasons. However, the total was greater than the number of respondents (72 versus 67), so some were there for multiple reasons, e.g. dining and shopping. We also asked their typical reason for visiting. After the work option (81%), respondents selected dining (40%), entertainment (31%), and shopping (22%) as their other reasons for visiting. The range of reasons shows Olde Town's draw for a diverse set of activities. It's also important to note that the top reasons; work, entertainment, and dining, do not necessarily require a car if other transportation options are viable, unlike shopping, which may be easier by car than public transit.

Reason	Today's Visit		Typical Visit	
	Count	%Total	Count of options	% Total
Work	52	79%	47	81%
Entertainment	7	11%	18	31%
Dining	9	14%	23	40%
Shopping	5	8%	13	22%
Other	2	3%	1	2%
TOTAL	N/A*	N/A*	N/A*	N/A*

Figure 2.2: Respondents' primary reasons for visiting Olde Town [QUESTION 6]

The response to the parking questions (Tables 3 and 4) illustrate the relative ease of parking in Olde Town. Nearly 40% were able to find street parking. The others used the parking garage (24%) and private lots (37%). Of these, only the private lot possibly has a cost. If an employee is parking in their work lot, the parking is free. Further, the majority (52%) said parking was Very Easy or Somewhat Easy.

Only 31% noted it was very difficult. There was no relationship between the ability to find parking and other answers, such as gender, age, number of visits per week, purpose of visit, or weekend.

Parking Location	Count	% Total
On Street in Olde Town	18	29%
On Street near Olde Town	6	10%
Parking Garage	15	24%
RTD Park-n-Ride	0	0%
Private Parking Lot	23	37%
Total	62	100%

Figure 2.3: Parking location for those that drove to Olde Town [QUESTION 2]

Difficulty Finding Parking	Count	% Total
Very Difficult	13	31%
Somewhat Difficult	7	17%
Somewhat Easy	5	12%
Very Easy	17	40%
Total	42	100%

Figure 2.4: Difficulty finding parking in Olde Town [QUESTION 3]

The response to the parking questions (Tables 2.3 and 2.4) illustrate the relative ease of parking in Olde Town. Nearly 40% were able to find street parking. The others used the parking garage (24%) and

TRAVEL PREFERENCES

IV. FINDINGS AND RESULTS (CONT.)

private lots (37%). Of these, only the private lot possibly has a cost. If an employee is parking in their work lot, the parking is free. Further, the majority (52%) said parking was Very Easy or Somewhat Easy. Only 31% noted it was very difficult. There was no relationship between the ability to find parking and other answers, such as gender, age, number of visits per week, purpose of visit, or weekend.

The final question asked what conditions they would require for them to take other travel modes. The findings are promising in that the share of respondents who checked they “Would Never” take a mode was 30% at the highest (for carpool) and as low as 18%, for transit. Additionally, 6% to 16% said they already used these other modes. Specifically, 25% of respondents would use public transit if it were easier or more convenient. The opening of the light rail line could be the easier or more convenient option for some of these respondents. However, there may be a need for better local transit connections, since others responded that transit would need to be quicker (18%). Others responded that they didn’t feel safe (12%).

These “what if” responses suggest Olde Town could encourage employees and visitors to use other modes if they worked to meet some of other conditions, such as improving the safety of bike lanes (21%), or subsidizing the cost of public transit (16%). These findings reinforce the Commuting Habits observation that many people currently commute from Olde Town to downtown Denver (mostly by car). There is a great opportunity to maximize the benefits of the Gold Line by accommodating the convenience and safety commuters to and from Olde Town.

The home cities of the respondents also suggest some of the respondents may be able to take the Gold Line in the future, including the eight respondents from Denver and the two respondents from Wheat Ridge. Of the 39 from Arvada, some may live along the Gold Line near the other stations.

Survey Locations	Count
[Blank]	27
Army Navy Surplus	4
Custom Flooring	2
Denver Beer Co	2
Global Goods	3
Homegrown Tap & Dough	1
Into the Fire	4
Kline's Beer Hall	2
La Dolce Vida	3
Library	1
Mi Tierra	5
Paws & Play	4
Rheinlander	1
Salon Hethers	4
Scrumptious	2
The Barre Standard	1
Zoom Bang Bang	1
TOTAL	67

Figure 2.6: Survey Locations

Mode	Easier/ More Convenient		Felt Safe/ Secure		Inexpensive/ Free		Less Time		Already Use		Would Never	
	Count	% Total	Count	% Total	Count	% Total	Count	% Total	Count	% Total	Count	% Total
Walking	12	18%	11	16%	4	6%	15	22%	6	9%	19	28%
Biking	13	19%	14	21%	2	3%	13	19%	6	9%	18	27%
Public Transit	17	25%	8	12%	11	16%	12	18%	4	6%	12	18%
Carpool/Vanpool	8	12%	1	1%	1	1%	2	3%	11	16%	20	30%
Shuttle from Satellite Parking	13	19%	3	4%	11	16%	5	7%	0	0%	21	31%

Figure 2.5: Conditions that must be present to consider using an alternative mode for their trip to Olde Town [QUESTION 7]

TRAVEL PREFERENCES

IV. FINDINGS AND RESULTS (CONT.)

Since most of the respondents were there to work, it follows that more than 67% visit Olde Town at least 5 times a week. This group is a target for trying alternative modes, if the conditions are met, since people are more likely to try public transit for routine and predictable travel rather than ad-hoc trips at different times of the day.

Respondents' Home Cities	Count
[Blank]	1
Arvada	39
Brighton	1
Broomfield	1
Castle Rock	1
Denver	8
Edgewater	1
Golden	1
Highlands Ranch	1
Lakewood	5
Parker	1
Thornton	1
Thr	1
Westminster	3
Wheat Ridge	2
TOTAL	67

Figure 2.7 Respondents' home cities

Number of Visits in a Typical Week	Count	% Total
[Blank]	4	6%
1	5	7%
2	5	7%
3	2	3%
3.5	1	1%
4	5	7%
5	26	39%
5.5	7	10%
6	5	7%
7	4	6%
7.5	1	1%
8.5	1	1%
10	1	1%
TOTAL	67	100%

Figure 2.8 Respondents' home cities

Tables 2.9-2.11(shown on the following page) show that younger people (ages 18-44) are more willing to walk/bike/take transit if various conditions were improved, compared to other age groups. People between the ages of 25 and 64 already walk/bike/take transit more, proportionally, than the oldest and youngest age groups surveyed. The 65+ age group is the most likely to never consider walking/biking/ or taking transit, proportionally, than the other age groups. This trend may mean it is best to focus efforts on improving conditions that would likely urge younger and middle-aged persons (those under 50) to walk/ bike/transit more, since this demographic already shows a willingness, given the right conditions.

TRAVEL PREFERENCES

IV. FINDINGS AND RESULTS (CONT.)

WALKING

Age Group	Number of Respondents	Would Walk w/ Conditions	% of Age Group	Already Walk	% of Age Group	Would Never Consider Walking	% of Age Group
18-24	11	8	73%	1	9%	2	18%
25-44	31	14	45%	4	13%	9	29%
45-64	8	2	25%	0	0%	4	50%
65+	9	0	0%	0	0%	4	44%

BIKING

Age Group	Number of Respondents	Would Bike w/ Conditions	% of Age Group	Already Bike	% of Age Group	Would Never Consider Biking	% of Age Group
18-24	11	8	73%	0	0%	1	9%
25-44	31	16	52%	5	16%	8	26%
45-64	8	0	0%	1	13%	5	63%
65+	9	1	11%	0	0%	4	44%

TRANSIT

Age Group	Number of Respondents	Would Use Transit w/ Conditions	% of Age Group	Already Use Transit	% of Age Group	Would Never Consider Using Transit	% of Age Group
18-24	11	10	91%	0	0%	1	9%
25-44	31	14	45%	3	10%	3	10%
45-64	8	2	25%	1	13%	4	50%
65+	9	1	11%	0	0%	4	44%

Figure 2.9-11: Answers to Final Question by Age Group

TRAVEL PREFERENCES

IV. FINDINGS AND RESULTS (CONT.)

Tables 12 and 13 show some interesting trends differing between male and female respondents. Men are more likely to already walk/bike/and use transit. Furthermore, women responded that they would walk/bike/or take transit if it felt safer or more secure. It is likely that there are certain safety issues that affect women more than men when considering alternate mode of transportation. Insufficient lighting at night, lack of other people on the street, and dark spaces (where someone might hide) may be factors that make women feel less safe than men. It is important to consider these differences in experience based on gender and find solutions that can make alternative forms of transportation feel safer for women. Additional surveys or a focus group could help to identify the safety issues.

GENDER	Number of Respondents	Already Walk	% of Gender	Already Bike	% of Gender	Already Use Transit	% of Gender
Female	40	3	8%	2	5%	1	3%
Male	21	2	10%	4	19%	3	14%

Figure 2.12: Response to Final Question by Gender

GENDER	Number of Respondents	Would Walk if More Safe/Secure	% of Gender	Would Bike if More Safe/Secure	% of Gender	Would Use Transit if More Safe/Secure	% of Gender
Female	40	9	23%	7	18%	8	20%
Male	21	1	5%	3	14%	0	0%

Figure 2.13: Response to Safety by Gender

Finally, almost half of all our respondents live in one of the zip codes adjacent to Old Town (80002, 80003, and 80004). A similar finding is present in the Demand for urban living in Olde Town Arvada findings section, which notes that the majority of people who work in Olde Town are from Arvada. Table 15 shows the breakdown of willingness to walk/bike/or take transit if conditions are improved, by respondents who live in the three zip codes adjacent to Old Town. 45% of all respondents living in these three zip codes say they would consider walking if various conditions were improved, 42% said they would consider biking, and 42% said they would consider taking transit to Old Town. This shows that there is a willingness by those who live near Old Town to take alternative forms of transportation. The city of Arvada should consider a complete streets plan from surrounding neighborhoods to Old Town to capitalize on this willingness.

	Number of Respondents	Would Walk w/ Conditions	% of Lone Drivers	Would Bike w/ Conditions	% of Lone Drivers	Would Use Transit w/ Conditons	% of Lone Drivers
Drove Alone	54	21	39%	24	44%	22	41%

Figure 2.14: Response to Final Question of those who Drove Alone

TRAVEL PREFERENCES

IV. FINDINGS AND RESULTS (CONT.)

HOME ZIP	Number of Respondents	Would Walk w/ Conditions	Would Bike w/ Conditions	Would Use Transit w/ Conditions
80002	12	33%	58%	33%
80003	9	56%	22%	67%
80004	10	50%	40%	30%
Total	31	45%	42%	42%

Figure 2.15 - Responses to Final Questions by Three Home Zip Codes Adjacent to Old Town

OTHER NOTABLE FINDINGS

- Of the 39 respondents who live and work in Arvada, only 6 indicated that they walk or bike to Olde Town in a typical week. None indicated that they use public transit. This finding may indicate that local connectivity (for both transit and pedestrian amenities) may need improvement
- The answers about biking are also informative for future investments. 14 (21%) of the respondents indicated that they would consider biking to Olde Town if they felt safe and secure. 13 (19%) would consider biking if it took less time. Complete streets for bicyclists and pedestrians with additional connections are possible solutions, but more surveys and planning studies are needed to identify the specific safety issues and locations. Since Arvada has made improvements for biking in some areas, awareness may be another issue.
- Of those that drove to Olde Town, there was a fairly equal distribution among the 3 most utilized parking locations: On-street in Olde Town, parking garages, and private lots. Thus, people, especially people, especially regular visitors, are somewhat aware of the different options. This may help to explain the high share that find it easy to park.
- Of those that drove to Olde Town, there was a fairly equal distribution among the 3 most utilized parking locations: On-street in Olde Town, parking garages, and private lots. Thus, people are somewhat aware of the different options. This may help to explain the high share that find it easy to park.
- While there were no significant differences by age or gender, of the people who reported they car pooled, 5 were in their 20s and 3 were in their 60s. These groups are less likely to have children and may find it easier to coordinate rides, or may be more likely to need to share a ride. These two age groups were also the ones who reported non-work reasons for being in Olde Town when they took the survey, namely for entertainment. This ratio may be an important consideration for setting parking requirements for new businesses. Rather than going by the number of seats in a restaurant, the City may want to consider the number of table, or some other measure that recognizes people generally drive to the entertainment destinations in groups.

TRAVEL PREFERENCES

IV. FINDINGS AND RESULTS (CONT.)

SUMMARY OF FINDINGS

1. Most survey respondents (81%) drove alone to Olde Town. Half of all respondents both live and work in Arvada, but still drive alone to work. Very few walk or bike to work, and no respondents reported taking public transit. Of the 24 respondents who live AND work in OTA but drive alone, almost all (22) live in the adjacent zip codes and would consider walking, cycling, taking transit, or using ride-share if conditions improved. While the total survey sample was small (67), to the extent it is representative of at least some other employees and visitors in OTA, shifting some of these travelers to different modes could have a positive impact on parking.
2. The free RTD garage is currently an underutilized resource that should be better leveraged. The garage currently feels disconnected from Olde Town and is difficult to navigate into and out of. Yet, 13 of the respondents noted they parked there.
3. Although we heard from other sources that parking is an issue about which many people have strong opinions, only 30% of the respondents found it difficult to find parking the day they completed the survey, and the majority of respondents

do not perceive a parking problem. Thus, catering parking policies to 30% or less of the daytime population may be limiting Olde Town's potential for future redevelopment. These individuals may need more information on where to park, not more parking.

4. Safety and lack of time are the most given answers for not bicycling. But connectivity is also an issue.

LIMITATIONS

- First, the number of surveys collected was too small for a very robust analysis. A greater sample size may provide more accurate or focused information.
- Second, there were a limited number of sites at which the survey was available, further limiting the representation captured in the sample. While we distributed surveys to the majority of businesses in OTA, there is a chance we missed a business that either was not open or would not accept the surveys, limiting the range and diversity of survey respondents. For instance, the Arvada Army and Navy Surplus generated 12 completed surveys while the rest of the businesses generated one to seven. If a business tends to attract a specific demographic, there is a chance the survey results could be skewed, leading to an

inaccurate representation of OTA and an inaccurate analysis.

- Third, the short time the surveys were available also limits the sample. Surveys were available for one week.
- Fourth, many business owners or employees forgot about the surveys or did not put a lot of effort into distributing them, which reduced both sample size and variety.
- Lastly, one of the survey questions seems to have been misunderstood. We asked the time of day the person parked, but respondents answered with the time they took the survey. Therefore, that attribute has been eliminated from the analysis.

V. CONCLUSIONS AND NEXT STEPS

After analyzing our survey results, our team has come up with several conclusions and next steps.

First, we found that most people drive alone to Olde Town, and that shifting this proportion of mode choice could have a significant impact on parking. We have found that the free RTD garage is currently an underutilized resource that should be better leveraged. The garage currently feels disconnected from Olde Town and is difficult to navigate into and out of.

TRAVEL PREFERENCES

V. CONCLUSIONS AND NEXT STEPS

About half of our survey respondents both live and work in Arvada, but still drive alone. From this finding, we suggest further study of the multi-modal options within Arvada, because it seems modes other than driving are not popular for local trips.

Both from comments on surveys and conversations we had with people in Olde Town, it is obvious that parking is an issue, yet only 30% of them found it difficult to find parking that day. This fact highlights the importance of educating community members on the benefits and costs of all possible solutions. It also shows that the majority of people do not perceive a parking problem.

It is apparent that there is a need to take advantage of alternate modes of transportation in Arvada, and the following section contains recommendations for achieving this. Next steps would most likely include holding public outreach meetings to reach a consensus on which solutions would be the best fit for the Arvada community. Once a consensus is reached, several studies may have to be conducted to determine the feasibility of these solutions.

RECOMMENDATIONS

Consider constructing an overpass from the parking garage to the light rail station to improve connectivity and to make the commute more seamless. As mentioned in the recommendations in both the Demand for Urban Living in Olde Town section and the Parking Observations section, finding a way to make the parking garage more noticeable to visitors through public art, better lighting, improved way finding, etc. would help to make the garage an inviting and attractive option for visitors, rather than a hidden unknown that seems more distant and confusing than it actually is. A study for an overpass would need to look at the entry/exit landing points to determine who owns the land if the overpass is not solely on the station and parking garage property,

as well as the slope/incline and span to determine materials and safety, and of course costs

Public education campaign: In accordance with the recommendations made in the Case Studies section, outreach, communication, and education about the benefits of shared parking and multi-modal transportation, as well as the impacts of parking, especially in the downtown core, is an essential element in keeping the public informed in the decision-making process to avoid any negative reactions. The creation of a parking ambassador program, as recommended in the Case Studies section, could allow for a more streamlined and organized manner in which to achieve this. Considering younger and middle-aged adults (18-44) show a willingness to take alternative transportation to Old Town, but are not already, education and outreach should have some focus on these demographic groups.

RTD garage marketing: Marketing the RTD garage throughout Olde Town and emphasizing the free parking could better inform people and encourage them to use the garage instead of the street parking. A recommendation in the Parking Inventory section also mentions the importance of developing signage, way finding, and branding, in terms of parking throughout Olde Town, including the RTD garage.

Employee incentives: As briefly stated as a parking management strategy in the Case Studies recommendations section, a more regulatory-based recommendation would be to implement strategies that encourage employees of Olde Town to park in designated spots that aren't as convenient for people who make quick trips to Olde Town, such as in the RTD parking garage, and ways to encourage them to take transit. Additionally, offering free or subsidized EcoPasses to downtown employees could incentivize the use of public transportation. This could be done through allowing businesses to opt into the EcoPass program by purchasing EcoPasses for their employees.

TRAVEL PREFERENCES

V. CONCLUSIONS AND NEXT STEPS

Designate longer-term employee parking areas: This would allow for a faster turnover in more convenient parking for visitors. The City would need to work with local businesses to determine where these areas are and encourage their staff to use them.

