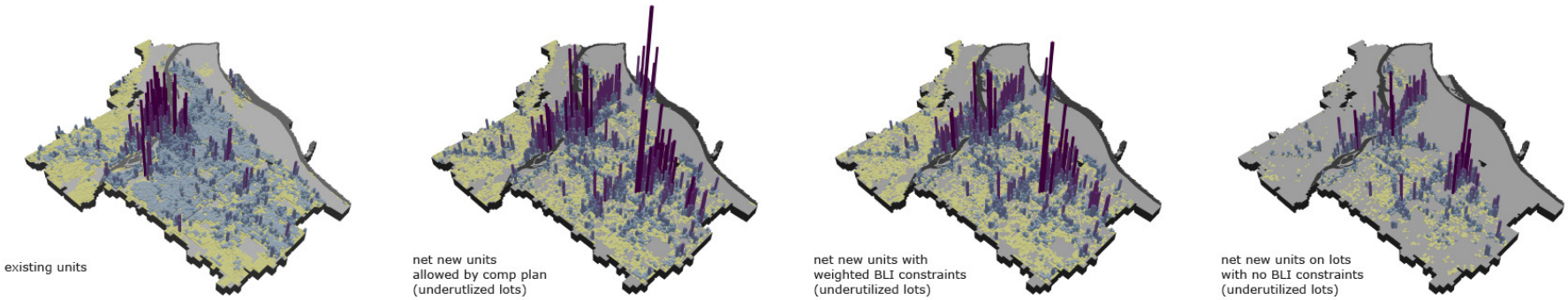
Buildable Lands Inventory – Summary of Future Development Capacity



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Buildable Lands Inventory – Summary of Future Development Capacity

Table of Contents

1. Introduction: Managing Expected Growth

In recent decades, the Portland metropolitan region and the City of Portland experienced a steady increase in population. In 1980, the city's population was about 368,000 residents. By 2010, the population had grown to more than 584,000 residents.

Much of this growth was a result of new city boundaries. In the 1980s and 1990s, the City of Portland annexed much of the city referred to as East Portland and Cully, as well as some smaller areas in North and Southwest Portland, greatly expanding the city's boundaries. Other growth can be attributed to people having children and new Portlanders arriving from across Oregon, the nation and beyond. Portland also has experienced significant residential infill development.

Oregon's statewide planning system requires cities to maintain an adequate supply of land to accommodate at least 20 years of future growth. State statutes and administrative rules establish procedures that each city must follow to demonstrate that they have enough buildable land to meet the projected need for housing and employment.

In the future, it is unlikely that Portland's boundaries will change, but Portland is expected to continue to grow and develop. In another 25 years, how many people will live on Portland's nearly 93,000 acres? Where in the city will people choose to live? What kinds of jobs will Portlanders have? To answer those questions, Portlanders will need to figure out how to manage change, direct investments and work smarter within existing city limits.

2. Population and Employment Forecasts

Who develops household and employment forecasts?
Metro, our regional government, is responsible for developing a forecast that estimates the expected population and employment growth for the next 20 and 50 years. Metro allocates this forecast to individual jurisdictions, including Portland. The City of Portland has an obligation under State law to coordinate with Metro and ensure that our planning work is consistent with this forecast.

Why are forecasts important?
Forecasts help the City of Portland plan responsibly. Population growth triggers the need for new housing and a complex web of additional urban services, from water pipes and sewers to parks and open spaces, roads, schools and hospitals, all of which need to be planned far in advance. Employment forecasts tell the City of Portland what kind of land will be needed to help the economy grow and which types of businesses are likely to provide jobs over the next generation. The forecasts help Portlanders make informed decisions about how to manage land, where and when to invest in infrastructure – like transportation and utilities – and which policies and programs should be continued and enhanced and which should not.

How do Metro's household and employment forecasts work?
Metro uses data from the forecasting firm Global Insight to create a long-range forecast for the region. In October 2011 the Metro Council adopted the latest growth forecast. Metro expects continued population growth, with nearly 1 million new residents and 540,000 new jobs in the greater Portland region.

Using this regional forecast, Metro estimates the distribution of households and jobs to individual cities based on a computer model called Metroscope. For transportation planning purposes, Metro extrapolates this forecast out to the year 2045. Based on the November 2011 Metro allocation, Portland is expected to grow by 132,000 households and 147,000 jobs by 2035.

Table 1. 2010-2035 Portland Growth Forecast

	2010	2035	Change
Households	254,328	386,579	132,251
Employment	369,440	516,440	147,000

Source: BPS analysis of November 2011 Metro "GAMMA" Forecast

2. Population and Employment Forecasts (cont.)

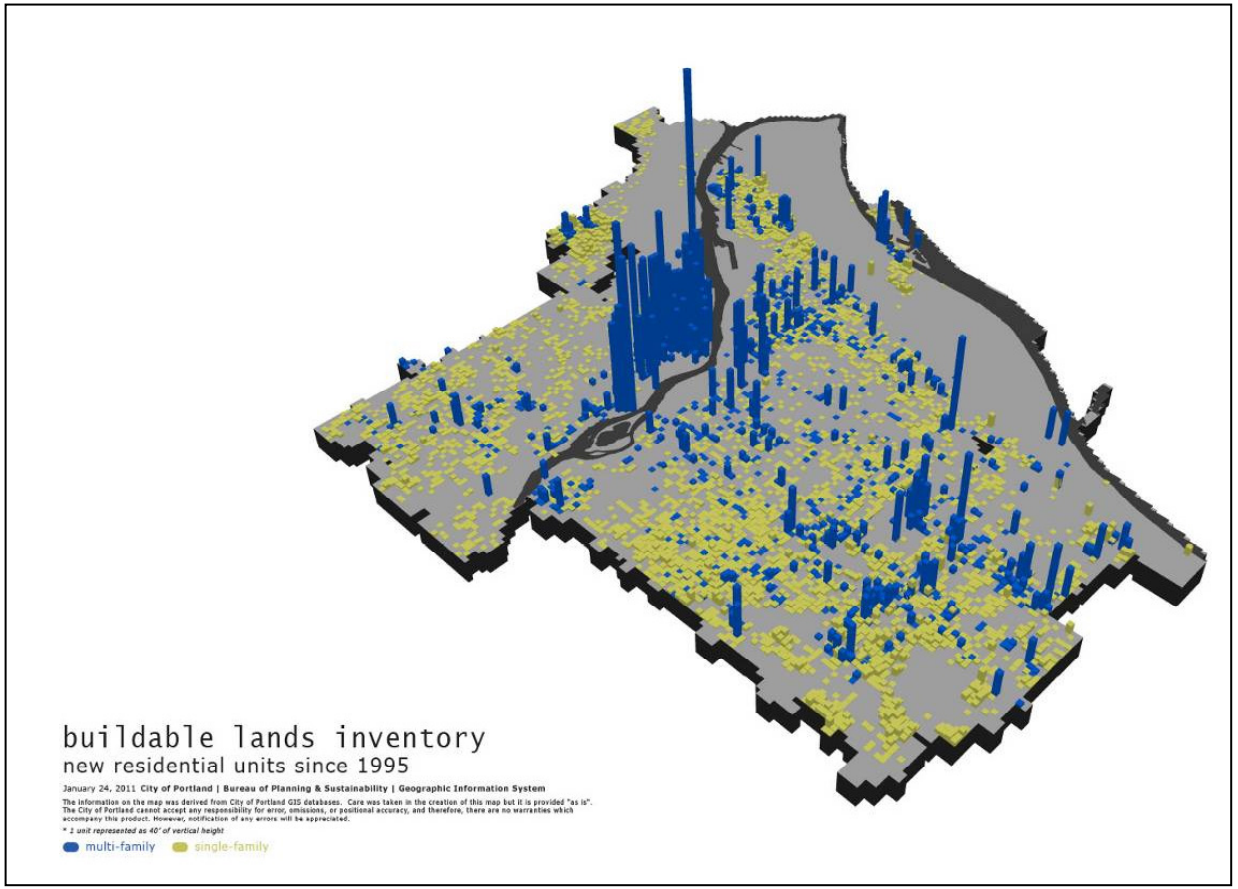
Household Forecast

The 132,000 new Portland households represents a 27% capture rate of the regional growth, which is consistent our historic capture rates. This growth rate is about 5,300 units per year. For context, approximately 31,000 new dwellings were built in Portland over the past decade. During the most recent housing boom (2004 to 2008) growth rates reached approximately 4,500 new dwellings each year.

