

**DATE:** November 6, 2014

**ECO Project #: 21774**

**TO:** Lloyd Purdy

**FROM:** Nick Popenuk and Lizzie Gooding

**SUBJECT: BENCHMARKS FOR EVALUATING POTENTIAL INDUSTRIAL DEVELOPMENT**

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## **1. Introduction**

The City of Tigard has asked ECONorthwest to conduct a site-specific infrastructure funding plan for the Fields Trust Site. The purpose of the project is to assist with implementation of new industrial development on the Fields Trust Site, and the surrounding Hunziker Industrial Core. As part of this effort, the City has asked ECONorthwest for benchmarks to evaluate the economic and fiscal impact of potential new development. This memo provides the City with a set of benchmarks for potential industrial development, including employment, income, and real market values per acre.

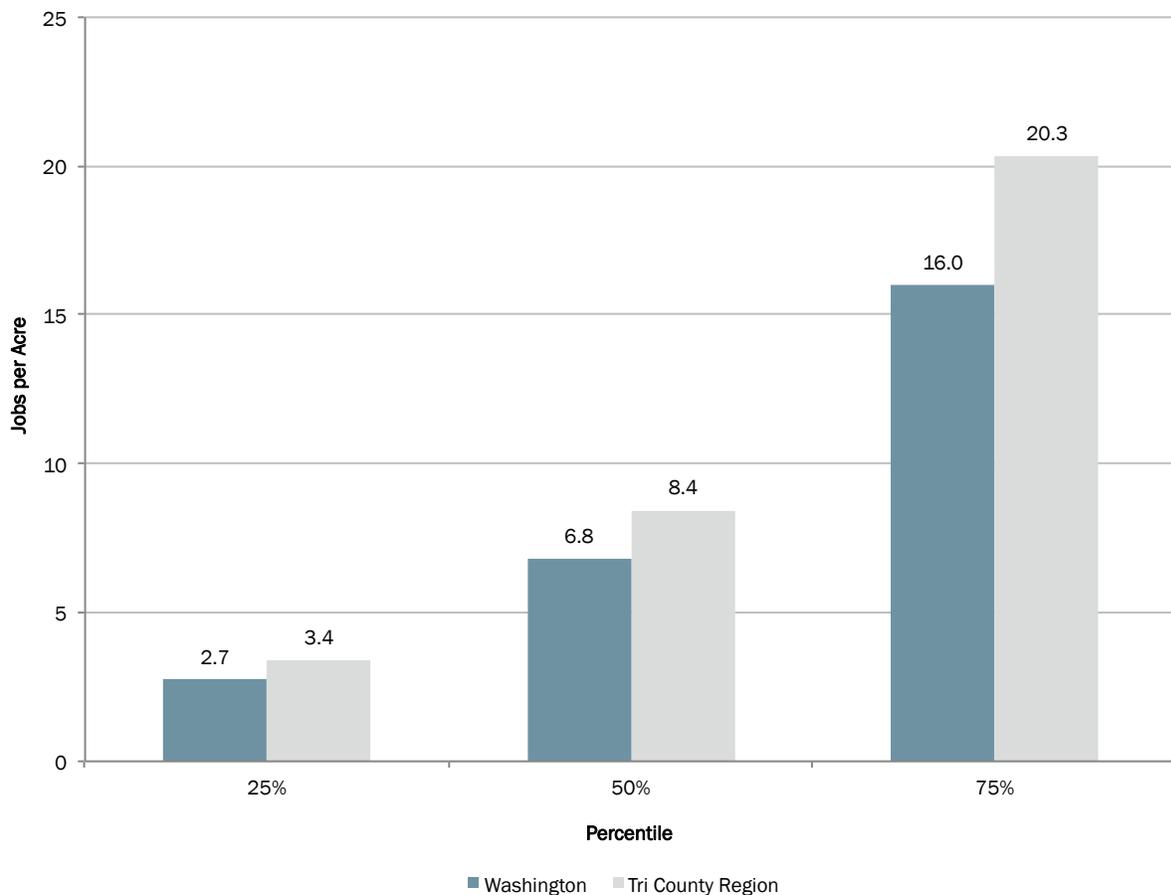
The remainder of this memorandum is organized to provide a summary of the results, followed by a more detailed description of the methods used in the analysis.

