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Making a Great Place:

2010 growth management assessment

August 2010

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INTRODUCTION

Changing times require creative approaches

Traditionally, this region's growth management decisions have amounted to bitter arguments that focused exclusively on how much and where to expand the urban growth boundary (UGB), applying a high degree of precision to forecasts and determinations of needed acreages. The 2009 urban growth report (UGR) and the 2010 growth management decision strive to offer a different approach. This new approach attempts to shed light on how public and private partnerships can be formed to foster the kinds of communities that the region's residents desire. To that end, the staff recommendations in this report explicitly recognize potential financial and process constraints to development, both from a developer's perspective and from the public sector's perspective, and aims to suggest a more productive path.

There is still considerable work to be done to foster the types of communities that support a sustainable, prosperous and equitable region. This document describes a number of policy and regulatory updates that are intended to lay the groundwork. But new policies, regulations and UGB expansions alone will not be sufficient. It has become clear that the region must implement a community investment strategy in order to:

- invest in safe, livable communities
- promote economic development and good jobs
- protect our natural areas
- reduce inefficiency, foster innovation and demand accountability

Implementation of this strategy will require collaborative action across local, regional and state governments. This assessment focuses on regional actions.

Legal context of growth management decision

Oregon land use law requires that, every five years, Metro assess the region's capacity to accommodate the numbers of people anticipated to live or work inside the UGB over the next 20 years. To make this determination, Metro forecasts population and employment growth over a 20-year timeframe; conducts an inventory of vacant, buildable land inside the UGB; assesses the capacity of the current UGB to accommodate population and employment growth either on vacant land or through redevelopment and infill; determines whether additional capacity is needed, and documents the results of these analyses in the UGR. If the UGR indicates that the current UGB is unlikely to support the growth needs of the next 20 years with current policies, zoning and public investments, the Council must identify the actions that will increase the likelihood that development will occur more efficiently inside the existing UGB or expand the UGB.

Contents of this report

In December 2009, the Metro Council accepted the UGR and its population and employment forecasts as the basis for a growth management decision that the Council intends to make in December 2010. Collectively, the Capacity Ordinance and its exhibits are the proposed legislation that will be considered by the Metro Council in its December 2010 decision. This report and its appendices provide the foundation for the proposed Capacity Ordinance by summarizing the UGR's findings and describing the local and regional actions that have been taken or could be taken to fill the residential and large-industrial-site needs identified in the UGR.

Taking an outcomes-based approach to growth management decisions

On the advice of the Metro Policy Advisory Committee (MPAC), the Metro Council has adopted an approach to assessing growth management options that strives for six desired outcomes:

- People live and work in vibrant communities where they can choose to walk for pleasure and to meet their everyday needs.
- Current and future residents benefit from the region's sustained economic competitiveness and prosperity.
- People have safe and reliable transportation choices that enhance their quality of life.
- The region is a leader in minimizing contributions to global warming.
- Current and future generations enjoy clean air, clean water and healthy ecosystems.
- The benefits and burdens of growth and change are distributed equitably.

In addition to supporting policy recommendations, this document is intended to provide information about the possible long-term implications of implementing these recommendations. Scenario results that address the six desired outcomes can be found in Appendix 1.

SUMMARY OF METRO CHIEF OPERATING OFFICER RECOMMENDATIONS

The region should make the most efficient use possible of land already inside the UGB. This overarching recommendation is the region's best means of fostering the types of communities that people in the region have indicated that they desire. It is the surest way the region can position itself to provide more transportation choices, reduce carbon emissions, make careful use of scarce financial resources, preserve the quality of life that is valued so highly by residents and employers, and keep the costs of housing and transportation in check for current and future residents. Most of the increases in capacity necessary to fill any gap have already been accomplished by city councils and county commissions. Those local actions are very important and, to the degree possible, are recognized in this assessment and recommendation.

Implement a coordinated community investment strategy

Making investments is more difficult than ever in an era of limited resources, growing environmental and economic challenges, and voter distrust in government. However, the results of doing nothing are not acceptable. Metro's Chief Operating Officer recommends that the region implement a Community Investment Strategy aimed at fulfilling the vision of the 2040 Growth Concept and realizing aspiration of communities throughout the region. The Community Investment Strategy will move forward through countless public and private actions and investments, large and small, in neighborhoods, downtowns, industrial areas and natural areas all across the region. Consequently, this recommendation not only addressed to the Metro Council, but also local governments, the state government, and the private sector. Only by acting together with focus and determination will the strategy succeed.

As the region collectively develops a Community Investment Strategy, three critical questions must be answered:

- **What investments do we need to make?** Which investments will make our communities more livable, prosperous, equitable and sustainable? What kinds of projects, in what places, will spur further investments or actions and attract the greatest market response?
- **How will we pay for priority investments?** What are the most appropriate existing and potential financial mechanisms to employ? What creative approaches can we use to lower costs and leverage better outcomes?
- **Who will decide?** What process will be used to prioritize and coordinate investments needed to achieve our shared vision?

Summary of recommendations for providing residential capacity

The 2009 UGR identified a need for capacity for an additional 27,400 to 104,900 dwelling units. Out of that range of need, the efficiency actions described in this document are expected to provide capacity for 32,050 dwelling units.

When making the 2010 growth management decision, the Metro Council must decide where to plan in the range forecast of household demand. Policy makers should consider:

- The implications for communities in the larger seven-county region as well as the possible impacts on the region's transportation facilities if residential growth is displaced.
- The statistical likelihood that actual residential growth will be closer to the middle of the range forecast.
- The fact that the Metro Council will make another growth management decision in 2015, allowing for course corrections, if needed.
- How a UGB expansion may affect the depressed market for existing homes.

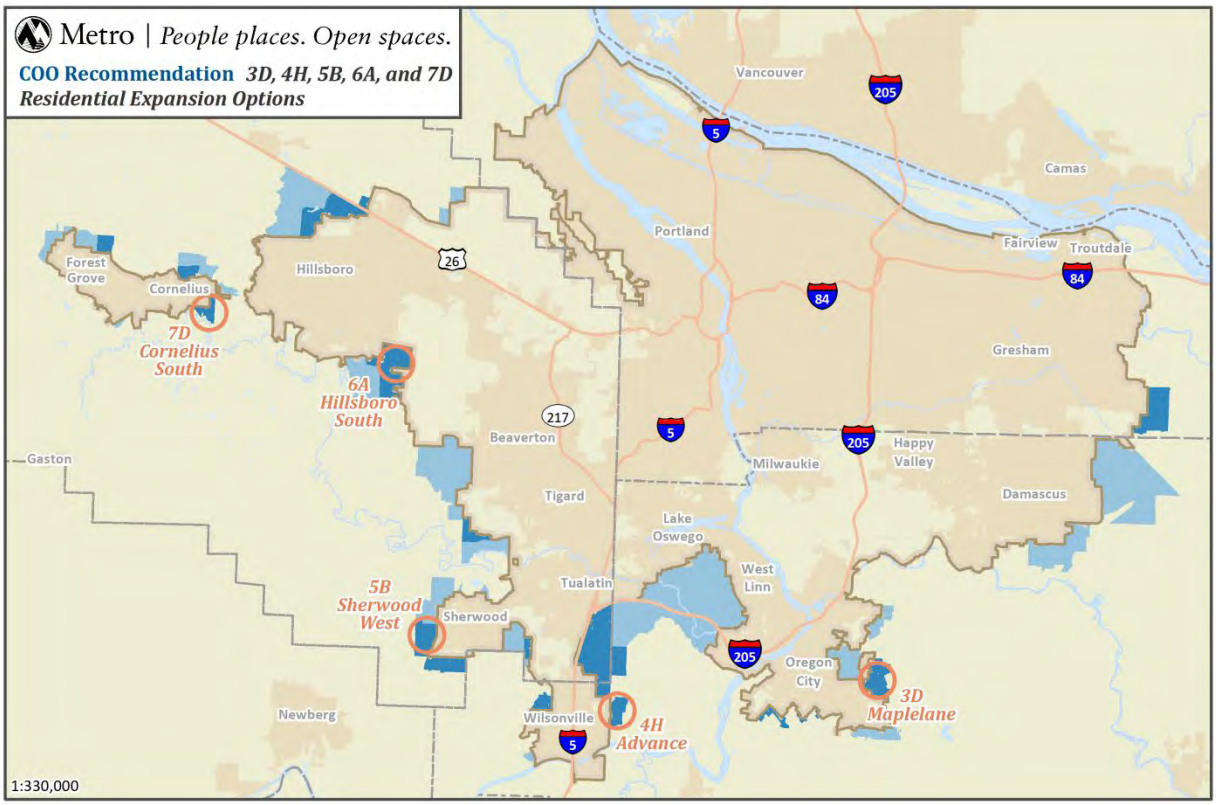
The Metro Council's growth management decision should reinforce existing downtowns, main streets and employment areas, consistent with the six desired outcomes. If the Council decides to plan for a point that is lower in the household range forecast, there is no need for a UGB expansion. However, the Council may wish to consider planning for more residents. In that event, a UGB expansion would be needed. To provide the Metro Council with options, staff has analyzed a variety of possible UGB expansion areas. Depending on where in the range forecast the Council plans, the Council may wish to consider a UGB expansion into one or more of the areas depicted in Figure 1.

