City of Beaverton Public Parking Study



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Executive Summary

The City of Beaverton applied to host a practicum project because of a need to reevaluate the use, occupancy, and value of the public parking available within its Central Business District. In conversation with city officials, concerns were raised about underutilization of available parking spaces, threats to physical property and pedestrian safety from parking lot misuse, and the fear that unused, unoccupied parking spaces were taking up valuable land that could instead serve the community through more efficient, desirable, and productive land uses.

The data gathered by Michigan State University's Spring 2025 practicum team validated many of the points raised by the City of Beaverton. Many parking areas, both on-street angled and parallel parking and off-street parking lots, failed to reach 50% capacity during both weekday and weekend collection periods in February 2025. One collection area, an off-street parking lot near a major intersection and Ross Lake, failed to record a single vehicle during any of the nine data collection periods undertaken by the practicum team. The data confirms the city's concerns; Beaverton needed to reckon with its public parking.

To synthesize the best practices for the city regarding future management of its public parking, the practicum team gathered additional data. The team gathered and analyzed parking-related case studies from similarly sized communities, surveyed the business owners and operators of the Central Business District, and reviewed Beaverton's existing parking ordinances. Based on those considerations, the team will present a variety of recommendations within this report.

To improve safety, increase mobility, and prioritize overall usefulness in Beaverton's Central Business District, the city should carry out several quick improvements within the next year. These specific efforts aim to improve the look of the area, increase safety, and reform superfluous policies. The main suggestions are to update the paint on crosswalks and parking spaces, put up protective bollards and signs for public parking, and review parking rules to better meet the needs of residents and visitors. By focusing on these improvements, the city can create a more welcoming and effective downtown area.

The practicum team's mid-term recommendations aim to improve parking efficiency and increase pedestrian safety, building upon the initial short-term improvements recommended previously. The city can make it easier for residents and visitors to get around by changing the current parking designs and enhancing walkway accessibility for pedestrians. The primary recommendations are to redesign the Laundry Lot to enhance traffic movement and make better use of space and to move parking spots in the Old Bank Lot back to create a protected walkway for pedestrians. These changes will improve safety and make it easier to access the Central Business District without a car.

To support Beaverton's future development, the practicum team's long-term recommendations focus on smart infill development, infrastructural upgrades, and increased pedestrian connectivity. These recommendations include directives for infill growth in underutilized areas, upgrades to off-street parking lots, and the construction of a pedestrian bridge to increase accessibility. By repurposing select parking areas for mixed-use commercial activity and public gathering spaces, the city can conceive a more walkable and pedestrian-friendly downtown. Additionally, paving the Porter-Ross parking lot will guarantee greater parking opportunities while aiding future development. Finally, construction of the Trail of Two Cities pedestrian bridge will supply a crucial non-motorized network between Beaverton and Gladwin, further encouraging access.

Implementing these recommendations in Beaverton's Central Business District will allow for smarter, safer, and simpler use of the city's public parking spaces, both on-street and off-street. They address the concerns raised by Beaverton's municipal officials and respond to the deficiencies in usage and accessibility identified by the practicum team's gathered data. Most importantly, the recommendations incorporate community feedback from business owners, a group identified as a crucial stakeholder within the city's downtown area. Overhauling how the city manages its public parking will reduce stress on city officials, increase accessibility for pedestrians, protect physical infrastructure, and mitigate the effects of underutilized space in a valuable area, ultimately building a better, brighter Beaverton.

Introduction

Practicum Structure

Students enrolled in graduate and undergraduate degrees in Urban and Regional Planning must complete a planning practicum course before graduation. This course is designed to remove them from the classroom environment and allow them to apply the theoretical disciplines they have learned to projects completed in partnership with jurisdictions across Michigan, solving on-the-ground planning problems. Students are asked to rank their choices among several of these projects; the members of this practicum team all ranked the City of Beaverton's public parking study as their top choice. This study is the result of their work during the planning practicum course in the Spring of 2025.

Client Overview

The partner jurisdictions for this project were the City of Beaverton and the Beaverton Downtown Development Authority (DDA); the practicum team's primary contact was Matthew Lang, the Director of Downtown & Community Development. The practicum team also conversed with and relied on the knowledge of James Barta from the Department of Public Works and Shannon Sirpilla, the City Manager.

Project Overview

The project's scope was developed from collaborative conversations with Director Lang. The project's goal is to prepare recommendations for improved public parking management, both on- and off-street, within Beaverton's Central Business District (CBD). The project includes an analysis of current parking conditions and identification of ideal sites for alternative uses, including outdoor retail activity, short-term parking, and mixed-use development. These recommendations will incorporate both primary and secondary data, incorporating parking occupancy, location, and stock data gathered by the practicum team and research on parking needs and comparable parking studies completed by other communities with similar characteristics.





Gladwin County, Michigan

Figure 1 - Beaverton and Michigan



Figure 2 – Beaverton Downtown Development Authority Map, Including the Central Business District

The project will focus primarily on parking within the Central Business District (outlined in the red dotted line) but will also incorporate data and conclusions from major nearby lots and the

effects of community anchor institutions that may be located outside of the focus area. Additionally, a survey was conducted to gauge business owners on matters related to public parking availability within the Central Business District. This survey will gather data on intended destinations, employee parking habits, and the difficulties (or lack thereof) in finding a space.

1. Study Area Overview

1.1 Beaverton History

Beaverton, in Gladwin County, was first named Grand Forks due to its proximity to the confluence of the Tobacco River and Cedar River. Originally settled by loggers from Canada due to its abundance of natural resources, the community had a booming lumber industry.



Figure 3 - Three gentlemen on Brown St in Beaverton, MI in 1944 the same focus area of the Practicum team- sourced from Gladwin County Historical Society on Facebook

Incorporated in 1903 as a city, the construction of electrical plants, sewer systems, and a grain handling facility created a strong economy. Following the industrial shift and a change in the business composition, Beaverton emerged as the "Thermoforming Capital of the World." Thermoforming is the process of heating plastic sheets and vacuum-fitting over a mold. Saint-Gobain began operating in Beaverton in 1995 under the name of Norton Performance Plastics after acquiring Patter Products. In 2018, the expansion of Saint-Gobain created jobs from the emerging business, the facility produces products for drug and vaccine manufacturers to process fluids, such as silicone tubing. It is Gladwin County's largest employer with 333 workers employed at the Beaverton plant in 2023.



Figure 4 – Gladwin County's largest employer, Saint-Gobain Performance Plastics building in Beaverton

1.2 Socio-Economic Profile

1.2.1 Demographics

Figure 5 shows the population estimates for Beaverton since 2010. During this period, the general trend saw Beaverton's population increase. Beaverton saw a stark rise in population around 2018. Since then, the population has been steadily declining to below 2010 levels.



Figure 5 - Beaverton Population Estimates Over Time | Graph shows 5-year population estimates for the City of Beaverton. Included is a trendline that shows average population changes over this time. (ACS 5-Year Estimates)

Per the 2023 ACS 5-Year estimates, Beaverton had a population of 1,036. The city has lost 32 residents since its 2016 estimates, which were used in the city's master plan. Beaverton residents predominantly identify as "white" at 96.9%.

1.2.2. Household and Family Size

An estimated 504 households reside in Beaverton, including an estimated 240 families. The average family size (2.98) is nearly an entire person larger than the average household size (2.06).

