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M E M O

July 8, 2010

To: Planning Commission

From: Eric Engstrom, Portland Plan Manager

Subject: July 2010 Briefing and Hearing: Portland Plan Factual Basis and Buildable Lands Analysis

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INTRODUCTION AND BACKGROUND

Periodic review is a process for local governments in Oregon to examine and update their Comprehensive Plan and implementing codes. The City's Periodic Review process, timeline and tasks are described in a Work Program adopted by Council in Resolution No. 36626 on August 6, 2008. A Work Program is a detailed listing of tasks necessary to revise or amend the City's Comprehensive Plan or code to ensure they achieve the Statewide Planning Goals.

The first step ('Task 1') was for the City is to review its community involvement program to ensure that there is an adequate process for community participation in all phases of periodic review. Ongoing efforts to amend and update the community involvement work plan are being considered by the Planning Commission on July 13th, 2010. The next step is to create the Buildable Lands Inventory (BLI); an assessment of the City's capacity to accommodate projected changes in housing and employment. This hearing is the second in a three-round series of meetings before Planning Commission. In early 2010 (Jan.-Mar.) the first series of hearings presented relevant information from the Portland Plan Background Reports, an introduction to periodic review, and preliminary information about our housing and employment forecasts and land supply assumptions.

PROJECT DESCRIPTION

The BLI is comprised of maps and associated spatial analyses. The current maps are in DRAFT form and will be refined over the next several months with public input. The DRAFT BLI Maps will be used to identify land areas as either having full, diminished, or no capacity to accommodate additional housing units or additional jobs forecasted for the next 20 years. This project will develop an adequate factual basis for analysis and decision making for five areas: economic development, needed housing, public facilities, transportation, and urbanization.

The Buildable Lands Inventory (BLI) is the City's second Work Task: Task II – Inventory and Analysis. This Work Task contains five Subtasks:

Subtask A – Characterization of Existing Land Supply
Subtask B – Estimate of Remaining Development Potential
Subtask C – Coordination of Population and Employment Forecast
Subtask D – Identification of Employment Needs
Subtask E – Identification of Housing Needs

METHODOLOGY

In Subtask A and B, Staff has researched existing regulations and investigated regulations from other Bureaus to create an inventory that determines land capacity for housing and employment. Some lands contain physical and/or market constraints to development/redevelopment.

1) First, a "Base Case" scenario is being created. This is effectively a "gross land supply" describing the housing and employment capacity with existing zoning capacity without constraints.
2) Second, a "Constrained Base Case" is being created. This is effectively a "net land supply" describing capacity with the current constraints. Constraints may either be regulatory, or physical.

The constraint effects have been ranked into five categories:

- not constrained (0%)
- low constraint
- constrained
- highly constrained, and
- fully constrained. (100%)

3) Third, we will state our market assumptions, planned infrastructure investments, and current levels of urban renewal subsidies. These factors could either enhance or depress development and redevelopment rates in specific areas of the city.

4) Fourth, a "Default" scenario will be created. This is a "net land supply" describing capacity with the current constraints, and adding in market assumptions, planned infrastructure investments, and current levels of urban renewal subsidies. The default scenario is based only on existing policies and does not represent

5) Fifth, other scenarios will be created based on desired Portland Plan outcomes.

PROJECT MATERIALS

The City's BLI is described by the following documents:

1. Appendix A - BLI Layers Matrix: containing the state-mandated conditions to assess to determine if a land is constrained. Each condition is a separate layer. This matrix also contains other discretionary conditions that the City has elected to include. Each condition is described by the scale of influence the layer has on land and employment capacity.
2. Appendix B - Narrative: describing each layer, its determined capacity effect and the methodology supporting that determination.
3. Appendix C – Portland Plan: Household Forecasts and Development Capacity
4. Draft Maps. – Online at Portland Plan Map Atlas (www.portlandonline.com then click on 'Learn About Your City', then click on 'Portland Plan Atlas")

PROJECT TIMELINE

This Hearing will be to consider Task II, Subtask A and B only. Subtasks C, D and E as well as Task III – Consideration of Alternatives and Task IV – Policy Choices will be considered by the Planning and Sustainability Commission in late 2010.

DECISIONS & ACTIONS REQUESTED

The July 13 and July 27, 2010 agenda item provides a briefing to the City Planning Commission and an opportunity for the public to testify about the BLI and its methodology.

City staff will ask the Planning Commission's advice on how to improve the Subtasks at the July 13 and 27th Hearings; but the Commission will not be asked to make a recommendation to City Council until late 2010.

Staff welcomes all public content. Specifically, Staff would like to hear feedback on the following:

a) Are there any conditions missing from the BLI map layers?
b) Is the methodology and rationale for estimating capacity effects clear, logical and /or appropriate?

OT Highway Interchanges **MAP**	Some	L	L
nsportation (Substandard and Under-Improved Streets)			
proved and Unimproved Streets **MAP**	Some	L	L
destrian System **MAP**	Some	L	L
ter Service			
ter System **MAP**	Some	L	L
ter Deficient Service Areas **MAP**	Some	L	L
wer			
velopment Assumptions for Sanitary Sewer	Some	L	L
rmwater			
rmwater System **MAP**	Some	L	L
pth to Seasonal High Water **MAP**	Some	M	M
l Infiltration Capability **MAP**	Some	L	L
llfield Protection Areas	Some	L	L
*ht Limitations **MAP***			
proach and departure cones	Some	L	0%
se contours	Some	L	0%
eas where building height must be limited near the Portland iport (on top of Old Town parking garage)	Some	L	L
*tural Resource Features **MAP***			
eams, lakes, river and other water bodies	Full	100%	100%
tlands	Some	M	M
ests	None	0%	0%
od Areas (equivalent to layers N8-N10)	Some	L	L
oundwater recharge areas	None	0%	0%
*ventory of Significant Natural Resources **MAP***			
tural Resource Inventory - Low Ranked Resource Areas	None	0%	0%
tural Resource Inventory-Medium Ranked Resource Areas	None	L	M
tural Resource Inventory - High Ranked Resource Areas	None	M	M
ecial Habitat Area (no riparian or wildlife habitat ranks)	None	0%	L
*ventory of Scenic Areas **MAP***			
ws	Some	L	L
es	None	0%	0%
rridors	None	0%	0%
*en space **MAP***			
comp plan map designation	Some	H	H
s open space tax assessment - none in city	Full	100%	100%
s with riparian tax assessment - none in city	n/a	n/a	n/a
s with farm tax assessment - none in city	Full	100%	100%
s with forest tax assessment - none in city	Full	100%	100%
*lineated Wellhead Protection Areas **MAP***			
llhead Protection Areas (Columbia South Shore, proposed Powell ley)	None	0%	0%
*vironmental Overlay Zones **MAP***			
vironmental Conservation Zones	Some	0%	M
vironmental Protection Zones	Full	100%	100%
*nificant Cultural Resources **MAP***			
toric districts	Some	L	L
toric buildings, sites and landmarks	Some	L	L
eas requiring archaeological scan or consultation with Native erican tribal governments	Some	0%	L
*zards **MAP***			
y of Portland Landslide Hazard Areas, includes 1996 landslide nt data	None	0%	0%
slopes over 25%. Hazards will be identified from the best ailable topographic maps, and the following information	Some	L	0%
egon Department of Geology and Mineral Industries Statewide gital Landslide Database (SLIDO)	Some	L	0%
egon Department of Geology and Mineral Industries Rapidly ving Landslide Hazard Zones (IMS-22)	Some	L	0%
rthquake Fault lines, areas subject to liquefaction, and areas bject to moderate or severe damage from earthquakes	Some	L	0%
egon Department of Geology and Mineral Industries database S-1	None	0%	0%
egon Department of Geology and Mineral Industries database S-16	Some	L	0%
deral Emergency Management Agency 100-year flood (flood in) maps	Some	M	M
deral Emergency Management Agency floodway maps	Full	100%	100%
96 actual flooded (Component of G4 - Flood Areas)	n/a	n/a	n/a
*ownfields **MAP***			
ntaminated Areas identified by the Oregon Department of vironmental Quality, Environmental Cleanup Sites I (ECSI)	Some	H	H
ntaminated Areas identified by the Oregon Department of vironmental Quality, Confirmed Release Sites (CRL)	Some	H	H

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Appendix B

Buildable Lands Inventory "Map Layers" Narrative

Infrastructure

A Constrained Map Areas: Transportation (Vehicular Level of Service) including:

A1 2008 Volume to Capacity Ratios

A2 Neighborhoods where Majority of Streets Meet Connectivity Standards

A3 ODOT Highway Interchanges

a) **Definition** Catchment areas for over-capacity street segments (see Map A1) were defined as 1/8 mile in neighborhoods with where the majority of streets meet adopted connectivity standards (see Map A2) and ¼ mile in neighborhoods where connectivity does not meet adopted standards. However, only parcels subject to discretionary review were considered constrained, not those where development is allowed by right.

b) **Methodology**

i) **Physical:** This layer does not reflect physical or regulatory constraints that make a portion of the site unavailable for development.

ii) **Market:** This layer reflects market constraints that add expense or time to development. Based on information from the Bureau of Transportation and the Bureau of Development Services, areas along or within the catchment areas of over-capacity facilities (as defined by vehicular level of service standards) have been considered partially constrained. Since it is difficult to delineate catchment areas for each facility for this analysis, level of street connectivity were used to assign approximate catchment areas.

In addition, areas within ½ mile of on- and off-ramps for ODOT facilities (see Map A3) were considered constrained due to additional ODOT review requirements.

B Constrained Map Areas: Transportation (Substandard and Under-Improved Streets) including:

B1 Substandard and Unimproved Streets

B2 Pedestrian System

a) **Definition:** Constrained parcels are those immediately adjacent to substandard or unimproved streets or rights-of-way (see Map B1), or adjacent to existing streets that lack sidewalks (see Map B2).

b) **Methodology**

i) **Physical:** This layer does not reflect physical or regulatory constraints that make a portion of the site unavailable for development.

ii) **Market:** This layer reflects market constraints that add expense or time to development. Based on conversations with the Bureau of Transportation and the Bureau of Development Services, parcels adjacent to incomplete and substandard streets and rights-of-way, including those without sidewalks, have been designated as having a partial market constraint, due to the additional cost of street improvements.

Note on Parking: The need to construct parking for new development was also discussed as a potential market constraint. However, since parking is not considered a public facility it was not be included in this analysis.

C Constrained Map Areas: Water Service including:

C1 Water System

C2 Deficient Service Areas

a) **Definition:** Parcels meeting the following criteria were identified as constrained:

i) Parcels served only by a 2-inch main (see Map C1). These mains may be insufficient to provide adequate flow and development may be required to upgrade service mains. The Portland Water Bureau provides 65% of the cost of these upgrades (for improvements up to $125,000) for residential projects.

ii) Parcels located in areas with substandard fire flow (see Map C2). In these cases, sprinklers and/or other fire protection improvements may be required.

iii) Parcels located adjacent to streets that lack water service (see Map C1). These parcels are required to construct the water facilities necessary to deliver water to their parcel. The Portland Water Bureau provides 40% of the cost of water main upgrades for improvements up to $125,000.

b) **Methodology**

i) **Physical:** This layer does not reflect physical or regulatory constraints that make a portion of the site unavailable for development.

ii) **Market:** This layer reflects market constraints that add expense or time to development. Based on conversations with the Portland Water Bureau and the Bureau of Development Services, water service can be provided to all parcels within the Portland urban services boundary through public or private systems. Development of parcels meeting one or more of the definition criteria may experience additional development costs related to installation or improvement of water infrastructure.