One way to understand what might happen in the future is to evaluate past trends. The map below illustrates where new housing has been developed over the past decade. Taller, darker lines indicate a greater number of new dwelling units.

Nationally, regionally and within the city, household size is projected to decline in coming years. In 2005, 28 percent of households included children. By 2035, 25 percent of Portland households are expected to include children. As a result, demand is expected to be highest for multi-family units. Currently, about 61 percent of the existing dwellings are single family detached homes. In contrast, during the most recent decade (2001 to 2010) only 28 percent of new housing units in Portland were single-family detached homes.

More information is available in the **Housing Demand and Supply Background Report**.



2. Population and Employment Forecasts (cont.)

Employment Forecast

The City of Portland employment forecast is based on the Metro regional forecast of job growth. Employment in the Portland region is expected to increase from just under 1 million jobs in 2010 to nearly 1.5 million in 2035 - with an average annual growth rate in the range of 1.8% per year over the 2010-2035 period.

Metro allocates Portland 147,000 new jobs over the 2010-35 forecast period – an annual average growth rate of 1.3% and a 27% capture rate of regional employment growth – which is consistent with historic rates.

Table 2 shows the distribution of the employment forecast by sector. The institutional sectors (health and education) account for nearly 53,000 new jobs or 36% of the growth. While the manufacturing sector declines slightly as consistent with national and regional forecast expectations, the warehousing and distribution sectors are expected to see strong growth with over 16,000 new jobs by 2035.

More information is available in the **Economic Opportunity Analysis**.

Table 2. City of Portland Employment Forecast by Sector

Employment Sector	2010	2035	Job Change 2010-35	Avg Rate of Growth 2010-35
Agriculture & Mining	392	357	(35)	-0.4%
Construction	14,224	21,765	7,541	1.7%
Manufacturing	25,035	24,328	(707)	-0.1%
Wholesale Trade	18,009	23,250	5,241	1.0%
Retail Trade	31,060	33,309	2,249	0.3%
Transportation, Warehousing & Utilities	23,676	35,345	11,669	1.6%
Information	9,640	13,906	4,266	1.5%
Finance	17,048	24,524	7,476	1.5%
Real Estate	7,946	15,527	7,581	2.7%
Professional Services	26,943	39,268	12,325	1.5%
Management	14,322	21,910	7,588	1.7%
Administrative Services	18,449	28,404	9,955	1.7%
Educational Services	37,937	61,838	23,901	2.0%
Health & Social Services	50,616	79,702	29,086	1.8%
Arts, Entertainment & Recreation	6,741	8,582	1,841	1.0%
Accommodation & Food Services	35,102	44,686	9,584	1.0%
Other Services	16,802	23,318	6,516	1.3%
Government (Civilian)	15,498	16,422	924	0.2%
TOTAL EMPLOYMENT	**369,440**	**516,440**	**147,000**	**1.3%**

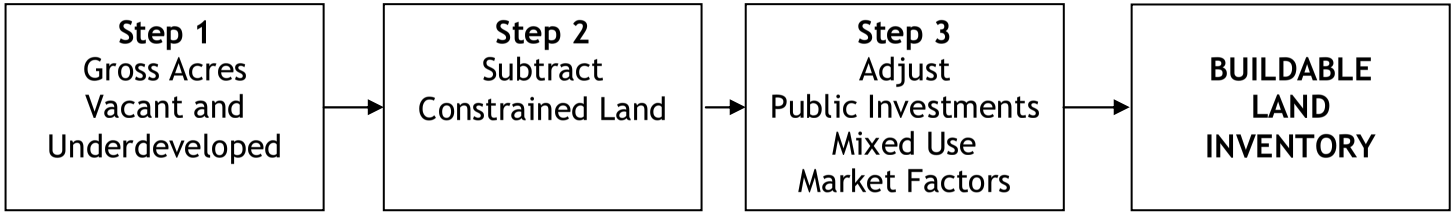
Source: E. D. Hovee & Company, LLC based on Metro Gamma forecast, November 2011.

3. Buildable Lands Inventory Methodology

The Buildable Lands Inventory (BLI) is an estimate of how much development potential is possible under current city plans and zoning. It is a tool to help us understand where future development might occur in Portland and whether our zoning and regulations allow for the development capacity needed to accommodate the projected household and job growth. Based on where the projected growth occurs, we can plan to address the impacts of that growth. To help answer questions like these, the City of Portland uses its own computer model to estimate "development capacity" and describe where growth might occur in the future. Development capacity is defined as the likely number of new dwelling units or jobs that could be accommodated in the city under existing regulations, assuming the continuation of recent development trends. The BLI by itself does not consider or predict market demand for new construction. It only identifies lands that could potentially be available for development, should a market demand exist.

The BLI is one of the key assumptions in the City's comprehensive planning process. Eventually, the BLI will inform development of several different growth scenarios, each of which will describe a different approach to shaping future growth. From that, a preferred scenario will be developed that will form the basis for updates to the Comprehensive Plan.

The BLI is developed through a series of steps or analyses to derive the development capacity estimate:



While the BLI is based on the same basic steps, there are variations and different assumptions for the residential and employment analyses. These differences are due in part to the differences in the overall zoned capacity for the different land uses. Overall, there is an excess supply of residential capacity that allows us to be less precise. Whereas, with the employment side there shortfalls for certain categories, therefore we want to be more precise in our assumptions. A separate report entitled **Development Capacity Analysis (DCA) GIS Model'** describes the methodology used for this step (see Appendix A). A more detailed analysis of the Central City was conducted to estimate the development potential in this area (see Appendix B).

3. Buildable Lands Inventory Methodology (cont.)

The basic methodology to identify the buildable land is as follows:

Step 1 *Estimate the gross acreage of land that is available for development and redevelopment.*
The estimate includes an inventory of the vacant sites in the city plus a selection of other sites that are underdeveloped and likely available for redevelopment. The underdeveloped or underutilized sites are generally defined as sites that have less than 20 percent of the allowed building square footage. The DCA model uses existing building area to calculate the likelihood of redevelopment based on the rationale that parcels with smaller building coverage compared to what is allowed by current zoning regulations are likely to redevelop given the potential for a new larger building to absorb the value of the existing building into the development costs.

Step 2 *Subtract development capacity due to constrained lands.*
Constrained lands include sites that lack needed urban infrastructure (for example, sites without sewer service), or have physical or regulatory barriers to development (such as environmentally sensitive areas, historic landmarks, flood hazards, etc.). The level of constraints vary by the type of constraint and the type of land. A separate report describes the methodology used to identify constraints and estimate their impact on development (see Appendix C).

Step 3 *Adjust for other development factors.*
In this step, the capacity estimate for some areas may be adjusted upward or downward by some factor to account for public infrastructure investments, mixed use development, and market factors. The capacity is adjusted for near term public infrastructure projects that part of our capital improvement program. For mixed use areas, the development capacity is split between residential and commercial space. Market factors are applied to

Result *Buildable Land Inventory*
The result is an inventory of land that has capacity to accommodate additional development (The BLI). This inventory represents an aggregated supply-side analysis and does not necessarily mean any specific property will development within the 2035 planning horizon.

Next Steps *Adjust for changes to the Comprehensive Plan Map.*
This future step will adjust the development capacity analysis based on proposed Comprehensive Plan Map changes.

4. Residential Development Capacity Summary

Step 1: Gross Development Potential
The Comprehensive Plan sets the limits about what kind of development may occur in different parts of the city. The map at right illustrates how much development intensity is allowed under the current Comprehensive Plan and zoning. Darker areas represent areas with the greatest allowances for new development.

Vacant land is the most obvious location for future development. However, Portland is a landlocked city with a decreasing supply of vacant land and little opportunity to add additional land along our borders.

In addition to vacant land, the Development Capacity Analysis identifies land that is underdeveloped or underutilized. These sites are counted as likely to redevelop in the next 25 years because the relatively low amount of existing development makes new development financially feasible.