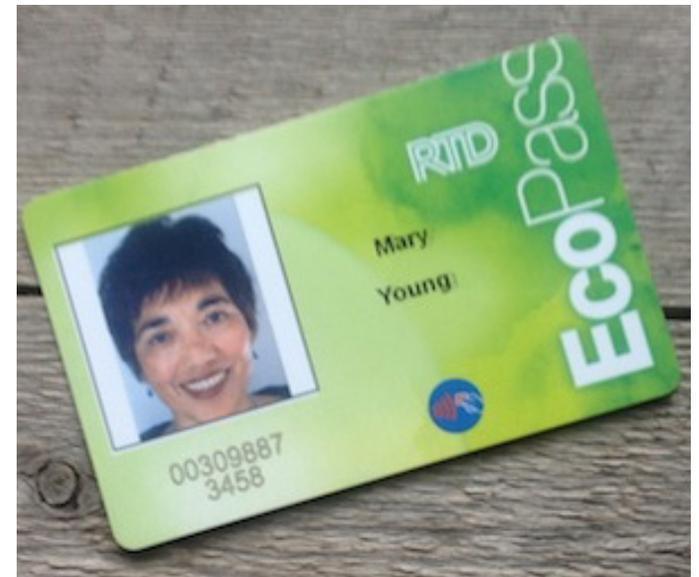
Study existing connections: Identify the existing local pedestrian, bike, and transit connections from Olde Town to the rest of Arvada. There may be gaps in these connections that inhibit the use of alternative modes of transportation for those living and working in Arvada. These efforts to identify gaps should begin with connecting to nearby neighborhoods, since our survey showed a need to improve connections to the three adjacent neighborhoods. In addition, improvements to connections should consider and address barriers to transportation that differ by gender, especially involving feeling safe and secure while traveling. Similarly, expanding public transit and improving pedestrian infrastructure were among some of the recommendations in the Case Studies section.

Charge for on-street parking, while offering free parking in the parking garage. These points are also expanded upon in the Parking Observations section.

Reserve several high-priority spots for carshare vehicles. Similar to a recommendation made in the Case Studies section, the City could offer subsidies to employees who use unique car sharing programs, such as those that allow the driver to take the car home and drive it to work, but allow the car to be shared by others during the day. Rideshare carpool services, such as Lyft's Lyftline could also be promoted. Implementing parking fees and meter fees could be a way in which a program like this could be funded.



Car 2 Go Elective Drive car share option. (Source:car2go.com)



RTD EcoPass (Source: YoungForCouncil.org)

PARKING INVENTORY - CHAPTER THREE



(Source: <https://greyareanews.com/news/local-co/olde-town-arvada-water-tower-get-facelift/>)

PARKING INVENTORY

I. INTRODUCTION

Parking is critical to the function of Olde Town Arvada and understanding existing parking availability and occupancy rates will be essential to developing travel demand management strategies. To that end, the project team reviewed parking inventories from other communities to identify best practices and designed and executed a parking inventory in Olde Town Arvada. The inventory counted all parking spaces within the bounds of Olde Town Arvada, delineated different types of parking, and assessed the occupancy of these spaces at three different times of the week. Initial findings indicate that parking spots have the highest occupancy in the Olde Town Core, defined here as Yukon Street to Webster Street and Ralston Road to Grandview Avenue. While this is not surprising, strategies will need to be identified that connect driver-visitors and possible new residents/businesses to parking outside of these five square blocks to make use of underutilized parking spaces and lots throughout the remainder of Olde Town Arvada.

II. BACKGROUND

This downtown parking assessment and recommendations, prepared for the City of Arvada, is a comprehensive analysis of the parking system in Olde Town Arvada. This analysis has been completed to determine the current utilization of parking and the future need for parking in Olde Town Arvada. It uses Donald Shoup's target occupancy rate of 85% as its baseline, a number that demonstrates parking spaces are being utilized while availability of parking remains (Shoup 560-561). The City of Arvada is experiencing significant new development including a new light rail station and increasing densification. This development could potentially create a stronger pedestrian environment if parking is addressed on the front end and alternative transportation is utilized. The assessment and recommendations contained in this report provide a snapshot of current parking utilization and suggestions to maximize the efficacy of the overall parking system in Olde Town Arvada.

III. METHODS AND DATA

Before designing the parking inventory, the study team reviewed parking studies from other communities and relevant Arvada planning documents. Below are the data sources analyzed and a brief description of applicable takeaways from each.

DATA SOURCES

The following plans were reviewed to identify existing parking strategies in Arvada and strategies utilized in other, similar municipalities.

Olde Town Arvada Parking Plan: The current Arvada parking plan has identified four strategies for dealing with parking management: Improve utilization by encouraging shared use of private parking facilities; create more parking spaces; require future developments to provide their own parking resources; and utilize travel demand management to reduce the number of people driving into Olde Town Arvada.

Arvada Comprehensive Plan: Arvada is looking to, "Encourage development of transit-supportive, higher-density, mixed-use, pedestrian-oriented areas" and transit-oriented development. Grandview Road, the southern boundary of Olde Town, is designated as mixed-use, but the City hopes to revitalize the area and keep the historic parts intact. The street has many deficiencies to accommodate all modes of travel with narrow lanes that lead to traffic safety concerns. The priority here is to improve the sidewalks and traffic flow, which is expected to increase 10%-30% by 2035.

Arvada Transit Station Framework Plan: This Arvada plan references limiting the parking supply. It states that "By creating more limited parking supply and moving parking from surface parking lots to on-street parking and parking-structures, residents, shoppers, and employees are encouraged to use transit to get to the TOD and walk."

PARKING INVENTORY

III. METHODS AND DATA (CONT.)

Loveland Parking Study: The Loveland Parking Study provided a road map for developing a process of quantifying and qualifying the parking demands for the study area. The parking inventory was created based on the charts and maps included in the Loveland parking study. Loveland noted that a parking system is not just about parking vehicles, but that it also involves walk-ability, signage, parking enforcement, and marketing parking to owners, employees, and customers.

METHODS

The parking inventory of Olde Town Arvada was completed over five shifts on different days, observing parking spaces and occupancy rates were observed in the morning and afternoon on both weekdays and weekends as well as one shift on a Saturday evening. The project team brought students into the field to review all parking, both public and private, within the boundaries of Olde Town Arvada. Spaces were tracked by the type of parking, time limit allotted, and whether or not the space was occupied. The raw data includes counts across the following types of spaces:

- 2-hour public spaces
- 4-hour public spaces
- Loading spaces
- ADA spaces
- Private spaces

After analyzing the results of the inventory, data has been organized into counts for each block face. Those counts include totals across each type of parking space, average occupancy on the block face, and maximum occupancy observed on the block face. The totals across each type of parking space give an idea of the existing parking stock in Olde Town Arvada. The average occupancy gives a good indicator of typical use of those spaces and maximum occupancy observed gives an idea of which block faces tend to be at the high end of occupancy.

IV. FINDINGS AND RESULTS

The parking inventory clearly indicates that, when including all types of parking, Olde Town Arvada has an excess of parking spaces. Below are the total number of spaces as well as the overall occupancy rates for weekday daytime, weekend daytime, and Saturday evenings based on the project team’s observations:

Figure 3.1: Olde Town Arvada Parking Occupancy

Total Spaces	Weekday Daytime	Weekend Daytime	Weekend Evening
1,217	45%	53%	55%

The percentages above represent the percent of parking spaces that were occupied during the observation period. Saturday evening was the busiest observation period, though only 55% of spaces were occupied at this time. When zooming in to the specific locations of these parking spaces, important findings begin to emerge. The Olde Town Core, five square blocks in the center of downtown, had the highest occupancy rates. These occupancy rates were also highest on the weekends, peaking during weekend evenings.

The map on the following page displays the naming conventions used for each block face in Olde Town Arvada. The map corresponds to the four following charts, which represent street parking in the four quadrants of the study area.

PARKING INVENTORY

IV. FINDINGS AND RESULTS (CONT.)

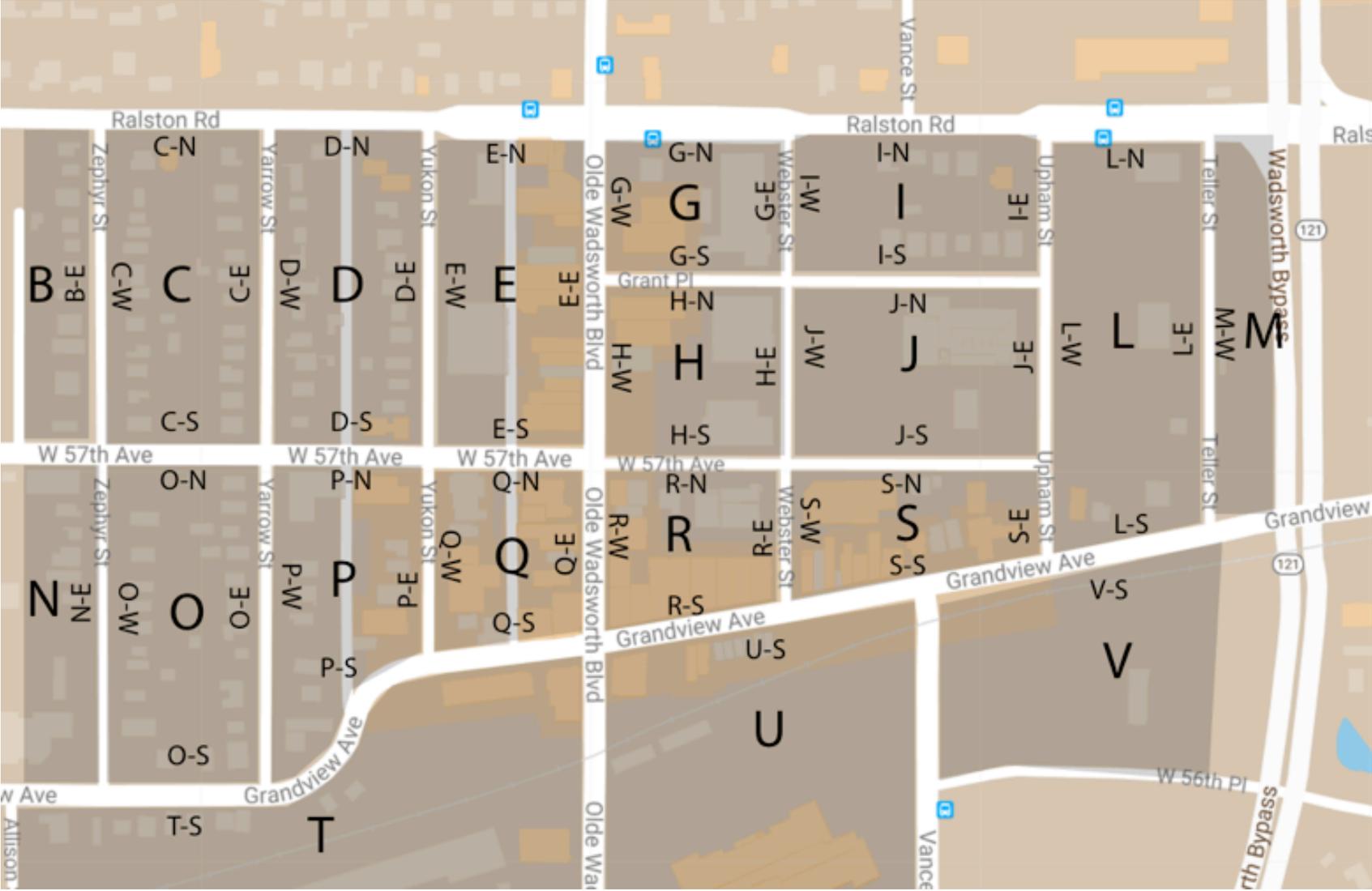


Figure 3.2: Olde Town Arvada Parking Inventory Guide

PARKING INVENTORY

IV. FINDINGS AND RESULTS (CONT.)

Block Face	Total Parking Spots	Weekday Daytime		Weekend Daytime		Weekend Evening	
		Occupancy	Occupancy %	Occupancy	Occupancy %	Occupancy	Occupancy %
BE	18	4	22%	2.5	14%	2	11%
CN*	5	2	40%	0.5	10%	2	40%
CE	17	6	35%	5.5	32%	8	47%
CS	8	0.5	6%	4	50%	2	25%
CW	19	7	37%	4	21%	10	53%
DN*	22	3.5	16%	0	0%	9	41%
DE	22	13	59%	8.5	39%	17	77%
DS	11	7	64%	2.5	23%	8	73%
DW	19	5.5	29%	4.5	24%	10	53%
EE	10	7.5	75%	8.5	85%	8	80%
ES	8	6.5	81%	7	88%	8	100%
EW	16	9	56%	8	50%	14	88%

Figure 3.3: Parking Counts NW Quadrant

Block Face	Total Parking Spots	Weekday Daytime		Weekend Daytime		Weekend Evening	
		Occupancy	Occupancy %	Occupancy	Occupancy %	Occupancy	Occupancy %
GE	5	1	20%	0.5	10%	0	0%
GS	10	5	50%	8	80%	10	100%
GW	7	6	86%	7	100%	6	86%
HN	12	8.5	71%	7	58%	9	75%
HE	10	5.5	55%	6	60%	5	50%
HS	6	3.5	58%	4	67%	5	83%
HW	11	6	55%	9.5	86%	11	100%
IE	6	6	100%	4.5	75%	5	83%
IS	11	1	9%	5.5	50%	4	36%
IW*	90	12	13%	6.5	7%	11	12%
JN	13	1	8%	8.5	65%	8	62%
JE	8	2	25%	8	100%	6	75%
JS	14	5.5	39%	11.5	82%	9	64%
JW	9	5	56%	7	78%	8	89%

Figure 3.4: Parking Counts NE Quadrant

Figures 3.3-7 consist of charts displaying the results of the parking inventory by block face or lot. Each chart includes the following data for the three different times of day/week observed:

- Total number of spaces
- Number of cars parked
- Occupancy rate

* = the count on this block face includes private parking spaces
 ** = the count on this block face consists only of private parking spaces

PARKING INVENTORY

IV. FINDINGS AND RESULTS (CONT.)

Block Face	Total Parking Spots	Weekday Daytime		Weekend Daytime		Saturday Evening	
		Occupancy	Occupancy %	Occupancy	Occupancy %	Occupancy	Occupancy %
LE**	19	11.5	61%	8.5	45%	7	37%
LS	8	1	13%	5	63%	2	25%
LW	24	7	29%	17	71%	12	50%
MW**	100	38.5	39%	73.5	74%	79	79%
RN	11	7.5	68%	9.5	86%	10	91%
RE	6	4.5	75%	5.5	92%	5	83%
RS	12	8.5	71%	12	100%	11	92%
RW	8	6.5	81%	7.5	94%	8	100%
SN	15	5.5	37%	12	80%	11	73%
SE*	25	11	44%	23	92%	6	24%
SS	12	6	50%	11	92%	9	75%
SW	5	3	60%	4	80%	4	80%
US*	38	6.5	17%	15.5	41%	29	76%
VS	18	7	39%	12	67%	12	67%

Figure 3.5: Parking Counts NW Quadrant

Block Face	Total Parking Spots	Weekday Daytime		Weekend Daytime		Weekend Evening	
		Occupancy	Occupancy %	Occupancy	Occupancy %	Occupancy	Occupancy %
NE	23	7	30%	4	17%	4	17%
ON*	36	6.5	18%	5	14%	11	31%
OE	19	6.5	34%	12.5	66%	12	63%
OS	9	1	11%	0	0%	0	0%
OW*	20	9	45%	7.5	38%	8	40%
PN	12	9	75%	6.5	54%	8	67%
PE*	31	8.5	27%	6	19%	6	19%
PS*	18	13	72%	6	33%	8	44%
PS*	18	13	72%	6	33%	8	44%
PW*	46	14.5	32%	14	30%	11	24%
QN	7	2	29%	4.5	64%	6	86%
QE	7	6	86%	5.5	79%	6	86%
QS	5	4.5	90%	3	60%	5	100%
QW	18	7.5	42%	15	83%	16	89%
TS*	77	65	84%	38	49%	34	44%

Figure 3.6: Parking Counts NE Quadrant

PARKING INVENTORY

IV. FINDINGS AND RESULTS (CONT.)

Olde Town Arvada Parking Occupancy - Weekday Daytime

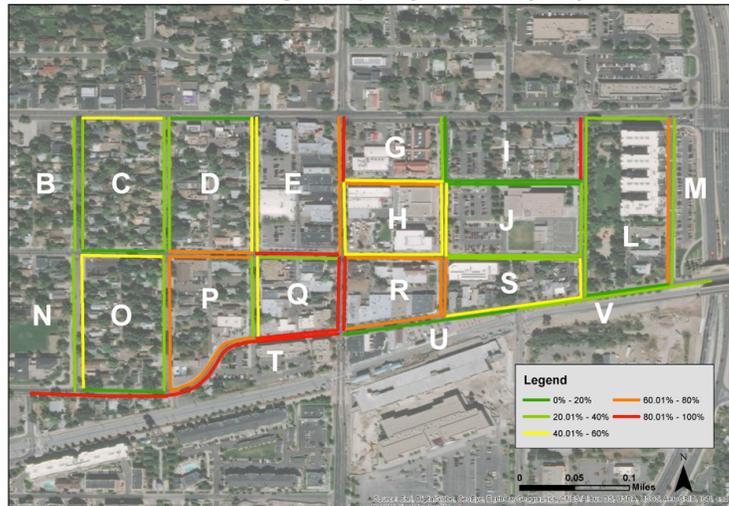


Figure 3.7: Weekday Daytime Occupancy

Olde Town Arvada Parking Occupancy - Weekend Daytime

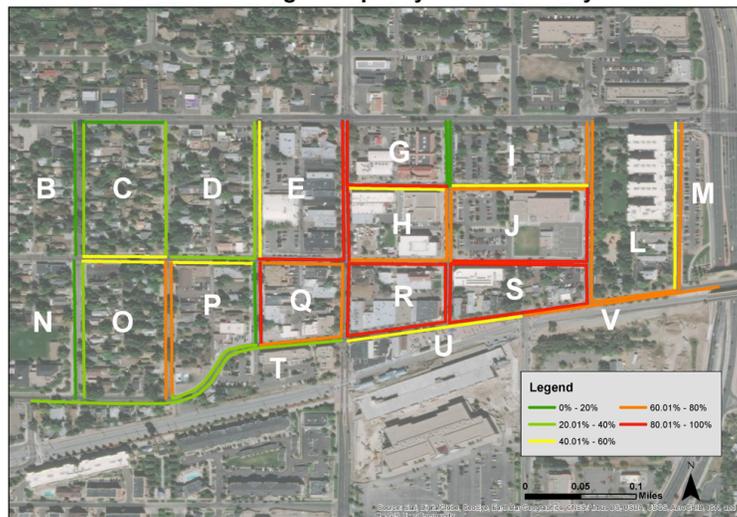


Figure 3.8: Weekend Daytime Occupancy

Figures 3.7-9 display the occupancy rate for each block face and public lot in Olde Town Arvada. Each map represents the average occupancy for that particular time of day/week across weekday daytime, weekend daytime, and weekend evening. Green on the maps means that the occupancy rate is low and the block face has significant additional parking spaces while red means that the occupancy rate is high and most spaces were taken during that time. These maps show the overall trend of high occupancy in the Olde Town Core while highlighting the highest levels of occupancy on the weekend.

