CITY OF PORTLAND
ECONOMIC OPPORTUNITIES ANALYSIS:
Section 4 – Community Choices



March 2016 Revised Draft

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City of Portland Bureau of Planning & Sustainability

EXECUTIVE SUMMARY

The EOA is an analysis of the 20-year supply and demand for employment land in the city. It is prepared according to State Administrative Rule OAR 660-09-0015 and consists of four sections:

1. Trends, Opportunities & Market Factors
2. Long Range Employment Land Forecast (Demand)
3. Buildable Land Inventory (Supply)
4. Community Choices

This report is the fourth section of the EOA. It assesses the likely development capacity of the community choices proposed in the updated Comprehensive Plan map, policies, and investments to support and meet the employment land needs identified in Sections 1-3. Section 4 also summarizes additional implementation strategies expected to implement the proposed policies and meet identified employment land needs.

KEY FINDINGS

- The 2012 Metro regional employment forecast allocates 141,600 new jobs to the City of Portland by 2035.
- This forecast job growth translates to a demand for 2,895 acres of employment land by 2035.
- The 2035 Comprehensive Plan provides for adequate development capacity to meet this employment land demand, meeting current shortfalls identified in the EOA Section 2-3 Report, through:
    - 393 acres of additional development capacity in existing industrial districts, as a result of map changes, public infrastructure investments (for example, transportation access improvements near vacant land), and strategies to improve industrial land retention, brownfield redevelopment, intensified use of developed land, and expansion. Taken together, these actions primarily make it possible to use the existing gross land supply more efficiently by removing existing constraints.
    - 216 acres of additional development capacity for major campus institutions.
    - 123 acres of additional capacity in the Central City industrial areas (Central Eastside and Lower Albina).
    - 335 acres or more of total land capacity for marine terminals, rail yards, and airport facilities.

KEY OPPORTUNITIES

The 2035 Comprehensive Plan includes key opportunities to support forecast job growth and meet employment land needs. The Comprehensive Plan provides a broader framework for

economic development to support job growth and prosperity, including business development, sector initiatives, innovation, workforce development, poverty reduction, and other interrelated programs.

Figure 1. Proposed Employment Land Development Capacity Summary

	2010-35 Demand		Supply (acres)			Reconciliation	
Aggregate Geography	Added Jobs	Land (acres)	Existing Plan BLI	Proposed Plan BLI*	Other Gains**	Surplus/ Deficit	Supply/ Demand
Central City	44,740	150	266	390	390	240	260%
Industrial	31,630	1,685	1,365	1,488	1,756	71	104%
Neighborhood Commercial	35,140	690	1,303	1,489	1,489	799	216%
Institutions	22,730	370	306	522	522	152	141%
Total	141,640	2,895	3,240	3,889	4,157		

* Proposed Plan BLI (Buildable Land Inventory) includes gains from plan map changes, planned infrastructure projects, and brownfield strategy proposals.

** Other gains result from proposed strategies for industrial land intensification, retention, and site-assistance.

Source: Bureau of Planning and Sustainability

To fill the need for all types of employment land, the following strategies have been identified:

Citywide

- Establish a job capture rate target to help measure Portland's performance over time.
- Create a strong business climate through regulatory improvements, cost-competitiveness, and business development.
- Provide a competitive employment land supply with a wide range of types, sizes and locations.
- Expand exports and grow traded sector businesses as an impetus to overall economic growth and prosperity.

Central City

- Promote and invest in the Central City as the region's and state's office, employment, and cultural center.
- Protect and facilitate the long-term success of the Central City Industrial districts, and facilitate their evolution into a higher density mix of employment uses.
- Expand industrial office overlay zoning and office development incentives to meet development capacity needs of the Central City Industrial districts.
- Support initiatives to advance Portland as a national leader in urban innovation and sustainability, supporting higher density mixed use development in the Central City and entrepreneurship in the expanding creative and green sectors of the economy.

Industrial and Employment Districts

- Promote industrial retention, growth, and traded sector competiveness as a West Coast freight hub and the state's largest industrial area.
- Protect Prime Industrial Areas for long-term retention and reduce non-industrial use allowances in industrial and employment zones.
- Create and implement a comprehensive toolkit of brownfield redevelopment incentives and tools, and support prompt resolution and cleanup of the Portland Harbor Superfund Site and associated brownfields.
- Implement strategic freight investments and business climate improvements to support industrial land intensification and reinvestment.
- Designate portions of airport area golf courses for a mix of industrial use, natural resource area, and public access to open space, to help meet industrial development capacity needs.
- Designate additional Dispersed Employment areas, particularly in East Portland, to meet development capacity needs.
- Expand natural resource protection, restoration and enhancement, and ecological site design to support concurrent improvement of watershed health and industrial capacity.

Neighborhood Business Districts

- Promote the growth, economic equity and vitality of Neighborhood Business Districts as dynamic areas of small business development and a foundation of neighborhood livability.
- Designate additional Town Centers and Neighborhood Centers to meet capacity needs in Town Centers, provide for concentrated employment and residential density, and foster healthy and connected neighborhoods.
- Designate neighborhood commercial areas between centers to expand local access to goods and services and promote neighborhood-serving business.
- Prioritize commercial revitalization investments in underserved neighborhoods.

Campus Institutions

- Promote the stability and growth of campus institutions as essential service providers and major employers.
- Designate campus institutions as employment land with associated zoning to accommodate capacity needs.
- Create campus development regulations that support projected institutional growth and neighborhood livability through suitable density, adequate infrastructure, context-supportive edges, and attractive amenities.
- Invest in transportation improvements that acknowledge and accommodate forecast institutional growth.

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I. INTRODUCTION

This report is the fourth and concluding section of the EOA. It assesses the likely development capacity that could result from the community choices proposed in the updated Comprehensive Plan. These include changes to Comprehensive Plan map land use designations, policy changes, and new investments. Section 4 also summarizes additional implementation strategies expected to implement the proposed policies and meet identified employment land needs. This revised EOA is based on the 2035 Comprehensive Plan.

Statewide Planning Goal 9 and the associated administrative rules require cities to provide for economic development and job growth in their comprehensive plans. Goal 9 requires cities to show they can meet employment land needs through adopted policies and implementation measures. They must provide for an adequate number of sites of suitable sizes, types and locations needed to accommodate the forecasted employment growth.

The 2035 Portland Comprehensive Plan proposes a variety of approaches to meet these requirements:

- Policies to maintain an adequate supply of land with the necessary supporting public facilities.
- Policies and programs to implement brownfield redevelopment strategies.
- Comprehensive plan map and zoning code changes.
- Capital improvement programming and funding.
- Regulatory and fee improvements.
- Tax incentives and other assistance.
- Property acquisition and parcel assembly.
- Public-private partnerships.

The overall objectives for economic development in the 2035 Comprehensive Plan mirror those in the Portland Plan. They call for a growing city economy, traded sector competitiveness, and equitable household prosperity. They seek continuing growth of a balanced, diverse economy that supports a socially and economically diverse population. In turn, the Comprehensive Plan proposes land use and development policies to meet the varying land needs across the employment geographies identified in the EOA, including the Central City, Industrial and Employment Districts, Campus Institutions, and Neighborhood Business Districts.

This report starts with a brief section on citywide opportunities and then focuses on proposed policies and strategies addressing each employment geography to support its growth potential. The Comprehensive Plan identifies a broad range of community choices that guide and support employment land development. The summary of those choices described here center on key policies, infrastructure investments and land use map changes that will ensure Portland will provide adequate growth capacity to meet 20-year forecast for employment growth.

II. CITYWIDE CHOICES

The Comprehensive Plan proposes new policy directions in four areas that support job growth and related development capacity:

1. A clear job growth target
2. A strong business climate
3. A competitive land supply
4. Competitive traded sectors

EMPLOYMENT GROWTH TARGET

> *Comprehensive Plan Policy 6.3. Employment growth.* Strive to capture at least 25 percent of the seven-county region's employment growth (Multnomah, Washington, Clackamas, Yamhill, Columbia, Clark, and Skamania Counties).

The City of Portland has had a housing growth policy since the early 1990s to capture 20% of the region's housing growth, which has been successfully met. At one time Portland was thought to be running out of capacity to develop new housing. Setting a housing growth target was used to support finding new ways to reach the goal – expanding multifamily housing capacity, expanding tax incentives and tools to support multi-family housing development, and supporting livability investments that expand demand for housing growth in Portland.

Setting a job-growth target in Policy 6.3 provides a comparable opportunity to respond to emerging economic challenges and measure success in our responses. Additional policies that contribute to meeting this growth target include 6.1 Diverse and Growing Economy, 6.7 Competitive Advantages, 6.10 Business Innovation, and policies cited in the sections below on improved business climate, traded sector competitiveness, and specific employment geographies.

In contrast to most of Oregon, Portland by 2013 had recovered all of the jobs it lost during the Great Recession. Multnomah County added about 31,000 jobs between 2010 and 2013, leading the region's recovery with an average annual job-growth rate of 2.4% during this upswing period. This recent job growth in Portland is consistent with long-term trends, and signals an upturn from the relatively flat job growth over the 2000-2008 business cycle, when the City captured only 5% of regional employment gains.

Despite Portland's strong historic and continued role as a major job center for the entire regional labor market, the experience of the last two economic downturns (since 2000) indicates that this continued role is not assured. Portland is typical of large cities that support a diverse and growing population attracted by economic opportunity.

With 370,000 jobs as of 2010, Portland accounts for 39% of the jobs in the 7-county metro area (PMSA), much higher than its 26% share of the region's 2.2 million residents. Long-term trends and forecast growth indicate moderate erosion of Portland's role as a regional job center, expected to decline from 39% of regional employment in 2010 to 34% by 2035.

The proposed job-growth target in Policy 6.3 is consistent with the historic capture rate for Multnomah County from 1980-2008 of 25%, with a high of 31% in the 1990s.[1] The trend-line analysis in EOA Section 1 indicates a job growth level that would represent a 28% city capture rate of PMSA job growth to 2035. The Metro regional employment forecast of 141,600 new jobs for the City of Portland by 2035 equates to a 26% capture rate of regional employment growth.

The proposed job growth target is complemented by Policy 6.28, which addresses increasing Income Self Sufficiency. It adds further guidance on job growth, supporting adequate land supply and public facilities to expand access to self-sufficient wages and career ladders for low-income people. This policy implements similar direction set in the Portland Plan. Policy 6.28 responds to the increasing job-polarization trends of recent decades, during which job growth has been in the low- and high-wage occupations with shrinking job opportunities in middle-wage occupations.

Middle-wage jobs are particularly concentrated in the industrial districts. In contrast, employment in the Central City and campus institutions is concentrated in high-wage occupations requiring college education, and neighborhood business districts are concentrated in low-wage occupations. In turn, workers of color and residents in East Portland rely disproportionately on industrial district jobs for self-sufficient wages and upward mobility (see EOA Section 1).

STRONG BUSINESS CLIMATE

> *Comprehensive Plan Policy 6.8. Business environment. Use plans and investments to help create a positive business environment in the city and provide strategic assistance to retain, expand, and attract businesses.*
>
> *Policy 6.17. Regulatory climate. Improve development review processes and regulations to encourage predictability and support local and equitable employment growth and encourage business retention.* Five sub-policies provide a framework of direction on regulatory improvements.

Improving Portland's regulatory and overall business climate was a primary theme of the Portland Plan Business Survey (2010) results and the Economic Development Policy Expert Group comments and business workshop comments on the Comprehensive Plan Working Draft.

In the business focus group results, described in Section 1 of the EOA, the most frequently mentioned responses to the question about how to position Portland to remain a prosperous city were the following:

[1] The long-term employment trends analysis is based on county data because reliable, comparable city data is not available before 2000.

- Need for greater regulatory flexibility better tailored to unique needs of individual businesses and/or business types.
- More recognition of the contribution of business to Portland's vitality – a change from regulators to partners asking "what can we do to help".
- Greater emphasis on cultivating business opportunity in Portland – with active marketing but without "picking winners."
- Need for better business access to resources, incentives and/or tax structure reform – ranging from reforming the business income tax to loan/incentive programs for small business to a point person/advocate for business in City Hall.

Business owners and real estate investors make decisions about where and how to invest based on the alternatives available. For many commercial businesses, the choice is between Portland and other communities in the metro area. For industrial and other traded sector businesses that compete globally, choices are often with locations well beyond the Portland metro area.

Making Portland's business districts more attractive and competitive to a broader range of businesses will help diversify and expand the economy. Portland's Central City, freight-oriented industrial areas, large hospital and college campuses, and other commercial centers and corridors make up a varied urban economy. In order to overcome constraints and strengthen location advantages to remain Oregon's largest job center, the Comprehensive Plan includes policies and actions that will help Portland's business districts be more attractive and support job growth.

In addition to Policies 6.8 and 6.17 cited above, other proposed policies that support a stronger business climate are 6.9 Small Business Development, 6.18 Short-Term Land Supply, 6.23 Clusters, 6.22 Traded Sector Diversity, and 6.32 Minority-Owned, Woman-Owned and Emerging Small Business (MWESB) Assistance.

COMPETITIVE LAND SUPPLY

> *Policy 6.13. Land Supply. Provide supplies of employment land that are sufficient to meet the long-term and short-term employment growth forecasts, adequate in terms of amounts and types of sites, available and practical for development. Types of sites are distinguished primarily by EOA employment geographies, although capacity needs for building types with similar site characteristics can be met in other employment geographies.*

The Oregon statewide planning rules require that all cities have an adequate land supply to meet the needs for future job growth. Policy 6.13 is an overall response to meet this state requirement. The Comprehensive Plan recommends changes needed for the employment land supply to be sufficient to meet forecast job growth through 2035. These changes address shortfalls identified in five of the city's ten employment geographies.

This policy is implemented by a variety of measures in the 2035 Comprehensive Plan:

- Designation of additional land area for employment development in each of the EOA employment geographies as shown in Figure 1.

- New policy support for brownfield redevelopment, providing regionally competitive development sites, and land supply for near-term development.

- Policies and strategies that allow additional development capacity to meet identified shortfalls.

Resulting development capacity in each employment geography is shown in Figure 2. A map of the ten employment geographies is included as Figure 3. The increase in development capacity expected to result from investments identified in the Transportation System Plan (TSP) are included.

This EOA is based on Metro's 2012 employment forecast and development trends that are influenced by the Great Recession and emerging economic trends from the recovery. The development capacity is based on assumptions about intensification, brownfield redevelopment and transportation/freight investments that represent a higher priority. The resulting development capacity is adequate to meet forecasted demand, but the supply is tight for industrial land. Policy 6.17 Evaluate Land Needs calls for frequent (every 5-7 years) updates to the EOA that will provide an opportunity to evaluate development trends and forecasts and make adjustments to maintain an adequate development capacity.

Figure 2. Proposed Employment Land Development Capacity

	2010-35 Demand		Supply (acres)			Reconciliation	
Employment Geography	Added Jobs	Land (acres)	Existing Plan BLI	Proposed Plan BLI*	Other Gains**	Surplus/ Deficit	Supply/ Demand
Central City Commercial	34,120	60	201	201	201	141	336%
Central City Industrial	10,620	90	65	188	188	98	209%
Harbor & Airport Districts	16,050	1,013	774	862	1,029	16	102%
Harbor Access Lands	2,070	192	113	136	167	-25	87%
Columbia East	9,310	350	356	346	416	66	119%
Dispersed Employment	4,200	130	121	144	144	14	111%
Gateway Regional Center	3,970	50	137	164	164	114	328%
Town Centers	6,160	130	304	381	381	251	293%
Neighb. Centers & Corridors	25,010	510	863	944	944	434	185%
Institutions	22,730	370	306	522	522	152	141%
Residential	7,400						
Total	141,640	2,895	3,240	3,889	4,157		
Aggregate Geography							
Central City	44,740	150	266	390	390	240	260%
Industrial	31,630	1,685	1,365	1,488	1,756	71	104%
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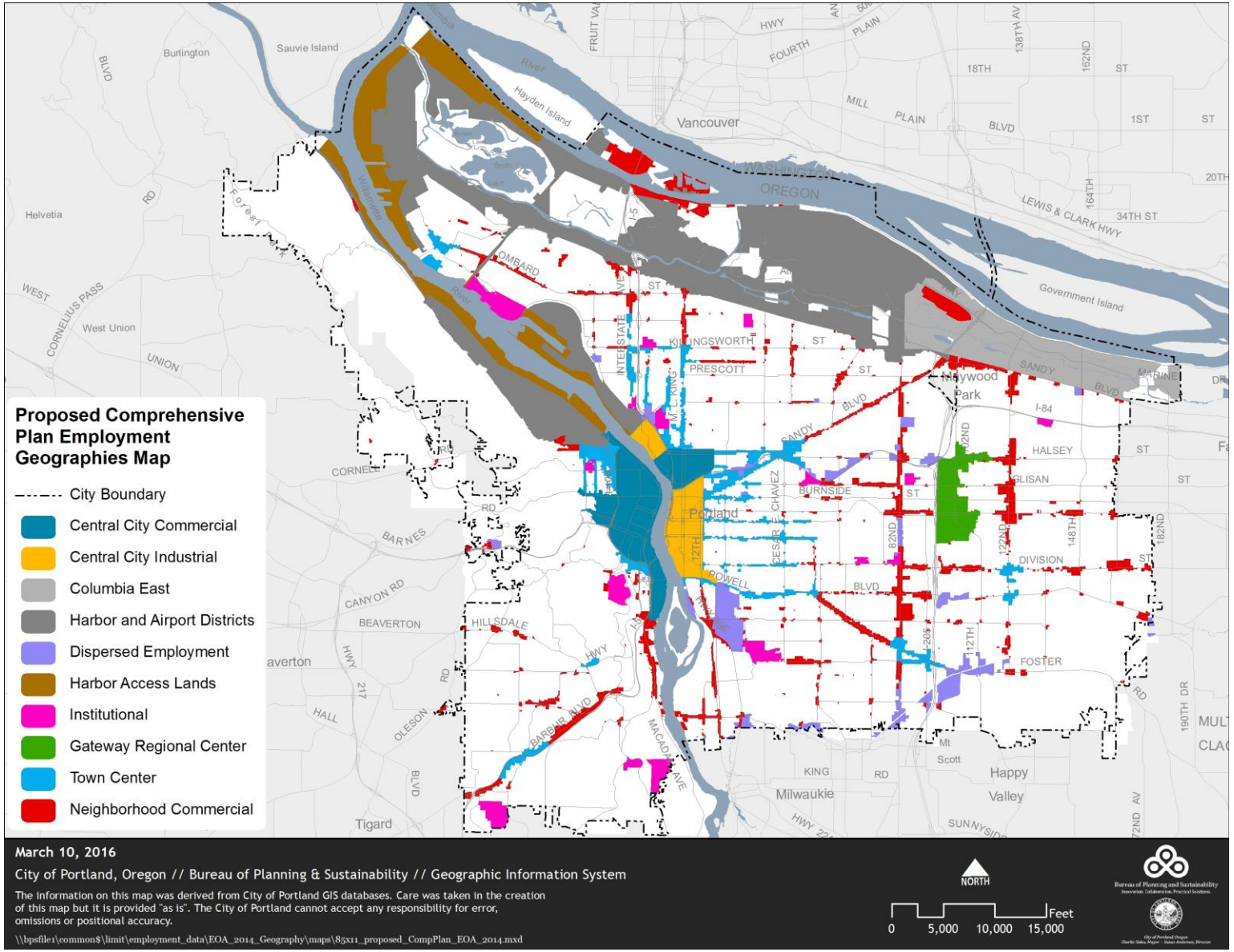
* Proposed Plan BLI (Buildable Land Inventory) includes gains from plan map changes, planned infrastructure projects, and brownfield strategy proposals.

