2018 Urban Growth Report Appendix 8

Regional Industrial Site Readiness Inventory (2017 update)

REGIONAL INDUSTRIAL SITE READINESS

2017 Inventory Update

Dated
October 20, 2017

Project Number
2110160.04

REGIONAL INDUSTRIAL SITE READINESS – 2017 Inventory Update and Investment Report

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EXECUTIVE SUMMARY

Quality of life begins with good jobs, and a thriving economy nurtures a healthy community. Numerous factors that help a community thrive include an educated workforce, strong infrastructure, and available developable land in areas where businesses and jobs can locate. This analysis focuses on the availability of these critical employment lands. Manufacturing is the backbone of the Portland metropolitan area's "traded-sector" employment. Traded-sector employers export goods and services to sell, and import that revenue back into the local economy. Traded-sector businesses include industries such as high technology, software, and design services, among others. A prosperous economy depends on having traded-sector businesses that provide middle-income jobs for its residents. On average, a traded-sector worker in the Portland metropolitan area earns 42% more than other workers[1] and offers valuable employment opportunities for those without high school or college degrees. In an income-tax-dependent state such as Oregon, these higher wage traded-sector jobs generate more revenue for Oregonians and help fund schools, parks, and other valuable services.

The Portland metro area competes on a global scale to attract these coveted jobs and businesses, so it is important to have an adequate inventory of development-ready land. With significant growth forecasted for the region[2], this is more important than ever. In a globally competitive environment, businesses increasingly require compressed timelines for deciding where they will locate. Many of the region's industrial sites are years away from being development-ready; but in a world where businesses are looking at being operational in 12 months or less, that timeline is too long and businesses will locate elsewhere. Similar to individuals viewing multiple options when considering the purchase of a home, businesses must also consider different locations. Having a site inventory of varying sizes and locations in the Portland metro area is key for facilitating a diverse, thriving economy and the quality businesses, jobs and wages that brings.

This report examines the supply of large industrial sites available to accommodate existing and future employers. It is the third edition of the *2011 Regional Industrial Site Readiness Project,* an inventory of large (25+ acre) industrial sites within the Portland metropolitan area Urban Growth Boundary (UGB) and select urban reserves[3]. This 2017 project is a partnership of Metro, NAIOP - Commercial Real Estate Development Association Oregon Chapter, Greater Portland Inc., Portland General Electric, Port of Portland, and the Portland Business Alliance (Project Management Team), with cooperation from local governments and private property owners. This update is intended to inform local, regional, and state efforts to ensure that the region's large industrial sites are ready for traded-sector job creation.

This report intends to:

1. Track the changes from the region's inventory of large industrial sites (last updated June 2014);
2. Analyze varying stages of development readiness for each site;
3. Inform policymakers about policy changes or investments that have influenced the development-readiness;
4. Summarize investments, tax base, and jobs created from development of inventory sites; and
5. Identify policy and investment actions that can ensure a consistent inventory of these vital sites into the future.

[1] *2012 Portland-Metro's Traded Sector*, Value of Jobs report issued by Portland Business Alliance.
[2] The *2014 Metro Urban Growth Report* forecasted 440,00 additional jobs and 300,000-485,000 additional people inside the Metro Urban Growth Boundary by 2035.
[3] Although this inventory does not include any sites within rural areas of these three counties that are outside the UGB and selected urban reserves, these sites are important to the region's economic prosperity.

The development-readiness tiers used in this inventory are based on those established during the 2011 inventory project. Tier 1 sites are the only sites generally considered recruitment-ready for businesses expanding or locating in the Portland region. While not considered marketable for most recruitments, Tier 2 could be feasible for expansions of existing businesses and for speculative development for investors. Tier 3 sites are not desirable because they require complex fixes to become development-ready.

Tier 1: Development-ready within 180 days. It is anticipated that a site can receive all necessary permits; sites can be served with infrastructure and zoned and annexed into the city within this timeframe. No or minimal infrastructure or brownfield remediation is necessary and that due diligence and entitlements could be provided and/or obtained within this time period.

Tier 2: Likely to require 7-30 months to become development-ready.

Tier 3: Likely to require over 30 months to become development-ready.

Inventory Changes

As a result of the strong economic cycle that continues, the number of large industrial sites in the regional inventory decreased from 54 to 47 sites between 2014 and 2017 – 20% market absorption and reduction of 550 gross acres. Of the 47 sites in the 2017 inventory:

- There are 10 Tier 1 sites; 11 Tier 2 sites; and 26 Tier 3 sites.
- 6 new sites were ***added***[4] to the inventory since 2014 due to changes in the market: 1 Tier 1 site, and 5 Tier 3 sites.
- 13 sites were ***removed*** from the inventory since 2014 primarily due to site readiness investments and development.

The removal of 13 sites in the 2017 inventory is a result of the loss of 9 sites which were absorbed by the market with development. In addition, two sites were removed due to environmental restrictions, and two sites were sold and are being held for future development (user designated).

ACTIVITY RESULTING IN SITE REMOVAL BETWEEN 2014 – 2017 INVENTORY	
User designated[5]	2
Construction and development	6
Developed below acreage threshold	3
Environmental constraint changes[6]	2
Total:	**13**

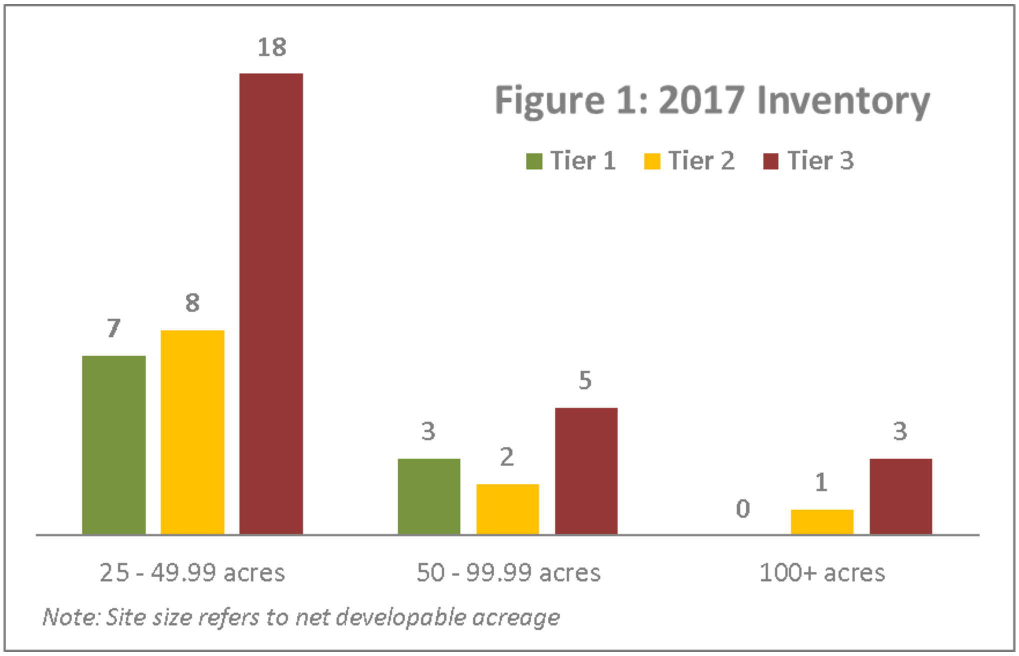
This decrease in sites was offset by the addition of six new sites to the inventory, one of which is a Tier 1 site. Four of the new sites are active gravel pits, and one is a former gravel pit, all of which are designated as Tier 3 sites and will take significant investment in mitigation and infrastructure to move to development-ready status. Finally, one site was moved from the User-Designated List onto the inventory as a Tier 1 site, due to the owner's willingness to transact.

4 Market changes: **Site 119:** Intel (West Union Road) site (Tier 1) was a user-designated site in June 2014 inventory and has recently been listed for sale. **Site 117:** New site found in the 2015 Washington County Regional Industrial Site Readiness Project. **Sites 118 – 122**: Existing operating gravel sites added to keep consistent with 2011 methodology.

5 User-designated sites are sites owned and held for future expansion of existing regional firms and not available to the general market. **Site 48** (DeWayne Wafford) and **Site 56** (East Evergreen) were added to user-designated as they have been purchased for future development.

6 Two sites were removed from the inventory due to environmental site constraints that reduced the net site acreage to less than 25 acres: **Site 47** (Cranford) and **Site 34** (Vanleeuwen).

Figure 1: 2017 Inventory Results



The following charts and tables compare the 2011, 2014, and 2017 inventory changes.

	2011 Inventory	2014 Inventory	2017 Inventory
Tier 1	9	14	10
Tier 2	16	17	11
Tier 3	31	23	26
Total	56 sites	54 sites	47 sites

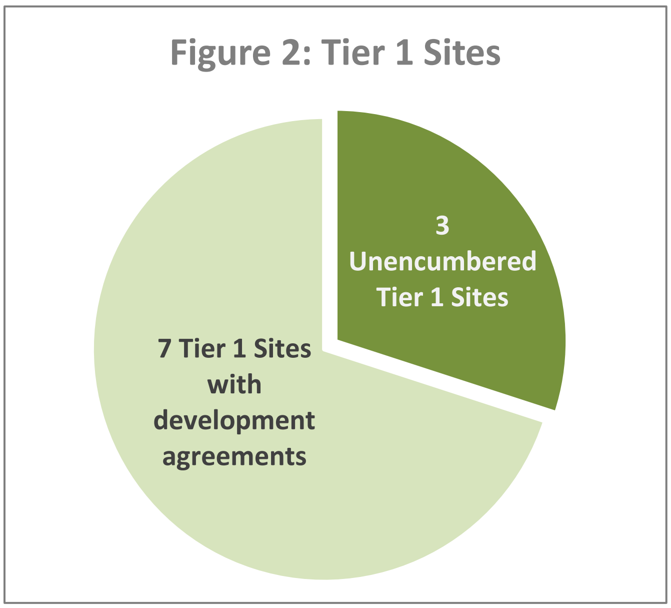
	2011 Inventory	2014 Inventory	2017 Inventory
25-49 acres	40	39	33
50-99 acres	9	10	10
100+ acres	7	5	4
Total	56 sites	54 sites	47 sites

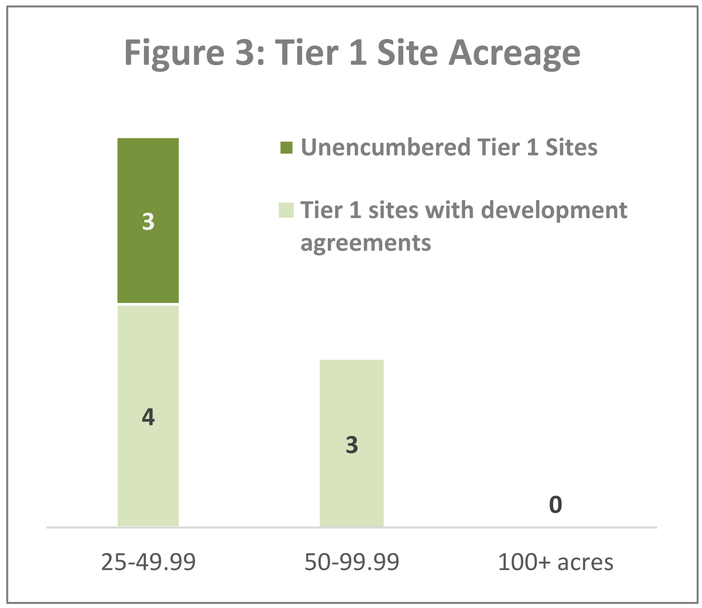
Findings

1. **Between 2014 and 2017, there has been significant development of large industrial sites in the region. There are relatively few unencumbered Tier 1 industrial sites remaining in the inventory and no 50+ or 100+ acre Tier 1 sites.**

   - Nine sites have been developed either fully or partially[7]. Due to national market trends, much of this development activity has been in the distribution and logistics sector and industrial parks.
   - Since this June 2017 inventory was completed, seven additional Tier 1 sites have seen market activity with current development agreements in place[8].
   - Since this June 2017 inventory was completed, two additional Tier 2 sites have seen market activity with current development agreements in place[9]. This results in only one remaining 50+ acre site (Meek Subarea) in Tier 2 **and** Tier 1.
   - Should development proceed on the seven Tier 1 sites with development agreements, there will only be three remaining Tier 1 sites, and no 50-99.99-acre Tier 1 sites available in the region.

Figures 2 and 3: Tier 1 Sites by Development Status and Site Acreage





2. **There has been slower movement between tiers than in the previous inventory update (4 sites between 2014 and 2017, versus 7 sites between 2011 and 2014). This is in part due to the market absorption of sites, but underscores the continued need to make these site readiness investments.**

[7] **Site 13:** Specht Properties, **Site 22** (GVBP – East), **Site 46** (Development Services of America), **Site 49** (Majestic Realty Co.), **Site 111** (Weston), **Site 113** (Henningsen), **Site 114** (Colwood), **Site 19** (TRIP Phase 2), and **Site 63** (Woodburn).

[8] **Site 1:** Rivergate; **Site 29:** CCDA; **Site 50:** Shute North; **Site 52:** Shute South; **Site 119:** Intel; **Site 16:** Blue Lake Corporate Park (formerly Cereghino); **Site 18:** TRIP Lot 10.

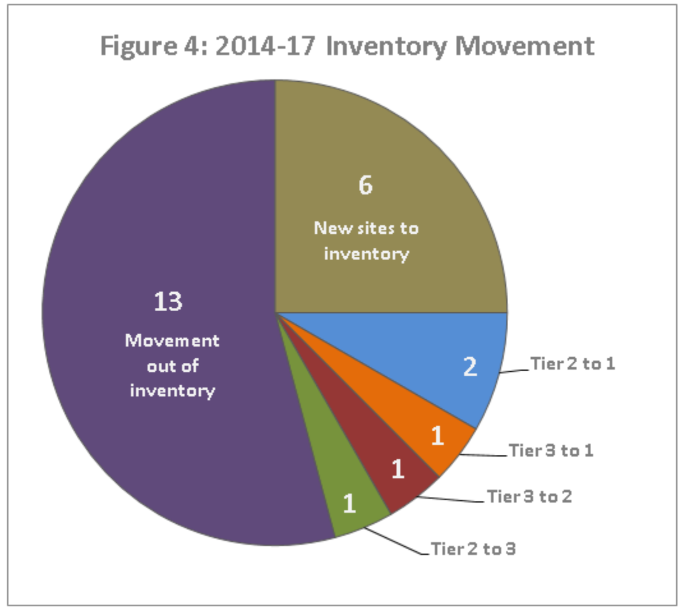
[9] **Site 9**: 33rd Ave and Marine Drive and **Site 37**: Orr Family Site.