## 2. Benchmarks

### Employment density

Exhibit 1 shows employment per acre for industrial properties in the area. Employment density varies widely for different industrial businesses across the region, with values at the 75<sup>th</sup> percentile roughly nine times higher than at the 25<sup>th</sup> percentile. Half of all businesses (those between the 25<sup>th</sup> and 75<sup>th</sup> percentiles) have employment densities that range from 3 to 20 jobs per acre. The 25<sup>th</sup> percentile reflects fairly low-density industrial employment, and is shown to be about 3 jobs per acre region-wide. The median value (i.e., the 50<sup>th</sup> percentile) for industrial properties is 8 jobs per acre region-wide. The 75<sup>th</sup> percentile reflects fairly high-density industrial employment, and is shown to be about 20 jobs per acre region-wide. Note that the employment density for industrial property in Washington County is slightly lower than the region-wide numbers.

**Exhibit 1. Jobs per acre of industrial property, Washington County and Tri-County Portland metropolitan region, 2012**

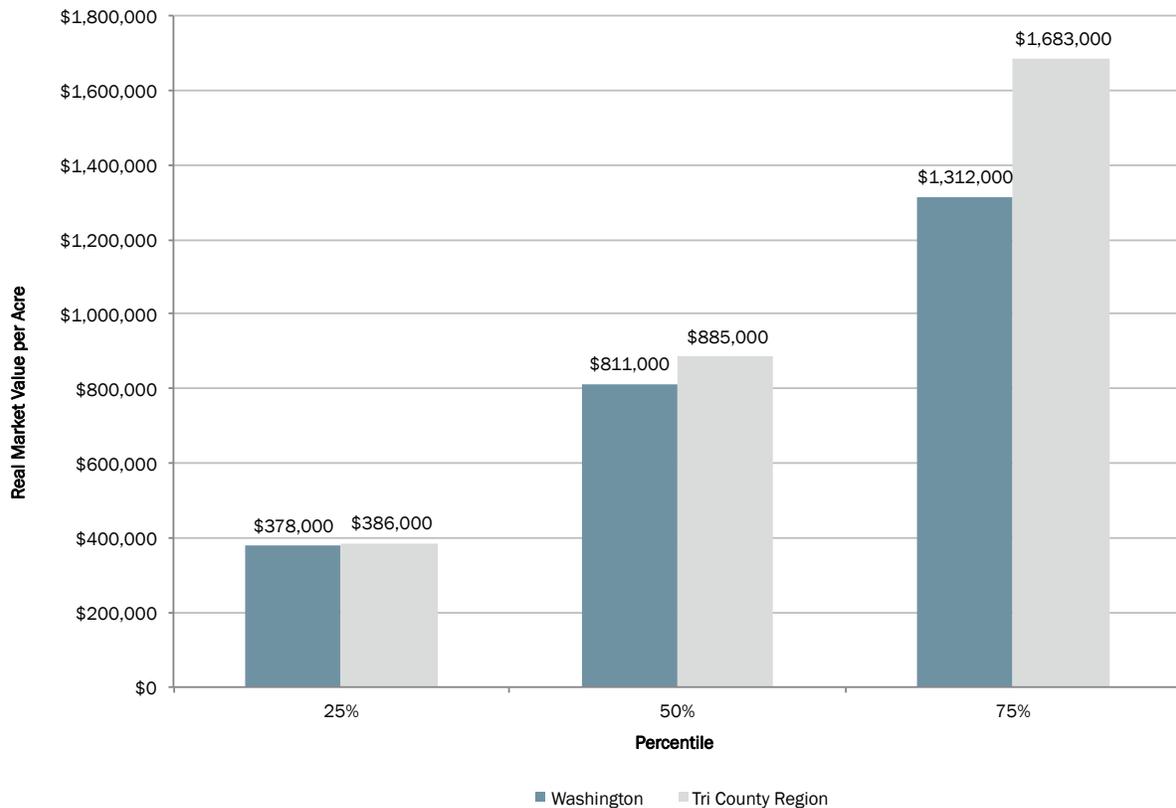


Source: ESRI Business Analyst data 2012, Metro RLIS 2014

### Real market value

Real market value per acre for industrial property shows less variation than employment, with values at the 75<sup>th</sup> percentile roughly four times the values at the 25<sup>th</sup> percentile. Half of all industrial businesses in the region (those between the 25<sup>th</sup> and 75<sup>th</sup> percentiles) have real market values ranging from \$386,000 to \$1,683,000 per acre. This includes the value of land, buildings, equipment, and other improvements. The median real market value per acre for industrial property is \$885,000 region-wide. As shown in Exhibit 2, values in Washington County are somewhat lower than region-wide values.