** Other gains result from proposed strategies for industrial land intensification, retention, and site-assistance.

Source: Bureau of Planning and Sustainability

Figure 3. 2035 Comprehensive Plan Employment Geographies Map



Policy 6.14 Brownfield Redevelopment calls for the cleanup and redevelopment of 60% of the city's brownfield acreage by 2035. In contrast, continuation of current approaches and trends would support a brownfield redevelopment rate of 40% by 2035.

This policy target is based on the 2012 Portland Brownfield Assessment, which includes a citywide brownfield inventory, financial feasibility analysis, and recommendations of national best practices. Strategies to develop a comprehensive local brownfield toolkit of incentives and best practices are described below in the industrial districts section of this report.

Policy 6.16 Regionally Competitive Development Sites broadly supports use of incentives, investments, and other efforts to improve the regional competitiveness of vacant and underutilized sites in Portland.

These measures aim to moderate the long-term national and regional trend for job sprawl. The city's declining regional share of employment and commercial/industrial space, especially during the 2000-08 business cycle, suggest significant opportunity for improvement in regional markets. Further policy direction on cost-competitiveness is discussed below addressing specific employment geographies and their growth-capacity needs.

Policy 6.18 Short-Term Land Supply calls for a competitive and diverse supply of development-ready sites to meet 5-year increments of demand. The 2035 Comprehensive Plan proposes two approaches to meet this policy.

First, while short-term land needs between 2010 and 2020 are already met in most geographies, actions are needed to meet identified needs in the others. The most challenging geography for meeting short-term land needs is Harbor Access Lands. Here the City has limited ability to resolve, by 2020, Superfund and brownfield constraints on vacant sites; however, recent and planned transportation investments and site-development assistance have supported redevelopment and infill that appear sufficient to be meet forecast growth. In the Central City Industrial and Dispersed Employment geographies, short-term land supply needs will be met by rezoning for expanded development capacity. Second, **Policy 6.19. Evaluate Land Needs** proposes that the City update its short-term land supply analysis and strategy every 5-7 years to coincide with regional forecast updates. These updates are expected to include specific actions to replenish short-term land supply as needed in each employment geography.

EXPORT AND TRADED SECTOR COMPETITIVENESS

> *Policy 6.21 Traded Sector Competitiveness. Align plans and investments with efforts to improve the city and regional business environment for traded sector and export growth. Participate in regional and statewide initiatives.*

Traded sector businesses have a central role in driving and expanding the regional economy across the board.[2] To succeed and grow, these businesses must stay competitive in the changing

[2] Traded sector businesses are companies that sell many of their products and services to people and businesses outside the Portland region, nationally and globally. Examples include most manufacturing and many professional and business service companies as well as smaller craft businesses with local and global customers. Traded sector businesses may be locally owned and can be small, medium or large in size.

global marketplace. Traded sector companies and related industries tend to collect in regions where they have competitive advantages, a phenomenon called industry clusters. This supports greater access to specialized services and suppliers, a strong industry knowledge base, and skilled, experienced workers.

Global trends have put increasing pressure on regions to strengthen their competitiveness for traded sector growth, which drives regional prosperity. In response, the Oregon Business Plan, regional economic development strategies, and the Portland Economic Development Strategy all focus their attention on traded sector competitiveness and growth. Portland's Economic Development Strategy concentrates the City's business development resources on a targeted set of traded sector clusters in advanced manufacturing, athletic and outdoor, clean tech, and software.

The 2035 Comprehensive Plan reinforces this state and regional economic development direction in Policy 6.21 (above), 6.23. Clusters, 6.24. Trade and Freight Hub, 6.26. Import Substitution, 6.27. Business Opportunities in Urban Innovation, and 6.22 Traded Sector Diversity.

III. CENTRAL CITY

In 2010, the Central City accounted for 123,500 jobs – about one-third of the jobs in Portland. By 2035, more than 44,700 additional jobs are projected for the area, requiring 150 acres of development capacity in the city center.

What types of businesses locate here? Central City businesses are concentrated in the "office sectors" – professional and business services, headquarters offices, finance, information, and government. Central City is also a diverse business district with specializations in higher education, small-scale industry, and entertainment/tourism/retail services. The EOA identifies two types of Central City employment geographies, each having a different mix of businesses, facilities, and land needs:

- The "Central City Commercial" geography is the region's high-density core, consisting of Downtown (the Central Business District), Lloyd, South Waterfront, and the University and River Districts. Office sectors make up 72% of Downtown jobs and 58% in the Lloyd District (see EOA Section 1). Entertainment, restaurants, retail, and higher education are also major parts of this employment geography.

- The Central City Industrial geography, consisting of the Central Eastside and Lower Albina, has a mix of small-scale industrial, lower-cost office, and diverse commercial space. These districts meet demand for close-in industrial space and have become a dynamic "incubator" location for new and expanding businesses.

Why are these employment geographies important? While nationally other central cities have lost out to suburban competition, Central City Portland is experiencing strong growth as a high-density mixed use neighborhood. It contains over half of the regional office market and has benefited from an emphasis on access, especially transit, and livability for residents, workers and visitors. This is the preferred location for faster-growing office sector businesses that make up 34% of forecast citywide job growth. Land use and infrastructure policies prioritize Central City as the region's core location for concentrated growth and increasing density.

2010-2035 job growth potential: 45,000 net new jobs. Central City accounts for 32% of the citywide job forecast. Metro's robust regional job growth forecast in the office sectors suggests substantial opportunity to compete for a larger Central City share of office development that has been occurring primarily in suburban locations, where lower land costs, larger sites, and less-expensive surface parking patterns prevail.

EMPLOYMENT LAND CAPACITY OF THE 2035 COMPREHENSIVE PLAN

While the Central City Commercial geography easily has the development capacity to meet 2035 demand, the EOA forecasts that, without action, the Central City Industrial geography would meet only 72% of demand (a 25-acre shortfall).

The Central City 2035 plan, and specifically the Southeast Quadrant Plan, is proposing to increase employment capacity in the Central Eastside through expansion of the land area allowing industrial office development and other land use changes. These proposed changes are

estimated to result in an additional 123 acres of Central City Industrial capacity, accommodating 209% of forecast demand.

Similarly, the 15-acre deficit in "short-term" land supply needed by 2020 in the Central City Industrial geography is expected to be met by plan map amendments and expected rezoning by 2017.

CENTRAL CITY GROWTH AND LAND USE DIRECTION

> *Policy 6.34 Central City. Improve the Central City's regional share of employment and continue its growth as the unique center of both the city and the region for innovation and exchange through commerce, employment, arts, culture, entertainment, tourism, education, and government.*

The land use and development policies for the Central City are being developed in the Central City 2035 Plan Update, which is underway as a separate process from the Comprehensive Plan Update; however, the 2035 Comprehensive Plan does include key policy directions emphasizing accelerated job growth, the innovation and exchange advantages of being a large-scale economic center, diversity as a business and cultural center, and industrial retention.

Over the last 20 years, the development focus of the Central City Commercial geography has shifted from office to residential and mixed use as new drivers of core area development. In recent years, this has had the previously unanticipated effect of generating new office demand closer to residential, notably in the Pearl District. The increased role that a mixed residential-commercial neighborhood can play for the downtown core area received particular attention and recommended priority from developers participating in the Central City office focus group.

Downtown Portland has 49% of the multi-tenant office space in the region. On average, the CBDs in eight peer cities (including Denver, Austin, and Charlotte) have a 27% share of the multi-tenant office space in their respective regions. In the 2000-08 business cycle, the Central City's average annual job growth rate of 0.7% exceeded the national average of 0.5%. **Proposed policies reinforce this competitive position of the Central City as the dominant office center in the region.**

RETENTION AND EVOLUTION OF CENTRAL CITY INDUSTRIAL AREAS

> *Policy 6.35. Central City industrial districts. Protect and facilitate the long-term success of Central City industrial districts, while supporting their evolution into places with a broad mix of businesses with high employment densities.*

The Central City Industrial districts are a preferred, close-in location for many warehouse, manufacturing, and industrial service business. The industrial setting also provides a cost-competitive "incubator" location for new and expanding businesses, creative services, and cost-conscious offices. The combination of these competitive roles has made these districts a dynamic job growth center. This strong job growth trend has continued through the Great Recession and recent recovery period.

Proposed land use direction in the Central City Industrial geography supports the retention and continuing evolution as industrial/incubator districts, recognizing the strong market niche and job growth advantages of these land use roles. Much of the recent job growth within these districts has been fueled by the renovation of multi-story buildings into uses that support higher (largely service sector) job densities while offering competitive rents. In effect, incubator space and incubator districts represent an increasingly important hybrid or crossover product positioned between traditional office and industrial-service segments of employment building space spectrum. Incubator space is intended to:

- Offer greater flexibility to the user including pure office, exclusive industrial-distribution, and also mixed office-industrial functions.
- Be oriented to information and design applications for which Portland is becoming better known both on the West Coast and nationally.
- Offer employment and functional business space at a cost below that of prime office but with better finishes and in a more urbanized setting than would be possible in an exclusively industrial sanctuary setting.

There is a question as to how this adaptive reuse model can also be applied to leverage new construction, once the stock of the most prime existing multi-story older industrial spaces has been renovated. The primary challenge for creating new incubator space is to deliver a product that meets current business needs at rental rates low enough to be competitive for start-up and emerging creative firms. The alternative would be to forego this opportunity for in-city incubator areas, with more potential demand transferred to other parts of Portland, the region or outside the metro area. For example, additional employment land along SE 82nd Avenue and in the Gateway Regional Center could potentially serve this function.

EXPAND CENTRAL CITY INDUSTRIAL DEVELOPMENT CAPACITY

Existing development capacity in the Central City Industrial geography meets only 72% of forecast demand. In 2002, capacity was expanded in part of the Central Eastside by establishing the EOS Overlay (Employment Opportunity Subarea of the Central City Plan District), which defined and allowed "industrial office" uses there. Industrial office uses are limited primarily to information sector businesses, such as graphics and software. This zoning innovation helped accelerate job growth in the Central Eastside by reuse of underutilized second-floor space. The predominant industrial zoning in this geography has created an affordable environment for robust job growth by cost-conscious office tenants. Continued growth in this market appears to be reliant on hybrid zoning that retains industrial sanctuary cost levels while expanding development capacity of Class C office tenants.

The Central City 2035 Plan update underway will be designating additional capacity in these industrial areas by expanding the area allowing industrial office development and site assistance to overcome development constraints for new construction. Changes will be made to existing Employment Opportunity Subarea (EOS) overlay to preserve building square footage for industrial and industrial office use by limiting retail sales and services to 5,000 square feet per site and allowing additional industrial office in rehabilitated multi-story structures. EOS will be expanded to the ODOT blocks, North of Burnside, the Southern Triangle, and IG zoned properties along Hawthorne, Madison, Main, Yamhill and Belmont. On EOS sites 20,000 square

feet or larger, industrial office uses are limited to a maximum floor area ratio of 3:1. In core areas of the Central Eastside, industrial office capacity will be allowed with a FAR of up to 3:1 only when ground floor use is dedicated to manufacturing and production, warehouse and freight movement, wholesale sales or industrial services. A significant increase in employment capacity is gained through a flexible employment zone (EX no housing) that will be applied to the OMSI station area to promote Employment Transit-Oriented Development. Resulting capacity gains are included in the Buildable Land Inventory of the 2035 Comprehensive Plan, adding 123 acres of Central City Industrial development capacity. This resulting capacity will accommodate 209% of forecast demand by 2035.

URBAN INNOVATION INITIATIVES

> *Policy 6.27. Business opportunities in urban innovation. Strive to have Portland's built environment, businesses, and infrastructure systems showcase examples of best practices of innovation and sustainability.*

Portland universities and businesses are active in research and development and the commercialization of new technologies. The development of the South Waterfront and University districts are directly linked to efforts to create a world-class educational and research complex anchored by OHSU and PSU with increasing opportunities for research commercialization.

Policies and programs, such as Clean Energy Works Oregon and Solarize Portland have contributed to growing the market for green building technologies and practices and have demonstrated how job creation can be part of reducing energy use and resource consumption.

Portland has a solid record of business growth related to urban innovation including startups and niche product development. Examples are bicycle manufacturing, green building and stormwater products and services, local food businesses, planning and design, and international tourism. Connections to other cities, nationally and internationally, and widening recognition of Portland as a sustainability leader have contributed to making the region and city more innovative and prosperous.

The 2035 Comprehensive Plan will provide a 25-year supply of additional employment land in the Central City by preserving and enhancing the area's industrial districts while increasing their development capacity, and making the city center even more attractive for research and development, new technologies and healthcare.

IV. INDUSTRIAL AND EMPLOYMENT DISTRICTS

In 2010, Industrial and Employment Districts accounted for 87,000 jobs – about 25% of the jobs in Portland. By 2035, more than 31,600 additional jobs are projected for these areas, requiring 1,700 acres of developable industrial land.

What types of businesses locate here? Industrial employers, mainly in manufacturing and distribution, concentrate along the Portland Harbor and the Columbia Corridor, which make up Oregon's freight infrastructure hub and largest industrial area. They particularly need one-story buildings, medium to large sites, and locations buffered from housing. Central City Industrial and Dispersed Employment areas also have a range of commercial and industrial businesses. The EOA identifies four types of Industrial and Employment District geographies (counting Central City separately), each representing a different mix of businesses, facilities and land needs:

- The Harbor and Airport Districts geography is a heavy industrial setting occupied primarily by manufacturing and distribution businesses that need multimodal freight access.
- Harbor Access Lands along the deep-water shipping channel are occupied almost entirely by river- or rail-dependent industry, including marine terminals, manufacturing, construction, vessel services, and accessory uses, including headquarters offices associated with nearby industry.
- The Columbia East district, located east of the Portland Airport and 82nd Ave., is a mix of industrial and business flex space.
- The Dispersed Employment geography consists of primarily small business-park and flex-space sites occupied by low-density office and light industrial businesses in residential settings near freeways or truck routes.

Why are these geographies important? Portland is the core of the region's distribution and manufacturing economy. It includes the state's (and the Columbia River Basin's) largest seaport, rail hub, and airport.

The region's traded sectors, which bring income into the region and drive regional prosperity, are primarily industrial. The 87,000 jobs in these districts are also Portland's primary middle-wage job base and provide upward-mobility opportunities that expand income self-sufficiency and reduce racial disparities. The higher employment "multiplier" impact of industrial activity (see explanation in EOA Section 1), compared to commercial activity, means that industrial district jobs generate additional employment and prosperity benefits in the region.

2010-2035 job growth potential: 31,600 net new jobs. These districts account for 22% of the citywide job forecast. Compared to commercial sectors, industrial sector trends are complicated by slower job growth and faster output growth, driven by global market pressures to raise productivity. Portland's industrial job growth forecast is moderate, faster than national trends and slower than regional trends. Portland remains a preferred location for general industrial and warehouse development in the region, drawing on its advantages of multimodal freight-hub infrastructure, proximity to customers and suppliers in diverse industrial districts, and established industrial sanctuary zoning.

EMPLOYMENT LAND CAPACITY OF THE 2035 COMPREHENSIVE PLAN

The existing Comprehensive Plan does not provide adequate capacity to meet forecast demand in the combined industrial and employment districts to 2035. Forecast land needs exceed the existing supply of buildable land by 320 acres in these districts, providing only 81% of the needed growth capacity.

Local options to expand industrial development capacity are limited by various factors: the prevalent demand for one-story buildings on large sites; Portland's inability to annex industrial land beyond West Hayden Island; and the budget tradeoffs of increasing public investment in brownfields and freight transportation infrastructure to facilitate industrial land intensification. Moreover, these geographies are regionally significant locations for both industry and natural resources, and Comprehensive Plan policies support allocating more land to meet the needs of both.

The new Comprehensive Plan proposes a balanced package of policies, map changes, and infrastructure investment strategies to meet forecast land needs in Portland's industrial and employment districts. These strategies are intended to support both industrial growth and improved watershed health in industrial districts while meeting other plan objectives. This package of strategies was shaped with advice from the Industrial Land/Watershed Health Working Group, which included members from a broad mix of affected stakeholders, and which met for over a year.

Overall, the estimated industrial land capacity of the 2035 Comprehensive Plan is expected to be adequate to meet forecast demand, based on the following three general assumptions:

1. *The plan accommodates the medium cargo forecast for 150 acres of marine terminal land demand by 2035 without annexation and industrial development at West Hayden Island.*

   The medium cargo forecast of 150 acres will be met in the existing Harbor Access Lands geography, as described in EOA Sections 1-2. Also, an additional 50 acres or more of industrially-zoned land is potentially available to support marine terminal development that lies just outside of the Harbor Access Lands geography. West Hayden Island is not relied upon to meet future demand for marine terminals in the next 20 years.

2. The recommended Comprehensive Plan map designation of Rural Farm Forest maintains West Hayden Island as a holding zone for future determination of the mix of land uses, if and when it is annexed into the City of Portland. *The Comprehensive Plan can meet overall 2035 demand for industrial development and job growth across all of the industrial geographies even with the Harbor Access Lands geography meeting only 87% of forecast demand.*

   Not all of the job growth (and land demand) in the Harbor Access Lands geography is river-related. Some elements, such as expansion of some existing distribution and manufacturing facilities, can be located nearby in other geographies. Portland's combined industrial geographies provide a diverse supply of industrial development sites to meet overlapping demand for industrial building types, and the aggregate industrial geographies are expected to maintain adequate capacity to meet forecast demand.

