

Volume 3: Technical Appendices

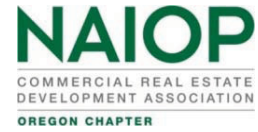


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Port of Portland — Portland Business Alliance

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Project Funders:

Commercial Real Estate Economic Coalition (CREEC)
Clackamas County
City of Gresham
City of Hillsboro
City of Portland
City of Sherwood
City of Wilsonville
Howard S. Wright
National Electrical Contractors Association – Oregon-Columbia Chapter
Oregon State Building & Construction Trades Council
Portland General Electric
Plumbing & Mechanical Contractors Association
Sheet Metal & Air Conditioning Contractors National Association
Three Oaks Development Company
Westside Economic Alliance

The Project is being funded in part through funds provided by the State of Oregon, acting by and through the Business Oregon (an Oregon state agency).

The site information contained in this report is based on publicly available data sources and is not intended to replace independent due diligence for transaction purposes. Prospective purchasers, tenants, and others shall perform and rely solely upon, their own independent due diligence with respect to the Property.

Volume 3 is one of four documents for the Regional Industrial Site Readiness Project. This volume presents the technical appendices that support Volumes 1 and 2. Volume 1 presents the complete Project analysis and findings. Volume 2 presents site specific details and results of the Project. The Project Executive Summary is the fourth document.

VOLUME 3: APPENDECIES

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- K. ASH CREEK ASSOCIATES REPORT
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Site ID	Preliminary Tier	State Certified	Traded-Sector Industry	Owner/Site	Location	County	Gross Acres	Wetlands (RLIS)	Wetland Acreage (Jurisdictions)*	Flood 96 Acres (RLIS)	FEMA Flood AC (RLIS)	Floodplain AC (Jurisdictions)*	Streams AC (RLIS)	Stream AC (Jurisdictions)*	7-25% Slope Acres (RLIS)	10-25% Slope Acres (Jurisdiction RLIS)*	All Constraints (RLIS)	All Constraints (Jurisdictions)*	% Constraints (RLIS)	% Constraints (Jurisdictions)*	Net Developable Acreage (RLIS)	Net Developable Acreage (Market Knowledge)*	Use Restriction	Brownfield	Annexation Required	Number of Taxlots	Number of Owners	Sewer Score	Water Score	Storm Score	Surrounding System Quality	Access to Interstate Highway	Access to Freight Route (Roadway)	Access to Freight System (All Modes)	Currently for Sale/Lease	Willing to Transact	Private Ownership	Investor	Public	User	Site ID	Notes		
35	3		C, D	TONQUIN INDUSTRIAL AREA	TUALATIN	Washington	49.70	0.83	0.50	0.00	0.00		0.15		9.18		9.73	9.40	19.58%	18.91%	39.97	40.30			YES	8	7	B	C	B	B	B	A	A		YES				YES	35	Property owners have expressed willingness to aggregate - per City of Tualatin		
36	3		B, C, D	TIGARD SAND & GRAVEL SITE	TUALATIN	Washington	296.88	9.33		0.00	0.00		1.02		163.71		168.78		56.85%		128.10				YES	15	3	C	C	B	C	B	A	A		NO				YES	36	Tigard Sand & Gravel owns 12 parcels; active gravel operation		
37	3		D	ORR FAMILY FARM LLC	SHERWOOD	Washington	96.26	4.20		0.00	0.00		0.00		49.60		53.42		55.50%		42.84				YES	1		C	A	B	C	B	B	A		NO	YES					37	Annexation required; Owner not willing to transact	
47	3		D, F	GRANFORD JULIAN F & SHARON D	HILLSBORO	Washington	28.51	0.44	0.44	0.55	2.32	0.52	0.00	0.50	5.63	0.47	7.93	1.22	27.82%	4.28%	20.57	27.29				1		C	B	B	A	A	A	A		NO	YES					47	Combination of hydric and partially hydric soils present; On site wetland investigation warranted - per DSL	
59	3		C, D, H	COFFEE CREEK INDUSTRIAL AREA - site 2	WILSONVILLE	Washington	46.37	0.00	0.00	0.00	0.00	0.00	0.00		0.10		0.10	0	0.22%		46.27				YES	12	8	B	B	A	B	B	C	B		NO	YES					59	8 property owners; ability to aggregate has not been discussed	
60	3		C, D, H	COFFEE CREEK INDUSTRIAL AREA - site 3	WILSONVILLE	Washington	29.65	0.00	0.00	0.00	0.00	0.00	0.00		2.60		2.60	0	8.77%		27.05			X	YES	10	7	B	A	A	B	B	C	C		NO	YES					60	7 property owners; No expressed willingness to aggregate; Site includes parcels that are split by County lines; Potential underground storage tank on site but exact location is unclear (Metro database); UST could be also located in parcel 61 to the north	
61	3		C, D, H	COFFEE CREEK INDUSTRIAL AREA - site 4	WILSONVILLE	Washington	48.56	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0	0.00%		48.56				YES	12	8	B	A	A	B	B	B	C		NO	YES					61	8 property owners; No expressed willingness to aggregate	
64	3		D	WOODFOLD-MARCO MFG INC (East Oak St)	FOREST GROVE	Washington	25.46	0.00		0.00	0.00		0.00		0.00		0.00		0.00%		25.46					2	2	B	B	B	A	C	A	C		NO	YES					64	2 parcels; 2 property owners	
65	3		D	WOODFOLD-MARCO MFG INC (West Oak St)	FOREST GROVE	Washington	53.93	0.02		0.00	0.00		0.00		0.00		0.02		0.04%		53.91						5		B	B	C	A	C	A	C		NO	YES					65	
100	3		A, B, D, F	HOLZMEYER RICHARD HENRY ET AL	FOREST GROVE	Washington	111.37	0.00		0.00	0.00		0.00		11.63		11.25		10.10%		100.12				YES	1		C	-	B	A	C	C	B		N/A	YES					100	Outside UGB; Water service information was not available at the time of this analysis	
101	3		A, B, F	VANROSE FARMS and VANDERZANDEN	HILLSBORO	Washington	270.5	18.45		9.08	27.34	22.85	12.14		29.99	23.41	35.77	45.67	13.22%	16.88%	234.73	224.83			YES	2	2	C	B	B	B	C	B	B		YES	YES					101	Outside UGB; Parcels were aggregated into 1 site per City of Hillsboro; On site wetland investigation is warranted per DSL	
104	3		A, B, F	HILLSBORO URBAN RESERVES (Aggregate)	HILLSBORO	Washington	320	0.00	0.00	0.00	14.96	9.24	0.00		4.54	1.36	19.50	10.60	6.09%	3.31%	300.50	309.40			YES	9	8	C	B	B	C	C	B	B		YES	YES					104	Outside UGB; Property owners have expressed willingness to aggregate and transact - per City of Hillsboro; On site wetland investigation is warranted - per DSL	
109	3		A, D, H	MORSE BROS INC	TUALATIN	Washington	85.31	3.98		0.00	0.00		0.00		21.26		23.59		27.65%		61.73			C	YES	7		C	C	B	C	C	C	B		NO				YES	109	Outside UGB		