**Exhibit 2. Real market value per acre of industrial property, Washington County and Tri-County Portland metropolitan region, 2013**

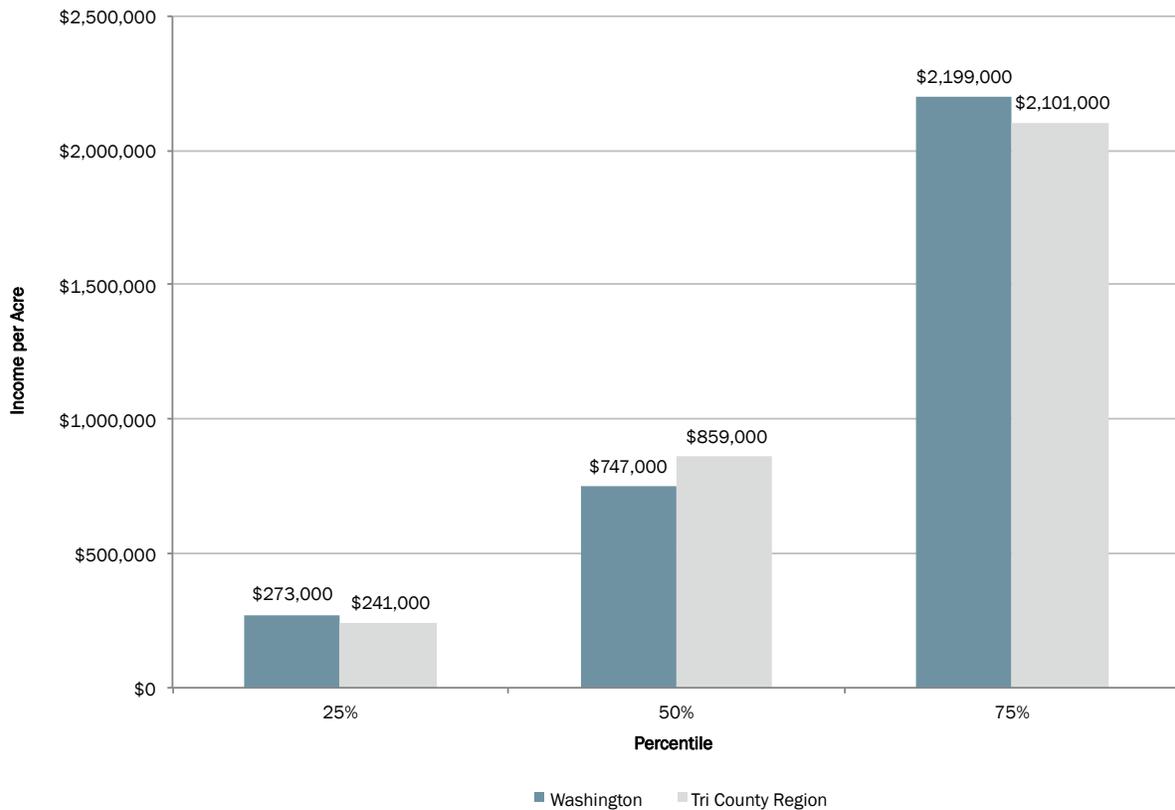


Source: Metro RLIS 2014

## Income

Exhibit 3 shows annual income per acre for industrial property in the region. Half of all industrial businesses in the region (those between the 25<sup>th</sup> and 75<sup>th</sup> percentiles) generate income ranging from \$241,000 to \$2.1 million per acre. The range of income per acre varies significantly, with income at the 75<sup>th</sup> percentile roughly ten times more than income at the 25<sup>th</sup> percentile. Median income per acre for industrial property is \$859,000 region-wide. Income per acre in Washington County is on par with income region-wide.

