

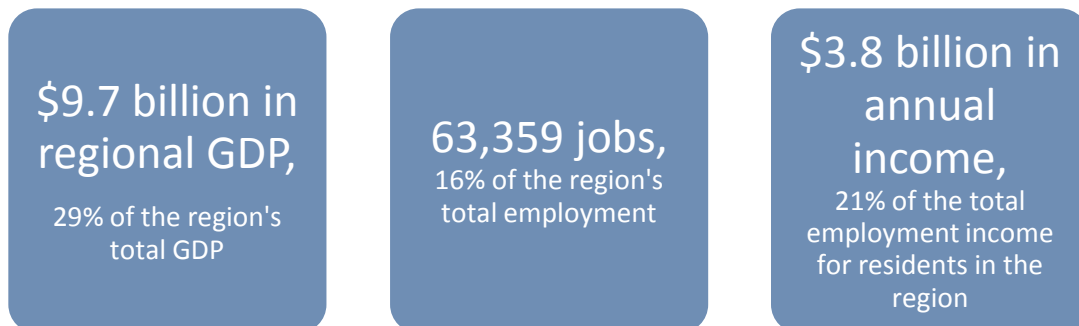
# Addendum 2A:

## Freight Contribution to the Regional Economy

### 1.1 Overview

To understand the transportation performance needs of the freight sectors driving the Treasure Valley's economic activity and growth, this addendum provides a description of the regional economic impact of freight in Ada and Canyon counties ("the region").

Freight has a significant impact on the region, directly contributing:

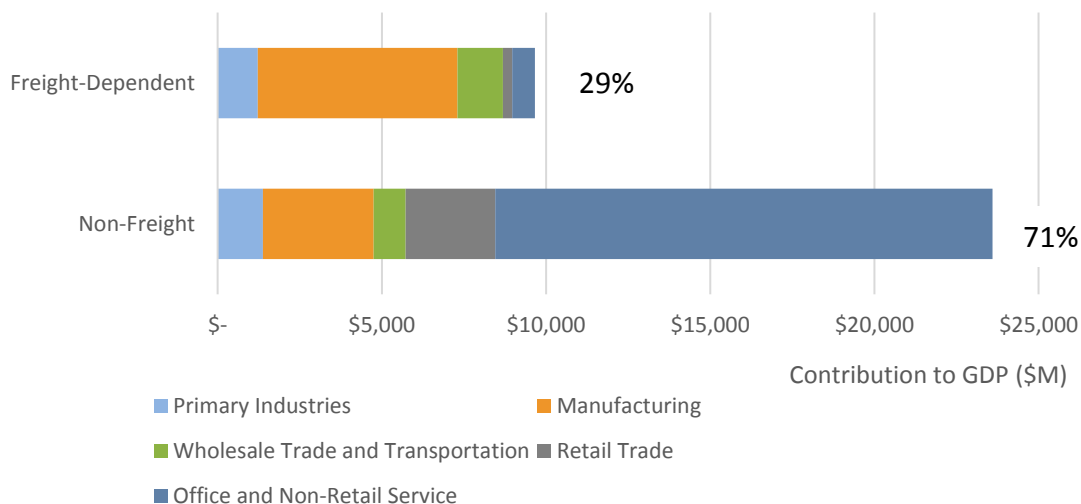


### 1.2 Importance of Freight to the Region's Economy

Figure 1-1 breaks down freight-dependent economic activity by sector. The clear driver of most freight-dependent GDP (Gross Domestic Product) is the Manufacturing sector – responsible for \$6.1 billion or 63% of freight-dependent GDP in the region. This reflects the fact that manufacturers depend on road and rail infrastructure to get product to market and to receive raw materials, inputs, and equipment. Expectedly, the Office and Non-Retail Service sector generates GDP that is mostly non-freight-dependent, but even this sector demands freight to some extent (e.g. businesses and hospitals requiring supplies).

***Freight does not dominate the region's economy but does serve as an important contributor – with the Manufacturing sector leading the way.***

Figure 1-1: Contribution to GDP, By Sector



Source: CPCS analysis of TREDIS data (2016). Non-Freight refers to GDP created in each sector that is not considered by TREDIS to be freight-dependent.