D Constrained Map Areas: Sewer Conveyance

D1 Development Assumptions for Sanitary Sewer

a) **Definition:** A limited number of parcels were considered constrained as they may not be able to connect to a public sewer system due to topographic or other constraints (see Map D1).

b) **Methodology**

i) **Physical:** This layer does not reflect physical or regulatory constraints that make a portion of the site unavailable for development.

ii) **Market:** This layer does not reflect market constraints that add expense or time to development.

Service This layer reflects infrastructure/service constraints. Based on information from the Bureau of Environmental Services and the Bureau of Development Services, existing service level deficiencies for combined and separated sanitary sewers were not identified as development constraints. However, there are a few areas of the City that may be unable to connect to a public system due to topographic or other constraints.

E Stormwater Including:

E1 Stormwater System

E2 Depth to Seasonal High Water

E3 Soil Infiltration Capability

E4 Wellfield Protection Areas

a) **Definition:** Parcels in areas that are not suitable for infiltration, based on depth to seasonal high groundwater (see Map E2), soil infiltration capability (see Map E3), and wellhead protection designation (see Map E4) and do not have access to a stormwater pipe or culvert, combined sewer pipe, stream or drainageway (see Map E1) were considered constrained.

b) **Methodology**

i) **Physical:** This layer does not reflect physical or regulatory constraints that make a portion of the site unavailable for development.

Market: This layer reflects market constraints that add expense or time to development. Based on conversations with the Bureau of Environmental Services and the Bureau of Development Services, parcels in areas that are not suitable for infiltration (based on definition criteria) were considered constrained. These parcels may face market constraints due to increased cost of stormwater infrastructure or may be unable to meet stormwater requirements.

F Areas where building use and height must be limited near Portland International Airport

F1 Approach and departure cones

a) **Definition** The Aircraft Landing overlay zone provides safer operating conditions for aircraft in the vicinity of Portland International Airport by limiting the height of structures and vegetation. (Code Section 33.400)

b) **Methodology**

i) **Physical:** This layer reflects regulatory constraints that make a portion of the site unavailable for development because overlay zone height limits near the airport landing and takeoff cone are regulated to lower heights in some cases below the base zone height maximum.

ii) **Market:** This layer does not reflect market constraints.

iii) **Service** This layer does not reflect infrastructure/service constraints because it's not a service-related layer.

iv) **Housing:** This layer has a low capacity reduction because the areas with reduced height potential, primarily Rocky Butte and the Alameda Ridge areas may realize less residential development over time in response to regulatory height constraints. In most cases constraint is low because height limits can be appealed to the FAA that allows development over the maximum standard.

v) **Employment:** This layer has a 0% capacity reduction because the areas with constrained height are primarily areas of Rocky Butte and Alameda Ridge which are almost exclusively residentially zoned.

F2 Noise contours

a) **Definition:** The Portland International Airport Noise Impact Zone reduces the impact of aircraft noise on development within the noise impact area surrounding the Portland International Airport. The zone achieves this by limiting residential densities and requiring noise insulation, noise disclosure statements and noise easements. An official Zoning Map shows this area with the area "x" map symbol. The mapped area includes all lands within the LDN 65 or higher noise contours. New residential uses between the LDN 65 and 68 noise contours face a residential density restriction lowering the maximum allowed units. New residential uses within the LND 68 noise contour are prohibited.

b) **Methodology**

i) **Physical:** This layer reflects a regulatory constraint that make a portion of the site unavailable for development because within the LDN 68 noise contour, new residential uses are generally prohibited.

ii) **Market:** This layer does not reflect market constraints that add expense or time to development.

iii) **Service** This layer does not reflect infrastructure/service constraints because it's not a service-related layer.

iv) **Housing:** This layer has a low capacity reduction because on Hayden Island several areas fall within the LDN 68 noise contour, where new residential uses are prohibited. Other nearby areas are also limited in allowed density as they are within the LDN 65-68 contours.

v) **Employment:** This layer has a 0% capacity reduction because the "x" overlay zone applies no restriction to non-residential development.

F3 Areas where building height must be limited near the Portland Heliport (on top of Old Town parking garage)

a) **Definition:** Regulations for the helicopter landing facilities impose restrictions on new buildings and trees/landscaping within the 8 (horizontal) to 1 (vertical) from the landing pad in the four approach/departure flight paths, extending North, Northeast, East and Southeast from the heliport. Chapter 33.243 outlines these regulations. The Portland Heliport atop the Smart Park Garage at NW 1st & Davis has vacant surface parking lots and parcels in at least two different directions. Because the approach/departure flight paths are located primarily above Waterfront Park, the river, and the I-5 and I-84 freeways, no significant reductions in housing or employment density are expected of this layer.

b) Methodology

i) **Physical:** This layer does not reflect significant physical constraints to development.

ii) **Market:** This layer does not reflect market constraint that add expense or time to development.

iii) **Service** This layer does not reflect infrastructure/service constraints because it not a service-oriented layer.

iv) **Housing:** This layer has a low capacity reduction because the geographic area subject to the height limit extends 1-2 blocks in a perimeter around the heliport.

v) **Employment:** This layer has a low capacity reduction because the geographic area subject to the height limit extends 1-2 blocks in a perimeter around the heliport.

G Natural Resource Features

G1 Streams, lakes, river and other water bodies

a) Definition

Drainageway: An open linear depression, whether constructed or natural, which functions for the collection and drainage of surface water. It may be permanently or temporarily inundated. Drainageways include sloughs. Road-side ditches are not drainageways unless the open channel is a segment of an existing stream or drainageway. (Chapter 33.910)

Stream: An area where enough natural surface water flows to produce a stream channel, such as a river or creek, that carries flowing surface water during some portion of the year. This includes:

- The water itself, including any vegetation, aquatic life, or habitat;
- Beds and banks below the high water level which may contain water, whether or not water is actually present;
- The floodplain between the high water level of connected side channels;
- Beaver ponds, oxbows, and side channels if they are connected by surface flow to the stream during a portion of the year; and
- Stream-associated wetlands.

Perennial stream: Stream that flows throughout the year; permanent stream.

Intermittent stream: Stream that flows only at certain times of the year, as when receiving water from springs or from evaporation or seepage exceed the available stream flow.

Ephemeral stream: Stream or portion of stream that flows briefly in direct response to precipitation in the immediate vicinity, and with channels at all times above water table. (Chapter 33.910)

Water bodies: Permanently or temporarily flooded lands which may lie below the deepwater boundary of wetlands. Water depth is such that water, and not the air, is the principal medium in which prevalent organisms live, whether or not they are attached to the bottom. The bottom may sometimes be considered nonsoil or the water may be too deep or otherwise unable to support emergent vegetation. Water bodies include rivers, streams, creeks, sloughs, drainageways, lakes, and ponds. (Chapter 33.910)

b) Methodology

i) **Physical:** This layer reflects physical and regulatory constraints that make a portion of the site unavailable for development. The presence of surface water during all or parts of the year, and the dynamic nature of these features poses a physical constraint to development. Most, but not all of these features are also located within existing environmental overlay zones, the impacts of which are addressed below. However, the City also applies drainage reserve rules to ensure that hydraulic conveyance is maintained. The Drainage Reserve rules apply to an area within 15 feet of the centerline of a stream.

ii) **Market:** This layer creates market constraints that add expense or time to development. The presence of water and dynamic nature of these features, combined with the requirements of the City's Drainage Reserve Rules, may necessitate the use of special construction methods for developments within or adjacent to these features.

iii) **Service:** This layer does not reflect infrastructure/service constraints because it not a service-oriented layer.

iv) **Housing:** This layer has a 100% capacity reduction. The combination of physical constraints and regulatory requirements will discourage development in these features.

v) **Employment:** This layer has a 100% capacity reduction. The combination of physical constraints and regulatory requirements will discourage development in these features.

G2 Wetlands

a) Definition An area that is inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances does support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands include swamps, marshes, bogs, and similar areas. (33.910)

b) Methodology

i) **Physical:** This layer reflects physical and regulatory constraints that can make a portion of the site unavailable for development. Many wetlands in Portland are regulated under City, state and/or federal regulations, including the City's environmental overlay zones and Clean Water Act fill and removal requirements. In addition to the City's environmental overlay zones and state/federal regulations can limit encroachment into the wetland, and require mitigation to compensate for lost function. There also may be additional costs associated with developing in or around a wetland due to the presence of surface water or high groundwater table.

ii) **Market:** This layer reflects market constraints that add expense or time to development because additional reviews, permits, conditions of approval, or mitigation actions may be required.

iii) **Service:** This layer does not reflect infrastructure/service constraints because it not a service-oriented layer.

iv) **Housing:** This layer has a medium capacity reduction because a number of wetlands may not be large enough to qualify for state and federal regulation.

v) **Employment:** This layer has a medium capacity reduction because a number of wetlands may not be large enough to qualify for state and federal regulation.

G3 Forests

a) **Definition:** Forests are areas of substantial contiguous tree canopy, and are comprised of evergreen (e.g., Douglas fir) and/or deciduous (e.g., big leaf maple) trees. Forested areas can include shrub and ground cover understory layers, but in Portland understory can also be relatively sparse. Forested areas exist along rivers and streams, and in upland areas. Forested areas are found in Portland's public park and natural areas, residential neighborhoods and commercial/industrial areas.

b) **Methodology**

i) **Physical:** This layer does not in itself reflect physical or regulatory constraints that make a portion of the site unavailable for development unless in an environmental overlay zone or special plan district where trees are specifically regulated (see below).

ii) **Market:** This layer does not in itself reflect market constraints that add expense or time to development unless in an environmental overlay zone or special plan district where trees are specifically regulated (see below).

iii) **Service:** This layer does not reflect infrastructure/service constraints because it not a service-oriented layer.

iv) **Housing:** This layer has a 0% capacity reduction because unless the forest is in a regulated zone, there are no associated regulations.

v) **Employment:** This layer has a 0%capacity reduction because unless the forest is in a regulated zone, there are no associated regulations.

G4 Flood Areas

a) **Definition:** Regulatory floodway means the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height (No City of Portland Definition. Source: FEMA Subchapter B—Insurance And Hazard Mitigation part 59—General Provisions).

b) **Methodology**

i) **Physical:** This layer reflects a physical constraint that can make a portion of some sites unavailable for development. Although the Flood Area is not regulated per se, much of the Flood Area is comprised of the FEMA 100-year floodplain which is regulated (see below).

ii) **Market:** This layer creates market constraints that add expense or time to development because balanced cut and fill may be required and special structural approaches may be needed to prevent or remediate water damage, which can add to development costs.

iii) **Service:** This layer does not reflect infrastructure/service constraints because it not a service-oriented layer.

iv) **Housing:** This layer has a low capacity reduction due to potential regulatory and market constraints.

v) **Employment:** This layer has a low capacity reduction due to potential regulatory market constraints.