If UGB expansions are part of the strategy, the region should ask whether potential expansion areas have the right finance tools, governance support and market readiness in place to succeed. Policy makers should consider:

- How to improve upon the outcomes of other UGB expansions of the past decade, where there has been little development and the development that has occurred has often consisted of larger, more expensive homes with relatively low densities.
- How might these UGB expansion options help the region to achieve its six desired outcomes?
- Will UGB expansions support regional and city efforts in centers and corridors?
- What conditions, if any, should be placed on residential UGB expansions?
- In the 20-year timeframe, are market conditions likely to support higher density development in UGB expansion areas?
- Are there adequate public resources to pay for the facilities and amenities necessary to achieve higher density development in UGB expansion areas?

- Are policy makers comfortable with the risks associated with planning for the lower end of the forecast demand range? Would a strategic UGB expansion reduce those potential risks?
- What effects would a no-UGB-expansion decision have on growth in neighboring communities outside of the Metro UGB, such as Vancouver, Newberg and Canby?

Figure 1: Metro Chief Operating Officer recommendation on options for residential UGB expansions



Summary of recommendations for providing large-industrial-site capacity

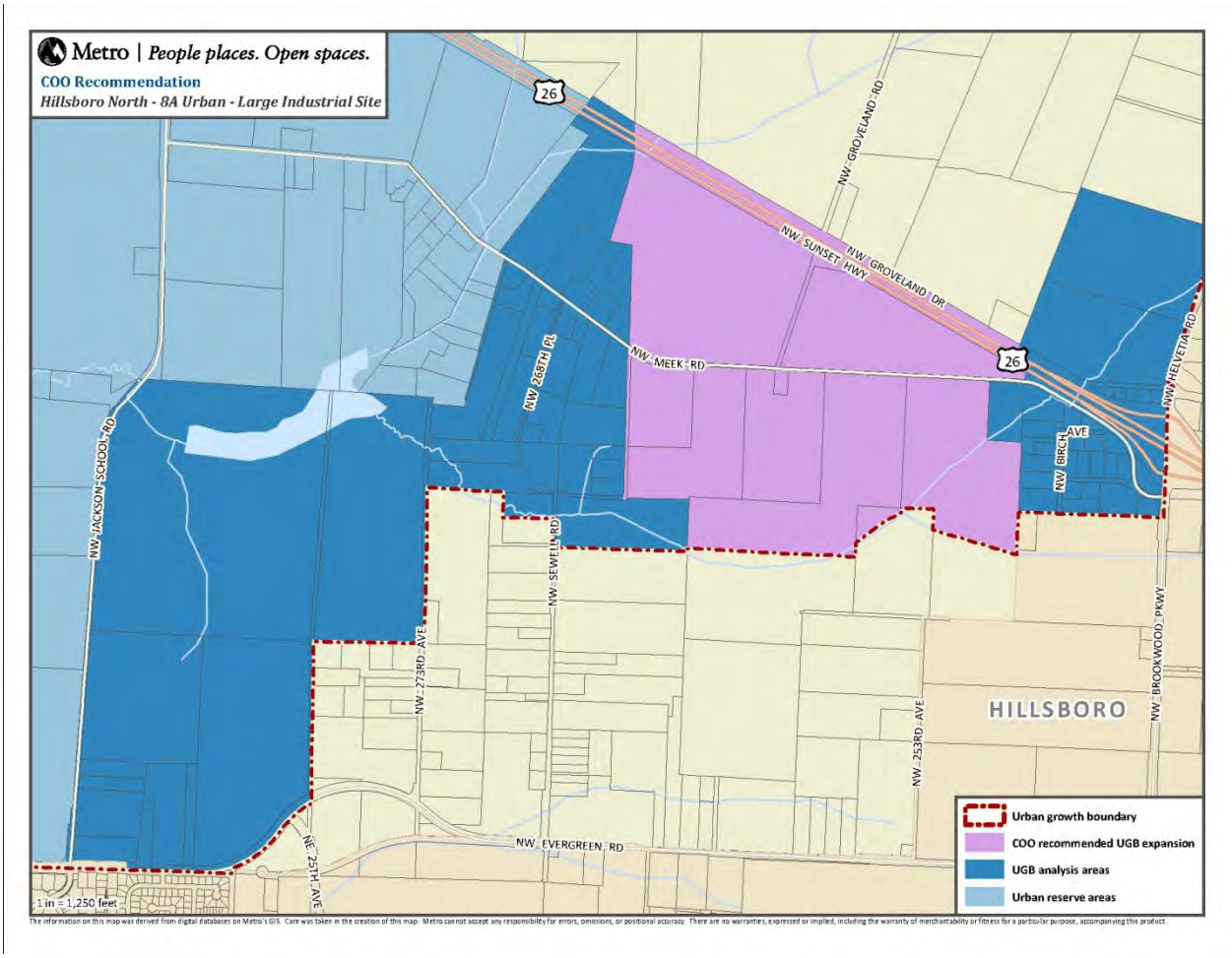
The 2009 UGR indicated that there is traded-sector-industrial demand for 200 to 1,500 additional acres on sites with 50 or more acres. Metro's Chief Operating Officer recommends that the region support the traded-sector economy by maintaining an adequate supply of large industrial sites with the following actions:

- Elevate brownfield cleanup to a regional priority and target efforts on large industrial sites within the UGB;
- Limit division of large industrial sites;
- Create a large-site inventory[1] and a system to replenish this inventory upon development; and
- Strengthen protection of key traded-sector industrial sites by prohibiting new schools, places of assembly and parks and recreational facilities.

With the above conditions assumed, Metro's Chief Operating Officer recommends that the Metro Council add 310 acres of industrial land to the urban growth boundary north of Hillsboro. This expansion should only be made if there is certainty that this land will supply lots over 50 acres. This recommended UGB expansion for industrial employment is depicted in Figure 2. If the Council wishes to plan for a higher point in the range of large-site industrial demand, there are additional urban reserves north of Hillsboro that are suitable.

[1] For the purposes of this inventory, large sites are defined as single or contiguous tax lots in common ownership, totaling at least 50 gross buildable acres that have been designated under Title 4 as Industrial or Regionally Significant Industrial Areas. The large-site inventory is described in more detail in Appendix 5.