Transportation and Warehousing (a subset of Wholesale Trade and Transportation in the figure above) itself accounts for only \$633 million of GDP or 2% of the regional total. This includes the GDP contributions of the air, rail, water, truck, and pipeline transportation industries, as well as couriers and warehousing/storage. However, when considering how many other industries rely on the freight system for delivering inputs and shipping outputs, the region’s total economic freight dependence is far larger than the Transportation and Warehousing industries alone.

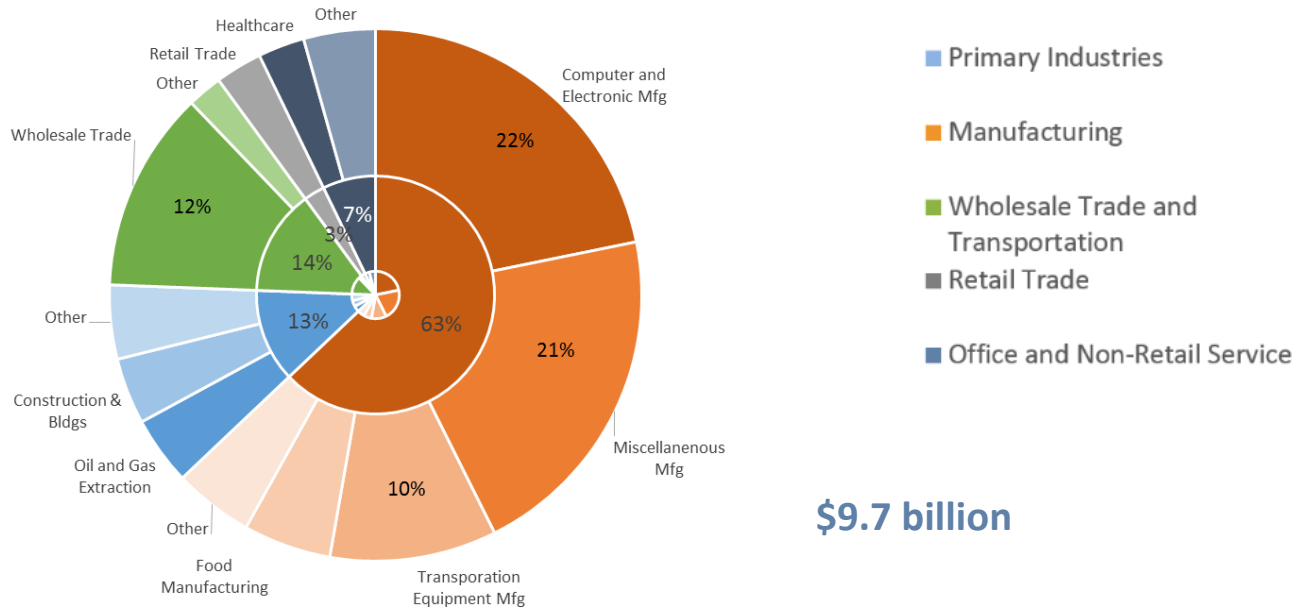
***The total value of regional GDP that is freight-dependent is \$9.7 billion – more than 15 times the GDP generated by Transportation and Warehousing alone.***

### 1.3 Importance of Freight to GDP, Employment, and Labor Income

Breaking down the sectors further reveals which industries are most important to freight-dependent economic activity in the region. The top industries vary depending on whether one analyzes GDP, employment or labor income.

Figure 1-2 shows the top industries in terms of contribution to regional GDP. Computer and Electronic Manufacturing alone is responsible for 22% of all freight-dependent GDP in the region. Transportation Equipment Manufacturing is also a significant share at 10%. (It is not immediately clear what Miscellaneous Manufacturing refers to).