* These columns indicate that environmental constraint information was provided by jurisdictions, Port of Portland, or Group Mackenzie knowledge and are not from Metro RLIS data. These columns supplement the previous RLIS columns. Net developable acreage (market knowledge) supplements the net developable acreage (RLIS) column.


** Indicates a seller is willing to transact but not within in tier 1 timeframe of 180 days.

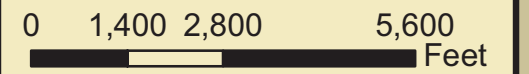
TRADED-SECTOR INDUSTRY:
A: Regionally to nationally scaled clean-tech manufacturer
B: Globally scaled clean technology campus
C: Heavy industrial/manufacturing
D: General manufacturing
E: Food processing
F: High-tech manufacturing or campus industrial
G: Regional (multi-state) distribution center
H: Warehouse/distribution
I: Portland regional distribution center
J: Call center/business services
K: Data centers
L: Rural/frontier industrial

Regional Industrial Inventory Project

Map 1 North Portland

 Potential Industrial Site

 Urban Growth Boundary

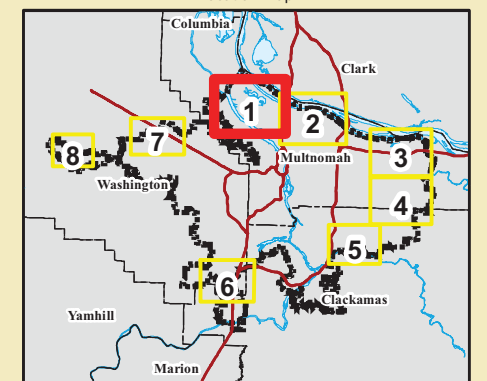


Source Data
Metro RLIS Lite Base Data, August 2011

Geographic Projection Information
NAD 83 HARN, Oregon North
Lambert Conformal Conic



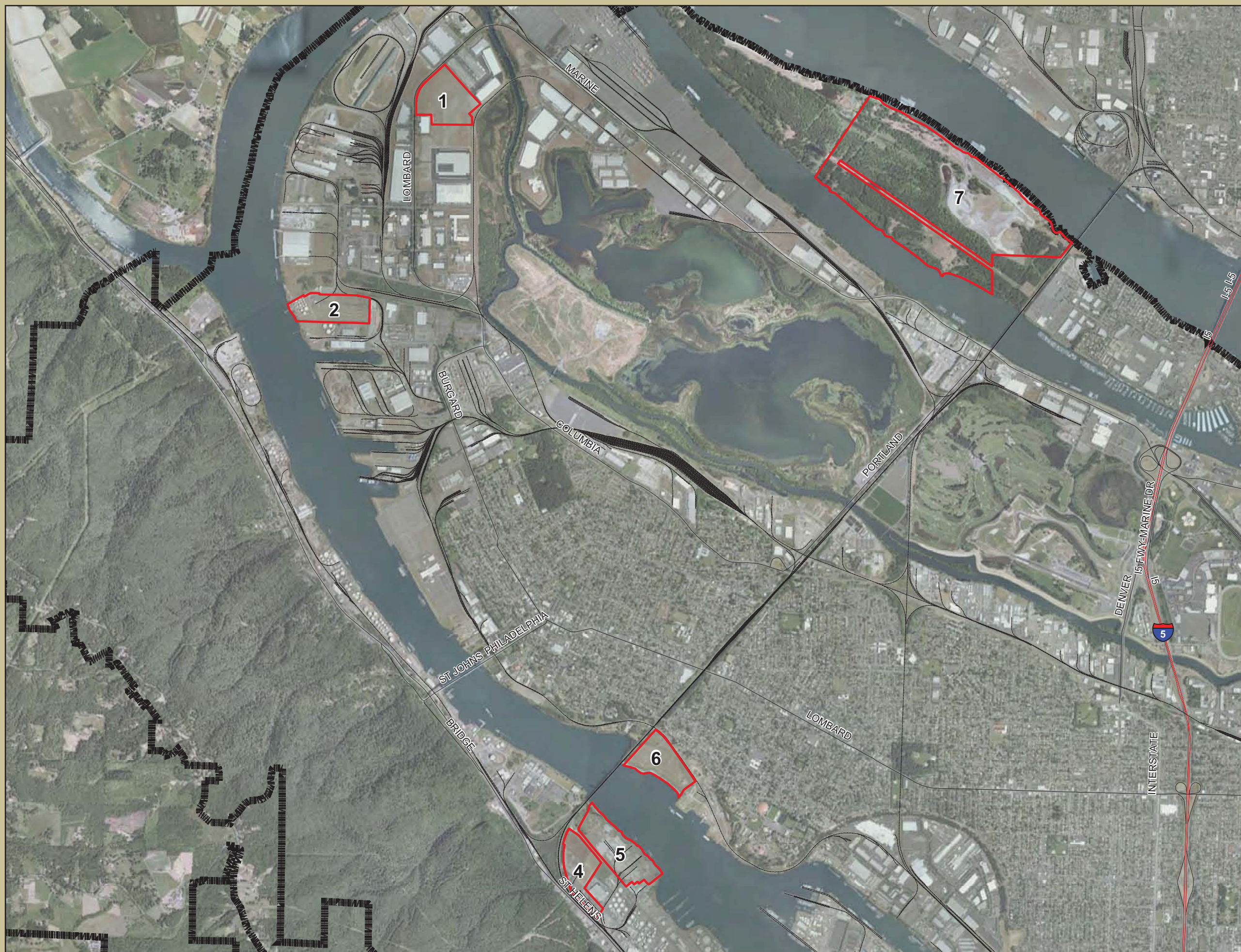
Location Map



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Regional Industrial Inventory Project