Site readiness investments moved sites between tiers:

- Two sites moved up from Tier 2 to Tier 1 based on environmental mitigation and infrastructure investments[10].
- One site moved up from Tier 3 to Tier 1 based on environmental mitigation investments[11].
- One site moved up from Tier 3 to Tier 2 based on transportation investments[12].
- One site moved down from Tier 2 to Tier 3 due to lack of infrastructure[13].
- One site moved to the inventory from the 2014 User-Designated list due to property owner's willingness to sell[14].
- Equally as important, and not reflected in the chart to the right, site readiness investments since 2014 enabled the nine sites that have been fully or partially developed to be developed. A prime example of these site readiness efforts are the environmental mitigation and infrastructure investments required to prepare the Site 19 TRIP Phase 2 for development.

ACTIONS THAT MADE SITES MORE DEVELOPMENT-READY BETWEEN 2014-2017 INVENTORIES	
Changes in property owner willingness to transact	1
Environmental constraint mitigation	2
Infrastructure investments	2

Figure 4: Movement within inventory



Source: Mackenzie

3. **Significant challenges remain to move sites to market. This is particularly true for sites that require aggregation and High-Need Tier 3 sites.**
   - Large industrial sites can face multiple development constraints, including: state and local legislative actions[15], inadequate infrastructure[16] and transportation, land assembly needs, natural resources mitigation, brownfield remediation, and property owners not willing to transact.
   - Sites with multiple property owners require aggregation. This is a key issue to supplying larger sites to the market affecting over a third of the Tier 2 and Tier 3 sites in the inventory (13 sites).
   - Nearly 2/3 of the Tier 2 and Tier 3 sites require local actions such as annexation, zoning, or completion of concept planning (22 sites).

[10] **Site 1:** Rivergate and **Site 18:** TRIP Phase 2.
[11] **Site 16:** Blue Lake Corporate Park (formerly Cereghino).
[12] **Site 37:** Orr Family Site.
[13] **Site 101:** Vanrose Farms and Bert and Bernie LLC.
[14] **Site 119:** Intel (West Union Rd).
[15] Local and state legislative actions include UGB expansion, annexation, zoning, and concept planning.
[16] Infrastructure includes water, sewer, and stormwater utilities.

- Of the 26 Tier 3 sites, the development community views 15 of these sites as High-Need sites, which will require significant resources to reach Tier 1 site readiness. These sites are expected to take five years or more of site readiness work. In some case, industrial development may not be feasible.
  - Seven of the 26 Tier 3 sites are current or previous operating gravel pits. To be developable, these sites will need to be filled once extraction is complete. The timing of fill is unknown and may take years. Although these sites may be utilized for industrial development in the future, they are on the lengthier Tier 3 timeframe, perhaps even decades out from development.
  - While brownfield redevelopment affects seven large industrial sites, three industrial sites are located in the Portland Harbor Superfund site which will add significant costs, time, and will require coordinated strategies.

Tier 2 and 3 Site Development Constraints[17]	
Infrastructure (sewer, water, storm utilities)	16
Transportation	22
Land Assembly	13
Local and State Legislative Actions	22
Brownfield Cleanup	7
Natural Resources	17
Willingness to Transact	21

- Based on detailed site assessments completed on 19 Tier 2 and Tier 3 sites and a PGE infrastructure study, the estimated total costs for infrastructure only are $143.8 million for the 1,385 gross acres, or an average cost of $2.31 per square foot. In addition, for the 19 sites with detailed site assessments, there is another $53 million of estimated non-infrastructure site readiness costs needed to move sites to market (e.g., wetlands, brownfield clean up, slope mitigation, building pad surcharge), underscoring the importance of flexible site readiness funding sources.

4. Site readiness investments and development since 2011 have resulted in significant investment and job creation.

- As a supplemental analysis to the inventory, the 2017 project included an evaluation of the return on investment realized from sites that have been fully or partially developed. Since 2011, six sites have fully developed[18] and nine sites have partially developed[19]. Another seven sites are expected to move toward development in 2017.
  - Of the fully developed sites, $230 million in investment in real property has occurred on 225 industrial acres, creating between 2,500 and 2,750 direct jobs with an estimated annual wage of $50,000 and a $5.2 million annual state personal income tax return.

[17] Estimated costs for constraint mitigation not available.

[18] **Site 46**: Westmark site; **Site 21**: GVBP East; **Site 13**: Specht Properties; **Site 11**: PIC East; **Site 40**: Pacific Realty Associates; **Site 49**: Majestic Realty.

[19] **Site 19:** TRIP lots 1-6; **Site 22:** GVBP lot 9; **Site 21:** GVBP lots 1-3; **Site 48:** Baker/Bindewale; **Site 56:** East Evergreen; **Site 16:** Cereghino; **Site 114:** Colwood; **Site 111:** Weston; **Site 113:** Henningsen.

Fully Developed Sites Since 2011 (6 sites)	
Acres	225
Square Footage	4 million
Estimated Direct Jobs	2,500-2,750
Estimated Average Annual Wage	$50,000
Estimated Indirect and Induced Jobs	2,500
Investment in Real Property	$230 million
Annual Local Property Tax Revenues	$500,000*
Annual State Personal Income Tax Revenues	$5.2 million

* Property tax revenues are adjusted to reflect the five-year property tax abatement for all but one of the nine sites. Property tax revenues will increase at the end of the tax abatement period.

Partially Developed Sites Since 2011 (9 sites)	
Acres	350 acres
Square Footage	4.78 million
Estimated Job Capacity	2,800–3,250
Investment in Real Property	$500 million

Recommendations and Next Steps

While recent market absorption of industrial sites highlighted in this report ranged from 26 net developable acres to 80 net developable acres in the 2014-2017 inventory cycle, the Portland metropolitan region continues to see a demand for larger industrial sites of 50+ and 100+ acres. The 2017 inventory highlights the lack of 50+ and 100+ Tier 1 industrial sites and hurdles associated with moving the Tier 2 and Tier 3 sites of this size to market. If this regional issue is not addressed, the Portland region will experience lost opportunities for new game-changer business locations and expansions.

Policymakers should consider policy actions and investments to address industrial site readiness challenges (e.g., land aggregation, infrastructure, transportation, natural resource mitigation, legislative actions, and industrial brownfield cleanup) and development hurdles. With reduced federal funds, the region will need to be more strategic about investments to support these goals.

The Project Management Team recommends that policymakers, economic development practitioners, and other stakeholders focus their efforts on the following actions to address the findings from this report:

Local and Regional Site Readiness Actions

1. Engage the Oregon Economic Development Department, Oregon Economic Development Association, local jurisdictions, private property owners, and developers in efforts to make investments in industrial sites needed to move these sites to market.
2. Actively work to find ways to aggregate 13 industrial sites with multiple property owners to realize the market potential of these sites. This is critical to realizing the potential of Coffee Creek, Meek Subarea and other industrial sites in the region.
3. Support local jurisdictions in evaluating the sites that require state and local legislative actions (e.g., annexation, zoning, and concept planning) and identify the timeline for and feasibility of completing this work. Metro has invested Community Planning and Development funds in the past to support such efforts.

4. Evaluate Tier 3 High-Need sites to determine if there is a path for development. If not, consider removing them from the inventory or creating a Tier 4.
5. Proactively work on solutions to the Lower Willamette cleanup to remove the cloud over the properties in the Portland Harbor.
6. Apply brownfield tools approved by the legislature to brownfield redevelopment of industrial lands (Brownfield Tax Abatement Program and Landbanking Authority).
7. Actively work on regional and local infrastructure financing solutions that impact 60% of the industrial sites in the inventory. Metro's Economic Atlas may help identify strategic infrastructure investments benefitting the region's industrial and employment lands. Local infrastructure needs could potentially be packaged with State infrastructure financing to fund local/regional projects through the West Coast Infrastructure Exchange.
8. Support regular updates of the inventory and track investments from sites that have been developed. Consider expanding the inventory to sites of 15 acres or more to reflect shifting market demand.

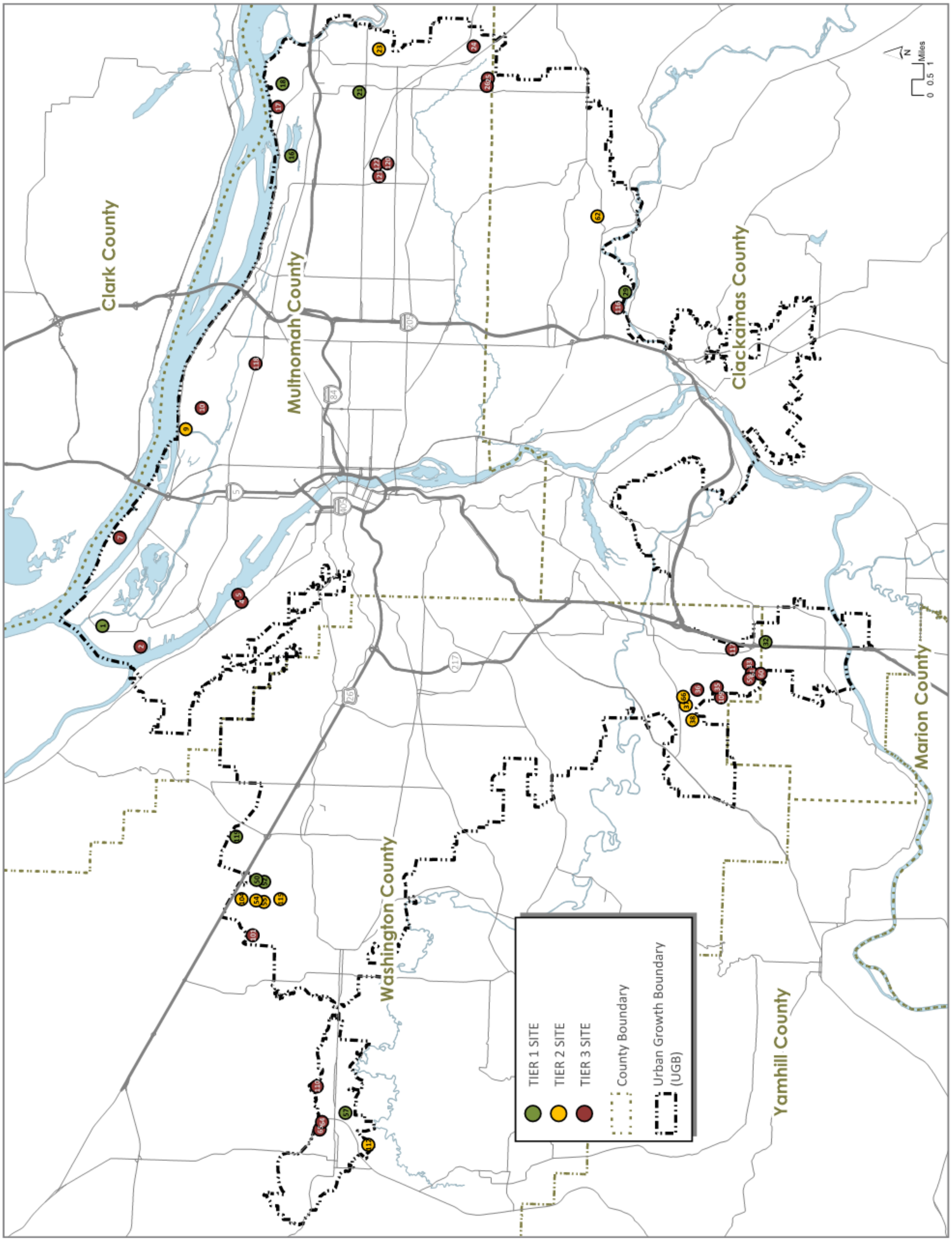
State Legislative Actions

9. Advocate for new tools and funding to support brownfield cleanup and redevelopment. This includes but is not limited to re-capitalization of the Oregon Economic Development Department's Brownfield Revolving Loan Fund and passage of Brownfield Tax Credit.
10. Support state loan funding for the Industrial Site Readiness Program and Special Public Works Fund. The Industrial Site Readiness Program was enacted in 2013 without authorization for loan funding. The Special Public Work Program is oversubscribed and underfunded.
11. Continue to support the Regional Solutions Teams that provide coordinated state attention to facilitate solutions for sites with complex issues involving multiple agencies. The Metro Regional Solutions Team played a key role in addressing sire readiness issues in Troutdale, Gresham, Clackamas, and Hillsboro in the 2014-17 inventory cycle.

Local Development Actions

12. Evaluate the potential for new or expanded enterprise zones or other local or state incentives to help secure targeted development.
13. Encourage local communities to explore an expedited permitting process to address market expectations of issuing construction permits. Several communities with development wins in the 2014-2017 inventory cycle have expedited permitting programs in place (e.g., Hillsboro, Gresham).

Map 1: Regional Map of Tier 1, 2, and 3 Sites



PROJECT SUMMARY

Project Purpose

The *2011-12 Regional Industrial Site Readiness Project* assessed the Portland region's supply of development-ready large industrial sites, a critical part of a strategy to retain and attract traded-sector jobs. Traded-sector employers export and sell goods and services and then import that revenue back into the local economy. Manufacturing is the backbone of the Portland metropolitan area's "traded-sector" employment. Traded-sector businesses include industries such as high technology, software, and design services among others. A prosperous economy depends on having traded-sector businesses that provide middle-income jobs for its residents. *Portland-Metro's Traded Sector*, a 2012 *Value of Jobs Report* issued by Portland Business Alliance, found that on average a traded-sector worker in the Portland metropolitan area earns 42% more than a local-sector worker in the Portland metropolitan region. In an income-tax-dependent state such as Oregon, these high wage traded-sector jobs generate more revenue for critical services like schools, health care, and social services than local-sector jobs. Traded-sector jobs have a multiplier effect throughout the economy, with an additional 2.5 local-sector jobs created for each traded-sector job. Traded-sector jobs provide employment opportunities for those without a high school or college degree. Because the Portland region competes with other metropolitan areas for these traded-sector jobs, it must have an adequate inventory of development-ready large industrial sites for expanding and attracting businesses.

