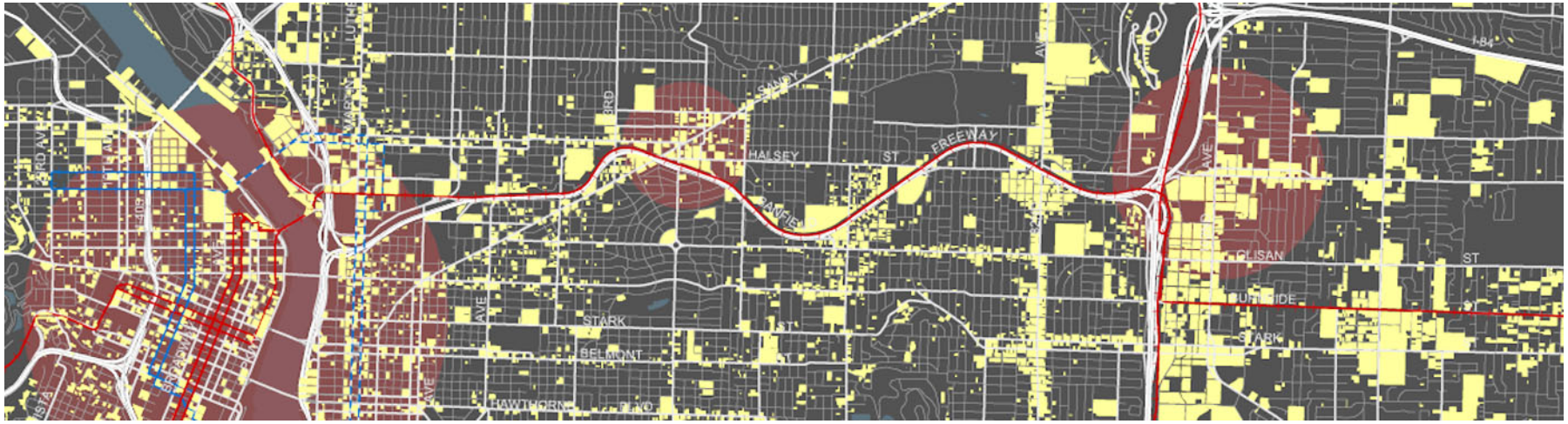
City of Portland Bureau of Planning & Sustainability

Buildable Lands Inventory and Growth Allocation GIS model



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Bureau of Planning and Sustainability
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City of Portland, Oregon
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overview

The City of Portland is currently engaged in an effort – the Comprehensive Plan Update – to plan for the long-term future of our city. In order to discuss the future of Portland, it is important to establish a basic understanding of how the City today compares to the vision of the City for the future. The Bureau of Planning & Sustainability's Development Capacity Analysis geographic information systems (GIS) model provides information about the amount of existing and proposed housing and employment capacity, and information about how growth may be distributed.

Maximum land use intensities in Portland are controlled in three ways:

1. establishing floor area ratio (FAR) limit and maximum height limits. FAR is the ratio of a building's total square footage to the square footage of the underlying development parcel; or
2. limiting the total number of multi-family residential units; or
3. assigning minimum lot sizes for new single-family residential development.

These limits govern building size and bulk, and – among other objectives – create reasonable certainty for utility and transportation providers regarding the intensities of use for which they must provide infrastructure. FAR and building height limits are the primary limiting factor on development in employment, commercial, and high-density residential areas. In multi-family and single-family residential areas, capacity is based on the allowed number of residential units, rather than maximum building square footages. The specific criteria for determining allowed capacity are described in detail in the Methodology section of this document.

All development capacity and growth allocation analysis is based on the City of Portland's "Comprehensive Plan Designations" rather than existing zoning. The Comprehensive Plan Designations reflect the current adopted land use plan for the City of Portland. This plan guides the future growth and development of the city. This analysis provides a means to compare the possible outcomes of the current adopted plans with other alternatives, and quantify possible impacts of new recommended plans.

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There are several reasons for conducting this analysis:

› to quantify the existing development capacity within Portland under the current Comprehensive Plan and zoning regulations;

› to identify likely redevelopment scenarios and prospective clusters of future development activity by identifying sites that are significantly underutilizing their allowed development capacity;

› to generate development capacity and possible growth allocation statistics for different areas of the City to highlight the differences in terms of existing and allowed development capacity;

› to serve as a basis for predicting residential and employment growth under different development scenarios;

› to help measure the possible impact of recommended land use plans, by predicting where growth may occur, which provides a basis to evaluate impacts – for example, impacts to the transportation system, tree canopy, housing supply, air quality.

Important note: This is a "supply-side" analysis. The model does not predict market demand for new construction. It only identifies lands within the City that could potentially become available for development/redevelopment should market demand exist.

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methodology

The Development Capacity Analysis and Growth Allocation geographic information systems (GIS) model consists of 4 basic steps:

1. calculate existing and recommended development and allowed development limits in terms of building square footage, number of multi-family residential units, number of allowed single-family residential lots, and estimated number of jobs;
2. identify development parcels that significantly underutilize their allowed (or proposed) development capacity;
3. apply development constraints to determine remaining, estimated development capacity in terms of building square footage, number of multi-family residential units, number of allowed single-family residential lots, and estimated number of jobs;
4. allocate the expected 20-year housing and employment growth to the available development capacity.

Each of these steps is discussed in detail in the following sections. Refer to the Model Inputs section below for more information on each of the GIS data inputs (development parcels, 3D building model, etc.).

Step 1: Calculate existing development and allowed development limits

The first step in the development capacity model is to calculate existing development and allowed (or proposed) development limits. This allows for a determination of how much of each development parcel's allowed capacity is being used (or not used). **Figure 1** presents an overview of this process, described in detail below.

Existing development

Existing building square footages are determined using the City of Portland's 3D building model. Where building square footage is known (meaning the 3D building GIS dataset building "feature" is attributed with a known square footage), that information is used by the model. Known square footages are usually derived from building permit information, but other sources are used as well (such as information from the building's developer).

If the building square footage is not known, it is estimated using the 3D building model. First, a predominant use is assigned to each building based on the Multnomah County Assessor "property codes". The property codes are consolidated into a small number of general categories – office, institutional, multi-family residential, etc. – and each one of these general categories is assigned an average floor-to-floor height based on standard development practices relating to each use. These assumptions are shown in **Table 1**.

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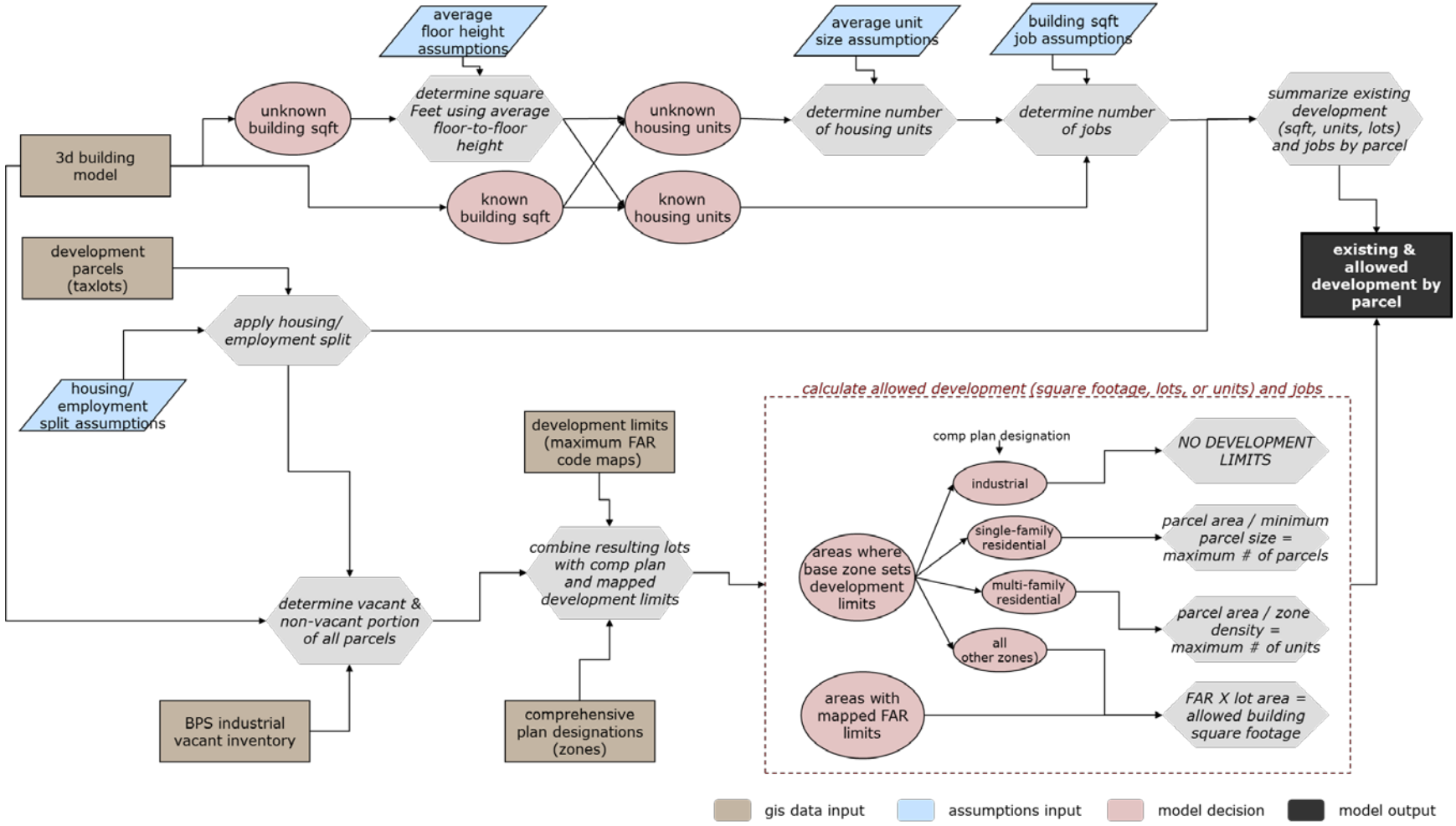


Figure 1. Buildable Lands Inventory GIS model Step #1: Calculate existing and allowed development.

