Active Transportation Return on Investment Study

Final Draft Technical Report

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Prepared for: Portland Metro

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1 Executive Summary

1.1 Project overview

The Active Transportation Return on Investment (ATROI) study aims to provide a quantitative and qualitative assessment of the benefits of active transportation infrastructure in the Portland, OR region. The study uses a selection of AT projects constructed in the region between 2001 and 2017 to evaluate impacts, with a focus on economic impacts, broadly defined. Two types of projects are included. 2040 catalyst projects retrofitted busy commercial streets with pedestrian friendly treatments aimed at catalyzing economic development. Longer gap-filling projects completed key routes within the regional bicycling network with the potential to increase the bicycle mode share.

The scope of the project has three main tasks.

1. A **technical analysis of 2040 catalyst projects** provided quantitative estimates the economic impacts of the catalyst projects, including such things as jobs, sales, and property values. This report focuses on this task, conducted by Transportation Research and Education Center (TREC) at Portland State University (PSU).
2. A **technical analysis of longer gap-filling bikeways** provided quantitative estimates the benefits of these projects to users, including travel time savings and health benefits. This task was conducted by staff at Metro and results are not included here.
3. A **qualitative assessment** aimed to supplement the quantitative analysis of Tasks 1 and 2 with qualitative information that helps tell the story of each project. The results of this task, conducted by TREC at PSU, are in a separate report.

There is a growing body of research examining the economic benefits of active transportation (AT) infrastructure. One thread of that research focuses on the effects of such infrastructure on business activity. These potential benefits stem from customers who arrive by active transportation modes and those that may arrive by another mode but continue to walk in the area and patronize multiple businesses. A second body of research focuses on the impact that such infrastructure has on property values. These impacts may be positive, resulting from the improved accessibility, aesthetics, and/or related features of the infrastructure, or negative, linked to real or perceived negative aspects of such infrastructure. Other economic benefits of active transportation that have been documented include tourism and the equipment and apparel industry related to bicycling and walking.

Task 1 of this study (and this executive summary) focused on the first set of potential economic benefits – impacts on business activity near the improvements. Given the types of improvements and the existing research, our analysis focuses on the types of business activity we expect to be most affected by improved access for people on foot and bicycle: retail and food (e.g., restaurants, cafes, bars). We used three different analytical methods, aggregated trend, difference-in-difference (DID), and interrupted time series (ITS), to examine the business activity outcomes (e.g., employment, wages and sales revenue) in these improved project corridors.

1.2 Catalyst projects

The catalyst projects included in this study are described briefly in Table 1. Nearly all of the projects focus primarily on pedestrian improvements, including elements such as improved sidewalks (new,

widened, etc.), safer crossings (signals, rectangular rapid flash beacons, curb extensions, crosswalks, signage, ramps, etc.), improved bus stops, landscaping (trees, bioswales for stormwater management, etc.), lighting, and public art. A few projects also included new or restriped bike lanes, sharrows, and/or bike parking.

Table 1: Overview of Catalyst Projects

Project label	Area	Lead Agency	Year
Clackamas County			
Milwaukie: McLoughlin Blvd.	SE McLoughlin Blvd, from Harrison St - Kronberg Park (~0.4 miles)	City of Milwaukie	2006
Milwaukie: Town Center	Milwaukie TC: LRT stop to Main St	City of Milwaukie/TriMet	2016
Oregon City: McLoughlin Blvd.	SE McLoughlin Blvd from the Hwy. 43 bridge north to Dunes Dr. (~0.9 miles)	City of Oregon City	2009
Multnomah County			
Gresham: Hood Ave.	NE Hood Ave, from SE Division to SE Powell (~0.5 miles)	City of Gresham	2013
Portland: Burnside	E Burnside, from NE 3rd Ave to NE 14th Ave	City of Portland	2010
Portland: Division St.	SE Division St., from SE 6th to SE 39th (~1.9 miles)	City of Portland	2014
Portland: Foster-Woodstock	SE Foster and SE Woodstock, from SE 87th to SE 101st (~0.8 miles)	City of Portland	2013
Portland: St John's	St John's Town Center	City of Portland	2012
Washington County			
Beaverton: SW Rose Biggi	SW Rose Biggi: Hall to Crescent	City of Beaverton	2015
Cornelius: Baseline	Cornelius: Baseline and North Adair St., Phase I and II	City of Cornelius	2016
Forest Grove: Town Center	Forest Grove Town Center, along Pacific Ave. and 19th Ave.	City of Forest Grove	2010
Tigard: Main St.	Main Street Green Street Phase I, Rail Corridor to 99W (~0.3 miles)	City of Tigard	2014

1.3 Methods and Data

Building on the experience from our previous study (Liu et al. 2019), we used three different analytical methods: **aggregated trend**, **difference-in-difference (DID)**, and **interrupted time series (ITS)** to examine how business activities had changed over time. Aggregated trend analysis and DID analysis both utilize control corridors to understand the impacts on the treatment corridor, while ITS is an econometric technique that analyzes multiple time points on the improved corridor only. Our previous study found that the ITS analysis provides more robust results than the other two methods, since it is a method that does not rely on choosing or finding appropriate control corridors. However, it requires more data points post-intervention to achieve meaningful and valid impact estimations.

For our analysis, we examine the changes in three business activity indicators (employment, wages and sales revenue) using three data sources: **Longitudinal Employer-Household Dynamics (LEHD)** employment data, **Quarterly Census of Employment and Wages (QCEW)** employment and wages data, and **National Establishment Time-Series (NETS)** employment and sales data. By utilizing various business activity indicators, we can comprehensively think about how the characteristics of the businesses have changed within the same industry category or between different industry categories. All three data sources were available between 2002 and 2017 (2018 QCEW data was also available), with varying degrees of geographic and industry sector resolution.

1.3.1 Aggregated trend analysis

Aggregated trend analysis aims to compare the trends of indicators of treatment and comparators such as control corridors, cities, or neighborhoods over time. Its advantage is that it is a visual and intuitive approach that displays the potential outcomes of improvements; however, it is exploratory and does not include statistical testing, it is difficult to reach definitive conclusions with this analysis. To identify the trends in growth rate and actual changes in economic indicators of treatment and comparators together, we used the actual values and indexed values to the three years pre-construction.

To use aggregated trend analysis in this project, we used LEHD and NETS datasets from 2002 to 2017, and QCEW dataset from 2003 to 2018 for the retail and food and accommodation sectors. In terms of the business indicators, we used employment from the LEHD datasets, employment, wages, number of establishments, and employment per establishment from the QCEW datasets, and employment, sales, number of establishments, and employment per establishment from the NETS datasets. For each business indicator per dataset, we made the trend plots for retail and food and accommodation sectors. Furthermore, to grasp the growth rates of business indicators, we calculated the indexed values based on a pre-construction baseline. More specifically, we averaged the values of business indicators three years before construction, divided all business indicators by those values and multiplied by 100 to use relative business activities compared to three years before construction.

1.3.2 Difference-in-difference (DID) analysis

DID analysis is a method to test the effects of the intervention by comparing the difference before and after the intervention of the treatment and that of the control group. It assumes that the trends of treatment and control groups will be the same over time if there is no intervention. In other words, DID can eliminate the impacts of confounding factors that can affect outcome even if it does not include control variables. This is because these impacts will apply commonly to both treatment and control groups (Lee, 2016). To do this, DID analysis uses a regression model that includes three variables: the difference in level between treatment and control group (*Type*), the difference in the level of control group between pre- and post-intervention (*Prepost*), and the interaction term of two variables (*Type:Prepost*). The DID estimation equation is expressed as follows:

$$Business\ Indicator_{it} = \beta_0 + \beta_1 Type_{it} + \beta_2 Prepost_{it} + \beta_3 Type_{it} Prepost_{it} + \varepsilon_{it}$$

In the stylized representation of DID analysis (Figure 1), we observe that the slope of the treatment corridor became steeper than before after the improvement. Within the DID analysis, we can determine the causal impact of the improvement using the coefficient estimate of *Type:Prepost*, which represents the difference in the level changes of the treatment and the control corridors before and after the intervention.

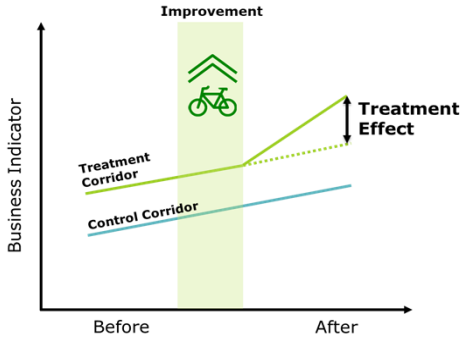

Figure 1: A stylized representation of DID analysis

To apply DID analysis, we used LEHD and NETS datasets from 2002 to 2017, and QCEW dataset from 2003 to 2018 for the retail and food and accommodation sectors. DID analysis was conducted separately for the two industry sectors, using LEHD employment data, QCEW employment and wage data and NETS employment and sales revenue data, respectively.

Because it is necessary to identify a control corridor for the DID approach, we applied this approach to the five improved corridors where we were able to identify appropriate control corridors: Burnside Street (Portland), Foster-Woodstock (Portland), Main Street (Tigard), McLoughlin Boulevard (Milwaukie), and McLoughlin Boulevard (Oregon City).

1.3.3 Interrupted time series (ITS) analysis

ITS analysis is one type of quasi-experimental technique that analyzes multiple time points on the treatment corridor itself, and aims to evaluate the impacts of an intervention (or improvement) on the time series indicators (McDowall, 1980). More specifically, ITS analysis employs a regression model including three time-based variables, the slope of the pre-intervention (*ts_year*), the change in level at the point of the intervention (*Prepost*), and the change in slope between pre- and post-intervention (*ts_year:Prepost*) with the assumptions that pre-intervention trend would continue into the future had there not been an intervention and that there are no other external factors impacting the trends (Kontopantelis et al., 2015). The estimation equation of the interrupted time-series analysis is as follows:

$$Business\ Indicator_t = \beta_0 + \beta_1 ts\_year_t + \beta_2 Prepost_t + \beta_3 ts\_year_t : Prepost_t + \varepsilon_t$$

As illustrated in the stylized representation of ITS analysis (Figure 2), if the **level** and the **slope** of the economic indicator increased after the improvement, both *Prepost* and *ts_year:Prepost* estimated coefficients from ITS should be positive and statistically significant. This type of result would indicate a

positive causal impact of the active transportation investment on the business indicator along the improved corridor.

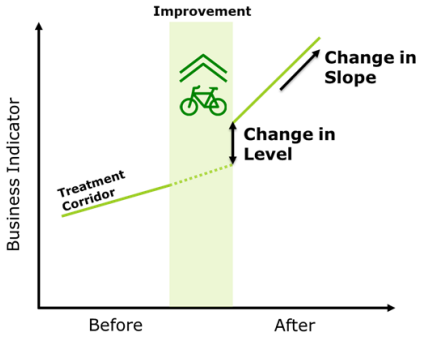

Figure 2 - A stylized representation of ITS analysis

To apply ITS analysis to this project, we employed LEHD and NETS datasets from 2002 to 2017, and QCEW dataset from 2003 to 2018 for the retail and food and accommodation sectors. Since control corridors are not required for ITS analysis, all improved corridors were analyzed using this method. ITS analysis was conducted separately for the two industry sectors (retail and food and accommodations), using LEHD employment data, QCEW employment and wage data and NETS employment and sales revenue data, respectively.

1.4 Findings

A summary of the findings of the Task 1 analysis of impacts on business activity for each catalyst project appears in Table 2 and Table 3. Overall, we found positive effects for the retail and/or food sectors in nine of the 12 study areas. We found positive effects for projects located in different parts of the region, i.e., the potential economic benefits are not just in more urban parts of the city of Portland. We also found positive effects for different scales of projects.

Table 2: Business activity outcome summary

Project label	Business Activity Outcomes
Clackamas County	
Milwaukie: McLoughlin Blvd. (2006)	It was **difficult to draw clear conclusions** about the effects of the improvements on the business activities because of the Great Recession immediately after construction and the limited amount of data available before construction. Nevertheless, we found some positive impacts in the food sector as a result of larger increases (or smaller decreases) in business activities compared to the trends of comparators immediately after construction. These trends have persisted since 2010. It also appears that the corridor may have performed better compared to McLoughlin Blvd. in Gladstone, but worse than McLoughlin Blvd. in Oregon City. The mixed findings are not surprising considering the timing of the project, the limited scope of the improvements made, the lack of commercial land uses on one side of the street, and the type of roadway (four-lane major arterial).

Project label	Business Activity Outcomes
Milwaukie: Town Center (2016)	There are **no significant results** from the econometric analyses, though we see some **positive impacts** of the improvements in the food sector based on the trend analysis. Since this area was improved relatively recently (2015), it would be useful to **collect more years of data** to identify the long-term effects of the improvements. This is particularly true given the new mixed-used development in the area.
Oregon City: McLoughlin Blvd. (2009)	We see **positive impacts** of the improvements of McLoughlin Blvd in Oregon City on the business activities in the retail sector using all three methods and data sources. The findings for the food and accommodations sector are **mixed**, with **negative effects** on employment and sales using one data source and **positive effects** on wages with another data source.
Multnomah County	
Gresham: Hood Ave. (2013)	We see some **positive changes** associated with the improvements, particularly **positive wage growth** in both retail and food sectors and some positive growth in employment, though the findings are not consistent between data sources. This may be due to the relatively small number of establishments in the study area and differences in which establishments were included in each data source.
Portland: Burnside (2010)	We found many **positive effects** in the retail sector. The findings in the food and accommodations sector were **very mixed**, with negative, positive, and neutral findings. Some of the negative findings may reveal sectoral differences between the control corridor (SE Morrison) and E Burnside. The most positive findings for the food sector were in sales, while the analysis of employment was neutral or negative.
Portland: Division St. (2014)	We found significant **positive effects** in the food and accommodations sector. The retail sector on the Division Street corridor had remained steady for the past ten years, while the food and accommodations sector had grown steadily. The ITS analyses confirmed the **positive trends** observed in the QCEW food employment and wages. While the ITS analyses of the NETS food sales and employment data revealed **no significant impacts**, we **recommend further analysis** when more years of data become available.
Portland: Foster-Woodstock (2013)	Our analyses showed **mixed effects** in the retail sector and some **negative effects** in the food and accommodations sector. In particular, the aggregated trend analysis and ITS analysis of the QCEW retail employment revealed negative impacts after the 2013 improvements, but the DID analysis of NETS retail employment and sales showed that they fared better than its control corridor. It is important to note that the Foster-Woodstock corridor contains relatively fewer retail and food and accommodations establishments compared to many of the other corridors being analyzed. The effects of individual store closings, for reasons that may or may not have been related to the corridor improvement, may have outsized effects on the analysis.
Portland: St John's (2012)	Our analysis revealed **positive effects** associated with the improvements, particularly in the retail sector. The NETS data of the retail sector did not show similar results, possibly because the loss of one automotive dealer, a larger employer with around 50 employees, that may have driven some of the outcomes. Overall, both retail and food and accommodations sectors appear to be growing at a steady pace or maintaining a steady level of activity similar to its comparators after the 2012 improvements, with the exception of food industry wages after 2014.

Project label	Business Activity Outcomes
Washington County	
Beaverton: SW Rose Biggi (2015)	We see some **positive trends** associated with the improvements in the retail sector. Because the improvements on SW Rose Biggi Avenue in Beaverton were constructed relatively recently (2015), **more years of data** may be necessary to confirm the long term effects of the improvements on businesses.
Cornelius: Baseline (2016)	We found **negative** or **no significant impacts** of the improvements on the retail sector and **some positive impacts** on the food sector. The decline in retail activity in the project area started before 2010 and appears to have continued. These results may be indicative of some sectoral shift from retail to food service and other industries along this corridor. Since the project is relatively new (2016), **more years of data** may be necessary to reveal long term effects.
Forest Grove: Town Center (2010)	We found **strong positive and significant impacts** of the pedestrian improvements to food sector employment and wages, and **smaller positive and significant impacts** on retail sector employment and wages, and food sector sales.
Tigard: Main St. (2014)	Both the retail and food industries along the Main Street corridor in Tigard consistently **mirrored the trends** in the control corridor and the City of Tigard. The analyses of QCEW data showed **positive trends** in retail employment and **positive statistically significant impacts** in food employment, but these effects were not found in other data sources.

The text in the Table 3 simplifies the results for all outcomes (employment, wages, and sales), data sources, and methods of analysis. With the mix of results and types of improvements, it is difficult to identify strong patterns in the results, though there is one hint of a pattern. Four of the projects were on major, multi-lane, higher speed arterials. The negative results were two such cases (SE Foster/Woodstock in Portland and E Baseline in Cornelius) and all but one of the "mixed effects" (which include some negative findings) were on such streets (McLoughlin Boulevard in Milwaukie and Oregon City and SE Foster/Woodstock in Portland). The scale and context of these streets as major thoroughfares makes increasing pedestrian-oriented business challenging. However, the improvements likely have safety and other benefits. For example, the improvements along McLoughlin Boulevard in both Milwaukie and Oregon City allow people to walk more safely between riverfront trails and the historic downtowns.

Table 3: Summary of business impacts

Study area	Retail	Food
Milwaukie: McLoughlin Blvd. (2006)	Mixed	Mixed
Milwaukie: Town Center (2016)	No effects	Some positive
Oregon City: McLoughlin Blvd. (2009)	Mainly positive	Mixed
Gresham: NE Hood Ave. (2013)	Some positive	Some positive
Portland: E Burnside (2010)	Mainly positive	Mixed
Portland: SE Division St. (2014)	Some positive	Mainly positive
Portland: SE Foster Rd.-Woodstock Blvd. (2013)	Mixed	Some negative
Portland: St John's (2012)	Some positive	Mainly no effect
Beaverton: SW Rose Biggi (2015)	Some positive	Mainly no effect
Cornelius: E Baseline (2016)	Some negative	Mainly positive
Forest Grove: Town Center (2010)	Some positive	Mainly positive
Tigard: Main St. (2014)	Mainly no effect	Mainly no effect

Our Task 1 analysis also looked at the race and ethnicity of employees in the study areas to detect any changes over time. Given the overall numbers of employees and share of non-white and Hispanic employees, it was difficult to draw strong conclusions. In three of the areas, we did find some limited evidence of a trend of an increase in the share of non-white or Hispanic/Latino employees relative to the controls or comparators.

Finally, our previous research in the city of Portland found a positive association between access to high-quality bicycle infrastructure (protected or separated bike lanes and bike boulevards) and residential property sales values. In other words, homes (single-family and multi-family) closer to such infrastructure and/or with more of that infrastructure nearby were valued higher, all other things (e.g., home size, school district, etc.) equal. We conducted a similar analysis for Washington County focused on multiuse trail infrastructure. We chose trail infrastructure because of the limited number of other types of high-quality bikeways in the county and because Task 3 included several trail projects. That analysis did *not* find a positive association similar to what we found in Portland. In fact, there was a negative association in several of our models. We suspect that this may be due to the fact that many of the trails in Washington County are located along powerline corridors. Close proximity to such powerline infrastructure would likely have a negative effect on home values and this effect could be stronger than anything positive associated with the trail infrastructure below. In addition, our findings may indicate that home buyers in Washington County do not value proximity to trails. Intercept surveys of trail users in the county find the vast majority of users use the trails for recreation (not utilitarian travel) and that 20-70% or more of the users may arrive by car. These factors may reduce the potential positive accessibility effects of active transportation infrastructure.

1.5 Limitations and challenges

All projects are not without limitations and challenges. The research team anticipated many of these, which influenced the decision to employ multiple methods and data sources. One challenge we did not anticipate was the lack of clear information about the projects themselves. We were often unable to obtain documents that described the exact nature and timing of the improvements made. In the end, we believe we found the necessary information (except good before photos), though it took longer than

planned. The COVID-19 pandemic also affected our Task 3 activities. Even with electronic substitutes for in-person contact, the depth and breadth of our findings were limited, as key stakeholders were rightfully focused on other priorities and people were not out using the improved infrastructure.

In reviewing the scope of each project, we identified some methodological limitations that affect many of the projects. First is the lack of appropriate control corridors. The aggregated trend analysis method benefits from having control corridors or comparator areas, and the DID analysis requires the use of a control corridor. The lack of appropriate control corridors is due, in part, to the many investments being made throughout the region in bicycle and pedestrian infrastructure. Several possible control corridors with similar contexts and land uses either already had bicycle/pedestrian infrastructure when the catalyst project was built or such infrastructure was added in a similar time frame. In other cases, there were no corridors that adequately satisfied other criteria, particularly having similar commercial activity, being in geographic proximity, and being in a similar position in the road network.

A second limitation to using these methods is that many of these projects are in areas that received other types of public investments that likely also produced positive economic impacts. These include other transportation investments (e.g., a new MAX station or a Streetcar line) and a range of activities related to urban renewal. In a few cases, the scale of the catalyst project is relatively small compared to the other public investments. In one such case (Milwaukie Town Center), we expanded the study area to include other AT improvements made at the same time with a different funding source. In all cases where complementary improvements occurred at about the same time as the catalyst project, it is not possible to attribute any positive outcomes solely to the catalyst project. However, this limitation highlights the role that the catalyst projects play in the larger planning and investment strategies outlined in Metro's 2040 Growth Concept. By definition, catalyst projects often aim to support the larger transportation investments (e.g. transit stations) and/or land use changes (e.g. mixed-use zoning and investments in transit-oriented development).

Moreover, the temporal range of available datasets presents an additional limitation to the analyses. LEHD and NETS datasets were available from 2002 to 2017, and QCEW dataset from 2003 to 2018. However, all of our street improvements were completed after 2010, with the exception of McLoughlin Blvd in Milwaukie which was completed in 2006. This means that in a number of analyzed corridors, it was difficult to evaluate long-term effects of street improvements because sufficient data had not been collected after construction. Therefore, we suggest extra attention be paid to interpreting the economic outcomes on those improvement corridors and recommend further analysis when additional years of data become available.

Lastly, the Great Recession that began in 2008 and 2009 impacted our analysis. Most of the projects were constructed within a few years (before and after) the recession, making it more challenging to isolate the effects of the street improvement project from larger economic trends. This is where using multiple analytical approaches was useful. For example, analysis methods that utilized a control corridor or comparator area such as the DID analysis or aggregated trend analysis provided ways to identify business activity shifts in an improved area relative to the larger economic trends affecting the comparator neighborhood or city during the recessionary period or during the post-recessionary recovery.

2 Introduction

The Active Transportation Return on Investment (ATROI) study aims to provide a quantitative and qualitative assessment of the benefits of active transportation infrastructure. The outcomes of the study will help inform policy and decision making in the Portland, OR region, including future decisions about Regional Flexible Funding, a pot of federal funds that has been spent on projects to improve active transportation (AT) and freight. The study uses AT projects in the region supported by these funds in the past to evaluate impacts, with a focus on economic impacts, broadly defined. Other impacts, including safety, are not included in this analysis.

Two types of projects are included:

- **2040 Catalyst projects** that retrofit busy commercial streets with pedestrian friendly treatments aimed at catalyzing economic development within 2040 Centers, Main Streets or Station Communities. Redesigned streets can improve economic conditions through creating attractive and walkable business districts, providing access to a variety of destinations, local businesses and jobs.
- **Longer gap-filling projects** that complete key routes within the regional bicycling network with the potential to increase the bicycle mode share. Gaps in the bikeway network make it difficult, unsafe and unpleasant for people to access destinations that meet daily needs. This impacts safety and discourages people from choosing to bike. Well-connected routes do not have gaps and are comfortable and safe for people of all ages. Projects that fill critical gaps and link existing facilities make them work more effectively and can provide an array of benefits to the people using them.

The scope of the project has three main tasks:

1. **Technical analysis of 2040 catalyst projects.** The objective of this task was to provide quantitative estimates the economic impacts of the catalyst projects, including such things as jobs, sales, and property values.
2. **Technical analysis of longer gap-filling bikeways.** The objective of this task was to provide quantitative estimates the benefits of these projects to users, including travel time savings and health benefits.
3. **Qualitative assessment.** The goal of this task was to supplement the quantitative analysis of Tasks 1 and 2 with qualitative information that helps tell the story of each project.

The Transportation Research and Education Center (TREC) at Portland State University (PSU) undertook Tasks 1 and 3, which are the focus of this report. Staff at Metro did the Task 2 analysis. A separate consultant will be using the products of all three tasks to create a cohesive final report and additional products for use by Metro in communicating the research.

This technical report describes the methods used for both Tasks 1 and 3 and the results of Task 1. The results of Task 3, in the form of short case studies of each project, are in a separate report. The sections in this report are as follows:

- **Existing Research.** This section describes existing research from the US and elsewhere on the economic impacts of AT infrastructure on business activity and property values. This research informed our approach to Task 1.

- **Task 1 Methods: Business Impacts.** This section describes the data and analytical methods used to assess the impacts of the catalyst projects on business activity, including employment, wages, and sales. We also describe how the catalyst projects included in Task 1 were selected and how we defined the study areas around each project.
- **Task 3 Methods.** This section describes our process to collect qualitative information on both catalyst and longer gap-filling projects.
- **Overview of Study Areas.** We provide a brief description of all projects included in the study, with some additional business-related data on the catalyst projects.
- **Business Impacts Findings by Study Area.** This section provides a summary of the findings of the business-related impacts (employment, wages, and sales) for each catalyst project study area. We also provide some descriptive data on business activity in each area.
- **Property Value Impacts: Methods and Findings.** This section describes an analysis conducted of property value impacts of trail infrastructure, including several longer-gap filling projects, in Washington County. This analysis aimed to supplement previous work the team conducted estimating the property value impacts of bikeway infrastructure in the city of Portland.
- **Conclusions and Future Work.** In this section, we first summarize the primary conclusions from all of the Task 1 analyses. We then provide some recommendations for future research and activities.
- **References.** A list of references used in the report.
- **Appendix: Race and Ethnicity Analysis of Employment.** This section provides the results of our analysis of the racial and ethnic composition of study area employment, including changes over time, before and after catalyst project construction. Overall, we did not detect meaningful changes or patterns, so this analysis did not factor into our overall conclusions.
- **Appendix: Business Activity.** This section includes detailed descriptive data about the business activity in each catalyst study area for the year 2017 and a baseline year, approximately three years before the project was completed. The team used these data to inform our interpretation of the Task 1 findings.
- **Appendix: DID and ITS Tables.** This section includes the tables with the output from all of the difference-in-difference (DID) and interrupted time series (ITS) regression models used for the Task 1 business impacts analysis.

3 Existing Research

There is a growing body of research examining the economic benefits of active transportation (AT) infrastructure. One thread of that research focuses on the effects of such infrastructure on business activity. These potential benefits stem from customers who arrive by active transportation modes and those that may arrive by another mode but continue to walk in the area and patronize multiple businesses. A second body of research focuses on the impact that such infrastructure has on property values. These impacts may be positive, resulting from the improved accessibility, aesthetics, and/or related features of the infrastructure, or negative, linked to real or perceived negative aspects of such infrastructure. Relevant research on these two areas of research are presented here. Other economic benefits of active transportation that have been documented include tourism and the equipment and apparel industry related to bicycling and walking. Research on these benefits is not directly relevant to this project and is not reviewed here.

3.1 Impacts on business activity

Several studies have looked at the spending patterns of customers by mode. Most of these argue that travel by active transportation tends to be under-valued by business owners (Forkes and Lea, 2010; McCormick, 2012; O'Connor et al., 2011; Pagliara and Biggiero, 2014). Several studies show that drivers spend more *per visit* compared to pedestrians and bicyclists (Clifton et al., 2012; O'Connor et al., 2011; Bent et al., 2009). However, when the monthly spending totals are calculated, bicyclists and pedestrians outspend drivers. Most relevant for this study, Clifton et al. (2012) collected data from 89 businesses in the Portland region and found that drivers spent more per visit (but visit fewer times per month), while bicyclists spent more per capita per month compared to other modes of transport. Bent et al. (2009) showed that despite the fact that spending per visit of drivers is greater than those of walkers and people using transit, walkers and people using transit visits more frequently. Therefore, spending per month was highest for walkers. Similarly, some studies compare shopping behavior between bicyclists and motorists to identify the effects of the installation of active transportation facilities. These studies show that cyclists not only spend more money than car users, but also visit the stores more frequently (Arancibia, 2012; Campbell, 2015; Forkes and Lea, 2010; Popovich et al., 2014). Furthermore, Tolley (2011) also emphasizes the importance of space for people, not for car parking, and how it can lead to economic benefits in local businesses. A study of traffic calming projects, including bike lanes, along Valencia Street in San Francisco concluded that such projects can bring economic benefits to small businesses based on the interviews with the merchants in the area (Drennen, 2003). While these studies provide insights into our understanding of the spending patterns of consumers who utilize different modes of travel, because the data are collected via surveys of either business owners or intercepted consumers, it is difficult to make definitive statements of the overall business or economic impacts of new bicycle or pedestrian infrastructure or to extrapolate these results to other cities or street improvement scenarios.

Some research attempts to link active transportation infrastructure to increased economic activity by utilizing local business retail sales or employment data before and after the street improvements to study the impacts of street improvements (NYCDOT, 2013; Rowe, 2013; Poirier, 2017). For example, a study from the New York City Department of Transportation (2013) compared the change in sales of retail trade, accommodation, and food services for three years in the areas abutting streets with active transportation improvements and comparison sites. They demonstrated that street improvement projects have a positive effect on locally-based retail businesses in the project areas. Following a similar

approach using sales tax data, Rowe (2013) showed a 400% improvement in retail sales on one Seattle, WA street after the bike lane installation compared to the rest of the neighborhood, while sales stayed the same on a second street after the installation of the bike lane. More recently, Poirier (2017) compared before-and-after sales revenue for abutting and non-abutting street improvement corridor business establishments in San Francisco and found street improvements tended to benefit local-serving businesses instead of all types of business establishments evenly. However, a study in downtown Vancouver, British Columbia found a slight decrease in retail sales after the implementation of separated bike lanes (Stantec Consulting, 2011). Sztabinski (2009) argues that replacing on-street parking space with a bike lane does not negatively affect commercial activity nearby areas based on the spending habits of cyclists and pedestrians.

There is some evidence that economic benefits resulting from active transportation facilities might vary depending on the type of businesses. For example, Clifton et al. (2013) show that in the case of the convenience store, expenditures of both transit and walking as modes of access were less than that of using the car while the expenditure per trip is larger for people going to restaurants on foot than people using automobiles. In addition, Rowe (2013) argues that although the sales index of the bicycle projects sites increases after bike lane installation, it cannot demonstrate that it results from an increase in bicycle access. Rather, it can only support the fact that the street improvement projects do not have a negative impact on the business activity in the projects' areas. McCormick (2012) and Szende et al. (2020) make similar conclusions that street improvement projects do not affect business activities in nearby areas such as business turnover and the number of new business openings.

To sum up, most studies demonstrate that the implementation of active transportation projects have a neutral or positive effect on business activities in the surrounding area. However, there are challenges to conducting research on this topic. First, it is necessary to take a more rigorous and systematic approach to analyze the impacts of active transportation implementation. For example, there are various confounding variables which may have an influence on the economic activities of local businesses such as citywide economic condition and trends. More specifically, if business activity in the project area is on the rise regardless of the project, it is difficult to determine the impact of street improvement on local businesses simply by comparing the construction before and after. Similarly, even if the sales of establishments in the corridor increased after the street improvement, it is hard to say that the project had a positive effect on business activity if the sales of establishments located in other corridors near the project site increased more. Therefore, it is necessary to control confounding variables using a more rigorous methodology with control corridors or time-series analysis on the project site.

Second, the impacts on local businesses may vary depending on the characteristics of the active transportation projects. For instance, while some street improvement projects reduce the number of travel lanes or remove on-street parking lots to improve the convenience of pedestrians and cyclists, others only improve the street without any other changes. In addition, according to the studies of the difference in spending patterns by travel modes, there are differences in spending per visit, frequency of visit and pending per month among walkers, cyclists, and drivers (Bent et al., 2009; Forkes and Lea, 2010; Lee, 2008; O'Connor et al., 2011; Popovich et al., 2014; Sztabinski, 2009). These findings imply that they may have different effects on the local businesses depending on whether the active transportation project focuses on pedestrian or bike facilities.

Lastly, more objective data are needed to assess the changes in business activities. Much of the existing research is based on perceptions of local business owners or the amount of spending that visitors report on surveys or interviews. This approach indirectly identifies the impact of the implementation of

active transportation projects on the local business; however, there is a possibility that it may be different from the actual effects in that it is based on human perception. Furthermore, since there are various indicators that measure business activities such as the number of employment, sales revenue and the number of establishments, the researches can make different conclusions depending on which variables they use. For instance, if a small business is replaced by a luxury business after street improvement, the number of employees may decrease but sales revenue may increase. Therefore, it is necessary to apply a systematic approach using various data and indicators.

Our research team recently completed a national study that attempted to address many of these limitations. That project (Liu et al 2019) used four different sources of economic data and three different analytical approaches to examine improvements made along 14 street corridors in business districts in Indianapolis, Portland, Minneapolis, Memphis, San Francisco, and Seattle that had pedestrian and/or bicycle infrastructure improvements, along with comparison corridors with similar business activities and geography, but without the improved AT infrastructure. The analysis generally found that street improvements have either positive impacts on corridor economic and business performance or non-significant impacts, though the findings did vary depending on the data source and analytical approach used. The food sector tended to benefit more than the retail sector, though positive effects on retail were found in nine of the 14 cases. The research demonstrated the value of using multiple data sources. It found that results varied by data source, which may result from specific characteristics of each source including "the fuzzy factor applied for confidentiality in the LEHD data, differences in business industry sectors' coverage and details across data sources, and varying geographical detail of each data source (e.g., census-block level in LEHD data versus block-facing level in other data sources)." The research also found that one analysis method (interrupted time series) provided more robust results, but also required more years of data than other methods to draw strong conclusions, which can limit its use.

3.2 Impacts on property values

A number of studies have shown that consumers may show a positive preference for active transportation infrastructure, such as bicycle trails or separated bike lanes, by paying a premium on properties that are located close to or are adjacent to such facilities (Liu and Shi 2017; Perk et al. 2015)., However, other researchers have also argued that the increase in traffic around active transportation facilities may contribute to adverse impacts such as crime, noise, litter, and loss of privacy near these properties (Asabere and Huffman 2009; Hammons 2015) or mixed impacts depending on the type of facility. Krizek's (2006) hedonic pricing models in Minneapolis suggest that proximity to bike trails and on-street bike facilities in suburban areas negatively impacts property values, but no impact was found from other types of bike facilities; Welch et al. (2016) show that shorter distances to off-street trails in Portland, Oregon have positive property value impacts compared to negative impacts stemming from proximity to on-street bike lanes.

The most commonly used methodology to study the impact of infrastructure characteristics on property values is the hedonic pricing model, which employs regression models to identify the impacts of the diverse characteristics of a property (or commodity) on its total value (Dhanju and Racca 2006; Kashian et al. 2018). Our research team will follow the methodology of Liu and Shi (2017), utilizing an ordinary least squares (OLS) hedonic model to distinguish the impact on property values from corridor or trail improvements versus other features. This method will allow us to control for conventional characteristics that contribute to property values, such as property characteristics (e.g., size, age and property tax liability), transaction characteristics (e.g., year of sale and seasonality) and regional

characteristics (e.g., distance to employment centers, access to transit stations, school quality or neighborhood) (Mohammed et al. 2013; Sirmans et al. 2005; Harrison and Rubinfeld 1978).

4 Task 1 Methods: Business Impacts

4.1 Overview

Our quantitative analysis examines the impact of infrastructure improvements in commercial areas. The study areas were selected from projects funded through Metro's Regional Flexible Funds program and are all in Metro-designated town centers, regional centers, station areas, or main streets. These are areas with a mix of commercial, public, and residential land uses. The improvements were intended, in part, to help create attractive and walkable business districts. All of the projects involve pedestrian improvements (e.g., sidewalks, landscaping, lighting, improved crossings) and a few include bicycle infrastructure.

Given the types of improvements and the existing research, our analysis focuses on the types of business activity we expect to be most affected by improved access for people on foot and bicycle: retail and food (e.g., restaurants, cafes, bars). Building on the experience from our previous study, we used three different analytical methods: aggregated trend, difference-in-difference (DID), and interrupted time series (ITS). All three methods (described in more detail in section 4.3) look at changes over time. Aggregated trend analysis and DID analysis both utilize control corridors to understand the impacts on the treatment corridor, while ITS is an econometric technique that analyzes multiple time points on the improved corridor only. Our previous study found that the ITS analysis provides more robust results than the other two methods, since it is a method that does not rely on choosing or finding appropriate control corridors. However, it requires more data points post-intervention to achieve meaningful and valid impact estimations. We also used three different data sources, which is necessary because no single data source is perfect, as explained in more detail in section 4.3. Those sources are Longitudinal Employer-Household Dynamics (LEHD) employment data, Quarterly Census of Employment and Wages (QCEW) employment and wage data, and National Establishment Time Series (NETS) employment and sales data.

4.2 Site selection and definitions

4.2.1 Site selection

At the start of the study, Metro provided a list of "catalyst projects" throughout the region that had been completed before 2016. An early task in the study was to further refine the methodology for each of those projects, after we had obtained more detailed information about each project from the implementing agency and other sources. In developing the refined methodology, we removed one project and added two from the quantitative analysis. We removed the Lovejoy Ramp replacement project for several reasons. The project was only 0.3 miles in length and the US Postal Service facility is the only main land use for about half of that length on the south side. The project also coincided with the construction of the Portland Streetcar. It is unlikely that we would be able to attribute any economic improvements specifically to the pedestrian infrastructure resulting from the ramp replacement separately from those associated with the Streetcar. In addition, the pedestrian environment on the blocks throughout this area have been improved over the same time period as the area has rapidly developed. We added McLoughlin Boulevard in Oregon City because we were concerned that the McLoughlin Boulevard project in Milwaukie might not lead to any clear conclusions. This is because one key element of the improvements (decorative crosswalks) had literally disappeared

soon after installation. Finally, we added Baseline St. in Cornelius because the project appeared to be a significant improvement worthy of analysis.

For the aggregated trend analysis approach, we selected one or more comparator areas. For projects in the city of Portland, we used the city as a whole and the subarea in which the project is located, e.g., the Southeast quadrant. In addition, for one Portland project, SE Foster/SE Woodstock in the Lents area, we also used two smaller neighborhoods (Mount Tabor and Montavilla). This followed an analysis of the Lents Town Center done by Prosper Portland (the City's redevelopment agency) that used those neighborhoods as a comparator. For non-Portland projects, we used that city as a comparator.

The difference-in-difference (DID) analysis approach requires the selection of an appropriate control corridor, which should be similar to the improved corridor but have not received an improvement. The control corridors are also used in the aggregated trend analysis. Control corridors first need to not have pedestrian and bicycle improvements similar to those in our catalyst projects. The additional criteria for selecting appropriate control corridors include (1) geographical proximity; (2) similar level and type of commercial activity; (3) similar growth in commercial activity before the improvement; (4) similar motor vehicle travel volumes; and (5) a similar position in the road network. We were only able to identify appropriate control corridors for a subset of the catalyst projects. In many cases, possible corridors that met all or most of these five criteria had similar active transportation improvements in place, such as improved sidewalks and crossings and/or bicycle infrastructure. While posing a challenge for our research design, this is a positive result of the on-going efforts of Metro and local jurisdictions to implement the 2040 Growth Concept and local transportation systems plans (TSPs).

4.2.2 Study area definitions

The first step of the project was to collect more detailed information about each project. This was necessary first to define each study area for analysis and secondly to help refine the methodology for each project, including identifying possible control locations. This process was unexpectedly challenging and was exacerbated by the start of the COVID-19 pandemic in March 2020. We contacted staff at each public agency that was responsible for the project with varying degrees of success. Staff turnover, busy workloads, and varying record-keeping procedures often led us to use other means to define each project. Some public agency websites had information, and Google's Streetview feature with previous year images was particularly useful. In addition, several of the projects were either part of a larger project and/or one of several improvements made over several years. This often made it hard to delineate the Metro-funded project. In some cases, it would not be possible to distinguish the impacts of the Metro-funded project from the other efforts, and the study area was broadened.

Once we determined where the improvements were made, we used two methods to identify business establishments that are located near the improvements being analyzed, based on the data source. The QCEW and NETS datasets include establishment-level data (i.e. a point for each business) and we selected establishments within a 0.125-mile buffer area around the improvements. The LEHD dataset is provided at the Census block level and we included establishments located within the adjacent Census blocks of the improvements. These relatively small study areas were chosen because we expect the greatest impact of pedestrian infrastructure to be on businesses closest to the improvements. The study areas are either a corridor (e.g. along a single main street) or a district, where improvements were clustered along several streets (Figure 3).

Figure 3: Examples of a study area corridor (left, SE Division Street, Portland) and district (right, Forest Grove Town Center)

4.3 Data

4.3.1 Data sources

To assess the impacts of street improvement projects on business activities, this study used three data sources: Longitudinal Employer-Household Dynamics (LEHD) employment data, Quarterly Census of Employment and Wages (QCEW) employment and wages data, and National Establishment Time-Series (NETS) employment and sales data. Table 1 summarizes the advantages and limitations of each dataset.

For our analysis, we examine the changes in three business activity indicators (employment, wages and sales revenue) using three data sources: LEHD, QCEW and NETS. To look at the changes in jobs, we used all three data sources. In addition, we examined changes in wages using QCEW data, and changes in sales revenue using NETS data. By utilizing various business activity indicators, we can comprehensively think about how the characteristics of the businesses have changed within the same industry category or between different industry categories. For example, if we observe that the number of food and accommodations employees had increased but wages and sales have decreased, it may be due to a transition from higher price sit-down restaurants to quick service food establishments with a greater number of lower wage employees. Or if we observe a decline in the retail sector coupled with growth in the food and accommodations sector, these trends may be indicative of a greater concentration of restaurants and bars along the corridor that attract consumers.

Table 4: Data Sources

Data	Source	Years	Issues
Longitudinal Employer-Household Dynamics (LEHD) - annual employment, racial and ethnic composition of workers at census block level	US Census Bureau	2002-2017	Advantages: • Freely available from the U.S. Census Disadvantages: • Provided at the census block level, which means that all the establishments on the same block but facing an unimproved street are included • May not provide sufficient accuracy (due to process to maintain confidentiality) to estimate the economic impacts of some street improvement corridors. • Industry classification only includes employment at the two-digit NAICS code level, so irrelevant businesses (e.g. gas stations) may be included.
Quarterly Census of Employment and Wages (QCEW) (also known as ES-202 data) - quarterly employment and wages at establishment level	Oregon Dept of Employment	1999-2018	Advantages: • Provides accurate economic indicator data at very fine geographic and industry-level detail • More recent data may be available Disadvantages: • Non-aggregated, establishment-level data is typically confidential, but was obtained by PSU for this study.
National Establishment Time-Series (NETS) - annual employment and sales at establishment level	Walls & Associates	1990-2017	Advantages: • Provides economic indicator data at very fine geographic and industry-level detail • Establishment level data is not confidential Disadvantages: • Proprietary data source that can be costly, depending on the scale needed • Sales revenue is an estimated number

4.3.2 Industry selection

Our analysis is primarily focused on the retail, and food and accommodations sectors. We filtered the datasets in the retail and food and accommodation sectors using the North American Industry Classification System (NAICS) codes. For retail, this study used the CNS07 variable in the LEHD dataset which represents the number of retail sector jobs (NAICS code 44-45). We filtered the QCEW dataset and NETS dataset using the same NAICS codes to maintain consistency between the various data sources. For the food and accommodation service sector, we employed the CNS18 variable in the LEHD dataset which represents the number of food and accommodation services jobs (NAICS code 72); the QCEW dataset and NETS dataset are filtered using NAICS code 722 that includes food services and drinking places (and excludes hotels and other types of accommodations) to conduct a more accurate analysis.

To further understand the business landscape in the areas surrounding the study areas, we examined how all industry sectors around corridors changed after the street improvements. This descriptive analysis shows business activity on each of the improved study areas by comparing the number of establishments, employment, and sales by industry sector. This provides a larger picture perspective of the types of economic activity that occur along each improved corridor, and how they may have shifted. We utilized the NETS dataset for this analysis because of its establishment-level detail and the inclusion of sales data. The details of that analysis appear in Appendix 12. For each study area, we compared the number of establishments, employment, and sales by all industry sectors (2-digit NAICS codes), by retail trade subsectors (4-digit NAICS codes within sectors 44-45), and by food and drink subsectors (5-digit NAICS codes within sector 722), respectively. The NETS dataset provides precise establishment-data to identify businesses adjacent to the improvement corridors, where the business activity indicators (number of establishments, employment and sales) within each industrial categorization could be compared.

4.4 Analysis methods

4.4.1 Aggregated trend analysis

Aggregated trend analysis aims to compare the trends of indicators of treatment and comparators such as control corridors, cities, or neighborhoods over time. Its advantage is that it is a visual and intuitive approach that displays the potential outcomes of improvements; however, it is exploratory and does not include statistical testing, it is difficult to reach definitive conclusions with this analysis. To identify the trends in growth rate and actual changes in economic indicators of treatment and comparators together, we used the actual values and indexed values to the three years pre-construction.

To use aggregated trend analysis in this project, we used LEHD and NETS datasets from 2002 to 2017, and QCEW dataset from 2003 to 2018 for the retail and food and accommodation sectors. In terms of the business indicators, we used employment from the LEHD datasets, employment, wages, number of establishments, and employment per establishment from the QCEW datasets, and employment, sales, number of establishments, and employment per establishment from the NETS datasets. For each business indicator per dataset, we made the trend plots for retail and food and accommodation sectors. Furthermore, to grasp the growth rates of business indicators, we calculated the indexed values based on a pre-construction baseline. More specifically, we averaged the values of business indicators three years before construction, divided all business indicators by those values and multiplied by 100 to use relative business activities compared to three years before construction.

4.4.2 Difference-in-difference (DID) analysis

DID analysis is a method to test the effects of the intervention by comparing the difference before and after the intervention of the treatment and that of the control group. It assumes that the trends of treatment and control groups will be the same over time if there is no intervention. In other words, DID can eliminate the impacts of confounding factors that can affect outcome even if it does not include control variables. This is because these impacts will apply commonly to both treatment and control groups (Lee, 2016). To do this, DID analysis uses a regression model that includes three variables: the difference in level between treatment and control group (*Type*), the difference in the level of control group between pre- and post-intervention (*Prepost*), and the interaction term of two variables (*Type:Prepost*). The DID estimation equation is expressed as follows:

$$Business\ Indicator_{it} = \beta_0 + \beta_1 Type_{it} + \beta_2 Prepost_{it} + \beta_3 Type_{it} Prepost_{it} + \varepsilon_{it}$$

In the stylized representation of DID analysis in Figure 4, we observe that the slope of the treatment corridor became steeper than before after the improvement. Within the DID analysis, we can determine the causal impact of the improvement using the coefficient estimate of *Type:Prepost*, which represents the difference in the level changes of the treatment and the control corridors before and after the intervention.

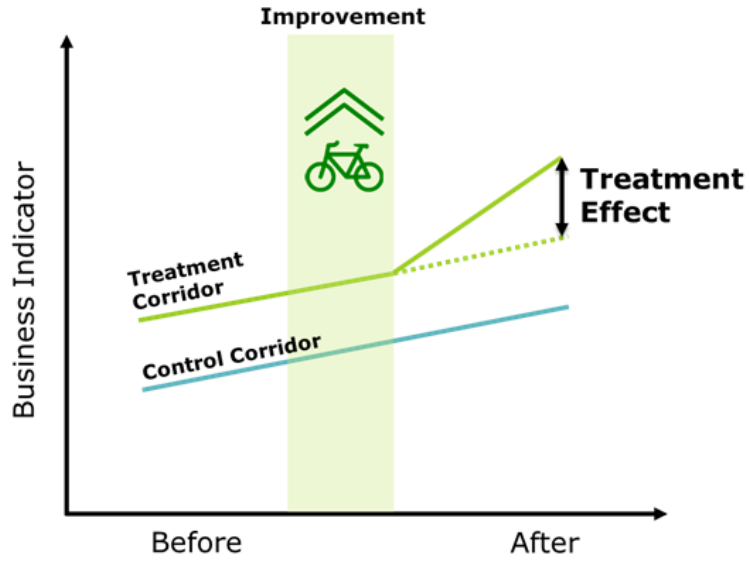

Figure 4: *A stylized representation of DID analysis*

To apply DID analysis, we used LEHD and NETS datasets from 2002 to 2017, and QCEW dataset from 2003 to 2018 for the retail and food and accommodation sectors. DID analysis was conducted separately for the two industry sectors, using LEHD employment data, QCEW employment and wage data and NETS employment and sales revenue data, respectively.

Because it is necessary to identify a control corridor for the DID approach, we applied this approach to the five improved corridors where we were able to identify appropriate control corridors: Burnside Street (Portland), Foster-Woodstock (Portland), Main Street (Tigard), McLoughlin Boulevard (Milwaukie), and McLoughlin Boulevard (Oregon City). While we identified one control corridor for most improved corridors, two control corridors were identified for McLoughlin Boulevard in Milwaukie, and were analyzed separately. One of the control corridors for the McLoughlin Boulevard corridor in Milwaukie was McLoughlin Boulevard in Oregon City, but we limited the time period for the control corridor in Oregon City to the years prior to 2010 when it also received improvements.

4.4.3 Interrupted time series (ITS) analysis

ITS analysis is one type of quasi-experimental technique that analyzes multiple time points on the treatment corridor itself, and aims to evaluate the impacts of an intervention (or improvement) on the time series indicators (McDowall, 1980). More specifically, ITS analysis employs a regression model including three time-based variables, the slope of the pre-intervention (*ts_year*), the change in level at the point of the intervention (*Prepost*), and the change in slope between pre- and post-intervention (*ts_year:Prepost*) with the assumptions that pre-intervention trend would continue into the future had there not been an intervention and that there are no other external factors impacting the trends (Kontopantelis et al., 2015). The estimation equation of the interrupted time-series analysis is as follows:

$$Business\ Indicator_t = \beta_0 + \beta_1 ts\_year_t + \beta_2 Prepost_t + \beta_3 ts\_year_t : Prepost_t + \varepsilon_t$$

As illustrated in the stylized representation of ITS analysis in Figure 5, if the **level** and the **slope** of the economic indicator increased after the improvement, both *Prepost* and *ts_year:Prepost* estimated coefficients from ITS should be positive and statistically significant. This type of result would indicate a positive causal impact of the active transportation investment on the business indicator along the improved corridor.

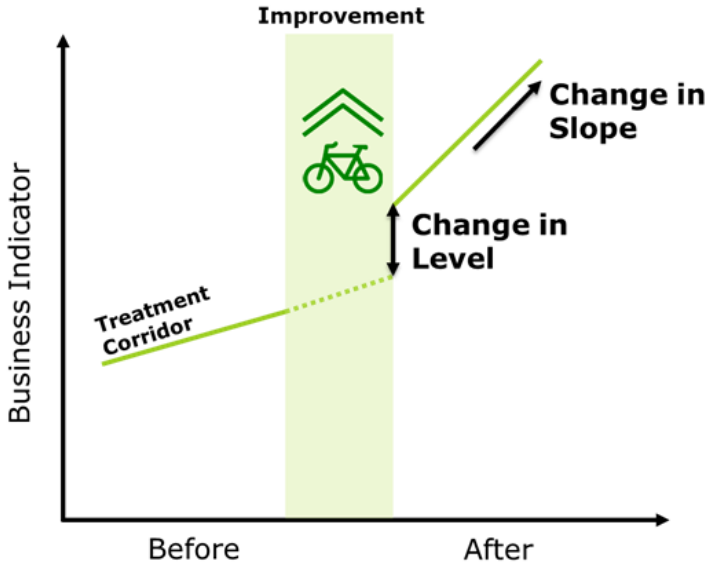

Figure 5: *A stylized representation of ITS analysis*

To apply ITS analysis to this project, we employed LEHD and NETS datasets from 2002 to 2017, and QCEW dataset from 2003 to 2018 for the retail and food and accommodation sectors. Since control corridors are not required for ITS analysis, all improved corridors were analyzed using this method. ITS analysis was conducted separately for the two industry sectors (retail and food and accommodations), using LEHD employment data, QCEW employment and wage data and NETS employment and sales revenue data, respectively.

4.5 Limitations

In reviewing the scope of each project, we identified two methodological limitations that affect many of the projects. First is the lack of appropriate control corridors. As discussed earlier in the methodology description, the aggregated trend analysis method benefits from having control corridors or comparator areas, and the DID analysis requires the use of a control corridor. The lack of appropriate control corridors is due, in part, to the many investments being made throughout the region in bicycle and pedestrian infrastructure. Several possible control corridors with similar contexts and land uses either already had bicycle/pedestrian infrastructure when the catalyst project was built or such infrastructure was added in a similar time frame. In other cases, there are no corridors that adequately satisfy other criteria, particularly having similar commercial activity, being in geographic proximity, and being in a similar position in the road network.

The second limitation to using these methods is that many of these projects are in areas that received other types of public investments that likely also produced positive economic impacts. These include

other transportation investments (e.g., a new MAX station or a Streetcar line) and a range of activities related to urban renewal. In a few cases, the scale of the catalyst project is relatively small compared to the other public investments. Given these limitations, our approach includes the following:

- ITS analysis with employment and sales data for all of the projects. The release of new NETS and LEHD data makes this approach feasible.
- Aggregated trend analyses for all projects comparing project corridor area to its comparator city, a comparator subarea (e.g. city quadrant), and/or other comparable centers/station areas.
- DID and aggregated trend analysis using control corridors for a subset of projects.
- Expanding project areas in some cases to assess the cumulative effects of the multiple, adjacent transportation improvements.

Moreover, the temporal range of available datasets presents an additional limitation to the analyses. LEHD and NETS datasets were available from 2002 to 2017, and QCEW dataset from 2003 to 2018. However, all of our street improvements were completed after 2010, with the exception of McLoughlin Blvd in Milwaukie which was completed in 2006. This means that in a number of analyzed corridors, it was difficult to evaluate long-term effects of street improvements because sufficient data had not been collected after construction. Therefore, we suggest extra attention be paid to interpreting the economic outcomes on those improvement corridors and recommend further analysis when additional years of data become available.

Lastly, the Great Recession that began in 2008 and 2009 will impact our analysis. Most of the projects were constructed within a few years (before and after) the recession, making it more challenging to isolate the effects of the street improvement project from larger economic trends. This is where using multiple analytical approaches can be useful. For example, analysis methods that utilize a control corridor or comparator area such as the DID analysis or aggregated trend analysis may provide ways to identify business activity shifts along an improved corridor relative to the larger economic trends affecting the comparator neighborhood or city during the recessionary period or during the post-recessionary recovery.

5 Task 3 Methods

The methods we used to collect qualitative input on the impacts of the catalyst and longer gap-filling projects was altered significantly from our original plan due to COVID-19. The activities undertaken are described below.

Interviews. The objective was to conduct up to four in-depth interviews for each project. For each project, in addition to agency staff, we identified potential stakeholders to interview by using project documents, news and social media reports, and area maps. Types of organizations we looked at included neighborhood business and resident groups, local businesses, and non-profit organizations operating in the area (e.g. farmers markets). We aimed to have a variety of roles included in the interviews and contacted stakeholder by email and phone to invite them for a remote interview. Because of COVID-19, it was difficult to find stakeholders that were willing to spend the time (30-40 minutes) for an interview. We were able to conduct two or more interviews for nearly all of the projects (Table 5). We conducted the interviews online via Zoom using a script that varied some based on the type of stakeholder (i.e., agency staff vs. business owner). In most cases, with the interviewee's consent, we recorded the interview to help ensure accuracy of our notes and quotations. We also asked stakeholders for any documents or photos of the project, as well as ideas for other people to interview.

On-line input form. Our original plan involved spending time at most of the projects inviting people walking and bicycling in the area to provide input for the study. Instead, we developed an online form to collect input. The short form had two main open-ended questions. One asked what the person thought about walking, bicycling, or using other non-car or transit modes of transportation in the project area (streets or trails). The second asked if they could remember the area before the improvements and how they thought the improvements changed their activities. The form asked about the types of activities they did in the project area (walk, run, bike, skateboard, wheelchair, other) and some demographics (city or neighborhood, race/ethnicity, disability, and gender). We promoted the form through social media and placed ads on Facebook to increase input for some projects. We also asked some project stakeholders to share the form with their networks.

We sometimes referred to this effort as a "survey" because that is terminology that users understand. However, we need to make clear that it was designed primarily to collect qualitative input from interested users, and the distribution method was not intended to result in a representative sample of all users. When several users expressed concerns or issues related to the improvements, we did include those sentiments in our Task 3 summary for the project.

Existing sources. Given the inability to collect data in-person and the lack of activity in many of the study areas due to COVID restrictions on businesses, we mined many existing sources to capture user views pre-COVID. These included the following:

- Intercept surveys conducted by volunteers as part of Metro's regular trail counting efforts. For this study, we used a subset of the surveys from 2008 to 2018 that were conducted at locations within our study areas and after completion of the improvements that were part of the study. Therefore, our findings from the surveys may differ from data available in Metro reports that use the trail survey data.
- Surveys conducted by PSU of residents of transit-oriented developments (TODs) funded by Metro. Some of these TODs were in three of the catalyst project study areas: Gresham NE Hood, Beaverton SW Rose Biggi, and Portland E Burnside.

- Websites and social media. We searched the internet, including news sites and social media, to find examples of what users thought of these projects. One site was particularly useful: www.traillink.com; the site had user reviews for most of the trail projects in the study. Another website, bikeportland.org also often provided useful information from users for bikeway projects. Older Metro-produced website stories on projects also helped fill in some gaps.

Table 5: Summary of Task 3 data collection activities

Project label	Project type	# interviews conducted	# input forms collected
Clackamas County			
Milwaukie: McLoughlin Blvd.	Catalyst	2	43
Milwaukie: Town Center	Catalyst		
Oregon City: McLoughlin Blvd.	Catalyst	2	5
Trolley Trail	Longer gap-filling	2	17
Milwaukie: 17th Ave. Path	Longer gap-filling	3	18
Multnomah County			
Gresham: NE Hood Ave.	Catalyst	2	23
Portland: E Burnside	Catalyst	1	23
Portland: SE Division St.	Catalyst	3	43
Portland: SE Foster Rd.-Woodstock Blvd.	Catalyst	3	85
Lovejoy Ramp removal	Catalyst*	2	14
Portland: St John's	Catalyst	3	36
Gresham: Gresham-Fairview Trail	Longer gap-filling	2	10
Portland: 50s bikeway	Longer gap-filling	2	32
Portland: 20s bikeway	Longer gap-filling	2	42
Portland: Cully Blvd	Longer gap-filling	5	19
Portland: Eastbank Esplanade	Longer gap-filling	2	3
Washington County			
Beaverton: SW Rose Biggi	Catalyst	2	2
Cornelius: E Baseline	Catalyst	2	10
Forest Grove: Town Center	Catalyst	1	51
Tigard: Main St.	Catalyst	2	11
Hillsboro: Rock Creek Path	Longer gap-filling	1	5
Westside Trail: Rock Creek to Bronson Creek	Longer gap-filling	2	29
Westside Trail: Merlo MAX to Burntwood Dr	Longer gap-filling	2	30
Tualatin River Greenway trail	Longer gap-filling	2	21

**Not included in Task 1 analysis, only Task 3*

6 Overview of Study Areas

6.1 Catalyst projects

The 13 Catalyst projects are briefly described in Table 6. (Note that the Lovejoy Ramp project is included in the list, though it is not analyzed quantitatively in Task 1.) Nearly all of the projects focus primarily on pedestrian improvements, including elements such as improved sidewalks (new, widened, etc.), safer crossings (signals, rectangular rapid flash beacons, curb extensions, crosswalks, signage, ramps, etc.), improved bus stops, landscaping (trees, bioswales for stormwater management, etc.), lighting, and public art. A few projects also included new or restriped bike lanes, sharrows, and/or bike parking. Two projects were more extensive. In Beaverton, SW Rose Biggi Ave. was extended to connect with a previously disconnected street, involving a new bridge over a creek. This provided improved access for all modes. As part of the Milwaukie Town Center project, the Metro funding was used to create the Adams Street Connector, a one-block pedestrian area connecting the new MAX light rail station with Main Street and a park. Our study area also includes adjacent pedestrian improvements that were installed at the same time as part of the larger light rail extension project.

Information about the number of establishments and employment and sales in the retail and food and accommodations (F&A) sectors for each study area is shown in Table 7 (Clackamas County), Table 8 (Multnomah County), and Table 9 (Washington County). These data from the NETS for 2017. Retail establishments represent from 6-18% of all establishments, 3-16% of employment, and 3-37% of estimated sales in the study areas. For five of the study areas, retail is the leading sector for sales: Main St. in Tigard, SW Rose Biggi in Beaverton, St. John's Town Center and SE Division in Portland, and McLoughlin Blvd. in Oregon City. The F&A sector represents 4-11% of all establishments, 7-17% of employment, and 2-9% of sales in the study areas. F&A is the leading employment sector for the St. Johns project, while it ranks 2nd or 3rd for six other projects.

The data in each of these tables is for the study area, which is a 0.125-mile buffer around the project improvements. The study areas range from 62 acres (SW Rose Biggi in Beaverton) and 78 acres (Main St. in Tigard) to over 300 acres along SE Division St. in Portland. Figure 6 shows the number of retail and F&A establishments for each corridor, while Figure 7 shows the density of those establishments.

Table 6: Overview of Catalyst Projects

Project label	Area	Lead Agency	Improvements made	Additional information/context	Year
Clackamas County					
Milwaukie: McLoughlin Blvd.	SE McLoughlin Blvd, from Harrison St - Kronberg Park (~0.4 miles)	City of Milwaukie	Improved pedestrian crossings, landscaping, and sidewalks. Pedestrian crosswalks at several intersections were painted with a brick-like pattern that has since severely faded.	Along the west side, it follows the Trolley Trail and Milwaukie Bay Park along the Willamette River. To the east, there are mainly commercial spaces until it runs into Kellogg Creek.	2006
Milwaukie: Town Center	Milwaukie TC: LRT stop to Main St	City of Milwaukie/TriMet	The Adams Street Connector links the MAX station with Main Street. Other pedestrian and bicycle improvements on adjacent blocks include wider sidewalks, crosswalks, curb extensions, landscaping, and lighting.	The improvements were done in conjunction with the Portland-Milwaukie Light Rail (PMLR) project. The Adams Street Connector was funded with Metro regional flexible funds. The other improvements were funded through the PMLR project.	2016
Oregon City: McLoughlin Blvd.	SE McLoughlin Blvd from the Hwy. 43 bridge north to Dunes Dr. (~0.9 miles)	City of Oregon City	Sidewalk expansion, street trees, crosswalks, and public art	This stretch of McLoughlin runs in the downtown area of Oregon City (a regional center) along the Willamette River. This was phase I of a larger project.	2009
Multnomah County					
Gresham: NE Hood Ave.	NE Hood Ave, from SE Division to SE Powell (~0.5 miles)	City of Gresham	Added sidewalk on the east side of Hood Ave, planter strip with trees and streetlights to treat stormwater, and improved ADA access on NE 4th and Hood. Curb extensions and crosswalks at four intersections.	The north end of the project links to the Gresham Central MAX station. The project is in central Gresham, just on the edge of the main historical commercial area. The land uses along the corridor include a mix of commercial and housing, along with a park that hosts the Gresham Farmers' Market.	2013
Portland: E Burnside	E Burnside, from NE 3rd Ave to NE 14th Ave	City of Portland	Addition of a bike lane, improved sidewalks and crossings, and landscaping. In addition, the street was converted to a one-way couplet with NE Couch.	This area was part of the Lower East Burnside Catalyst Development Area.	2010

Project label	Area	Lead Agency	Improvements made	Additional information/context	Year
Portland: SE Division St.	SE Division St., from SE 6th to SE 39th (~1.9 miles)	City of Portland	Pedestrian improvements, including curb extensions and ramps, marked crossings, pedestrian countdown timers, bioswales and other landscaping, improved bus stops, bike corrals, public art, and street lighting improvements.		2014
Portland: SE Foster Rd.-Woodstock Blvd.	SE Foster and SE Woodstock, from SE 87th to SE 101st (~0.8 miles)	City of Portland	Striped bike lanes, improved sidewalks, and landscaping.	This project is in the Lents Town Center Urban Renewal Area. SE Foster and SE Woodstock are parallel streets and form a one-way couplet through the main part of the Town Center.	2013
Not included in Task 1 analysis	Lovejoy Ramp Removal and Reconstruction Project (~0.3 miles)	City of Portland	Deconstruction of original Lovejoy ramp, replaced with a shorter-approach ramp connecting Lovejoy St to Broadway bridge. The reconstructed ramp includes pedestrian improvements beginning at NW 12th Avenue up to Broadway Bridge.	The project made room for additional development in the area in the heart of the Pearl District.	2002
Portland: St John's	St John's Town Center	City of Portland	The pedestrian element of this plan has four components. First, signalize the Richmond/Ivanhoe intersection, second, interconnect three signalized intersections, third install curb extensions with striped crosswalks at several locations, and fourth construct a median refuge island with striped crosswalk at Lombard/Reno.	As a part of a grant received in 2004, the St. Johns/ Lombard part of the larger grant plan focused on improving pedestrian crossing safety in the St. Johns town center and pedestrian district. This also included curb extensions primarily along N Ivanhoe. The pedestrian element of this plan has four components. First, signalize the Richmond/Ivanhoe intersection, second, interconnect three signalized intersections, third install curb extensions with striped crosswalks at several locations, and fourth construct a median refuge island with striped crosswalk at Lombard/Reno.	2012
Washington County					

Project label	Area	Lead Agency	Improvements made	Additional information/context	Year
Beaverton: SW Rose Biggi	SW Rose Biggi: Hall to Crescent	City of Beaverton	This project extended Rose Biggi Ave 850 feet from SW Crescent Ave. to Hall Boulevard. The segment includes two motor vehicle travel lanes, parking lanes, sidewalks, landscaping and street trees, lighting, storm drainage, irrigation, and a new bridge over Beaverton Creek.	Before the project, the street hit a dead-end; the project is a key north-south connection to the regional center, for motor vehicles, pedestrians, and bicycles. The project is also part of the city of Beaverton's larger efforts to improve the area around the Transit Center and Downtown through a range of transportation and land use projects.	2015
Cornelius: E Baseline	Cornelius: Baseline and North Adair St., Phase I and II	City of Cornelius	street lighting, wider sidewalks, additional street parking, safer intersections, street trees, a new stormwater management system, and a reduction in visible power lines.	Baseline is part of a one-way couplet with North Adair through downtown Cornelius. Similar improvements were made on North Adair.	2016
Forest Grove: Town Center	Forest Grove Town Center, along Pacific Ave. and 19th Ave.	City of Forest Grove	A four-block area received a "full treatment" of decorative brick areas, street trees and tree wells with decorative grates, and decorative crosswalks. Several intersections were retrofitted with wheelchair ramps.	The two streets form a one-way couplet, with two travel lanes in each direction.	2010
Tigard: Main St.	Main Street Green Street Phase I, Rail Corridor to 99W (~0.3 miles)	City of Tigard	New sidewalks, safer pedestrian crossings, street trees and landscaping, public art, benches, energy-efficient LED streetlights, stormwater treatment planters, and a turn-around for motorists at the south end of Main Street.	Main Street is one lane in each direction, with parallel and diagonal on-street parking. The Fanno Creek Trail intersects with the project corridor. This was part of Phase I of an effort to completely redesign and improve all of Main Street in downtown Tigard.	2014

Table 7: Business establishment information for Clackamas County sites, 2017

	Milwaukie: McLoughlin Blvd.	Milwaukie: Town Center	Oregon City: McLoughlin Blvd.
Establishments			
Total # establishments	188	198	244
% Retail	9.6%	8.1%	16.4%
% Food & accommodations	9.6%	5.6%	10.7%
Employment			
Total employment	1,081	1,288	2,301
% Retail	5.4%	4.1%	14.6%
Rank of retail	9	10	3
% Food & accommodations	12.5%	7.5%	10.3%
Rank of Food	2	5	4
Sales			
Total sales	84,504,371	101,927,453	182,444,006
% Retail	7.4%	5.8%	37.1%
Rank of retail	5	7	1
% Food & accommodations	5.3%	3.1%	4.1%
Rank of Food	8	13	6
Top sector for sales	52: Finance and Insurance	61: Educational Services	44-45: Retail Trade
Study area size (acres)*	101	106	167

**Study area size includes a 0.125-mile buffer area around the infrastructure improvements.*

Table 8: Business establishment information for Multnomah County sites, 2017

	Gresham: Hood St.	Portland: Burnside	Portland: Division St.	Portland: Foster-Woodstock	Portland: St Johns
Establishments					
Total # establishments	251	518	808	187	308
% Retail	6.4%	10.4%	9.3%	10.2%	10.1%
% Food & accommodations	4.4%	8.1%	9.3%	3.7%	10.4%
Employment					
Total employment	1,330	5,097	4,063	817	1,575
% Retail	3.2%	9.0%	8.7%	6.2%	11.0%
Rank of retail	9	5	4	8	3
% Food & accommodations	7.2%	6.6%	17.1%	10.5%	17.0%
Rank of Food	5	7	2	3	1
Sales					
Total sales	146,916,555	543,299,624	293,786,332	73,418,104	117,197,575
% Retail	2.9%	17.3%	18.0%	8.1%	21.4%
Rank of retail	7	2	1	4	1
% Food & accommodations	2.3%	2.6%	9.1%	4.0%	9.3%
Rank of Food	8	9	4	9	4
Top sector for sales	81: Other Services (except Public Admin)	31-33: Manufacturing	44-45: Retail Trade	23: Construction	44-45: Retail Trade
Study area size (acres)	107	114	307	175	153

**Study area size includes a 0.125-mile buffer area around the infrastructure improvements.*

Table 9: Business establishment information for Washington County sites, 2017

	Beaverton: SW Rose Biggi	Cornelius: Baseline	Forest Grove: Town Center	Tigard: Main St.
Establishments				
Total # establishments	262	110	290	159
% Retail	6.5%	18.2%	14.1%	13.8%
% Food & accommodations	7.3%	8.2%	11.0%	8.8%
Employment				
Total employment	2,633	748	1,675	969
% Retail	8.8%	15.9%	10.7%	14.2%
Rank of retail	5	2	4	2
% Food & accommodations	12.8%	13.6%	12.4%	10.7%
Rank of Food	3	3	3	4
Sales				
Total sales	235,576,670	99,714,815	133,827,736	85,909,511
% Retail	28.8%	21.1%	14.5%	23.5%
Rank of retail	1	2	2	1
% Food & accommodations	4.5%	4.7%	5.8%	4.2%
Rank of Food	5	4	7	7
Top sector for sales	44-45: Retail Trade	62: Health Care and Social Assistance	61: Educational Services	44-45: Retail Trade
Study area size (acres)	62	128	233	78

**Study area size includes a 0.125-mile buffer area around the infrastructure improvements.*

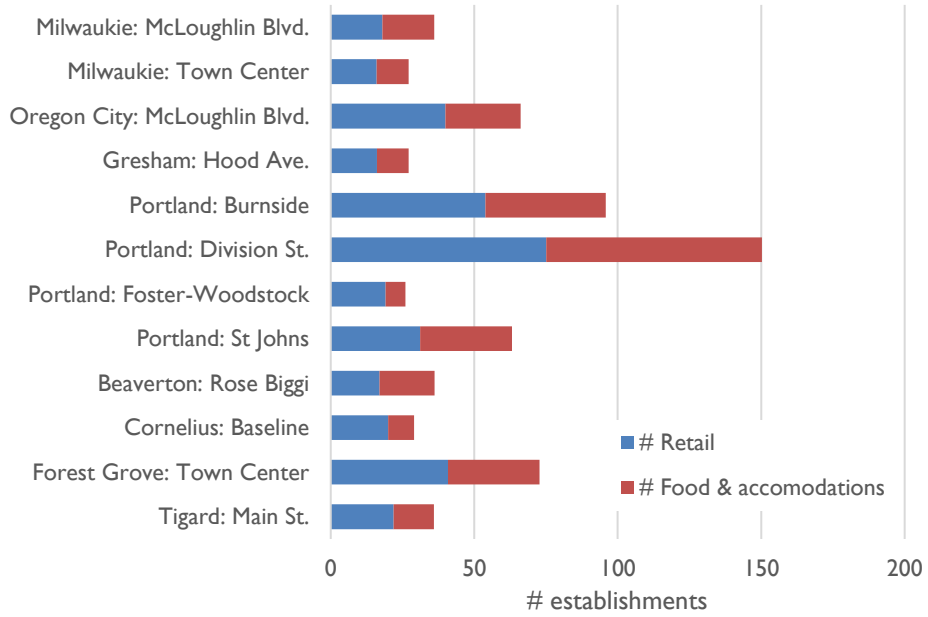

Figure 6: Number of retail and food establishments, 2017

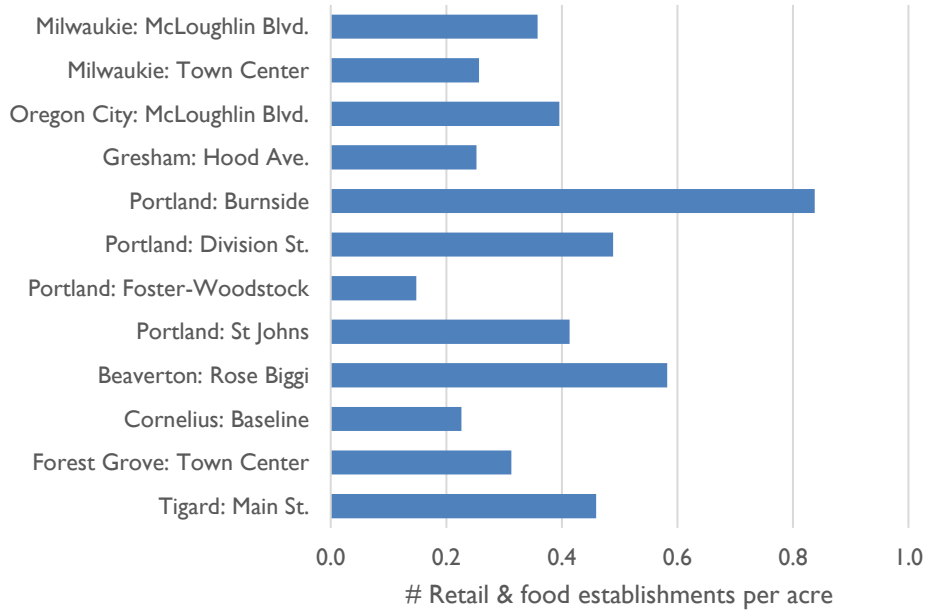

Figure 7: Number of retail and food establishments per acre, 2017

6.2 Longer gap-filling projects

The 11 longer-gap filling projects are described in Table 10. Eight of the projects are multi-use paths or trails, ranging from the Eastbank Esplanade in downtown Portland to portions of the Westside Trail in Washington County. Two projects are bicycle boulevards or "neighborhood greenways" in the city of Portland. These are bikeway projects where traffic calming features (e.g. speed humps and motor vehicle traffic diverters), enhanced crossings at major arterials (e.g. new signals and crosswalks), and wayfinding signage to improve accessibility for people on bicycles and foot, in wheelchairs, or other pedestrian modes were installed. The final project (Cully Boulevard) includes a protected bike lane (aka cycle track) and improved sidewalks. The context of the projects varies significantly, with some used primarily for recreation and others connecting major work and shopping destinations.

Table 10: Overview of longer gap-filling projects

Project label	Area	Lead Agency	Improvements made	Additional information/context	Year
Clackamas County					
Trolley Trail	Trolley Trail	North Clackamas Parks and Recreation District	The 6-mile Trolley Trail runs through Milwaukie, Oak Grove, Jennings Lodge, and Gladstone. The multi-use trail has areas that are both paved and gravel.	North Clackamas Parks and Recreation District and Metro purchased the right-of-way in 2001 using a voter-approved bond measure. The trail It runs along the old Portland Traction Company streetcar line.	2013
Milwaukie: 17th Ave. Path	17th Ave Multi-use Path: SE Ochoco - SE McLoughlin	City of Milwaukie	The multi-use path is on the west side of SE 17th Avenue within the existing right-of-way between McLoughlin Blvd and SE Ochoco Street.	The project connected two significant regional multi-use trails: the Trolley Trail to the south and the Springwater Corridor to the north.	2017
Multnomah County					
Gresham: Gresham-Fairview Trail	Gresham-Fairview Trail: Burnside to Springwater	City of Gresham Parks and Rec	This section of the paved trail connected E Burnside Ave to the Springwater Trail.	The complete 5.7+ paved mile trail runs through the city of Portland to the city of Gresham, from NE Halsey Street to the Springwater Trail.	2011
Portland: 50s bikeway	50s bikeway: Thompson to Woodstock	City of Portland	A 4.3-mile bicycle boulevard or "neighborhood greenway" project that includes eight arterial crossing improvements and traffic calming features to increase safety.	This a north-south safety corridor connects eight eastside neighborhoods from Rose City Park to Woodstock.	2014
Portland: 20s bikeway	20s bikeway: Lombard to Springwater trail	City of Portland	A 9.1 mile bicycle boulevard or "neighborhood greenway" project with 17 pedestrian crossings at busy arterial streets and additional traffic calming features.	The north-south orientation of this trail helps to add the needed connections most often seen east-west.	2017
Portland: Cully Blvd	Cully Blvd cycle track: Prescott to Killingsworth	City of Portland	A cycle track (protected bike lane), widened sidewalks, planting areas, and redesigned curb parking.	The Cully Boulevard Green Street Project was a $5.4 million improvement project that rebuilt Cully Blvd.	2011

Project label	Area	Lead Agency	Improvements made	Additional information/context	Year
Portland: Eastbank Esplanade	Eastbank Esplanade & Steel Bridge	Portland Parks and Recreation	The Esplanade is a 1.5 mile multi-use trail along the east side of the Willamette River. Portions of the trail extend over the river. The Steel Bridge provides pedestrians and bicyclists a route across the river.	The project connects SE Caruthers St by the Tilikum Crossing to the Steel Bridge. This project included riverbank restoration.	2001
Washington County					
Hillsboro: Rock Creek Path	Rock Creek Path: Orchard Park to Wilkins	City of Hillsboro	The project improved a portion of the regional multi-use path from one it its main trailheads (Orchard Park) to NE Wilkins St.	The Rock Creek Trail is Hillsboro's primary regional multi-use trail corridor, following along the Rock Creek Greenway. There are long-term plans to further extend the trail to the Tualatin River Water Trail.	2013
Westside Trail: Rock Creek to Bronson Creek	Westside Trail: Rock Creek Trail to Bronson Creek trail	Tualatin Hills Parks and Recreation Department (THPRD)	This segment extended the Westside trail further north, connecting with the Rock Creek Trail and Kaiser Woods Natural Area	The Westside Trail is a regional multi-use trail, initially called the Beaverton Powerline Trail, running along Washington County's electrical power utility corridors. When complete, the trail will stretch about 25 miles from King City and the Tualatin River in the south to Forest Park and Highway 30, in the north. Much of the trail, planned and built, is in the Tualatin Hills Parks & Recreation District (THPRD).	2019
Westside Trail: Merlo MAX to Burntwood Dr	Westside Trail: Merlo Road MAX to Schuepback Park and Schuepback Park to Burntwood Way	Tualatin Hills Parks and Recreation Department (THPRD)	This project includes two connecting segments of the Westside Trail, about three miles in length, total. These segments connected to the existing trail that extends south to the Tigard city limits at Barrow Rd		2013 and 2014
Tualatin River Greenway trail	Tualatin River Greenway trail	City of Tualatin	A 4.6-mile long accessible multi-use pedestrian and bike path from Tigard to Durham and Tualatin.	This project was funded through Connect Oregon	2016

7 Business Impacts Findings by Study Area

The sections that follow provide the findings for each study area. For each study area, we first describe the improvements and indicate the project completion date and the control and comparator areas. We then provide a narrative summary of the business activity in the area for 2017 based on the NETS data. More detailed figures are included in Appendix (Section 12). The next parts present the findings from each of the three methods, starting with an overall summary. We include figures with the aggregate trend plots here. The detailed results of the DID and ITS regression models are in an appendix (Section 13).