**Exhibit 3. Annual income per acre, Washington County and Tri-County Portland metropolitan region, 2012**



Source: IMPLAN, 2012

## 3. Methods, Sources, and Limitations

### 3.1 Definitions

Below are technical definitions for key terms used in our analysis:

- **Percentile:** a measure of the distribution of observations less than or equal to a given indicator in a range. For example, the twenty-fifth percentile of industrial jobs per acre in Washington County in 2012 was 2.7; this means that 25% of all industrial businesses had job densities less than or equal to 2.7 jobs per acre.
- **Real market value:** County Assessor estimate of the market value of a property, based on what a willing buyer would likely pay to a willing seller on the first day of a given tax year. The real market value data used in our analysis includes all real, personal, utility, and manufactured property accounts associated with industrial parcels. In Oregon, real market value can be (and usually is) different from “assessed value,” which is the value used to calculate a property’s tax liability.
- **Annual income:** This measure of income was taken from IMPLAN and consists of employee compensation and proprietors income:
  - Employee compensation includes workers’ wages and salaries, as well as other benefits such as health, disability, and life insurance; retirement payments; and employer paid payroll taxes.
  - Proprietors income (owner-operated business income) represents the payments received by small-business owners or self-employed workers.
- **Jobs:** according to IMPLAN’s methodology, are measured in terms of full-year-equivalents (FYE). One FYE job equals work over twelve months in a given industry (this is the same definition used by the federal government’s Bureau of Labor Statistics). For example, two jobs that last six months would together count as one FYE job. A job can be full-time or part-time, seasonal or permanent; IMPLAN counts jobs based on the duration of employment, not the number of hours a week worked.
- **NAICS:** North American Industry Classification System is the standard classification system used by the United States government to categorize businesses.

### 3.2 Sources

ECONorthwest relied upon four main data sources to perform this analysis: (1) Metro RLIS data, (2) ESRI Business Analyst data, and (3) IMPLAN data on income by industry sector.

- **Metro RLIS:** A free database provided by Metro, the regional government for the Portland metropolitan region. Data includes tax lots in Clackamas, Multnomah, and Washington Counties, and is updated quarterly and provided in shapefile format.
- **ESRI Business Analyst:** A paid service from ESRI. Business data is provided in spatial format and includes the number of employees per business as well as the business NAICS code.

- **IMPLAN:** A paid service from MIG, Inc., specializing in local economic modeling. This data was the source of our assumptions on average annual income for different industries (defined by four digit NAICS codes).
- **County Assessors:** The Assessor's Office for each county maintains a database of real market value and other property characteristics for each parcel and tax account.

### 3.3 Methods

Our analysis was conducted using the following steps:

- **Define "industrial" businesses.** IMPLAN divides all businesses into 440 sectors, based on the primary activities that the businesses engage in. We identified 93 of these sectors as "industrial" for the purposes of our analysis. These sectors range from heavy industry like iron and steel mills (NAICS code 3311) to warehousing and storage (NAICS code 493). A complete list of these "industrial" business sectors is included as an attachment to this memo.
- **Identify industrial businesses in the Tri-County Portland region.** We used ESRI Business Analyst to identify all businesses in the Tri-County Portland region in the NAICS codes associated with the 93 industrial business sectors. This identified a total of 310 businesses.
- **Match industrial businesses to parcels.** Tax parcel data and business point data were projected into a Coordinate system appropriate to northern Oregon to ensure accuracy in measurements and spatial operations. The business point data were geocoded and matched to parcel data, to determine the acreage of each parcel associated with each business. To account for error introduced when the business points were geocoded, a twenty-five-foot buffer was drawn around each point to increase the likelihood that the business would intersect or fall inside the correct parcel boundary. After matching the ESRI Business Analyst data to the RLIS data, we had acreage and employment for each business
- **Match real market value data to parcels.** There can be multiple property tax accounts associated with each parcel, therefore we used County Assessment data for FY 2013-14, and summed the real market value of each tax account associated with each parcel that matched with an industrial business location.
- **Estimate annual income for each business.** IMPLAN estimates the average annual income per job for each industry sector for each county. We multiplied the average annual income assumptions from IMPLAN by the total number of employees reported for each industrial business in ESRI Business Analyst. This provided an estimate of the annual income from each business.
- **Normalize the results per acre.** To allow the businesses to be more easily compared, we divided each of our economic measures (jobs, annual income, and real market value) by the number of acres of each parcel.

- **Eliminate parcels less than 0.25 acres and identify low, medium, and high benchmarks.** To account for error introduced when industrial businesses were matched to parcels, we eliminated all businesses that matched to parcels less than 0.25 acres. Finally, we ranked each business by each economic measure and calculated the values of the 25<sup>th</sup>, 50<sup>th</sup>, and 75<sup>th</sup> percentiles to present low, medium, and high benchmarks for the region. This calculation was done for Washington County and the Tri-county Region.