Figure 2: Metro Chief Operating Officer recommended UGB expansion to meet large-site industrial employment demand



In weighing large-site industrial growth management options, policy makers should consider several questions, including:

- Will the proposed UGB expansion help the region to achieve its six desired outcomes?
- What conditions, if any, should be placed on this proposed UGB expansion area? What conditions or tools would encourage landowners to assemble their tax lots, making the site more development ready?
- How many large sites are needed inside the UGB to ensure a competitive supply?

Summary of recommendations for additional strategies to support desired outcomes

Update Framework and Functional plans

The proposed changes to the Framework and Functional plans that are described in this document and included as exhibits to the draft Capacity Ordinance represent staff's best effort to codify the suggestions heard to date on how to better align regional policies with desired community outcomes. These proposals are intended to stimulate further discussion during the fall of 2010. Staff anticipates further revisions to these proposed plan updates before the Metro Council considers them in December 2010.

Update the 2040 Growth Concept map and Title 4 map

All plans need periodic updating. This report, Appendix 6 and draft Capacity Ordinance Exhibits F and O describe proposed changes to the 2040 Growth Concept map and Title 4 map (Industrial and Other Employment Areas). Metro's Chief Operating Officer recommends that the Metro Council adopt these changes to better reflect local plans and aspirations as well as the evolution of communities in the region.

SUMMARY OF FORECAST AND 2009 UGR FINDINGS

In December 2009, the Metro Council, on the advice of MPAC, accepted the UGR, which incorporated the 2009 – 2030 residential and employment forecasts, as the basis for the growth management decisions that are now being contemplated. This document describes the options that the Metro Council has for addressing the capacity needs identified in the 2009 UGR.

Population and employment range forecasts

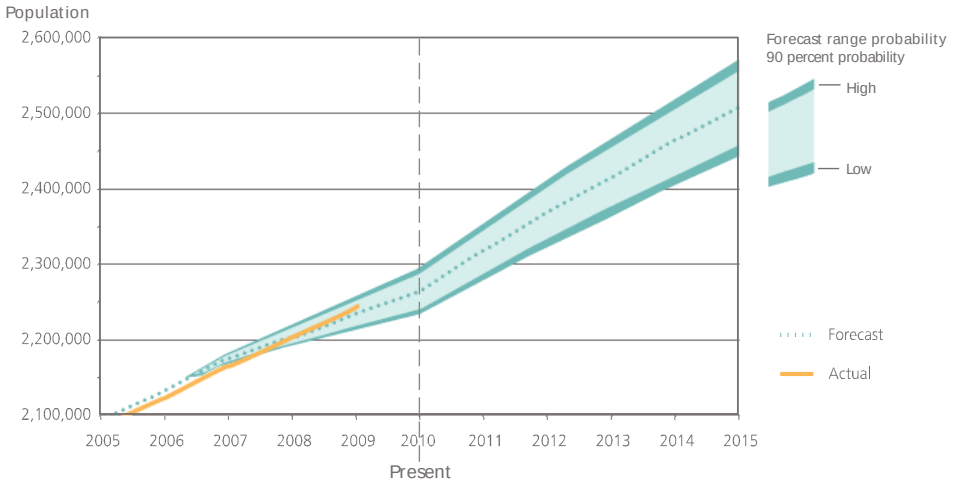
The 20-year range forecasts inform the UGR. The use of a range forecast acknowledges uncertainty and allows for growth management decisions to focus on desired outcomes rather than a specific number. The forecasts are for the seven-county primary metropolitan statistical area (PMSA), which includes Clackamas, Multnomah, Washington, Yamhill, Columbia, Clark, and Skamania counties.

The 20-year forecasts indicate that, by the year 2030, there will be a total of 1,181,300 to 1,301,800 households and a total of 1,252,200 to 1,695,300 jobs in the larger seven-county area. There is a 90 percent chance that growth will occur within this range. Statistically, growth is more likely to occur closer to the middle of the range. The full demand range was assessed in the 2009 UGR to identify potential capacity needs.

In his September 2009 report, *Strategies for a Sustainable and Prosperous Region,* Metro's Chief Operating Officer, Michael Jordan, recommended that the Metro Council in 2010 focus not on the extreme ends of the population range forecast, but on the middle-third of that range. For consistency with the urban and rural reserves decisions, which were finalized by the Metro Council and the boards of commissioners of Clackamas, Multnomah and Washington counties in June 2010, this report also focuses on the middle-third of the forecast range.

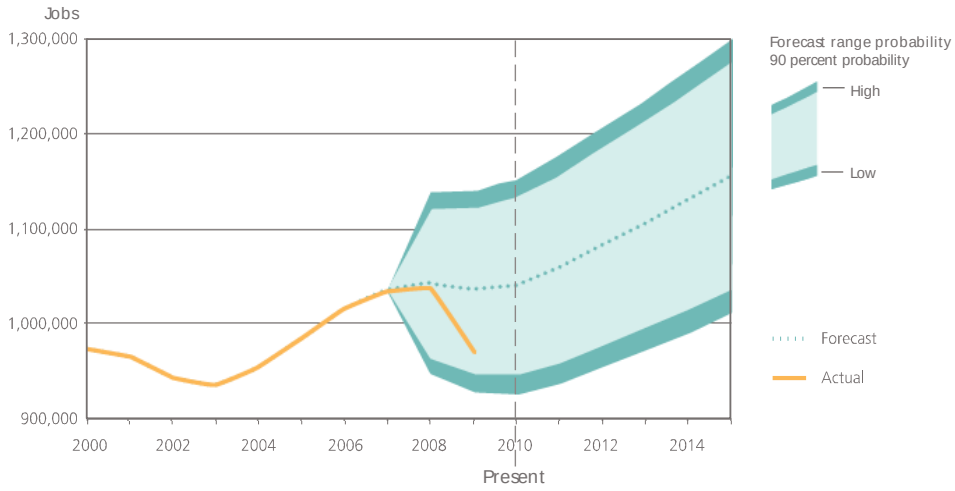
The recent recession has raised some questions whether the 2009 forecast remains valid. The 2009 forecast was developed using IHS Global Insight data that was produced after the recession had begun. Additionally, the forecast range is sufficiently large to account for the depths of the recession that have been experienced over the last year. Actual population growth remains well within the forecast range as shown in Figure 3. This growth trend is expected to continue.

Figure 3: comparison of actual and forecast population growth (2009 Metro forecast for 7-county PMSA)



Though employment numbers in the region have suffered a dramatic recent downturn, they too remain within the 2009 forecast range, which included a short-term slowdown in employment. In the long term, employment is expected to return to trend and remain within the 2009 forecast range. Actual employment growth is compared with the forecast in Figure 4.

Figure 4: comparison of actual and forecast employment growth (2009 Metro forecast for 7-county PMSA)



Trend forecasts are not intended to predict the many ups and downs that will inevitably occur over the long term. The range forecast remains a reliable basis for growth management decisions to be made in 2010. For this reason, staff does not recommend revising the 2009 range forecast and UGR that the Metro Council accepted as the basis for upcoming growth management decisions. However, when deciding where in the range to plan, the Council may wish to consider the recession. This report provides additional information to inform that discussion.