7.1 Milwaukie: McLoughlin Boulevard

Description: The McLoughlin Blvd project is about 0.4 miles long and included pedestrian crossings, landscaping, and sidewalk improvements. One feature of the improvements – brick texture on the crosswalks – has faded over time, noticeably at least in 2009 (the oldest Google Street view image available). The project is adjacent to the Trolley Trail and Milwaukie Bay Park along the Willamette River, so there are commercial land uses only on one side of the street (*Figure 8*). The pedestrian crossing improvements provide a safer connection between the park and trail along the river and downtown Milwaukie.

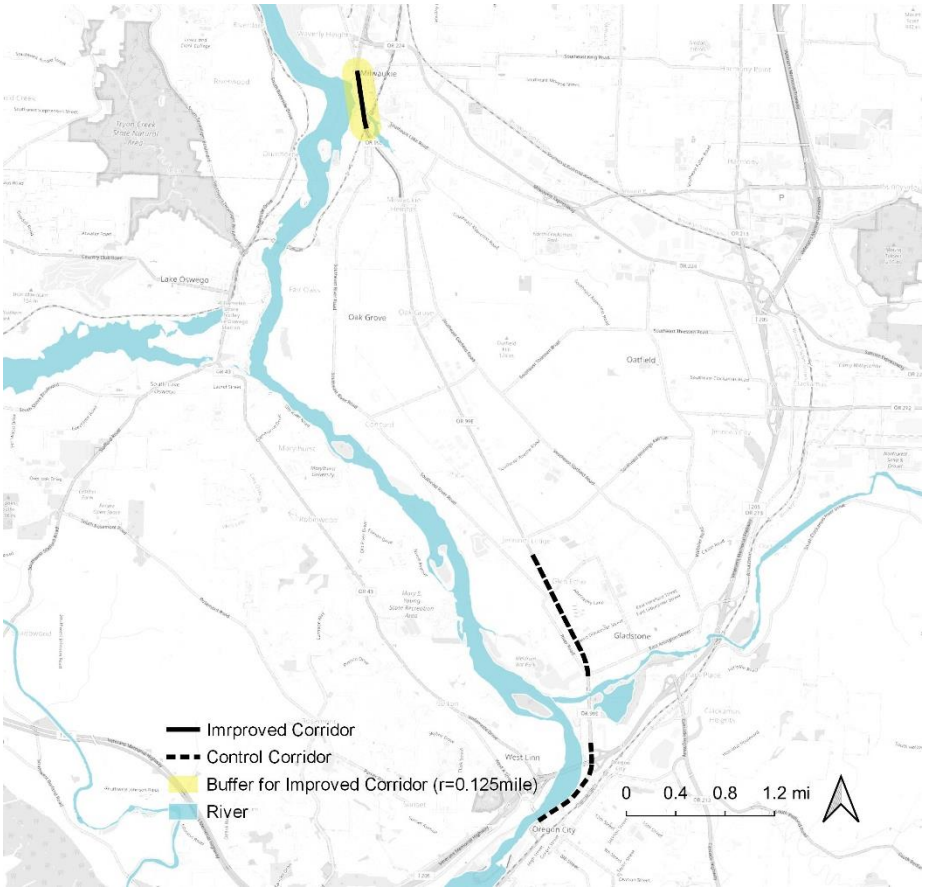

Figure 8: McLoughlin Blvd study area

Completion Date: July 2006

Controls: McLoughlin Blvd in Gladstone, McLoughlin Blvd in Oregon City. The second control area in Oregon City is the location of another Catalyst project (Section 7.3), but that project was finished in 2010, after the post-construction analysis time period for this project.

Comparator areas: City of Milwaukie

Business Activity: Between 2003 and 2017, the NETS data indicated that there was a significant decrease in retail sector business activities. More specifically, in 2003 retail represented 20.1% of all establishments. This fell to 9.6% in 2017. Retail employment fell from 11.7% to 5.4% of all employment, and retail sales declined from 17.3% to 7.4% of all sales. The start of the decline corresponds with the Great Recession of 2007-09 Recession (Figure 9). In 2017, the food and accommodations sector represented 9.6% of the establishments, 12.5% of the employment, and 5.3% of sales. There was no significant change in the food and accommodations business activities between 2003 and 2017. About 90% of the food and drink establishments are restaurants & other eating places, with little change between 2003 and 2017.

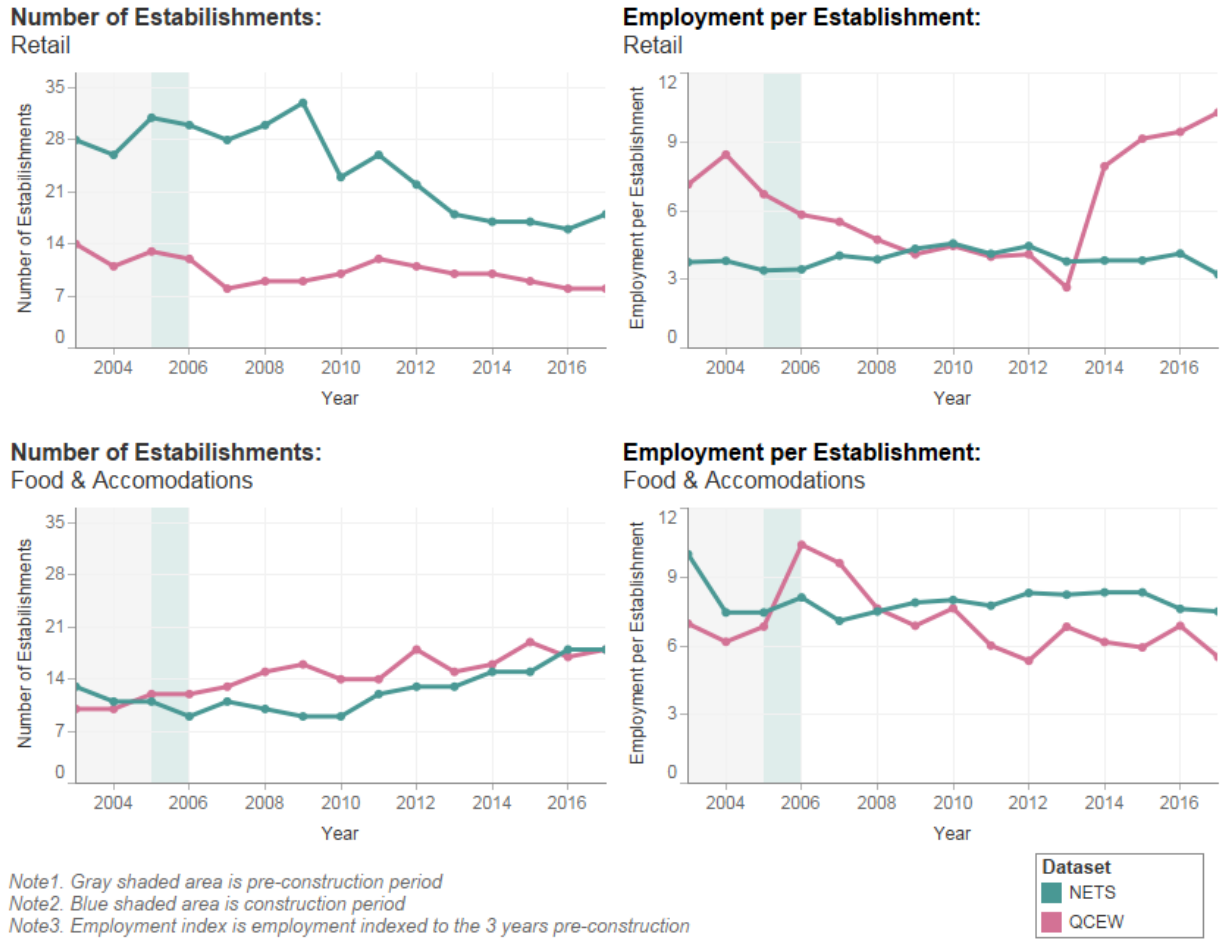

Figure 9: Milwaukie: McLoughlin Blvd. retail and food establishments, 2003-2017

Overall: It was difficult to draw clear conclusions about the effects of the improvements on the business activities because of the Great Recession immediately after construction and the limited

amount of data before construction. This is because LEHD data starts in 2002 and our QCEW data starts in 2003. Nevertheless, we found some positive impacts in the food sector as a result of larger increases (or smaller decreases) in business activities compared to the trends of comparators immediately after construction (Table 11). These trends have persisted since 2010. It also appears that the corridor may have performed better compared to McLoughlin Blvd. in Gladstone, particularly for retail employment, but worse than McLoughlin Blvd. in Oregon City. The mixed findings are not surprising considering the timing of the project before the recession, the limited scope of the improvements made, the lack of commercial land uses on one side of the street, and the type of roadway (four-lane major arterial).

Table 11: Milwaukie McLoughlin Boulevard, summary of business impacts

Outcome (data source)	Retail			Food		
	Aggregated Trend	**DID**	**ITS**	**Aggregated Trend**	**DID**	**ITS**
Employment (LEHD)	○	+ —	○	○	○ —	○
Employment (QCEW)	○	+ ○	+	○	○	○
Employment (NETS)	○	+ ○	○	+	○ —	○
Wages (QCEW)	○	○ —	○	○	○ —	○
Sales (NETS)	—	+ ○	—	+	○ —	+

+: *positive effect* ○: *no effect* —: *negative effect*
For DID results, top row control is McLoughlin Blvd. in Gladstone, bottom row control is McLoughlin Blvd. in Oregon City

Aggregated Trend: Because the years immediately following the completion of the improvement coincide with the Great Recession, it is not possible to separate the effects of the economic downturn using this type of analysis. The aggregated trend analyses suggest that employment, wages, and sales in the retail industry along the improved McLoughlin Boulevard corridor experienced a relatively larger decrease than the comparator areas, but returned to a similar trend in more recent years. The NETS retail employment and sales analyses showed persistent declines after 2010, though this is also seen for the control corridor in Gladstone. Food sector jobs and wages experienced a boost in the years directly following the improvement and appeared to be closely mirroring the trends in its comparators in more recent years (*Figure 10*).

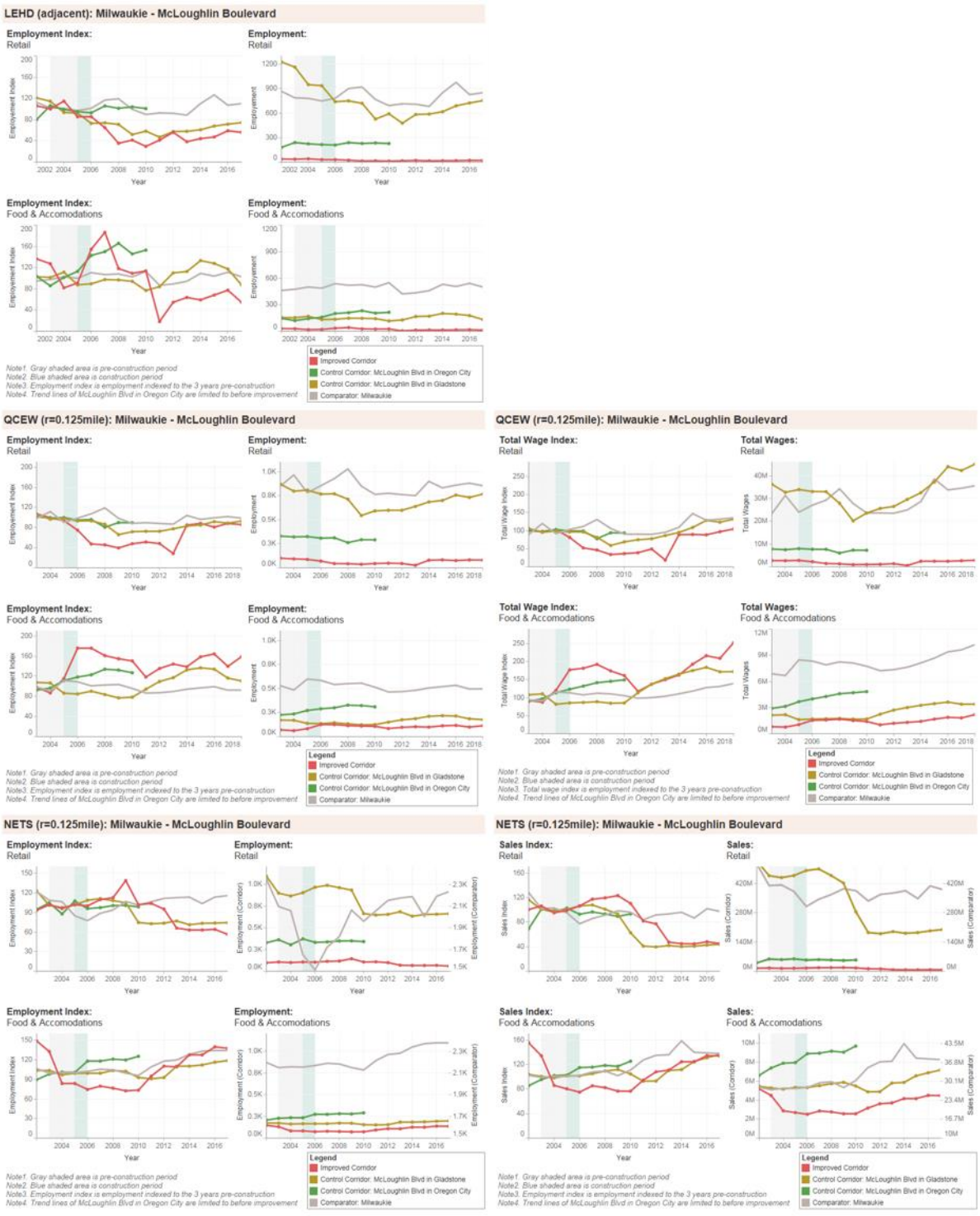

Figure 10: McLoughlin aggregated trend analysis

DID: The DID analyses showed that employment and wages in both retail and food sectors on McLoughlin Boulevard in Milwaukie were higher than that of the control corridor in Gladstone following the 2006 improvements. The results also showed negative impacts on food sector wages when using the Oregon City section of McLoughlin Boulevard as the control corridor, but no significant impacts on

retail employment, retail wages, or food employment using QCEW data. DID analyses of retail employment and sales (NETS) also indicated positive impacts when compared to the Gladstone control corridor, while DID analyses of food employment and sales indicated negative impacts when compared to the Oregon City control corridor. Generally, the DID analyses suggest that the 2006 improvements on McLoughlin Boulevard in Milwaukie contributed positively to retail sector employment when compared to the Gladstone control corridor, and contributed negatively to food sector employment, wages and sales when compared to the Oregon City control corridor.

ITS: The ITS analyses of LEHD and QCEW data did not yield significant conclusions on the impact on employment or wages along the McLoughlin Boulevard corridor in Milwaukie. Some of these inconclusive results may be attributed to the limited data prior to the improvement. The ITS analyses of NETS data confirmed the results from the aggregated trend analyses, that retail employment and sales experienced negative growth rates after the 2006 improvement and food employment and sales experienced positive growth rates. Because the years immediately following the completion of the improvement coincide directly with the Great Recession, we cannot conclude that the negative trends in the retail sector were directly attributable to the street improvement. On the other hand, the positive growth in the food sector on the Milwaukie McLoughlin Boulevard corridor appeared to be robust despite the recessionary impacts.

7.2 Milwaukie Town Center

Description: The Town Center improvements were done in conjunction with the Portland-Milwaukie Light Rail (PMLR) project. The improvement funded by Metro's regional flexible funds is the one-block Adams Street Connector, which links the MAX station with Main Street. The Connector is a pedestrian area with landscaping, artwork, and seating. There are several other pedestrian and bicycle improvements on adjacent blocks that were funded through the PMLR project. It would be impossible to quantify the impacts of the Adams St. Connector separately from the other improvements and from the impacts of the new MAX station. In addition, Google Street view images reveal that several intersections in the area have had curb extensions and landscaping for much of the past decade and that other sidewalk improvements have been made over that time period. Therefore, we defined the study area as the 11 blocks in the downtown area that includes the commercial side of McLoughlin Blvd. along with areas around the later pedestrian improvements (*Figure 11*).

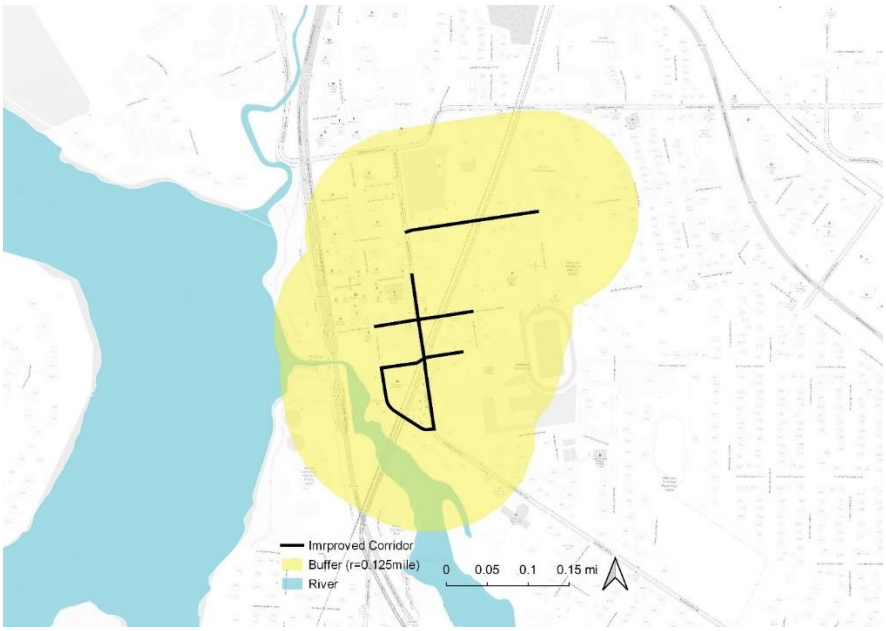

Figure 11: Milwaukie Town Center study area

Completion Date: July 2015

Control: No appropriate controls available

Comparator areas: City of Milwaukie

Business Activity: In 2017, the NETS data indicated that there were 16 retail establishments, representing about 8.1% of all establishments, 4.1% of employment, and 5.8% of sales. These figures are slightly lower than in 2012, three years before project construction. Over that time period, there were fewer grocery stores (from three to one), which contributed to a decline in retail employment. The employment in grocery stores decreased from 29.4% to 9.4% of all retail employment, and grocery sales decreased from 27.9% to 8.5% of all retail sales. In 2017, the food and accommodations sector represented 5.6% of all establishments, 7.5% of employment, and 3.1% of sales. This sector saw some growth from 2012 to 2017, in the total numbers and as a share of overall business activity. That growth was primarily in restaurants and other eating places, which represented all but one of the establishments in 2017.

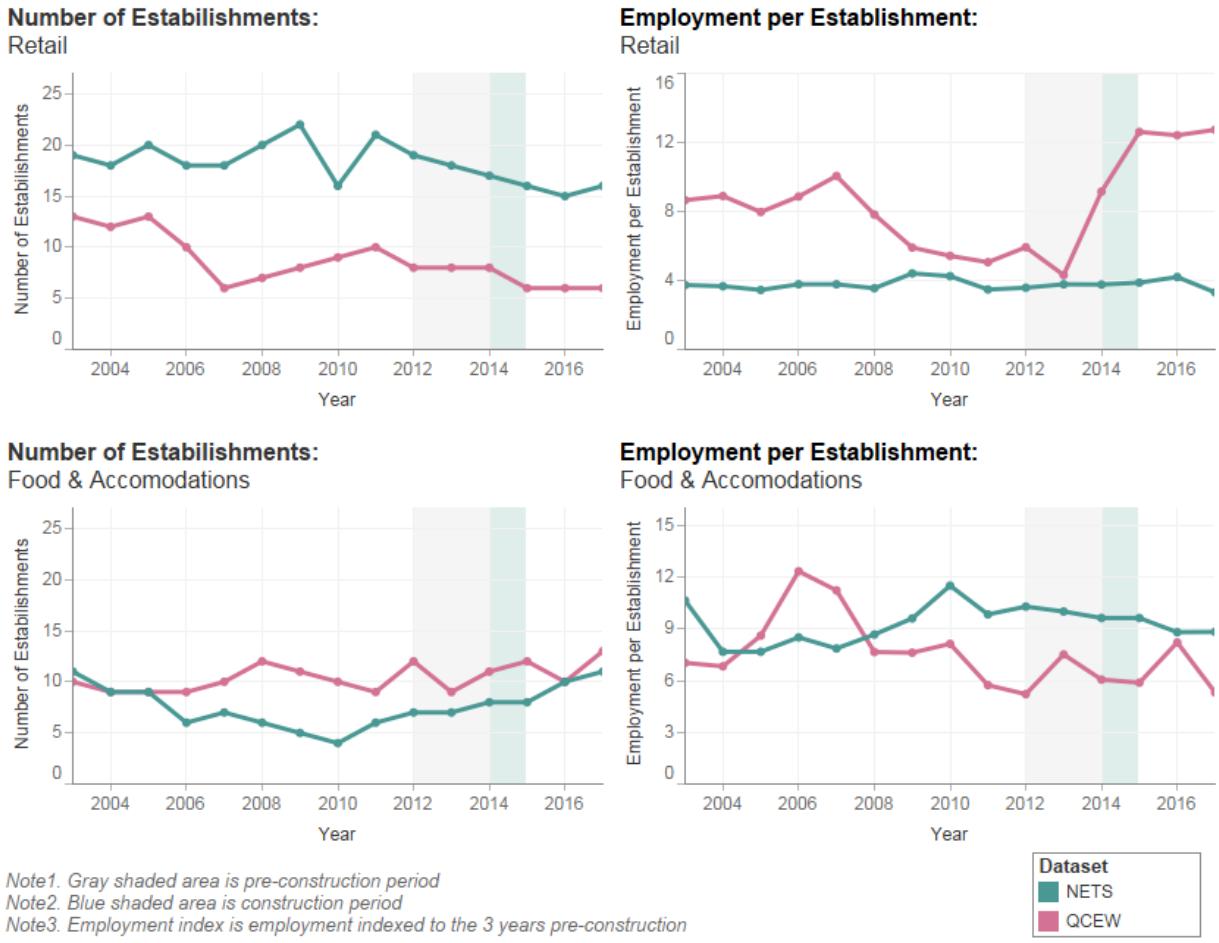

Figure 12: Milwaukie Town Center retail and food establishments, 2003-2017

Overall: There are no significant results from the econometric analyses, though we see some positive impacts of the improvements in the food sector based on the trend analysis (Table 12). Since this area was improved relatively recently (2015), it would be useful to collect more years of data to identify the long-term effects of the improvements. This is particularly true given the new mixed-used development in the area.

Table 12: Milwaukie Town Center, summary of business impacts

Outcome (data source)	Retail			Food		
	Aggregated Trend	**DID**	**ITS**	**Aggregated Trend**	**DID**	**ITS**
Employment (LEHD)	○		○	○		○
Employment (QCEW)	○		○	○		○
Employment (NETS)	○		○	+		○
Wages (QCEW)	○		○	+		○
Sales (NETS)	○		○	+		○

+: *positive effect* ○: *no effect* —: *negative effect*
gray shading: analysis not conducted due to lack of appropriate control area

Aggregated Trend: These analyses showed that the employment and wage levels in both retail and food sectors in the Milwaukie Town Center generally mirrored the trends in both Gladstone and Milwaukie, with some degree of negative growth during the Great Recession and positive growth following the 2015 pedestrian improvements. Wages (QCEW), employment (NETS), and sales (NETS) in the food sector showed relatively stronger growth compared to the retail sector in the most recent years, while NETS retail employment and sales displayed a dip in the most recent year of data (2017) (*Figure 13*).

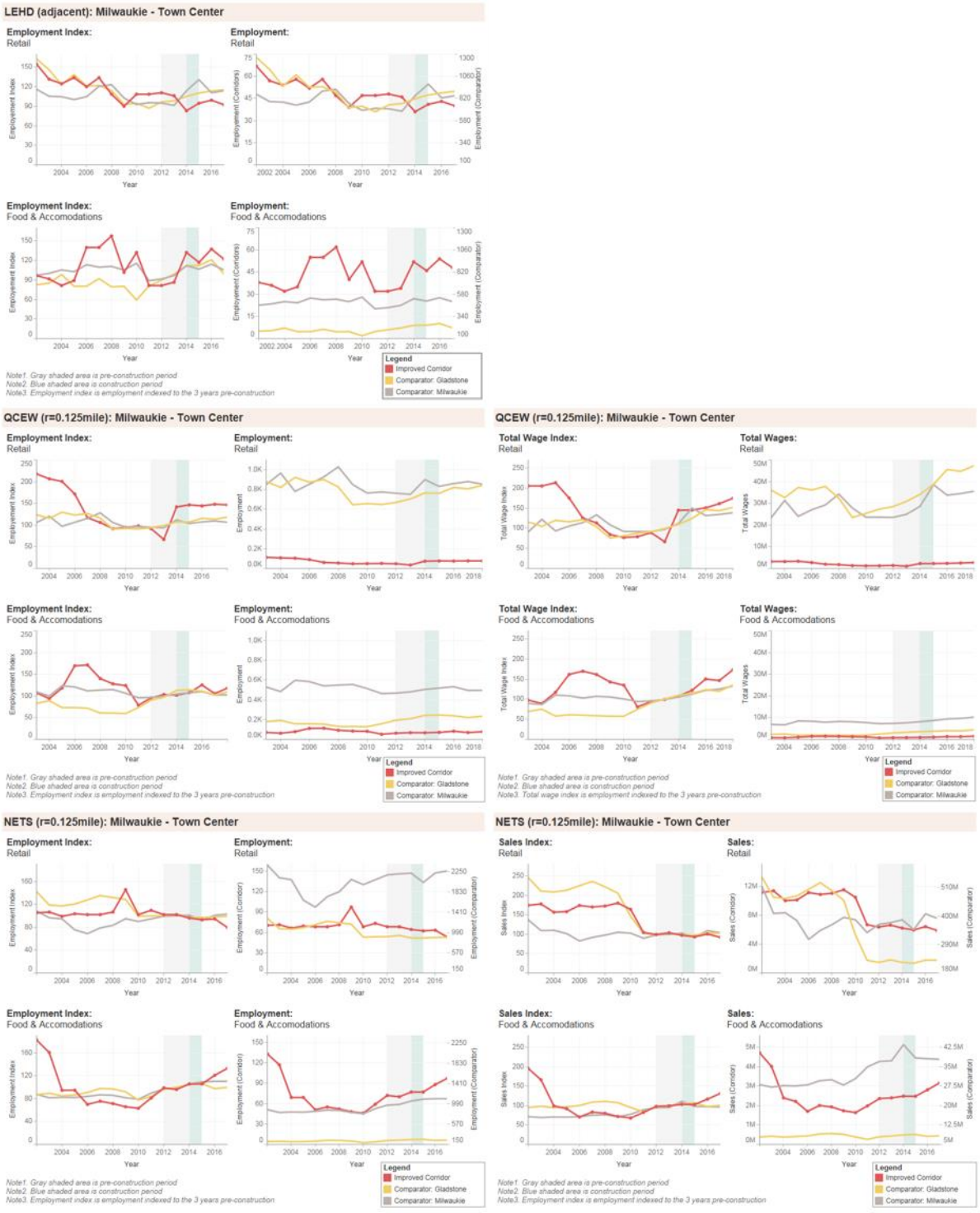

Figure 13: Milwaukie aggregated trend analysis

ITS: The ITS analyses of LEHD, QCEW, and NETS data in the Milwaukie Town Center area found non-significant results for both jobs and wages.

7.3 Oregon City: McLoughlin Boulevard

Description: Our analysis covers Phase I of this project, which is 0.9 miles in length from the Hwy. 43 bridge north to Dunes Drive and included sidewalk expansion, street trees, crosswalks, and public art. This stretch of McLoughlin Blvd. runs in the downtown area of Oregon City (a regional center) along the Willamette River (*Figure 14*). The context is similar to the Milwaukee project on McLoughlin Blvd. The improvements provide a connection between the Willamette River Greenway Trail along the river and downtown Oregon City.

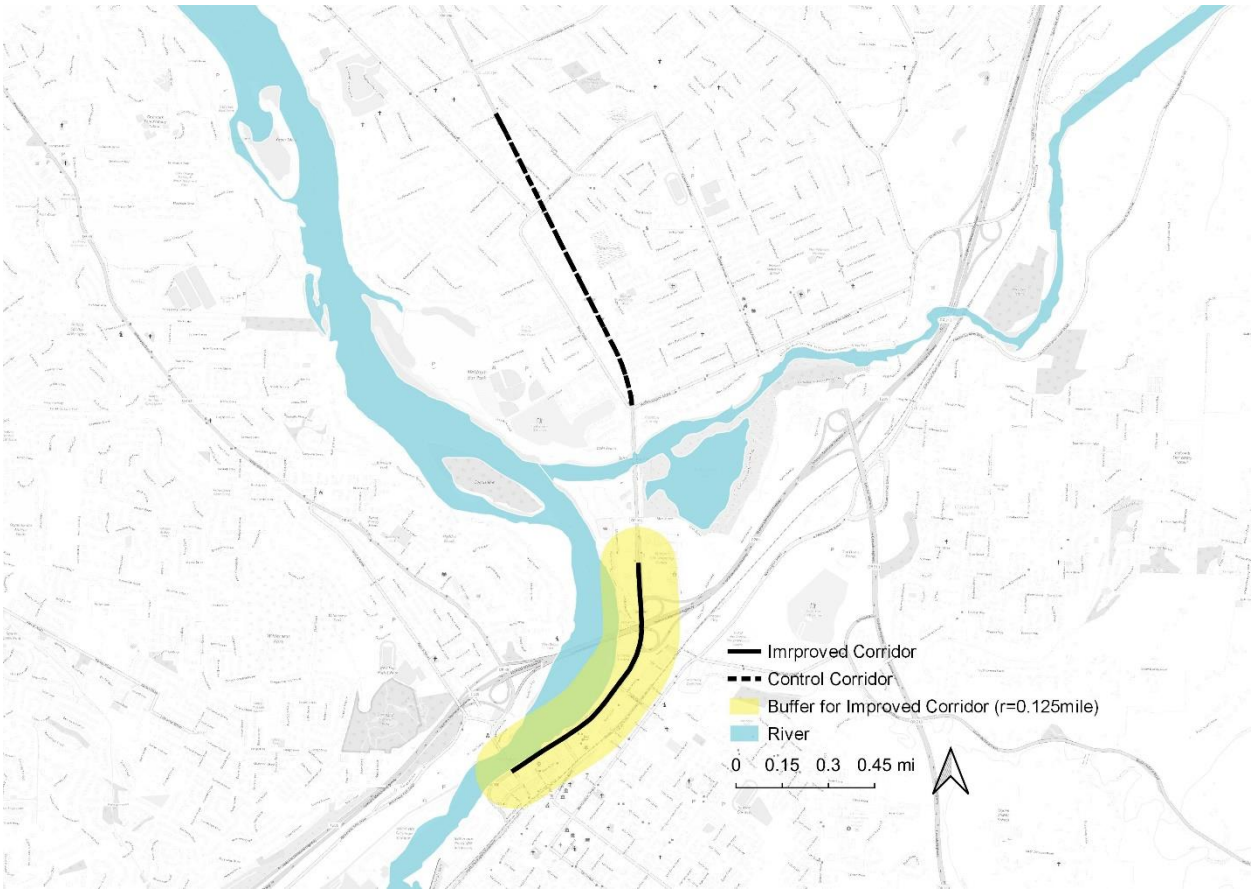

Figure 14: Oregon City study area

Completion Date: 2010

Control: McLoughlin Blvd in Gladstone

Comparator areas: City of Oregon City

Business Activity: In 2017, the NETS data indicated that there were 40 retail establishments, representing about 16% of all establishments, 15% of all employment, and 37% of all sales. Within the retail sector, the establishments of the health & personal care sector increased from 2% in 2012 to 10% of all retail establishments in 2017, while those of the office supplies sector decreased from 12% to 5% during the same period. Simultaneously, the sales of the health & personal care sector increased from 22% to 39% of all retail sales; however, the employment of both sectors and the sales of the office supplies sector did not change significantly. In 2017, the food and accommodations sector represented 11% of the establishments, 10% of the employment, and 4% of sales. Within the food and drink sector,

the number of drinking places (alcoholic beverages) increased between 2007 and 2017, as did employment and sales in those types of establishments. The number of restaurants & other eating places remained about the same, but employment and sales fell. Therefore, drinking places were a larger share of business activity in 2017 compared to 2007.

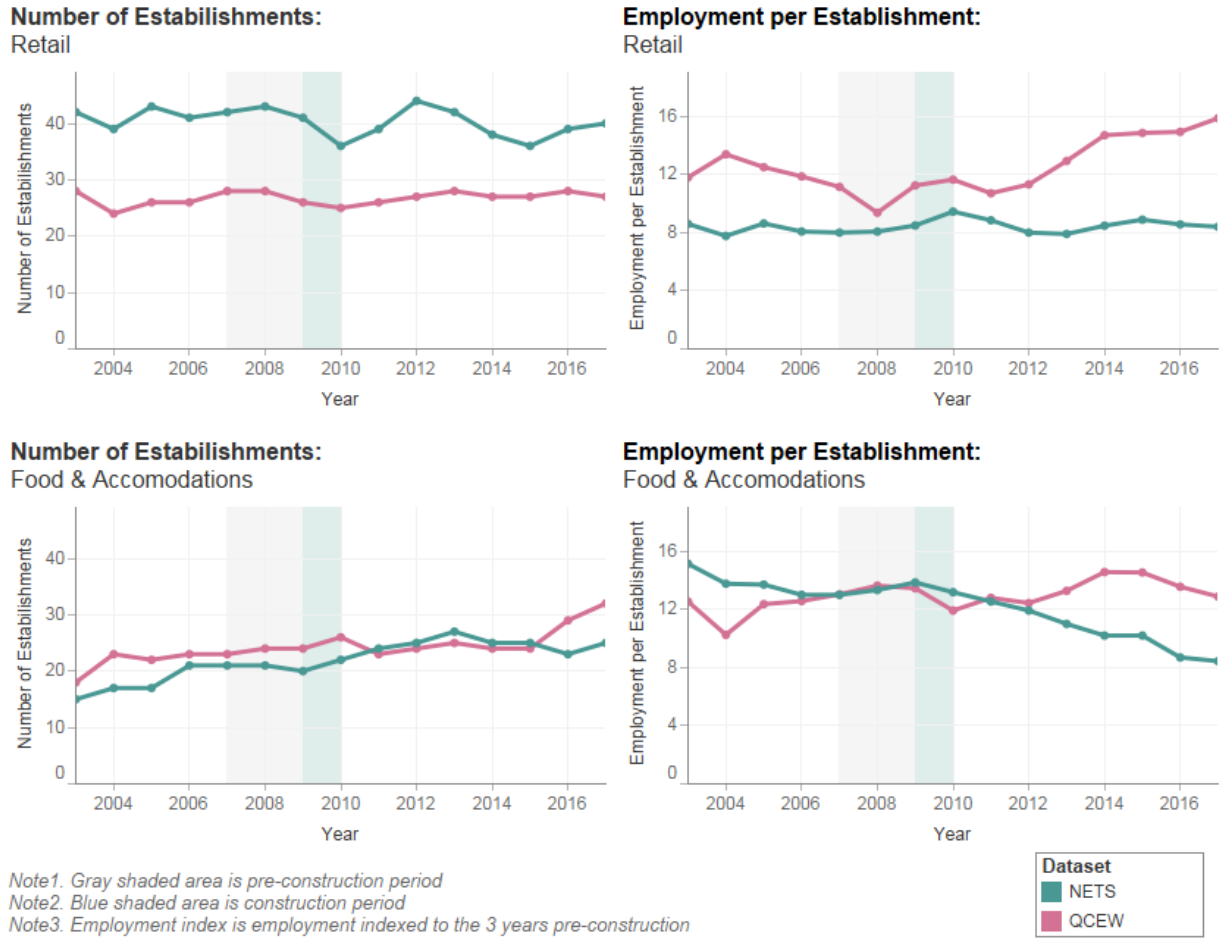

Figure 15: Oregon City retail and food establishments, 2003-2017

Overall: We see several positive impacts of the improvements of McLoughlin Blvd in Oregon City on the business activities in the retail sector using all three methods and data sources (Table 13). The findings for the food and accommodations sector are mixed, with negative effects on employment and sales using one data source and positive effects on wages with another data source.

Table 13: Oregon City McLoughlin Boulevard, summary of business impacts

Outcome (data source)	Retail			Food		
	Aggregated Trend	**DID**	**ITS**	**Aggregated Trend**	**DID**	**ITS**
Employment (LEHD)	○	+	+	○	○	○
Employment (QCEW)	+	+	+	○	○	○
Employment (NETS)	○	+	○	—	○	—
Wages (QCEW)	○	○	+	○	+	+
Sales (NETS)	+	+	○	—	○	—

+: *positive effect* ○: *no effect* —: *negative effect*

Aggregated Trend: These analyses showed that the employment and wage levels in both retail and food sectors on the McLoughlin Boulevard corridor in Oregon City generally followed the control corridor and the Oregon City trends, with a small decrease in the year immediately after construction followed by consistent growth starting in 2012. While wages in both sectors grew at a significant pace after 2010, the number of retail jobs and wage levels (to a lesser extent) increased more significantly after the improvement when compared to the control corridor and Oregon City. NETS retail employment and sales also displayed a trend consistent with the control corridor and Oregon City, with a sharp increase in retail sales in the last year of data (2017). On the other hand, NETS food employment and sales both displayed a sharp decline around 2014, but the number of food establishments stayed relatively constant, with fewer employees and sales per establishment (*Figure 16*).

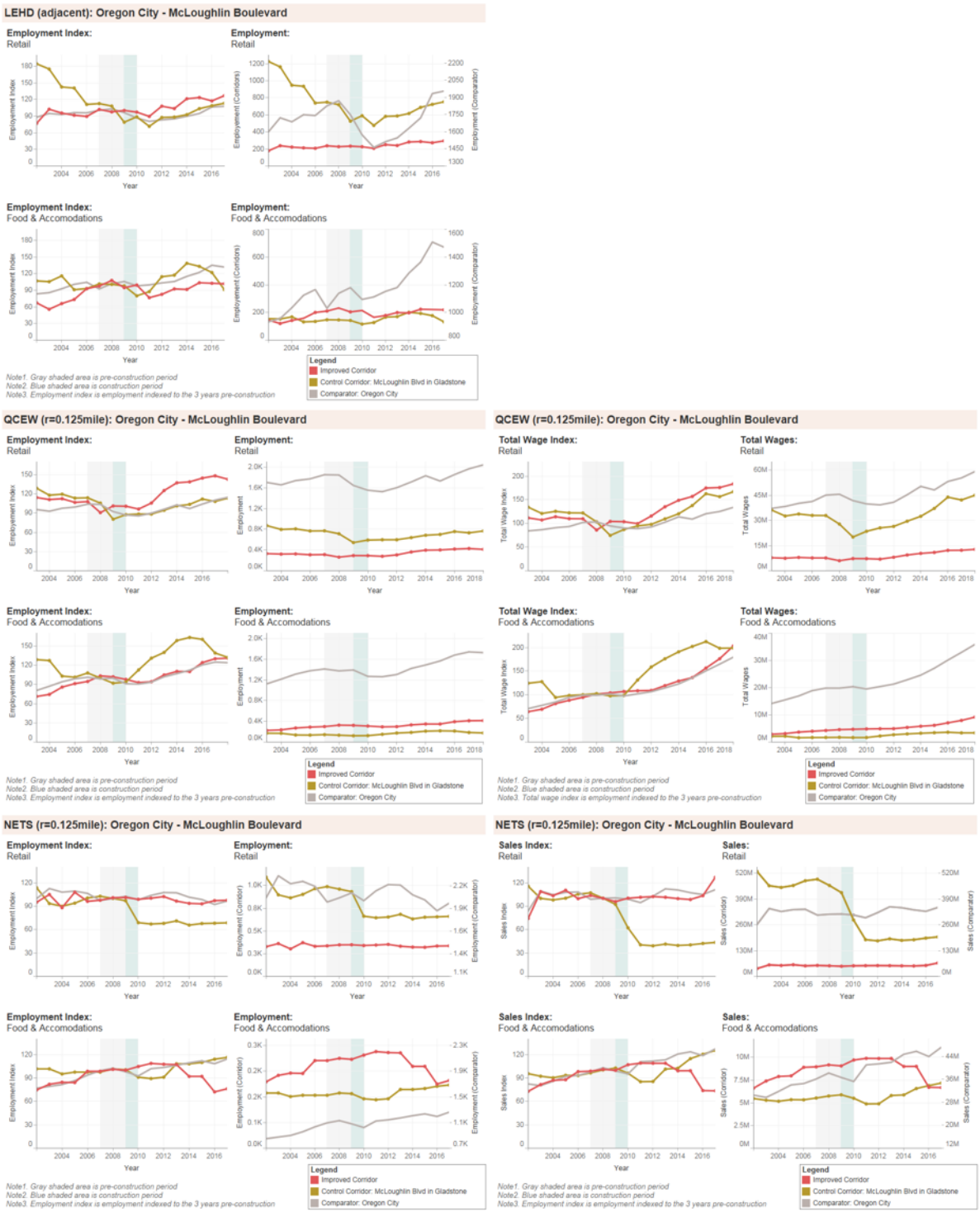

Figure 16: Oregon City aggregated trend analysis

DID: The DID analyses showed positive significant impacts in retail employment and food sector wages following the improvements on McLoughlin Boulevard in Oregon City when compared to the control corridor in Gladstone. The DID analyses of NETS data showed positive effects on retail employment and sales, but no significant effect on food employment and sales.

ITS: The ITS analyses found positive significant effects in the retail sector for employment (LEHD and QCEW) and wage levels (QCEW) and in the food sector for wages (QCEW). However, the results showed negative impacts on food sector jobs and sales using NETS data and no significant impacts on food sector jobs using QCEW and LEHD.

7.4 Gresham: NE Hood Avenue

Description: This pedestrian improvement project is a half-mile in length and included adding sidewalks, planter strips with trees and streetlights, curb extensions, crosswalks, and improved ADA access. The north end of the project links to the Gresham Central MAX station (*Figure 17*). The project is in central Gresham, just on the edge of the historic commercial center. The land uses along the corridor include a mix of commercial and apartment housing, along with a park that includes the Arts Plaza. The Arts Plaza opens onto a "festival street" (a segment of Third Street) that hosts the Gresham Farmer's Market.

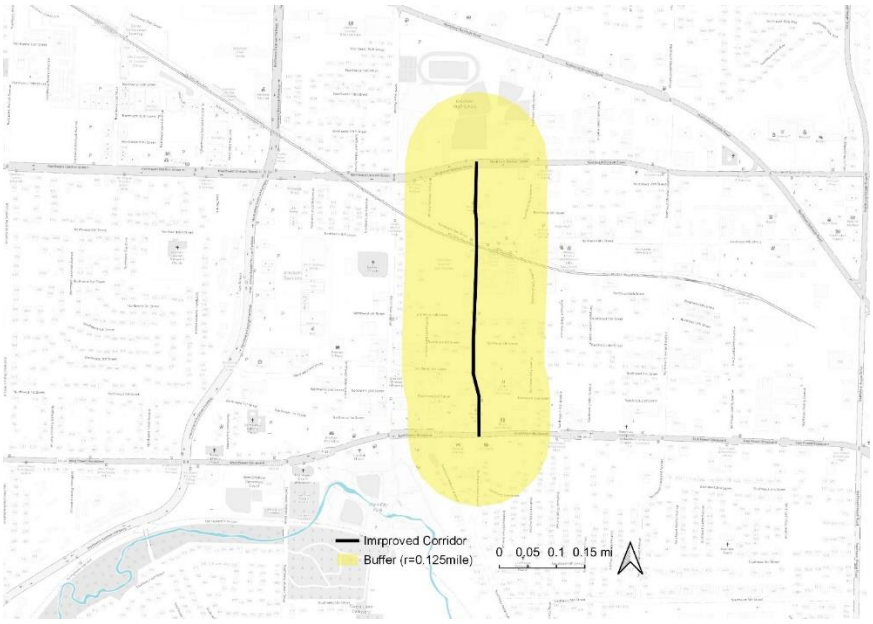

Figure 17: NE Hood Ave. study area

Completion Date: March 2013

Control: No appropriate controls available

Comparator areas: City of Gresham

Business Activity: In 2017, the NETS data indicated that there were 16 retail establishments, representing about 6% of all establishments, 3% of employment and 3% of sales. Within the retail sector, specialty food represented 24% of employment and home furnishings was 12%. The food and accommodations sector represented 4% of all establishments, 7% of employment, and 2% of sales. Health care and social assistance establishments made up 29% of employment and 20% of sales. Other important sectors in the area include other services and finance and insurance. Within the food and drink sector, restaurants and other eating places represent over 90% of establishments, employment, and sales.

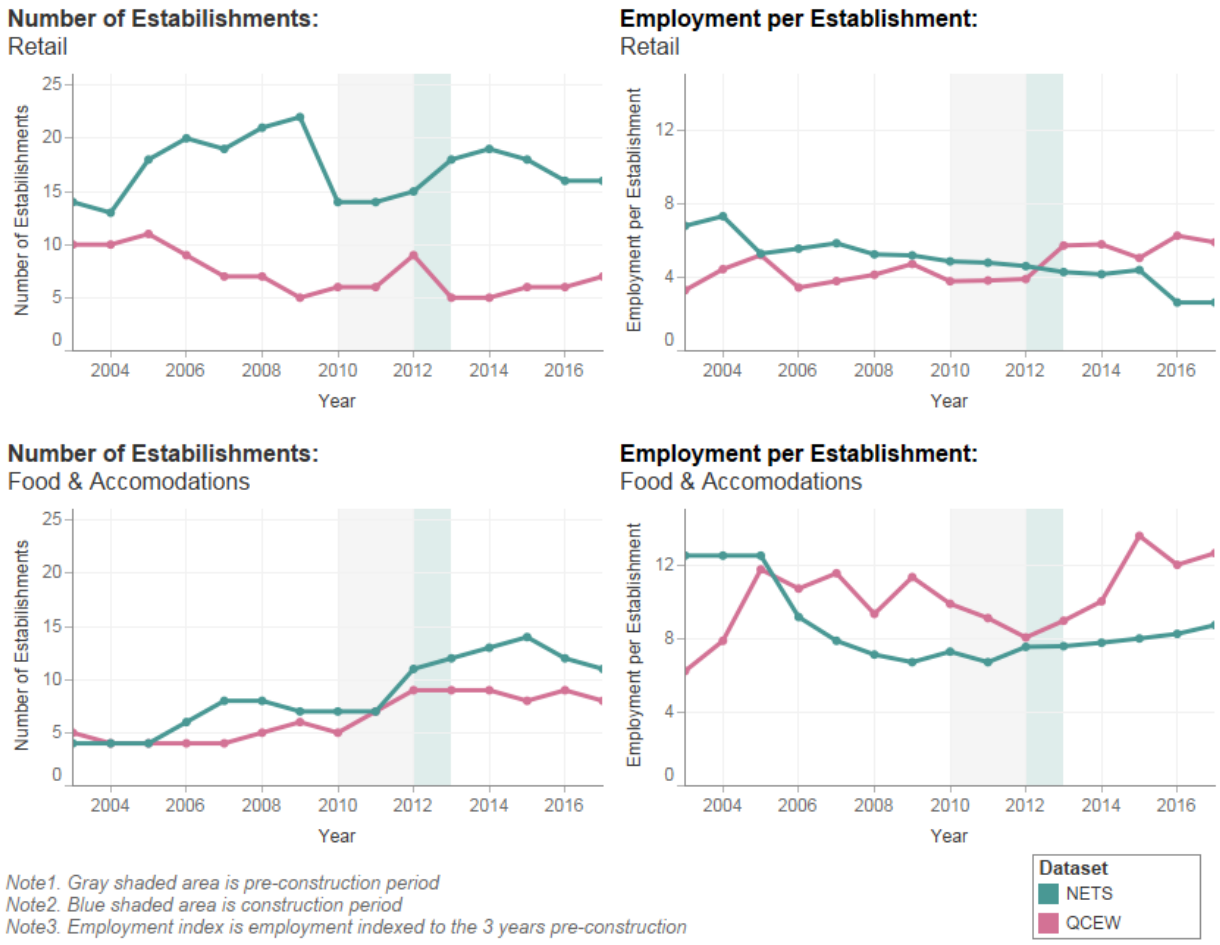

Figure 18: NE Hood Ave. retail and food establishments, 2003-2017

Overall: We see some positive changes associated with the improvements, particularly positive wage growth in both retail and food sectors, though the findings are not consistent between data sources (Table 14). Effects on employment were either positive or no effect was detected. This may be due to the relatively small number of establishments in the study area and differences in which establishments were included in each data source.

Table 14: Gresham NE Hood Ave, summary of business impacts

Outcome (data source)	Retail			Food		
	Aggregated Trend	**DID**	**ITS**	**Aggregated Trend**	**DID**	**ITS**
Employment (LEHD)	○		○	○		○
Employment (QCEW)	+		+	+		○
Employment (NETS)	○		○	+		○
Wages (QCEW)	+		+	+		+
Sales (NETS)	○		○	○		○

+: *positive effect* ○: *no effect* —: *negative effect*
gray shading: analysis not conducted due to lack of appropriate control area

Aggregated Trend: The LEHD data generally followed the employment trends in the City of Gresham. The analyses of QCEW data showed that retail employment and wages in the study area follow the growth pattern in Gresham closely, with increasing growth in the most recent years following the 2013 improvement. In the food and accommodations sector, jobs and wages displayed persistent positive growth that outpaced the rest of the City. While the retail and food employment and sales trends broadly follow Gresham trends in the analysis of NETS data, both food employment and sales appear to experience relatively higher growth post-improvement. The increase in food employment appears to be driven by an increase in full-service restaurants (*Figure 19*).

Figure 19: NE Hood Ave. aggregated trend analysis

ITS: While the ITS analysis of LEHD and NETS data showed no significant impacts, the analyses of QCEW showed that retail employment and wage growth were positively impacted by the 2013 improvements along the Hood Avenue corridor in Gresham. The same effect could also be seen for wages in the food sector. However, these results indicated that the food sector employment continued

to grow at a pace that was consistent with its pace prior to the street improvement. The lack of consistency between the NETS and QCEW findings may be due to differences in the data. For the retail sector, the NETS data included about 15-20 establishments in each year, compared to 5-10 in the QCEW data. Looking at the NETS data, there was a drop in the number of automotive parts and tire establishments between 2010 and 2017 (four to one), which appears to help explain the drop in employment and sales in those data for 2016 and 2017, which likely influenced the ITS results.

7.5 Portland: E Burnside Street

Description: The improvements were done when the street was converted to a one-way couplet with NE Couch and included a bike lane, sidewalk, crossing improvements, signals, and landscaping (*Figure 20*). For most of the corridor, motor vehicle travel lanes were reduced from two in each direction to three eastbound lanes. There are four lanes for a few blocks on the east end of the corridor.

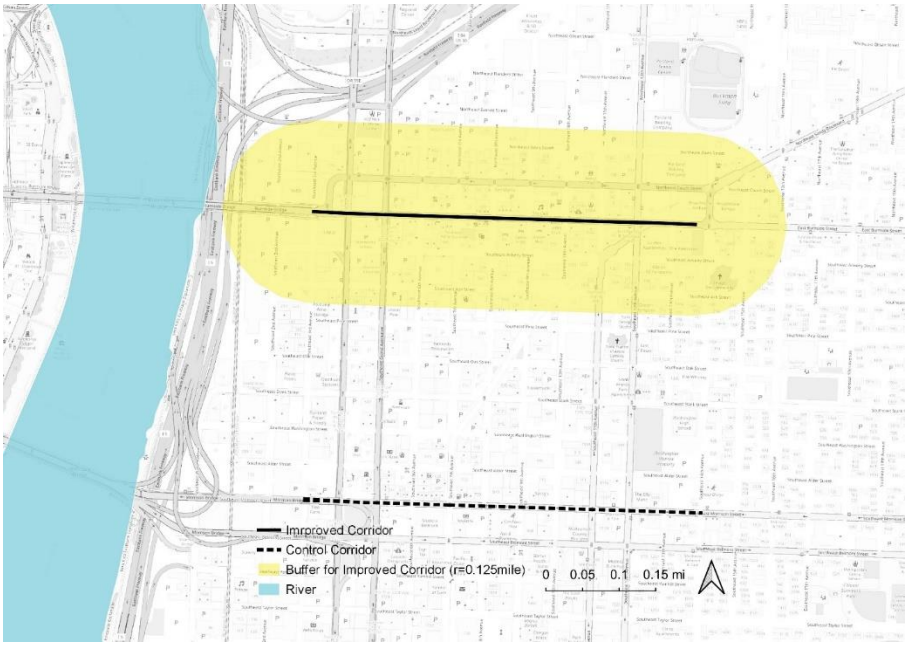

Figure 20: East Burnside study area

Completion Date: December 2010

Control: SE Morrison Street (from SE 6th Ave to 14th Ave)

Comparator areas: City of Portland, SE & NE Portland quadrants

Business Activity: In 2017, the NETS data indicated that there were 54 retail establishments, representing about 10.4% of all establishments, 9.0% of employment and 17.3% of sales. Within the retail sector, automobiles represented 34% of the employment and 54% of sales although it only represents less than 20% of retail establishments. The food and accommodations sector represented 8.1% of all establishments (n=42), 6.6% of employment, and 2.6% of sales. Within the food and drink sector, drinking places (alcoholic beverages) represented over 35% of establishments, but only about 20% of employment and sales. Other major businesses along the corridor included health care and social assistance establishments which made up 20.9% of employment, followed by manufacturing (17.5%).

However, manufacturing led sales (25.8%), followed by retail trade (17.3%) and wholesale trade (15.7%). Health care only represented 7.1% of sales.

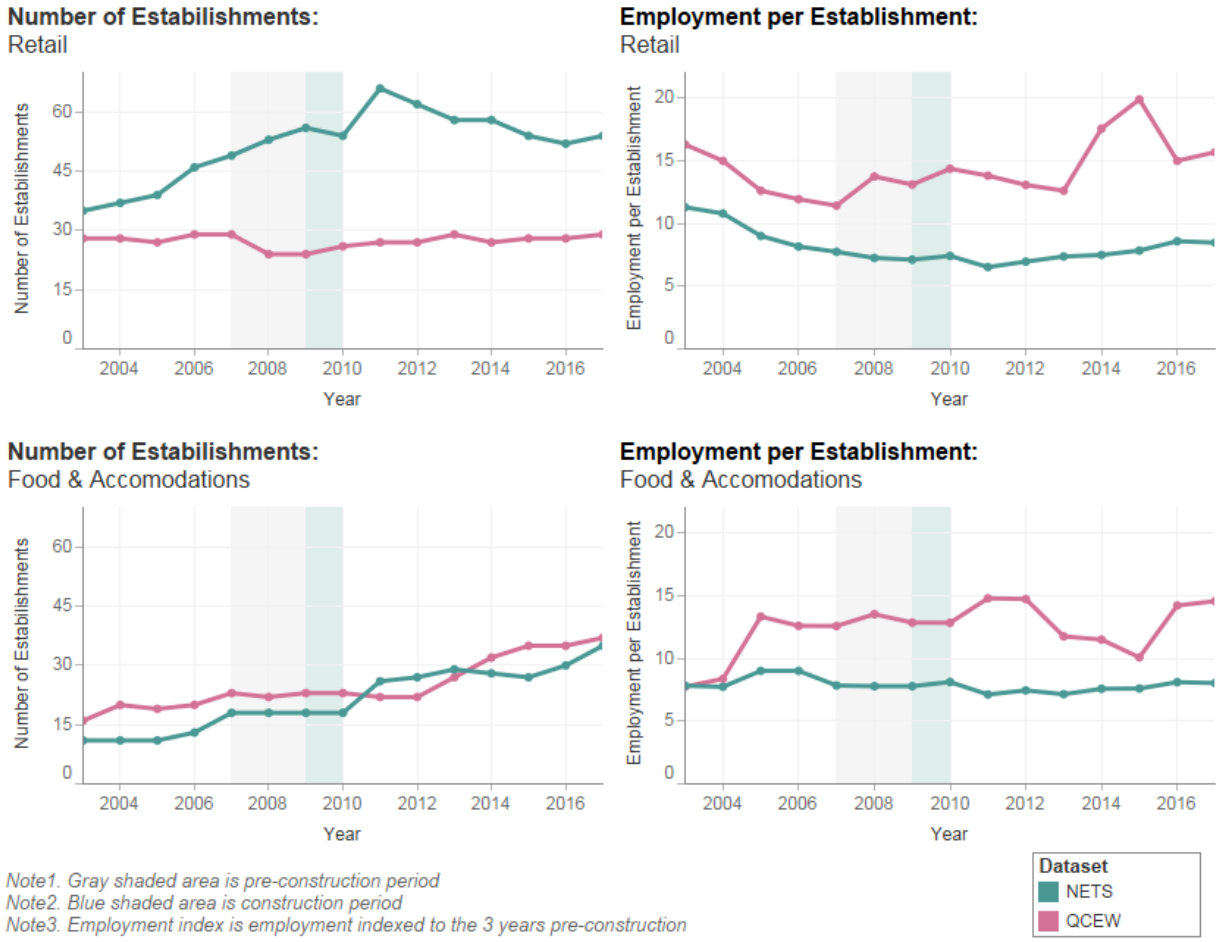

Figure 21 : East Burnside retail and food establishments, 2003-2017

Overall: Overall, we found many positive effects in the retail sector. The growth in retail employment came mainly from the automobile, building material and supplies, specialty food, and liquor sectors. The findings in the food and accommodations sector were very mixed, with negative, positive, and neutral findings. The consistent negative findings from the DID analysis in the food sector may simply reveal that the control corridor (SE Morrison) is more successful in that sector than E Burnside, which outperformed the control in some retail sector measures. The most positive findings for the food sector were in sales, while the analysis of employment was neutral or negative. Between 2007 and 2017, the number of food and drink establishments almost doubled (from 22 to 42), though the share of the area's total employment and sales from this sector increased only slightly. Within the sector, there was a shift in sales and employment from restaurants to drinking places.

Table 15: Portland E Burnside Street, summary of business impacts

Outcome (data source)	Retail			Food		
	Aggregated Trend	**DID**	**ITS**	**Aggregated Trend**	**DID**	**ITS**
Employment (LEHD)	+	○	+	—	—	○
Employment (QCEW)	○	○	+	○	—	○
Employment (NETS)	+	+	○	○	—	○
Wages (QCEW)	+	+	+	○	—	+
Sales (NETS)	○	—	○	+	○	+

+: *positive effect* ○: *no effect* —: *negative effect*

Aggregated Trend: While employment levels in both retail and food sectors on the Burnside Street corridor generally followed the positive trends seen in its comparator quadrants and the City of Portland, the findings are more positive for the retail sector. For retail employment, the LEHD and NETS data showed greater growth in the corridor compared to the control and comparator quadrants, while the QCEW showed growth similar to the control, but greater than the quadrants. The QCEW also revealed that retail wages in the corridor grew more than the control and comparators. For the food sector, the LEHD data shows that the corridor's growth was about the same as the quadrants', but slower than the control. The QCEW revealed that food sector employment and wages grew at about the same rate as the comparator quadrants for the first five years after the improvements, though somewhat greater over the most recent three years. However, the trend was not very different from the control. The trends in the NETS food sector data showed similar trends to comparators before improvement, it showed higher growth rate than that of comparators after improvement (*Figure 22*).

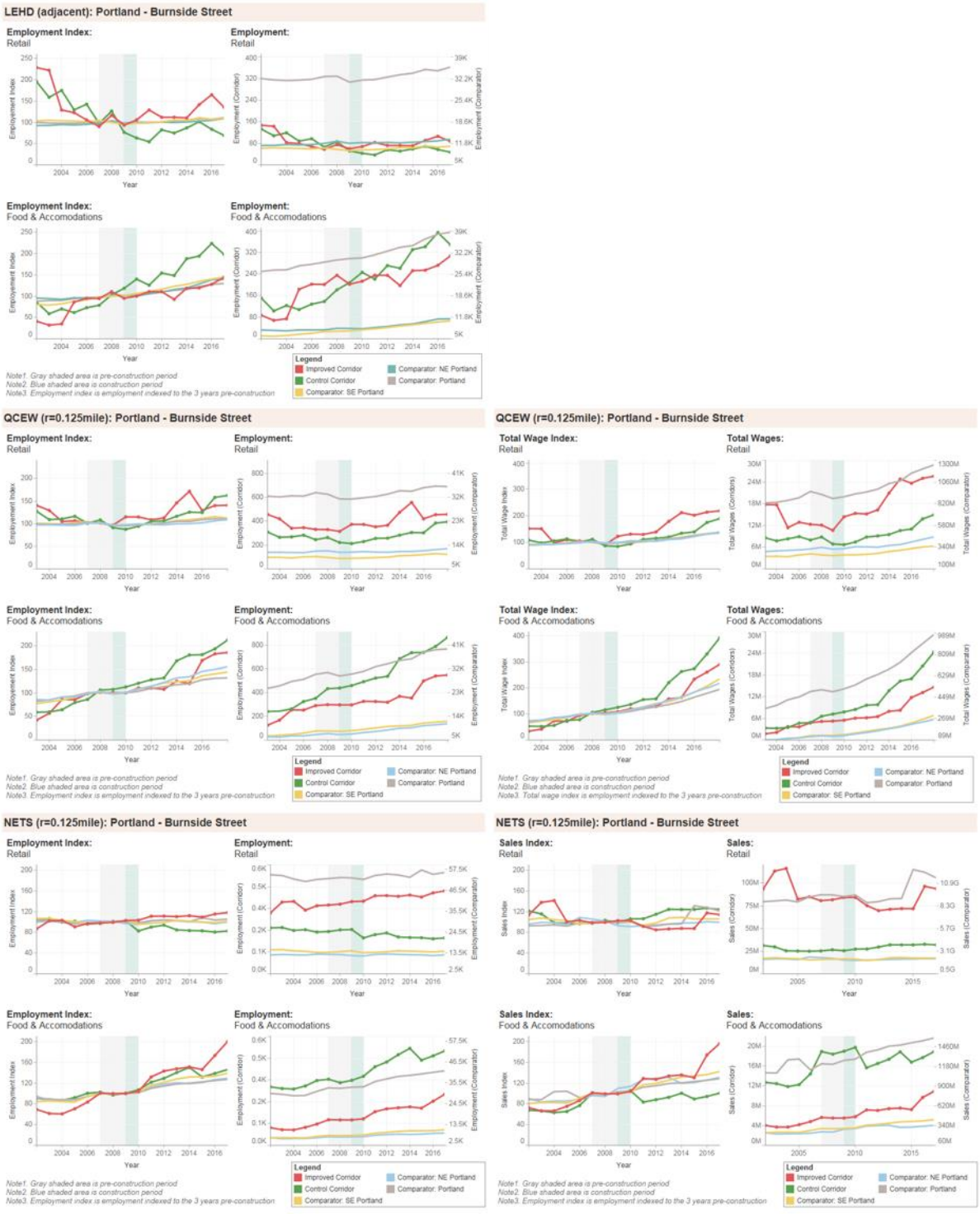

Figure 22: East Burnside aggregated trend analysis

DID: The DID analysis was somewhat consistent with the trend analysis. We found positive effects in the retail sector using the QWEC wage data and the NETS employment data, though negative effects with the NETS sales data. All three data sources showed that the food industry experienced a decline in both employment and wages following the improvement, relative to the control corridor.

ITS: The ITS analyses of LEHD and QCEW data showed consistently positive growth in retail employment and wages along the Burnside Street corridor after the improvement projects. Although the results did not suggest significant impacts on food industry employment, they revealed a smaller (when compared to the retail industry), but positive impact on food industry wages. Using the NETS data, the results were not significant, except for positive impact on sales in the food industry.

7.6 Portland: SE Division Street

Description: This project is 1.9 miles in length and included pedestrian improvements throughout the corridor, including curb extensions and ramps, marked crossings, pedestrian countdown timers, bioswales and other landscaping, improved bus stops, bicycle amenities (bike corrals), public art, and street lighting improvements (*Figure 23*).

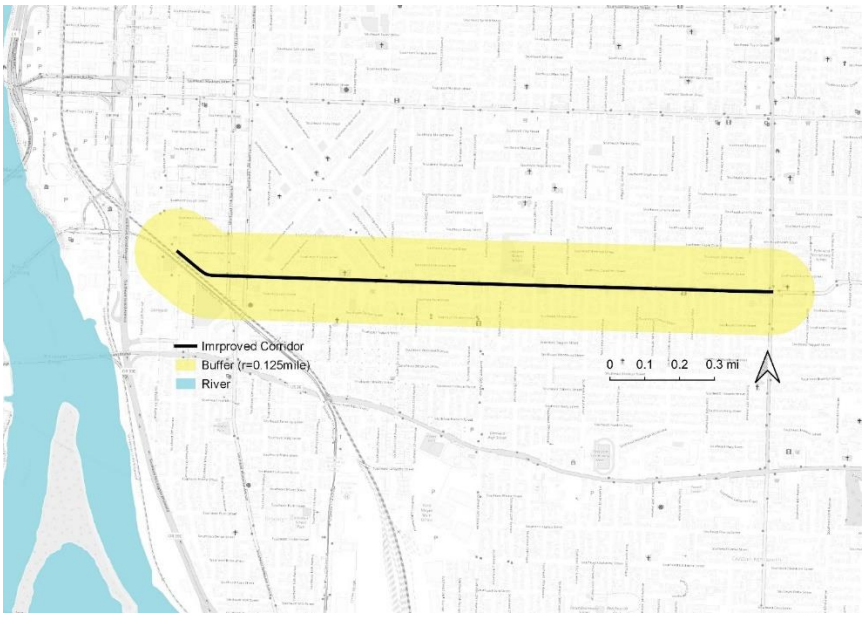

Figure 23: Division Street study area

Completion Date: November 2014

Control: No appropriate controls available

Comparator areas: City of Portland, SE Portland quadrant

Business Activity: In 2017, the NETS data indicated that there were 75 retail establishments, representing about 9.3% of all establishments, 8.7% of employment and 18.0% of sales. Retail trade was the leading sector for sales in 2017 (18.0%). Within the retail sector, clothing represented 16.0% of establishments and 14.2% of employment, and health and personal care was 13.4% of employment and 39.3% of sales. Food and accommodation (n=75) was the leading sector in terms of employment[1] in 2017, representing 17.1% of all employment and 9.1% of sales. Within the food and drink sector, restaurants & other eating places represented about 80 % of establishments, employment and sales.

[1] Excluding "unclassified" establishments, which were 17.2% of employment.

Aside from unclassified establishments (17.2%), the other significant employment sector in the area was health care and social assistance (9.8%). Following the retail trade sector, the wholesale trade (12.8%) and manufacturing (11.1%) sectors represented the largest amount of sales within the corridor.

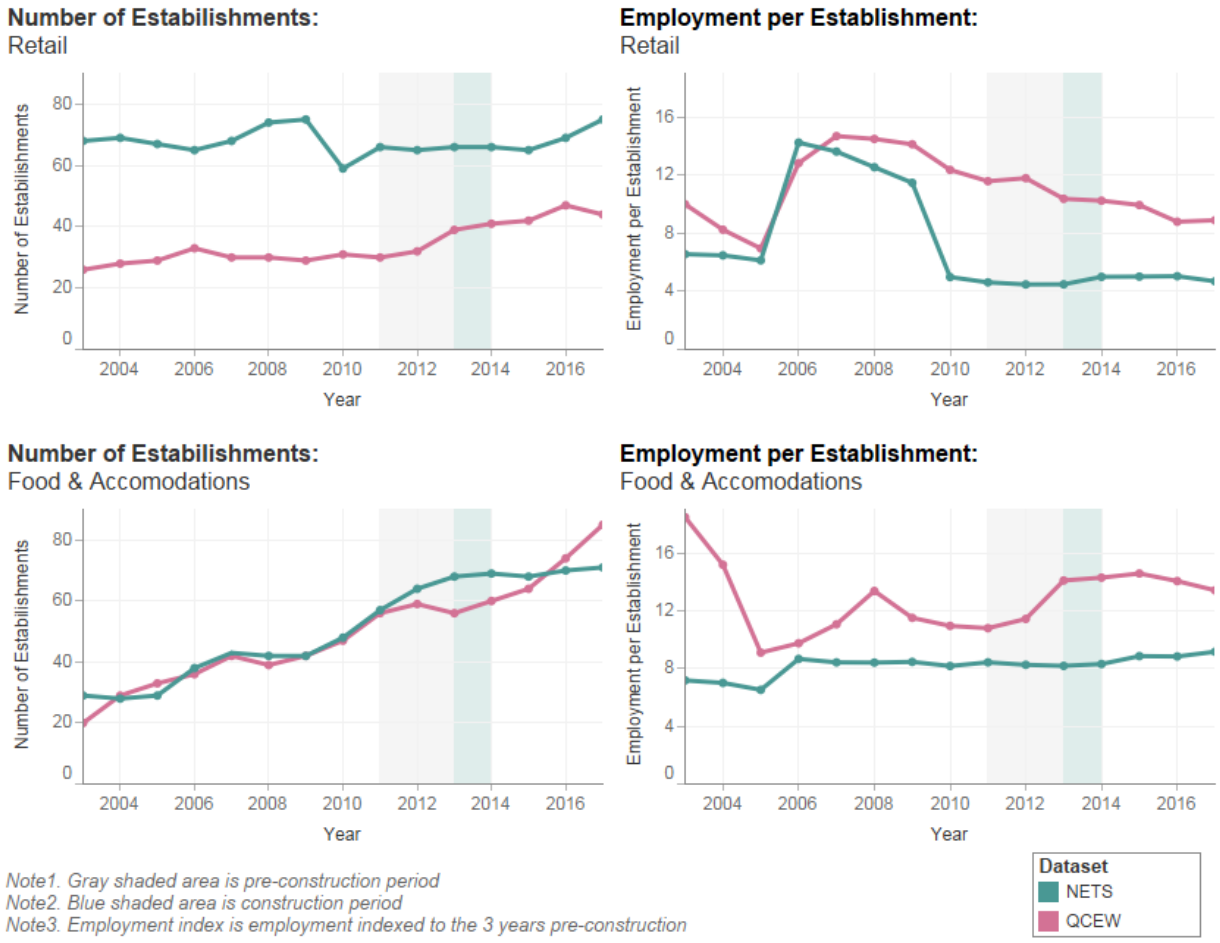

Figure 24: Division Street retail and food establishments, 2003-2017

Overall: Overall, we found significant positive effects in the food and accommodations sector, where the number of establishments grew by 24.6%, employment by 35.4% and sales by 50.6% between 2011 and 2017 (NETS data). The retail sector on the Division Street corridor had remained steady for the past ten years, while the food and accommodations sector grew steadily. The ITS analyses confirmed the positive trends observed in the food employment and wages. While the ITS analyses of the NETS food sector data revealed no significant impacts, we recommend further analysis when more years of data become available.

Table 16: Portland SE Division Street, summary of business impacts

Outcome (data source)	Retail			Food		
	Aggregated Trend	**DID**	**ITS**	**Aggregated Trend**	**DID**	**ITS**
Employment (LEHD)	+		○	+		○
Employment (QCEW)	○		○	+		+
Employment (NETS)	○		○	+		○
Wages (QCEW)	○		○	+		+
Sales (NETS)	+		○	+		○

+: *positive effect* ○: *no effect* —: *negative effect*
gray shading: analysis not conducted due to lack of appropriate control area

Aggregated Trend: The aggregated trend analyses showed that the retail industry employment and wages generally mirrored the trend in SE Portland and the City of Portland, but the LEHD employment and NETS sales data in the retail sector revealed greater growth. The number of jobs, wages, and sales in the food and accommodations sector using all three data sources showed strong positive growth that began prior to the improvements in 2014 and continued to strengthen in the subsequent years (*Figure 25*).

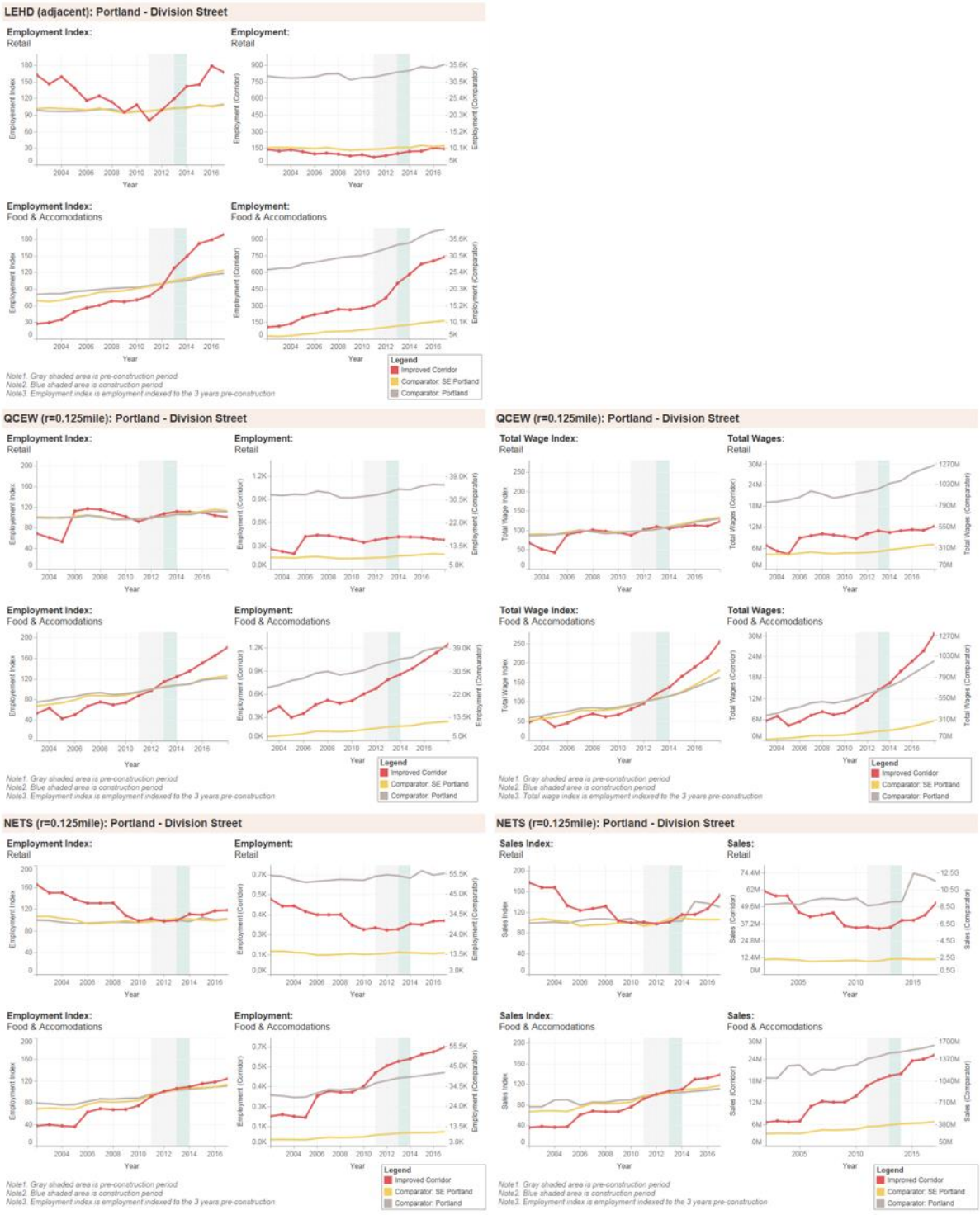

Figure 25: Division aggregated trend analysis

ITS: While the ITS analyses of LEHD data did not yield significant results, the ITS analyses of QCEW data found that the 2014 improvement on the Division Street corridor resulted in large positive and significant impacts to the number of jobs as well as wages in the food sector. In addition, the analyses of

NETS data found that the street improvement in the Division Street corridor had a positive impact on sales in the retail sector.