Olde Town Arvada Parking Occupancy - Weekend Evening

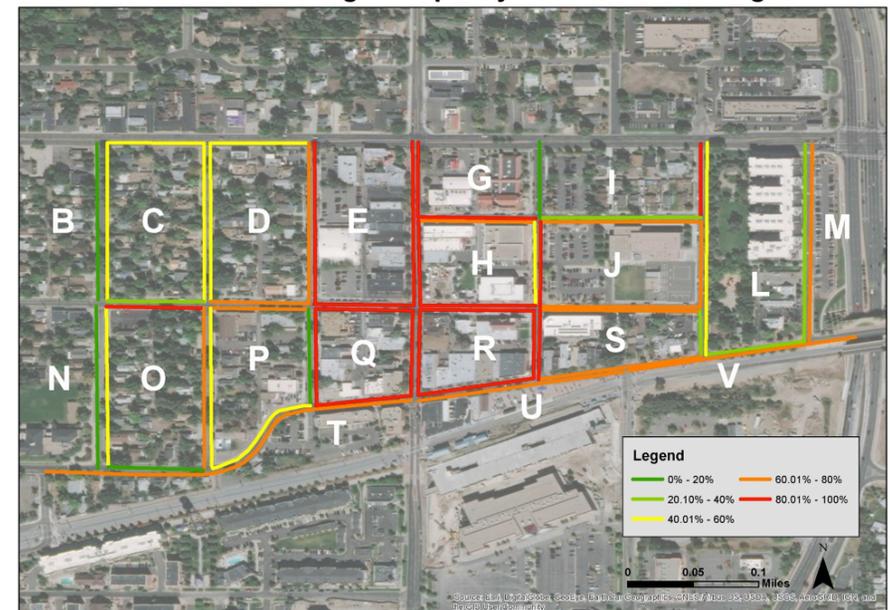


Figure 3.9: Weekend Evening Occupancy

PARKING INVENTORY

IV. FINDINGS AND RESULTS (CONT.)

Lot	Total Parking Spots	Weekday Daytime		Weekend Daytime		Saturday Evening	
		Occupancy	Occupancy %	Occupancy	Occupancy %	Occupancy	Occupancy %
Elk South	41	7.5	18%	5	12%	8	20%
Grif's	28	23	82%	25	89%	20	71%
Olde Town West	30	22	73%	28	93%	30	100%
Webster	102	72	71%	92.5	91%	73	72%

Figure 3.10: Parking Counts Public Lots

The most important finding from the study is likely the high levels of occupancy of the Olde Town Core, particularly on the weekends, while occupancy of both streets and lots on the east and west sides of the Olde Town Core remain minimal to moderate. When visitors are coming to Olde Town Arvada, the spaces in the Core are the most convenient and obvious to the majority of commercial activities and are therefore the most sought-after spaces. There are plenty of spaces adjacent to the Core that will meet the demand of the community, however, the spaces are not always located where they would be most convenient to eat, dine, and shop.

LIMITATIONS

The most important limitation of the parking inventory was the brief timespan of data collection. While parking occupancy was low on the days the project team observed in the field, there could be certain dates or events that fill out a larger proportion of Olde Town Arvada's parking resources. A more thorough study would cover a longer period of time that would allow for analysis during community events, farmers markets, and the busy holiday shopping season. Parking spaces are often supplied according to peak use rather than typical use, but finding a balance between the two is important to ensure that there are never times when all parking spaces and lots are occupied.

A second limitation of the parking inventory is that it did not include the RTD lot, which provides 600 public parking spaces for access to Olde Town Arvada and the surrounding communities. While the project team knows that this lot has significant occupancy anecdotally, it will play a critical role in absorbing additional visitors given its capacity is equal to nearly one half of the overall capacity of parking in Olde Town Arvada.

SUMMARY OF FINDINGS

1. Parking issues in Olde Town Arvada are more perceived than real.
2. Though prime parking in the Olde Town Core, both on-street parking and the West Lot, are generally full, which leads to people "cruising" the same blocks for parking, many nearby surface lots and the RTD parking garage remain underutilized.
3. There is a lack of information for drivers about the availability and location of parking outside the Core blocks.

PARKING INVENTORY

V. CONCLUSIONS AND NEXT STEPS

While Olde Town Arvada has a surplus of parking spaces, few of them are located immediately adjacent to the City's most important amenities. This puts a high demand on spaces in the Olde Town Core, while spaces and lots outside of these five square blocks remain underutilized. Although the project team did not observe the RTD lot south of Olde Town Arvada, it should be considered one of the underutilized lots. The project team has focused its recommendations on interventions that will increase turnover of surface lot and on-street parking spots in the Olde Town Core, making additional private lots available to the public, and encouraging visitors to park in underutilized spaces and lots. While these recommendations could increase use of and access to these additional spaces, the biggest challenge will be messaging to change the norms of how residents and visitors access Arvada's Olde Town.

RECOMMENDATIONS

The following recommendations should be implemented to maximize efficacy of the parking system:

Change 2-hour spaces to 1-hour in the Olde Town Core: Anecdotally, the City has shared with the project team that businesses in Olde Town Arvada want their customers to be able to park nearby when briefly patronizing their shops. Reducing the time limit on spaces would enable these customers to still stop in the bakery or flower shop, for instance, for quick shopping while increasing the turnover of these spaces. This will require increased monitoring by the parking contractor. If people are dining, drinking, lingering, or working downtown, they should be parking in spots on the perimeter of Olde Town Arvada or in lots that are currently underutilized.

Enforce parking time limits: Anecdotally, residents and employees in Olde Town Arvada do not believe that parking limits are enforced. Not only is the City losing out on opportunities for income, parking spaces will not turn over as frequently if visitors do not believe that the time limit will be enforced. Lowering the time limit for on-street parking in the Olde Town Core and enforcing these time limits will ensure more circulation in these central spots, particularly from people who are shopping at just one or two destinations in Olde Town Arvada. The City could take a phased approach and implement reduced time limits and stricter enforcement first to see if that increases the turnover. If it does not have a significant impact, they could then charge for street parking in the Olde Town Core.



Parking Enforcement (Source: <https://www.townofsouthsidefl.gov/departments-services/parking>)



Paid Public Parking (Source: <https://coronadotimes.com/news/2014/02/18/coronado-vons-adds-paid-public-parking/>)

PARKING INVENTORY

V. CONCLUSIONS AND NEXT STEPS (CONT.)

Develop signage, way finding and branding strategy: If the goal is to diffuse parking away from the Olde Town Core and increase utilization of peripheral spaces and lots, signage, way finding, and branding can be an important strategy to change the parking norms of Olde Town Arvada. Signage and way finding would indicate how to get to available lots while a branding campaign could encourage those visiting Olde Town Arvada to eat, drink and linger to park in lots or the garage rather than on the street. This will reserve spaces in the Olde Town Core for in-and-out shoppers while encouraging those intending to stay in Olde Town Arvada for an extended period to park in underutilized spaces and lots. A signage strategy will be particularly important for increasing use of the RTD lot, which is located outside the boundaries of Olde Town Arvada, yet very close to the shops and restaurants on the south end.

Increase utilization of existing private parking: By partnering with private property owners, the City could bring additional parking spaces online when these businesses, churches, and other facilities are not utilizing their parking. A good example is St. Anne's Church, which has extensive parking spaces available but does not need access to these spaces at all times. If additional public/private lots are brought online as public parking resources, it would be critical to communicate these changes to the public as a part of the broader signage, way finding, and branding strategy.

Phase 2 – Charge for parking in the Olde Town Core: Once the City has reduced parking limits from 2-hour to 1-hour, signage has been enhanced and enforcement has been increased, a new study should be undertaken to understand the impact of these strategies on the parking supply. If these strategies are not enough, or if visitors to Olde Town Arvada increase substantially in the future, the City must consider installing meters in the Olde Town Core and charging for on-street parking. By charging for street parking, visitors to Olde Town Arvada will be more willing to utilize lots that may not be as convenient to their destination or consider using a different mode of transport to get to Olde Town Arvada. The revenue from paid parking could also be used to pay for increased enforcement, something that will be necessary to realize the full benefit of paid parking. While this is not an option that needs to be implemented immediately, it is something that will need to be considered as the population and number of visitors to Olde Town Arvada continues to increase. Additional revenues could also be used for other transportation options, such as additional bike racks, bike sharing, to subsidize transit passes for employees, or to fund car sharing spaces.

PARKING OBSERVATIONS - CHAPTER FOUR



(Source: <http://arvadaurbanrenewal.org/projects/olde-town-square/>)

PARKING OBSERVATIONS

I. INTRODUCTION

This section of the Olde Town Arvada (OTA) study focused on the behaviors of people parking in OTA through on-street observations of the parking areas with the highest parking occupancies. The purpose of conducting these observations was to fill in data gaps not collected by the travel survey and parking inventory teams. Filling these gaps can help planners to determine the roots of OTA's parking problem.

II. BACKGROUND

We identified the gaps in knowledge about OTA's parking context that were most useful to study based on our preliminary investigation of OTA through the parking surveying, as well as a discussion with Nathan Bishop, Executive Director of OTA's Business Improvement District.

The objective of these observations was to gain a more complete sense of the dynamic nature of parking demand and to complement the static measure of the occupancy rates at particular points in time. By studying several areas over 30-minute intervals, we were able to observe how long parking spaces remained open before they were filled again. This shows the time(s) of day that "cruising", or circling, for parking is most necessary for a driver to find a spot in Olde Town.

In our discussion with Nathan Bishop, we determined the ideal distribution of observation days/times and key observation sites, among other aspects of our study. We targeted 30-minute periods as an appropriate study time. The focus was observation and note-taking. The team also collected a few short in-person intercept surveys with individuals leaving their parked cars or lingering in the area. Best practices from other travel demand studies confirm the importance of repetitive study – so our team members surveyed the same three parking segments/lots on each visit.

From these observations, our team gathered more information about the parking habits of residents and visitors in OTA, which in turn allowed us to develop a set of strategic recommendations. These recommendations are meant to inform the City's future decisions regarding parking policy. Our recommendations are intended to lead to a well-managed and customer-friendly parking system.

Currently, Arvada does not charge for parking in OTA and as parking expert Donald Shoup has noted, "[We] don't pay for parking in our role as motorists, but in all our other roles - consumers, investors, workers, residents, and taxpayers - we pay a high price" (2). These observations provide critical data to help inform evidence-based recommendations. For example, because of the lack of time restrictions or pricing on parking, spaces filled up quite quickly when they become open

PARKING OBSERVATIONS

METHODS AND DATA

The data for this chapter of the report are primary data collected during each team member's observation trips and can be separated into the following nine categories for each observation site:

PRIMARY DATA CATEGORIES

- Number of vehicles arriving
- Number of vehicles leaving
- Number of personnel from the parking management company sighted during the observation
- Count of people arriving by bike
- Count of people leaving by bike
- Number of minutes with an open spot
- Number people arriving/leaving by public transit (RTD)
- Number of individuals leaving each personal motor vehicle
- Number of individuals leaving or arriving by number of TNC's (Uber/Lyft)

METHODS

In order to collect this data, the team conducted observations during six time periods on a variety of days and times at three locations. The times chosen for study were considered representative of the variety of visitors to Olde Town (employees, visitors, locals, etc.). The six days and times are as follows:

- Monday Morning (AM) 8:30-10:30 am
- Thursday Evening (EVE) 5-7 pm
- Friday Afternoon (PM) 2-4 pm
- Saturday Morning (AM) 10 am-12 pm
- Saturday Evening (EVE) 7-9 pm
- Sunday Afternoon (PM) 12-2 pm

During each of these times a team member conducted three thirty-

minute observations at three separate locations. During the visits they completed a Parking Observations chart (see Figures 4.2a-c).

- Olde Wadsworth Boulevard between 57th Avenue and Grant Street
- Olde Wadsworth Boulevard between Grandview Avenue between Webster Street
- OTA West parking lot located on Grandview Avenue between Yarrow Street and Olde Wadsworth Boulevard .

Each data collector followed this protocol before and during the observation period:

- Assemble print copies of the Parking Observations chart for each location.
- Walk the entire length of the study area block to determine confirm the observation point, which were mutually identified for each site as follows:
- For Olde Wadsworth Boulevard between 57th Avenue and Grant St., outside of Rhinelander Bakery.
- For Grandview Avenue between Webster Street and Olde Wadsworth Ave., the bench outside 12 Volt Tavern.
- For the OTA West lot, the southeast side of the lot to obtain the best vantage point.
- Once in position, the data collector started a timer for 30 minutes.
- During the 30 minutes, the data collector used a stopwatch to record the amount of time each parking spot was vacant.
- The data collector then noted their observations in the Parking Observations chart as they occurred.
- Additional observations were noted in a separate area to describe the types of travelers (e.g., single, family, friends, youth, seniors, etc.) and their behavior.
- The data collector then typed the observations into an Excel spreadsheet to be combined with the rest of the team's data.

PARKING OBSERVATIONS

METHODS AND DATA (CONT.)



Figure 4.1: Observation Areas Map (Source: Study team’s annotation of the Olde Town area)

*Note: Two data fields - number of personnel from the parking management company and number people arriving/leaving by public transit (RTD) were left off because there were no observations of either recorded. However, a RTD Access-a-Ride bus was spotted traveling a study segment during the Monday morning observation, with one passenger aboard.

The main issue the study team faced with making these parking observations was ensuring that all of the activity occurring in the study area during the allotted time was recorded. Each study area had its own challenges as far as vantage point, so team members did their best to make sure at the very least, each car arriving and departing was accounted for in the study.

OBSERVATIONS

After the study team’s series of parking observations were consolidated, they were organized so that conclusions could be drawn from the data sets. The three tables in Figure 2 below showcase the parking demand exhibited at the study area locations, two key street segments and one parking lot. Some general conclusions can be drawn from these tables about parking turnover, demand by day of the week, number of individuals per vehicle, and utilization of alternative modes.

PARKING OBSERVATIONS

FINDINGS AND RESULTS

Olde Wadsworth Blvd. between 57th Ave. and Grant St.

Observations	MON AM	THU EVE	FRI PM	SAT AM	SAT EVE	SUN PM
Vehicles Arriving	7	7	4	7	5	3
Vehicles Leaving	4	7	6	7	5	3
Avg. # of Individuals Leaving Each Vehicle	1	2	2	2	2	2
People Arriving By Bike	0	1	0	0	0	0
People Leaving By Bike	0	0	0	0	0	0
Individuals Picked Up/Dropped Off	1	0	1	0	0	1

Grandview Ave. between Webster St. and Olde Wadsworth Blvd

Observations	MON AM	THU EVE	FRI PM	SAT AM	SAT EVE	SUN PM
Vehicles Arriving	6	6	10	12	3	4
Vehicles Leaving	6	5	9	11	3	5
Avg. # of Individuals Leaving Each Vehicle	1	2	1	2	3	2
People Arriving By Bike	0	0	0	0	1	7
People Leaving By Bike	1	0	0	0	0	0
Individuals Picked Up/Dropped Off	0	0	0	2	0	0

Olde Town West Lot (Grandview Ave. between Yarrow St. and Old Wadsworth Blvd)

Observation	MON AM	THU EVE	FRI PM	SAT AM	SAT EVE	SUN PM
Vehicles Arriving	4	12	4	10	4	10
Vehicles Leaving	1	11	5	9	5	13
Avg. # of Individuals Leaving Each Vehicle	2	-	3	3	3	2
People Arriving By Bike	0	0	0	0	0	0
People Leaving By Bike	0	0	0	0	0	0
Individuals Picked Up/Dropped Off	0	0	0	0	1	0

A general trend in the data shows a high replacement rate in regard to open parking spaces. Open spaces turn over quickly. Although the spot vacated may not have been the one captured by the next arriving vehicle, the number of vehicles arriving and those leaving were nearly identical for all three locations during each data collection period. The anomalies in this trend are found on Monday morning, when more vehicles were arriving than leaving (beginning of the work day) and Sunday evening, when the opposite occurred.

In terms of the number of individuals per vehicle, people were more likely to arrive solo on Monday mornings (inferred to be true for many work commuters). On the weekends and evenings, people were more likely to arrive with one or two others, who most often appeared to be a partner or family member. The very few times people were observed being dropped off by ride-sharing services or friends/family occurred mostly on the weekends. Though cyclists were spotted downtown, few utilized this mode or RTD bus service to reach or leave their destination.

Figures 4.2a-c: Team Member Parking Observations Charts

PARKING OBSERVATIONS

FINDINGS AND RESULTS

Time-based findings are displayed in Figure 4.3, which shows how long parking spaces were open. The 57th to Grant street segment of Olde Wadsworth Boulevard at the peak time had spots open for 3.3 minutes on average, and the Grandview Avenue segment at the peak time had spots open for an average of 3.5 minutes. The West Lot had only a 2.6-minute average open time. Further, during two of the 30-minute observations, there were times when no spaces were open. This resulted in extensive cruising to the tune of four cars during each 30-minute time period.

Additionally, some unlabeled areas, like the corner of Griff’s Lot near an abandoned business, were observed to have led to confusion. When spots in the outlying neighborhood are seized by visitors rather than residents due to a lack of clarity about which parking is for whom, frustrations may arise.