2009 Urban Growth Report

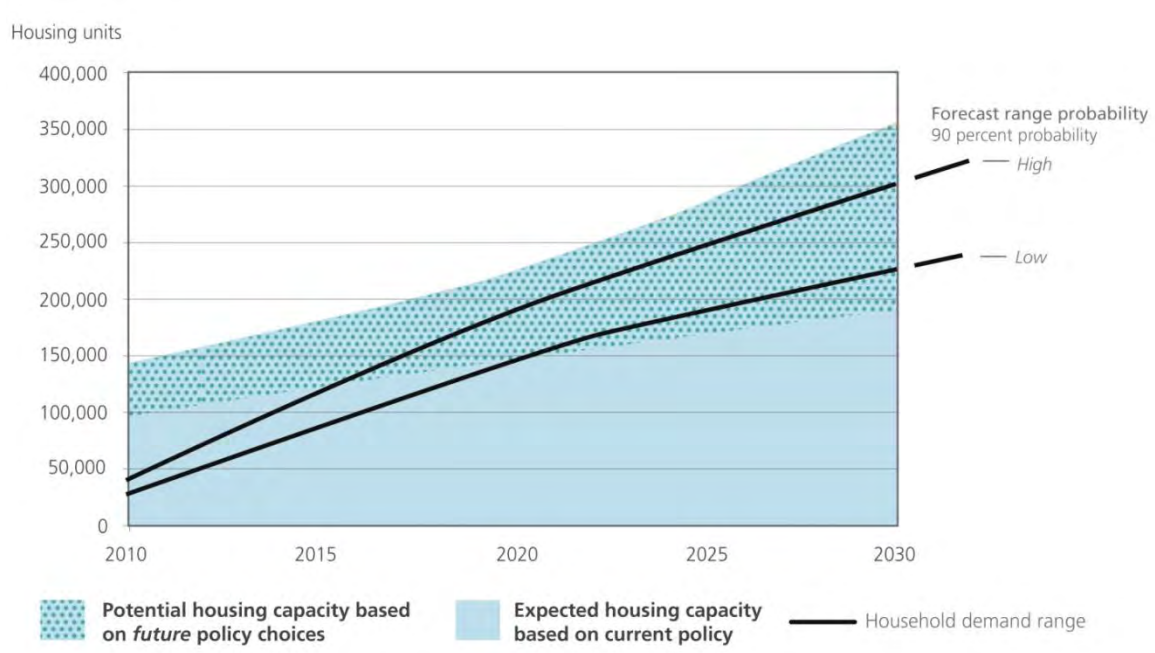
In addition to the 20-year range forecasts, the UGR included an analysis of the share of the UGB's zoned capacity that is likely to be developed by the year 2030. The UGR's analysis assumed a continuation of current (2009) policies and investment trends. No changes to existing zoning were assumed despite the fact that such changes are likely over time as cities and counties refine their strategies to achieve their aspirations for growth and development. The UGR's assessment of the likelihood of development was based on historic data, scenario modeling, and the professional expertise of Metro staff, city and county staff, economic consultants and business representatives. This approach represented a shift from previous UGRs and sought to recognize market realities in its assessment. UGR results are portrayed for four different categories—residential, general industrial employment, general non-industrial employment, and large-lot industrial employment.

2009 UGR residential assessment

Local zoning codes define the maximum amount of development that is allowable in different locations. The UGR assumed no changes to local zoning designations and found that there is ample zoned capacity within the current UGB to accommodate the next 20 years of residential growth. But without additional investments in public infrastructure, other policy changes, or changes in market conditions, the market is not likely to make full use of zoned capacity. Even at the low end of the range forecast, a gap was identified in the UGB's capacity to accommodate the next 20 years of residential growth on vacant land or through redevelopment and infill (refill).

The 2009 UGR found that, depending on how much residential growth occurs, there is a need for additional capacity to accommodate 27,400 to 104,900 dwelling units. Since the completion of the 2009 UGR, new local and regional actions have been taken to address this capacity gap. Those actions are described in this document. Figure 5 depicts the 2009 UGR's assessment of residential capacity and demand for the years 2010 to 2030.

Figure 5: 2009 UGR assessment of residential capacity and demand from 2010 - 2030 (source: 2009 UGR)



The UGR also included an assessment of future cost-burdened households (renters that spend more than half of their after-tax household income on housing and transportation expenses). If the policy and investment trends assessed in the UGR continue, the number of cost-burdened households in the region may double by the year 2030. Under that scenario, between 51 to 69 percent of renter households inside the UGB would be cost-burdened. The UGR analysis also found that, as is the case today, there are likely to be concentrations of cost-burdened households in some communities and very few in others. Centers and corridors provide residents with the most affordable transportation options, but high market demand in those locations is likely to continue driving housing prices upwards.

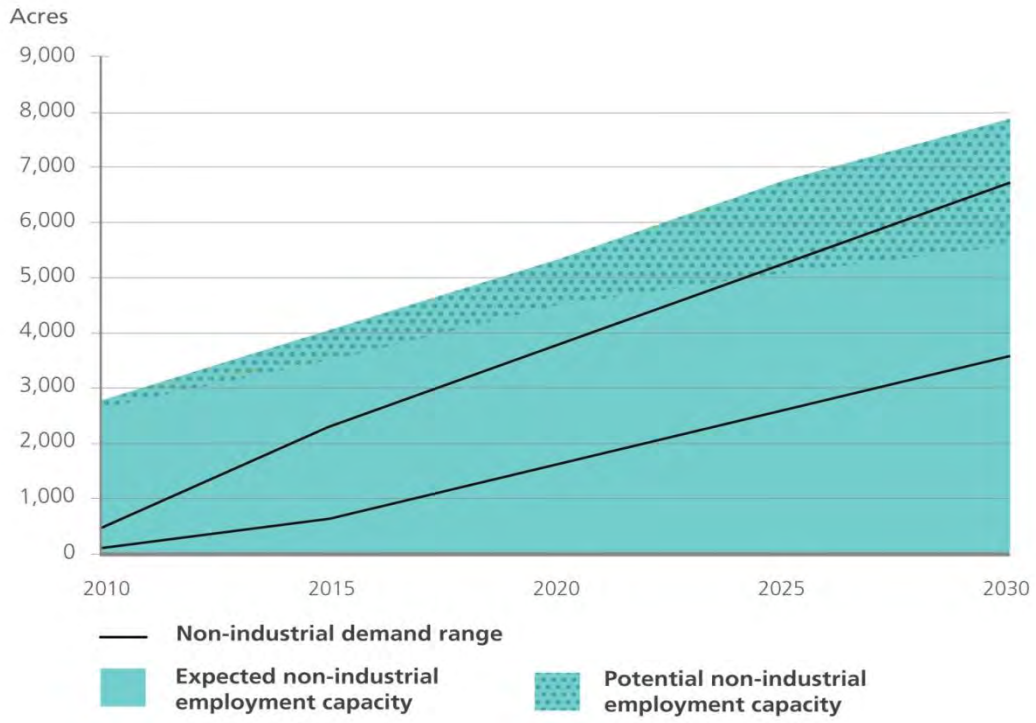
2009 UGR general non-industrial employment assessment

The non-industrial employment section of the UGR assessed the current UGB's capacity to accommodate non-industrial (e.g. office, retail, institutional) job growth on vacant land or through refill. The analysis indicated there is sufficient zoned capacity to meet the non-industrial employment need that is forecast for the next 20 years, but there is a need to make investments or policy changes to support the high end of the demand range.

The 2009 UGR found that the UGB has adequate capacity for non-industrial employment except at the high end of the employment forecast range. There is no need for additional non-industrial capacity at the middle of the employment forecast range.

Figure 6 depicts the range of non-industrial demand and capacity.