G5 Groundwater Recharge Areas

a) **Definition:** Groundwater Sensitive Areas. Areas from which groundwater is replenished and the flow enables contaminants to be carried into aquifers (aquifer recharge areas), or areas of an aquifer in which the groundwater level and flow characteristics are influenced by the withdrawal of groundwater (areas of influence). (Chapter 33.910) There is no GIS layer for groundwater recharge areas. General location information can be found in adopted City Natural Resource Inventories and Protection Plans.

b) **Methodology**

i) **Physical:** This layer does not in itself reflect physical or regulatory constraints except when located within an environmental overlay zone.

ii) **Market:** This layer does not in itself reflect market constraints that add expense or time to development because groundwater recharge areas are do not call for special construction approaches and are not regulated except when located within an environmental overlay zone.

iii) **Service:** This layer does not reflect infrastructure/service constraints because it not a service-oriented layer.

iv) **Housing:** This layer has a 0% capacity reduction (see i) and ii) above).

v) **Employment:** This layer has a 0% capacity reduction (see i) and ii) above).

H Inventory of Significant Natural Resources (Riparian areas & Fish and wildlife habitats)

a) **Definition**

i) **Riparian Areas**. Lands which are adjacent to rivers, streams, lakes, ponds, and other water bodies. They are transitional between aquatic and upland zones, and as such, contain elements of both aquatic and terrestrial ecosystems. They have high water tables because of their close proximity to aquatic systems, soils which are usually made up largely of water-carried sediments, and some vegetation that requires free (unbound) water or conditions that are more moist than normal. (Chapter 33.910)

ii) **Fish and wildlife habitat areas:** Lands which contain significant food, water, or cover for native terrestrial and aquatic species of animals. Examples include forests, fields, riparian areas, wetlands, and water bodies. (Chapter 33.910)

b) **Assumptions -** The City's updated inventory of natural resources includes riparian corridors and wildlife habitat areas. The City's methodology is based on the methodology Metro used to develop its adopted Title 13 inventory of regionally significant riparian corridors and wildlife habitat. Note that "riparian corridors" include rivers, streams and wetland features, and adjacent riparian areas as defined above. The inventory methodology started with mapping key natural resource features including rivers, streams, flood areas, wetlands, large vegetated areas). The inventory identifies the specific riparian functions provided by these resource features

(streamflow moderation and flood storage, bank and water quality functions, microclimate and shade, organic inputs, channel dynamics, wildlife movement corridor) and their wildlife habitat attributes (size, interior habitat area, connectivity between patches and proximity to water). Relative ranks are assigned to natural resources based on these functions and attributes. Separate ranks are assigned to riparian corridors and wildlife habitat areas. The ranks are then combined to create a single relative resource rank of low, medium, or high. The inventory also identifies special habitat areas which incorporate and refine the regional Habitats of Concern identified in Metro's adopted Title 13 inventory of regionally significant riparian corridors and wildlife habitat. Special Habitat Areas include rare or declining habitat types, or features or habitats that are vital to plant and animal species at risk, and migrating species such as neotropical birds and elk.

The Natural Resources Inventory is not a regulatory designation in most areas, at this time. The City does, however, have an obligation under Periodic Review to consider information about environmentally sensitive lands for planning purposes, and an obligation under Metro Title 13 to consider regulation of some portion of this land area. For purposes of this land supply analysis, an assumption is being made that the City will regulate these areas in the future in a manner similar to the existing environmental overlay zoning program. For purposes of this land supply analysis, the assumption is that existing policies and regulatory mandates mean that the City must continue to refine the environmental zoning program in coming years using the Natural Resources Inventory maps. Making that assumption at this time enables analysis of the implications of that policy scenario (essentially, projecting forward the City's existing policy direction). These assumptions are made for modeling purposes only, and are not intended to suggest a specific regulatory proposal. Other scenarios may also be examined as the Portland Plan progresses. The specific mapping methodology is described in the **Natural Resources Inventory Background Report**.

H Inventory of Significant Natural Resources (Riparian areas & Fish and wildlife habitats)

c) Definition

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above. The inventory methodology started with mapping key natural resource features including rivers, streams, flood areas, wetlands, large vegetated areas). The inventory identifies the specific riparian functions provided by these resource features (streamflow moderation and flood storage, bank and water quality functions, microclimate and shade, organic inputs, channel dynamics, wildlife movement corridor) and their wildlife habitat attributes (size, interior habitat area, connectivity between patches and proximity to water). Relative ranks are assigned to natural resources based on these functions and attributes. Separate ranks are assigned to riparian corridors and wildlife habitat areas. The ranks are then combined to create a single relative resource rank of low, medium, or high. The inventory also identifies special habitat areas which incorporate and refine the regional Habitats of Concern identified in Metro's adopted Title 13 inventory of regionally significant riparian corridors and wildlife habitat. Special Habitat Areas include rare or declining habitat types, or features or habitats that are vital to plant and animal species at risk, and migrating species such as neotropical birds and elk.

The Natural Resources Inventory is not a regulatory designation in most areas, at this time. The City does, however, have an obligation under Periodic Review to consider information about environmentally sensitive lands for planning purposes, and an obligation under Metro Title 13 to consider regulation of some portion of this land area. For purposes of this land supply analysis, an assumption is being made that the City will regulate these areas in the future in a manner similar to the existing environmental overlay zoning program. For purposes of this land supply analysis, the assumption is that existing policies and regulatory mandates mean that the City must continue to refine the environmental zoning program in coming years using the Natural Resources Inventory maps. Making that assumption at this time enables analysis of the implications of that policy scenario (essentially, projecting forward the City's existing policy direction). These assumptions are made for modeling purposes only, and are not intended to suggest a specific regulatory proposal. Other scenarios may also be examined as the Portland Plan progresses. The specific mapping methodology is described in the **Natural Resources Inventory Background Report**.

H1 Natural Resource Inventory Low Ranked Resource Areas

a) **Description.** Low-ranked resource areas are comprised primarily of smaller, isolated upland forested wildlife habitat areas, as well as low-structure vegetated portions of riparian corridors that are located relatively more than 200-300 feet from a river, stream or wetland. Low ranked areas also include portions of the flood areas that are developed or paved. These areas provide significant flood storage function but do not contribute to other basic riparian functions.

b) **Assumptions**

i) **Commercial/Industrial/Employment Zones:** If past practices were continued, low ranked resource areas would not be regulated.

ii) **Residentially-zoned areas:**

- No areas would be strictly limited, e.g., Environmental "p" protection overlay zone.
- In some areas, development could potentially be limited. This would not affect housing density given existing policies that allow development to cluster, tae advantage of reduced lot size and setbacks, or transfer development rights.

c) **Methodology**

i) **Physical:** This layer would not currently create physical or regulatory constraints. In addition, very few of these areas coincide with Metro Title 13 Habitat Conservation Areas. In terms of future policy, this inventory layer is not in itself be expected to limit development capacity in the future, except potentially in Special Habitat Areas (see below) or areas designated for open space use.

ii) **Market:** This layer does not reflect market constraints that add expense or time to development.

iii) **Service:** This layer does not reflect infrastructure/service constraints because it not a service-oriented layer.

iv) **Housing:** This layer has a 0% capacity reduction because, if past practices continued, this layer is not expected to result in future physical, regulatory, or market constraints on housing development. The estimated capacity in these resource areas is 100% with 0% reduction resulting in an impact of 0%.

v) **Employment:** This layer has a 0% capacity reduction because, if past practices continued, this layer is not expected to result in future physical, regulatory, or market constraints on employment or development. The estimated capacity in these resource areas is 100% with 0% reduction resulting in an impact of 0%.

H2 Natural Resource Inventory Medium Ranked Resource Areas

a) **Description:** Medium-ranked resources include larger upland forest patches, or other habitat types that are not in close proximity to water. They are often important wildlife habitat areas, and are critical to the health of Portland's watersheds.

b) **Assumptions**

i) **Commercial/Industrial/Employment Zones:**

- Some of these areas could be strictly limited, e.g., Environmental "p" overlay zone, and some moderately limited, e.g., Environmental "c" conservation overlay zone
- Based on the *City of Portland Economic Opportunities Analysis: Summary Report – Final Draft* (E.D. Hovee & Company, LLC) approximately 45% average development rate to 2035 for potential moderately limited areas;

ii) **Residential Zones**

- Some of these areas could be strictly limited, e.g., Environmental "p" protection overlay zone and some moderately limited, e.g., Environmental "c" conservation overlay zone
- Some resource area not regulated (approximately 30% of upland resource area.

c) **Methodology**

i) **Physical:** This layer does not currently create physical or regulatory constraints that make a portion of the site unavailable for development. However, many of these resource areas coincide with Metro Title 13 Habitat Conservation Areas which local jurisdictions must protect, conserve and restore through their regulatory and/or non-regulatory programs. These areas contribute significantly to multiple riparian corridor and/or wildlife habitat functions, and are important to the overall condition of Portland's watersheds. From a policy perspective, and based on recent City Council action on the River Plan/North Reach, it is expected

that the City would consider action needed to avoid, minimize and mitigate adverse impacts on the values and functions provided by these resource areas.

ii) **Market:** If the City were to apply environmental overlay zones or other tool to protect these resources, new development could be subject to additional review, permit, or mitigation requirements, which could in turn, add expense or time to development.

d) **Service:** This layer does not reflect infrastructure/service constraints because it not a service-oriented layer.

e) **Housing:** If the City were to apply environmental overlay zones or other tools to protect the Medium-ranked resources, consistent with past practice, it is likely that development would continue to be allowed, but would be subject to additional standards or review. In general, the existing City regulatory approaches allow housing development to cluster on the least sensitive portions fo a site, which allows the same number of dwelling units to be built. As a result, this layer is assumed to have a "Low" impact level in residential zones.

f) **Employment:** If the City were to apply environmental overlay zones or other tools to protect the Medium-ranked resources, consistent with past practices, development would continue to be allowed, but would be subject to additional standards or review. Based on recent City Council adoption of the River Plan/North Reach, it is likely that the City would not limit employment uses in these areas except in areas adjacent to streams and wetlands. As such, the layer would likely be associated with a low employment capacity reduction. It is expected that this layer could be associated with a "Medium" impact on employment development due primarily to market impacts.