Table 1: Average floor-to-floor height assumptions by predominant building use.

use	average floor-to-floor height
commercial	14'/19'*
industrial	19'
institutional	12'/14'/19'*
multi-family residential	10'
office	14'
single-family residential	10'
all other uses/unknown use	12'

* floor height depends on the specific use. For example, a building with a "big box" retail property code (commercial use) is assigned a height of 19'

Next, the number of stories for each portion of each building – each *polygon* making up the building's form -- is determined by dividing the height of the polygon by the average floor-to-floor height as determined by the predominant building use. The base area – or *footprint* – of each component polygon is multiplied by the number of stories to arrive at the total estimated floor square footage for that portion of the building. The total square footage of the building is calculated by combining the square footage of all the component polygons.

The total building square footage for each development parcel is then calculated as the total square footage of all buildings on the parcel. Because some parcels contain only a portion of a building's footprint, square footages are weighted based on the percentage of the building footprint within each parcel. **Figure 2** illustrates this process.

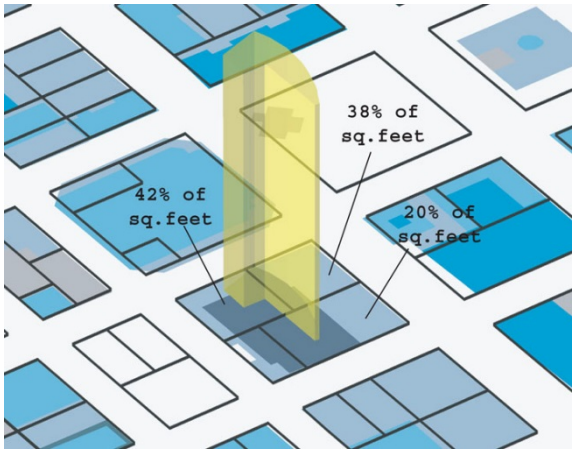
Existing number of multi-family housing units are derived from City of Portland Buildings GIS Data.

Allowed development capacity

Before calculating the allowed development capacity of each parcel, portions of parcels that have been identified as vacant by the Bureau of Planning & Sustainability (in their industrial/employment lands inventory) are divided into "new" development parcels. This allows these areas to be evaluated separately from the larger lot that they are within.

(a) height of each building polygon is derived from the 3D model

(b) each polygon is divided into floors; each floor's square footage can then be calculated



(c) total square footage of each building polygon is then assigned to a parcel based on the % area in each parcel

Figure 2. Estimating total building development parcel building square footage.

There are two ways the specific development limits are applied to parcels in Portland:

1. specific Planning and Zoning Code maps that delineate FAR and height limits for particular areas of the City (such as the Central City Plan District); or
2. through development limits related to the parcel's Comprehensive Plan designation and zone (or proposed designation and zone).

If there is no code map showing a development limit for the parcel, then the comprehensive plan or zoning designation determines the limits (**Figure 3**). Note that some designations, like "industrial sanctuary", have no development limits. This model can be run using either the current zoning, or anticipated future zoning based on the current or proposed Comprehensive Plan.

The parcel data is combined with both the code map GIS data and the zoning GIS data (which contains both current zoning and current and possible future comprehensive plan designations). For each parcel, a determination is made as to which of these two apply. Once this is determined, allowed development capacity is calculated as follows:

1. areas with mapped FAR limits (per code maps)

Where FAR limits are determined by a code map, the total allowed FAR is calculated by multiplying the lot area by the FAR limit. For example, a 20,000 square foot lot with a FAR limit of 4:1 would have an allowed development capacity of 80,000 square feet. Note that the model only considers "base" FAR. Any additional FAR – *bonus FAR* – that results from having certain amenities (i.e., bike parking) or building features (i.e., ecoroofs) are not currently taken into consideration when determining "underutilized" lots. They are, however, calculated for each lot where the bonus FAR limit is known, so this information is in the output dataset.

2. areas where the base zone sets development limits

Where the development limits are determined by the base zone, development limits can be expressed as not only building square footage, but – in residential zones – as allowed lots and residential units as well. The limits are calculated as follows:

i. industrial parcels (IS zones): no development limits (FAR and height limitations do not apply to industrially-zoned lots).

ii. single-family residential parcels (R2.5, R5, R7, R10, R20 & RF zones): development limits are expressed as the allowed number of development parcels based on the minimum lot size of the zone. The total parcel area is divided by the minimum lot size to determine the total number of allowed parcels. If, for example, a parcel in an R5 zone is 20,000 square feet, that parcel could be subdivided into four 5,000 square foot lots (the minimum lot size in a R5 zone is 5,000 square feet.) Note that resulting values are rounded differently based on the maximum number of lots. Refer to the Single-Dwelling Zones Land Division Guide for more information.

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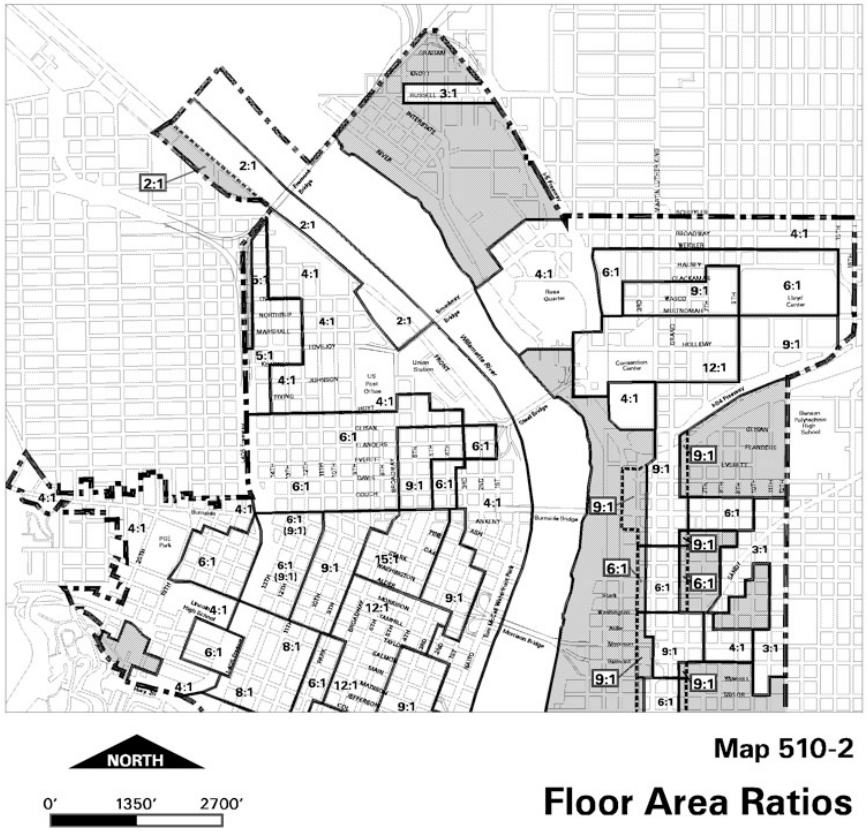

(a) FAR limits map from Title 33 zoning code

Table 130-3
Summary of Development Standards in Commercial Zones

Standard	CN1	CN2	CO1	CO2	CM	CS	CG	CX
Maximum FAR (see 33.130.205)	.75 to 1	.75 to 1	.75 to 1	2 to 1	1 to 1 See 33.130.253	3 to 1	3 to 1	4 to 1
Maximum Height (see 33.130.210)	30 ft.	30 ft.	30 ft.	45 ft.	45 ft.	45 ft.	45 ft.	75 ft.
Min. Building Stbks (see 33.130.215) Street Lot Line or Lot Line Abutting an OS, RX, C, E, or I Zone Lot	0	0	0	0	0	0	0	0
Lot Line Abutting other R Zoned Lot	See Table 130-4	See Table 130-4	See Table 130-4	See Table 130-4	See Table 130-4	See Table 130-4	See Table 130-4	See Table 130-4
Garage Entrance Setback (see 33.130.250,E)	5/18 ft	5/18 ft	5/18 ft	5/18 ft	5/18 ft	5/18 ft	5/18 ft	5/18 ft
Max.Building Stbks (see 33.130.215) Street Lot Line	None	None	None	None	10 ft.	10 ft.	None	None
Transit Street or Pedestrian District	10 ft.	10 ft.	10 ft.	10 ft.	None	None	10 ft.	10 ft.