Figure 6: non-industrial employment capacity and demand from 2010 to 2030 (source: 2009 UGR)



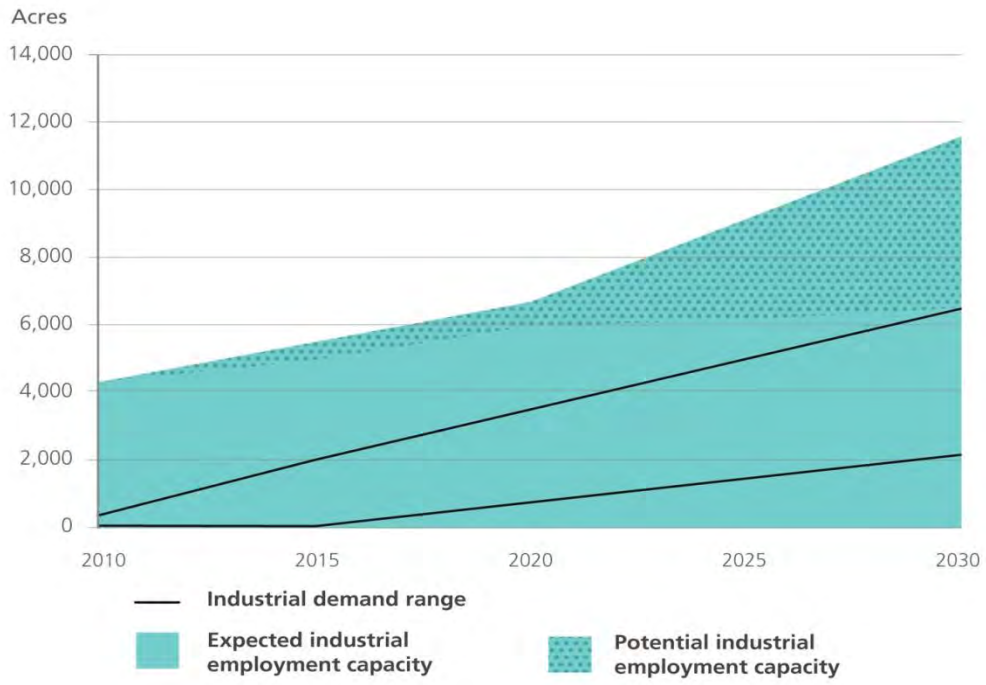
UGR general industrial employment assessment

The general industrial[2] section of the UGR assessed the current UGB's capacity to accommodate industrial job growth on vacant land or through redevelopment and infill (refill). The assessment of industrial demand for large, vacant lots was handled separately.

The 2009 UGR found that there is adequate capacity inside the current UGB to accommodate the next 20 years of general industrial job growth even at the high end of the employment forecast range.

Figure 7 depicts the range of general industrial capacity and demand from 2010 to 2030.

Figure 7: general industrial capacity and demand from 2010 to 2030 (source: 2009 UGR)



[2] The "general industrial employment" portion of the 2009 UGR looked at industrial land capacity in aggregate, without regard for the configuration or size of individual tax lots. Industrial employment that requires large sites was assessed separately in the 2009 UGR and is addressed separately in this report.

UGR large-lot-industrial employment assessment

The "large lot" portion of the 2009 UGR's analysis was completed in recognition of the fact that some firms in traded-sector industries require large vacant sites. Demand for large sites is likely to be the product of the decisions of individual firms rather than broader industry trends. The UGR's forecast-based assessment originally determined that, over the 20-year period, there is demand for 200 to 800 acres of additional large-lot capacity on sites with 50 or more buildable acres. This range is based on the amount of employment growth realized as well as whether assembly of adjacent lots is assumed.

As a matter of economic development policy, the Metro Council, on the advice of MPAC, has agreed to consider a wider range of potential large-lot demand than what was indicated by the forecast-based approach:

- Large-lot demand will be the result of the decisions of individual firms, so it is inherently difficult to forecast.
- Some cities in the region have identified large, traded-sector firms as the focus of their economic development plans.
- It may be preferable from a policy standpoint to have flexibility to accommodate traded-sector firms.
- The use of an employment forecast may be an inadequate means of estimating large-lot demand for freight, rail, and marine terminal uses.

With economic development considerations in mind, the Metro Council accepted the 2009 UGR, which indicated traded-sector industrial employment demand for 200 to 1,500 acres of additional capacity on sites with 50 or more buildable acres.

ADDRESSING RESIDENTIAL GROWTH

Efficiency measures

The 2009 UGR indicated that there is ample zoned capacity within the current UGB to accommodate the next 20 years of residential growth, but that different investments and policies are needed to make the most of that capacity. Depending on the amount of residential growth that is realized, the UGR identified a need for additional capacity for 27,400 to 104,900 dwelling units. This capacity gap is expressed in dwelling units because there are a variety of ways to accommodate households, each with its own implications for how the region and its communities function.

Because a residential capacity gap is identified in the UGR, Oregon Revised Statute 197.296 instructs Metro to expand the UGB and/or amend plans in ways that increase the likelihood of higher density development inside the existing UGB. These latter actions are referred to as "efficiency measures" in this document. The statute states that efficiency measures may include, but are not limited to:

- Increases in the permitted density on existing residential land
- Financial incentives for higher density housing
- Provisions permitting additional density beyond that generally allowed in the zoning district in exchange for amenities and features provided by the developer
- Removal or easing of approval standards or procedures
- Minimum density ranges
- Redevelopment and infill strategies
- Authorization of housing types not previously allowed by the plan or regulations
- Adoption of an average residential density standard
- Rezoning or re-designation of nonresidential land

Cities and citizens throughout the region have indicated their desire to make better use of the land inside the current UGB to enliven their downtowns and main streets. Many of these local efforts are ongoing or are in their formative stages. These include several cities in the region that are undertaking a periodic review of their comprehensive plans. These cities include Portland, Lake Oswego, Forest Grove, Troutdale, and Tigard. Several other cities in the region will be undertaking this periodic review in the near future (Happy Valley, Milwaukie, Sherwood, and Tualatin). The efficiency effects of these cities' updated plans will be accounted for in the 2014 urban growth report.

There are also a number of regional and local policies and plans that have recently been adopted that are expected to lead to more efficient use of land inside the UGB. State law directs Metro to assess how these adopted efficiency measures may influence future use of zoned capacity. Actions

that encourage more compact growth will reduce the need for UGB expansions. These adopted actions are described in this report and its appendices.

The 2009 UGR's calculation of residential need included three main measures of possible market responses to zoned capacity. To inform the 2010 growth management decision, these three measures have been reevaluated with newly-adopted actions in mind:

Refill rate:
The refill rate represents the share of new residences that are built through redevelopment or infill. Refill occurs on land that is not vacant. Refill rates may be tracked historically or forecasted. The 2009 UGR assumed that 33 percent of future residential growth through the year 2030 would occur through refill.

Vacant mixed-use and multi-family capacity:
The 2009 UGR applied an assumption that, by the year 2030, only 50 percent of the capacity on vacant multi-family land would be developed. This underutilization was assumed for a number of reasons including lagging market demand and inadequate public investments in some centers and corridors.

New urban area[3] capacity:
The 2009 UGR assumed that only 50 percent of the capacity in new urban areas would be market feasible through the year 2030.

Sources relied on for assessing efficiency measures

There are a wide variety of public policies and investments that can influence long-term residential development. Because of this variety, there is no single analytic approach that can be applied across the board. In completing this analysis of the effects of newly-adopted residential efficiency measures, Metro relied on several methods, listed below, that are further described in the appendices.

MetroScope scenarios:
MetroScope, an integrated transportation and land use scenario model, is well-suited to assessing the regional effects of changes to policies and investments such as the adoption of the 2035 Regional Transportation Plan (RTP), local adoption of urban renewal programs, and the region's designation of urban and rural reserves. Among other outputs, MetroScope can provide an assessment of the redevelopment and infill rates (refill rates) that may be achieved in the future. The input assumptions for the draft scenario conducted to inform the 2010 Capacity Ordinance are intended to represent policies and investment strategies that are adopted or are expected to be adopted by the end of 2010. More detail regarding this MetroScope scenario's assumptions and results can be found in Appendix 1.

[3] New urban areas are areas that were added to the UGB from 1998 to 2005.

Development form assessment tool:
Metro staff worked with Johnson Reid, LLC to develop an assessment tool to illustrate how public investments in amenities such as pedestrian improvements may increase the likelihood that the market will utilize multi-family and mixed-use residential capacity in urban centers and corridors. The assessment tool was used to illustrate these likely effects in several districts in the region, but to avoid double-counting with other information sources, its results are not explicitly included in overall calculations of capacity.