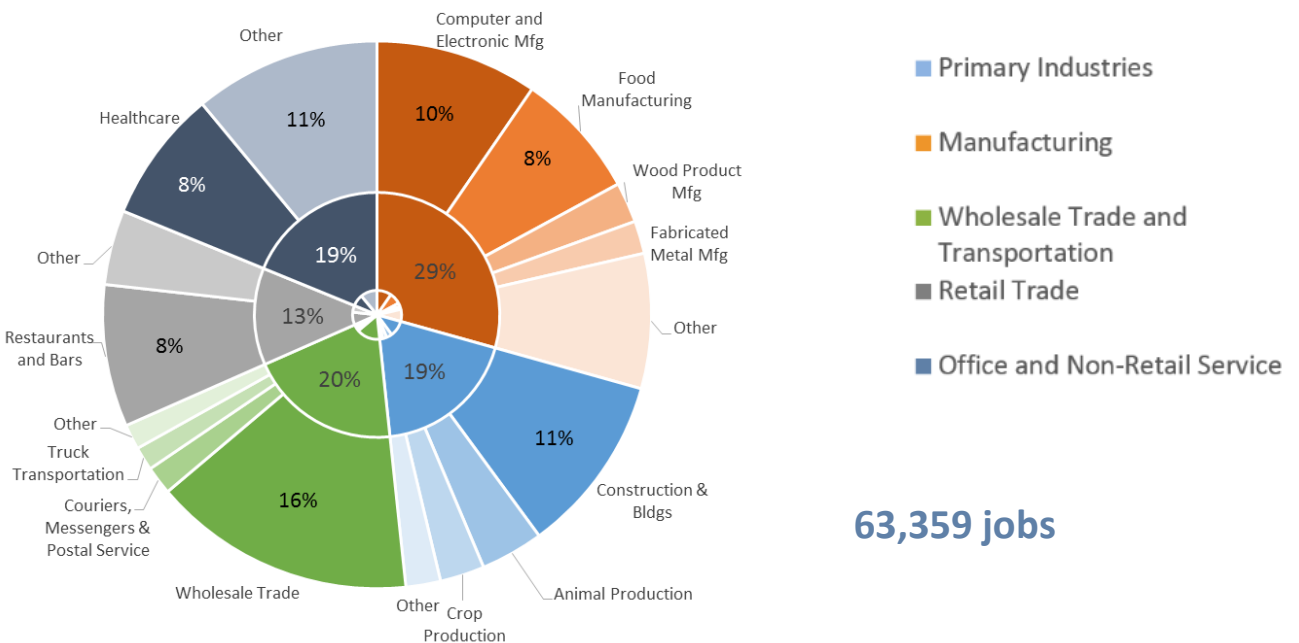
Figure 1-2: Top Industries – Contribution of Freight to Regional GDP



Source: CPCS analysis of TREDIS data (2016). Includes all economic activity classified as Freight-Dependent by TREDIS.

Figure 1-3 shows the top industries by employment. The distribution of jobs by industry is much more evenly distributed than for GDP. Wholesale Trade is responsible for 16% of freight-dependent jobs in the region.

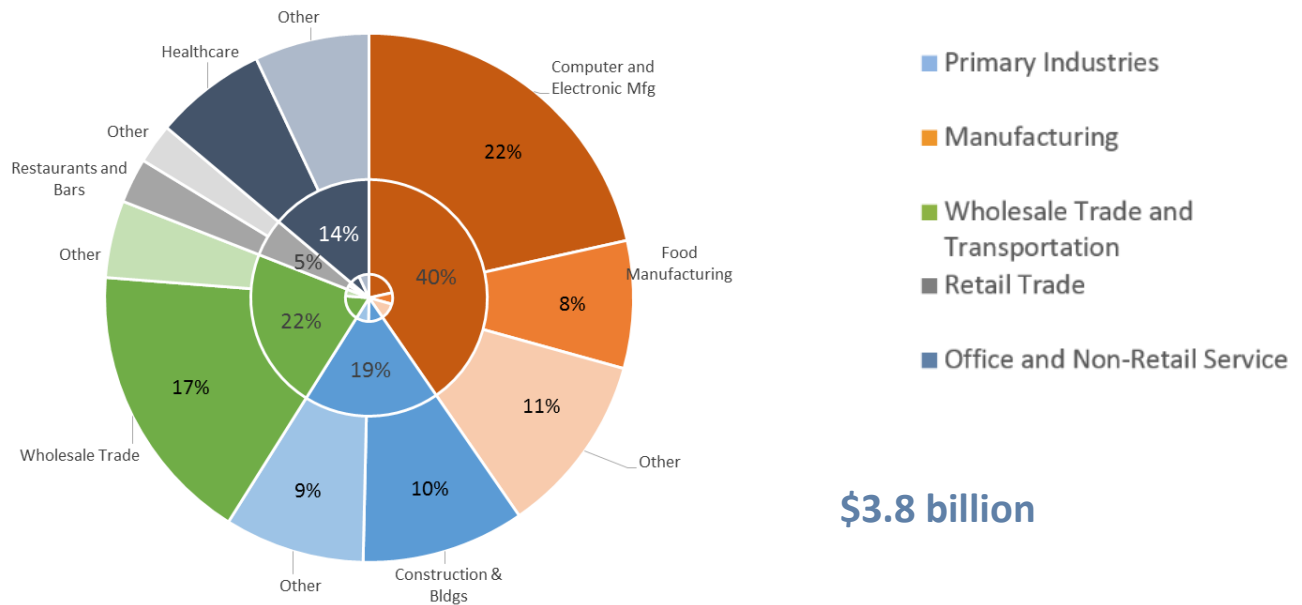
Figure 1-3: Top Industries – Contribution of Freight to Regional Employment