(b) FAR limits as determined by zone

Figure 3. Examples of 2 different methods of applying development limits to parcels.

iii. multi-family residential parcels (R1, R2, R3 & IR zones): development limits are expressed as the allowed number of residential units based upon maximum density of the zone. The total parcel area is divided by the maximum density to determine the total number of allowed units. If, for example, a parcel in an R1 zone is 20,000 square feet, that parcel is allowed 20 multi-family units (the minimum zone density in a R1 zone is 1,000 square feet.) Note that resulting values are rounded differently based on the maximum number of units. Refer to the Multi-Dwelling Zones Land Division Guide for more information.

iv. all other high-density residential, mixed use commercial, and employment parcels (CG, CS, CX, EX, IR, ME, NC, OC, RH, RX & UC zones): development limits are expressed as the allowed building square footage based on the maximum floor-area ratio (FAR). The total parcel area is multiplied by the maximum FAR to determine the total allowed building square footage. If, for example, a 20,000 square feet parcel has an FAR of 4:1, an 80,000 square foot building is allowed on that lot. Note that only "base" FAR is considered. Maximum FAR of comprehensive plan designations are determined by associating them with existing base zones, or making an assumption about future zoning designations (**Appendix 1**).

The final output of Step 1 of the model is a GIS dataset that contains the existing building square footage and allowed development (total square footage, number of units, or number of parcels) for every parcel within the City of Portland.

Step 2: Identify development parcels that significantly underutilize their allowed development capacity

The second step in the Buildable Lands Inventory model is to identify parcels that are significantly underutilizing their allowed (or proposed) development capacity, which is determined in Step #1 above. **Figure 4** provides an overview of the process, described in detail below.

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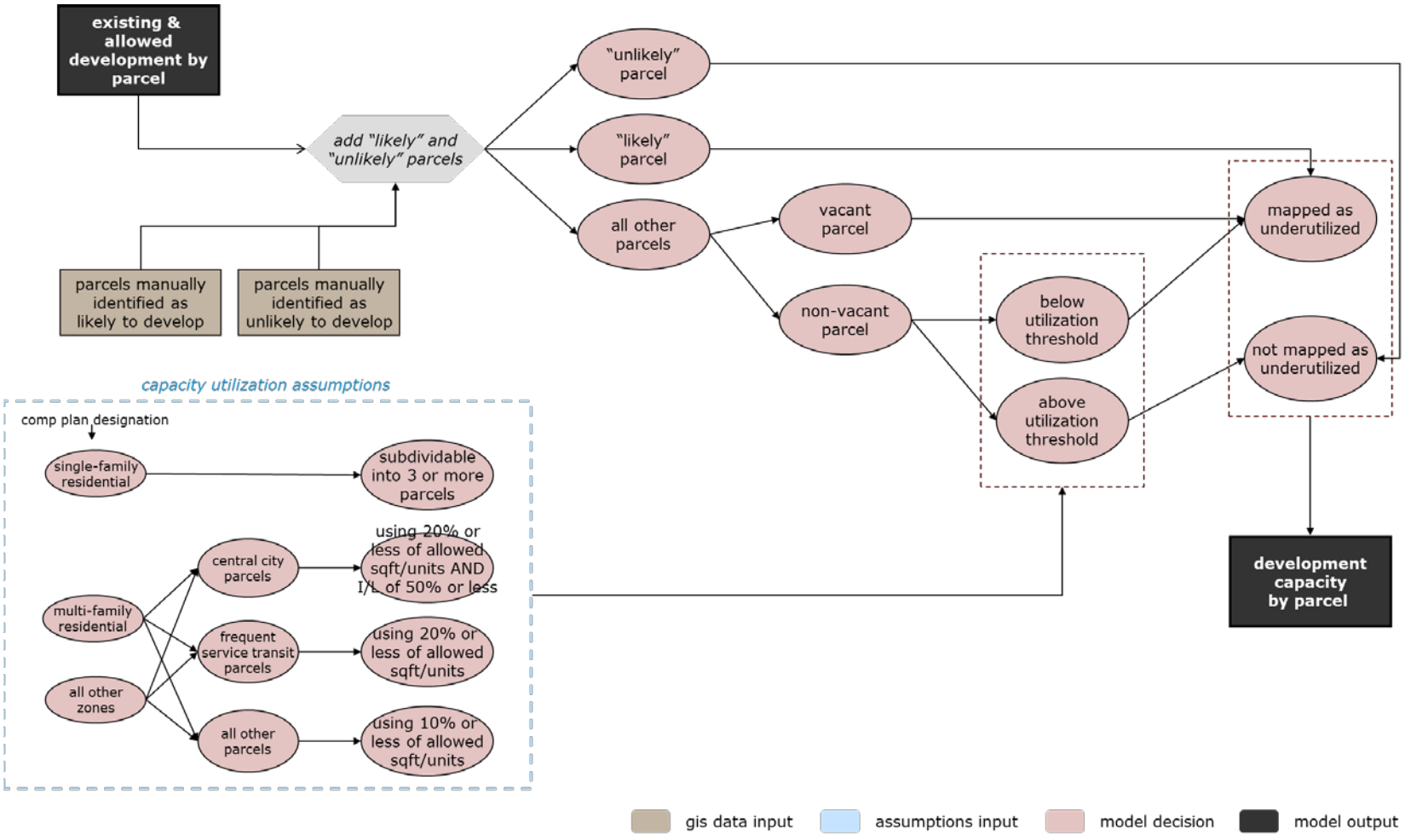

Figure 4. Buildable Lands Inventory GIS model Step #2: Identify underutilized parcels.

Parcels are evaluated as follows:

1. “Likely” & “Unlikely” parcels

The initial outputs of the Buildable Lands Inventory GIS model were reviewed thoroughly by Bureau of Planning & Sustainability staff. Based on staff knowledge, parcels that were known to have high development or redevelopment potential and were not identified by the model as underutilized were “manually” flagged as underutilized and included in subsequent model outputs. These “likely” parcels are all mapped as underutilized regardless of the existing or allowed development capacity.

Parcels that were not identified as constrained in Step 2 of the model, but that are known to have a very low likelihood for development or redevelopment, were manually flagged as “unlikely” to develop, and therefore not included in the final map of underutilized parcels.

2. All other parcels

All vacant parcels are mapped as underutilized, regardless of the allowed development capacity. Parcels are identified as vacant by Metro, in their regional vacant lands inventory, or the Bureau of Planning & Sustainability in their industrial/employment lands inventory. In addition, any non-industrial parcels where less 5% or less of the site area is developed AND where the Multnomah County Assessor has recorded the current land use as “vacant” are included in the vacant category. Portions of a parcel larger than ½ acre that are mapped as vacant are considered a separate parcel and are treated as such in all 3 steps of the DCA model.

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

i. industrial parcels (IS zones): industrially-zoned parcels can not be evaluated because there are no FAR or other similar limits on allowed development. As a result, *only vacant industrial properties are mapped as significantly underutilized*.

ii. single-family residential parcels (R2.5, R5, R7, R10, R20 & RF zones): single-family residential (SFR)-zoned parcels that can be subdivided into 3 or more parcels – calculated using the land division assumptions in Step #1 of the DCA model – are mapped as underutilized. Note that the number of allowed parcels is rounded differently based on the maximum number of parcels. Refer to the Single-Dwelling Zones Land Division Guide for more information.

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iii. multi-family residential parcels (R1, R2, R3 & IR zones):

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

For example, a 20,000 square foot R1 parcel that currently has 2 existing units, an improvement value of $50,000 and a land value of $200,000. The percentage of capacity used by this parcel is calculated as:

$$\frac{number\ of\ existing\ units}{parcel\ area \div zone\ density} = \frac{2}{20{,}000 \div 1{,}000} = \frac{2}{20} = 10\%$$

Note that the number of allowed units is rounded differently based on the maximum number of units. Refer to the Multi-Dwelling Zones Land Division Guide for more information.

The improvement-to-land ratio of this parcel is calculated as follows:

$$\frac{improvement\ value}{land\ value} = \frac{\$50{,}000}{\$200{,}000} = 25\%$$

In this Central City parcel example, the parcel is mapped as underutilized because the percentage of capacity used is less than 20% AND the improvement-to-land ratio is less than 50%.

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

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

iv. all other high-density residential, mixed use commercial, and employment parcels (CG, CS, CX, EX, IR, ME, NC, OC, RH, RX & UC zones):

a. parcels within the Central City: mapped as underutilized if they are using less than 20% of their allowed floor-area ratio (FAR) building square footage AND the parcel's improvement-to-land ratio is 50% or less. Improvement-to-land ratios are calculated using Multnomah County Assessor real market land and improvement (building) values for the current tax year.

For example, a 20,000 square foot parcel that currently contains a 10,000 square foot building has a FAR of 5:1, an improvement value of $50,000 and a land value of $200,000. The percentage of capacity used by this parcel is calculated as:

$$\frac{existing\ building\ square\ footage}{parcel\ area \times FAR} = \frac{10{,}000}{20{,}000 \times 5} = \frac{10{,}000}{100{,}000} = 10\%$$

The improvement-to-land ratio of this parcel is 25%, calculated per the multi-family example above. This Central City parcel is mapped as underutilized because the percentage of capacity used is less than 20% AND the improvement-to-land ratio is less than 50%.

Note that all calculations are based on base floor-area ratios and do not include additional square footages that might be allowed because of development and building features that qualify for FAR bonuses (residential development, bike lockers, etc.)

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

c. all other parcels: mapped as underutilized if they are using less than 10% of their allowed FAR building square footage (regardless of the improvement-to-land ratio).

Step 3: Apply development constraints

The third step in the Buildable Lands Inventory model is to apply development constraints to allowed development capacity. **Figure 5** summarizes the process of identifying constrained properties. The specific types of constraints are described in detail in **Appendix 2** (and described in more detail in **Appendix C of the Buildable Lands Inventory Summary Report**, adopted by City Council in October 2012).