The assessment tool was designed to work like pro forma analyses used by developers which compare construction and land costs with achievable rents. These calculations indicate to a developer what the highest-and-best use of a property is, determining whether it is rational to build, for instance, a townhome or a high rise. Public actions or investments that reduce costs to a developer (for example, lower parking requirements) or that boost achievable rents can shift the highest-and-best use to a different development form.

The price premiums associated with a variety of public investments were determined through a literature review, statistical analysis of local property sales, and the professional expertise of Johnson Reid. Additional background on this work is available in Appendix 2.

City and county staff knowledge:
City and county planning staff are an important source of information about development trends in their jurisdictions. In several instances, Metro staff consulted with city and county staff for their professional knowledge of local conditions. These consultations helped to inform the assessment of potential development readiness of new urban areas as well as refill rates. City staffs were also important sources of information for identifying efficiency measures that have been recently adopted.

Summary of efficiency measures that were assessed

2035 Regional Transportation Plan
The 2009 UGR assessment assumed the transportation network described in the 2035 financially-constrained RTP. Since then, the 2035 RTP update was adopted in June 2010. The updated RTP includes additional transportation facilities and funding strategies and is expected to lead to more efficient use of residential capacity inside the existing UGB. The RTP project list is divided into two categories, "mobility projects" and "community-building projects."

Many of the projects listed below are in addition to the projects included in the financially-constrained RTP. Those additional projects are marked "*."

RTP mobility projects
Mobility projects in the 2035 RTP include facilities such as arterial roads, highways, and light rail. These facilities connect locations in the region to one another, allowing people to exercise greater choice on where to live and work. Mobility projects from the 2035 RTP have been incorporated into the assumed transportation network in the draft MetroScope scenario that informs the 2010 Capacity Ordinance. Notable mobility projects in the 2035 RTP are summarized as follows:

Notable transit mobility projects

- Columbia River Crossing light rail transit
- Milwaukie light rail completion
- Southwest corridor (Hwy. 99W) light rail development*
- Westside Express Service (WES) service improvements*
- I-205 bus rapid transit from Clackamas Town Center to Tualatin*
- On-street bus rapid transit on Southeast Division Street and Southeast Powell Boulevard*

Notable throughway mobility projects

- I-5 Columbia River Crossing (10 lanes with tolling)
- Sunrise Corridor development from I-205 to 172nd Ave.
- OR 217, US 26 & I-5/I-84 interchange improvements
- Operational improvements on I-205*
- Operational improvements on I-5*
- Additional interchange improvements on OR 217, US 26, I-5, I-205, and I-84*

Notable arterial mobility projects

- I-5/99W Connector Alternative 7 (three arterial improvements including Southern Arterial)*
- Sellwood Bridge reconstruction

RTP community-building projects

The community-building projects in the 2035 RTP are intended to foster the types of communities that the region's citizens have indicated they prefer. These community-building projects constitute over $5.3 billion (year 2007 dollars) in public investments, with over $3 billion of it going to centers, corridors, main streets, and station areas. There is a substantial body of academic research that has demonstrated that these types of public investments are associated with increased residential demand. Appendix 2 includes a literature review on this topic. For MetroScope modeling purposes, input assumptions that describe the relative desirability of different locations were conservatively adjusted to reflect the significant nature of these investments.[4] Community-building projects in the 2035 RTP include facilities such as:

[4] This input assumption, "neighborhood score," is typically based on a statistical assessment of historic single-family residence sales data and is usually held constant in scenarios. Neighborhood scores have been adjusted in the scenario that informs the 2010 Capacity Ordinance to recognize the magnitude of community-building investments that have been adopted. Appendix 2 contains a fuller explanation of the adjustments that were made. The work completed by Johnson Reid (see Appendix 4) corroborates the relationship between these types of investments and higher sales prices. A 2010 study by Metro (see Appendix 9) illustrates the types of design features found in neighborhoods with lower and higher neighborhood scores.

- New streetcar lines in Portland*
- Portland-to-Lake Oswego streetcar
- Pedestrian and bike improvements throughout the region*
- Streetscaping throughout the region*

New incentives

Since the Metro Council acceptance of the 2009 UGR, several cities have adopted or indicated their intent to adopt urban renewal or other financial tools.[5] These financial tools typically fund public investments in urban amenities such as streetscape and pedestrian improvements that help to attract residential growth to these locations. By focusing demand in urban renewal areas, it becomes financially feasible for developers to build at higher densities, which makes more efficient use of existing capacity inside the UGB.

Beaverton urban renewal

In 2008, the City of Beaverton's voters approved a city charter amendment that makes urban renewal available as a tool for the city to use, subject to voter approval. A January 2010 urban renewal feasibility study conducted for the city recommends that an urban renewal program should focus on community amenities that will encourage private development. Although an urban renewal program is not yet adopted, it is expected that an urban renewal plan will be on the ballot in Beaverton in November 2010. Progress made by the city and citizen support indicate that urban renewal or a comparable investment mechanism will be in place during the 2010 to 2030 planning period that is the focus of the 2010 Capacity Ordinance. Consequently, urban renewal is assumed for Beaverton in the MetroScope scenario that informs this analysis.

Hillsboro urban renewal

In May 2010, the Hillsboro City Council approved the formation of a downtown urban renewal district. The city intends to invest in public amenities and storefront improvements that will foster a vibrant downtown district and will encourage private investment. The draft Capacity Ordinance scenario assumes that urban renewal is available in downtown Hillsboro.

Milwaukie urban renewal

The City of Milwaukie is currently writing an urban renewal plan for its downtown. The city intends to adopt the plan by the end of 2010. The draft Capacity Ordinance scenario assumes that urban renewal is available in downtown Milwaukie. This would complement the city's existing vertical housing tax abatement program, helping to focus growth in the downtown center.

Portland transit-oriented development tax abatement

The City of Portland currently has a Transit-Oriented Development Tax Abatement program in effect. The full extent of the program was not adequately reflected in the input assumptions for the

[5] In recent months, the City of Tualatin has indicated its intent to not extend the life of its urban renewal program. That decision is also reflected in updated scenario assumptions.

scenario that informed the 2009 UGR (the program was only assumed in Hollywood Town Center). The draft Capacity Ordinance scenario assumptions reflect the full extent of the program.[6]

Public investments in AmberGlen

In January 2010, the City of Hillsboro adopted the AmberGlen Community Plan, which envisions a thriving mixed-use, transit-oriented community consisting of approximately 600 acres located at the southern edge of the Tanasbourne Town Center area, bounded by 185th Avenue on the east, Cornell and Walker roads on the north, 206th Avenue on the west, and the Westside light rail line on the south. The city intends to make substantial investments in high-quality pedestrian and environmental amenities such as parks and streetcar. These investments combined with the area's access to existing light rail are expected to spur medium-to-high-density development. The draft Capacity Ordinance scenario carries an assumption that these public investments will be made.

New local policies and investments:

Cities and counties in the region have taken a number of other actions that increase the likelihood that residential capacity inside the existing UGB will be used more efficiently. Appendix 3 includes an inventory of community-building investments in centers and corridors that are included in local capital improvement plans. Typical investments in this inventory include parks, plazas, pedestrian and bike improvements, and civic buildings. The inventory only includes community-building investments in centers and corridors, which total almost $350 million. Because of the scope of the inventory of planned local capital improvements, not all projects have been explicitly or individually assessed for their potential effects on market use of zoned capacity. Instead, the inventory points to a more general conclusion that cities throughout the region are planning significant investments that will improve their communities and support more efficient use of zoned capacity in centers and corridors.

Appendix 3 describes a variety of other recently adopted local government actions that range from the adoption of vertical housing tax credit programs to community-building investments in public amenities.

Zoning and comprehensive plan updates

In recent months, Tigard and Hillsboro (for AmberGlen) have updated their zoning or comprehensive plans to focus growth in targeted locations. Both cities also intend to make substantial public investments to realize their community visions.