Source: CPCS analysis of TREDIS data (2016). Includes all economic activity classified as Freight-Dependent by TREDIS.

Figure 1-4 shows the same breakdown for labor income. Computer and Electronic Manufacturing is responsible for 22% of freight-dependent labor income in the region, with Wholesale Trade at 17%. Other important industries include Construction and Food Manufacturing. The high share for Computer and Electronic Manufacturing relative to its share for employment indicates that wages in this industry are substantially higher than in other freight-dependent industries.

Figure 1-4: Top Industries – Contribution of Freight to Regional Labor Income



Source: CPCS analysis of TREDIS data (2016). Includes all economic activity classified as Freight-Dependent by TREDIS.

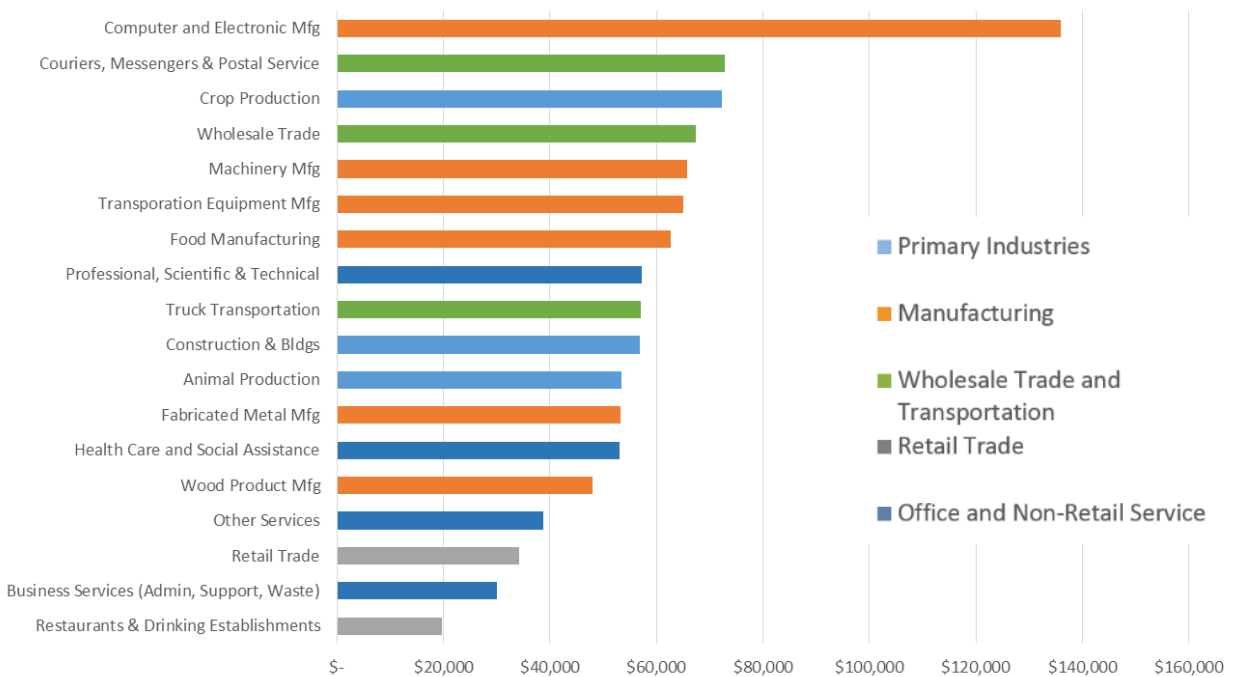
## 1.4 High-Income Freight-Dependent Industries

Figure 1-5 shows the Labor Income per Employee, i.e. wages, for industries with significant freight-dependent employment in the region (at least 750 “freight-dependent” jobs).