1.2.3 Age

The median age of Beaverton residents is 39.7 years, which is similar to the state median age of 40.5 years per 2023 ACS 5-Year estimates. It is difficult to discern overarching patterns within age and sex distributions due to low population numbers for each age cohort, but there are several clear spikes in male or female population within certain age brackets.



Figure 6 - Beaverton Population Pyramid | Population pyramid sows estimated male and female populations broken down by age cohorts. (ACS 2023 5-Year Estimate)

1.2.4. Income and Poverty

The poverty rate is estimated at 21.6% as of 2023. The poverty rate has experienced a ten-point decrease over the past decade. From 2023 ACS estimates, Beaverton's poverty rate is higher than Gladwin County's (13.2%), the county in which Beaverton resides.

As of 2024, the median household income is \$50,960, according to ESRI Business Analyst Report and housing income profile. Per capita income for 2024 was \$30,328. Both median household income and per capita income for Beaverton are lower than that of parent Gladwin County, as shown in Figure 7.



Figure 7 - Beaverton and Gladwin County Income | Comparisons of per capita incomes and median household incomes between the City of Beaverton and Gladwin County (2024: Esri Housing Profile Estimate)

1.2.5 Commuting

The majority (88.4%) of Beaverton workers drive to work alone (see Table 1). The average occupancy per vehicle is 1.02 persons when traveling to work. While low in number, 4.5% of workers commute via carpool. Much of the remainder (5.5%) work from home. All these figures result in Beaverton having a heavily car-dependent lifestyle. This holds truer when compared to larger Gladwin County. Together, this influences the demand for parking spaces for workers.

Means of Transportation to Work (2023)							
	Beaverton	Gladwin					
		County					
Car, truck, or van	92.4%	87.5%					
Drove alone	88.4%	81.4%					
Carpooled	4.5%	6.0%					
Public transportation	0.0%	0.1%					
Walked	0.7%	1.1%					
Bicycle	0.0%	0.3%					
Taxicab & other means	0.9%	2.2%					
Worked from home	5.5%	8.9%					

Table 1- Commuting Method | Individual's primary means of transportation to work (2023: ACS 5-Year Estimates)

Between 2016 and 2023, Beaverton residents have become more likely to have longer commute time to work. Mean travel times have risen by 34% in this period from 22.8 minutes to 29.9 minutes (see Table 2). In contrast, Gladwin County commute times have stayed more unwavering. The City of Beaverton and Gladwin County now share similar travel times to work as of 2023 estimates. Due to Beaverton's small geographic size and worker reliance on personal

vehicles as a means of transportation to work, most Beaverton residents do not work within city limits. This limits the current parking demand in the central business district. Nevertheless, around a fifth of Beaverton workers travel less than 10 minutes to work, who may necessitate parking for work.

Travel Time To Work								
Place	Beavert	on, City	Gladwir	n County				
Year	2016	2023	2016	2023				
Less than 10 minutes	26.1%	21.8%	17.2%	15.6%				
10 to 14 minutes	7.8%	15.5%	10.0%	12.3%				
15 to 19 minutes	11.0%	7.8%	14.0%	10.7%				
20 to 24 minutes	19.6%	8.0%	10.5%	11.1%				
25 to 29 minutes	.5%	4.8%	4.9%	7.0%				
30 to 34 minutes	10.2%	10.3%	13.1%	11.1%				
35 to 44 minutes	13.3%	1.5%	7.5%	8.1%				
45 to 59 minutes	7.0%	23.6%	10.8%	13.9%				
60 or more minutes	4.4%	6.8%	12.0%	10.2%				
Mean travel time to work (minutes)	22.8	29.9	30.8	29.9				

Table 2 – Commuting Times | Table shows average commute times of workers in the City of Beaverton & Gladwin County in 2016 and 2023. (2023: ACS 5-Year Estimates)

Public transit options are largely absent. There is, however, the <u>Gladwin City-County Transit</u> service, a single-vehicle door-to-door service that offers trips around Gladwin County. The service requires riders to schedule rides in advance (see Figure 8).



Figure 8 - Gladwin City-County Transit, offered by Gladwin County, a short bus ride hailing service from Subway traveling on W Brown St as captured by Beaverton Team.

1.2.6 Industry

Three industries employ most of Beaverton's labor force. Educational services, health care, and social assistance hold the largest share of workers who can be found in places such as

Beaverton Elementary and High Schools and the Library. The next largest is retail trade along the Ross Street (M18) corridor and Brown Street in the central business district. The manufacturing sector is supported by plastic thermoforming companies BMG, Saint-Gobain Performance Plastics, and associated suppliers. These companies contribute to Beaverton's favorable location quotient (2.4) in the manufacturing industry compared to the national level (ESRI Business Analysis | Civilian Labor Force Profile).

1.2.7 Housing

Most of Beaverton's housing stock was built prior to 1980, with the median year of structures built in 1978. Housing construction of all types has rapidly decreased since the 80s and 90s. The city has a total of 551 housing units, 47 of which are vacant properties (~8.5% vacancy rate).



Figure 9 - Occupied Housing Units Construction Over Time in Beaverton. This image shows the age of occupied housing units. (2023: ACS 5-Year Estimates)

Housing Units by Occupancy Status and Tenure (2024)									
	Beav	erton	Gladwir	n County					
Housing Units	Number	Percent	Number	Percent					
Total Housing Units	597		17,011						
Occupied	531	88.9%	11,220	66.0%					
Owner	374	62.6%	9,613	56.5%					
Renter	157	26.3%	1,607	9.4%					
Vacant	66	11.1%	5,791	34.0%					

Table 3 – Housing Units by Occupancy Status (2023: ACS 5-Year Estimates)

1.2.8 Household Occupancy

Single-family detached homes are the slight majority of Beaverton's occupied housing stock (52.4%). These units are overwhelmingly owner-occupied (88.6%). In contrast, single-family

detached units comprise only 20.2% of renter-occupied units meaning that multifamily units and mobile homes are more likely to be renter-occupied. (S2504 | Physical Housing Characteristics for Occupied Housing Units) Beaverton residents are more likely to rent compared to the state level. From the 2023 ACS 5-Year estimates, only 27.1% of Michigan residents live in renter-occupied housing units.



Figure 10 - Beaverton Occupied Housing Units | Number of owner- and renter-occupied housing units by housing type. (ACS 2023 5-Year Estimates)

From the same surveys, Beaverton residents are more likely to live in a single-person household (45.4%) than at the state level (30.4%). This explains in part the share of renter-occupied households in Beaverton. More single-person households require more housing units. Moreover, single-person households do not necessitate larger home sizes.

1.2.9 Education

Beaverton is below the state average in terms of high school graduates and those with bachelor's degrees or higher. For the residential population 25 years and over, Beaverton's high school graduate attainment is 84.2% compared to the State of Michigan's 91.9%. Similarly, Beaverton trails in residents with bachelor's degrees or higher with only 11.2% of its residents compared to the state's 31.8%. People with less than a high school degree in Beaverton are twice as likely to be in poverty as the state average.



Figure 11 - Beaverton & Michigan Residents Highest Level of Educational Attainment (ACS 2023 5-Year Estimates)



Figure 12 - Beaverton & Michigan residents' educational attainment and poverty (ACS 2023 5-Year Estimates)

2. Land Use in the Central Business District

The Central Business District (CBD) of Beaverton, Michigan, primarily falls under the C-1 Downtown Commercial zoning district, as indicated on the city's zoning map. This area is designed to serve as the city's commercial hub, supporting a mix of retail, office, dining, and entertainment uses to create a vibrant and pedestrian-friendly environment.