Map 2 Portland International Airport

 Potential Industrial Site

 Urban Growth Boundary

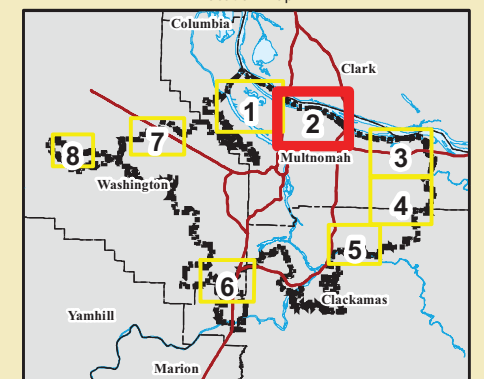


Source Data
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Geographic Projection Information
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Location Map



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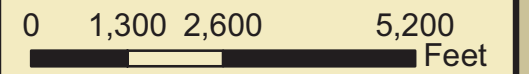


Regional Industrial Inventory Project

Map 3 East Multnomah County

 Potential Industrial Site

 Urban Growth Boundary

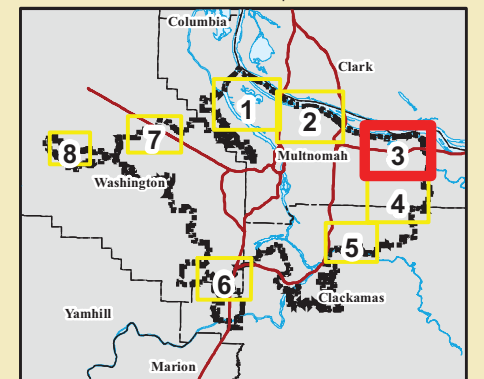


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Geographic Projection Information
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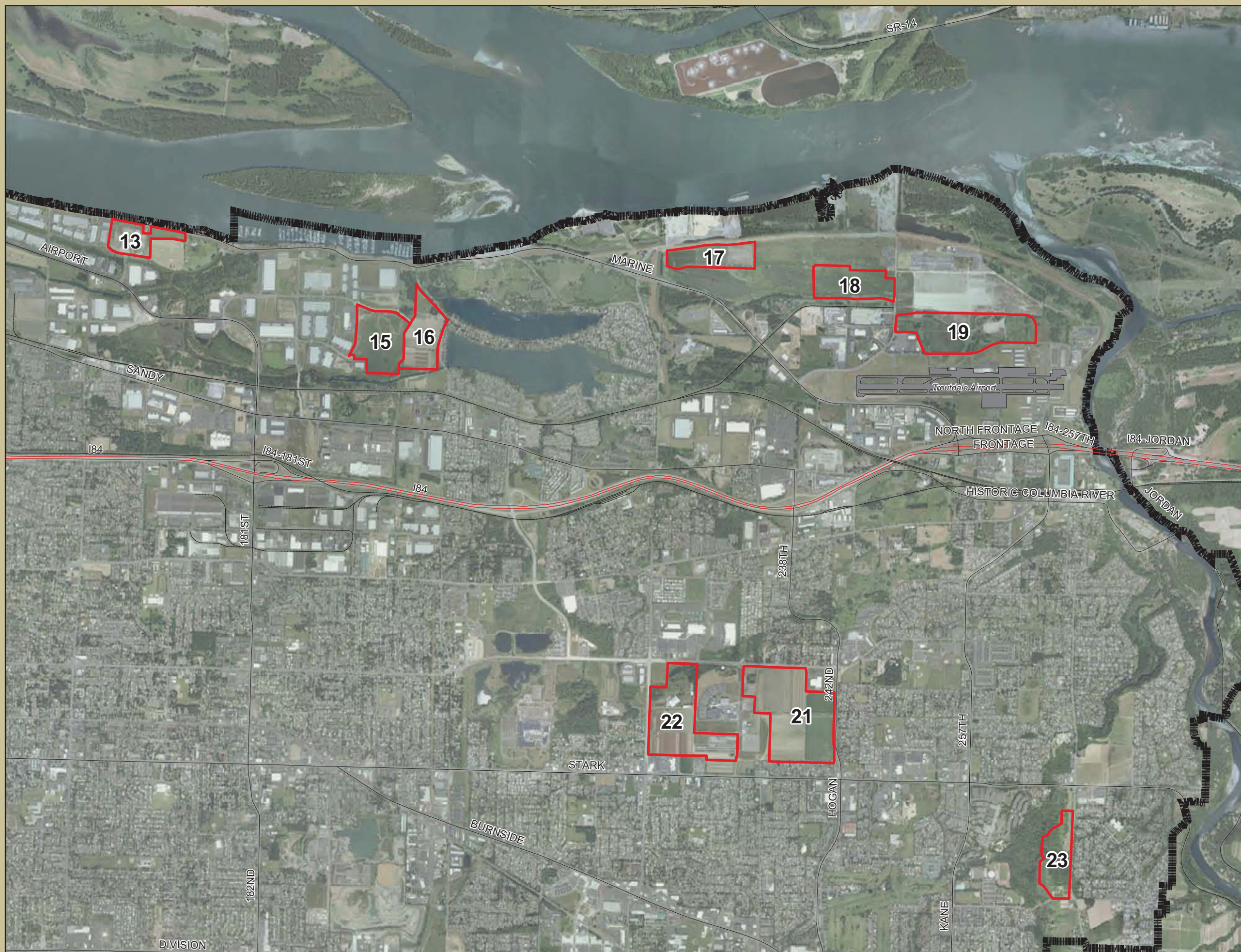
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Regional Industrial Inventory Project