This report is an update to the 2011 and 2014 inventories which described the supply and development-readiness of large (25 net acres and larger) industrial sites in the Portland metropolitan region[20]. Net developable acres are gross acres less wetlands, floodplain, 7%+ slopes, streams, and other development constraints that limit development. For purposes of this study, only vacant, industrially zoned, or planned lands within the Portland metropolitan Urban Growth Boundary (UGB) were analyzed. The 2017 inventory utilized the same methodology that was developed during the 2011-2012 Project and utilized in the 2014 inventory update project.

The original project was conceived partly in response to *Metro's 2009 Urban Growth Report*, which identified a shortage of large industrial sites in the region and the need to replenish large industrial sites as they are developed. The original project was produced by Mackenzie in partnership with Business Oregon, Metro, NAIOP – Commercial Real Estate Development Association Oregon Chapter, Port of Portland, and the Portland Business Alliance whose representatives served as the Project Management Team (PMT). Since this time, the PMT has been expanded to include Greater Portland Inc and Portland General Electric.

The 2011 inventory provided an understanding of the supply of vacant large industrial lands, the time and investment needed to get these sites development-ready, and the sites' development constraints. While the 2011 report and this update are limited in scope to large industrial sites within the Metro UGB and urban reserves, several communities in the Portland-Vancouver region have replicated the work for other locations and site sizes, most notably Clackamas County's county-wide work in 2013-14[21] and Clark County's county-wide inventory in fall 2016[22].

As with the 2011 and 2014 inventory update, this project focuses on the quality of land and how ready it is for development versus the quantity of gross acres. The inventory is intended to be maintained and updated on a regular basis to reflect market changes, development, investments, and actions to move sites to market. It will also

[20] The Regional Industrial Site Readiness Project examines vacant, industrially-zoned, or planned lands within the Portland metropolitan area's UGB and selected urban reserves that are suitable for large industrial development by new firms moving to the region, development companies who develop business and employment centers, or support the growth of existing firms. The study identified and documented user-owned sites held for future use, but excluded these from the detailed analysis because these sites were not available to the general market. Rural areas of Clackamas and Washington counties outside the Metro UGB were not included in this analysis.

[21] http://cmap.clackamas.us/ccss/

[22] http://www.credc.org/land-for-jobs/

help to inform continued local and private sector efforts to increase site readiness, legislative actions to fund site readiness, due diligence programs, and provide context for *Urban Growth Report*s and the *Economic Values Atlas* produced by Metro. The *Urban Growth Report* assesses the region's long-range employment and housing growth and, as such, has a broader perspective than this inventory, which focuses on site-readiness for short- and medium-term job creation opportunities. The common theme of both the *Urban Growth Repor*t and this inventory is that the public and private sectors need to work cooperatively to make sites available for private sector job creation. The next *Urban Growth Report* will be released in draft form in the summer of 2018, followed by a regional urban growth management decision by the end of 2018.

The 2017 inventory update reflects market conditions as of June 2017. This report summarizes the findings of the 2017 inventory and highlights changes from the June 2014 inventory to show movement within the market and the impact of recent actions and investments. The inventory can be used as a reference for monitoring and tracking changes of absorption of industrial sites in the region, and can also be used by the public sector as the basis for making informed land use and investment decisions around the supply, regulation, and development readiness of industrial sites.

2017 INVENTORY

Background on the Update

Consistent with the 2014 inventory, the 2017 inventory update assessed industrial sites over 25 net developable acres to identify development-ready sites (Tier 1) and sites that need additional work and investment (Tier 2 and Tier 3). The 2017 inventory update did not analyze the size of investments needed to move Tier 2 and Tier 3 sites to development-ready status. With the assistance of Metro Community Planning and Development funding, Clackamas and Washington counties completed detailed site assessments using the methodology developed in Phase 2 of the *2011-12 Regional Industrial Site Readiness Project* for site readiness investments and future development. In recent years, Clark County also completed detailed site assessments in 2016. This site assessment work helped identify and sequence site readiness investments required for future development.

Mackenzie and the PMT evaluated sites using similar criteria and metrics as companies or developers would use, rather than limiting analysis to existing parcels or tax lots. A site in this inventory could be a single-owner parcel or multiple adjacent parcels that can be combined into a single site; combined parcels could include adjacent parcels in the same ownership and/or in multiple ownerships. This update is also important because trends and changes can be examined since the previous inventory, not solely the quantity of land. It assesses actions, investments and market changes to understand the transformation of sites. It is anticipated that in future updates of the inventory, additional data points will help identify trends that may further inform policymakers.

Tiering Criteria and the Process to Score the Sites

The tiering system utilized in this inventory update was based on development readiness criteria established during the 2011-2012 project, and employed for the 2014 update. The tiers are based on industry standards and mirror the recruitment/development timeframe used by the State's Industrial Site Certification Process. The tiers are defined as follows.

Tier 1 Sites have over 25 net developable acres and are development-ready, or can be development-ready, within 180 days (six months). It is anticipated that no, or minimal, infrastructure or brownfield remediation is necessary, and that due diligence and entitlements could be provided and/or obtained within this time period. A Tier 1 site does not have a use restriction and is currently on the market for sale or lease, or the owner is willing to transact within 180 days. Sites in this tier would generally qualify for Business Oregon's Industrial Site Certification program.

Tier 2 Sites have over 25 net developable acres and require additional actions that would take between 7 to 30 months to be counted as development-ready. The 7- to 30-month timeframe is for sites that are less competitive for expansions and recruitment, but may still be of some interest to more patient users/developers. These sites may have deficiency issues with regard to infrastructure or may require brownfield remediation, annexation, and additional local and state legislative actions that are assumed to take more than six months. Additionally, these sites may have a marine or aviation use restriction that limits, but does not eliminate, their market opportunity. These sites are currently on the market for sale or lease, or the property owner is willing to transact. If the property owners' willingness to transact is unknown, the site may still be considered a Tier 2 site. Should the site be in multiple ownerships, an agreement to aggregate within 30 months must be in place.

Tier 3 Sites have over 25 net developable acres and require the most cost and time to deliver a development-ready site. Tier 3 sites include those that require 30 months or more to be development-ready and represent the least competitive sites from an expansion, recruitment, or a speculative development perspective. In addition to the criterion for Tier 2, these sites may or may not be currently for sale or lease, or the owner may or may not be willing to transact. In a small number of cases, sites are in Tier 3 because required information was not available at the time this report was published. In this tier, the Project team identified High-Need sites expected to take five years or more for site readiness investments needed to move to Tier 1. Development of some of these sites may not be feasible.

Table 1 below shows the tiering criteria developed and used by the PMT and consultant team to tier the sites.

Table 1: Inventory Tiering Criteria

	25 Net Developable Acres	Use Restriction	Brownfield Remediation	Annexation Required	Sewer, Water, & Storm	System Mobility	Currently for Sale or Lease		Willingness to Transact
Tier 1	Within 6 months	No	No or Within 6 months (Score of A)	No	A or B	A or B	Yes	***OR***	Yes
Tier 2	Within 7-30 months	Yes or No	Within 7-30 Months (Score of B)	Yes or No	A, B, or C	A, B, or C	Yes	***OR***	Yes or Unknown
Tier 3	>30 months	Yes or No	>30 months (Score of C)	Yes or No	A, B, or C	A, B, or C	Yes or No	***OR***	Yes or No or Unknown

Source: Mackenzie

2017 INVENTORY UPDATE FINDINGS

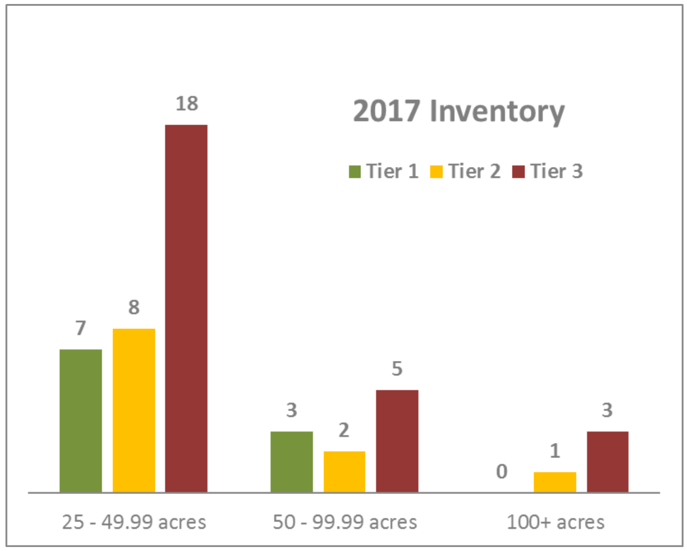
Development Readiness

Industrial sites in the region are in varying states of readiness, requiring regulatory approvals (development permitting, environmental resource mitigation), local discretionary actions (concept planning, annexation, zoning), infrastructure (sewer, water, transportation), site/property owner aggregation, and brownfield remediation.

The study finds that the region has a decreasing supply of large industrial sites readily available to attract and grow employers needed for the region to prosper, particularly sites of 50 net developable acres or more. Figures 5 and 6 represent the findings of the regional inventory as of June 2017.

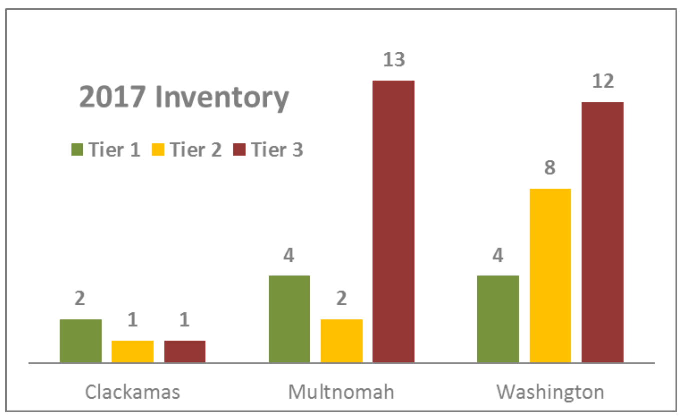
The study found the following:

Figure 5: Site Distribution Based on Tiers and Lot Size



Source: Mackenzie

Figure 6: Site Distribution Based on Tiers and County



Source: Mackenzie

10 Tier 1 sites

Available for facility construction within 180 days

There are 10 Tier 1 development-ready sites available in the near term, mostly in the 25- to 49-acre range. Tier 1 sites total approximately 430 net developable acres, and seven of these sites are currently under contract/in due diligence with potential purchasers.

11 Tier 2 sites

Available for facility construction between seven and 30 months

Tier 2 mid-term sites require additional investment or policy actions to be development-ready. Of the 11 Tier 2 sites totaling approximately 673 net developable acres, two of these sites require property owner assembly; however, all are willing to transact. Seven of these sites require city annexation.

26 Tier 3 sites

Available for facility construction beyond 30 months

There are multiple challenges to address to bring these 26 Tier 3 sites to market. Investment and actions required to move these sites forward include site aggregation, brownfield remediation, wetland mitigation, transportation/infrastructure improvements, and annexation. Of the Tier 3 sites, 11 (42%) require property owner assembly. Tier 3 sites total approximately 1,680 net developable acres. Of these 26 Tier 3 sites, 15 sites are considered High-Need sites with an estimated development timeframe of over five years.

50-plus and 100-plus-acre size sites
The 2017 inventory update found a decreasing supply of 50-plus and 100-plus-acre sites in the Portland region.

With respect to 50- to 99-acre sites, the study found 10 sites, only five of which are unencumbered:

- Three Tier 1 sites that are all under development agreements and may soon no longer be available.
- Two Tier 2 sites that are both under development agreements and may soon no longer be available.
- Five Tier 3 sites: Site 33: Coffee Creek site 1 (Wilsonville); Site 64: Woodfold-Marco Manufacturing Inc. (Forest Grove); and three currently operating gravel pit sites in Gresham (Sites 120, 121 and 122).

With respect to 100-plus-acre sites, the study found four sites:

- No Tier 1 sites.
- One Tier 2 site: Site 104, Meek Subarea site (Hillsboro).
- Three Tier 3 sites: Site 7: West Hayden Island; Site 10: SW Quad (both owned by the Port of Portland); and Site 101: Vanrose Farms/Bert & Bernie LLC (Hillsboro).

Tier 2 and 3 Development Constraints

There are multiple development constraints impacting the 37 Tier 2 and Tier 3 sites, as outlined in the table below.

Parcel aggregation is an issue impacting 35% of the sites. Nearly 60% of the Tier 2 and Tier 3 sites require local and state legislative action, and 65% of Tier 2 and Tier 3 sites have significant site infrastructure and environmental constraints.

Tier 2 and Tier 3 Development Constraints	
Brownfield clean up:	7
Natural Resources:	17
Infrastructure (water, sewer, storm utilities):	16
Transportation:	22
Land Assembly:	13
Local and State Legislative Actions (annexation, zoning, concept planning and UGB expansion):	22
Willingness to Transact	
No:	15
Unknown:	6

Note: Most sites may have multiple constraints

Tier 1, 2, and 3 Site Results

The 2017 update is based on the best available public information available to the consultant as of June 2017. The inventory of industrial sites in the Portland region will change over time; as such, this inventory is a snapshot in time. Changes to this inventory are based on better information, such as wetland delineations; site surveys; property owner conversations; new properties coming on the market; properties in the inventory coming off the market due to transactions; a change in tier status based on investment or other actions; and other issues, such as an increase in property owner willingness to transact or other user designation.

The inventory update identifies 47 large industrial sites in the Metro UGB and selected urban reserves (Figure 7). Of these 47 sites in the inventory, 10 sites (21%) are Tier 1; 11 sites (24%) are Tier 2; and 26 sites (55%) are Tier 3 sites. Many of the Tier 3 sites have significant barriers to development readiness and may not be able to be aggregated as a site at all. The complete inventory of sites detailing all the data prepared for each site, their location in the region, and their tiers can be found in Appendix A, with regional maps found in Appendix B.