3. *The City must act to retain prime industrial land and to continue to get greater development and productivity from its supply of sites.*

   Future industrial capacity depends on getting more industrial growth in the existing industrial districts . This requires rules for industrial land retention, new incentives and programs to increase brownfield redevelopment, and public investments and efforts to encourage more intensified use of developed sites.

   Significant land use actions that reduce industrial district capacity below forecast demand are expected to explain how those reductions will be addressed through long-range programs (e.g., brownfield remediation), be offset with equivalent capacity gains, or seek a Goal 9 exception. Five-year updates of the EOA are proposed to monitor effectiveness, adjust strategies, and maintain an adequate short-term land supply.

Figure 4 provides a summary of the capacity impacts of the proposed strategies to provide adequate industrial development capacity and improve watershed health. These capacity impacts are analyzed by geography and strategy. The "Periodic Review" section of the table includes the forecasted demand, the capacity in the 2035 Comprehensive Plan from the map changes, brownfields cleanup, intensification and retention, and the resulting surplus or deficit.

The "Integrated 2035 Strategies" section of the table reflects the potential capacity impact of future watershed health improvements. Improvements include the rezoning of approximately 550 acres of land from industrial to open space. The Watershed Health Strategies also identify significant natural resources that should be protected through future updates to the City's environmental and greenway overlay zones. These capacity estimates are intended as placeholders and are not intended to be binding. The estimates are based on natural resource information from the adopted 2012 Natural Resource Inventory (NRI), however the City expects to update the NRI as part of future legislative projects. The capacity estimates also have a placeholder for future acquisition sites to accommodate restoration projects required to Portland Harbor Superfund Natural Resources Damages Assessment (NRDA) mitigation requirement.

Taking into consideration the strategies to both improve employment capacity and to improve watershed health, the analysis indicates there is an expected shortfall of development capacity in the Harbor Access Lands and Harbor & Airport Districts geographies. Future post-acknowledgement plan amendments to protect these natural resources will need to explain how industrial development capacity needs will be met, or take an exception to Goal 9.

Figure 4. Proposed Industrial and Employment Districts Capacity

Employment Geography	Land Demand (acres)	Supply (acres) Existing Plan BLI	Draft Plan BLI (1)	Other Gains (2)	Integrated Strategies (3)	Reconciliation Surplus/ Deficit	Supply/ Demand
Proposed Capacity Summary by Employment Geography							
Harbor & Airport Districts	1,013	774	862	1,029	931	-82	92%
Harbor Access Lands	192	113	136	167	130	-62	67%
Columbia East	350	356	346	416	376	26	108%
Dispersed Employment	130	121	144	144	144	14	111%
Total	1,685	1,365	1,488	1,756	1,581	-104	94%

Proposed Strategies to Provide Growth Capacity and Improve Watershed Health	Capacity Impacts of Proposed Strategies Harbor & Airport	Harbor Access	Columbia East	Dispersed Empl.	Total Industrial
Industrial land retention - prime industrial area retention, reduced non-industrial use allowances	27	2	21		50
Brownfiield redevelopment - comprehensive program and incentives, Superfund, land bank	89	23	8	4	124
Industrial land intensification - strategic freight projects, Kenton line, regulatory improvements	112	28	50		190
Airport golf courses - map designation, rezoning, investments, site assistance, restoration	83				83
New Mixed Employment areas - map designation, rezoning, investments	3			12	16
Other plan map changes - OS designation on natural areas and parks, new industrial areas	-53				
Watershed health improvements - environmental zoning, NRDA, enhancement, ecological design	-98	-37	-40		-175
Total	164	16	39	16	235

1. Proposed Plan BLI (Buildable Land Inventory) includes gains from plan map changes, planned infrastructure projects and brownfield proposals.
2. Other gains result from proposed strategies for industrial land intensification, retention, and site-assistance.
3. Integrated strategies include estimated capacity impacts of proposed watershed health improvement strategies, including 25-acre capacity impact from NRDA (Natural Resources Damages) requirements of harbor Superfund.

Source: Bureau of Planning and Sustainability

[AT1]Development opportunities exist to meet the 150-acre marine terminal demand estimate, including approximately 40 acres at Port of Portland's T-6 (near Suttle Road), 30 acres at T-4 (former Cargill site), and 55-84 acres at the former Time Oil terminal and aggregated nearby sites. Proposed public investments (e.g., improvements at Suttle Road and Time Oil Road) and site assistance are expected to help overcome development constraints at these sites. The small 25-acre Harbor Access Land shortfall can be accommodated in other industrial areas. Not all of the existing jobs in the area are dependent on access to the Portland Harbor. With a tight land supply, over time some of the industrial demand will relocate in industrial areas nearby. For example, expanding harbor businesses like Evraz Steel have grown on nearby sites off of the harbor. A capacity-management approach is proposed to maintain a diverse supply of industrial

sites overall to meet the short-term and 2035 land needs of the aggregated industrial geographies citywide.

INDUSTRIAL GROWTH AND LAND USE DIRECTION

> *Policy 6.37. Industrial land. Provide industrial land that encourages industrial business retention, growth, and traded sector competitiveness as a West Coast trade and freight hub, a regional center of diverse manufacturing, and a widely accessible base of family-wage jobs, particularly for under-served and under-represented people.*
>
> *Policy 6.38. Industrial sanctuaries. Protect industrial land as industrial sanctuaries identified on the Comprehensive Plan Map primarily for manufacturing and distribution uses and to encourage the growth of industrial activities in the city.*

These policies support continuing industrial growth and acknowledge its household and regional prosperity benefits. Proposed industrial land use policies respond to the range of forecast land demand in different types of industrial and employment areas, including Policy 6.38. Industrial Sanctuaries, 6.40. Harbor Access Lands, 6.42 Multimodal Freight Corridors, 6.43. Columbia East, and 6.44 Dispersed Employment Areas. The 2035 Comprehensive Plan retains its 1980 "Industrial Sanctuary" designation and policy as the primary land use direction for industrial districts. The Industrial Sanctuary concept is designed to limit non-industrial uses in order to encourage industrial retention, reinvestment and growth. Other large cities have also adopted similar, more restrictive industrial zoning approaches in recent years, including Seattle, Vancouver B.C., and Los Angeles on the West Coast.

INDUSTRIAL LAND RETENTION

> *Policy 6.39. Prime industrial land retention. Protect the multimodal freight-hub industrial districts at Portland Harbor, Columbia Corridor, and Brooklyn Yard as prime industrial land that is prioritized for long-term retention.* (This policy goes on to call for protecting prime industrial land from conversion and offsetting capacity reductions with additional capacity.)

These policies prioritize Prime Industrial areas (see map in Comprehensive Plan Figure 6.1) for long-term retention, and they support reduction of zoning allowances for non-industrial uses. Since 1990, approximately 400 acres of former industrial or mixed employment land in or adjacent to Prime Industrial areas has been rezoned for non-industrial use. In addition, substantial public acquisition of designated Industrial Sanctuary land has occurred in these areas for natural areas, parks, jails, and other public facilities that do not serve industrial uses.

The following proposed actions will implement the industrial land retention policies with corresponding increases in development capacity due to shifting non-industrial development demand to other geographies, such as Central City Commercial or Neighborhood Commercial, where there is a surplus of capacity to accommodate that demand.

- Amend zoning regulations to prohibit quasi-judicial map amendments from Industrial Sanctuary to another designation on Prime Industrial land. Future legislative projects are expected to analyze and estimate the loss of prime industrial land capacity, including existing industrial development and vacant capacity. Findings will need to explain how forecast demand for Prime Industrial development capacity will be met. An industrial capacity inventory system based on the BLI will be used to track program activities that are or are expected to increase, reduce, or mitigate for loss of industrial land capacity to conversion, regulation, or acquisition for other purposes.

- Amend zoning regulations to reduce allowance for non-industrial uses in industrial zones; reduce land-intensive non-industrial allowances in IH and IG zones, such as parks and open areas, self-service storage, commercial outdoor recreation and major event entertainment; and reduce retail allowances and prohibit residential use in EG zones.

- Develop inter-governmental coordination procedures for proposed public acquisitions to track and mitigate impacts on industrial land supply.

Proposed land retention policies and these implementation actions are expected to result in development capacity gains of 27 acres in the Harbor and Airport Districts, 2 acres in Harbor Access Lands, and 21 acres in Columbia East. Calculation of these gains is based on two primary assumptions. First, industrial land conversion trends through rezoning and public acquisition for non-industrial use are not expected to continue without offsetting capacity losses by equivalent gains elsewhere in Portland. Second, a 50-acre capacity gain is expected from shifting an estimated 50% of forecast retail land development in these districts to other employment geographies. To implement this change, zoning code amendments are expected to substantially reduce future retail allowances in General Employment (EG) zones to approximately 20,000 square feet per site.

BROWNFIELD REDEVELOPMENT

Policy 6.46. Industrial brownfield redevelopment. Provide incentives, technical assistance and direct support to overcome financial-feasibility gaps to enable remediation and redevelopment of brownfields for industrial growth.

Policy 6.41. Portland Harbor Superfund Site. Take a leadership role in prompt resolution and cleanup of the Portland Harbor Superfund Site and redevelopment of associated brownfields. Encourage a science-based and cost-effective cleanup solution that facilitates re-use of land for river- or rail-dependent or related industrial uses.

Brownfields are vacant or underutilized properties where real or potential contamination complicates redevelopment. Proposed Policies 6.46 and 6.41 provide direction for a broad-ranging brownfield strategy to substantially increase industrial brownfield redevelopment as outlined below. Further direction is provided in proposed Policies 6.14. Brownfield Redevelopment and 7.15. Brownfield Remediation. Increasing brownfield redevelopment is a broadly supported option to increase industrial land capacity because it meets multiple objectives, including improvement of public health and environmental quality, reduction of urban sprawl, and expansion of industrial development capacity in advantageous locations.

Portland's industrial districts contain an estimated 620 acres of brownfields, accounting for over 60% of brownfields on employment lands citywide, as inventoried in the 2012 Portland Brownfield Redevelopment Assessment. The pace of recent development trends in Portland reviewed in EOA Sections 1 and 3 indicate that only 40% of the city's industrial brownfield acreage is likely to redevelop by 2035 under current conditions. Essentially, cleanup costs and financial risks exceed potential redevelopment revenues on most brownfields; however, other states have adopted aggressive tax incentives and a variety of other brownfield tools to overcome this financial gap. The Portland Brownfield Assessment estimated the total financial feasibility gap of the current citywide brownfield inventory at about $210 million, out of a total estimated cleanup cost of $240 million. That study also analyzed the return on investment of applying tax incentives to cover $210 million gap, estimating that future state income and property taxes after redevelopment would typically recover the costs of these incentives within one to four years.

In addition to on-site contamination, liability for future cleanup of river sediment contamination in the Portland Harbor Superfund Site has been a significant deterrent to brownfield redevelopment along the harbor. While progress on this Superfund project has been long delayed, it is anticipated that the U.S. Environmental Protection Agency will issue a Record of Decision, allocate liability among responsible parties, and move forward with cleanup actions well within the 2035 planning horizon. Comprehensive Plan Policy 6.40. Portland Harbor Superfund Site supports City efforts toward prompt resolution and cleanup.

The following proposed actions are expected responses to implement brownfield policies. Estimates of resulting development-capacity gains in the 2035 Comprehensive Plan assume implementation of these actions. While the City can influence brownfield redevelopment, cooperation with state and federal agencies is also necessary, including legislative changes and new funding sources to accelerate brownfield cleanup.

- Create an industrial/commercial brownfield redevelopment program to implement a comprehensive brownfield toolkit of incentives and best practices. Hire staff to develop and implement the program.

- Draft and lobby for enabling legislation and funding to substantially expand brownfield redevelopment, including tax incentives, authorization of land banks with liability protection, and other brownfield best practices.

- Create and fund financial gap incentives for cleanup and redevelopment of underutilized, contaminated sites. Design incentives to substantially increase industrial redevelopment but not be available to entities identified as being responsible for the contamination.

- Obtain Superfund liability relief for brownfield purchasers. Obtain EPA commitment and staff resources to provide prospective purchaser agreements and de minimis settlements on harbor brownfields. Consider a city insurance pool or other incentives to minimize in-water liability cost gaps for innocent purchasers.

- Take a leadership role and promote prompt resolution and cleanup of the Portland Harbor Superfund site.

- Create a local industrial land bank. Facilitate strategic brownfield and other industrial redevelopment unlikely to occur in the private market, such as large industrial sites.

Proposed brownfield policies and these implementation actions are expected to result in development capacity gains of 89 acres in the Harbor and Airport Districts, 23 acres in Harbor Access Lands, 8 acres in Columbia East, and 4 acres in Dispersed Employment areas. Calculation of these capacity gains is based on increasing the brownfield redevelopment rate from 40% (estimate used in existing Buildable Land Inventory) to 60% by 2035, consistent with the 60% target set in Policy 6.14 Brownfield Redevelopment. This gain appears to be realistic, based on the estimated capacity impacts of recommended "best practice" incentives and tools in the Portland Brownfield Redevelopment Assessment.

INDUSTRIAL LAND INTENSIFICATION

> *6.45. Industrial land use intensification. Encourage reinvestment and intensification of industrial land use, as measured by output and throughput per acre.*
>
> *Policy 6.24. Trade and freight hub. Encourage investment in transportation systems and services that will retain and expand Portland's competitive position as a West Coast trade gateway and freight distribution hub.*

Not all job growth will be accommodated on vacant or underutilized land. Strategic freight investments and business climate improvements offer key opportunities to encourage industrial reinvestment and more intensive use of existing buildings and developed land by raising the City's value proposition among competing industrial locations. Proposed Policies 6.38 and 6.23 (above) and Policy 6.17. Regulatory Climate and 8.30. Public-Private Partnerships provide supporting direction to pursue these opportunities. Business community participation in public investment planning and regulatory improvement processes can help to further target public actions to industry priorities and intensification opportunities, as supported by proposed Policy 2.1. Partnerships and Coordination.

Industrial land "intensification" means more intensive use of existing industrial buildings and businesses on already developed sites. For example, the heavy industrial, freight-hub location advantages that characterize most of Portland's Prime Industrial areas are unique in the region. However, retention and expansion of capacity in these heavy industrial geographies enables the region to more effectively compete for and efficiently serve these types of employment land demand. Policy 6.45 (above) acknowledges that floor area or employment density are not the only measures of productivity and that intensification through productivity gains in output-per-acre on manufacturing facilities or throughput-per-acre on distribution facilities is appropriate.

In North America and Europe, significant examples of new and modern, multi-story industrial development have been limited. Building elevators are an efficiency bottleneck for most manufacturing and warehousing. Instead, industry preferences and development trends have shifted toward more large, single-story buildings and more outdoor maneuvering area to accommodate efficient truck movement and bigger trains and ships, driven by increasingly competitive global markets (see business focus group results in EOA Section 1). Within this

context, however, various recent development examples in Portland indicate opportunities to increase intensification through business expansion, infill, or redevelopment:

- Site investments that expand output capacity at developed sites are common. The recent expansion of South Rivergate Rail Yard (TSP Project 30047) improved unit-train access and encouraged capacity expansion at nearby Canpotex and Columbia Grain marine terminals. The proposed Rivergate Overcrossing (TSP Project 115610) nearby is similarly expected to facilitate continuing expansion at Evraz Steel.
- Underused or obsolete facilities can be redeveloped. Proposed site improvements (TSP Project 112080) at Port of Portland T-4 will facilitate redevelopment of the former Cargill terminal.
- Office functions are expanding at industrial headquarters sites, such as the proposed redevelopment of Daimler offices on Swan Island.
- The proposed double-tracking improvements and eight proposed overcrossings along Union Pacific's Kenton Line (TSP Projects 40085 and others) will alleviate congestion from forecast rail volume growth on this corridor and improve rail yard capacity.
- An expanding market for micro-business incubator facilities has spurred reuse of underutilized upper floors and redevelopment in the Central Eastside District. Another example that extends beyond the Central City is the recently developed five-story industrial building on NW York St. in the Harbor and Airport Districts geography.

To implement Policies 6.45 and 6.24 (above) and freight transportation policies 9.29 – 9.35, an extensive program of strategic freight investments are proposed in the Transportation System Plan, consistent with the Regional Transportation Plan. These infrastructure projects address identified deficiencies, accommodate forecast growth, improve Portland's competitiveness as a leading export region, and some of them facilitate development or intensification of particular sites. Freight volumes handled in the region are expected to roughly double in tonnage and triple in value between 2007 and 2040 (2015 Commodity Flow Forecast). In addition to the freight projects proposed in the TSP, the following proposed actions are expected responses to implement industrial land intensification and related freight infrastructure and regulatory climate policies. Estimates of resulting development-capacity gains in the 2035 Comprehensive Plan assume implementation of these actions.

1. Update the Portland Freight Master Plan project list and incorporate changes into the Transportation System Plan Update. Develop a list of priority freight projects that improve Portland's industrial location value and freight district access.

2. Pursue funding sources to increase freight system improvements. Expand opportunities for public-private funding partnerships.

3. Improve Portland's industrial regulatory climate to support job growth (see further explanation above on new citywide directions). Conduct a study to evaluate cumulative city regulatory and fee costs, and develop implementation strategies. Explore process improvements to reduce uncertainty, timing, complexity, other transactions costs, and emphasize regional competitiveness in new regulations and fees without rolling back regulatory standards.

4. Consider establishing an industrial land bank and incentives to facilitate more intensive industrial redevelopment on underutilized sites.

Proposed policies and these implementation actions are expected to result in industrial land intensification with estimated development capacity gains of 112 acres in the Harbor and Airport Districts, 28 acres in Harbor Access Lands, and 50 acres in Columbia East. Calculation of these capacity gains is based on two factors. First, the redevelopment/infill rate is expected to increase to 15% from the current estimates in the Buildable Land Inventory (BLI) of 8% in Harbor and Airport Districts, 1% in Harbor Access Lands, and 7% in Columbia East. Existing BLI estimates are based on the amount of underdeveloped land with General Employment (EG) zoning. The 15% target represents conservative expansion of the 13% redevelopment/infill trend in Columbia East from 1999 to 2011 (see EOA Section 1), taking into account expected tightening transportation budgets for freight investments and proposed environmental zoning on developed land described in the next section. The Columbia East development trend is used here because the associated job growth trends during this period approximate forecast growth much closer than in the other industrial geographies.