Map 4 E Gresham

-  Potential Industrial Site
-  Urban Growth Boundary

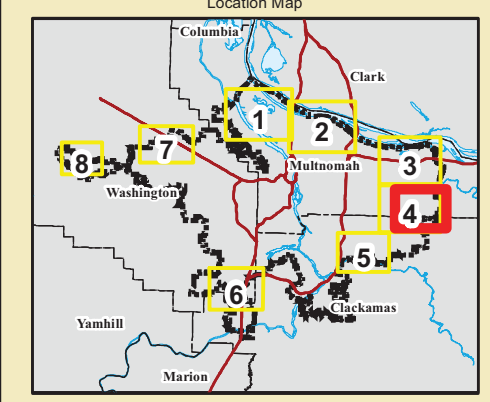


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Geographic Projection Information
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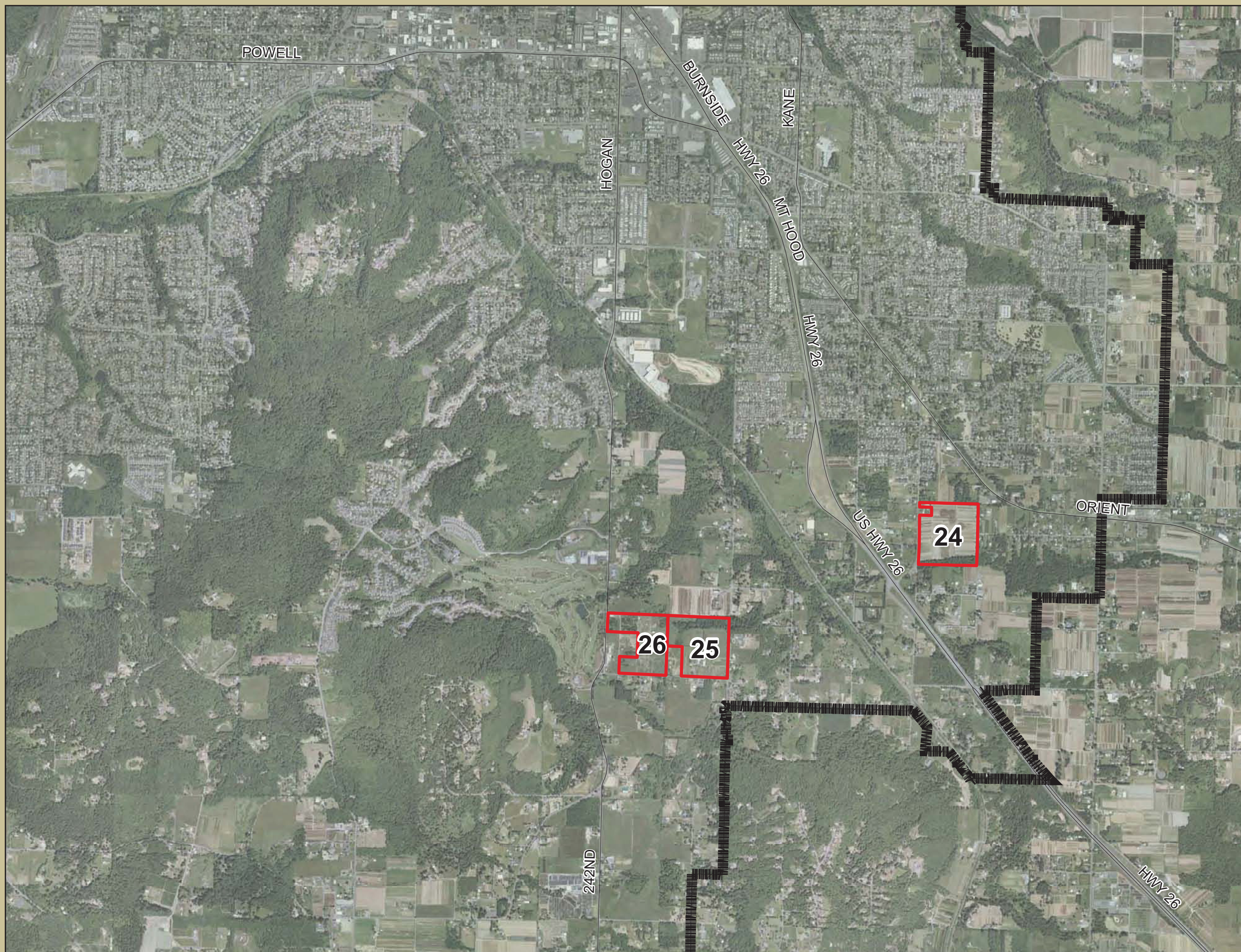
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
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Regional Industrial Inventory Project