7.7 Portland: SE Foster Road-Woodstock Boulevard

Description: The project includes striped bike lanes and pedestrian improvements, including improved sidewalks and landscaping. The project spans about 0.8 miles on each parallel street (SE Foster and SE Woodstock), about evenly split between segments east and west of I-205. The project falls within the Lents Town Center Urban Renewal Area (URA) (*Figure 26*).

Figure 26: Foster-Woodstock study area

Completion Date: June 2013

Control: SE Powell Blvd (from SE 82nd Ave to SE 92nd Ave)

Comparator areas: City of Portland, SE Portland quadrant, Mt. Tabor/Montavilla neighborhoods

Business Activity: In 2017, the NETS data indicated that there were 19 retail establishments, representing about 10.2% of all establishments, 6.2% of employment and 8.1% of sales. Within the retail sector, grocery represented 23.5% of employment and 26.2% of sales, and gasoline stations were 19.6% of employment and 28.3% of sales. The food and accommodations sector represented 3.7% of all establishments (7 establishments in 2017), 10.5% of employment, and 4.0% of sales. Within the food and drink subsector, all six were categorized as restaurants and other eating places as of 2017.

Aside from unclassified establishments, the construction sector made up the largest portion of employment at 15.3%, followed by food and accommodations at 10.5% and other services (except public administration) at 9.9% of employment. Construction led sales (21.9%), followed by manufacturing (20.2%) and wholesale trade (11.6%).

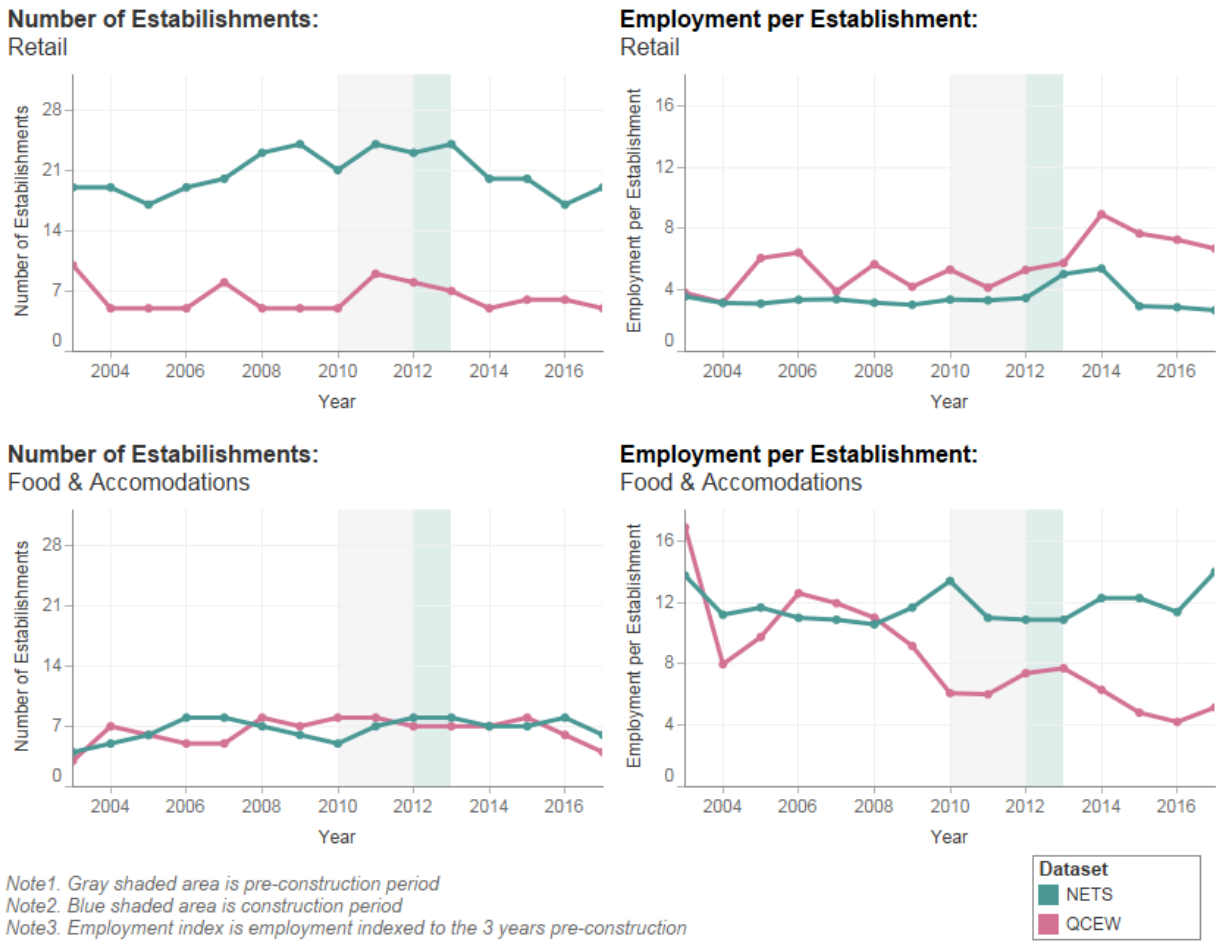

Figure 27: Foster-Woodstock retail and food establishments, 2003-2017

Overall: Our analyses showed mixed effects in the retail sector and some negative effects in the food and accommodations sector. In particular, the aggregated trend analysis and ITS analysis of the QCEW retail employment revealed negative impacts after the 2013 improvements, but the DID analysis of NETS retail employment and sales showed that they fared better than its control corridor. It is important to note that the Foster-Woodstock corridor contains relatively fewer retail and food and accommodations establishments compared to many of the other corridors being analyzed. In 2010, there were only 21 retail and six food and accommodations establishments. The effects of individual store closings, for reasons that may or may not have been related to the corridor improvement, may have outsized effects on the analysis. For example, the reduction of one grocery store and two used merchandise stores between 2010 and 2017 accounted for a loss of 16 jobs (80% of jobs lost). Two additional factors may explain the lack of significant positive findings. First, the area is undergoing significant changes in land use, including the construction of the Oliver Station mixed use development. Such large construction disrupts business activity. A longer period of analysis could be useful. Second, the pedestrian improvements may not be enough to counter the high volume and speed of motor vehicle traffic in the mixed-use area. Concerns about traffic were raised in our Task 3 work.

Table 17: Portland SE Foster Road-Woodstock Boulevard, summary of business impacts

Outcome (data source)	Retail			Food		
	Aggregated Trend	**DID**	**ITS**	**Aggregated Trend**	**DID**	**ITS**
Employment (LEHD)	○	○	○	—	○	○
Employment (QCEW)	—	○	—	—	○	○
Employment (NETS)	○	+	○	○	—	○
Wages (QCEW)	○	○	○	○	—	○
Sales (NETS)	○	+	○	○	—	○

+: *positive effect* ○: *no effect* —: *negative effect*

Aggregated Trend: The trends in this corridor, particularly for retail, are not consistent over time, with several ups and downs, making it challenging to draw clear conclusions. The comparator areas generally showed consistent and steady growth in employment, wages, and sales over the whole time period for both sectors. In the corridor, most of the data showed that retail employment experienced a short-lived bump followed by a decline, while food and accommodations employment fell after project construction. The NETS data shows an unusually high bump in retail employment and sales for the years 2013 and 2014, which is due to a single business in the dataset that only operated those two years. The business is on the very edge of the study area, east of I-205 and unlikely to have been impacted significantly from the Town Center improvements. The NETS data for the food sector remained flat after construction. In some cases, the downward employment trend was similar to the control, while in other cases it was more negative. Wages in the corridor remained relatively constant in the retail industry, fell slightly in the food industry in the years immediately following construction, but showed signs of an uptick in the food industry in 2018 (the most recent year of QCEW data available) which may be worth further observation. These trends, however, are not as positive as the comparator areas. The sales trends in the corridor post-construction showed a slight decline in retail sales, which was below the growth seen in the comparator areas, but a smaller decline than the control. There were steady sales in food and accommodations in the corridor post-construction, compared to a slight increase in the comparator areas.

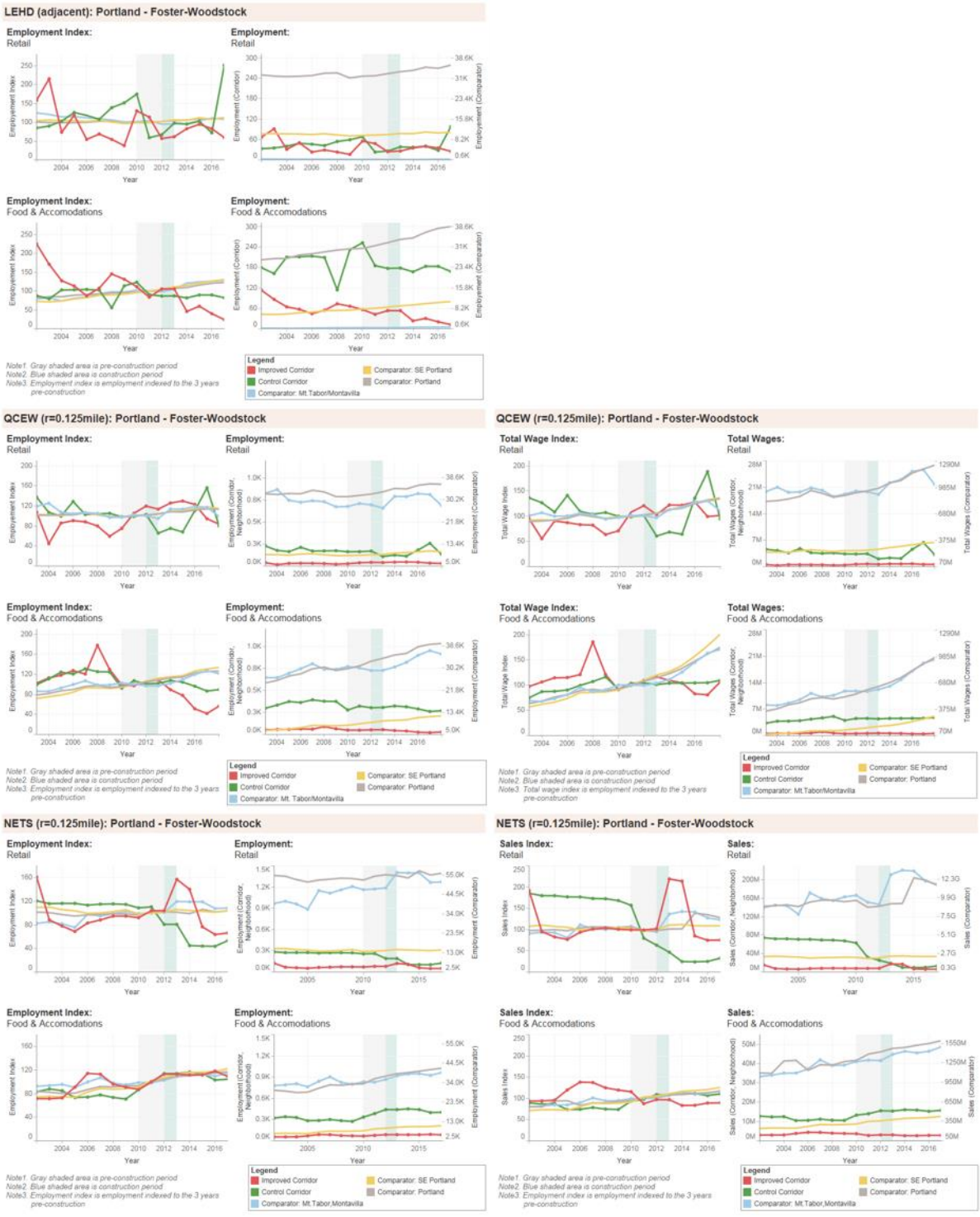

Figure 28: Foster-Woodstock aggregated trend analysis

DID: The DID analyses of LEHD and QCEW data on the Foster-Woodstock corridor found non-significant results for both jobs and wages, with the exception of a small negative impact on wages in the food sector. DID analyses of NETS data, however, revealed that the improvements on Foster-Woodstock in Portland are associated with positive impacts on both the number of jobs and sales in the

retail sector, but negative impacts on the food and accommodations sector when compared to the control corridor.

ITS: The ITS analyses of LEHD, QCEW, and NETS data showed no significant impacts on employment and wages along the Foster-Woodstock corridor after the improvement projects, except for a relatively small negative impact on retail job growth.

7.8 Portland: St John's Town Center

Description: This project included curb extensions and striped crosswalks at several intersections, a median refuge island, some landscaping/bioswales, and signal improvements. Most of the improvements are concentrated along N Ivanhoe, N St. Louis, and N Lombard streets. The median refuge island is about a half-mile away from the other improvements in a more residential area. Therefore, our economic analysis excludes this island (*Figure 29*).

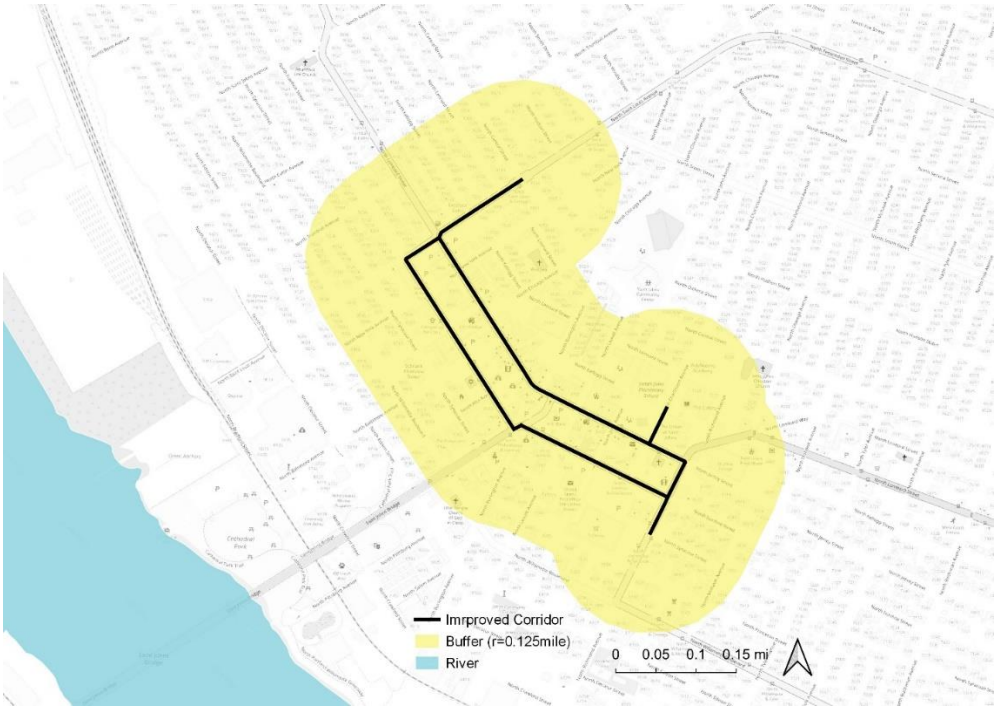

Figure 29: St Johns study area

Completion Date: April 2012

Control: No appropriate controls available

Business Activity: In 2017, the NETS data indicated that there were more than 30 retail establishments, representing about 10.1% of all establishments, 11.0% of employment and 21.4% of sales. Within the retail sector, grocery represented 66.7% of employment and 76.8% of sales, and electronics was 5.2% of employment and 3.8% of sales. The food and accommodations sector represented 10.4% of the establishments (32 establishments in 2017), 17.0% of employment, and 9.3% of sales. Following the food and accommodations sector and retail trade sector as the largest employers in this area, the public administration sector made up the next largest portion of employment at 7.2%, followed by public administration at 7.2% and health care and social assistance at 6.2% of employment. Retail trade led sales

(21.4%), followed by wholesale trade (13.2%) and transportation and warehousing (10.6%). Within the food and drink sector, drinking places (alcoholic beverages) represented 14.6% of sales in 2017 (more than double of its share of sales in 2009), but the number of establishments and employment in this subsector has remained relatively constant.

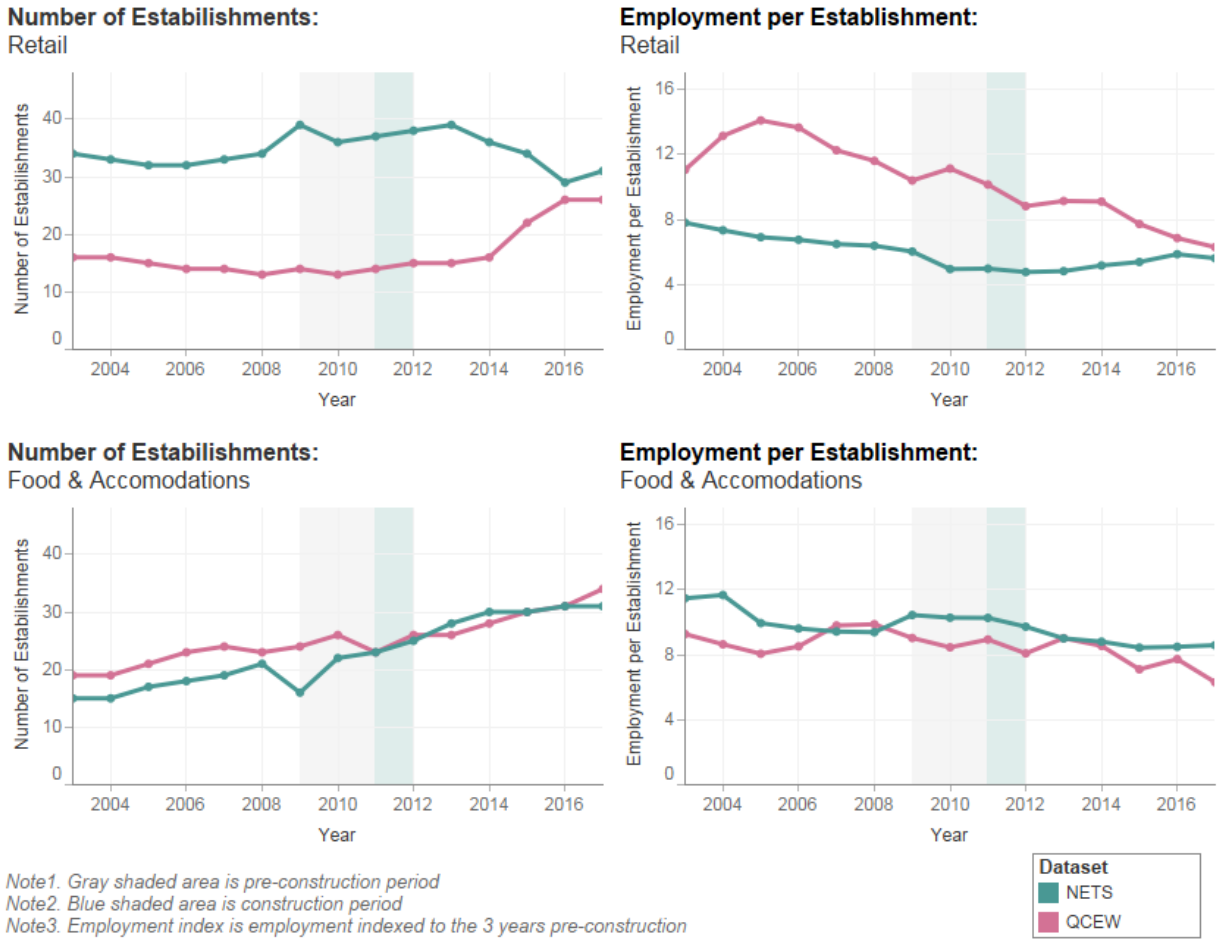

Figure 30: St Johns retail and food establishments, 2003-2017

Overall: Our analysis revealed positive effects in the retail sector associated with the improvements, using two of the three data sources. Overall, both retail and food and accommodations sectors appear to be growing at a steady pace or maintaining a steady level of activity similar to its comparators after the 2012 improvements, with the exception of food industry wages after 2014.

Table 18: Portland St. John's Town Center, summary of business impacts

Outcome (data source)	Retail			Food		
	Aggregated Trend	**DID**	**ITS**	**Aggregated Trend**	**DID**	**ITS**
Employment (LEHD)	+		+	○		○
Employment (QCEW)	○		+	○		○
Employment (NETS)	○		○	○		○
Wages (QCEW)	○		+	—		○
Sales (NETS)	○		○	○		○

+: *positive effect* ○: *no effect* —: *negative effect*
gray shading: analysis not conducted due to lack of appropriate control area

Aggregated Trend: The aggregated trend analyses indicated that the level of employment and wages in both retail and food sectors generally followed the patterns in N Portland and the city of Portland in the years immediately prior to the 2012 pedestrian improvement. There are some differences between the data sources due to differences in geographic and industrial resolution. The LEHD data showed more of an overall growth pattern in retail employment throughout while the QCEW and NETS data revealed a downward trend prior to 2012 for retail employment and wages. Following the 2012 improvements, the analyses showed positive growth in retail jobs and wages that is on par with or slightly better than its comparators, and a relatively flat trend in food sector jobs and some stagnation in food sector wages in the most recent years (*Figure 31*). The NETS food sales data show a dramatic drop that we suspect may be an error in the data. The overall trend without that one-year trop in 2011 is consistent with that of the comparator and city.

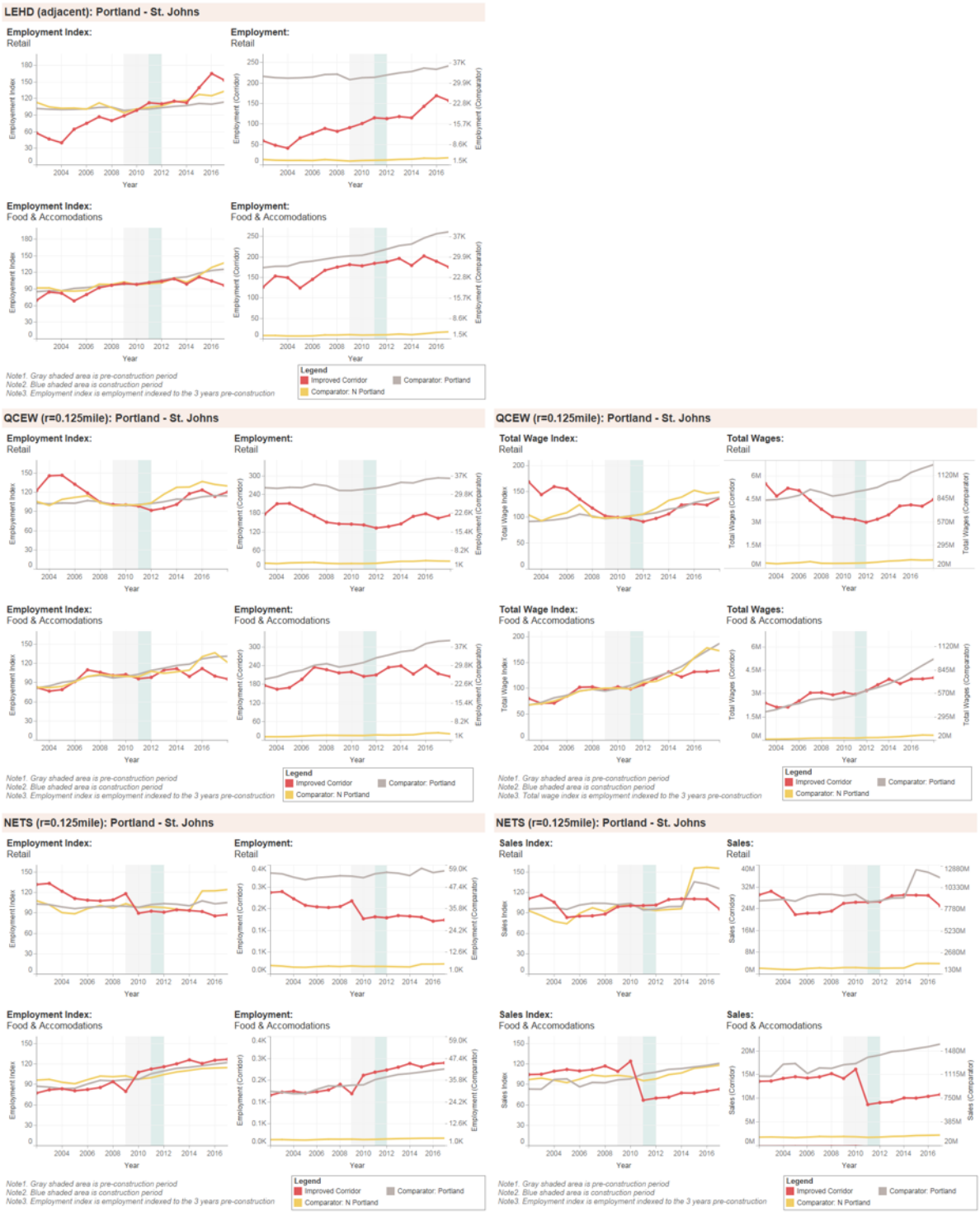

Figure 31: St. Johns aggregated trend analysis

ITS: The ITS analyses of LEHD and QCEW data showed consistent positive significant impacts of the St Johns pedestrian improvements on retail employment and wages. Some of the estimated coefficients for the food sector were statistically significant (positive level change and negative slope change using LEHD and QCEW employment), these results pointed to a relatively flat post improvement trend, and we

could not conclude that the improvements had significant impacts on food sector employment or wages. No significant impacts were found in the ITS analyses of NETS data.

7.9 Beaverton: SW Rose Biggi Avenue

Description: This project extended Rose Biggi Avenue 850 feet from SW Crescent Ave. to Hall Boulevard (*Figure 32*). The segment includes two motor vehicle travel lanes, parking lanes, sidewalks, landscaping and street trees, and lighting. Before the project, the street hit a dead-end; the project is a key north-south connection to the regional center, for motor vehicles, pedestrians, and bicycles. The project is also part of the city of Beaverton's larger efforts to improve the area around the Transit Center and Downtown through a range of transportation and land use projects.

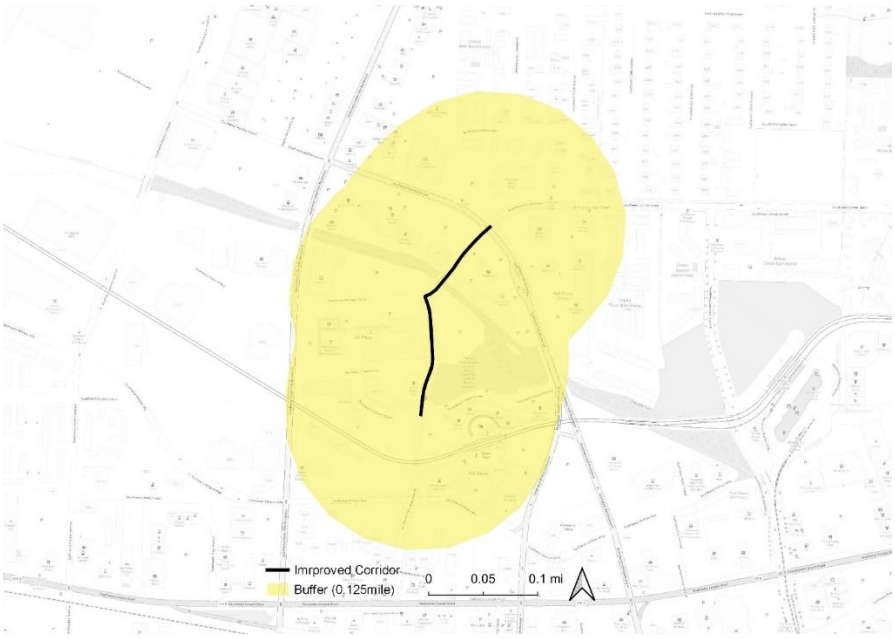

Figure 32: SW Rose Biggi study area

Completion Date: May 2015

Control: No appropriate controls available

Comparator areas: City of Beaverton

Business Activity: In 2017, the NETS data indicated that there were 17 retail establishments, representing about 6.5% of the establishments, 8.8% of the employment and 28.8% of sales. Within the retail sector, automobile dealers represented 67.8% of employment and electronics was 9.4%. There were 19 establishments in the food and accommodations sector, representing 7.3% of the establishments, 12.8% of employment, and 4.5% of sales. The information sector (including publishers, news stations, radio stations, and data processing) was the largest employer, making up 24.4% of employment, followed by public administration at 15.2% and food and accommodations at 12.8% of employment. Retail trade led sales (28.8%), followed by professional, scientific and technical services (17.1%) and information (16.8%).

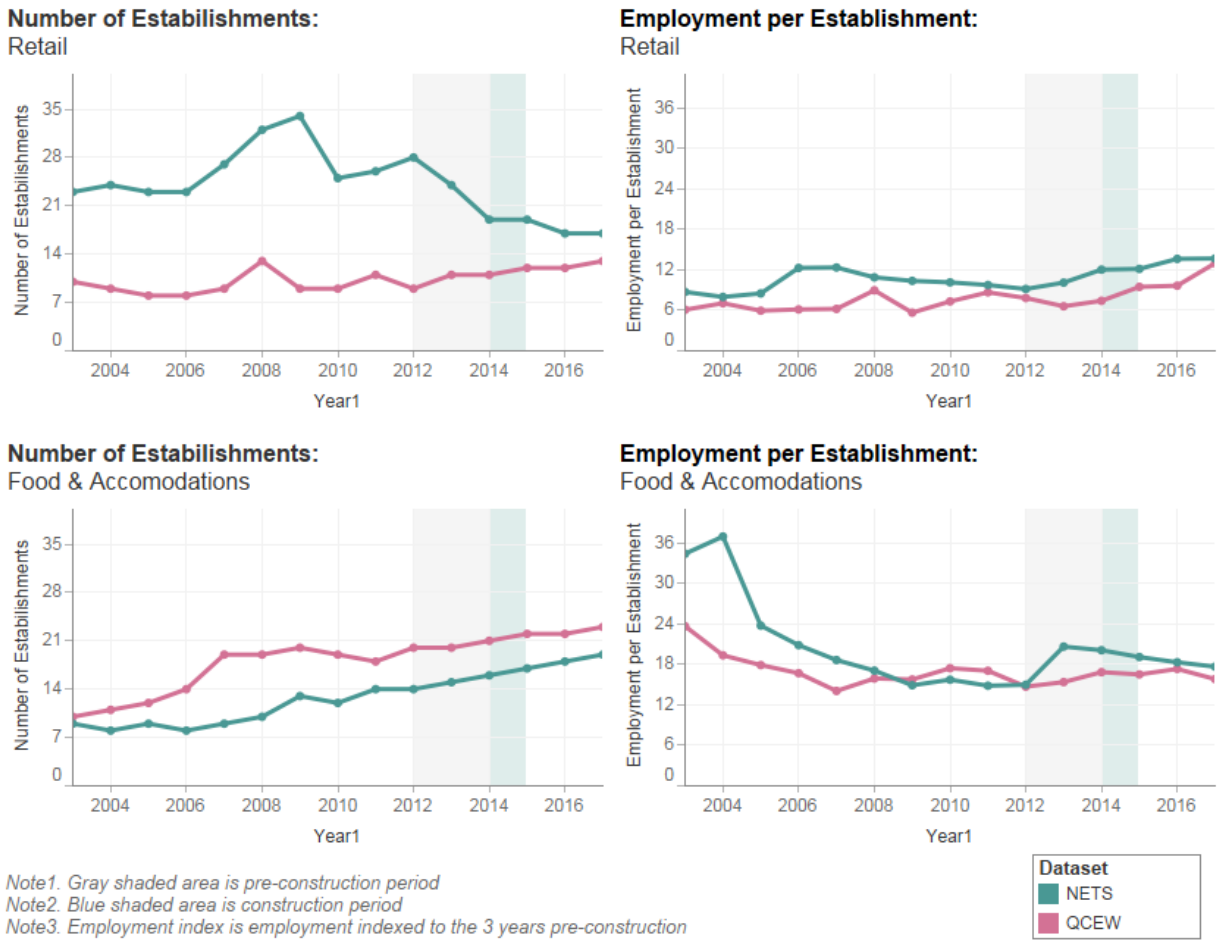

Figure 33: SW Rose Biggi retail and food establishments, 2003-2017

Overall: We see some positive trends associated with the improvements in the retail sector. Because the improvements on SW Rose Biggi Avenue in Beaverton were constructed relatively recently (2015), more years of data may be necessary to confirm the long-term effects of the improvements on businesses.

Table 19: Beaverton SW Rose Biggi Avenue, summary of business impacts

Outcome (data source)	Retail			Food		
	Aggregated Trend	**DID**	**ITS**	**Aggregated Trend**	**DID**	**ITS**
Employment (LEHD)	+		+	○		○
Employment (QCEW)	+		○	○		○
Employment (NETS)	○		○	○		○
Wages (QCEW)	+		○	○		○
Sales (NETS)	○		○	—		○

+: *positive effect* ○: *no effect* —: *negative effect*
gray shading: analysis not conducted due to lack of appropriate control area

Aggregated Trend: The aggregated trend analyses of retail employment and wages on the SW Rose Biggi Avenue showed relatively larger fluctuations compared to other analyzed corridors both before and after the 2015 improvements. The trends using the LEHD and QCEW data reveal some positive (but volatile) growth post construction relative to the city as a whole for retail employment and wages. The NETS retail employment and sales data followed the city pattern over the time period. Note that we found one outlier in NETS sales data. Employment for this establishment did not increase or decrease significantly from 2003 to 2017, but its sales increased sharply between 2004 and 2005 and decreased again between 2007 and 2008, at which time sales were similar to 2004. We treated the three years from 2005 to 2007 as outliers and instead interpolated using the compound annual growth rate between 2004 and 2008.

Employment and wage levels in the food and accommodations sector generally reflected those in the city of Beaverton. The trend in food sales in the study area was flat or slightly negative since construction, compared to a small but stead increase for the city as a whole. More years of data would be useful to see if this trend changes.

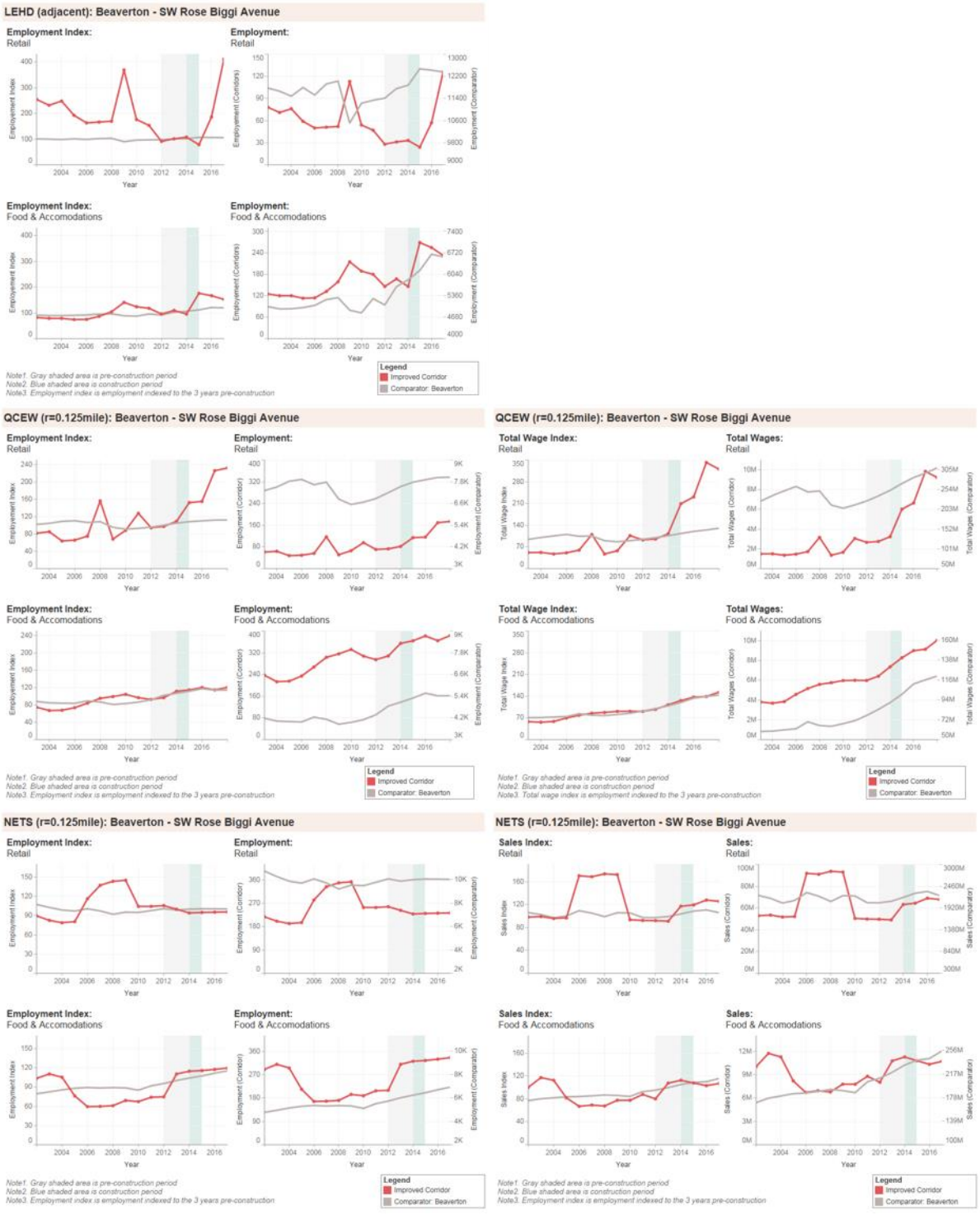

Figure 34: SW Rose Biggi aggregated trend analysis

ITS: The ITS analyses of LEHD, QCEW and NETS data did not yield significant conclusions to the impact on employment, wages, or sales along SW Rose Biggi Avenue in Beaverton.

7.10 Cornelius: E Baseline Street

Description: The improvements included aesthetic lighting, wider sidewalks, curb extensions, street trees, improved crossings, repainted bike lanes, and clear markings for on-street parking along E Baseline Street between 10th and 19th Avenues. The project followed similar improvements on Adair Street that were completed in 2010. Baseline and Adair form a one-way couplet through Cornelius (*Figure 35*).

Figure 35: Cornelius study area

Completion Date: 2014

Control: No appropriate controls available

Comparator areas: City of Cornelius

Business Activity: In 2017, the NETS data indicated that there were 20 retail establishments, representing about 18.2% of all establishments, 15.9% of employment, and 21.1% of sales. Retail was the second largest sector in the area, following health care and social assistance (32.5% of employment and 50.1% of sales). Within the retail sector, health and personal care represented 33.6% of employment and 37.2% of sales. In 2017, the food and accommodations sector represented 8.2% of all establishments, 13.6% of employment, and 4.7% of sales. All of the food and accommodations establishments were restaurants or drinking places, with restaurants representing over 80% of the employment and sales.

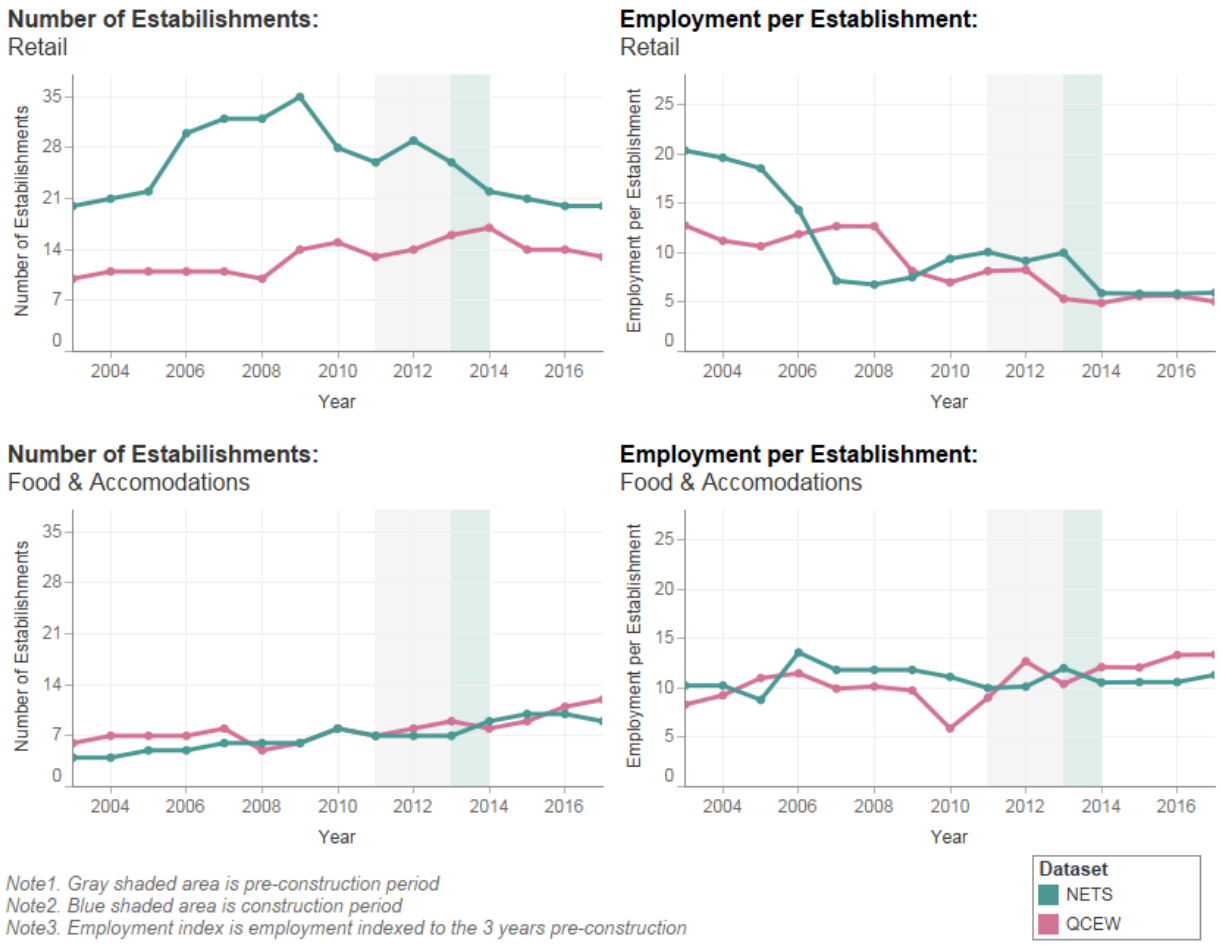

Figure 36: Cornelius retail and food establishments, 2003-2017

Overall: We found negative or no significant impacts of the improvements on the retail sector and some positive impacts on the food sector. The decline in retail activity in the project area started before 2010 and appears to have continued. These results may be indicative of some sectoral shift from retail to food service and other industries along this corridor. In particular, the NETS data reveals that the number of grocery stores in the area fell from eight in 2011 to four in 2017. During the same period, the employment in groceries decreased from 60% to 12% of all retail employment and the sales decreased from 46% to 6% of all retail sales. The number of food and accommodations establishments in the project area grew from seven to nine from 2011 to 2017 and that sector's share of all employment grew from 9% to 14%.

Table 20: Cornelius E Baseline Street, summary of business impacts

Outcome (data source)	Retail			Food		
	Aggregated Trend	**DID**	**ITS**	**Aggregated Trend**	**DID**	**ITS**
Employment (LEHD)	—		○	+		○
Employment (QCEW)	—		○	+		+
Employment (NETS)	—		○	+		○
Wages (QCEW)	—		○	+		+
Sales (NETS)	—		○	○		○

+: *positive effect* ○: *no effect* —: *negative effect*
gray shading: analysis not conducted due to lack of appropriate control area

Aggregated Trend: The aggregated trend analyses revealed that retail employment and wage levels on the Baseline corridor generally followed a declining trend prior to 2010 and continued along the same path after 2014, while the city of Cornelius gradually increased its overall retail employment or remained relatively steady, depending on the data source. Retail sales also declined in the project area after 2014. On the other hand, food and accommodation sector employment and wages in the project area grew over the whole time period, with stronger growth subsequent to the 2014 improvements, relative to the city overall. Sales in the food and accommodation sector after 2014 was somewhat flat, a similar trend to that of the city (*Figure 37*).

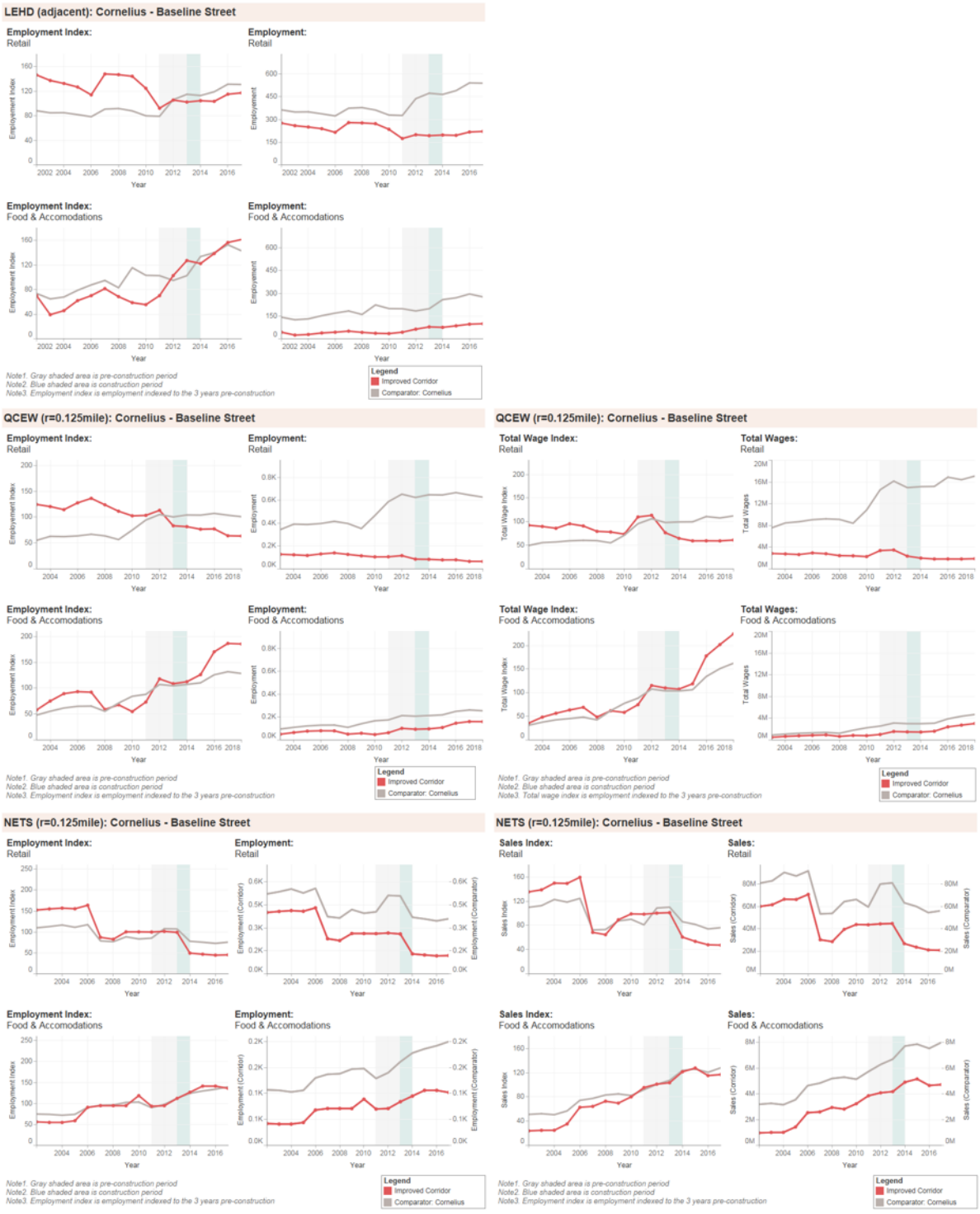

Figure 37: Cornelius aggregated trend analysis

ITS: The ITS analyses of all datasets showed no significant impacts of the Baseline improvements on all business activity indicators in the retail sector. The results using the QCEW data suggested positive impacts on food sector wages and jobs.

7.11 Forest Grove: Town Center

Description: This project involved pedestrian improvements along Pacific Ave. and 19th Ave. in the Forest Grove Town Center. Those two streets form a one-way couplet, with two travel lanes in each direction. A four-block area received a "full treatment" of decorative brick areas, street trees and tree wells with decorative grates, and decorative crosswalks. Several intersections were retrofitted with wheelchair ramps. At the east end of the approximately 1.3-mile corridor, curbing was installed for an island planter area where Pacific Ave. and 19th Way merge. However, that improvement is about a half-mile away from the other improvements. Moreover, it is in a median area that is not very accessible to pedestrians. Therefore, we defined the study area to include only the other improvements (*Figure 38*).

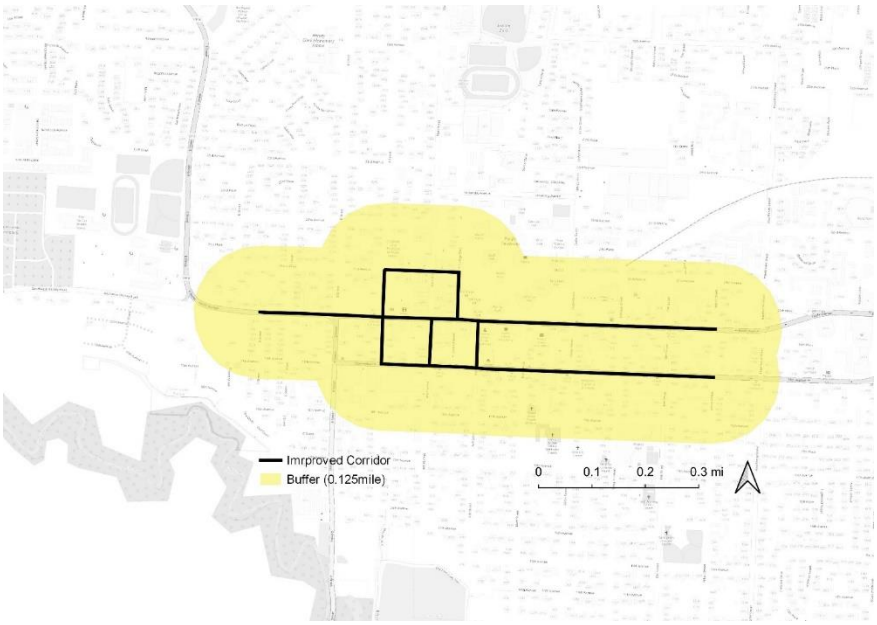

Figure 38: Forest Grove Town Center study area

Completion Date: January 2010

Control: No appropriate controls available

Comparator areas: City of Gladstone and city of Forest Grove. Gladstone was chosen because it is a town center, but has not received significant pedestrian improvements.

Business Activity: In 2017, the NETS data indicated that there were 41 retail establishments, representing about 14.1% of all establishments, 10.72% of employment and 14.5% of sales. Within the retail sector, specialty food represented 14.5% of employment, sporting goods and musical instruments was 12.8%, and grocery and bookstores and news dealers were both 11.7%. There were 32 establishments in the food and accommodations sector, representing 11.0% of all establishments, 12.4% of employment, and 5.8% of sales. The educational services sector made up 14.8% of employment and 15.7% of sales, and the health care and social assistance sector made up 14.0% of employment and 14.3% of sales. Other important sectors in the area include finance and insurance and utilities. Within the food and drink sector, restaurants and other eating places represented the majority of establishments at 82.8%, 88.6% of employment, and 86.3% of sales.

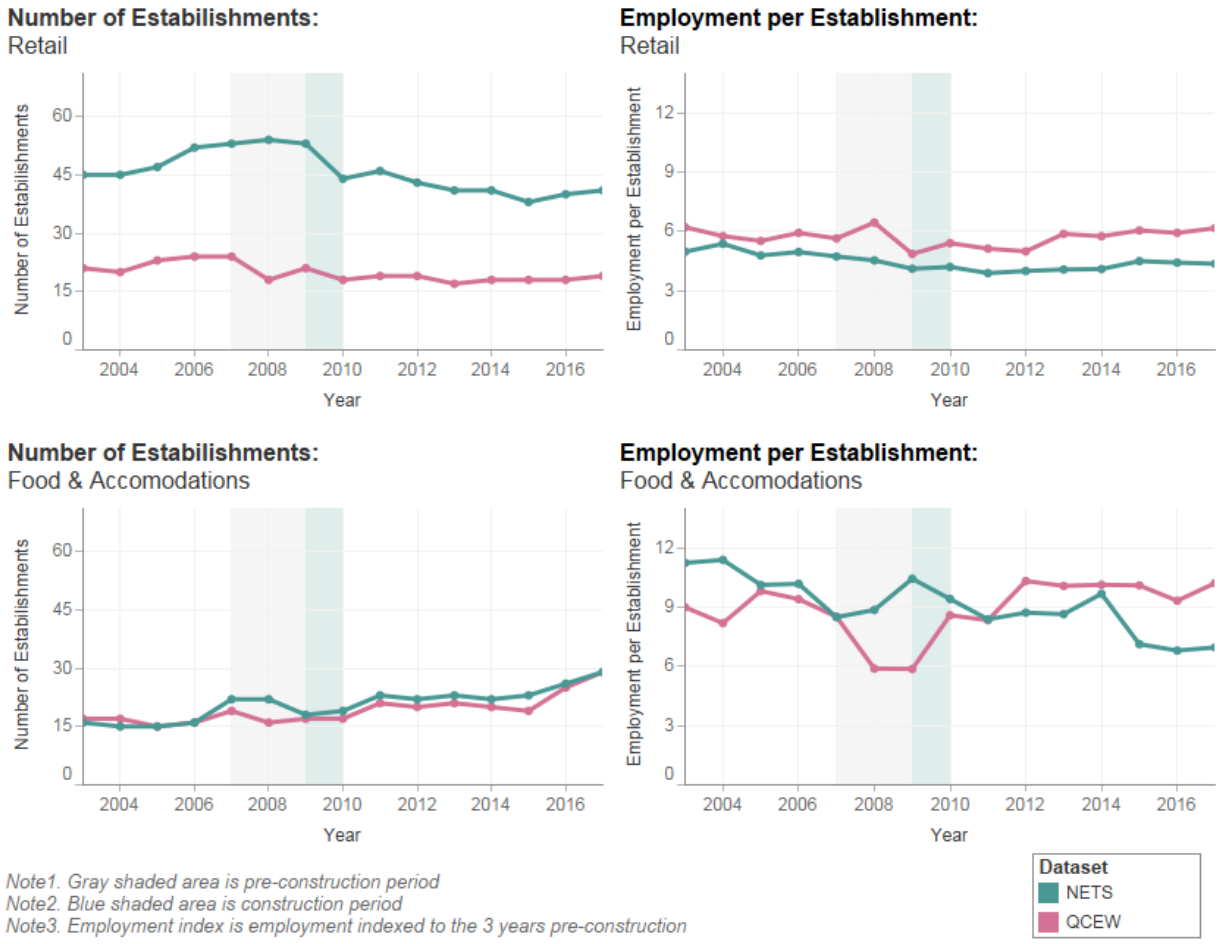

Figure 39: Forest Grove Town Center retail and food establishments, 2003-2017

Overall: We found strong positive effects on food sector employment and wages, and smaller positive effects on retail sector employment and wages, as well as food sector sales.

Table 21: Forest Grove Center, summary of business impacts

Outcome (data source)	Retail			Food		
	Aggregated Trend	**DID**	**ITS**	**Aggregated Trend**	**DID**	**ITS**
Employment (LEHD)	○		+	+		+
Employment (QCEW)	○		+	+		+
Employment (NETS)	○		○	○		○
Wages (QCEW)	○		+	+		+
Sales (NETS)	○		○	○		+

+: *positive effect* ○: *no effect* —: *negative effect*
gray shading: analysis not conducted due to lack of appropriate control area

Aggregated Trend: The aggregated trend analyses highlighted how closely the improved Forest Grove Town Center retail employment and wages tracked the trends in both Gladstone and Forest Grove, with a downturn that corresponded to the Great Recession and a slow but steady recovery back to the pre-Recession retail employment level after 2012. On the other hand, the food and accommodations sector employment and wage levels also closely tracked its comparators prior to the 2010 improvements but displayed a marked rate of growth that has accelerated in the most recent three years using the LEHD and QCEW data (*Figure 40*). NETS data showed more moderate growth in the food and accommodations sector.

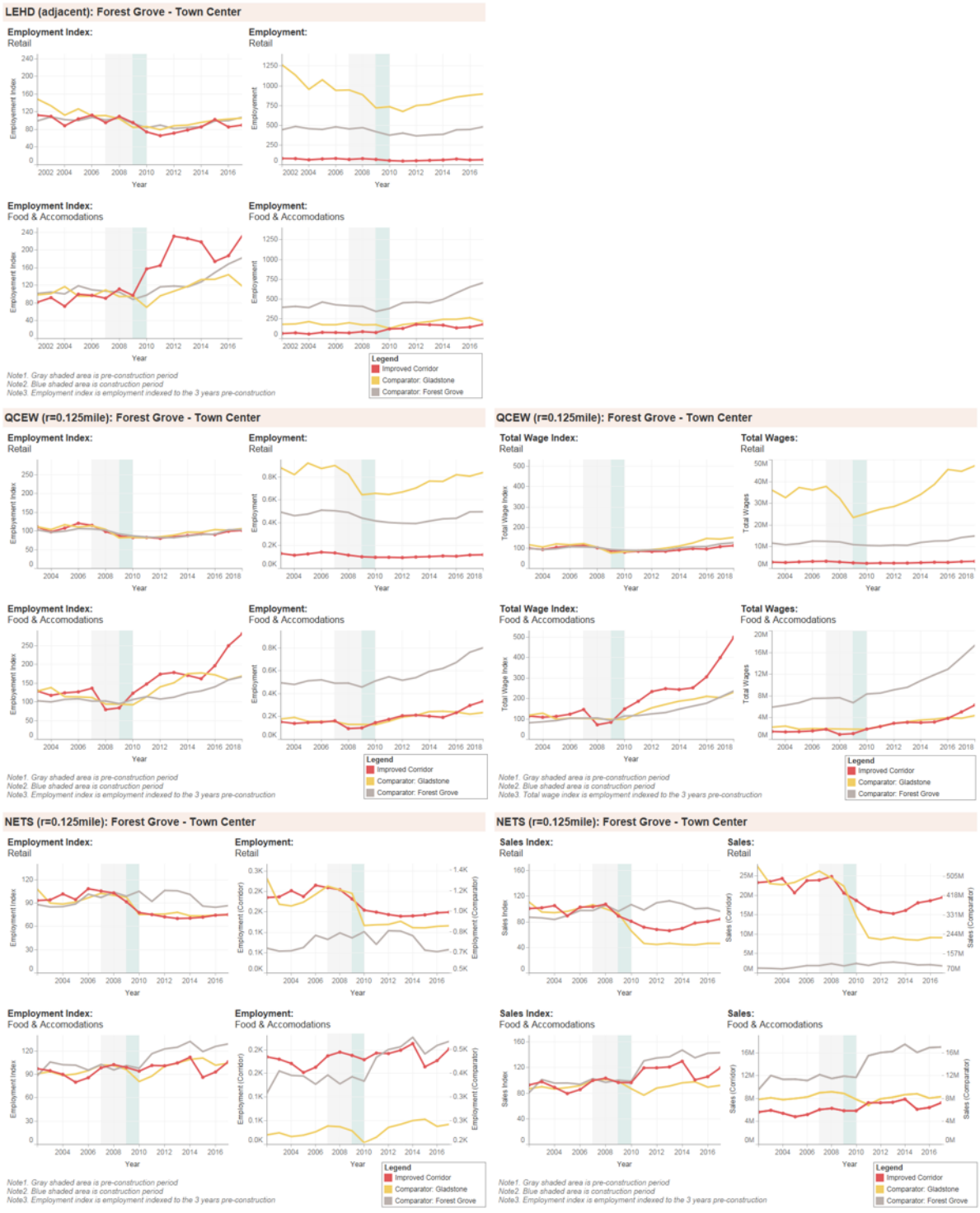

Figure 40: Forest Grove Town Center aggregated trend analysis

ITS: The ITS analyses of LEHD and QCEW data showed mostly positive and significant impacts of the pedestrian improvements to food sector employment and wages in the Forest Grove Town Center. These results also indicated a similarly positive impact on retail sector employment and wages. While

most of the results of the ITS analysis of NETS data were not significant, we did find positive and significant impacts of the improvements on food sector sales.

7.12 Tigard: Main Street

Description: This project includes pedestrian improvements over 0.3 miles of the southern half of Main Street in the Tigard town center, from Pacific Highway/99W to the railroad crossing. The transportation elements included new sidewalks, safer pedestrian crossings, street trees and landscaping, public art, benches, energy-efficient LED streetlights, stormwater treatment planters, and a turnaround for motorists at the south end of Main Street. Main Street is one lane in each direction, with parallel and diagonal on-street parking. The Fanno Creek Trail intersects with the project corridor. The improvements were a part of a Phase I effort to completely redesign and improve all of Main Street in downtown Tigard. Phase II continues those improvements north to Scoffins Street, with construction scheduled for 2021 (*Figure 41*).

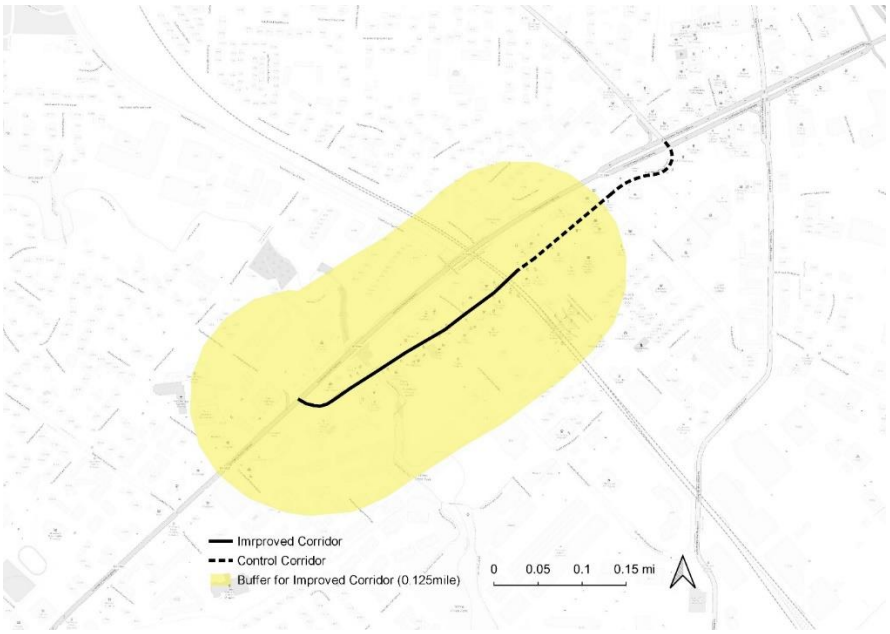

Figure 41: Main St. study area

Completion Date: November 2014

Control: Main Street (from 99W to Pacific Highway)

Comparator areas: City of Tigard

Business Activity: In 2017, the NETS data indicated that there were 22 retail establishments, representing about 13.8% of all establishments, 14.2% of employment and 23.5% of sales. Within the retail sector, other motor vehicles represented 36.2% of employment and gasoline was 25.4%. There were 14 establishments in the food and accommodations sector, representing 8.8% of all establishments, 10.7% of employment, and 4.2% of sales. The other services (except public administration) sector made up 16.8% of employment and 10.3% of sales. Other important sectors in the area include educational services, wholesale trade and transportation and warehousing.

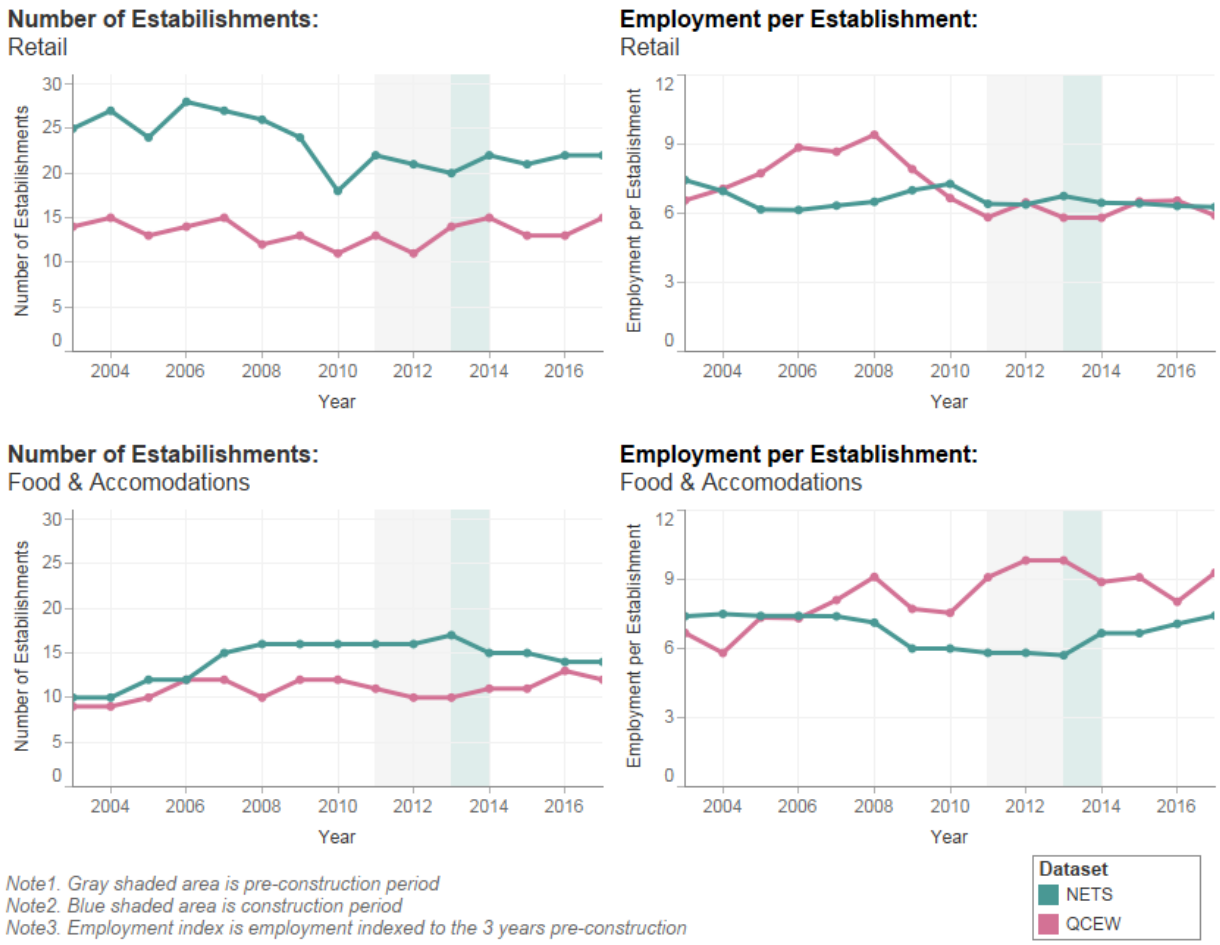

Figure 42: Main St. retail and food establishments, 2003-2017

Overall: Both the retail and food industries along the Main Street corridor in Tigard consistently mirrored the trends in the control corridor and the City of Tigard. The analyses of QCEW data showed positive trends in retail employment and positive statistically significant impacts in food employment, but these effects were not found in other data sources.

Table 22: Tigard Main Street, summary of business impacts

Outcome (data source)	Retail			Food		
	Aggregated Trend	**DID**	**ITS**	**Aggregated Trend**	**DID**	**ITS**
Employment (LEHD)	○	○	○	○	○	○
Employment (QCEW)	+	○	○	○	+	○
Employment (NETS)	○	○	○	○	○	○
Wages (QCEW)	○	○	○	○	○	○
Sales (NETS)	○	○	○	○	○	○

+: *positive effect* ○: *no effect* —: *negative effect*

Aggregated Trend: Although the Main Street corridor in Tigard experienced relatively large fluctuations in retail employment during the Great Recession, both retail and food sector employment, wage levels and sales stabilized and converged with the trends in the control corridor and the City of Tigard starting in the pre-construction period and tracked closely following the 2014 improvements as well. However, retail employment on Main Street did experience a small relative uptick that coincided with the construction period, although retail wages did not show the same relative increase (*Figure 43*).

Figure 43: Main St. aggregated trend analysis

DID: The DID analyses pointed to a positive significant impact of the 2014 improvement on retail employment along Main Street in Tigard, but no significant impacts on retail wages, food employment, wages, and NETS retail employment and sales.

ITS: The ITS analyses of LEHD, QCEW and NETS data did not show significant impacts to either the level or growth rates of employment, wages, and sales on the Tigard Main Street corridor.

8 Property Value Impacts Methods and Findings

8.1 Introduction

As discussed in section 3.2, existing research has found that active transportation infrastructure can sometimes affect property values positively by improving access for non-motorized travel and/or providing linear open space with trails. Our previous research in the city of Portland found a positive association between access to high-quality bicycle infrastructure and residential property sales values (Liu and Shi, 2017). That analysis used home sales data from 2010 to 2013. The high-quality (or advanced") bikeway infrastructure for that analysis included the bicycle boulevards (aka neighborhood greenways) as well as protected bike lanes such as on Cully Boulevard (a longer gap-filling project in this study). Two other longer gap-filling projects – the 20s and 50s bicycle boulevards – were built after the analysis time period, though we believe the findings are relevant to those projects. That analysis found the following effects on single-family homes (SFH) and multi-family homes (MFH):

> For SFHs, each ¼ mi closer to the nearest advanced bike facility increased the property value by $1,571. An additional ¼ mi of facility density increased values by $1,399. MFHs gained only $211 for each ¼ mi of proximity to advanced bike facilities. However, they experienced a large increase of $3,683 with an additional ¼ mi of facility density within their buffer zone. These coefficient estimates showed that access to advanced bike facilities translated to statistically significant positive price premiums on all residential properties. For MFHs, however, the density of the bike network played a much more significant role in determining property values than proximity to facilities. In other words, homes (single-family and multi-family) closer to such infrastructure and/or with more of that infrastructure nearby were valued higher, all other things (e.g., home size, school district, etc.) equal. (Liu and Shi, 2017, p. 56).

For this study, we considered conducting a similar analysis for the catalyst projects. However, to do so would require data on infrastructure similar to the catalyst projects (e.g., improved pedestrian crossings, curb extensions, landscaping, etc.) throughout the region, along with the dates of installation. Those data do not exist. There is, however, data on the types of bicycle infrastructure included in Task 3 of this study – the longer gap-filling projects. Since we had done such an analysis covering the city of Portland, we decided to focus on Washington County, which has a somewhat extensive multiuse trail system. Four longer gap-filling projects in this study provided extensions and key connections within that system. We also chose trail infrastructure because of the limited number of other types of high-quality bikeways in the county. The methods and findings from that analysis are presented here.

8.2 Methods

Following the existing literature, we utilize the following general hedonic price model specification in order to characterize the impacts of various factors, including improvements on bicycle trails from the longer gap-filling projects, on residential property values utilizing data from Washington County:

$$P_i = \beta_0 + \beta_1 Transport_i + \beta_2 Transact_i + \beta_3 Property_i + \beta_4 Region_i + \varepsilon_i$$

The dependent variable, P_i, represents property sale price. $Transport_i$ is a vector that includes transportation characteristics such as distance to nearest bicycle path, distance to nearest rail station, or whether a property is located on a cul-de-sac; $Transact_i$ is a vector that includes transaction characteristics such as year and season of the sale, serving as proxies for general economic factors; $Property_i$ is a vector of internal property characteristics such as age, property size, lot size and property

tax liability of the property (assessed value to real market value ratio)[2]; and $Region_i$ is a vector of external neighborhood or regional characteristics such as school quality and distance to Portland (Liu and Renfro 2014; Liu and Shi 2017). Each of the estimated coefficients describes the marginal value to the homeowner of improvements or amenities in each vector.

8.3 Data

Property sales data for the analysis came from the Washington County Assessor's Office's residential property tax roll. We limited the data to single-family home (SFH) sales that occurred from 2016 to 2019 to capture sales after the completion of most trail improvements and excluded sales in 2020 due to the COVID-19 pandemic. Additionally, transactions with excessively low or high sale prices were excluded to avoid non-arm's length transactions or specialized properties. Geographically, the sales transactions were relatively evenly distributed throughout Washington County, although the northern part of the county had a relatively larger concentration of properties with higher sale prices.

Using the geo-location of each property, additional property, regional and transportation characteristics were spatially joined using Metro's Regional Land Information System (RLIS). The two main variables of interest for this project are distance to nearest multi-use path and density of multi-use path within a half-mile buffer zone around the property. These variables were computed using the RLIS bike routes data, last updated in 2018.

Each property was assigned to an elementary school catchment area according to the 2015-2016 School Attendance Boundary Survey (SABS), conducted by the National Center for Education Statistics and the U.S. Census Bureau, and school quality was calculated as the average of state-published English and math scores (measured by the percentage of students exceeding state standards in the catchment area). The distance to the City of Portland, to the nearest light rail station (MAX or WES) and to the nearest multi-use paths were calculated as the straight-line distance from the centroid of each tax lot to the respective locations. Additionally, because residential property sales are affected by overall economic and market conditions as well as seasonality (30), a sale year and a season of sale variable (non-rainy season is defined as June to September) are incorporated to capture these trends in the market. Neighborhood variables (Community Participation Organizations – CPOs) were also incorporated.

Descriptive statistics are shown below, including transportation, transaction, property and regional characteristics. During the 2016-2019 time period, a total of 32,808 single-family homes were transacted in Washington County. The average single-family home sold was 26 years old, 2,027 square feet and sold at an average price of $430,380. On average, these properties were approximately 0.22 and 2.16 miles away from the nearest multi-use path and light rail station, respectively, and have an average of 2.16 miles of multi-use trails within a half mile buffer. Lastly, about 28% of all properties transacted are located on a cul-de-sac.

[2] The unique structure of Oregon's property tax system via Measure 5 and Measure 50 has led to large heterogeneity across properties in terms of property tax liabilities, this analysis follows Liu and Renfro's (2014) specification to also include an AV/RMV-ratio (assessed value to real market value ratio) variable to capture the capitalization effects of varying property tax liability.

Table 23: Descriptive statistics of property value impact analysis variables

Variable	n	Mean	Std. Dev.	Minimum	Maximum
Transaction characteristics					
Sale price ($)	32,808	430,379	172,578	50,000	3,400,000
Sale year = 2016	8,858	-	-	-	-
Sale year = 2017	8,680	-	-	-	-
Sale year = 2018	8,068	-	-	-	-
Sale year = 2019	7,202	-	-	-	-
Seasonality – transactions between June and September (%)	32,808	39%	-	0	1
Property characteristics					
Age (years)	32,808	26.37	20.09	0	147
Size (square feet)	32,808	2,027	753	460	10,552
Lot size (square feet)					
AV/RMV ratio	32,808	0.63	0.08	0.08	1.00
Regional characteristics					
Distance to downtown Portland (miles)	32,808	10.68	3.74	3.62	23.36
School quality – out of 100	32,808	59.61	14.48	21.80	91.00
Transportation characteristics					
Length of multi-use path (miles within 0.5-mile buffer zone)	32,808	0.97	0.89	0.00	5.15
Distance to nearest multi-use path (mile)	32,808	0.22	0.16	0.00	1.35
Distance to nearest light rail station (mile)	32,808	2.16	1.46	0.03	7.87
Located on a cul-de-sac (dummy)	32,808	28%	-	0	1

Note: Series of dummy variables of neighborhoods are excluded from the table.

8.4 Findings

We performed a number of ordinary least squares (OLS) hedonic price regressions on SFH sales data between 2016 and 2019 in Washington County, including sale year, seasonality and neighborhood fixed effects to control for overall economic conditions and unobserved neighborhood characteristics. The R-squared values were equal to 0.57 for these estimated models, which indicated that the specifications described approximately 57% of the property sale price variation. The regression coefficients for property, regional, and transaction characteristics were statistically significant and largely similar to our previous work in Portland (Liu and Shi 2017). Newer and larger (both in terms of property size and lot size) properties with lower property tax liability, better school quality, and proximity to downtown Portland were estimated to have higher property values. We also found that single-family home values in

Washington County increased annually between 2016 and 2019, and generally fetched higher prices during non-rainy months of the year.

Contrary to our previous findings in the city of Portland, the hedonic price regressions for this study suggest that property values in Washington County tended to increase as properties were located further away from multi-use trails and light rail stations, and no significance was found with regards to the density of multi-use trails around a property. These differing results do not necessarily reflect a fundamental difference in consumer preferences for proximity or access to active transportation infrastructure. Rather, they may be reflective of the different types of infrastructure and usage patterns that exist—multi-use paths are the predominant type of active transportation infrastructure in Washington County, and appears to be primarily utilized for recreational purposes as opposed to the on-street network of advanced bicycle facilities utilized for both commuting and recreational purposes in Portland. The intercept surveys of trail users in the county have found that 70% or more of the users are using the trail for recreation and that 20-70% or more arrive by car, indicating that close proximity (i.e., within walking distance) may not be important. In addition, many of the trails, including much of the Westside Trail, are built along powerline corridors. Close proximity to such powerline infrastructure would likely have a negative effect on home values and this effect could be stronger than anything positive associated with the trail infrastructure below.