H3 Natural Resource Inventory High Ranked Resource Areas (not including Special Habitat Areas)

a) **Description:** High-ranked resource areas contribute to the broad array of riparian and/or wildlife habitat functions evaluated in the Natural Resource Inventory, and are critical to the health of Portland's watersheds. Most of these areas also coincide with Metro Title 13 Habitat Conservation Areas, which local jurisdictions are required to address through their regulatory and/or non-regulatory programs. Often, high ranked natural resources are aquatic or riparian areas (lands near streams and rivers).

b) **Assumptions**

i) **Of the acres within Commercial/Industrial/Employment Zones:**

- Some of these areas would be strictly limited; e.g., Environmental "p" protection overlay zone, and some could be moderately limited (e.g., Environmental "c" conservation overlay zone)
- Based on the *City of Portland Economic Opportunities Analysis: Summary Report – Final Draft* (E.D. Hovee & Company, LLC) approximately 45% average development rate to 2035 for potential moderately limited areas – reflects market factors.

ii) **Of the acres within the Residential Zones:**

- Some could be strictly limited (e.g., Environmental "p" protection overlay zone), and some could be moderately limited (e.g., Environmental "c" conservation overlay zone).
- Areas that are moderately limited do not affect housing density given opportunities to cluster, reduce lot size and setbacks, transfer development, etc.

c) Methodology

i) Physical: This layer does not currently reflect physical or regulatory constraints that make a portion of the site unavailable for development. However, these areas represent the highest functioning riparian corridors and wildlife habitat areas in the City. The include rivers, streams, wetlands, and vegetated flood areas, as well as forested riparian vegetation, often within 50 – 100 feet from a water body or on steep slopes. Most of these resource areas coincide with Metro Title 13 Habitat Conservation Areas which local jurisdictions must protect, conserve and restore through their regulatory and/or non-regulatory programs. Many of these resource areas are within existing City environmental zones, however considerable areas are not. These areas contribute significantly to a broad array of riparian corridor and/or wildlife habitat functions, and are critical to the overall condition of Portland's watersheds. From a policy perspective, and based on recent City Council action on the River Plan/North Reach, it is likely the City will consider taking action if needed to avoid, minimize or mitigate adverse impacts on the values and functions provided by these resource areas.

ii) Market: If the City were to apply environmental overlay zones or other tools to protect these resources, new development could be subject to additional review, permit, or mitigation requirements, which could in turn, add expense or time to development.

iii) Service This layer does not reflect infrastructure/service constraints because it is not a service layer.

iv) Housing: If the City were to apply environmental overlay zones or other tool to protect the High-ranked resources, consistent with past practice, development might be strictly limited or prohibited in these areas, particularly areas adjacent to streams and wetlands. In other areas it is likely the City would moderately limit development to protect resource values and functions. However, given the flexibility provided by the City's existing development standards, and opportunities for innovative housing project design (cluster development, PUDs), this layer is assumed to have a "Medium" impact level in residential zones.

v) Employment: If the City were to apply environmental overlay zones or other tool to protect the High-ranked resources, it is likely that the City would strictly limit development in some areas, particularly areas adjacent to streams and wetlands. In other areas it is likely the City would moderately limit development to protect resource values and functions. Given the analysis provided in the *City of Portland Economic Opportunities Analysis: Summary Report – Final Draft* (E.D. Hovee & Company, LLC) it is expected that this layer could be associated with a medium impact on employment development due primarily to market impacts. This layer is assumed to have a "Medium" impact level in non-residential zones.

H4 Significant Habitat Area (SHA)

a) **Description:** Special Habitat Areas include rare or declining habitat types (native oak stands, bottomland hardwood forest, habitats that are vital to plant and animal species at risk (wetlands, grasslands), and migrating species such as neotropical birds and elk (buttes, Forest Park). They also include urban features that vital to species at risk, such as bridges that provide nesting sites for the Peregrine falcon. From a policy perspective, and based on recent City Council action on the River Plan/North Reach, it is expected that the City would consider action needed to avoid, minimize and mitigate adverse impacts on the values and functions provided by these resource areas.

b) **Assumptions**

i) **Commercial/Industrial/Employment Zones:**

- If past practice were carried forward, no SHAs without additional ranks would be strictly limited within these zones, e.g., Environmental "p" protection overlay zone;
- Many of the SHAs could be moderately limited (e.g., Environmental "c" conservation overlay zone, River "e");
- In some cases the City will facilitate the sensitive development of these areas through development agreements, helping overcome the market factors assumed in the *City of Portland Economic Opportunities Analysis: Summary Report – Final Draft* (E.D. Hovee & Company, LLC). Examples include Siltronic site in Willamette N. Reach and discussions regarding potential development and mitigation of SW Quad in PDX Futures planning area.

ii) **Residentially-zoned areas**

- If past practice were continued, no areas would be strictly limited, e.g., Environmental "p" overlay zone;
- Some areas could potentially be moderately limited, but areas that are moderately limited do not affect housing density given opportunities to cluster, reduce lot size and setbacks, transfer development, etc.

c) **Methodology**

i) **Physical:** This layer does not currently reflect physical or regulatory constraints that make a portion of the site unavailable for development. However, these areas are important for watershed health and biodiversity. Many SHAs coincide High-ranked resource areas in the City Natural Resource Inventory, and with Habitats of Concern identified in Metro's inventory of significant riparian corridors and wildlife habitat. They also correspond with Title 13 Habitat Conservation Areas that local jurisdictions are required to protect, conserve, and restore through their regulatory and non-regulatory programs.

ii) **Market:** If the City were to apply environmental overlay zones or other tools to protect these resources, consistent with past practice, new development could be subject to additional review, permit, or mitigation requirements, which could in turn, add expense or time to development.

iii) **Service:** This layer does not reflect infrastructure/service constraints because it not a service-oriented layer.

iv) **Housing:** If, consistent with past practice, the City were to apply environmental overlay zones or other tools to protect Special Habitat Areas, it is likely that the City would strictly limit some areas, particularly those located within or adjacent to streams and wetlands, and would moderately limit development in other areas.

However, given the flexibility provided by the City's existing development standards, and opportunities for innovative housing project design, it is expected that this layer would be associated with a 0% housing capacity reduction. Estimated capacity in these resource areas is 100% with a 0% reduction and impact level.

v) **Employment:** If, consistent with past practice, the City were to apply environmental overlay zones or other tool to protect the Special Habitat, it is likely that the City would strictly limit development in some areas, particularly areas adjacent to streams and wetlands. In other areas it is likely the City would moderately limit development to protect resource values and functions. Given the analysis provided in the *City of Portland Economic Opportunities Analysis: Summary Report – Final Draft* (E.D. Hovee & Company, LLC) it is expected that this layer could be associated with a medium impact on employment development due primarily to market impacts. However, given the recent activities relating Special Habitat Area in the River Plan/North Reach, it is anticipated that Special Habitat Area designation would, in itself, have a "Low" impact on employment development.

I Inventory of Scenic Areas

I1 Views

a) **Definition:** The 1991 Scenic Resources Protection Plan identified important scenic view corridors with height restrictions and scenic viewpoints with no special height restrictions. Individual sites are mapped in the Plan identifying any relevant height restrictions. In the Central City height restrictions associated with Scenic Views have been incorporated into the Plan District Height Limits.

b) **Methodology**

i) **Physical:** This layer reflects a regulatory constraint that reduces the allowed height on various properties outside the central city that fall within a mapped view corridor with a height restriction in the Scenic Resources Protection Plan. These view corridors with height restrictions occur in the vicinity of the St. John's Bridge, the Linnton Neighborhood, above the Albina Rail Yards and in the Columbia South Shore Area.

ii) **Market:** This layer does not reflect market constraints that add expense or time to development.

iii) **Service:** This layer does not reflect infrastructure/service constraints because it not a service-oriented layer.

iv) **Housing:** This layer has a low capacity reduction because most development will be allowed; only development above the mapped height limit would be restricted.

v) **Employment:** This layer has a low capacity reduction because most development will be allowed; only development above the mapped height limit would be restricted.

I2 Sites

a) **Definition:** Scenic Sites were included citywide in the 1991 Scenic Resources Protection Plan. No regulatory or physical capacity-reducing regulations are associated with Scenic Sites.

b) **Methodology**

i) **Physical:** This layer does not reflect physical or regulatory constraints that make a portion of the site unavailable for development because these areas are identified, but are not regulated and not reduce capacity.

ii) **Market:** This layer does not reflect market constraints that add expense or time to development because these areas are identified, but are not regulated and not reduce capacity.

iii) **Service** This layer does not reflect infrastructure/service constraints because it is not a service layer.

iv) **Housing:** This layer has a 0% capacity reduction because corridors do not reduce capacity.

v) **Employment:** This layer has a 0% capacity reduction because corridors do not reduce capacity.

I3 Corridors

a) **Definition:** The 1991 Scenic Resources Protection Plan identified two linear scenic corridors throughout the city. Development within or adjacent to the Scenic Corridors must meet the additional landscaping and setback regulations of Chapter 33.480. Development is allowed but limitations on building length, tree removal, signage and mechanical equipment are imposed, and additional landscaping standards apply.

b) **Methodology**

i) **Physical:** This layer does not reflect physical or regulatory constraints that make a portion of the site unavailable for development because these areas have additional development standards. But the standards do not reduce the achievable level of housing or employment.

ii) **Market:** This layer does not reflect market constraints that make a portion of the site unavailable for development because these areas have additional development standards. But the standards do not reduce the achievable level of housing or employment.

iii) **Service** This layer does not reflect infrastructure/service constraints because it is not a service layer.

iv) **Housing:** This layer has a 0% capacity reduction because these areas have additional development standards. But the standards do not reduce the achievable level of housing or employment.

v) **Employment:** This layer has a 0% capacity reduction because these areas have additional development standards. But the standards do not reduce the achievable level of housing or employment.

J Open space

J1 OS comp plan map designation

a) **Definition** The Open Space zone is intended to preserve and enhance public and private open, natural, and improved park and recreational areas identified in the Comprehensive Plan. (Chapter 33.100)

b) **Methodology**

i) **Physical:** This layer reflects potential capacity reductions because it removes otherwise high intensity development land from the available supply.

ii) **Market:** This layer does not reflect market constraints.

iii) **Service:** This layer does not affect infrastructure/service constraints because it is not a service layer.

iv) **Housing:** This layer has a high capacity reduction because housing is prohibited in the Open Space Zone.

v) **Employment:** This layer has a high affect on employment because commercial and industrial uses are generally prohibited in the Open Space Zone. However, some outdoor recreation, park and open area and utility and educational uses are allowed through a Conditional Use Process - Golf Courses for example, provide some limited employment opportunities in the OS zone. Some modest employment capacity is also available by parks uses such as maintenance programming and security staff for public and private recreational facilities.

J2 Lots open space tax assessment

a) **Definition:** Specially Assessed Value is a value established by statute. The state legislature has established several programs that create value levels below market value for certain types of property. Each program has specific applications and use requirements. Examples of types of property that may qualify for special assessment are farm land, forest land, historic property, and property which qualify as "open space".

There are different types of deferral programs, and all have monetary penalties for taking land out of deferral. The Open Space deferral is by application only and its Exemption Code is ZB = Open Space Deferral. (Source: Multnomah County)

b) **Methodology**

i) **Physical:** This layer reflects regulatory constraints that make a portion of the site unavailable for development because the nature of the Open Space Tax Assessment is that it’s only applied to lands with low employment potential.

ii) **Market:** This layer does not reflect market constraints that add expense or time to development.

iii) **Service:** This layer does not reflect infrastructure/service constraints because it not a service-oriented layer.

iv) **Housing:** This layer has a 100% capacity reduction because housing development would disqualify individual properties from receiving the Open Space Tax Assessment.

v) **Employment:** This layer has a 100% capacity reduction because commercial development would disqualify individual properties from receiving the Open Space Tax Assessment.

J3 Lots with riparian tax assessment

a) **Definition:** "Designated riparian land" means the beds of streams, the adjacent vegetation communities, and the land thereunder, which are predominantly influenced by their association with water, not to extend more than 100 feet landward of the line of nonaquatic vegetation, which are privately owned and which qualify for exemption under ORS 308A.350 to 308A.383. An owner of land defined as "designated riparian land" may request exemption of that land from ad valorem taxation as riparian land under ORS 308A.350 to 308A.383. (ORS 308A.350 (3))

There are different types of deferral programs, and all have monetary penalties for taking land out of deferral. The Open Space deferral is by application only and its code RP = Riparian Deferral. (Source: Multnomah County)

b) **Methodology:** There are no designated riparian lands that are under tax exemption within the City. No physical, market, or service constraints were identified in the analysis.