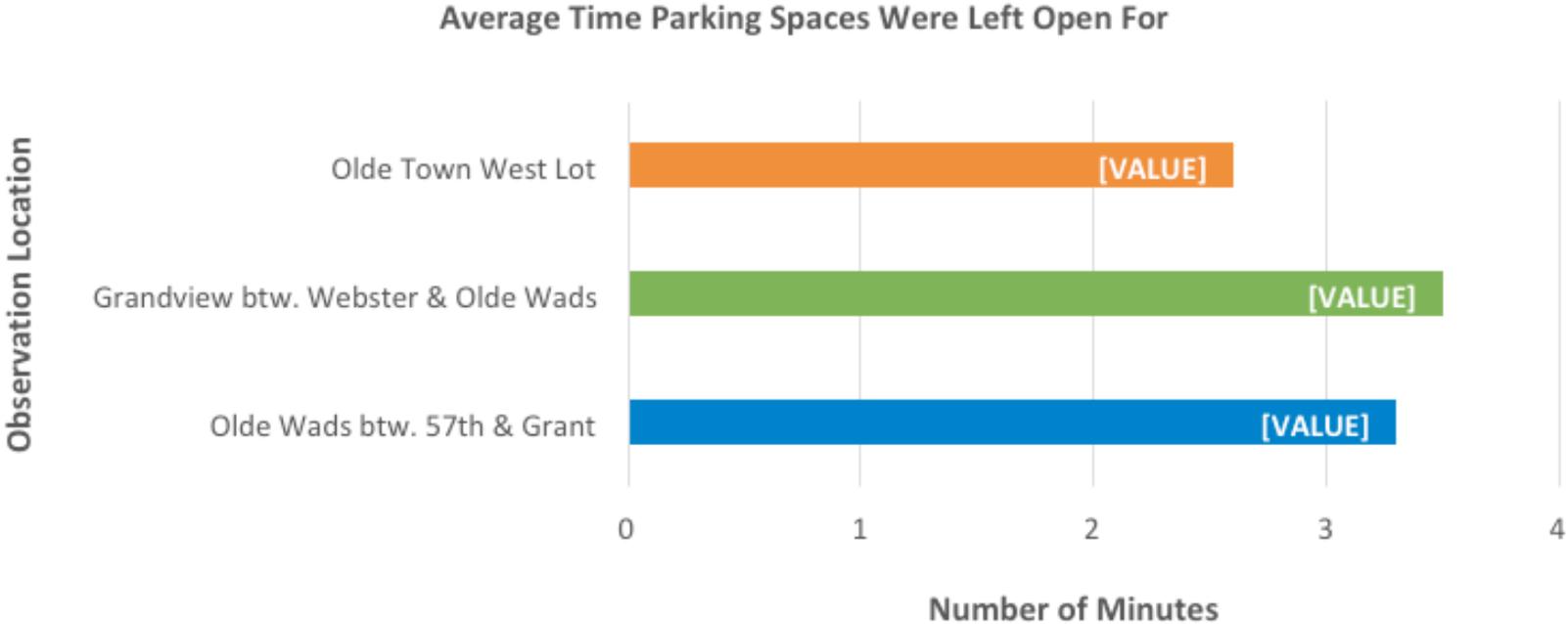


Figure 4.3: Average Time of Space Availability

PARKING OBSERVATIONS

FINDINGS AND RESULTS

INTERVIEWS

There seems to be a baseline assumption among Arvada residents and visitors that the parking situation in OTA is a potential barrier to enjoying the city's quaint downtown core. Team members spoke with Nathan Bishop (mentioned above) who surmised that the problem is a lack of knowledge about where parking facilities are located, i.e., an "advertising problem," not the amount of parking available. After speaking with Nathan, a team member spoke via email with Patrick Hire, Project Manager for LAZ Parking, the company contracted to manage enforcement in Olde Town. Patrick shared a heat map of ticket density for OTA for the month of March, where red signifies the most citations, followed by orange and yellow, with green signifying

for the month of March, where red signifies the most citations, followed by orange and yellow, with green signifying the least (Figure 3). LAZ's enforcement operates seven days per week, typically from 8am-7pm. 425 citations were distributed during that month, averaging out to about 13-14 per day.

The hot spots of ticketing are centered around the two Webster parking lots (4-hour parking), on Grandview before the intersection with Vance Street (4 hour parking, including handicapped, and loading zones adjacent to the future RTD G-Line stop) and Yukon Street near 57th (2 hour parking) near a row of small shop fronts, a church and the popular New Image Brewery.

Patrick was also quick to point out that enforcement does not spill into nearby neighborhoods, perhaps alluding to past complaints from residents. Overall, the radius of the ticketing area is fairly small. Case in point, a team member who parked for more than 5 hours in a 2-hour spot on Olde Wadsworth Boulevard towards the train tracks on Grandview Avenue was not ticketed. During 30-minute observation windows near hot spots such as Hunter Bay Coffee Roasters, there seemed to not be much issue with parking-time violations; most cars cycled in and out fairly regularly, coffee in hand. The greater issue, likely, is with employees parking in 2 or 4 hour spots for the length of the workday. This cuts down on the availability of parking for short-term visitors stopping into town

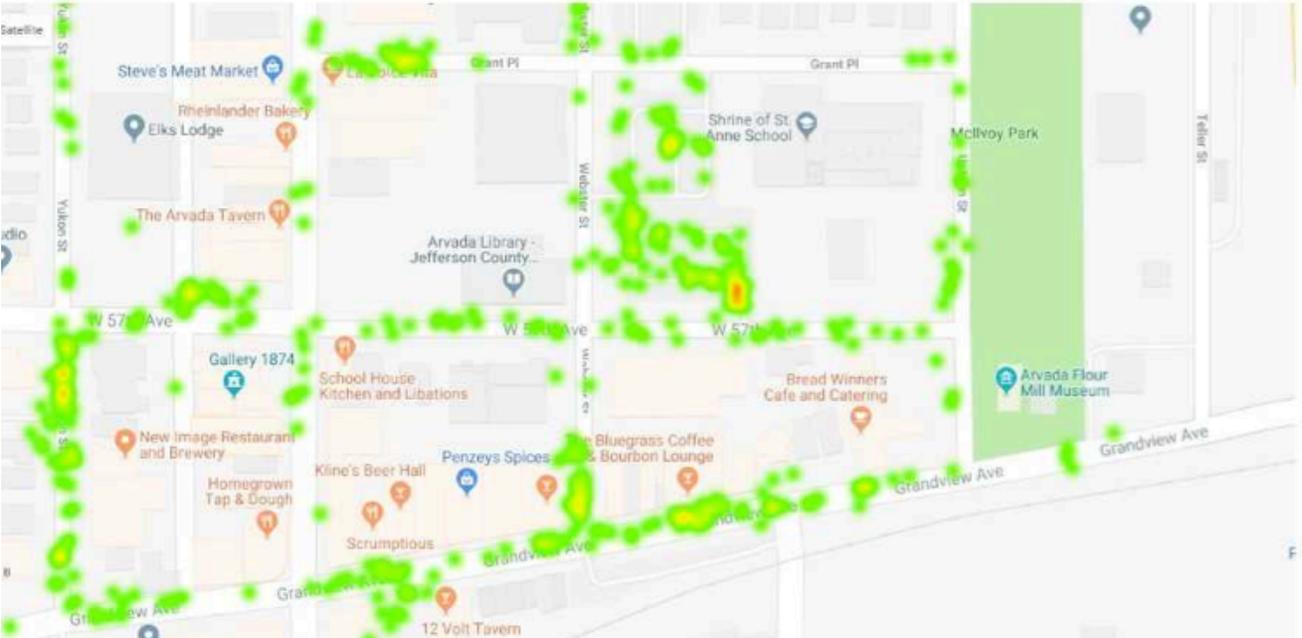


Figure 4.4: Park Enforcement Heat Map

CASE STUDIES

III. METHODS AND DATA (CONT.)

or lunch, to buy an item, or to window shop.

Multiple unsolicited resident statements, which we gathered through brief interactions with them during our observations, attested to both a need for cruising to find parking and the fact that parking violations in OTA do result in ticketing.

Taken together, these findings attest to Nathan's earlier point - that the lack of know-how and way finding related to parking directions lead to frustration for both residents and visitors to the city. Upon their initial arrival, if they see little parking available in the Olde Town Core, they plan to cruise the same blocks until they find a spot.

LIMITATIONS

There were two major limitations to this study that may have impacted its success. The first limitation was the lack of manpower accessible for observations. With a larger group of people, the study team would have been able to observe more areas of OTA and draw further validated conclusions for the expanded data set. In addition, the study team was not able to complete observations during a large event that would have been representative of a peak parking time period.

SUMMARY OF FINDINGS

1. A parking inventory conducted five times on five different days identified that Olde Town Arvada has a parking space surplus, ranging from 670 open spots during weekdays to 547 open on weekend evenings, not including the parking garage. Currently, before the commuter rail line opens, the garage adds hundreds of more spots to the surplus.
2. While Olde Town Arvada has a surplus of parking spaces, few of them are located immediately adjacent to the city's most important amenities. This puts a high demand on spaces in the Olde Town Core (the five blocks adjacent to Olde Wadsworth Boulevard), primarily along Wadsworth), which results in high occupancy of those spaces. At the same time, spaces and lots outside of these five square blocks remain underutilized.
3. Through anecdotes from passers-by during the observation and the inventory, we heard and observed gaps in parking enforcement. Visitors and employees park throughout Olde Town beyond the stated times and do not receive tickets. On the other hand, some nearby

IV. CONCLUSIONS AND NEXT STEPS

Olde Town Arvada is a classic example of a walkable downtown core: a place where visitors can window shop, grab a brew at Denver Beer Company, or pop in for a coffee at Hunter Bay Roasters. Arvadans are steadfast in their goal to stay true to their roots and not become a small city with big city problems. However, the parking issue - cruising, visitor frustration, and perceived economic disadvantages and overcrowding - is foremost on many people's minds. Our recommendations to the City of Arvada are based on careful study of parking conditions, existing infrastructure, and feedback from current residents.

RECOMMENDATIONS

Increase signage and way finding: Improving knowledge of the availability of space can have a positive impact on parking efficiency and reduce the perception that there is not enough parking. Currently, the best way to find an open spot as someone unfamiliar with the city is to cruise through the downtown core, looking for on-street and parking lot availability. The only existing signage the team uncovered were tacked up flyers on a bulletin board in Olde Town Square.

PARKING OBSERVATIONS

CONCLUSIONS AND NEXT STEPS (CONT.)

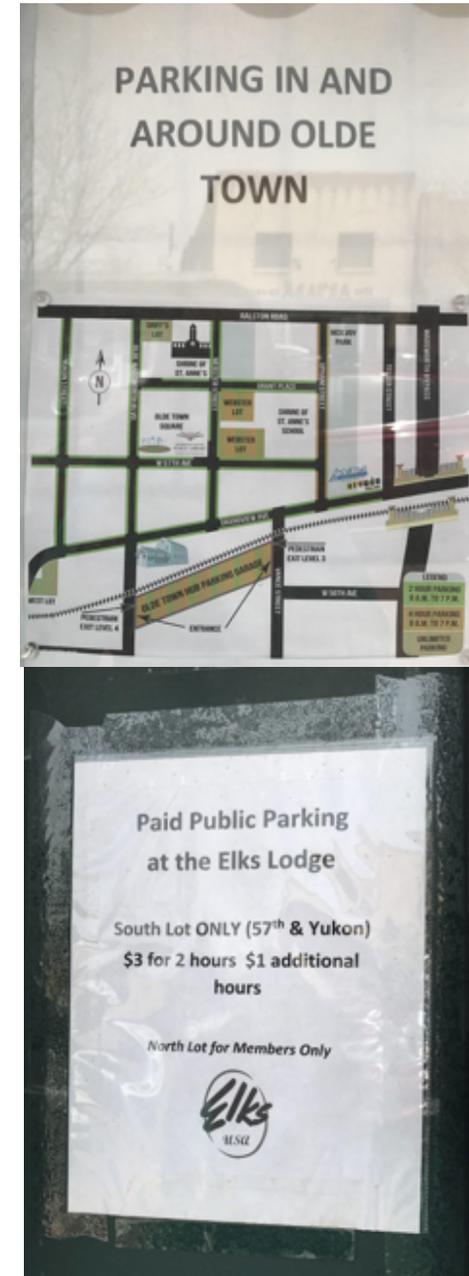
A highly underutilized resource locally, the RTD-run parking garage with 200 of its 600 spaces reserved for OTA merchants/customers, faces barriers to access - including its distance, the incline, and a lack of pedestrian amenities. Adding sidewalks and landscaping, as well as proper signage directing visitors towards this parking amenity would lessen the parking burden on OTA's streets.

Our study segments showcased two types of parking situations: rapid turnover and slow turnover. The rapid turnover observed on the on-street parking segments is of less worry than the slower turnover in the West lot which leaves few to no spaces available for long periods of time.

If Arvada were to implement some restrictions on the parking in OTA, there is a higher likelihood that at least one space would be available at all times. The study team recommends charging for small, highly utilized lots like the West Lot, approximately \$1 per hour. For the on-street 2-hour parking spaces, it is no surprise that vehicles may overstay their welcome if not ticketed regularly. In the case of these segments, tiered pricing could combat the issue. For example, installing parking meters and charging \$1/hour from 9am-7pm, Monday through Saturday, so weekday workers will not park and then forget their vehicles, and those coming to town in the evening for dinner or a beer will not fill the front-row, on-street parking spots so completely. An additional benefit of installing meters is the increased ease of enforcement granted to parking services. Yet, the parking would be free for most of the evening, which reduces the likelihood that the metering would negatively affect local businesses.

Potential research into utilizing smart parking technologies such as ParkiFi, which monitor spaces for availability with electronic sensors that update apps or digital signs with the location and number of available parking spaces, may be beneficial in helping residents and visitors locate available spaces. The intent of these technologies is to improve parking efficiency and lower driver frustration around parking issues.

Although Cities and businesses are often reluctant to introduce parking regulations or pricing, these recommendations could actually enhance visitor, resident, and employee satisfaction with their time enjoyed in beautiful Olde Town Arvada by reducing the parking frustrations and time spent "cruising" for parking.



Figures 4.5a-b: Existing signage in Olde Town Square

MARKET STUDY - CHAPTER FIVE



(Source: <https://www.apartments.com/5773-olde-wadsworth-blvd-arvada-co/6b681fv/>)

MARKET STUDY

I. INTRODUCTION

This chapter summarizes the results of a grocery store feasibility study for Olde Town. Grocery stores are trip-generators, and therefore, a nearby grocery store for Olde Town residents could reduce trips and the need for high car ownership if residents use alternative transportation modes, such as walking and biking, to shop for at least some of their groceries.

Although the area has not yet been able to support a grocery store, this market study draws on available market trends, demographic data, population projections and transportation demand data to determine the viability of some type of grocery store in the near-term or intermediate future to meet the needs of a growing community, particularly due to the focus on transit-oriented development (TOD) around the Gold Line stations.

The chapter includes a review of academic literature and market research that informed the analysis; an overview of the methodology and data used in the market study; a summary of our findings; and a concluding section with recommendations for the next steps Arvada should take to identify a location that could be targeted toward certain types of grocers.

II. BACKGROUND

There are various aspects to consider when determining the feasibility of a grocery store for a small town historic district, including grocery industry trends, consumer trends, and supply and demand. However, for the purpose of this study, an understanding of travel and commuter trends as they relate to the feasibility of Arvada supporting a grocery store is essential as well. This is particularly important as Arvada prepares for an increase in Olde Town residents, who may also want to opt-out of car use, and is reevaluating the supply and management of parking for the Olde Town area. With this in mind, this section will

provide some context and trends of the grocery industry and consumer patterns followed by a discussion of the relationship between multi-modal and non-auto transportation, and the supply and demand for grocery stores.

GROCERY INDUSTRY

While consumer trends may change, including the types of shopping experiences desired and the content consumers wish to see on shelves, one constant will always remain: everyone needs groceries. A Food Market Institute (FMI) presentation on trends in 2017 shows that 84% of adults say they hold at least 50% of their household grocery shopping responsibility and most families shop 1.5 times per week. According to FMI's supermarket data factsheet, the industry employs 4.8 million people ("Supermarket Facts" n.p.). In 2017, grocery sales generated \$682.7 billion and the median weekly sales per supermarket in 2016 was \$397,499 ("Supermarket Facts" n.p.). A total of 38,571 supermarket stores (2017) generally tend to have a large footprint. In 2017 the median total store size was 41,300 square feet, a trend that has been increasing ("Supermarket Facts" n.p.). The size of grocery stores make sense given that the average number of shelf items at stores in 2016 was 38,900 products.

According to FMI, households spend 5.5% of their disposable income on food at home. Also, the industry is seeing an increase in income spent on going out for food, as 4.3% of disposable income is spent on food away from home ("Supermarket Facts" n.p.).

GROCERY TRENDS

The FMI presentation on U.S. grocery shopper trends outlines some important patterns that occurred in 2017, including a significant increase in e-commerce, a trend explosively driven by Millennials as nearly half are shopping at Online-only retailers for non-perishable and

MARKET STUDY

II. BACKGROUND (CONT.)

household items. However, fresh foods are continuing to be bought in store by this young-adult population group. Additionally, the percent of male grocery shoppers continues to rise, but many families still grocery shop together, and consumers are continuing to “shop around” for better pricing as many shoppers are not loyal to one store. Transparency of grocers and products is becoming increasingly important. Shoppers are becoming more concerned and conscientious about food safety and are explicitly purchasing more fresh foods stemming from a desire for more information regarding the ethical considerations and processing agents found in many groceries (FMI 18-19).

There are multiple grocery store trends that have become more prevalent in the past few years that may push the traditional, large footprint grocery store model into a “thing of the past,” or at least a model that is not feasible to have on every major arterial of a town or city. Some of the trends described in an article by Retail Info Systems are pricing wars due to acquisition/mergers like that of Whole Foods by Amazon, online ordering and delivery, a strong emphasis on fresh foods, a stronger focus on changing climate and food stocking availability to give consumers variety, and smaller store footprints.

In an article in Forbes, the author asserts that the Millennial generation’s influence on grocery stores is starting to cause stores to react faster to changing consumer habits, needs, and wants (Anders n.p.). This article highlights online shopping and meal-kit services as reasons for traditional grocers to offer online ordering, delivery, and convenient pick-up options. Additionally, it notes changes in the way people pay for their groceries, showing that they are starting to trend to more high-tech options like Apple Pay. Lastly, a new trend becoming popular in large cities like Chicago and Denver are grocery store models that create a more social experience, allowing customers to drink while shopping and dine-in as well.



New grocery store model in Denver (Source: cooksfresh-market.com)



Whole Foods Market indoor dining section (Source: <https://www.mercurynews.com>)

MARKET STUDY

II. BACKGROUND (CONT.)

DRAMATIC ONLINE-ONLY RETAILER GROWTH DRIVEN BY MILLENNIALS

Frequency of shopping Online-only retailers

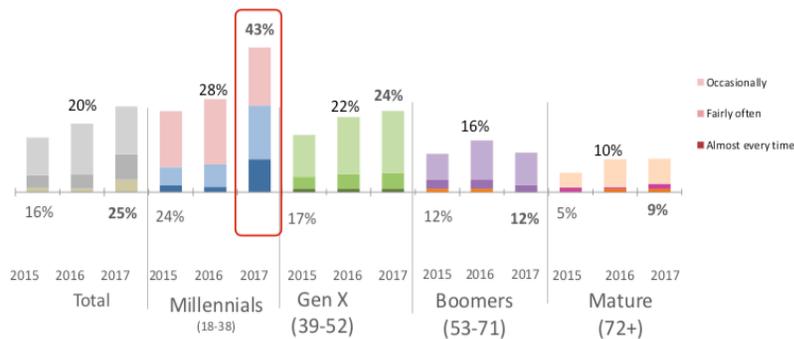


Figure 5.1: Online Retail Growth

- A summary of grocery market trends is outlined and described below:
- Meal kits: A December 2017 Forbes article on grocery trends states that the meal kit industry topped \$2.2 billion. While that is actually a small fraction of the \$1.5 trillion food industry, the trend for ready-to-cook delivery boxes to a customer's home is expected to increase as Millennials age and get increasingly busy, further influencing their food purchasing habits (Anders, n.p).