Business Categories						
Type of Business	Quantity					
Retail	9					
Service	8					
Restaurant	3					
Entertainment	1					
Other	2					
Total:	23					

Table 4 – Types of businesses in the CBD

2.1 Zoning and Land Use in the CBD



Figure 14 - Zoning in Commercial Business District

• C-1 Downtown Commercial: The CBD is primarily zoned for downtown commercial activities, encouraging businesses such as shops, restaurants, offices, and mixed-use buildings with residential spaces on upper floors.

2.2 Adjacent Zoning Districts

- R-2 Medium Density Residential & R-3 High-Density Residential: Providing housing options close to the commercial core.
- C-2 Regional Commercial: Allowing for larger-scale commercial developments that serve both local and regional markets.

2.3 Key Features of the CBD Land Use Plan

- Mixed-Use Development: Encourages a blend of commercial and residential uses to foster a walkable, active downtown environment.
- Historic and Community-Oriented Development: Preserves Beaverton's small-town charm while accommodating modern business growth.
- Infrastructure and Accessibility: The district is strategically located along major routes (such as M-18) to enhance connectivity and economic activity.

Public and Green Spaces: Conservation (CON) areas near the Tobacco River support environmental sustainability and provide recreational spaces for residents. Commercial is the second largest land use in Beaverton; covering 328 parcels and 16% of the land. Smaller building footprints clustered around M-18 and Brown Street constitute the downtown, but larger commercial enterprises that sit along M-18 primarily provide services to vehicular traffic.



Figure 15 - One of many parades that occur on W Brown St to commemorate Fourth of July, car shows, and the community as sourced from Pure Gladwin County Facebook



Figure 16 - City of Beaverton Zoning Map

3. Infrastructure Overview

The following is an inventory of the physical infrastructure within the study area of the City of Beaverton's Central Business District. This infrastructure plays a critical role in shaping the accessibility, safety, and overall functionality of the CBD. The inventory also identifies infrastructure related challenges, particularly those requiring coordination with state agencies, such as improvements along the M-18 corridor.

3.1 State Infrastructure

M-18, a State Highway owned by the State of Michigan, runs through the Central Business District, adjacent to downtown businesses. This can pose challenges for the city related to traffic and pedestrian crossings as the city does not have full control of this roadway and must coordinate with the State of Michigan for any changes.

3.2 Traffic Lights

The only traffic light in Beaverton is at the four-way intersection of Ross Street (M-18) and E Brown/W Brown Street.

3.3 Bridges

While there are no bridges directly in the Central Business District, two bridges adjacent to the CBD boundary serve the CBD.

- The first bridge serves north- and south-bound traffic on Ross Street (M-18) over Ross Lake. During warm months, this bridge is used by pedestrians crossing the lake from Ross Lake Park to downtown Beaverton. However, the bridge is not pedestrian friendly as the sidewalk on both sides is very thin.
- The second bridge serves East and Westbound traffic on Porter Street, where the Tobacco River meets Ross Lake.

3.4 Public Parking

Within the Central Business District there are four public parking lots and two zones of onstreet parking.

- Porter-Ross Lot located between Porter Street and East Brown Street, East of South Ross Street
- Trail Lot located Northeast of the intersection of South Ross Street and Porter Street
- Laundry Lot located at the intersection of West Brown Street and Pearson Street in the Northeast quadrant
- Old Bank Lot located at the intersection of West Brown Street and South Brown Street in the Southwest quadrant

- Pearson Street Parking located on the East and West sides of Pearson Street between W. Brown Street and Ross Street
- West Brown Street Parking located on the North and South sides of W. Brown Street between the Old Park and Ride driveway and Ross Street



Figure 17 - Public Parking Lots in the Central Business District

3.5 Intersections

- Ross (M-18) & Pearson/Porter A four-way intersection with stop signs Eastbound (Pearson) and Westbound (Porter) and three marked crosswalks
- Ross (M-18) & W Brown/E Brown A four-way intersection controlled by a traffic signal and four marked crosswalks fitted with pedestrian signals and pushbuttons, maintained by the Michigan Department of Transportation (MDOT)
- W Brown & Pearson A three-way intersection with one stop sign Southbound (Pearson) and three unmarked crosswalks

3.6 Buildings

• There are 23 businesses in the CBD in 18 parcels. As mentioned previously in Table 4, there are 9 retail businesses, 8 service businesses, 3 restaurants, 1 entertainment business, and 2 other types of businesses.

• There are currently 15 apartment units above businesses in the CBD (with around 12 units being currently occupied)

4. Public Parking Overview



Figure 18 - Public Parking Lots in the Central Business District

Curbside parking areas included on-street parking on West Brown Street and Pearson Street, while publicly owned off-street parking included the Laundry, Old Bank, Trail, and Porter-Ross Lots. Additionally, the Old Park & Ride Lot, which is currently managed by the city, is just outside of the CBD boundary; it is included in this visualization to provide a more comprehensive picture of parking conditions in the district.

5. Analysis

5.1 Parking Supply

Beaverton's public parking within the CBD is contained within four primary publicly owned lots and two on-street parking zones. The largest of these lots is the area the practicum team has code-named the Porter Ross lot, a complex of parking areas that are currently largely unimproved. However, the city has created a plan called Trail Head, Kayak Launch, & Parking Lot Improvements, which details the capacity, layout, and location of the future improved lots that will occupy that space. Occupancy and total capacity numbers for the Porter-Ross lot are based on the numbers provided in that plan. Visual surveys completed during the team's site visits determined total occupancy for the other lots and the on-street parking.

Parking Lot Counts										
Darcal Code Name	Wednesday Feb 4, 2025		Frida	Friday Feb 7, 2025		Saturday Mar 8, 2025		Total		
Parcer Coue Marile	10AM	12PM	2PM	10AM	12PM	2PM	10AM	12PM	2PM	Capacity
Porter-Ross Lot (A)	7	9	11	8	7	7	0	5	0	
Porter-Ross Lot (B)	0	0	0	0	0	0	4	4	4	
Porter-Ross Lot (C)	0	0	0	0	0	0	0	0	0	
Porter-Ross Lot (D)	0	0	0	0	0	0	0	0	0	128
Porter-Ross Lot (E)	16	16	17	14	15	15	6	7	5	
Porter-Ross Lot (F)	0	0	0	1	0	0	0	0	0	
Porter-Ross Lot (G)	1	1	1	0	2	2	1	2	2	
Trail Lot	0	0	0	0	0	0	0	0	0	8
Laundry Lot	2	1	3	0	2	3	0	0	1	4
Old Bank Lot	7	4	9	5	11	9	4	7	10	20
Pearson St	8	10	10	5	5	5	3	4	3	12
Brown St	6	17	9	6	10	10	4	14	14	31
Old Park&Ride	3	3	3	1	8	11	3	3	3	18

Table 5 – Parking Lot Counts | Three days of counts in the 221 city-owned parking lots.