J4 Lots with farm tax assessment

a) **Definition:** Specially Assessed Value is a value established by statute. The state legislature has established several programs that create value levels below market value for certain types of property. Each program has specific applications and use requirements. Examples of types of property that may qualify for special assessment are farm land, forest land, historic property, and property which qualify as "open space".

There are different types of deferral programs, and all have monetary penalties for taking land out of deferral. For lots with houses it is usual to remove some amount of property that surrounds the home from the deferral. This is called a homestead exclusion. If allowed by the zoning code these homestead sites could redevelop. Homesteads can be identified by the following codes:

- NQ
- NA
- NB
- QH

Deferrals are automatic in the Exclusive Farm Use zones. Other deferrals are by application, such as a farm exemption in non-EFU zones. The farm exemption codes are:

- EFU = Farm Deferral
- NON EFU = Farm Deferral by Application (Source: Multnomah County)

b) **Methodology**

i) **Physical:** This layer does not reflect potential capacity reductions.

ii) **Market:** This layer reflects market constraints that add expense to development because redevelopment of properties receiving the tax assessment would be required to pay retroactive taxes if the land was developed for other than farm uses.

iii) **Service** This layer does not affect infrastructure/service constraints because it is not a service layer.

iv) **Housing:** This layer has a 100% capacity reduction because it removes otherwise redevelopable land from the supply.

v) **Employment:** This layer has a 100% capacity reduction because it removes otherwise redevelopable development land from the supply.

J5 Lots with forest tax assessment

a) **Definition:** Specially Assessed Value is a value established by statute. The state legislature has established several programs that create value levels below market value for certain types of property. Each program has specific applications and use requirements. Examples of types of property that may qualify for special assessment are farm land, forest land, historic property, and property which qualify as "open space". Under this program, land is assessed at a special rate based upon the typical price paid for land managed for the production of harvestable timber. This value is often less than the real market value used for taxing other properties.

There are different types of deferral programs, and all have monetary penalties for taking land out of deferral. The Open Space deferral is by application only and its Exemption Codes are:

- ZN or ZNA = Forest Deferral
- CLS of CLASS = Small Tract Forest Deferral (Source: Multnomah County).

b) **Methodology**

i) **Physical:** This layer does not reflect potential capacity reductions.

ii) **Market:** This layer reflects market constraints that add expense to development because redevelopment of properties receiving the tax assessment would be required to pay retroactive taxes if the land was developed for other than forest uses.

iii) **Service** This layer does not reflect infrastructure/service constraints because it not a service-oriented layer.

iv) **Housing:** This layer has a 100% capacity reduction because it removes otherwise redevelopable land from the supply.

v) **Employment:** This layer has a 100% capacity reduction because it removes otherwise redevelopable development land from the supply.

K Delineated Wellhead Protection Areas

K1 Delineated wellhead protection areas Columbia South Shore

a) **Definition:** The regulated area (i.e., the designated groundwater protection area) is based on a groundwater model simulation of the 30-year time of travel to the production wells of the Columbia South Shore Groundwater Resource Wellhead Protection Area (WHPA). The area includes portions of the Cities of Portland, Gresham, and Fairview. The regulations are aimed at new and existing businesses that use and store hazardous materials that pose a threat to groundwater. (Columbia South

Shore Well Field Wellhead Protection Area, Reference Manual, City of Portland Bureau of Water Works)

b) Methodology

i) **Physical:** This layer does not reflect physical or regulatory constraints that make a portion of the site unavailable for development because the requirements are based on use and hazardous material storage and use.

ii) **Market:** This layer does not reflect market constraints that add expense or time to development because the requirements are based on use and hazardous material storage and use.

iii) **Service:** This layer does not reflect infrastructure/service constraints because it not a service-oriented layer.

iv) **Housing:** This layer has a 0% capacity reduction because the requirements are based on land use and hazardous material storage and use.

v) **Employment:** This layer has a 0% capacity reduction because the requirements are based on land use and hazardous material storage and use.

L Environmental Overlay Zones

L1 Environmental Conservation Overlay Zones

a) Definition: Environmental zones protect resources and functional values that have been identified by the City as providing benefits to the public. The environmental regulations encourage flexibility and innovation in site planning and provide for development that is carefully designed to be sensitive to the site's protected resources. These regulations also help meet other City goals, along with other regional, state, and federal goals and regulations. The environmental regulations also carry out Comprehensive Plan policies and objectives. The Environmental Conservation zone conserves important resources and functional values in areas where the resources and functional values can be protected while allowing environmentally sensitive urban development (Chapter 33.430.017).

b) Methodology

i) **Physical:** This layer reflects regulatory constraints that make a portion of the site unavailable for development according to the *City of Portland Economic Opportunities Analysis: Summary Report – Final Draft (*E.D. Hovee & Company, LLC) due to market effects. See ii. Below.

ii) **Market:** This layer reflects market constraints that add expense or time to development because proposed development in the resource area of the conservation zone is subject to special permits or reviews, potential conditions of approval, and mitigation for unavoidable adverse impacts on natural resources. According to the *City of Portland Economic Opportunities Analysis: Summary Report – Final Draft* (E.D. Hovee & Company, LLC), only a portion of the non-residential environmental conservation zoned industrial and employment lands in the city will develop by 2035. Estimated shares are:

- 40% in industrial areas;
- 50% in neighborhood commercial areas;
- 55% in town centers, Gateway, and Central City industrial; and

- 65% in Central City commercial and institutional campuses.

The estimated shares are based on a combination of development trends and market knowledge to allocate demand among different types of constrained land. Data are not currently available to specifically link development trends to specific constraint types on average by geography.

iii) **Service:** This layer does not reflect infrastructure/service constraints because it not a service-oriented layer.

iv) **Housing:** This layer has a 0% capacity reduction because the regulations provide flexibility to achieve density goals through allowed disturbance areas, clustering, reducing lot sizes, and modifying setbacks. Mitigation is allowed to compensate for unavoidable adverse impacts and is not typically costly relative to overall project costs.

v) **Employment:** This layer has a medium capacity reduction as noted in ii above.

L2 Environmental Protection Overlay Zones

a) **Definition:** Environmental zones protect resources and functional values that have been identified by the City as providing benefits to the public. The environmental regulations encourage flexibility and innovation in site planning and provide for development that is carefully designed to be sensitive to the site's protected resources. These regulations also help meet other City goals, along with other regional, state, and federal goals and regulations. The environmental regulations also carry out Comprehensive Plan policies and objectives. The Environmental Protection zone provides the highest level of protection to the most important resources and functional values. These resources and functional values are identified and assigned value in the inventory and economic, social, environmental, and energy (ESEE) analysis for each specific study area. Development will be approved in the environmental protection zone only in rare and unusual circumstances (Chapter 33.430.015).

b) **Methodology**

i) **Physical:** This layer reflects regulatory constraints that make a portion of the site unavailable for development because most uses and development types are not allowed within the environmental protection overlay zones. The City may approve development in the protection overlay zone if needed for required access across a property, or if anticipated public benefit would outweigh the adverse impacts on natural resource values and functions.

ii) **Market:** This layer reflects market constraints that add expense or time to development. Development proposed to be located in the Environmental Protection Overlay Zone would be subject to environmental review to determine if the approval criteria can be met. The review would include an analysis of alternatives to locating within the protection zone, as well as conditions of approval and mitigation requirements for development that is approved in the overlay zone.

iii) **Service:** This layer does not reflect infrastructure/service constraints because it not a service-oriented layer.

iv) **Housing:** This layer has a 100% capacity reduction because housing would not typically be allowed within the environmental protection overlay zone.

v) **Employment:** This layer has a 100% capacity reduction because employment uses would not typically be allowed within the environmental protection overlay zone.

M Significant Cultural Resources

M1 Historic districts

a) **Definition:** A Historic Resource is a structure or object that has historic significance. Historic Resources include:

- Historic Landmarks, including those that are listed in the National Register of Historic Places;
- Conservation Landmarks;
- Conservation Districts;
- Historic Districts, including those listed in the National Register of Historic Places;
- Structures or objects that are identified as contributing to the historic significance of a Historic District or a Conservation District; and
- Structures or objects that are included in the Historic Resources Inventory. (Chapter 33.910)

b) **Methodology**

i) **Physical:** This layer reflects physical or regulatory constraints that make a portion of the site unavailable for development because Historic Districts reduce development potential within the District by not always permitting density increases, use changes or intensification. In some cases, federal and/or state law may prohibit local governments altering these districts.

ii) **Market:** This layer reflects market constraints that add expense or time to development because Historic Districts reduce development potential within the District, making development more expensive to retain the District's character.

i) **Service** This layer does not reflect infrastructure/service constraints that affect a service level.

ii) **Housing:** This layer has a low capacity reduction because redevelopment occurs and is possible within Historic Districts, but not typically at the same scale or intensity as nearby properties outside the district.

iii) **Employment:** This layer has a low capacity reduction because redevelopment occurs and is possible within Historic Districts, but not typically at the same scale or intensity as nearby properties outside the district.

M2 Historic buildings, sites and landmarks

a) **Definition:** A Historic Landmark designations may include buildings, a portion of a building, sites, trees, statues, signs, or other objects or spaces that the City or the Keeper of the National Register of Historic Places has designated or listed for their special historic, cultural, archaeological, or architectural merit. (Chapter 33.910)

b) **Methodology**

iii) **Physical:** This layer reflects physical or regulatory constraints that make these sites difficult to redevelop as density increases, use changes and additions may not be allowed or appropriate depending on individual resource features.

iv) **Market:** This layer reflects market constraints that add expense or time to development because alterations to these resources are only allowed after completing a Historic Design Review process.

i) **Service** This layer does not reflect infrastructure/service constraints that affect a service level.

ii) **Housing:** This layer has a low capacity reduction because redevelopment or alterations may be possible but typically additional floor area or intensity is limited.

iii) **Employment:** This layer has a low capacity reduction because redevelopment or alterations may be possible but typically additional floor area or intensity is limited.

M3 Areas requiring archaeological scan or consultation with Native American tribal governments

a) **Definition:** Archaeological evidence has confirmed that American Indians used the plan district prior to entry of EuroAmericans to the Portland area. Archaeological resources have historic, cultural, and scientific value to the general public and heritage value to associated tribes, whose ancestors lived in the plan district area and harvested local natural resources for subsistence and spiritual/ceremonial uses. Of special concern is the potential for ground disturbance activities to uncover human remains and archaeological resources that may be eligible for listing on the National Register of Historic Places. (Chapter 33.515.262).

The Plan District maps Archaeological Sensitivity Areas and requires testing and construction protocols where confirmation testing has not yet been completed.

b) **Methodology**

i) **Physical:** This layer reflects physical or regulatory constraints that make a portion of the site unavailable for development because the possibility of archaeological resources (if found) reduce development potential for the lot and make development more expensive due to archaeological analysis.

ii) **Market:** This layer reflects market constraints that add expense or time to development because the possibility of archaeological resources (if found) reduce development potential for the lot and make development more expensive due to archaeological analysis.

iii) **Service:** This layer does not reflect infrastructure/service constraints that affect a service because it is not a service-oriented layer.

iv) **Housing:** This layer has a 0% capacity reduction because the Archaeological sensitivity areas in the Plan District all occur within employment or industrial lands.

v) **Employment:** This layer has a low capacity reduction because most archeologically sensitive areas have completed confirmation testing. The remaining areas where confirmation testing is required are limited in size and all occur east of NE 148th Avenue as shown on Map 515-7 of Chapter 33. Low impacts to employment capacity are anticipated because of the small size of these areas, past experience with confirmation testing results, and their location adjacent to water bodies and sloughs.