Second, the 15% intensification rate is applied to the total land demand forecast of the industrial geographies, including additional acreage needs for marine, air, and rail terminals. For example, approximately 50 acres of the forecast 200-acre land need for railroad yards is expected to be met in the Harbor and Airport Districts by the proposed Kenton Line double-tracking and associated overcrossing improvements (TSP Projects 40085, 30055, 40001, and others). The Port of Portland's 2013 Rail Plan identified the Kenton Line as the only rail segment in Portland where forecast growth is expected to exceed practical capacity by 2030, and the proposed double-tracking improvements are recommended as a major regional project to address this congestion. These improvements are also expected to improve rail yard efficiency and functional capacity in Portland through substantial train storage capacity and improved rail mobility, which is the basis for the 50-acre estimate of railroad land needs to be met by infill and redevelopment.

INDUSTRIAL DISTRICT EXPANSION

> *Policy 6.51. Golf course reuse and redevelopment. Facilitate a mix of industrial, natural resource, and public open space uses on privately owned golf course sites in the Columbia Corridor that property owners make available for reuse*.

New Industrial Sanctuary areas are designated on the 2035 Comprehensive Plan Map at two private golf courses (Colwood and Broadmoor). These map changes represent 35% of the development capacity gains in the Harbor and Airport District. Policy 6.51 (above) provides further direction for their land use and development. This proposed policy advances a multi-objective planning approach to accommodate a mix of new industrial areas, existing and enhanced natural resource areas, and public access to open space at these sites. The plan map also designates various additional sites as Mixed Employment land to meet capacity needs in Dispersed Employment areas.

Capacity impact estimates of map changes are based on assumptions that development of buildable land in new industrial and employment areas is expected to be (1) serviceable by public facilities and (2) financially viable on average to meet forecast demand within the 2035

planning horizon. The serviceability of sites is supported by proposed investments in the Citywide Systems Plan and Transportation System Plan and proposed Policy 8.21. System Capacity. Site assistance to accommodate financial feasibility of development on these sites by 2035 is also supported by Policy 6.16. Regionally Competitive Development Sites. Implementation efforts are expected to address development feasibility constraints as needed.

Airport Area Golf Courses
The Trust for Public Land and property owners of the 138-acre Colwood golf course obtained conditional approval of a quasi-judicial plan map and zoning amendment in 2014 to rezone 49 acres for industrial uses with the remainder as public open space and natural area. The Comprehensive Plan includes this map change at the Colwood site and a similar land use proposal at the nearby Broadmoor golf course, designating approximately 72 additional acres at Broadmoor as Industrial and retaining the Open Space designation on 58 acres, consistent with a conceptual redevelopment plan submitted by the property owner. The Comprehensive Plan also retains the Open Space designation on two nearby private golf courses, Riverside and Columbia Edgewater.

These map designations were drawn to generally avoid encroaching on natural resources protected through existing environmental overlay zones, and to create large, functional industrial sites and open spaces with opportunities for substantial environmental restoration. The buildable land inventory estimates 55 acres of capacity after constraints at these sites. The assumed capacity of these map changes includes 28 additional acres, accounting for the entire 49-acre site at Colwood where development is underway, rather than the 21 acres of capacity included in the BLI. With public infrastructure investment and site assistance, about 100 acres of industrially designated land at these sites may be available for development.

Proposed public investments (e.g., improvements at 33rd Avenue) and site assistance are expected to help overcome development constraints at these sites. Development requirements are expected to include adequate infrastructure improvements, natural resource protection and enhancement, and expanded public access to open space, consistent with proposed Policy 6.48. Golf Course Reuse and Redevelopment.

West Hayden Island
West Hayden Island was brought into the Urban Growth Boundary in 1983 for marine industrial development, and Metro designates the site as Regionally Significant Industrial Area in the Urban Growth Management Functional Plan (Title 4), as well as regionally significant fish and wildlife habitat (Title 13). Metro requires that the City of Portland develop a district plan for West Hayden Island, in cooperation with the Port of Portland. The district plan has not been completed, therefore the recommended Comprehensive Plan Map designation of Rural Farm Forest maintains West Hayden Island as a holding zone for future determination of the mix of land uses, if and when it is annexed in to the City of Portland. The Comprehensive Plan accommodates the medium cargo forecast for 150 acres of marine terminal land demand by 2035 without relying on annexation and industrial development at West Hayden Island.

New Mixed Employment Areas

A variety of map changes are proposed in the Comprehensive Plan Update to expand capacity and improve the land use efficiency and functions of Dispersed Employment areas:

- New Mixed Employment areas have been designated at development opportunity sites near freeway interchanges or truck routes in East Portland, including an existing farm site (currently designated residential or commercial) and underutilized commercial sites.

- New Mixed Employment areas have been designated as transition areas between industrial districts and residential neighborhoods at NW Vaughn St. and N Columbia Blvd. at Denver St.

- Existed General Commercial areas with redevelopment potential for higher employment density have been changed to Mixed Employment designations, including portions of SE 82nd Ave. and N Hayden Meadows Dr.

- Existing Central Employment sites in employment use have been changed to Mixed Employment designations in Dispersed Employment areas (e.g., Freeway Lands) and in Central Gateway (see explanation in Neighborhood Business Districts section below), focusing their development potential on employment uses rather than mixed use/residential use.

The Employment Capacity Zoning Project is underway as part of the Periodic Review Task 5 Implementation to propose zoning map and code changes that implement these new Comprehensive Plan designations.

The 2035 Comprehensive Plan maps also includes new Mixed Employment designations in existing Industrial Districts, including the ESCO manufacturing headquarters site and adjacent infill parcels south of NW Nicolai.

WATERSHED HEALTH IMPROVEMENTS

> *Policy 6.49. Industrial growth and watershed health. Facilitate concurrent strategies to protect and improve industrial capacity and watershed health in the Portland Harbor and Columbia Corridor areas.*

Development capacity impacts are also expected to result from actions to meet City environmental policies and regulatory obligations. As noted above, Portland's industrial districts along the Willamette and Columbia Rivers serve as regionally significant industrial and natural resource locations. Recognizing the parallel public objectives for limited land in these geographies, Policy 6.46 above describes expectations for concurrent improvements in both industrial capacity and watershed health. Other 2035 Comprehensive Plan policies to protect and improve watershed health include 7.19. Natural Resource Protection, 7.21 pertaining to Environmental Protection Programs, 7.22. Land Acquisition Priorities and Coordination, additional policies specific to the Willamette, Columbia, and Columbia Slough watersheds, and policies calling for designing with nature, resource efficient development, and hazard resilient development.

To implement watershed health policies on balance with economic development policies, a strategy of additional natural resource protection, enhancement and ecological site design is proposed as summarized below. This multi-faceted strategy was developed in consultation with the Industrial Land/Watershed Health Working Group described above. Implementation of this strategy is expected to be pursued concurrently with actions to support industrial capacity gains, in accordance with Policy 6.49. Industrial Growth and Watershed Health. **Update Environmental and Greenway Overlay Zones and Regulations**

- Complete multi-objective plans for the River Plan/North Reach and Columbia Corridor, to address some combination of the following:
    - Applying new overlays to unprotected higher functioning or priority resources (e.g. high- and medium-ranked natural resources in the City's Natural Resource Inventory (NRI), potential off-site mitigation and restoration sites).
    - Removing overlays from land with no NRI resources.
    - Adjusting the protection level to better correspond to the level of natural resource function and improve program consistency (e.g. c-zone to p-zone or vice versa).
    - Updating area-specific environmental and greenway regulations that improve natural resource function through industrial development and redevelopment (e.g., streamlined procedures for site enhancements or ecological site design (see section D below), and allow prospective mitigation credit for proactive restoration activities, etc.).
- Pursue targeted update of Environmental Overlay Zone chapter of the Zoning Code (citywide regulations) including streamlining for resource enhancement, streamlining to encourage industrial intensification, clarification of mitigation requirements (e.g., potential standards, additional flexibility for off-site mitigation or participation in mitigation bank), and provisions needed to respond to new ESA listings.
- Complete future regulatory and/or program updates as needed to comply with the Endangered Species Act in response to litigation against FEMA relating to floodplain development.

Enhance/Restore Protected Natural Resources

- Identify priorities, estimated costs, and funding options (revenue sources, partnerships, incentives) in the Columbia Corridor and Portland Harbor. Specifically explore and pursue the following:
    - Restoration investments in public or land trust ownership or conservation easements.
    - Dedicated, long-term revenue sources for acquisition, restoration, and maintenance.

  - Options for public/private partnerships and investments.
  - Incentives for natural resource enhancement, such as tax credits.
  - Innovative institutional and funding structures.
  - Community and political support and commitment for proactive, long-term restoration investments.

- Prioritize target mitigation/restoration sites in the Columbia Corridor and Portland Harbor.
- Work with private mitigation bankers and other partners to explore and develop banks that sell wetland, riparian, in-water and grassland-related mitigation credits for City-required mitigation or NRDA/Superfund mitigation.

Advance Ecological Site Design

- Encourage ecological site design through best practices research and seeking partnerships and pilot projects.
- Establish or reinstate financial incentives, such as the eco-roof incentive program
- Provide education and technical assistance.
- Evaluate and pursue, as appropriate, code amendments, including regulatory incentives and performance based approaches.
- Develop resource handbook or design competition to encourage eco-industrial site design.

Capacity Assumptions for Additional Natural Resource Protection

The following analysis is intended to estimate the potential development capacity impacts of future legislative projects that will among other items, update the City's existing greenway and environmental overlay zones. The analysis also estimates potential development capacity impacts associated with Portland Harbor Superfund's Natural Resources Damages Assessment required restoration activities. This analysis and associated assumptions do not specifically dictate or bind future City decisions. In the future, when specific regulatory actions are proposed, development capacity impacts and Goal 9 compliance will be addressed along with other goals as part of that project.

It is estimated that future updates to the City's environmental and greenway overlay zones could reduce development capacity by 150 acres on vacant and underutilized sites:

- 98 acres in the Harbor and Airport Districts
- 12 acres in Harbor Access Lands
- 40 acres in Columbia East

These capacity impacts represent the potential incremental impact of updated regulations beyond the capacity reductions attributed to physical features (floodplains, wetlands, etc.) that have already been applied as part of the Buildable Land Inventory methodology.

An additional 25 acres of capacity reduction is assumed in anticipation of the use of some vacant or underutilized sites for restoration to meet Natural Resource Damage Assessment requirements associated with Portland Harbor Superfund.

Future regulatory updates are also expected to expand environmental overlay zoning on developed sites in Columbia East and in the Harbor and Airport Districts. These overlay zone expansions are estimated to apply to approximately 2% of the developed sites in Columbia East, and 3.5% of the developed sites in the Harbor and Airport Districts, respectively.

An additional 1% of the developed sites in Columbia East, and 2% of the developed sites in the Harbor and Airport Districts, are assumed to shift from existing environmental conservation zone to environmental protection zone. These areas are within 50 feet of a stream or wetland. Most of these natural resource areas on developed sites have existing environmental constraints other than or in addition to environmental overlay zones.

In the Harbor Access Lands, greenway and environmental overlay zone updates are expected to apply to approximately 12% of developed sites; however, in each of these geographies, the regulatory updates would apply to natural resources that are currently constrained and subject to existing regulations (e.g., Willamette greenway overlay zones, balanced cut and fill) or other environmental constraints. As a result, the incremental impact of future regulations on developed sites is expected to be negligible.

More detailed descriptions of these analyses are provided in Appendix A.

Other elements of the strategy to improve watershed health are not assumed to have significant impacts on development capacity. Restoration efforts are assumed to focus primarily on protected natural resource or open space areas. Efforts to encourage ecological site design are assumed to include a mix of non-regulatory and regulatory tools that will support both development and watershed goals for certainty and overall cost-effectiveness.

SHORT-TERM LAND SUPPLY

EOA Section 3 identifies significant deficits of short-term development capacity in the Harbor and Airport Districts, Harbor Access Lands, and Dispersed Employment areas. These short-term deficits are expected to be met by announced development projects, intensified use of developed sites, and proposed map amendments and rezoning.

In the Harbor and Airport Districts, an estimated 35-acre deficit in existing short-term land supply can be met by proposed investments and efforts to encourage intensified use of developed land (estimated at 15% of demand as discussed above) and the proposed development project at the 49-acre industrial portion of the former Colwood Golf Course. Surplus short-term capacity of

101 acres in the Columbia East geography is also available to partially meet demand for comparable building types.

In the Harbor Access Lands geography, most of the vacant land supply consists of brownfields affected by Portland Harbor Superfund liability. These harbor brownfield sites are not included in the short-term land supply, and the City has limited ability to overcome those development constraints by 2020; however, substantial development is underway or proposed in this geography that appears to be generally at pace to meet short-term forecast demand for 82 acres by 2020 (see Figure 8 in Appendix B).

- Redevelopment of the Daimler Trucks headquarters offices broke ground in 2014 on a new 269,000 square foot nine-story building that is expected to result in approximately 400 new jobs. This development represents equivalent capacity of approximately 18 acres (measured by floor area, or 21 acres measured by expected jobs).

- The Canpotex potash terminal at Port of Portland T-5 made $165 million of facility investments in 2014, providing an estimated 70% expansion of existing throughput capacity (see EOA Section 1), which is generally represented by the existing 320,000 square foot storage building. This intensified use of non-vacant land represents an approximate capacity gain of 15 acres, since this site is not included in the Buildable Land Inventory.

- Other major facility investments since 2012 have also been identified by the Port of Portland on existing Harbor Access Land sites, which translate less clearly into equivalent building square footage. These investments include $50 million for a new dry-dock at Vigor Industrial, $44 million for upgraded storage and handling at Columbia Grain, $21 million for expanded grain storage and moving facilities at LD Commodities, and $10 million in new ship loading facilities at the Kinder Morgan Bulk Terminal.

The modest 4-acre deficit in short-term land supply estimated in the Dispersed Employment areas is expected to be met rezoning projects underway in Task 5 of the Comprehensive Plan Update, including new areas of General Employment zoning and increases in industrial development allowances in the Neighborhood Commercial geography.

The 2035 Comprehensive Plan will provide a 20-year supply of additional employment land capacity in Portland's industrial districts through brownfield redevelopment, intensification of land uses, and expansion of industrial sanctuaries.

V. NEIGHBORHOOD BUSINESS DISTRICTS

In 2010, Neighborhood Business Districts accounted for 93,000 jobs – about 25% of the jobs in Portland. By 2035, more than 35,000 additional jobs are projected for these areas, requiring 700 acres of business commercial capacity.

What types of businesses locate here? Neighborhood business districts are mainly home to the retail, personal service, and related sectors that serve customers on-site. These businesses generally need ground-floor space along pedestrian- or auto-oriented streets. The EOA identifies three types of Neighborhood Business District geographies:

- Gateway is designated by Metro as a Regional Center and is planned to transition to a high-density, mixed use area. Gateway has concentrations of businesses in health care and retail.
- Town Centers are planned for midrise, mixed-use development and include concentrations of institutional, retail, and office sector businesses. They include Hillsdale, Hollywood, Lents, St. Johns, and West Portland, which are designated in Metro's 2040 Growth Concept, and new town centers are proposed in Northwest District, Killingsworth/Interstate, and Midway (122nd/Division).
- The numerous mixed use commercial corridors across Portland have a diverse business mix and concentrations of small businesses. These districts are designated as Neighborhood Centers, Civic Corridors, Neighborhood Corridors, and interspersed nodes.

Why are these employment geographies important? Neighborhood Business Districts are a foundation of neighborhood livability in attracting pedestrian and social activity, defining neighborhood character, providing diverse destinations, and conveniently serving daily shopping needs. The 93,000 jobs in these districts account for 25% of the citywide employment. Neighborhood business districts also provide major economic benefits by keeping local dollars circulating within Portland, particularly through small business vitality. Small businesses are concentrated in this employment geography more than others, supporting Portland's identity as a small business city.

2010-2035 job growth potential: 35,100 net new jobs. These districts account for 25% of the citywide job forecast. Many of these districts are experiencing significant growth and change, providing synergistic locations for concentrated housing and commercial growth in "complete neighborhoods" with convenient access to services.

EMPLOYMENT LAND CAPACITY OF THE 2035 COMPREHENSIVE PLAN

The Neighborhood Business Districts currently have surplus development capacity to accommodate nearly twice their aggregate forecast demand by 2035. Substantial surplus capacity exists in the Gateway, Town Centers, and Neighborhood Centers and Corridors geographies. Surplus short-term capacity to meet demand by 2020 is also available in these three geographies (see EOA Task 2/3 Report).

NEIGHBORHOOD BUSINESS GROWTH AND LAND USE DIRECTION

Policy 6.61. Neighborhood business districts. Provide for the growth, economic equity, and vitality of neighborhood business districts.

Policy 6.65. Neighborhood-serving business. Provide for neighborhood business districts and small commercial nodes in areas between centers to expand local access to goods and services. Allow nodes of small-scale neighborhood serving commercial uses in large planned developments and as a ground floor use in high density residential areas.

The primary land use and development policies for this employment geography are summarized in the section below on centers and corridors. The areas are designated for mixed residential and employment uses and higher densities to support complete neighborhoods and healthy communities. Policies 6.61 and 6.65 (above) provide further land use direction on their primary commercial market function of neighborhood serving businesses. The livability and economic equity of Portland neighborhoods rely on these neighborhood serving businesses.

2035 COMPREHENSIVE PLAN MAP CHANGES

Numerous map changes are proposed in the Comprehensive Plan to implement the centers and corridors framework. A Mixed Use Zoning Project is underway as part of the Comprehensive Plan Update (in Task 5 in the periodic review work plan) to clarify and implement these new designations. Existing commercial zones already allow multifamily residential use and densities that are generally consistent with these designations. The proposed plan designates:

- Three new Town Centers at Northwest District, Killingsworth/Interstate, and Midway. Town Centers are intended to accommodate low-rise to midrise density of up to 10 stories.

- Twenty-two Neighborhood Centers throughout the city, supporting the objectives of healthy and complete neighborhoods. Neighborhood Centers are intended to accommodate low-rise density of up to 4 stories.

- A network of Civic Corridors and Neighborhood Corridors for midrise and low-rise densities, respectively, which take advantage of their redevelopment potential and transit connections. Civic corridors are the city's busiest, widest and most prominent streets.