### 3.4 Limitations to the Analysis

This analysis is meant to provide general context when considering potential industrial development. Due to the nature of the available data and methods, however, the data and methods used in this analysis are not foolproof, and there are certain limitations to the analysis that should be kept in mind. These limitations include:

- **Potential inaccuracies in reporting:** This analysis relied on data from third party sources. All of these data sources may contain some errors. For example, when local businesses report their employment numbers used by ESRI Business Analyst, they may enter the incorrect NAICS code, or they may enter the number of employees for multiple facilities at just one location. Despite the potential for errors in the data, the data sources used are some of the most accurate and widely used data sources for this type of analysis.
- **Confidentiality of income data:** Income data for individual businesses is confidential, and we did not have access to that data. We had to estimate the income for each business based on IMPLAN assumptions for the average income of each industry in each county. If a business generates actual income that is significantly higher or lower than the countywide average, our methods would not account for this disparity.
- **The geocoding of the industrial business points:** Geocoding is a spatial function that calculates, then plots the latitude and longitude of a given street address using a road network database. If there are errors within the address data, or if the database does not recognize the address, the address will be plotted to the next largest geography the tool can correctly identify. For example, if the tool does not recognize the street number, but can find the street's location, it will plot a point in the middle of the given street, rather than at the given address. This introduces potential error because it means that some points may fall on a road network rather than on the correct parcel. Some businesses identified in ESRI Business Analyst may have been plotted outside of their designated parcel and either overlaid with the wrong parcel or excluded from the analysis.
- **Matching point data to assessment data:** There is not necessarily a one to one match between each business and each parcel. Our methods accounted for multiple businesses located on the same parcel, but we could not account for situations in which a single business should be associated with multiple parcels.

Despite these potential sources of inaccuracy, our analysis should still prove useful for the City's purposes of evaluating the economic and fiscal impacts of potential industrial development. Our methods benefit from relying on a large sample size of businesses (by

calculating values for the entire Tri-County area), and showing data between the 25<sup>th</sup> and 75<sup>th</sup> percentiles, accounting for outliers that may reflect inaccurate data.

## 4. Economic impacts of proposed development

New development would generate short-term economic impacts from construction activity, as well as ongoing long-term economic impacts from the employment uses on the site. We estimate both of these impacts in this report. Our analysis measures impacts that occur in the Portland Metropolitan Statistical Area, which is defined by the U.S. Office of Management and Budget and the U.S. Census Bureau as the seven-county region comprised of Clackamas, Columbia, Multnomah, Washington and Yamhill counties in Oregon, and Clark and Skamania counties in Washington.

For this type of analysis, an economic impact model is used. Software programs have been developed for the purpose of modeling local economies. These programs focus on the relationship between industry sectors, and how spending in one sector affects other sectors. The value of using an impact model is that it can estimate all of the eventual secondary impacts, well beyond the first and second rounds, as expenditures ripple through the economy.

We estimated the impacts of the project using the economic modeling software IMPLAN (Impact Analysis for Planning). IMPLAN calculates economic impacts in a transparent manner, using well-known and robust data sources for its calculations. IMPLAN was developed as a product of the Rural Development Act of 1972 by the U.S. Forest Service, in cooperation with the Federal Emergency Management Agency and the Department of the Interior. The U.S. Forest Service later privatized IMPLAN and it is now operated by the Minnesota IMPLAN Group.

IMPLAN divides the economy into 440 industry sectors, as well as government and households. For each sector, IMPLAN allocates spending and employment impacts between the local and non-local economies. The IMPLAN data comes from the U.S. Economic Census, U.S. Bureau of Labor Statistics, the Internal Revenue Service, and other government statistical sources.

When discussing economic impacts, it is important to have a clear definition of key terms, particularly regarding the levels of impact, and the types of impacts.

### *Levels of impacts*

Transactions (and employment) occur at two different levels, depending on how removed they are from the initial source. Those levels are:

- **Direct impacts:** Those that happen at the initial source. For this analysis, direct impacts include any spending by the developer during construction, or by the businesses that occupy the new development during operations. Direct impacts are sometimes referred to as primary impacts, because they start where the primary sources of economic activities occur.