Urban and rural reserves

Though the designation of urban and rural reserves is not technically an efficiency measure, this agreement indicates the region's intent to grow in a more compact fashion than in the past. The draft MetroScope scenario that informs the 2010 Capacity Ordinance assumes that future UGB expansions will occur on urban reserves, which total 28,615 acres. This is in contrast to the scenarios that informed the 2009 UGR, developed before the designation of urban reserves, where substantially more land was assumed available for prospective UGB expansions. The assumption

[6] Locations where the program overlaps with urban renewal are not double-counted in the scenario. Only urban renewal is assumed in those locations.

that many fewer acres will be available for prospective UGB expansion contributes to the higher refill rate observed in the scenario that informs this analysis.

Likely effects of efficiency measures

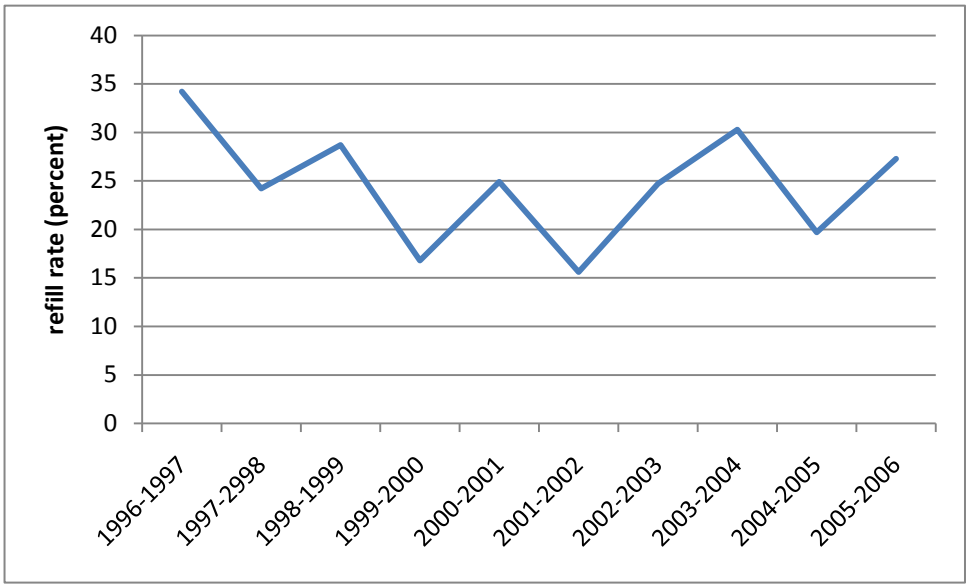
As previously described, the 2009 UGR and this assessment of residential efficiency measures take into account several market factors, which account for the share of zoned capacity that is likely to be developable with current policies, and anticipated investment trends and economic conditions. The effects of recently-adopted efficiency measures on these market factors are described below.

Refill rate:

The refill rate is an important measure of how efficiently development is occurring. Based on policies in place at the time, the 2009 UGR included an assumption that the refill rate through the year 2030 would be 33 percent. What this means is that the 2009 UGR assumed that 33 percent of all new dwelling units in the UGB from 2010 to 2030 would occur through redevelopment or infill. Several sources of information were consulted to determine a likely refill rate that may result from newly adopted efficiency measures.

Figure 8 depicts the historic residential refill rate inside the Metro UGB from 1996-2006. As can be seen in the chart, the rate varies from year to year.

Figure 8: Historic residential refill rates inside the Metro UGB from 1996 to 2006 (source: Metro)



The MetroScope scenario that was conducted to inform this assessment indicates that newly-adopted policies and investments will result in more efficient market use of zoned residential capacity. In particular, this scenario indicates that 41 percent of new residential units developed through the year 2030 will occur through refill. This same MetroScope scenario also indicates that

this rate moderates somewhat by the year 2040 (35 percent refill). This is likely because additional UGB expansion capacity is assumed to be available in the scenario's later years.

In recent years, researchers have pointed to some fundamental demographic shifts and changes in housing preferences that favor urban redevelopment and infill (Nelson, 2006) (Leinberger, 2008) (United States Environmental Protection Agency, 2010) (Leinberger, 2010). The City of Portland's experience with redevelopment indicates that a widely-written-about shift in residential preferences is well under way. This shift in preferences is leading to more redevelopment and infill in existing urban areas that offer a variety of community amenities within walking distance. To better understand this dynamic, City of Portland staff recently examined residential permit data for several mixed-use corridors and centers.[7] For example, from 2004 to 2009, a total of 423 new dwellings developed within the Hollywood Town Center and Belmont and Interstate Avenue corridors. This development occurred on 62 separate sites, with only seven of those sites being vacant prior to development. In terms of individual dwelling units, only 19 of the 423 units, or about five percent, were developed on vacant sites, which tended to be smaller and in lower-intensity zones. In most cases, single-family homes were replaced with new four- or six-plex developments or single-story commercial buildings, and surface parking lots were replaced by multi-story mixed-use development.

The development form assessment tool, created with the assistance of Johnson Reid, LLC, indicates that planned public investments will influence developer's choices, leading to more efficient redevelopment. The assessment tool was only applied to five case study areas[8] and is, therefore, intended to be illustrative and does not provide a comprehensive assessment of redevelopment potential in the existing UGB. However, the assessment tool, which considers development potential from a developer's perspective, indicates that planned public investments are likely to increase market utilization of zoned capacity in three out of the five case study areas. The redevelopment form assessment tool indicates that, in these three case study areas alone, an additional 1,000 to 5,200 dwelling units are likely to be market feasible because of planned public investments.

[7] Source: June 10, 2010 memo from Susan Anderson (Portland Bureau of Planning and Sustainability) to Robin McArthur (Metro)

[8] Areas tested include downtown Lake Oswego and Gresham, Lents, Foster Blvd., and Interstate Ave. The areas tested vary in size. In all cases, existing zoning was assumed.

Based on these sources of information, it is estimated that policies currently in place, including recently adopted efficiency measures, are likely to result in a refill rate of 38 percent through the year 2030. Refill rates are translated into dwelling unit capacity in Table 1.

Table 1: Refill capacity with efficiency measures (assuming medium growth forecast through 2030)

	Refill Rate	**Refill Capacity (dwelling units)**
2009 UGR	33%	86,600
With efficiency measures	38%	99,700
Difference	**+5%**	**+13,100**

Vacant multi-family capacity:

The 2009 UGR assumed that only 50 percent of the region's residential capacity on vacant lands zoned for multi-family housing would be market feasible through the year 2030. Because this is vacant land, it is a separate source of capacity from refill. Two sources of information are relied upon to determine how recently-adopted efficiency measures may affect the market viability of these types of residential capacity. These sources include a MetroScope scenario and the development form assessment tool created by Johnson Reid, LLC.

The updated MetroScope scenario that was conducted to inform this analysis indicates that newly-adopted strategies and investments are likely to lead to more efficient use of residential capacity in areas zoned for multi-family development. The new scenario indicates that 60 percent of the capacity in these zoning categories is likely to be developed through the year 2030. Because MetroScope is a regional model and because several major scenario assumptions were updated (for example, the transportation network now reflects the adopted 2035 Regional Transportation Plan and the scale and location of prospective UGB expansions reflect the adopted urban reserves), it is difficult to isolate specific reasons why a greater share of capacity on vacant land zoned multi-family gets developed under the updated scenario.

The development form assessment tool developed by Johnson Reid, LLC also indirectly informs this portion of the analysis. As previously described, the tool was used to assess the effects of newly-adopted strategies in several districts in the region. Though the assessment was focused on illustrating redevelopment potential (rather than development on vacant land), its general conclusions support MetroScope results pertaining to multi-family residential development on vacant land.

Based on these sources of information, it is expected that 60 percent of the zoned capacity on vacant land zoned for multi-family will be market feasible through the year 2030. As summarized in Table 2, this would amount to capacity for 3,700 additional dwelling units that is attributable to adopted efficiency measures.