Parking Lot Usage Rates										
Parcal Code Name	Wednesday Feb 5, 2025		Friday Feb 7, 2025		Saturday Mar 8, 2025			Total		
Parcel Coue Marile	10AM	12PM	2PM	10AM	12PM	2PM	10AM	12PM	2PM	Capacity
Porter-Ross Lot	18.75%	20.30%	22.60%	17.90%	18.75%	18.75%	8.59%	14.06%	8.59%	128
Trail Lot	0%	0%	0%	0%	0%	0%	0.0%	0%	0%	8
Laundry Lot	50%	25%	75%	0%	50%	75%	0.0%	0%	25%	4
Old Bank Lot	35%	20%	45%	25%	55%	45%	20.0%	35%	50%	20
Pearson St	66.7%	83.3%	83.3%	41.6%	41.6%	41.6%	25.0%	33%	25%	12
Brown St	19.3%	54.8%	29%	19.3%	32.2%	32.2%	12.9%	45%	45%	31
Old Park&Ride	16.6%	16.6%	16.6%	0.5%	44.4%	61.1%	16.7%	17%	17%	18

Table 6 – Parking Lot Usage Rates

5.2 Occupancy

Our data indicates that the average usage in the public parking lots is higher in the Old Bank and Laundry lots, which are comparatively much closer to the anchor commercial entities along West Brown Street than the Porter-Ross and Trail Lots. However, no single parking lot averaged more than 50% occupancy over the course of either of the data collection periods; the Laundry Lot, which averaged exactly 50% occupancy on Wednesday, February 4th, only has a total capacity of four, so the lot's occupancy statistics must be taken with a grain of salt. However, three of the lot's four available parking spaces were occupied at 2 pm on February 4th and February 6th, giving the Laundry Lot the distinction of being the most occupied off-street parking lot overall.

The Old Bank Lot, the largest of the lots directly adjacent to West Brown Street, also saw significant use. However, it only reached 50% capacity during one measurement period: 12 pm on Friday, February 7. These usage statistics and the low occupancy numbers for many of the other public lots (including the lack of a single car being measured in the trail lot during any of the data collection periods) indicate that public parking lots within Beaverton's CBD are being heavily underused.



Figures 19 (Left) - Laundry Lot taken by the Practicum Team during our first site visit that shows a vacant lot and in the left with the snow in the corner is a hatched area for no parking

Figure 20 (Right) – Laundry Lot taken by Practicum Team during our data collection, there were never more than 3 spaces being used, and shows the diagonal parking spaces available with faint lines



Figure 21 - Old Bank Lot as captured by the Practicum Team is being regularly parked at and notice on the right are indentations from cars hitting into the Hardware business with concrete curbs being covered by snow in the wintertime





Figures 22 & 23 - Porter-Ross Lot next to T&J Automotive, has cars that have been observed to be parked long-term which can be attributed to abandonment, waiting on parts, used for storage. This image was captured by the Practicum team on our first site visit in January.

The on-street public parking on West Brown Street and Pearson Street was more popular than the off-street parking. The Pearson Street parking was especially popular on Wednesday, February 5, 2025, with occupancy numbers well above two-thirds during all three data collection periods. However, significantly fewer spots are available along Pearson Street than along West Brown Street (12, compared to 31), so higher total occupancy statistics must be contextualized with that information.





Figures 24 & 25- West Brown Street observed on our site visit shows one side of diagonal parking and across the street the Beaverton Tavern the parallel parking spots

West Brown Street, the main commercial corridor for Beaverton, contains 31 free parallel and angled on-street parking spots owned and maintained by the city. The occupancy of these spots peaked above 50% at 12 pm on Wednesday, February 5, and did not pass 30% occupancy during any other collection period. Cumulatively, despite having higher occupancy rates than the off-street lots, Beaverton's on-street public parking is also underused.



Figure 26 - View of W Brown St Parking taken by Practicum Team shows the on-street parking at full capacity

Based on the occupancy data gathered, adequate parking in and around the West Brown Street corridor and throughout the Central Business District is available to accommodate the average demand in Beaverton. Additionally, more than 100 parking spaces were available at any given time, including at least a dozen available spots within the high-demand areas of the Laundry Lot, the Old Bank Lot, and the on-street parking spaces on Pearson Street and West Brown Street.

6. Parking Ordinance Overview

The purpose of parking requirements, as described in Article 06 of the City of Beaverton Zoning Ordinance, is to define regulations for various vehicle types in residential and non-residential zoning districts. The regulations are to ensure there is safe and adequate parking available near a place of interest and reasonable protection from adjacent land uses from dedicated parking places.

The zoning ordinance makes use of parking minimums. This means that in aggregate the capacity of dedicated parking spaces at minimum must reach the sum of spaces required from nearby land uses. Available dedicated parking must also be reflected upon a change in conditions, (ex. increase building size, number of employees).

Off-street parking with adequate access must be provided in all zoning districts that the time of erection or enlargement of any structure. Off-street parking is defined as a parking strip, bay, stall, garage, or combination thereof, located in the side or rear yards. Single- and two-family homes may have a dedicated parking area in the front but must be approved by the Planning Commission. Non-residential uses must have parking on the same lot or within 300 feet of the building, distance calculated from the nearest point to the building.

Collective parking involves the use of city-owned off-street parking spaces satisfying the requirements of two or more buildings or land uses. These spaces still require satisfying the collective sum of spaces for each use that uses said parking spaces. The total number of spaces in a collective space may be reduced should the Planning Commission determine that building or land use operating hours do not conflict. The collective parking range is 500 feet rather than typical off-street parking's range of 300 feet.

6.1 General Observations & Concerns

Off-street parking is supposed to have a curb or bumper rail adjacent to a public sidewalk or right-of-way. In the collection of parcels that we have designated "Porter-Ross," there is presently and absence of either a curb or bumper rail in the parcels dubbed "E" and "G."

Lighting installations used to illuminate off-street parking are to limit light to the parking area and to not bleed into adjacent land uses. Due to time constraints, the practicum team was unable to observe lighting luminosity in relation to off-street parking and other properties. Lighting is still important to consider during parking lot redevelopment, and potential infill development.

On-street parking is only referenced once throughout the entire zoning ordinance. It is only used in C-1 zoning districts and may be used to waive off-street parking requirements. Onstreet parking does not have a definition within the zoning ordinance unlike off-street parking spaces. Due to the presence of on-street parking along Brown Street and Pearson Avenue, a definition should be created.

It is unclear whether a business requires and has a dedicated off-site loading zone. Minimum loading zone width is to be 12ft by 50ft. Off-street loading activity cannot interfere with the public right of way or parking spaces. Loading areas must be well-defined and cannot be used to satisfy a land use's parking requirements. The number of loading spaces required begins with a gross area of 5,000 square feet. The planning commission may determine that a loading area is necessary for areas smaller than 5,000 square feet. An issue for new loading areas in the CBD is that there is little, if any, room to construct new ones without compromising parking spaces.

Most businesses in the CBD require some level of use of collective, public on- and off-street parking spaces. Overall, the practicum team estimates around 330 parking spaces would be required in the CBD for homes and businesses that cannot fulfil their parking requirements. At present, there are only around 221 parking spaces. This parking spaces figure is determined by using existing housing, industrial, commercial and office space both occupied and unoccupied. Gladwin County's GIS viewer was used as a tool to calculate building areas when required for parking space calculations. Moreover, this estimate lacks any approved reductions to parking requirements or other variances, besides the Beaverton GEM Theatre.

The quantity of required parking spaces does not reflect the practicum team's observed parking count volumes during site visits. Additionally, the parking requirements limit potential infill development.

6.2 Use Category Specific Issues

Table 7 refers to all land use categories found in the CBD with descriptions taken from Table 03-3: Table of Use Requirements from the City of Beaverton Zoning Ordinance. The table organizes land use categories by residential, institutional, commercial, and industrial uses. Also listed are definitions for each land use category, parking requirements, and other design standards.