Constraints are incorporated into the model as a two separate GIS featureclasses, one for constraints that apply to an entire parcel (i.e., slope, brownfields, historic resources), and one for partial lot constraints (i.e., protection overlays, wetlands, flood hazards). Constraint data and/or maps are available upon request.

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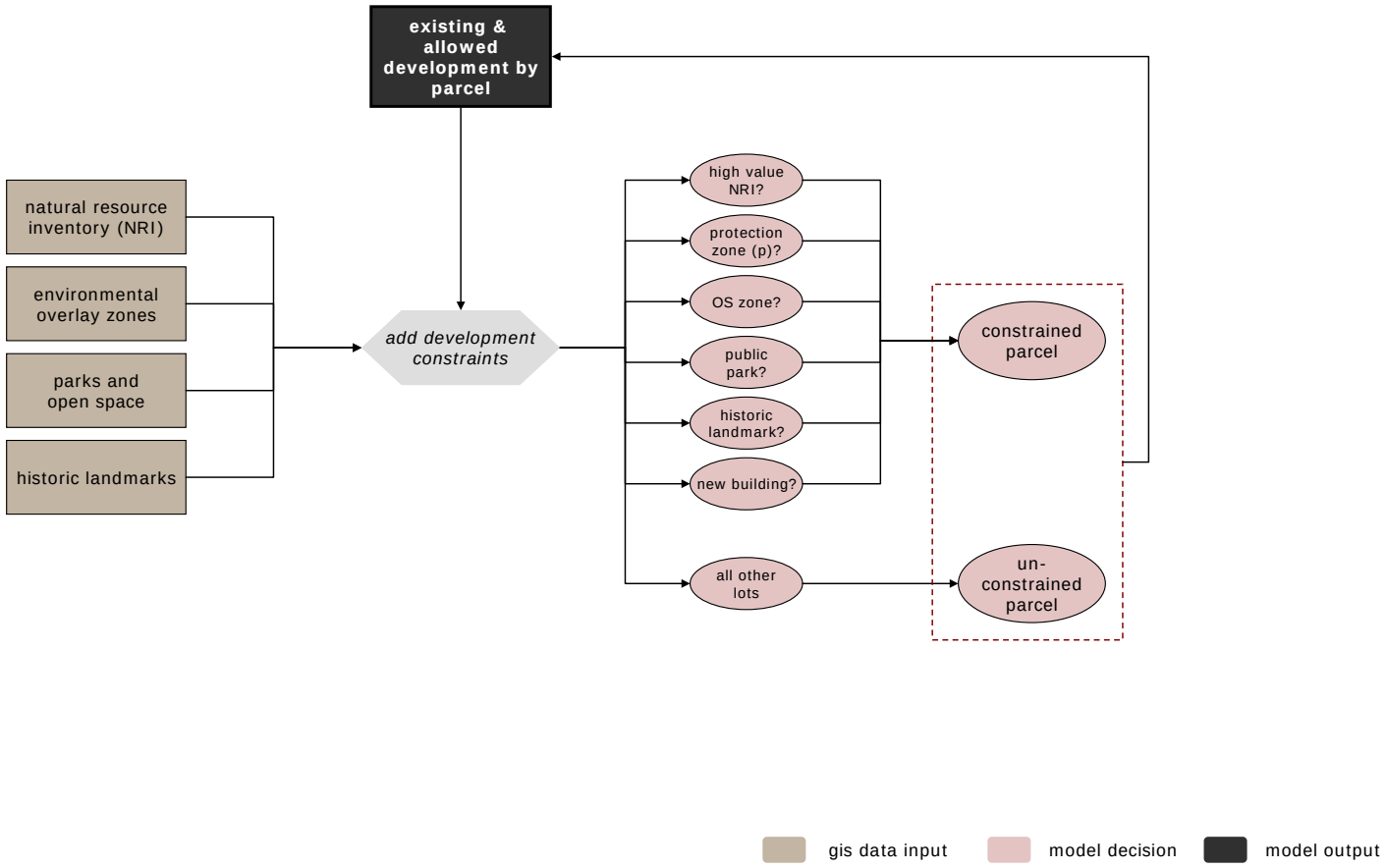

Figure 5. Buildable Lands Inventory GIS model Step #2: Identify constrained properties.

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Step 4: Housing and employment allocation

The final step in the Buildable Lands Inventory model is to generalize the constrained development capacity to a 250X250' grid covering the Portland urban service boundary area and iteratively allocate Metro's forecasted growth for the City as a whole to the individual grid cells. Currently the model is allocating forecasted growth from 2010 to 2035, less actual development built between 2010 and 2015, and new jobs added between 2010 and 2012. **Figure 6** illustrates this process.

The allocation model determines each grid cells "attraction index" using past development activity in the grid cell, and available capacity in the cell (relative weight of each factor in the index calculation is determined per the "Lookback" assumptions in **Appendix 1**). The index value for each cell is calculated by comparing the number of SFR and MFR units constructed in the cell in the past five years to all units constructed in the City, and the net housing and jobs capacity in the cell compared to the net capacity in the entire City. So for each cell, the single-family residential (SFR) attraction index would be calculated as:

$$Atraction\ Index = \left(\frac{SFR\ units\ added\ to\ grid\ cell\ in\ the\ last\ 5\ years}{SFR\ units\ added\ to\ the\ Portland\ USB\ in\ the\ last\ 5\ years} \times 80\%\right) + \left(\frac{SFR\ lot\ capacity\ of\ the\ cell}{SFR\ lot\ capacity\ in\ the\ USB} \times\ 20\%\right)$$

The index is then iteratively recalculated, based on the "proposed growth scenario" allocation area assumptions in **Appendix 1** (Tables 6 and 7). Allocation areas are defined modeling geographies that correspond to the Urban design Framework place types used in the recommended Comprehensive Plan (The Central City, Regional centers, Town centers, Civic Corridors, Neighborhood centers, etc.). These allocation areas are a tools that enables the model to respond to specific policy objectives, such as goals to accommodate a certain percentage of growth to the Central City, or various Mixed Use areas. For each allocation area, a specified percentage of units and jobs is allocated to that area. The allocation index is recalculated to distribute 100% of that allocation. The allocation areas were adjusted to represent different growth scenarios. A default scenario was also run that allocated growth based entirely on the attraction index, without the allocation area screen.

For example, the SFR allocation to a particular grid cell in an allocation area would be calculated as:

$$Allocation\ area\ SFR\ allocation\ \times \left(Grid\ cell\ SFR\ attraction\ index\ \times \left(\frac{Total\ SFR\ attraction\ index\ for\ the\ Portland\ USB}{Total\ SFR\ attraction\ index\ for\ all\ grid\ cells\ in\ the\ allocation\ area}\right)\right)$$

If the allocation exceeds the capacity of a cell, the surplus is then reallocated to cells with remaining capacity by adjusting the allocation index based on the total of the cells with remaining capacity (using an equation similar to the one above), and then the

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surplus is redistributed. The process continues until all housing units and jobs have been allocated. If a specific allocation area "fills up" to capacity, excess is re-allocated to other geographies.

The development capacity GIS model is composed of several individual Python scripts. The model itself runs in ESRI's ArcGIS (Version 10.3). The model is not static – as the inputs to the model change, the model results can be updated, thus allowing the model to incorporate changes in zoning regulations, assumptions, etc., thus making the capacity analysis easy to update and maintain over time.

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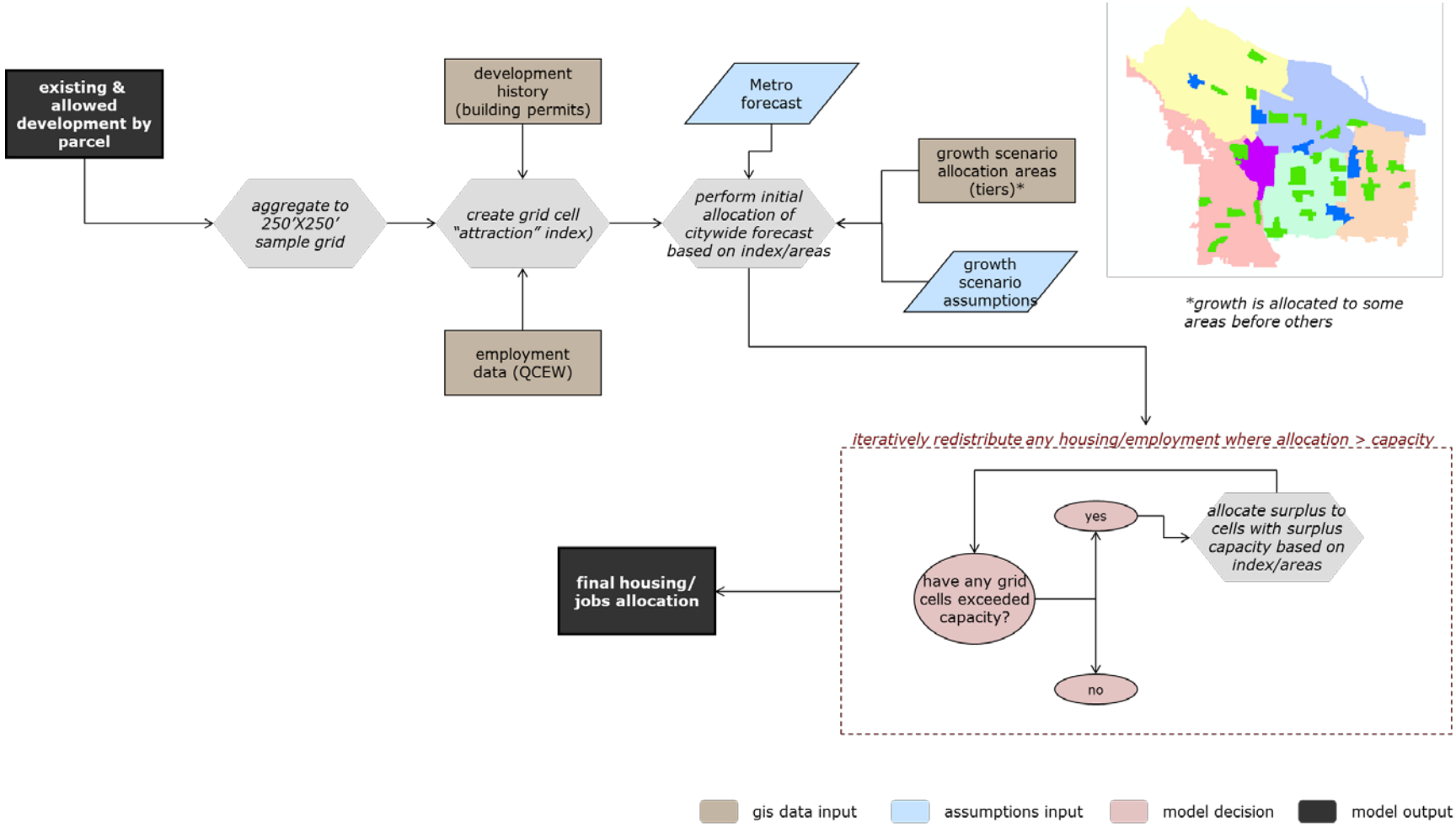