9 Conclusions and Future Work

9.1 Key findings

A summary of the results of the analysis of business impacts is shown in 24. The text in the table simplifies the results for all outcomes (employment, wages, and sales), data sources, and methods of analysis. "Some positive" (or "some negative") indicates that some, but not a majority, of the analyses were positive (or negative), while the others were neutral (no effect). "Mainly positive" indicates that a majority of the analyses were positive, while the others were all or primarily neutral (no effect). "Mixed" indicates that there were positive, negative, and no effects, with no one direction of effect dominating. "Mainly no effect" is used when all but one of the analyses found no effect.

Overall, we found some or mainly positive effects for the retail and/or food sectors in nine of the 12 study areas. We found positive effects for projects located in different parts of the region, i.e. the potential economic benefits are not just in more urban parts of the city of Portland. We also found positive effects for different scales of projects. For example, the scale of the improvements along NE Hood Ave. in Gresham are smaller than those made along SE Division in Portland, about one-half mile vs. nearly two miles. It may, however, be harder to find statistically significant changes for smaller projects. For example, the improvements on Main St. in Tigard were only about one-third of a mile in length and we were not able to find many effects. That project was the first phase of a two-phase project. An analysis conducted in a few years after the second phase is completed might show different outcomes. Some other newer projects might also benefit from longer study time periods. This is particularly true for the areas undergoing major redevelopment, such as Milwaukie Town Center and SE Foster/Woodstock in the Lents Town Center.

Table 24: Summary of business impacts

Study area	Retail	Food
Milwaukie: McLoughlin Blvd. (2006)	Mixed	Mixed
Milwaukie: Town Center (2016)	No effects	Some positive
Oregon City: McLoughlin Blvd. (2009)	Mainly positive	Mixed
Gresham: NE Hood Ave. (2013)	Some positive	Some positive
Portland: E Burnside (2010)	Mainly positive	Mixed
Portland: SE Division St. (2014)	Some positive	Mainly positive
Portland: SE Foster Rd.-Woodstock Blvd. (2013)	Mixed	Some negative
Portland: St John's (2012)	Some positive	Mainly no effect
Beaverton: SW Rose Biggi (2015)	Some positive	Mainly no effect
Cornelius: E Baseline (2016)	Some negative	Mainly positive
Forest Grove: Town Center (2010)	Some positive	Mainly positive
Tigard: Main St. (2014)	Mainly no effect	Mainly no effect

With the mix of results and types of improvements, it is difficult to identify strong patterns in the results, though there is one hint of a pattern. Four of the projects were on major, multi-lane, higher speed arterials. The negative results were two such cases (SE Foster/Woodstock in Portland and E Baseline in Cornelius) and all but one of the "mixed effects" (which include some negative findings) were on such streets (McLoughlin Boulevard in Milwaukie and Oregon City and SE Foster/Woodstock in

Portland). The scale and context of these streets as major thoroughfares makes increasing pedestrian-oriented business challenging. However, the improvements likely have safety and other benefits (see results for Task 3). For example, the improvements along McLoughlin Boulevard in both Milwaukie and Oregon City allow people to walk more safely between riverfront trails and the historic downtowns.

9.2 Limitations and future work

All projects are not without limitations and challenges. The research team anticipated many of these, which influenced the decision to employ multiple methods and data sources. One challenge we did not anticipate was the lack of clear information about the projects themselves. We were often unable to obtain documents that described the exact nature and timing of the improvements made. Some, but not all, of this challenge may be attributed to the study getting underway just before the COVID-19 pandemic. This made it more challenging to reach agency staff and for staff to access relevant materials. Staff turnover and a mix of recordkeeping practices was also contributed. Some of the information may have been included in the original applications to Metro for funding, though we were unable to obtain those either. Also, projects often change some between the original funding decision and construction. In the end, we believe we found the necessary information (except good before photos), though it took longer than planned. If Metro plans to do project evaluation in the future, we recommend that agencies receiving funding be required to provide some standard documentation of the project, such as a description of the before conditions and the improvements made, ideally with maps, diagrams, and/or photos.

The COVID-19 pandemic, which we clearly did not anticipate, also affected our Task 3 activities. While we were able to conduct interviews remotely via telephone or video, many potential interviewees were not available to do so because of the pandemic. For example, some business owners were rightfully more concerned about the effects of the stay-at-home orders on their business than participating in this study. Agency staff often had higher priorities and/or were experiencing furloughs. We had also planned to spend time in each study area intercepting people to collect their input on the project impacts and outcomes. We converted this effort to an on-line form and used more existing data sources (e.g. user websites, existing surveys, social media, etc.). While we were able to gather useful input this way, it may not have been as rich or varied as in-person methods would have found. Health concerns also limited the time we could travel to and spend in each study area, even without interacting with other people.

In reviewing the scope of each catalyst project, we identified some methodological limitations that affected the business impacts analysis many of the projects. First is the lack of appropriate control corridors. The aggregated trend analysis method benefits from having control corridors or comparator areas, and the DID analysis requires the use of a control corridor. The lack of appropriate control corridors is due, in part, to the many investments being made throughout the region in bicycle and pedestrian infrastructure. Several possible control corridors with similar contexts and land uses either already had bicycle/pedestrian infrastructure when the catalyst project was built or such infrastructure was added in a similar time frame. In other cases, there were no corridors that adequately satisfied other criteria, particularly having similar commercial activity, being in geographic proximity, and being in a similar position in the road network.

A second limitation to using these methods is that many of these projects are in areas that received other types of public investments that likely also produced positive economic impacts. These include other transportation investments (e.g., a new MAX station or a Streetcar line) and a range of activities

related to urban renewal. In a few cases, the scale of the catalyst project is relatively small compared to the other public investments. In one such case (Milwaukie Town Center), we expanded the study area to include other AT improvements made at the same time with a different funding source. In all cases where complementary improvements occurred at about the same time as the catalyst project, it is not possible to attribute any positive outcomes solely to the catalyst project. However, this limitation highlights the role that the catalyst projects play in the larger planning and investment strategies outlined in Metro's 2040 Growth Concept. By definition, catalyst projects often aim to support the larger transportation investments (e.g. transit stations) and/or land use changes (e.g. mixed-use zoning and investments in transit-oriented development).

Moreover, the temporal range of available datasets presents an additional limitation to the analyses. LEHD and NETS datasets were available from 2002 to 2017, and QCEW dataset from 2003 to 2018. However, all of our street improvements were completed after 2010, with the exception of McLoughlin Blvd in Milwaukie which was completed in 2006. This means that in a number of analyzed study areas, it was difficult to evaluate long-term effects of street improvements because sufficient data had not been collected after construction. Therefore, we suggest extra attention be paid to interpreting the economic outcomes on those improvement corridors and recommend further analysis when additional years of data become available.

Lastly, the Great Recession that began in 2008 and 2009 impacted our analysis. Most of the projects were constructed within a few years (before and after) the recession, making it more challenging to isolate the effects of the street improvement project from larger economic trends. This is where using multiple analytical approaches was useful. For example, analysis methods that utilized a control corridor or comparator area such as the DID analysis or aggregated trend analysis provided ways to identify business activity shifts in an improved area relative to the larger economic trends affecting the comparator neighborhood or city during the recessionary period or during the post-recessionary recovery.

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11 Appendix: Race & Ethnicity Analysis of Employment

The following is a descriptive analysis of the trend in the number of jobs by race and ethnicity. We analyzed the yearly trend in number of jobs for non-white and Hispanic employees. The number of detailed racial jobs within the non-white racial group is compared between 2009, the first year in the data, and 2017, the last year in the data. As a result of the analysis, although the number of jobs by race and ethnicity have not been changed significantly over past eight years in many of the twelve projects, the following projects and corridors show some changes in the number of jobs for non-white and Hispanic: Forest Grove Town Center, Gresham: NE Hood Avenue, and Beaverton: SW Rose Biggi Avenue.

11.1 Data and methods

The data for this analysis is the LEHD Origin-Destination Employment Statistics datasets, which includes data on workers by race and ethnicity. The data are for all sectors, not just retail and food. The data are only available for years 2009 to 2017. The race data includes six categories: White alone, Black or African American alone, American Indian or Alaska Native alone, Asian alone, Native Hawaiian or other Pacific Islander alone, and two or more race groups. For our analysis of yearly trends by study area, we combined the five non-white racial groups as one racial group ("non-white"). This is because the number of workers in each non-white racial group was far too small to detect any trends or differences. The ethnicity data includes has two categories: not Hispanic or Latino, and Hispanic or Latino ("Hispanic/Latino"). For both race and ethnicity, we examined whether there is any unique yearly trend or significant change before and after the catalyst project improvements in the study area, the control corridor (if applicable), and the comparator areas.

The analysis result has several limitations. Firstly, the number of years included is limited (2009 to 2017), making it difficult to identify clear trends before and after the construction, particularly for newer projects. Secondly, the study areas, and therefore the number of jobs, are relatively small. This can lead to large fluctuations if just one or two businesses open or close. As noted above, it also makes it difficult to examine any particular race. Combining all racial categories into a single "non-white" group does not recognize the different levels of and reasons for disparities for particular racial groups. Finally, the job data are for all sectors. Therefore, it is not clear whether any changes would be related to the types of business we would expect to see grow as a result of the improved active transportation infrastructure. difficult to determine whether there have been changes in certain fields of jobs by race and ethnicity.

11.2 Findings

For all 12 catalyst projects, the yearly trend in the share of workers who are non-white and Hispanic/Latino generally followed the trend of comparator areas. However, three study areas showed slightly different positive trends.

Gresham: NE Hood Avenue. The percentage of non-white workers in the study area continued to increase after construction to a level similar to the comparator. The percentage nearly doubled from 7.1% in 2009 to 13.1% in 2017 (Figure 44). The rate of increase after construction was greater than that of the comparator area (the whole city of Gresham). Among racial groups, the greatest increase was in Black or African American alone, which increased from 1.6% in 2009 to 4.5% in 2017.

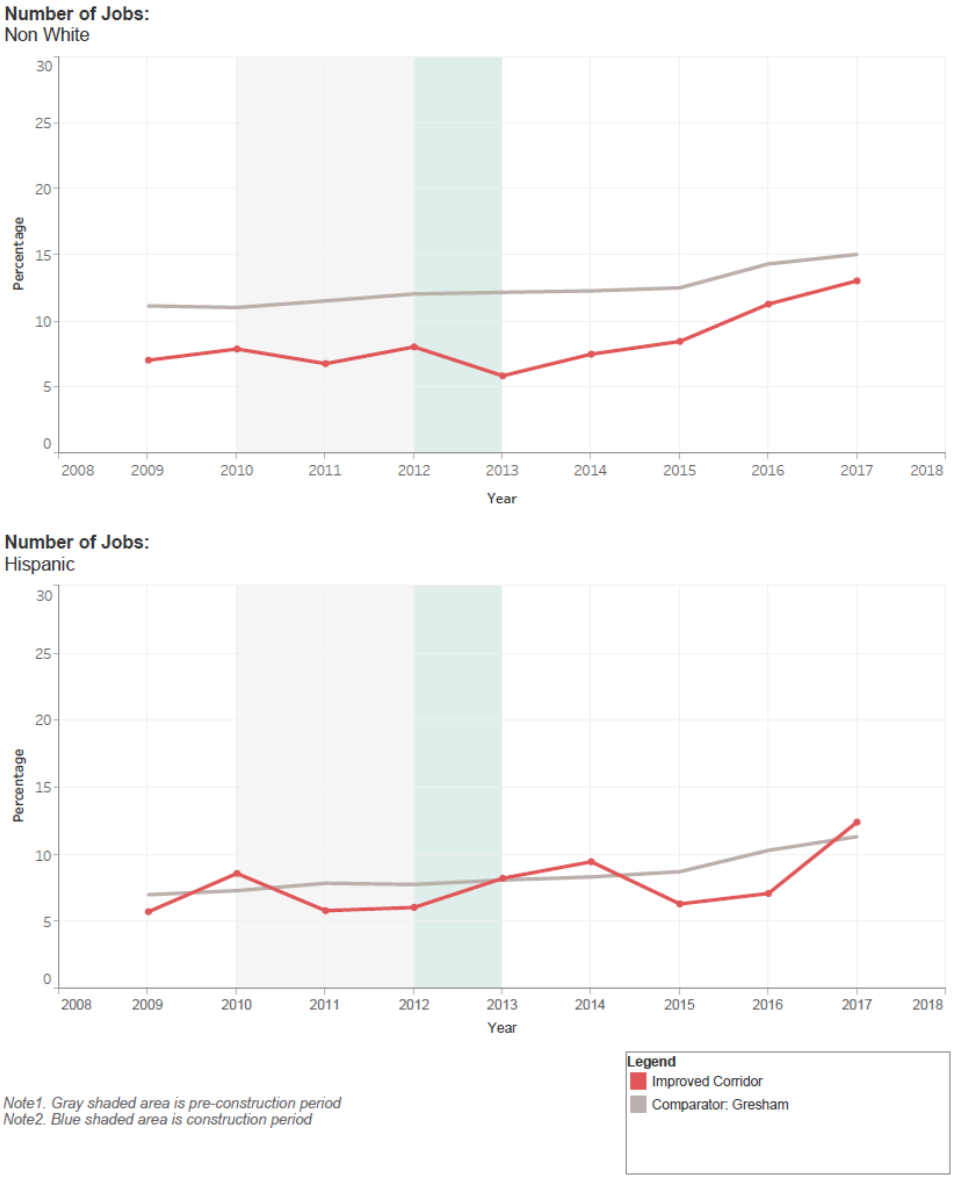


Figure 44: Racial composition of employment, Gresham: NE Hood Ave.

Portland: SE Foster-Woodstock. In the Portland: SE Foster-Woodstock study area, the change in percentages of jobs for Hispanic/Latino workers appears to increase at a slightly higher rate than the comparator areas and the control area (Figure 45). The pattern for non-white workers is less clear due to large fluctuations for some years. The trend from pre-construction (2010-2012) to 2017 is slightly steeper than for the comparators, but the large fluctuations over the entire period (2009 to 2017) indicate some instability in the data. This may be due to the significant changes taking place in the Lents Town Center, as well as the relatively small number of workers in the area (under 1,000 in 2017).

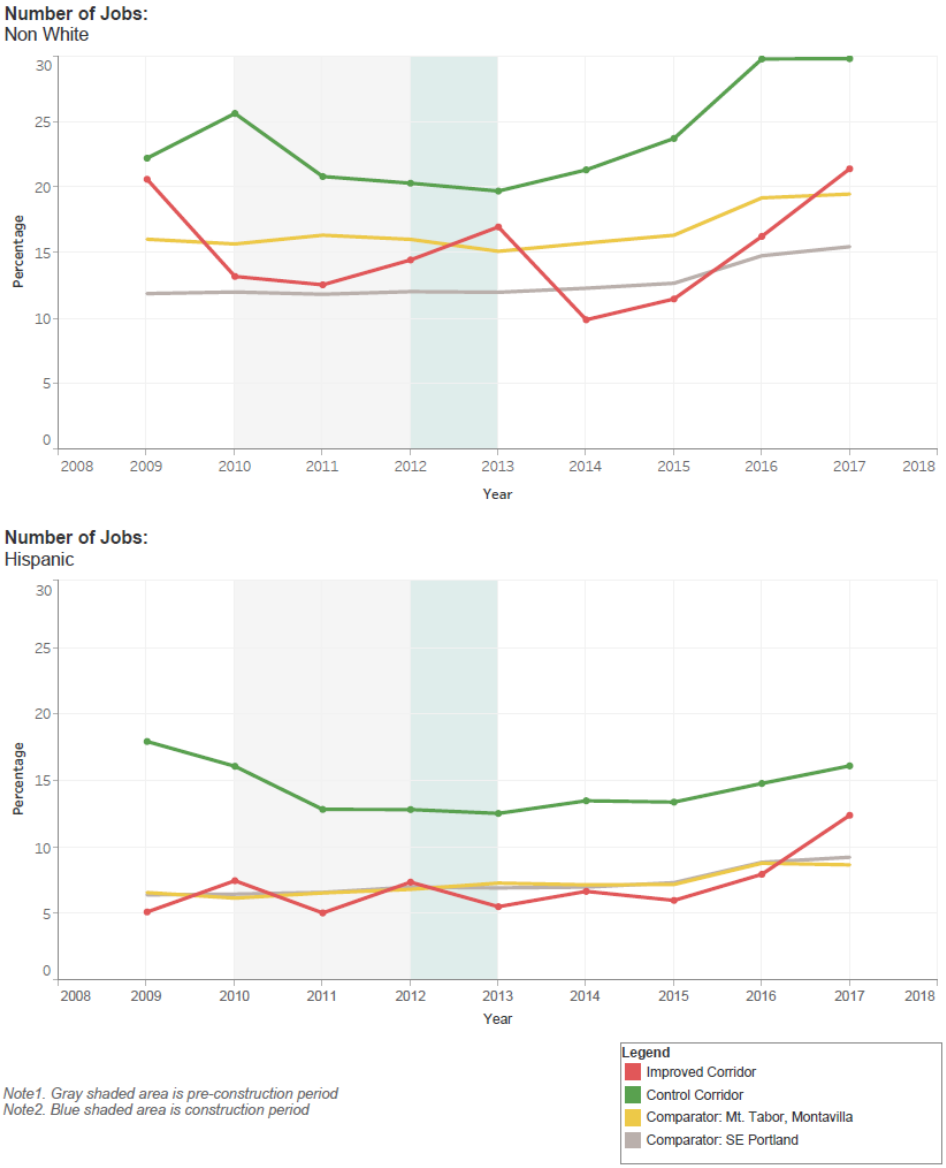


Figure 45 : Racial composition of employment, Portland: SE Foster-Woodstock

Beaverton: SW Rose Biggi Avenue. The percentage of jobs for non-white workers in the study area increased about 10 percentage points in the two years after the construction (Figure 46). Given the short time period post-construction, we recommend including more years of data before drawing a strong conclusion on this potential racial shift in employment.

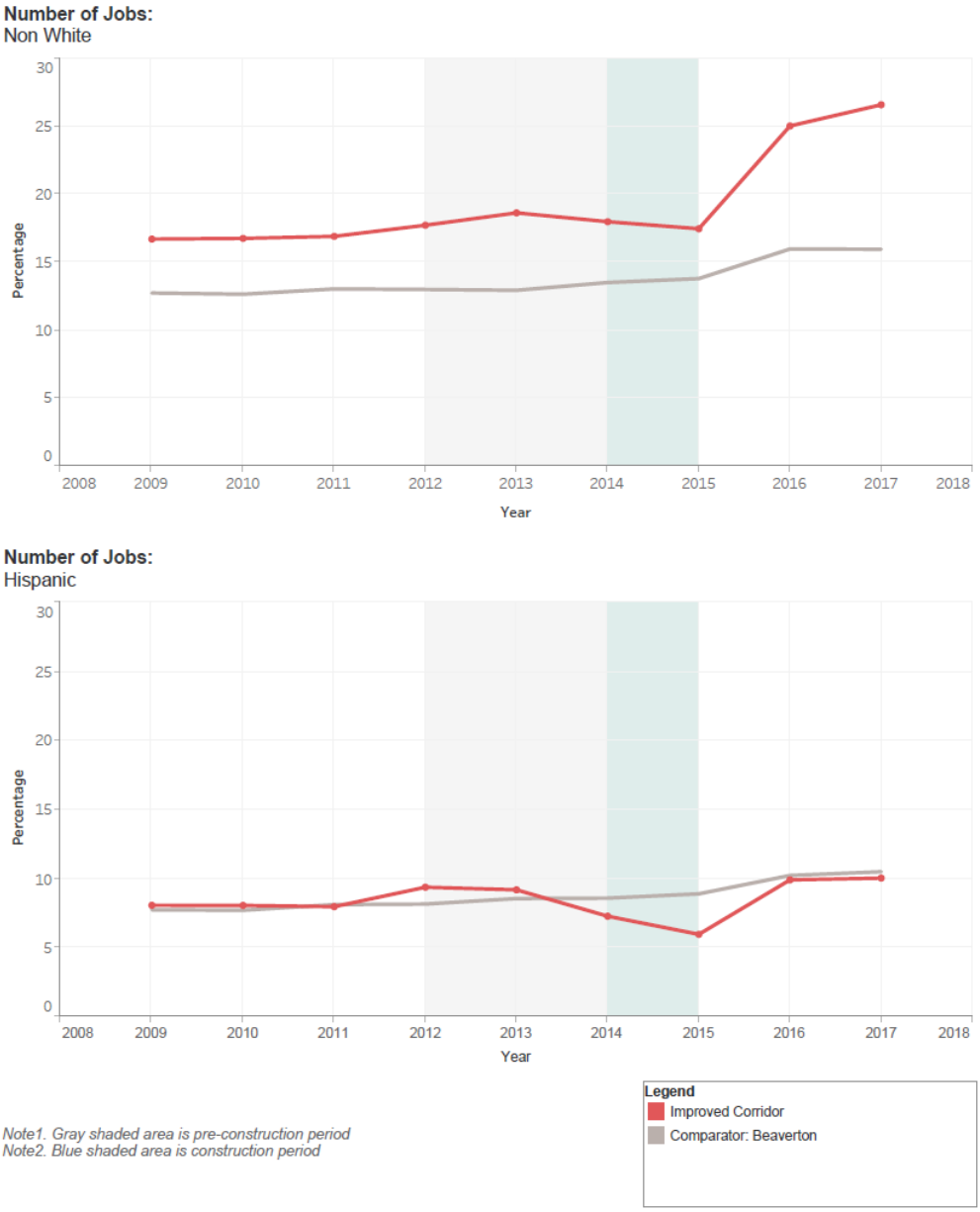


Figure 46 Racial composition of employment, Beaverton: SW Rose Biggi

12 Appendix: Business Activity

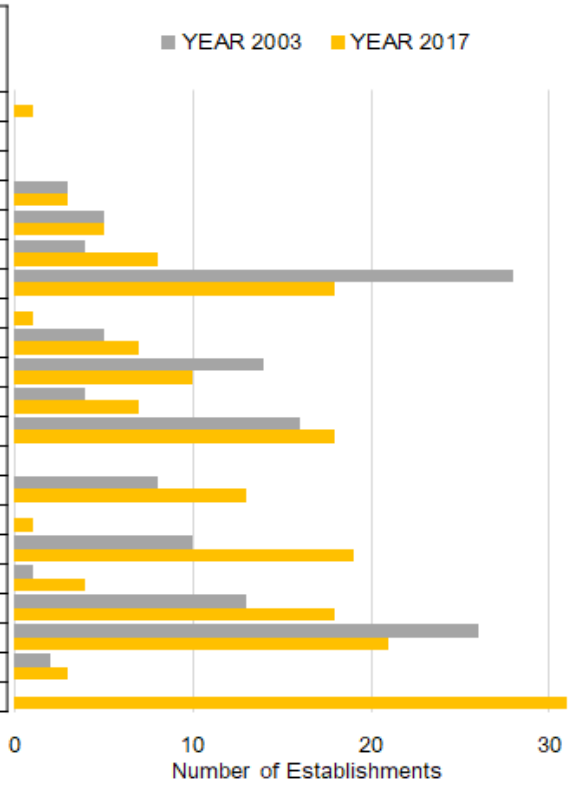
Industry sectors by NAICS codes included

All Industry Sectors (2-digit NAICS codes)	Retail Trade Sector (4-digit NAICS codes)	Food and Drink Sector (5-digit NAICS codes)
11: Agriculture, Forestry, Fishing and Hunting 21: Mining 22: Utilities 23: Construction 31-33: Manufacturing 42: Wholesale Trade 44-45: Retail Trade 48-49: Transportation and Warehousing 51: Information 52: Finance and Insurance 53: Real Estate Rental and Leasing 54: Professional, Scientific, and Technical Services 55: Management of Companies and Enterprises 56: Administrative and Support and Waste Management and Remediation Services 61: Educational Services 62: Health Care and Social Assistance 71: Arts, Entertainment, and Recreation 72: Accommodation and Food Services 81: Other Services (except Public Administration) 92: Public Administration	4411: Automobile Dealers 4412: Other Motor Vehicle Dealers 4413: Automotive Parts, Accessories, and Tire Stores 4421: Furniture Stores 4422: Home Furnishings Stores 4431: Electronics and Appliance Stores 4441: Building Material and Supplies Dealers 4442: Lawn and Garden Equipment and Supplies Stores 4451: Grocery Stores 4452: Specialty Food Stores 4453: Beer, Wine, and Liquor Stores 4461: Health and Personal Care Stores 4471: Gasoline Stations 4481: Clothing Stores 4483: Jewelry, Luggage, and Leather Goods Stores 4511: Sporting Goods, Hobby, and Musical Instrument Stores 4512: Book Stores and News Dealers 4522: Department Stores 4523: General Merchandise Stores, including Warehouse Clubs and Supercenters 4531: Florists 4532: Office Supplies, Stationery, and Gift Stores 4533: Used Merchandise Stores 4539: Other Miscellaneous Store Retailers 4541: Electronic Shopping and Mail-Order Houses 4542: Vending Machine Operators 4543: Direct Selling Establishments	72231: Food Service Contractors 72232: Caterers 72233: Mobile Food Services 72241: Drinking Places (Alcoholic Beverages) 72251: Restaurants & Other Eating Places

12.1 Milwaukie: McLoughlin Boulevard

12.1.1 Establishments by 2-digit NAICS codes, Milwaukie: McLoughlin Boulevard

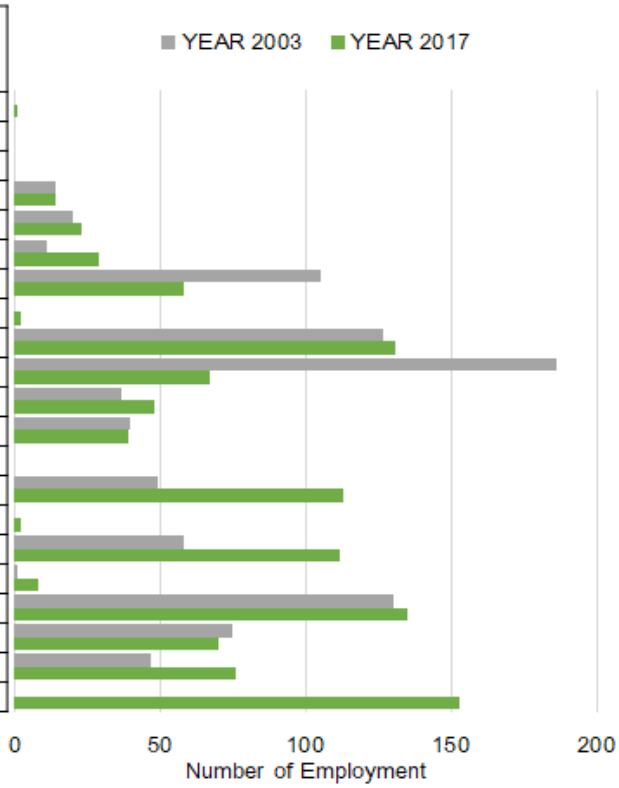
% of Total Establishments		All Industry Sector (NAICS 2-digit codes)
2003	2017	
0.0	0.5	11: Agriculture, Forestry, Fishing & Hunt.
0.0	0.0	21: Mining
0.0	0.0	22: Utilities
2.2	1.6	23: Construction
3.6	2.7	31-33: Manufacturing
2.9	4.3	42: Wholesale Trade
20.1	9.6	44-45: Retail Trade
0.0	0.5	48-49: Transportation and Warehousing
3.6	3.7	51: Information
10.1	5.3	52: Finance and Insurance
2.9	3.7	53: Real Estate Rental and Leasing
11.5	9.6	54: Professional, Sci. & Tech. Services
0.0	0.0	55: Mgt. of Companies & Ent.
5.8	6.9	56: Admin. & Support / Waste Mgt.
0.0	0.5	61: Educational Services
7.2	10.1	62: Health Care and Social Assist.
0.7	2.1	71: Arts, Entertainment, & Recreation
9.4	9.6	72: Accommodation & Food Services
18.7	11.2	81: Other Services (except Public Admin.)
1.4	1.6	92: Public Administration
0.0	16.5	99: Unclassified



Between 2003 and 2017, the most noticeable variation is the increase of establishments that fall into the Unclassified sector (99). The Agriculture, Forestry, Fishing and Hunting (11), Wholesale Trade (42), Transportation and Warehousing (48-49), Information (51), Real Estate Rental and Leasing (53), Administrative and Support and Waste Management and Remediation Services (56), Educational Services (61), Health Care and Social Assistance (62), Arts, Entertainment, and Recreation (71), Accommodation and Food Services (72), and Public Administration (92) sectors also displayed increases in 2017 in both number and percentage of establishments compared to 2003. On the other hand, the Retail Trade (44-45), Finance and Insurance (52), and Other Services (except Public Administration) (81) sectors in 2017 decreased its size both in number and percentage of establishments compared to 2003.

12.1.2 Employment by 2-digit NAICS codes, Milwaukie: McLoughlin Boulevard

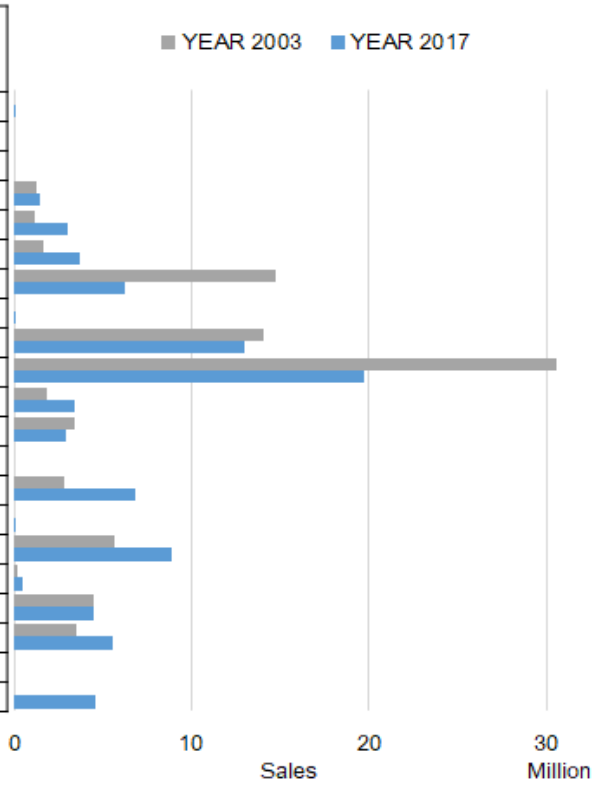
% of Total Employment		All Industry Sector (NAICS 2-digit codes)
2003	2017	
0.0	0.1	11: Agriculture, Forestry, Fishing & Hunt.
0.0	0.0	21: Mining
0.0	0.0	22: Utilities
1.6	1.3	23: Construction
2.2	2.1	31-33: Manufacturing
1.2	2.7	42: Wholesale Trade
11.7	5.4	44-45: Retail Trade
0.0	0.2	48-49: Transportation and Warehousing
14.1	12.1	51: Information
20.7	6.2	52: Finance and Insurance
4.1	4.4	53: Real Estate Rental and Leasing
4.4	3.6	54: Professional, Sci. & Tech. Services
0.0	0.0	55: Mgt. of Companies & Ent.
5.4	10.5	56: Admin. & Support / Waste Mgt.
0.0	0.2	61: Educational Services
6.4	10.4	62: Health Care and Social Assist.
0.1	0.7	71: Arts, Entertainment, & Recreation
14.4	12.5	72: Accommodation & Food Services
8.3	6.5	81: Other Services (except Public Admin.)
5.2	7.0	92: Public Administration
0.0	14.2	99: Unclassified



Between 2003 and 2017, the most noticeable variation is again the increase in employment in the Unclassified (99) sector, following from the same increase in the number of unclassified establishments in A-1. The Wholesale Trade (42), Real Estate Rental and Leasing (53), Administrative and Support and Waste Management and Remediation Services (56), Health Care and Social Assistance (62), and Public Administration (92) sectors displayed increases in 2017 in both number and percentage of employment compared to 2003. On the other hand, the Retail Trade (44-45), and Other Services (except Public Administration) (81) sectors experienced decreases in 2017 in both number and percentage of overall employment compared to 2003.

12.1.3 Sales by 2-digit NAICS codes, Milwaukie: McLoughlin Boulevard

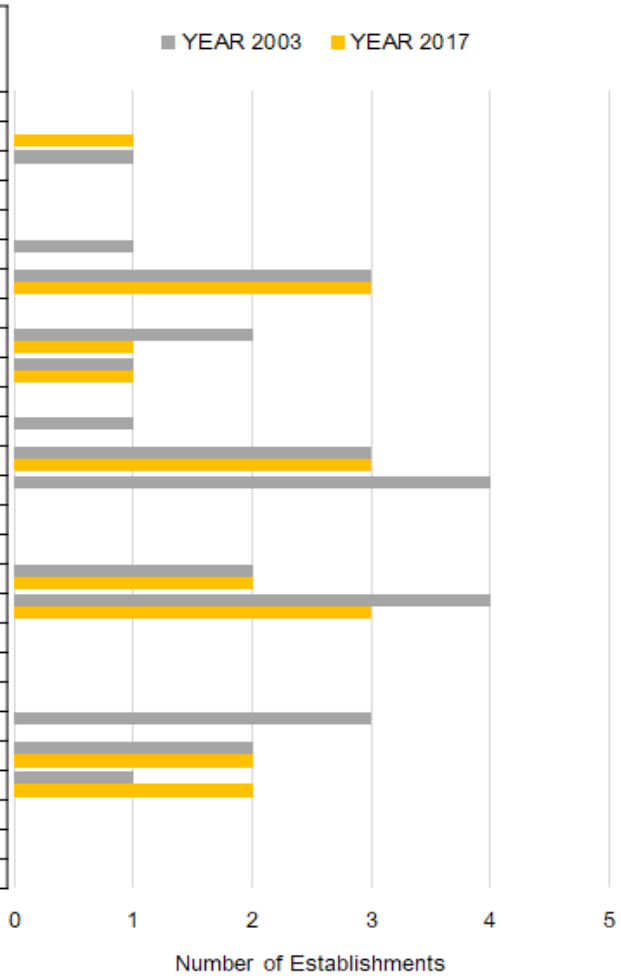
% of Total Sales		All Industry Sector (NAICS 2-digit codes)
2003	2017	
0.0	0.1	11: Agriculture, Forestry, Fishing & Hunt.
0.0	0.0	21: Mining
0.0	0.0	22: Utilities
1.5	1.7	23: Construction
1.4	3.6	31-33: Manufacturing
1.9	4.4	42: Wholesale Trade
17.3	7.4	44-45: Retail Trade
0.0	0.1	48-49: Transportation and Warehousing
16.4	15.3	51: Information
35.8	23.3	52: Finance and Insurance
2.2	4.0	53: Real Estate Rental and Leasing
4.0	3.5	54: Professional, Sci. & Tech. Services
0.0	0.0	55: Mgt. of Companies & Ent.
3.3	8.1	56: Admin. & Support / Waste Mgt.
0.0	0.1	61: Educational Services
6.6	10.5	62: Health Care and Social Assist.
0.2	0.6	71: Arts, Entertainment, & Recreation
5.3	5.3	72: Accommodation & Food Services
4.1	6.6	81: Other Services (except Public Admin.)
0.0	0.0	92: Public Administration
0.0	5.4	99: Unclassified



Between 2003 and 2017, the most noticeable variation is the decrease of sales that fall into the Finance and Insurance (52) sector. The Information (51), and Professional, Scientific, and Technical Services (54) sectors also displayed decreases in 2017 in both sales figures and percentage of sales compared to 2003. On the other hand, the Manufacturing (31-33), Wholesale Trade (42), Administrative and Support and Waste Management and Remediation Services (56), Health Care and Social Assistance (62), and Other Services (except Public Administration) (81) sectors experienced increases in 2017 in both figure and percentage of sales compared to 2003.

12.1.4 Retail establishments by 2-digit NAICS codes, Milwaukie: McLoughlin Boulevard

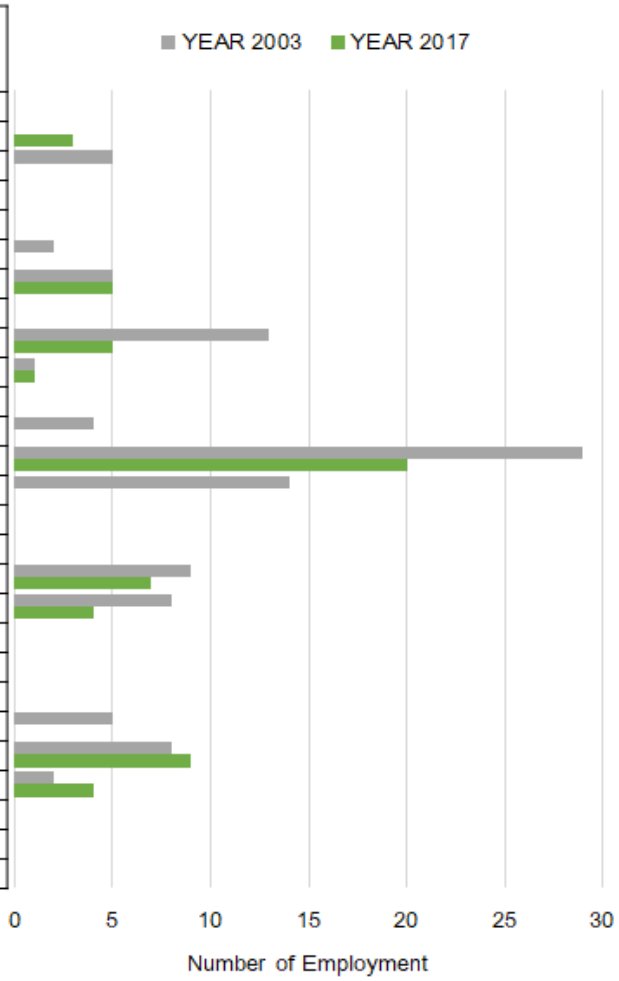
% of Total Establishments		Retail Trade Sector (4-digit NAICS codes)
2003	2017	
0.0	0.0	4411: Automobile
0.0	5.6	4412: Other Motor Vehicle
3.6	0.0	4413: Automotive Parts & Tire
0.0	0.0	4421: Furniture
0.0	0.0	4422: Home Furnishings
3.6	0.0	4431: Electronics & Appliance
10.7	16.7	4441: Building Material and Supplies
0.0	0.0	4442: Lawn and Garden Equip. & Supplies
7.1	5.6	4451: Grocery
3.6	5.6	4452: Specialty Food
0.0	0.0	4453: Liquor
3.6	0.0	4461: Health & Personal Care
10.7	16.7	4471: Gasoline
14.3	0.0	4481: Clothing
0.0	0.0	4482: Shoe
0.0	0.0	4483: Jewelry & Leather Goods
7.1	11.1	4511: Sporting Goods & Musical Inst.
14.3	16.7	4512: Book Stores & News Dealers
0.0	0.0	4522: Department Stores
0.0	0.0	4523: General Merchandise
0.0	0.0	4531: Florists
10.7	0.0	4532: Office Supplies
7.1	11.1	4533: Used Merchandise
3.6	11.1	4539: Other Miscellaneous
0.0	0.0	4541: Electronic Shopping & Mail-Order
0.0	0.0	4542: Vending Machine
0.0	0.0	4543: Direct Selling Est.



Between 2003 and 2017, the Other Motor Vehicle Dealers (4412) and Other Miscellaneous Store Retailers (4539) sectors displayed increases in 2017 in both number and percentage of establishments compared to 2003. The Grocery Stores (4451), Health and Personal Care Stores (4461), Clothing Stores (4481), and Office Supplies, Stationery, and Gift Stores (4532) experienced decreases in 2017 in both number and percentage of establishments compared to 2010.

12.1.5 Retail employment by 2-digit NAICS codes, Milwaukie: McLoughlin Boulevard

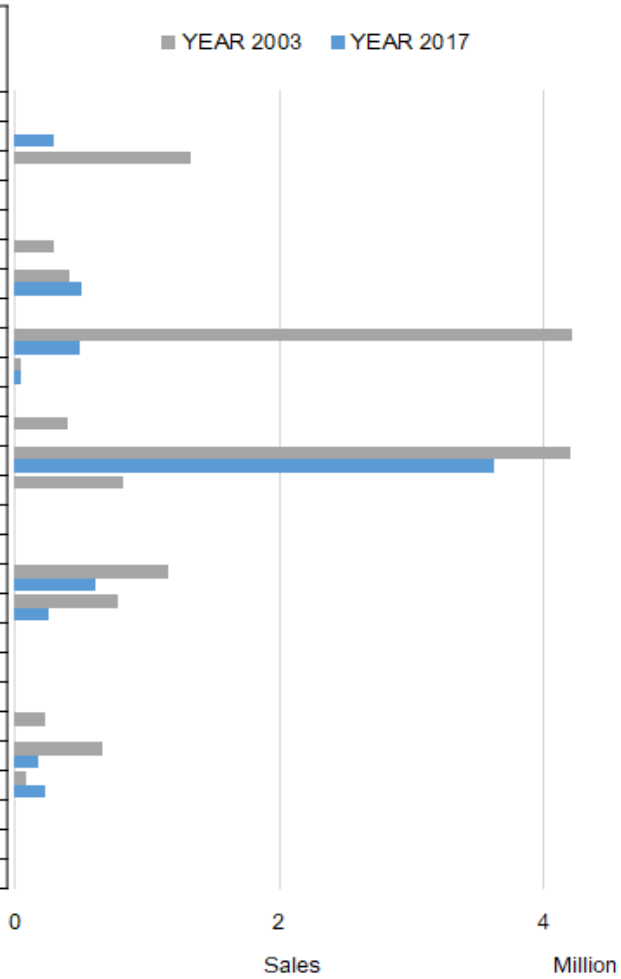
% of Total Employment		Retail Trade Sector (4-digit NAICS codes)
2003	2017	
0.0	0.0	4411: Automobile
0.0	5.2	4412: Other Motor Vehicle
4.8	0.0	4413: Automotive Parts & Tire
0.0	0.0	4421: Furniture
0.0	0.0	4422: Home Furnishings
1.9	0.0	4431: Electronics & Appliance
4.8	8.6	4441: Building Material and Supplies
0.0	0.0	4442: Lawn and Garden Equip. & Supplies
12.4	8.6	4451: Grocery
1.0	1.7	4452: Specialty Food
0.0	0.0	4453: Liquor
3.8	0.0	4461: Health & Personal Care
27.6	34.5	4471: Gasoline
13.3	0.0	4481: Clothing
0.0	0.0	4482: Shoe
0.0	0.0	4483: Jewelry & Leather Goods
8.6	12.1	4511: Sporting Goods & Musical Inst.
7.6	6.9	4512: Book Stores & News Dealers
0.0	0.0	4522: Department Stores
0.0	0.0	4523: General Merchandise
0.0	0.0	4531: Florists
4.8	0.0	4532: Office Supplies
7.6	15.5	4533: Used Merchandise
1.9	6.9	4539: Other Miscellaneous
0.0	0.0	4541: Electronic Shopping & Mail-Order
0.0	0.0	4542: Vending Machine
0.0	0.0	4543: Direct Selling Est.



Between 2003 and 2017, the two noticeable variations are the decreases in employment in the Grocery Stores (4451) and Clothing Stores (4481) sectors. The Automotive Parts, Accessories, and Tire Stores (4413), Electronics and Appliance Stores (4431), Health and Personal Care Stores (4461), and Office Supplies, Stationery, and Gift Stores (4532) also experienced decreases in both number and percentage of employment compared to 2003. On the other hand, Other Motor Vehicle Dealers (4412), Used Merchandise Stores (4533), and Other Miscellaneous Store Retailers (4539) sectors displayed increases in 2017 in both number and percentage of employment compared to 2003.

12.1.6 Retail sales by 2-digit NAICS codes, Milwaukie: McLoughlin Boulevard

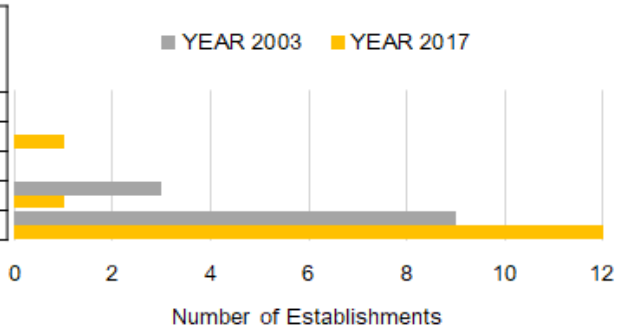
% of Total Sales		Retail Trade Sector (4-digit NAICS codes)
2003	2017	
0.0	0.0	4411: Automobile
0.0	4.8	4412: Other Motor Vehicle
9.0	0.0	4413: Automotive Parts & Tire
0.0	0.0	4421: Furniture
0.0	0.0	4422: Home Furnishings
2.0	0.0	4431: Electronics & Appliance
2.8	8.1	4441: Building Material and Supplies
0.0	0.0	4442: Lawn and Garden Equip. & Supplies
29.4	8.0	4451: Grocery
0.4	0.8	4452: Specialty Food
0.0	0.0	4453: Liquor
2.7	0.0	4461: Health & Personal Care
28.4	57.9	4471: Gasoline
5.6	0.0	4481: Clothing
0.0	0.0	4482: Shoe
0.0	0.0	4483: Jewelry & Leather Goods
7.8	9.7	4511: Sporting Goods & Musical Inst.
5.3	4.1	4512: Book Stores & News Dealers
0.0	0.0	4522: Department Stores
0.0	0.0	4523: General Merchandise
0.0	0.0	4531: Florists
1.5	0.0	4532: Office Supplies
4.5	2.9	4533: Used Merchandise
0.6	3.7	4539: Other Miscellaneous
0.0	0.0	4541: Electronic Shopping & Mail-Order
0.0	0.0	4542: Vending Machine
0.0	0.0	4543: Direct Selling Est.



Between 2003 and 2017, the most noticeable variation is the decrease in sales that fell into the Grocery Stores (4451) sector compared to 2003. The Automotive Parts, Accessories, and Tire Stores (4413), Electronics and Appliance Stores (4431), Health and Personal Care Stores (4461), Clothing Stores (4481), Book Stores and News Dealers (4512), Office Supplies, Stationery, and Gift Stores (4532), Used Merchandise Stores (4533) sectors also experienced decreases in 2017 in both figure and percentage of sales compared to 2003. On the other hand, Other Motor Vehicle Dealers (4412), Building Material and Supplies Dealers (4441), and Other Miscellaneous Store Retailers (4539) sectors experienced increases in 2017 in both figure and percentage of sales compared to 2003.

12.1.7 Food and drink establishments by 2-digit NAICS codes, Milwaukie: McLoughlin Boulevard

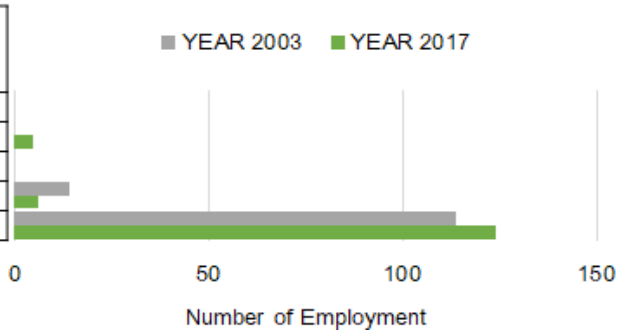
% of Total Establishments		Food & Drink Sector (5-digit NAICS codes)
2003	2017	
0.0	0.0	72231: Food Service Contractors
0.0	5.6	72232: Caterers
0.0	0.0	72233: Mobile Food Services
25.0	5.6	72241: Drinking Places (Alcoholic Bev.)
75.0	88.9	72251: Restaurants & Other Eating Places



Between 2003 and 2017, the Caterers (72232) and Restaurants & Other Eating Places (72251) sectors displayed increases in 2017 in both number and percentage of establishments compared to 2003. On the other hand, the Drinking Places (Alcoholic Beverage) (72241) sector experienced a decrease in 2017 in both number and percentage of establishments compared to 2003.

12.1.8 Food and drink employment by 2-digit NAICS codes, Milwaukie: McLoughlin Boulevard

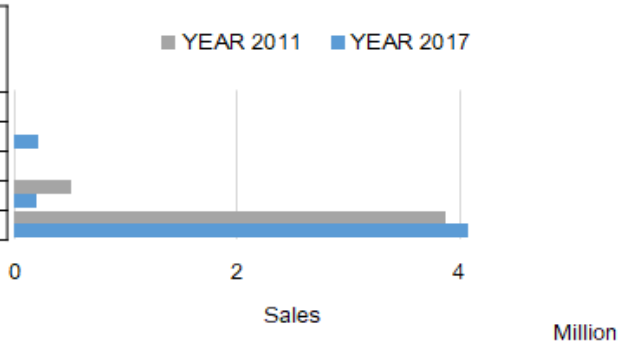
% of Total Employment		Food & Drink Sector (5-digit NAICS codes)
2003	2017	
0.0	0.0	72231: Food Service Contractors
0.0	3.7	72232: Caterers
0.0	0.0	72233: Mobile Food Services
10.9	4.4	72241: Drinking Places (Alcoholic Bev.)
89.1	91.9	72251: Restaurants & Other Eating Places



Between 2003 and 2017, the Caterers (72232) and Restaurants & Other Eating Places (72251) sectors displayed increases in 2017 in both number and percentage of employment compared to 2003. On the other hand, the Drinking Places (Alcoholic Beverage) (72241) sector experienced a decrease in 2017 in both number and percentage of employment compared to 2003.

12.1.9 Food and drink sales by 2-digit NAICS codes, Milwaukie: McLoughlin Boulevard

% of Total Sales		Food & Drink Sector (5-digit NAICS codes)
2003	2017	
0.0	0.0	72231: Food Service Contractors
0.0	4.8	72232: Caterers
0.0	0.0	72233: Mobile Food Services
11.8	4.3	72241: Drinking Places (Alcoholic Bev.)
88.2	90.9	72251: Restaurants & Other Eating Places

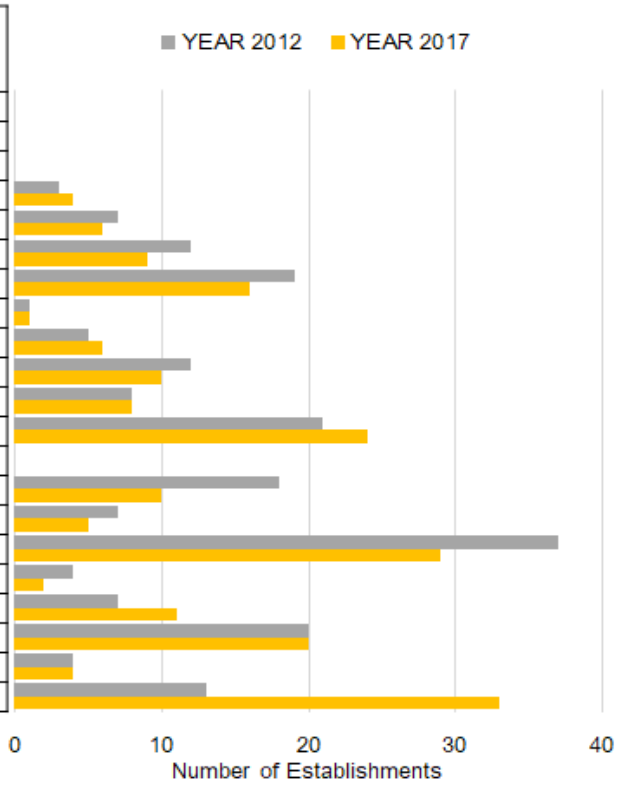


Between 2003 and 2017, the Caterers (72232) and Restaurants & Other Eating Places (72251) sectors displayed increases in 2017 in both figure and percentage of sales compared to 2003. On the other hand, the Drinking Places (Alcoholic Beverage) (72241) sector experienced a decrease in 2017 in both figure and percentage of sales compared to 2003.

12.2 Milwaukie Town Center

12.2.1 Establishments by 2-digit NAICS codes, Milwaukie Town Center

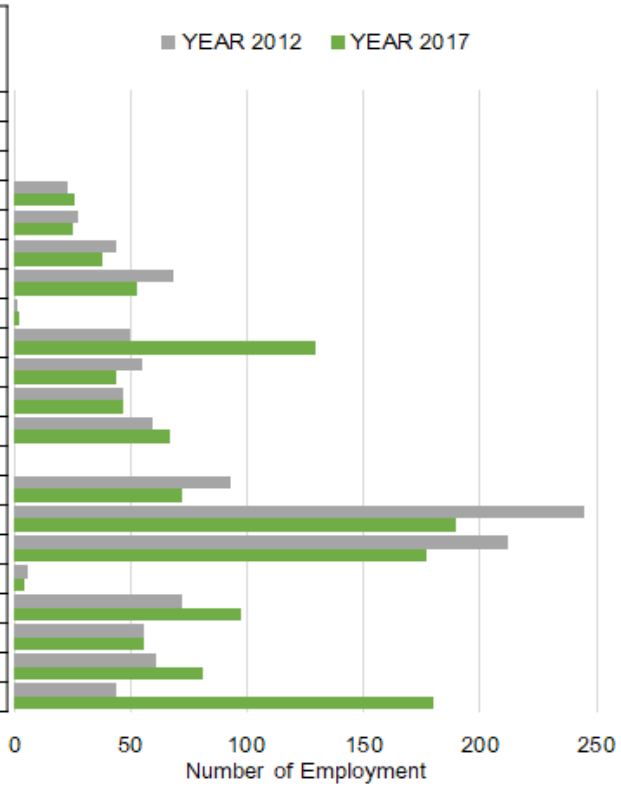
% of Total Establishments		All Industry Sector (NAICS 2-digit codes)
2012	2017	
0.0	0.0	11: Agriculture, Forestry, Fishing & Hunt.
0.0	0.0	21: Mining
0.0	0.0	22: Utilities
1.5	2.0	23: Construction
3.5	3.0	31-33: Manufacturing
6.1	4.5	42: Wholesale Trade
9.6	8.1	44-45: Retail Trade
0.5	0.5	48-49: Transportation and Warehousing
2.5	3.0	51: Information
6.1	5.1	52: Finance and Insurance
4.0	4.0	53: Real Estate Rental and Leasing
10.6	12.1	54: Professional, Sci. & Tech. Services
0.0	0.0	55: Mgt. of Companies & Ent.
9.1	5.1	56: Admin. & Support / Waste Mgt.
3.5	2.5	61: Educational Services
18.7	14.6	62: Health Care and Social Assist.
2.0	1.0	71: Arts, Entertainment, & Recreation
3.5	5.6	72: Accommodation & Food Services
10.1	10.1	81: Other Services (except Public Admin.)
2.0	2.0	92: Public Administration
6.6	16.7	99: Unclassified



Between 2012 and 2017, the most noticeable variation is the increase of establishments that fall into the Unclassified sector (99). The Construction (23), Professional, Scientific, and Technical Services (54), and Accommodation and Food Services (72) sectors also displayed increases in 2017 in both number and percentage of establishments compared to 2012. On the other hand, the Manufacturing (31-33), Wholesale Trade (42), Retail Trade (44-45), Transportation and Warehousing (48-49), Finance and Insurance (52), Administrative and Support and Waste Management and Remediation Services (56), Educational Services (61), Health Care and Social Assistance (62), and Arts, Entertainment, and Recreation (71) sectors in 2017 decreased its size both in number and percentage of establishments compared to 2012.

12.2.2 Employment by 2-digit NAICS codes, Milwaukie Town Center

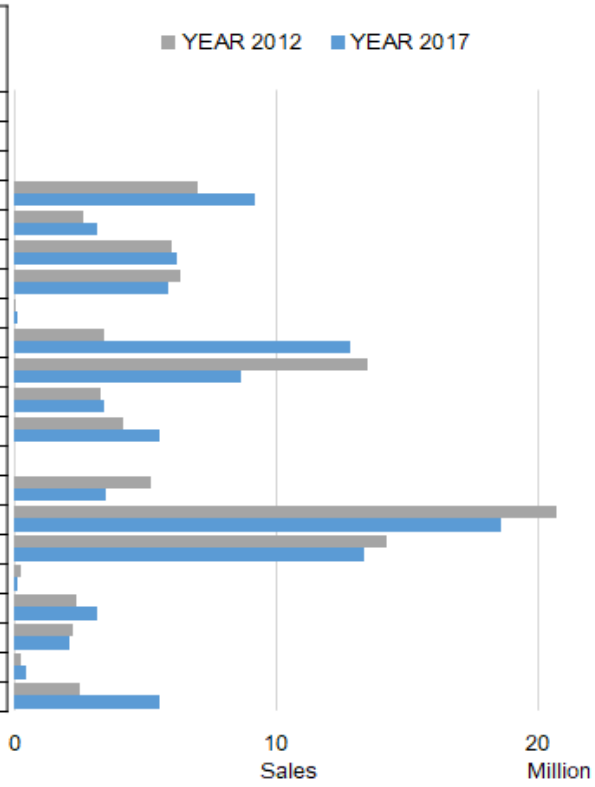
% of Total Employment		All Industry Sector (NAICS 2-digit codes)
2012	2017	
0.0	0.0	11: Agriculture, Forestry, Fishing & Hunt.
0.0	0.0	21: Mining
0.0	0.0	22: Utilities
2.0	2.0	23: Construction
2.3	1.9	31-33: Manufacturing
3.8	3.0	42: Wholesale Trade
5.8	4.1	44-45: Retail Trade
0.1	0.2	48-49: Transportation and Warehousing
4.3	10.0	51: Information
4.7	3.4	52: Finance and Insurance
4.0	3.6	53: Real Estate Rental and Leasing
5.1	5.2	54: Professional, Sci. & Tech. Services
0.0	0.0	55: Mgt. of Companies & Ent.
8.0	5.6	56: Admin. & Support / Waste Mgt.
21.1	14.8	61: Educational Services
18.2	13.7	62: Health Care and Social Assist.
0.5	0.3	71: Arts, Entertainment, & Recreation
6.2	7.5	72: Accommodation & Food Services
4.8	4.3	81: Other Services (except Public Admin.)
5.2	6.3	92: Public Administration
3.8	14.0	99: Unclassified



Between 2012 and 2017, the most noticeable variation is again the increase in employment in the Unclassified (99) sector, following from the same increase in the number of unclassified establishments in A-1. The Information (51), Accommodation and Food Services (72) and Public Administration (92) sectors also displayed increases in 2017 in both number and percentage of employment compared to 2012. On the other hand, the Manufacturing (31-33), Wholesale Trade (42), Retail Trade (44-45), Finance and Insurance (52), Real Estate Rental and Leasing (53), Administrative and Support and Waste Management and Remediation Services (56), Educational Services (61), and Health Care and Social Assistance (62) sectors experienced decreases in 2017 in both number and percentage of overall employment compared to 2012.

12.2.3 Sales by 2-digit NAICS codes, Milwaukie Town Center

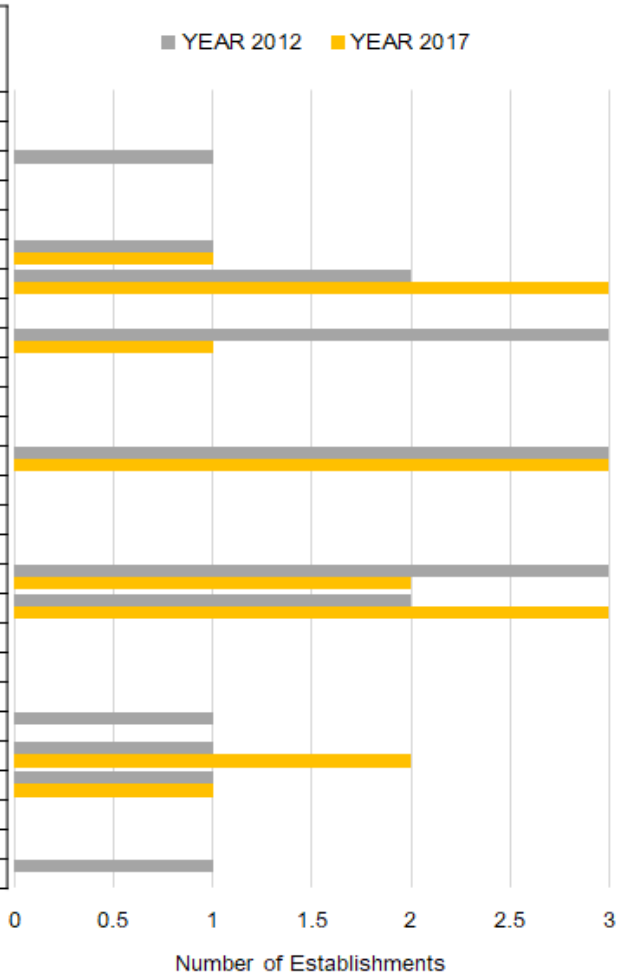
% of Total Sales		All Industry Sector (NAICS 2-digit codes)
2012	2017	
0.0	0.0	11: Agriculture, Forestry, Fishing & Hunt.
0.0	0.0	21: Mining
0.0	0.0	22: Utilities
7.4	9.0	23: Construction
2.8	3.1	31-33: Manufacturing
6.4	6.1	42: Wholesale Trade
6.7	5.8	44-45: Retail Trade
0.1	0.1	48-49: Transportation and Warehousing
3.7	12.6	51: Information
14.3	8.5	52: Finance and Insurance
3.5	3.4	53: Real Estate Rental and Leasing
4.4	5.4	54: Professional, Sci. & Tech. Services
0.0	0.0	55: Mgt. of Companies & Ent.
5.5	3.4	56: Admin. & Support / Waste Mgt.
22.0	18.3	61: Educational Services
15.1	13.1	62: Health Care and Social Assist.
0.3	0.1	71: Arts, Entertainment, & Recreation
2.5	3.1	72: Accommodation & Food Services
2.4	2.1	81: Other Services (except Public Admin.)
0.2	0.4	92: Public Administration
2.7	5.5	99: Unclassified



Between 2012 and 2017, the most noticeable variation is the increase of sales that fall into the Information (51) sector. The Construction (23), Manufacturing (31-33), Professional, Scientific, and Technical Services (54), Accommodation and Food Services (72), Public Administration (92), and Unclassified (99) sectors also displayed increases in 2017 in both sales figures and percentage of sales compared to 2012. On the other hand, the Retail Trade (44-45), Finance and Insurance (52), Administrative and Support and Waste Management and Remediation Services (56), Educational Services (61), Health Care and Social Assistance (62), Arts, Entertainment, and Recreation (71), and Other Services (except Public Administration) (81) sectors experienced decreases in 2017 in both figure and percentage of sales compared to 2012.

12.2.4 Retail establishments by 2-digit NAICS codes, Milwaukie Town Center

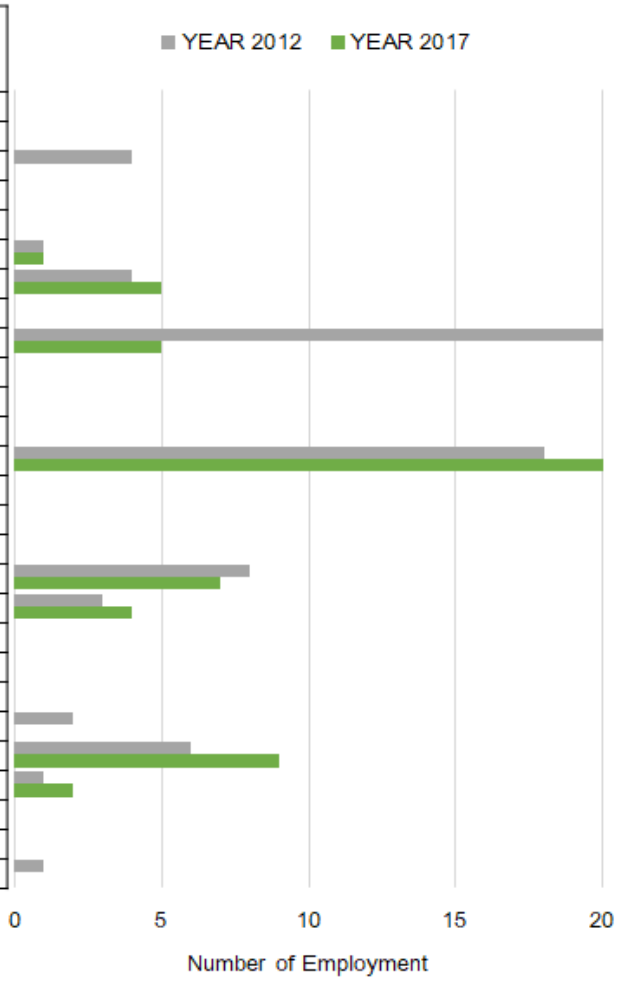
% of Total Establishments		Retail Trade Sector (4-digit NAICS codes)
2012	2017	
0.0	0.0	4411: Automobile
0.0	0.0	4412: Other Motor Vehicle
5.3	0.0	4413: Automotive Parts & Tire
0.0	0.0	4421: Furniture
0.0	0.0	4422: Home Furnishings
5.3	6.3	4431: Electronics & Appliance
10.5	18.8	4441: Building Material and Supplies
0.0	0.0	4442: Lawn and Garden Equip. & Supplies
15.8	6.3	4451: Grocery
0.0	0.0	4452: Specialty Food
0.0	0.0	4453: Liquor
0.0	0.0	4461: Health & Personal Care
15.8	18.8	4471: Gasoline
0.0	0.0	4481: Clothing
0.0	0.0	4482: Shoe
0.0	0.0	4483: Jewelry & Leather Goods
15.8	12.5	4511: Sporting Goods & Musical Inst.
10.5	18.8	4512: Book Stores & News Dealers
0.0	0.0	4522: Department Stores
0.0	0.0	4523: General Merchandise
0.0	0.0	4531: Florists
5.3	0.0	4532: Office Supplies
5.3	12.5	4533: Used Merchandise
5.3	6.3	4539: Other Miscellaneous
0.0	0.0	4541: Electronic Shopping & Mail-Order
0.0	0.0	4542: Vending Machine
5.3	0.0	4543: Direct Selling Est.



Between 2012 and 2017, the Building Material and Supplies Dealers (4441), Book Stores and News Dealers (4512), and Used Merchandise Stores (4533) sectors displayed increases in 2017 in both number and percentage of establishments compared to 2012. The Automotive Parts, Accessories, and Tire Stores (4413), Grocery Stores (4451), Office Supplies, Stationery, and Gift Stores (4532), and Direct Selling Establishments (4543) experienced decreases in 2017 in both number and percentage of establishments compared to 2012.

12.2.5 Retail employment by 2-digit NAICS codes, Milwaukie Town Center

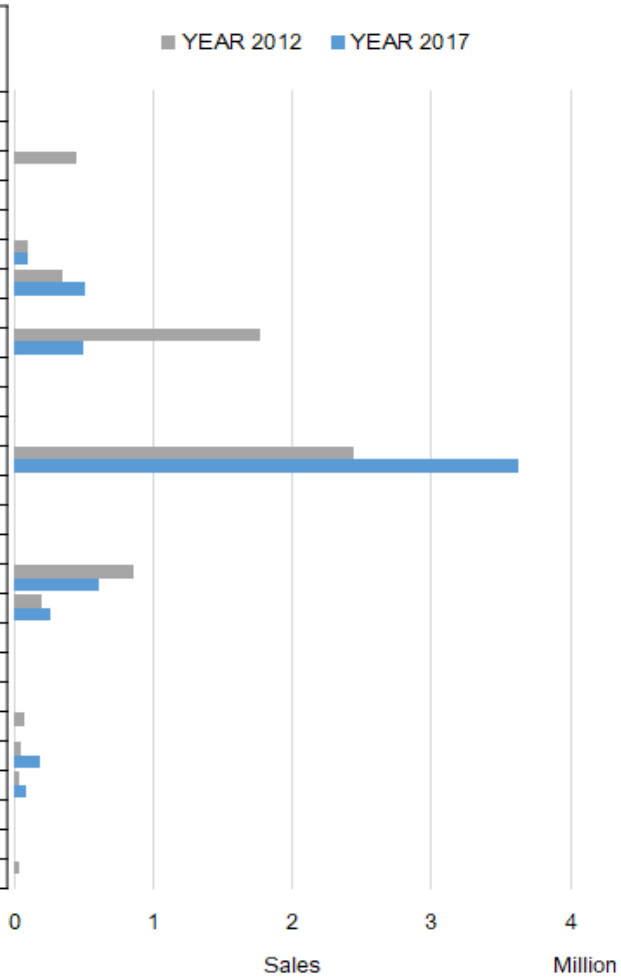
% of Total Employment		Retail Trade Sector (4-digit NAICS codes)
2012	2017	
0.0	0.0	4411: Automobile
0.0	0.0	4412: Other Motor Vehicle
5.9	0.0	4413: Automotive Parts & Tire
0.0	0.0	4421: Furniture
0.0	0.0	4422: Home Furnishings
1.5	1.9	4431: Electronics & Appliance
5.9	9.4	4441: Building Material and Supplies
0.0	0.0	4442: Lawn and Garden Equip. & Supplies
29.4	9.4	4451: Grocery
0.0	0.0	4452: Specialty Food
0.0	0.0	4453: Liquor
0.0	0.0	4461: Health & Personal Care
26.5	37.7	4471: Gasoline
0.0	0.0	4481: Clothing
0.0	0.0	4482: Shoe
0.0	0.0	4483: Jewelry & Leather Goods
11.8	13.2	4511: Sporting Goods & Musical Inst.
4.4	7.5	4512: Book Stores & News Dealers
0.0	0.0	4522: Department Stores
0.0	0.0	4523: General Merchandise
0.0	0.0	4531: Florists
2.9	0.0	4532: Office Supplies
8.8	17.0	4533: Used Merchandise
1.5	3.8	4539: Other Miscellaneous
0.0	0.0	4541: Electronic Shopping & Mail-Order
0.0	0.0	4542: Vending Machine
1.5	0.0	4543: Direct Selling Est.



Between 2012 and 2017, the most noticeable variation is again a decrease in employment in the Grocery Stores (4451) sector. The Automotive Parts, Accessories, and Tire Stores (4413), Office Supplies, Stationery, and Gift Stores (4532), and Direct Selling Establishments (4543) sectors also experienced decreases in both number and percentage of employment compared to 2012. On the other hand, Building Material and Supplies Dealers (4441), Gasoline Stations (4471), Book Stores and News Dealers (4512), Used Merchandise Stores (4533), and Other Miscellaneous Store Retailers (4539) sectors displayed increases in 2017 in both number and percentage of employment compared to 2012.

12.2.6 Retail sales by 2-digit NAICS codes, Milwaukie Town Center

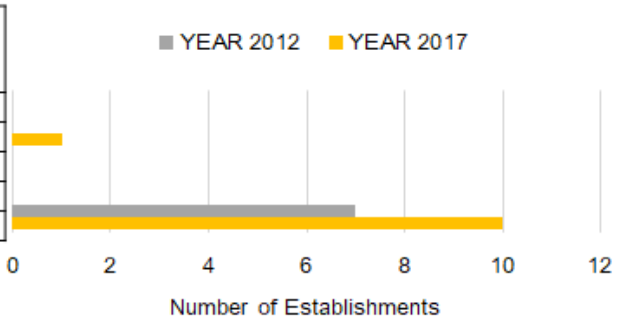
% of Total Sales		Retail Trade Sector (4-digit NAICS codes)
2012	2017	
0.0	0.0	4411: Automobile
0.0	0.0	4412: Other Motor Vehicle
7.1	0.0	4413: Automotive Parts & Tire
0.0	0.0	4421: Furniture
0.0	0.0	4422: Home Furnishings
1.6	1.7	4431: Electronics & Appliance
5.4	8.7	4441: Building Material and Supplies
0.0	0.0	4442: Lawn and Garden Equip. & Supplies
27.9	8.5	4451: Grocery
0.0	0.0	4452: Specialty Food
0.0	0.0	4453: Liquor
0.0	0.0	4461: Health & Personal Care
38.5	61.8	4471: Gasoline
0.0	0.0	4481: Clothing
0.0	0.0	4482: Shoe
0.0	0.0	4483: Jewelry & Leather Goods
13.5	10.4	4511: Sporting Goods & Musical Inst.
3.2	4.4	4512: Book Stores & News Dealers
0.0	0.0	4522: Department Stores
0.0	0.0	4523: General Merchandise
0.0	0.0	4531: Florists
1.2	0.0	4532: Office Supplies
0.7	3.1	4533: Used Merchandise
0.6	1.4	4539: Other Miscellaneous
0.0	0.0	4541: Electronic Shopping & Mail-Order
0.0	0.0	4542: Vending Machine
0.5	0.0	4543: Direct Selling Est.



Between 2012 and 2017, the most noticeable variation is again a decrease in sales in the Grocery Stores (4451) sector, following from the same decrease in the number of grocery employment in B-2. The Automotive Parts, Accessories, and Tire Stores (4413), Sporting Goods, Hobby, and Musical Instrument Stores (4511), Office Supplies, Stationery, and Gift Stores (4532), and Direct Selling Establishments (4543) sectors also experienced decreases in 2017 in both figure and percentage of sales compared to 2012. On the other hand, Building Material and Supplies Dealers (4441), Gasoline Stations (4471), Used Merchandise Stores (4533), and Other Miscellaneous Store Retailers (4539) sectors experienced increases in 2017 in both figure and percentage of sales compared to 2012.

12.2.7 Food and drink establishments by 2-digit NAICS codes, Milwaukie Town Center

% of Total Establishments		Food & Drink Sector (5-digit NAICS codes)
2012	2017	
0.0	0.0	72231: Food Service Contractors
0.0	9.1	72232: Caterers
0.0	0.0	72233: Mobile Food Services
0.0	0.0	72241: Drinking Places (Alcoholic Bev.)
100.0	90.9	72251: Restaurants & Other Eating Places



Between 2012 and 2017, the Caterers (72232) sector displayed an increase in 2017 in both number and percentage of establishments compared to 2012. On the other hand, the Restaurants & Other Eating Places (72251) sector experienced a decrease in 2017 in percentage of establishments, but displayed an increase in the number of establishments compared to 2012.

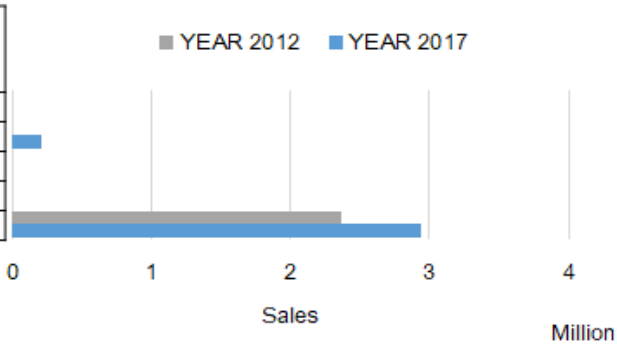
12.2.8 Food and drink employment by 2-digit NAICS codes, Milwaukie Town Center

% of Total Employment		Food & Drink Sector (5-digit NAICS codes)
2012	2017	
0.0	0.0	72231: Food Service Contractors
0.0	5.2	72232: Caterers
0.0	0.0	72233: Mobile Food Services
0.0	0.0	72241: Drinking Places (Alcoholic Bev.)
100.0	94.8	72251: Restaurants & Other Eating Places

Between 2012 and 2017, the Caterers (72232) sector displayed an increase in 2017 in both number and percentage of employment compared to 2012. On the other hand, the Restaurants & Other Eating Places (72251) sector experienced a decrease in 2017 in percentage of employment, but displayed an increase in the number of employment compared to 2012.

12.2.9 Food and drink sales by 2-digit NAICS codes, Milwaukie Town Center

% of Total Sales		Food & Drink Sector (5-digit NAICS codes)
2012	2017	
0.0	0.0	72231: Food Service Contractors
0.0	6.8	72232: Caterers
0.0	0.0	72233: Mobile Food Services
0.0	0.0	72241: Drinking Places (Alcoholic Bev.)
100.0	93.2	72251: Restaurants & Other Eating Places

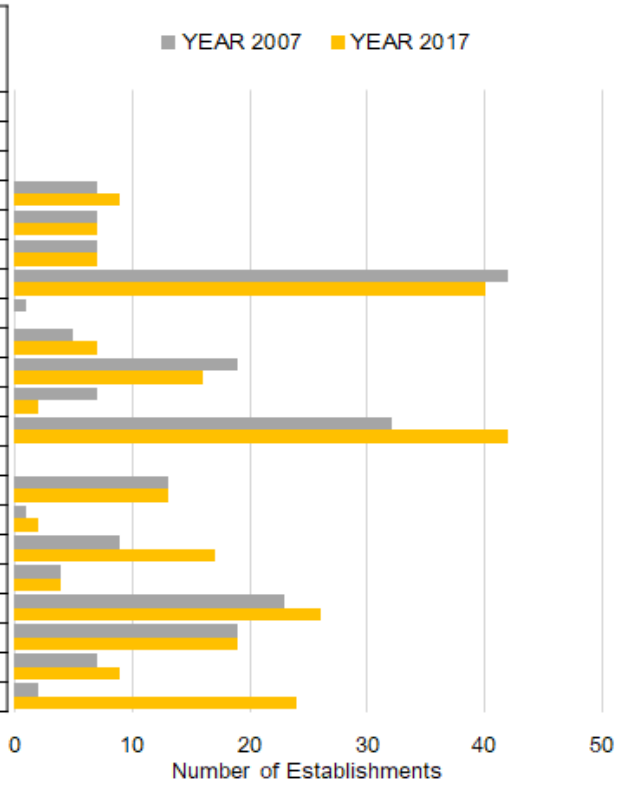


Between 2012 and 2017, the Caterers (72232) sector displayed an increase in 2017 in both figure and percentage of sales compared to 2012. On the other hand, the Restaurants & Other Eating Places (72251) sector experienced a decrease in 2017 in percentage of sales, but displayed an increase in the figure of sales compared to 2012.