4. Residential Development Capacity Summary (cont.)

Vacant and Underutilized Land

The housing capacity was calculated only for properties that are considered vacant or underutilized. Assumptions were made to identify these properties based on their zoning and location:

Non-vacant parcels are individually identified as "significantly underutilized" if they are below the capacity utilization threshold defined for their comprehensive plan designation. The following assumptions determine whether a parcel is above or below this utilization threshold:

Single-family residential parcels (R2.5, R5, R7, R10, R20 & RF zones): single-family residential (SFR)-zoned parcels that can be subdivided into 3 or more parcels are mapped as underutilized. Note that the number of allowed parcels is rounded differently based on the maximum number of parcels. Refer to the Single-Dwelling Zones Land Division Guide for more information.

Multi-family residential parcels (R1, R2, R3, RH, RX & IR zones):

a. *Central City:* parcels are mapped as underutilized if they are using less than 20% of their allowed multi-family units AND the parcel's improvement-to-land value ratio is 50% or less. Existing units are calculated using Metro's regional Multifamily Housing Inventory. Improvement-to-land ratios are calculated using Multnomah County Assessor real market land and improvement (building) values for the current tax year.

b. *Outside the Central City but within 500' of a "frequent service" transit line:* mapped as underutilized if they are using less than 20% of their allowed multi-family units (regardless of the improvement-to-land ratio). Improvement and land values are not as accurate or consistently recorded outside Portland's Central City, so they are not used in other parts of the City at this time. Frequent service transit lines are defined as bus and light rail lines that run every 15 minutes or better during weekday peak hours.

c. *All other parcels:* mapped as underutilized if they are using less than 10% of their allowed multi-family units (regardless of the improvement-to-land ratio).

Commercial mixed-use parcels (CN, CM, CS, CG, CX, & EX zones): Most of our commercial land use zones allow residential uses and over the last 15 years Portland has seen a significant amount of mixed-use, residential development in these areas. The amount of residential capacity in these commercial areas is based on the mixed-use adjustment factor in the employment capacity analysis (see Table 11).

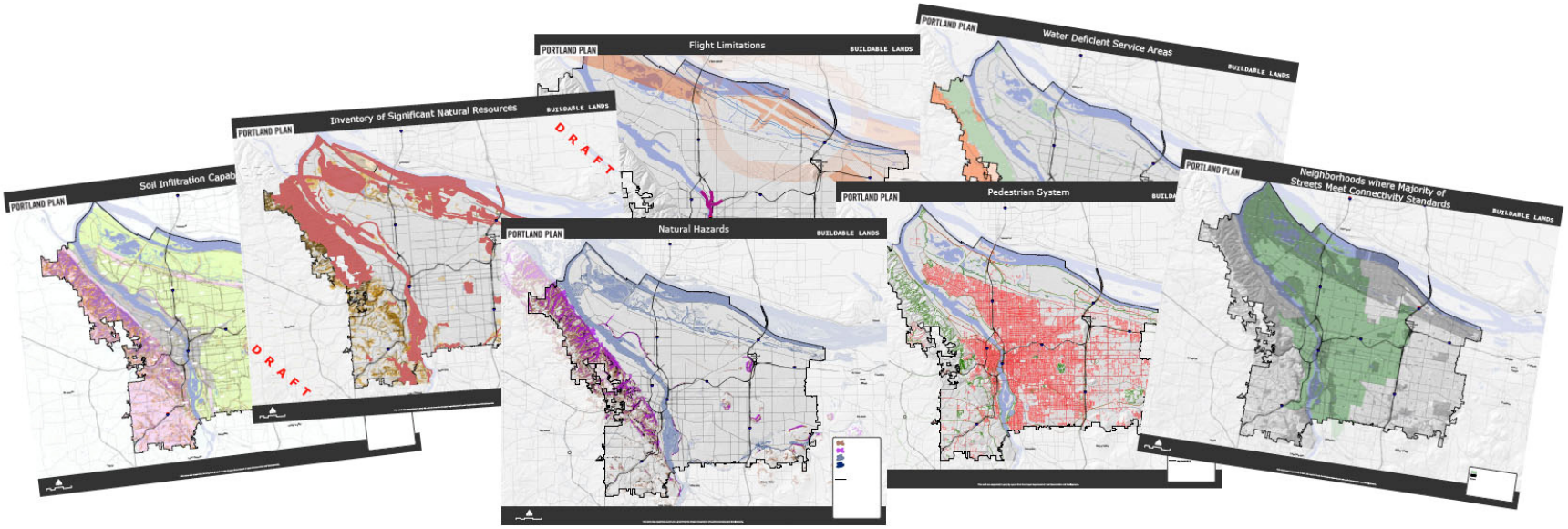
4. Residential Development Capacity Summary (cont.)

Step 2: Constraint Analysis

Constrained land is a term used to identify land features that may limit the intensity of future development (and therefore the distribution of future housing or jobs). State planning rules identify a list of specific constraints that must be considered, at minimum. Additional constraints may also be identified.

Constraints could be the market, regulations, infrastructure-related, and/or physical factors that impact development feasibility. The term "constraint" does not imply that these factors are necessarily undesirable or leading to negative outcomes. For example, land near the bank of a river may be considered fully or partly "constrained" from reaching full zoned capacity for housing and jobs, but in reality the closeness to natural areas or a river may increase the desirability of a parcel and likelihood of development. Maps of the constraints and a more detailed description of how these constraints were evaluated are found in Appendix C.

The residential and employment constraint methodology starts with the same base layers, but uses different methods to determine the discount factors.



4. Residential Development Capacity Summary (cont.)

Residential Constraints

Tables 3-7 summarize the residential constraints considered in this analysis. The constraints are characterized as high, medium, or low based on consultation with the City of Portland's development review staff at the Bureaus of Development Services, Transportation, Water, and Environmental Services. The BLI model translates these into the following assumptions: None = No capacity reduction (impacted land area assumed to have full capacity); Some (Low) = Model reduces capacity of impacted area by 15%; Some (Medium) = Model reduces capacity of impacted area by 45%; Some (High) = Model reduces capacity of impacted area by 80%; Full = 100% capacity reduction (no assumed capacity for impacted land area).

Table 3. Infrastructure Constraints

ID	Constraint Layer	Impact on Residential Capacity
A	**Transportation (Vehicular Level of Service)**	
A1	2008 Transportation Network PM Peak 2 hours Volume to Capacity Ratio	Low
A2	Neighborhoods where Majority of Streets Meet Connectivity Standards	Low
A3	ODOT Highway Interchanges	Low
B	**Transportation (Other)**	
B1	Improved and Unimproved Streets	Low
B2	Pedestrian System	Low
C	**Water**	
C1	Water System	Low
C2	Water Deficient Service Areas	Low
D	**Sewer**	
D1	Development Assumptions for Sanitary Sewer	Low
E	**Stormwater**	
E1	Stormwater System	Low
E2	Depth to Seasonal Groundwater	Low
E3	Soil Infiltration Capacity	Low
E4	Well-field Protection Areas	Low

4. Residential Development Capacity Summary (cont.)

Table 4. Environmental Feature Constraints

ID	Constraint Layer	Impact on Residential Capacity
G	**Natural Resource Features**	
G1	Streams. Lakes, rivers, and other water bodies	Full
G2	Wetlands	Medium
G3	Forests	None
G4	Flood Areas (equivalent to layers N8-N10)	None
G5	Groundwater Recharge Areas	None
H	**Natural Resources Inventory (NRI)**	
H1	NRI – Low Ranked Resource Areas	None
H2	NRI – Medium Ranked Resource Areas	Low
H3	NRI – High Ranked Resource Areas	Medium
H4	NRI – Special Habitat Areas (with no riparian or wildlife habitat ranks)	None
N	**Land Hazard Features**	
N1	Potential Landslide Hazard Areas	None
N2	All Slopes over 25%	Low
N3	DOGAMI Digital Landslide Database (SLIDO)	Low
N4	DOGAMI Landslide Hazard Zones (IMS-22)	Low
N5	DOGAMI Database IMS-1 (Earthquake Hazards)	None
N6	DOGAMI Database IMS-16	None
N7	FEMA 100-Year Floodplain Map	Medium
N8	FEMA Floodway Map	Full
N9	1996 Actual Flooded	None
N10	Wildfire Hazard Map	None
L	**Environmental Overlay Zones**	
L1	Environmental Conservation Zones	None
L2	Environmental Protection Zones	Full