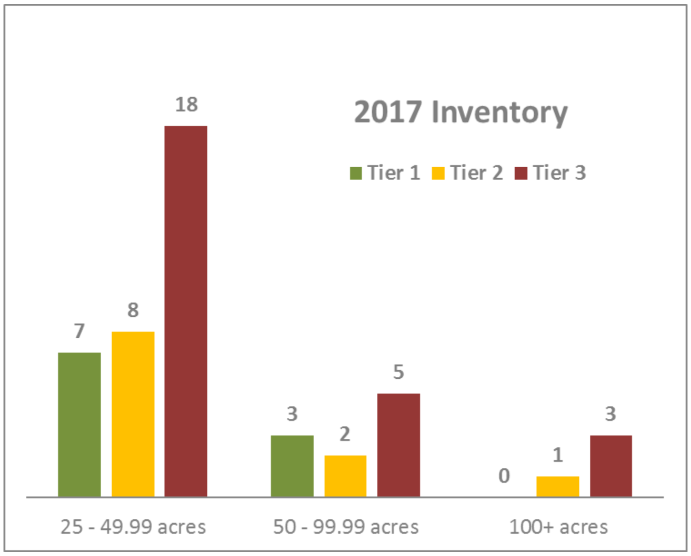
Table 2: Tier and Site Distribution by County

Tier/Acres	Clackamas	Multnomah	Washington	Total
Absorbed by the Market *(removed from 2014 inventory)*	**0**	**5**	**8**	**13**
Tier 1	**2**	**4**	**4**	**10**
25-49 acres	2	3	2	7
50-99 acres	0	1	2	3
100+ acres	0	0	0	0
Tier 2	**1**	**2**	**8**	**11**
25-49 acres	1	1	6	8
50-99 acres	0	1	1	2
100+ acres	0	0	1	1
Tier 3	**1**	**13**	**12**	**26**
25-49 acres	1	8	9	18
50-99 acres	0	3	2	5
100+ acres	0	2	1	3
TOTAL	**4**	**19**	**24**	**47**

Tier 1 Sites

Of the 10 Tier 1 sites, four are in Washington County, four are in Multnomah County and two are in Clackamas County (Table 2). There is a limited supply of large sites ready for industrial development as 70% of the Tier 1 sites are in the 25-49-acre range. There are three 50-plus-acre sites, and no 100-acre sites that are Tier 1; the three 50-plus acre sites have development agreements.

Figure 7: Site Distribution Based on Tier and Acreage



Source: Mackenzie

In addition to development readiness, there are a handful of economic factors that drive the suitability of industrial sites for immediate development. A closer look at the 10 Tier 1 sites (Table 3) reveals that the number of sites attractive to a broad range of potential traded-sector companies is even smaller. Of the 10 Tier 1 sites, two sites have multiple owners and a potential user must aggregate these sites themselves. One site is currently for sale at an above-market price for industrial development. It is unclear if, or when, the current owner will align the asking price with current industrial market pricing. Seven Tier 1 sites are currently under development agreements with potential purchasers, and may be off the inventory by 2018[23].

80% of the Tier 1 sites are in Multnomah or Washington County[24]. Because the inventory only includes sites within the Portland metropolitan UGB or select urban reserves, industrial sites located in rural Washington County and Clackamas County, such as Banks, Canby, Sandy, Molalla, and Estacada are not included in this inventory[25]. However, these sites are an important component of the regional economy. Table 3 details the Tier 1 sites.

[23] **Site 1:** Rivergate; **Site 29:** CCDA; **Site 50:** Shute North; **Site 52:** Shute South; **Site 16:** Blue Lake Corporate Park (formerly Cereghino); **Site 18:** TRIP Lot 10; **Site 119**: Intel (West Union Road).

[24] Approximately 40% of Multnomah County is within the Metro UGB; 17% of Washington County; and 5% of Clackamas County.

[25] http://cmap.clackamas.us/ccss/

Table 3: Tier 1 Site Summary

Site ID	Owner/Site	Location	County	Gross Acres	Net Developable Acreage	Number of Tax lots	Number of Owners	Currently for Sale/Lease	Willing to Transact
1	Port of Portland (Rivergate)	Portland	Multnomah	51.44	51.21	4		L	
16	Blue Lake Corporate Center (formerly Cereghino)	Gresham	Multnomah	41.63	25.00	5		L	
18	Port of Portland (TRIP - Phase 2)	Troutdale	Multnomah	42.67	30.18	3		S/L	
21	Port of Portland GVBP - East	Gresham	Multnomah	48.2	48.2	1		S/L	
29	Clackamas County Development Agency	Clackamas	Clackamas	61.93	40.00	11		S/L	
32	Ralph & Shirley Elligsen	Wilsonville	Clackamas	33.42	30.20	2		S	
50	Shute North (Berger/Moore Trust/Boyles Trust)	Hillsboro	Washington	73.31	55.00	5	3	S	
52	Shute South (Berger Properties/Moore Trust)	Hillsboro	Washington	42.91	42.91	2	2	S	
57	TTM Technologies (formerly Merix Corporation)	Forest Grove	Washington	34.25	29.71	1		S	
119	Intel (West Union Rd)	Hillsboro	Washington	72.4	72.4	2	1		Yes
			Total Acres:	**502.16**	**424.81**				

Note: It is assumed that if a property is currently listed for sale or lease, the property owner is willing to transact.

Source: Mackenzie

Tier 2 Sites

The analysis found 11 Tier 2 sites within the Metro UGB. The bulk of these sites are in Washington or Multnomah County, with only one site in Clackamas County. There are few 50+ acre sites in Tier 2: two sites between 50-99 acres and one 100-plus-acre site.

Each of the sites in Tier 2 face significant challenges to become development-ready: most require infrastructure extension, and seven sites require local and state legislative actions, like annexation. Many Tier 2 sites have multiple development constraints that limit their marketability. The inventory update did not identify specific constraints at each site, but the list of potential constraints includes environmental clean-up, infrastructure upgrades, property owner aggregation, annexation, wetland/floodplain fill.

Because they have fewer development challenges than Tier 3 sites, Tier 2 sites may present the best opportunity to focus resources to bring more sites to Tier 1. Table 4 details the Tier 2 sites.

Table 4: Tier 2 Site Summary

Site ID	Owner/Site	Location	County	Gross Acres	Net Developable Acreage	Number of Tax lots	Number of Owners	Currently for Sale/Lease	Willing to Transact
9	Port of Portland (NE Marine Drive & 33rd Ave)	Portland	Multnomah	66.74	62.70	1		L	No
23	Mt Hood Community College	Troutdale	Multnomah	38.45	37.40	3			Yes
37	Orr Family Farm LLC	Sherwood	Washington	96.26	77.00	1			No
38	Biles Family LLC	Sherwood	Washington	39.60	30.89	1		S	
54	5305 NW 253RD Avenue LLC	Hillsboro	Washington	38.49	28.59	1			N/A
55	Spokane Humane Society & Spokanimal Care	Hillsboro	Washington	45.49	34.00	1			Yes
62	Rock Creek Site	Happy Valley	Clackamas	40.83	36.82	5	2	S	Yes
66	Kenneth Itel	Tualatin	Washington	46.25	30.25	2			Yes
104	Meek Subarea Site	Hillsboro	Washington	268.02	257.42	8	7		Yes
112	Hally Haworth	Forest Grove	Washington	38.19	36.15	2			Yes
115	Port of Portland (former SolarWorld)	Hillsboro	Washington	46.23	46.23	1		L	No
			Total Acres:	**764.55**	**677.45**				

Note: It is assumed that if a property is currently listed for sale or lease, the property owner is willing to transact. **Source: Mackenzie**

Tier 3 Sites

The analysis found 26 Tier 3 sites within the Metro UGB and selected urban reserves. While all but one[26] of the Tier 3 sites are inside the UGB, this category of sites has multiple and significant constraints to overcome to get to development readiness. Similar to the other tiers, the number of 50+-acre Tier 3 sites is limited, with five sites that are between 50-99 acres, and three 100+-acre sites.

Eleven of the Tier 3 sites (42%) require aggregation of parcels in separate ownerships. Ownership ranges from two owners for the Woodfold site in Forest Grove (Site 64) to up to 16 owners for the Coffee Creek Site 1 in Wilsonville (Site 33). Six of these 11 sites have more than three ownerships. The more owners involved, the more complex and lengthy the aggregation process.

More than two-thirds (15) of the sites in Tier 3 will require some kind of local or state legislative actions such as UGB expansion, annexation, zoning and concept planning to become development-ready. Examples include sites that are outside the current UGB and West Hayden Island, which is inside the UGB, but has been subject to two lengthy planning and annexation processes that ended without the desired outcome and, if pursued, will likely include significant infrastructure and mitigation requirements. If approved for development, the West Hayden Island site is at least seven years away from readiness due to permits, mitigation, and infrastructure requirements.

Another issue affecting five Tier 3 sites is brownfield contamination. Three of these sites[27] are located in the City of Portland adjacent to the Willamette River Superfund designation and have significant development issues, risk, and uncertainty.

Six of the Tier 3 sites (12%) are currently operating as active quarries, with gross site acreage varying from 26 to 300 acres. These sites have been mined for decades and, as a result, are significantly sloped due to excavation and may not be ready for industrial development for decades.

Development readiness requires, first and foremost, a willingness to enter into a transaction by the property owner. However, simply a lack of willingness to transact, or a lack of information of a willingness to transact, was not a reason to exclude a site in the inventory. Of the 26 Tier 3 sites, 20 (76%) either lack a willingness to transact or the information was unable to be determined as part of this study. Three of the Tier 3 sites (12%) are currently, or could be, available to the general market, as the property owner is willing to enter into a transaction; three sites (12%) are currently listed for sale or lease on the market. Table 5 provides a complete list of the Tier 3 sites. Table 6 below provides a list of 15 Tier 3 High-Need sites – a subset of Tier 3 sites – that are likely to require more than five years for development.

[26] **Site 109:** Morse Bros Inc.
[27] **Site 2:** Time Oil Company; **Site 4:** ESCO Corp; **Site 5:** Altofina Chemicals Inc.

Table 5: Tier 3 Site Summary

Site ID	Owner/Site	Location	County	Gross Acres	Net Developable Acreage	Number of Tax lots	Number of Owners	Currently for Sale/Lease	Willing to Transact
2	Time Oil Company	Portland	Multnomah	51.10	39.40	7			Yes
4	ESCO Corp	Portland	Multnomah	37.62	29.92	6	3		N/A
5	Atofina Chemicals INC	Portland	Multnomah	59.76	47.25	6			N/A
7	Port of Portland (West Hayden Island)	Portland	Multnomah	472.00	300.00	3			Yes
10	Port of Portland (SW Quad)	Portland	Multnomah	209.69	206.47	5		L	Yes
17	Port of Portland (TRIP – Phase 3)	Fairview	Multnomah	34.14	30.00		1	S/L	Yes
24	Jean Johnson	Gresham	Multnomah	37.17	33.82	1			N/A
25	Lester Jonak, Jr.	Gresham	Multnomah	34.19	27.07	1			N/A
26	Michael & Ardele Obrist	Gresham	Multnomah	33.51	33.51	2			N/A
33	Coffee Creek Industrial Area - Site 1	Wilsonville	Washington	89.59	84.70	21	16		No
35	Tonquin Industrial Area	Tualatin	Washington	49.52	34.32	8	7		Yes
36	Tigard Sand & Gravel Site	Tualatin	Washington	301.08	25.00	15	3		No
59	Coffee Creek Industrial Area - Site 2	Wilsonville	Washington	45.07	44.49	12	7		No
60	Coffee Creek Industrial Area - Site 3	Wilsonville	Washington	28.82	26.22	10	6		No
61	Coffee Creek Industrial Area - Site 4	Wilsonville	Washington	46.57	42.37	12	8		No
64	Woodfold-Marco MFG Inc. (East Oak Street)	Forest Grove	Washington	27.67	25.06	2	2		No
65	Woodfold-Marco MFG Inc. (West Oak Street)	Forest Grove	Washington	53.66	52.97	5			No

Site ID	Owner/Site	Location	County	Gross Acres	Net Developable Acreage	Number of Tax lots	Number of Owners	Currently for Sale/Lease	Willing to Transact
101	Vanrose Farms and Bert & Bernie LLC	Hillsboro	Washington	271.64	224.83	2	2	S	Yes
109	Morse Bros. Inc.	Tualatin	Washington	83.68	25.00	7			No
110	Davis Family Trust & Remi Taghon	Cornelius	Washington	49.01	40.21	10	2		Yes/ No
116	Northwest Sand & Gravel Inc.	Unincorporated	Clackamas	26.20	25.10	6	1		No
117	Chamberlain	Wilsonville	Washington	43.00	39.40	9	11		No
118	Yett	Portland	Multnomah	30.10	30	13	1		No
120	Morse Brothers Site 2	Gresham	Multnomah	93.02	93.02	11	1		
121	Multnomah County Gravel 1	Gresham	Multnomah	67.2	67.2	4	1		
122	John D. Winters	Gresham	Multnomah	52.3	52.3	13	1		
			Total Acres:	**2,327**	**1,679**				

Source: Mackenzie

Notes: "YES/NO" is for a property with two owners – one willing to transact and one not willing to transact. Additionally, it is assumed that if a property is currently listed for sale or lease, the property owner is willing to transact; site 109 is currently outside of the UGB.

High-Need Sites

Fifteen Tier 3 sites have been identified that, due to various factors, require significant resources to reach Tier 1 development readiness. These sites are expected to require five years or more of site readiness work. This inventory includes these sites in both the Tier 3 designation, as well as this additional High-Need Site designation, as they face significant development challenges that may preclude any industrial development, including Superfund cleanup (3 sites); active/previous gravel pits requiring reclamation (7 sites); interchange access to planned industrial area (3 sites); annexation and rezoning (1 site); and multiple access/infrastructure/mitigation (1 site). It is important to note that although these sites are designed and planned for industrial development, they may never develop for their designated uses due to these constraints and market factors. Table 6 provides a complete list of the High-Need sites.