- A Mixed Employment area in Central Gateway that supplements the tightening capacity for industrial-office incubator space in the Central City and compete more effectively in the regional office development market.

SYSTEM OF CENTERS AND CORRIDORS

Goal 3.D. A system of centers and corridors. Portland's interconnected system of centers and corridors provides diverse housing options and employment opportunities, robust multimodal transportation connections, access to local services and amenities, and supports low-carbon complete, healthy, and equitable communities.

Policy 3.13. Role of centers. Enhance centers as anchors of complete neighborhoods that include concentrations of commercial and public services, housing, employment, gathering places, and green spaces.

Policy 3.16. Investments in centers. Encourage public and private investment in infrastructure, economic development, and community services in centers to ensure that all centers will support the populations they serve.

One of the primary themes of the 2035 Comprehensive Plan is the urban form framework of centers and corridors that are well served by pedestrian, bicycle, and transit systems. Centers and mixed use corridors are places with concentrations of businesses and services, housing, gathering places and green spaces that provide residents with options to live a healthy, active lifestyle. When services and other destinations are clustered in compact areas economic viability is strengthened and walking, transit and bicycling become more practical. The proposed of Neighborhood and Town Centers and Civic and Residential Corridors vary in size and character depending on their location, but all of them contribute to increasing economic opportunities and neighborhood vitality.

Currently, only 64% of Portlanders live in complete neighborhoods with frequent transit service, schools, parks or greenspaces, and businesses and other amenities close enough to safely and easily walk or bike for meeting. In some areas, services are scattered or missing, or streets may lack sidewalks, bikeways or other safe connections providing local access. The Portland Plan set the objective that 80% of Portlanders live in a complete neighborhood by 2035. The 2035 Comprehensive Plan supports this objective by concentrating growth in centers and corridors that are dispersed across Portland neighborhoods.

In the past, Portland has primarily used zoning that promotes a compact mix of commercial uses and housing to cultivate places with a sufficient mix of uses and services; however, zoning alone has not been successful in producing these results evenly across the city. Emerging opportunities to increase development of centers and corridors include expanding demand for multifamily housing in close-in locations, associated retail and service needs as well as continuing expansion of the health care and education sectors in centers and corridors. Policy 3.16 (above) and the Transportation System Plan and Citywide Systems Plan propose concentrated investments in centers and corridors that make them more attractive and affordable locations to develop. Additionally, the Portland Plan's Healthy Connected City strategy introduces a broader range of tools, including community partnerships and investments that will help achieve these objectives.

SMALL BUSINESS SUPPORT AND NEIGHBORHOOD REVITALIZATION

Policy 6.9. Small business development. Facilitate the success and growth of small businesses and coordinate plans and investments with programs that provide technical and financial assistance to promote sustainable operating practices.

Policy 6.66 Investment priority. Prioritize commercial revitalization investments in neighborhoods that serve communities with limited access to goods and services.

Policy 6.63 Small, independent businesses. Facilitate the retention and growth of small and locally-owned businesses.

Community-driven revitalization efforts underway offer potential to increase small business development, improve economic equity, and reduce retail and service disparities among Portland neighborhoods. **Small businesses are at the core of Portland's neighborhood business districts. Collectively, they offer diverse potential to improve job growth, increase self-employment, and add to the city's economic resiliency.**

Policies 6.66 and 6.63 reinforce new directions for commercial revitalization set in the Portland Neighborhood Economic Development Strategy and Portland Plan. These strategies propose a community-driven neighborhood economic development approach to build local capacity, minimize involuntary displacement and spur commercial activity in underserved neighborhoods. This approach includes support for entrepreneurship and microenterprise development, as well as expanding community partnerships to leverage more public investments to advance neighborhood economic development goals.

While much of the public sector role has focused on one-time capital investments and incentives, a pivotal difference can be in the form of day-to-day technical, marketing, and related business assistance. Portland has a solid base of business districts with supportive community organizing and small business resources. Recent initiatives include the East Portland Action Plan, the Neighborhood Economic Development Strategy, and the Neighborhood Prosperity Initiative. PDC's Neighborhood Economic Development Strategy includes a multi-pronged approach to measuring neighborhood business vitality, including new business licenses, new business growth, positive job growth, resident income, transit access, and retail needs satisfaction.[3]

GATEWAY AS PORTLAND'S SECOND BUSINESS CENTER

Policy 3.28. Role of Gateway. Encourage growth and investment in Gateway to enhance its role as East Portland's center of employment, commercial and public services.

For the Gateway Regional Center, substantial new office development has not yet occurred despite direct proximity to east-west and north-south freeway (I-84/I-205) and light rail transit service coupled with availability of tax increment funding through the urban renewal area. Barriers to successful office development have included lack of a critical mass of professional and financial sector office activity, lower market rents that are inadequate to support mid-to-high

[3] For detailed information on the neighborhood vitality index, please read the Neighborhood Economic Development strategy: http://www.pdc.us/bus_serv/ned.asp

rise construction costs, and relative fragmentation of many of the vacant and lesser valued property holdings.

Policy 3.28 supports a range of demand opportunities in Gateway to expand low/mid-rise institutional and office development:

- Institutional development accounts for 60% of the forecast building area in Gateway to 2035, building on the expansion potential of Adventist hospital and a variety of other health care and education facilities there.

- The Mixed Employment area designated in Central Gateway takes advantage of the area's potential to accommodate spillover demand from the tightening capacity for industrial office incubator space in the Central City.

- Gateway and the nearby Portland International Center at PDX are Portland's largest concentrated area of office development capacity, outside of the Central City, available to establish a critical mass of office activity that could compete more effectively with lower-rise and larger footprint office parks currently focused in the suburban market around Portland. Greater diversity of office products would better enable Portland to recapture its competitive share of the office space market that has been lost over the last couple of decades. Gateway's relative affordability and proximity to PDX is among its location advantages for businesses requiring immediate access to air transport through personnel, customers, or high-value freight.

The majority of the land supply is associated with smaller, underutilized redevelopment sites rather than vacant sites; however, the current development trends indicate that the market is developing at a relatively low 0.5 FAR, which is consistent with a significant existing amount of surface parking lot area. **Achieving higher FARs in Gateway and the town centers will depend on opportunities to reduce the proportion of land in surface parking.** One of the key elements will be to find innovative approaches to reduce the parking footprint while assuring customer and employee accessibility. These strategies include support for prototype developments to show market viability. Innovations could include taking advantage of the reduced parking standards already in place, un-bundling of parking in real-estate transactions (for example, listing the price of a parking space separate from the residential or commercial lease, as an add-on), maintaining on-street parking, and initial structured parking with major development projects outside of the Central City.

COMMERCIAL CAPACITY IN UNDERSERVED NEIGHBORHOODS

Commercial vitality is widely uneven among neighborhood business districts, and only 60% of Portlanders currently live within a half-mile of a full-service grocery store or market that sells healthy, fresh food. The Portland Plan's Healthy Connected City goal emphasizes creating complete neighborhood centers that provide access to services and destinations, locally and across the city. In response, **the 2035 Comprehensive Plan map designates new Neighborhood Commercial areas in underserved areas.** Policy 6.65 Neighborhood-Serving Business also supports adding commercial and mixed use development capacity in underserved neighborhoods. Related policies that further support reducing neighborhood retail and service

disparities include Policy 6.9. Small Business Development, 6.69. Temporary and Informal Markets and Structures, and 4.80 Neighborhood Food Access.

The 2035 Comprehensive Plan will provide a 20-year supply of additional commercial land in neighborhood business districts by enhancing the capacity of existing centers and corridors, investing in new centers and corridors, providing small business support and neighborhood revitalization programs, and addressing the needs of underserved neighborhoods.

VI. CAMPUS INSTITUTIONS

In 2010, institutional campuses (hospitals, colleges and universities) accounted for 31,900 jobs – about 9% of the jobs in Portland. By 2035, 22,730 additional jobs are projected for these areas, requiring 370 acres of development capacity for campus institutions.

What types of businesses locate here? The health care and education sectors are concentrated in large hospital and college campuses and smaller neighborhood facilities. The institutional geography consists of 17 of Portland's 19 large hospital and college campuses (excluding PSU in the Central City Commercial geography and Adventist hospital in Gateway). Their campuses vary from large pastoral expanses (some exceed 100 acres) to concentrated urban complexes of mid-rise buildings.

Why is this geography important? Portland has an exceptional collection of higher education and health care institutions that provide access to essential services, such as education and workforce training and health care. They are centers of innovation and learning in the community. These institutions are also major employers, anchoring the health care and education sectors, which accounted for 88,500 jobs, or 24% of the employment in the city in 2010, and have been leading sources of job growth locally, regionally, and nationally. The jobs in this geography are also relatively stable, continuing to grow during the 2008-2010 Great Recession, and are concentrated in high-wage occupations.

2010-2035 job growth potential: 22,700 net new jobs. The Institutional geography accounts for 16% of the citywide job forecast. The health care and education sectors concentrated in this geography have been the city's biggest job growth sectors, making up 36% of forecast job growth and 27% of forecast citywide employment in 2035.

EMPLOYMENT LAND CAPACITY OF THE 2035 COMPREHENSIVE PLAN

The current growth capacity in most of the Campus Institutions geography consists of the maximum development allowance set in their conditional use master plans and impact mitigation plans. This existing capacity meets only 83% of forecast demand by 2035, leaving a 64-acre shortfall of needed developable land. The 2035 Comprehensive Plan meets this capacity shortfall primarily by designating each campus as employment land with expected development (FAR) allowances that exceed forecast development. The floor area allowances being considered in the Institutional Zoning Project now underway meet an estimated 141% of forecast demand overall, as described further below.

INSTITUTIONAL GROWTH AND LAND USE DIRECTION

> *Policy 6.55 Campus institutions. Provide for the stability and growth of Portland's major campus institutions as essential service providers, centers of innovation, workforce development resources, and major employers.*
>
> *Policy 6.56 Campus land use. Provide for major campus institutions as a type of employment land, allowing uses typically associated with health care and higher*

education institutions. Coordinate with institutions in changing campus zoning to provide land supply that is practical for development and intended uses.

These policies and the Comprehensive Plan Map propose a major shift in land use direction for campus institutions, designating them as employment districts, where uses typically associated with their operations are allowed, rather than conditional uses in residentially designated areas. The average age of the 15 residentially designated institutions at their current locations is nearly 80 years. **The average size of these campuses in total employment is comparable to Town Centers.**

This policy shift also supports the forecast job growth at campus institutions. Implementation of these policies is expected to include zone changes to allow forecast development, as well as transportation and other infrastructure projects to adequately serve these campuses.

2035 COMPREHENSIVE PLAN MAP CHANGES

The current residential land use designation on most of this geography in the Comprehensive Plan Map is proposed to be changed to Institutional Campus, a new employment land designation. This map designation is generally applied to the current master planned campus boundaries. Proposed Policy 10.1.20 Institutional Campus describes the intended use, intensity and public services provision at these map designations, including the intent to foster the growth of the institution while enhancing the livability of surrounding residential neighborhoods and the viability of nearby business areas. The Portland Plan specifically supports this map change in Action 69, calling for new land use and investment approaches to support the growth and neighborhood compatibility of college and hospital campuses.

Continuing development of Portland's campus institutions is complicated by the historic development of these campuses in unusual locations not consistent with typical commercial siting criteria. As a result, campus institutions commonly have limited transit or arterial street access, proximity to residential neighborhoods that constrain campus expansion, and zoning regulations that appear to increasingly impede effective site planning to respond to rapidly changing educational and health care needs. The current residential map designations contribute to this mismatch.

Meeting forecast institutional land needs is challenging, not only because of the size of the gap (64 acres) but also the physical setting of many institutions, often bounded by residential neighborhoods. Options generally include:

- Increased density of development within the existing footprint through infill and redevelopment.
- Increasing the campus footprint (with land acquisition), often requiring re-zoning and conditional use master plan (CUMP) approval processes.
- Creating satellite campuses taking advantage of opportunities elsewhere in Portland, such as designated mixed use centers and corridors.

The approach proposed in the Comprehensive Plan combines each of these options. Moderate campus-wide densities can accommodate substantial growth, while limiting development at

campus edges near single-family neighborhoods. The proposed map designations are based on the current master plans, which can extend outward from the current footprint, such as inclusion of the planned riverfront expansion area at the University of Portland. Policy 6.60. Satellite Facilities also encourages continuing off-site expansion where practical for some types of uses, such as OHSU outpatient and research facilities in nearby South Waterfront and Providence offices in nearby Hollywood.

REGULATORY REFORM

> *Policy 6.57 Development impacts. Protect the livability of surrounding neighborhoods through adequate infrastructure and campus development standards that foster suitable density and attractive campus design.*
>
> *Policy 6.58 Community amenities and services. Encourage campus development that provides amenities and services to surrounding neighborhoods, emphasizing the role of campuses as centers of community activity.*
>
> *Policy 6.59 Campus edges. Provide for context-sensitive, transitional uses and development at the edges of campus institutions to enhance their integration into surrounding neighborhoods, including mixed-use and neighborhood-serving commercial uses where appropriate.*

These proposed policies provide balanced direction for new development standards to accommodate institutional growth and neighborhood compatibility and livability. Implementation of these policies is underway in the Campus Institutional Zoning Project as part of the Comprehensive Plan Update (Task 5).

The current zoning regulatory approach of conditional use master plans and impact mitigation plans has been widely criticized. This zoning approach does not designate adequate 20-year growth capacity for campus institutions. Representatives of long-established institutions have objected that their conditional use status treats them as "guests in the neighborhood." Required ten-year and interim updates of master plans entail extensive Type 3 review and tend to hamper flexibility for technological and market changes in the rapidly growing health care and education fields. In response, institutions may overestimate planned development to meet potential future needs, which can contribute to protracted neighborhood disputes from development impacts in these discretionary review processes.

The current conditional-use status of campus institutions, requiring campus master plans and periodic updates, is expected to be replaced by institutional campus base zones that allow typical institutional uses and establish development standards to protect surrounding neighborhood livability, consistent with proposed Policies 6.57 - 6.59.

The Campus Institutional Zoning Project proposes new zones to implement the Institutional Campus map designations. Two types of campus zones will encompass the broad range of conditions and suitable development capacity among campuses, such as the following: a medical campus zone allowing 3:1 Floor Area Ratio (FAR), or up to 4:1 in Regional and Town Centers; an urban higher education campus zone allowing 2:1 FAR or up to 3:1 in designated Regional and Town Centers; and a lower density higher education campus zone allowing 0.5:1 FAR. **The**

resulting development capacity will be adequate to meet forecast land needs for each type of campus (see Figure 2).

SATELLITE AND SMALLER URBAN CAMPUSES IN CENTERS AND CORRIDORS

> *Policy 6.60 Satellite facilities. Encourage opportunities for expansion of uses, not integral to campus functions, to locate in centers and corridors to support their economic vitality.*

Policy 6.60 encourages expansion of less integral institutional facilities in satellite locations, which in turn frees up space for core services on the campuses. For example, Providence Hospital has taken this approach by locating some of their administrative office facilities in nearby Hollywood Town Center. Another example is the location of OHSU outpatient and research facilities at satellite facilities in nearby South Waterfront, linked to the OHSU hospital by an aerial tram. These institutional satellite facilities can be a source of both services and employment in mixed-use centers and corridors.

A related trend and capacity-expansion opportunity is the location of smaller standalone campuses in centers and corridors. For example, PCC is making significant investments in its Cascade and Southeast campuses that integrate the campus into the existing commercial corridors. Other related examples include proposed expansion of the University of Oregon and Oregon State University facilities in the Central City.

ADEQUATE TRANSPORTATION ACCESS AND SERVICE

Traffic impacts and related transportation system deficiencies are commonly cited as the most challenging compatibility issue of campus institutional growth on neighborhood livability. Additionally, EOA focus groups identified improved transit service as the single greatest public infrastructure need. Because most of Portland's major medical and educational institutions have been in place for many years, the need for continued public investment and service reconfiguration can be easily overlooked.

The proposed designation of campus institutions on the Comprehensive Plan Map has helped to specifically account for institutional growth in transportation modeling for the Transportation System Plan (TSP) update. In turn, proposed projects in the TSP are expected to be implemented as needed to provide adequate system capacity.

As major employers, transportation demand management (TDM) plans offer another significant opportunity to more efficiently serve transportation needs of institutions and reduce traffic impacts on surrounding neighborhoods. Proposed Policy 9.53. Transportation Demand Management supports creation and maintenance of ongoing TDM programs.

The 2035 Comprehensive Plan will provide a 20-year supply of additional land for campuses and institutions through regulatory reform, encouraging satellite facilities, and addressing traffic impacts and transportation deficiencies.

APPENDIX A. INDUSTRIAL CAPACITY IMPACTS OF NATURAL RESOURCE PROTECTION REGULATIONS

ESTIMATING THE DEVELOPMENT CAPACITY IMPACTS OF POTENTIAL FUTURE NATURAL RESOURCE PROTECTION

The impacts of potential future regulations have been estimated to inform City strategies to meet Statewide Planning Goal 9 and relevant Comprehensive Plan policies. The development capacity impact estimates are incremental, accounting for existing environmental constraints and associated capacity reductions applied by the Buildable Land Inventory (BLI).

Specifically, for vacant and underutilized sites, the BLI already deducts 100% of development capacity for floodways and environmental protection overlay zones, and 50% of the capacity for environmental conservation overlay zones, steep slopes, wetlands, and the 100-year floodplain. The BLI also deducts 50% of the site area from development capacity for nearly all vacant and underutilized sites that contain existing greenway overlay zones.

The incremental development capacity impact of potential future regulations is estimated in Figures 6, 7, and 8 below, based on the following assumptions and analysis. This analysis provides a reasonable basis for planning, given City goals, policies, recent planning analyses, and regulatory obligations, but is not intended to bind future City policy and regulatory decisions.

HARBOR AND AIRPORT DISTRICTS, AND COLUMBIA EAST

In the Harbor and Airport Districts, and in Columbia East, environmental overlay zones are assumed to be applied to land with natural resources that rank high or medium in the Natural Resources Inventory (NRI). For purposes of this analysis it is assumed that:

- The environmental protection overlay zone (p-zone) would be applied to protect natural resources within 50 feet of rivers, streams, drainageways, and wetlands; and the p-zone would be applied to the wetlands and waterways themselves. It is assumed that the p-zone would be applied to these natural resource areas if they are currently unprotected by environmental overlay zones. It is also assumed that the environmental conservation zone (c-zone) would be converted to the p-zone to provide additional protection for natural resources within 50 feet of water bodies.