12.3 Oregon City: McLoughlin Boulevard

12.3.1 Establishments by 2-digit NAICS codes, Oregon City: McLoughlin Boulevard

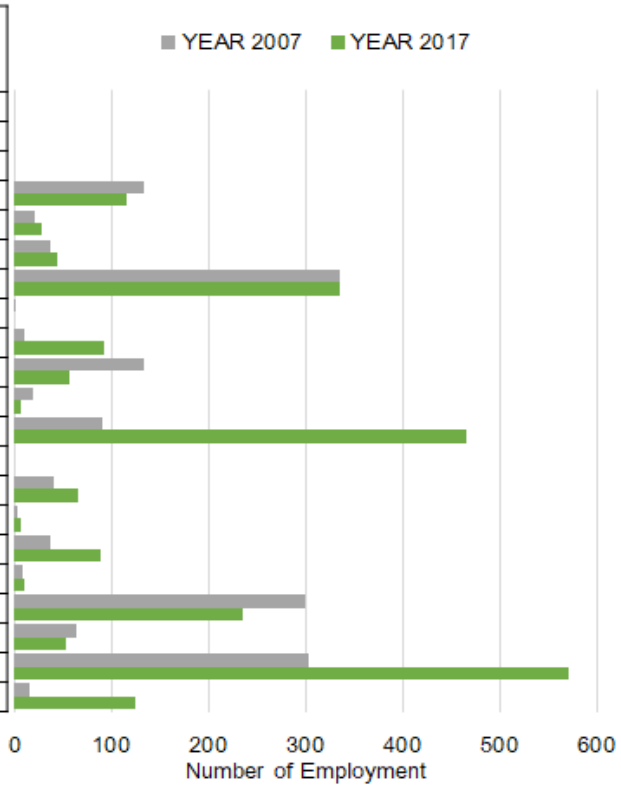
% of Total Establishments		All Industry Sector (NAICS 2-digit codes)
2007	2017	
0.0	0.0	11: Agriculture, Forestry, Fishing & Hunt.
0.0	0.0	21: Mining
0.0	0.0	22: Utilities
3.4	3.7	23: Construction
3.4	2.9	31-33: Manufacturing
3.4	2.9	42: Wholesale Trade
20.5	16.4	44-45: Retail Trade
0.5	0.0	48-49: Transportation and Warehousing
2.4	2.9	51: Information
9.3	6.6	52: Finance and Insurance
3.4	0.8	53: Real Estate Rental and Leasing
15.6	17.2	54: Professional, Sci. & Tech. Services
0.0	0.0	55: Mgt. of Companies & Ent.
6.3	5.3	56: Admin. & Support / Waste Mgt.
0.5	0.8	61: Educational Services
4.4	7.0	62: Health Care and Social Assist.
2.0	1.6	71: Arts, Entertainment, & Recreation
11.2	10.7	72: Accommodation & Food Services
9.3	7.8	81: Other Services (except Public Admin.)
3.4	3.7	92: Public Administration
1.0	9.8	99: Unclassified



Between 2007 and 2017, the most noticeable variation is the increase of establishments that fall into the Unclassified sector (99). The Construction (23), Information (51), Professional, Scientific, and Technical Services (54), Educational Services (61), Health Care and Social Assistance (62), and Public Administration (92) sectors also displayed increases in 2017 in both number and percentage of establishments compared to 2007. On the other hand, the Retail Trade (44-45), Transportation and Warehousing (48-49), Finance and Insurance (52), Real Estate Rental and Leasing (53), Administrative and Support and Waste Management and Remediation Services (56), Arts, Entertainment, and Recreation (71), and Other Services (except Public Administration) (81) sectors in 2017 decreased its size both in number and percentage of establishments compared to 2007.

12.3.2 Employment by 2-digit NAICS codes, Oregon City: McLoughlin Boulevard

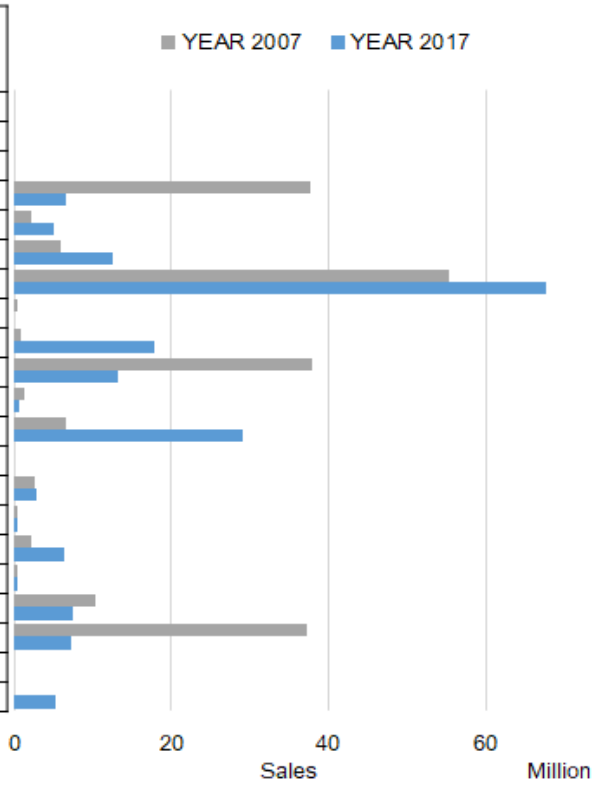
% of Total Employment		All Industry Sector (NAICS 2-digit codes)
2007	2017	
0.0	0.0	11: Agriculture, Forestry, Fishing & Hunt.
0.0	0.0	21: Mining
0.0	0.0	22: Utilities
8.6	5.0	23: Construction
1.4	1.2	31-33: Manufacturing
2.4	2.0	42: Wholesale Trade
21.6	14.6	44-45: Retail Trade
0.1	0.0	48-49: Transportation and Warehousing
0.7	4.0	51: Information
8.6	2.4	52: Finance and Insurance
1.2	0.3	53: Real Estate Rental and Leasing
5.9	20.3	54: Professional, Sci. & Tech. Services
0.0	0.0	55: Mgt. of Companies & Ent.
2.6	2.9	56: Admin. & Support / Waste Mgt.
0.3	0.3	61: Educational Services
2.4	3.8	62: Health Care and Social Assist.
0.6	0.4	71: Arts, Entertainment, & Recreation
19.3	10.3	72: Accommodation & Food Services
4.1	2.3	81: Other Services (except Public Admin.)
19.5	24.9	92: Public Administration
1.0	5.4	99: Unclassified



Between 2007 and 2017, the most noticeable variation is the increase in employment in the Professional, Scientific, and Technical Services (54) sector. The Information (51), Administrative and Support and Waste Management and Remediation Services (56), Health Care and Social Assistance (62), Public Administration (92), and Unclassified (99) sectors also displayed increases in 2017 in both number and percentage of employment compared to 2007. On the other hand, the Manufacturing (31-33), Wholesale Trade (42), Retail Trade (44-45), Finance and Insurance (52), Real Estate Rental and Leasing (53), Administrative and Support and Waste Management and Remediation Services (56), Arts, Entertainment, and Recreation (71), Accommodation and Food Services (72), and Other Services (except Public Administration) (81) sectors experienced decreases in 2017 in both number and percentage of overall employment compared to 2007.

12.3.3 Sales by 2-digit NAICS codes, Oregon City: McLoughlin Boulevard

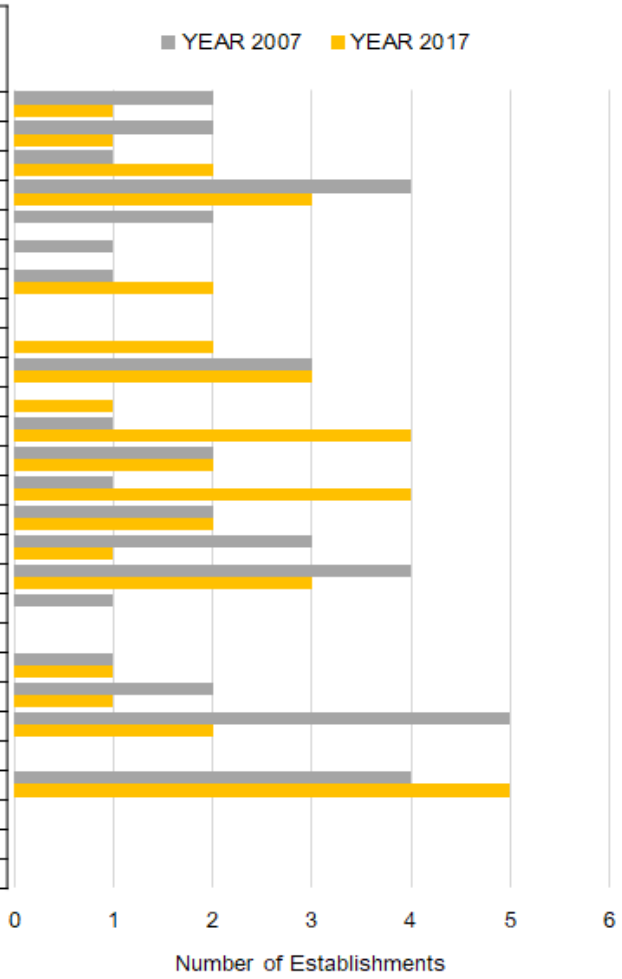
% of Total Sales		All Industry Sector (NAICS 2-digit codes)
2007	2017	
0.0	0.0	11: Agriculture, Forestry, Fishing & Hunt.
0.0	0.0	21: Mining
0.0	0.0	22: Utilities
18.8	3.6	23: Construction
1.1	2.7	31-33: Manufacturing
2.9	6.9	42: Wholesale Trade
27.6	37.1	44-45: Retail Trade
0.1	0.0	48-49: Transportation and Warehousing
0.5	9.8	51: Information
18.9	7.2	52: Finance and Insurance
0.6	0.3	53: Real Estate Rental and Leasing
3.2	16.0	54: Professional, Sci. & Tech. Services
0.0	0.0	55: Mgt. of Companies & Ent.
1.3	1.5	56: Admin. & Support / Waste Mgt.
0.1	0.2	61: Educational Services
1.0	3.5	62: Health Care and Social Assist.
0.2	0.2	71: Arts, Entertainment, & Recreation
5.1	4.1	72: Accommodation & Food Services
18.6	4.0	81: Other Services (except Public Admin.)
0.0	0.0	92: Public Administration
0.0	2.9	99: Unclassified



Between 2007 and 2017, the most noticeable variation is the decrease of sales that fall into the Construction (23) sector. The Finance and Insurance (52), Accommodation and Food Services (72), and Other Services (except Public Administration) (81) sectors also experienced decreases in 2017 in both sales figures and percentage of sales compared to 2007. On the other hand, the Manufacturing (31-33), Wholesale Trade (42), Retail Trade (44-45), Information (51), Professional, Scientific, and Technical Services (54), Health Care and Social Assistance (62), and Unclassified (99) sectors experienced increases in 2017 in both figure and percentage of sales compared to 2007.

12.3.4 Retail establishments by 2-digit NAICS codes, Oregon City: McLoughlin Boulevard

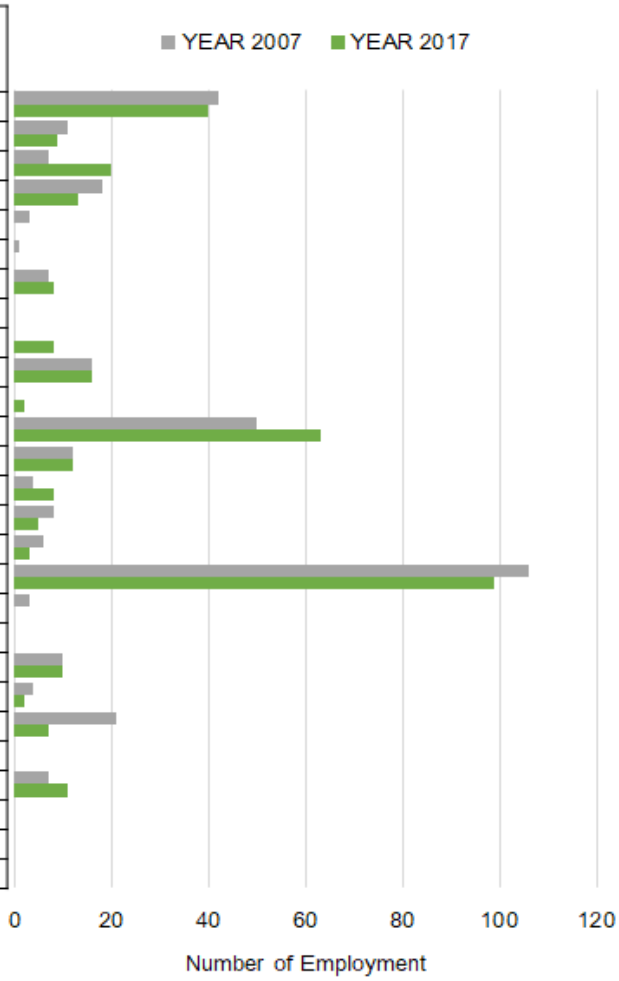
% of Total Establishments		Retail Trade Sector (4-digit NAICS codes)
2007	2017	
4.8	2.5	4411: Automobile
4.8	2.5	4412: Other Motor Vehicle
2.4	5.0	4413: Automotive Parts & Tire
9.5	7.5	4421: Furniture
4.8	0.0	4422: Home Furnishings
2.4	0.0	4431: Electronics & Appliance
2.4	5.0	4441: Building Material and Supplies
0.0	0.0	4442: Lawn and Garden Equip. & Supplies
0.0	5.0	4451: Grocery
7.1	7.5	4452: Specialty Food
0.0	2.5	4453: Liquor
2.4	10.0	4461: Health & Personal Care
4.8	5.0	4471: Gasoline
2.4	10.0	4481: Clothing
4.8	5.0	4482: Shoe
7.1	2.5	4483: Jewelry & Leather Goods
9.5	7.5	4511: Sporting Goods & Musical Inst.
2.4	0.0	4512: Book Stores & News Dealers
0.0	0.0	4522: Department Stores
2.4	2.5	4523: General Merchandise
4.8	2.5	4531: Florists
11.9	5.0	4532: Office Supplies
0.0	0.0	4533: Used Merchandise
9.5	12.5	4539: Other Miscellaneous
0.0	0.0	4541: Electronic Shopping & Mail-Order
0.0	0.0	4542: Vending Machine
0.0	0.0	4543: Direct Selling Est.



Between 2007 and 2017, the most noticeable variation is the increase of establishments that fall into the Health and Personal Care Stores (4461) sector. The Automotive Parts, Accessories, and Tire Stores (4413), Building Material and Supplies Dealers (4441), Grocery Stores (4451), Used Merchandise Stores (4533), Clothing Stores (4481), and Other Miscellaneous Store Retailers (4539) sectors displayed increases in 2017 in both number and percentage of establishments compared to 2007. The Automobile Dealers (4411), Other Motor Vehicle Dealers (4412), Furniture Stores (4421), Home Furnishings Stores (4422), Electronics and Appliance Stores (4431), Jewelry, Luggage, and Leather Goods Stores (4483), Sporting Goods, Hobby, and Musical Instrument Stores (4511), Book Stores and News Dealers (4512), Florists (4531), and Office Supplies, Stationery, and Gift Stores (4532) sectors experienced decreases in 2017 in both number and percentage of establishments compared to 2007.

12.3.5 Retail employment by 2-digit NAICS codes, Oregon City: McLoughlin Boulevard

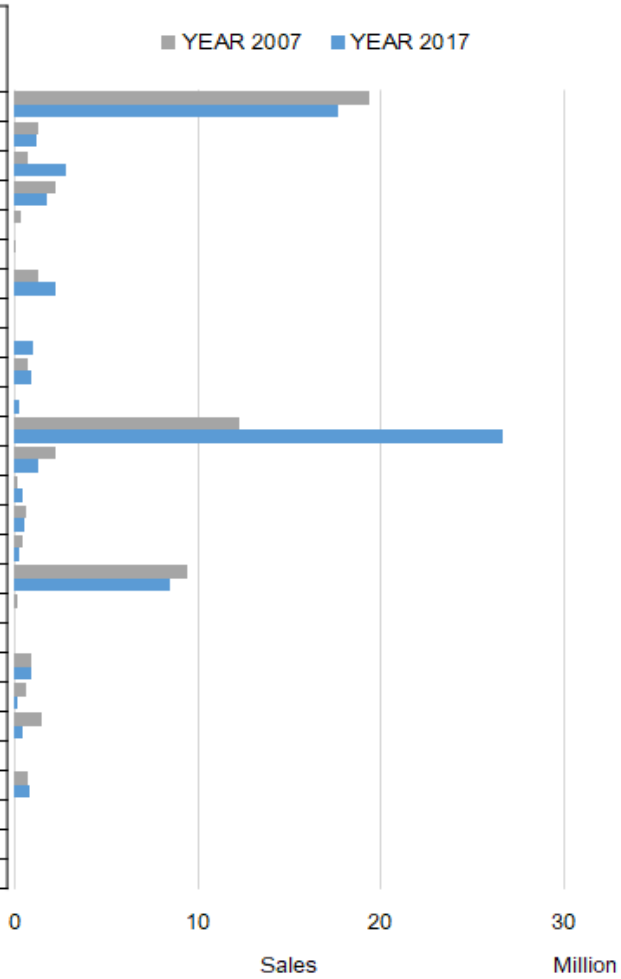
% of Total Employment		Retail Trade Sector (4-digit NAICS codes)
2007	2017	
12.5	11.9	4411: Automobile
3.3	2.7	4412: Other Motor Vehicle
2.1	6.0	4413: Automotive Parts & Tire
5.4	3.9	4421: Furniture
0.9	0.0	4422: Home Furnishings
0.3	0.0	4431: Electronics & Appliance
2.1	2.4	4441: Building Material and Supplies
0.0	0.0	4442: Lawn and Garden Equip. & Supplies
0.0	2.4	4451: Grocery
4.8	4.8	4452: Specialty Food
0.0	0.6	4453: Liquor
14.9	18.8	4461: Health & Personal Care
3.6	3.6	4471: Gasoline
1.2	2.4	4481: Clothing
2.4	1.5	4482: Shoe
1.8	0.9	4483: Jewelry & Leather Goods
31.5	29.5	4511: Sporting Goods & Musical Inst.
0.9	0.0	4512: Book Stores & News Dealers
0.0	0.0	4522: Department Stores
3.0	3.0	4523: General Merchandise
1.2	0.6	4531: Florists
6.3	2.1	4532: Office Supplies
0.0	0.0	4533: Used Merchandise
2.1	3.3	4539: Other Miscellaneous
0.0	0.0	4541: Electronic Shopping & Mail-Order
0.0	0.0	4542: Vending Machine
0.0	0.0	4543: Direct Selling Est.



Between 2007 and 2017, the Automotive Parts, Accessories, and Tire Stores (4413), Building Material and Supplies Dealers (4441), Grocery Stores (4451), Beer, Wine, and Liquor Stores (4453), Health and Personal Care Stores (4461), Clothing Stores (4481), and Other Miscellaneous Store Retailers (4539) sectors displayed increases in both number and percentage of employment compared to 2007. On the other hand, Automobile Dealers (4411), Other Motor Vehicle Dealers (4412), Furniture Stores (4421), Sporting Goods, Hobby, and Musical Instrument Stores (4511), and Office Supplies, Stationery, and Gift Stores (4532) sectors experienced decreases in 2017 in both number and percentage of employment compared to 2007.

12.3.6 Retail sales by 2-digit NAICS codes, Oregon City: McLoughlin Boulevard

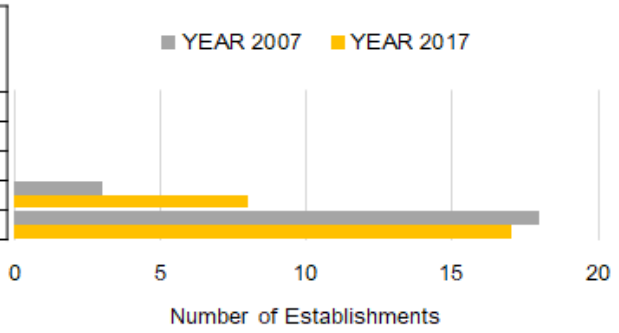
% of Total Sales		Retail Trade Sector (4-digit NAICS codes)
2007	2017	
35.0	26.0	4411: Automobile
2.4	1.8	4412: Other Motor Vehicle
1.4	4.2	4413: Automotive Parts & Tire
4.0	2.6	4421: Furniture
0.7	0.0	4422: Home Furnishings
0.1	0.0	4431: Electronics & Appliance
2.4	3.3	4441: Building Material and Supplies
0.0	0.0	4442: Lawn and Garden Equip. & Supplies
0.0	1.4	4451: Grocery
1.3	1.3	4452: Specialty Food
0.0	0.4	4453: Liquor
22.2	39.3	4461: Health & Personal Care
4.1	1.9	4471: Gasoline
0.4	0.7	4481: Clothing
1.2	0.7	4482: Shoe
0.8	0.4	4483: Jewelry & Leather Goods
17.1	12.5	4511: Sporting Goods & Musical Inst.
0.3	0.0	4512: Book Stores & News Dealers
0.0	0.0	4522: Department Stores
1.6	1.3	4523: General Merchandise
1.1	0.2	4531: Florists
2.7	0.7	4532: Office Supplies
0.0	0.0	4533: Used Merchandise
1.3	1.2	4539: Other Miscellaneous
0.0	0.0	4541: Electronic Shopping & Mail-Order
0.0	0.0	4542: Vending Machine
0.0	0.0	4543: Direct Selling Est.



Between 2007 and 2017, the most noticeable variation is the increase in sales in the Health and Personal Care Stores (4461) sector. The Automotive Parts, Accessories, and Tire Stores (4413), Building Material and Supplies Dealers (4441), and Grocery Stores (4451) sectors also experienced increases in 2017 in both figure and percentage of sales compared to 2007. On the other hand, Automobile Dealers (4411), Sporting Goods, Hobby, and Musical Instrument Stores (4511), and Office Supplies, Stationery, and Gift Stores (4532) sectors experienced decreases in 2017 in both figure and percentage of sales compared to 2007.

12.3.7 Food and drink establishments by 2-digit NAICS codes, Oregon City: McLoughlin Boulevard

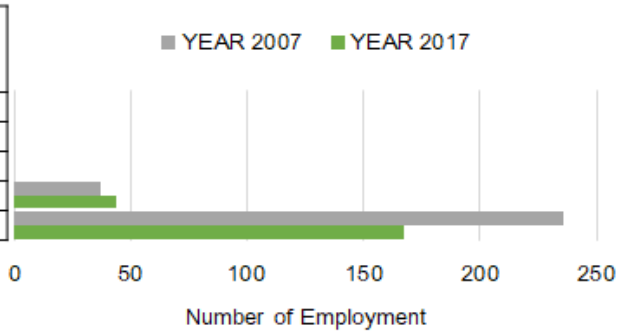
% of Total Establishments		Food & Drink Sector (5-digit NAICS codes)
2007	2017	
0.0	0.0	72231: Food Service Contractors
0.0	0.0	72232: Caterers
0.0	0.0	72233: Mobile Food Services
14.3	32.0	72241: Drinking Places (Alcoholic Bev.)
85.7	68.0	72251: Restaurants & Other Eating Places



Between 2007 and 2017, the Drinking Places (Alcoholic Beverages) (72241) sector displayed an increase in 2017 in both number and percentage of establishments compared to 2007. On the other hand, the Restaurants & Other Eating Places (72251) sector experienced a decrease in 2017 in both number and percentage of establishments compared to 2007.

12.3.8 Food and drink employment by 2-digit NAICS codes, Oregon City: McLoughlin Boulevard

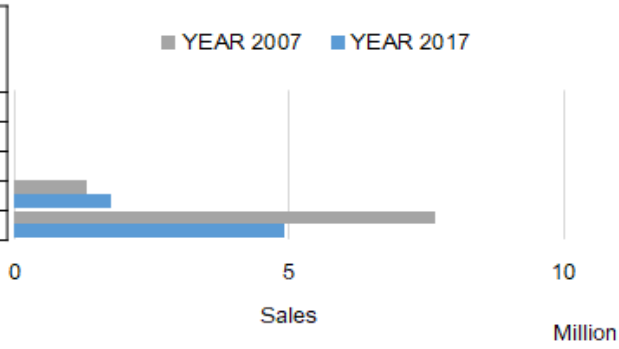
% of Total Employment		Food & Drink Sector (5-digit NAICS codes)
2007	2017	
0.0	0.0	72231: Food Service Contractors
0.0	0.0	72232: Caterers
0.0	0.0	72233: Mobile Food Services
13.6	20.9	72241: Drinking Places (Alcoholic Bev.)
86.4	79.1	72251: Restaurants & Other Eating Places



Between 2007 and 2017, the Drinking Places (Alcoholic Beverages) (72241) sector displayed an increase in 2017 in both number and percentage of employment compared to 2007. On the other hand, the Restaurants & Other Eating Places (72251) sector experienced a decrease in 2017 in both number and percentage of employment compared to 2007.

12.3.9 Food and drink sales by 2-digit NAICS codes, Oregon City: McLoughlin Boulevard

% of Total Sales		Food & Drink Sector (5-digit NAICS codes)
2007	2017	
0.0	0.0	72231: Food Service Contractors
0.0	0.0	72232: Caterers
0.0	0.0	72233: Mobile Food Services
14.5	26.5	72241: Drinking Places (Alcoholic Bev.)
85.5	73.5	72251: Restaurants & Other Eating Places

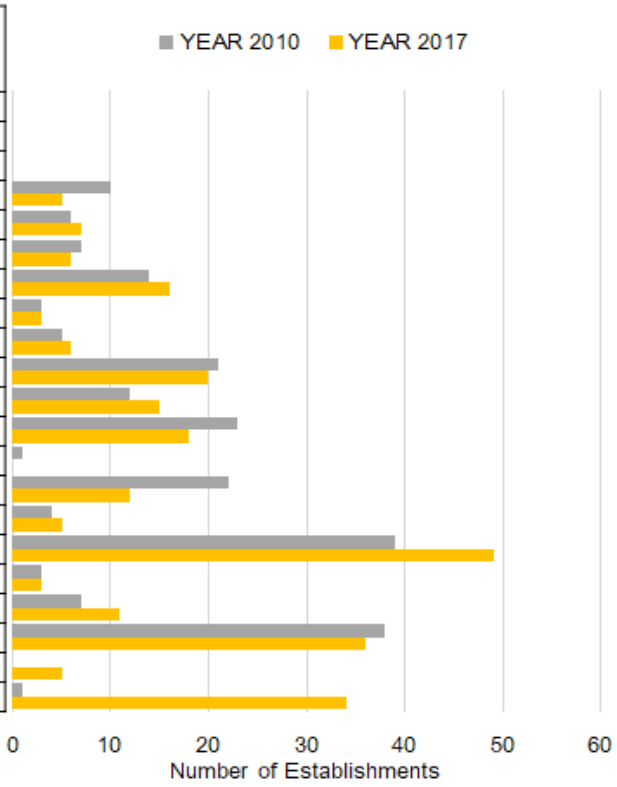


Between 2007 and 2017, the Drinking Places (Alcoholic Beverages) (72241) sector displayed an increase in 2017 in both figure and percentage of sales compared to 2007. On the other hand, the Restaurants & Other Eating Places (72251) sector experienced a decrease in 2017 in both figure and percentage of sales compared to 2007.

12.4 Gresham: NE Hood Avenue

12.4.1 Establishments by 2-digit NAICS codes, Gresham: NE Hood Avenue

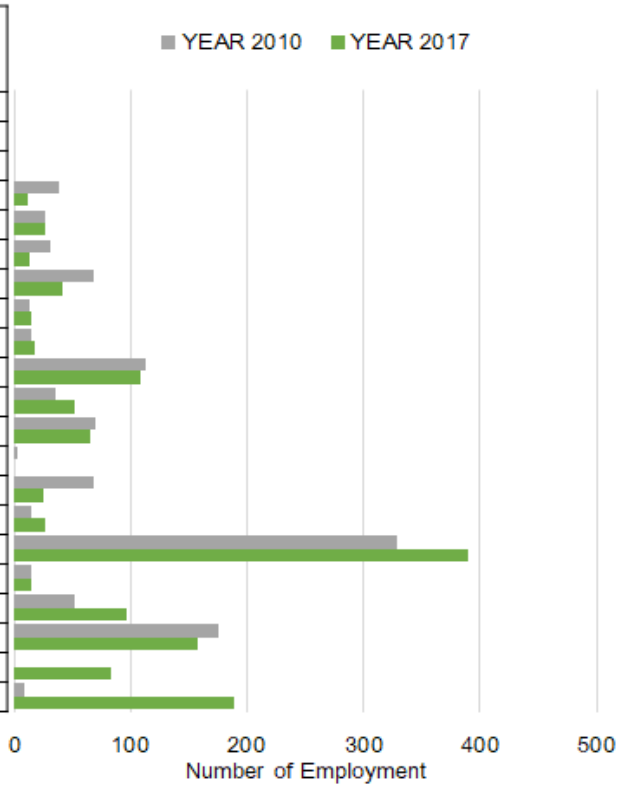
% of Total Establishments		All Industry Sector (NAICS 2-digit codes)
2010	2017	
0.0	0.0	11: Agriculture, Forestry, Fishing & Hunt.
0.0	0.0	21: Mining
0.0	0.0	22: Utilities
4.6	2.0	23: Construction
2.8	2.8	31-33: Manufacturing
3.2	2.4	42: Wholesale Trade
6.5	6.4	44-45: Retail Trade
1.4	1.2	48-49: Transportation and Warehousing
2.3	2.4	51: Information
9.7	8.0	52: Finance and Insurance
5.6	6.0	53: Real Estate Rental and Leasing
10.6	7.2	54: Professional, Sci. & Tech. Services
0.5	0.0	55: Mgt. of Companies & Ent.
10.2	4.8	56: Admin. & Support / Waste Mgt.
1.9	2.0	61: Educational Services
18.1	19.5	62: Health Care and Social Assist.
1.4	1.2	71: Arts, Entertainment, & Recreation
3.2	4.4	72: Accommodation & Food Services
17.6	14.3	81: Other Services (except Public Admin.)
0.0	2.0	92: Public Administration
0.5	13.5	99: Unclassified



Between 2010 and 2017, the most noticeable variation is the increase of establishments that fall into the Unclassified sector (99). Manufacturing (31-33), Information (51),Real Estate Rental and Leasing (53), Educational Services (61), Health Care and Social Assistance (62), Accommodation and Food Services (72), and Public Administration (92) sectors displayed increases in 2017 in both number and percentage of establishments compared to 2010. On the other hand, the Construction (23), Manufacturing (31-33), Wholesale Trade (42), Transportation and Warehousing (48-49), Finance and Insurance (52), Professional, Scientific, and Technical Services (54), Management of Companies and Enterprises (55), Administrative and Support and Waste Management and Remediation Services (56), and Other Services (except Public Administration) (81) sectors decreased in 2017 its size both in number and percentage of establishments compared to 2010.

12.4.2 Employment by 2-digit NAICS codes, Gresham: NE Hood Avenue

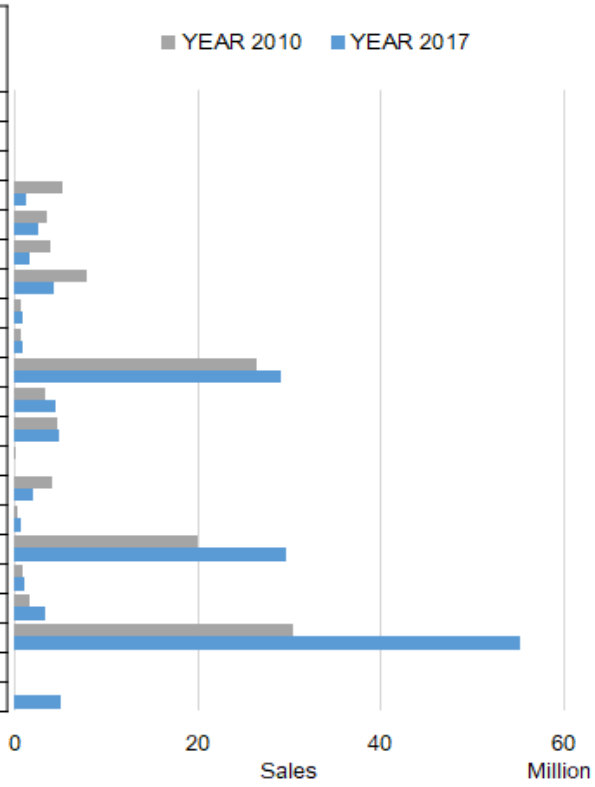
% of Total Employment		All Industry Sector (NAICS 2-digit codes)
2010	2017	
0.0	0.0	11: Agriculture, Forestry, Fishing & Hunt.
0.0	0.0	21: Mining
0.0	0.0	22: Utilities
3.6	0.9	23: Construction
2.4	2.0	31-33: Manufacturing
2.9	1.0	42: Wholesale Trade
6.3	3.2	44-45: Retail Trade
1.2	1.1	48-49: Transportation and Warehousing
1.3	1.4	51: Information
10.5	8.1	52: Finance and Insurance
3.4	3.8	53: Real Estate Rental and Leasing
6.5	4.9	54: Professional, Sci. & Tech. Services
0.2	0.0	55: Mgt. of Companies & Ent.
6.3	1.9	56: Admin. & Support / Waste Mgt.
1.3	2.0	61: Educational Services
30.6	29.2	62: Health Care and Social Assist.
1.4	1.1	71: Arts, Entertainment, & Recreation
4.8	7.2	72: Accommodation & Food Services
16.4	11.8	81: Other Services (except Public Admin.)
0.0	6.2	92: Public Administration
0.8	14.1	99: Unclassified



Between 2010 and 2017, the noticeable variation is again the increase in employment in the Unclassified (99) sector, following from the same increase in the number of unclassified establishments in A-1. Real Estate Rental and Leasing (53), Educational Services (61), and Accommodation and Food Services (72) sectors displayed increases in 2017 in both number and percentage of employment compared to 2010. On the other hand, the Wholesale Trade (42), Retail Trade (44-45), Professional, Scientific, and Technical Services (54), Administrative and Support and Waste Management and Remediation Services (56), and Other Services (except Public Administration) (81) sectors experienced decreases in 2017 in both number and percentage of overall employment compared to 2010.

12.4.3 Sales by 2-digit NAICS codes, Gresham: NE Hood Avenue

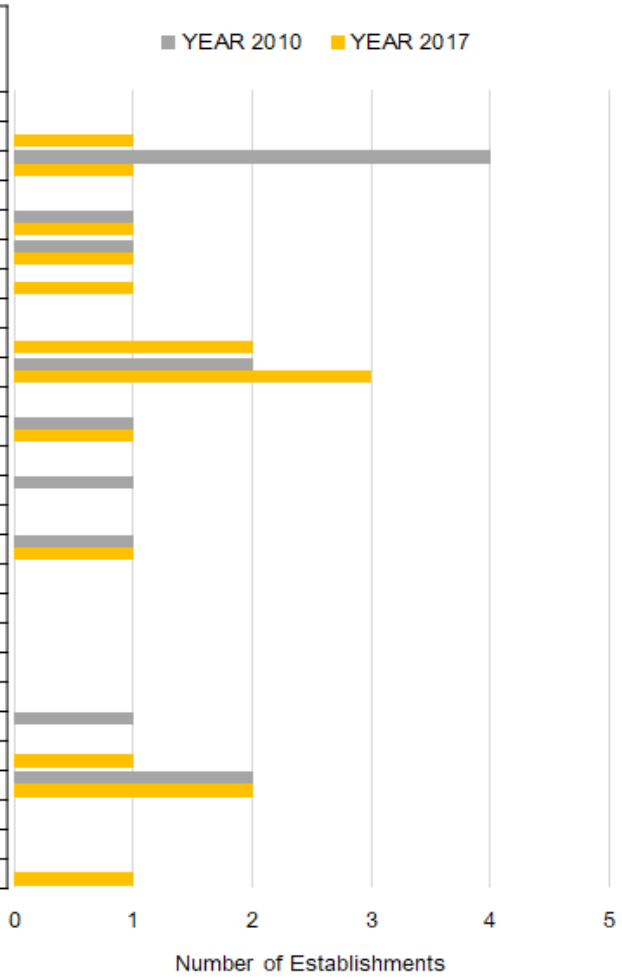
% of Total Sales		All Industry Sector (NAICS 2-digit codes)
2010	2017	
0.0	0.0	11: Agriculture, Forestry, Fishing & Hunt.
0.0	0.0	21: Mining
0.0	0.0	22: Utilities
4.7	0.9	23: Construction
3.1	1.8	31-33: Manufacturing
3.4	1.1	42: Wholesale Trade
6.9	2.9	44-45: Retail Trade
0.7	0.7	48-49: Transportation and Warehousing
0.6	0.6	51: Information
23.1	19.7	52: Finance and Insurance
3.0	3.1	53: Real Estate Rental and Leasing
4.1	3.3	54: Professional, Sci. & Tech. Services
0.1	0.0	55: Mgt. of Companies & Ent.
3.7	1.3	56: Admin. & Support / Waste Mgt.
0.3	0.5	61: Educational Services
17.5	20.1	62: Health Care and Social Assist.
0.8	0.7	71: Arts, Entertainment, & Recreation
1.5	2.3	72: Accommodation & Food Services
26.6	37.5	81: Other Services (except Public Admin.)
0.0	0.0	92: Public Administration
0.0	3.4	99: Unclassified



Between 2010 and 2017, the most noticeable variation is the increase of sales that fall into the Other Services (except Public Administration) (81) sector. The Real Estate Rental and Leasing (53) Educational Services (61), Health Care and Social Assistance (62), Accommodation and Food Services (72), and Unclassified (99) sectors in 2017 displayed increases in both sales figures and percentage compared to 2010. On the other hand, the Construction (23), Manufacturing (31-33), Wholesale Trade (42), Retail Trade (44-45), and Administrative and Support and Waste Management and Remediation Services (56) sectors experienced decreases in 2017 in both figure and percentage of sales compared to 2010.

12.4.4 Retail establishments by 2-digit NAICS codes, Gresham: NE Hood Avenue

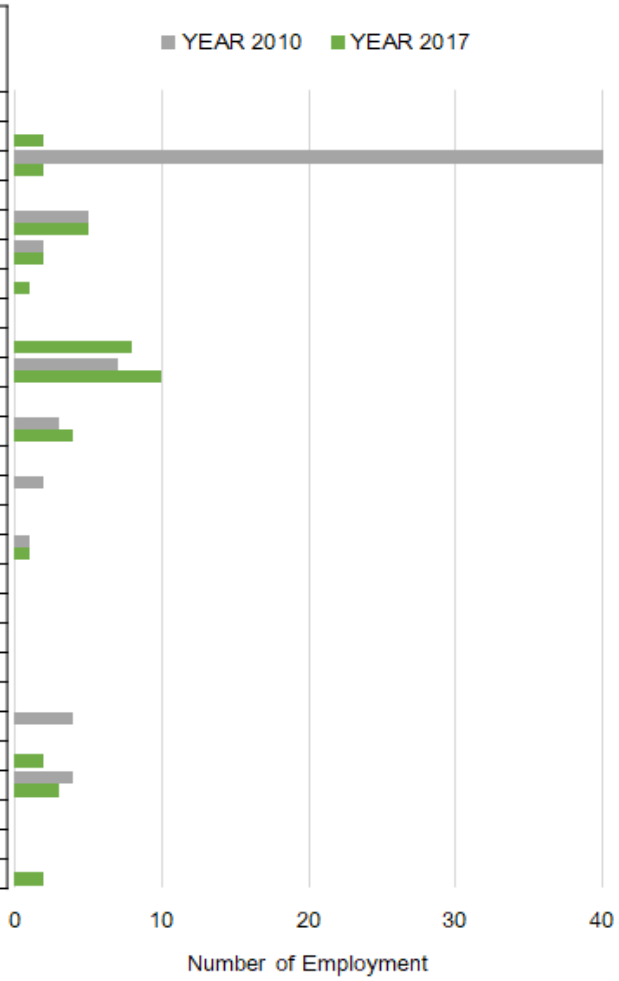
% of Total Establishments		Retail Trade Sector (4-digit NAICS codes)
2010	2017	
0.0	0.0	4411: Automobile
0.0	6.3	4412: Other Motor Vehicle
28.6	6.3	4413: Automotive Parts & Tire
0.0	0.0	4421: Furniture
7.1	6.3	4422: Home Furnishings
7.1	6.3	4431: Electronics & Appliance
0.0	6.3	4441: Building Material and Supplies
0.0	0.0	4442: Lawn and Garden Equip. & Supplies
0.0	12.5	4451: Grocery
14.3	18.8	4452: Specialty Food
0.0	0.0	4453: Liquor
7.1	6.3	4461: Health & Personal Care
0.0	0.0	4471: Gasoline
7.1	0.0	4481: Clothing
0.0	0.0	4482: Shoe
7.1	6.3	4483: Jewelry & Leather Goods
0.0	0.0	4511: Sporting Goods & Musical Inst.
0.0	0.0	4512: Book Stores & News Dealers
0.0	0.0	4522: Department Stores
0.0	0.0	4523: General Merchandise
0.0	0.0	4531: Florists
7.1	0.0	4532: Office Supplies
0.0	6.3	4533: Used Merchandise
14.3	12.5	4539: Other Miscellaneous
0.0	0.0	4541: Electronic Shopping & Mail-Order
0.0	0.0	4542: Vending Machine
0.0	6.3	4543: Direct Selling Est.



Between 2010 and 2017, the Other Motor Vehicle Dealers (4412), Building Material and Supplies Dealers (4441), Grocery Stores (4451), Specialty Food Stores (4452), Used Merchandise Stores (4533), and Direct Selling Establishments (4543) sectors displayed increases in 2017 in both number and percentage of establishments compared to 2010. On the other hand, Automotive Parts, Accessories, and Tire Stores (4413), and Office Supplies, Stationery, and Gift Stores (4532) sectors displayed decreases in 2017 in both number and percentage of establishments compared to 2010.

12.4.5 Retail employment by 2-digit NAICS codes, Gresham: NE Hood Avenue

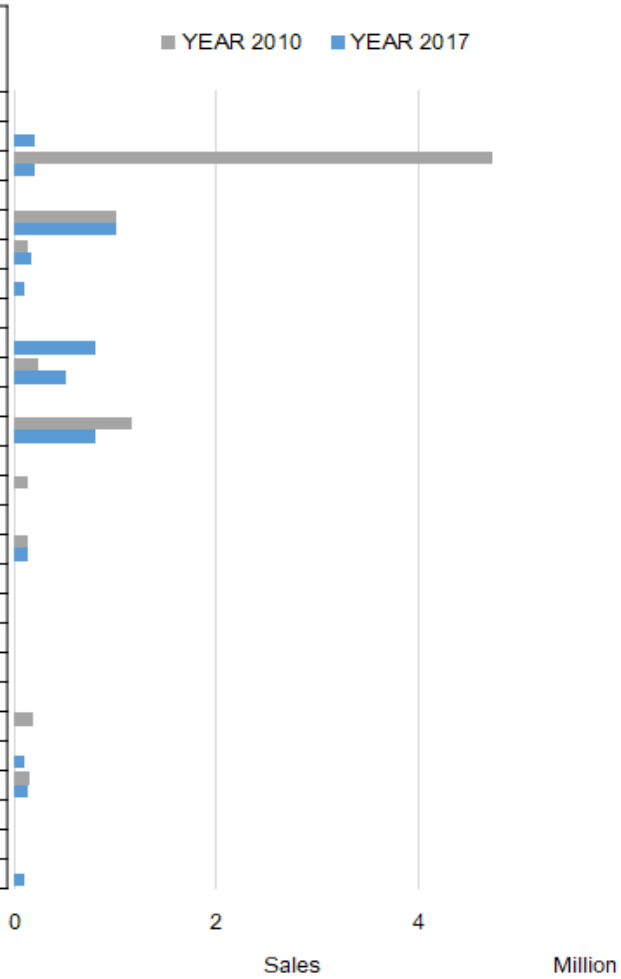
% of Total Employment		Retail Trade Sector (4-digit NAICS codes)
2010	2017	
0.0	0.0	4411: Automobile
0.0	4.8	4412: Other Motor Vehicle
58.8	4.8	4413: Automotive Parts & Tire
0.0	0.0	4421: Furniture
7.4	11.9	4422: Home Furnishings
2.9	4.8	4431: Electronics & Appliance
0.0	2.4	4441: Building Material and Supplies
0.0	0.0	4442: Lawn and Garden Equip. & Supplies
0.0	19.0	4451: Grocery
10.3	23.8	4452: Specialty Food
0.0	0.0	4453: Liquor
4.4	9.5	4461: Health & Personal Care
0.0	0.0	4471: Gasoline
2.9	0.0	4481: Clothing
0.0	0.0	4482: Shoe
1.5	2.4	4483: Jewelry & Leather Goods
0.0	0.0	4511: Sporting Goods & Musical Inst.
0.0	0.0	4512: Book Stores & News Dealers
0.0	0.0	4522: Department Stores
0.0	0.0	4523: General Merchandise
0.0	0.0	4531: Florists
5.9	0.0	4532: Office Supplies
0.0	4.8	4533: Used Merchandise
5.9	7.1	4539: Other Miscellaneous
0.0	0.0	4541: Electronic Shopping & Mail-Order
0.0	0.0	4542: Vending Machine
0.0	4.8	4543: Direct Selling Est.



Between 2010 and 2017, the most noticeable variation is the decrease in employment that fell into the Automotive Parts, Accessories, and Tire Stores (4413) sector compared to 2010. Clothing Stores (4481), and Office Supplies, Stationery, and Gift Stores (4532) experienced decreases in 2017 in both number and percentage of employment compared to 2010. On the other hand, Other Motor Vehicle Dealers (4412), Grocery Stores (4451), Specialty Food Stores (4452), Health and Personal Care Stores (4461) and Direct Selling Establishments (4543) displayed increases in 2017 in both number and percentage of employment compared to 2010.

12.4.6 Retail sales by 2-digit NAICS codes, Gresham: NE Hood Avenue

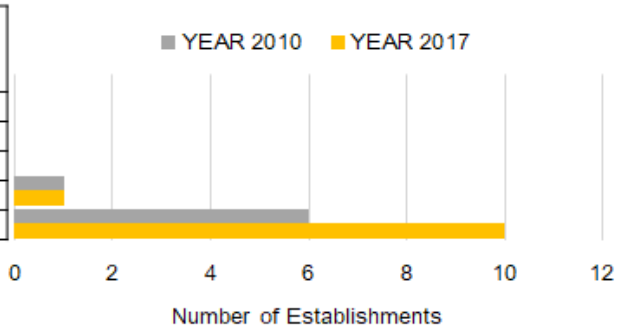
% of Total Sales		Retail Trade Sector (4-digit NAICS codes)
2010	2017	
0.0	0.0	4411: Automobile
0.0	4.7	4412: Other Motor Vehicle
60.2	4.7	4413: Automotive Parts & Tire
0.0	0.0	4421: Furniture
12.8	23.6	4422: Home Furnishings
1.7	3.8	4431: Electronics & Appliance
0.0	2.4	4441: Building Material and Supplies
0.0	0.0	4442: Lawn and Garden Equip. & Supplies
0.0	18.8	4451: Grocery
3.0	12.2	4452: Specialty Food
0.0	0.0	4453: Liquor
14.8	18.8	4461: Health & Personal Care
0.0	0.0	4471: Gasoline
1.6	0.0	4481: Clothing
0.0	0.0	4482: Shoe
1.6	2.9	4483: Jewelry & Leather Goods
0.0	0.0	4511: Sporting Goods & Musical Inst.
0.0	0.0	4512: Book Stores & News Dealers
0.0	0.0	4522: Department Stores
0.0	0.0	4523: General Merchandise
0.0	0.0	4531: Florists
2.4	0.0	4532: Office Supplies
0.0	2.4	4533: Used Merchandise
2.0	3.3	4539: Other Miscellaneous
0.0	0.0	4541: Electronic Shopping & Mail-Order
0.0	0.0	4542: Vending Machine
0.0	2.4	4543: Direct Selling Est.



Between 2010 and 2017, the most noticeable variation is the decrease in sales that fell into the Automotive Parts, Accessories, and Tire Stores (4413) sector compared to 2010, following from the same decrease in the number of Automotive Parts, Accessories, and Tire Stores employment in B-2. Grocery Stores (4451) and Specialty Food Stores (4452) sectors experienced increases in 2017 in both figure and percentage of sales compared to 2010.

12.4.7 Food and drink establishments by 2-digit NAICS codes, Gresham: NE Hood Avenue

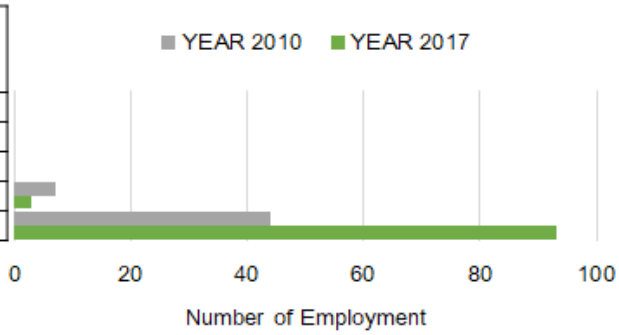
% of Total Establishments		Food & Drink Sector (5-digit NAICS codes)
2010	2017	
0.0	0.0	72231: Food Service Contractors
0.0	0.0	72232: Caterers
0.0	0.0	72233: Mobile Food Services
14.3	9.1	72241: Drinking Places (Alcoholic Bev.)
85.7	90.9	72251: Restaurants & Other Eating Places



Between 2010 and 2017, Restaurants & Other Eating Places (72251) displayed an increase in 2017 in both number and percentage of establishments compared to 2010. Drinking Places (Alcoholic Bev.) (72241) experienced a decrease in 2017 in percentage, but no change in number of establishments compared to 2010.

12.4.8 Food and drink employment by 2-digit NAICS codes, Gresham: NE Hood Avenue

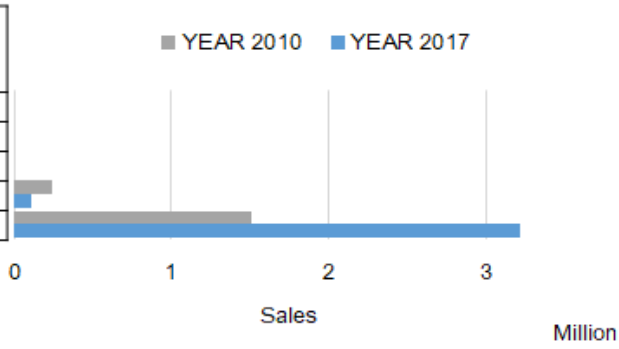
% of Total Employment		Food & Drink Sector (5-digit NAICS codes)
2010	2017	
0.0	0.0	72231: Food Service Contractors
0.0	0.0	72232: Caterers
0.0	0.0	72233: Mobile Food Services
13.7	3.1	72241: Drinking Places (Alcoholic Bev.)
86.3	96.9	72251: Restaurants & Other Eating Places



Between 2010 and 2017, Restaurants & Other Eating Places (72251) displayed an increase in 2017 in both number and percentage of employment compared to 2010. Drinking Places (Alcoholic Bev.) (72241) experienced a decrease in 2017 in both number and percentage of employment compared to 2010.

12.4.9 Food and drink sales by 2-digit NAICS codes, Gresham: NE Hood Avenue

% of Total Sales		Food & Drink Sector (5-digit NAICS codes)
2010	2017	
0.0	0.0	72231: Food Service Contractors
0.0	0.0	72232: Caterers
0.0	0.0	72233: Mobile Food Services
13.6	3.2	72241: Drinking Places (Alcoholic Bev.)
86.4	96.8	72251: Restaurants & Other Eating Places

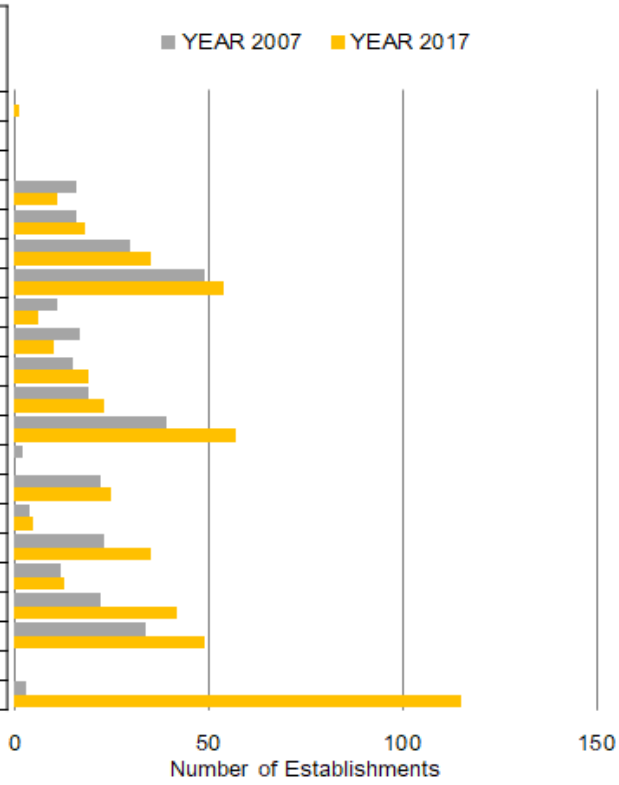


Between 2010 and 2017, Restaurants & Other Eating Places (72251) displayed an increase in 2017 in both figure and percentage of sales compared to 2010. Drinking Places (Alcoholic Bev.) (72241) experienced a decrease in 2017 in both figure and percentage of sales compared to 2010.

12.5 Portland: E Burnside Street

12.5.1 Establishments by 2-digit NAICS codes, Portland: E Burnside Street

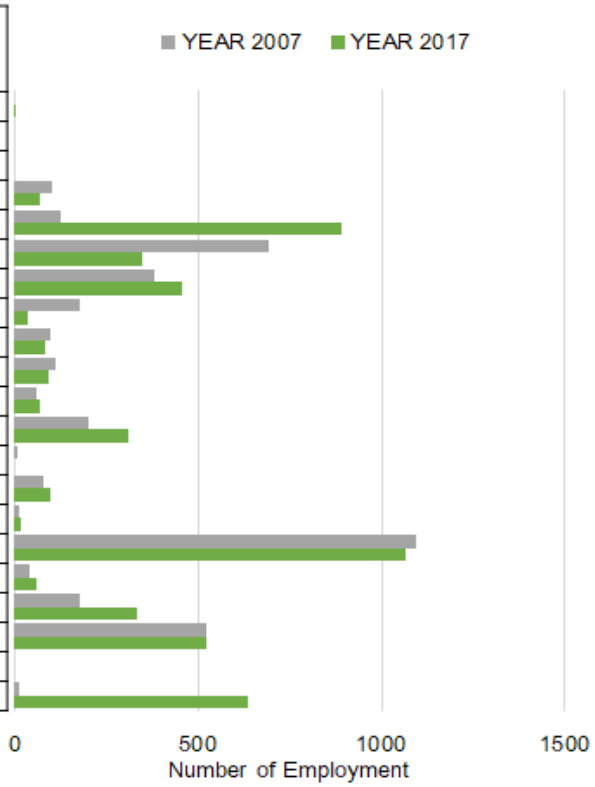
% of Total Establishments		All Industry Sector (2-digit NAICS codes)
2007	2017	
0.0	0.2	11: Agriculture, Forestry, Fishing & Hunt.
0.0	0.0	21: Mining
0.0	0.0	22: Utilities
4.8	2.1	23: Construction
4.8	3.5	31-33: Manufacturing
9.0	6.8	42: Wholesale Trade
14.7	10.4	44-45: Retail Trade
3.3	1.2	48-49: Transportation and Warehousing
5.1	1.9	51: Information
4.5	3.7	52: Finance and Insurance
5.7	4.4	53: Real Estate Rental and Leasing
11.7	11.0	54: Professional, Sci. & Tech. Services
0.6	0.0	55: Mgt. of Companies & Ent.
6.6	4.8	56: Admin. & Support / Waste Mgt.
1.2	1.0	61: Educational Services
6.9	6.8	62: Health Care and Social Assist.
3.6	2.5	71: Arts, Entertainment, & Recreation
6.6	8.1	72: Accommodation & Food Services
10.2	9.5	81: Other Services (except Public Admin.)
0.0	0.0	92: Public Administration
0.9	22.2	99: Unclassified



Between 2007 and 2017, the most noticeable variation is the increase of establishments that fall into the Unclassified sector (99). Manufacturing (31-33), Wholesale Trade (42), Retail Trade (44-45), Professional, Scientific, and Technical Service (54), and Other Services (81) sectors experienced increases in the number of establishments but decreased in percentage terms. On the other hand, the Accommodation and Food Services (72) sector in 2017 increased its size both in number and percentage of establishments compared to 2007.

12.5.2 Employment by 2-digit NAICS codes, Portland: E. Burnside Street

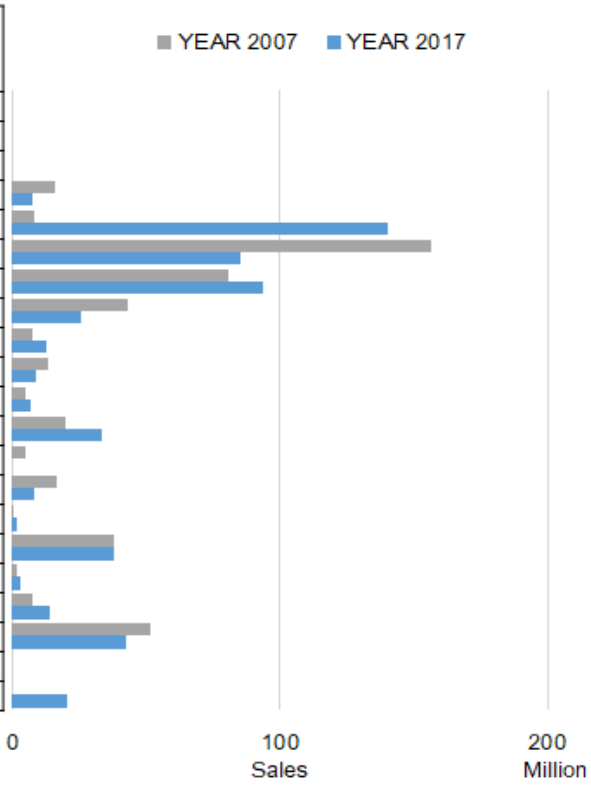
% of Total Employment		All Industry Sector (2-digit NAICS codes)
2007	2017	
0.0	0.0	11: Agriculture, Forestry, Fishing & Hunt.
0.0	0.0	21: Mining
0.0	0.0	22: Utilities
2.7	1.4	23: Construction
3.3	17.5	31-33: Manufacturing
17.7	6.8	42: Wholesale Trade
9.7	9.0	44-45: Retail Trade
4.5	0.7	48-49: Transportation and Warehousing
2.5	1.6	51: Information
2.9	1.8	52: Finance and Insurance
1.5	1.4	53: Real Estate Rental and Leasing
5.2	6.1	54: Professional, Sci. & Tech. Services
0.2	0.0	55: Mgt. of Companies & Ent.
2.0	1.9	56: Admin. & Support / Waste Mgt.
0.3	0.4	61: Educational Services
28.0	20.9	62: Health Care and Social Assist.
1.1	1.2	71: Arts, Entertainment, & Recreation
4.6	6.6	72: Accommodation & Food Services
13.4	10.2	81: Other Services (except Public Admin.)
0.0	0.0	92: Public Administration
0.4	12.5	99: Unclassified



Between 2007 and 2017, the most noticeable variation is again the increase in employment in the Unclassified (99) sector, following from the same increase in the number of unclassified establishments in A-1. Retail Trade (44-45), Wholesale Trade (42) and Health Care and Social Assistance (62) sectors experienced decreases in 2017 in both numbers and percentage of employment compared to 2007. On the other hand, the Professional, Scientific, and Technical Services (54) and Accommodation and Food Services (72) sectors displayed increases in both number and percentage of overall employment.

12.5.3 Sales by 2-digit NAICS codes, Portland: E. Burnside Street

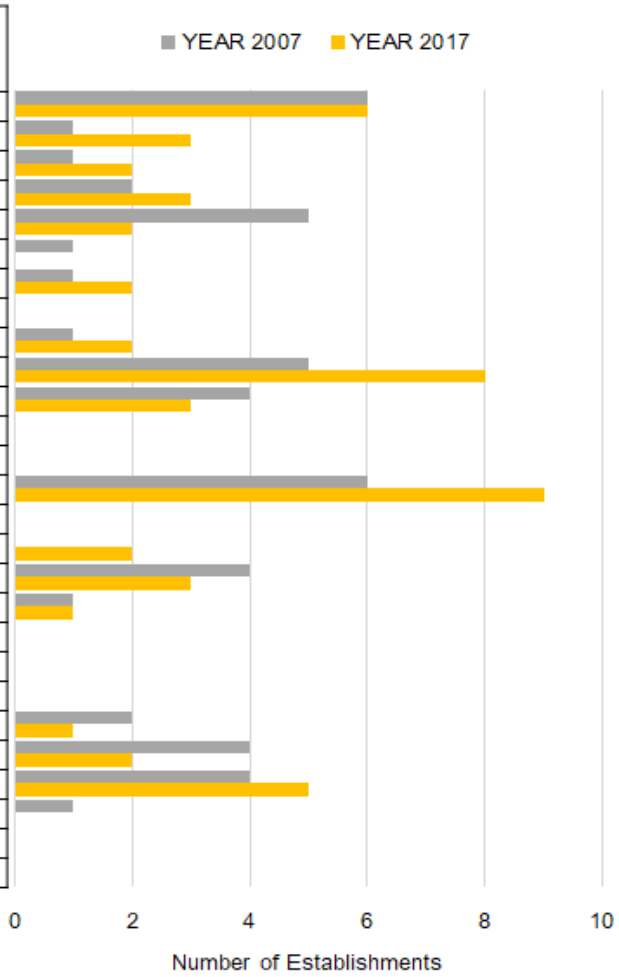
% of Total Sales		All Industry Sector (2-digit NAICS codes)
2007	2017	
0.0	0.0	11: Agriculture, Forestry, Fishing & Hunt.
0.0	0.0	21: Mining
0.0	0.0	22: Utilities
3.4	1.4	23: Construction
1.7	25.8	31-33: Manufacturing
33.2	15.7	42: Wholesale Trade
17.1	17.3	44-45: Retail Trade
9.2	4.8	48-49: Transportation and Warehousing
1.6	2.4	51: Information
2.8	1.7	52: Finance and Insurance
1.1	1.3	53: Real Estate Rental and Leasing
4.2	6.2	54: Professional, Sci. & Tech. Services
1.0	0.0	55: Mgt. of Companies & Ent.
3.5	1.6	56: Admin. & Support / Waste Mgt.
0.1	0.3	61: Educational Services
8.0	7.1	62: Health Care and Social Assist.
0.4	0.5	71: Arts, Entertainment, & Recreation
1.6	2.6	72: Accommodation & Food Services
10.9	7.9	81: Other Services (except Public Admin.)
0.0	0.0	92: Public Administration
0.0	3.8	99: Unclassified



Between 2007 and 2017, the Wholesale Trade (42), Transportation and Warehousing (48-49) and Other Services (except Public Admin.) (81) sector experienced decreases in 2017 in both sales figures and percentage of sales compared to 2007. On the other hand, the Professional, Scientific, and Technical Services (54), Retail Trade (44-45) and Accommodation and Food Services (72) sector in 2017 displayed increases in 2017 in both sales figures and percentage compared to 2007.

12.5.4 Retail establishments by 2-digit NAICS codes, Portland: E Burnside Street

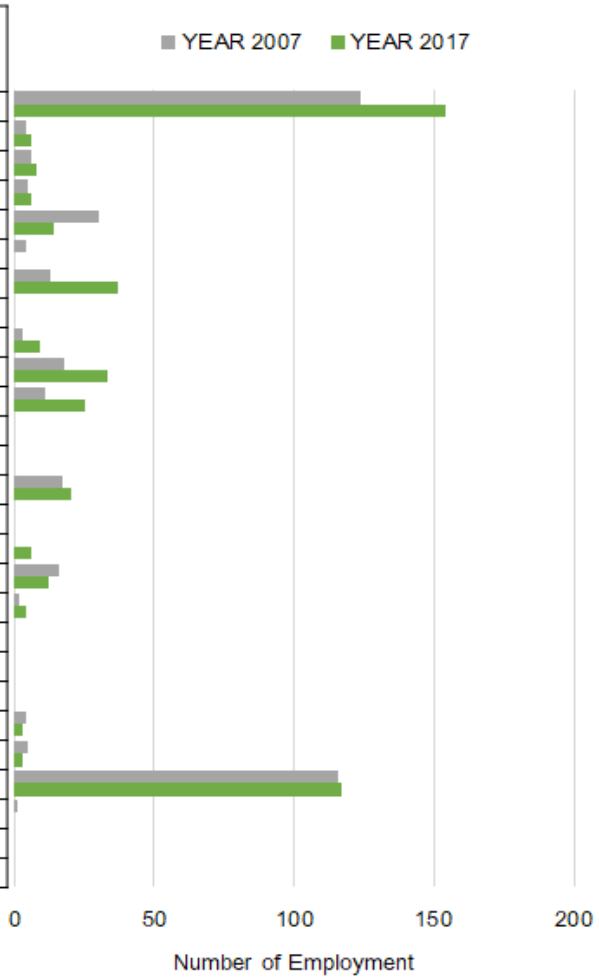
% of Total Establishments		Retail Trade Sector (4-digit NAICS codes)
2007	2017	
12.2	11.1	4411: Automobile
2.0	5.6	4412: Other Motor Vehicle
2.0	3.7	4413: Automotive Parts & Tire
4.1	5.6	4421: Furniture
10.2	3.7	4422: Home Furnishings
2.0	0.0	4431: Electronics & Appliance
2.0	3.7	4441: Building Material and Supplies
0.0	0.0	4442: Lawn and Garden Equip. & Supplies
2.0	3.7	4451: Grocery
10.2	14.8	4452: Specialty Food
8.2	5.6	4453: Liquor
0.0	0.0	4461: Health & Personal Care
0.0	0.0	4471: Gasoline
12.2	16.7	4481: Clothing
0.0	0.0	4482: Shoe
0.0	3.7	4483: Jewelry & Leather Goods
8.2	5.6	4511: Sporting Goods & Musical Inst.
2.0	1.9	4512: Book Stores & News Dealers
0.0	0.0	4522: Department Stores
0.0	0.0	4523: General Merchandise
0.0	0.0	4531: Florists
4.1	1.9	4532: Office Supplies
8.2	3.7	4533: Used Merchandise
8.2	9.3	4539: Other Miscellaneous
2.0	0.0	4541: Electronic Shopping & Mail-Order
0.0	0.0	4542: Vending Machine
0.0	0.0	4543: Direct Selling Est.



Between 2007 and 2017, the two noticeable variations are the increases in establishments in the Specialty Food (4452) and Clothing (4481) sectors in Retail Trade (42) compared to 2007. On the other hand, the Home Furnishing (4422) Sporting Goods, Hobby, and Musical Instrument (4511), Office Supplies, and Gifts (4532), and Used Merchandise (4533) sectors experienced decreases in 2017 in both numbers and percentage of establishments compared to 2007.

12.5.5 Retail employment by 2-digit NAICS codes, Portland: E Burnside Street

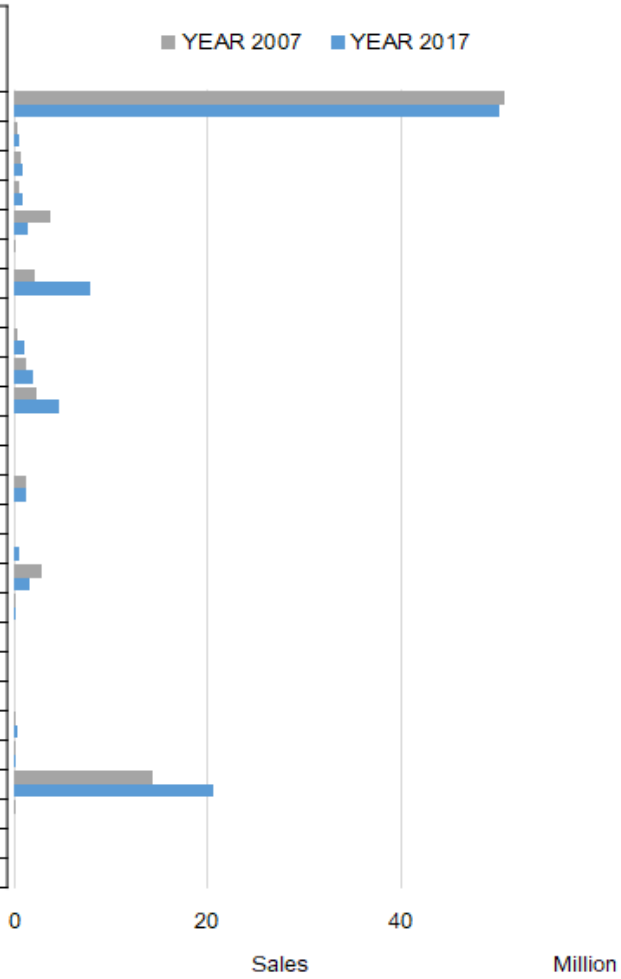
% of Total Employment		Retail Trade Sector (4-digit NAICS codes)
2007	2017	
32.7	33.7	4411: Automobile
1.1	1.3	4412: Other Motor Vehicle
1.6	1.8	4413: Automotive Parts & Tire
1.3	1.3	4421: Furniture
7.9	3.1	4422: Home Furnishings
1.1	0	4431: Electronics & Appliance
3.4	8.1	4441: Building Material and Supplies
0	0	4442: Lawn and Garden Equip. & Supplies
0.8	2	4451: Grocery
4.7	7.2	4452: Specialty Food
2.9	5.5	4453: Liquor
0	0	4461: Health & Personal Care
0	0	4471: Gasoline
4.5	4.4	4481: Clothing
0	0	4482: Shoe
0	1.3	4483: Jewelry & Leather Goods
4.2	2.6	4511: Sporting Goods & Musical Inst.
0.5	0.9	4512: Book Stores & News Dealers
0	0	4522: Department Stores
0	0	4523: General Merchandise
0	0	4531: Florists
1.1	0.7	4532: Office Supplies
1.3	0.7	4533: Used Merchandise
30.6	25.6	4539: Other Miscellaneous
0.3	0	4541: Electronic Shopping & Mail-Order
0	0	4542: Vending Machine
0	0	4543: Direct Selling Est.



Between 2007 and 2017, Automobile Dealers (4411) and Other Miscellaneous (4539). Automobile Dealer (4411), Building Material (4441), Grocery (4451), Specialty Food (4452) and Liquor (4453) sectors displayed increases in 2017 in both numbers and percentages of employment compared to 2007. On the other hand, the Home Furnishing (4422), Office Supplies (4532), Used Merchandise (4533) sectors experienced decreases in 2017 in both numbers and percentages of employment compared to 2007.

12.5.6 Retail sales by 2-digit NAICS codes, Portland: E Burnside Street

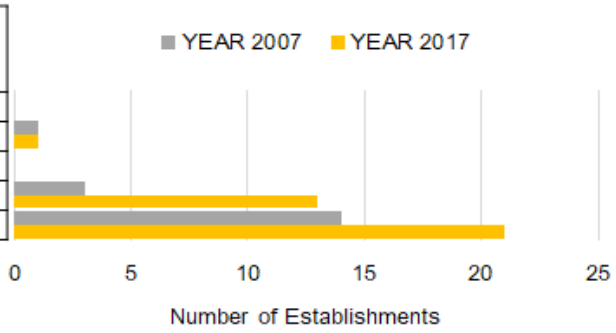
% of Total Sales		Retail Trade Sector (4-digit NAICS codes)
2007	2017	
62.9	53.6	4411: Automobile
0.5	0.6	4412: Other Motor Vehicle
0.7	0.9	4413: Automotive Parts & Tire
0.7	0.8	4421: Furniture
4.6	1.5	4422: Home Furnishings
0.0	0.0	4431: Electronics & Appliance
2.7	8.3	4441: Building Material and Supplies
0.0	0.0	4442: Lawn and Garden Equip. & Supplies
0.3	1.1	4451: Grocery
1.6	2.0	4452: Specialty Food
2.8	5.0	4453: Liquor
0.0	0.0	4461: Health & Personal Care
0.0	0.0	4471: Gasoline
1.5	1.4	4481: Clothing
0.0	0.0	4482: Shoe
0.0	0.6	4483: Jewelry & Leather Goods
3.4	1.6	4511: Sporting Goods & Musical Inst.
0.2	0.2	4512: Book Stores & News Dealers
0.0	0.0	4522: Department Stores
0.0	0.0	4523: General Merchandise
0.0	0.0	4531: Florists
0.2	0.2	4532: Office Supplies
0.2	0.2	4533: Used Merchandise
17.7	22.0	4539: Other Miscellaneous
0.1	0.0	4541: Electronic Shopping & Mail-Order
0.0	0.0	4542: Vending Machine
0.0	0.0	4543: Direct Selling Est.



Between 2007 and 2017, the Home Furnishing (4422) and Sporting Goods, Hobby, and Musical Instruments (4511) sectors experienced decreases in 2017 in both the figures and percentages of sales compared to 2007. On the other hand, the Building Material (4441), Grocery (4451), Specialty Food (4452), and Liquor (4453) sectors in 2017 displayed increases in both figures and percentages of sales compared to 2007.

12.5.7 Food and drink establishments by 2-digit NAICS codes, Portland: E Burnside Street

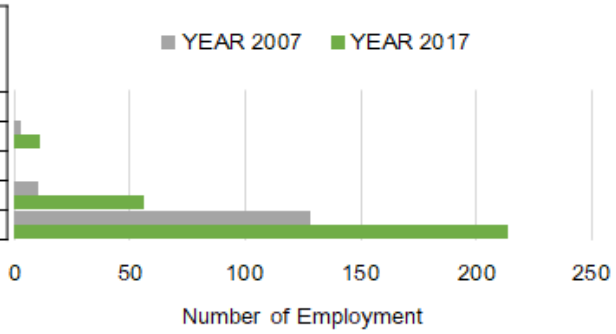
% of Total Establishments		Food & Drink Sector (5-digit NAICS codes)
2007	2017	
0.0	0.0	72231: Food Service Contractors
5.6	2.9	72232: Caterers
0.0	0.0	72233: Mobile Food Services
16.7	37.1	72241: Drinking Places (Alcoholic Bev.)
77.8	60.0	72251: Restaurants & Other Eating Places



Between 2007 and 2017, the Restaurants & Other Eating Places (72251) sector experienced an increase in 2017 in number of establishments, but a decrease in the percentage compared to 2007. The Drinking Places (Alcoholic Bev.) (72241) sector displayed increases in both numbers and percentages of the establishments compared to 2007.

12.5.8 Food and drink employment by 2-digit NAICS codes, Portland: E Burnside Street

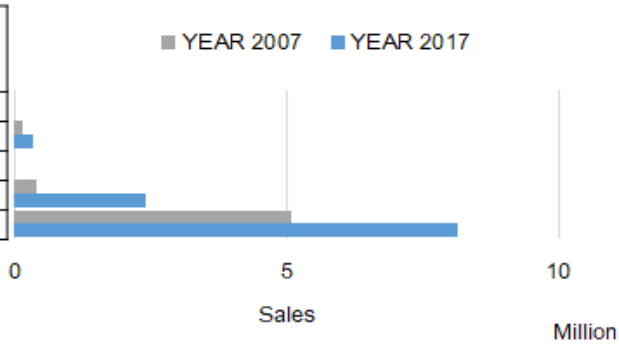
% of Total Employment		Food & Drink Sector (5-digit NAICS codes)
2007	2017	
0.0	0.0	72231: Food Service Contractors
2.1	3.9	72232: Caterers
0.0	0.0	72233: Mobile Food Services
7.1	19.9	72241: Drinking Places (Alcoholic Bev.)
90.8	76.2	72251: Restaurants & Other Eating Places



Between 2007 and 2017, the Restaurants & Other Eating Places (72251) sector experienced an increase in 2017 in number of employment, but a decrease in the percentage compared to 2007. The Drinking Places (Alcoholic Bev.) (72241) sector displayed increases in both number and percentage of employment compared to 2007.

12.5.9 Food and drink sales by 2-digit NAICS codes, Portland: E Burnside Street

% of Total Sales		Food & Drink Sector (5-digit NAICS codes)
2007	2017	
0.0	0.0	72231: Food Service Contractors
2.6	3.2	72232: Caterers
0.0	0.0	72233: Mobile Food Services
7.4	22.0	72241: Drinking Places (Alcoholic Bev.)
90.1	74.8	72251: Restaurants & Other Eating Places

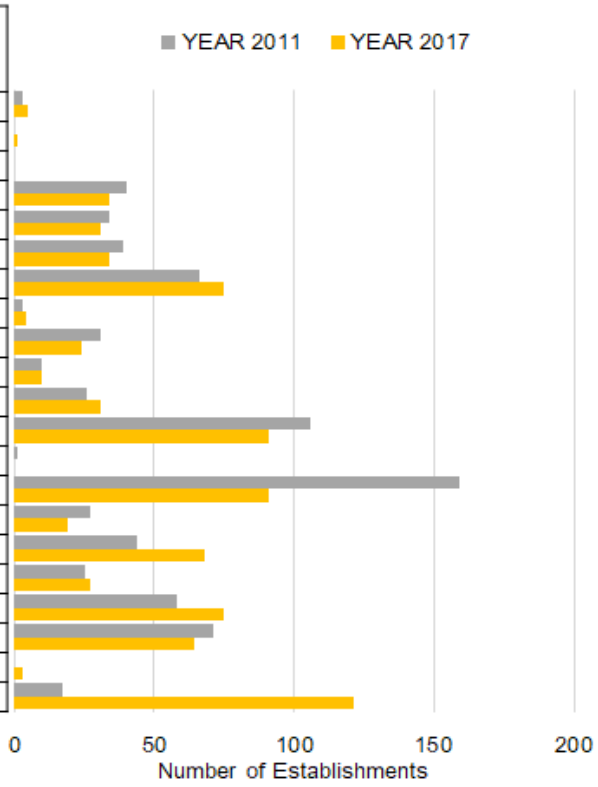


Between 2007 and 2017, the Restaurants & Other Eating Places (72251) sector experienced an increase in 2017 in figure of sales, but a decrease in the percentage compared to 2007. The Drinking Places (Alcoholic Bev.) (72241) sector displayed increases in both figure and percentage of the sales compared to 2007.