Figure 6. Buildable Lands Inventory GIS model Step #4: Allocate Housing and Jobs Forecast.

model results

BLI Model Development Capacity Parcels
A GIS featureclass containing all parcels identified as underutilized by the BLI GIS model. Contains parcel-by-parcel information about existing SFR/MFR housing and jobs, and allowed housing and job capacity. Development constraint information is also tracked for each parcel, and allowed capacities are adjusted based on these constraints.

Download: http://gis.pdx.opendata.arcgis.com/datasets/266a4e0651e245399caf09eb06691272_90

Metadata: https://www.portlandmaps.com/metadata/index.cfm?&brief=0&action=DisplayLayer&LayerID=52965

BLI Model Housing/Employment Allocation Grid
Allocation of Metro 2035 forecast for the City of Portland to a 250'X250' grid covering the City of Portland area. Forecast is allocated to cells based on development trends, employment densities, and underlying development capacity per the GIS-based buildable lands inventory (BLI) allocation and capacity models. Growth is allocated based on the current proposed comprehensive plan land use designations and a proposed ("preferred") growth scenario that resulted from the Bureau of Planning and Sustainability's (BPS) 2012 Growth Scenario Analysis.

Download: http://gis.pdx.opendata.arcgis.com/datasets/596a1c1dcca249c289c7bfe237ab876a_88

Metadata: https://www.portlandmaps.com/metadata/index.cfm?&brief=0&action=DisplayLayer&LayerID=53973

All other model inputs, Python scripts, and supporting documentation are available upon request.

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project contacts

For more information about the City of Portland Buildable Lands Inventory GIS model, please contact:

Kevin Martin | Bureau of Planning & Sustainability | Technical Services Manager | 503.823.7710
kevin.martin@portlandoregon.gov

Eric Engstrom | Bureau of Planning & Sustainability | Principal Planner | 503.823.3329
eric.engstrom@portlandoregon.gov

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Appendix 1: BLI Model Assumptions

Table 1: Comprehensive Plan and Capacity Assumptions

COMP_ZONE	TYPE	GEN_ZONE	GEN_ZONE_CC	REG_ZONE	FAR	FAR_UTIL	FAR_UTILCC	HEIGHT	ZONE_SIZE	RESSPLIT	RESSPLITCC	MFR_SPLIT	RETSPLITCC	AVG_UNIT	AVG_UNITCC	MIN_LOT	MIN_LOTCC	NOTES
CE	Zone	Commercial	Commercial	MUR9	2.5:1	1	0.90	45	0	0.25	0.40	1.00	0.06	1,000	1,000	1,500	10,000	
CG	Zone	Commercial	Commercial	MUR9	3:1	1	0.90	45	0	0.25	0.40	1.00	0.06	1,000	1,033	1,500	10,000	
CI1	Zone	Institutional	Institutional	MUR10	4:1	1	1.23	65	0	0.10	0.00	1.00	0.00	1,000	1,000	1,500	10,000	
CI2	Zone	Institutional	Institutional	MUR10	4:1	1	1.23	65	0	0.10	0.00	1.00	0.00	1,000	1,000	1,500	10,000	
CM1	Zone	Commercial	Commercial	MUR8	1.5:1	1	0.90	35	0	0.30	0.40	1.00	0.06	1,000	1,000	1,500	10,000	
CM2	Zone	Commercial	Commercial	MUR9	2.5:1	1	0.90	45	0	0.75	0.40	1.00	0.06	1,000	1,000	1,500	10,000	
CM3	Zone	Commercial	Commercial	MUR10	3:1	1	0.90	65	0	0.75	0.63	1.00	0.08	1,000	1,000	1,500	10,000	
CX	Comp Plan/Zone	Commercial	Commercial	MUR10	4:1	1	0.90	75	0	0.55	0.40	1.00	0.06	1,000	1,033	1,500	10,000	
EG1	Zone	General Employment	Mixed Employment	IND/IL	3:1	0.65	1.23	45	0	0.00	0.63	0.00	0.08	1,000	1,196	1,500	10,000	
EG2	Zone	General Employment	Mixed Employment	IND/IL	3:1	0.4	1.23	0	0	0.00	0.63	0.00	0.08	1,000	1,196	1,500	10,000	
EX	Comp Plan/Zone	Central Employment	Mixed Employment	MUR10	3:1	1	1.23	65	0	0.75	0.63	1.00	0.08	1,000	1,196	1,500	10,000	
IC	Comp Plan	Institutional	Institutional	MUR10	4:1	1	1.23	65	0	0.10	0.00	1.00	0.00	1,000	1,000	1,500	10,000	
IG1	Zone	Industrial	Industrial	IL	NA	0	0.00	0	0	0.00	0.00	0.00	0.00	1,000	1,000	1,500	10,000	
IG2	Zone	Industrial	Industrial	IL	NA	0	0.00	0	0	0.00	0.00	0.00	0.00	1,000	1,000	1,500	10,000	
IH	Zone	Industrial	Industrial	IL	NA	0	0.00	0	0	0.00	0.00	0.00	0.00	1,000	1,000	1,500	10,000	
IR	Comp Plan	Multi-Family Residential	Residential	MUR7	2:1	1	0.87	100	0	0.05	0.78	1.00	0.05	1,000	821	1,500	10,000	
IS	Comp Plan	Industrial	Industrial	IL	NA	0	0.00	0	0	0.00	0.00	0.00	0.00	1,000	1,000	1,500	10,000	
ME	Comp Plan	General Employment	Mixed Employment	IND/IL	1:1	1	1.23	45	0	0.00	0.63	0.00	0.08	1,000	1,196	1,500	10,000	
MU-C	Comp Plan	Commercial	Commercial	MUR9	3:1	1	0.90	45	0	0.50	0.66	0.95	0.34	1,000	1,000	1,500	10,000	
MU-D	Comp Plan	Commercial	Commercial	MUR8	.75:1	1	0.90	30	0	0.20	0.25	0.75	1.00	1,000	1,000	1,500	10,000	
MU-N	Comp Plan	Commercial	Commercial	MUR9	2.5:1	1	0.90	45	0	0.25	0.25	0.80	0.75	1,000	1,000	1,500	10,000	
MU-U	Comp Plan	Commercial	Commercial	MUR10	4:1	1	0.90	65	0	0.75	0.75	0.99	0.25	1,000	1,000	1,500	10,000	
NC	Comp Plan	Commercial	Commercial	MUR8	.75:1	1	0.90	30	0	0.30	0.40	1.00	0.06	1,000	1,033	1,500	10,000	
OC	Comp Plan	Commercial	Commercial	MUR9	1:1	1	0.90	45	0	0.00	0.40	0.00	0.06	1,000	1,033	1,500	10,000	
OS	Comp Plan/Zone	Open Space	Open Space	POS	NA	0	0.00	0	0	0.00	0.00	0.00	0.00	1,000	1,000	1,500	10,000	
R1	Comp Plan/Zone	Multi-Family Residential	Residential	MFR6	NA	1	0.87	45	1,000	1.00	0.78	0.67	0.05	1,000	821	1,500	10,000	
R10	Comp Plan/Zone	Single-Family Residential	Residential	SFR3	NA	0	0.00	30	10,000	1.00	1.00	0.00	0.00	1,000	1,000	1,500	10,000	
R2	Comp Plan/Zone	Multi-Family Residential	Residential	MFR2	NA	1	0.87	40	2,000	1.00	0.78	0.67	0.05	1,000	821	1,500	10,000	
R2.5	Comp Plan/Zone	Single-Family Residential	Residential	SFR14	NA	0	0.00	35	2,500	1.00	1.00	0.00	0.00	1,000	1,000	1,500	10,000	
R20	Comp Plan/Zone	Single-Family Residential	Residential	SFR2	NA	0	0.00	30	20,000	1.00	1.00	0.00	0.00	1,000	1,000	1,500	10,000	
R3	Comp Plan/Zone	Multi-Family Residential	Residential	MFR1	NA	0	0.00	35	3,000	1.00	1.00	0.67	0.00	1,000	1,000	1,500	10,000	
R5	Comp Plan/Zone	Single-Family Residential	Residential	SFR7	NA	0	0.00	30	5,000	1.00	1.00	0.00	0.00	1,000	1,000	1,500	10,000	
R7	Comp Plan/Zone	Single-Family Residential	Residential	SFR5	NA	0	0.00	30	7,000	1.00	1.00	0.00	0.00	1,000	1,000	1,500	10,000	
RF	Comp Plan/Zone	Single-Family Residential	Residential	SFR1	NA	0	0.00	30	86,920	1.00	1.00	0.00	0.00	1,000	1,000	1,500	10,000	
RH	Comp Plan/Zone	Multi-Family Residential	Residential	MUR9	2:1	1	0.87	100	0	1.00	0.78	1.00	0.05	1,000	821	1,500	10,000	
RX	Comp Plan/Zone	Multi-Family Residential	Residential	MUR10	4:1	1	0.87	100	0	1.00	0.78	1.00	0.05	1,000	821	1,500	10,000	
UC	Comp Plan	Commercial	Commercial	MUR9	3:1	1	0.90	45	0	0.75	0.40	1.00	0.06	1,000	1,033	1,500	10,000	
WHI	Comp Plan	Industrial	Industrial	IL	NA	0	0.00	0	0	0.00	0.00	0.00	0.00	1,000	1,000	1,500	1,500	