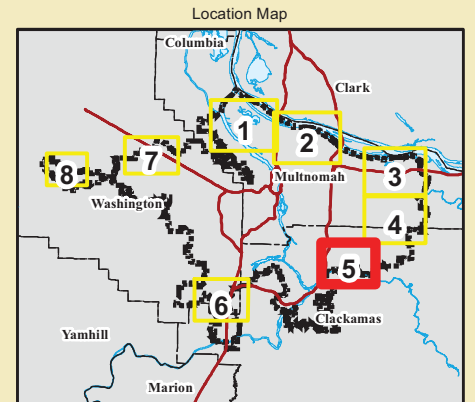
Map 5 Clackamas County

 Potential Industrial Site
 Urban Growth Boundary



Source Data
 Metro RLIS Lite Base Data, August 2011

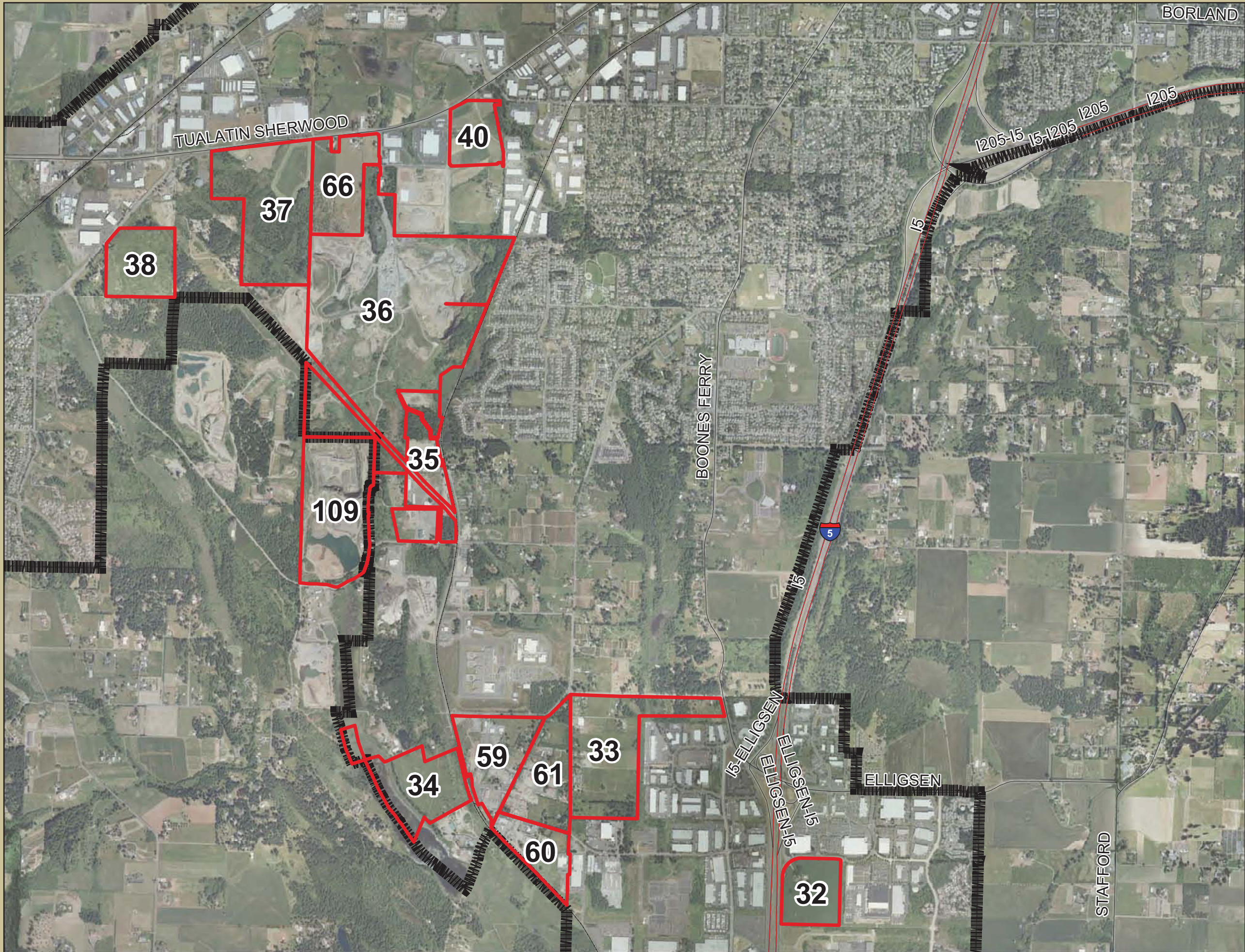
Geographic Projection Information
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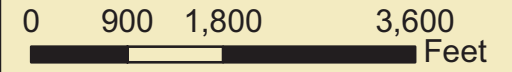
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Regional Industrial Inventory Project

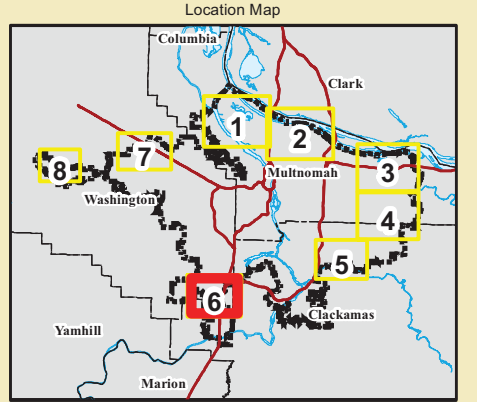
Map 6 Tualatin, Sherwood & Wilsonville

- Potential Industrial Site
- Urban Growth Boundary



Source Data
Metro RLIS Lite Base Data, August 2011

Geographic Projection Information
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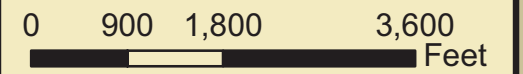
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Regional Industrial Inventory Project