12.6 Portland: SE Division Street

12.6.1 Establishments by 2-digit NAICS codes, Portland: SE Division Street

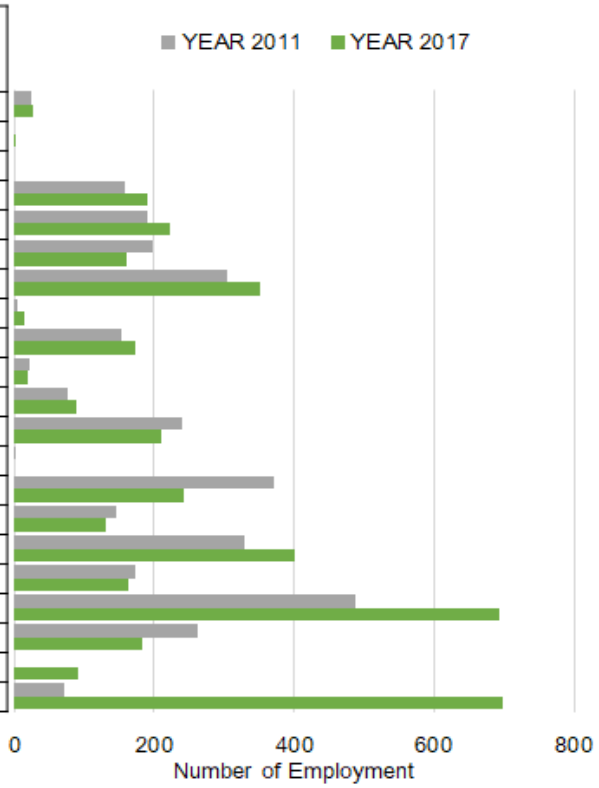
% of Total Establishments		All Industry Sector (NAICS 2-digit codes)
2011	2017	
0.4	0.6	11: Agriculture, Forestry, Fishing & Hunt.
0.0	0.1	21: Mining
0.0	0.0	22: Utilities
5.3	4.2	23: Construction
4.5	3.8	31-33: Manufacturing
5.1	4.2	42: Wholesale Trade
8.7	9.3	44-45: Retail Trade
0.4	0.5	48-49: Transportation and Warehousing
4.1	3.0	51: Information
1.3	1.2	52: Finance and Insurance
3.4	3.8	53: Real Estate Rental and Leasing
13.9	11.3	54: Professional, Sci. & Tech. Services
0.1	0.0	55: Mgt. of Companies & Ent.
20.9	11.3	56: Admin. & Support / Waste Mgt.
3.6	2.4	61: Educational Services
5.8	8.4	62: Health Care and Social Assist.
3.3	3.3	71: Arts, Entertainment, & Recreation
7.6	9.3	72: Accommodation & Food Services
9.3	7.9	81: Other Services (except Public Admin.)
0.0	0.4	92: Public Administration
2.2	15.0	99: Unclassified



Between 2011 and 2017, the two noticeable variations are the increase of establishments that fall into the Unclassified sector (99) and the decrease in Administrative and Support and Waste Management and Remediation Services (56) sector. Construction (23), Manufacturing (31-33), Wholesale Trade (42), Educational Services (61) and Other Services (except Public Administration) (81) sectors experienced decreases in 2017 in both number and percentage of establishments compared to 2011. On the other hand, the Retail Trade (44-45), Real Estate Rental and Leasing (53), and Accommodation and Food Services (72) sectors in 2017 increased its size both in number and percentage of establishments compared to 2011.

12.6.2 Employment by 2-digit NAICS codes, Portland: SE Division Street

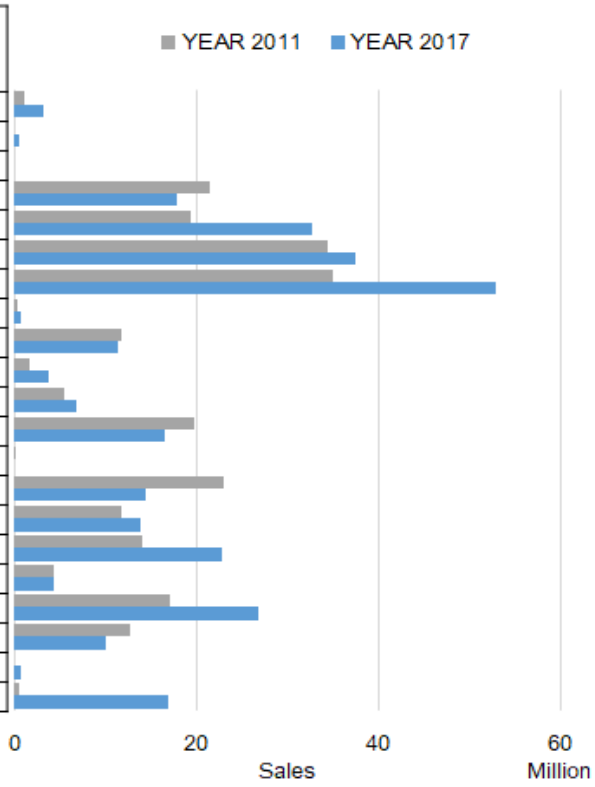
% of Total Employment		All Industry Sector (NAICS 2-digit codes)
2011	2017	
0.8	0.7	11: Agriculture, Forestry, Fishing & Hunt.
0.0	0.1	21: Mining
0.0	0.0	22: Utilities
4.9	4.7	23: Construction
5.9	5.5	31-33: Manufacturing
6.2	4.0	42: Wholesale Trade
9.5	8.7	44-45: Retail Trade
0.2	0.3	48-49: Transportation and Warehousing
4.7	4.2	51: Information
0.7	0.5	52: Finance and Insurance
2.4	2.2	53: Real Estate Rental and Leasing
7.5	5.2	54: Professional, Sci. & Tech. Services
0.1	0.0	55: Mgt. of Companies & Ent.
11.6	6.0	56: Admin. & Support / Waste Mgt.
4.6	3.2	61: Educational Services
10.3	9.8	62: Health Care and Social Assist.
5.4	4.0	71: Arts, Entertainment, & Recreation
15.2	17.1	72: Accommodation & Food Services
8.1	4.5	81: Other Services (except Public Admin.)
0.0	2.3	92: Public Administration
2.2	17.2	99: Unclassified



Between 2011 and 2017, the most noticeable variation is again the increase in employment in the Unclassified (99) sector, following from the same increase in the number of unclassified establishments in A-1. Construction (23), Manufacturing (31-33), Retail Trade (44-45), and Health Care and Social Assistance (62) experienced increases in the number of employment, but displayed decreases in percentage of employment in 2017 compared to 2011. On the other hand, the Accommodation and Food Services (72) sector displayed an increase in both number and percentage of overall employment.

12.6.3 Sales by 2-digit NAICS codes, Portland: SE Division Street

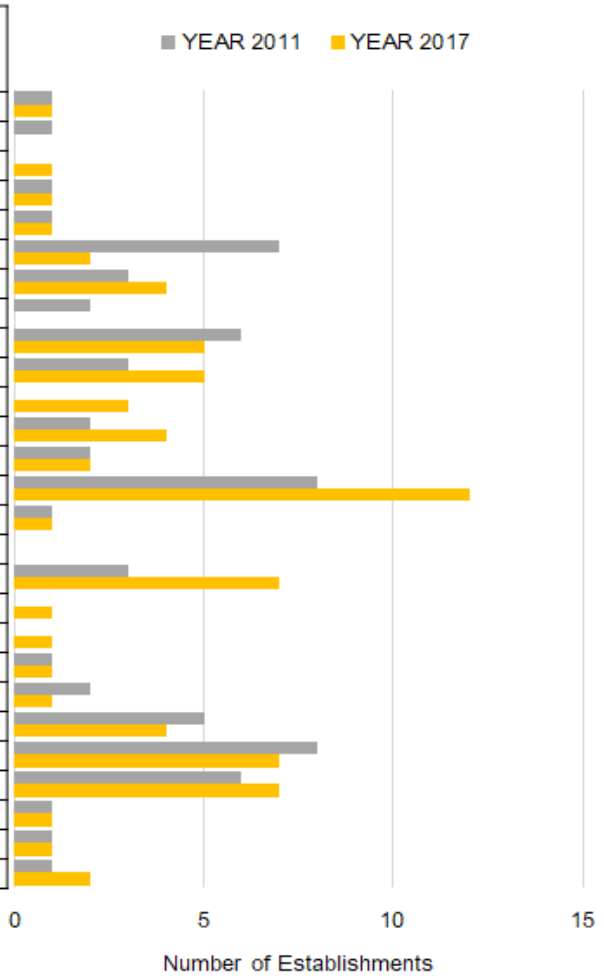
% of Total Sales		All Industry Sector (NAICS 2-digit codes)
2011	2017	
0.5	1.1	11: Agriculture, Forestry, Fishing & Hunt.
0.0	0.2	21: Mining
0.0	0.0	22: Utilities
9.2	6.1	23: Construction
8.3	11.1	31-33: Manufacturing
14.7	12.8	42: Wholesale Trade
15.0	18.0	44-45: Retail Trade
0.1	0.2	48-49: Transportation and Warehousing
5.1	3.9	51: Information
0.7	1.3	52: Finance and Insurance
2.3	2.3	53: Real Estate Rental and Leasing
8.4	5.6	54: Professional, Sci. & Tech. Services
0.0	0.0	55: Mgt. of Companies & Ent.
9.9	4.9	56: Admin. & Support / Waste Mgt.
5.1	4.7	61: Educational Services
6.0	7.8	62: Health Care and Social Assist.
1.8	1.5	71: Arts, Entertainment, & Recreation
7.3	9.1	72: Accommodation & Food Services
5.4	3.4	81: Other Services (except Public Admin.)
0.0	0.3	92: Public Administration
0.3	5.8	99: Unclassified



Between 2011 and 2017, the most noticeable variation is the increases of sales that fall into the Retail Trade (44-45) and Unclassified (99) sectors. The Construction (23), Professional, Scientific, and Technical Services (54) and Administrative and Support and Waste Management and Remediation Services (56) sectors in 2017 experienced decreases in both sales figures and percentage compared to 2011. On the other hand, the Health Care and Social Assistance (62) and Accommodation and Food Services (72) sectors displayed slight increases in 2017 in both figure and percentage of sales compared to 2007.

12.6.4 Retail establishments by 2-digit NAICS codes, Portland: SE Division Street

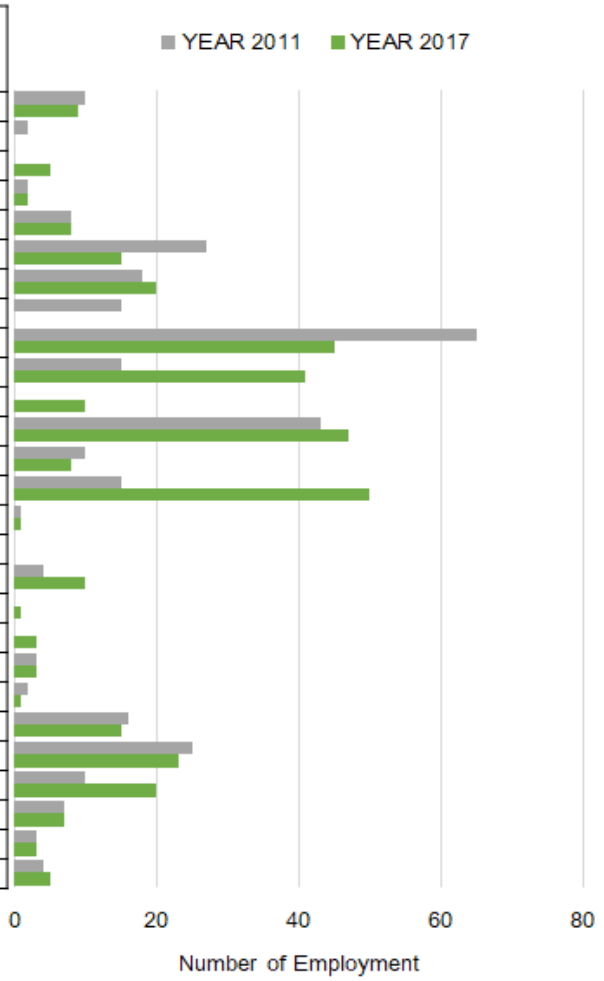
% of Total Establishments		Retail Trade Sector (4-digit NAICS codes)
2011	2017	
1.5	1.3	4411: Automobile
1.5	0.0	4412: Other Motor Vehicle
0.0	1.3	4413: Automotive Parts & Tire
1.5	1.3	4421: Furniture
1.5	1.3	4422: Home Furnishings
10.6	2.7	4431: Electronics & Appliance
4.5	5.3	4441: Building Material and Supplies
3.0	0.0	4442: Lawn and Garden Equip. & Supplies
9.1	6.7	4451: Grocery
4.5	6.7	4452: Specialty Food
0.0	4.0	4453: Liquor
3.0	5.3	4461: Health & Personal Care
3.0	2.7	4471: Gasoline
12.1	16.0	4481: Clothing
1.5	1.3	4482: Shoe
0.0	0.0	4483: Jewelry & Leather Goods
4.5	9.3	4511: Sporting Goods & Musical Inst.
0.0	1.3	4512: Book Stores & News Dealers
0.0	1.3	4522: Department Stores
1.5	1.3	4523: General Merchandise
3.0	1.3	4531: Florists
7.6	5.3	4532: Office Supplies
12.1	9.3	4533: Used Merchandise
9.1	9.3	4539: Other Miscellaneous
1.5	1.3	4541: Electronic Shopping & Mail-Order
1.5	1.3	4542: Vending Machine
1.5	2.7	4543: Direct Selling Est.



Between 2011 and 2017, the noticeable variation is the decrease in establishments in the Electronics and Appliance Stores (4431) sector compared to 2011. The Grocery Stores (4451) Office Supplies, Stationery, and Florists (4531), Gift Stores (4532) and Used Merchandise Stores (4533) sectors also experienced decreases in 2017 in both number and percentage of establishments compared to 2011. On the other hand, the Specialty Food Stores (4452), Clothing Stores (4481), Other Miscellaneous Store Retailers (4539) and Direct Selling Establishments (4543) sectors displayed increases in 2017 in both number and percentage of establishments compared to 2011.

12.6.5 Retail employment by 2-digit NAICS codes, Portland: SE Division Street

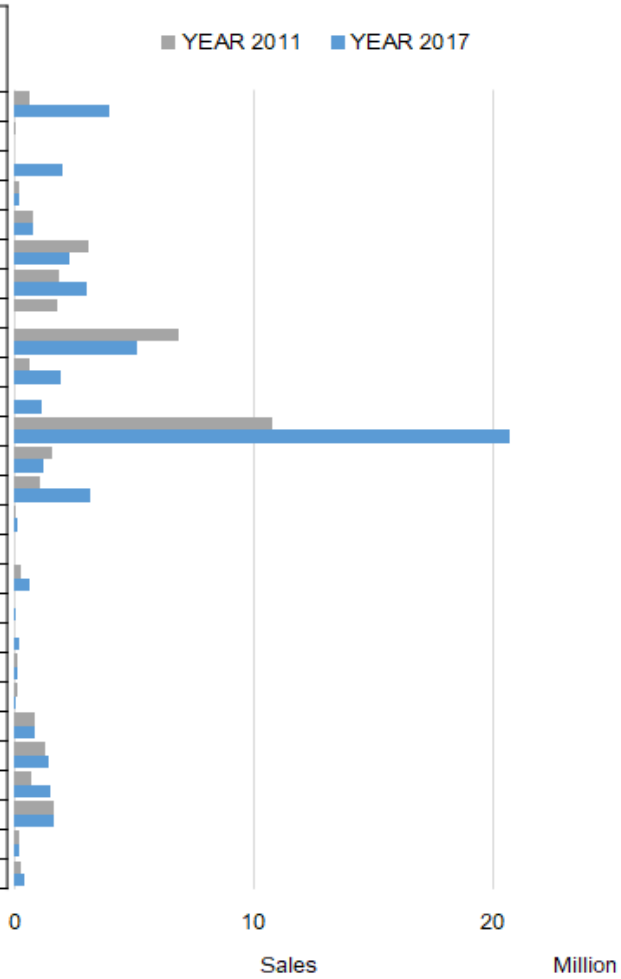
% of Total Employment		Retail Trade Sector (4-digit NAICS codes)
2011	2017	
3.3	2.6	4411: Automobile
0.7	0.0	4412: Other Motor Vehicle
0.0	1.4	4413: Automotive Parts & Tire
0.7	0.6	4421: Furniture
2.6	2.3	4422: Home Furnishings
8.9	4.3	4431: Electronics & Appliance
5.9	5.7	4441: Building Material and Supplies
4.9	0.0	4442: Lawn and Garden Equip. & Supplies
21.3	12.8	4451: Grocery
4.9	11.6	4452: Specialty Food
0.0	2.8	4453: Liquor
14.1	13.4	4461: Health & Personal Care
3.3	2.3	4471: Gasoline
4.9	14.2	4481: Clothing
0.3	0.3	4482: Shoe
0.0	0.0	4483: Jewelry & Leather Goods
1.3	2.8	4511: Sporting Goods & Musical Inst.
0.0	0.3	4512: Book Stores & News Dealers
0.0	0.9	4522: Department Stores
1.0	0.9	4523: General Merchandise
0.7	0.3	4531: Florists
5.2	4.3	4532: Office Supplies
8.2	6.5	4533: Used Merchandise
3.3	5.7	4539: Other Miscellaneous
2.3	2.0	4541: Electronic Shopping & Mail-Order
1.0	0.9	4542: Vending Machine
1.3	1.4	4543: Direct Selling Est.



Between 2011 and 2017, the noticeable variation is the increase in employment that fell into the Clothing Stores (4481) compared to 2011. Other Miscellaneous Store Retailers (4539) also experienced an increase in 2017 in both number and percentage of employment compared to 2011. On the other hand, the Electronics and Appliance Stores (4431), Grocery Stores (4451) and Used Merchandise Stores (4533) sectors experienced decreases in 2017 in both number and percentage of employment compared to 2011.

12.6.6 Retail sales by 2-digit NAICS codes, Portland: SE Division Street

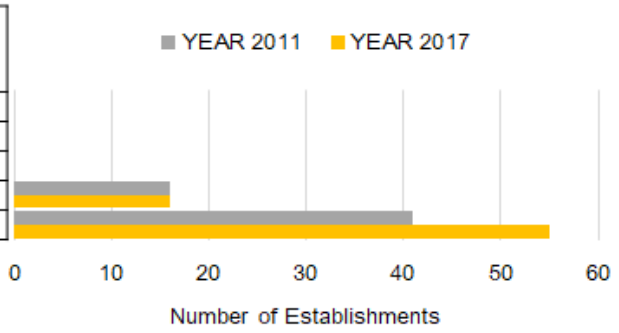
% of Total Sales		Retail Trade Sector (4-digit NAICS codes)
2011	2017	
1.7	7.5	4411: Automobile
0.2	0.0	4412: Other Motor Vehicle
0.0	3.8	4413: Automotive Parts & Tire
0.5	0.4	4421: Furniture
2.3	1.4	4422: Home Furnishings
8.9	4.4	4431: Electronics & Appliance
5.4	5.7	4441: Building Material and Supplies
5.2	0.0	4442: Lawn and Garden Equip. & Supplies
19.7	9.8	4451: Grocery
1.9	3.7	4452: Specialty Food
0.0	2.1	4453: Liquor
30.9	39.3	4461: Health & Personal Care
4.5	2.3	4471: Gasoline
3.0	6.0	4481: Clothing
0.3	0.2	4482: Shoe
0.0	0.0	4483: Jewelry & Leather Goods
0.7	1.2	4511: Sporting Goods & Musical Inst.
0.0	0.1	4512: Book Stores & News Dealers
0.0	0.3	4522: Department Stores
0.5	0.2	4523: General Merchandise
0.3	0.1	4531: Florists
2.4	1.6	4532: Office Supplies
3.8	2.7	4533: Used Merchandise
2.0	2.9	4539: Other Miscellaneous
4.8	3.1	4541: Electronic Shopping & Mail-Order
0.5	0.3	4542: Vending Machine
0.7	0.8	4543: Direct Selling Est.



Between 2011 and 2017, the most noticeable variation is the increase in sales that fall into the Health and Personal Care Stores (4461) compared to 2011. Specialty Food Stores (4452) and Clothing Stores (4481) also experienced increases in 2017 in both figure and percentage of sales compared to 2011. On the other hand, the Electronics and Appliance Stores (4431) Lawn and Garden Equipment and Supplies Stores (4442) and Grocery Stores (4451) sectors in 2017 experienced decreases in both figures and percentages of sales compared to 2011.

12.6.7 Food and drink establishments by 2-digit NAICS codes, Portland: SE Division Street

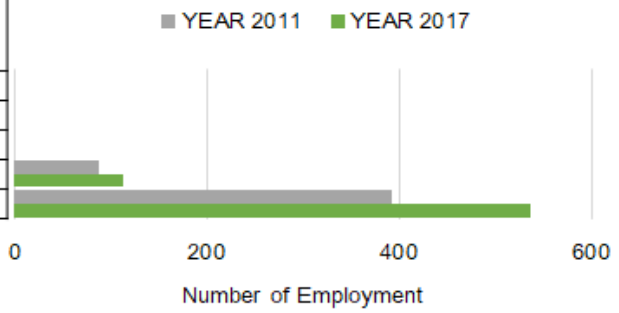
% of Total Establishments		Food & Drink Sector (5-digit NAICS codes)
2011	2017	
0.0	0.0	72231: Food Service Contractors
0.0	0.0	72232: Caterers
0.0	0.0	72233: Mobile Food Services
28.1	22.5	72241: Drinking Places (Alcoholic Bev.)
71.9	77.5	72251: Restaurants & Other Eating Places



Between 2011 and 2017, the Restaurants & Other Eating Places (72251) sector experienced an increase in 2017 in both number and percentage of establishments compared to 2011. The Drinking Places (Alcoholic Bev.) (72241) sector displayed a decrease in percentage of establishments compared to 2011.

12.6.8 Food and drink employment by 2-digit NAICS codes, Portland: SE Division Street

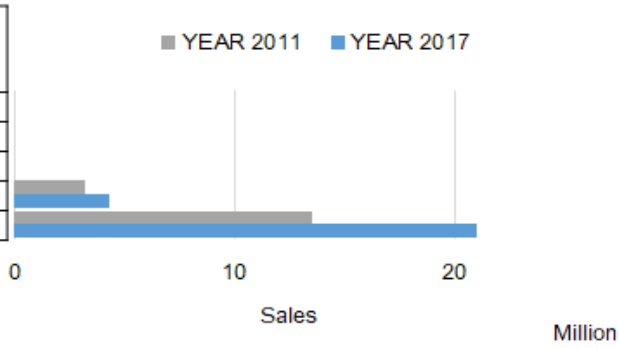
% of Total Employment		Food & Drink Sector (5-digit NAICS codes)
2011	2017	
0.0	0.0	72231: Food Service Contractors
0.0	0.0	72232: Caterers
0.0	0.0	72233: Mobile Food Services
18.1	17.4	72241: Drinking Places (Alcoholic Bev.)
81.9	82.6	72251: Restaurants & Other Eating Places



Between 2011 and 2017, the Restaurants & Other Eating Places (72251) sector experienced an increase in 2017 in both number and percentage of employment compared to 2011. The Drinking Places (Alcoholic Bev.) (72241) sector displayed an increase in the number of employment, but experienced a decrease in the percentage of employment compared to 2011.

12.6.9 Food and drink sales by 2-digit NAICS codes, Portland: SE Division Street

% of Total Sales		Food & Drink Sector (5-digit NAICS codes)
2011	2017	
0.0	0.0	72231: Food Service Contractors
0.0	0.0	72232: Caterers
0.0	0.0	72233: Mobile Food Services
19.4	16.9	72241: Drinking Places (Alcoholic Bev.)
80.6	83.1	72251: Restaurants & Other Eating Places

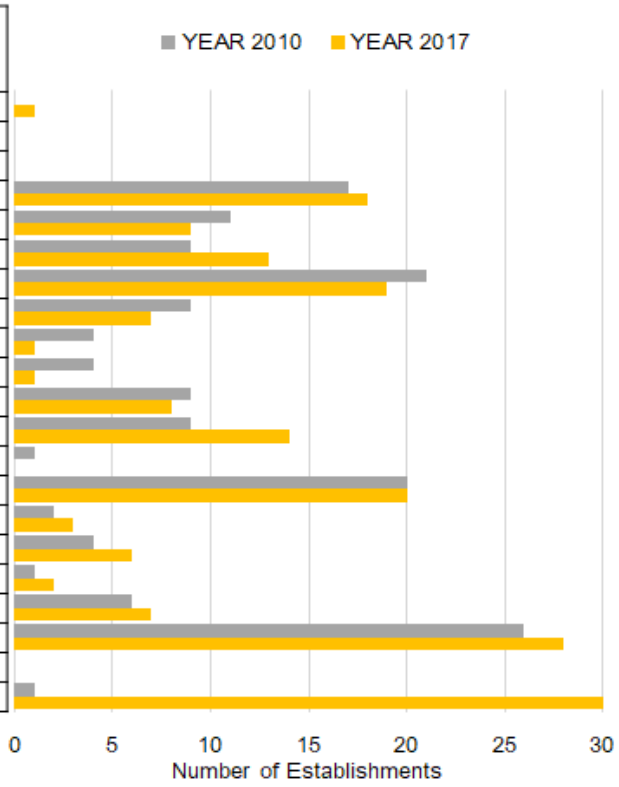


Between 2011 and 2017, the Restaurants & Other Eating Places (72251) sector experienced an increase in 2017 in both figure and percentage of sales compared to 2011. The Drinking Places (Alcoholic Bev.) (72241) sector displayed an increase in the figure of sales, but experienced a decrease in the percentage of sales compared to 2011.

12.7 Portland: Foster Road-Woodstock Boulevard

12.7.1 Establishments by 2-digit NAICS codes, Portland: Foster-Woodstock Boulevards

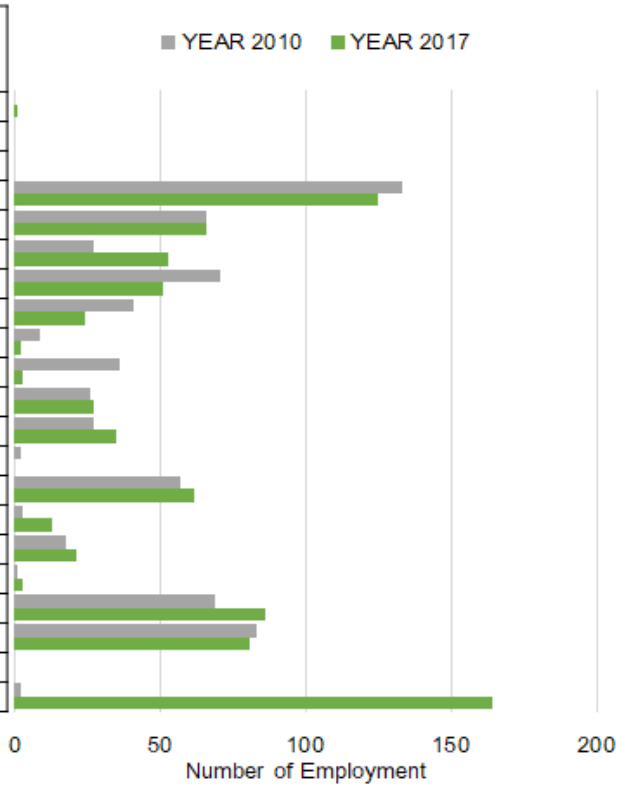
% of Total Establishments		All Industry Sector (NAICS 2-digit codes)
2010	2017	
0.0	0.5	11: Agriculture, Forestry, Fishing & Hunt.
0.0	0.0	21: Mining
0.0	0.0	22: Utilities
11.0	9.6	23: Construction
7.1	4.8	31-33: Manufacturing
5.8	7.0	42: Wholesale Trade
13.6	10.2	44-45: Retail Trade
5.8	3.7	48-49: Transportation and Warehousing
2.6	0.5	51: Information
2.6	0.5	52: Finance and Insurance
5.8	4.3	53: Real Estate Rental and Leasing
5.8	7.5	54: Professional, Sci. & Tech. Services
0.6	0.0	55: Mgt. of Companies & Ent.
13.0	10.7	56: Admin. & Support / Waste Mgt.
1.3	1.6	61: Educational Services
2.6	3.2	62: Health Care and Social Assist.
0.6	1.1	71: Arts, Entertainment, & Recreation
3.9	3.7	72: Accommodation & Food Services
16.9	15.0	81: Other Services (except Public Admin.)
0.0	0.0	92: Public Administration
0.6	16.0	99: Unclassified



Between 2010 and 2017, the most noticeable variation is the increase of establishments that fall into the Unclassified (99) sector. The Agriculture, Forestry, Fishing and Hunting (11), Wholesale Trade (42), Professional, Scientific, and Technical Services (54), Educational Services (61), Health Care and Social Assistance (62), and Arts, Entertainment, and Recreation (71) sectors in 2017 also displayed increases in both number and percentage of establishments compared to 2010. On the other hand, the Manufacturing (31-33), Retail Trade (44-45), Transportation and Warehousing (48-49), Information (51), Finance and Insurance (52), Real Estate Rental and Leasing (53) and Management of Companies and Enterprises (55) sectors in 2017 decreased its size both in number and percentage of establishments compared to 2010.

12.7.2 Employment by 2-digit NAICS codes, Portland: Foster-Woodstock Boulevards

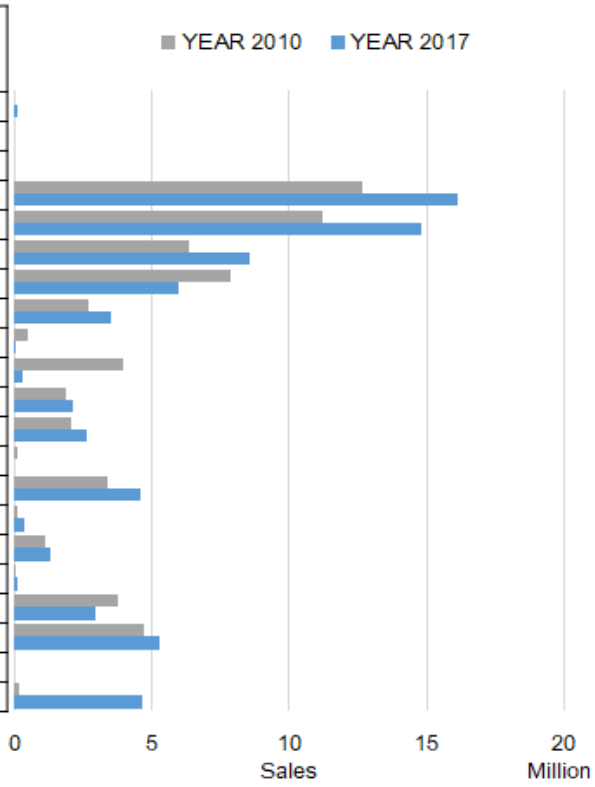
% of Total Employment		All Industry Sector (NAICS 2-digit codes)
2010	2017	
0.0	0.1	11: Agriculture, Forestry, Fishing & Hunt.
0.0	0.0	21: Mining
0.0	0.0	22: Utilities
19.8	15.3	23: Construction
9.8	8.1	31-33: Manufacturing
4.0	6.5	42: Wholesale Trade
10.6	6.2	44-45: Retail Trade
6.1	2.9	48-49: Transportation and Warehousing
1.3	0.2	51: Information
5.4	0.4	52: Finance and Insurance
3.9	3.3	53: Real Estate Rental and Leasing
4.0	4.3	54: Professional, Sci. & Tech. Services
0.3	0.0	55: Mgt. of Companies & Ent.
8.5	7.6	56: Admin. & Support / Waste Mgt.
0.4	1.6	61: Educational Services
2.7	2.6	62: Health Care and Social Assist.
0.1	0.4	71: Arts, Entertainment, & Recreation
10.3	10.5	72: Accommodation & Food Services
12.4	9.9	81: Other Services (except Public Admin.)
0.0	0.0	92: Public Administration
0.3	20.1	99: Unclassified



Between 2010 and 2017, the most noticeable variation is again the increase in employment in the Unclassified (99) sector, following from the same increase in the number of unclassified establishments in A-1. The Wholesale Trade (42), Professional, Scientific, and Technical Services (54), Educational Services (61), Arts, Entertainment, and Recreation (71), and Accommodation and Food Services (72) in 2017 also displayed increases in both number and percentage of employment compared to 2010. On the other hand, the Construction (23), Manufacturing (31-33), Retail Trade (44-45), Transportation and Warehousing (48-49), Information (51), Finance and Insurance (52), Management of Companies and Enterprises (55), and Other Services (except Public Administration) (81) sectors in 2017 experienced decreases in both number and percentage of overall employment compared to 2010.

12.7.3 Sales by 2-digit NAICS codes, Portland: Foster-Woodstock Boulevards

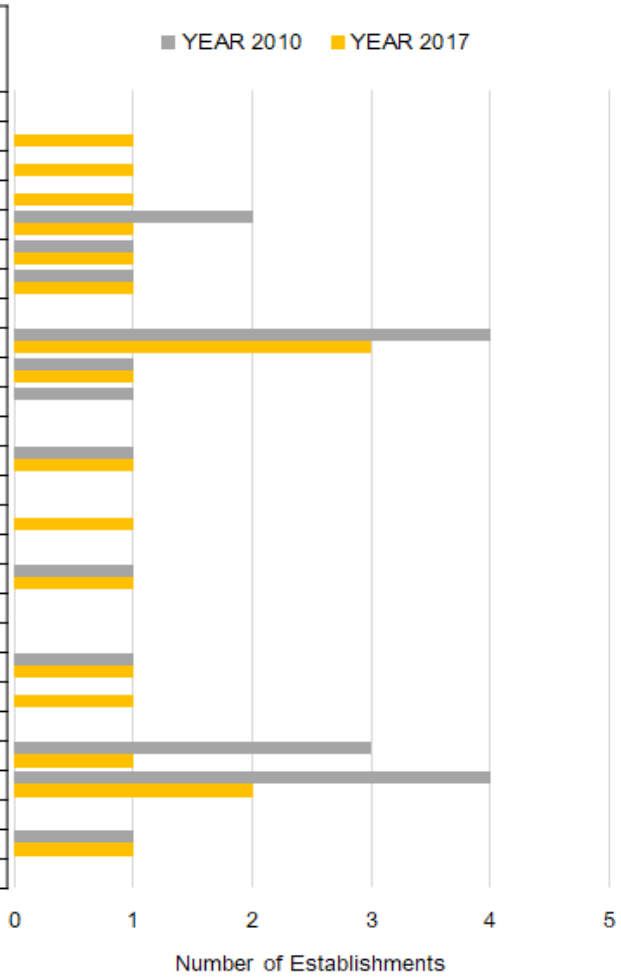
% of Total Sales		All Industry Sector (NAICS 2-digit codes)
2010	2017	
0.0	0.1	11: Agriculture, Forestry, Fishing & Hunt.
0.0	0.0	21: Mining
0.0	0.0	22: Utilities
20.2	21.9	23: Construction
17.9	20.2	31-33: Manufacturing
10.1	11.6	42: Wholesale Trade
12.6	8.1	44-45: Retail Trade
4.3	4.8	48-49: Transportation and Warehousing
0.8	0.1	51: Information
6.3	0.4	52: Finance and Insurance
2.9	2.9	53: Real Estate Rental and Leasing
3.3	3.6	54: Professional, Sci. & Tech. Services
0.2	0.0	55: Mgt. of Companies & Ent.
5.4	6.2	56: Admin. & Support / Waste Mgt.
0.2	0.5	61: Educational Services
1.8	1.8	62: Health Care and Social Assist.
0.1	0.2	71: Arts, Entertainment, & Recreation
6.0	4.0	72: Accommodation & Food Services
7.5	7.2	81: Other Services (except Public Admin.)
0.0	0.0	92: Public Administration
0.3	6.4	99: Unclassified



Between 2010 and 2017, the most noticeable variation is again the increase in sales in the Unclassified (99) sector, following from the same increase in the number of unclassified establishments and employment in A-1 and A-2. The Construction (23), Manufacturing (31-33), Wholesale Trade (42), Transportation and Warehousing (48-49), Professional, Scientific, and Technical Services (54), Administrative and Support and Waste Management and Remediation Services (56), and Educational Services (61) sectors in 2017 displayed increases in both sales figures and percentage compared to 2010. On the other hand, the Retail Trade (44-45), Information (51), Finance and Insurance (52), Management of Companies and Enterprises (55), and Accommodation and Food Services (72) sectors in 2017 experienced decreases in both figure and percentage of sales compared to 2010.

12.7.4 Retail establishments by 2-digit NAICS codes, Portland: Foster-Woodstock Boulevards

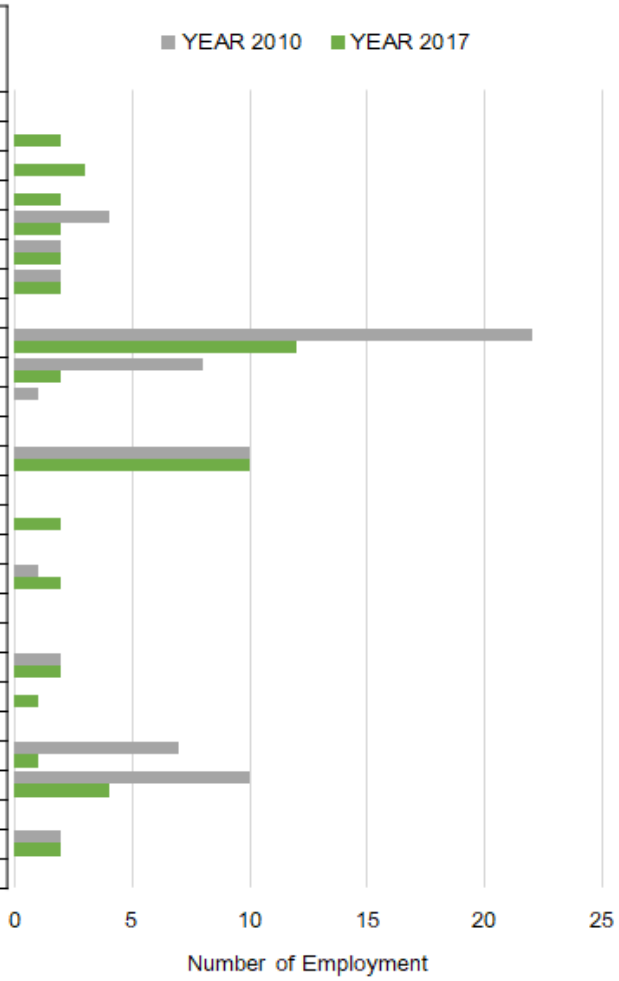
% of Total Establishments		Retail Trade Sector (4-digit NAICS codes)
2010	2017	
0.0	0.0	4411: Automobile
0.0	5.3	4412: Other Motor Vehicle
0.0	5.3	4413: Automotive Parts & Tire
0.0	5.3	4421: Furniture
9.5	5.3	4422: Home Furnishings
4.8	5.3	4431: Electronics & Appliance
4.8	5.3	4441: Building Material and Supplies
0.0	0.0	4442: Lawn and Garden Equip. & Supplies
19.0	15.8	4451: Grocery
4.8	5.3	4452: Specialty Food
4.8	0.0	4453: Liquor
0.0	0.0	4461: Health & Personal Care
4.8	5.3	4471: Gasoline
0.0	0.0	4481: Clothing
0.0	5.3	4482: Shoe
0.0	0.0	4483: Jewelry & Leather Goods
4.8	5.3	4511: Sporting Goods & Musical Inst.
0.0	0.0	4512: Book Stores & News Dealers
0.0	0.0	4522: Department Stores
4.8	5.3	4523: General Merchandise
0.0	5.3	4531: Florists
0.0	0.0	4532: Office Supplies
14.3	5.3	4533: Used Merchandise
19.0	10.5	4539: Other Miscellaneous
0.0	0.0	4541: Electronic Shopping & Mail-Order
4.8	5.3	4542: Vending Machine
0.0	0.0	4543: Direct Selling Est.



Between 2010 and 2017, the Other Motor Vehicle Dealers (4412), Automotive Parts, Accessories, and Tire Stores (4413), Furniture Stores (4421), Shoe Stores (4482), and Florists (4531) sectors in 2017 displayed increases in both number and percentage of establishments compared to 2010. On the other hand, Home Furnishings Stores (4422), Grocery Stores (4451), Used Merchandise Stores (4533), and Other Miscellaneous Store Retailers (4539) sectors in 2017 experienced decreases in both number and percentage of establishments compared to 2010.

12.7.5 Retail employment by 2-digit NAICS codes, Portland: Foster-Woodstock Boulevards

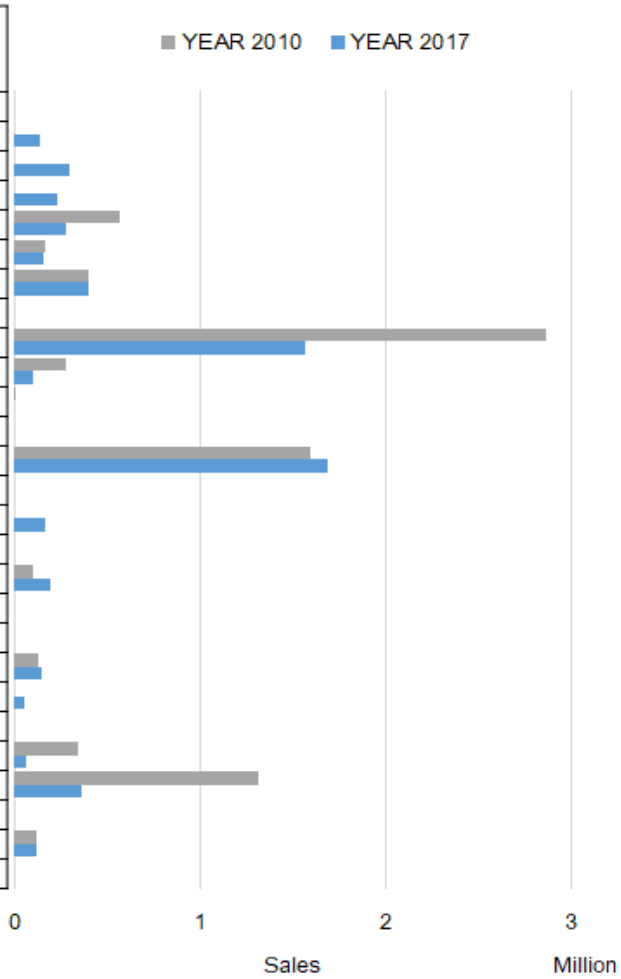
% of Total Employment		Retail Trade Sector (4-digit NAICS codes)
2010	2017	
0.0	0.0	4411: Automobile
0.0	3.9	4412: Other Motor Vehicle
0.0	5.9	4413: Automotive Parts & Tire
0.0	3.9	4421: Furniture
5.6	3.9	4422: Home Furnishings
2.8	3.9	4431: Electronics & Appliance
2.8	3.9	4441: Building Material and Supplies
0.0	0.0	4442: Lawn and Garden Equip. & Supplies
31.0	23.5	4451: Grocery
11.3	3.9	4452: Specialty Food
1.4	0.0	4453: Liquor
0.0	0.0	4461: Health & Personal Care
14.1	19.6	4471: Gasoline
0.0	0.0	4481: Clothing
0.0	3.9	4482: Shoe
0.0	0.0	4483: Jewelry & Leather Goods
1.4	3.9	4511: Sporting Goods & Musical Inst.
0.0	0.0	4512: Book Stores & News Dealers
0.0	0.0	4522: Department Stores
2.8	3.9	4523: General Merchandise
0.0	2.0	4531: Florists
0.0	0.0	4532: Office Supplies
9.9	2.0	4533: Used Merchandise
14.1	7.8	4539: Other Miscellaneous
0.0	0.0	4541: Electronic Shopping & Mail-Order
2.8	3.9	4542: Vending Machine
0.0	0.0	4543: Direct Selling Est.



Between 2010 and 2017, the most noticeable variation is the decrease in employment that fell into the Grocery Stores (4451) sector compared to 2010. The Home Furnishings Stores (4422), Specialty Food Stores (4452), Used Merchandise Stores (4533), and Other Miscellaneous Store Retailers (4539) sectors in 2017 also experienced decreases in both number and percentage of employment compared to 2010. On the other hand, Other Motor Vehicle Dealers (4412), Automotive Parts, Accessories, and Tire Stores (4413), Furniture Stores (4421), Shoe Stores (4482), and Florists (4531) sectors displayed increases in 2017 in both number and percentage of employment compared to 2010.

12.7.6 Retail sales by 2-digit NAICS codes, Portland: Foster-Woodstock Boulevards

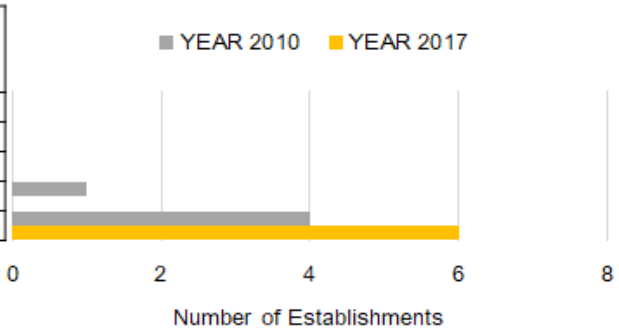
% of Total Sales		Retail Trade Sector (4-digit NAICS codes)
2010	2017	
0.0	0.0	4411: Automobile
0.0	2.4	4412: Other Motor Vehicle
0.0	5.0	4413: Automotive Parts & Tire
0.0	3.9	4421: Furniture
7.2	4.7	4422: Home Furnishings
2.1	2.7	4431: Electronics & Appliance
5.1	6.7	4441: Building Material and Supplies
0.0	0.0	4442: Lawn and Garden Equip. & Supplies
36.4	26.2	4451: Grocery
3.5	1.7	4452: Specialty Food
0.0	0.0	4453: Liquor
0.0	0.0	4461: Health & Personal Care
20.3	28.3	4471: Gasoline
0.0	0.0	4481: Clothing
0.0	2.8	4482: Shoe
0.0	0.0	4483: Jewelry & Leather Goods
1.3	3.2	4511: Sporting Goods & Musical Inst.
0.0	0.0	4512: Book Stores & News Dealers
0.0	0.0	4522: Department Stores
1.6	2.5	4523: General Merchandise
0.0	0.8	4531: Florists
0.0	0.0	4532: Office Supplies
4.3	1.0	4533: Used Merchandise
16.7	6.1	4539: Other Miscellaneous
0.0	0.0	4541: Electronic Shopping & Mail-Order
1.5	2.0	4542: Vending Machine
0.0	0.0	4543: Direct Selling Est.



Between 2010 and 201, the two noticeable variations are the decreases in sales that fell into the Grocery Stores (4451) and Other Miscellaneous Store Retailers (4539) sectors compared to 2010. On the other hand, Other Motor Vehicle Dealers (4412), Automotive Parts, Accessories, and Tire Stores (4413), Furniture Stores (4421), Shoe Stores (4482), and Florists (4531) sectors displayed increases in 2017 in both figure and percentage of sales compared to 2010.

12.7.7 Food and drink establishments by 2-digit NAICS codes, Portland: Foster-Woodstock Boulevards

% of Total Establishments		Food & Drink Sector (5-digit NAICS codes)
2010	2017	
0.0	0.0	72231: Food Service Contractors
0.0	0.0	72232: Caterers
0.0	0.0	72233: Mobile Food Services
20.0	0.0	72241: Drinking Places (Alcoholic Bev.)
80.0	100.0	72251: Restaurants & Other Eating Places



Between 2010 and 2017, the Restaurants & Other Eating Places (72251) sector displayed an increase in 2017 in both number and percentage of establishments compared to 2010. On the other hand, the Drinking Places (Alcoholic Beverages) (72241) sector decreased in 2017 in both number and percentage of establishments compared to 2010.

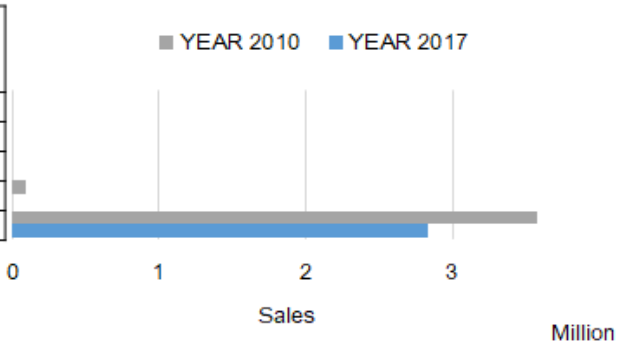
12.7.8 Food and drink employment by 2-digit NAICS codes, Portland: Foster-Woodstock Boulevards

% of Total Employment		Food & Drink Sector (5-digit NAICS codes)
2010	2017	
0.0	0.0	72231: Food Service Contractors
0.0	0.0	72232: Caterers
0.0	0.0	72233: Mobile Food Services
3.0	0.0	72241: Drinking Places (Alcoholic Bev.)
97.0	100.0	72251: Restaurants & Other Eating Places

Between 2010 and 2017, the Restaurants & Other Eating Places (72251) sector displayed an increase in 2017 in both number and percentage of employment compared to 2010. On the other hand, the Drinking Places (Alcoholic Beverages) (72241) sector decreased in 2017 in both number and percentage of employment compared to 2010.

12.7.9 Food and drink sales by 2-digit NAICS codes, Portland: Foster-Woodstock Boulevards

% of Total Sales		Food & Drink Sector (5-digit NAICS codes)
2010	2017	
0.0	0.0	72231: Food Service Contractors
0.0	0.0	72232: Caterers
0.0	0.0	72233: Mobile Food Services
2.5	0.0	72241: Drinking Places (Alcoholic Bev.)
97.5	100	72251: Restaurants & Other Eating Places

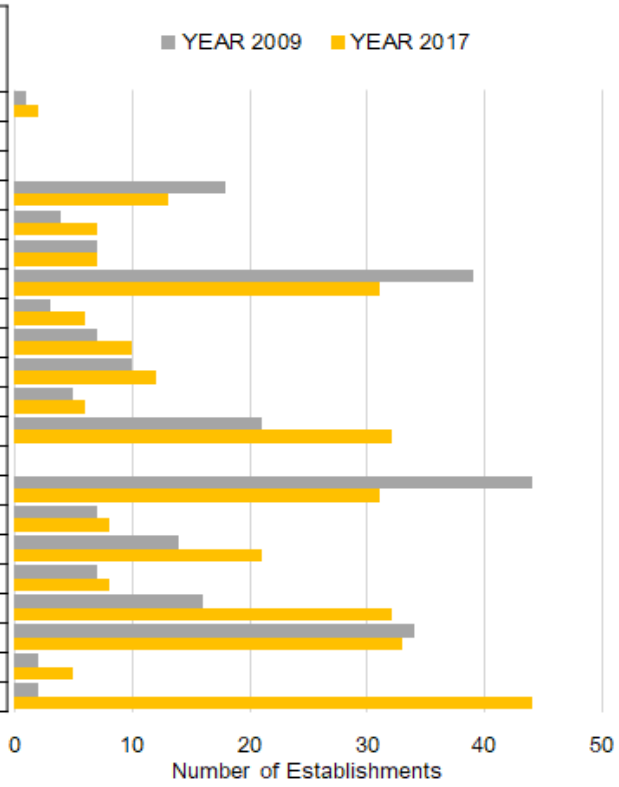


Between 2010 and 2017, the Restaurants & Other Eating Places (72251) experienced a decrease in 2017 in the figure of sales, but displayed an increase in percentage of sales compared to 2010. On the other hand, the Drinking Places (Alcoholic Beverages) (72241) sector decreased in 2017 in both figure and percentage of sales compared to 2010.

12.8 Portland: St John's Town Center

12.8.1 Establishments by 2-digit NAICS codes, Portland: St John's Town Center

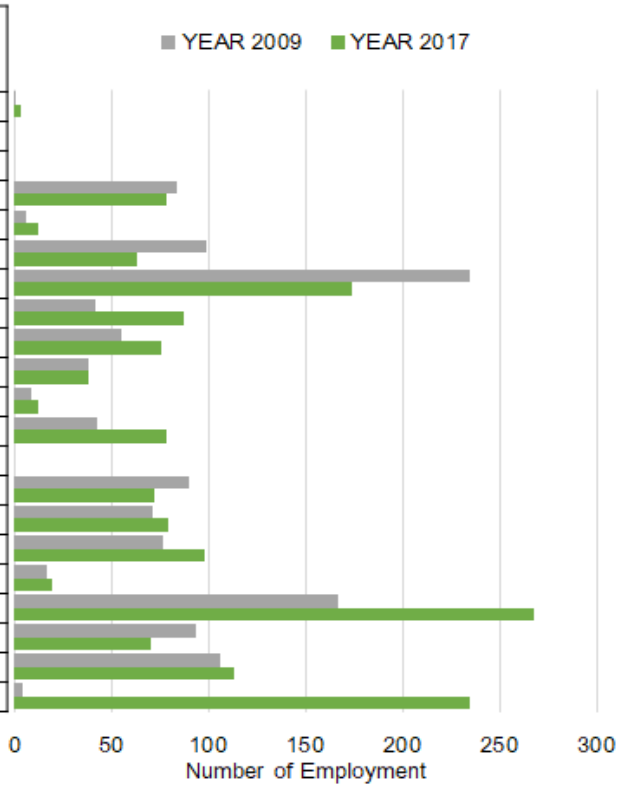
% of Total Establishments		All Industry Sector (NAICS 2-digit codes)
2009	2017	
0.4	0.6	11: Agriculture, Forestry, Fishing & Hunt.
0.0	0.0	21: Mining
0.0	0.0	22: Utilities
7.5	4.2	23: Construction
1.7	2.3	31-33: Manufacturing
2.9	2.3	42: Wholesale Trade
16.2	10.1	44-45: Retail Trade
1.2	1.9	48-49: Transportation and Warehousing
2.9	3.2	51: Information
4.1	3.9	52: Finance and Insurance
2.1	1.9	53: Real Estate Rental and Leasing
8.7	10.4	54: Professional, Sci. & Tech. Services
0.0	0.0	55: Mgt. of Companies & Ent.
18.3	10.1	56: Admin. & Support / Waste Mgt.
2.9	2.6	61: Educational Services
5.8	6.8	62: Health Care and Social Assist.
2.9	2.6	71: Arts, Entertainment, & Recreation
6.6	10.4	72: Accommodation & Food Services
14.1	10.7	81: Other Services (except Public Admin.)
0.8	1.6	92: Public Administration
0.8	14.3	99: Unclassified



Between 2009 and 2017, the most noticeable variation is the increase of establishments that fall into the Unclassified sector (99). The Agriculture, Forestry, Fishing and Hunting (11), Manufacturing (31-33), Transportation and Warehousing (48-49), Information (51), Professional, Scientific, and Technical Services (54), Health Care and Social Assistance (62), Accommodation and Food Services (72), and Public Administration (92) sectors also displayed increases in 2017 in both number and percentage of establishments compared to 2009. On the other hand, the Construction (23), Retail Trade (44-45), Administrative and Support and Waste Management and Remediation Services (56), and Other Services (except Public Administration) (81) sectors in 2017 decreased its size both in number and percentage of establishments compared to 2009.

12.8.2 Employment by 2-digit NAICS codes, Portland: St John's Town Center

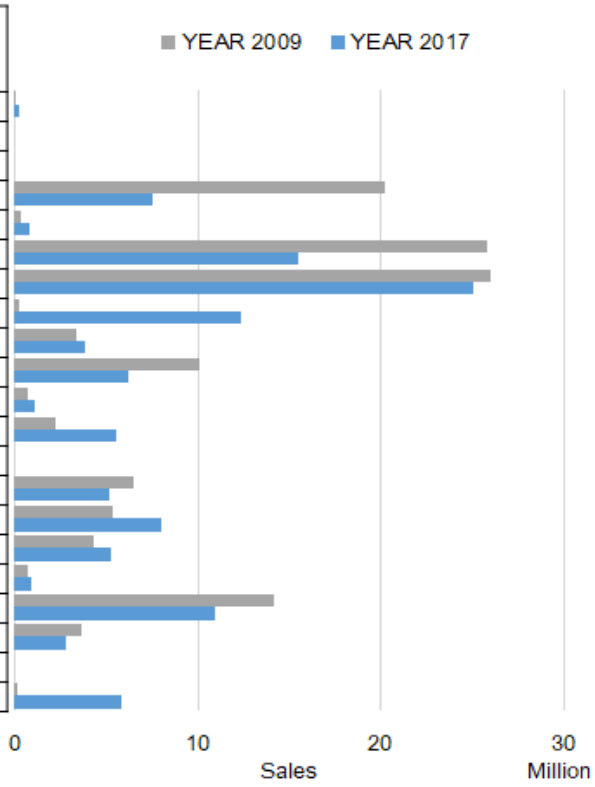
% of Total Employment		All Industry Sector (NAICS 2-digit codes)
2009	2017	
0.1	0.2	11: Agriculture, Forestry, Fishing & Hunt.
0.0	0.0	21: Mining
0.0	0.0	22: Utilities
6.8	5.0	23: Construction
0.5	0.8	31-33: Manufacturing
8.0	4.0	42: Wholesale Trade
19.0	11.0	44-45: Retail Trade
3.4	5.5	48-49: Transportation and Warehousing
4.4	4.8	51: Information
3.1	2.4	52: Finance and Insurance
0.7	0.8	53: Real Estate Rental and Leasing
3.5	5.0	54: Professional, Sci. & Tech. Services
0.0	0.0	55: Mgt. of Companies & Ent.
7.3	4.6	56: Admin. & Support / Waste Mgt.
5.7	5.0	61: Educational Services
6.2	6.2	62: Health Care and Social Assist.
1.4	1.2	71: Arts, Entertainment, & Recreation
13.5	17.0	72: Accommodation & Food Services
7.6	4.4	81: Other Services (except Public Admin.)
8.6	7.2	92: Public Administration
0.3	14.9	99: Unclassified



Between 2009 and 2017, the most noticeable variation is again the increase in employment in the Unclassified (99) sector, following from the same increase in the number of unclassified establishments in A-1. The Manufacturing (31-33), Transportation and Warehousing (48-49), Information (51), Professional, Scientific, and Technical Services (54), and Accommodation and Food Services (72) sectors also displayed increases in 2017 in both number and percentage of employment compared to 2009. On the other hand, the Construction (23), Wholesale Trade (42), Retail Trade (44-45), Administrative and Support and Waste Management and Remediation Services (56) and Other Services (except Public Administration) (81) sectors experienced decreases in 2017 in both number and percentage of overall employment compared to 2009.

12.8.3 Sales by 2-digit NAICS codes, Portland: St John's Town Center

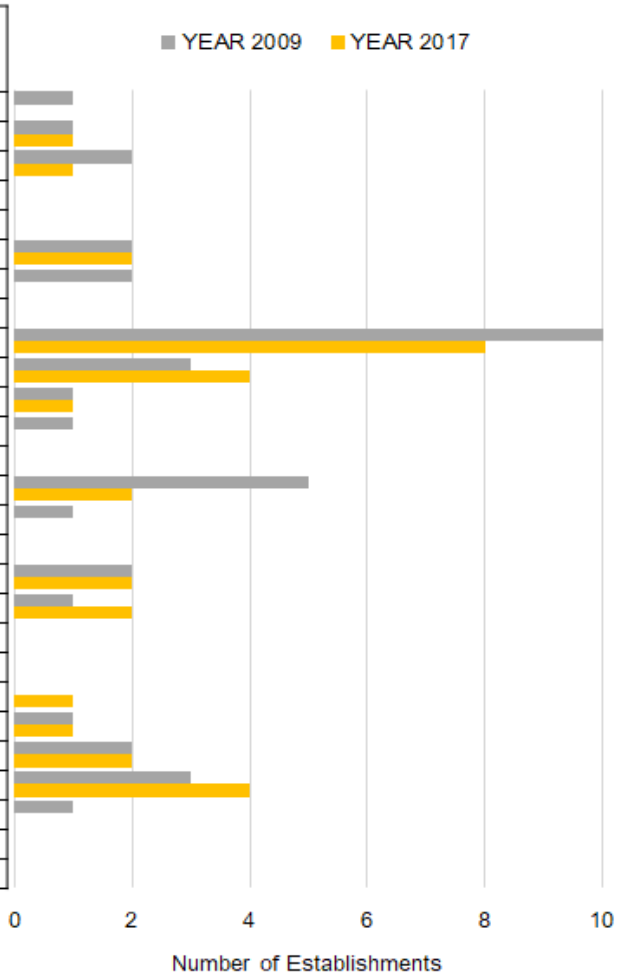
% of Total Sales		All Industry Sector (NAICS 2-digit codes)
2009	2017	
0.0	0.2	11: Agriculture, Forestry, Fishing & Hunt.
0.0	0.0	21: Mining
0.0	0.0	22: Utilities
16.3	6.4	23: Construction
0.3	0.7	31-33: Manufacturing
20.8	13.2	42: Wholesale Trade
20.9	21.4	44-45: Retail Trade
0.2	10.6	48-49: Transportation and Warehousing
2.8	3.3	51: Information
8.2	5.3	52: Finance and Insurance
0.6	1.0	53: Real Estate Rental and Leasing
1.8	4.7	54: Professional, Sci. & Tech. Services
0.0	0.0	55: Mgt. of Companies & Ent.
5.3	4.4	56: Admin. & Support / Waste Mgt.
4.3	6.8	61: Educational Services
3.5	4.5	62: Health Care and Social Assist.
0.6	0.8	71: Arts, Entertainment, & Recreation
11.4	9.3	72: Accommodation & Food Services
3.0	2.4	81: Other Services (except Public Admin.)
0.0	0.0	92: Public Administration
0.1	5.0	99: Unclassified



Between 2009 and 2017, the most noticeable variation is the decrease of sales that fall into the Construction (23) sector. The Wholesale Trade (42), Finance and Insurance (52), Administrative and Support and Waste Management and Remediation Services (56), Accommodation and Food Services (72), and Other Services (except Public Administration) (81) sectors also experienced decreases in 2017 in both sales figures and percentage of sales compared to 2009. On the other hand, the Manufacturing (31-33), Transportation and Warehousing (48-49), Information (51), Real Estate Rental and Leasing (53), Professional, Scientific, and Technical Services (54), Educational Services (61), and Health Care and Social Assistance (62) sectors experienced increases in 2017 in both figure and percentage of sales compared to 2009.

12.8.4 Retail establishments by 2-digit NAICS codes, Portland: St John's Town Center

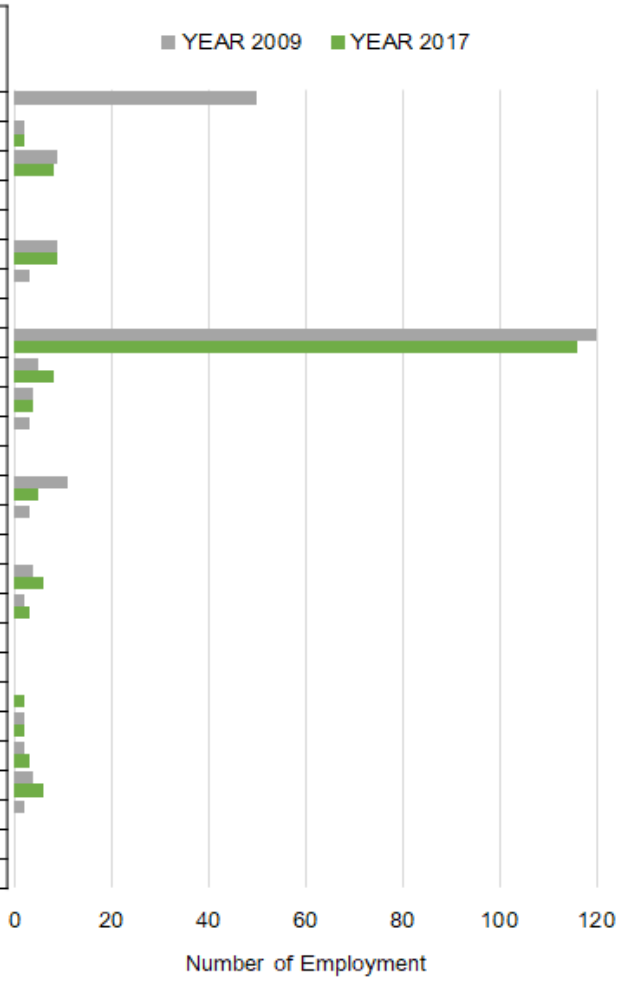
% of Total Establishments		Retail Trade Sector (4-digit NAICS codes)
2009	2017	
2.6	0.0	4411: Automobile
2.6	3.2	4412: Other Motor Vehicle
5.1	3.2	4413: Automotive Parts & Tire
0.0	0.0	4421: Furniture
0.0	0.0	4422: Home Furnishings
5.1	6.5	4431: Electronics & Appliance
5.1	0.0	4441: Building Material and Supplies
0.0	0.0	4442: Lawn and Garden Equip. & Supplies
25.6	25.8	4451: Grocery
7.7	12.9	4452: Specialty Food
2.6	3.2	4453: Liquor
2.6	0.0	4461: Health & Personal Care
0.0	0.0	4471: Gasoline
12.8	6.5	4481: Clothing
2.6	0.0	4482: Shoe
0.0	0.0	4483: Jewelry & Leather Goods
5.1	6.5	4511: Sporting Goods & Musical Inst.
2.6	6.5	4512: Book Stores & News Dealers
0.0	0.0	4522: Department Stores
0.0	0.0	4523: General Merchandise
0.0	3.2	4531: Florists
2.6	3.2	4532: Office Supplies
5.1	6.5	4533: Used Merchandise
7.7	12.9	4539: Other Miscellaneous
2.6	0.0	4541: Electronic Shopping & Mail-Order
0.0	0.0	4542: Vending Machine
0.0	0.0	4543: Direct Selling Est.



Between 2009 and 2017, the most noticeable variation is the decrease of establishments that fall into the Clothing Stores (4481) sector. The Automobile Dealers (4411), Automotive Parts, Accessories, and Tire Stores (4413), and Electronic Shopping and Mail-Order Houses (4541) sectors experienced decreases in 2017 in both number and percentage of establishments compared to 2009. On the other hand, the Specialty Food Stores (4452), Book Stores and News Dealers (4512) and Other Miscellaneous Store Retailers (4539) sectors displayed increases in 2017 in both number and percentage of establishments compared to 2009.

12.8.5 Retail employment by 2-digit NAICS codes, Portland: St John's Town Center

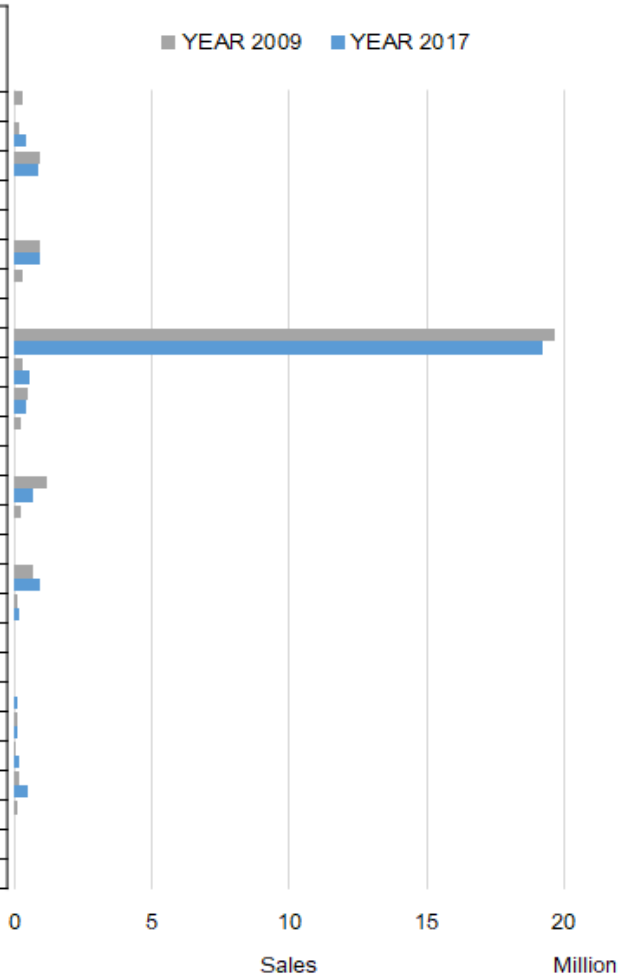
% of Total Employment		Retail Trade Sector (4-digit NAICS codes)
2009	2017	
21.3	0.0	4411: Automobile
0.9	1.1	4412: Other Motor Vehicle
3.8	4.6	4413: Automotive Parts & Tire
0.0	0.0	4421: Furniture
0.0	0.0	4422: Home Furnishings
3.8	5.2	4431: Electronics & Appliance
1.3	0.0	4441: Building Material and Supplies
0.0	0.0	4442: Lawn and Garden Equip. & Supplies
51.1	66.7	4451: Grocery
2.1	4.6	4452: Specialty Food
1.7	2.3	4453: Liquor
1.3	0.0	4461: Health & Personal Care
0.0	0.0	4471: Gasoline
4.7	2.9	4481: Clothing
1.3	0.0	4482: Shoe
0.0	0.0	4483: Jewelry & Leather Goods
1.7	3.4	4511: Sporting Goods & Musical Inst.
0.9	1.7	4512: Book Stores & News Dealers
0.0	0.0	4522: Department Stores
0.0	0.0	4523: General Merchandise
0.0	1.1	4531: Florists
0.9	1.1	4532: Office Supplies
0.9	1.7	4533: Used Merchandise
1.7	3.4	4539: Other Miscellaneous
0.9	0.0	4541: Electronic Shopping & Mail-Order
0.0	0.0	4542: Vending Machine
0.0	0.0	4543: Direct Selling Est.



Between 2009 and 2017, the most noticeable variation is the decrease of the Automobile Dealers (4411) sector. The Clothing Stores (4481), and Electronic Shopping and Mail-Order Houses (4541) sectors displayed decreases in both number and percentage of employment compared to 2009. On the other hand, the Grocery Stores (4451) sector experienced a decrease in the number of employment, but an increase in the percentage of employment in 2017 compared to 2009.

12.8.6 Retail sales by 2-digit NAICS codes, Portland: St John's Town Center

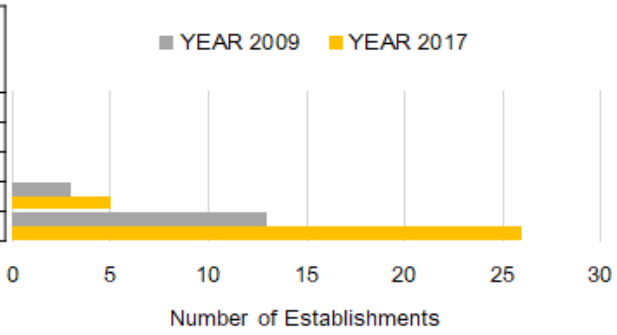
% of Total Sales		Retail Trade Sector (4-digit NAICS codes)
2009	2017	
1.1	0.0	4411: Automobile
0.7	1.8	4412: Other Motor Vehicle
3.5	3.5	4413: Automotive Parts & Tire
0.0	0.0	4421: Furniture
0.0	0.0	4422: Home Furnishings
3.6	3.8	4431: Electronics & Appliance
1.1	0.0	4441: Building Material and Supplies
0.0	0.0	4442: Lawn and Garden Equip. & Supplies
75.8	76.8	4451: Grocery
1.3	2.2	4452: Specialty Food
2.0	1.6	4453: Liquor
1.0	0.0	4461: Health & Personal Care
0.0	0.0	4471: Gasoline
4.6	2.7	4481: Clothing
1.0	0.0	4482: Shoe
0.0	0.0	4483: Jewelry & Leather Goods
2.5	3.7	4511: Sporting Goods & Musical Inst.
0.4	0.6	4512: Book Stores & News Dealers
0.0	0.0	4522: Department Stores
0.0	0.0	4523: General Merchandise
0.0	0.4	4531: Florists
0.3	0.4	4532: Office Supplies
0.3	0.6	4533: Used Merchandise
0.7	1.9	4539: Other Miscellaneous
0.4	0.0	4541: Electronic Shopping & Mail-Order
0.0	0.0	4542: Vending Machine
0.0	0.0	4543: Direct Selling Est.



Between 2009 and 2017, the Other Motor Vehicle Dealers (4412), Specialty Food Stores (4452), Sporting Goods, Hobby, and Musical Instrument Stores (4511), and Other Miscellaneous Store Retailers (4539) sectors experienced slight increases in 2017 in both figure and percentage of sales compared to 2009. On the other hand, Automobile Dealers (4411), Building Material and Supplies Dealers (4441), Beer, Wine, and Liquor Stores (4453), Health and Personal Care Stores (4461), and Clothing Stores (4481) sectors experienced decreases in 2017 in both figure and percentage of sales compared to 2009. The Grocery Stores (4451) experienced a decrease in the figure, but an increase in the percentage of sales in 2017 compared to 2009.

12.8.7 Food and drink establishments by 2-digit NAICS codes, Portland: St John's Town Center

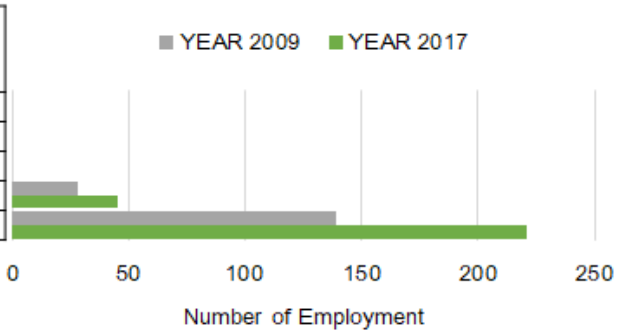
% of Total Establishments		Food & Drink Sector (5-digit NAICS codes)
2009	2017	
0.0	0.0	72231: Food Service Contractors
0.0	0.0	72232: Caterers
0.0	0.0	72233: Mobile Food Services
18.8	16.1	72241: Drinking Places (Alcoholic Bev.)
81.3	83.9	72251: Restaurants & Other Eating Places



Between 2009 and 2017, the Drinking Places (Alcoholic Beverages) (72241) sector displayed an increase in the number of establishments, but a decrease in the percentage of establishments in 2017 compared to 2009. On the other hand, the Restaurants & Other Eating Places (72251) sector experienced an increase in 2017 in both number and percentage of establishments compared to 2009.

12.8.8 Food and drink employment by 2-digit NAICS codes, Portland: St John's Town Center

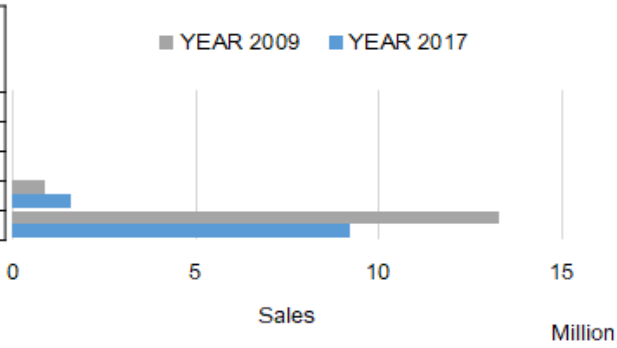
% of Total Employment		Food & Drink Sector (5-digit NAICS codes)
2009	2017	
0.0	0.0	72231: Food Service Contractors
0.0	0.0	72232: Caterers
0.0	0.0	72233: Mobile Food Services
16.8	16.9	72241: Drinking Places (Alcoholic Bev.)
83.2	83.1	72251: Restaurants & Other Eating Places



Between 2009 and 2017, both Drinking Places (Alcoholic Beverages) (72241) and the Restaurants & Other Eating Places (72251) sectors displayed increases in 2017 in the number of employment, but experienced little change in percentage of employment compared to 2009.

12.8.9 Food and drink sales by 2-digit NAICS codes, Portland: St John's Town Center

% of Total Employment		Food & Drink Sector (5-digit NAICS codes)
2009	2017	
0.0	0.0	72231: Food Service Contractors
0.0	0.0	72232: Caterers
0.0	0.0	72233: Mobile Food Services
6.3	14.6	72241: Drinking Places (Alcoholic Bev.)
93.7	85.4	72251: Restaurants & Other Eating Places

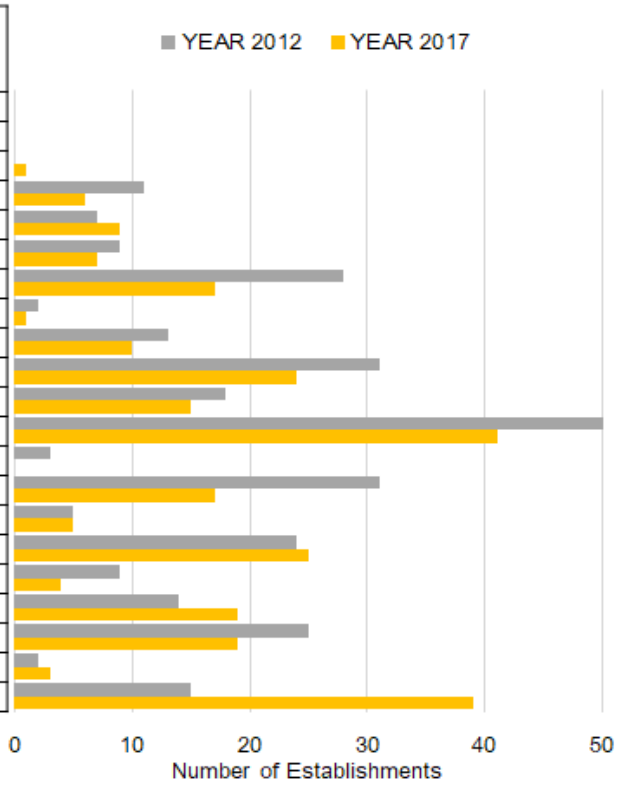


Between 2009 and 2017, the Drinking Places (Alcoholic Beverages) (72241) displayed an increase in 2017 in both figure and percentage of sales compared to 2009. On the other hand, the Restaurants & Other Eating Places (72251) sector experienced a decrease in 2017 in both figure and percentage of sales compared to 2009.