- The environmental conservation overlay zone would be applied to high- and medium-ranked natural resources located more than 50 feet from rivers, streams, drainageways, and wetlands.

- The BLI constraint methodology would be applied to estimate the incremental impacts of the expanded or modified environmental overlay zones.

- Environmental overlay zones would not be applied to low-ranked natural resources or to natural resources in the Airport Districts that rank high in the NRI, solely because they are Special Habitat Areas (SHAs) that support grassland associated wildlife species. This is because environmental program updates for those SHAs were addressed relatively recently in the Airport Futures project (adopted in 2011).

Applying these assumptions to vacant and under-utilized sites in the Harbor and Airport Districts, the p-zone would be applied to an additional 136 acres of acres of high- and medium-ranked natural resources within 50 feet of water bodies (88 acres of which are currently within the c-zone). The c-zone would be applied to an additional 66 acres of high- and medium-ranked natural resources located more than 50 feet from water bodies. The employment capacity impact of these regulatory updates is estimated to be an additional 97 acres beyond the capacity reductions already applied by the BLI constraints.

Applying these assumptions to vacant and under-utilized sites in Columbia East, the p-zone would apply to an additional 45 acres of high- and medium-ranked natural resources within 50 feet of water bodies (27 acres of which are in the existing c-zone). The c-zone would be applied to an additional 27 acres of high- and medium-ranked natural resources located more than 50 feet from water bodies. The employment capacity impact of these regulatory updates is estimated to be an additional 39 acres beyond the capacity reductions already applied by the BLI constraints.

HARBOR ACCESS LANDS

In the Harbor Access Lands geography, nearly all the vacant and underutilized sites contain Willamette River Greenway overlay zones. For these sites, it is assumed that:

- Future updates to the greenway overlay zones will retain key elements of existing regulations, including the greenway setback, greenway review for development on vacant and under-utilized sites that must establish river-dependent or river-related uses, and a planting or landscape requirement.

- A new natural resource-focused overlay zone will be applied to the 115 acres of high- and medium-ranked natural resources on vacant or underutilized sites containing existing greenway overlay zones. It is assumed that this new overlay zone would be similar in construct to the environmental conservation zone, but would be specifically designed for areas with river-related and river-dependent uses in the Portland Harbor.

- The updated regulations will include a new, streamlined standards-based review track for new development, as well as clearer mitigation requirements that would allow mitigation to occur on- or off-site. A new clear and objective standards track should significantly reduce the frequency in which a land use review is triggered by new development or redevelopment projects on already developed sites.

Given that the BLI already deducted at least 50% of the development capacity for entire vacant and underutilized sites within the existing Greenway overlay zones, and because it is assumed

future greenway regulations would contain similar elements as the existing Greenway overlay zones, no incremental impact on development capacity is assumed for future regulatory updates on sites within the Willamette Greenway.

The only high- and medium-ranked natural resources that are in the Harbor Access Lands geography but outside the Willamette Greenway are located on Port of Portland-owned Terminal 6 (T-6). To estimate the potential development capacity impact of future environmental regulatory updates on the vacant and underutilized portions of T-6, it is assumed that the environmental conservation overlay zone would be applied to high- and medium-ranked significant natural resources that are not within the existing overlay zone, including Special Habitat Areas. Applying this analysis, the c-zone would be applied to an additional 28 acres, with a capacity impact of an additional12 acres, beyond the environmental constraints already applied by the BLI.

IMPACTS OF FUTURE CITY ENVIRONMENTAL REGULATIONS ON DEVELOPED PROPERTIES

As noted above, the BLI and EOA assigned potential new employment capacity only to vacant or under-utilized properties in the Columbia East and Columbia Harbor EOA geographies, including the Harbor Access Lands portion of the Columbia Harbor geography. Potential new employment capacity was not assigned to developed properties in these geographies.

Given that the BLI did not allot future development capacity to developed industrial sites it is appropriate to view the impact of future regulations in terms of impacts on intensification of existing uses. Like the analysis of impacts on vacant and underutilized sites, it is appropriate to view the impacts of potential future environmental regulations as incremental relative to existing regulations and other constraints.

It is also assumed that the updated regulations would strike a balance among City policies for economic development and watershed health, for example, while it is expected that existing regulations will be improved and/or expanded to address unprotected natural resources, the updated regulations are also expected to include streamlined provisions, such as new or updated standards, or clearer allowances for off-site mitigation, that improve development and certainty, reduce the number of discretionary land use reviews required, and facilitate intensification of existing uses.

In terms of developed sites potentially affected by future environmental and greenway overlay zone updates, analysis suggests that these updates would have a relatively minimal impact, as summarized in the following bullets:

- There are 7,661 acres of developed sites in the Harbor and Airport Districts. Of the 615 acres of high- and medium-ranked NRI resources on these sites, (315 acres high, 300 acres medium) 340 acres or about 55% are within existing environmental overlay zones. The approximately 275 acres that are not within existing environmental overlay zones represent 3.5% of the developed site area in this portion of the geography. In addition, the vast majority of this area is currently constrained by existing wetlands, floodway, floodplain, or other environmental constraints.

- There are 1,705 acres of developed sites in the Columbia East geography. Of the 258 acres of high- and medium-ranked NRI resources these sites (139 acres high, 119 acres medium), 221 acres or about 86% are within existing environmental overlay zones. The 37 acres of high- and medium ranked NRI resources that are not within existing environmental overlay zones represent about 2% of the developed land in Columbia East. Some of this area is currently constrained by existing wetlands, floodway, floodplain, or other physical environmental constraints.

- There are approximately 1,996 acres of developed sites in the Harbor Access Lands, including sites in the greenway-i and greenway-g, overlay zones, and at Terminal 6. This area includes 237 acres of high and medium-ranked natural resources, or about 12% of the developed site area. Of these acres, 226 acres are on sites with existing greenway overlay zone or are affected by other environmental constraints. The area of currently unconstrained high and medium-ranked natural resources is about 11 acres or less than 1% of the developed sites in the Harbor Access Lands.

CAPACITY IMPACTS OF NATURAL RESOURCE DAMAGE ASSESSMENT AND RESTORATION

In addition to cleaning up contamination at the Portland Harbor Superfund site, responsible parties will be required to meet the Natural Resource Damage Assessment (NRDA) requirements of Superfund. Under NRDA, responsible parties must sponsor environmental restoration on their property or other designated sites to remedy past damages to fish, wildlife, and users of the Willamette River (e.g., boaters, fishers, etc.). A list of potential NRDA restoration sites has been identified by the Portland Harbor Natural Resource Trustees. A number of these sites have industrial or employment zoning. To account for the potential employment capacity impacts of future NRDA restoration, an additional 25-acre reduction in employment capacity is assumed as a contingency. This number reflects the employment capacity allocated by the BLI to the Linnton Plywood Site (~25 acres) and vacant portions of the site owned by Portland General Electric, including the Harborton Wetlands (~42 acres). NRDA restoration opportunities are currently being planned for both of these sites, or portions of the sites. The 25 acres also reflects an additional increment of capacity reduction based on the vacant portion of the Owens Corning site which is largely in the floodplain (~11 acres). For purposes of this analysis it is assumed that these sites are at least 70% constrained by a combination of greenway regulations and other constraints.

Figure 5. Harbor and Airport Districts - Capacity Impacts of Potential Environmental Zoning Changes on Vacant and Underutilized Land

Natural Resources Inventory (NRI) resources and environmental overlay zones within 50 feet of streams and wetlands (acres) (1)

NRI Ranking	Environmental Conservation Zone	Environmental Protection Zone	No Environmental Overlay Zone	Total
High	61.56	0.00	17.88	79.44
Medium	26.10	0.00	30.85	56.95
Total	**87.66**	**0.00**	**48.73**	**136.39**

Employment Capacity Impact of potential future environmental regulations on significant natural resources within 50 feet of streams (acres)

NRI Ranking	No BLI Env. Constraints, No Env. Zone	Emp. Capacity Impact (2)	Yes BLI Env. Constraints, No Env. Zone (3)	Emp. Capacity Impact (4)	Yes Env. Conservation Zone	Emp. Capacity Impact (5)	Total Employment Capacity Impact	Total
High	2.82	-2.82	2.99	-1.50	25.83	-11.62	-15.94	31.64
Medium	9.82	-9.82	8.90	-4.45	20.83	-9.37	-23.64	39.55
Totals	**12.64**	**-12.64**	**11.89**	**-5.95**	**46.66**	**-21.00**	**-39.58**	71.19

Employment Capacity Impact of potential future environmental regulations on significant natural resources within wetlands and 50 feet of wetlands (acres)

NRI Ranking	No BLI Env. Constraints, No Env. Zone	Emp. Capacity Impact (2)	Yes BLI Env. Constraints, No Env. Zone (3)	Emp. Capacity Impact (4)	Yes Env. Conservation Zone	Emp. Capacity Impact (5)	Total Employment Capacity Impact	Total
High	2.34	-2.34	10.25	-5.13	35.73	-16.08	-23.54	48.32
Medium	10.73	-10.73	1.40	-0.70	5.25	-2.36	-13.79	17.38
Totals	**13.07**	**-13.07**	**11.65**	**-5.83**	**40.98**	**-18.44**	**-37.34**	**65.70**

Employment Capacity Impact of potential future environmental regulations on significant natural resources more than 50 feet from streams and wetlands (acres)

NRI Ranking	No BLI Env. Constraints, No Env. Zone	Emp. Capacity Impact (6)	Yes BLI Env. Constraints, No Env. Zone (3)	Emp. Capacity Impact (7)	Yes Env. Conservation Zone	Emp. Capacity Impact (8)	Total Employment Capacity Impact	Total
High	1.17	-0.59	2.29	-0.23	19.78	0.00	-0.81	23.24
Medium	33.33	-16.67	29.26	-2.93	52.44	0.00	-19.59	115.03
Totals	**34.50**	**-17.25**	**31.55**	**-3.16**	**72.22**	**0.00**	**-20.41**	**138.27**

Total Employment Capacity Impacts **-97.32**

(1) Acreage includes wetlands and land within 50 feet of wetlands and streams, but does not include the area of streams. Land within 50 feet of streams and wetlands receive either a High or Medium NRI rank in this geography.
(2) It is assumed that environmental protection zone (p-zone) would be applied to significant natural resources within 50 feet of streams and wetlands. For resources with no BLI constraints the capacity reduction would be 100% of the resource area, consistent with the BLI and EOA methdology which eliminated 100% of employment capacity for land within the pzone.

(3) Calculated by subtracting the area of natural resources in the environmental conservation overlay from the total area of land with environmental BLI constraints.
(4) It is assumed that the p-zone would be applied to High and Medium ranked natural resources within 50 feet of streams and wetlands. For resources with BLI environmental constraints but no environmental overlay zone, the employment capacity impact would be -50%. The BLI and EOA deducted 50% employment capacity for 1 environmental constraint, and 10% each for up to 2 more constraints. This assumes the resources have 1 BLI environmental constraint, and that applying the p-zone would remove the remaining 50% capacity.

(5) The impact on employment capacity impact of applying the p-zone to significant natural resources that are within 50 feet of streams and wetlands, and within the environmental conservation overlay zone (c-zone) is - 45%. The BLI/EOA deducted 50% capacity to the portion of properties within the environmental conservation overlay zone (c-zone). Deducting an additonal 45% (rather than 50%) accounts for the likelihood that these natural resources in the c-zone have more than one BLI environmental constraint.
(6) The impacts on employment capacity impact of applying or modifying environmental overlay zoning on land that is further than 50 feet from streams and wetlands, and that has no BLI environmental constraints, are: - 50% for High-ranked NRI resources (assumes c-zone is applied); -50% for Medium-ranked resources (assumes c-zone is applied).
(7) The impacts on employment capacity impact of applying the environmental overlay zone to High and Medium ranked resources further than 50 feet from streams and wetlands, and that has BLI environmental constraints but no overlay zone are is -10% (assumes c-zone is applied).

(8) The impact on employment capacity impact of applying the environmental overlay zone to High and Medium ranked resources further than 50 feet from streams and wetlands, and that is within the c-zone is -0% since no change in overlay zone is anticipated.

Source: Bureau of Planning and Sustainability

Figure 6. Harbor Access Lands (T-6 only) - Capacity Impacts of Potential Environmental Zoning Changes on Vacant and Underutilized Land

Natural Resources Inventory (NRI) resources and environmental overlay zones (acres)

NRI Ranking	Environmental Conservation Zone	Environmental Protection Zone	No Environmental Overlay Zone	Total
High	3.56	0	4.41	7.97
High - SHA 0nly	0	0	10.43	10.43
Medium	2.44	0	12.86	15.3
Total	**6.0**	**0**	**27.7**	**33.7**

Employment Capacity Impact of potential future environmental regulations on significant natural resources (acres)

NRI Ranking	No BLI Env. Constraints, No Env. Zone	Emp. Capacity Impact (1)	Yes BLI Env. Constraints, No Env. Zone (2)	Emp. Capacity Impact (3)	Yes Env. Conservation Zone	Emp. Capacity Impact (4)	Total Employment Capacity Impact	Total
High	1.76	-0.88	2.65	-1.33	3.52	0.00	-2.21	7.93
High - SHA only	10.43	-5.22	0.00	0.00	0.00	0.00	-5.22	
Medium	7.75	-3.88	5.11	-0.51	2.36	0.00	-4.39	15.22
Totals	**19.94**	**-9.97**	**7.76**	**-1.84**	**5.88**	**0.00**	**-11.81**	33.58

(1) Capacity reduction = -0.5 x area of natural resources with no BLI environmental constraints, consistent with the BLI methodology, assuming that c-zone would be applied here.

(2) Calculated by subtracting the area of natural resources in the environmental conservation overlay from the total area of land with environmental BLI constraints.

(3) Capacity reduction of -0.1 x the area of natural resources with BLI constraints and no overlay zone, reflects the assumption that c-zone would be applied here, and is consistent with the BLI and EOA methodology.

(4) It is assumed that natural resources already within the c-zone would remain so, with no incremental impact on development capacity.

Source: Bureau of Planning and Sustainability

Figure 7. Columbia East - Capacity Impacts of Potential Environmental Zoning Changes on Vacant and Underutilized Land

Natural Resources Inventory (NRI) resources and environmental overlay zones within 50 feet of streams and wetlands (acres) (1)

NRI Ranking	Environmental Conservation Zone	Environmental Protection Zone	No Environmental Overlay Zone	Total
High	10.27	0	6.89	17.16
Medium	17.06	0	11.68	28.74
Total	**27.33**	**0**	**18.57**	**45.9**

Employment Capacity Impact of potential future environmental regulations on significant natural resources within 50 feet of streams (acres)

NRI Ranking	No BLI Env. Constraints, No Env. Zone	Emp. Capacity Impact (2)	Yes BLI Env. Constraints, No Env. Zone (3)	Emp. Capacity Impact (4)	Yes Env. Conservation Zone	Emp. Capacity Impact (5)	Total Employment Capacity Impact	Total
High	0.29	-0.29	0.01	-0.01	1.20	-0.54	-0.84	1.50
Medium	2.05	-2.05	2.65	-1.33	3.18	-1.43	-4.81	7.88
Totals	**2.34**	**-2.34**	**2.66**	**-1.33**	**4.38**	**-1.97**	**-5.64**	9.38

Employment Capacity Impact of potential future environmental regulations on significant natural resources within wetlands and 50 feet of wetlands (acres)

NRI Ranking	No BLI Env. Constraints, No Env. Zone	Emp. Capacity Impact (2)	Yes BLI Env. Constraints, No Env. Zone (3)	Emp. Capacity Impact (4)	Yes Env. Conservation Zone	Emp. Capacity Impact (5)	Total Employment Capacity Impact	Total
High	1.49	-1.49	5.10	-2.55	9.07	-4.08	-8.12	15.66
Medium	6.98	-6.98	0.00	0.00	13.88	-6.25	-13.23	20.86
Totals	**8.47**	**-8.47**	**5.10**	**-2.55**	**22.95**	**-10.33**	**-21.35**	**36.52**

Employment Capacity Impact of potential future environmental regulations on significant natural resources more than 50 feet from streams and wetlands (acres)

NRI Ranking	No BLI Env. Constraints, No Env. Zone	Emp. Capacity Impact (6)	Yes BLI Env. Constraints, No Env. Zone (3)	Emp. Capacity Impact (7)	Yes Env. Conservation Zone	Emp. Capacity Impact (8)	Total Employment Capacity Impact	Total
High	1.01	-0.51	0.18	-0.02	0.11	0.00	-0.52	1.30
Medium	23.30	-11.65	2.01	-0.20	8.52	0.00	-11.85	33.83
Totals	**24.31**	**-12.16**	**2.19**	**-0.22**	**8.63**	**0.00**	**-12.37**	**35.13**
Total Employment Capacity Impacts							**-39.36**	

(1) Acreage includes wetlands and land within 50 feet of wetlands and streams, but does not include the area of streams. Land within 50 feet of streams and wetlands receive either a High or Medium NRI rank in this geography.
(2) It is assumed that environmental protection zone (p-zone) would be applied to significant natural resources within 50 feet of streams and wetlands. For resources with no BLI constraints the capacity reduction would be 100% of the resource area, consistent with the BLI and EOA methdology which eliminated 100% of employment capacity for land within the pzone.
(3) Calculated by subtracting the area of natural resources in the environmental conservation overlay from the total area of land with environmental BLI constraints.
(4) It is assumed that the p-zone would be applied to High and Medium ranked natural resources within 50 feet of streams and wetlands. For resources with BLI environmental constraints but no environmental overlay zone, the employment capacity impact would be -50%. The BLI and EOA deducted 50% employment capacity for 1 environmental constraint, and 10% each for up to 2 more constraints. This assumes the resources have 1 BLI environmental constraint, and that applying the p-zone would remove the remaining 50% capacity.
(5) The impact on employment capacity impact of applying the p-zone to significant natural resources that are within 50 feet of streams and wetlands, and within the environmental conservation overlay zone (c-zone) is - 45%. The BLI/EOA deducted 50% capacity to the portion of properties within the environmental conservation overlay zone (c-zone). Deducting an additonal 45% (rather than 50%) accounts for the likelihood that these natural resources in the c-zone have more than one BLI environmental constraint.
(6) The impacts on employment capacity impact of applying or modifying environmental overlay zoning on land that is further than 50 feet from streams and wetlands, and that has no BLI environmental constraints, are: - 50% for High-ranked NRI resources (assumes c-zone is applied); -50% for Medium-ranked resources (assumes c-zone is applied).
(7) The impacts on employment capacity impact of applying the environmental overlay zone to High and Medium ranked resources further than 50 feet from streams and wetlands, and that has BLI environmental constraints but no overlay zone are is -10% (assumes c-zone is applied).