N Hazards

N1 City of Portland Landslide Hazard Areas, includes 1996 landslide point data

a) **Definition:** The potential landslide hazard areas map maintained by the City is used as a broad filter to flag development applications, land divisions, and other city reviews for consideration of soil stability and other geotechnical concerns.

b) **Methodology**
   - i) **Physical:** This layer reflects does not reflect physical or regulatory constraints that make a portion of the site unavailable for development.
   - ii) **Market:** This layer does not reflect market constraints that add expense or time to development.
   - iii) **Service** This layer does not reflect infrastructure/service constraints that affect a service because it is not a service-oriented layer.
   - iv) **Housing:** This layer has a 0% capacity reduction.
   - v) **Employment:** This layer has a 0% capacity reduction.

N2 All slopes over 25%. Hazards will be identified from the best available topographic maps, and the following information.

a) **Definition:** Slopes greater than 25%.

b) **Methodology**
   - i) **Physical:** This layer does not reflect physical or regulatory constraints that make a portion of the site unavailable for development because development is permitted pursuant to additional structural design meeting specific standards.
   - ii) **Market:** This layer reflects market constraints that add expense or time to development because additional structural design and associated construction add expense to secure structures on steep slopes.
   - iii) **Service** This layer does not reflect infrastructure/service constraints that affect a service because it is not a service-oriented layer.
   - iv) **Housing:** This layer has a low capacity reduction because development is still permitted, but some capacity may be lost in higher density zones, with accessory units or some sites that are substantially expensive to accommodate the slope.
   - v) **Employment:** This layer has a 0% capacity reduction because an insignificant amount of commercial/employment land is coincident with these steep slopes.

N3 Oregon Department of Geology and Mineral Industries Statewide Digital Landslide Database (SLIDO)

a) **Definition:** The Statewide Landslide Information Database of Oregon (SLIDO) was created to improve understanding of the landslide hazard in Oregon and to create a statewide base level of landslide data. The resulting database includes more than 15,000 landslide and landslide-related features (polygons) extracted from 257 published and non-published studies. This provides a base level of landslide information statewide. It differentiates areas of higher and lower hazards. This spatial

information is basic to emergency and land use applications; some common uses are to:

- Identify vulnerable areas that may require planning considerations
- Estimate potential losses from specific hazard events (before or after a disaster hits)
- Decide how to allocate resources for most effective and efficient response and recovery
- Prioritize mitigation measures that need to be implemented to reduce future losses (Source: Oregon Department of Geology and Mineral Industries)

b) Methodology

i) Physical: This layer reflects physical or regulatory constraints that make a portion of the site unavailable for development because development may be limited by the landslide potential.

ii) Market: This layer does not reflect market constraints that add expense or time to development.

iii) Service This layer does not reflect infrastructure/service constraints that affect a service because it is not a service-oriented layer.

iv) Housing: This layer has a low capacity reduction because landslide hazard areas are relatively small area and the majority of these areas are either already developed.

v) Employment: This layer has a 0% capacity reduction because an insignificant amount of commercial/employment land is coincident with these steep slopes.

N4 Oregon Department of Geology and Mineral Industries Rapidly Moving Landslide Hazard Zones (IMS-22)

a) Definition: The potential rapidly moving landslide hazard zones shown apply specifically and only to debris flow hazards. Debris flows are mixtures of water, soil, rock, and/or debris that have become a slurry and commonly move rapidly downslope. (Source: Oregon Department of Geology and Mineral Industries)

b) Methodology

i) Physical: This layer reflects physical or regulatory constraints that make a portion of the site unavailable for development because development may be limited by the landslide potential.

ii) Market: This layer does not reflect market constraints that add expense or time to development.

iii) Service This layer does not reflect infrastructure/service constraints that affect a service because it is not a service-oriented layer.

iv) Housing: This layer has a low capacity reduction because landslide hazard areas are relatively small area and the majority of these areas are either already developed.

v) Employment: This layer has a 0% capacity reduction because an insignificant amount of commercial/employment land is coincident with these steep slopes.

N5 Earthquake Fault lines, areas subject to liquefaction, and areas subject to moderate or severe damage from earthquakes

a) **Definition:** Earthquake Fault lines, areas subject to liquefaction, and areas subject to moderate or severe damage from earthquakes.

b) **Methodology**

i) **Physical:** This layer reflects physical or regulatory constraints that make a portion of the site unavailable for development because development may be limited by the landslide potential.

ii) **Market:** This layer does not reflect market constraints that add expense or time to development.

iii) **Service** This layer does not reflect infrastructure/service constraints that affect a service because it is not a service-oriented layer.

iv) **Housing:** This layer has a low capacity reduction because landslide hazard areas are relatively small area and the majority of these areas are either already developed.

v) **Employment:** This layer has a 0% capacity reduction because an insignificant amount of commercial/employment land is coincident with these steep slopes.

N6 Oregon Department of Geology and Mineral Industries database IMS-1

a) **Definition:** Oregon Interpretive Map Series (IMS). IMS-1 is a relative earthquake hazard map of the Portland metro region, Clackamas, Multnomah, and Washington counties, Oregon. It is 441.5 square miles of digital light detection and ranging (lidar) data for portions of the Portland METRO area and the Columbia River. The purposes of this project are to make images of the "Bare Earth" digital elevation model (DEM) derived from these lidar data available and searchable on the web by street address and to be able to compare and contrast these against aerial photographs, topographic maps, and 10-meter DEM derived from the topographic maps. (Source: Oregon Department of Geology and Mineral Industries)

b) **Methodology**

i) **Physical:** This layer does not reflect physical or regulatory constraints that make a portion of the site unavailable for development because no regulations are associated with this inventory

ii) **Market:** This layer does not reflect market constraints that add expense or time to development because no regulations are associated with this inventory

iii) **Service** This layer does not reflect infrastructure/service constraints that affect a service because it is not a service-oriented layer.

iv) **Housing:** This layer has a 0% capacity reduction because no regulations are associated with this inventory

v) **Employment:** This layer has a 0% capacity reduction because no regulations are associated with this inventory.

N7 Oregon Department of Geology and Mineral Industries database IMS-16

a) **Definition:** Earthquake scenario and probablistic ground shaking maps for the Portland, metropolitan area. (Source: Oregon Department of Geology and Mineral Industries)

b) **Methodology**

i) **Physical:** This layer reflects physical or regulatory constraints that make a portion of the site unavailable for development because development may be limited by the landslide potential.

ii) **Market:** This layer does not reflect market constraints that add expense or time to development.

iii) **Service** This layer does not reflect infrastructure/service constraints that affect a service because it is not a service-oriented layer.

iv) **Housing:** This layer has a low capacity reduction because landslide hazard areas are relatively small area and the majority of these areas are either already developed.

v) **Employment:** This layer has a 0% capacity reduction because an insignificant amount of commercial/employment land is coincident with these steep slopes.

N8 Federal Emergency Management Agency 100-year flood (flood plain) maps

Definition Land that is in the 100-year floodplain as currently defined by the Federal Emergency Management Agency (FEMA). "Floodplain" means the channel of watercourse and adjacent land areas which are subject to inundation by the base flood. (Chapter 24.50)

"Base Flood (100-year flood)" means the flood having 1 percent chance of being equaled or exceeded in any given year. Designation on maps always includes the letters A or V. (Chapter 24.50)

a) **Methodology**

i) **Physical:** This layer reflects physical and regulatory constraints that may make a portion of the site unavailable for development. Title 24.50.060.F. requires that "In all Flood Management Areas of the City not addressed by Section 24.50.060 G, balanced cut and fill shall be required. All fill placed at or below the base flood elevation shall be balanced with at least an equal amount of soil material removal. Soil material removal shall be within the same flood hazard area identified in Section 24.50.050 A. through I.

a. Excavation shall not be counted as compensating for fill if such areas will be filled with water in non-storm winter conditions.

b. Temporary fills permitted during construction shall be removed.

In addition, portions of site may be unsuitable for development due to frequent flood hazards and the costs and challenges associated with meeting balanced cut and fill requirements on-site or off-site.

ii) **Market:** This layer reflects market constraints that add expense or time to development because the additional requirements for development in Flood

Hazard Areas below the base flood elevation (100-year flood) can increase the cost and time associated with development.

iii) **Service** This layer does not reflect infrastructure/service constraints because it is not a service-oriented layer.

iv) **Housing:** This layer has a medium capacity reduction because regulations may limit the placement of housing due to physical site constraints and/or the cost of meeting balanced cut and fill requirements. Innovated housing design opportunities should temper the effects of the constraint,

v) **Employment:** This layer has a medium capacity reduction because regulations may limit the placement of employment uses due to physical site constraints, less flexibility in site design and/or the cost of meeting balanced cut and fill requirements.

N9 Federal Emergency Management Agency Floodway maps

a) Definition

i) **FEMA Floodway:** A "Regulatory Floodway" means the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height. Communities must regulate development in these floodways to ensure that there are no increases in upstream flood elevations. For streams and other watercourses where FEMA has provided Base Flood Elevations (BFEs), but no floodway has been designated, the community must review floodplain development on a case-by-case basis to ensure that increases in water surface elevations do not occur, or identify the need to adopt a floodway if adequate information is available. (Source: FEMA)

ii) **Floodway.** The active flowing channel during a flood, as designated on the flood maps adopted under authority of title 24 of the Portland City Code. The channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height. (Chapter 33.910)

iii) "Floodway" means the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than one foot. The actual floodway boundaries are computer activated and approximate. These boundaries are depicted on the FIRM. Boundaries for other watercourses may be subject to identification by the Sewage System Administrator. The width of the floodway for unidentified watercourses should not be less than 15 feet. (Chapter 24.50)

b) Methodology

i) **Physical:** This layer reflects physical and regulatory constraints that make a portion of the site unavailable for development. Under Title 24, encroachments into the floodway by development and structures defined in Section 24.50.020 are prohibited unless it is demonstrated by technical analysis from a registered engineer that the development will result in no increase in the base flood elevation. Technical analysis shall be reviewed and approved by the Sewage System

Administrator. However, the minimum width of the floodway shall not be less than 15 feet.

ii) **Market:** This layer reflects market constraints that add expense or time to development because additional technical analysis, with associated costs, may be needed to approve developments on the site.

iii) **Service** This layer does not reflect infrastructure/service constraints because it is not a service-oriented layer.

iv) **Housing:** This layer has a 100%capacity reduction because development would not typically be allowed in the floodway.

v) **Employment:** This layer has a 100% capacity reduction because development would not typically be allowed in the floodway.

N10 1996 actual flooded (equivalent to layers N8-N10)

O Brownfields

O1 Contaminated Areas identified by the Oregon Department of Environmental Quality, Environmental Cleanup Sites I (ECSI)

a) **Definition:** Sites with known or potential contamination from hazardous substances (Source: Oregon Department of Environ Environmental Quality).

b) **Methodology**

i) **Housing:** More information will be provided about this layer with the Economic Development worktask: Subtask D – Identification of Employment Needs.

ii) **Employment:** More information will be provided about this layer with the Economic Development worktask: Subtask D – Identification of Employment Needs.