4. Residential Development Capacity Summary (cont.)

Table 5 Brownfields Constraints

ID	Constraint Layer	Impact on Residential Capacity
O	**Potentially Contaminated Lands**	
O1	DEQ Environmental Cleanup Sites (ECSI)	Low
O2	DEQ Confirmed Release Sites (CRL)	Low
O3	DEQ Underground Storage Tanks (UST)	Low

Table 6. Low Level Constraints

ID	Constraint Layer	Impact on Residential Capacity
M	**Significant Cultural Resources**	
M1	Historic and Conservation Districts	Low
M2	Historic and Conservation Landmarks	Medium
M3	Areas Requiring Archeological Scan or Consultation with Native American tribal governments	None
I	**Inventory of Scenic Areas**	
I1	Views	Low
I2	Sites	None
I3	Corridors	None

4. Residential Development Capacity Summary (cont.)

Table 7 Other Constraints

ID	Constraint Layer	Impact on Residential Capacity
F	**Airport Flight Limitations**	
F1	Approach and Departure Cones	Low
F2	Noise Contours (areas above LDN 65 and 68 noise contours)	Varies - See Appendix C
F3	Heliport Landing (impacts several buildings near Portland Heliport)	Low
J	**Open Space**	
J1	OS Comprehensive Plan Map Designation	Full
J2	Lots with Open Space Tax Assessment	Full
J3-5	Lots with Riparian, Farm, Forest Tax Assessment	Full
K	**Air Quality**	
K1	Risk of Exposure to Outdoor Toxic Air Pollutants	None
P	**Public Land**	
P1	Publicly Owned Lots/Parcels (excl. those that provide residential uses).	High
P2	Public and Private Rights of Way	Full
P3	Beds and Banks of Navigable Waterways	Full
P4	Private Common Open Space	Full
P5	Institutional Campuses	Full
Q	**Rural Land**	
Q1	Land within the City but beyond the Urban Growth Boundary	Full

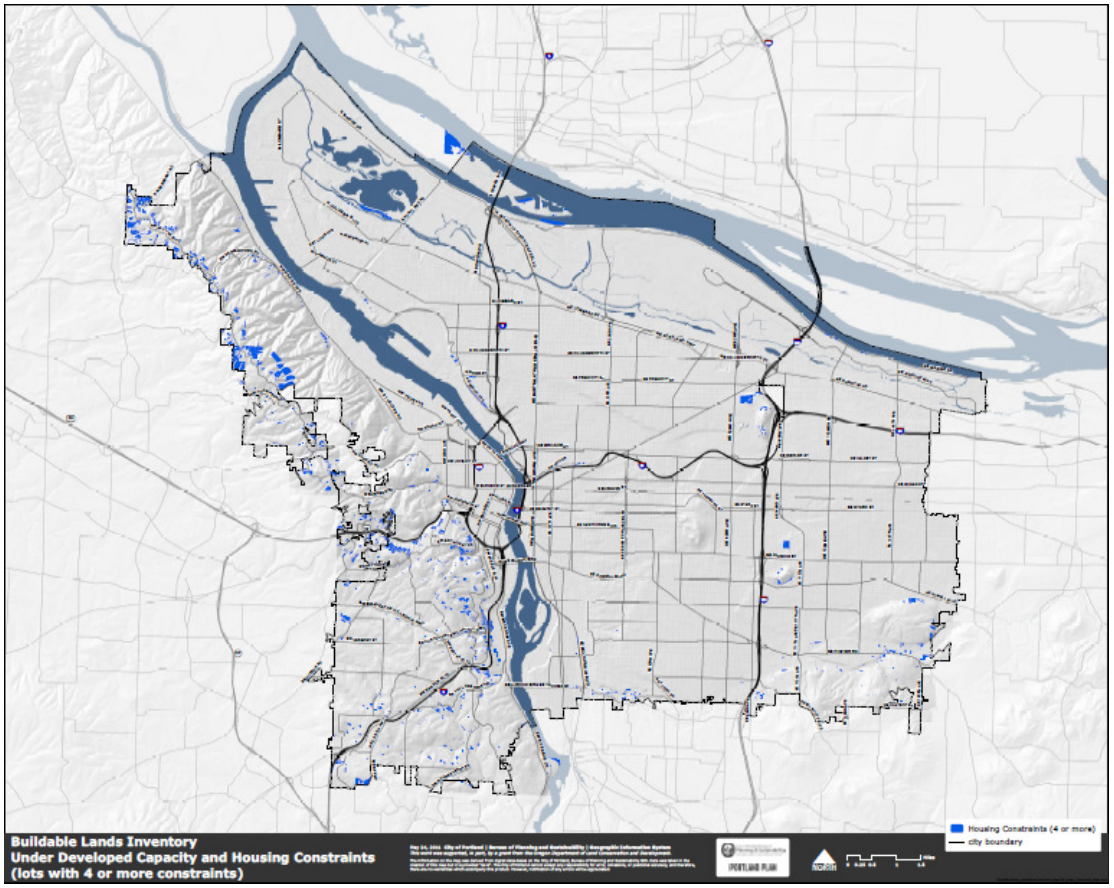
4. Residential Development Capacity Summary (cont.)

Overlapping Constraints

In addition to considering the individual constraints noted above, residential properties subject to multiple overlapping constraints were identified. Specifically, properties were assigned an additional "Medium" constraint if four or more of the following "Low" constraints were present in one location:

- Transportation (A, B)
- Water (C)
- Sewer (D)
- Stormwater (E)
- Environmental Overlays (L)
- Contamination (O)

This additional factor is intended to account for the additional complexity of development on sites with multiple overlapping infrastructure constraints and/or environmental concerns. Natural land feature layers (such as steep slopes, wetlands, large forests, etc.) were not separately incorporated into this evaluation because in most cases these features are found within the Environmental Overlay layer.



4. Residential Development Capacity Summary (cont.)

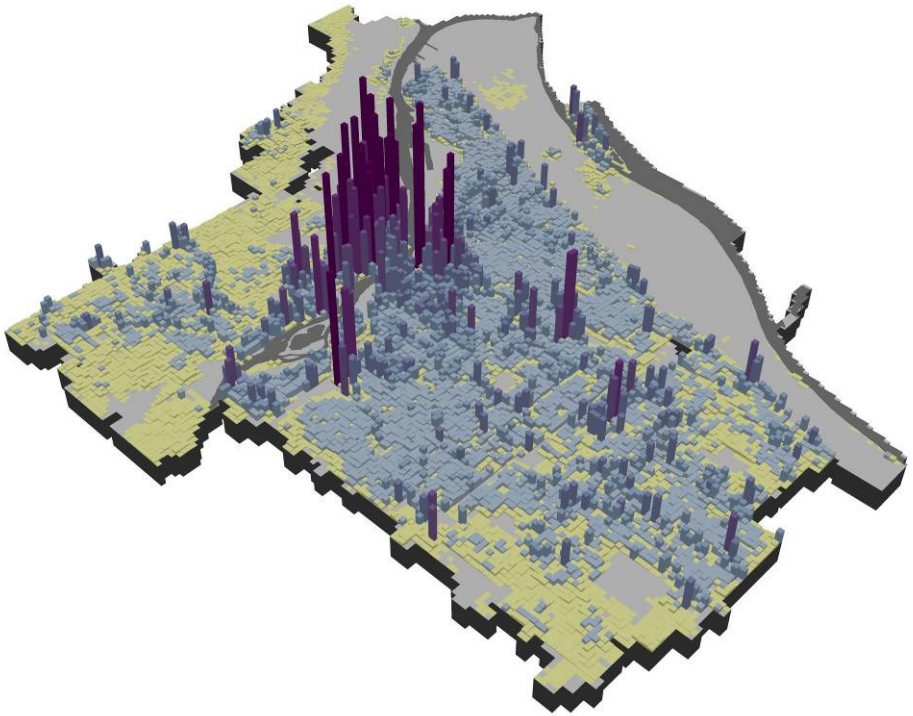
Residential Capacity Results
Zoned capacity in Portland is sufficient to meet projected housing need; that is, enough land in Portland is currently zoned to accommodate the projected number of new households. There are approximately 250,000 households in Portland today. The total estimated residential capacity of the city, with the existing Comprehensive Plan designations and evaluating the degree of impact from the constraints is 231,500 units.