- **Secondary impacts:** Those that happen largely away from the primary sources. These secondary impacts can be further broken down into indirect and induced impacts. An indirect impact is one that occurs because of business-to-business transactions. Thus, when the developer purchases concrete from a manufacturer in the Portland region, that purchase causes an indirect impact for the concrete manufacturer. An induced impact is one caused by household spending. For example, an employee at one of the industrial tenants in the new development who spends some of her salary at a restaurant in Tigard, causes a first round of induced impacts. If the waiter at the restaurant earns more money because of her visit, his increased earnings cause him to spend more money locally, for a second round of induced impact.

### *Types of impacts*

Impacts are reported using economic measures, such as jobs and income that, while not additive, do provide alternative perspectives for expressing the size of economic effects. The measurements used in this report are:

- **Labor income:** The sum of employee compensation and proprietors' income.
- **Output:** Output is the market value of whatever is produced. For construction projects, it is the cost of building and completing structures excluding land (since land is not something that is produced) and financing costs.
- **Jobs:** The annual average number of employees, both payroll and self-employed, for either full- or part-time work. An annual average is work for twelve months. Therefore, seven months of work by an electrician building a new industrial building on the site plus five months of work by a welder together count as one job for one year, even though two different people in two different occupations were employed for part of the year. Note that the definition of "job" used in this analysis is not the same as full-time equivalent (FTE) positions, as defined by the Government Accountability Office. A measure of FTE makes adjustments for the number of hours a person works, whereas the jobs in this analysis only counts the weeks per year a person works. Thus, a half-time employee who works for 12 months would equal 0.5 FTE, but would equal 1 job in our analysis.<sup>1</sup>

## **4.1 Assumptions**

The property owner (The Fields Trust), and the City are currently in negotiations with the preferred developer (Trammell Crow) regarding the potential development program for the site. At this time, Trammell Crow does not have a specific development concept, but they have

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<sup>1</sup> There are various benefits and shortcoming for different measures of employment. The measurement of jobs used in this analysis is not necessarily better than FTE, but it is the only measure available from IMPLAN, the economic modeling software used in this analysis. IMPLAN estimates of jobs come from data from the Bureau of Labor Statistics, based on the unemployment insurance forms employers fill out for workers.

provided us with key assumptions on the size and value of new development by type, and the number of employees that can be expected to be located on site.

Exhibit 4 summarizes the development program assumptions from Trammell Crow. Note that Trammell Crow only provided assumptions for the employment uses. For the multifamily residential portion of the site, we used assumptions from earlier analysis conducted by Mackenzie, described in the Fields Property Development Analysis and Opportunity Study (February 2014). To estimate the construction cost of the development, we used local cost assumptions per square foot for relevant building types from RSMMeans.

We assume 324,000 SF of multifamily residential development on the eastern portion of the site, and 225,000 SF of employment development on the western portion of the site. The employment development would be a mix of industrial, flex space, and commercial uses, with the exact tenant mix yet to be determined. We estimate the total construction cost of the development would be \$67,355,280.

**Exhibit 4. Draft development program, Fields Trust Site**

Use	Square Feet	Cost / SF	Cost
Industrial/Flex	180,000	\$ 94.75	\$ 17,055,000
Office	45,000	\$ 130.88	\$ 5,889,600
Multifamily	324,000	\$ 137.07	\$ 44,410,680
<b>Total</b>	<b>549,000</b>	<b>\$ 122.69</b>	<b>\$ 67,355,280</b>

Sources:

Mackenzie, Fields Property Development Analysis and Opportunity Study, February 2006.  
 2014 Reed Construction Cost Data for Portland region from RSMMeans.

Trammell Crow suggested employment density assumptions for the potential future tenants of the development. For office users, Trammell Crow assumed 3.25 employees per 1,000 square feet. For industrial/flex users, Trammell Crow assumed 0.75 employees per 1,000 square feet of space. Assuming roughly 20 acres of the site are developed as industrial/flex space, that would equate to an industrial employment density of 6.75 jobs per acre, which is similar to the 50<sup>th</sup> percentile of industrial businesses in Washington County, as shown earlier in Exhibit 1.

**4.2 Construction impacts**

In addition to the onsite construction activity (new buildings, and site preparation), infrastructure improvements in the surrounding area would also generate short-term economic impacts. The total estimated construction cost of new development shown in Exhibit 4, excludes the cost of infrastructure. Infrastructure, including water, sanitary sewer, stormwater, and transportation would add an additional \$5,182,953 to the construction costs.<sup>2</sup>

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<sup>2</sup> Infrastructure cost estimates are described in the Fields Trust Site – Preliminary Infrastructure Funding Plan, produced by ECONorthwest for the City of Tigard, October 2, 2014, based on engineering and cost estimates from Mackenzie, described in the Hunziker Industrial Core: Evaluation of Potential Infrastructure Investments, Cost Estimates, July 29, 2014.