Table 2: Institutional Campus Capacity Assumptions

Name	Campus_ID	MP_SQFT	MP_FAR	MP_Jobs	Notes
Concordia University	1	81,762	0.1041	275	
Kaiser Medical Center	4	233,758	0.3211	478	
Legacy Emmanuel Hospital	2	272,004	0.1336	1,894	
Legacy Good Samaritan Hospital	3	442,419	0.7158	1,083	
Lewis & Clark College	5	908,162	0.1378	613	
Multnomah University	6	104,943	0.1014	187	
OHSU-Marquam Hill Hospitals	17	1,861,846	0.4197	6,318	
OHSU-South Waterfront Campus	18	508,115	3.9940	4,000	Deduct from Institutions, Add to Central City job total
PCC-Cascade	7	102,913	0.3211	381	
PCC-Southeast	8	54,833	0.3211	203	
PCC-Sylvania	9	347,634	0.3211	1,287	
Portland Adventist Hospital	10	0	0.0000	1,124	Deduct from Gateway/Neighborhood Commercial jobs
Portland State University	16	0	0.0000	2,139	Deduct from Central City jobs
Providence Portland Hospital	11	580,000	0.9318	3,430	
Reed College	12	263,674	0.0563	678	
University Of Portland	13	545,601	0.0937	506	
University of Western States	15	31,560	0.0351	147	
Warner Pacific College	14	185,217	0.2738	186	

Table 3: Development Constraint Assumptions

Category	Field	EOA_Category	Description	Partial_Lots	Model_Update	Rate_Housing	Rate_Employ_CC	Rate_Employ_Ind	Rate_Employ_Com	Rate_Employ_Inst
Brownfields	conECSI	Brownfields	DEQ, Environmental Cleanup Sites I (ECSI)	No	Yes	0.85	0.90	0.60	0.60	0.55
Brownfields	conLUST	Brownfields	DEQ, Underground Storage Tank Cleanup Sites (UST)	No	Yes	0.85	0.90	0.60	0.60	0.55
Cultural Resources	conHist	Low	Historic and Conservation districts	No	No	0.85	0.85	0.85	0.85	0.85
Cultural Resources	conHistLdm	Historic	Historic and Conservation Landmarks	No	Yes	0.55	0.55	0.55	0.55	0.55
Cultural Resources	conNatAm	Low	Parcels requiring archaeological scan or consultation with Native American tribal governments	No	No	1.00	0.85	0.85	0.85	0.85
Environmental Overlay Zones	conCovrly	Environmental	Environmental Conservation Zones	Yes	Yes	1.00	0.75	0.50	0.35	0.35
Environmental Overlay Zones	conPovrly	Full	Environmental Protection Zones	Yes	Yes	0.00	0.00	0.00	0.00	0.00
Flight Limitations	conAirHgt	None	Approach and departure cones	No	No	0.85	1.00	1.00	1.00	1.00
Flight Limitations	conHeliprt	None	Heliport Landing (impacts several buildings near Portland Heliport)	No	No	0.85	1.00	1.00	1.00	1.00
Flight Limitations	conNoise	None	Noise contours (areas above LDN 65 and 68 noise contours)	No	No	0.85	1.00	1.00	1.00	1.00
Greenway	conGW	Greenway	All land with g/r/n overlays; land within i overlay where 10% or more of the parcel is within 125' of OHW	No	No	0.55	0.75	0.50	0.55	0.55
Hazards	conFld100	Environmental	FEMA 100-Year Floodplain Map	Yes	Yes	0.85	0.75	0.50	0.35	0.35
Hazards	conFldway	Full	FEMA Floodway Map	Yes	Yes	0.00	0.00	0.00	0.00	0.00
Hazards	conLSHA	None	Parcels within 50' of a mapped landslide hazard area	No	No	0.85	1.00	1.00	1.00	1.00
Hazards	conSLIDO	None	Parcels within 50' of a mapped historic landslide (most recent SLIDO database)	No	No	0.85	1.00	1.00	1.00	1.00
Hazards	conSlp25	Environmental	Parcels where 25% or more of the parcel has a slope of greater than 25%	No	No	0.85	0.75	0.50	0.35	0.35
Infrastructure	conSewer	Infrastructure	Infrastructure Constrained Areas: Sewer	No	No	0.85	0.75	0.75	0.75	0.75
Infrastructure	conStorm	Infrastructure	Stormwater System	No	No	0.85	0.75	0.75	0.75	0.75
Infrastructure	conWater	Infrastructure	Water System	No	No	0.85	0.75	0.75	0.75	0.75
Natural Resources	conWetland	Environmental	Wetlands	Yes	Yes	0.55	0.75	0.50	0.35	0.35
Public Ownership	conInstit	None	Institutional Campuses	No	No	0.00	1.00	1.00	1.00	1.00
Public Ownership	conPrvCom	Full	Private Common Open Space	No	No	0.00	0.00	0.00	0.00	0.00
Public Ownership	conPubOwn	None	Publicly owned or controlled lots that do not provide for residential uses	No	Yes	0.20	1.00	1.00	1.00	1.00
Scenic Areas	conView	Low	Views	No	No	0.85	0.85	0.85	0.85	0.85
Transporation	conTranCap	Infrastructure	2008 Volume to Capacity Ratios	No	No	0.85	0.75	0.75	0.75	0.75
Transporation	conTranInt	Infrastructure	ODOT Highway Interchanges	No	No	0.85	0.75	0.75	0.75	0.75
Transporation	conTranSub	Infrastructure	Substandard and Unimproved Streets	No	No	0.85	0.75	0.75	0.75	0.75

Table 4: Allocation Attraction Index Assumptions

Alloc_Type	Lookback	Capacity	Notes
Housing	80%	20%	Lookback based on permit history (5-year, or full history)
Employment	80%	20%	Lookback based on number of existing employees (QCEW data)

Table 5: SFR, MFR and Jobs Allocation

Alloc_Type	Allocation	Notes
MFR Units	81,653	96,059 (2010 to 2035 forecast) less 2,043 ADUs less 12,363 New MFR Units (through 6/1/15)
SFR Units	22,098	25,535 (2010 to 2035 forecast) less 3,437 New SFR Units (through 6/1/15)
ADU Units	2,045	3,000 (2010 to 2035 forecast) less 955 New ADUs (through 6/1/15); ADU units assigned to SFR zones through separate model
Jobs	117,015	141,640 (2010 to 2035 forecast) less 24,625 new jobs (through 2013, per QCEW data)

Table 6: Proposed Growth Scenario Housing Allocation Assumptions

Alloc_Area	SFR_Cap_Util	MFR_Cap_Util	MFR_Alloc	Notes
Central City Plan District	100%	110%	38.00%	
Gateway	100%	80%	4.00%	
Town Center - Urban Ring	100%	90%	27.00%	
Civic Corridors	100%	80%	16.00%	
Neighborhood Centers - Corridors	100%	70%	12.00%	
Other	100%	70%	3.00%	

Table 7: Proposed Growth Scenario Employment Allocation Assumptions

Alloc_Area	Employ_Cap_Util	Employ_Alloc	Notes
Central City Plan District	100%	23.92%	Includes PSU and OHSU South Waterfront institutional allocation
Central City Industrial	100%	6.83%	
Industrial	100%	21.78%	
Institutional	100%	18.13%	
Gateway	100%	3.09%	Includes Adventist Hospital Institutional allocation
Neighborhood Commercial	100%	20.34%	
Residential	100%	5.30%	
WHI	100%	0.60%	750 jobs from Industrial allocation