- Online ordering and delivery: The convenience of one-stop-shop online platforms like Amazon have grasped onto the grocery market in a way that would have been unexpected a decade ago. This is causing grocery stores to rethink the ways they reach consumers beyond traditional brick and mortar shopping.

- Fresh foods and local sourcing: The convergence of two aforementioned trends are leading toward a potential trend for smaller scale grocers focusing on offering high quality, local,

fresh foods. One trend that has been occurring for a few decades is shoppers who tend to buy bulk, non-perishable items from wholesale clubs, like Costco or Sam's Club. Coupled with the more recent trend of Amazon orders online, it is likely that local brick and mortar grocers will need to respond by offering fresh foods and potentially less non-perishable items on their shelves. Additionally, according to FMI's 2017 consumer trend report, many consumers who seek locally grown foods are concerned with what is most fresh and in-season, followed by a desire to support

the local economy and buy better tasting, often organic fresh food items. Generally, consumers tend to want to know the source of the product and how it is grown (FMI, 2017).

- In-store eating and drinking: The desire to create social experiences while doing mundane tasks, a trend commonly sought by Millennials, has brought changes to the traditional weekly grocery shopping chore. In response, many small-chain grocers and local small grocers, as well as large national fresh market chains like Whole Foods, have revolutionized the grocery and in-store dining options for customers, providing opportunities to eat and drink while shopping, a trend which is quickly growing across the industry.

- Fierce pricing competition: As the grocery models begin to change into smaller footprints, with an increased focus on quality, fresh, and potentially locally sourced produce bought in-store and non-perishable items bought at large discount stores or online, pricing competition is expected to become fierce as shoppers continue to price-check stores to find the cheapest items. This competitive pricing will force large grocery stores to respond to changing conditions of the industry, to drop in-store prices, or to consolidate the number of stores as a result of changing consumer habits and trends.

MARKET STUDY

II. BACKGROUND (CONT.)

TRANSPORTATION AND GROCERY STORE SUPPLY AND DEMAND

A review of key literature and research shows a mutually beneficial relationship between multi-modal and non-automobile modes of transportation and economic development. The first correlation can be seen in the suggestions posed by many researchers and studies that higher density of retail, office and recreation options directly correlate to higher rates of non-automobile transportation. In a 2013 study of land use effects on bicycle ridership, researchers from the University of Maryland, University of Memphis, and Georgia Institute of Technology found that “urban and suburban areas with more retail and recreation centers tend to produce more bicycle trips than their counterparts” (Cui et al., 2014).

A frequently held presupposition by many business owners is that improving the built environment for non-automobile use will have negative effects on business, because automobile users typically spend the most of all consumers on goods or services per visit. However, this idea is not accurate in all environments. Higher rates of retail options encourage greater bicycle ridership and other non-automobile transportation, and non-automobile transportation has a positive economic effect on local businesses. This creates a mutually reinforcing cycle. Multiple studies have found that automobile and non-automobile consumers spend comparable amounts at a variety of businesses, including convenience stores and supermarkets (Clifton et al. 2012 16-17). It is true that automobile users typically spend more than bicyclists, pedestrians, and transit users per visit to a store. However, bicyclists, pedestrians and transit users all have much higher frequency of visits to that store, thus either balancing out expenditure by month, or in some cases even resulting in higher expenditures per month by non-automobile users (Clifton et al. 2012 2).

It should be noted that this study, in particular, was limited in size and location and would need to be replicated in other cities to determine

its applicability to Arvada, and, more specifically, Olde Town.

III. METHODS AND DATA

This section will outline the methods utilized to determine the feasibility of a grocery store for OTA and provide key demographic data that will inform the recommendations that will be provided at the end of the report. Primarily, this section will clarify how grocery store industry trends were analyzed, how far Arvada residents travel to go grocery shopping, and provide demographic data necessary to guide our recommendations.

In order to analyze the feasibility of a grocery store in Olde Town, we used a variety of sources. First, we explored the American Community Survey data representative of OTA's Census Tracts. The Census data found is outlined specifically in Chapter 1 “Urban Living in Olde Town Arvada Market Study,” and a further analysis of applicability to this section is described below. By exploring the demographics of the surrounding area, we were able to get a cursory look at the type of people who live in the immediately surrounding area that would be most likely to use the grocery store on a regular basis. Additionally, grocery stores in proximity to Olde Town were identified, and this information was mapped using GIS to determine the distances to the area. After viewing the nearest grocery stores, the analysis began to explore consumer expenditure details using the Bureau of Labor Statistics Consumer Expenditure Survey for the most recent year of available data: 2017. Lastly, using GIS analysis and the Arvada OpenData Catalog, the land use plan was assessed, and Olde Town potential uses were identified to determine if a grocery store is an allowable use for the area.

For this feasibility study, the traditional market study framework was utilized, which consists of an analysis of demand for the product, an analysis of the existing and future supply and competition in a defined

MARKET STUDY

III. METHODS AND DATA (CONT.)

study area, and a synthesis of the demand and supply. Specifically, to identify demand estimates for a grocery store in Olde Town, we researched existing literature regarding demographic links in relation to food shopping behaviors on a national scale. For the supply, several data sources and analytic techniques were used to determine the market for a grocery store within 1, 2, and 5 miles of the Study Area, including GIS. Nearby grocery store competition was categorized by food retailer type and the type of demographics they each generally capture. Potential possible locations for a food retailer in Olde Town were then considered.

The grocery store boundaries are slightly larger than the Olde Town boundaries in order to capture a residential area with multifamily housing to the north of Ralston Road that might house potential customers. To synthesize the demand and supply, the current and projected population demographics for the study area were compared based on the proposed housing units and density in the TOD framework plan and the state demographers projections (see Chapter 1). This was followed by an assessment of how much these households would spend on groceries and to what types of places they may be attracted for grocery shopping based on this study's review of the literature and several industry reports. An analysis about shopping patterns by bike, transit, and walking was also considered.

To determine the relationship between transportation demand/modes and market feasibility for grocery stores (and similar businesses), multiple sources were used. These are referenced at the end of the final report.

DEMOGRAPHICS

This report's Study Area is bounded by West 58th Avenue to the north, Zephyr Street to the west, Teller Street to the east, and Grandview Avenue to the south. Demographic information was gathered from the

U.S. Census Bureau American Community Survey using Block Group 1, Census Tract 104.05, Block Group 4, Census Tract 103.05, and Block Group 1, Census Tract 103.08.

AGE

The specific breakdown of age demographics can be found in Chapter 1, Figure 4. Age contributes to spending habits in several ways, such as how often, how much, and what types of food the shopper will buy. Furthermore, younger demographics are most likely to use online ordering services such as Amazon to obtain basic food and household items. In contrast, the older demographic is less likely to utilize the online mode of grocery shopping ("10 Ways Younger and Older Millennials Shop Differently," n.d.; "USDA ERS - Millennials Devote Larger Shares of Their Grocery Spending to Prepared Foods, Pasta, and Sugar and Sweets Than Other Generations," n.d.).

Arvada's population overall is generally evenly dispersed. The largest percent of population is the Under 18 category, but this category also includes one of the largest age ranges. A dip in relative population can be seen in 18-24 year-olds. This makes sense as Arvada does not have a traditional four-year university which would cause many in this age range to move elsewhere. Although the Red Rocks campus has student housing and some students live in the nearby apartments, their campus is primarily a commuter campus.

When comparing the ages of Arvada residents to those of Olde Town, there are several notable differences. First, a lower percentage of the population is under 18 years old in Olde Town, and there is a greater percent of 25 to 34 year olds (22% compared to 13%). Both areas have about a quarter of the population in each of the 35 to 54 and 55 to >65 year old age groups. This suggests that the downtown area has a higher concentration of the 10-year cohort of Millennials, who are early in their careers, but it is important to remember that they are not the

MARKET STUDY

III. METHODS AND DATA (CONT.)

In terms of transportation, the slightly younger demographic within Olde Town indicates that residents may be more likely to walk or bike to nearby locations. Furthermore, a cultural shift in the younger demographic may result in non-vehicular transportation being more palatable. The seniors in Olde Town may also be inclined to walk, as they may have moved to the area specifically for its more walkable urban form.

INCOME

Income	Arvada		Old Town	
	Count	% Total	Count	% Total
Less than \$25,000	4,741	10%	631	29%
\$25,000 to \$49,999	8,468	18%	557	25%
\$50,000 to \$74,999	9,677	21%	419	19%
\$75,000 to \$99,999	6,987	15%	272	12%
\$100,000 to \$124,999	4,739	10%	215	10%
\$125,000 to \$149,999	3,638	8%	45	2%
\$150,000 to \$199,999	3,733	8%	53	2%
\$200,000 or more	3,867	8%	15	1%

Figure 5.2: Income in Arvada and Olde Town (Data Sources: United States Census, ACS B19001, 2016 5-year Estimate, via Census Reporter & Social Explorer)

A chart of the median household income for Olde Town compared to Arvada and Denver county can be found in Chapter 1 (Figure 1.7). Figure 5.2 above outlines the income breakdown of Olde Town community members compared to Arvada as a whole. Income is significant to spending habits in that it can be used to determine how much a household can spend on groceries as well as other goods and

services. For instance, grocery stores with higher priced items will be more affordable to shoppers with a higher income. Inversely, stores that offer cheaper or discounted items provide a more viable option for lower income households.

Generally speaking, Arvada is a middle-class community with the majority of the population falling somewhere in the middle of the income range categories. The income range with the highest percent of households is \$50,000-\$74,999 (20%). Looking at Olde Town’s data, there is a much higher percent of households that fall within the lower income ranges, less than \$50,000. The highest percent of households make between \$25,000 and \$49,000 (30%), with the second largest category being the less than \$25,000 (10%). This aligns with the age demographic data, as there are more young people in Olde Town, likely still in the early parts of their careers or attending postsecondary school. As the population for older adults is also a large percentage of the total population, there may also be more seniors on fixed incomes. It is also important to note that only 15 households earn more than \$200,000.

Looking beyond grocery habits to transportation, income also has implications for viable travel habits. Those falling within the lower income ranges may be more strained by housing and car-related costs such as maintenance, parking, and gas, in addition to the high upfront cost. Affordable apartments and public transportation could be a huge advantage for these households making TOD much more enticing for this demographic.

MARKET STUDY

III. METHODS AND DATA (CONT.)

UNEMPLOYMENT RATE

At first glance, it appears that Arvada has a high unemployment rate, at nearly 7%. However, the data also indicates that this number is skewed high due to the high unemployment rate of children and teens in the area, at 21.2%. Looking at Olde Town, the unemployment rate falls to just over 4%.

These data might inform the availability of grocery store employees. Unemployed teens in Arvada could be available for evening and weekend workers. In this way, the development of a new grocery store would not be hindered by a small workforce.

Location	Unemployment Rate
Arvada	6.90%
Olde Town	4.10%

Figure 5.3: Unemployment rate in Arvada and Olde Town. Data Source: United States Census, B19001

HOUSEHOLD SIZE AND DENSITY

In Chapter 1, Figures 1.8 through 1.11 show housing type statistics that are relevant to determining the feasibility of a grocery store in OTA. Many of the homes in Olde Town are multi-family complexes with 2+ units; 25% of those multifamily units are 20-49 unit structures, and comparatively, only about 30% of residential units are single family.

Olde Town is identified as being more urban, in comparison to Arvada as a whole. The geographic density is still currently unlikely to support a traditional grocer as the population in the specific area is less than

4,000 people total. However, capturing the light rail commuters and potential visitors to the area, in conjunction with identified redevelopment areas, and thus future multifamily dwellers, could hold promise for a more unique or small-scale grocer.

IV. FINDINGS

This section will outline the findings of the research conducted on the feasibility of a grocery store servicing the Olde Town neighborhood of Arvada. First, the section will make recommendations based on the grocery trends introduced in the Background section and then move on to discuss the implications of the research regarding grocery supply and demand, followed by some discussion of the limitations of this report.

TRENDY GROCERY STORE MODEL REQUIRED IN OLDE TOWN

While grocery trends are changing nationwide, for this report it is especially important to consider the Colorado and local Arvada context. Grocery stores would fare well to adapt to some of the trends outlined above. Many of these trends are starting to be seen in towns and cities across the state. As Arvada continues to develop its transportation options to and from Denver, it is likely that the “live in Arvada” and “commute to Denver,” as highlighted in Chapter 1, Figures 14 and 15, will continue to occur. According to most recent 2015 LEHD on the Map analysis of Arvada, 20,792 people commute into the area, 49,888 people commute outside of the city, while only 4,834 live and work in Arvada. In Chapter 1, Figure 1.16, the 2015 LEHD on the Map for Olde Town Arvada analysis shows that 3,781 people travel to Olde Town for work, 2,856 employees live in Olde Town but travel outside of the area for work, and only 79 people live and work within Olde Town Arvada. By increasing the number of residents in Olde Towne, the viability of a small grocery store would be more likely.

MARKET STUDY

III. METHODS AND DATA (CONT.)

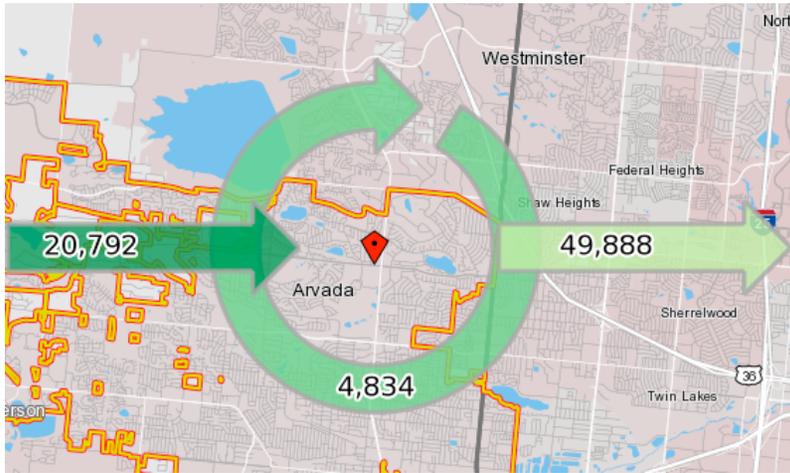


Figure 5.4: Commute in and out of Arvada. Source: LEHD on the Map

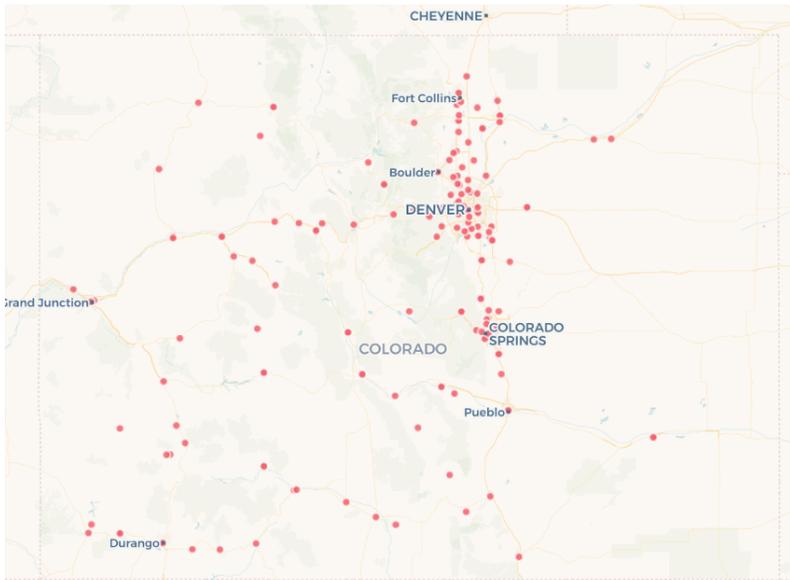


Figure 5.5: Colorado Farmers Market locations. Source: MagpieSupply

TRANSPORTATION BASED DEMAND

Olde Town Arvada provides a denser urban environment than the surrounding Arvada neighborhoods. It also has more transportation options including bus routes, bike paths, walking routes, and future commuter rail. Furthermore, this summer Arvada will be experimenting with dockless bike share.

As described in Chapter 1, Figure 1.24, there are 8 bus stops located in and very near the Olde Town area. North of the Olde Town Core, there is a high concentration of bus options along the central Wadsworth corridor within a short walk or bicycle ride. The other access options include the previously covered RTD Gold Line (opening in 2018) and 600 space Park-n-Ride structure which offers parking for both Olde Town visitors and RTD transit riders. This increased accessibility to Olde Town will likely lead to increased demand for goods and services there, making a small grocer more viable than it has been in the past. Bike and transit accessibility have positive economic effects on retail businesses. In several studies it has been shown that while consumers arriving via these alternative transportation methods spend less per visit than automobile users, they visit businesses more frequently, often resulting in equal or higher expenditures per month than automobile users (Clifton et al. 2012 2). For example, a study of consumer expenditures and frequency of trips in Austin, Texas, showed that cyclists actually spent the most money at convenience stores both per visit and per month. Cyclists spent an average of \$7.95 per visit and \$81.76 per month, compared to \$7.61 per visit and \$68.95 per month for automobile users (Clifton et al. 2012 Table 3).

Across all transportation modes, consumers in the U.S. spend an average of \$3,838 per year on food eaten at home, according to the 2011 BLS Consumer Expenditure Survey (Clifton et al., 2013 5). Combined with the data showing that multi-modal transportation users often spend equal to, or in some cases more time than (when controlled over longer

MARKET STUDY

III. METHODS AND DATA (CONT.)

periods of time), automobile users, this establishes a strong economic incentive for Olde Town Arvada to attract a grocery store to the study area. With 3,960 residents currently living in OTA, and an additional 113,532 living in Arvada as a whole, there is an opportunity for Olde Town to capture a portion of some of this grocery spending—with the right type of store.

As mentioned above, automobile consumers in expenditure by transportation mode. Large-scale grocery stores are one of the only types of retail businesses that do not experience multi-modal transportation users spending the same or more than automobile drivers. Even when trip frequency is accounted for, automobile consumers still spend more at supermarkets. A few factors should be considered when looking at this information though. First, supermarkets have an already higher rate of automobile-based consumers. A 2011 report in Seattle, WA estimated that 88% of shoppers arrived by car (Clifton et al., 2013). Additionally, it can be assumed that a large factor influencing this is the nature of many people grocery shopping in bulk. It is estimated that 70% of shoppers visit grocery stores at random intervals, with another 30% shopping on a fixed schedule (Clifton et al., 2012). Those shopping on a fixed schedule frequently shop in large quantities, which would be very difficult to carry via alternative transportation methods.

Although traditional large supermarkets are still the most automobile-dependent, these trends change substantially when looking at smaller-scale grocers, local markets, and convenience stores, all of which encourage more multi-modal transportation and see more comparable market capture across all modes of transportation.