Apartments above another principal use are only in the C1 zone, Downtown Commercial. These units require one unit of parking per dwelling. Currently, there is no dedicated long-term parking solution for these units.

The Beaverton GEM Theatre falls under the Movie theatres, cinemas, concert halls and playhouses category. Per the table of use requirements, the theatre requires one parking space for every four seats, and one space for every two workers. At the time of the theatre's renovation, a parking variance was permitted in which the theatre could use the city-owned car park in the area. Beaverton GEM Theatre does not own any parking spaces, and the acquisition of land to construct new parking spaces would be infeasible.

Downtown Coin Laundry falls under the laundromat use category in the table of use requirements. The parking requirements require one space for every two machines. As a result, the laundromat requires a staggering 22 parking spaces, per the zoning ordinance. Interestingly, if the laundromat were to use the dry cleaner land use category, parking spaces would instead be calculated for every 300 square feet. This would require the laundromat to only have four parking spaces, coincidentally equivalent to the number of parking spaces adjacent to it.

Retail use categories are very generalized in the zoning ordinance when considering parking requirements. All retail in the CBD falls under the 'retail business establishment up to 20,000 sq. ft.' use category. To provide more accurate requirements, the city can break down retail establishments into distinct types (ex. hardware store, clothing, etc.). This is already shown in the definition for retail businesses in the Table of Use Requirements. Different retail categories would require a different amount of parking. For example, nearby St. Louis, MI, requires five parking spaces per 1,000 square feet of usable floor area for a discount store versus one space for 500 feet of gross floor area of a building hardware and household equipment store.

In all, land uses that in the CBD that rely on public off-street parking are not compliant with the parking minimums outlined in the zoning ordinance. Despite this the city appears content with not constructing additional parking spaces. This is apparent in the text of the zoning ordinance which allows the planning commission to reduce the parking requirements within collective parking spaces. Moreover, the parking lot counts gathered from the practicum team reflect the underutilization of existing parking spaces. Lastly, the construction of new parking spaces in the CBD would require land acquisition or the construction of above or below-ground parking structures. Acquiring new land is a highly unlikely prospect whilst parking structures are not a cost-effective strategy for a city like Beaverton. This leads to a need to revise the parking requirements to help existing land uses to be compliant and to not rely on variances for future land use changes.

7. Business Owner Survey

On March 17, the practicum team sent out our business survey to our client and passed it on to all the property owners in the CBD. Given a week, the online survey was used to gauge the business owners' perceptions of parking demand and supply in the downtown area. There were 23 survey respondents, and the team was able to analyze responses from a diverse mix of business types - including retail, food, service, and personal services - to gain insights into commuting patterns, parking availability, and desired improvements in the commercial district.

Question 1



Figure 27. Type of Business

This range suggests a broad set of operating needs and customer bases, all of which influence parking expectations and preferences. Service and commercial businesses often offer the largest number of parking spaces. The other is a result of no responses.

Question 2: Do you lease or own your building?

15 respondents own, 5 lease, and 3 had no response, a majority own their property, meaning they may have more direct control over on-site parking and longer-term interests in downtown infrastructure.

Question 3



Figure 28. Number of employees

Most businesses in the downtown area are small enterprises, with nearly half of businesses that operate with fewer employees highlight the predominance of small-scale operations in the local business landscape of Beaverton.

Question 4: What is your primary mode of transportation?

An overwhelming of 22 respondents drive their personal vehicle, and only one respondent walks. This indicates an overwhelming reliance on private vehicles and the importance of parking among downtown employees.

Current Parking Usage

Question 5



Figure 29. Employee Parking

Approximately 12 of the respondents identified with parking at a public parking lot, 8 on-site private parking, 2 street parkers, and one business owner that specified that they park at the church parking lot.

Question 6



Figure 30. Convenience

These results reflect a strong reliance on accessible parking not only for employees but likely for customers as well, reinforcing the significant role that parking availability plays in supporting business activity in the downtown area.

Question 7



Figure 31. Ranking importance

"Location" and "Time restrictions" are the most critical factors for businesses when choosing a place to park, while EV charging infrastructure is currently not a major concern.

Question 8



Figure 32. Availability of parking

This clearly demonstrates the tightness of parking resources in the city center and highlights that optimizing parking wayfinding is one of the key directions for improvement in the business district. The ample amount of public parking should be highlighted for businesses, residents, and those traveling in the area.





Figure 33. Improvements

When asked what types of improvements businesses would like to see in the downtown area, respondents favored green spaces such as gardens, public seating, and gathering areas in Downtown Beaverton. Additionally, public parking was a recommendation from two respondents.

8. Strengths, Weaknesses, Opportunities, and Threats

The City of Beaverton commissioned this parking study to analyze what resources existed within the CBD in relation to public parking and what could be done to improve the management of those resources. To build on the analysis of current parking conditions above, the team has prepared the following analysis of the city's Strengths, Weaknesses, Opportunities, and Threats (SWOT) to further inform and shape the team's recommendations.

Strengths	Weaknesses
 Passionate and capable Development/DDA staff Engagement and communication between Development and Public Works Locally owned anchor institutions along West Brown Street 	 Inability to change MDOT-managed road Other public works needs with higher priorities than parking maintenance
Opportunities	Threats
 Parking plan for Porter-Ross Lot Potential redesign of West Brown Street on- street parking Redevelopment opportunities in surplus parking lots 	 Winter weather effects on parking availability Potential difficulties in acquiring financing for redevelopment

Table 7 – Strengths, Weaknesses, Opportunities, and Threat analysis relating to Central Business District parking.

9. Comparable Community Case Studies

9.1 Overview

To develop the methodology for the City of Beaverton's parking study, the practicum team reviewed the methodologies used by other similarly sized communities. Parking studies from Boyne City, Michigan; Portland, Michigan; and Winona Lake, Indiana, were reviewed to identify the strategies and implementation that were deemed most feasible.

The comparable city case studies were selected because of the wide variety of authoring bodies they represented, including a public body, a private firm, and a past practicum team; this variety of authors allowed the team to compare project methodology and editorial styles between the reports and incorporate unique features of each into this document. The Michiana Area Council of Governments (MACOG) undertook the Winona Lake, Indiana study, while Rich & Associates, a private parking consultant firm, completed Boyne City, Michigan's study. The Downtown Portland Parking and Accessibility Study was conducted by a prior MSU practicum team in 2009 and helped build the Beaverton practicum team's capacity to evaluate the feasibility of various methodologies.

9.2 Findings

Winona Lake, Indiana: Michiana Area Council of Governments

The Michiana Area Council of Governments conducted the Winona Lake, Indiana parking study in consultation with a steering committee consisting of city officials and representatives from anchor institutions like Grace College. The study focused on residential parking and included a survey of residents within their targeted zones to ask them about their parking habits and their access to on-street parking spaces.

In our study, we have partially adopted the Winona Lake study's survey model, including several adapted versions of the questions that the MACOG team employed to gather resident use and satisfaction data. We have also taken broader design inspiration from the graphical style of the study's maps, especially for the representation of the relative locations of on-street parking.

Boyne City, Michigan: Rich & Associates

Rich & Associates, a private firm specializing in consulting on parking projects, completed the parking study for Boyne City, Michigan, focusing on the areas with a concentration of commercial uses near the shore of Lake Charlevoix and along the Boyne River. The study had a broader scope than the Winona Lake Study, incorporating both on-street and off-street parking

and studying both capacity and occupancy at various times of day. Public input was solicited through a series of public meetings rather than a survey.