(8) The impact on employment capacity impact of applying the environmental overlay zone to High and Medium ranked resources further than 50 feet from streams and wetlands, and that is within the c-zone is -0% since no change in overlay zone is anticipated.

Source: Bureau of Planning and Sustainability

APPENDIX B. CAPACITY DETAILS OF THE 2035 COMPREHENSIVE PLAN

The Buildable Land Inventory sites identified in Figure 9 below are based on the Recommended Draft Comprehensive Plan. Additional map changes under consideration by City Council are included in the supply analysis of draft plan (Figures 2, 3, and 4), but they are not included in Figure 9. These additional map changes result in a net capacity reduction of 36 acres in the Harbor and Airport Districts geography and a net capacity transfer of 3 acres from the Neighborhood Centers and Corridors geography to the Dispersed Employment Area geography.

Figure 8. Proposed Short-Term Land Development Capacity

	Building Square Feet						
Employment Geography	**Base Supply**	**Constrained Supply**	**Adjusted Supply**	**BLI Acres**	**Other Gains***	**2010-20 Demand**	**Surplus/ Deficit**
Central City Commercial	54,137,000	40,309,000	40,309,000	178		40	138
Central City Industrial	11,499,971	9,815,388	9,815,388	169		75	95
Harbor & Airport Districts	64,774,132	27,464,262	25,504,262	586	89	659	16
Harbor Access Lands	15,374,000	2,578,000	2,578,000	59	33	82	10
Columbia East	23,330,000	14,832,000	14,832,000	340	39	279	101
Dispersed Employment	11,554,120	6,959,287	6,959,287	106	10	109	7
Gateway Regional Center	12,588,000	7,965,000	4,456,000	111		33	78
Town Centers	25,875,000	21,685,000	7,095,000	288		86	202
Neighborhood Centers & Corridors	97,316,000	69,915,000	18,368,000	811		362	449
Institutions	9,045,000	7,048,000	7,048,000	306		224	82
Total	**325,493,223**	**208,570,937**	**136,964,937**	**2,955**	**172**	**1,949**	**1,178**
Aggregate Geography							
Central City	65,636,971	50,124,388	50,124,388	347		114	233
Industrial	115,032,252	51,833,549	49,873,549	1,092	172	1,129	134
Neighborhood Commercial	135,779,000	99,565,000	29,919,000	1,210		482	729
Institutions	9,045,000	7,048,000	7,048,000	306		224	82
Total	**325,493,223**	**208,570,937**	**136,964,937**	**2,955**	**172**	**1,949**	**1,178**

* Assume gains from meeting 15% of demand by industrial land intensification, proposed Harbor Access Land projects at Daimler and Canpotex, and expansion of Dispersed Employment development allowances in Neighborhood Commercial corridors.

Source: Bureau of Planning and Sustainability

Figure 9. Buildable Land Inventory of 2035 Comprehensive Plan Designations and Constraint Assumptions – Net Building Square Footage

	Less than .5 acres			.5 to 1 acre			1 to 3 acres			3 to 5 acres			6 to 10 acres		
Employment Geography	Before Constraints	After Constraints	After Market Adjustment	Before Constraints	After Constraints	After Market Adjustment	Before Constraints	After Constraints	After Market Adjustment	Before Constraints	After Constraints	After Market Adjustment	Before Constraints	After Constraints	After Market Adjustment
Central City Commercial	7,497,811	7,197,059	7,197,059	15,159,776	13,330,873	13,330,873	10,559,634	8,854,404	8,854,404	8,027,270	7,167,651	7,167,651	1,467,613	1,466,108	1,466,108
Redevelopment	2,484,177	2,377,157	2,377,157	5,548,327	5,032,736	5,032,736	3,783,209	3,099,972	3,099,972	2,331,958	1,956,998	1,956,998	643	0	0
Vacant	5,013,635	4,819,902	4,819,902	9,611,449	8,298,137	8,298,137	6,776,424	5,754,433	5,754,433	5,695,311	5,210,654	5,210,654	1,466,969	1,466,108	1,466,108
Central City Industrial	3,361,652	3,162,509	3,162,509	3,780,408	3,434,098	3,434,098	2,992,892	2,432,880	2,432,880	1,419,501	1,199,283	1,199,283	1,094,996	628,213	628,213
Redevelopment	750,856	715,121	715,121	843,766	767,459	767,459	643,237	509,799	509,799	24,840	24,495	24,495	85,606	70,123	70,123
Vacant	2,610,796	2,447,388	2,447,388	2,936,642	2,666,639	2,666,639	2,349,655	1,923,080	1,923,080	1,394,661	1,174,788	1,174,788	1,009,390	558,090	558,090
Columbia East	68,322	50,988	50,988	433,737	265,545	265,545	1,675,314	1,027,609	1,027,609	1,276,778	862,286	862,286	1,276,977	885,539	885,539
Redevelopment	0	0	0	0	0	0	37,160	21,176	21,176	53,536	39,381	39,381	57,099	57,099	57,099
Vacant	68,322	50,988	50,988	433,737	265,545	265,545	1,638,154	1,006,432	1,006,432	1,223,242	822,904	822,904	1,219,877	828,440	828,440
Dispersed Employment	552,062	435,062	435,062	443,425	354,999	354,999	673,933	558,874	558,874	919,217	593,121	593,121	282,189	255,512	255,512
Redevelopment	188,812	171,992	171,992	176,043	161,535	161,535	342,403	261,434	261,434	265,292	149,945	149,945	105,462	105,462	105,462
Vacant	363,250	263,070	263,070	267,381	193,463	193,463	331,530	297,440	297,440	653,924	443,176	443,176	176,727	150,049	150,049
Harbor Access Lands	15,401	5,314	5,314	58,775	22,322	22,322	792,697	197,720	197,720	0	0	0	712,955	205,003	205,003
Redevelopment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vacant	15,401	5,314	5,314	58,775	22,322	22,322	792,697	197,720	197,720	0	0	0	712,955	205,003	205,003
Harbor & Airport Districts	376,787	271,277	271,277	582,570	388,889	388,889	4,653,472	2,972,371	2,972,371	3,229,148	2,111,735	2,111,735	5,983,080	4,172,686	4,172,686
Redevelopment	41,731	27,578	27,578	45,428	28,848	28,848	307,896	183,806	183,806	148,650	118,343	118,343	0	0	0
Vacant	335,056	243,699	243,699	537,142	360,041	360,041	4,345,576	2,788,566	2,788,566	3,080,497	1,993,392	1,993,392	5,983,080	4,172,686	4,172,686
Institutions	260,311	191,840	191,840	500,753	385,580	385,580	1,830,164	1,446,792	1,446,792	188,806	188,806	188,806	432,724	418,800	418,800
Redevelopment	134,000	94,064	94,064	303,572	269,733	269,733	1,698,317	1,332,945	1,332,945	188,806	188,806	188,806	340,764	340,764	340,764
Vacant	126,310	97,776	97,776	197,180	115,847	115,847	131,847	113,847	113,847	0	0	0	91,959	78,036	78,036
Neighb. Centers & Corridors	11,178,460	10,107,567	2,849,455	11,975,107	10,639,592	3,025,003	23,535,660	20,462,265	6,000,511	9,689,025	8,189,013	2,532,413	7,735,522	5,976,336	1,714,647
Redevelopment	8,574,632	7,816,335	1,911,413	9,305,598	8,363,288	2,139,317	18,435,304	16,409,813	4,447,992	7,075,891	5,980,156	1,528,964	5,368,495	4,268,800	1,053,559
Vacant	2,603,827	2,291,232	938,042	2,669,508	2,276,303	885,686	5,100,356	4,052,452	1,552,519	2,613,134	2,208,858	1,003,449	2,367,027	1,707,536	661,088
Gateway Regional Center	532,092	447,243	289,118	881,477	736,477	424,659	5,422,965	4,608,982	2,488,758	4,248,019	3,019,688	1,356,047	2,147,191	1,270,414	647,569
Redevelopment	269,797	203,585	130,752	522,078	440,278	216,938	3,478,927	3,178,590	1,491,006	2,729,399	1,980,013	714,992	1,928,941	1,124,937	589,976
Vacant	262,295	243,658	158,366	359,399	296,200	207,722	1,944,038	1,430,392	997,752	1,518,620	1,039,674	641,055	218,250	145,478	57,594
Town Centers	4,131,514	3,776,144	1,689,717	5,672,299	5,201,874	2,437,300	7,182,080	6,450,308	2,857,003	2,782,392	2,517,923	1,047,974	1,978,882	1,756,415	708,315
Redevelopment	2,977,045	2,716,417	1,097,342	4,231,019	3,871,481	1,694,702	5,270,561	4,742,222	1,882,284	2,075,750	1,902,516	705,215	1,600,662	1,450,370	524,594
Vacant	1,154,468	1,059,728	592,375	1,441,280	1,330,393	742,598	1,911,519	1,708,086	974,719	706,643	615,407	342,759	378,220	306,045	183,720
Outside Geographies	480,778	400,941	400,941	343,255	261,067	261,067	1,231,534	913,626	913,626	0	0	0	4,517,552	3,179,676	3,179,676
Redevelopment	395,899	334,423	334,423	285,361	222,229	222,229	165,961	122,424	122,424	0	0	0	1,823,062	1,231,195	1,231,195
Vacant	84,879	66,518	66,518	57,893	38,839	38,839	1,065,573	791,202	791,202	0	0	0	2,694,491	1,948,481	1,948,481
Grand Total	**28,455,190**	**26,045,946**	**16,543,281**	**39,831,581**	**35,021,316**	**24,330,334**	**60,550,345**	**49,925,831**	**29,750,548**	**31,780,155**	**25,849,505**	**17,059,315**	**27,629,680**	**20,214,704**	**14,282,070**
Aggregate Geography															
Central City	10,859,463	10,359,569	10,359,569	18,940,184	16,764,972	16,764,972	13,552,526	11,287,284	11,287,284	9,446,770	8,366,934	8,366,934	2,562,609	2,094,321	2,094,321
Industrial	1,012,573	762,640	762,640	1,518,507	1,031,754	1,031,754	7,795,415	4,756,574	4,756,574	5,425,142	3,567,141	3,567,141	8,255,200	5,518,741	5,518,741
Neighborhood Commercial	15,842,065	14,330,955	4,828,290	18,528,882	16,577,943	5,886,962	36,140,705	31,521,555	11,346,272	16,719,437	13,726,623	4,936,434	11,861,595	9,003,165	3,070,531
Institutions	260,311	191,840	191,840	500,753	385,580	385,580	1,830,164	1,446,792	1,446,792	188,806	188,806	188,806	432,724	418,800	418,800
Outside Geographies	480,778	400,941	400,941	343,255	261,067	261,067	1,231,534	913,626	913,626	0	0	0	4,517,552	3,179,676	3,179,676
Total	**28,455,190**	**26,045,946**	**16,543,281**	**39,831,581**	**35,021,316**	**24,330,334**	**60,550,345**	**49,925,831**	**29,750,548**	**31,780,155**	**25,849,505**	**17,059,315**	**27,629,680**	**20,214,704**	**14,282,070**

Figure 9. Buildable Land Inventory of 2035 Comprehensive Plan Designations and Constraint Assumptions – Net Building Square Footage (Part 2)

	10 to 20 acres			20 to 50 acres			More than 50 acres						
Employment Geography	Before Constraints	After Constraints	After Market Adjustment	Before Constraints	After Constraints	After Market Adjustment	Before Constraints	After Constraints	After Market Adjustment	Total Before Constraints	Total After Constraints	Total Adjusted Capacity	Employment Geography
Central City Commercial	3,846,801	2,211,257	2,211,257	7,676,155	5,403,093	5,403,093	0	0	0	54,235,060	45,630,446	45,630,446	**Central City Commercial**
Redevelopment	1,269,311	712,804	712,804	1,471,303	1,044,455	1,044,455	0	0	0	16,888,929	14,224,123	14,224,123	Redevelopment
Vacant	2,577,490	1,498,452	1,498,452	6,204,853	4,358,637	4,358,637	0	0	0	37,346,131	31,406,322	31,406,322	Vacant
Central City Industrial	0	0	0	0	0	0	127,685	52,273	52,273	12,777,134	10,909,257	10,909,257	**Central City Industrial**
Redevelopment	0	0	0	0	0	0	0	0	0	2,348,304	2,086,998	2,086,998	Redevelopment
Vacant	0	0	0	0	0	0	127,685	52,273	52,273	10,428,830	8,822,258	8,822,258	Vacant
Columbia East	4,175,044	2,035,727	2,035,727	5,180,616	3,668,344	3,668,344	9,314,254	6,322,373	6,322,373	23,332,719	15,067,422	15,067,422	**Columbia East**
Redevelopment	0	0	0	0	0	0	0	0	0	147,795	117,657	117,657	Redevelopment
Vacant	4,175,044	2,035,727	2,035,727	5,180,616	3,668,344	3,668,344	9,314,254	6,322,373	6,322,373	23,184,924	14,949,765	14,949,765	Vacant
Dispersed Employment	448,579	184,401	184,401	1,866,765	1,519,106	1,519,106	5,445,874	2,692,871	2,692,871	10,079,981	6,158,882	6,158,882	**Dispersed Employment**
Redevelopment	18,786	16,369	16,369	83,849	64,493	64,493	522,717	220,194	220,194	1,514,553	979,432	979,432	Redevelopment
Vacant	429,793	168,032	168,032	1,782,917	1,454,613	1,454,613	4,923,156	2,472,677	2,472,677	8,565,428	5,179,450	5,179,450	Vacant
Harbor Access Lands	3,239,663	968,988	968,988	3,136,372	1,865,138	1,865,138	7,433,578	2,665,507	2,665,507	15,374,040	5,924,678	5,924,678	**Harbor Access Lands**
Redevelopment	66,891	30,706	30,706	0	0	0	0	0	0	66,891	30,706	30,706	Redevelopment
Vacant	3,172,773	938,282	938,282	3,136,372	1,865,138	1,865,138	7,433,578	2,665,507	2,665,507	15,307,149	5,893,972	5,893,972	Vacant
Harbor & Airport Districts	7,901,184	4,844,617	4,844,617	16,598,345	9,271,066	9,271,066	31,784,535	17,311,199	17,311,199	70,732,333	41,072,563	39,112,363	**Harbor & Airport Districts**
Redevelopment	1,112,133	825,551	825,551	803,524	577,067	577,067	0	0	0	2,417,632	1,733,613	1,733,613	Redevelopment
Vacant	6,789,050	4,019,067	4,019,067	15,794,821	8,693,999	8,693,999	31,784,535	17,311,199	17,311,199	68,314,702	39,338,950	37,378,750	Vacant
Institutions	2,960,939	2,723,286	2,723,286	7,402,342	3,554,702	3,554,702	4,773,038	4,548,641	4,548,641	18,349,076	13,458,448	13,458,448	**Institutions**
Redevelopment	2,022,538	1,795,029	1,795,029	431,334	415,437	415,437	3,426,636	3,373,966	3,373,966	8,545,968	7,810,744	7,810,744	Redevelopment
Vacant	938,401	928,257	928,257	6,971,008	3,139,265	3,139,265	1,346,402	1,174,676	1,174,676	9,803,107	5,647,704	5,647,704	Vacant
Neighb. Centers & Corridors	8,115,699	6,195,248	1,699,976	10,634,789	5,445,272	2,103,842	6,912,501	3,402,058	1,529,542	89,776,763	70,417,352	21,455,390	**Neighb. Centers & Corridors**
Redevelopment	6,729,748	5,050,320	1,243,412	4,947,060	2,330,411	712,464	1,517,823	945,355	286,336	61,954,552	51,164,478	13,323,456	Redevelopment
Vacant	1,385,951	1,144,928	456,564	5,687,729	3,114,862	1,391,379	5,394,678	2,456,703	1,243,206	27,822,211	19,252,874	8,131,934	Vacant
Gateway Regional Center	5,712,160	3,934,805	1,205,412	321,216	321,216	153,952	0	0	0	19,265,120	14,338,824	6,565,516	**Gateway Regional Center**
Redevelopment	5,297,136	3,623,811	1,116,157	305,698	305,698	144,124	0	0	0	14,531,977	10,856,912	4,403,944	Redevelopment
Vacant	415,024	310,993	89,255	15,517	15,517	9,828	0	0	0	4,733,143	3,481,913	2,161,572	Vacant
Town Centers	1,045,474	581,820	286,118	249,702	213,707	114,389	841,102	238,260	236,280	23,883,446	20,736,450	9,377,096	**Town Centers**
Redevelopment	950,437	486,871	234,958	161,215	150,325	66,615	207,892	37,442	37,442	17,474,580	15,357,644	6,243,151	Redevelopment
Vacant	95,038	94,948	51,160	88,487	63,382	47,775	633,210	200,818	198,838	6,408,866	5,378,806	3,133,945	Vacant
Outside Geographies	3,145,894	2,056,443	2,056,443	19,778,661	12,891,689	12,891,689	2,961,045	2,890,305	2,890,305	32,458,719	22,593,748	22,593,748	**Outside Geographies**
Redevelopment	3,069,917	1,993,074	1,993,074	16,105,932	9,808,787	9,808,787	1,586,989	1,567,846	1,567,846	23,433,122	15,279,979	15,279,979	Redevelopment
Vacant	75,977	63,369	63,369	3,672,728	3,082,901	3,082,901	1,374,056	1,322,459	1,322,459	9,025,597	7,313,769	7,313,769	Vacant
Grand Total	**40,591,438**	**25,736,591**	**18,216,225**	**72,844,964**	**44,153,331**	**40,545,320**	**69,593,612**	**40,123,488**	**38,248,992**	**370,264,391**	**266,308,071**	**196,253,246**	**Grand Total**
Aggregate Geography													**Aggregate Geography**
Central City	3,846,801	2,211,257	2,211,257	7,676,155	5,403,093	5,403,093	127,685	52,273	52,273	67,012,194	56,539,703	56,539,703	Central City
Industrial	15,764,471	8,033,733	8,033,733	26,782,098	16,323,653	16,323,653	53,978,240	28,991,950	28,991,950	119,519,074	68,223,546	66,263,346	Industrial
Neighborhood Commercial	14,873,333	10,711,872	3,191,506	11,205,707	5,980,195	2,372,184	7,753,603	3,640,318	1,765,822	132,925,329	105,492,627	37,398,002	Neighborhood Commercial
Institutions	2,960,939	2,723,286	2,723,286	7,402,342	3,554,702	3,554,702	4,773,038	4,548,641	4,548,641	18,349,076	13,458,448	13,458,448	Institutions
Outside Geographies	3,145,894	2,056,443	2,056,443	19,778,661	12,891,689	12,891,689	2,961,045	2,890,305	2,890,305	32,458,719	22,593,748	22,593,748	Outside Geographies
Total	**40,591,438**	**25,736,591**	**18,216,225**	**72,844,964**	**44,153,331**	**40,545,320**	**69,593,612**	**40,123,488**	**38,248,992**	**370,264,391**	**266,308,071**	**196,253,246**	**Total**