This figure draws attention to specific freight-dependent industries that are “punching above their weight,” in terms of delivering household-sustaining jobs for the region.

***Computer and Electronic Manufacturing produces \$136,000 in income per employee – by far the most of any industry. Manufacturing and Transportation industries overall generate higher incomes, while Retail Trade industries have lower incomes.***

Figure 1-5: Labor-Income per Employee, for Top High-Employment Industries



Source: CPCS analysis of TREDIS data (2016). Includes all economic activity classified as Freight-Dependent by TREDIS. Note: To the extent that any employment is undercounted (e.g. season employment), this may skew the labor income per employee result.

## 1.5 Focus on: Agri-Food

Figure 1-6 focuses on Agri-Food industries, comparing these to two regional average baselines. This subgroup is responsible for \$1.3 billion in GDP, or 3.7% of the regional economy. The Agri-Food industries belong to the Primary Industries and Manufacturing sectors, and consist of:

- Crop Production
- Animal Production
- Food Manufacturing
- Beverage & Tobacco Manufacturing

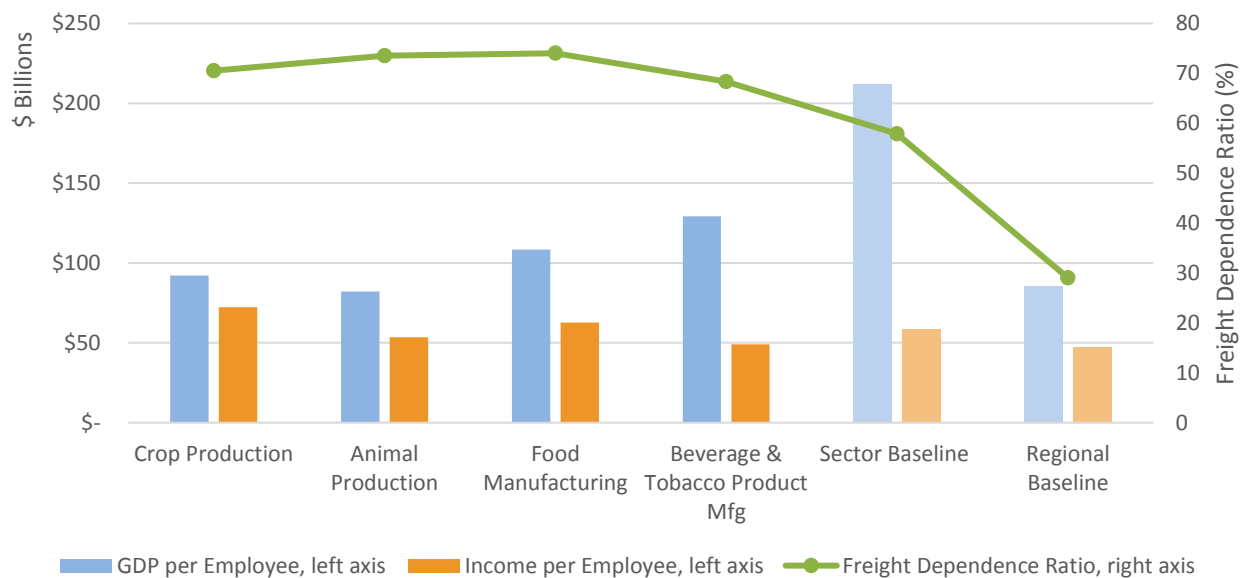
Downstream Agri-Food industries within Wholesale Trade could not be distinguished as this level of detail was not available for Wholesale Trade.

Two baselines are used: the regional baseline (for the regional economy as a whole), and the sector baseline (consisting of all Primary Industries and Manufacturing, excluding Computer and Electrical Manufacturing, which is a large proportion of regional GDP and would otherwise dominate the results).

Compared to the sector baseline, Agri-Food industries are low value-added (low GDP per employee – blue columns), but comparable in terms of income per employee (orange columns). When compared to the regional economy as a whole, both GDP per employee and income per employee are above average.

Agri-Food industries also have a high-level of freight dependence (ratio of GDP that is defined by TREDIS as “Freight-Dependent”) – when compared not only to the general economy but also to other Primary Industries and Manufacturing. This demonstrates that Agri-Food is particularly reliant on road and rail infrastructure for its economic success.