Map 7 Hillsboro

 Potential Industrial Site

 Urban Growth Boundary

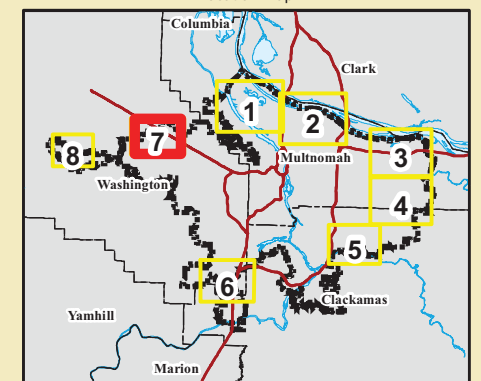


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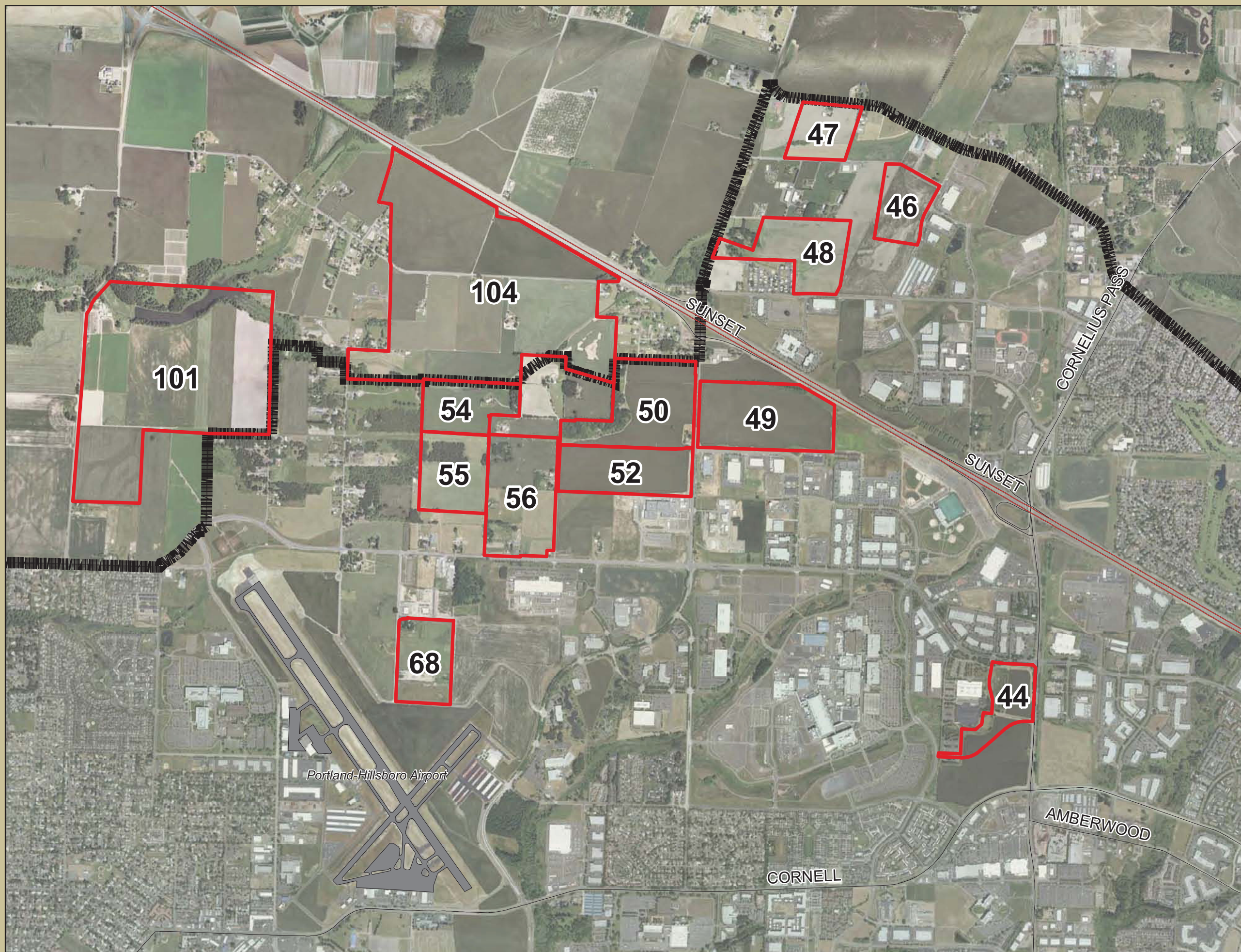
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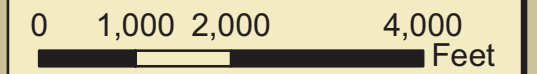


Regional Industrial Inventory Project

Map 8 Forest Grove

 Potential Industrial Site

 Urban Growth Boundary

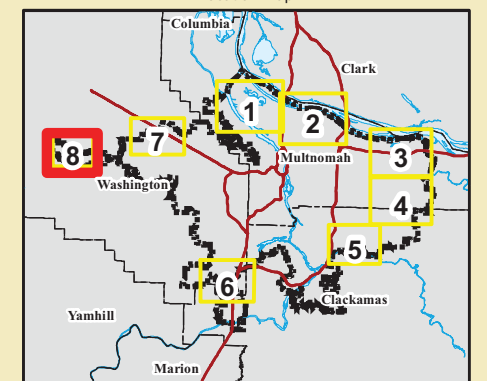


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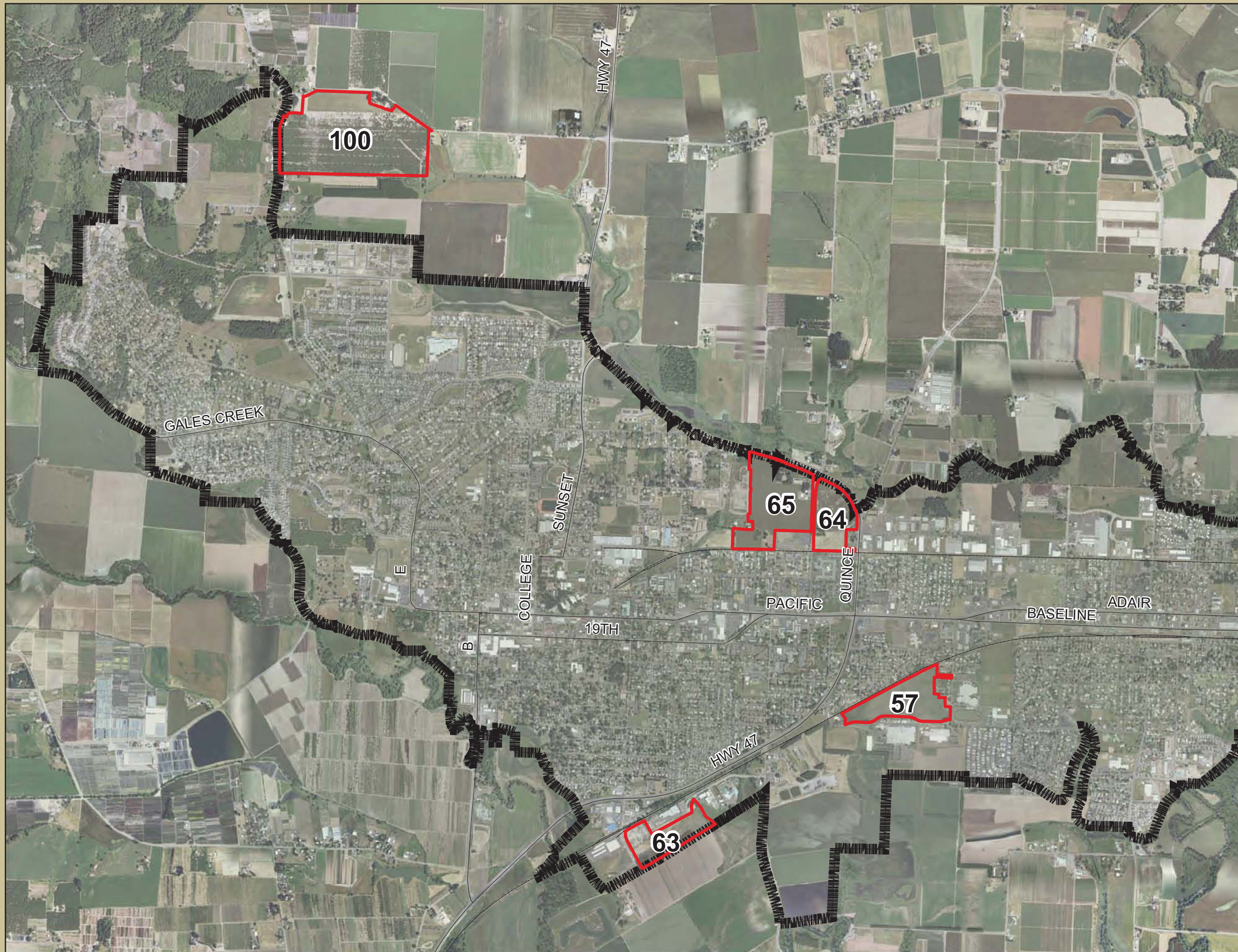
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Phase 1 Tiering Matrix									
	25 net developable acres	Use Restriction	Brownfield Remediation	Annexation Required	Sewer, Water, & Storm	System Mobility	Currently for Sale or Lease		Willingness to Transact
Tier 1	Within 6 months	No	No or Within 6 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	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	A, B or C	A, B or C	Yes or No	OR	Yes or No or Unknown