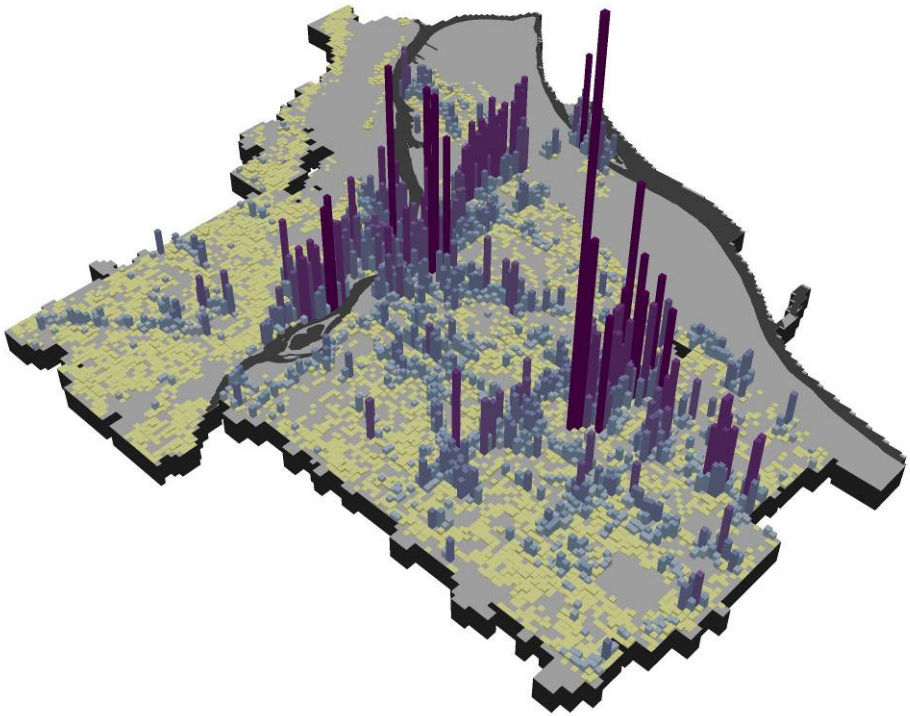
About 15 percent of that capacity is in land available for single dwelling residential development (detached or attached homes on their own lot). The largest concentration of single dwelling capacity is in East Portland in the Powelhurst-Gilbert neighborhood.

At least 14 percent of Portland's capacity is located in the Central City (approximately 33,000 dwellings). For a more detailed study of the Central City's capacity (see the **2011 Central City Development Capacity Report – Appendix B**). That report estimated a capacity of 50,000 to 60,000 additional housing units, after considering available development incentives and bonuses.

Outside of the Central City, most of the remaining growth capacity is in mixed use corridors and neighborhood centers. Notable areas of high growth capacity are Gateway, North Interstate Corridor, Lents, Hayden Island, Montavilla, and some areas of East Portland. The areas of town with the least capacity for additional growth are some areas in Northeast Portland and most of West Portland.

4. Residential Development Capacity Summary (cont.)





Above Left: The distribution of existing dwelling units in Portland (2010).

Above Right: Additional new dwelling units allowed by the Comprehensive Plan after considering the likely impact of the constraints. Using this approach, there is a remaining capacity of approximately 231,500 potential new dwellings.

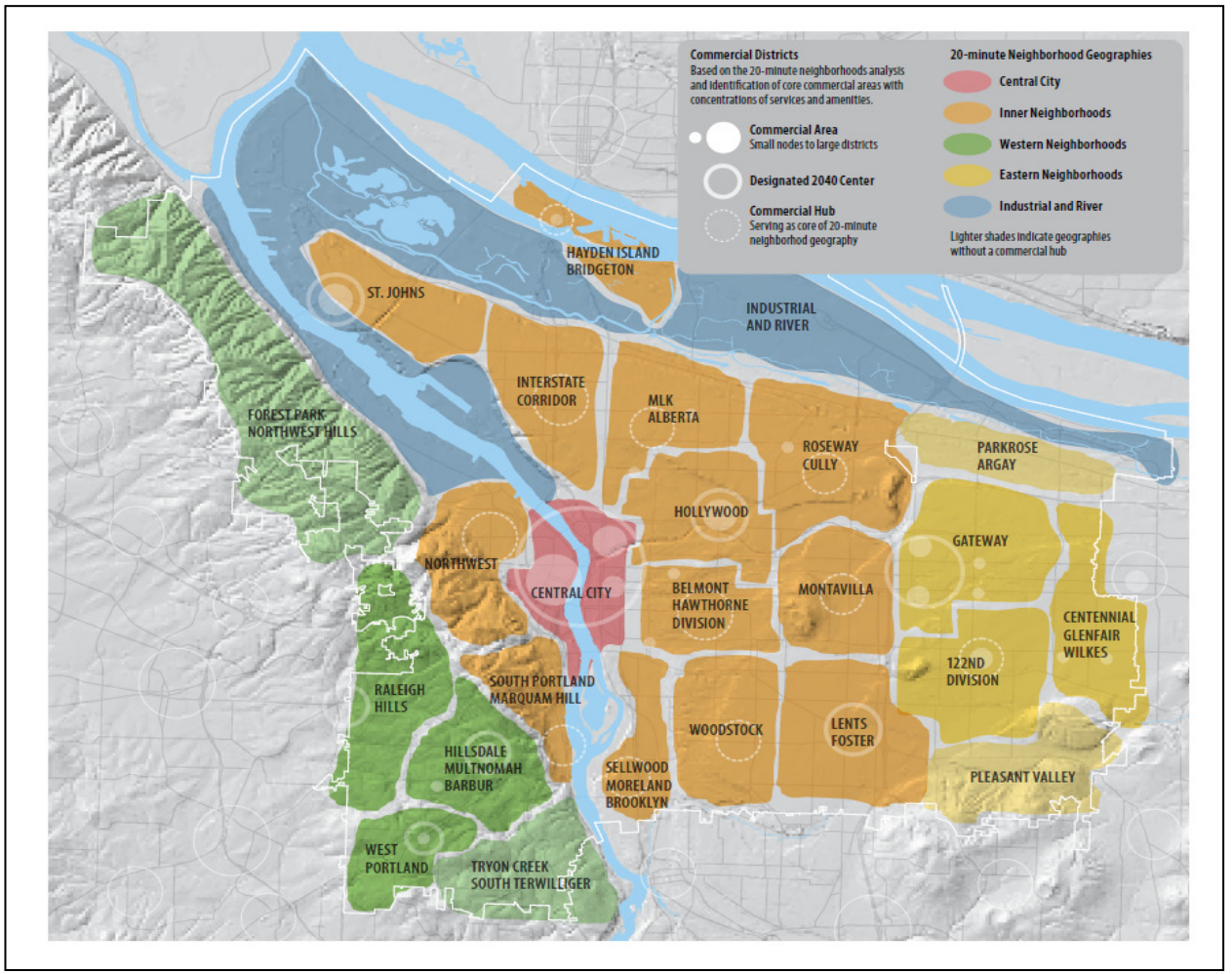
number of housing units

- less than 20 units
- 20 to 50 units
- 50 to 100 units
- 100 to 200 units
- 200 to 350 units
- 350 to 600 units
- more than 600 units
- no units

4. Residential Development Capacity Summary (cont.)

20-Minute Neighborhood Analysis Areas

As part of the Portland Plan analysis, we looked at how different parts of the city were faring in terms of the citywide measures of success. The local analysis areas are shown on the map on this page. Most of these areas are centered on an existing commercial center or main street. They are sized to approximate a walkable distance from those centers. Each area includes several Portland Neighborhood Associations. Table 8 summarizes the capacity estimates for each analysis area.