EXISTING GROCERY SUPPLY

The proximity of large-scale grocery stores can impact the viability of a grocery store located in Olde Town Arvada. Currently, two wholesale clubs, Costco and Sam’s Club, are located within a one-mile radius of OTA. Within a two-mile radius there are three

traditional stores (ie: King Soopers, Safeway, Sprouts, etc.) and three stores that fall under the “other” category (ie: convenience stores and small family businesses). At three miles, there are four more traditional stores and one large-scale store. Figure 5.6 shows this proximity of stores to the Olde Town Study Area.

Most of the grocery stores in the area represent the large-scale, traditional stores, which are more automobile dependent. Our analysis of the local, existing grocery supply has shown that there is a market deficiency in the smaller-scale local markets which can attract more bicyclists, walkers, and transit-riding consumers.



Figure 5.6: Commute in and out of Arvada.

MARKET STUDY

III. METHODS AND DATA (CONT.)

Another consideration is the requirements that larger-scale grocers have for site selection. For instance, Sprouts Farmers Markets, considered a traditional store in the analysis above, has both size and parking restrictions that would keep it from being feasible in the Olde Town core. Sprouts requires 100,000+ population within 10 minutes, which Arvada likely meets, however it also requires a building size of approximately 30,000 sf, a location with high traffic counts, and a minimum of over 140 parking spaces (Sprouts Farmers Market n.p.). King Soopers and Trader Joe's, other large grocery chains, have similar requirements.

Another potential store format is a discount grocer. The Study Area does offer many sought-after characteristics looked for by the discount grocery chain Aldi, including a traffic count in excess of 20,000 and a dense trade area (Aldi, 2017). The ideal size of an Aldi store is smaller -- 17,000+ sf. The Arvada Centerplace Shopping Center, just south of the Study Area and close to the Park-n-Ride, offers a suitable location for this chain. It is longer than a 5-minute walk from the residential area north of Ralston, but could be an easy biking distance. However as of the writing of this report, Aldi does not operate within Colorado. This is support, however, that a smaller-scale market would be a more feasible option, yet since even Aldi requires a dedicated parking lot (Aldi, 2017), even it would not fit in the denser, smaller-scale urban core of Olde Town Arvada. Because smaller-scale, locally-owned businesses have fewer requirements, there is more opportunity to support them in the area.

An alternative to a traditional grocer are markets that are leased by multiple vendors. Examples of these offer a smaller grocery footprint, a unique experience, an emphasis on fresh foods, and potentially some creative, pre-made, "grab-and-go"-style items or "curbside pick-up," and would likely fare well in the Olde Town environment. The small footprint would require less revenue per week, and a priority location near the light rail could capture commuters that pass through Olde

Town, but live in a different area of Arvada.

RETAIL MARKET ANALYSIS

To estimate total, local expenditures for an Olde Town Arvada grocer, two types of customer were assumed: 1) local residents buying groceries for use at home and 2) local workers purchasing pre-made meals while at work.

To determine a likely market capture of food expenditures for Study Area residents, households were divided by household income using data from the American Community Survey 2012-2016 5-Year Average downloaded from Social Explorer Professional by Block Group. To estimate the likely capture for an Olde Town Arvada grocer, an analysis that considered the supply of other food stores in the area, the likely price point for a smaller food market, and consumer behavior yielded an estimated percentage to be spent by a household in each income range at the store. Consumer expenditure data came from the Bureau of Labor Statistics' Consumer Expenditure Survey, 2015-2016 Western Region data tables and were used to calculate total market capture. Multiplying the number of households by the annual 'Food at Home' expenditure figure, and then multiplying that by a likely percentage capture (i.e., percentage of total groceries a household would purchase at the OTA grocer) produced the likely market capture for each income range.

Another analysis was performed that expanded the consumer market area to households within a half-mile radius buffer from the study area, which is the distance likely to be walkable to a grocery store. This group is assumed to be less likely to shop often at this store because they live closer to both other stores and major roads. Therefore, the capture rate is lower across the income categories.

MARKET STUDY

III. METHODS AND DATA (CONT.)

In addition to area residents, area workers, who may shop at the store for meals during work and/or food to take home, were used in our calculations. The number and income levels of workers employed in the area was obtained from the U.S. Census Bureau’s Longitudinal Household Employment Dynamics (LEHD) ‘On the Map’ tool. There are only three income categories used for this tool, and a rounded, annual estimate was used (listed in parentheses): Less than \$1,250 per month (\$15,000 per year), \$1,251 to \$3,333 per month (\$15,001 to \$39,999 per year), and more than \$3,333 per month (\$40,000 and more per year). This rounding allowed us to more meaningfully and understandably match the two datasets together.

Consumer Unit Group	Share of Olde Town + 1/2 mile		Low Estimate (90% of Analysis)	Middle of Range (100% of Analysis)	High range (105% of Analysis)
	Share of Olde Town Captured by Olde Town Grocer	buffer captured by Olde Town Grocer			
Less than \$10,000	20%	15%	\$268,998	\$298,887	\$313,831
\$10,000 to \$14,999	20%	15%	\$146,937	\$163,263	\$171,426
\$15,000 to \$19,999	20%	15%	\$320,715	\$356,351	\$374,168
\$20,000 to \$29,999	10%	5%	\$201,882	\$224,313	\$235,529
\$30,000 to \$39,999	5%	5%	\$188,174	\$209,082	\$219,536
\$40,000 to \$49,999	5%	5%	\$159,604	\$177,338	\$186,204
\$50,000 to \$74,999	5%	5%	\$379,585	\$421,762	\$442,850
\$75,000 and more	5%	5%	\$675,950	\$751,056	\$788,609
Annual Expenditures			\$2,341,845	\$2,602,050	\$2,732,153
Weekly			\$45,035	\$50,039	\$52,541

Figure 5.7 : At home food expenditure market capture for Olde Town Grocer for Olde Town Residents within a half mile radius

Note: because of a slight difference in ranges used by the American Community Survey and the Consumer Expenditure Survey, the income category for “\$50,000 to \$74,999” uses the expenditure data point for “\$50,000 to \$69,999.” Likewise, the income category “\$75,000 and more” uses the expenditure data point for “\$70,000 and more.” This was seen as unlikely to significantly change the outcome of the analysis.

MARKET STUDY

III. METHODS AND DATA (CONT.)

The expenditure data comes from the ‘Food away from home’ category of the same Consumer Expenditure Survey used for residents. This captures the workers who would be purchasing pre-made meals during their work hours or to take home, and possibly groceries. As with residents, an analysis of competitor offerings, price points, and consumer behavior were used to estimate capture rates. But because the employees may do most of their shopping at grocery stores near their home and may eat lunch elsewhere or bring their lunch, we used a small capture rate. The calculations and analysis are the same as above including an additional dataset using a half-mile buffer. In this case, however, we assumed the additional workers within the buffer would be far less likely to frequent the shop during work hours. There are also, presumably, far more expenditures wrapped into the CES’s ‘Food away from home’ category than work lunches, so we assigned lower capture rates.

When totaled together, estimated weekly revenues between \$58,456 and \$68,198 were determined (Figure 5.8). As noted above, median supermarket revenue for 2016 was close to \$400,000 weekly. To support this size of store (30,000+ sq. ft.), an additional 10,000 households would be required, and to avoid needing a large parking lot those households would need to be within walking or biking distance. However, smaller retailers with specialty products may get a higher share of the niche market. The potential revenue from household expenditures is shown in Figure 5.9 where the revenue of specialty stores is shown to be well below that of the three potential market capture rates (Guttery, M, 2017, “Key Statistics: Industry Data”).

Employees in Olde Town	Share of Olde Town + 1/2 mile		Low Estimate (90% of Analysis)	Middle of Range (100% of Analysis)	High range (105% of Analysis)
	Share of Olde Town Captured by Olde Town Grocer	Share of Olde Town + 1/2 mile buffer captured by Olde Town Grocer			
Less than \$15,000	3%	0%	\$55,088	\$61,209	\$64,270
\$15,000 to \$39,999	3%	2%	\$323,102	\$359,002	\$376,952
\$40,000 and more	3%	2%	\$319,667	\$355,185	\$372,945
Annual Expenditure			\$697,857	\$775,397	\$814,166
Weekly Expenditure			\$13,420	\$14,911	\$15,657

Figure 5.8: Food away from home expenditure market capture for Olde Town Grocer for Olde Town Workers and Workers Employed within a half mile radius (Source: U.S. Bureau of Labor Statistics, U.S. Census Bureau)

	Total Potential Grocery Market Capture for OTA Specialty Grocer			2017 Average Revenue for Specialty Food Store*
	Low Estimate	Medium Estimate	High Estimate	
Grand Total Annual Expenditure	\$3,039,702	\$3,377,447	\$3,546,319	\$176,560
Grand Total Weekly Expenditure	\$58,456	\$64,951	\$68,198	\$3,395

Figure 5.9: Potential annual and weekly revenue for OTA specialty grocer compared to national average based on three market capture scenarios Source: Guttery, M 2017

LIMITATIONS

There were multiple limitations to this study that prevent it from being a comprehensively accurate assessment of the market feasibility for a grocery store in Olde Town Arvada. First, multiple data sources, such as ESRI Market Research, could not be accessed for this report due to financial constraints. These would provide further insight into market trends, absorption rates, leakage rates, and market capture of other local grocers in the area.

Additionally, the findings and conclusions made in this report are limited by the scope of the research and literature they are based upon. A thorough review of the literature and research used for this report reveals that many of the studies

MARKET STUDY

III. METHODS AND DATA (CONT.)

studies and data sets are limited in location, sample size, etc.

The findings are based on theories about grocery demand v. transportation modes, not on comprehensive studies looking solely at the Olde Town Arvada and its specific demographics. No current, comprehensive studies were found to exist. Efforts were made by this research team to make reasonable associations with similar studies, but it is important to note that differences between previous studies and the unique nature of Olde Town Arvada would need to be studied.

SUMMARY OF FINDINGS

1. A number of trends in the grocery industry such as ready-made meal kits, online ordering with delivery, and in-store eating and drinking may offer opportunities for smaller grocers and specialty food stores. However, caution is required as supermarkets and super centers pick up on trends quickly and can out compete smaller stores in most markets.
2. Supermarkets, which require a minimum store size of 30,000 square feet, require much larger and denser populations and more disposable income than is currently present within walking distance of Olde Town. To support a supermarket or traditional grocery, 10,000 more households would need to be added within walking or biking distance of the store. However, since these large markets see the biggest difference between automobile and non-automobile consumers in expenditure by transportation mode, it may be far-fetched to assume a walkable supermarket may be a feasible product at all. A supermarket would expect parking and high traffic volumes if they were to locate in Olde Town.

3. There are currently ten stores offering grocery sales within three miles of Olde Town. These are large super centers (3), traditional supermarkets (6), and convenience stores (3).
4. In cities within the region, small-scale specialty stores with multiple vendors, local items (including prepared), and fresh groceries have been able to survive with moderate densities.

IV. RECOMMENDATIONS

The following recommendations and conclusions are based on data that can reasonably be compared to Olde Town Arvada:

First, location will be vital to the feasibility of a grocery store. Based on this report's findings, the store should be located along, or near, the central corridor of Olde Town Arvada. Additionally, the closer and more visible the store is to the south side of the study area, near the RTD Gold Line Station and the Park-n-Ride structure, the more market-capture it will be able to have for both transit riders and automobile users.

Second, the type of grocery store is also important to the feasibility of the project. As suggested in the research from the Food Market Institute, as well as other studies referenced in this report, grocery trends are changing drastically in light of new online and home delivery options. Consumers are increasingly looking for convenient solutions to fit busy lifestyles; experiential shopping; high quality, fresh and local sourcing; and competitive pricing. The previously mentioned study from Austin, Texas further confirms these trends, by showing that proximity to a store was not the only factor used in grocery store choice, but that access to quality products and unique experiences were also main factors.

MARKET STUDY

IV. RECOMMENDATIONS (CONT.)

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All of these trends point to the need for a unique grocery service in Olde Town Arvada. A large-scale supermarket is not feasible due simply to land availability, site location, and consumer demographics in the area. In Chapter 1, the section on "Future Development: Vacant or Underutilized Parcels in Olde Town" shows Figure 25, identifying vacant or underutilized parcels in Olde Town Arvada. While some of these parcels may be adequate to host a large-scale grocery store, one of the largest parcels is currently a park and while identified, it is not recommended to remove the park. Until the area densifies its housing options to increase downtown residents, it could be difficult to justify a traditional grocer. However, in the event that a pedestrian bridge

from the light rail to Olde Town is built, as described in Chapter 2 of this report, a traditional grocer may be intrigued to place a new store near the light rail station. The pedestrian bridge development coupled with a shared-use agreement of the Park-n-Ride parking structure could provide a more attractive traditional grocer model, but the development would likely require parking variances, but in conjunction these pieces could offer further feasibility of that type of store.

Additionally, based on the Consumer Expenditure Survey data shown above, it is recommended that the most viable type of grocery store under Olde Town's current conditions would be a small-scale, specialty grocer that meets some of the emerging national grocery trends. As the population and income of Olde Town Arvada continues to grow, it may be more feasible for other styles of grocers to set up shop in the area, but until that density is added, there will not be enough grocery market capture to validate the need for a larger scale, or more traditional type of grocery store.

MARKET STUDY

V. CONCLUSIONS AND NEXT STEPS

As discussed previously, the built environment and transportation demand have a mutually beneficial relationship, which informs the conclusions of this report. While large-scale supermarkets may be less affected by changing transportation trends, it is clear that convenience stores and smaller-scale grocers experience the benefits of consumers using multiple modes of transportation beyond traditional automobiles.

The feasibility of a grocery store in Olde Town Arvada is dependent on many changing variables, including densifying the downtown residential housing stock, travel trends as the opening of the Gold Line light rail station that may shift commuter mode and Olde Town demographics, and overall supply and demand from the community. This report suggests that, taking into account these many factors, a small-scale, local, grocery with a mix of price-conscious shelf-stable food, and higher-end grocery store items, such as meal kits and organic local products, may be the best fit for the community.

To conclude, it is recommended that Olde Town Arvada explore options for establishing a small-scale grocer in town that could meet the needs of residents, workers, and future transit riders. The findings of this report suggest that it is feasible for the right type of grocer to thrive in the right location.

CASE STUDIES - CHAPTER SIX



(Source: <https://www.denver.org/about-denver/neighborhood-guides/olde-town-arvada/>)

CASE STUDIES

I. INTRODUCTION

This chapter contains findings from our research on the larger-scale implications of parking in a medium-sized city's downtown area. Included is a review of case studies and an outline of best-practice approaches for parking and alternative transportation in these types of redeveloping communities. Specifically, the recommendations are related to parking requirements, parking organization structures, parking design, and parking financing. The five case studies include Parker, Fort Collins, Breckenridge, and Lakewood, Colorado, and Marlborough, MA. The team compiled these cases through literature reviews and interviews with Denver-Metro area planners. We also interviewed a planner from Littleton, Colorado, but we have not included it in our set of cases since the town had not yet studied their parking situation. The chapter concludes with recommendations and next steps that the team identified as being most applicable to Olde Town Arvada.

II. BACKGROUND

There is a discrepancy between how the planning community and the public view free parking, one that often requires the planning department to recommend parking spaces that exceed daily needs. Parking space counts for the country vary from study to study, but a common estimate for the total is around one billion. This is in comparison to about 250 million registered cars and light trucks, which amounts to about four spaces for every car (Thompson n.p.). This accounts for almost 7% of the total urban footprint in America (Davis et al. 255). Many geographic phenomena are not evenly distributed throughout the world, and in this case, parking spaces in the United States are no different. In suburban areas, this can lead to many parking spaces becoming underutilized seas of pavement, concrete and white painted lines. Conversely, in urban environments, it can result in drivers having difficulties finding parking spaces. For urban drivers, the amount of time searching for parking spaces may be perceived as excessive, thus causing dissatisfaction.

As Donald Shoup (549) has shown, the hidden cost of free parking is actually bundled into the cost of the developments and places people are visiting in the first place, negating - and possibly outweighing - the cost of the goods and services. Shoup also details how a central business district (CBD) can run into issues when a municipality instructs developers to have minimum parking requirements (549). One of the issues is the cost of land. For instance, in Olde Town Arvada, the city's CBD, land values are more expensive than the surrounding area. Developers might consider locating to other areas that have cheaper land, which can be allocated for parking and thus drive down development costs. The reason for the success of the CBD has to do with the higher densities found in the area coupled with the variety of activates the area supports. Manville and Shoup suggest that surface parking lots found within the CBD actually hurt the area's development due to the costliness of building on expensive land, for the lowest possible amount of productivity – a parking lot instead of a café or retail store or almost anything else (n.p.). Arvada's Olde Town has several of these lots, further hampering the economic development for which the area strives, while simultaneously creating more congestion due to the "cruising" phenomenon found within denser city areas. "Cruising", as Manville and Shoup describe it, is the in-between act of arriving to one's destination, then circling parking lots and street-side parking like vultures circling their prey; in the automobile's case, a tremendous amount of economic and environmental waste (n.p.).

Studies have shown that sometimes a simple change in the zoning code or relaxing of minimum parking requirements can have positive effects on parking demand, which can be felt through the community. Other studies suggest that there needs to be an appropriate price for parking, depending on land use and utilization of the latest technologies for payment, enforcement, and way finding (DTJ and Nelson\Nygaard 50). Since parking shortages are the result of a discrepancy between supply and demand for a finite good in the short term, pricing can moderate demand, thereby freeing up existing supply.

CASE STUDIES

II. BACKGROUND (CONT.)

Smaller cities in remote locations attract tourists from all over for events that can overwhelm the city in terms of its parking availability, often times with cars parked in fields on the outskirts of town. In some of these cases, shuttles are a viable option, as the revenue generated by tourists offsets the cost of running an all-day shuttle. At off-peak times, there still may be a large number of people attracted to the city who need parking in the city since the irregular and smaller demand would not support a regularly scheduled shuttle. In these cases, some towns have determined that a better understanding and management of their existing parking inventory may be sufficient. For instance, they can make small repairs to existing lots—such as re-striping or paving to allow for more spaces and installing better parking signage to direct drivers to parking lots. These types of parking management strategies may reduce the need to develop more expensive options.

People tend to like what has been given to them as a service; something provided through a government or employer or even something as simple as a buy-one, get-one-free coupon. Parking spaces feel like they should be provided to people who use cars to run errands, go to work or school, something that is inherently part of our auto-oriented culture. Regarding commuting to work, a study found “that certain key issues need to be addressed if the barriers to implementing workplace car parking charges are to be overcome” (Rye and Ison 59). They found the emotional component outweighs the monetary factor, but also leaves employees with a dreaded feeling of paying to work, which might make even the most devoted employee, question their superiors. Another concern people rightly might have regarding changes in parking strategies is the chance of the municipality getting it wrong. As Shoup notes, planners for 144 different cities set parking requirements by surveying nearby cities or consulting the Institute of Transportation Engineers handbook, which can propagate mistakes or rely on data that is not applicable to that particular city (549-552). These attempts can possibly create new issues, which are paid for by the taxes generated from residents – while still not solving the issue.