Table 6: Tier 3 Subset – High-Need Sites

Site ID	Owner/Site	Location	County	Gross Acres	Net Developable Acreage	Number of Tax lots	Number of Owners	Currently for Sale/Lease	Willing to Transact
2	Time Oil Company	Portland	Multnomah	51.10	39.40	7			Yes
4	ESCO Corp	Portland	Multnomah	37.62	29.92	6	3		N/A
5	Atofina Chemicals Inc.	Portland	Multnomah	59.76	47.25	6			N/A
7	Port of Portland (West Hayden Island)	Portland	Multnomah	472.00	300.00	3			Yes
10	Port of Portland (SW Quad)	Portland	Multnomah	209.69	206.47	5		L	Yes
24	Jean Johnson	Gresham	Multnomah	37.17	33.82	1			N/A
25	Lester Jonak, Jr.	Gresham	Multnomah	34.19	27.07	1			N/A
26	Michael & Ardele Obrist	Gresham	Multnomah	33.51	33.51	2			N/A
36	Tigard Sand & Gravel Site	Tualatin	Washington	301.08	25.00	15	3		No
109	Morse Bros. Inc.	Tualatin	Washington	83.68	25.00	7			No
116	Northwest Sand & Gravel Inc.	Unincorporated	Clackamas	26.20	25.10	6	1		No
118	Yett	Portland	Multnomah	30.10	30	13	1		No
120	Morse Brothers Site 2	Gresham	Multnomah	93.02	93.02	11	1		
121	Multnomah County Gravel	Gresham	Multnomah	67.2	67.2	4	1		
122	John D. Winters	Gresham	Multnomah	52.3	52.3	13	1		
			Total Acres:	**1,588**	**1,035**				

Additional Sites

There are several dozen industrially designated sites in the region that are not included in this inventory update. These sites fall into four categories.

1. The parcel/site is greater than 25 gross acres; but when constraints (environmental or restrictive zoning/overlay) are taken into consideration, the net developable acreage falls below 25 acres (see Table 7).

2. The parcel/site is owned by a company that is **part of an existing campus/development** and the company has future expansion plans. This vacant land is not currently available to the market for another prospective user. The site is partially vacant, but reserved for expansion (see Table 8).

3. The parcel/site is owned by a company that has **future development plans;** therefore, the site is not currently on the market for a prospective user. The site is fully vacant and land banked for new development (see Table 8).

4. The parcel/site is currently developed for industrial use, but could redevelop in the future. These sites are not analyzed as a part of this project since doing so would significantly expand the scope of this analysis.

Although these sites do not appear in the 2017 inventory in this report, they are still an important portion of the region's industrial land supply. Appendix C provides regional maps of the environmentally constrained and user-designated sites.

Sites with Less Than 25 Net Developable Acres

There are 25 parcels and/or sites in this study that have 25 gross acres, but do not have at least 25 net developable acres. However, these sites are still part of the region's inventory of industrial land, as they may be developable for smaller users. These sites are identified in Table 7 below, but are not included in the 2017 inventory because they did not meet the criteria of this study.

Table 7: Parcels or Sites with Less Than 25 Net Developable Acres

Owner	Location	Gross Acreage	Approximate Net Developable Acres	Notes
McCormick & Bassili Investments LLC	Happy Valley (HWY 212 & 162nd)	33.98	7.5	Environmental constraints result in <25 net developable acres – according to Clackamas County
Weaver Russell	Happy Valley (HWY 212 & 162nd)	34.19	3.5	Environmental constraints result in <25 net developable acres – according to Clackamas County

Owner	Location	Gross Acreage	Approximate Net Developable Acres	Notes
Fazio	Portland (East of NE MLK & Gertz)	34.96	22	Existing drainage ditch bisects site into a 21.5-acre site; net developable acres in largest development parcel is <25 acres.
Graphic Packaging	North Portland (Marine Drive & Portland)	26.26	2.75	Environmental constraints result in <25 net developable acres.
Catellus	Portland (N of Airport and 185th)	31.99	3.5	Environmental constraints result in <25 acres remaining (wetlands and floodplain).
Langer Family	Sherwood (T/S Road & Adams)	56.48	< 25	Public utility district overlay on site results in <25 net developable.
Orwa Sherwood LLC	Sherwood (T/S Road & Adams)	50.25	6	Bisecting road results in <25 net developable acres.
Fred Fields	Tigard (Hall and Hunziker)	35.6	<25	Environmental constraints result in <25 net developable acres (market/site knowledge).
David Young	Wilsonville (S of Boeckman W of I-5)	33.9	0	Significant Resource Overlay Zone environmental constraints – according to City of Wilsonville.
Gary Walgraeve	Tualatin (Herman Road & 118th)	54.95	14.5	Environmental constraints result in <25 net developable acres – according to City of Tualatin.
Edward Wager	Tualatin (T/S Road & 124th)	32.14	13	Environmental constraints result in <25 net developable acres – according to City of Tualatin.
Joe Bernert Tow Inc.	Wilsonville (Wilsonville Road & Boones Ferry)	31.18	13.5	Significant Resource Overlay Zone – according to Wilsonville.
Rock Creek aggregate site	Happy Valley (Rock Creek Blvd & SE 172nd Avenue)	25.03	21.04	Slope constraints.
Powin Pacific Properties LLC	Tualatin (T/S Road & 115th)	29.47	13.45	Wetlands and stream on site.
Port of Portland	Portland (south of NE 33rd/Marine Drive site)	28	23	Drainage ditches result in <25 net developable acres.
Xerox (2 parcels)	Wilsonville (East of I-5)	95.81	34.1	Remaining 34.1 acres are reserved for future on-site environmental mitigation for the Xerox campus and not developable.

Owner	Location	Gross Acreage	Approximate Net Developable Acres	Notes
Port of Portland	Troutdale (TRIP- Lot 3) NEW	38	23	Under a Development Agreement to Purchase. Term of agreement commenced in March 2016 and terminates March 2018. Site has a four-acre high value wetland.
Port of Portland	Troutdale (Troutdale Airport Property)	56	25.5	For lease only. Development timeframe tied to Troutdale Airport Master Plan, lease terminations and tenant moves to the south side of the airport. 6 buildings envisioned. Phase I: four buildings planned for 2018-20 (26 acres); Phase II: two buildings planned for 2024-26 (15 acres); and Phase III: one building planned for 2028 (15 acres). Net developable acreage not contiguous due to presence of bisecting stream and wetland on site.
Port of Portland	Portland (T6 Suttle Road) NEW	41	19.98	Two tax lots east of Terminal 6 and BPA ownership. Transportation challenges, although LID planned for Suttle Road. An underutilized dredge rehandle facility is present on the site. It has not been used for more than 10 years. Could potentially be repurposed if lease of property was warranted.
Port of Portland	Troutdale (TRIP Lot 12)	40.01	21	More than 6 acres of wetlands. Filling these will increase the net developable acreage. Needs access road development, utility extensions.
State of Oregon	Clackamas County (Camp Withycombe)	139	23	Annexed into the City of Happy Valley. Owned by the State of Oregon/Oregon Military Department and remains in use as a National Guard training facility and supply depot. This is a long-term institutional use.
Kennedy/Fitzpatrick /Vanleeuwen (former site #34)	Wilsonville	52.88	17.6	Net developable acreage is challenged because of slopes.
Tigard Sand and Gravel	Tualatin	41.5	N/A	Future right-of-way purchase for 124th Ave bisected the entire 300-acre property. This site is impacted with significant slopes.

Owner	Location	Gross Acreage	Approximate Net Developable Acres	Notes
Julian & Sharon Cranford (former site #47)	Hillsboro	28.51	23.20	Environmental site assessment resulting in less than 25 developable acres; as found in 2015 Washington County Industrial Site Assessment Project.
Port of Portland	Gresham Vista Business Park (GVBP) Lot 10	30.98	10	Environmental constraints and conservation easements result in <25 net developable acres.

Source: Mackenzie

User Owned and User-Designated Sites

This analysis also excluded land-banked parcels that are owned and held for future expansion by existing regional firms. These parcels are an important part of the regional industrial land inventory; but since they are being held by their current owners for future development, they are not considered to be available to the general market, which is the focus of this study. There are 20 user-owned sites with, at a minimum, 25 net developable acres that are being held for future development in this study (Table 8). Ten (10) of these sites are vacant (for future use) with 25 or more net developable acres; and 10 are partially vacant (buildings on site/part of existing campus), but still have a minimum of 25 acres vacant for future expansion.

Table 8: User-Owned and User-Designated Sites

Owner	Location	Gross Acreage	Vacant Acreage	Vacant: for future use	Partially Vacant: in use	Notes
N Pacific Union Conference Association SDA (Wilbur Adkins)	Gresham (Foster & Tillstrom)	66.9	66.9	X		Reserved for future use/development. Sanitary sewer not currently available. Property owner may be willing to transact.
Providence Health	Happy Valley (HWY 212 & 162nd)	49.7	49.7	X		Reserved for future use/development. Future Phase 2 Sunrise Corridor in Happy Valley TSP may impact SE corner of site. Slope and natural resource constraints.
Legacy Health Services	Hillsboro (Cornell & Cornelius Pass)	28.95	27.3	X		Reserved for future use/development (easement on site).
Port of Portland (PIC WEST)	Portland (NE Alderwood Drive)	69.45	58.96	X		Future relocation site for PDX rental cars. Natural resource issues on-site.
Port of Portland	Hillsboro (NW Evergreen Road and 264th)	39.22	34.15	X		Inside Hillsboro Airport fence, and included in FAA Airport Layout Plan; reserved for aviation-related development only.
Mentor Graphics	Wilsonville (S of Boeckman E of I-5)	43.4	43.4	X		Reserved for future use/development - split from main campus by public street; Significant Natural Resource Overlay Zone on site and wetlands.
Phight LLC	Tualatin (T/S Road & 118th)	28.8	28.8	X		Reserved for future use/development.

Owner	Location	Gross Acreage	Vacant Acreage	Vacant: for future use	Partially Vacant: in use	Notes
BT Property LLC (UPS)	Gresham (NE 185th and NE Portal Way)	51.45	51.45	X		Reserved for future use/development. Next to Blue Lake/Cereghino property. Full utilities, access and flat but constrained by wetlands.
Great American TVR	Clackamas County (I205/82nd)	49.35	47.5		X	Communication towers and infrastructure on site.
Nacco Materials Company (Hyster-Yule)	Fairview (Marine & Blue Lake Road)	78.7	58.7		X	Excess land; some environmental constraints on site. Currently in use for Lift Truck R&D.
Microchip Technology (formerly Linde)	Gresham (Glisan & 223rd)	137	54		X	Not available – according to City of Gresham. 30 gross acres on NW portion may be excess property with wetlands.
Mutual Materials	Gresham (Hogan Road)	86.08	56.8		X	Excess land: currently in use.
Novellus Systems Inc.	Tualatin (SW Tualatin Road & SW 108th)	58.4	27.46		X	Excess land: currently in use.
PGE Portland (Linneman/ Gresham Substation)	Gresham (Powell & E of 182nd)	72.13	62.8		X	Reserved for future use and not available.
Genentech (entire campus)	Hillsboro (Evergreen & Brookwood)	75.3	60		X	Reserved for future use and not available.
Tokyo Ohka Kogyo	Hillsboro (Evergreen & Brookwood)	38.89	28.5		X	Reserved for future use and not available.
PGE Portland (Harbor Substation)	North Portland (St Helens)	63.1	43.9		X	Excess land currently in use. Superfund cloud.
Cookin (Siltronic)	Portland (St Helens Road)	79.27	38.6		X	Reserved for future use and not available.
Dewayne Wafford (former Site 48)	Hillsboro	46.06	44.58	X		Sold and reserved for future use/development.
East Evergreen (former Site 56)	Hillsboro	70.74	49.74	X		29 acres of 70-acre site sold and reserved for future use; 23 acres are not designated.

Source: Mackenzie

Changes from 2014 Inventory to 2017 Inventory

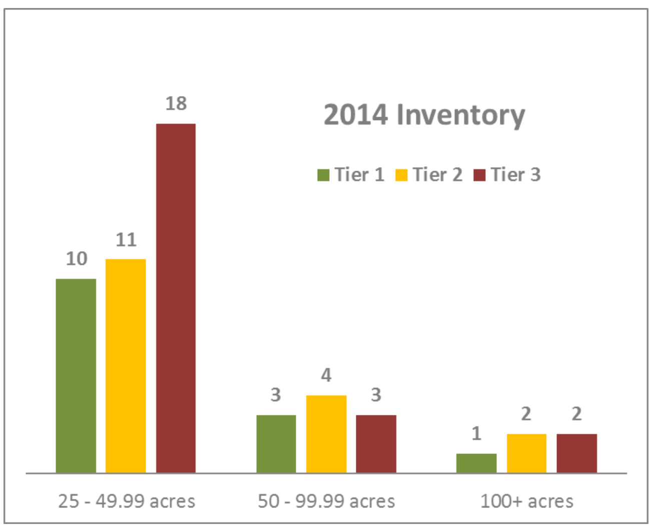
Movement In and Out of the Inventory

The 2017 inventory includes 47 sites. This is a lower count than both the 2014 inventory of 54 sites and the 2011 inventory of 56 sites.

- Thirteen sites were removed from the 2014 inventory, including four sites that are being developed or used for construction staging.
  - Tier 1 sites decreased by four sites;
  - Tier 2 sites decreased by six sites; and
  - Tier 3 sites increased by three sites.
- Six sites were added to the inventory.

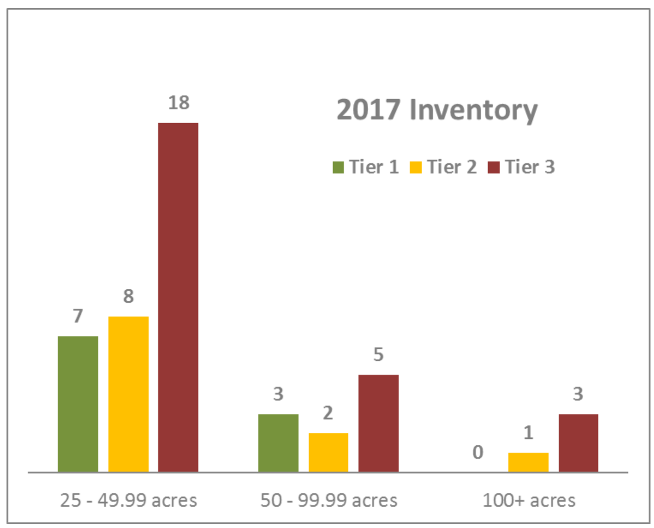
The breakdown among tiers, compared with the previous update in 2014, is shown in Figures 8 and 9 below.