O2 Contaminated Areas identified by the Oregon Department of Environmental Quality, Confirmed Release Sites (CRL)

a) **Definition:** Sites in Oregon with suspected or known releases of hazardous substances, as well as sites that DEQ has determined require no further action. (ECSI generally excludes sites with petroleum releases from underground storage tanks). ECSI contains information on over 3,000 sites in Oregon. (Source: Oregon Department of Environ Environmental Quality).

b) **Methodology**

i) **Housing:** More information will be provided about this layer with the Economic Development worktask: Subtask D – Identification of Employment Needs.

ii) **Employment:** More information will be provided about this layer with the Economic Development worktask: Subtask D – Identification of Employment Needs.

O3 Contaminated Areas identified by the Oregon Department of Environmental Quality, Underground Storage Tank Cleanup Sites (UST)

a) **Definition:** The UST Cleanup List is a listing of all sites with reported releases of petroleum products from regulated underground storage tanks (USTs), unregulated USTs, and home heating oil tanks. (Source: Oregon Department of Environ Environmental Quality).

b) **Methodology**

i) **Housing:** More information will be provided about this layer with the Economic Development worktask: Subtask D – Identification of Employment Needs.

ii) **Employment:** More information will be provided about this layer with the Economic Development worktask: Subtask D – Identification of Employment Needs.

P Publicly Owned Land

P1 Publicly owned or controlled lots and parcels that do not provide for employment or residential uses

a) **Definition:** Land owned or controlled by a federal, state, regional, or local government, or by a special district.

b) **Assumptions:** Most of public land is not available for housing, but some land is available for employment.

c) **Methodology**

i) **Physical:** This layer reflects physical constraints that make sites unavailable for development because it removes potentially developable land from the available land supply.

ii) **Market:** This layer does not reflect market constraints that add expense or time to development, because land use regulations apply equally to public and private land.

iii) **Service** This layer may provide social or physical infrastructure, but does not affect capacity per se.

iv) **Housing:** This layer has a high capacity reduction because the amount of publicly-owned land used for parks, open space, schools, and institutions; even when the land is designated for residential use. An exception is land owned by the Housing Authority of Portland which provides significant housing opportunities.

v) **Employment:** This layer shows a reduced capacity reduction because a significant amount of public land, such as golf courses and event facilities has low employment levels. Other publicly owned land has, such as government office buildings, has high employment levels.

P2 Public rights-of-way

a) **Definition:** A. The area between property lines of a street, easement, tract or other area dedicated to the movement of vehicles, pedestrians and/or goods. A public right-of-way is dedicated or deeded to the public for public use and under the control of a public agency. A private right-of-way is in private ownership, for use by the owner

and those having express or implied permission from the owner, but not by others. (Chapter 16.90.302)

b) **Assumption:** Neither public or private rights-of-way are available for housing or employment.

c) **Methodology**
   i) **Physical:** This layer reflects physical or regulatory constraints that make a portion of the site unavailable for development because all public rights-of-way are unavailable for development.

   ii) **Market:** This layer does not reflect market constraints because no development is permitted on these lands.

   iii) **Service** This layer does not reflect infrastructure/service constraints that affect a service because it only contains services, it does not affect the service levels.

   iv) **Housing:** This layer has a 100% capacity reduction all public rights-of-way are unavailable for development.

   v) **Employment:** This layer has a 100% capacity reduction all public rights-of-way are unavailable for development.

P3 Beds and banks of navigable waterways

a) **Definition:** The people of Oregon own and have the right to use the beds and banks of all navigable streams, rivers, and lakes up to the ordinary high water line. These lands are publicly owned and managed by the Division of State Lands. (Source: Oregon Department of State Lands.)

b) **Assumptions**: No submerged land is available for housing or employment. Some submerged land is leased for residential or employment use. Examples include state leases for floating homes and marinas and aggregate extraction at Ross Island. These exceptions provide negligible housing and jobs capacity.

c) **Methodology**
   i) **Physical:** This layer reflects physical or regulatory constraints that make a portion of the site unavailable for development because it is outside the legal purview of the City of Portland to make land use decisions.

   ii) **Market:** This layer does not reflect market constraints that add expense or time to development because no development is permitted on these lands.

   iii) **Service** This layer does not reflect infrastructure/service constraints that affect a service because it is not a service-oriented layer.

   iv) **Housing:** This layer has a 100% capacity reduction because all beds and banks are unavailable for development

   v) **Employment:** This layer has a 100% capacity reduction because all beds and banks are unavailable for development

Q Rural lands

Q1 Approximately 500 acres of land that is within the city limits but beyond the urban growth boundary.

a) **Definition:** land that is within the city limits but beyond the urban growth boundary and zoned Residential Farm/Forest (RF).

b) b) Assumption: None of this land is available for urban development. Although some of this land is designated by the City for future urban development, this designation will be superseded by a 2010 decision of the Metro Council acting under the authority of SB 1011 (2007). Also, a 2002 decision of the Metro Council to place this land in the urban growth boundary was reversed by the Oregon Court of Appeals in City of West Linn v Metro, finding this land amongst the least suitable for urban development. While this land does have potential for more rural residences and for some farm and forest employment; these are, by state definition, rural uses which are not to be included in urban capacity calculations.

c) **Methodology**

i) **Physical:** This layer does not reflect physical or regulatory constraints that make a portion of the site unavailable for development because it is outside the urban growth boundary and can not increase density beyond state-required minimum lot sizes. [m3]

ii) **Market:** This layer does not reflect market constraints.

iii) **Service** This layer does not reflect infrastructure/service constraints because it not a service-oriented layer.

iv) **Housin**g: This layer has a total (100%) capacity reduction because any remaining housing potential is rural rather than urban.

v) **Employment:** This layer has a total (100%) capacity reduction because any remaining employment potential is rural rather than urban.

PORTLAND PLAN

Household Forecasts and Development Capacity

Managing Change

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 2005, the population had grown to nearly 555,000 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. In coming years, it is unlikely that Portland's boundaries will change. As a result, current Portlanders, their friends and growing families and new Portlanders alike will need to figure out how to manage change, direct investments and work smarter within existing city limits.

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?

Who develops household and employment forecasts?

Metro, our regional government, is responsible for forecasting the amount of population growth the metropolitan area will likely experience. Metro is also responsible for developing an employment forecast that estimates the number and types of jobs that will be in the city in the future.

What is a forecast?

Metro's forecasts are not targets. They are projections or estimates of what is likely to happen in the future, given trends, previous experience and existing policies. Although forecasts are educated estimations of what is likely to happen, they are neither goals nor necessarily descriptions of desired outcomes.

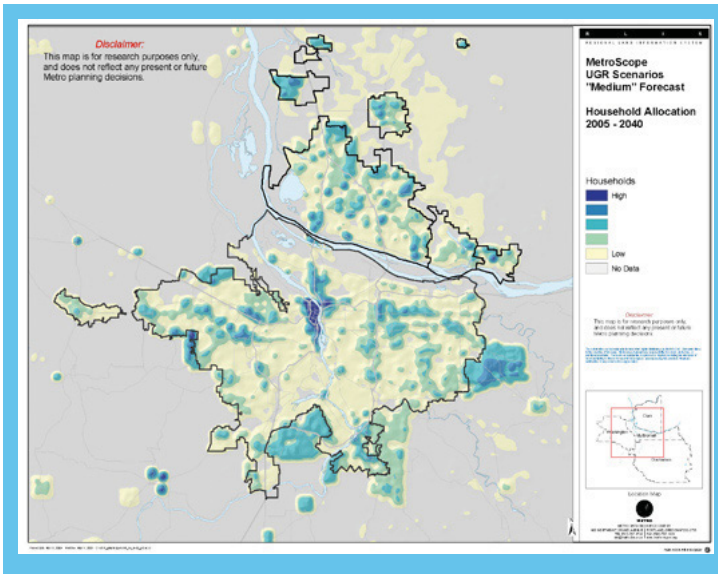
Why are forecasts important?

While forecasts may not always tell Portlanders what they want to hear, they are useful and very important. Household and employment forecasts help the City of Portland and other local communities plan responsibly. After all, population growth triggers the need not only for new housing but also for a complex web of additional urban services, from water pipes and sewers to parks and open spaces, roads, railways, schools and hospitals, all of which need to be planned far in advance. Employment

forecasts tell the City of Portland what kind of land and work sites are needed to help the economy grow and tell the city which types of businesses are likely to provide jobs over the next generation. The information contained in forecasts helps Portlanders make informed and educated 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?

For information on how Metro's forecast model, Metroscope, works, please check out Metro's website: **www.metro-region.org**.



Household Allocation

Shows Metro's projections for the distribution of new households by the year 2040 (medium growth scenario shown). Larger amounts of projected residential growth within Portland are anticipated in and around the Central City, along the Interstate Corridor, and around Gateway and other areas in Eastern Portland.

HOUSEHOLD FORECAST SNAPSHOT

In the model, Portland is projected to gain 105,000 to 136,000 new households by 2035 (an annual percent rate change of 1.2 percent - 1.6 percent) This annual percent growth rate translates into a need for 3,500 - 4,500 new housing units each year.

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 households are expected to include children.

Demand is expected to be highest for multi-family units. The Central City is projected nearly to triple its number of households by 2035.

Currently zoned land capacity in Portland is sufficient to meet housing demands - that is, enough land in Portland is currently zoned to accommodate the projected numbers of new households citywide and in each particular subarea.

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

EMPLOYMENT FORECAST SNAPSHOT

Between 2000 and 2006, the average annual growth rate (AAGR) of jobs in Portland was just 0.2%, compared to 0.5% in the three-county area, 0.7% in the seven-county MSA, 1.6 percent in Central Portland, and 3.2% in the outer-ring sections of the three-county area.

Portland's 40% share of the jobs in the 7-county metropolitan area (MSA) in 2006 is declining. Portland's capture rate of regional job growth fell to 11% in the 2000-2006 period, down from about 27% in the 1980-2000 period. Central Portland has been an exception to this trend, adding about 12,000 jobs from 2000 to 2006, while the rest of the city lost 7,000 jobs.

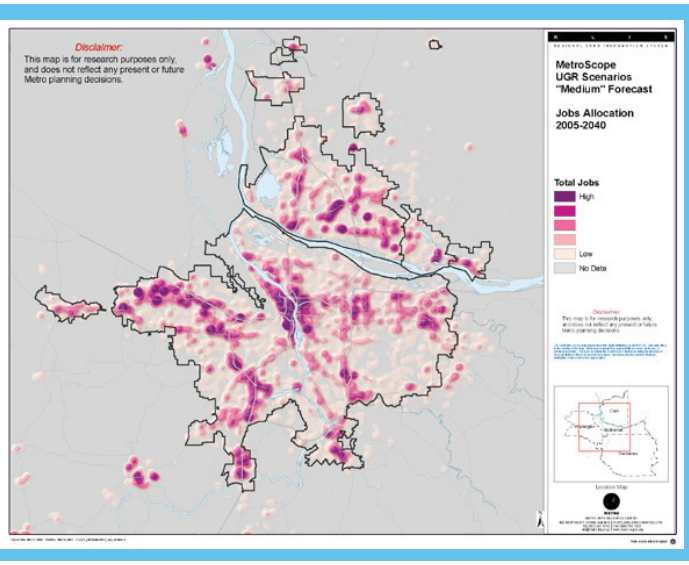
Metro prepared a range of low, medium and high forecasts of job growth. The mid-range forecast indicates a more robust job growth rate of 1.7% per year from 2010-2035. The low range forecast estimates approximately 100,000 new jobs, the mid range estimates approximately 150,000 new jobs and the high range estimates approximately 200,000 new jobs.