Our study adapts the Boyne City study's recommendation structure, including the inclusion of specific policy changes that can be made by Beaverton authorities and provisional timelines for implementing those policies. Our table of contents and overall report layout also draws significant inspiration from the outline created by Rich & Associates for the study.

Portland, Michigan: Michigan State University 2009 Practicum Team

In the Spring of 2009, a planning practicum team from Michigan State University's School of Planning, Design, and Construction (SPDC) completed a parking study for Portland, Michigan as their capstone academic project. They chronicled public and private parking, estimating demand and capacity through site-visit-based reports. The Portland team also calculated the required parking capacity in their downtown-based study area using both the city's zoning code and a parking algorithm generated by the Institute of Transportation Engineers.

Our practicum team used this study as a benchmark for what a group of practicum students could expect to accomplish within the course structure. We aim to improve and modernize the methodologies used by the Portland team, delivering on our mission to provide a workable, functional, and helpful parking study to the city of Beaverton for current and future use.

10. Recommendations

The City of Beaverton Public Parking Study is intended to help the City of Beaverton enhance the use of its public parking areas through cosmetic and safety-focused changes. While primarily aimed at improving existing parking spaces, the following recommendations also provide a plan to accommodate for future infill development and growth within the City of Beaverton.

To enhance safety, accessibility, and overall functionality within Beaverton's Central Business District the city could implement several short-term improvements within the next year. These targeted initiatives focus on cosmetic enhancements, safety measures, and policy adjustments to improve the pedestrian experience, optimize parking, and support local businesses. Key recommendations include refreshing pavement markings for crosswalks and parking spaces, installing protective bollards and public parking signage, and reassessing parking policies to better accommodate residents and visitors. By prioritizing these improvements, the city can create a more welcoming and efficient environment.

Building on the foundation of short-term improvements, our mid-term recommendations focus on optimizing parking efficiency and enhancing pedestrian safety. By reconfiguring existing parking layouts and improving pedestrian infrastructure, the city can create a more accessible and user-friendly environment for both residents and visitors. Key recommendations include reconfiguring the Laundry Lot to improve traffic flow and space utilization and setting back parking spaces in the Old Bank Lot to accommodate a dedicated pedestrian walkway. These changes will help enhance safety and walkability in the CBD.

To support Beaverton's future growth, our long-term improvements focus on strategic development, infrastructure upgrades, and enhanced pedestrian connectivity. These recommendations prioritize infill development in underutilized parking spaces, upgrades to off-street parking facilities, and the construction of a pedestrian bridge to improve accessibility. By repurposing select parking areas for mixed-use development and public gathering spaces, the city can create a more walkable and pedestrian friendly downtown. Additionally, paving the Porter-Ross parking lot will ensure long-term parking availability while accommodating future growth. Finally, the construction of the Trail of Two Cities pedestrian bridge will provide a critical non-motorized connection between Beaverton and Gladwin, further strengthening accessibility.

10.1 Short-term Recommendations – Less than 1 Year

Cosmetic Improvements – Repaint Crosswalks and Parking Spaces

Improving accessibility and enhancing pedestrian safety are crucial within the Central Business District. Additionally, enhancing parking organization and wayfinding should be clear priorities for the City of Beaverton and the Department of Public Works. As such, the city should refresh pavement markings for on-street parking spaces and off-street public lots while also repainting crosswalks on West Brown Street, Pearson Street, and Ross Street. Collaboration with the Michigan Department of Transportation may be necessary for crosswalks on M-18 to ensure compliance with state regulations and standards.

On average, parking lot striping costs between \$0.20 and \$1.00 per linear foot. Paint type, accessible spaces, and labor costs also impact the cost. For thermoplastic crosswalks in snowy areas with heavy snowplow usage the lifespan is lessened. According to the Federal Highway Administration thermoplastic is preferred due to the longevity of the material, however the initial cost and time requirements for installation are greater than typical paint. Also, snowplows are more likely to damage thermoplastic markings, which should be considered when choosing which material would be most effective for the City of Beaverton.

Crosswalk & Work Materials							
Material	Cost	Lifespan (Months)					
Paint	0.03-0.05/LF	9-36					
Expoxy Paint	0.20-0.30/LF	48					
Thermoplastic	0.19-0.26/LF	72					
Preformed Tape	1.50-2.65/LF	48-96					

Table 8 - Crosswalk visibility materials by cost and estimated lifespan | Federal Highway Administration

These improvements can be executed on an abbreviated time scale; ideally, the painting would be completed before the end of 2025. Primary responsibility for the project will fall to the Department of Public Works, who will collaborate with the Michigan Department of Transportation and the Department of Planning and Zoning to prioritize specific lots and crosswalks for repainting.



Figure 34. Map of with proposed repainting of lots and crosswalks for improved accessibility for pedestrians in the downtown area

Safety and Wayfinding – Install Protective Bollards and Public Parking Signage

Ease of use is crucial in enticing customers to visit the CBD and use public parking lots when they do so. However, Beaverton's city-owned parking lots lack clear signage indicating what parking spaces are available to use. Constructing this signage in the Laundry Lot, the Old Bank Lot, and the Porter-Ross Complex will help residents and visitors easily identify public parking locations. Additionally, Beaverton should also ensure that public parking does not interfere with local business operations. To prevent vehicles, especially those parked on the west side of the Old Bank Lot, from backing into buildings, the Department of Public Works should remove the existing concrete parking stops and install bollards along the side of the hardware store. Bollards provide a more effective and durable solution for protecting buildings and pedestrian walkways. To facilitate the adoption of later recommendations, the city should consider setting the bollards (and their attendant parking spaces) back from the building by several feet.

A simple, stainless-steel bollard with a threaded base can be purchased for around \$150, depending on the manufacturer. Installation costs vary based on the quantity of bollards being installed, whether they require a cover, and labor expenses. Michigan State Industries can produce parking signage that can typically cost between \$33 and \$40 per sign, depending on the size, plus the cost of labor and installation. However, costs may increase for customized signs.

These improvements should be implemented on an abbreviated time scale; ideally, by Fall 2025. Primary responsibility for the project will fall to the Department of Public Works, who will need to purchase and install the bollards as well as collaborate with a signage producer, such as the Michigan Department of Transportation, to design and produce public parking signs.





Figures 35 (Left) and 36 (Right) - Representations of bollards placed along the side of a building and an example of a public parking lot sign

Parking Policy Reform – Reevaluate Overnight and Two-Hour Parking Restrictions

Adjusting city policies regarding public parking in the CBD will lift burdens for consumers and employees. Beaverton should include flexibility in its ordinance banning on-street parking between 2:00 a.m. and 6:00 a.m. by applying it seasonally: enforce the ordinance in the winter, easing the Department of Public Works' snow removal efforts, but remove it in the summer, when there is less maintenance work that needs to be done before the business day begins. Additionally, Beaverton should assess the necessity of the existing two-hour parking limit in the Old Bank Lot and consider its removal. Removing the restriction will enhance parking accessibility for visitors and local businesses while reducing the need for enforcement.

These reforms can be implemented quickly, ideally, by the end of 2025. Primary responsibility for the project will fall to the Planning and Zoning Department, who will need to propose the alterations to the City Council, Planning Commission, and the Downtown Development Authority.