Figure 8: 2014 Inventory



Source: Mackenzie

Figure 9: 2017 Inventory



Source: Mackenzie

Movement between Tiers

From 2011 to 2014, there was significant movement between the tiers (11 sites), but less market activity with only three sites developed. Between 2014 and 2017, there was significant market activity with nine sites absorbed by the market and four moving up a tier. In addition, site readiness investments were made in a number of these sites (e.g., Site 19 TRIP Phase 2, Site 66: Itel) to improve development readiness.

For the remaining sites on the 2017 inventory, there was little movement of sites between tiers that occurred between 2014 and 2017. The 2017 inventory update found four sites that moved up a tier: two Tier 2 sites became Tier 1 sites; one Tier 3 site became a Tier 1 site; and one Tier 3 site became a Tier 2 site. One site moved down a tier, from Tier 2 to Tier 3. The table below shows movement between the tiers since the 2014 inventory. The movement of sites upward on the inventory were due to environmental mitigation, transportation upgrades, and changes in an owner's willingness to transact. The movement of one site from Tier 2 to Tier 3 is due to changes to the assumed timing of investment in infrastructure.

Table 9: Movement in the Inventory

	2017 Inventory	Remaining from 2014 Inventory	Upgraded from 2014 Inventory	Downgraded from 2014 Inventory	Added Sites to 2017 Inventory
Tier 1	10	6	3 (two previously Tier 2, one previously Tier 3)	-	1 (previously User Designated)
Tier 2	11	10	1 (previously Tier 3)	0	0
Tier 3	26	20	-	1 (previously Tier 2)	5
TOTAL	**47**	**36**	**4**	**1**	**6**

Of the four sites that moved up a tier:

- Two sites are in Multnomah County (Portland and Troutdale), owned by the Port of Portland, and moved from Tier 2 to Tier 1 on the inventory[28]. One of the sites was able to do so without significant investment in infrastructure, only by obtaining a permit that minimizes environmental constraints to development. One of the sites was subdivided, filled, and benefited from transportation upgrades in the area.
- One site is in Gresham and is privately owned.[29] The site moved from Tier 3 to Tier 1 due to environmental mitigation.
- One site is in Sherwood and is privately owned[30]. The site moved from Tier 3 to Tier 2 due to transportation infrastructure upgrades, and a change in the owner's willingness to transact.

The site that went from a Tier 2 to Tier 3 moved down the inventory due to projected timing of transportation and infrastructure investments[31]. The site was analyzed in more detail as a part of the 2015 Washington County Regional Industrial Site Readiness project, and was found to be development-ready in 45 months.

Sites Deleted from the Inventory

Between the 2014 and 2017 inventories, there were 13 sites removed and six sites added. This amounts to approximately 538 estimated net developable acres that were removed from the inventory. In contrast, the six sites added to the 2017 inventory accounted for approximately 354 acres. The net decrease of large industrial site acreage in the metro region is an estimated 184 net developable acres. Table 10 provides a complete list of sites removed from the 2017 inventory, and the reason for doing so.

[28] **Site 1:** Port of Portland (Rivergate); **Site 18**: Port of Portland (TRIP Phase 2)
[29] **Site 16:** Blue Lake Corporate Park (formerly Cereghino)
[30] **Site 37:** Orr Family Farm Inc
[31] **Site 101:** Vanrose Farms and Bert & Bernie LLC

Table 10: 2014 Inventory Sites Removed from 2017 Inventory

Site ID	Owner/Site	Location	County	Gross Acres	Net Developable Acres	Sale/Lease/ Transact (2014)	Development and/or Action
Tier 1 Sites							
13	Specht Properties, Inc.	Portland	Multnomah	28.11	26.52	S	Property purchased by Specht Development and built Interstate Crossroads.
22	Port of Portland GVBP - West	Gresham	Multnomah	87.79	67.84	S/L	Portion of property purchased; remaining land on lot 8 less than 25 developable acres.
46	Development Services of America (Westmark Site)	Hillsboro	Washington	30.02	30.02	S	Sold and developed by Reser's Fine Foods.
48	Dewayne Wafford (Baker/Bindewald Site)	Hillsboro	Washington	46.06	44.58	S	Sold with plans to develop by DuPont Fabros (moved to user-designated list).
49	Majestic Realty Co.	Hillsboro	Washington	75.11	62.75	S/L	Sold and developed (Top Golf, Amazon, Via West, Rosendin Electric) Remaining lot 2 is 5.5 acres.
111	Weston Investments and CCF Oregon LLC	Gresham	Multnomah	34.99	26.00	S	Eastern portion of property purchased by Panattoni; remaining land less than 25 developable acres.
113	Henningsen Cold Storage	Forest Grove	Washington	28.57	26.44	S	Portion of property purchased by Old Trapper; remaining land less than 25 developable acres.
114	Colwood LTD Partnership	Portland	Multnomah	47.55	39.42	S	Sold; USPS building construction underway.
Tier 2 Sites							
19	Port of Portland (Trip - Phase 2)	Troutdale	Multnomah	80.53	80.34	S	Sold; Amazon building construction under way.

Site ID	Owner/Site	Location	County	Gross Acres	Net Developable Acres	Sale/Lease/ Transact (2014)	Development and/or Action
47	Julian & Sharon Cranford	Hillsboro	Washington	28.51	23.2	S	Environmental site assessment resulting in less than 25 developable acres; as found in 2015 Washington County Industrial Site Assessment Project.
56	East Evergreen Site	Hillsboro	Washington	70.74	61.00	S	Portion of property purchased by T5 Data Centers (moved to user-designated list); remaining land less than 25 developable acres.
63	Woodburn Industrial Capital	Forest Grove	Washington	26.17	25.01	S/L	Portion of property purchased; remaining land less than 25 developable acres.
Tier 3 Sites							
34	Kennedy/Fitzpatrick /Vanleeuwen	Wilsonville	Washington	52.88	17.6	N/A	Net developable acreage is challenged due to slopes and environmental constraints.
User-Designated Sites							
	Clackamas CDA		Clackamas	32.2	32.1	N/A	Proposed 6.57 acres of ROW to be conveyed to ODOT for Sunrise Expressway; remaining land less than 25 developable acres.

Source: Mackenzie

The 2017 inventory added six sites: one Tier 1 site, and five Tier 3 sites for a total of approximately 350 gross acres.

Table 11: Sites Added to the 2017 Inventory

Site ID	Owner/Site	Location	County	Gross Acres	Net Developable Acres	Sale/Lease/ Transact (2017)	Site Added Due To
Tier 1 Sites							
119	Intel (West Union & Cornelius Pass)	Hillsboro	Washington	72.4	72.4	Yes	Site was on User-Designated List in 2011 and 2014 inventory. In 2017, user decided to transact.
Tier 3 Sites							
117	Chamberlain	Wilsonville	Washington	43.00	39.40	No	Site was found during 2015 Washington County Industrial Site Assessment Project.
118	Yett	Portland	Multnomah	30.10	30	No	Site is currently operating gravel pit. Found through additional outreach to City of Portland staff.
120	Morse Bros. Site 2	Gresham	Multnomah	93.02	93.02	No	Site is currently operating gravel pit. Found through additional outreach to City of Gresham staff.
121	Multnomah County Gravel 1	Gresham	Multnomah	67.2	67.21	No	Site is currently operating gravel pit. Found through additional outreach to City of Gresham staff.
122	John D. Winters	Gresham	Multnomah	52.3	52.31	No	Site is currently operating gravel pit. Found through additional outreach to City of Gresham staff.

Source: Mackenzie

Site Assessment Analysis Summary

Since the inception of this industrial site inventory project and related work efforts, a series of detailed site assessments have been developed. This includes 2012 Phase 2 (12 sites), 2014 Clackamas County Strategically Significant Employment Lands Project (21 sites), and 2015 Washington County Regional Industrial Site Assessment Project (15 sites), funded in part by Metro Community Planning and Development Grants. In addition, PGE commissioned a study of infrastructure costs for a number of sites in the 2014 inventory (15 sites – including some covered from previous assessments). While the analysis in some cases is older (2012), and others focused solely on infrastructure (PGE), this analysis provides important information on the order of magnitude investments that will need to be made to move 19 of the 37 Tier 2 and Tier 3 sites to Tier 1 site readiness. For the 19 Tier 2 and Tier 3 sites representing 1,385 gross acres, the estimated total costs for infrastructure only are $143.8 million, or an average cost of $2.31 per gross square foot ($106,000 per acre). In addition, for the 19 sites with detailed site assessments, there is another $53 million[32] of estimated non-infrastructure site readiness costs needed to move sites to market (e.g., wetland mitigation, brownfield clean up, slope mitigation, and building pad surcharge), underscoring the importance of flexible site readiness funding sources.

The inventory work that was completed as a part of the *2011-12 Regional Industrial Site Readiness Project* was organized into two phases: the inventory (Phase 1), and detailed site assessment analysis (Phase 2). This report is an update of the inventory (Phase 1); however, the detailed site assessment analysis that has been completed after the initial inventory contains information on the infrastructure investments, site readiness costs, and development timeframes for many of the sites included in the inventory. This information provides context for the regional challenges in moving non-Tier 1 industrial sites to market to meet the region's growing population and job needs. As mentioned throughout this report, the following site assessment projects have been completed following the October 2011 inventory:

- *2011-12 Regional Industrial Site Readiness Project – Volume 2 Phase 2 Site Results*[33]
- *2014 Clackamas County Strategically Significant Employment Lands Project*34
- *2015 Washington County Regional Industrial Site Assessment Project* 35
- *2016 Clark County Employment Land Study*36
- *2017 Portland General Electric Service District Site Evaluation* (Appendix E)

The site assessment analysis is based on unique site assumptions for conceptual target industry site development and has not been updated in 2017 dollars as a part of this report. Similarly, new site readiness costs have not been developed, as the intent of the table below is to consolidate already completed report information (where available) in one report.

[32] $29 million if the estimated $24 million estimate for Tigard Sand and Gravel quarry reclamation fill earthwork is excluded.
[33] www.valueofjobs.com/land_ study_2012/ls_Phase1-2-3-analysis-findings.html.
[34] Site assessment analysis results not publicly available at time of this report.
[35] http://www.co.washington.or.us/LUT/Divisions/LongRangePlanning/PlanningPrograms/CommunityPlanning/industrial-lands.cfm.
[36] Site assessment analysis results not publicly available at time of this report.

Table 12: Summary of Site Assessment Analysis Results: Infrastructure and Transportation Requirements

Site ID	Site Name	Location	Gross Acres	Net Developable Acres[37]	Total Costs[38]	Cost per Gross SF	Cost per Gross Acre	Tier[39]
62	Rock Creek Site 1	Happy Valley	40.83	36.82	$4,167,500	$2.34	$102,070	2
112	Haworth	Forest Grove	38.19	36.15	$3,125,000	$1.88	$81,828	2
66	Itel	Tualatin	46.25	30.25	$7,269,750	$3.61	$157,184	2
115	Port of Portland NW Evergreen Rd	Hillsboro	46.23	46.23	$2,574,000	$1.28	$55,678	2
55	Spokane Humane Society	Hillsboro	45.49	36	$6,520,000	$3.29	$143,328	2
38	Biles	Sherwood	39.60	30.89	$3,082,000	$1.79	$77,828	2
104	Meek Sub Area	Hillsboro	268.02	257.42	$30,000,000	$2.57	$111,932	2
2	Time Oil	Portland	51.7	39.4	$1,446,000	$0.65	$27,969	3
24	Jean Johnson	Gresham	37.17	33.82	$8,434,000	$5.21	$226,903	3
36	Tigard Sand & Gravel[40]	Tualatin	72.6	66.1	$10,944,000	$3.46	$150,744	3
37	Orr Family	Sherwood	93.77	74.50	$9,114,000	$2.23	$97,195	3
33	Coffee Creek 1	Wilsonville	89.59	84.70	$6,306,500	$1.62	$70,393	3
59	Coffee Creek 2	Wilsonville	45.07	44.49	$5,333,500	$2.72	$118,338	3
60	Coffee Creek 3	Wilsonville	28.82	26.22	$1,917,500	$1.53	$66,534	3
61	Coffee Creek 4	Wilsonville	46.57	42.37	$7,722,000	$3.81	$165,815	3
64	Woodfold-Marco East	Forest Grove	27.7	25.06	$2,932,000	$2,43	$105,848	3
65	Woodfold-Marco West	Forest Grove	53.66	52.97	$3,843,000	$1.64	$71,618	3
101	Vanrose Farms	Hillsboro	271.64	224.83	$24,980,000	$2.11	$91,960	3
117	Chamberlain	Wilsonville	43.00	39.4	$4,170,000	$2.23	$96,977	3
	TOTALS:		1,385	1,227	$143.8 M	$2.31 (average)	$106,200 (average)	

[37] Per 2017 inventory (Appendix A)
[38] Water, sewer, stormwater, and transportation infrastructure only
[39] Per 2017 inventory (Appendix A)
[40] Only 72.6 acres of the 245 acres were analyzed as a part of the Washington County site assessment analysis due to required public road construction projects shown in the Tualatin Transportation System Plan.

RETURN ON INVESTMENT

The industrial development cycle kicked off in 2014 with nearly 1.2 million square feet delivered that year. Large scale development projects exemplified by PDX Logistics Center, Interstate Crossroads Distribution Center, and Majestic Brookwood Business Park have contributed to the completion of over 7.5 million square feet of industrial space since 2014, according to market research from Kidder Mathews. There is over 3.5 million square feet currently under construction at the time of this report. A defining characteristic of this cycle has been the predominance of warehousing and distribution, otherwise described as "logistics" space. The experience of the Portland Metropolitan area is not an anomaly in this respect. Aside from a few select markets with well-established legacy production or natural resource based sectors, growth in manufacturing has been decidedly flat.

The lack of growth in manufacturing is reflective of a long-term national trend dating back to the 1980s. For example, since 1980, manufacturing employment in the United States is down 36%. Some of this decline can be attributed to increased productivity and a trend toward capital utilization and automation in production processes; however, the observed structural trend of manufacturing functions shifting to foreign markets, capitalizing operating cost advantages, cannot be ignored.