4. Residential Development Capacity Summary (cont.)

Table 8. Estimated Residential Capacity, by Area (Assumes Current Comprehensive Plan)

Analysis Zone	2010 Households (Census)	Additional Capacity			Growth Factor
		SFR capacity	MFR capacity	Total	
122nd-Division	13,800	4,608	6,731	**11,339**	1.8
Belmont-Hawthorne-Division	18,600	1,614	7,211	**8,825**	1.5
Centennial-Glenfair-Wilkes	12,000	2,091	9,323	**11,414**	2.0
Central City	21,800	30	32,743	**32,773**	2.5
Forest Park-Northwest Hills	3,400	1,118	114	**1,232**	1.4
Gateway	12,700	2,675	33,388	**36,063**	3.8
Hayden Island-Bridgeton	2,500	251	4,969	**5,221**	3.1
Hillsdale-Multnomah-Barbur	9,100	1,432	3,471	**4,903**	1.5
Hollywood	16,500	909	8,563	**9,473**	1.6
Interstate Corridor	15,100	1,105	22,696	**23,800**	2.6
Lents-Foster	17,800	2,936	18,520	**21,457**	2.2
MLK-Alberta	15,000	701	7,104	**7,805**	1.5
Montavilla	14,000	2,066	9,639	**11,705**	1.8
Northwest	14,400	721	5,929	**6,650**	1.5
Parkrose-Argay	5,700	759	3,369	**4,128**	1.7
Pleasant Valley	4,000	2,702	560	**3,262**	1.8
Raleigh Hills	7,800	2,055	1,737	**3,792**	1.5
Roseway-Cully	14,100	1,392	3,710	**5,103**	1.4
Sellwood-Moreland-Brooklyn	7,900	476	3,508	**3,984**	1.5
South Portland-Marquam Hill	4,700	698	3,150	**3,848**	1.8
St. Johns	12,400	1,361	5,637	**6,997**	1.6
Tryon Creek-Riverdale	3,400	837	0	**837**	1.2
West Portland	4,800	478	1,378	**1,856**	1.4
Woodstock	13,800	1,766	3,323	**5,090**	1.4
TOTALS	***265,300***	***34,784***	***196,771***	***231,555***	**1.9**

← ?

The 'Growth Factor is a way of quantifying the amount of change that is possible in each area. For example, a score of 2.0 would mean that there is capacity to double the number of households in a given area. A score of 1.0 would mean there is little or no capacity for growth. This estimate is based on the amount of vacant and underutilized land available for housing development, how many new dwellings the zoning allows on that land, and factoring in the impact of constraints (e.g., slopes, lack of infrastructure or environmental resources).

5. Employment Capacity Analysis

Step 1: Gross Development Potential

The employment capacity analysis uses the same approach as the residential capacity analysis and looks at the difference between existing and allowed development to determine the remaining development capacity under the current comprehensive plan. The first step to inventory buildable land is a relatively straight forward process to identify vacant sites or land utilizing tax assessment data, Metro's vacant land inventory, and verification process utilizing aerial photos and field checking. Parcels under 0.5 acres were not considered viable for industrial uses and parcels less than 1,500 square feet were not considered viable for commercial development.

There is a more complicated process to identify developed parcels that are significantly under-developed or underutilized and are likely to redevelop. Similar to the residential capacity methodology, within the Central City, a parcel must have less than 20% of the allowed floor area and have an improvement-to-land ratio (I/L ratio) of less than 50%. Outside the Central City, parcels within 500 feet of a "frequent service" transit line are mapped as underutilized if they are using less than 20% of their allowed floor area (regardless of the improvement-to-land ratio). Improvement and land values are not as accurate or consistently recorded outside Portland's Central City, so they are not used in other parts of the City at this time. Frequent service transit lines are defined as bus and light rail lines that run every 15 minutes or better during weekday peak hours.

All other parcels are mapped as underutilized if they are using less than 10% of their allowed floor area (regardless of the improvement-to-land ratio).

For underutilized parcels that will redevelop, the existing building square footage is deducted from the zoned capacity so only the net new development capacity is counted.

Industrial-zoned parcels are limited to vacant parcels. Underutilized parcels are not included in this analysis because there are no FAR limits in the Portland industrial zones and industrial development tends to have lower building coverage with large areas for outdoor storage and vehicle maneuvering areas.

Institutional campuses warrant special consideration because their land use patterns are distinct from other employers. Medical and higher education institutions often tend to cluster all or a significant portion of their activity into campuses, requiring larger parcels or aggregations of parcels, developing land more intensively (e.g. with structured parking) and locating in a variety of zones other than commercial and industrial (such as residential). For the BLI, 17 individual campuses are identified and the development capacity is determined through an assessment of current land use approvals and base zoning minus existing buildings.

5. Employment Capacity Analysis (cont.)

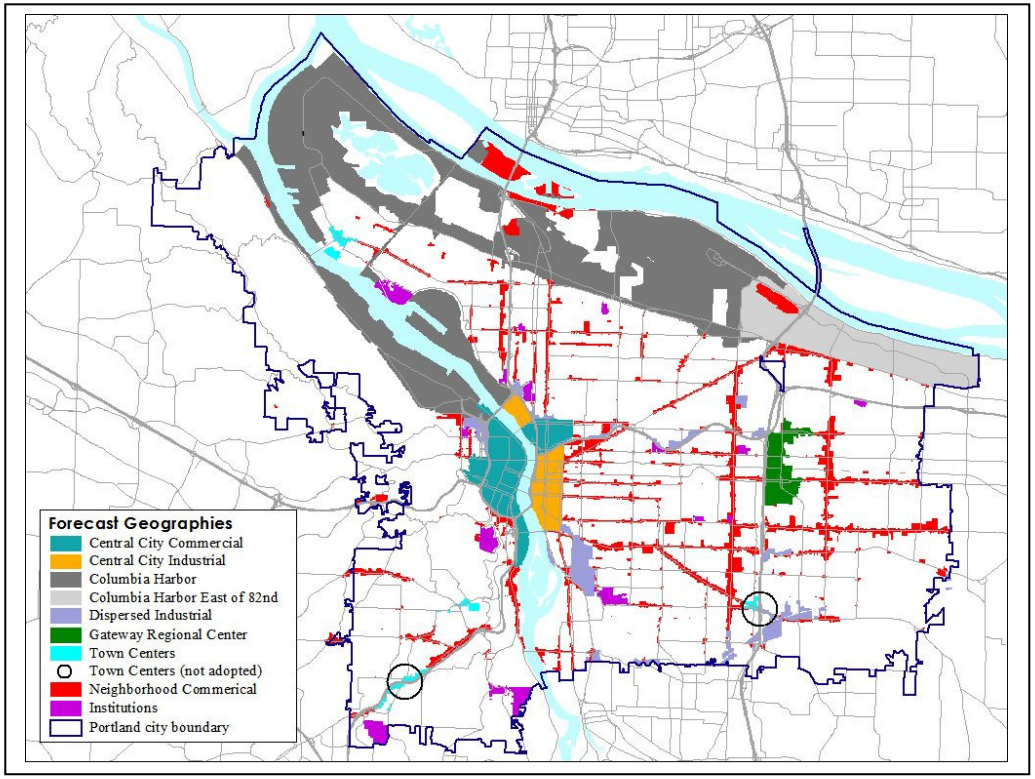
Employment Geographies

The employment geographies are subareas of the city that represent types of business districts (Table 9). Each "employment land geography" represents (1) a collection of established business districts by type that reflects business location preferences (agglomeration) and community location preferences (comprehensive plan); (2) a segment of citywide demand for employment land, consisting of a distinct mix of business sectors and building types; and (3) a segment of the city's current developable land supply. These employment geographies are summarized into four larger aggregate categories of: Central City, industrial, commercial, and institutional. There is residential geography that is primarily associated with institutional uses occurring in residential areas, home occupations, non-conforming uses and ancillary employment with open space areas (ranging from golf courses to public parks), however, because most of these uses are located on land for residential uses we do not calculate an employment capacity for these areas.

In some cases, a separate estimate for the Harbor Access Lands subarea is shown, which is a subarea of the Columbia Harbor employment geography that represents the working waterfront along the Willamette and Columbia rivers.