Figure 37. Waterbury, Vermont initiating their Winter Overnight Parking Ban Parking Ban starting Nov 15 for their snow season allowing their Public Works Department to clear the streets

<u>10.2 Mid-term Recommendations – 1-3 Years</u>

Parking Efficiency - Optimize Layout and Enhance Vehicular Access

To maximize space usage and improve traffic flow, the city should redesign the layout of the Laundry Lot. Currently, the lot has a narrow, one-way aisle and underutilized space. By replacing diagonal parking spaces with perpendicular spaces, the lot would have a more efficient configuration, improving circulation while maintaining existing access for drivers using it to access the Central Business District.

The reconfiguration would not reduce the capacity of the lot, and the layout would increase the ability of through traffic to access the Lot, the laundromat, and the surrounding streets and alleyways. Additionally, the lot could be expanded to five perpendicular spaces if the fence line along the western side of the lot was extended to the existing alleyway along the north side of the lot. The current zoning ordinance requires one space per two machines.



Figure 38 – The current layout of the Laundry Lot at the corner of Pearson Street and West Brown Street.



Figure 39 – The recommended layout of the Laundry Lot, including perpendicular parking and more efficient use of space

This recommendation builds on previous recommendations concerning cosmetic improvements and repainting and, as such, shares a responsible party. Beaverton's Department of Public Works should take the lead on restriping and reformulating the Laundry Lot, including clear demarcation between parking spaces and the driveways on either side of the lot. The cost per space should reflect similar figures to the original cosmetic recommendations, albeit on a much smaller scale.

Pedestrian Protection - Set Back Parking Spaces and Install Walkway

This recommendation builds on the Safety and Wayfinding short-term recommendation, which calls for replacing concrete parking stops with bollards along the western boundary of the Old Bank Lot. This mid-term recommendation would involve setting back the existing parking spaces along the hardware store to create space for a dedicated sidewalk or pedestrian walkway adjacent to the building. Adjusting the parking spaces in this way would further enhance safety, reduce conflicts, and space overlap between vehicles and pedestrians, and provide a more defined walking path to ease pedestrian access from areas south of the Central Business District to West Brown Street. Installing bollards would further protect pedestrians and the building from vehicle damage, as recommended previously.

This recommendation is in the mid-term section as it requires the implementation of earlier recommendations, particularly those concerning Safety and Wayfinding. Forethought when constructing those improvements should allow for bollard placement that already partially sets back parking spaces, easing the implementation of this recommendation.

Assuming the implementation of previous recommendations occurs, there should be no need for the removal and reinstallation of bollards to facilitate their adoption. The cost for this activity would depend on sidewalk installation, which the practicum team estimates between \$5,000-\$10,000.



Figure 40 – A pedestrian walkway facilitating access to storefronts that is protected by bollards in front of set-back parking spaces

<u>10.3 Long-term Recommendations – 3-5 Years</u>

Zoning Code Reform – Reducing Parking Minimums and Integrating Best Practices

Beaverton's parking ordinances require substantial amounts of off-street, dedicated parking for each type of business within the Central Business District. As established in this report, the present parking supply can only accommodate two-thirds of what the law establishes as the minimum capacity. However, as seen in the practicum team's analysis, this existing parking supply is chronically underutilized by automobiles. Despite falling more than 100 spaces short of its own legal minimums, Beaverton's CBD has more than enough parking to handle observed demand. Therefore, it is the code itself that should change.

In the practicum team's occupancy study, the area that saw the most use and the highest turnover was on-street parking, especially on West Brown Street. The spaces there, most of which are directly adjacent to the businesses downtown, are crucial to this report's understanding of public parking usage in Beaverton's CBD. However, the city's ordinance has no set definition of on-street parking and its uses. In fact, there is only a single reference to the fact that on-street parking can be substituted for off-street parking where required off-street lots cannot be constructed. This is a significant oversight, and one that should be corrected through a change in the code.

Many of the businesses along the West Brown Street and Ross Street corridors are subject to parking requirements that would be difficult to meet under the current zoning code. Institutions such as second-hand retail, restaurants, and hardware stores are all subject to 'space-per-square-foot' style rules, which ignore occupancy, location, and patronage data in favor of pure area calculation.

The practicum team recommends creating a parking ordinance district that overlaps with the Central Business District, waiving many of these requirements. This will not only ease potential future legal stress on existing businesses should they decide to remodel or expand; it will also enable the construction of mixed-use infill development that the community's business leaders desire.

Development and Beautification – Pursue Infill Opportunities on Underutilized Space

As measured in the practicum team's occupancy survey, significant portions of the available parking space in Beaverton's Central Business District are chronically underutilized. As such, exploring alternative uses and infill development on prime locations currently occupied by public parking is our flagship long-term recommendation. This development, regardless of form, should take place along Beaverton's primary commercial and business corridors of West Brown Street and Ross Street.

The responses elicited by the practicum team's survey demonstrated that many landowners and business operators within the Central Business District favored the development of public gathering areas and increased commercial variety closer to the city's core. To accomplish this goal, the redevelopment should incorporate both a public plaza space along the sidewalk, fostering community gatherings and leisure activities, as well as a mixed-use commercial and residential development adjacent to both vehicular and pedestrian access points.

This development's exact nature should be informed by a future resident engagement process, soliciting more detailed opinions from Beaverton's business community and wider resident surveys, listening sessions, and public comment periods. Location-wise, the practicum team has identified the lot on the north side of the building at 100 Ross Street as a prime candidate for redevelopment because of its proximity to the Ross Street/West Brown Street Intersection and its adjacency to the future Porter-Ross parking lot complex.



Figure 41 – Current land uses on the site north of 100 Ross Street



Figure 42 – Proposed land use of the site north of 100 Ross Street

Upgrading Off-Street Parking - Reformat, Pave, and Paint the Porter-Ross Lots

The Porter-Ross parking lot complex presents a significant opportunity to increase the convenience of parking at businesses located on the east side of Ross Street while also making space for infill development. This space could be developed to capitalize on its nearness to the commercial businesses within downtown Beaverton. Additionally, creating significant amounts of off-street parking behind businesses increases pedestrian accessibility and overall commercial character.

Paving and painting the lots will ensure access to an abundance of all-weather parking spaces near these businesses. Pursuing infill development within the Porter-Ross complex will also require additional parking for proposed businesses and potential apartment units. parking spaces will ensure that those lots are available once the development occurs.

Currently, businesses adjacent to the presently undeveloped Porter-Ross complex employ various spaces for automotive storage, maintenance, and repair. To respect these uses, these businesses and the city should explore partnerships for parking occupancy, including dedicated leasing of spaces or the purchase of some of the complex to allow the automotive businesses to make use of their own private parking.

The map on the next page demonstrates Beaverton's existing concept for the layout and location of new parking spaces within the existing Porter-Ross complex. Adopting this plan, with some allowances for potential infill development near the 100 Ross Street address, will go a long way towards ensuring continued public parking access for the city's residents.



Figure 43- The Porter-Ross Complex Development Plan, via the City of Beaverton

Pedestrian Connectivity to the CBD - Construct Trail of Two Cities Pedestrian Bridge

As seen in Figure 45 on the previous page, the plan for the development of the Porter-Ross lot also includes the construction of a boardwalk between the Trail Lot and the sidewalk along Porter Street across the lake. The construction of this boardwalk would ease the movement of those walking or biking to the Central Business District from residential areas northeast of downtown, as well as provide the final piece of connectivity to the Trail of Two Cities, linking the commercial cores of Beaverton and Gladwin.