There are those who believe that a reversal of this trend is on the horizon. The combination of a deteriorating foreign labor cost advantage, shrinking product life cycles (and an associated need to co-locate design and production functions), and concerns over intellectual property point to a potential domestic manufacturing resurgence. The current political climate is aligned with this outcome as well. While the potential is clear, manufacturing-based development has been slow to materialize in the United States. To the extent that production-based industries are locating in the United States, competition for sitings is exceptionally fierce. Aside from the rare instance where location in a particular market is a necessity (for example, a corporate or supply-chain linkage), local and state economic development organizations must offer a comprehensive value-proposition in recruitment efforts that include several variables, such as land availability/costs, incentives, streamlined permitting, infrastructure, and workforce training, among many others.

Now in its third iteration, the *Regional Industrial Lands Inventory* introduces a supplemental analysis to assess the development outcomes that have been realized since the initial 2011 inventory. The objective of this assessment is to illustrate the role of industrial sites in economic development and define the contribution that industrial land development has had on the local economy.

The 2017 inventory comes in the midst of an economic cycle that has lasted seven years. Over this time, the three-county region has added over 140,000 jobs[41]. While much of this employment growth can be attributed to refill of existing space left idle by the Great Recession, the region is now 77,000 private sector jobs[42] above its pre-recession peak, with development of new structures providing much needed capacity.

The tables in this section show how many of the large industrial sites included in 2011 and 2014 inventories have been absorbed in the current cycle and how economically productive they are. This assessment is comprised of two parts:

1. Sites that have been purchased or absorbed by a user or developer and have development *partially completed*, under construction, or planned in the near future.
2. Sites that were included in the 2011 inventory that have been absorbed and *fully built-out*.

[41] Oregon Employment Department, Quarterly Census of Employment and Wages (QCEW), 2017
[42] Oregon Employment Department, Quarterly Census of Employment and Wages (QCEW), 2017

Methodology—Partially Completed Sites

Information provided for partially completed sites was derived exclusively from existing publicly available data and/or input from the Project Management Team (PMT). Information on the physical characteristics of each site was extrapolated from the previous 2014 inventory project. Each site was classified by user and development type during a working session with the PMT. The data collection and analytical process for each metric is discussed below, with key metrics summarized in Table 13.

Developer/User Classification:

Determination whether the project was a developer- or user-driven development project was based on:

- *Developer Driven:* A developer controls the site and develops all or a portion of the site for either a specific user or for multiple tenants.

- *User Driven:* A specific user locates and/or controls a site for its own expansion or location. The user then contracts to have a facility constructed.

Development Type Classification:

Determination whether the project is a speculative development or a build-to-suit for a specific user was based on:

- *Speculative Development:* Buildings are developed with no specific tenant in mind. Space is marketed and leased on the open market.

- *Build-to-Suit:* Buildings are designed and constructed for a specific user that has agreed to lease or purchase space prior to construction.

Other Metrics

Other metrics included in the assessment of partially developed sites include:

Planned Investment:

The category for planned investment includes the estimated cost of developing known portions of the site. This metric includes hard costs only and excludes personal property or Furniture, Fixture, and Equipment (FFEs). This information was provided from public project press releases or from PMT outreach efforts to project developers.

Building Square Footage:

Expected development as measured by the square footage represents the amount of physical development that has occurred, is planned, or is under construction. This data was derived from PMT outreach efforts to developers and from site plans submitted to jurisdictional partners for land use approval.

Building Type:

The classification for building type is a qualitative description of the building use/function for each site. This classification was established in a working session with the PMT.

Job Potential/Capacity:

This represents either the actual or theoretical capacity for jobs at each project. Actual/announced job estimates, where available, were obtained through public press release or PMT outreach efforts to users. In many cases, specifically for speculative development, information was unavailable because the physical space that has been developed (or is in the process of developing), does not have identified or obtained tenants. In these instances, Mackenzie relied on estimates of job density (average square feet per employee) from *Metro's 2014 Urban Growth Report (UGR)*. However, in the current development cycle, employment densities have tended to be lower than those assumed in the UGR. Therefore, Mackenzie calculated job estimates as a range with the *UGR* based value as an upper bound, discounting the Metro estimate by 30% to complete a lower bound range.

Methodology—Fully Built-Out Sites

This report also identified six sites from the 2011 or 2014 inventories that have been fully absorbed or "built-out." For these sites, Mackenzie provided a full "return-on-investment" assessment that included a predetermined set of metrics. Information used to populate this assessment was derived from a range of public and proprietary sources. The PMT was instrumental in coordinating outreach to developers, users, brokers, and tenants to obtain proprietary information. The data collection and analytical process for each metric is discussed here, with key metrics summarized in Table 13.

Developer/User and Development Type Classification:

This is an identical classification process to that used for partially developed sites above. All sites were classified as either developer or user driven, and as either a speculative or build-to-suit type. This was determined based on industry knowledge during a working session with the PMT.

Building Type:

This is an identical classification process to that used for partially developed sites above. This metric is a qualitative classification to represent the use/function of the building.

Land Sale Acquisition Price/Date:

This metric represents the price that the user or developer paid for gross, raw land and the date (year) the transaction took place. This information is publicly available and was derived from each site's respective county assessor's office. This metric is included to demonstrate the price necessary for the property to transact from its previous owner to a party interested in developing the site.

Total Developed Square Feet:

Total developed square feet is the amount of building square footage developed on the site. This information was derived from site plans submitted to jurisdictional partners for land use approval.

Investment in Real Property:

This is an identical metric as "planned investment" in the partial development assessment with the *exception* that this metric is actual investment and not planned. This metric reflects hard costs only and does not include soft costs or FFEs. This data was obtained through public press releases or through PMT outreach efforts to developers.

Local Assessed Property Values:

This metric is the combined assessed value of real property for land and improvements as determined by the assessor's office in each respective county. Assessed value is not replacement cost or real market value. It is the rate at which property taxes are levied on a property and are influenced by regulatory factors such as incentives.

Property Tax Revenues:

This metric represents the total property tax collection for each site in the 2016-17 tax year. These figures were derived directly from the assessor's office in each respective county.

User/Tenants:

This represents the actual company or companies that occupy developed space at each site. This information was derived from public press releases, quarterly market reports published by the brokerage community, and PMT outreach efforts with developer partners. The square footages associated with each tenant are approximate.

Direct Job Estimates:

This metric represents the estimated number of jobs tenants employ at each site. Where information was available through public press release or disclosed by a business, that number was used. However, as employment data is proprietary, firms are often unwilling to disclose information about their business operations. In this instance, Mackenzie again relied upon estimates of job density (square feet per employee) from *Metro's Urban Growth Report*. Job density on a gross-acre basis is also reported by dividing total jobs by gross acres of the site.

Industries Represented:

Industry determination was based on how tenants self-classify under the North American Industrial Classification System (NAICS[43]). Where exact NAICS classification could not be identified, industry standards were applied (for examples, data centers typically classify as 518 Data Processing, Hosting, and Related Services).

Average Wage:

The average wage for each site was calculated using an average wage across industries for each site. Wage data by industry is derived from the *Quarterly Census of Employment and Wages (QCEW) for 2016* for each respective County[44]. For sites with multiple industries/tenants, the reported wage is a weighted average based on job estimates by industry.

Indirect and Induced Economic Impacts:

To estimate ancillary impacts in the economy, Mackenzie utilized IMPLAN (IMPact for PLANning[45]) input/output multiplier model methodology. Developed by the U.S. Forest Service to assist in land and resource management planning, IMPLAN is an economic impact model designed for analyzing the effects of industry activity upon all other industries in an economic area. IMPLAN multiplier models are built directly from region-specific flows of transactions between firms and consumer, reflecting the unique structure of the region's trade economy.

[43] At the three-digit NAICS level.
[44] This information is available from the Oregon Employment Department's website at www.qualityinfo.org
[45] Minnesota IMPLAN Group (MIG), Stillwater, Minnesota

Indirect and induced impacts, collectively termed “multiplier” impacts, are off-site economic impacts that stem from the direct economic functions that occur from ongoing operations of a specific project. Individually, these impacts are defined as:

Indirect Impacts

Indirect impacts are based on the response of businesses within a geographic area to direct impacts. For example, purchasing of production inputs from vendors, purchase of real estate, maintenance services, legal services, etc. are indirect economic activities that may be supported.

Induced Impacts

Induced impacts are based on the response of households within a geographic area effected by the direct impacts. These impacts stem from the labor income produced by both direct and indirect impacts. For example, households get paid wages/benefits and use a portion of this on purchases of goods and services in the economy. The share of this activity that is captured locally reflects the induced impact.

For this project, jobs and income were reported economic outputs.

State Income Tax Revenues (Payroll Taxes):

In addition to accounting for inter-industry flows of commerce between firms, IMPLAN’s modeling system further captures payments and transfers between workers, firms, and the government, including taxes. In IMPLAN, this metric is reported as a dollar figure associated with the direct impact reported; in the case of this analysis, jobs.

Incentives:

Many jurisdictions, including state and local entities, offer incentives in the recruitment of large scale projects with the potential to produce investment, jobs, and higher than average wages. The most common program in the region is the Enterprise Zone (E-zone). The E-zone varies slightly by jurisdiction and project. Generally, the E-zone is a three- to five-year property tax abatement to businesses for new improvements and property. This greatly reduces property tax revenues in the first five years of any project with an E-zone.

Table 13: Full Development Return on Investment Metrics and Sources

Metric	Source Data/Process
Developed Acres	Because every site is considered to be developed to its most productive capacity, developed acres are equal to the site size from the 2011 or 2014 inventory.
Land Acquisition Price/Date	Derived from public record from the respective County assessor's office.
Developed Space	From development site plans provided by developers via the PMT.
Use Type	Mackenzie determination from building characteristics.
Tenants/Users	Derived from public press releases, published broker reports, and outreach conducted by the PMT.
Jobs	Initial estimates, where available, were derived from public releases. Estimates were verified and additional input was provided by the PMT via outreach to developers and economic development partners. Where no estimate was available, Mackenzie utilized space per employee estimates by use type from *Metro's 2014 Urban Growth Report (UGR)*. However, in the current development cycle, employment densities have tended to be lower than those assumed in the *UGR*. Therefore, Mackenzie calculated job estimates as a range with the *UGR* based value as an upper bound.
Industries Represented	Industry determination was based on how tenants self-classify under the North American Industrial Classification System (NAICS[46]). Where exact NAICS classification could not be identified, industry standards were applied (for examples, data centers typically classify as 518 Data Processing, Hosting, and Related Services).
Average Wage and Income	Average wages were determined by industry classification, derived from the *Oregon Employment Department's Quarterly Census of Employment and Wages*. Total income impacts are the sum of jobs and average wage.
Investment in Real Property	Hard construction costs only. Derived from outreach to developer partners via the PMT.
Incentives	Each site was evaluated to determine if it was in an existing enterprise zone, as identified by local economic development departments.
Assessed Value/Property Taxes	Assessed value and property tax estimates are directly derived from the respective county assessor's office.
Indirect Economic Impacts	Indirect job and labor income impacts were calculated by Mackenzie using IMPLAN[47]. Report impacts are those captured at the three-county level.
Payroll Tax Revenue Estimates	Direct state payroll tax estimates are derived from IMPLAN.

[46] At the three digit NAICS level.

[47] IMPLAN is an input-output (I-O) based economic impact model designed for analyzing the effects of industry activity upon all other industries in an economic area.

Findings – Development Partially Completed

For this assessment, the baseline data on site size and location was extrapolated from previous inventories. Additional information on development size, user/developer, investment and, in some cases, jobs were derived from published press releases as well as input from the PMT. As a largely information gathering and reporting task, no significant modeling or data analysis was required for this report.

This task found nine sites[48] that were included in the 2011 or 2014 inventories, totaling approximately 550 gross acres, and that are now partially developed. The sites were located in Gresham (3 sites), Portland (2), Hillsboro (2), Troutdale (1), and Forest Grove (1). No sites were located in Clackamas County, and three of the nine sites were owned by the Port of Portland. In addition, existing or planned development on these nine sites has amounted to nearly $500 million in investment in real property[49] with over 4 million square feet of developed space planned.

Development forms are largely represented by large user warehousing and logistics spaces. Both sites in Hillsboro are being developed as data centers. Five of the nine sites have had tenant and/or job announcements, including Site 13 (Amazon - 1,500+ jobs), Site 56 (Data Center - 20 to 30 jobs), Site 111 (up to 400 jobs), Site 113 (Old Trapper - 15 to 30 jobs), and Site 114 (United State Postal Service - jobs unknown). At two Gresham Vista Business Park sites, over 1.2 million square feet of speculative industrial space is being developed (440-667 jobs).

[48] This is difficult to directly compare to the 2014 inventory because three separate sites with over 25 net developable acres were created from the 2014 inventoried Site 21: GVBP East. This 115 acre site was split into a 29 acre site for Glisan Corporate Park (lots 1-3) and 49 acre site for Subaru (lot 4). As a result, a portion of the 115 acre site still remains on the 2017 inventory; Site 21: GVBP East (lot 5) with 48 acres available. Given the size of other sites on the 2017 inventory (e.g. Site 104: Meek Sub Area), it is expected that a similar instance will occur again in future inventory updates as portions of large sites develop.

[49] Investment in this analysis is limited to hard costs for real property. Investment for tenant improvements and site development is largely proprietary and difficult to obtain.