Services account for just over one-fifth (21%) of the City's employment base – followed by health and social services, arts/accommodations/food services, education, retail, and manufacturing

Between 2010 and 2035, the institutional sector is projected to grow by 37%, the office sector by 28%, the industrial sector by 18% and the retail and service sector by 17%. Schools and hospitals accounted for about 53,200 in-city jobs as of 2006 and for virtually all of the net job gains experienced in Portland from 2000-06. This is the City's fastest growing sector. Accommodating future job growth in the institutional sector may prove challenging becuase those uses are often adjacent to or within residential areas.

City estimates indicate that Portland will need about 600 more acres of industrial land and 360 more acres of institutional land to meet the mid-range job forecast

More information is available in the **Economic Opportunities Analysis Background Reports**



Jobs Allocation

Shows Metro's projections for the distribution of new jobs by the year 2040 (medium growth scenario shown). Within Portland, the largest amounts of job growth are anticipated in and around the Central City and to a lesser extent around Gateway.

HOUSEHOLD FORECASTS AND DEVELOPMENT CAPACITY

What is Portland's Residential Development Capacity?

To begin to understand what Metro's forecasts might mean for Portland – that is, is our land area great enough and do our regulations allow for the development of housing and housing types needed to accommodate the projected household growth – the City of Portland uses its own computer model to project "development capacity." Development capacity is defined as the likely number of new dwelling units that could be built in the city under existing regulations assuming the continuation of recent market trends.

Determining development capacity is a five-step process. For each step, assumptions must be made. The approach used in this analysis is intended to be transparent, and relatively conservative.

Step I estimates the gross acreage of land that is available for development and redevelopment in the city. This includes:

- Inventory of the vacant sites/acreage in the city (a)
- Selection of other sites that are underdeveloped and likley available for redevelopment (b)

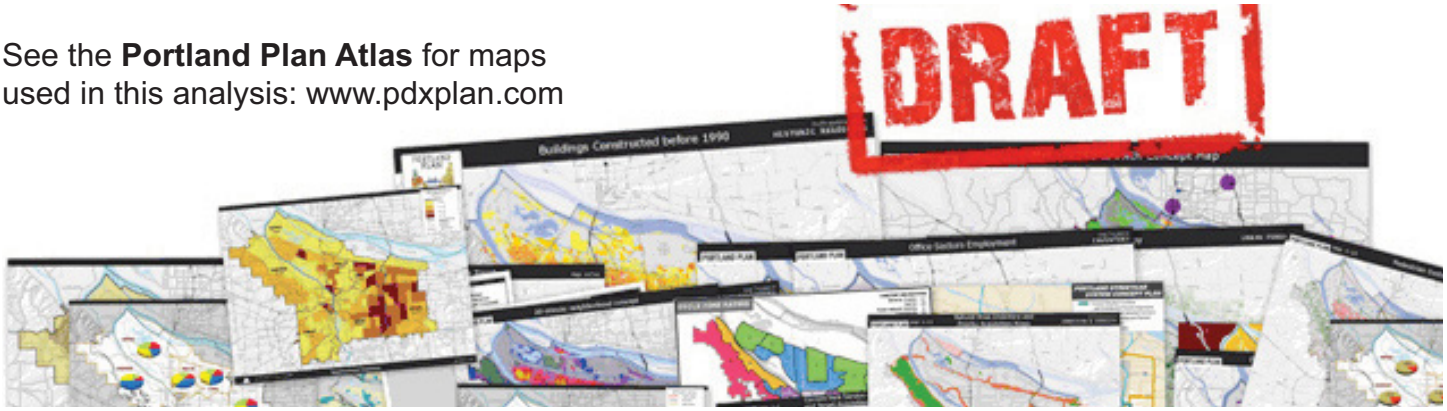
Step II subtracts constrained lands (c) from the Step I results ((a + b) - c). Constrained lands include sites that lack needed urban infrastructure (for example, sites without sewer service), and also include physical and regulatory barriers to development (such as environmentally sensitive areas, historic landmarks, flood hazards, etc.).

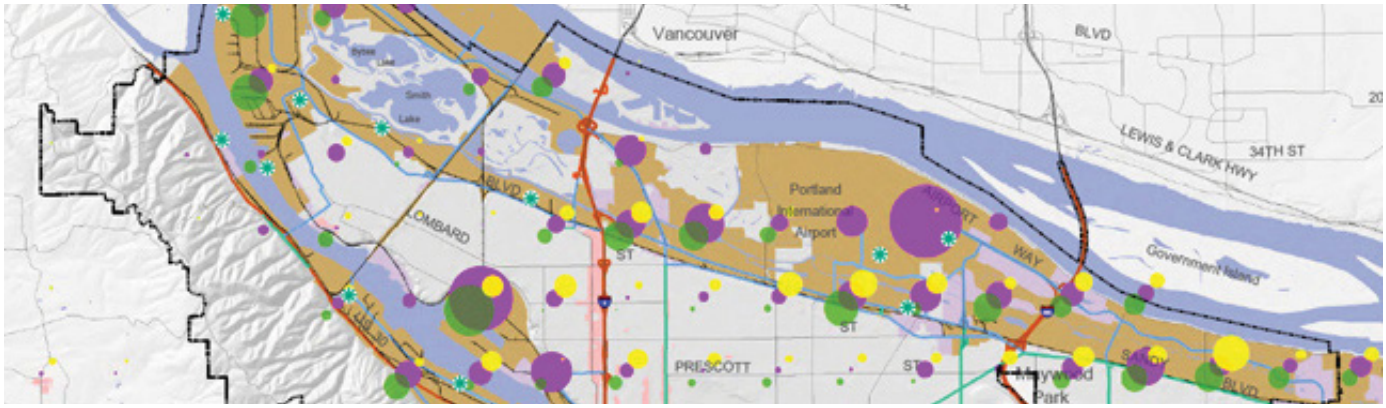
Step III examines market factors, past development trends, and expected near-term infrastructure improvements. In this step, the capacity estimate for some areas may be either adjusted upward or downward by some factor (d).

Step IV combines the results of Steps I through IV into a "Default Scenario", and estimates the net acreage of land that is available for development and redevelopment in the city ((a + b) - c)*d. The result is a capacity estimate, expressed as the number of new dwellings that can be accommodated. The default scenerio is based only on existing policy and development allowances.

Step V creates other scenarios based on desired Portland Plan outcomes.

See the **Portland Plan Atlas** for maps used in this analysis: www.pdxplan.com





EMPLOYMENT FORECASTS AND LAND CAPACITY

What is Portland's Land Capacity to Support Job Growth?

Statewide Planning Goal 9 requires an "economic opportunities analysis" (EOA), including an examination of trends and evaluation of land supply to accommodate the next 20 years of forecast growth.

Recent trends show a declining city share of the region's jobs, despite an expanding share of the region's housing. Portland has advantageous infrastructure and workforce capacity, but tightening land supply. Portland's land supply for job growth has shifted away from greenfields to constrained land and redevelopment at higher densities. Narrowing land supply options have not slowed local housing development, but may limit employment growth. Land supply is affected by a variety of public choices, particularly in land use policy, infrastructure investments, and incentives.

The draft mid-range employment forecast is for recovery to a 27-percent capture rate of regional job growth (about 150,000 new jobs; 1.3% AAGR), and translates into demand for 3,200 acres of employment land absorption. Land absorption is a measure of both the vacant land developed during the period and the sites redeveloped to higher density. The high range forecast is for 200,000 new jobs (36% capture rate, 1.6 AAGR) and absorption of 4,100 acres; the low range forecast is for 100,000 new jobs (18% capture rate, 0.9 AAGR) and absorption of 3,200 acres at lower densities.

To meet forecast land absorption, 4,200 acres of developable employment land has been identified, but roughly two thirds of that land has development constraints. Supply was measured by vacant (unimproved) land and "less improved sites," measured by an improvements-to-land-value ratio less than 0.5. Approximately 1,400 acres of the developable supply are potential brownfield sites (may be contaminated), of which only 33% is estimated to be available for development by 2035 under current market conditions. An additional 1,350 acres of the supply has existing or proposed environmental overlays that allow but limit development, of which 45 percent is estimated to be available for development by 2035.

Comparing available supply to forecast demand by district geographies, significant shortfalls of developable land were identified for industrial district and institutional campus growth. The Economic Opportunities Analysis reports provide detailed estimates of land absorption and existing capacity within nine employment land geographies.

KEEP UP WITH THE CONVERSATION

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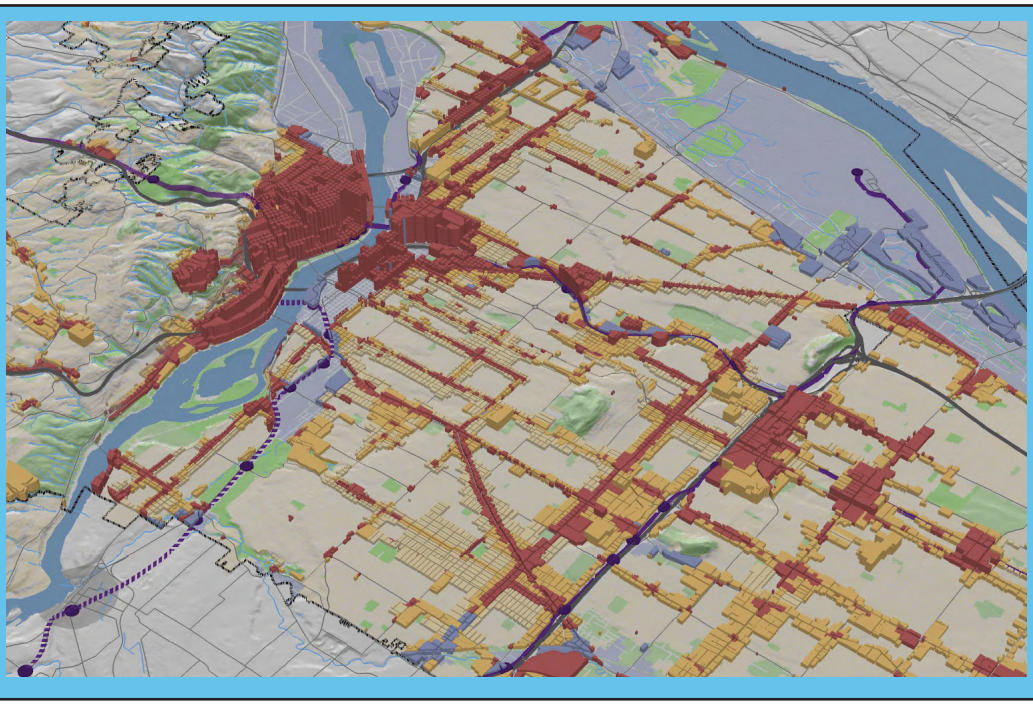
Development Capacity

The model to the right illustraits how much development intensity is allowed under current City rules (the Comprehensive Plan and Zoning). Darker areas represent areas with the greatest allowances for development.



For More Information...

The **Portland Plan Atlas** includes maps of the different factors impacting land supply. Follow the "Learn About Your City" links at the Portland Plan website below.

For information on how Metro's forecast model, Metroscope, works, please check out Metro's website: **www.metro-region.org**.