Site readiness and time to market are the determining factors used to develop tiers of sites.

Tier 1 sites are shovel ready, or can be shovel ready within 180 days (6 months) and require minimal to no additional costs or time to deliver a site. It is anticipated that no or minimal infrastructure or remediation is necessary along with due diligence and entitlements, could be provided/obtained within this time period. The site has no use restriction, and is currently on the market for sale or lease or the ownership is willing to transact.

Tier 2 sites require additional time, between 7-30 months, and costs to deliver a shovel ready site. These sites may have a use restriction e.g. marine or aviation only as determined by the Port of Portland. They may have deficiency issues with regards to infrastructure, may require brownfield remediation and may also require annexation and additional entitlements that are assumed to take beyond 6 months time. These sites are currently on the market for sale or lease, or the ownership is willing to transact or this information is not available.

Tier 3 sites require the most time, over 30 months, and costs to deliver a shovel ready site. In addition to the criterion for Tier 2, these sites may or may not be currently for sale or lease or willingness to transact could be yes or no, or is not available.

INFRASTRUCTURE AND TRANSPORTATION RATING METHODOLOGY

INFRASTRUCTURE

Sewer	A	≥ 8" main located adjacent to or stubbed to site or within ~200ft of site. No downstream pipe/treatment capacity issues.
	B	≥ 6-8" main located within ~ 1000ft, with no downstream deficiencies. Possible pump station needed.
	C	No nearby pipe and/or significant lift station and force main needed. Downstream deficiencies may be present.
Water	A	≥ 12" main adjacent or within ~200ft, preferred loop system existing. No low-pressure issues.
	B	≥ 8" adjacent, or ≥ 12" main within ~ 1000ft. No pump station or pressure/treatment deficiencies.
	C	No nearby pipe and/or system deficiencies present.
Storm	A	≥ 12" public main adjacent or within ~200ft, or ability to discharge to managed surface waters. No capacity issues.
	B	≥ 12" main within ~ 500ft; possible outfall to nearby regulated surface channel or wetland.
	C	No adjacent public storm or no available discharge point to surface water.

TRANSPORTATION

Surrounding System Quality	A	Local Access and Transportation System Mobility are Good
	B	Local Access is Good and Transportation System Mobility is Poor -OR- Local Access is Poor and Transportation System Mobility is Good
	C	Local Access and Transportation System Mobility are Poor
<p>Defined by 2 metrics: <i>Local Access</i> – Defined as the immediate (proximate) transportation system. Factors to consider: Direct roadway connection to the transportation system Extent of frontage and offsite improvements necessary to connect to the proximate transportation system Values: Good – Property has direct connection and no offsite improvements are necessary. Poor – Property does not have a direct connection and/or significant improvements are necessary to gain local access.</p> <p><i>Transportation System Mobility</i> – Defined as the mobility on the existing freight transportation system. This includes mobility on the adjacent higher-order roadways and intersections. This does not include mobility on the mainline interstate highways as it is assumed all motor vehicle freight generally has to traverse these roadways and is not critical to individual property valuation. Values: Good – Mobility of adjacent system has a PM peak hour v/c ratio ≤ 0.99 (an approximate LOS F or better). Poor – Mobility of adjacent system has a PM peak hour v/c ratio > 0.99 (an approximate LOS F or worse).</p>		
Access to Interstate Highway	A	< 1.0 Miles to Interstate Highway
	B	1.0 - 5.0 Miles to Interstate Highway
	C	> 5.0 Miles to Interstate Highway
Access to Freight Route (Roadway)	A	< 0.5 Miles to Freight Route
	B	0.5 - 2.0 Miles to Freight Route
	C	> 2.0 Miles to Freight Route
Access to Freight System (All Modes)	A	Reasonable Access to 3 Freight Modes
	B	Reasonable Access to 2 Freight Modes
	C	Reasonable Access to 1 Freight Modes

STATE OF OREGON - Oregon Business Development Department
Industrial Development Competitiveness Matrix