As precedent has shown, residents are likely to be opposed to parking reform and modernization due to the possible loss of the quaint, small-town atmosphere they have enjoyed for a generation. Another concern is the lack of trust in the municipal government to handle the money generated from parking in a transparent manner; Shoup and others suggest the revenue should be returned to a parking benefit district to help reinvest into the location where the parking revenues are collected (561-562). When residents see direct positive results in the community they will be more encouraged to accept new strategies.

The future of parking can have numerous outcomes, depending on how planners, businesses and residents decide to move forward. There is the “do nothing” outcome, which will keep Arvada from addressing parking issues while development continues to happen. (It should be noted, but not highly likely, that the “do nothing” approach can lead to the devaluation of land in the Olde Town district creating an undesirable scenario with paralyzing congestion and a table of planners saying “I told you so.”). On the contrary, Arvada can step up and work to preemptively solve the issues before they become major reasons people might use to justify avoiding visiting Olde Town. Utilizing a host of resources, pilot programs can be implemented to learn and understand the impacts of parking patterns at different times of the day and analyze the best route forward. The fear of rising costs for parking are legitimate to people who never had to pay before, but it does not have to be a “life and death decision” if the proper care is taken to inform the public, not only 1) why paying for parking is a benefit to the city, but also to 2) help residents and visitors understand the true hidden cost of free parking. An analogy to more simply explain how parking has a real effect on a city can be summed up as such: “Parking is real estate” (n.p.).

CASE STUDIES

III. METHODS AND DATA

METHODS

The research group for this chapter began by completing a preliminary literature review. During this phase, we compiled a matrix of the best practices and ranked them based on their applicability to Old Town Arvada and how successful the practice was, looking specifically at evaluation metrics and measurements, when available.

Next, we compiled a list of places that were similar to Olde Town Arvada in terms of population size and the Olde Town distinction. This list helped us continue to identify case studies that would be most relevant to Olde Town, and also helped to establish a list of municipalities from which we could gain a better understanding of best practices that would be feasible for Old Town Arvada.

Following the preliminary literature review and development of a list of similar municipalities, we decided on the strongest case studies that had been identified during the preliminary literature review phase. We then identified the planners or other contacts at each municipality.

Next, we developed a list of interview questions to guide the discussion with planners from five Colorado cities: Parker, Fort Collins, Lakewood, Breckenridge, and Littleton. The interview questions are as follows:

- Is there a parking issue (or perceived parking issue) in your downtown/Old Town area that you have addressed or are needing to address?
- What are the general policies that you have implemented to manage the parking in your downtown/Old Town?
- What practices have you tried that have worked? Not worked?

- What parking requirements do you have in place for developers in downtown/Old Town when it comes to parking?
- Has your city done any planning for new transportation technologies that may affect parking?
- How has growth in your city impacted the broader transportation system?

The best practices found in the literature, paired with the information and lessons learned from the interviews with local area planners, provided the backbone for this chapter and ultimately informed our recommendations for Olde Town Arvada.

DATA SOURCES

We conducted a web-search for parking management best-practices for small and medium sized cities. This resulted in nearly 20 separate documents, and from these the list was narrowed down to include the following based on their applicability and feasibility in Olde Town Arvada, as well as similarity to Olde Town Arvada in terms of size, context, development, and the designation of an Old Town.

Estes Park Downtown Plan: Existing Conditions and Parking Management Best Practices, Version 1 prepared by Kimley-Horn (2017)

- This document outlined and provided detailed descriptions of parking management best practices for cities.

Driving Urban Environments: Smart Growth Parking Best Practices by Robin Zimmler (2005)

- This document provided information related to parking best practices, specifically those that align with Smart Growth strategies.

CASE STUDIES

III. METHODS AND DATA (CONT)

Case Studies- Smart Parking by the Massachusetts State Government

- This resource provided detailed best practices from several different municipalities in the state of Massachusetts.

Parking Plan, Fort Collins: Downtown and Surrounding Neighborhoods by the City of Fort Collins (2013)

- This document provided information on parking management practices that might also be relevant and useful for Olde Town Arvada, given the similar historic nature of Fort Collins' downtown area. This purpose of this plan was to develop and manage parking to support commercial, economic, and neighborhood vitality, while creating a balanced and sustainable parking and access management strategy for downtown. The goal was to enhance downtown Fort Collins to become a preferred, visitor-friendly, regional destination that people can access through transit, walking, biking, and driving; a place that visitors, upon arrival, can easily find affordable and adequate parking.

Downtown Parking Study and Plan by the Town of Parker (2017).

- This parking plan and study was a preemptive study, aimed at assisting the town to take a proactive approach

in planning how new development will impact parking in the downtown area. It provides best practices that could also be adopted and successful in Olde Town Arvada.

Parking is Like a Dining Space by Barter (2012)

- This article provided a quick venture into better analogies describing parking in cities.

The environmental and economic costs of sprawling parking lots in the United States by Davis et al. (2010)

- This article provided an analysis of space allocation of parking lots in typical Midwestern counties and an overview related to estimations of the supply of parking spaces to potential demand.

People, Parking and Cities by Manville and Shoup (2004)

- This article provided a study comparing the suburban sprawl in Los Angeles, car ownership and land use patterns in the densest urbanized area in the United States.

The Trouble with Minimum Parking Requirements. Transportation Research Part A: Policy and Practice by Shoup (1999)

- This article provided an overview of the following phenomenon: drivers get subsidized parking while others who do

not drive end up paying for it.

No Parking Here by Clive Thompson (2016)

- This article provided an in-depth long form analysis that covers the many parking aspects ranging from giant sprawling suburban parking lots to Shoup's "pay for parking" mantra to a future with self-driving cars.

Key informant interviews with planners (include the name of the interview, date of interview, interview method (phone, in-person, email, etc.). We have not included the interview with the Littleton planner since the interview provided little relevant information. Littleton is not actively considering parking or other related redevelopment issues.

- Carolyn Washee-Freeland, Associate Planner, Town of Parker
- Seth Lorson, Transit Planner, City of Fort Collins
- Shannon Haynes, Assistant Town Manager, Breckenridge
- Paul Rice, Planning Manager on Parking, Belmar/Lakewood

CASE STUDIES

IV. FINDINGS AND RESULTS

BEST PRACTICES FOR PARKING POLICY APPROACHES

The following is a list of the five parking management practices we believe are most relevant for Olde Town at this time.

1. Transportation Demand Management: Decisions around parking in Olde Town should be based on sound, evidence-based research that takes into account changing trends for transportation in the immediate area and larger region, and the respective demand for transportation modes in each of the near-in and surrounding areas. This information can help optimize the flow of transportation by each mode into the focus area, i.e. Olde Town. Data on the transportation demand can help guide and reinforce future development trends. TDM analysis is more effective and comprehensive than anecdotal evidence of travel demand assumed or shared by planners in different municipalities.

Recommendation for Olde Town: Based on our research, Olde Town does not have a parking shortage problem, it has a parking management problem. The city should utilize the data from the parking inventory, parking observation, and travel survey in this study to implement the following four practices as part of an overarching travel demand program.

2. Employer-Based Parking Facilitation: Employers can be instrumental in achieving substantial reductions in parking demands through programs, transit subsidies, flexible work schedules, and bicycle accommodations. Municipalities could take the lead by offering these types of programs to their own employees (Kimley-Horn 4).

Recommendation for Olde Town: Employers in Arvada could charge employees a moderate fee for parking or let them cash out their parking space. The City of Arvada can work with Olde Town employers to develop and implement these programs or even make them compulsory through transportation demand management policies. For Olde Town Arvada this may mean encouraging employees to park in the surface lots or the RTD parking garage, freeing up more of the closer, short term, on-street parking for visitors.

3. Pricing and Parking Benefit Districts: Parking prices should accurately reflect the demand and encourage efficient use of the parking supplies. Parking in retail areas should reflect higher prices to discourage long-term use, and just high enough prices to keep at least one space per block open always. This demand-response approach improves the system efficiency by allowing users to park quickly and allow users who are willing to pay for the prime parking spaces. This can encourage carpooling and alternative travel modes. Such dynamic pricing allows for price adjustments from block-to-block according to the demands during different times of the day and shifting the load from a full block to emptier ones. Parking usage can be tracked year-to-year and rates can be adjusted accordingly, marking less expensive blocks with green signs saying "Value." Also, priced parking has been made more user friendly through technology advances such as multi-space meters that take license plate numbers, in-car transponders, and pay-by-phone applications. Additionally, creating a parking benefit district would allow a portion of the revenue raised by paid parking to be reinvested into the district by improving the infrastructure, making streetscape improvements, paying for special events, etc. (Horn, 2017).

CASE STUDIES

IV. FINDINGS AND RESULTS (CONT.)

Recommendation for Olde Town: Accurate pricing for parking in Olde Town Arvada could be transformational and the first step towards changing the perception of the parking environment in that area. Taking this a step further and creating a parking district in Olde Town, possibly through the BID, could alleviate some of the public push back that a community like Olde Town Arvada may see when implementing paid parking. Businesses could determine how the parking benefit revenues are used in Olde Town. They could also help to determine the rates and hours and the type of metering/payment system.

4. Reduction or Elimination of Parking Requirements: Minimum parking requirements rarely reflect the true demand for parking in urban areas. Worse, they tend to inflate supplies, making it difficult to establish prices. Research has shown that parking facilities are often only 50 percent full during peak periods. Many cities have eliminated parking requirements in certain areas, such as transit stations. Some cities allow developers to pay fees in lieu of meeting parking requirements or lease parking from other existing parking facilities (Horn, 2017).

Recommendation for Olde Town: The parking inventory, observations, and survey data in this report indicate there are locations where parking is not being heavily used, and that some regular users (employees in the area) of the most sought-after parking, e.g. on-street core parking, could be directed to park in the areas that are in less demand. With the commuter rail line opening in the future, Arvada should start to implement time restrictions, and payment systems in small areas and closely monitor the results to identify opportunities for additional changes, not only near the station, but also in the larger Olde Town vicinity. In terms of redevelopment, the excess availability of parking spaces in areas throughout town are evidence of the opportunity for shared parking situations. We discuss this approach for meeting parking minimums in the following best practice.

5. Shared-Parking: In areas with mixed land uses, parking can be shared among the different uses, during different times of the day, and different days of the week. Cities should promote this type of parking through its zoning codes and contract agreements among landowners to reduce redundant supplies (Kimley-Horn 9-10).

Recommendation for Olde Town: Arvada currently has some shared-parking in Olde Town. This could be expanded to other arrangements with its landowners. This, in conjunction with some of the other best practices, could lead to a better parking environment in the area. The OTA BID could keep an inventory of all of the spaces identified in the observation and be the broker between the developers who need to meet parking minimums for their new development and the City. By collectively managing and negotiating all the parking in Olde Town, the BID could enable the City to direct infill developers to provide parking through shared lease arrangements, or contributions toward shared parking via the Olde Town Parking District.

While these five best practice approaches can provide the backbone for thinking about and moving forward with solving various problems related to parking demand and growth, it is not plausible to assume that one, or even all, of these approaches can solve the growing parking demand and transportation problems faced by municipalities. The following case studies will illustrate how collaborative, innovative, and site-specific approaches are ideal for creating solutions to this complex problem.

CASE STUDIES

IV. FINDINGS AND RESULTS (CONT.)

CASE STUDIES AND KEY INFORMANT INTERVIEWS

FORT COLLINS, CO

Fort Collins has implemented many policies in order to manage their parking downtown, information of which was gathered from the parking plan that the city adopted in 2013, the city's land use code, and an interview with Seth Lorson, a Transit Planner for the City of Fort Collins. Downtown Fort Collins has wanted to address the following issues: an abundance of Downtown visitors parking on residential streets, downtown employees occupying 20% of high demand parking locations, and the need to plan for parking needs of new development. In order to resolve these issues, Fort Collins has focused their efforts on Travel Demand Management and Demand Mitigation Strategies.

Fort Collins Downtown core is located within their Transit Oriented Development (TOD) Overlay Zone which has affected the policies that are in place for the area. Prior to the parking study in 2013, there were no parking minimums for residential development and only maximums for commercial development. The resulting parking plan has much clearer requirements for developers including both parking minimums and maximums as well as demand mitigation strategies. Within the TOD Overlay Zone, developments are able to reduce the number of minimum parking spaces required by opting into the Demand Mitigation Strategies. For example, both residential and non-residential developments can reduce their parking by five spaces for every one carshare space provided and 10% for the following alternatives: transit passes for every employee/tenant within the development, being located within 1,000 feet of a transit station or bicycle and pedestrian Level of Service A. Similarly, there is a set of requirements for bicycle parking in both residential and non-residential developments.

Fort Collins is also currently in the process of developing a strategy that will help visitors know when and where they can park. The new

strategy consists of installing sensors in both on and off-street parking spots that will be recorded within the Fort Collins Parking App. With the app visitors will be able to track available parking in real time, thereby reducing the time visitors will need to spend finding parking. Though street parking is currently not metered, when the city deems it necessary to do so, users will be able to use the app to pay for and renew their parking time limit.

One major difference between Downtown Fort Collins and Old Town Arvada is Fort Collins proximity to Colorado State University. Due to this, there is a significant difference in parking needs, particularly for residential uses such as rent "by the bedroom" units, and fraternity and sorority houses – all of which have different, often higher, parking requirements than that of standard residential uses.

Another difference is that RTD, Arvada's transit agency, is much larger and less flexible than Fort Collins' (TransFort), since RTD services many cities throughout a large region.

PARKER, CO

In 2016, the town of Parker identified the need to conduct a parking study and analysis in their Downtown area in anticipation of future development. The objective of their study was to identify strategies to effectively manage current parking and to plan for future needs. Parker contracted with Kimley-Horn who has completed the parking analysis and who is continuing to conduct research on what policies can be effectively implemented for new development.

We conducted an interview with Carolyn Washee-Freeland, an Associate Planner with the Town of Parker to gather more information about the current state of parking in the Downtown area. According to her, the parking problem in Parker is rooted in public perception rather than insufficient parking supply. Ms. Washee-Freeland attributed the

CASE STUDIES

IV. FINDINGS AND RESULTS (CONT.)

problem” to issues that are seen in many suburban downtown areas, including Olde Town Arvada: most parking is located within walking distance, but it is further from the main areas; employees of the businesses in Downtown occupy prime parking locations; and a lack of parking at major, but infrequent, Town events.

The Town of Parker’s parking strategy is composed of public and private off-street parking, unrestricted on street parking, and two-hour time-restricted parking on main Downtown streets. The two-hour parking plan was only implemented in 2017. Kimley-Horn, the firm that has continued to monitor the progress of the program, and Ms. Washee-Freeland have reported that the community reception to the program has been positive. In order to educate the community on the new time restricted parking program, Parker implemented a Parking Ambassador program. The goal of this program was to increase community awareness of parking practices in a customer service-oriented way as opposed to traditional parking enforcement strategies.

In addition to the current parking analysis, the Town is also planning for future parking needs within downtown by analyzing and restructuring parking requirements for developers. Currently the Town’s zoning code calls for minimum parking requirements that are similar to those that are recommended by the Urban Land Institute. One notable policy outlined in the code states the following: “the Parker Municipal Code (title 13.06.050© – Shared Parking) allows an administrative waiver based on a professional shared parking analysis for any development proposing shared parking with another property within 1,000 feet of the requested development” (Parker, 2017, p. 10). Ms. Washee-Freeland stated that mixed-uses that balance shared parking through the day are the developments that they are wanting in the area. Additionally, the report prepared by Kimley-Horn recommended the implementation of parking maximums and payment-in-lieu fees in order to balance the mix of parking in Downtown Parker.

The applicability of strategies from the Town of Parker and Arvada is limited due to the sizes of the two cities and their level of service by public transit. Parker is smaller in scale than Arvada and also not served by public transit to the extent that Arvada is. Additionally, Parker’s time limited parking strategy is much newer than Arvada’s and is still being evaluated on its effectiveness. Though the two cities are at different stages in their parking management their goals are similarly aligned: to balance the demand for parking and the perceived parking problem with the desire to have a walkable, vibrant downtown area at present as well as planning for new development in the future.

MARLBOROUGH, MA

Marlborough, Massachusetts is a town of 40,000 people approximately 30 miles west of Boston, about 45 minutes by car. The town has experienced several parking stresses: the limited physical size of the town; a conflict between business parking and the close proximity of residential parking; and a need for the reduction in physical size of parking spaces. The city amended zoning to increase flexibility for residential parking to be located up to a ¼ mile off-site, freeing up top stories of downtown buildings for residences. ¼ Local businesses were concerned that there would not be enough parking for customers, but studies showed a negligible impact. The following proposed section for adoption in the city’s protective bylaws (May 3, 2013) shows their flexibility in allowing off-site parking requirements through reductions in the size of parking spaces, called compact-sized spaces.

“7.3.1.6 For mixed uses, there shall be adequate off-street parking to service both the commercial use and the residential use as set forth in § 7.3. Shared parking with municipal or commercial uses can be considered to the [sic] meet the parking requirements, if made a condition of the building permit (Town of Marlborough, May 3, 2013).”

CASE STUDIES

IV. FINDINGS AND RESULTS (CONT.)

Additionally, Marlborough implemented compact-sized parking spaces to reduce the size of parking spaces and their footprint in downtown. Below is a detailed description of the amendment that was made in their bylaws.

Compact-sized parking spaces:

Applicability. This subsection shall apply only to parking lots primarily used by employees or residents occupying the site in question and shall not apply to parking areas used by the general public and/or having constant turnover, such as shopping centers, unless authorized at site plan approval based upon determination that safety will be adequately protected and that commonly employed engineering and planning standards have been met in full.

Percentages. Up to 33% of parking spaces may be designed for use by cars smaller than full size, hereinafter called "compact cars."

Additional open space required. For any reduction in total parking area obtained as a result of using compact-sized spaces, an equal or greater area of open space shall be provided in addition to the minimum open space required by the lot coverage

provisions of the chapter.

Location. Compact-sized parking spaces, unless restricted for use by and located adjacent to a dwelling unit, shall be located in one or more continuous areas and shall not be intermixed with spaces designed for full-sized cars.

Identification. Compact-sized parking spaces shall be clearly designed by pavement marking and by direction signs in conformance with the Sign Ordinance, Chapter 526, and labeled as 'Compact Cars Only.'