Pedestrian accessibility is crucial to fostering the patronage of small businesses and the success of Beaverton's commercial area, especially during warmer months. Existing walkways across Ross Lake are insufficient to allow for safe passage of those not using automobiles, and implementing a separate boardwalk that is fully disconnected from vehicular traffic will go a long way towards prioritizing comfort and ease of use.

Boardwalk construction is expensive (the practicum team estimates a figure around \$200,000), and as such the city would need to seek outside funding for infrastructure from the State of Michigan and the federal Department of Transportation. Ideally, the trail will be connected over a finished boardwalk by the summer of 2030, assuming funding can be found and relationships with contractors are pursued.

11. Conclusion

Michigan State University's Beaverton practicum team focused on the reevaluation of the public parking infrastructure in the city's Central Business District. The team spoke to city staff from the Downtown Development Authority and the Department of Public Works and identified concerns about the potential for chronic underutilization of the provided on- and off-street parking. Additionally, infrastructural issues relating to private property damage and pedestrian safety were brought forth. The team was asked to evaluate potential solutions to these issues and suggested alternative land uses that would benefit the community.

The practicum team engaged in a prolonged data-gathering process to ascertain the current infrastructural conditions present in Beaverton's Central Business District and to study the occupancy of the district's on-street and off-street public parking zones. The occupancy data, gathered across three separate times on each of the three study days, confirmed the concerns the city staff raised. No public parking areas averaged more than 50% occupancy across the three study periods in February and March of 2025.

To effectively recommend solutions to the issues identified during data collection, the practicum team consulted a variety of sources. Besides the raw occupancy data, the team also incorporated lessons learned from parking-related case studies conducted in other rural Midwestern communities, surveyed business owners and operators in the Central Business District, and reviewed the parking requirements laid out in Beaverton's zoning ordinance. The recommendations contained in this report represent the sum of the knowledge gained from these sources and the application of that knowledge towards the identified issues.

This report's recommendations promote smarter, safer, and simpler use of Beaverton's on- and off-street public parking spaces, easing and accommodating a wider array of resident and visitor experiences in the Central Business District. They address staff concerns about use deficiencies, property damage, and pedestrian safety, and incorporate both primary data gathered by the practicum team and reference practices from case studies across the country. Most importantly, the recommendations incorporate community feedback from business owners, a group identified as a crucial stakeholder within the city's downtown area.

Reconstituting the structure of Beaverton's public parking will promote efficiency, accessibility, and safety. In infrastructure, policy, and design, positive change will improve Beaverton's quality of life and address outstanding issues in the Central Business District. This report creates the foundation for future growth in the heart of the city; given time, it will blossom.

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Appendix A

City of Beaverton Zoning Ordinance | Table of Use Requirements | Language of parking requirements for land use types in Central Business District

	City of Beaverton Zoning Ordinance Table of Use Requirements							
Uses by Category	Definitions	Parking Requirements	Design Standards					
Residential Uses								
Apartments above	One or more apartments on the second	One (1) per						
another principal	floor or higher located above a non-	dwelling unit						
use	residential use on the ground floor							
	A building containing two (2) separate	Two (2) spaces per						
	dwelling units adjacent side by side or	dwelling unit						
Two-family	stacked and designed for residential use							
dwelling	and conforming in all other respects to the							
	standards set forth in the definition							
	"dwelling unit"							
Institutional Uses								
Public	Buildings and sites under the control of a	One (1) per three						
governmental	local, state or federal government or	(3) persons, or Fire						
administrative	agency used primarily for offices or as	code capacity						
facilities	public meeting facilities							
Industrial Uses	· · · · · · ·							
Warehousing and	A use engaged in storage, wholesale, and	One (1) space per						
distribution	distribution of manufactured products,	employee						
establishment	supplies, and equipment							
Commercial Uses	Duainaga inughing that gan and you air	T						
	Business involving the general repair,	two (2) spaces per						
		stall plus one (1)						
Automobile body	venicies of engines, coulsion repair, such							
shops	as body, frame, of fender straightening	Sales alea						
	rustproofing: refinishing or steam							
	cleaning							
	Business involving the general repair.	Two (2) spaces per						
	rebuilding, or reconditioning of motor	stall plus one (1)						
	vehicles or engines: but not including	per 200 sg. ft. of						
Automobile repair	collision repair, such as body, frame, or	sales area						
	fender straightening and repair; overall							
	painting and vehicle rustproofing;							
	refinishing or steam cleaning.							
	A building or structure designed or used	Two (2) spaces per	1) Gasoline pumps shall be set back a					
	for the retail sale of fuel lubricants, air,	stall plus one (1)	minimum of 25 feet from any street or right-					
	water and other operating commodities	per employee	of-way line.					
	for motor vehicles, aircraft or boats, and		2) All lubrication equipment, motor vehicle					
	convenience commercial goods and fast		washing equipment, hydraulic hoists, and					
	food for the customers. It also includes		pits shall be enclosed within a building.					
	facilities for the storage, minor repair, or		3) All outside storage areas for trash, used					
Automobile	servicing of vehicles, but not including		tires, auto parts and similar items shall be					
service station	bumping, painting, refinishing, major		enclosed by a 6-foot screening fence and					
	repairs and overhauling, steam cleaning,		shall comply with requirements for					
	or rustproofing, The term covers such uses		location of accessory buildings.					
	as quick oil change facilities, tire repair							
	and replacement and muffler/brake							
	replacement facilities provided no major							
	repairs as described above are							
	undertaken	<u> </u>	<u> </u> הו					

	An establishment where the principal	One (1) space per	
Bank and similar	business is the receipt, disbursement, or	100 square feet	
financial	exchange of funds and currencies.		
institutions	Examples include banks, savings and		
	loans, and credit unions.		
	Any restaurant, bank, or business with an	N/A	1) The main and accessory buildings shall
	auto service window.		be set back a minimum of 40 feet from any
Drive thru			adjacent right-of-way line or residential
octablichmont			property line.
establishinent			2) Six (6) stacking spaces per window, may
			be reduced by planning commission
			during site plan review based on use.
	A facility where patrons wash, dry, or dry	One (1) space per	
Laundromat	clean clothing or other fabrics in machines	two (2) machines	
	operated by the patron.		
Movie theatres	An open, partially enclosed, or fully	One (1) space per	A dedicated pick-up and drop off zone
nome meanes,	enclosed facility used or intended to be	four (4) seats, plus	shall be provided which shall not interfere
balls and	used primarily for entertainment events,	one (1) space for	with on-site circulation, and shall provide
naus anu	expositions, and other public gatherings.	each two (2)	immediate, barrier-free adjacent access
playhouses		employees	to the theater building.
	Professional office: The office of a	One (1) space per	
	professional person such as a doctor,	200 square feet	
Offices	dentist, engineer, architect, attorney,		
	insurance or real estate agent, and the like		
	A structure in which the principal use is	One (1) space for	
Restaurant	the preparation and sale of food and	each 100 sq. ft.	
	beverages.		
	An establishment which supplies	One (1) space per	
	commodities on the premises that does	200 sq. ft.	
Retail husiness	not exceed 20,000 sq. ft. in gross floor		
establishment un	area Examples include groceries, drugs,		
to 20,000 sq. ft	liquor, clothing, dry goods, notions, curios,		
to 20,000 sq. ft.	pet, jewelry, sporting goods, or hardware		
	stores, bakeries, florists, and music		
	shops.		
Retail sales of	An establishment which supplies pre-	One (1) space per	
second-hand	owned commodities on the premises	200 sq. ft.	
merchandise	Examples include second-hand stores,		
	consignment shops, and pawn shops.		