Table 8: Housing Type Assumptions

Comp_Plan	A	B	C	D	E	F	G	H	I	J	K	A_CC	B_CC	C_CC	D_CC	E_CC	F_CC	G_CC	H_CC	I_CC	J_CC	K_CC
CG	0.00%	28.57%	28.57%	42.86%	3.23%	37.63%	32.26%	26.88%	0.00%	0.00%	0.00%	0.00%	28.57%	28.57%	42.86%	3.23%	37.63%	32.26%	26.88%	0.00%	0.00%	0.00%
CX	0.00%	0.00%	0.00%	100.00%	0.00%	15.15%	0.00%	10.10%	50.51%	9.09%	15.15%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	20.00%	0.00%	0.00%	0.00%	80.00%
EX	0.00%	0.00%	0.00%	100.00%	4.04%	15.15%	0.00%	15.15%	45.45%	10.10%	10.10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	10.00%	10.00%	25.00%	5.00%	50.00%
IC	0.00%	0.00%	0.00%	0.00%	0.00%	25.00%	75.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	25.00%	75.00%	0.00%	0.00%	0.00%	0.00%
IR	0.00%	0.00%	0.00%	0.00%	5.00%	5.00%	90.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.00%	5.00%	90.00%	0.00%	0.00%	0.00%	0.00%
IS	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
ME	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	11.11%	5.56%	0.00%	83.33%	0.00%	0.00%	0.00%
MU-C	20.00%	20.00%	20.00%	40.00%	5.26%	26.32%	15.79%	52.63%	0.00%	0.00%	0.00%	20.00%	20.00%	20.00%	40.00%	5.26%	26.32%	15.79%	52.63%	0.00%	0.00%	0.00%
MU-D	5.00%	15.00%	10.00%	75.00%	75.00%	25.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.00%	15.00%	10.00%	75.00%	75.00%	25.00%	0.00%	0.00%	0.00%	0.00%	0.00%
MU-N	5.00%	20.00%	25.00%	50.00%	18.75%	37.50%	12.50%	31.25%	0.00%	0.00%	0.00%	5.00%	20.00%	25.00%	50.00%	18.75%	37.50%	12.50%	31.25%	0.00%	0.00%	0.00%
MU-U	0.00%	0.00%	0.00%	100.00%	2.02%	12.12%	20.20%	20.20%	30.30%	10.10%	5.05%	0.00%	0.00%	0.00%	100.00%	2.02%	12.12%	20.20%	20.20%	30.30%	10.10%	5.05%
NC	0.00%	0.00%	40.00%	60.00%	0.00%	53.33%	0.00%	46.67%	0.00%	0.00%	0.00%	0.00%	0.00%	40.00%	60.00%	0.00%	53.33%	0.00%	46.67%	0.00%	0.00%	0.00%
OC	0.00%	0.00%	40.00%	60.00%	0.00%	53.33%	0.00%	46.67%	0.00%	0.00%	0.00%	0.00%	0.00%	40.00%	60.00%	0.00%	53.33%	0.00%	46.67%	0.00%	0.00%	0.00%
OS	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
R1	0.00%	0.00%	40.00%	60.00%	10.53%	36.84%	0.00%	0.00%	47.37%	5.26%	0.00%	0.00%	0.00%	40.00%	60.00%	10.53%	36.84%	0.00%	0.00%	47.37%	5.26%	0.00%
R10	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
R2	0.00%	33.33%	66.67%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	33.33%	66.67%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
R2.5	70.00%	25.00%	5.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	70.00%	25.00%	5.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
R20	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
R3	0.00%	33.33%	66.67%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	33.33%	66.67%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
R5	85.00%	15.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	85.00%	15.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
R7	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
RF	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
RH	0.00%	0.00%	40.00%	60.00%	10.53%	36.84%	0.00%	0.00%	47.37%	5.26%	0.00%	0.00%	0.00%	42.86%	57.14%	8.60%	37.63%	0.00%	0.00%	48.39%	5.38%	0.00%
RX	0.00%	0.00%	0.00%	100.00%	2.04%	33.67%	0.00%	7.14%	38.78%	8.16%	10.20%	0.00%	0.00%	0.00%	100.00%	2.02%	6.06%	25.25%	3.03%	15.15%	3.03%	45.45%
UC	0.00%	20.00%	30.00%	50.00%	11.11%	5.56%	0.00%	83.33%	0.00%	0.00%	0.00%	0.00%	20.00%	30.00%	50.00%	11.11%	5.56%	0.00%	83.33%	0.00%	0.00%	0.00%
WHI	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Table 9: Housing Type Descriptions

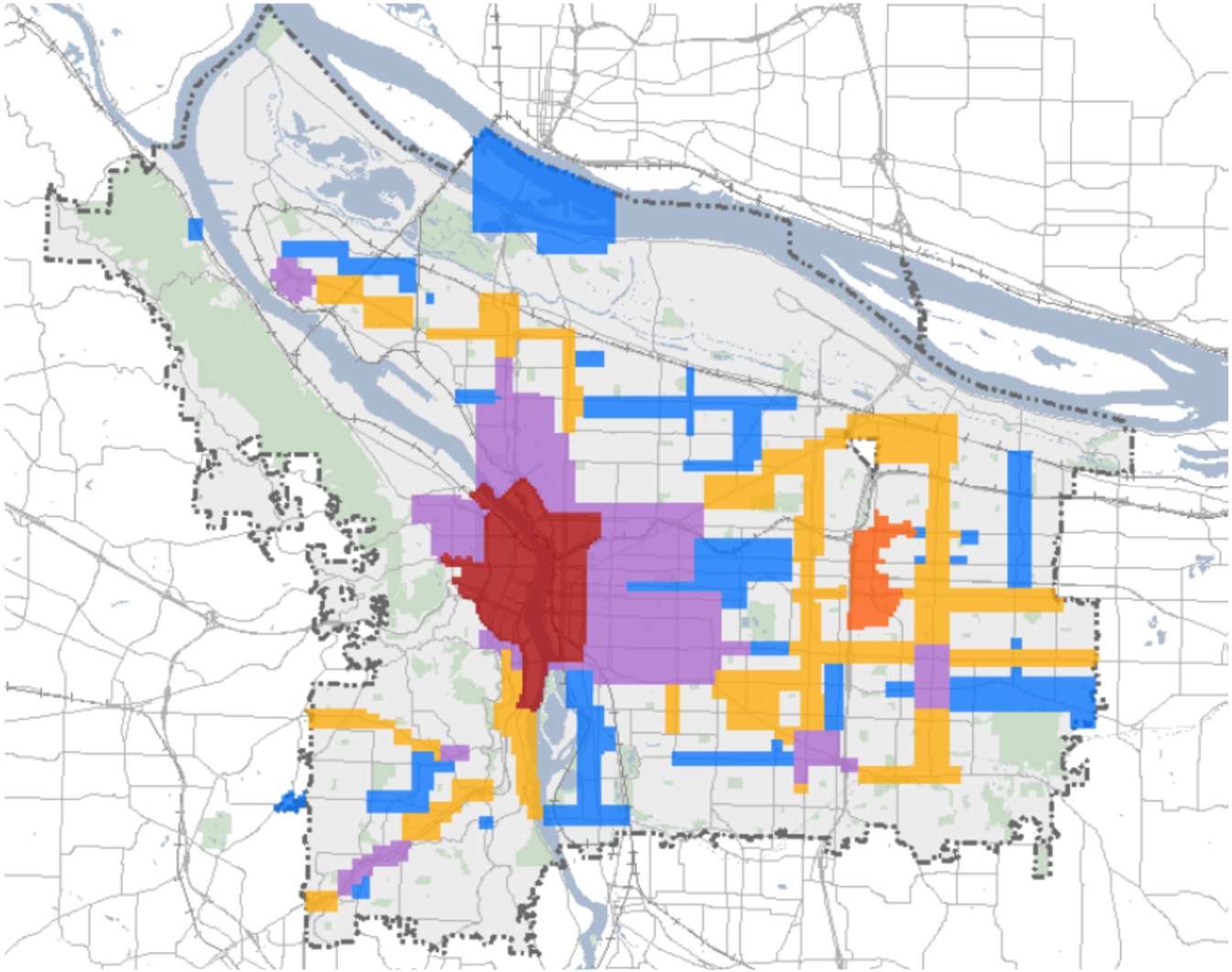
Code	Housing_Type	Unit_Type
A	SFR Houses	SFR
B	Narrow Lot Houses	SFR
C	Attached Houses Medium Density	SFR
D	Attached Houses High Density	SFR
E	Plexes	MFR
F	Corridor Apartments	MFR
G	SRO Housing	MFR
H	Neighborhood Mixed Use	MFR
I	Mid-Rise Mixed Use Small Units	MFR
J	Mid-Rise Mixed Use Large Units	MFR
K	High-Rise Tower	MFR

Table 10: Employment Capacity Assumptions

Geog_Spec	Market_FAR	BldgSF_Job	QCEW_Estimate	
CENTRAL CITY COMMERCIAL	0.00	398	790	
CENTRAL CITY INDUSTRIAL	0.00	491	637	
COLUMBIA EAST	0.00	660	1,109	
COLUMBIA HARBOR	0.00	755	1,572	*
HARBOR AND AIRPORT DISTRICTS	0.00	755	1,572	
DISPERSED EMPLOYMENT	0.00	490	804	
DISPERSED INDUSTRIAL	0.00	490	804	*
HARBOR ACCESS LANDS	0.00	1,250	2,012	
HARBOR ACCESS SUBAREA	0.00	1,250	2,012	*
INSTITUTIONAL	0.00	462	436	
NEIGHBORHOOD COMMERCIAL	0.52	445	825	
REGIONAL CENTER	0.95	503	819	
TOWN CENTER	0.54	519	698	
Outside Employment Areas	0.00	450	N/A	
WHI	0.00	1,250	2,012	

* old geography name, no longer used

Sample Allocation Area Map (Residential, Preferred 2035 Comprehensive Plan Scenario)