Dimensions. The minimum dimensions of compact-sized parking stalls and aisles shall be as indicated in the Table of Parking Dimensions: Compact-Sized Spaces. The complete stall dimension shall be paved and no deduction shall be obtained for bumper overhang.

Table of Parking Dimensions: Full-Sized Spaces

Angle of Parking (degrees)	Width of Parking Space (feet)	Depth of Parking Space (feet)	Width of Maneuvering Aisle*	
			1-way (feet)	2-way (feet)
61° to 90°	9	18	24	24
46° to 60°	9	18	18	20
45°	9	18	15	20
Parallel	9	20	12	20

Table of Parking Dimensions: Compact-Sized Spaces

Angle of Parking (degrees)	Width of Parking Space (feet)	Depth of Parking Space (feet)	Width of Maneuvering Aisle*	
			1-Way (feet)	2-Way (feet)
61° to 90°	8	16	22	22
46° to 60°	8	16	18	18
45°	8	16	15	18
Parallel	8	18	12	18

Tables 6.1a-b: Parking Dimensions (Source: City of Marlborough, MA, Chapter 650: Zoning; Article VII Dimensional, Landscaping and Parking Regulations; § 650-48 Off-street

CASE STUDIES

IV. FINDINGS AND RESULTS (CONT.)

These requirements allow developers to utilize a shared parking regulation to meet their minimum, which helped to “relieve the pressure on developers to account for 100% of their parking requirements on site” (Massachusetts, 2018). Establishing new dimensions, called compact-sized spaces, allowed for the reduction in physical parking space requirements. The compact-size permitted up to 33% of parking spaces to be reduced by one foot in width and two feet in length, which considerably reduced the parking spaces’ footprint (see tables above for comparison of full-sized versus compact-size spaces). This had a significant impact on the parking stresses by decreasing oversupply, creating smaller spaces, and creating temporary reserve parking (Massachusetts, 2018).

Also, in the amendment of their zoning codes, shown above, the town stipulates that the plans for the off-site parking and shared parking with commercial or municipal uses must be included in the building permit.

BRECKENRIDGE, CO

Experienced a parking problem for years before they hired Nelson Nygaard Consultants for a parking and transportation study in 2015. The biggest issue with parking was that employees of Vail Resorts and local businesses

were parking on Main Street for extended periods of time, leaving no spaces for guests who wanted to visit downtown. Nelson Nygaard’s report finalized in 2016 offered recommendations on how Breckenridge could increase close-in convenient parking and reduce traffic congestion, as well as determine the most impactful changes to transit.

These recommendations included: improving walkability; initiating paid curbside parking; eliminating the employee parking permit program; and identifying possible locations for new off-street parking lots. Taking most of the recommendations, the Town of Breckenridge spent \$7.8 million dollars to implement a variety of strategies. Among them, Shannon Haynes highlighted the following:

1. Improved parking outside of Main Street Downtown. By improving lighting and infrastructure and increasing transit to lots outside of downtown, it is now more attractive for guests to park there once for a longer period of time.
2. Improved pedestrian infrastructure. The Town installed heated sidewalks, improved lighting, and added flashing crosswalk signs. The idea was to get people out of their cars completely and incentivize walking to downtown.
3. Expanded the public transportation system. A free in-town bus route connects

people to downtown from nearby lots and neighborhoods. The technology on the buses was improved, including arrival boards, which tell travelers when the next bus will arrive, and a mobile application. Stops and shelters were added, and lighting was improved. They also purchased a trolley that runs up and down Main Street.

4. Paid on-street parking was implemented. The Town now outsources the management and monitoring of their on-street parking and uses Interstate Parking who uses the Passport Parking technology where people can pay by zones on their mobile phone with their license plate number. There are no time limits, however higher rates are charged where and when demand is higher.
5. The employee parking permit program was eliminated. Employees of local businesses are invited to park for free in the Airport Road satellite lot and take the free bus to downtown.

So far, Ms. Haynes and Town officials have seen the improvements as a huge success. Employees no longer park on Main Street, and they have been achieving their goal of 15% on-street parking availability. Guests have responded very well to the Main Street Trolley, and they plan on purchasing a second this year. The Town still manages handicap spaces, however by outsourcing the

CASE STUDIES

IV. FINDINGS AND RESULTS (CONT.)

enforcement of on-street paid parking, they have experts in the field that understand the technology more strictly enforcing it, and the police department has a lighter workload.

A few challenges that the Town continues to face are mostly concerned with Vail Resorts and the paid surface parking lots that they own downtown. The transit center is located in between two private lots with 1,200 total parking spaces, which conflicts with buses and pedestrians. Regarding development and parking requirements, the following are outlined in the Town's zoning code:

Number of required off-street parking spaces (per 1,000 square feet of gross floor area):

- Residential: 1.1
- General Retail / Commercial: 1.4
- Supermarket: 2.5
- General Office: 1.4
- Government Office: 2.4
- Restaurant: 3.5

Olde Town Arvada is significantly smaller in geography and its tourist economy than downtown Breckenridge, so strategies that are working for Breckenridge may not be supported in Arvada.

BELMAR / LAKEWOOD, CO

Belmar has a unique parking problem in that the area is over-parked. There are over 4,500 free customer parking spaces throughout the district, almost half of which are located among the free indoor parking garages. The problem with this is that shoppers don't park in the garages; they choose to circulate until they find an available space on-street and pay a meter. In addition to free structured parking, there are seven surface parking lots that are also no cost. There are 250 on-

street spaces that cost \$0.75 per hour, where people pay at a kiosk and place a receipt on their dashboard.

The intent of charging for on-street parking was to encourage patrons to park in the garages and surface lots, using the "park once" model. This has not been successful, as "cruising" is still an issue and the off-street parking is severely underutilized. Planning officials wanted dense development in Belmar, and buildings ended up being significantly less dense than anticipated. The issue with density was that the banks refuse to loan to developers unless they park at a minimum of one space per unit (although most buildings are often higher). When developers can't get financing for their intended dense developments, they revise their proposals with lower density, which results in them being over-parked.

Belmar was a huge redevelopment project that brought in bigger box stores and multiple types of residential development. Olde Town Arvada is much smaller and historic, and the type of development that the City is looking for is drastically different from that of Belmar. However, Olde Town could learn from Bel Mar's experience in terms of creating expensive structured parking beyond the need. The price of Bel Mar's on-street parking may also be too low.

CASE STUDIES

IV. FINDINGS AND RESULTS (CONT.)

SUMMARY OF FINDINGS

1. Researchers recommend that Transportation Demand Management (TDM) programs that are data-based are more effective and comprehensive than relying on anecdotal evidence of travel demand. However, the towns we studied in Denver are not yet doing this.
2. Employers can be instrumental in achieving substantial reductions in parking demands through commuting and parking incentives that encourage multi-modal travel. These can be through transit subsidies, flexible work schedules, and bicycle accommodations. In Breckenridge, CO, downtown employees can park in an off-street lot and take a free shuttle to their jobs, which has successfully opened on-street spaces for visitors.
3. Parking prices should accurately reflect the demand and encourage efficient use of the parking supplies, including setting higher prices in retail areas. Priced parking blended with “smart” technology makes finding appropriate parking easier on drivers. Breckenridge, CO has seen a 15% availability rate in their on-street parking after instituting a fee for parking.
4. Parking minimums are inefficient, tending to inflate supplies and making it difficult to implement and set priced parking. In areas with mixed land uses, it is efficient for parking to be shared among uses, during different times of the day, or during different days of the week. For instance, in Marlborough, MA, allowing developers to meet parking minimums off-site and through shared parking has led to a decrease in the oversupply of parking. Parker, CO is investigating shared parking and could be an informative case study once implemented.



Parking in Breckenridge, Colorado (Source: <https://www.istockphoto.com/photo/parking-lot-in-breckenridge-colorado-gm610116360-104647905>)



Parking in Marlborough, Massachusetts (Source: <http://marlboroughedc.com/2016/12/communities-look-to-build-a-better-downtown/downtown-marlborough-ma-medc-web-2/>)

CASE STUDIES

V. CONCLUSION: RECOMMENDATIONS AND NEXT STEPS

Based on conducted interviews, established best practices, the relevant case studies, and the context of Old Town Arvada, the research team suggests the below recommendations. These recommendations are consistent with those that have been presented in earlier chapters and support their conclusions.

1. Increase communication to educate residents and visitors on parking and travel options in and around Olde Town. This communication could manifest in many different ways including physical way-finding and digital communication such as social media, a mobile app, or website. Additionally, connect with local business owners to help them communicate with and educate their customers and employees about where the best place to park is.
2. Implement transportation demand management and parking demand mitigation strategies for new developments that will encourage uses of alternative transportation, relieving the pressure and demand for parking while creating a more walkable Olde Town. These options may include increasing bike racks, designating spaces for carshare (such as Car2Go) or rideshare drop off location (for Lyft and Uber). This change for parking requirements can also leave room for new technological developments that may change methods of transportation in the future. This recommendation can also be used for existing businesses and developments as an opt in option.
3. Encourage mixed-use development that can utilize and balance shared parking throughout the day. Explore what types of development would have complementary peak parking hours as opposed to competing peak parking hours. Additionally, encourage existing businesses that have private parking lots, such as the Elks Lodge and the site for the new Trammel Crow development, to explore the option of sharing parking in the downtown area with new developments that are within walking distance.
4. Align the evaluation of parking space supply/demand with the city's overarching societal and economic needs and wants. The evaluation of parking spaces in Olde Town should fit into the constructs defined for long-term development goals in Olde Town. This should be interrelated to the adequacy of parking spaces and the dialogue between developers pertaining to their responsibilities regarding parking and the City's goals. This burden should be shared between the private sector and public sector. An increase in alternative multi-modal options should be taken into consideration.
5. Charge for on and off-street parking in a manner that is consistent with market-rate prices. Charging for parking in specified areas around and in Olde Town can make parking more competitive for drivers while also incentivizing drivers to utilize other forms of transportation. With the right prices, this has the potential to promote increased used of the nearby parking garage near the new commuter rail station. This could also lead to tenants validating parking for their customers. While there may be some push back and dissatisfaction from residents and visitors to Olde Town in the short-term, in the long-term the benefits would outweigh any perceived negative implications and would align land uses with more sustainable development patterns.

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CITY OF ARVADA

Bob Manwaring, Director of Public Works

Jessica Prosser, City Planner

Brian Davis, GIS Service Manager

Nathan Bishop, Executive Director of the Olde Town Business Improvement District ID

FACULTY MEMBER

Carrie Makarewicz, PhD

STUDENTS

Berry, Alan James

Blaine, Alison

Bland, Nora

Boydston, Meghan

Butz, Frank Benton

Canfield, Holly

Christensen, Mark

Cromartie, Austyn

Cunningham, AnnaRose

Davis, Kenna

Dimperio, Thomas

Featherstone, John

Flynt, Krista

Gasperek, Caleb

Gelem, Benjamin

Gesten, Max

Gluckin, Emily

Godwin, Jenny

Gonzales, Mayra

Green, Joe

Grunditz, Naomi

Haag, Rose

Jablon, Shelby

Jacobs, Greg

Katz, Alexander

Kazemian, Camran

Kleinfelter, Emily

Leonard, Steph

Marcucilli, Molly

McBride, Dillon

McFarland, Ashley

Milardo, Kristin

Nilsen, Matthew

Nordhus, Andy James

Phillips, Joshua

Provan, Sydney

Rich, Elle Ann

Robbins, Ty S

Shaffer, Sarah

Slocombe, Jackie

Torbert, Maria Amy

Vigil, Brittany

Wise, David B

Young, Liz

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APPENDICES

A. Urban Living

- A.1 Census Tracts and Blocks Used
- A.2 Vacant and Underutilized Parcels

B Travel Preferences

- B.1 Sample Travel Survey

APPENDICES

A.1 Urban Living Census tracts and blocks used

Olde Town

104.05 BG1 Jefferson County, Colorado

103.08 BG1 Jefferson County, Colorado

103.05 BG4 Jefferson County, Colorado

Arvada (minus Olde Town census blocks)

96.08, Adams County, Colorado

98.15, Jefferson County, Colorado

98.32, Jefferson County, Colorado

98.33, Jefferson County, Colorado

8.34, Jefferson County, Colorado

98.35, Jefferson County, Colorado

98.36, Jefferson County, Colorado

98.37, Jefferson County, Colorado

98.38, Jefferson County, Colorado

98.39, Jefferson County, Colorado

98.40, Jefferson County, Colorado

98.41, Jefferson County, Colorado

98.51, Jefferson County, Colorado

102.05, Jefferson County, Colorado

102.06, Jefferson County, Colorado

102.08, Jefferson County, Colorado

102.09, Jefferson County, Colorado

102.10, Jefferson County, Colorado

102.11, Jefferson County, Colorado

102.12, Jefferson County, Colorado

102.13, Jefferson County, Colorado

103.03, Jefferson County, Colorado

103.04, Jefferson County, Colorado

103.05, Jefferson County, Colorado

103.06, Jefferson County, Colorado

103.07, Jefferson County, Colorado

103.08, Jefferson County, Colorado

104.02, Jefferson County, Colorado

104.05, Jefferson County, Colorado

104.06, Jefferson County, Colorado

104.06, Jefferson County, Colorado

Denver County, Colorado

Entire county tract

A.2 Vacant and Underutilized Parcels in Arvada

Parcel #	Address of Parcel	Current Use	Why Categorized Underutilized	Assessed Value
1	7884 Ralston	Single Family Residential	Underutilized – residential use in P-1 Commercial Zoning District	21,199
2	7711 Grandview	Retail	Improvement value less than land value	73,341
3	7605 Yukon	Single Family Residential	Underutilized – residential use in OT-RN Mixed Use Zoning District	36,660
4	7607 Yukon	Single Family Residential	Underutilized – residential use in OT-RN Mixed Use Zoning District	23,322
5	7609 Yukon	Single Family Residential	Underutilized – residential use in OT-RN Mixed Use Zoning District	17,305
6	5705 Yukon	Single Family Residential	Underutilized – residential use in OT-RN Mixed Use Zoning District	12,668
7	5707 Yukon	Single Family Residential	Underutilized – residential use in OT-RN Mixed Use Zoning District and quality assessment “poor”	11,455
8	5709 Yukon	Single Family Residential	Underutilized – residential use in OT-RN Mixed Use Zoning District	18,039
9	5711 Yukon	Single Family Residential	Underutilized – residential use in OT-RN Mixed Use Zoning District	16,644
10	5713 Yukon	Single Family Residential	Underutilized – residential use in OT-RN Mixed Use Zoning District	7,181
11	5717 Yukon	Single Family Residential	Underutilized – residential use in OT-RN Mixed Use Zoning District	20,247
12	5719 Yukon	Single Family Residential	Underutilized – residential use in OT-RN Mixed Use Zoning District	19,678
13	5721 Yukon	Single Family Residential	Underutilized – residential use in OT-RN Mixed Use Zoning District	23,475
14	5700 Yukon	Social/Fraternal Hall	Underutilized – institutional use in OT-EY Mixed Use Zoning District	66,216
15	5640 Yukon	Social/Fraternal Hall	Underutilized – institutional use in OT-EY Mixed Use Zoning District	14,763
16	7407 West 57 th Ave	Parking Lot	Underutilized – surface parking	7,830
17	7407 Grandview	Mixed Use	Assessed value	0
18	7317 Grandview	Single Family Residential	Underutilized – institutional use in OT-GV Mixed Use Zoning District	12,054
19	7318 West 57 th Avenue	Single Family Residential	Underutilized – institutional use in OT-GV Mixed Use Zoning District and quality assessment “poor”	5,667
20	7315 Grandview	Single Family Residential	Underutilized – institutional use in OT-GV Mixed Use Zoning District and quality assessment “poor”	14,452
21	7207 Grandview	Apartment	Improvement value less than land value	24,691
22	8101 Ralston	Vacant	Vacant	796
23	8101 Ralston	Vacant	Vacant	203

APPENDICES

B.1 Sample Travel Survey

For all 67 completed surveys with comments see separate PDF



3

Old Town Arvada Travel Survey
 The city of Arvada is working with Urban & Regional Planning master's students at the University of Colorado Denver to explore current and future transportation options to and from Old Town.
 All responses are confidential and will only be reported as combined totals. Home intersection and zip code will be used to calculate average trip lengths, time, and general origins of visitors to Old Town.

Today's Date: 4-11-18 Time: 6:10pm Survey Location: Denver Beer
 Home City: Arvada Home Zip Code: _____
 Closest Major Intersection to your home: _____ & _____
 Work location (city): Arvada Age: _____ Gender: _____

1. How did you get to Old Town today?
 Drove Alone
 Drove with at least one other person
 o How many others? _____
 Walked
 Biked
 Ride share, e.g. Lyft, Uber
 Public Transit
 Other _____
2. If you drove, where did you park?
 On street in Old Town
 On street in a neighborhood near Old Town
 Parking Garage
 Park and Ride
 Did not drive or park
 Parking lot/other _____
3. On a scale of 1 to 10, how easy was it to find parking today? 1 = Easy 10 = Difficult _____

4. During a typical week, how many times do you visit Old Town by the following travel modes?
 Drove Alone 4
 Drove with at least one other person _____
 Walk _____
 Bike _____
 Public Transit _____
 Ride share, e.g. Lyft, Uber _____
 Multi-Modal (e.g., bike then bus, etc.) _____
6. What are your primary reasons for visiting Old Town?

Reasons for Today's Visit	Reasons for your typical visits
<input checked="" type="checkbox"/> Work	<input checked="" type="checkbox"/> Work
<input checked="" type="checkbox"/> Entertainment	<input checked="" type="checkbox"/> Entertainment
<input checked="" type="checkbox"/> Dining	<input checked="" type="checkbox"/> Dining
<input type="checkbox"/> Shopping	<input type="checkbox"/> Shopping
<input type="checkbox"/> Other _____	<input type="checkbox"/> Other _____

5. How often do you visit Old Town in a typical week (number of times)? 5

7. To use the following modes to get to Old Town, which conditions would need to be met? (Check all that apply)

Travel Mode	If it were easier or more convenient	If it felt safer and secure	If it were less expensive or free	If it took less time	I already use this mode	I would never consider it	Other reason (please explain)
Walking	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Biking	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Public Transit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Carpool/Vanpool	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Stable/lean vehicle parking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Thank you for your participation, if you have any additional comments please write them on the back!



CONTACT US TO LEARN MORE

Hometown Colorado Initiative

<http://hometowncolorado.org>

MAILING ADDRESS

College of Architecture and Planning

University of Colorado Denver

Campus Box 126, P.O. Box 173364

Denver, CO 80217-3364

PHYSICAL LOCATION

College of Architecture and Planning

University of Colorado Denver

1250 14th Street, Suite 300

Denver, CO 80202