Table 9. Employment Geographies

Category	Employment Geography
Central City	Central City Commercial
	Central City Incubator
Industrial	Columbia Harbor
	Harbor Access Lands
	Columbia East (east of 82nd Ave)
	Dispersed Industrial
Commercial	Gateway Regional Center
	Town Centers
	Neighborhood Commercial
Institutions	Institutional Campuses



5. Employment Capacity Analysis (cont.)

Step 2: Employment Constraints

As with the residential constraints, each constraint is defined and mapped and a discount factor is determined to reflect the degree of impact each constraint has on development. The discount factor is determined in a two-step process. The first step is characterizing the constraint as high, medium, or low based on consultation with the City of Portland's development review staff at the Bureaus of Development Services, Transportation, Water, and Environmental Services. Then this factor is adjusted based on a review of development rates of various constrained sites compared to unconstrained sites for the 1999-2011 period. This analysis included both the rate of development (avoidance) as well as the overall amount of development to determine the level of constraint. The constraint layers are grouped into six categories and sorted by geographic area.

For overlapping constraints, an additional discount factor of -10% is applied to sites with two overlapping constraints or -20% for sites with more than three constraints. Institutional campuses are not included in this adjustment factor because the master planning process to establish the development capacity has already factored most of these constraints.

Table 10. Employment Constraint Factors

Constraint	Adjusted Capacity	Constraint	Adjusted Capacity
Environmental		**Historic Landmarks**	
Central City	75%	Central City	55%
Industrial	50%	Industrial	55%
Commercial	35%	Commercial	55%
Infrastructure		**Low Level**	
Central City	75%	Central City	85%
Industrial	75%	Industrial	85%
Commercial	75%	Commercial	85%
Brownfields		**Greenway**	
Central City	90%	Central City	75%
Industrial	40%	Industrial	50%
Commercial	50%	Commercial	55%

Source: E.D. Hovee & Company, LLC and Bureau of Planning and Sustainability

5. Employment Capacity Analysis (cont.)

Step 3: Adjustments

The capacity is reduced to account for constraints such as infrastructure, brownfields, and natural resources protections. We also reduce the capacity if the site is likely to be developed as a mixed-use employment/residential building by discounting the portion of building space that would be residential space based on past development trends. The development capacity is also adjusted for market factors in some areas to reflect zoned capacity that is more than is currently being developed or expected to be developed in the foreseeable future.

Mixed-Use Zoning Allocation

Most of our commercial land use zones allow residential uses and over the last 15 years Portland has seen a significant amount of mixed-use, residential development in these areas, especially in the Central City. Therefore, we assume a certain amount of the development capacity in these commercial areas will develop as residential space and therefore not available for employment uses. The residential share is based on a review of building permit activity in commercial corridors from 2002-2008.

Table 11. Mixed Use Zoning Residential Share Factors

Comprehensive Plan Designation		Residential Share	Central City Residential Share
EX	Central Employment	75%	63%
CX	Central Commercial	55%	40%
UC	Urban Commercial	75%	40%
CG	General Commercial	25%	40%
NC	Neighborhood Commercial	30%	40%
IR	Institutional Residential	5%	78%
ME	Mixed Employment	0%	63%

Source: Bureau of Planning and Sustainability

5. Employment Capacity Analysis (cont.)

Market Development Rates
This factor adjusts the land supply to reflect market supportable building capacity for commercial areas outside the Central City where the capacity allowed by zoning is greater than what the private market is expected to develop. For example, most town centers and commercial corridors allow for up to 3:1 floor-to-area ratios (FARs). Even after some of the floor area is allocated to residential space (see above), the commercial space is greater than what the private sector typically develops. While future market conditions are difficult to predict, we want to use a conservative estimate and these market factors are consistent with the FARs used in the employment demand forecast.

Table 12. Commercial FAR Market Factor

Employment Geography	Commercial FAR Cap
Gateway Regional Center	0.95
Town Centers	0.54
Neighborhood Commercial	0.52

Source: E.D. Hovee & Company, LLC

A review of development trends in the Central City shows that most development incorporates floor area bonuses that exceed the base standards in the BLI, therefore no market factor is needed in the Central City. The development capacity of industrial areas is not regulated by FARs so no factor is needed. The Institutional campus capacity has been determined by the campus master plan process, so the market factor does not apply.

5. Employment Capacity Analysis (cont.)

Employment Capacity Results

Our employment development capacity is about 101 million square feet, which is distributed across the different employment geographies.

Table 13. Summary of Employment Development Capacity

Aggregate Geography	Share
Central City	37%
Industrial	20%
Commercial	33%
Institutions	11%
Total	100%

Source: Bureau of Planning and Sustainability

The employment land supply is presented in three stages – the base supply (vacant and underutilized parcels), the constrained supply, and the (final) adjusted market supply.

We have about 3,100 acres of buildable land (Table 14). Approximately 63% of the development capacity is vacant land and 37% is underutilized redevelopable land. Various constraints reduce the capacity by about 25%, especially in our industrial areas, which have about 2,000 acres of vacant land, but 40% of that capacity is constrained, leaving about 1,250 acres available for future employment growth.

The commercial areas outside the Central City have a tremendous amount of development capacity. Even after accounting for constraints, mixed use residential development, and market factor adjustments there is still about 33 million square feet or 1,100 acres. Institutional campuses have the potential for about 10.7 million square feet of development, or 300 acres of capacity.

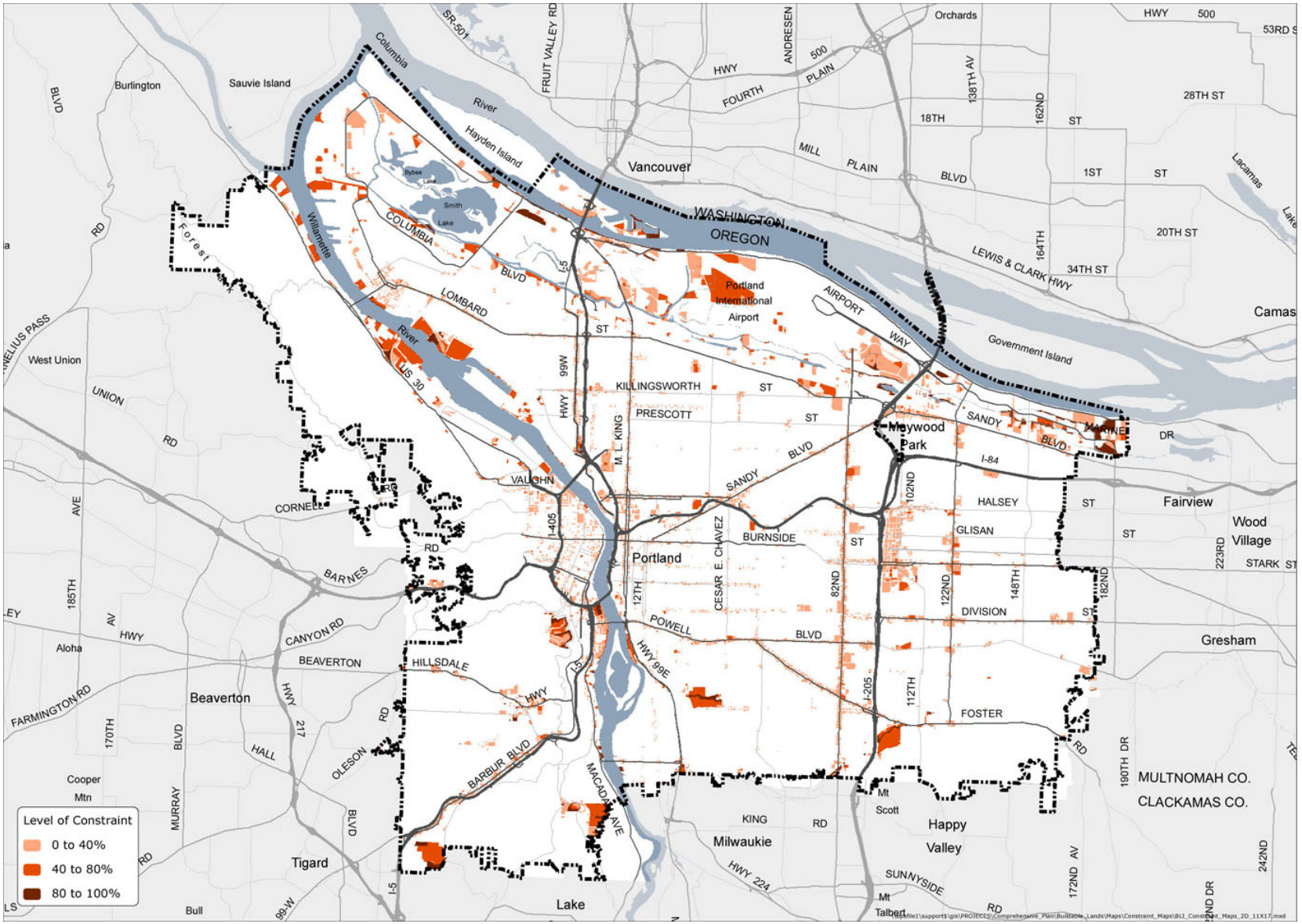
5. Employment Capacity Analysis (cont.)