Figure 10. Buildable Land Inventory of 2035 Comprehensive Plan Designations and Constraint Assumptions – Net Land Area in Acres

	Less than .5 acres			.5 to 1 acre			1 to 3 acres			3 to 5 acres			6 to 10 acres		
Employment Geography	Before Constraints	After Constraints	After Market Adjustment	Before Constraints	After Constraints	After Market Adjustment	Before Constraints	After Constraints	After Market Adjustment	Before Constraints	After Constraints	After Market Adjustment	Before Constraints	After Constraints	After Market Adjustment
Central City Commercial	33	32	32	67	59	59	47	39	39	35	32	32	6	6	6
Redevelopment	11	10	10	24	22	22	17	14	14	10	9	9	0	0	0
Vacant	22	21	21	42	37	37	30	25	25	25	23	23	6	6	6
Central City Industrial	58	55	55	65	59	59	52	42	42	25	21	21	19	11	11
Redevelopment	13	12	12	15	13	13	11	9	9	0	0	0	1	1	1
Vacant	45	42	42	51	46	46	41	33	33	24	20	20	17	10	10
Columbia East	2	1	1	10	6	6	38	24	24	29	20	20	29	20	20
Redevelopment	0	0	0	0	0	0	1	0	0	1	1	1	1	1	1
Vacant	2	1	1	10	6	6	38	23	23	28	19	19	28	19	19
Dispersed Employment	13	10	10	10	8	8	15	13	13	21	14	14	6	6	6
Redevelopment	4	4	4	4	4	4	8	6	6	6	3	3	2	2	2
Vacant	8	6	6	6	4	4	8	7	7	15	10	10	4	3	3
Harbor Access Lands	0	0	0	1	1	1	18	5	5	0	0	0	16	5	5
Redevelopment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vacant	0	0	0	1	1	1	18	5	5	0	0	0	16	5	5
Harbor & Airport Districts	9	6	6	13	9	9	107	68	68	74	48	48	137	96	96
Redevelopment	1	1	1	1	1	1	7	4	4	3	3	3	0	0	0
Vacant	8	6	6	12	8	8	100	64	64	71	46	46	137	96	96
Institutions	6	4	4	11	9	9	42	33	33	4	4	4	10	10	10
Redevelopment	3	2	2	7	6	6	39	31	31	4	4	4	8	8	8
Vacant	3	2	2	5	3	3	3	3	3	0	0	0	2	2	2
Neighb. Centers & Corridors	494	446	126	529	470	134	1,039	903	265	428	362	112	342	264	76
Redevelopment	379	345	84	411	369	94	814	724	196	312	264	68	237	188	47
Vacant	115	101	41	118	100	39	225	179	69	115	98	44	104	75	29
Gateway Regional Center	13	11	7	22	18	11	135	115	62	106	75	34	54	32	16
Redevelopment	7	5	3	13	11	5	87	79	37	68	49	18	48	28	15
Vacant	7	6	4	9	7	5	49	36	25	38	26	16	5	4	1
Town Centers	168	153	69	230	211	99	292	262	116	113	102	43	80	71	29
Redevelopment	121	110	45	172	157	69	214	193	76	84	77	29	65	59	21
Vacant	47	43	24	59	54	30	78	69	40	29	25	14	15	12	7
Outside Geographies	11	9	9	8	6	6	28	21	21	0	0	0	104	73	73
Redevelopment	9	8	8	7	5	5	4	3	3	0	0	0	42	28	28
Vacant	2	2	2	1	1	1	24	18	18	0	0	0	62	45	45
Grand Total	**806**	**728**	**319**	**968**	**856**	**400**	**1,814**	**1,525**	**688**	**836**	**678**	**327**	**804**	**594**	**347**
Aggregate Geography															
Central City	91	86	86	132	118	118	98	81	81	60	52	52	25	17	17
Industrial	23	18	18	35	24	24	179	109	109	125	82	82	190	127	127
Neighborhood Commercial	675	611	202	781	699	243	1,466	1,280	443	647	539	188	475	367	121
Institutions	6	4	4	11	9	9	42	33	33	4	4	4	10	10	10
Outside Geographies	11	9	9	8	6	6	28	21	21	0	0	0	104	73	73
Total	**806**	**728**	**319**	**968**	**856**	**400**	**1,814**	**1,525**	**688**	**836**	**678**	**327**	**804**	**594**	**347**

Figure 10. Buildable Land Inventory of 2035 Comprehensive Plan Designations and Constraint Assumptions – Net Land Area in Acres (Part 2)

	10 to 20 acres			20 to 50 acres			More than 50 acres						
Employment Geography	Before Constraints	After Constraints	After Market Adjustment	Before Constraints	After Constraints	After Market Adjustment	Before Constraints	After Constraints	After Market Adjustment	Total Before Constraints	Total After Constraints	Total Adjusted Capacity	Employment Geography
Central City Commercial	17	10	10	34	24	24	0	0	0	239	201	201	**Central City Commercial**
Redevelopment	6	3	3	6	5	5	0	0	0	75	63	63	Redevelopment
Vacant	11	7	7	27	19	19	0	0	0	165	139	139	Vacant
Central City Industrial	0	0	0	0	0	0	2	1	1	221	188	188	**Central City Industrial**
Redevelopment	0	0	0	0	0	0	0	0	0	41	36	36	Redevelopment
Vacant	0	0	0	0	0	0	2	1	1	180	152	152	Vacant
Columbia East	96	47	47	119	84	84	214	145	145	536	346	346	**Columbia East**
Redevelopment	0	0	0	0	0	0	0	0	0	3	3	3	Redevelopment
Vacant	96	47	47	119	84	84	214	145	145	532	343	343	Vacant
Dispersed Employment	10	4	4	43	35	35	125	62	62	231	141	141	**Dispersed Employment**
Redevelopment	0	0	0	2	1	1	12	5	5	35	22	22	Redevelopment
Vacant	10	4	4	41	33	33	113	57	57	197	119	119	Vacant
Harbor Access Lands	74	22	22	72	43	43	171	61	61	353	136	136	**Harbor Access Lands**
Redevelopment	2	1	1	0	0	0	0	0	0	2	1	1	Redevelopment
Vacant	73	22	22	72	43	43	171	61	61	351	135	135	Vacant
Harbor & Airport Districts	181	111	111	381	213	213	730	397	397	1,624	943	898	**Harbor & Airport Districts**
Redevelopment	26	19	19	18	13	13	0	0	0	56	40	40	Redevelopment
Vacant	156	92	92	363	200	200	730	397	397	1,568	903	858	Vacant
Institutions	68	63	63	170	82	82	110	104	104	421	309	309	**Institutions**
Redevelopment	46	41	41	10	10	10	79	77	77	196	179	179	Redevelopment
Vacant	22	21	21	160	72	72	31	27	27	225	130	130	Vacant
Neighb. Centers & Corridors	358	274	75	470	240	93	305	150	68	3,963	3,109	947	**Neighb. Centers & Corridors**
Redevelopment	297	223	55	218	103	31	67	42	13	2,735	2,259	588	Redevelopment
Vacant	61	51	20	251	138	61	238	108	55	1,228	850	359	Vacant
Gateway Regional Center	143	98	30	8	8	4	0	0	0	481	358	164	**Gateway Regional Center**
Redevelopment	132	90	28	8	8	4	0	0	0	363	271	110	Redevelopment
Vacant	10	8	2	0	0	0	0	0	0	118	87	54	Vacant
Town Centers	42	24	12	10	9	5	34	10	10	970	843	381	**Town Centers**
Redevelopment	39	20	10	7	6	3	8	2	2	710	624	254	Redevelopment
Vacant	4	4	2	4	3	2	26	8	8	260	219	127	Vacant
Outside Geographies	72	47	47	454	296	296	68	66	66	745	519	519	**Outside Geographies**
Redevelopment	70	46	46	370	225	225	36	36	36	538	351	351	Redevelopment
Vacant	2	1	1	84	71	71	32	30	30	207	168	168	Vacant
Grand Total	**1,062**	**699**	**421**	**1,760**	**1,033**	**878**	**1,758**	**997**	**914**	**9,785**	**7,093**	**4,231**	**Grand Total**
Aggregate Geography													**Aggregate Geography**
Central City	17	10	10	34	24	24	2	1	1	460	390	390	Central City
Industrial	362	184	184	615	375	375	1,239	666	666	2,744	1,566	1,521	Industrial
Neighborhood Commercial	543	395	117	488	257	101	339	160	77	5,415	4,309	1,492	Neighborhood Commercial
Institutions	68	63	63	170	82	82	110	104	104	421	309	309	Institutions
Outside Geographies	72	47	47	454	296	296	68	66	66	745	519	519	Outside Geographies
Total	**1,062**	**699**	**421**	**1,760**	**1,033**	**878**	**1,758**	**997**	**914**	**9,785**	**7,093**	**4,231**	**Total**

APPENDIX C. 2016 UPDATE OF ECONOMIC OPPORTUNITIES ANALYSIS

On October 3, 2012, Portland City Council adopted the Portland Economic Opportunities Analysis (EOA) by Ordinance No. 185657, which also included the other background reports required as factual basis for the Comprehensive Plan Update. In January 2014, the Port of Portland withdrew their annexation application for marine terminal development at West Hayden Island, which was anticipated to address industrial land and marine terminal capacity needs identified in the EOA. In April 2014, the City of Portland asked the Oregon Land Conservation and Development Commission (LCDC) to withdraw the 2012 EOA and resubmit a revised version with Task 3 of the Comprehensive Plan Update work plan, in order to consider changes that address marine terminal land needs, Metro's updated employment forecast, and an updated Buildable Land Inventory. The 2016 EOA Update consists of the following groups of amendments to the 2012 EOA.

HARBOR ACCESS LANDS GEOGRAPHY AND MARINE TERMINAL FORECAST

> "Harbor Access Lands" was identified as a distinct employment geography in the 2016 EOA update, and marine terminal land needs were updated to account for the capacity gains of various major investments at existing marine terminals.

The 2012 EOA (previously adopted version) identified harbor access lands, located generally between the deepwater navigation channel and the nearest parallel street, as a subarea of the "Columbia Harbor" employment geography. The 2016 EOA splits Columbia Harbor into two distinct geographies, Harbor Access Lands and the Harbor and Airport Districts. This change simplifies analysis of this marine industrial geography and responds to an issue raised in the LCDC objection of the 2012 EOA by Schnitzer Steel Industries, Inc. The marine-related functional distinction of land demand in the Harbor Access Lands geography is reinforced by Portland's "River Industrial" zoning overlay that applies to nearly all of this geography, requiring that primary uses be river-dependent or river-related.

The boundary of Harbor Access Lands was refined to include larger portions of Port of Portland Terminals 4 and 6. This boundary change resulted in a small 7-acre shift in forecast demand (along with corresponding job growth and building area) from the Harbor and Airport Districts into the Harbor Access Lands geography, from what was calculated in the January 2015 EOA.

The land demand of the marine terminal commodity movement forecast was also revised. In the 2012 EOA, marine terminal land needs were estimated in an industrial land supply analysis of Portland Harbor prepared by ECONorthwest and incorporated into the EOA in Section 1, Appendix C. In 2016, that analysis was updated to account for recent major investments at automobile, grain, and dry bulk terminals at Portland Harbor that substantially expanded their capacity to handle future growth. The cargo forecast was also adjusted from 2040 to 2035, in order to more accurately assess land demand for each cargo type within the 2035 planning horizon. The resulting land needs are analyzed in EOA Section 1, considering three cargo

forecast scenarios and three terminal site sizes for each cargo type. The updated estimate of 2035 marine terminal land needs in the EOA is 150 acres, based on the medium cargo forecast scenario and "practical" site-size assumptions. The Comprehensive Plan accommodates this land need within the Harbor Access Lands geography and does not rely upon annexation of West Hayden Island. The Comprehensive Plan map designation of Rural Farm Forest maintains West Hayden Island as a holding zone for future determination of the mix of land uses, if and when it is annexed into the City of Portland.

REGIONAL FORECAST UPDATE

The citywide employment forecast was reduced to be consistent with Metro's adopted employment allocation to the City of Portland in 2012.

The 2012 EOA was based on a Metro's draft "Gamma" forecast, and the subsequent version adopted by Metro later in 2012 reduced Portland's allocation from 147,000 to 141,600 new jobs. The 2016 EOA Update applies Metro's adopted regional 2035 employment forecast and Portland's citywide allocation of projected job growth. The resulting 4% reduction in the citywide employment forecast has a fairly even impact on forecast growth across employment geographies, based on the forecast methodology described in EOA Section 2.

SHORT-TERM LAND SUPPLY

The demand horizon for short-term land supply was extended to 2020, since the previous forecast to 2015 is now out of date.

The 2000-2015 forecast in the 2012 EOA was replaced with a 2010-2020 forecast in the 2016 EOA update, in order to evaluate the adequacy of the current short-term land supply to accommodate forecast growth over the next five years. The short-term land supply, which is intended to represent development-ready sites, is identified in the EOA by removing brownfields from the full Buildable Land Inventory (see EOA Section 3). The estimate of short-term land supply has also been updated with subsequent Buildable Land Inventory revisions, reflecting continuing updates by Oregon DEQ in their inventories of potentially contaminated sites used to identify brownfields. The short-term land supply does not include additional capacity identified in the March 9, 2015 BLI, which will result from planned infrastructure improvements, because those infrastructure projects will only be partially completed by 2020.

EMPLOYMENT GEOGRAPHIES MAP UPDATE

The EOA map of employment geographies was revised to be consistent with the 2035 Comprehensive Plan Map.

Employment geographies are used to estimate segments of employment land demand and supply, in order to evaluate the growth capacity of the city's primary types of business districts. Employment geography boundaries are based on business location preferences (recent inventories) and community location preferences reflected by the Comprehensive Plan map. The 2012 EOA identified employment geographies, consistent with the existing Comprehensive Plan map. The employment geographies map was revised in the 2016 EOA update to be consistent

with the 2035 Comprehensive Plan map and remain relevant over the coming 20 years of business and job growth.

EOA Section 1 applies the 2012 version of the employment geographies map, which was used to evaluate job growth and development trends. The Existing Comprehensive Plan Employment Geographies Map is used in EOA Section 2-3 (see Figure 8) to evaluate the existing (baseline) land supply to meet demand to 2035, and the 2035 Comprehensive Plan Employment Geographies Map (Figure 3) is used in this report is used to evaluate the proposed land supply to meet demand to 2035. Figure 8 in EOA Section 2-3 depicts the specific changes between the existing and proposed employment geographies maps.

The updated BLI uses the proposed employment geography boundaries and distinguishes the existing and proposed capacity by two factors: the existing and proposed land use designations on the plan map and reduced brownfield constraint assumptions. For example, the golf courses added to the Harbor and Airport Districts geography have no existing capacity under the current Open Space designation and about 55 acres of capacity in the proposed industrial designations. The demand forecast has not been revised to reflect the proposed employment geographies, because (1) geography demand is arguably better estimated by the existing mix of businesses and (2) the map changes consist primarily of vacant and underutilized sites and have relatively minimal impact on forecast demand in the industrial and institutional geographies where growth capacity is at issue.

BUILDABLE LAND INVENTORY (BLI) UPDATE

> The BLI was revised in the 2016 EOA update to include updated employment geographies, vacant and underutilized sites, and constraints mapping.

The 2012 Buildable Land Inventory (BLI) that was used in the 2012 EOA has been updated to the March 9, 2015 version of the BLI in the 2016 EOA update. While the BLI methodology has not changed, several changes have occurred since 2012 in the mapping of vacant and underutilized sites and relative constraints mapping on those sites. Changes include removal of sites that developed in the intervening period, addition of brownfield sites from more up-to-date DEQ inventories, and revised mapping of substandard street constraints, wetlands, and DOGAMI landslide data.

The January 2015 draft of the EOA used results from the December 31, 2014 BLI, which was completed prior to identification and impact modeling of planned transportation projects in the proposed draft of the Transportation System Plan (TSP) and Citywide Systems Plan (CSP). Transportation capacity is one of a number of land constraints included in the BLI methodology. Specifically, some employment land is constrained by traffic congestion that will be remedied through a TSP project. The March 2015 BLI has been updated to include capacity impacts of the BLI transportation constraints and the TSP project list.

CAPACITY IMPACTS OF 2035 COMPREHENSIVE PLAN

> This report, EOA Section 4, was rewritten to describe the proposed policies, map designations, investments and strategies that address employment land supply and evaluate their capacity impacts.

The purpose of EOA Section 4 has shifted in the 2016 EOA update. In the 2012 EOA, Section 4 reviewed a range of plan implementation options to meet forecast demand in each forecast geography. In the 2016 EOA update, Section 4 has been rewritten to (1) specifically describe the community choices proposed in the 2035 Comprehensive Plan that address employment land demand and capacity and (2) assess the likely development capacity impacts of those choices.

Proposed community choices include specific policies, plan map changes, infrastructure projects, and expected implementation strategies that affect land demand and capacity in each employment geography. For example, a balanced program of Industrial Land/Watershed Health strategies is summarized in Section 4 that is expected to meet forecast industrial demand while improving watershed health. These strategies are intended to clarify the expected results of interrelated economic development and environmental policies proposed in the updated Comprehensive Plan.

The BLI methodology is used to estimate capacity impacts of most of these proposed measures. An updated summary of proposed BLI capacity is included in Appendix B. Estimated impacts of potential environmental zoning changes in industrial districts, consistent with the adopted Natural Resources Inventory, is included in Appendix A. Proposed capacity of the Institutions geography is estimated by the proposed density allowances being considered in the Institutional Zoning Project in Periodic Review Task 5 of the Comprehensive Plan Update.