PROFILE		A	B	C	D	E	F	G	H	I	J	
		Regionally to Nationally Scaled Clean-Tech Manufacturer	Globally Scaled Clean Technology Campus	Heavy Industrial / Manufacturing	General Manufacturing	Food Processing	High-Tech Manufacturing or Campus Industrial	Regional (multi-state) Distribution Center	Warehouse / Distribution	Call Center / Business Services	Rural / Frontier Industrial	
1	GENERAL REQUIREMENTS	Use is permitted outright, located in UGB or equivalent and outside flood plain; and site (NCDA) does not contain contaminants, wetlands, protected species, or cultural resources or has mitigation plan(s) that can be implemented in 180 days or less.										
PHYSICAL SITE												
2	Total Site** (Acres)	Competitive Acreage*	50	100	25	10	20	25	200	25	3	5
3	Competitive Slope:	Maximum Slope	0 to 5%	0 to 5%	0 to 5%	0 to 5%	0 to 5%	0 to 7%	0 to 5%	0 to 5%	0 to 12%	0 to 5%
WORKFORCE												
4	Available workforce population in 50 mile radius	People	150,000	750,000	30,000	30,000	20,000	60,000	75,000	20,000	25,000	1,000
TRANSPORTATION												
5	TRIP GENERATION:	ADT/Acre	50 to 75 (per acre)	50 to 75 (per acre)	42 to 58 (per acre)	76 to 106 (per acre)	75 to 100 (per acre)	50 to 75 (per acre)	64 to 86 (per acre)	65 to 86 (per acre)	144 to 192 (per acre)	5 to 10 (per acre)
6	MILES TO INTERSTATE OR OTHER PRINCIPLE ARTERIAL:	Miles	w/ in 10	w/ in 10	w/ in 10	w/ in 20	w/ in 30	w/ in 15	w/ in 5 (only interstate or equivalent)	w/ in 5 (only interstate or equivalent)	N/A	N/A
7	RAILROAD ACCESS:	Dependency	Preferred	Preferred	Preferred	Preferred	Preferred	Not Required	Preferred	Preferred	Not Required	N/A
8	PROXIMITY TO MARINE PORT:	Dependency	Preferred	Preferred	Preferred	Preferred	Preferred	Not Required	Preferred	Preferred	Not Required	N/A
9	PROXIMITY TO AIRPORT-REGIONAL(Commercial):	Dependency	Competitive	Required	Preferred	Preferred	Preferred	Competitive	Preferred	Preferred	Preferred	N/A
		Distance (Miles)	w/ in 60	w/ in 30	w/ in 60	w/ in 60	w/ in 60	w/ in 30	w/ in 60	w/ in 60	w/ in 60	N/A
10	PROXIMITY TO AIRPORT-INTERNATIONAL:	Dependency	Preferred	Competitive	Preferred	Preferred	Preferred	Preferred	Preferred	Preferred	Preferred	N/A
		Distance (Miles)	w/ in 100	w/ in 100	w/ in 300	w/ in 300	w/ in 300	w/ in 100	w/ in 300	w/ in 300	w/ in 300	N/A
UTILITIES												
11	WATER:	Min. Line Size (Inches/Dmtr)	10	10	8"	8"	10"	10"	4"	4"	4"	4"
		Min. Fire Line Size (Inches/Dmtr)	10"	10"	10"	10"	10"	10"	10"	10"	8"	6" (or alternative source)
	High Pressure Water Demand Dependency	Preferred	Preferred	Preferred	Not Required	Preferred	Preferred	Preferred	Not Required	Not Required	Not Required	Not Required
	Flow (GPD)	250,000	1 MGD	36,100	17,000	24,900	65,300	11,700	11,700	4,600	750	
12	SEWER:	Min. Service Line Size (Inches/Dmtr)	10"	10"	8"	8"	10"	10"	4"	4"	4"	4' (or on-site source)
		Flow (GPD)	250,000	1 MGD	32,500	15,300	100,000	58,800	11,700	11,700	4,600	750
13	NATURAL GAS:	Preferred Min. Service Line Size (Inches/Dmtr)	6"	6"	6"	4"	6"	6"	2"	2"	2"	N/A
		On Site	Competitive	Competitive	Competitive	Competitive	Preferred	Competitive	Preferred	Preferred	Preferred	Preferred
14	ELECTRICITY:	Minimum Service Demand	2 MW	10 MW	1 MW	.25 MW	.25 MW	.25 MW	1 MW	.25 MW	0.15 MW	.1 MW
		Close Proximity to Substation	Competitive	Competitive	Competitive	Preferred	Not Required	Competitive	Not Required	Not Required	Preferred	Not Required
		Secondary System Dependency	Preferred	Competitive	Required	Not Required	Not Required	Required	Not Required	Not Required	Required	Not Required
15	TELECOMMUNICATIONS:	Major Communications Dependency	Required	Required	Preferred	Preferred	Preferred	Required	Preferred	Preferred	Required	Preferred
		Route Diversity Dependency	Preferred	Preferred	Not Required	Not Required	Not Required	Required	Not Required	Not Required	Required	Not Required
		Fiber Optic Dependency	Preferred	Preferred	Preferred	Preferred	Preferred	Required	Preferred	Preferred	Required	Not Required
16	SPECIAL CONSIDERATIONS	<p>Acreage allotment includes expansion space (often an exercisable option). Very high utility volumes in one or more areas common. Sensitive to nearby uses.</p> <p>Demanding criteria-driven site selection. High material and visitor throughput. Major Commercial Airport a must. Redundancy in trip routes and utilities vital. Surrounding Environmentals (vibration, noise, etc). Buffering and expansion space necessary. Sensitive to encroachment activities of nearby uses (residential, institutional, commercial).</p> <p>Adequate distance from sensitive land uses (residential, parks, large retail centers) necessary. High throughput of materials. Large yard spaces and/or buffering required. Often transportation related requiring marine/rail links.</p> <p>Adequate distance from sensitive land uses (residential, parks) necessary.</p> <p>May require high volume/supply of water and sanitary sewer treatment. Often needs substantial storage/yard space for input storage. On site water pre-treatment needed in many instances.</p> <p>Surrounding environment of great concern (vibration, noise, air quality, etc.). Increased setbacks may be required and/or on-site utility service areas. Avoid sites close to wastewater treatment plants, landfills, sewage lagoons, and other such land uses. May require high volume/supply of water and sanitary sewer treatment.</p> <p>Transportation routing and proximity to/from major highways is crucial. Expansion options required. Truck Staging requirements mandatory. Does not like to site or have routing issues between site and interstate that have rail crossings, school zones, airport runways, or drawbridges.</p> <p>Transportation infrastructure such as roads and bridges to/from major highways is most competitive factor.</p> <p>Relatively higher parking ratios may be necessary. Will be very sensitive to labor force considerations and the location of other similar centers in the region.</p> <p>Located in more remote locations in the state. Usually without direct access (within 50 miles) of Interstate or City of more than 50,000 people.</p>										

Group Mackenzie; Business Oregon

Terms:

More Critical



Less Critical

'Required' factors are seen as mandatory in a vast majority of cases and have become industry standards

'Competitive' significantly increases marketability and is *highly recommended by OBD*. May also be linked to financing in order to enhance the potential reuse of the asset in case of default.

'Preferred' increases the feasibility of the subject property and its future reuse. Other factors may, however, prove more critical

* Competitive Acreage: Acreage that would meet the site selection requirements of the majority of industries in this sector.

**Total Site: Building footprint, including buffers, setbacks, parking, mitigation, and expansion space