Exhibit 5 summarizes the projected economic impacts from construction. These impacts would be temporary. For the purposes of our analysis, we assumed construction of the entire site would occur in one calendar year. If the development is phased over a longer period of time then these economic impacts would also be staggered over a longer period. We estimate the impacts from new construction would include 639 jobs, \$140 million of output, and \$51.1 million of labor income.

**Exhibit 5. Economic impacts of construction, Fields Trust Site**

	Direct	Secondary	Total
Output	\$75,404,074	\$64,868,558	\$140,272,632
Labor Income	\$26,814,099	\$24,334,412	\$51,148,512
Jobs	399	240	639

Sources: ECONorthwest, using Oregon State IMPLAN model, 2012.

### 4.3 Operating impacts

Once development is complete, there will be ongoing economic impacts related to the employment located on the site. Exhibit 6 summarizes the economic impact of operations (i.e., the ongoing impacts from employment on the site). Note that ultimately these impacts will depend on the specific tenants that occupy the new development. Different tenants have large variation in the number of employees and the wages of those employees. When tenants are ultimately identified for the site, it may result in economic impacts that are significantly different than those shown in Exhibit 6. For our analysis, we assumed industrial/flex jobs would be a mixture of the manufacturing, warehousing, and transportation industries. For office employment, we assumed that the jobs would be in the professional and technical services industry. We estimate the impacts from operations would include 418 jobs, \$123 million in output, and \$37.2 million in labor income.

**Exhibit 6. Economic impacts of operations, Fields Trust Site**

	Direct	Secondary	Total
Output	\$79,339,309	\$44,002,041	\$123,341,350
Labor Income	\$21,108,312	\$16,104,071	\$37,212,383
Jobs	281	137	418

Sources: ECONorthwest, using Oregon State IMPLAN model, 2012.

## 4.4 Fiscal impacts

Economic impact analysis does not include fiscal impacts to local governments. In Oregon, property tax is the primary fiscal impact for local governments from new development. Exhibit 7 shows the projected annual property tax revenue from the proposed development. The City of Tigard would receive \$128,609 per year in property tax revenues from the proposed development on the Fields Trust Site.<sup>3</sup> This revenue would increase by 3.0% each year, as limited by Oregon Revised Statutes.

**Exhibit 7. Fiscal impacts of proposed development, Fields Trust Site**

	Industrial	Commercial	Multifamily	Total
Land Value	\$ 4,552,962	\$ 455,296	\$ 4,552,962	\$ 9,561,220
Improvement Value	\$ 17,055,000	\$ 5,889,600	\$ 44,410,680	\$67,355,280
Real Market Value	\$ 21,607,962	\$ 6,344,896	\$ 48,963,642	\$76,916,500
Change Property Ratio	0.736	0.736	0.625	
Assessed Value	\$ 15,903,460	\$ 4,669,843	\$ 30,602,276	\$51,175,579
Total Tax Rate	\$ 16.7390	\$ 16.7390	\$ 16.7390	\$ 16.7390
Total Annual Property Tax	\$ 266,208	\$ 78,169	\$ 512,251	\$ 856,628
City of Tigard Tax Rate	\$ 2.5131	\$ 2.5131	\$ 2.5131	\$ 2.5131
City of Tigard Annual Property Tax	\$ 39,967	\$ 11,736	\$ 76,907	\$ 128,609

Calculated by ECONorthwest based on the following sources

2014 Reed Construction Cost Data for Portland region from RSMeans.

2013-14 Washington County Assessor data for real market value of land, assuming total land value for all parcels is divided proportionately based on the acreage of each proposed land use.

2014-15 Washington County Assessor data for Changed Property Ratios, and tax rates.

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<sup>3</sup> Property tax forecasts are dependent on appraisal of the completed development. We assumed land values as reported by Washington County Assessor for FY 2013-14, and improvement values based on assumed construction costs from RSMeans. Some industrial/flex tenants have machinery and equipment with significant taxable value, which we have not attempted to forecast. If the project qualifies for property tax abatements (e.g., an Enterprise Zone), then tax revenues would be reduced.