Table 14: Partial Development Return on Investment Expected Results

Site	Site Acreage (developed portion in blue)	Site Location	Developer/User	Development Type	Planned Investment	Building SF	Building Type(s)	Job Potential Or Capacity
Site 19 TRIP lots 6-8	80.53	Troutdale	Trammell Crow Company	Build to suit: Amazon	$178.4 million	855,000	E-commerce Distribution Center	1,500 jobs announced
Site 22 GVBP lot 9	87.79 (37.42)	Gresham	Specht Properties	Speculative development: Vista Logistics	$61.7 million	732,824	Industrial Park	Not available, no tenants reported. Capacity for 260 – 395 jobs.
Site 21 GVBP lots 1-3	115.98 (28.74)	Gresham	Trammell Crow Company	Speculative development: Glisan Corporate Park	$30.1 million	504,525	Industrial Park	Not available, no tenants reported. Capacity for 180 – 272 jobs
Site 48 Baker/ Bindewalde	46.06	Hillsboro	DuPont Fabros Technology (user)	Build to suit: DuPont Fabros Technology	Proprietary information not available	985,678	Data Center	Not available, no tenants reported. Capacity for 98 – 148 jobs.
Site 56 East Evergreen	70.74 (30)	Hillsboro	T5 Data Centers (user)	Build to suit: T5 Data Centers	Proprietary information not available	200,000	Data Center	20 to 30 jobs announced
Site 16 Cereghino	41.63	Portland	Trammell Crow Company	Speculative development: Blue Lake Corporate Park	$30.3 million	463,500	Industrial Park	Not available, no tenants reported. Capacity for 310 – 465 jobs
Site 114 Colwood	47.55	Portland	Trammell Crow Company	Build to suit: United States Postal Service	$100 million	844,000	Package/ Sortation Distribution Center	Post office relocation, employee count unknown
Site 111 Weston	34.99 (12.06)	Gresham	Panattoni Development Company	Speculative development: Portland Portal Industrial Center	$14 million	131,000	Industrial Park	Not available, no tenants reported. Capacity for up to 400 jobs.
Site 113 Henningsen	28.57	Forest Grove	Old Trapper (user)	Build to suit: Old Trapper	$12.5 million	69,000	Food Processing	15- 30 jobs
TOTALS:	**552 (35)**				**$427M**	**4.78M SF**		**2,783 – 3,240**

Full Development Completed

This report also identified six sites from the 2011 or 2014 inventories that have been fully absorbed or "built-out." For these sites, Mackenzie provided a full "return-on-investment" assessment that included a predetermined set of metrics. Information used to populate this assessment was derived from a range of public and proprietary sources. The PMT was instrumental in coordinating outreach to developers, users, brokers, and tenants to obtain proprietary information. The data collection and analytical process for each metric included in the assessments is presented below and a summary table of impact findings for each individual site is included in Appendix D.

Six sites[50] totaling 224 acres of development have been fully absorbed in the metro area. Sites have absorbed in Hillsboro (2), Portland (2), Gresham (1), and Tualatin (1); and development is estimated over 4 million square feet with a mix of single user, multi-tenant speculative space, and multi-building corporate parks. Major tenants include Amazon, Lam Research, Reser's, Subaru, Staples, and Cummins. Investment in real property is over $230 million.

A defining characteristic of sites that have been absorbed is that the price of acquisition for gross land fell below $6.00 per square foot, and in two cases below $5.00 per square foot. Pricing for raw land is a function of many physical and market variables, including the ratio of net-to-gross acreage driven by Right-of-Way dedication or slope and wetland constraints. Presence of environmental contaminants, soil quality, and off-site costs/fees are other physical factors that influence the price a developer/user is willing to pay for land. Market conditions also play a role, including the competitiveness of alternative sites in the market and the suitability of a site for a specific use/user—with some industries more capable of paying for premium sites than others. When the combination of these factors is exceedingly high, a developer's/user's residual land value (the maximum price they are able to pay for land) often falls below an acceptable market price from a seller's perspective. In fact, for some Tier 3 sites, residual land value may be negative altogether.

Between 2,500 and 2,750 jobs are estimated on these six sites, with an average annual wage of nearly $50,000 annually and with as much as $135 million in income going to local employees. Ancillary job impacts resulting from indirect and induced effects that are retained in the local economy are estimated at 2,500 jobs and $140 million in labor income.

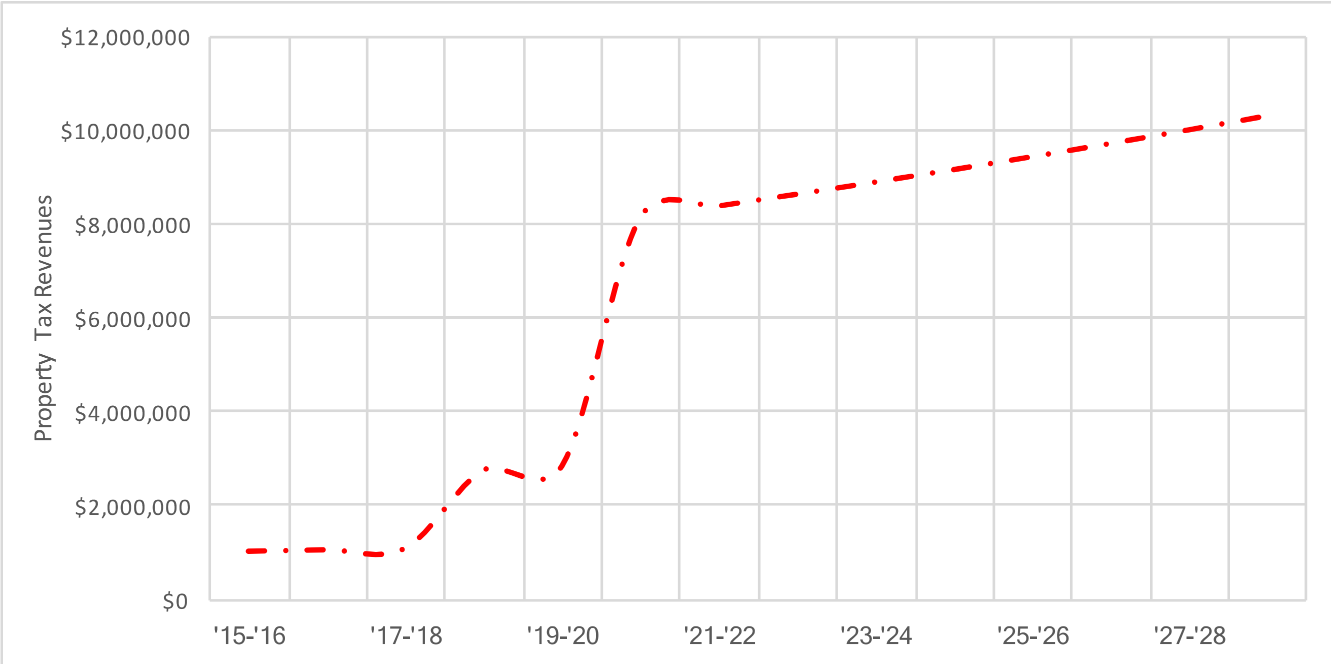
Annual property tax revenues to local jurisdictions will total to over $493,152[51]. This figure reflects the fact that most of the sites in this assessment have enterprise zone agreements leading to low property tax collections in the first five years of assessment. These collections will go up significantly when enterprise zone agreements expire. To illustrate this, Figure 10 shows a 15-year property tax revenue stream of a conceptual project with assessed values of $1 million for land and $6 million for improvements[52]. This example assumes a $20 per $1,000 millage rate and a 5-year E-zone with a 25% community service fee in years four and five. In the first five years, the project yields $157,000, or $31,400 in annual revenue. This compares to $775,000 or $155,000 per year when the incentive expires.

[50] This is difficult to directly compare to the 2014 inventory because three separate sites with over 25 net developable acres were created from the 2014 inventoried Site 21: GVBP East. This 115 acre site was split into a 29 acre site for Glisan Corporate Park (lots 1-3) and 49 acre site for Subaru (lot 4). As a result, a portion of the 115 acre site still remains on the 2017 inventory; Site 21: GVBP East (lot 5) with 48 acres available. Given the size of other sites on the 2017 inventory (e.g. Site 104: Meek Subarea), it is expected that a similar instance will occur again in future inventory updates as portions of large sites develop.

[51] Property tax calculations are not yet available by the Washington County Assessor for the Koch Corporate Center and Majestic Brookwood Business Park.

[52] Six to one is the observed average ratio of improvement-to-land value among fully developed sites.

Figure 10: Illustrated Flow of Property Tax Revenues for a Project in an Enterprise Zone



State personal income tax revenues are not impacted by local incentive packages and are significant, totaling at least $5.2 million in annual collections. While the estimates of property taxes are not complete (Site 49 data remains unavailable, personal property/equipment is not included), it is clear that annual state personal income tax revenues are many multiples larger than locally captured taxes from property tax revenues.

Table 15: Full Development Return on Investment Results

	Site 46: Westmark Site	Site 21: GVBP East	Site 13: Specht Properties	Site 11: PIC East	Site 40: Pacific Realty Associates	Site 49: Majestic Realty CO	Totals/ Averages
Development Name	Reser's Fine Foods	Subaru	Interstate Crossroads	PIC East	Koch Corporate Center	Majestic Brookwood Business Park	
Site Size	30.02	39.00	27.40	26.00	26.80	75.10	224 (total) 37 (average)
Developer/ User	User: Reser's Fine Foods	Developer: Trammell Crow Company	Developer: Specht Properties	Developer: Capstone Development Partners	Developer: PacTrust	Developer: Majestic Realty Co	-
Development Type	Build to suit	Build to suit	Speculative Development	Speculative Development	Speculative Development	Speculative Development	-
Building Type	Food Processing	Distribution Center	Industrial Park	Industrial Park	Industrial Park	Industrial Park	-
Land Sale/ Acquisition Price	$6,350,000	$9,463,912	$7,050,000	$16,160,060	N/A[53]	$15,028,200	$54M
Land Sale/ Acquisition Year	2014	2015	2014	2013-2016	N/A[54]	2014	-
Price per gross sq. ft.	$4.86	$5.57	$5.91	$14.27	N/A[55]	$4.59	$7.04 (average)
Total Developed Square Feet	309,127	600,000	492,554	1,096,400	533,000	980,000	4M
Investment in Real Property	$18,000,000	$46,000,000	$26,500,000	$40,000,000	$45,000,000	$54,000,000	$229M
Local Property Assessed Values	$5,083,850	$4,686,980	$2,241,310	$270,187	N/A[56]	N/A[57]	$12.2M
Tenants	Reser's Fine Foods	Subaru	Keystone Auto, Staples	Gateway Express, Ernest Packaging, KeHE Distributors, UPS, Cummins	Lam Research, Consentino, Superwinch	Rosendin Electric, Top Golf, Amazon, ViaWest, DB Schenker	-

[53] Information not available through Assessor's Office.
[54] Information not available through Assessor's Office.
[55] Information not available through Assessor's Office.
[56] Property tax calculation not yet available by the Washington County Assessor.
[57] Property tax calculation not yet available by the Washington County Assessor.

	Site 46: Westmark Site	Site 21: GVBP East	Site 13: Specht Properties	Site 11: PIC East	Site 40: Pacific Realty Associates	Site 49: Majestic Realty CO	Totals/ Averages
Average Wage	$43,982	$48,076	$55,676	$47,639	$72,878	$42,464	$51,785 (average)
State Personal Income Tax Revenues	$607,080	$81,631	$505,906	$688,435	$1,373,434	$2,002,373	$876,500 (average)
Indirect/ Induced Jobs	395	31	217	303	818	788	425 (average)
Average Wage	$43,982	$48,076	$55,676	$47,639	$72,878	$42,464	$51,785 (average)
Direct Job Estimates	350	50	225	375	328	1,400	2,728
Direct Jobs Estimates per Gross Acre	11.6	0.75	8.2	14.4	12.2	18.6	11 (average)

RECOMMENDATIONS AND NEXT STEPS

While recent market absorption of industrial sites highlighted in this report ranged from 26 net developable acres to 80 net developable acres in the 2014-2017 inventory cycle, the Portland metropolitan region continues to see a demand for larger industrial sites of 50+ and 100+ acres. The 2017 inventory highlights the lack of 50+ and 100+ Tier 1 industrial sites and hurdles associated with moving the Tier 2 and Tier 3 sites of this size to market. If this regional issue is not addressed, the Portland region will experience lost opportunities for new game-changer business locations and expansions.

Policymakers should consider policy actions and investments to address industrial site readiness challenges (e.g., land aggregation, infrastructure, transportation, natural resource mitigation, legislative actions, and industrial brownfield cleanup) and development hurdles. With reduced federal funds, the region will need to be more strategic about investments to support these goals.

The Project Management Team recommends that policymakers, economic development practitioners, and other stakeholders focus their efforts on the following actions to address the findings from this report:

Local and Regional Site Readiness Actions

1. Engage the Oregon Economic Development Department, Oregon Economic Development Association, local jurisdictions, private property owners, and developers in efforts to make investments in industrial sites needed to move these sites to market.
2. Actively work to find ways to aggregate 13 industrial sites with multiple property owners to realize the market potential of these sites. This is critical to realizing the potential of Coffee Creek, Meek Subarea and other industrial sites in the region.
3. Support local jurisdictions in evaluating the sites that require state and local legislative actions (e.g., annexation, zoning, and concept planning) and identify the timeline for and feasibility of completing this work. Metro has invested Community Planning and Development funds in the past to support such efforts.
4. Evaluate Tier 3 High-Need sites to determine if there is a path for development. If not, consider removing them from the inventory or creating a Tier 4.
5. Proactively work on solutions to the Lower Willamette cleanup to remove the cloud over the properties in the Portland Harbor.
6. Apply brownfield tools approved by the legislature to brownfield redevelopment of industrial lands (Brownfield Tax Abatement Program and Landbanking Authority).
7. Actively work on regional and local infrastructure financing solutions that impact 60% of the industrial sites in the inventory. Metro's Economic Atlas may help identify strategic infrastructure investments benefitting the region's industrial and employment lands. Local infrastructure needs could potentially be packaged with State infrastructure financing to fund local/regional projects through the West Coast Infrastructure Exchange.
8. Support regular updates of the inventory and track investments from sites that have been developed. Consider expanding the inventory to sites of 15 acres or more to reflect shifting market demand.

State Legislative Actions

9. Advocate for new tools and funding to support brownfield cleanup and redevelopment. This includes, but is not limited to, re-capitalization of the Oregon Economic Development Department's Brownfield Revolving Loan Fund and passage of Brownfield Tax Credit.

10. Support state loan funding for the Industrial Site Readiness Program and Special Public Works Fund. The Industrial Site Readiness Program was enacted in 2013 without authorization for loan funding. The Special Public Work Program is oversubscribed and underfunded.

11. Continue to support the Regional Solutions Teams that provide coordinated state attention to facilitate solutions for sites with complex issues involving multiple agencies. The Metro Regional Solutions Team played a key role in addressing site readiness issues in Troutdale, Gresham, Clackamas, and Hillsboro in the 2014-17 inventory cycle.

Local Development Actions

12. Evaluate the potential for new or expanded enterprise zones or other local or state incentives to help secure targeted development.

13. Encourage local communities to explore an expedited permitting process to address market expectations of issuing construction permits. Several communities with development wins in the 2014-2017 inventory cycle have expedited permitting programs in place (e.g., Hillsboro, Gresham).