Figure 1-6: Agri-Food Industries – Comparative View



Source: CPCS analysis of TREDIS data (2016). Includes all economic activity classified as Freight-Dependent by TREDIS (except “Avg for Regional Economy” which includes all economic activity, whether Freight-Dependent or not).

***While Agri-Food industries are responsible for only 3.7% of the regional economy (by GDP), these industries are particularly reliant on the region’s road and rail infrastructure.***

## 1.6 Implications

Freight-dependent industries are significant contributors to regional GDP, employment, and income. Many diverse industries across the economy, from construction to agriculture to healthcare, depend on reliable transportation networks for their competitiveness. In reality, the freight impact described in this report is likely conservative, as it does not account for the fact that many freight-dependent businesses function as “base industries” that indirectly support demand for jobs in healthcare, education, restaurants, and other supporting industries.

The overall health of the freight system is closely intertwined with that of the broader regional economy. Assessing and improving the performance of the freight transportation system can help make the region a more competitive environment for exporters and help support investments in key industries, in turn driving economic growth in the region.

# Appendix A. Methodology

The regional GDP, income and number of jobs generated in each respective industry were extracted from TREDIS data provided by COMPASS. TREDIS approximates the dependency of each industry on freight by linking economic data to freight data through vFreight and Transearch prior to attributing a portion of economic measures to freight data through IMPLAN insights on which industries use or produce services. Freight is then made into an input in the form of raw materials and intermediate goods, along with being an output in terms of finished goods, in order to assign the proportion of economic measures that are related to inbound freight movements and outbound freight movements. The freight dependence output reflects a summation of both inbound and outbound values. Due to constraints of available data, indirect and induced impacts are excluded from this analysis.

The study team also utilizes industry categorization to define sectors. The table below describes how these industries are categorized:

Figure 1-7: Sector Categorization

Sector	Industry
Primary Industries	Crop Production
Primary Industries	Animal Production
Primary Industries	Forestry & Logging
Primary Industries	Fishing, etc.
Primary Industries	Support for Agric & Forestry
Primary Industries	Oil and Gas Extraction
Primary Industries	Mining, Quarrying, & Support
Primary Industries	Utilities
Primary Industries	Construction & Bldgs
Manufacturing	Food Manufacturing
Manufacturing	Beverage & Tobacco Product Mfg
Manufacturing	Textile Mills & Products Mfg
Manufacturing	Apparel Mfg
Manufacturing	Leather Product Mfg
Manufacturing	Wood Product Mfg
Manufacturing	Paper Mfg
Manufacturing	Printing
Manufacturing	Petroleum and Coal Products Mfg
Manufacturing	Chemical Mfg
Manufacturing	Plastics & Rubber Products Mfg
Manufacturing	Nonmetal Mineral Product Mfg
Manufacturing	Primary Metal Mfg
Manufacturing	Fabricated Metal Mfg
Manufacturing	Machinery Mfg
Manufacturing	Computer and Electronic Mfg

Sector	Industry
Manufacturing	Electrical Equipment & Appliance Mfg
Manufacturing	Transportation Equipment Mfg
Manufacturing	Furniture Mfg
Manufacturing	Miscellaneous Mfg
Wholesale Trade	Wholesale Trade
Retail Trade	Retail Trade
Transportation and Warehousing	Air Transportation
Transportation and Warehousing	Rail Transportation
Transportation and Warehousing	Water Transportation
Transportation and Warehousing	Truck Transportation
Non-Retail Service	Transit and Ground Transportation
Transportation and Warehousing	Pipeline Transportation
Non-Retail Service	Scenic & Sightseeing Transport Support
Transportation and Warehousing	Couriers, Messengers & Postal Service
Transportation and Warehousing	Warehousing & Storage
Office Sector	Media & Information
Office Sector	Finance & Insurance
Office Sector	Real Estate, Rental & Leasing
Office Sector	Professional, Scientific & Technical
Office Sector	Management Services
Office Sector	Business Services (Admin, Support, Waste)
Non-Retail Service	Education Services
Non-Retail Service	Health Care and Social Assistance
Non-Retail Service	Arts, Entertainment & Recreation
Retail Trade	Lodging
Retail Trade	Restaurants & Drinking Establishments
Non-Retail Service	Other Services
Non-Retail Service	Government (Public Administration)