Table 14. Employment Development Capacity by Employment Geography

	Base Supply	Constrained Supply		Market Adjusted Supply		
Employment Geography	**Bldg Sq Ft**	**Bldg Sq Ft**	**% of Base**	**Bldg Sq Ft**	**% of Base**	**Acres**
Central City Commercial	52,916,000	35,664,000	67%	35,664,000	67%	151
Central City Incubator	3,871,000	2,173,000	56%	2,173,000	56%	40
Columbia Harbor	20,355,000	12,203,000	60%	12,203,000	60%	800
Harbor Access Lands	*4,818,000*	*1,600,000*	*33%*	*1,600,000*	*33%*	*108*
Columbia East of 82nd	10,676,000	6,747,000	63%	6,747,000	63%	387
Dispersed Industrial	1,992,000	994,000	50%	994,000	50%	63
Gateway Regional Center	12,596,000	10,386,000	82%	5,617,000	45%	136
Town Centers	7,560,000	6,082,000	80%	2,124,000	28%	90
Neighborhood Commercial	130,313,000	97,994,000	75%	25,398,000	19%	1,121
Institutions	10,703,000	10,676,000	100%	10,676,000	100%	306
Total	**250,982,000**	**182,919,000**		**101,596,000**		**3,094**
Aggregate Geography						
Central City	56,787,000	37,837,000		37,837,000		191
Industrial	33,023,000	19,944,000		19,944,000		1,250
Commercial	150,469,000	114,462,000		33,139,000		1,347
Institutions	10,703,000	10,676,000		10,676,000		306
Total	**250,982,000**	**182,919,000**		**101,596,000**		**3,094**

Source: Bureau of Planning and Sustainability

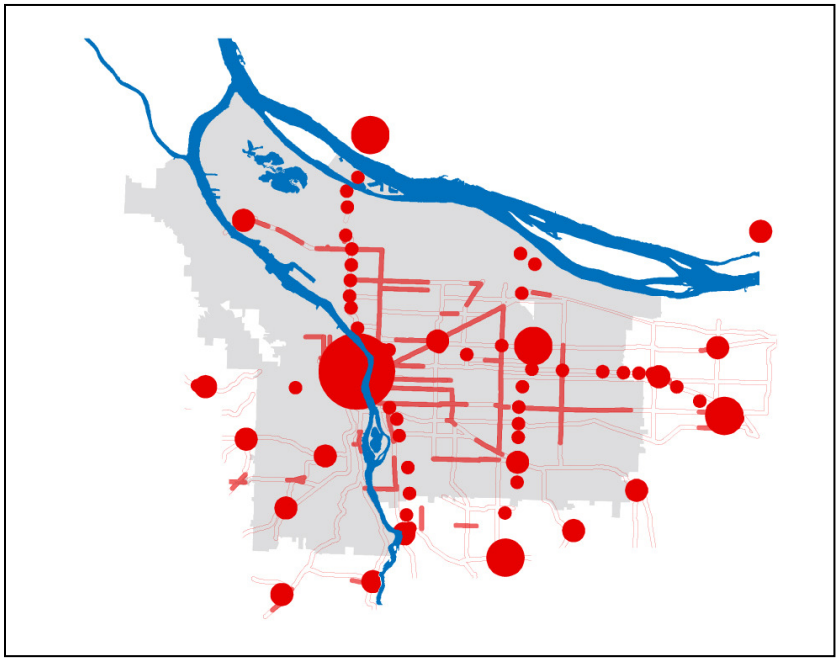
5. Employment Capacity Analysis (cont.)



5. Next Steps

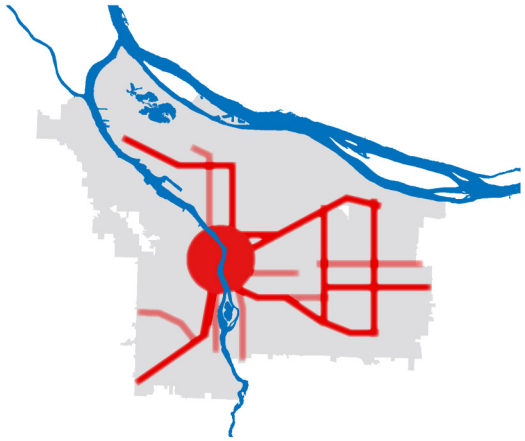
In 2012 Portlanders will weigh the costs and benefits of several different 25-year growth scenarios, and use that information to develop a preferred growth concept. Alternative scenarios are a tool used to explore ways the City might change its growth policies, development regulations and infrastructure investments to impact how and where the City grows over the next 25 years. The Bureau of Planning and Sustainability will produce a default scenario and three alternative scenarios, and after public discussion and refinement of the ideas, a "preferred scenario" will be selected to guide the future Comprehensive Plan update.

The **Default Scenario** is an estimate of the growth patterns we would likely see over the next 25 years without any regulatory or investment changes. In other words, how new jobs and housing would likely be distributed by 2035, if we follow our existing zoning and Comprehensive Plan. The Default Scenario is based only on the current land supply (the results of the BLI) and existing policies and planned investments, and does not recommend or explore choices we could make with the Portland Plan to move in a different direction. It will consider how the market will use the supply. For example, our existing plans have more capacity for growth than the likely market demand for housing, so the default scenario will state our assumptions about which areas will most likely be developed over the 25-year horizon. It will also consider how planned but not yet built infra-structure projects could impact land supply. The Default Scenario will be the starting point for consideration of other alternatives.

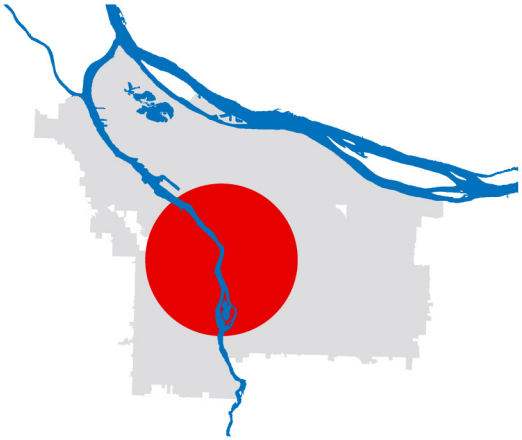


Next Steps

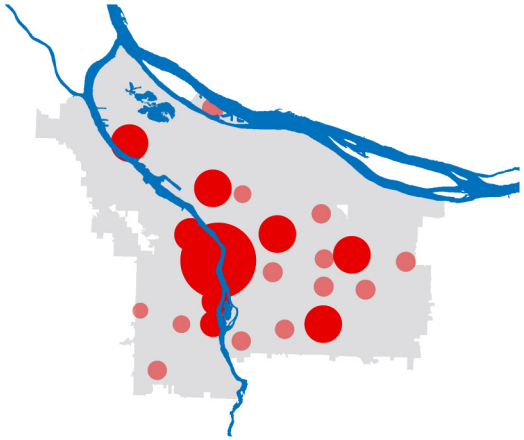
Other scenarios will illustrate different choices – for example, should we rely on neighborhood infill and main street development, or should we have a more central-city-focused growth strategy? How intensive should development be in neighborhood hubs? Scenarios also allow us to test different sequences of growth or different investment options. For instance, should the Lloyd District be more fully developed before Gateway? How would a Barbur or Powell Boulevard light rail line impact growth patterns?



Corridors



Central City Focused



Neighborhood Activity Centers

For More Information

About the Portland Plan:

www.pdxplan.com

Twitter: @PDXPlan|#PDXPlan

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About the Buildable Lands Inventory:

www.pdxplan.com/bli

www.pdxplan.com/atlas

About the Comprehensive Plan Update:

www.portlandonline.com/bps/compplan

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