12.9 Beaverton: SW Rose Biggi Avenue

12.9.1 Establishments by 2-digit NAICS codes, Beaverton: SW Rose Biggi Avenue

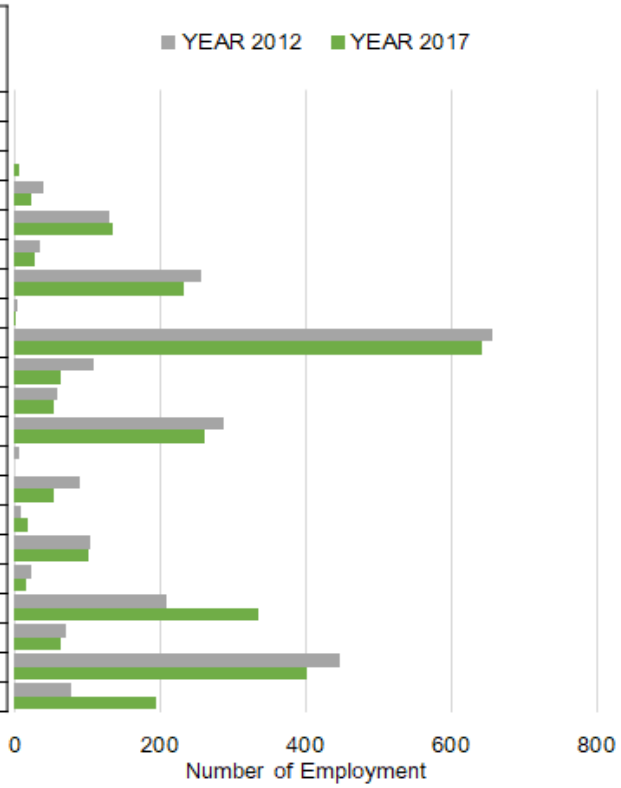
% of Total Establishments		All Industry Sector (NAICS 2-digit codes)
2012	2017	
0.0	0.0	11: Agriculture, Forestry, Fishing & Hunt.
0.0	0.0	21: Mining
0.0	0.4	22: Utilities
3.6	2.3	23: Construction
2.3	3.4	31-33: Manufacturing
2.9	2.7	42: Wholesale Trade
9.1	6.5	44-45: Retail Trade
0.6	0.4	48-49: Transportation and Warehousing
4.2	3.8	51: Information
10.0	9.2	52: Finance and Insurance
5.8	5.7	53: Real Estate Rental and Leasing
20.1	15.6	54: Professional, Sci. & Tech. Services
1.0	0.0	55: Mgt. of Companies & Ent.
10.0	6.5	56: Admin. & Support / Waste Mgt.
1.6	1.9	61: Educational Services
7.8	9.5	62: Health Care and Social Assist.
2.9	1.5	71: Arts, Entertainment, & Recreation
4.5	7.3	72: Accommodation & Food Services
8.1	7.3	81: Other Services (except Public Admin.)
0.6	1.1	92: Public Administration
4.9	14.9	99: Unclassified



Between 2012 and 2017, the most noticeable variation is the increase of establishments that fall into the Unclassified sector (99). The Health Care and Social Assistance (62) and Accommodation and Food Services (72) sectors also displayed increases in 2017 in both number and percentage of establishments compared to 2012. On the other hand, the Construction (23), Wholesale Trade (42), Professional, Scientific, and Technical Services (54), and Administrative and Waste Management (56) experienced decreases in 2017 in both number and percentage of establishments compared to 2012.

12.9.2 Employment by 2-digit NAICS codes, Beaverton: SW Rose Biggi Avenue

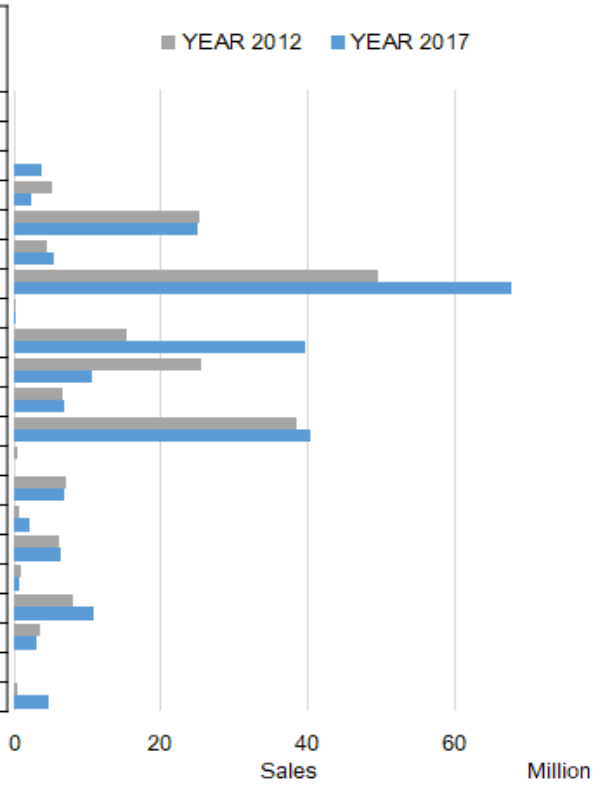
% of Total Employment		All Industry Sector (NAICS 2-digit codes)
2012	2017	
0.0	0.0	11: Agriculture, Forestry, Fishing & Hunt.
0.0	0.0	21: Mining
0.0	0.2	22: Utilities
1.6	0.9	23: Construction
5.0	5.2	31-33: Manufacturing
1.3	1.1	42: Wholesale Trade
9.8	8.8	44-45: Retail Trade
0.2	0.1	48-49: Transportation and Warehousing
25.0	24.4	51: Information
4.2	2.4	52: Finance and Insurance
2.3	2.0	53: Real Estate Rental and Leasing
11.0	9.9	54: Professional, Sci. & Tech. Services
0.2	0.0	55: Mgt. of Companies & Ent.
3.5	2.1	56: Admin. & Support / Waste Mgt.
0.4	0.7	61: Educational Services
4.0	3.8	62: Health Care and Social Assist.
0.9	0.6	71: Arts, Entertainment, & Recreation
8.0	12.8	72: Accommodation & Food Services
2.7	2.4	81: Other Services (except Public Admin.)
17.0	15.2	92: Public Administration
3.0	7.4	99: Unclassified



Between 2012 and 2017, the most noticeable variation is the increase of establishments that fall into the Accommodation and Food Services (72) sector. The Manufacturing (31-33) and Unclassified (99) sectors also displayed increases in 2017 in both number and percentage of employment compared to 2012. On the other hand, most other sectors, including Wholesale Trade (42) and Finance and Insurance (52) sector, experienced decreases in 2017 in both number and percentage compared to 2012.

12.9.3 Sales by 2-digit NAICS codes, Beaverton: SW Rose Biggi Avenue

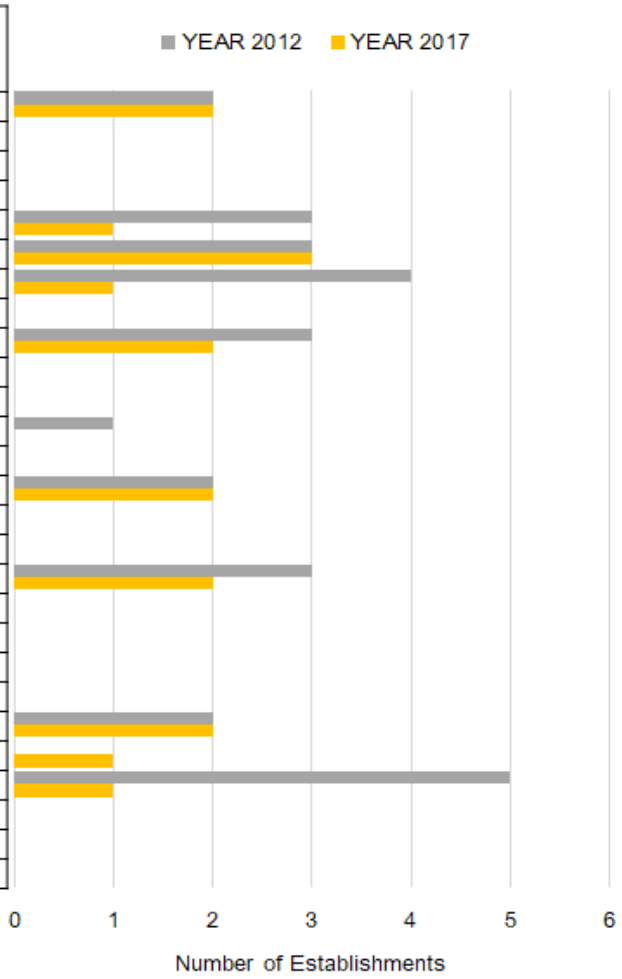
% of Total Sales		All Industry Sector (NAICS 2-digit codes)
2012	2017	
0.0	0.0	11: Agriculture, Forestry, Fishing & Hunt.
0.0	0.0	21: Mining
0.0	1.6	22: Utilities
2.7	1.0	23: Construction
12.8	10.6	31-33: Manufacturing
2.2	2.3	42: Wholesale Trade
25.1	28.8	44-45: Retail Trade
0.1	0.1	48-49: Transportation and Warehousing
7.7	16.8	51: Information
12.9	4.5	52: Finance and Insurance
3.4	2.9	53: Real Estate Rental and Leasing
19.4	17.1	54: Professional, Sci. & Tech. Services
0.2	0.0	55: Mgt. of Companies & Ent.
3.5	2.8	56: Admin. & Support / Waste Mgt.
0.4	0.9	61: Educational Services
3.1	2.6	62: Health Care and Social Assist.
0.4	0.2	71: Arts, Entertainment, & Recreation
4.1	4.5	72: Accommodation & Food Services
1.8	1.3	81: Other Services (except Public Admin.)
0.0	0.0	92: Public Administration
0.2	2.0	99: Unclassified



Between 2012 and 2017, the most noticeable variation is the increase of sales that fall into the Information (51) sector. The Utilities (22), Retail Trade (44-45) and Accommodation and Food Services (72) sectors displayed increases in 2017 in both figure and percentage of sales compared to 2012. On the other hand, Administrative and Waste Management (56) and Other Services (except Public Admin) (81) experienced decreases in 2017 in both figure and percentage of sales compared to 2012.

12.9.4 Retail establishments by 2-digit NAICS codes, Beaverton: SW Rose Biggi Avenue

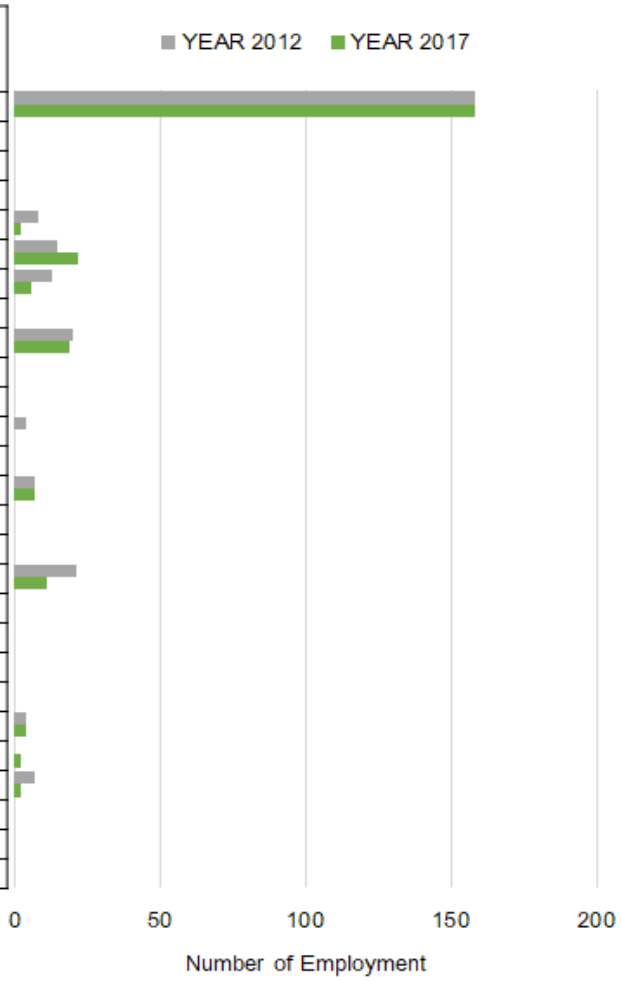
% of Total Establishments		Retail Trade Sector (4-digit NAICS codes)
2012	2017	
7.1	11.8	4411: Automobile
0.0	0.0	4412: Other Motor Vehicle
0.0	0.0	4413: Automotive Parts & Tire
0.0	0.0	4421: Furniture
10.7	5.9	4422: Home Furnishings
10.7	17.6	4431: Electronics & Appliance
14.3	5.9	4441: Building Material and Supplies
0.0	0.0	4442: Lawn and Garden Equip. & Supplies
10.7	11.8	4451: Grocery
0.0	0.0	4452: Specialty Food
0.0	0.0	4453: Liquor
3.6	0.0	4461: Health & Personal Care
0.0	0.0	4471: Gasoline
7.1	11.8	4481: Clothing
0.0	0.0	4482: Shoe
0.0	0.0	4483: Jewelry & Leather Goods
10.7	11.8	4511: Sporting Goods & Musical Inst.
0.0	0.0	4512: Book Stores & News Dealers
0.0	0.0	4522: Department Stores
0.0	0.0	4523: General Merchandise
0.0	0.0	4531: Florists
7.1	11.8	4532: Office Supplies
0.0	5.9	4533: Used Merchandise
17.9	5.9	4539: Other Miscellaneous
0.0	0.0	4541: Electronic Shopping & Mail-Order
0.0	0.0	4542: Vending Machine
0.0	0.0	4543: Direct Selling Est.



Between 2012 and 2017, the most noticeable variation is the decrease of sales that fall into the Other Miscellaneous (4539) sector. The Home Furnishings (4422) and Building Material (4441) also experienced decreases in 2017 in both number and percentage of establishments compared to 2012.

12.9.5 Retail employment by 2-digit NAICS codes, Beaverton: SW Rose Biggi Avenue

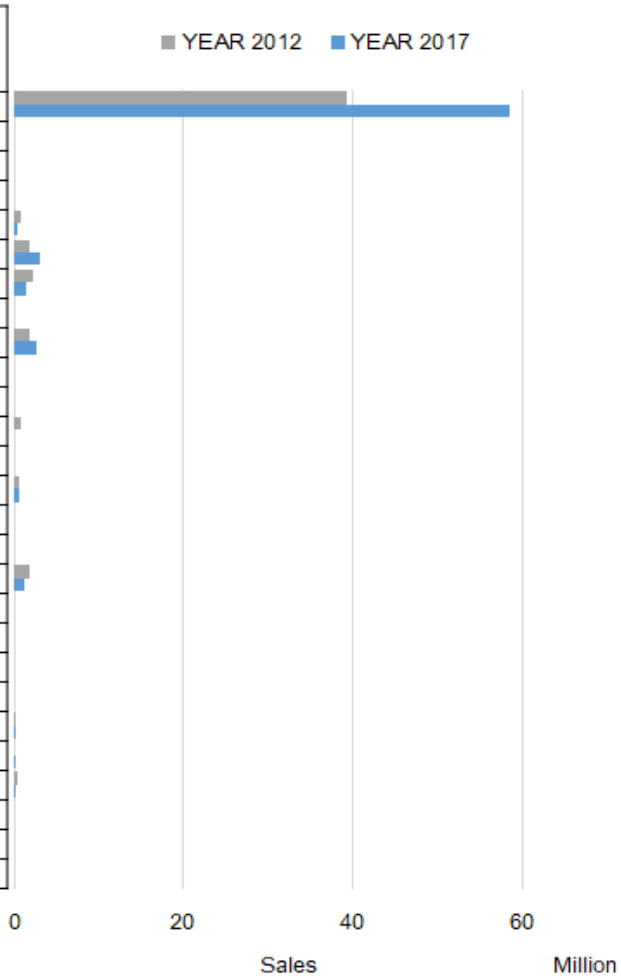
% of Total Employment		Retail Trade Sector (4-digit NAICS codes)
2012	2017	
61.5	67.8	4411: Automobile
0.0	0.0	4412: Other Motor Vehicle
0.0	0.0	4413: Automotive Parts & Tire
0.0	0.0	4421: Furniture
3.1	0.9	4422: Home Furnishings
5.8	9.4	4431: Electronics & Appliance
5.1	2.6	4441: Building Material and Supplies
0.0	0.0	4442: Lawn and Garden Equip. & Supplies
7.8	8.2	4451: Grocery
0.0	0.0	4452: Specialty Food
0.0	0.0	4453: Liquor
1.6	0.0	4461: Health & Personal Care
0.0	0.0	4471: Gasoline
2.7	3.0	4481: Clothing
0.0	0.0	4482: Shoe
0.0	0.0	4483: Jewelry & Leather Goods
8.2	4.7	4511: Sporting Goods & Musical Inst.
0.0	0.0	4512: Book Stores & News Dealers
0.0	0.0	4522: Department Stores
0.0	0.0	4523: General Merchandise
0.0	0.0	4531: Florists
1.6	1.7	4532: Office Supplies
0.0	0.9	4533: Used Merchandise
2.7	0.9	4539: Other Miscellaneous
0.0	0.0	4541: Electronic Shopping & Mail-Order
0.0	0.0	4542: Vending Machine
0.0	0.0	4543: Direct Selling Est.



Between 2012 and 2017, only the Electronics (4431) sector displayed an increase in 2017 in both number and percentage of employment compared to 2012. On the other hand, most other sectors experienced little change or decreases in 2017 in both number and percentage of employment compared to 2012.

12.9.6 Retail sales by 2-digit NAICS codes, Beaverton: SW Rose Biggi Avenue

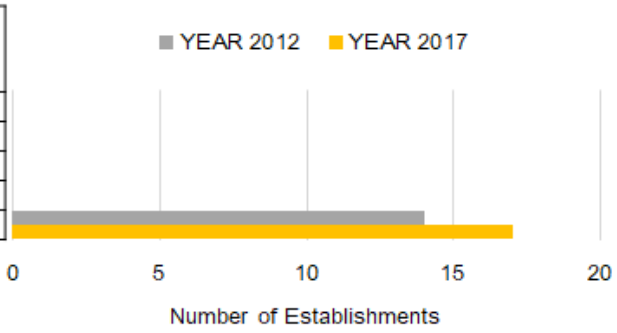
% of Total Sales		Retail Trade Sector (4-digit NAICS codes)
2012	2017	
79.1	86.2	4411: Automobile
0.0	0.0	4412: Other Motor Vehicle
0.0	0.0	4413: Automotive Parts & Tire
0.0	0.0	4421: Furniture
1.7	0.4	4422: Home Furnishings
3.7	4.5	4431: Electronics & Appliance
4.5	1.9	4441: Building Material and Supplies
0.0	0.0	4442: Lawn and Garden Equip. & Supplies
3.8	3.7	4451: Grocery
0.0	0.0	4452: Specialty Food
0.0	0.0	4453: Liquor
1.3	0.0	4461: Health & Personal Care
0.0	0.0	4471: Gasoline
0.9	0.9	4481: Clothing
0.0	0.0	4482: Shoe
0.0	0.0	4483: Jewelry & Leather Goods
3.8	1.6	4511: Sporting Goods & Musical Inst.
0.0	0.0	4512: Book Stores & News Dealers
0.0	0.0	4522: Department Stores
0.0	0.0	4523: General Merchandise
0.0	0.0	4531: Florists
0.4	0.4	4532: Office Supplies
0.0	0.1	4533: Used Merchandise
0.8	0.3	4539: Other Miscellaneous
0.0	0.0	4541: Electronic Shopping & Mail-Order
0.0	0.0	4542: Vending Machine
0.0	0.0	4543: Direct Selling Est.



Between 2012 and 2017, only the Electronics (4431) sector displayed an increase in 2017 in both figure and percentage of sales compared to 2012. On the other hand, most other sectors experienced little change or decreases in 2017 in both figure and percentage of sales compared to 2012.

12.9.7 Food and drink establishments by 2-digit NAICS codes, Beaverton: SW Rose Biggi Avenue

% of Total Establishments		Food & Drink Sector (5-digit NAICS codes)
2012	2017	
0.0	0.0	72231: Food Service Contractors
0.0	0.0	72232: Caterers
0.0	0.0	72233: Mobile Food Services
0.0	0.0	72241: Drinking Places (Alcoholic Bev.)
100.0	100.0	72251: Restaurants & Other Eating Places



Between 2012 and 2017, the Restaurants & Other Eating Places (72251) sector displayed an increase in 2017 in the number of establishments compared to 2012.

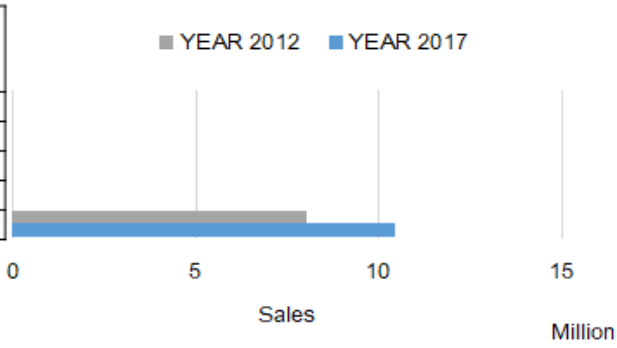
12.9.8 Food and drink employment by 2-digit NAICS codes, Beaverton: SW Rose Biggi Avenue

% of Total Employment		Food & Drink Sector (5-digit NAICS codes)
2012	2017	
0.0	0.0	72231: Food Service Contractors
0.0	0.0	72232: Caterers
0.0	0.0	72233: Mobile Food Services
0.0	0.0	72241: Drinking Places (Alcoholic Bev.)
100.0	100.0	72251: Restaurants & Other Eating Places

Between 2012 and 2017, the Restaurants & Other Eating Places (72251) sector displayed an increase in 2017 in the number of employment compared to 2012.

12.9.9 Food and drink sales by 2-digit NAICS codes, Beaverton: SW Rose Biggi Avenue

% of Total Employment		Food & Drink Sector (5-digit NAICS codes)
2012	2017	
0.0	0.0	72231: Food Service Contractors
0.0	0.0	72232: Caterers
0.0	0.0	72233: Mobile Food Services
0.0	0.0	72241: Drinking Places (Alcoholic Bev.)
100.0	100.0	72251: Restaurants & Other Eating Places

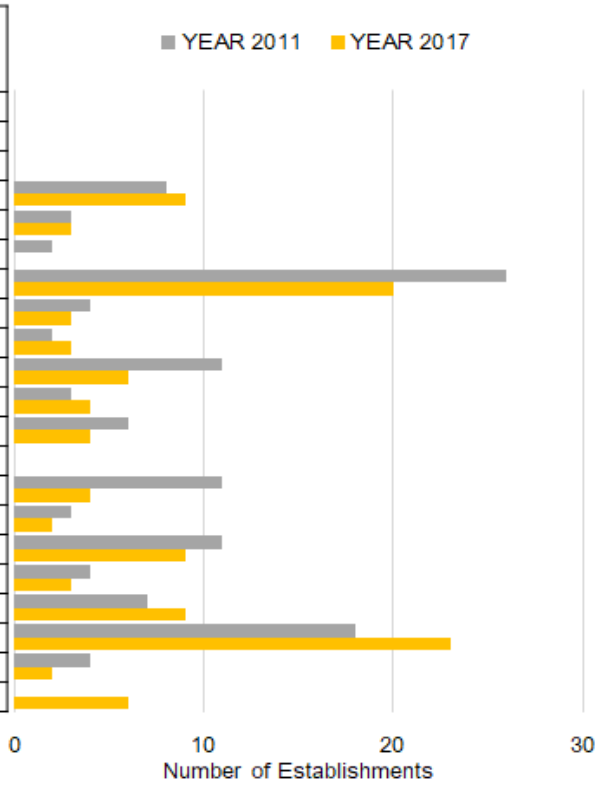


Between 2012 and 2017, the Restaurants & Other Eating Places (72251) sector displayed an increase in 2017 in the figure of sales compared to 2012.

12.10 Cornelius: E Baseline Street

12.10.1 Establishments by 2-digit NAICS codes, Cornelius: E Baseline Street

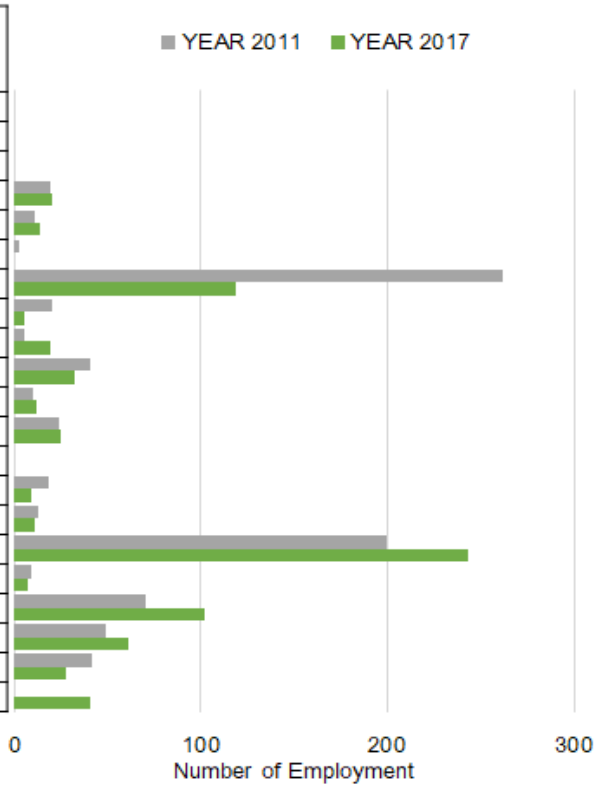
% of Total Establishments		All Industry Sector (NAICS 2-digit codes)
2011	2017	
0.0	0.0	11: Agriculture, Forestry, Fishing & Hunt.
0.0	0.0	21: Mining
0.0	0.0	22: Utilities
6.5	8.2	23: Construction
2.4	2.7	31-33: Manufacturing
1.6	0.0	42: Wholesale Trade
21.1	18.2	44-45: Retail Trade
3.3	2.7	48-49: Transportation and Warehousing
1.6	2.7	51: Information
8.9	5.5	52: Finance and Insurance
2.4	3.6	53: Real Estate Rental and Leasing
4.9	3.6	54: Professional, Sci. & Tech. Services
0.0	0.0	55: Mgt. of Companies & Ent.
8.9	3.6	56: Admin. & Support / Waste Mgt.
2.4	1.8	61: Educational Services
8.9	8.2	62: Health Care and Social Assist.
3.3	2.7	71: Arts, Entertainment, & Recreation
5.7	8.2	72: Accommodation & Food Services
14.6	20.9	81: Other Services (except Public Admin.)
3.3	1.8	92: Public Administration
0.0	5.5	99: Unclassified



Between 2011 and 2017, Retail Trade (44-45), Transportation and Warehousing (48-49), Finance and Insurance (52), Professional, Scientific, and Technical Services (54) Administrative and Support and Waste Management and Remediation Services (56) and Health Care and Social Assistance (62) sectors experienced decreases in both the number and percentage of establishments. On the other hand, the Construction (23) Information (51), Accommodation and Food Services (72), Other Services (except Public Administration) (81), and Unclassified (99) sector in 2017 increased its size both in number and percentage of establishments compared to 2011.

12.10.2 Employment by 2-digit NAICS codes, Cornelius: E Baseline Street

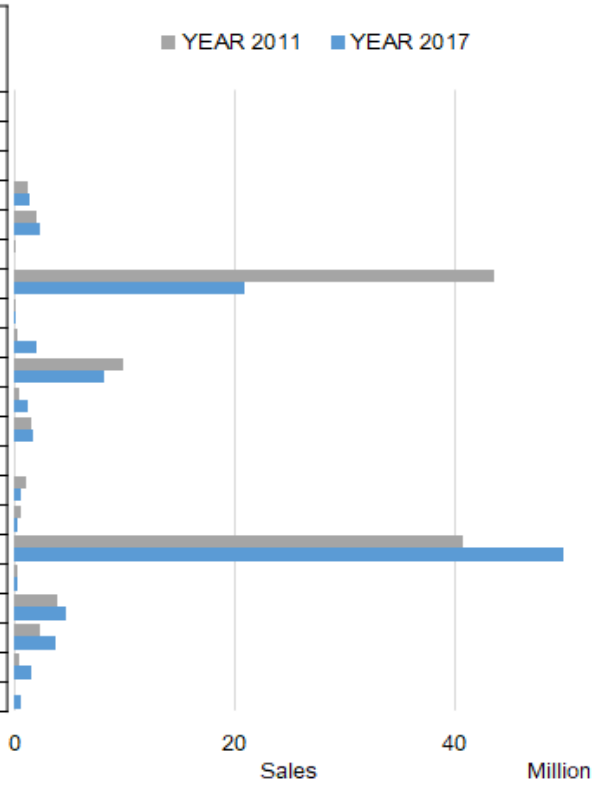
% of Total Employment		All Industry Sector (NAICS 2-digit codes)
2011	2017	
0.0	0.0	11: Agriculture, Forestry, Fishing & Hunt.
0.0	0.0	21: Mining
0.0	0.0	22: Utilities
2.4	2.7	23: Construction
1.4	1.9	31-33: Manufacturing
0.4	0.0	42: Wholesale Trade
32.9	15.9	44-45: Retail Trade
2.5	0.7	48-49: Transportation and Warehousing
0.6	2.5	51: Information
5.2	4.3	52: Finance and Insurance
1.3	1.6	53: Real Estate Rental and Leasing
3.0	3.3	54: Professional, Sci. & Tech. Services
0.0	0.0	55: Mgt. of Companies & Ent.
2.3	1.2	56: Admin. & Support / Waste Mgt.
1.6	1.5	61: Educational Services
25.1	32.5	62: Health Care and Social Assist.
1.1	0.9	71: Arts, Entertainment, & Recreation
8.8	13.6	72: Accommodation & Food Services
6.2	8.2	81: Other Services (except Public Admin.)
5.3	3.7	92: Public Administration
0.0	5.5	99: Unclassified



Between 2011 and 2017, the most noticeable variation is the decrease in the number of employment fall into the Retail Trade (44-45) sector compared to 2011. On the other hand, the Health Care and Social Assistance (62), Accommodation and Food Services (72) and Unclassified (99) sectors displayed increases in both number and percentage of overall employment.

12.10.3 Sales by 2-digit NAICS codes, Cornelius: E Baseline Street

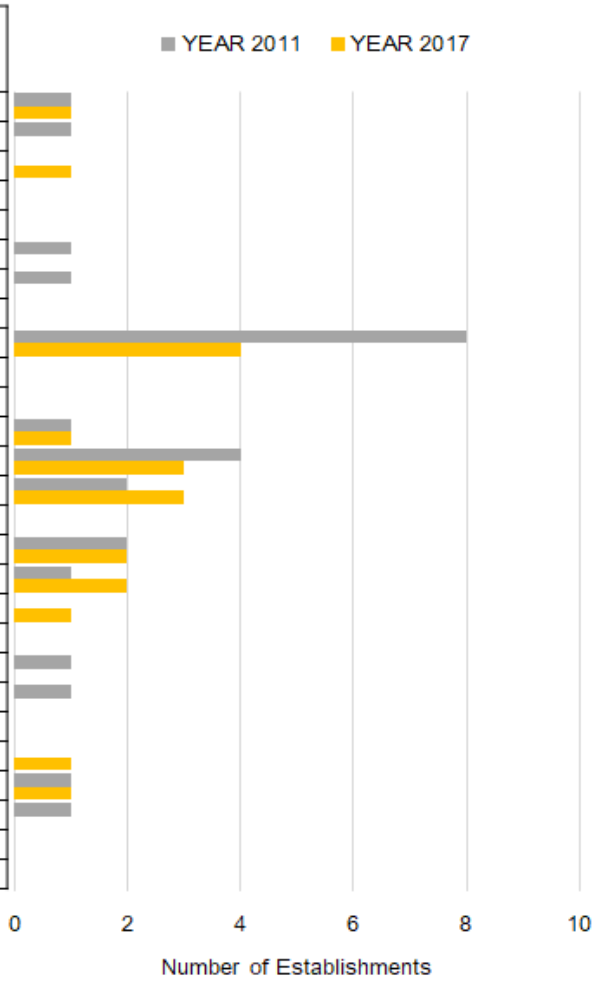
% of Total Sales		All Industry Sector (NAICS 2-digit codes)
2011	2017	
0.0	0.0	11: Agriculture, Forestry, Fishing & Hunt.
0.0	0.0	21: Mining
0.0	0.0	22: Utilities
1.2	1.4	23: Construction
1.9	2.3	31-33: Manufacturing
0.1	0.0	42: Wholesale Trade
40.1	21.1	44-45: Retail Trade
0.2	0.2	48-49: Transportation and Warehousing
0.3	2.0	51: Information
9.1	8.2	52: Finance and Insurance
0.5	1.2	53: Real Estate Rental and Leasing
1.5	1.7	54: Professional, Sci. & Tech. Services
0.0	0.0	55: Mgt. of Companies & Ent.
0.9	0.6	56: Admin. & Support / Waste Mgt.
0.5	0.3	61: Educational Services
37.4	50.1	62: Health Care and Social Assist.
0.3	0.3	71: Arts, Entertainment, & Recreation
3.5	4.7	72: Accommodation & Food Services
2.2	3.7	81: Other Services (except Public Admin.)
0.4	1.5	92: Public Administration
0.0	0.6	99: Unclassified



Between 2011 and 2017, the most noticeable variation is the decrease of sales that fall into the Retail Trade (44-45) sector. On the other hand, the Information (51) Health Care and Social Assistance (62), Accommodation and Food Services (72), Other Services (except Public Administration) (81), Public Administration (92), and Unclassified (99) sectors displayed increases in 2017 in both sales figures and percentage compared to 2011.

12.10.4 Retail establishments by 2-digit NAICS codes, Cornelius: E Baseline Street

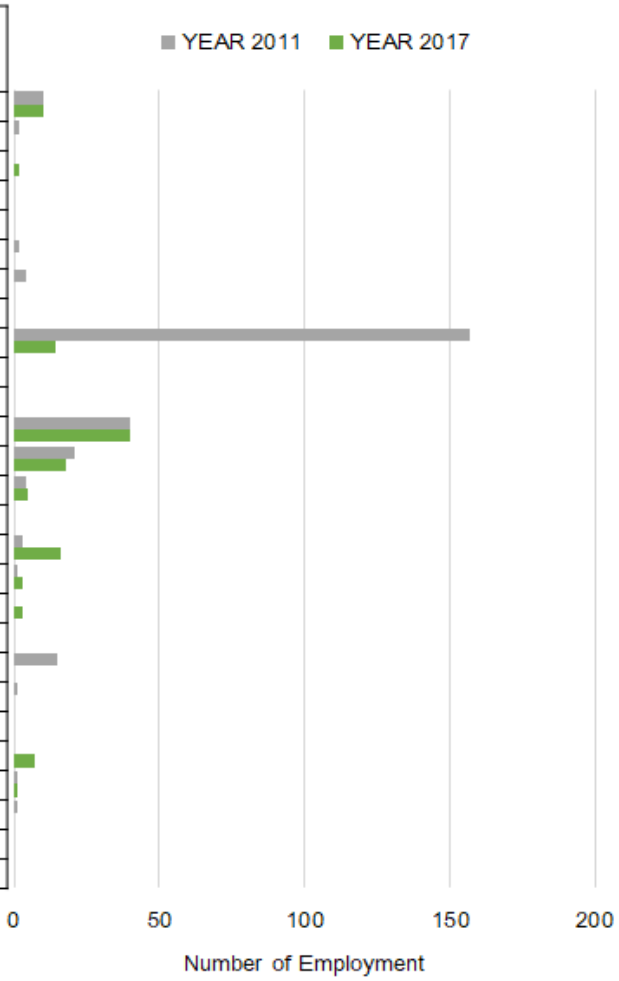
% of Total Establishments		Retail Trade Sector (4-digit NAICS codes)
2011	2017	
3.8	5.0	4411: Automobile
3.8	0.0	4412: Other Motor Vehicle
0.0	5.0	4413: Automotive Parts & Tire
0.0	0.0	4421: Furniture
0.0	0.0	4422: Home Furnishings
3.8	0.0	4431: Electronics & Appliance
3.8	0.0	4441: Building Material and Supplies
0.0	0.0	4442: Lawn and Garden Equip. & Supplies
30.8	20.0	4451: Grocery
0.0	0.0	4452: Specialty Food
0.0	0.0	4453: Liquor
3.8	5.0	4461: Health & Personal Care
15.4	15.0	4471: Gasoline
7.7	15.0	4481: Clothing
0.0	0.0	4482: Shoe
7.7	10.0	4483: Jewelry & Leather Goods
3.8	10.0	4511: Sporting Goods & Musical Inst.
0.0	5.0	4512: Book Stores & News Dealers
0.0	0.0	4522: Department Stores
3.8	0.0	4523: General Merchandise
3.8	0.0	4531: Florists
0.0	0.0	4532: Office Supplies
0.0	5.0	4533: Used Merchandise
3.8	5.0	4539: Other Miscellaneous
3.8	0.0	4541: Electronic Shopping & Mail-Order
0.0	0.0	4542: Vending Machine
0.0	0.0	4543: Direct Selling Est.



Between 2011 and 2017, the noticeable variation is the decrease in establishments in the Grocery Stores (4451) compared to 2011. The Other Motor Vehicle Dealers (4412), Electronics and Appliance Stores (4431), Building Material and Supplies Dealers (4441), Gasoline Stations (4471), General Merchandise Stores, including Warehouse Clubs and Supercenters (4523), Florists (4531), and Electronic Shopping and Mail-Order Houses (4541) sector also experienced decreases in 2017 in both number and percentage of establishments compared to 2011. On the other hand, the Clothing Stores (4481) and Sporting Goods, Hobby, and Musical Instrument Stores (4511) sectors displayed increases in 2017 in both number and percentage of establishments compared to 2011.

12.10.5 Retail employment by 2-digit NAICS codes, Cornelius: E Baseline Street

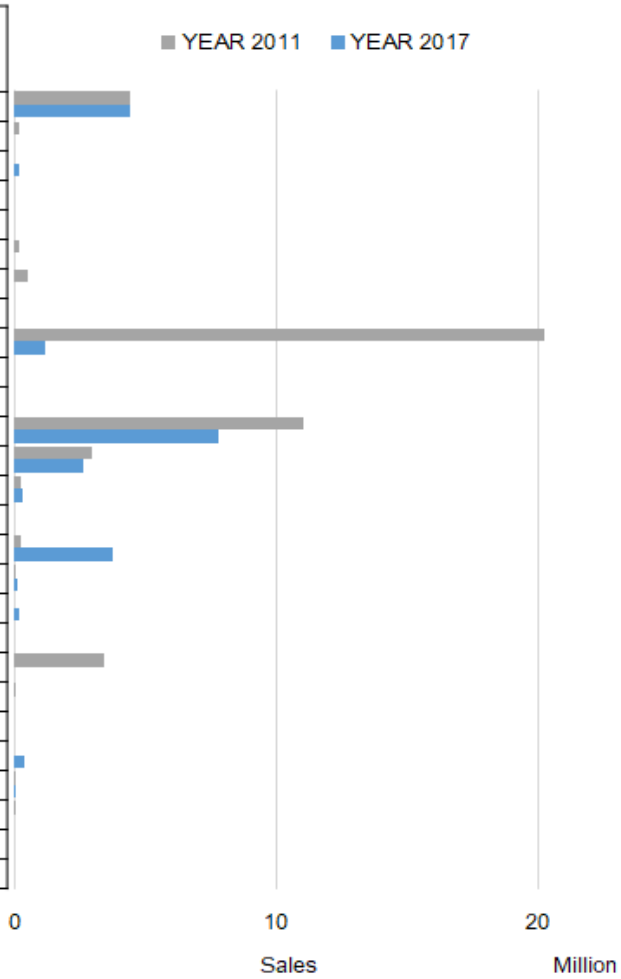
% of Total Employment		Retail Trade Sector (4-digit NAICS codes)
2011	2017	
3.8	8.4	4411: Automobile
0.8	0.0	4412: Other Motor Vehicle
0.0	1.7	4413: Automotive Parts & Tire
0.0	0.0	4421: Furniture
0.0	0.0	4422: Home Furnishings
0.8	0.0	4431: Electronics & Appliance
1.5	0.0	4441: Building Material and Supplies
0.0	0.0	4442: Lawn and Garden Equip. & Supplies
59.9	11.8	4451: Grocery
0.0	0.0	4452: Specialty Food
0.0	0.0	4453: Liquor
15.3	33.6	4461: Health & Personal Care
8.0	15.1	4471: Gasoline
1.5	4.2	4481: Clothing
0.0	0.0	4482: Shoe
1.1	13.4	4483: Jewelry & Leather Goods
0.4	2.5	4511: Sporting Goods & Musical Inst.
0.0	2.5	4512: Book Stores & News Dealers
0.0	0.0	4522: Department Stores
5.7	0.0	4523: General Merchandise
0.4	0.0	4531: Florists
0.0	0.0	4532: Office Supplies
0.0	5.9	4533: Used Merchandise
0.4	0.8	4539: Other Miscellaneous
0.4	0.0	4541: Electronic Shopping & Mail-Order
0.0	0.0	4542: Vending Machine
0.0	0.0	4543: Direct Selling Est.



Between 2011 and 2017, the noticeable variation is the decrease in employment in the Grocery (4451) compared to 2011. On the other hand, the Jewelry, Luggage, and Leather Goods Stores (4483) and Used Merchandise Stores (4533) sectors experienced increases in 2017 in both number and percentage of employment compared to 2011.

12.10.6 Retail sales by 2-digit NAICS codes, Cornelius: E Baseline Street

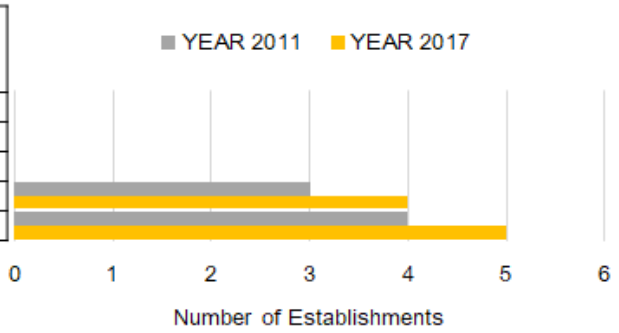
% of Total Sales		Retail Trade Sector (4-digit NAICS codes)
2011	2017	
10.1	21.0	4411: Automobile
0.5	0.0	4412: Other Motor Vehicle
0.0	1.0	4413: Automotive Parts & Tire
0.0	0.0	4421: Furniture
0.0	0.0	4422: Home Furnishings
0.4	0.0	4431: Electronics & Appliance
1.1	0.0	4441: Building Material and Supplies
0.0	0.0	4442: Lawn and Garden Equip. & Supplies
46.3	5.6	4451: Grocery
0.0	0.0	4452: Specialty Food
0.0	0.0	4453: Liquor
25.3	37.2	4461: Health & Personal Care
6.8	12.5	4471: Gasoline
0.5	1.6	4481: Clothing
0.0	0.0	4482: Shoe
0.6	17.8	4483: Jewelry & Leather Goods
0.1	0.5	4511: Sporting Goods & Musical Inst.
0.0	0.7	4512: Book Stores & News Dealers
0.0	0.0	4522: Department Stores
7.9	0.0	4523: General Merchandise
0.1	0.0	4531: Florists
0.0	0.0	4532: Office Supplies
0.0	1.8	4533: Used Merchandise
0.1	0.2	4539: Other Miscellaneous
0.1	0.0	4541: Electronic Shopping & Mail-Order
0.0	0.0	4542: Vending Machine
0.0	0.0	4543: Direct Selling Est.



Between 2011 and 2017, the most noticeable variation is the decrease in sales in the Grocery Stores (4451) compared to 2011. The General Merchandise Stores, including Warehouse Clubs and Supercenters (4523) sector also experienced a decrease in 2017 in both figure and percentage of sales compared to 2011. The Health and Personal Care Stores (4461) and Gasoline Stations (4471) sectors in 2017 experienced increases in the percentage of sales, but decreased in figure terms compared to 2011. On the other hand, the Jewelry, Luggage, and Leather Goods Stores (4483) sector in 2017 displayed an increase in both figures and percentages of sales compared to 2011.

12.10.7 Food and drink establishments by 2-digit NAICS codes, Cornelius: E Baseline Street

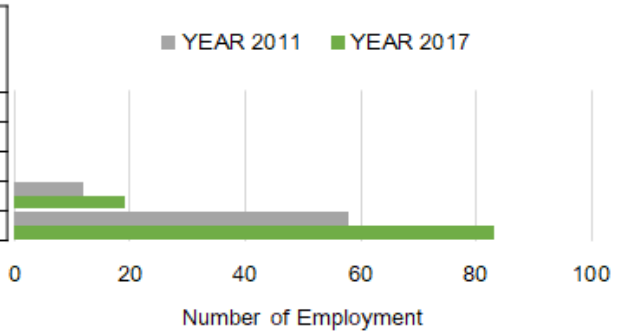
% of Total Establishments		Food & Drink Sector (5-digit NAICS codes)
2011	2017	
0.0	0.0	72231: Food Service Contractors
0.0	0.0	72232: Caterers
0.0	0.0	72233: Mobile Food Services
42.9	44.4	72241: Drinking Places (Alcoholic Bev.)
57.1	55.6	72251: Restaurants & Other Eating Places



Between 2011 and 2017, the Restaurants & Other Eating Places (72251) sector experienced an increase in 2017 in number of establishments, but a decrease in the percentage compared to 2011. The Drinking Places (Alcoholic Bev.) (72241) sector displayed increases in both number and percentage of establishments compared to 2011.

12.10.8 Food and drink employment by 2-digit NAICS codes, Cornelius: E Baseline Street

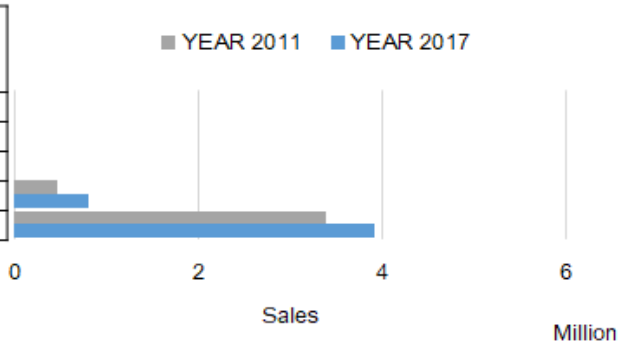
% of Total Employment		Food & Drink Sector (5-digit NAICS codes)
2011	2017	
0.0	0.0	72231: Food Service Contractors
0.0	0.0	72232: Caterers
0.0	0.0	72233: Mobile Food Services
17.1	18.6	72241: Drinking Places (Alcoholic Bev.)
82.9	81.4	72251: Restaurants & Other Eating Places



Between 2011 and 2017, the Restaurants & Other Eating Places (72251) sector experienced an increase in 2017 in number of employment, but a decrease in the percentage compared to 2011. The Drinking Places (Alcoholic Bev.) (72241) sector displayed increases in both number and percentage of employment compared to 2011.

12.10.9 Food and drink sales by 2-digit NAICS codes, Cornelius: E Baseline Street

% of Total Sales		Food & Drink Sector (5-digit NAICS codes)
2011	2017	
0.0	0.0	72231: Food Service Contractors
0.0	0.0	72232: Caterers
0.0	0.0	72233: Mobile Food Services
12.2	16.9	72241: Drinking Places (Alcoholic Bev.)
87.8	83.1	72251: Restaurants & Other Eating Places

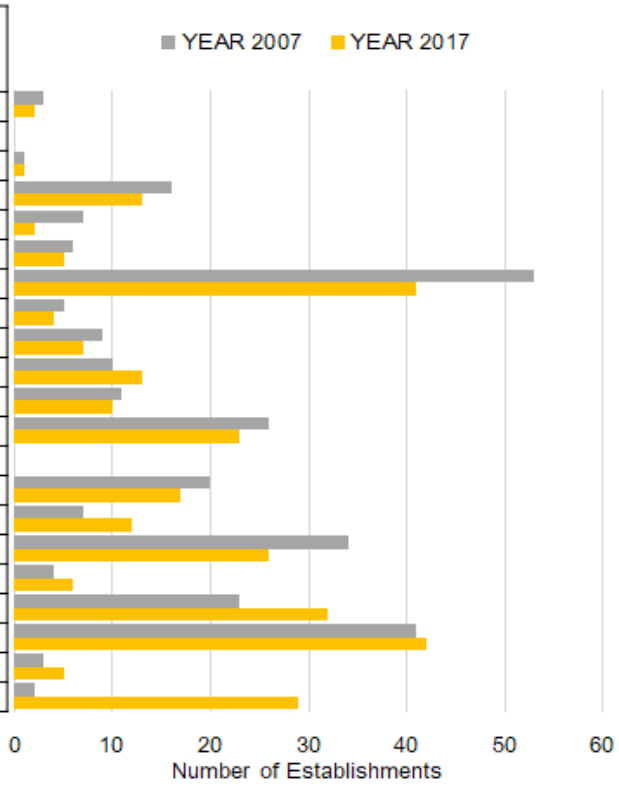


Between 2011 and 2017, the Restaurants & Other Eating Places (72251) sector experienced an increase in 2017 in figure of sales, but a decrease in the percentage compared to 2011. The Drinking Places (Alcoholic Bev.) (72241) sector displayed increases in both number and percentage of sales compared to 2011.

12.11 Forest Grove: Town Center

12.11.1 Establishments by 2-digit NAICS codes, Forest Grove: Town Center

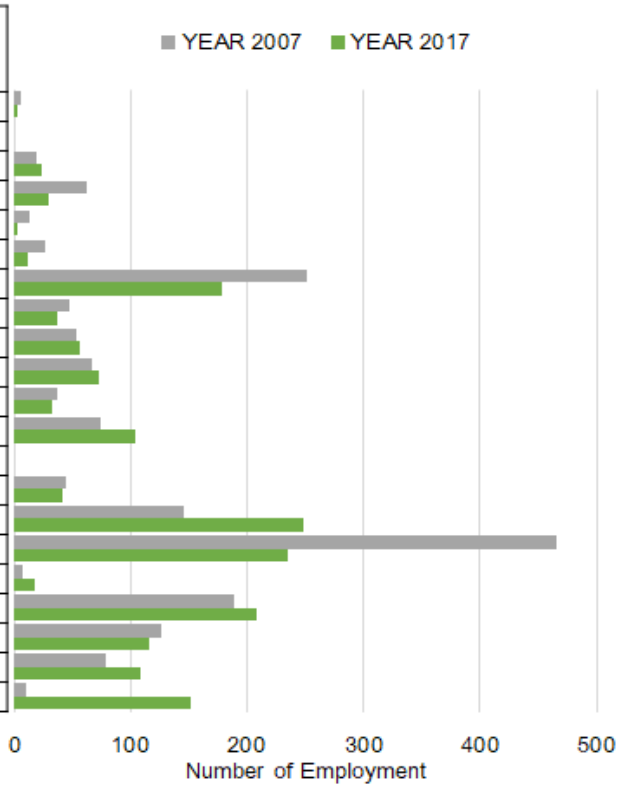
% of Total Establishments		All Industry Sector (NAICS 2-digit codes)
2007	2017	
1.1	0.7	11: Agriculture, Forestry, Fishing & Hunt.
0.0	0.0	21: Mining
0.4	0.3	22: Utilities
5.7	4.5	23: Construction
2.5	0.7	31-33: Manufacturing
2.1	1.7	42: Wholesale Trade
18.9	14.1	44-45: Retail Trade
1.8	1.4	48-49: Transportation and Warehousing
3.2	2.4	51: Information
3.6	4.5	52: Finance and Insurance
3.9	3.4	53: Real Estate Rental and Leasing
9.3	7.9	54: Professional, Sci. & Tech. Services
0.0	0.0	55: Mgt. of Companies & Ent.
7.1	5.9	56: Admin. & Support / Waste Mgt.
2.5	4.1	61: Educational Services
12.1	9.0	62: Health Care and Social Assist.
1.4	2.1	71: Arts, Entertainment, & Recreation
8.2	11.0	72: Accommodation & Food Services
14.6	14.5	81: Other Services (except Public Admin.)
1.1	1.7	92: Public Administration
0.7	10.0	99: Unclassified



Between 2007 and 2017, the most noticeable variation is the increase of establishments that fall into the Unclassified sector (99). Finance and Insurance (52), Educational Services (61), Arts, Entertainment, and Recreation (71), Accommodation and Food Services (72), and Public Administration (92) sectors displayed increases in 2017 in both number and percentage of establishments compared to 2007. On the other hand, the Agriculture, Forestry, Fishing and Hunting (11), Construction (23), Manufacturing (31-33), Wholesale Trade (42), Retail Trade (44-45), Transportation and Warehousing (48-49), Real Estate Rental and Leasing (53), Professional, Scientific, and Technical Services (54), Administrative and Support and Waste Management and Remediation Services (56), and Health Care and Social Assistance (62) sectors in 2017 decreased its size both in number and percentage of establishments compared to 2007.

12.11.2 Employment by 2-digit NAICS codes, Forest Grove: Town Center

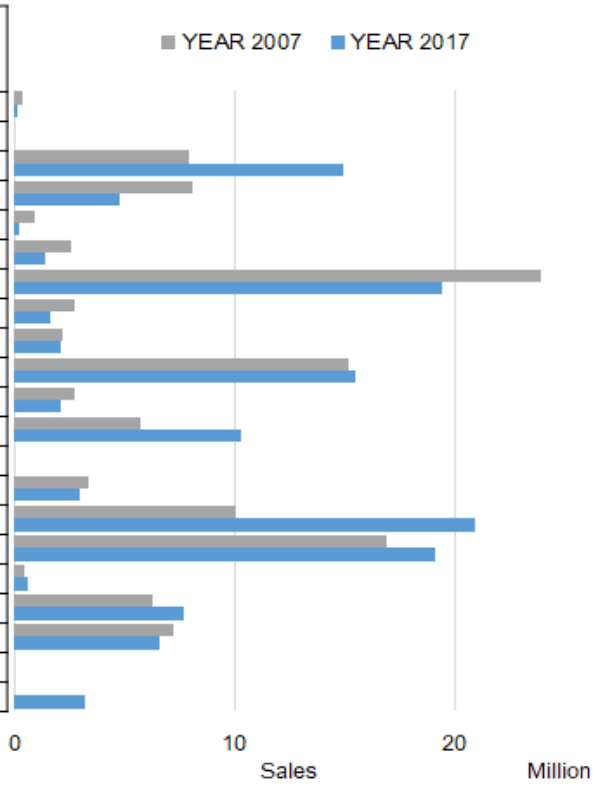
% of Total Employment		All Industry Sector (NAICS 2-digit codes)
2007	2017	
0.3	0.1	11: Agriculture, Forestry, Fishing & Hunt.
0.0	0.0	21: Mining
1.1	1.4	22: Utilities
3.6	1.8	23: Construction
0.8	0.2	31-33: Manufacturing
1.5	0.7	42: Wholesale Trade
14.6	10.7	44-45: Retail Trade
2.8	2.2	48-49: Transportation and Warehousing
3.1	3.3	51: Information
3.9	4.4	52: Finance and Insurance
2.1	1.9	53: Real Estate Rental and Leasing
4.3	6.2	54: Professional, Sci. & Tech. Services
0.0	0.0	55: Mgt. of Companies & Ent.
2.6	2.4	56: Admin. & Support / Waste Mgt.
8.4	14.8	61: Educational Services
27.1	14.0	62: Health Care and Social Assist.
0.4	1.0	71: Arts, Entertainment, & Recreation
11.0	12.4	72: Accommodation & Food Services
7.3	6.9	81: Other Services (except Public Admin.)
4.6	6.5	92: Public Administration
0.6	9.0	99: Unclassified



Between 2007 and 2017, the two noticeable variations are again increases in employment in the Unclassified (99) sector, following from the same increase in the number of unclassified establishments in A-1 and the decrease in employment in the Health Care and Social Assistance (62) sector. Utilities (22), Manufacturing (31-33), Information (51), Finance and Insurance (52), Professional, Scientific, and Technical Services (54), Educational Services (61), Arts, Entertainment, and Recreation (71), Accommodation and Food Services (72), and Public Administration (92) in 2017 displayed increases in both number and percentage of employment compared to 2007. On the other hand, the Construction (23), Manufacturing (31-33), Wholesale Trade (42), Retail Trade (44-45), Transportation and Warehousing (48-49), Management of Companies and Enterprises (55), Administrative and Support and Waste Management and Remediation Services (56), Other Services (except Public Administration) (81) sectors experienced decreases in both number and percentage of overall employment.

12.11.3 Sales by 2-digit NAICS codes, Forest Grove: Town Center

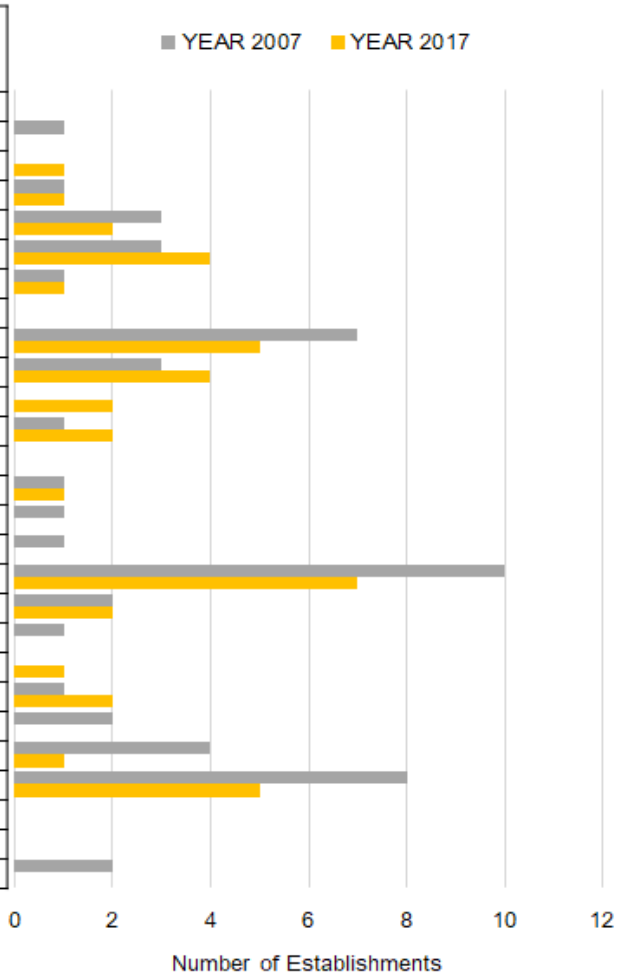
% of Total Sales		All Industry Sector (NAICS 2-digit codes)
2007	2017	
0.3	0.1	11: Agriculture, Forestry, Fishing & Hunt.
0.0	0.0	21: Mining
6.8	11.2	22: Utilities
7.0	3.6	23: Construction
0.8	0.2	31-33: Manufacturing
2.2	1.0	42: Wholesale Trade
20.5	14.5	44-45: Retail Trade
2.3	1.2	48-49: Transportation and Warehousing
1.8	1.6	51: Information
13.0	11.6	52: Finance and Insurance
2.3	1.6	53: Real Estate Rental and Leasing
4.9	7.7	54: Professional, Sci. & Tech. Services
0.0	0.0	55: Mgt. of Companies & Ent.
2.9	2.2	56: Admin. & Support / Waste Mgt.
8.6	15.7	61: Educational Services
14.5	14.3	62: Health Care and Social Assist.
0.4	0.5	71: Arts, Entertainment, & Recreation
5.4	5.8	72: Accommodation & Food Services
6.2	4.9	81: Other Services (except Public Admin.)
0.0	0.0	92: Public Administration
0.0	2.4	99: Unclassified



Between 2007 and 2017, the most noticeable variation is the increases of sales that fall into the Educational Services (61) sector. The Utilities (22), Professional, Scientific, and Technical Services (54) Arts, Entertainment, and Recreation (71), Accommodation and Food Services (72), and Unclassified (99) sectors in 2017 experienced decreases in both sales figures and percentage compared to 2007. On the other hand, the Construction (23), Manufacturing (31-33), Wholesale Trade (42), Retail Trade (44-45), Transportation and Warehousing (48-49), Information (51), Management of Companies and Enterprises (55), and Other Services (except Public Administration) (81) sectors displayed slight increases in 2017 in both figure and percentage of sales compared to 2007.

12.11.4 Retail establishments by 2-digit NAICS codes, Forest Grove: Town Center

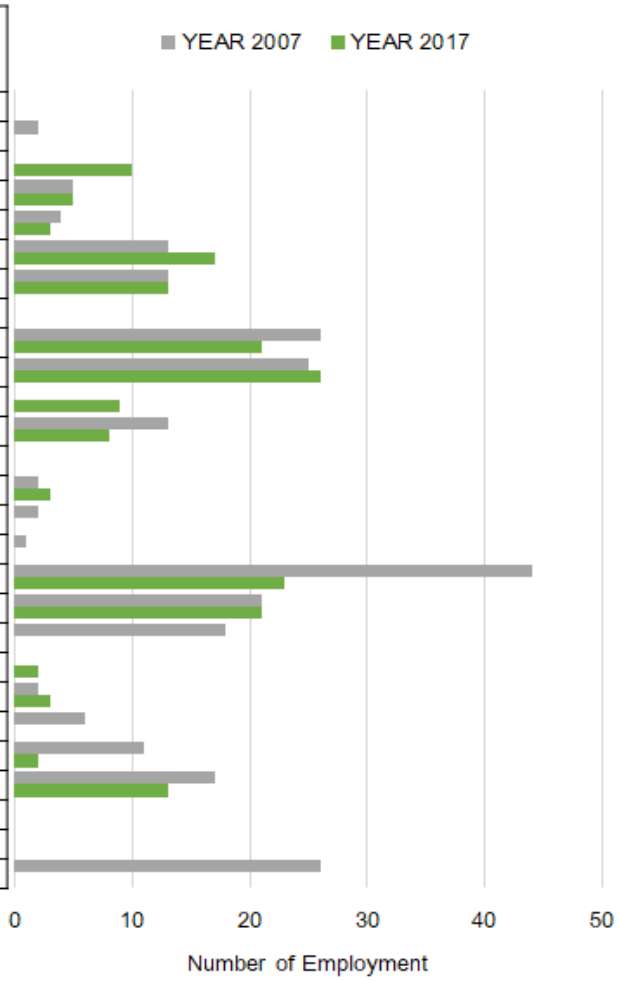
% of Total Establishments		Retail Trade Sector (4-digit NAICS codes)
2007	2017	
0.0	0.0	4411: Automobile
1.9	0.0	4412: Other Motor Vehicle
0.0	2.4	4413: Automotive Parts & Tire
1.9	2.4	4421: Furniture
5.7	4.9	4422: Home Furnishings
5.7	9.8	4431: Electronics & Appliance
1.9	2.4	4441: Building Material and Supplies
0.0	0.0	4442: Lawn and Garden Equip. & Supplies
13.2	12.2	4451: Grocery
5.7	9.8	4452: Specialty Food
0.0	4.9	4453: Liquor
1.9	4.9	4461: Health & Personal Care
0.0	0.0	4471: Gasoline
1.9	2.4	4481: Clothing
1.9	0.0	4482: Shoe
1.9	0.0	4483: Jewelry & Leather Goods
18.9	17.1	4511: Sporting Goods & Musical Inst.
3.8	4.9	4512: Book Stores & News Dealers
1.9	0.0	4522: Department Stores
0.0	2.4	4523: General Merchandise
1.9	4.9	4531: Florists
3.8	0.0	4532: Office Supplies
7.5	2.4	4533: Used Merchandise
15.1	12.2	4539: Other Miscellaneous
0.0	0.0	4541: Electronic Shopping & Mail-Order
0.0	0.0	4542: Vending Machine
3.8	0.0	4543: Direct Selling Est.



Between 2007 and 2017, the Electronics and Appliance Stores (4431), Specialty Food Stores (4452) and Health and Personal Care Stores (4461) sectors displayed increases in 2017 in both number and percentage of establishments compared to 2007. On the other hand, the Home Furnishings Stores (4422), Grocery Stores (4451), Sporting Goods, Hobby, and Musical Instrument Stores (4511), Other Miscellaneous Store Retailers (4539) sectors displayed decreases in 2017 in both number and percentage of establishments compared to 2007.

12.11.5 Retail employment by 2-digit NAICS codes, Forest Grove: Town Center

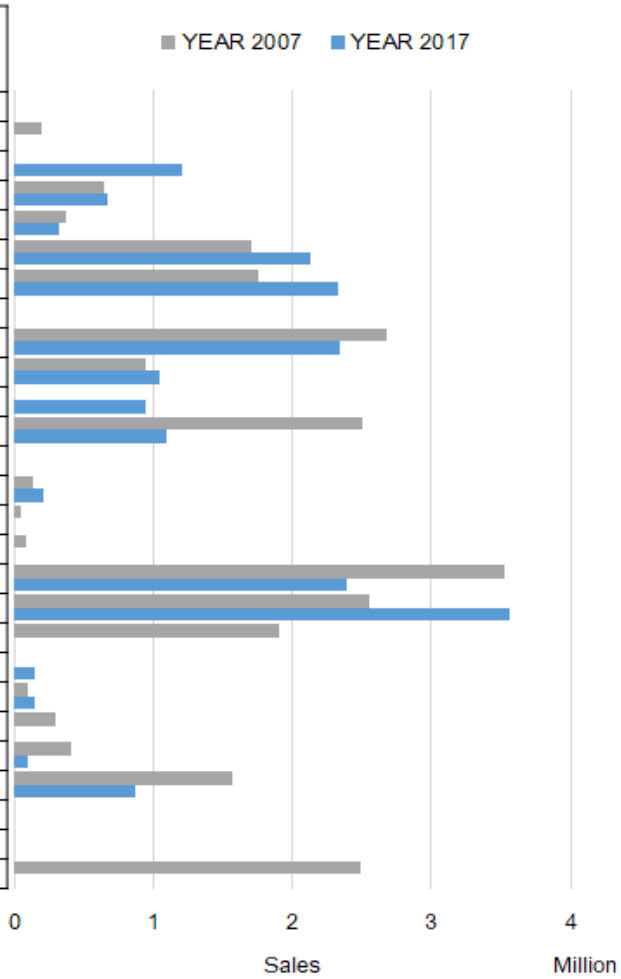
% of Total Employment		Retail Trade Sector (4-digit NAICS codes)
2007	2017	
0.0	0.0	4411: Automobile
0.8	0.0	4412: Other Motor Vehicle
0.0	5.6	4413: Automotive Parts & Tire
2.0	2.8	4421: Furniture
1.6	1.7	4422: Home Furnishings
5.2	9.5	4431: Electronics & Appliance
5.2	7.3	4441: Building Material and Supplies
0.0	0.0	4442: Lawn and Garden Equip. & Supplies
10.4	11.7	4451: Grocery
10.0	14.5	4452: Specialty Food
0.0	5.0	4453: Liquor
5.2	4.5	4461: Health & Personal Care
0.0	0.0	4471: Gasoline
0.8	1.7	4481: Clothing
0.8	0.0	4482: Shoe
0.4	0.0	4483: Jewelry & Leather Goods
17.5	12.8	4511: Sporting Goods & Musical Inst.
8.4	11.7	4512: Book Stores & News Dealers
7.2	0.0	4522: Department Stores
0.0	1.1	4523: General Merchandise
0.8	1.7	4531: Florists
2.4	0.0	4532: Office Supplies
4.4	1.1	4533: Used Merchandise
6.8	7.3	4539: Other Miscellaneous
0.0	0.0	4541: Electronic Shopping & Mail-Order
0.0	0.0	4542: Vending Machine
10.4	0.0	4543: Direct Selling Est.



Between 2007 and 2017, the two noticeable variations are the decreases in employment that fell into the Sporting Goods, Hobby, and Musical Instrument Stores (4511) and Direct Selling Establishments (4543) sectors compared to 2007. On the other hand, Automotive Parts, Accessories, and Tire Stores (4413), Electronics and Appliance Stores (44431), Beer, Wine, and Liquor Stores (4453), Clothing Stores (4481), and General Merchandise Stores, including Warehouse Clubs and Supercenters (4523) displayed increases in 2017 in both number and percentage of employment compared to 2007.

12.11.6 Retail sales by 2-digit NAICS codes, Forest Grove: Town Center

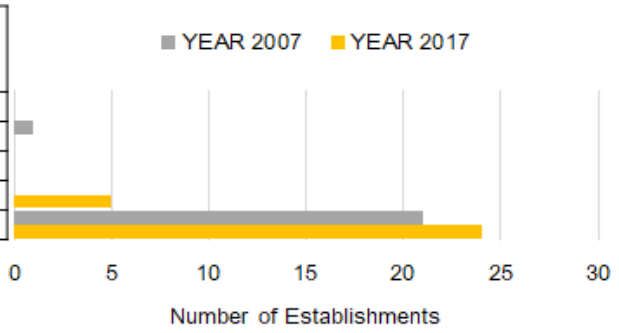
% of Total Sales		Retail Trade Sector (4-digit NAICS codes)
2007	2017	
0.0	0.0	4411: Automobile
0.8	0.0	4412: Other Motor Vehicle
0.0	6.2	4413: Automotive Parts & Tire
2.7	3.4	4421: Furniture
1.6	1.6	4422: Home Furnishings
7.1	10.9	4431: Electronics & Appliance
7.3	11.9	4441: Building Material and Supplies
0.0	0.0	4442: Lawn and Garden Equip. & Supplies
11.2	12.0	4451: Grocery
4.0	5.3	4452: Specialty Food
0.0	4.8	4453: Liquor
10.5	5.6	4461: Health & Personal Care
0.0	0.0	4471: Gasoline
0.6	1.0	4481: Clothing
0.2	0.0	4482: Shoe
0.3	0.0	4483: Jewelry & Leather Goods
14.8	12.3	4511: Sporting Goods & Musical Inst.
10.7	18.3	4512: Book Stores & News Dealers
8.0	0.0	4522: Department Stores
0.0	0.8	4523: General Merchandise
0.4	0.8	4531: Florists
1.2	0.0	4532: Office Supplies
1.7	0.5	4533: Used Merchandise
6.6	4.5	4539: Other Miscellaneous
0.0	0.0	4541: Electronic Shopping & Mail-Order
0.0	0.0	4542: Vending Machine
10.4	0.0	4543: Direct Selling Est.



Between 2007 and 2017, the most noticeable variation is the decrease in sales that fall into the Direct Selling Establishments (4543) compared to 2007. Health and Personal Care Stores (4461), Sporting Goods, Hobby, and Musical Instrument Stores (4511), Department Stores (4522), Office Supplies, Stationery, and Gift Stores (4532), Used Merchandise Stores (4533), and Other Miscellaneous Store Retailers (4539) also experienced decreases in 2017 in both figure and percentage of sales compared to 2007. On the other hand, the Automotive Parts, Accessories, and Tire Stores (4413), Electronics and Appliance Stores (4431), Building Material and Supplies Dealers (4441), Specialty Food Stores (4452), and Book Stores and News Dealers (4512) sectors in 2017 displayed increases in both figures and percentages of sales compared to 2007.

12.11.7 Food and drink establishments by 2-digit NAICS codes, Forest Grove: Town Center

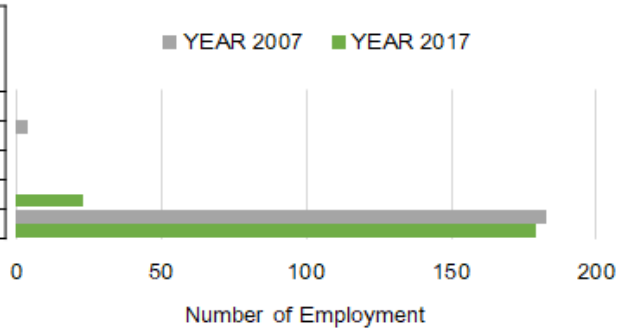
% of Total Establishments		Food & Drink Sector (5-digit NAICS codes)
2007	2017	
0.0	0.0	72231: Food Service Contractors
4.5	0.0	72232: Caterers
0.0	0.0	72233: Mobile Food Services
0.0	17.2	72241: Drinking Places (Alcoholic Bev.)
95.5	82.8	72251: Restaurants & Other Eating Places



Between 2007 and 2017, Restaurants & Other Eating Places (72251) displayed an increase in the number of establishments, but experienced a decrease in percentage of establishments in 2017 compared to 2007. Drinking Places (Alcoholic Bev.) (72241) displayed an increase in the number and percentage of establishments in 2017 compared 2007 while the Caterers (72232) sector experienced a decrease in both number and percentage of establishments compared to 2007.

12.11.8 Food and drink employment by 2-digit NAICS codes, Forest Grove: Town Center

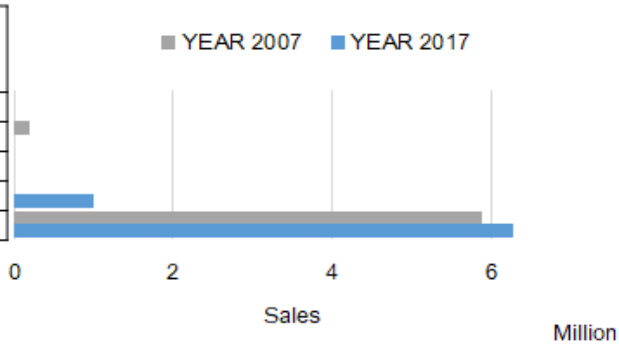
% of Total Employment		Food & Drink Sector (5-digit NAICS codes)
2007	2017	
0.0	0.0	72231: Food Service Contractors
2.1	0.0	72232: Caterers
0.0	0.0	72233: Mobile Food Services
0.0	11.4	72241: Drinking Places (Alcoholic Bev.)
97.9	88.6	72251: Restaurants & Other Eating Places



Between 2007 and 2017, Restaurants & Other Eating Places (72251) and Caterers (72232) displayed decreases in 2017 in both number and percentage of employment compared to 2007. Drinking Places (Alcoholic Bev.) (72241) displayed an increase in 2017 in both number and percentage of employment compared to 2007.

12.11.9 Food and drink sales by 2-digit NAICS codes, Forest Grove: Town Center

% of Total Sales		Food & Drink Sector (5-digit NAICS codes)
2007	2017	
0.0	0.0	72231: Food Service Contractors
3.2	0.0	72232: Caterers
0.0	0.0	72233: Mobile Food Services
0.0	13.7	72241: Drinking Places (Alcoholic Bev.)
96.8	86.3	72251: Restaurants & Other Eating Places

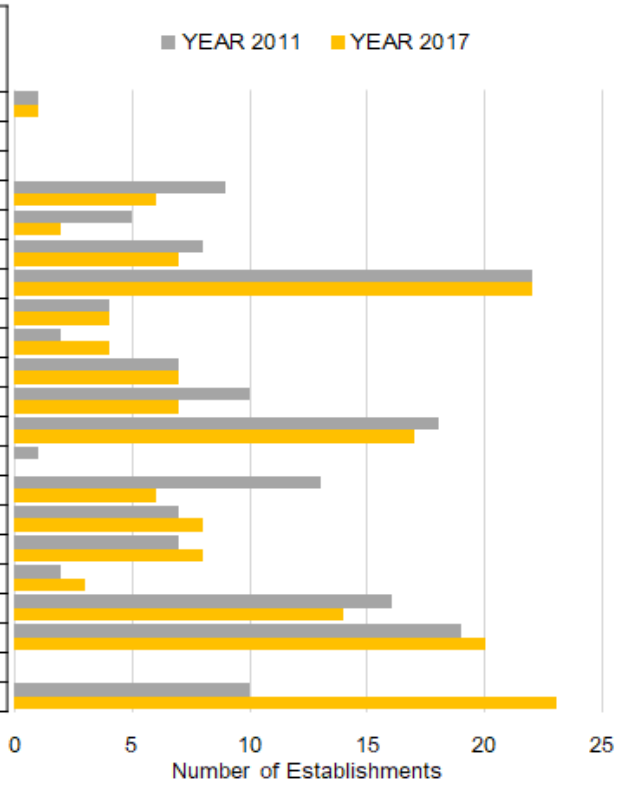


Between 2007 and 2017, Restaurants & Other Eating Places (72251) displayed an increase in the figure of sales, but experienced a decrease in percentage of sales in 2017 compared to 2007. Drinking Places (Alcoholic Bev.) (72241) displayed an increase in the number and percentage of sales in 2017 compared 2007 while the Caterers (72232) sector experienced a decrease in both figure and percentage of sales compared to 2007.