Appendix 2: Constraint Descriptions

Bureau of Planning and Sustainability Buildable Lands Inventory Model
BLI Development Constraints

constraint description	GIS attribute name	mapping methodology	applies to partial or full taxlots?	last update	*Capacity Utilization Rate* Residential	Employment (Central City)	Employment (Industrial)	Employment (Commercial)	Employment (Institutional)
Brownfields									
DEQ environmental cleanup sites (ECSI)	conECSI	lot contains an ECSI site	full	12/16/2014	85%	90%	60%	60%	55%
DEQ underground storage tank cleanup sites (LUST)	conLUST	lot contains an LUST site	full	12/16/2014	85%	90%	60%	60%	55%
Cultural Resources									
historic and conservation districts	conHist	lot is within a historic or conservation district	full	2/25/2014	85%	85%	85%	85%	85%
historic and conservation landmarks	conHistLdm	lot contains a historic or conservation landmark	full	2/25/2014	55%	55%	55%	55%	55%
areas requiring archaeological scan or consultation with tribes	conNatAm	lot with an identified cultural resource area	full	2/25/2014	100%	85%	85%	85%	85%
Environmental Overlay Zones									
conservation zones	conCovrly	lot or portion of a lot within mapped environmental conservation overlay zone	partial	12/16/2014	100%	75%	50%	35%	35%
protection zones	conPovrly	lot or portion of a lot within mapped environmental protection overlay zone	partial	12/16/2014	0%	0%	0%	0%	0%
Flight Limitations									
approach and departure cones	conAirHgt	overlay zone height limits near the airport landing and takeoff cone	full	1/1/2009	85%	100%	100%	100%	100%
heliport landing	conHeliprt	**identified heliports**	full	1/1/2009	85%	100%	100%	100%	100%
airport noise	conNoise	areas above day/night average sound level (LDN) of 65 per mapped noise contours	full	7/1/2012	85%	100%	100%	100%	100%
Greenway									
greenway	conGW	lots within mapped greenway overlay zones ("g", "r", and "n" overlays); lots within the "l" overlay where 10% or more of the lot area is within 125' of ordinary high water	full	7/1/2012	55%	75%	50%	55%	55%
Hazards									
DOGAMI regulatory landslide hazard area	conLSHA	lots within 50' of a mapped landslide hazard area	full	2/25/2014	85%	100%	100%	100%	100%
DOGMAI digital landslide deposits database	conSLIDO	lots within 50' of a mapped historic landslide deposit	full	12/16/2014	85%	100%	100%	100%	100%
FEMA 100-year floodplain map	conFld100	lot or portion of a lot within the mapped 100-year floodplain (special flood hazard area)	partial	12/16/2014	85%	75%	50%	35%	35%
FEMA floodway map	conFldway	lot or portion of a lot within the mapped floodway	partial	12/16/2014	0%	0%	0%	0%	0%
slopes over 25%	conSlp25	lots where 25% or more of the lot has a slope greater than or equal to 25% (as derived from LiDAR elevation models)	full	2/25/2014	85%	75%	50%	35%	35%
Infrastructure									
sewer system constraints	conSewer	lots identified as not able to connect to the public sewer system that are not parks, open space, or other publicly-owned land [source: Bureau of Environmental Services]	full	1/1/2014	85%	75%	75%	75%	75%
stormwater system constraints	conStorm	lots more than 50' from a mapped storwater pipe or culvert, combined sewer pipe, underground injection control (sump), or stream/river/drainageway, AND meet one of the following conditions: 1 | are less than 10' to seasonal high groundwater [source: Bureau of Environmental Services] 2 | are identified as not suitable for infiltration based on soil and slope [source: Bureau of Environmental Services] 3 | in a mapped wellhead protection area	full	1/1/2014	85%	75%	75%	75%	75%
water system constraints	conWater	lots are constrained if they meet one or more of the following conditions: 1 | greater than 50' from a water main and not within the Rockwood or Palantine Hill water districts; 2 | less than 50' from a 2" water distribution main AND not within 50' of a distribution main larger than 2"; 3 | in a wildland interface area AND not within the Linton, Rocky Butte pump, Mt. Scott, Lexington, Clatsop pump, Willalatin, Greenleaf, Penridge and Calvary service areas	full	1/1/2014	85%	75%	75%	75%	75%
Natural Resources									
wetlands	conWetland	lots or portions of a lot within a mapped wetland	partial	updates when model is run	55%	75%	50%	35%	35%
Public Ownership									
institutional campuses	conInstit	lots within a mapped institutional campus	full	2/25/2014	0%	100%	100%	100%	100%
private common open space	conPrvCom	lots identified as common open space; based on Metro Outdoor Recreation & Conservation Area (ORCA) "Home Owners Association" sites, as well as manual adding known private open space taxlots	full	9/17/2015	0%	0%	0%	0%	0%
publicly-owned lots that do not provide for residential uses	conPubOwn	publicly-owned lots not owned by the Housing Authority of Portland	full	12/16/2014	20%	100%	100%	100%	100%
Scenic Areas									
scenic views	conView	lots with a mapped view corridor with a height restriction in the Scenic Resources Protection Plan	full	1/1/2009	85%	85%	85%	85%	85%

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Bureau of Planning and Sustainability Buildable Lands Inventory Model
BLI Development Constraints

constraint description	GIS attribute name	mapping methodology	applies to partial or full taxlots?	last update	Capacity Utilization Rate: Residential	Employment (Central City)	Employment (Industrial)	Employment (Commercial)	Employment (Institutional)
Transportation									
traffic volume exceeds capacity	conTranCap	lots outside the Central City that do not have a Mixed Use (MU) comp plan designation and: 1 | are within areas mapped as Conditional Use Master Plan (CUMP) areas[1], or; 2 | have a proposed SFR comp plan designation (R2.5, R5, R7, R10, R20, RF), or; 3 | have an Institutional Campus (IC) comp plan designation, or; 4 | lots with proposed multifamily, employment or industrial proposed comp plan designations where the proposed comp plan designation will not match proposed zoning.[2] ... AND where one or more of the following conditions is met: 1 | lot or portion of the lot is less than 1/8 mile from an over capacity facility[3] for streets (excluding highways and highway interchanges) inside neighborhoods that meet connectivity standards[4]; 2 | lot or portion of the lot less than 1/4 mile from an over capacity facility[3] for streets (excluding highways and highway interchanges) outside neighborhoods that meet connectivity standards[4].	full	3/6/2015	85%	75%	75%	75%	75%
ODOT highway interchanges	conTranInt	lots outside the Central City that do not have a Mixed Use (MU) comp plan designation and: 1 | are within areas mapped as Conditional Use Master Plan (CUMP) areas[1], or; 2 | have a proposed SFR comp plan designation (R2.5, R5, R7, R10, R20, RF), or; 3 | have an Institutional Campus (IC) comp plan designation, or; 4 | lots with proposed multifamily, employment or industrial proposed comp plan designations where the proposed comp plan designation will not match proposed zoning.[2] ... AND: Where the lot is less than 1/2 mile from a I84, I5, I405, I205, or Hwy 26 over-capacity interchange (ramp connecting to a local street)[5]	full	3/6/2015	85%	75%	75%	75%	75%
substandard and unimproved Streets	conTranSub	lots are constrained if they meet one or more of the following conditions: 1 | within 50' of a incomplete or substandard street or right-of-way. Substandard street data is derived from street center line attributes from PBOT dataset *pavement_pms_pdx* . Attributes for Paved without Curb, Unpaved and Impassable Streets are derived from Fields [SurfaceType] and [Curb]. 2 | within 50' of a master plan street (Streetplan dataset)with a determined alignment; 3 | within 50' of a street face that lacks a sidewalk (excluding OS, IS, and EG comp plan designations) [using pbot sidewalk data]	full	12/16/2014	85%	75%	75%	75%	75%

[1] Conditional Use Master Plan (CUMP) areas are identified as all Land Use Review cases (per the BDS Land Use Review GIS data) with the following case types per the "CASE_NAME_FULL" attribute: "IM", "CUMS", "MS" and "IR". Sample query: CASE_NAME_FULL LIKE '%MS%'

[2] Used the BPS District Liaison proposed tentative zoning. Also assumed proposed comp plan designations and proposed zoning will match in proposed employment and industrial designations, exluding proposed golf course "IS" designations (proposed change record ID #s 294, 297 & 298). Identified using the following query: NOT NEWDESIG IN ('MU1', 'MU2', 'MU3', 'MU4') AND (NEWDESIG IN ('R2.5', 'R5', 'R7', 'R10', 'R20', 'RF') OR NEWDESIG = 'IC' OR (NEWDESIG IN ('CX', 'EX', 'R1', 'R2', 'R3', 'RH', 'RX') AND NEWDESIG <> NEWZONE) OR (RECID IN (294,297,298))), where NEWDESIG is the proposed designation, NEWZONE is the proposed zone, and RECID is the unique ID of the proposed change from the BPS comp plan proposal database.

[3] Over capacity streets are identified as any local (non-ODOT) street modeled at 90% capacity or above. Source is PBOT transportation model outputs V/C attribute. Sample query: V/C >= 90

[4] Neighborhoods that meet street connectivity standards: NPNS, NECN (except Eliot), CNN (except Cully), SUEL, Brentwood-Darlington, Mt Scott-Arleta, Foster-Powell, Downtown, Old Town/Chinatown, Northwest District, Pearl, South Portland, South Burlingame, Goose Hollow, Lloyd District

[5] Over capacity interchanges are identified as any ODOT freeway/highway interchanges (ramps connecting to local streets) modeled at 85% capacity or above. Source is PBOT transportation model outputs V/C attribute. Sample query: V/C >= 85