12.12 Tigard: Main Street

12.12.1 Establishments by 2-digit NAICS codes, Tigard: Main Street

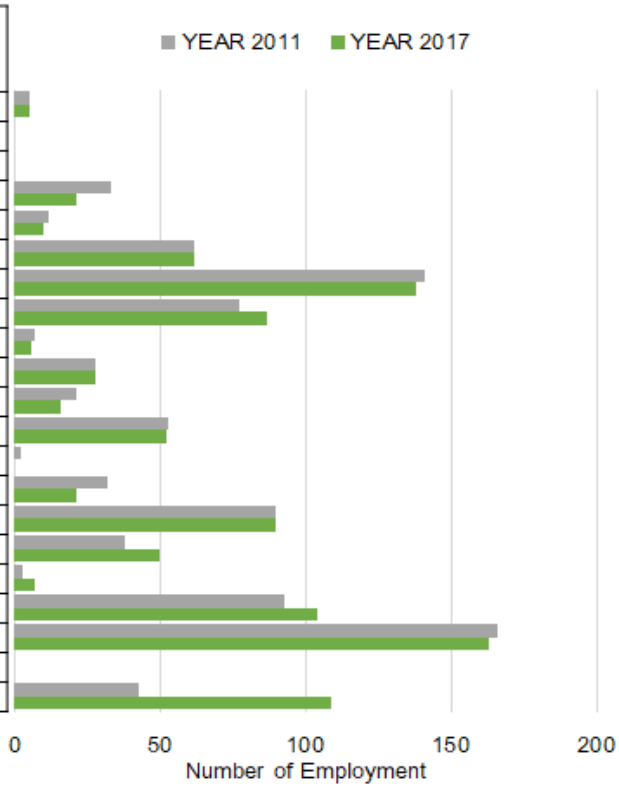
% of Total Establishments		All Industry Sector (NAICS 2-digit codes)
2011	2017	
0.6	0.6	11: Agriculture, Forestry, Fishing & Hunt.
0.0	0.0	21: Mining
0.0	0.0	22: Utilities
5.6	3.8	23: Construction
3.1	1.3	31-33: Manufacturing
5.0	4.4	42: Wholesale Trade
13.7	13.8	44-45: Retail Trade
2.5	2.5	48-49: Transportation and Warehousing
1.2	2.5	51: Information
4.3	4.4	52: Finance and Insurance
6.2	4.4	53: Real Estate Rental and Leasing
11.2	10.7	54: Professional, Sci. & Tech. Services
0.6	0.0	55: Mgt. of Companies & Ent.
8.1	3.8	56: Admin. & Support / Waste Mgt.
4.3	5.0	61: Educational Services
4.3	5.0	62: Health Care and Social Assist.
1.2	1.9	71: Arts, Entertainment, & Recreation
9.9	8.8	72: Accommodation & Food Services
11.8	12.6	81: Other Services (except Public Admin.)
0.0	0.0	92: Public Administration
6.2	14.5	99: Unclassified



Between 2011 and 2017, the most noticeable variation is the increase of establishments that fall into the Unclassified sector (99). The Information (51), Educational Services (61), Health Care and Social Assistance (62), Arts, Entertainment, and Recreation (71), and Other Services (except Public Administration) (81) sectors also displayed increases in 2017 in both number and percentage of establishments compared to 2011. On the other hand, the Construction (23), Manufacturing (31-33), Wholesale Trade (42), Real Estate Rental and Leasing (53), Professional, Scientific, and Technical Services (54), Management of Companies and Enterprises (55), Administrative and Support and Waste Management and Remediation Services (56), and Accommodation and Food Services (72) sectors in 2017 decreased its size both in number and percentage of establishments compared to 2011.

12.12.2 Employment by 2-digit NAICS codes, Tigard: Main Street

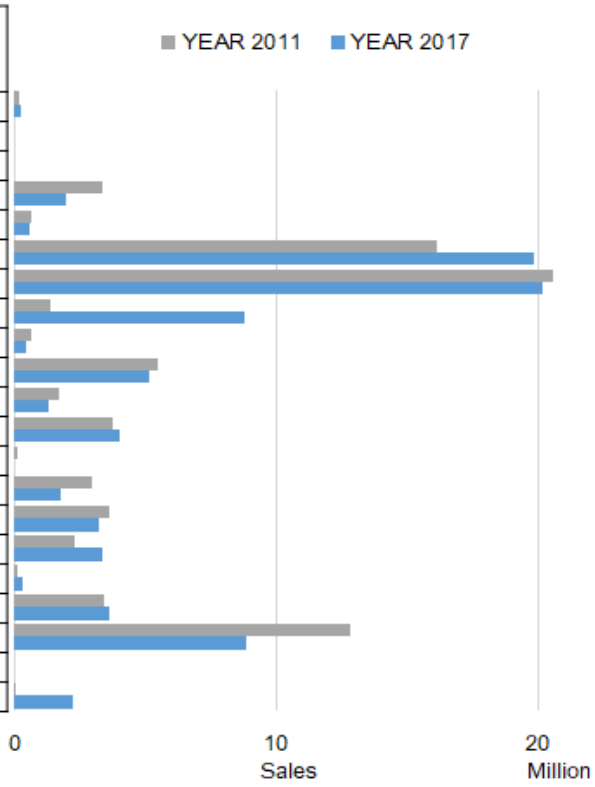
% of Total Employment		All Industry Sector (NAICS 2-digit codes)
2011	2017	
0.6	0.5	11: Agriculture, Forestry, Fishing & Hunt.
0.0	0.0	21: Mining
0.0	0.0	22: Utilities
3.6	2.2	23: Construction
1.3	1.0	31-33: Manufacturing
6.8	6.4	42: Wholesale Trade
15.6	14.2	44-45: Retail Trade
8.5	9.0	48-49: Transportation and Warehousing
0.8	0.6	51: Information
3.1	2.9	52: Finance and Insurance
2.3	1.7	53: Real Estate Rental and Leasing
5.8	5.4	54: Professional, Sci. & Tech. Services
0.2	0.0	55: Mgt. of Companies & Ent.
3.5	2.2	56: Admin. & Support / Waste Mgt.
9.9	9.3	61: Educational Services
4.2	5.2	62: Health Care and Social Assist.
0.3	0.7	71: Arts, Entertainment, & Recreation
10.3	10.7	72: Accommodation & Food Services
18.3	16.8	81: Other Services (except Public Admin.)
0.0	0.0	92: Public Administration
4.7	11.2	99: Unclassified



Between 2011 and 2017, the noticeable variation is again the increase in employment in the Unclassified (99) sector, following from the same increase in the number of unclassified establishments in A-1. The Transportation and Warehousing (48-49), Health Care and Social Assistance (62), Arts, Entertainment, and Recreation (71), and Accommodation and Food Services (72) sectors displayed increases in 2017 in both number and percentage of employment compared to 2011. On the other hand, the Construction (23), Manufacturing (31-33), Retail Trade (44-45), Real Estate Rental and Leasing (53), Professional, Scientific, and Technical Services (54), Management of Companies and Enterprises (55), Administrative and Support and Waste Management and Remediation Services (56), and Other Services (except Public Administration) (81) sectors experienced decreases in 2017 in both number and percentage of overall employment compared to 2011.

12.12.3 Sales by 2-digit NAICS codes, Tigard: Main Street

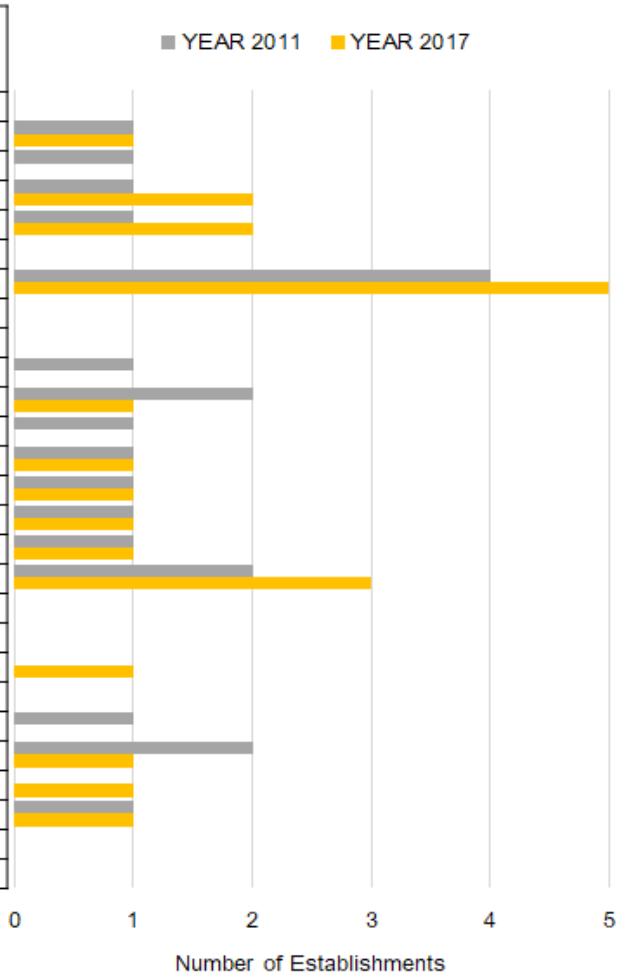
% of Total Sales		All Industry Sector (NAICS 2-digit codes)
2011	2017	
0.3	0.3	11: Agriculture, Forestry, Fishing & Hunt.
0.0	0.0	21: Mining
0.0	0.0	22: Utilities
4.3	2.3	23: Construction
0.8	0.6	31-33: Manufacturing
20.3	23.1	42: Wholesale Trade
25.9	23.5	44-45: Retail Trade
1.7	10.3	48-49: Transportation and Warehousing
0.8	0.5	51: Information
6.9	6.0	52: Finance and Insurance
2.1	1.5	53: Real Estate Rental and Leasing
4.7	4.7	54: Professional, Sci. & Tech. Services
0.1	0.0	55: Mgt. of Companies & Ent.
3.7	2.1	56: Admin. & Support / Waste Mgt.
4.6	3.8	61: Educational Services
2.9	3.9	62: Health Care and Social Assist.
0.2	0.4	71: Arts, Entertainment, & Recreation
4.3	4.2	72: Accommodation & Food Services
16.2	10.3	81: Other Services (except Public Admin.)
0.0	0.0	92: Public Administration
0.1	2.6	99: Unclassified



Between 2011 and 2017, the most noticeable variation is the increases of sales that fall into the Transportation and Warehousing (48-49) sector. The Wholesale Trade (42), Educational Services (61), Health Care and Social Assistance (62), Accommodation and Food Services (72), and Unclassified (99) sectors also displayed increases in 2017 in both sales figures and percentage of sales compared to 2011. On the other hand, the Construction (23), Retail Trade (44-45), Information (51), Finance and Insurance (52), Real Estate Rental and Leasing (53), Management of Companies and Enterprises (55), Administrative and Support and Waste Management and Remediation Services (56), Educational Services (61), and Other Services (except Public Administration) (81) sectors experienced decreases in 2017 in both figure and percentage of sales compared to 2011.

12.12.4 Retail establishments by 2-digit NAICS codes, Tigard: Main Street

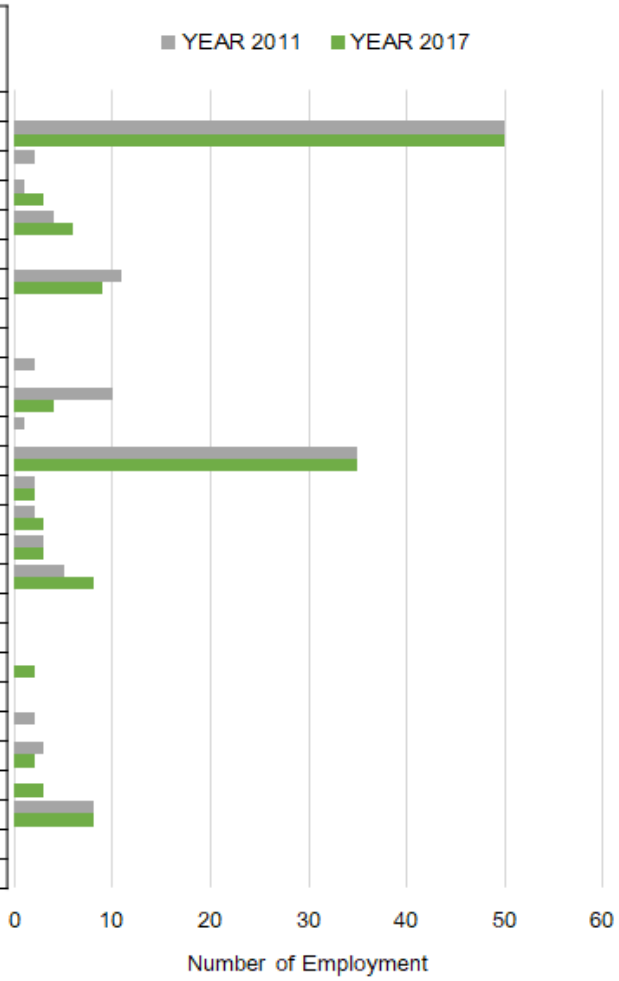
% of Total Establishments		Retail Trade Sector (4-digit NAICS codes)
2011	2017	
0.0	0.0	4411: Automobile
4.5	4.5	4412: Other Motor Vehicle
4.5	0.0	4413: Automotive Parts & Tire
4.5	9.1	4421: Furniture
4.5	9.1	4422: Home Furnishings
0.0	0.0	4431: Electronics & Appliance
18.2	22.7	4441: Building Material and Supplies
0.0	0.0	4442: Lawn and Garden Equip. & Supplies
0.0	0.0	4451: Grocery
4.5	0.0	4452: Specialty Food
9.1	4.5	4453: Liquor
4.5	0.0	4461: Health & Personal Care
4.5	4.5	4471: Gasoline
4.5	4.5	4481: Clothing
4.5	4.5	4482: Shoe
4.5	4.5	4483: Jewelry & Leather Goods
9.1	13.6	4511: Sporting Goods & Musical Inst.
0.0	0.0	4512: Book Stores & News Dealers
0.0	0.0	4522: Department Stores
0.0	4.5	4523: General Merchandise
0.0	0.0	4531: Florists
4.5	0.0	4532: Office Supplies
9.1	4.5	4533: Used Merchandise
0.0	4.5	4539: Other Miscellaneous
4.5	4.5	4541: Electronic Shopping & Mail-Order
0.0	0.0	4542: Vending Machine
0.0	0.0	4543: Direct Selling Est.



Between 2011 and 2017, the Furniture Stores (4421), Home Furnishings Stores (4422), Building Material and Supplies Dealers (4441) and Sporting Goods, Hobby, and Musical Instrument Stores (4511) sectors displayed increases in 2017 in both number and percentage of establishments compared to 2011. The General Merchandise Stores, including Warehouse Clubs and Supercenters (4523) and Other Miscellaneous Store Retailers (4539) sectors displayed an increase in 2017 in both the number and percentage of establishments compared to 2011. On the other hand, the Specialty Food Stores (4452), Beer, Wine, and Liquor Stores (4453), Health and Personal Care Stores (4461) and Used Merchandise Stores (4533) sectors disappeared on the SW Main Street or experienced decreases in 2017 in both number and percentage of establishments compared to 2010.

12.12.5 Retail employment by 2-digit NAICS codes, Tigard: Main Street

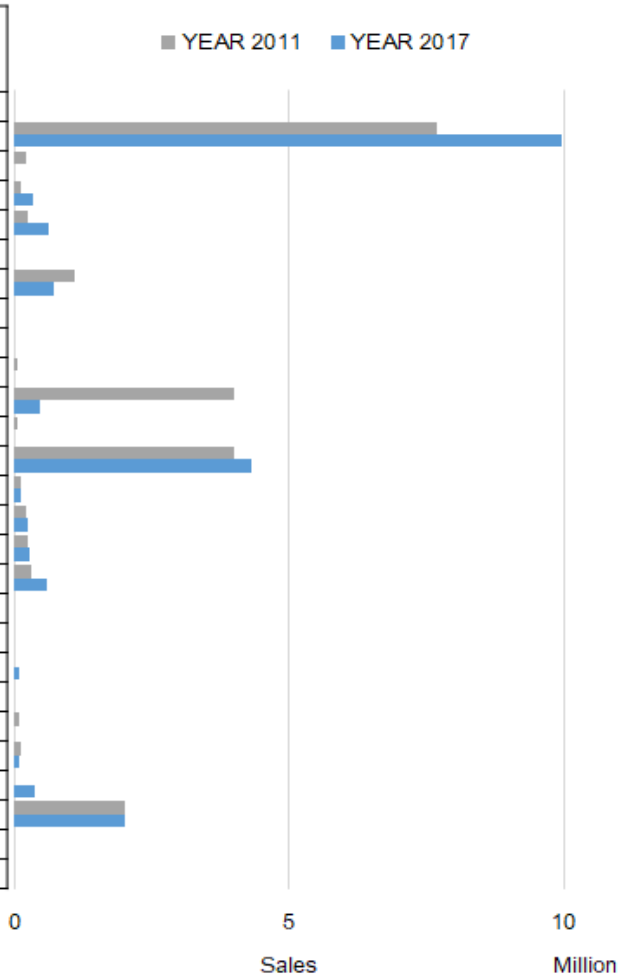
% of Total Employment		Retail Trade Sector (4-digit NAICS codes)
2011	2017	
0.0	0.0	4411: Automobile
35.5	36.2	4412: Other Motor Vehicle
1.4	0.0	4413: Automotive Parts & Tire
0.7	2.2	4421: Furniture
2.8	4.3	4422: Home Furnishings
0.0	0.0	4431: Electronics & Appliance
7.8	6.5	4441: Building Material and Supplies
0.0	0.0	4442: Lawn and Garden Equip. & Supplies
0.0	0.0	4451: Grocery
1.4	0.0	4452: Specialty Food
7.1	2.9	4453: Liquor
0.7	0.0	4461: Health & Personal Care
24.8	25.4	4471: Gasoline
1.4	1.4	4481: Clothing
1.4	2.2	4482: Shoe
2.1	2.2	4483: Jewelry & Leather Goods
3.5	5.8	4511: Sporting Goods & Musical Inst.
0.0	0.0	4512: Book Stores & News Dealers
0.0	0.0	4522: Department Stores
0.0	1.4	4523: General Merchandise
0.0	0.0	4531: Florists
1.4	0.0	4532: Office Supplies
2.1	1.4	4533: Used Merchandise
0.0	2.2	4539: Other Miscellaneous
5.7	5.8	4541: Electronic Shopping & Mail-Order
0.0	0.0	4542: Vending Machine
0.0	0.0	4543: Direct Selling Est.



Between 2011 and 2017, the Furniture Stores (4421), Home Furnishings Stores (4422), Shoe Stores (4482), Sporting Goods, Hobby, and Musical Instrument Stores (4511), General Merchandise Stores, including Warehouse Clubs and Supercenters (4523), and Other Miscellaneous Store Retailers (4539) displayed increases in both number and percentage of employment compared to 2011. On the other hand, Automotive Parts, Accessories, and Tire Stores (4413), Building Material and Supplies Dealers (4441), Specialty Food Stores (4452), Beer, Wine, and Liquor Stores (4453), Health and Personal Care Stores (4461), Office Supplies, Stationery, and Gift Stores (4532), and Used Merchandise Stores (4533) sectors experienced decreases in 2017 in both number and percentage of employment compared to 2011.

12.12.6 Retail sales by 2-digit NAICS codes, Tigard: Main Street

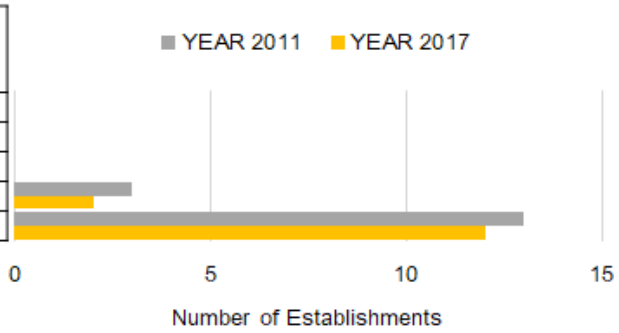
% of Total Sales		Retail Trade Sector (4-digit NAICS codes)
2011	2017	
0.0	0.0	4411: Automobile
37.4	49.4	4412: Other Motor Vehicle
1.0	0.0	4413: Automotive Parts & Tire
0.5	1.7	4421: Furniture
1.2	3.0	4422: Home Furnishings
0.0	0.0	4431: Electronics & Appliance
5.3	3.5	4441: Building Material and Supplies
0.0	0.0	4442: Lawn and Garden Equip. & Supplies
0.0	0.0	4451: Grocery
0.3	0.0	4452: Specialty Food
19.5	2.3	4453: Liquor
0.3	0.0	4461: Health & Personal Care
19.5	21.3	4471: Gasoline
0.6	0.6	4481: Clothing
1.0	1.3	4482: Shoe
1.2	1.3	4483: Jewelry & Leather Goods
1.5	2.9	4511: Sporting Goods & Musical Inst.
0.0	0.0	4512: Book Stores & News Dealers
0.0	0.0	4522: Department Stores
0.0	0.4	4523: General Merchandise
0.0	0.0	4531: Florists
0.5	0.0	4532: Office Supplies
0.6	0.5	4533: Used Merchandise
0.0	1.9	4539: Other Miscellaneous
9.7	9.9	4541: Electronic Shopping & Mail-Order
0.0	0.0	4542: Vending Machine
0.0	0.0	4543: Direct Selling Est.



Between 2011 and 2017, the two noticeable variations are the increase in sales that fell into the Other Motor Vehicle Dealers (4412) sector and the decrease in employment in the Beer, Wine, and Liquor Stores (4453) sector compared to 2011. The Gasoline Stations (4471), Shoe Stores (4482), Jewelry, Luggage, and Leather Goods Stores (4483), Sporting Goods, Hobby, and Musical Instrument Stores (4511), General Merchandise Stores, including Warehouse Clubs and Supercenters (4523), and Other Miscellaneous Store Retailers (4539) sectors experienced increases in 2017 in both figure and percentage of sales compared to 2011. On the other hand, Automotive Parts, Accessories, and Tire Stores (4413), Electronics and Appliance Stores (4431), Building Material and Supplies Dealers (4441), and Used Merchandise Stores (4533) sectors experienced decrease in 2017 in both figure and percentage of sales compared to 2011.

12.12.7 Food and drink establishments by 2-digit NAICS codes, Tigard: Main Street

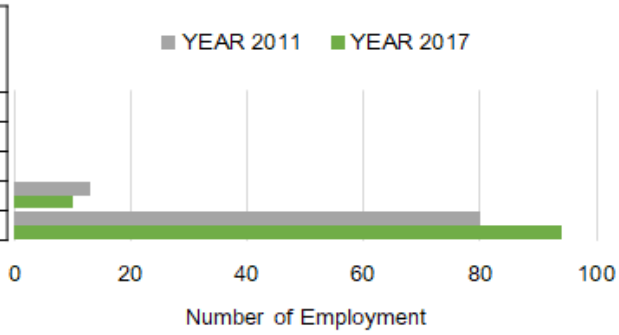
% of Total Establishments		Food & Drink Sector (5-digit NAICS codes)
2011	2017	
0.0	0.0	72231: Food Service Contractors
0.0	0.0	72232: Caterers
0.0	0.0	72233: Mobile Food Services
18.8	14.3	72241: Drinking Places (Alcoholic Bev.)
81.3	85.7	72251: Restaurants & Other Eating Places



Between 2011 and 2017, the Drinking Places (Alcoholic Beverages) (72241) sector experienced a decrease in 2017 in both number and percentage of establishments compared to 2011. On the other hand, the Restaurants & Other Eating Places (72251) sector experienced a decrease in 2017 in number of establishments, but displayed an increase in 2017 in percentage of establishments compared to 2011.

12.12.8 Food and drink employment by 2-digit NAICS codes, Tigard: Main Street

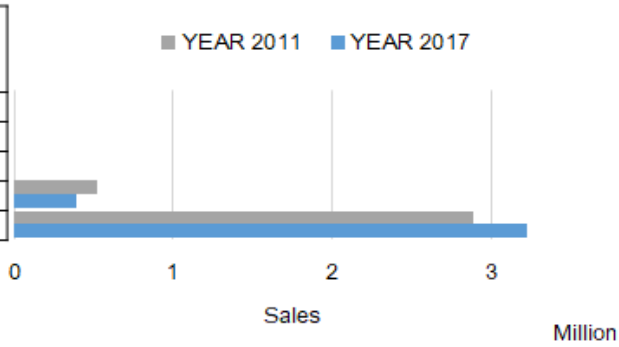
% of Total Employment		Food & Drink Sector (5-digit NAICS codes)
2011	2017	
0.0	0.0	72231: Food Service Contractors
0.0	0.0	72232: Caterers
0.0	0.0	72233: Mobile Food Services
14.0	9.6	72241: Drinking Places (Alcoholic Bev.)
86.0	90.4	72251: Restaurants & Other Eating Places



Between 2011 and 2017, the Drinking Places (Alcoholic Beverages) (72241) sector displayed a decrease in 2017 in both number and percentage of employment compared to 2011. The Restaurants & Other Eating Places (72251) sector displayed an increase in 2017 in both the number and percentage of employment compared to 2011.

12.12.9 Food and drink sales by 2-digit NAICS codes, Tigard: Main Street

% of Total Sales		Food & Drink Sector (5-digit NAICS codes)
2011	2017	
0.0	0.0	72231: Food Service Contractors
0.0	0.0	72232: Caterers
0.0	0.0	72233: Mobile Food Services
15.4	10.8	72241: Drinking Places (Alcoholic Bev.)
84.6	89.2	72251: Restaurants & Other Eating Places



Between 2011 and 2017, the Drinking Places (Alcoholic Beverages) (72241) sector displayed a decrease in 2017 in both figure and percentage of sales compared to 2011. The Restaurants & Other Eating Places (72251) sector displayed an increase in 2017 in both the figure and percentage of sales compared to 2011.

13 Appendix: DID and ITS tables

13.1 Milwaukie: McLoughlin Boulevard DID regression models

LEHD: Milwaukie-McLoughlin Boulevard
Construction completion: 2006

	Employment	
	Retail	Food
Type (Base: Treatment)	968.800***	122.600***
	(58.801)	(11.711)
Prepost	-17.582	-7.545
	(50.145)	(9.987)
Type:Prepost	-347.436***	15.036
	(70.916)	(14.124)
Constant	33.400	26.000***
	(41.578)	(8.281)
Observations	32	32
R2	0.951	0.937
Adjusted R2	0.946	0.930
Residual Std. Error (df = 28)	92.972	18.517
F Statistic (df = 3; 28)	182.079***	137.818***

Note1: *p<0.1; **p<0.05; ***p<0.01
Note2: Control corridor is McLoughlin Blvd in Gladstone

QCEW: Milwaukie-McLoughlin Boulevard
Construction completion: 2006

	Employment		Total Wages	
	Retail	Food	Retail	Food
Type (Base: Treatment)	723.271***	68.854***	31,419,488.000***	862,568.200**
	(37.261)	(17.981)	(3,703,573.000)	(394,727.900)
Prepost	-30.264	22.021	-897,284.300	517,607.500
	(30.424)	(14.682)	(3,023,954.000)	(322,294.000)
Type:Prepost	-106.007**	-5.410	-807,201.800	238,623.400
	(43.026)	(20.763)	(4,276,517.000)	(455,792.500)
Constant	87.500***	84.604***	2,551,322.000	1,035,907.000***
	(26.348)	(12.715)	(2,618,821.000)	(279,114.800)
Observations	32	32	32	32
R2	0.977	0.665	0.908	0.562
Adjusted R2	0.975	0.629	0.898	0.515
Residual Std. Error (df = 28)	52.696	25.429	5,237,643.000	558,229.600
F Statistic (df = 3; 28)	405.009***	18.491***	92.434***	11.978***

Note1: *p<0.1; **p<0.05; ***p<0.01
Note2: Control corridor is McLoughlin Blvd in Gladstone

NETS: Milwaukie-McLoughlin Boulevard
Construction completion: 2006

	Employment		Sales	
	Retail	Food	Retail	Food
Type (Base: Treatment)	842.200***	64.400***	460,791,320.000***	1,763,460.000***
	(59.253)	(14.018)	(47,755,924.000)	(494,538.200)
Prepost	-10.327	-0.236	-3,244,834.000	-49,436.360
	(50.531)	(11.954)	(40,726,389.000)	(421,743.600)
Type:Prepost	-195.291**	6.691	-201,894,308.000***	614,389.500
	(71.462)	(16.906)	(57,595,811.000)	(596,435.500)
Constant	101.600**	102.600***	14,093,000.000	3,549,100.000***
	(41.899)	(9.912)	(33,768,538.000)	(349,691.300)
Observations	32	32	32	32
R2	0.944	0.735	0.859	0.697
Adjusted R2	0.938	0.707	0.844	0.664
Residual Std. Error (df = 28)	93.688	22.164	75,508,745.000	781,933.500
F Statistic (df = 3; 28)	157.795***	25.943***	56.950***	21.441***

Note1: *p<0.1; **p<0.05; ***p<0.01
Note2: Control corridor is McLoughlin Blvd in Gladstone

LEHD: Milwaukie-McLoughlin Boulevard

Construction completion: 2006

	Employment	
	Retail	Food
Type (Base: Treatment)	178.600***	127.000***
	(7.788)	(11.112)
Prepost	-18.900**	3.000
	(8.261)	(11.786)
Type:Prepost	37.650***	59.000***
	(11.682)	(16.669)
Constant	33.400***	26.000***
	(5.507)	(7.858)
Observations	18	18
R2	0.988	0.964
Adjusted R2	0.985	0.956
Residual Std. Error (df = 14)	12.314	17.570
F Statistic (df = 3; 14)	380.889***	123.317***

Note1: *p<0.1; **p<0.05; ***p<0.01

Note2: Control corridor is McLoughlin Blvd in Oregon City

Note3: Time period is limited to before improvement of McLoughlin Boulevard in Oregon City (2010)

QCEW: Milwaukie-McLoughlin Boulevard

Construction completion: 2006

	Employment		Total Wages	
	Retail	Food	Retail	Food
Type (Base: Treatment)	233.750***	171.021***	5,156,896.000***	2,390,970.000***
	(9.242)	(15.429)	(290,123.500)	(235,688.800)
Prepost	-45.479***	29.458*	-1,427,922.000***	503,718.000*
	(9.242)	(15.429)	(290,123.500)	(235,688.800)
Type:Prepost	13.667	29.833	742,166.200*	666,556.200*
	(13.070)	(21.820)	(410,296.600)	(333,314.300)
Constant	87.500***	84.604***	2,551,322.000***	1,035,907.000***
	(6.535)	(10.910)	(205,148.300)	(166,657.200)
Observations	16	16	16	16
R2	0.991	0.963	0.984	0.961
Adjusted R2	0.989	0.953	0.980	0.951
Residual Std. Error (df = 12)	13.070	21.820	410,296.600	333,314.300
F Statistic (df = 3; 12)	463.824***	102.961***	251.971***	98.809***

Note1: *p<0.1; **p<0.05; ***p<0.01

Note2: Control corridor is McLoughlin Blvd in Oregon City

Note3: Time period is limited to before improvement of McLoughlin Boulevard in Oregon City (2010)

NETS: Milwaukie-McLoughlin Boulevard

Construction completion: 2006

	Employment		Sales	
	Retail	Food	Retail	Food
Type (Base: Treatment)	237.000***	132.200***	38,869,200.000***	4,198,060.000***
	(10.677)	(13.984)	(2,704,978.000)	(509,793.200)
Prepost	17.650	-28.600*	2,246,950.000	-868,725.000
	(11.325)	(14.832)	(2,869,062.000)	(540,717.300)
Type:Prepost	-13.500	73.800***	-1,884,550.000	2,335,940.000***
	(16.015)	(20.975)	(4,057,466.000)	(764,689.800)
Constant	101.600***	102.600***	14,093,000.000***	3,549,100.000***
	(7.550)	(9.888)	(1,912,708.000)	(360,478.200)
Observations	18	18	18	18
R2	0.984	0.950	0.962	0.935
Adjusted R2	0.980	0.939	0.954	0.921
Residual Std. Error (df = 14)	16.882	22.110	4,276,945.000	806,053.800
F Statistic (df = 3; 14)	281.709***	87.872***	118.818***	66.615***

Note1: *p<0.1; **p<0.05; ***p<0.01

Note2: Control corridor is McLoughlin Blvd in Oregon City

Note3: Time period is limited to before improvement of McLoughlin Boulevard in Oregon City (2010)

13.2 Milwaukie: McLoughlin Boulevard ITS analysis models

LEHD: Milwaukie-McLoughlin Boulevard

Construction completion: 2006

	Employment	
	Retail	Food
ts_year	-1.90	0.00
	(1.195)	(2.468)
prepost	-24.291***	12.64
	(4.781)	(9.870)
ts_year:prepost	2.19	-2.02
	(1.248)	(2.577)
Constant	37.200***	26.000***
	(2.928)	(6.044)
Observations	16	16
R2	0.866	0.468
Adjusted R2	0.833	0.335
Residual Std. Error (df = 5)	3.78	7.803
F Statistic (df = 3; 5)	25.854***	3.524**

Note1: *p<0.1; **p<0.05; ***p<0.01

QCEW: Milwaukie-McLoughlin Boulevard

Construction completion: 2006

	Employment		Total Wages	
	Retail	Food	Retail	Food
ts_year	-9.583	18.608***	-138,842.80	249,275.600*
	(5.595)	(5.692)	(220,783.000)	(122,143.400)
prepost	-87.422***	54.656***	-2,708,359.000***	450,263.30
	(14.880)	(15.138)	(587,144.100)	(324,824.800)
ts_year:prepost	14.087**	-19.105***	307,559.70	-202,827.40
	(5.692)	(5.791)	(224,609.700)	(124,260.500)
Constant	101.875***	56.692***	2,759,586.000***	661,993.600**
	(10.468)	(10.649)	(413,047.100)	(228,509.400)
Observations	16	16	16	16
R2	0.765	0.624	0.692	0.614
Adjusted R2	0.706	0.53	0.615	0.517
Residual Std. Error (df = 12)	12.511	12.728	493,685.80	273,121.00
F Statistic (df = 3; 12)	13.005***	6.628***	9.002***	6.359***

Note: *p<0.1; **p<0.05; ***p<0.01

NETS: Milwaukie-McLoughlin Boulevard

Construction completion: 2006

	Employment		Sales	
	Retail	Food	Retail	Food
ts_year	1.4	-19.400***	64,980.00	-718,420.000***
	(3.785)	(3.209)	(509,887.100)	(107,194.600)
prepost	67.745***	-113.127***	10,137,618.000***	-3,637,922.000***
	(15.140)	(12.836)	(2,039,548.000)	(428,778.500)
ts_year:prepost	-8.927**	26.809***	-1,390,229.000**	933,584.500***
	(3.953)	(3.352)	(532,559.700)	(111,961.100)
Constant	98.800***	141.400***	13,963,040.000***	4,985,940.000***
	(9.271)	(7.860)	(1,248,963.000)	(262,572.200)
Observations	16	16	16	16
R2	0.794	0.888	0.88	0.882
Adjusted R2	0.742	0.86	0.85	0.852
Residual Std. Error (df = 12)	11.969	10.148	1,612,405.00	338,979.20
F Statistic (df = 3; 12)	15.400***	31.729***	29.415***	29.770***

Note: *p<0.1; **p<0.05; ***p<0.01

13.3 Milwaukie Town Center ITS analysis models

LEHD: Milwaukie-Town Center

Construction completion: 2015

	Employment	
	Retail	Food
ts_year	-1.708***	0.288
	(0.313)	(0.714)
prepost	24.114	96.943
	(96.799)	(221.062)
ts_year:prepost	-1.292	-6.288
	(6.677)	(15.249)
Constant	60.886***	41.057***
	(2.392)	(5.462)
Observations	16	16
R2	0.747	0.098
Adjusted R2	0.684	-0.128
Residual Std. Error (df = 12)	4.716	10.771
F Statistic (df = 3; 12)	11.810***	0.434

Note: *p<0.1; **p<0.05; ***p<0.01

QCEW: Milwaukie-Town Center

Construction completion: 2015

	Employment		Total Wages	
	Retail	Food	Retail	Food
ts_year	-4.473***	-1.59	-139,229.200**	-11,241.77
	(1.431)	(1.298)	(46,285.600)	(18,673.920)
prepost	-29.019	22.316	-2,982,846.00	-1,133,468.00
	(191.708)	(173.873)	(6,200,658.000)	(2,501,655.000)
ts_year:prepost	5.056	-0.785	325,379.20	108,583.80
	(13.726)	(12.449)	(443,955.900)	(179,113.900)
Constant	96.380***	87.073***	2,888,357.000***	1,090,273.000***
	(10.119)	(9.178)	(327,288.600)	(132,044.500)
Observations	16	16	16	16
R2	0.455	0.115	0.468	0.252
Adjusted R2	0.318	-0.107	0.335	0.065
Residual Std. Error (df = 12)	19.306	17.51	624,426.90	251,924.90
F Statistic (df = 3; 12)	3.335*	0.518	3.514**	1.348

Note: *p<0.1; **p<0.05; ***p<0.01

NETS: Milwaukie-Town Center

Construction completion: 2015

	Employment		Sales	
	Retail	Food	Retail	Food
ts_year	-0.262	-2.481	-446,588.000***	-98,274.290*
	(0.562)	(1.596)	(88,726.160)	(53,632.410)
prepost	131.086	-125.2	1,701,207.00	-5,154,597.00
	(173.833)	(494.163)	(27,467,305.000)	(16,603,195.000)
ts_year:prepost	-9.738	11.481	-83,665.00	447,874.30
	(11.991)	(34.087)	(1,894,672.000)	(1,145,275.000)
Constant	71.914***	87.200***	12,121,903.000***	3,068,797.000***
	(4.295)	(12.209)	(678,624.700)	(410,209.100)
Observations	16	16	16	16
R2	0.275	0.244	0.743	0.262
Adjusted R2	0.094	0.055	0.679	0.078
Residual Std. Error (df = 12)	8.47	24.077	1,338,266.00	808,943.20
F Statistic (df = 3; 12)	1.518	1.291	11.570***	1.423

Note: *p<0.1; **p<0.05; ***p<0.01

13.4 Oregon City: McLoughlin Boulevard DID regression models

LEHD: Oregon City-McLoughlin Boulevard

Construction completion: 2010

	Employment	
	Retail	Food
Type (Base: Treatment)	623.556***	-36.778***
	(64.962)	(13.245)
Prepost	42.095	19.730
	(69.447)	(14.160)
Type:Prepost	-253.841**	3.063
	(98.213)	(20.025)
Constant	220.333***	180.556***
	(45.935)	(9.366)
Observations	32	32
R2	0.811	0.381
Adjusted R2	0.791	0.315
Residual Std. Error (df = 28)	137.805	28.097
F Statistic (df = 3; 28)	40.104***	5.753***

Note: *p<0.1; **p<0.05; ***p<0.01

QCEW: Oregon City-McLoughlin Boulevard

Construction completion: 2010

	Employment		Total Wages	
	Retail	Food	Retail	Food
Type (Base: Treatment)	427.427***	-142.969***	22,688,111.000***	-2,212,614.000***
	(35.857)	(16.979)	(2,485,341.000)	(442,058.400)
Prepost	70.000*	70.167***	2,989,106.000	2,416,495.000***
	(35.857)	(16.979)	(2,485,341.000)	(442,058.400)
Type:Prepost	-118.406**	-22.937	2,288,880.000	-1,083,998.000*
	(50.710)	(24.012)	(3,514,803.000)	(625,165.000)
Constant	305.344***	285.271***	7,365,341.000***	4,012,014.000***
	(25.355)	(12.006)	(1,757,401.000)	(312,582.500)
Observations	32	32	32	32
R2	0.886	0.872	0.871	0.806
Adjusted R2	0.873	0.858	0.858	0.786
Residual Std. Error (df = 28)	71.715	33.957	4,970,682.000	884,116.800
F Statistic (df = 3; 28)	72.181***	63.429***	63.288***	38.876***

Note: *p<0.1; **p<0.05; ***p<0.01

NETS: Oregon City-McLoughlin Boulevard

Construction completion: 2010

	Employment		Sales	
	Retail	Food	Retail	Food
Type (Base: Treatment)	577.333***	-88.667***	394,590,856.000***	-2,934,256.000***
	(30.000)	(12.548)	(17,318,987.000)	(452,543.000)
Prepost	-6.016	4.683	2,801,739.000	311,193.000
	(32.071)	(13.414)	(18,514,776.000)	(483,788.900)
Type:Prepost	-257.619***	7.238	-263,059,940.000***	228,156.300
	(45.356)	(18.971)	(26,183,847.000)	(684,180.800)
Constant	340.444***	254.889***	53,123,267.000***	8,399,256.000***
	(21.213)	(8.873)	(12,246,373.000)	(319,996.200)
Observations	32	32	32	32
R2	0.946	0.749	0.959	0.718
Adjusted R2	0.941	0.722	0.955	0.688
Residual Std. Error (df = 28)	63.640	26.618	36,739,119.000	959,988.800
F Statistic (df = 3; 28)	164.676***	27.817***	220.213***	23.799***

Note: *p<0.1; **p<0.05; ***p<0.01

13.5 Oregon City: McLoughlin Boulevard ITS analysis models

LEHD: Oregon City-McLoughlin Boulevard

Construction completion: 2010

	Employment	
	Retail	Food
ts_year	3.45	12.667***
	(2.154)	(2.130)
prepost	-94.533**	-46.175
	(39.712)	(39.265)
ts_year:prepost	9.086**	-2.952
	(3.819)	(3.776)
Constant	206.533***	129.889***
	(10.257)	(10.141)
Observations	16	16
R2	0.783	0.809
Adjusted R2	0.729	0.761
Residual Std. Error (df = 12)	16.687	16.499
F Statistic (df = 3; 12)	14.474***	16.900***

Note: *p<0.1; **p<0.05; ***p<0.01

QCEW: Oregon City-McLoughlin Boulevard

Construction completion: 2010

	Employment		Total Wages	
	Retail	Food	Retail	Food
ts_year	-7.188**	14.304***	-129,302.00	289,601.600***
	(3.219)	(2.100)	(78,407.590)	(52,388.590)
prepost	-191.648***	-98.339***	-7,133,602.000***	-3,478,178.000***
	(40.080)	(26.142)	(976,166.700)	(652,232.700)
ts_year:prepost	27.752***	4.702	970,184.700***	311,118.300***
	(4.553)	(2.969)	(110,885.100)	(74,088.650)
Constant	330.500***	235.208***	7,817,898.000***	2,998,409.000***
	(13.467)	(8.784)	(328,002.500)	(219,157.200)
Observations	16	16	16	16
R2	0.883	0.951	0.955	0.968
Adjusted R2	0.854	0.939	0.944	0.96
Residual Std. Error (df = 12)	20.863	13.608	508,139.30	339,516.90
F Statistic (df = 3; 12)	30.273***	78.228***	85.383***	121.558***

Note: *p<0.1; **p<0.05; ***p<0.01

NETS: Oregon City-McLoughlin Boulevard

Construction completion: 2010

	Employment		Sales	
	Retail	Food	Retail	Food
ts_year	1.1	10.233***	462,480.80	348,043.300***
	(2.257)	(1.683)	(695,973.700)	(64,038.760)
prepost	30.527	263.330***	-12,774,839.00	8,926,415.000***
	(41.598)	(31.020)	(12,829,526.000)	(1,180,486.000)
ts_year:prepost	-3.779	-28.376***	989,727.60	-949,964.000***
	(4.001)	(2.983)	(1,233,829.000)	(113,528.600)
Constant	336.044***	213.956***	51,273,343.000***	7,007,082.000***
	(10.744)	(8.011)	(3,313,498.000)	(304,885.500)
Observations	16	16	16	16
R2	0.102	0.884	0.228	0.858
Adjusted R2	-0.123	0.855	0.035	0.822
Residual Std. Error (df = 12)	17.48	13.034	5,390,989.00	496,042.10
F Statistic (df = 3; 12)	0.454	30.580***	1.179	24.105***

Note: *p<0.1; **p<0.05; ***p<0.01

13.6 Gresham: NE Hood Avenue ITS analysis models

LEHD: Gresham-Hood Avenue

Construction completion: 2013

	Employment	
	Retail	Food
ts_year	0.58	-0.615
	(2.270)	(0.597)
prepost	10.359	13.315
	(165.075)	(43.406)
ts_year:prepost	-1.08	-1.085
	(12.348)	(3.247)
Constant	25.641	25.885***
	(14.738)	(3.875)
Observations	16	16
R2	0.006	0.233
Adjusted R2	-0.243	0.041
Residual Std. Error (df = 12)	27.14	7.136
F Statistic (df = 3; 12)	0.023	1.216

Note: *p<0.1; **p<0.05; ***p<0.01

QCEW: Gresham-Hood Avenue

Construction completion: 2013

	Employment		Total Wages	
	Retail	Food	Retail	Food
ts_year	-1.644	4.516***	3,207.22	100,803.400***
	(0.960)	(0.668)	(14,768.520)	(10,500.250)
prepost	-138.897***	31.233	-3,152,309.000***	-1,686,572.000***
	(42.021)	(29.224)	(646,449.600)	(459,618.300)
ts_year:prepost	12.544***	-1.266	268,093.500***	163,787.700***
	(3.326)	(2.313)	(51,159.650)	(36,373.930)
Constant	40.364***	30.117***	863,005.600***	264,700.000***
	(5.679)	(3.950)	(87,371.740)	(62,120.310)
Observations	16	16	16	16
R2	0.61	0.95	0.804	0.98
Adjusted R2	0.513	0.938	0.755	0.975
Residual Std. Error (df = 12)	10.069	7.002	154,893.50	110,127.50
F Statistic (df = 3; 12)	6.257***	76.519***	16.382***	197.370***

Note: *p<0.1; **p<0.05; ***p<0.01

NETS: Gresham-Hood Avenue

Construction completion: 2013

	Employment		Sales	
	Retail	Food	Retail	Food
ts_year	-2.524*	2.455**	-19,299.38	143,575.500***
	(1.294)	(0.948)	(116,623.300)	(34,301.070)
prepost	154.415	95.467	24,339,403.000**	5,975,152.000**
	(94.137)	(68.924)	(8,482,507.000)	(2,494,861.000)
ts_year:prepost	-12.276	-5.255	-1,950,851.000***	-385,845.500*
	(7.042)	(5.156)	(634,499.500)	(186,618.000)
Constant	105.885***	44.333***	8,990,247.000***	1,037,618.000***
	(8.404)	(6.153)	(757,303.700)	(222,737.000)
Observations	16	16	16	16
R2	0.634	0.814	0.588	0.876
Adjusted R2	0.543	0.768	0.485	0.845
Residual Std. Error (df = 12)	15.477	11.332	1,394,612.00	410,181.10
F Statistic (df = 3; 12)	6.935***	17.529***	5.715**	28.214***

Note: *p<0.1; **p<0.05; ***p<0.01

13.7 Portland: E Burnside Street DID regression models

LEHD: Portland-Burnside Street

Construction completion: 2010

	Employment	
	Retail	Food
Type (Base: Treatment)	1.222	-8.778
	(11.996)	(25.598)
Prepost	-3.635	87.508***
	(12.824)	(27.366)
Type:Prepost	-30.651	67.778*
	(18.136)	(38.701)
Constant	86.778***	162.778***
	(8.482)	(18.101)
Observations	32	32
R2	0.245	0.609
Adjusted R2	0.164	0.567
Residual Std. Error (df = 28)	25.447	54.302
F Statistic (df = 3; 28)	3.021**	14.536***

Note: *p<0.1; **p<0.05; ***p<0.01

QCEW: Portland-Burnside Street

Construction completion: 2010

	Employment		Total Wages	
	Retail	Food	Retail	Food
Type (Base: Treatment)	-105.406***	96.448*	-5,666,090.000***	1,163,509.00
	(27.074)	(51.103)	(1,495,186.000)	(1,749,868.000)
Prepost	67.771**	162.031***	7,196,481.000***	5,347,980.000***
	(27.074)	(51.103)	(1,495,186.000)	(1,749,868.000)
Type:Prepost	-24.823	164.448**	-4,538,968.000**	4,498,608.000*
	(38.289)	(72.271)	(2,114,512.000)	(2,474,688.000)
Constant	363.615***	246.573***	13,646,531.000***	3,962,871.000***
	(19.144)	(36.135)	(1,057,256.000)	(1,237,344.000)
Observations	32	32	32	32
R2	0.625	0.729	0.747	0.635
Adjusted R2	0.585	0.7	0.72	0.595
Residual Std. Error (df = 28)	54.149	102.207	2,990,372.000	3,499,737.000
F Statistic (df = 3; 28)	15.552***	25.105***	27.554***	16.204***

Note: *p<0.1; **p<0.05; ***p<0.01

NETS: Portland-Burnside Street

Construction completion: 2010

	Employment		Sales	
	Retail	Food	Retail	Food
Type (Base: Treatment)	-142.222***	225.000***	-64,412,895.000***	10,787,833.000***
	(7.987)	(13.767)	(4,344,890.000)	(982,285.400)
Prepost	55.762***	102.365***	-12,626,824.000**	3,379,368.000***
	(8.539)	(14.718)	(4,644,882.000)	(1,050,107.000)
Type:Prepost	-88.349***	42.571*	16,910,973.000**	-1,506,728.000
	(12.076)	(20.814)	(6,568,856.000)	(1,485,076.000)
Constant	379.667***	116.778***	91,156,362.000***	4,752,556.000***
	(5.648)	(9.735)	(3,072,301.000)	(694,580.700)
Observations	32	32	32	32
R2	0.972	0.962	0.918	0.879
Adjusted R2	0.969	0.958	0.909	0.866
Residual Std. Error (df = 28)	16.944	29.205	9,216,903.000	2,083,742.000
F Statistic (df = 3; 28)	322.943***	234.022***	104.786***	67.518***

Note: *p<0.1; **p<0.05; ***p<0.01

13.8 Portland: E Burnside Street ITS analysis models

LEHD: Portland-Burnside Street

Construction completion: 2010

	Employment	
	Retail	Food
ts_year	-10.033***	20.767***
	(2.314)	(4.104)
prepost	-86.197*	21.86
	(42.662)	(75.655)
ts_year:prepost	13.569***	-8.374
	(4.103)	(7.276)
Constant	126.911***	79.711***
	(11.018)	(19.539)
Observations	16	16
R2	0.626	0.833
Adjusted R2	0.532	0.791
Residual Std. Error (df = 12)	17.926	31.79
F Statistic (df = 3; 12)	6.682***	19.898***

Note: *p<0.1; **p<0.05; ***p<0.01

QCEW: Portland-Burnside Street

Construction completion: 2010

	Employment		Total Wages	
	Retail	Food	Retail	Food
ts_year	-13.717	23.918***	-685,047.900*	566,117.000***
	(7.891)	(6.072)	(318,741.200)	(128,580.400)
prepost	-164.068	-185.598**	-15,311,554.000***	-7,933,259.000***
	(98.237)	(75.591)	(3,968,296.000)	(1,600,813.000)
ts_year:prepost	29.702**	13.59	2,433,776.000***	761,069.900***
	(11.159)	(8.587)	(450,768.100)	(181,840.100)
Constant	411.625***	162.861***	16,044,199.000***	1,981,462.000***
	(33.009)	(25.399)	(1,333,390.000)	(537,890.400)
Observations	16	16	16	16
R2	0.541	0.91	0.874	0.96
Adjusted R2	0.426	0.888	0.843	0.95
Residual Std. Error (df = 12)	51.137	39.348	2,065,679.00	833,296.20
F Statistic (df = 3; 12)	4.717**	40.503***	27.756***	96.894***

Note: *p<0.1; **p<0.05; ***p<0.01

NETS: Portland-Burnside Street

Construction completion: 2010

	Employment		Sales	
	Retail	Food	Retail	Food
ts_year	4.383*	8.500***	-3,237,336.000**	291,901.700***
	(2.179)	(1.767)	(1,319,702.000)	(85,640.430)
prepost	27.438	-22.206	-72,787,528.000**	-2,435,179.00
	(40.176)	(32.573)	(24,327,281.000)	(1,578,689.000)
ts_year:prepost	-0.562	4.714	7,171,616.000***	289,944.500*
	(3.864)	(3.133)	(2,339,581.000)	(151,824.300)
Constant	362.133***	82.778***	104,105,705.000***	3,584,949.000***
	(10.376)	(8.413)	(6,283,037.000)	(407,730.000)
Observations	16	16	16	16
R2	0.801	0.957	0.574	0.919
Adjusted R2	0.752	0.947	0.468	0.898
Residual Std. Error (df = 12)	16.882	13.687	10,222,366.00	663,367.90
F Statistic (df = 3; 12)	16.146***	89.824***	5.391**	45.114***

Note: *p<0.1; **p<0.05; ***p<0.01

13.9 Portland: SE Division Street ITS analysis models

LEHD: Portland-Division Street

Construction completion: 2014

	Employment	
	Retail	Food
ts_year	-3.423**	34.066***
	(1.311)	(3.721)
prepost	-118.846	181.062
	(175.628)	(498.501)
ts_year:prepost	12.923	-1.566
	(12.575)	(35.692)
Constant	127.846***	71.604**
	(9.270)	(26.312)
Observations	16	16
R2	0.583	0.957
Adjusted R2	0.479	0.946
Residual Std. Error (df = 12)	17.686	50.201
F Statistic (df = 3; 12)	5.591**	88.292***

Note: *p<0.1; **p<0.05; ***p<0.01

QCEW: Portland-Division Street

Construction completion: 2014

	Employment		Total Wages	
	Retail	Food	Retail	Food
ts_year	13.903**	43.706***	462,436.300***	910,524.700***
	(5.360)	(5.545)	(108,185.700)	(138,881.200)
prepost	296.154	-614.632	240,348.40	-26,959,493.000**
	(389.887)	(403.299)	(7,868,804.000)	(10,101,419.000)
ts_year:prepost	-27.244	61.060*	-90,576.51	2,640,507.000***
	(29.164)	(30.167)	(588,594.000)	(755,595.700)
Constant	284.646***	290.199***	6,190,256.000***	3,800,182.000***
	(34.808)	(36.006)	(702,513.400)	(901,837.400)
Observations	16	16	16	16
R2	0.403	0.96	0.727	0.966
Adjusted R2	0.253	0.95	0.658	0.958
Residual Std. Error (df = 12)	64.101	66.307	1,293,713.00	1,660,778.00
F Statistic (df = 3; 12)	2.696*	96.030***	10.639***	114.432***

Note: *p<0.1; **p<0.05; ***p<0.01

NETS: Portland-Division Street

Construction completion: 2014

	Employment		Sales	
	Retail	Food	Retail	Food
ts_year	-16.033***	34.846***	-2,177,435.000***	1,241,495.000***
	(1.933)	(2.587)	(353,089.900)	(80,558.860)
prepost	-305.736	134.41	-101,198,127.000*	7,629,824.00
	(258.900)	(346.589)	(47,301,744.000)	(10,792,081.000)
ts_year:prepost	29.033	-10.846	8,602,218.000**	-413,142.10
	(18.537)	(24.815)	(3,386,719.000)	(772,693.400)
Constant	465.736***	152.923***	56,736,134.000***	5,112,430.000***
	(13.665)	(18.294)	(2,496,722.000)	(569,637.100)
Observations	16	16	16	16
R2	0.857	0.964	0.778	0.978
Adjusted R2	0.822	0.955	0.722	0.972
Residual Std. Error (df = 12)	26.072	34.903	4,763,443.00	1,086,798.00
F Statistic (df = 3; 12)	24.014***	106.336***	14.007***	174.977***

Note: *p<0.1; **p<0.05; ***p<0.01

13.10 Portland: Foster-Woodstock Boulevards DID regression models

LEHD: Portland-Foster-Woodstock

Construction completion: 2013

	Employment	
	Retail	Food
Type (Base: Treatment)	2.500	130.083***
	(7.956)	(10.613)
Prepost	-6.500	-42.167***
	(11.251)	(15.009)
Type:Prepost	14.500	23.917
	(15.912)	(21.226)
Constant	40.250***	63.417***
	(5.626)	(7.505)
Observations	32	32
R2	0.055	0.891
Adjusted R2	-0.046	0.879
Residual Std. Error (df = 28)	19.488	25.997
F Statistic (df = 3; 28)	0.543	76.171***

Note: *p<0.1; **p<0.05; ***p<0.01

QCEW: Portland-Foster-Woodstock

Construction completion: 2013

	Employment		Total Wages	
	Retail	Food	Retail	Food
Type (Base: Treatment)	142.394***	280.682***	3,141,429.000***	3,592,735.000***
	(12.605)	(11.465)	(340,084.500)	(134,012.900)
Prepost	8.198	-27.074*	160,588.800	-104,009.00
	(15.944)	(14.502)	(430,176.600)	(169,514.400)
Type:Prepost	-19.194	-20.215	-102,229.800	478,115.900*
	(22.548)	(20.509)	(608,361.600)	(239,729.600)
Constant	31.318***	58.424***	512,388.000**	625,739.000***
	(8.913)	(8.107)	(240,476.000)	(94,761.460)
Observations	32	32	32	32
R2	0.859	0.968	0.813	0.976
Adjusted R2	0.844	0.965	0.793	0.973
Residual Std. Error (df = 28)	29.560	26.888	797,568.800	314,288.200
F Statistic (df = 3; 28)	57.021***	282.366***	40.586***	379.803***

Note: *p<0.1; **p<0.05; ***p<0.01

NETS: Portland-Foster-Woodstock

Construction completion: 2013

	Employment		Sales	
	Retail	Food	Retail	Food
Type (Base: Treatment)	179.833***	262.583***	49,723,528.000***	8,972,167.000***
	(10.729)	(15.693)	(5,387,094.000)	(495,311.900)
Prepost	-11.167	14.000	-112,730.200	-750,742.800
	(15.173)	(22.193)	(7,618,501.000)	(700,476.900)
Type:Prepost	-136.833***	74.417**	-47,999,834.000***	4,057,589.000***
	(21.458)	(31.386)	(10,774,188.000)	(990,623.900)
Constant	77.917***	72.750***	9,022,630.000**	3,491,158.000***
	(7.587)	(11.096)	(3,809,251.000)	(350,238.400)
Observations	32	32	32	32
R2	0.924	0.941	0.790	0.953
Adjusted R2	0.916	0.934	0.767	0.948
Residual Std. Error (df = 28)	26.281	38.439	13,195,632.000	1,213,262.000
F Statistic (df = 3; 28)	113.774***	148.118***	35.088***	188.484***

Note: *p<0.1; **p<0.05; ***p<0.01

13.11 Portland: Foster-Woodstock Boulevards ITS analysis models

LEHD: Portland-Foster-Woodstock

Construction completion: 2013

	Employment	
	Retail	Food
ts_year	-3.276*	-3.605**
	(1.536)	(1.212)
prepost	22.731	-3.944
	(111.724)	(88.157)
ts_year:prepost	-0.224	-0.695
	(8.357)	(6.594)
Constant	58.269***	83.244***
	(9.975)	(7.871)
Observations	16	16
R2	0.299	0.743
Adjusted R2	0.123	0.679
Residual Std. Error (df = 12)	18.369	14.494
F Statistic (df = 3; 12)	1.702	11.559***

Note: *p<0.1; **p<0.05; ***p<0.01

QCEW: Portland-Foster-Woodstock

Construction completion: 2013

	Employment		Total Wages	
	Retail	Food	Retail	Food
ts_year	1.059	-0.498	16,252.55	716.7
	(0.663)	(1.016)	(9,153.053)	(12,376.880)
prepost	68.852**	35.762	729,421.700*	106,673.60
	(29.027)	(44.488)	(400,648.700)	(541,762.600)
ts_year:prepost	-5.317**	-4.527	-53,757.94	-16,647.40
	(2.297)	(3.521)	(31,707.100)	(42,874.780)
Constant	26.023***	60.913***	431,125.300***	622,155.500***
	(3.923)	(6.013)	(54,150.190)	(73,222.630)
Observations	16	16	16	16
R2	0.48	0.672	0.544	0.164
Adjusted R2	0.35	0.591	0.43	-0.045
Residual Std. Error (df = 12)	6.955	10.66	95,998.03	129,809.80
F Statistic (df = 3; 12)	3.692**	8.212***	4.766**	0.787

Note: *p<0.1; **p<0.05; ***p<0.01

NETS: Portland-Foster-Woodstock

Construction completion: 2013

	Employment		Sales	
	Retail	Food	Retail	Food
ts_year	1.178	2.465***	169,325.90	-9,543.01
	(1.855)	(0.755)	(305,517.300)	(45,702.860)
prepost	239.664	28.908	46,466,652.000*	-1,820,030.00
	(134.925)	(54.910)	(22,221,561.000)	(3,324,162.000)
ts_year:prepost	-19.278*	-2.565	-3,550,666.000*	84,861.61
	(10.093)	(4.107)	(1,662,194.000)	(248,650.500)
Constant	71.436***	59.192***	8,091,338.000***	3,543,645.000***
	(12.046)	(4.902)	(1,983,903.000)	(296,775.500)
Observations	16	16	16	16
R2	0.272	0.598	0.277	0.326
Adjusted R2	0.09	0.498	0.096	0.157
Residual Std. Error (df = 12)	22.183	9.028	3,653,455.00	546,526.80
F Statistic (df = 3; 12)	1.497	5.959***	1.531	1.933

Note: *p<0.1; **p<0.05; ***p<0.01

13.12 Portland: St Johns ITS analysis models

LEHD: Portland-St. Johns

Construction completion: 2012

	Employment	
	Retail	Food
ts_year	7.027***	6.045***
	(0.963)	(1.110)
prepost	-76.245*	99.118*
	(42.156)	(48.568)
ts_year:prepost	6.173*	-9.245**
	(3.336)	(3.844)
Constant	45.045***	130.682***
	(5.698)	(6.564)
Observations	16	16
R2	0.941	0.804
Adjusted R2	0.927	0.755
Residual Std. Error (df = 12)	10.101	11.637
F Statistic (df = 3; 12)	64.163***	16.449***

Note: *p<0.1; **p<0.05; ***p<0.01

QCEW: Portland-St. Johns

Construction completion: 2012

	Employment		Total Wages	
	Retail	Food	Retail	Food
ts_year	-8.298***	5.471**	-293,896.300***	114,081.500***
	(1.552)	(1.933)	(30,313.500)	(22,508.500)
prepost	-131.600**	117.095*	-4,472,338.000***	669,346.90
	(43.315)	(53.947)	(845,989.400)	(628,167.500)
ts_year:prepost	15.336***	-11.090**	525,145.200***	-38,835.00
	(3.710)	(4.621)	(72,463.120)	(53,805.610)
Constant	204.958***	177.282***	5,468,339.000***	2,229,610.000***
	(8.286)	(10.319)	(161,829.800)	(120,162.500)
Observations	16	16	16	16
R2	0.737	0.569	0.901	0.919
Adjusted R2	0.672	0.461	0.877	0.899
Residual Std. Error (df = 12)	14.097	17.557	275,336.00	204,443.60
F Statistic (df = 3; 12)	11.230***	5.273**	36.555***	45.314***

Note: *p<0.1; **p<0.05; ***p<0.01

NETS: Portland-St. Johns

Construction completion: 2012

	Employment		Sales	
	Retail	Food	Retail	Food
ts_year	-8.109***	7.582***	-211,599.10	-330,265.500*
	(1.217)	(1.444)	(251,919.300)	(183,504.500)
prepost	-22.691	71.591	11,196,899.00	-9,454,077.00
	(53.292)	(63.211)	(11,027,045.000)	(8,032,384.000)
ts_year:prepost	3.709	-4.882	-542,567.90	673,234.90
	(4.218)	(5.002)	(872,673.900)	(635,678.200)
Constant	260.091***	152.909***	26,740,965.000***	15,109,555.000***
	(7.203)	(8.543)	(1,490,374.000)	(1,085,627.000)
Observations	16	16	16	16
R2	0.867	0.892	0.272	0.537
Adjusted R2	0.834	0.865	0.09	0.422
Residual Std. Error (df = 12)	12.769	15.146	2,642,152.00	1,924,611.00
F Statistic (df = 3; 12)	26.062***	32.926***	1.493	4.645**

Note: *p<0.1; **p<0.05; ***p<0.01

13.13 Beaverton: SW Rose Biggi ITS analysis models

LEHD: Beaverton-SW Rose Biggi Avenue

Construction completion: 2015

	Employment	
	Retail	Food
ts_year	-3.708**	7.404***
	(1.261)	(2.224)
prepost	-987.886**	454.343
	(390.458)	(688.558)
ts_year:prepost	72.708**	-29.404
	(26.933)	(47.496)
Constant	78.886***	108.657***
	(9.647)	(17.012)
Observations	16	16
R2	0.644	0.658
Adjusted R2	0.555	0.573
Residual Std. Error (df = 12)	19.024	33.548
F Statistic (df = 3; 12)	7.246***	7.708***

Note: *p<0.1; **p<0.05; ***p<0.01

QCEW: Beaverton-SW Rose Biggi Avenue

Construction completion: 2015

	Employment		Total Wages	
	Retail	Food	Retail	Food
ts_year	3.301**	11.696***	253,544.300***	340,183.900***
	(1.490)	(1.662)	(72,258.510)	(28,214.210)
prepost	-304.238	149.715	-10,376,222.00	-1,477,575.00
	(199.569)	(222.584)	(9,680,124.000)	(3,779,721.000)
ts_year:prepost	25.574*	-11.071	1,036,143.00	184,861.60
	(14.289)	(15.937)	(693,079.300)	(270,621.200)
Constant	52.932***	217.841***	893,842.20	3,531,723.000***
	(10.534)	(11.749)	(510,944.800)	(199,504.600)
Observations	16	16	16	16
R2	0.8	0.879	0.904	0.971
Adjusted R2	0.749	0.849	0.880	0.963
Residual Std. Error (df = 12)	20.097	22.415	974,820.60	380,630.50
F Statistic (df = 3; 12)	15.954***11.696***	29.124***	37.695***	132.076***

Note: *p<0.1; **p<0.05; ***p<0.01

NETS: Beaverton-SW Rose Biggi Avenue

Construction completion: 2015

	Employment		Sales	
	Retail	Food	Retail	Food
ts_year	2.158	2.116	-257,595.10	28,231.64
	(3.706)	(4.324)	(1,289,709.000)	(127,089.500)
prepost	-24.686	18.686	18,670,022.00	-3,842,005.00
	(1,147.375)	(1,338.586)	(399,260,173.000)	(39,343,586.000)
ts_year:prepost	-1.158	3.884	-893,259.90	349,972.40
	(79.145)	(92.335)	(27,540,643.000)	(2,713,889.000)
Constant	242.686***	227.314***	66,421,511.000***	8,887,337.000***
	(28.348)	(33.072)	(9,864,375.000)	(972,047.600)
Observations	16	16	16	16
R2	0.053	0.237	0.009	0.083
Adjusted R2	-0.184	0.046	-0.239	-0.147
Residual Std. Error (df = 12)	55.903	65.219	19,452,810.00	1,916,904.00
F Statistic (df = 3; 12)	0.223	1.24	0.034	0.361

Note: *p<0.1; **p<0.05; ***p<0.01

13.14 Cornelius: E Baseline Street ITS analysis models

LEHD: Cornelius-Baseline Street

Construction completion: 2014

	Employment	
	Retail	Food
ts_year	-6.429***	3.214***
	(1.998)	(0.817)
prepost	-245.341	-31.304
	(267.637)	(109.503)
ts_year:prepost	19.429	3.786
	(19.162)	(7.840)
Constant	274.341***	26.637***
	(14.127)	(5.780)
Observations	16	16
R2	0.941	0.836
Adjusted R2	0.927	0.795
Residual Std. Error (df = 12)	10.101	11.027
F Statistic (df = 3; 12)	64.163***	20.441***

Note: *p<0.1; **p<0.05; ***p<0.01

QCEW: Cornelius-Baseline Street

Construction completion: 2014

	Employment		Total Wages	
	Retail	Food	Retail	Food
ts_year	-3.763***	2.702*	-22,869.30	84,938.400***
	(0.865)	(1.391)	(34,700.720)	(15,875.640)
prepost	9.479	-138.78	-1,193,413.00	-4,267,375.000***
	(62.934)	(101.157)	(2,523,930.000)	(1,154,702.000)
ts_year:prepost	-1.621	14.015*	38,785.90	375,901.900***
	(4.708)	(7.567)	(188,792.300)	(86,372.820)
Constant	135.279***	57.105***	2,815,567.000***	488,577.200***
	(5.619)	(9.031)	(225,332.100)	(103,089.800)
Observations	16	16	16	16
R2	0.855	0.844	0.522	0.953
Adjusted R2	0.819	0.805	0.403	0.941
Residual Std. Error	10.347	16.631	414,960.30	189,845.00
F Statistic (df = 3; 1	23.626***	21.702***	4.370**	80.698***

Note: *p<0.1; **p<0.05; ***p<0.01

NETS: Cornelius-Baseline Street

Construction completion: 2014

	Employment		Sales	
	Retail	Food	Retail	Food
ts_year	-19.516***	4.247***	-2,881,065.000***	333,392.900***
	(3.920)	(0.621)	(781,329.100)	(19,727.040)
prepost	-267.612	92.15	-24,194,428.00	7,139,857.000**
	(525.089)	(83.257)	(104,670,882.000)	(2,642,736.000)
ts_year:prepost	18.016	-6.247	1,441,315.00	-549,942.900**
	(37.595)	(5.961)	(7,494,245.000)	(189,215.100)
Constant	402.945***	40.516***	60,014,562.000***	732,142.900***
	(27.716)	(4.395)	(5,524,831.000)	(139,491.200)
Observations	16	16	16	16
R2	0.808	0.892	0.712	0.973
Adjusted R2	0.76	0.864	0.64	0.967
Residual Std. Error	52.878	8.384	10,540,705.00	266,132.30
F Statistic (df = 3; 1	16.813***	32.887***	9.901***	146.615***

Note: *p<0.1; **p<0.05; ***p<0.01

13.15 Forest Grove: Town Center ITS analysis models

LEHD: Forest Grove-Town Center

Construction completion: 2010

	Employment	
	Retail	Food
ts_year	-1.900*	4.950*
	(0.933)	(2.393)
prepost	-57.648***	79.832*
	(17.200)	(44.117)
ts_year:prepost	5.043**	-3.236
	(1.654)	(4.243)
Constant	78.933***	57.311***
	(4.442)	(11.394)
Observations	16	16
R2	0.635	0.868
Adjusted R2	0.544	0.835
Residual Std. Error (df = 12)	7.227	18.538
F Statistic (df = 3; 12)	6.969***	26.319***

Note: *p<0.1; **p<0.05; ***p<0.01

QCEW: Forest Grove-Town Center

Construction completion: 2010

	Employment		Total Wages	
	Retail	Food	Retail	Food
ts_year	-4.015**	-4.689	-57,935.94	2,865.68
	(1.501)	(4.308)	(37,026.570)	(77,937.090)
prepost	-68.953***	-143.060**	-1,739,551.000***	-3,227,237.000***
	(18.688)	(53.632)	(460,977.000)	(970,309.000)
ts_year:prepost	7.510***	23.971***	180,837.500***	479,619.100***
	(2.123)	(6.092)	(52,363.470)	(110,219.700)
Constant	134.875***	152.944***	3,087,252.000***	1,424,020.000***
	(6.279)	(18.021)	(154,893.200)	(326,034.200)
Observations	16	16	16	16
R2	0.644	0.849	0.548	0.911
Adjusted R2	0.555	0.812	0.434	0.888
Residual Std. Error (df = 12)	9.728	27.918	239,959.60	505,090.10
F Statistic (df = 3; 12)	7.240***	22.542***	4.841**	40.695***

Note: *p<0.1; **p<0.05; ***p<0.01

NETS: Forest Grove-Town Center

Construction completion: 2010

	Employment		Sales	
	Retail	Food	Retail	Food
ts_year	-2.233	1.383	-384,055.800*	61,495.00
	(2.278)	(2.009)	(208,790.400)	(68,111.760)
prepost	-71.648	35.47	-14,476,924.000***	2,882,472.000**
	(41.986)	(37.027)	(3,848,826.000)	(1,255,567.000)
ts_year:prepost	2.733	-2.74	1,004,261.000**	-164,133.90
	(4.038)	(3.561)	(370,145.800)	(120,749.200)
Constant	238.933***	172.244***	24,145,487.000***	5,437,553.000***
	(10.844)	(9.563)	(994,041.100)	(324,276.800)
Observations	16	16	16	16
R2	0.776	0.237	0.815	0.713
Adjusted R2	0.721	0.046	0.769	0.641
Residual Std. Error (df = 12)	17.643	15.559	1,617,283.00	527,591.40
F Statistic (df = 3; 12)	13.891***	1.239	17.670***	9.931***

Note: *p<0.1; **p<0.05; ***p<0.01

13.16 Tigard: Main Street DID regression models

LEHD: Tigard-Main Street

Construction completion: 2014

	Employment	
	Retail	Food
Type (Base: Treatment)	54.154***	-13.308*
	(9.339)	(6.673)
Prepost	-32.538**	0.205
	(15.250)	(10.897)
Type:Prepost	13.846	-14.692
	(21.566)	(15.411)
Constant	82.538***	105.462***
	(6.603)	(4.719)
Observations	32	32
R2	0.648	0.241
Adjusted R2	0.610	0.160
Residual Std. Error (df = 28)	23.809	17.013
F Statistic (df = 3; 28)	17.169***	2.966**

Note: *p<0.1; **p<0.05; ***p<0.01

QCEW: Tigard-Main Street

Construction completion: 2014

	Employment		Total Wages	
	Retail	Food	Retail	Food
Type (Base: Treatment)	43.361***	48.090***	-356,383.400	489,818.500***
	(7.299)	(7.182)	(243,331.400)	(102,618.700)
Prepost	-10.090	18.368*	-60,082.500	584,081.800***
	(10.322)	(10.157)	(344,122.500)	(145,124.700)
Type:Prepost	-1.861	-26.778*	-104,268.600	-208,504.500
	(14.598)	(14.364)	(486,662.800)	(205,237.400)
Constant	96.403***	86.611***	3,610,774.000***	1,102,275.000***
	(5.161)	(5.078)	(172,061.300)	(72,562.370)
Observations	32	32	32	32
R2	0.633	0.633	0.113	0.627
Adjusted R2	0.594	0.593	0.018	0.588
Residual Std. Error (df = 28)	17.879	17.592	596,037.700	251,363.400
F Statistic (df = 3; 28)	16.116***	16.084***	1.184	15.717***

Note: *p<0.1; **p<0.05; ***p<0.01

NETS: Tigard-Main Street

Construction completion: 2014

	Employment		Sales	
	Retail	Food	Retail	Food
Type (Base: Treatment)	138.231***	77.615***	22,309,508.000***	2,095,785.000***
	(8.332)	(5.451)	(1,023,259.000)	(183,675.200)
Prepost	-21.436	9.077	-2,206,013.000	-155,879.700
	(13.605)	(8.902)	(1,670,975.000)	(299,940.400)
Type:Prepost	-11.231	-7.949	2,957,433.000	42,785.390
	(19.241)	(12.590)	(2,363,115.000)	(424,179.700)
Constant	158.769***	91.923***	20,395,979.000***	3,699,400.000***
	(5.891)	(3.855)	(723,553.200)	(129,878.000)
Observations	32	32	32	32
R2	0.923	0.896	0.957	0.853
Adjusted R2	0.915	0.885	0.952	0.837
Residual Std. Error (df = 28)	21.242	13.899	2,608,808.000	468,281.700
F Statistic (df = 3; 28)	112.264***	80.350***	205.477***	53.960***

Note: *p<0.1; **p<0.05; ***p<0.01

13.17 Tigard: Main Street ITS analysis models

LEHD: Tigard-Main Street

Construction completion: 2014

	Employment	
	Retail	Food
ts_year	-7.209***	1.615
	(0.893)	(1.342)
prepost	-40.791	30.897
	(119.602)	(179.762)
ts_year:prepost	4.709	-3.115
	(8.563)	(12.871)
Constant	125.791***	95.769***
	(6.313)	(9.488)
Observations	16	16
R2	0.874	0.109
Adjusted R2	0.842	-0.114
Residual Std. Error (df = 12)	12.044	18.103
F Statistic (df = 3; 12)	27.691***	0.488

Note: *p<0.1; **p<0.05; ***p<0.01

QCEW: Tigard-Main Street

Construction completion: 2014

	Employment		Total Wages	
	Retail	Food	Retail	Food
ts_year	-3.151**	3.654***	-82,926.31	64,322.990***
	(1.286)	(0.748)	(56,734.020)	(8,041.339)
prepost	-40.808	12.702	-2,375,578.00	-847,696.30
	(93.540)	(54.429)	(4,126,505.000)	(584,880.500)
ts_year:prepost	4.143	-1.746	220,659.70	67,940.31
	(6.997)	(4.071)	(308,666.500)	(43,749.610)
Constant	113.733***	66.515***	4,066,869.000***	748,498.500***
	(8.351)	(4.859)	(368,407.300)	(52,217.130)
Observations	16	16	16	16
R2	0.379	0.754	0.165	0.939
Adjusted R2	0.223	0.692	-0.044	0.924
Residual Std. Error (df = 12)	15.379	8.949	678,440.20	96,160.43
F Statistic (df = 3; 12)	2.438	12.236***	0.789	61.375***

Note: *p<0.1; **p<0.05; ***p<0.01

NETS: Tigard-Main Street

Construction completion: 2014

	Employment		Sales	
	Retail	Food	Retail	Food
ts_year	-4.390***	2.143**	-113,069.10	8,220.33
	(0.877)	(0.785)	(94,338.030)	(37,554.570)
prepost	-68.777	-6.066	-28,727,727.000**	-554,284.70
	(117.452)	(105.138)	(12,638,010.000)	(5,031,005.000)
ts_year:prepost	5.89	-0.143	1,959,019.000*	23,760.17
	(8.409)	(7.528)	(904,858.600)	(360,210.800)
Constant	185.110***	79.066***	21,074,394.000***	3,650,078.000***
	(6.199)	(5.549)	(667,070.600)	(265,550.900)
Observations	16	16	16	16
R2	0.734	0.437	0.519	0.023
Adjusted R2	0.667	0.296	0.399	-0.221
Residual Std. Error (df = 12)	11.828	10.588	1,272,690.00	506,638.90
F Statistic (df = 3; 12)	11.037***	3.106*	4.322**	0.096

Note: *p<0.1; **p<0.05; ***p<0.01