Table 2: market feasibility of vacant land zoned multi-family with efficiency measures (through 2030)

	Percent market feasible through 2030	Dwelling units
2009 UGR	50%	18,400
With efficiency measures	60%	22,100
Difference	**+10%**	**+3,700**

New urban area capacity[9]

In the 2009 UGR, it was assumed, across the region, that 50 percent of planned residential capacity in new urban areas would not be developed by the year 2030. This discount was assumed based on the current status of planning and development as well as MetroScope scenario results. In 2010, various city and county staff were consulted to determine if the current planning status of new urban areas indicates that more of their residential capacity may be development-ready by 2030.

MetroScope scenarios were also used to test how the combination of newly-adopted strategies may increase development readiness in new urban areas. This new assessment indicates that a greater-than-50-percent share of the region's residential capacity in new urban areas is likely to be developed through the year 2030. Because MetroScope is a regional model and because several major scenario assumptions were updated (for example, the transportation network now reflects the adopted 2035 Regional Transportation Plan and the scale and location of prospective UGB expansions reflect the adopted urban reserves), it is difficult to isolate specific reasons why individual new urban areas perform better in the updated scenario. Updated 20-year-capacity estimates for new urban areas are summarized in Table 3 and are rounded to the nearest 50.

[9] "New urban areas" refers to areas added to the Metro UGB from 1998 through 2005

Table 3: 20-year residential capacity estimates for new urban areas

	Dwelling units				
New urban area	Planned capacity	2009 UGR capacity assumption (50%)	2010 Capacity Ordinance assumption	Difference (additional capacity)	Reasoning
Beavercreek Rd	1,023	500	700	200	MetroScope scenario indicates that 70 percent of capacity is market feasible through 2030.
Bonny Slope	524	250	450	200	MetroScope scenario indicates that 82 percent of capacity is market feasible through 2030.
Brookman Rd	1,239	600	1,150	600	MetroScope scenario indicates that 94 percent of capacity is market feasible through 2030.
Bull Mountain	2,450	250	2,200	1,950	UGR assumption was erroneous. December 2009 planning estimates for Alternative B are for approximately 2,450 units. MetroScope scenario indicates that 99 percent of capacity is market feasible through 2030. Because of incorporation issues, staff believes that 90 percent is a more reasonable estimate.
Cooper Mountain	1,019	500	950	450	MetroScope scenario indicates that 92 percent of capacity is market feasible through 2030.
Damascus Boring	24,952	12,500	12,500	-	Draft comprehensive plan indicates expectation of 12,500 units over the 20-year timeframe. No basis for changing UGR assumption.
East Wilsonville	183	100	183	83	MetroScope scenario indicates that 100 percent of capacity is market feasible through 2030.
North Bethany	5,000	2,500	3,300	800	Urban reserves decision added Peterkort property, whose owners have donated sewer easements to the County, which will reduce infrastructure costs for North Bethany. A MetroScope scenario indicates that 82 percent of capacity is market feasible through 2030. Washington County staff indicated that 50 percent of capacity is market feasible through 2030. This analysis splits the difference and assumes 66 percent.
Park Place	1,091	550	800	250	MetroScope scenario indicates that 70 percent of capacity is market feasible through 2030.

New urban area	Planned capacity	2009 UGR capacity assumption (50%)	2010 Capacity Ordinance assumption	Difference (additional capacity)	Reasoning
Pleasant Valley	5,066	2,550	4,000	1,450	Per City of Gresham, 80 percent of capacity is market feasible through 2030 (all necessary facilities included in adopted plans; SDC mechanisms ensure that revenues match costs). A MetroScope scenario indicates that 76 percent of capacity is market feasible through 2030. This analysis splits the difference and assumes 78 percent.
South End Rd	413	200	350	150	MetroScope scenario indicates that 87 percent of capacity is market feasible through 2030.
Springwater	1,456	750	1,100	350	Per City of Gresham, 70 percent is market feasible through 2030 (all facilities included in adopted plans; SDC mechanisms ensure that revenues match costs). Some residential development will be contingent upon industrial area developing. A MetroScope scenario indicates that 82 percent of capacity is market feasible through 2030. This analysis splits the difference and assumes 76 percent.
Study Area 69 and 71	1,300	650	1,050	400	Per City of Hillsboro, 80 percent of capacity is market feasible through 2030 (assuming S. Hillsboro is added to UGB in 20-year timeframe). A MetroScope scenario indicates that 84 percent of capacity is market feasible through 2030. This analysis splits the difference and assumes 82 percent.
Villebois Village	2,390	1,200	2,100	900	Per City of Wilsonville (all facilities included in adopted plans). Wilsonville says 100 percent of capacity is market feasible through 2030. A MetroScope scenario indicates that 75 percent is market feasible through 2030. This analysis splits the difference and assumes 88 percent.
Witch Hazel	1,766	900	1,465	565	Per City of Hillsboro, 80 percent of capacity is market feasible through 2030. A MetroScope scenario indicates that 85 percent of capacity is market feasible through 2030. This analysis splits the difference and assumes 83 percent.
TOTAL	**48,000**	**24,000**	**32,550**	**+8,350**	

Summary of plan and zoning changes since the 2009 UGR

Recently, many cities in the region have implemented new strategies to achieve their community visions. These efforts include Wood Village's code update to allow cottage housing and zoning updates in downtown Gresham. These and other recently-adopted planning efforts are described in Appendix 3. In particular, since the Metro Council's acceptance of the UGR in December 2009, there have been two notable planning efforts that have resulted in an increase in zoned residential capacity. Table 4 provides a summary of new zoned capacity.

Table 4: summary of notable changes in zoned or planned residential capacity since the 2009 UGR

		Zoned or planned capacity (dwelling units)		
City	**Location of adopted plan or zone change**	**2009 UGR**	**2010 Capacity Ordinance**	**Additional capacity (difference)**
Hillsboro	AmberGlen	2,000	7,000	5,000
Tigard[10]	Downtown	1,000	2,900	1,900
Total new zoned residential capacity				**+6,900**

Both cities intend to make substantial public investments to realize their community visions. In the case of Hillsboro, that intent is documented in the AmberGlen Community Plan adopted in January 2010 (City of Hillsboro, 2010). The City of Tigard has documented its intent to make significant community investments. These efforts are described in Appendix 3. Because of the highly-strategic and intentional nature of these investments, all of the newly-zoned capacity in these two locations is assumed developable in the 20-year timeframe.

[10] In order to create the kind of community that its citizens envision, Tigard considered further increasing the zoned capacity of its downtown but has been prevented from doing so because of limitations imposed by the state Transportation Planning Rule.

Illustrations of possible impacts of efficiency measures

Public investments in amenities such as street cars and sidewalks can make a location more desirable to residents. With increased demand, developers can profitably build at higher densities than they would without the public investments. Using an approach developed by Johnson Reid, LLC and Fregonese and Associates, Metro staff examined how a variety of newly adopted public investments can increase the feasibility of higher-density residential development in urban centers and transportation corridors, helping to align development with community goals and plans. For illustrative purposes, the assessment tool was preliminarily applied to two areas, downtown Lake Oswego and a commercial area of the Lents neighborhood in Portland. A more complete discussion of the methods used can be found in Appendix 4.

The following figures illustrate how redevelopment may look in two local communities, based on the pro forma assessment.

Lake Oswego

Figure 9: Existing Conditions: 2nd Street, facing north towards B Avenue

Figure 10: Initial Public Improvements

Figure 11: Redevelopment Potential

City of Portland-Lents/Foster Corridor

Figure 12: Existing Conditions- Foster and 84th Avenue, facing west

Figure 13: Initial Public Improvements

Figure 14: redevelopment potential

Summary of additional residential capacity generated through efficiency measures

Table 5 summarizes the additional capacity generated through adopted efficiency measures.

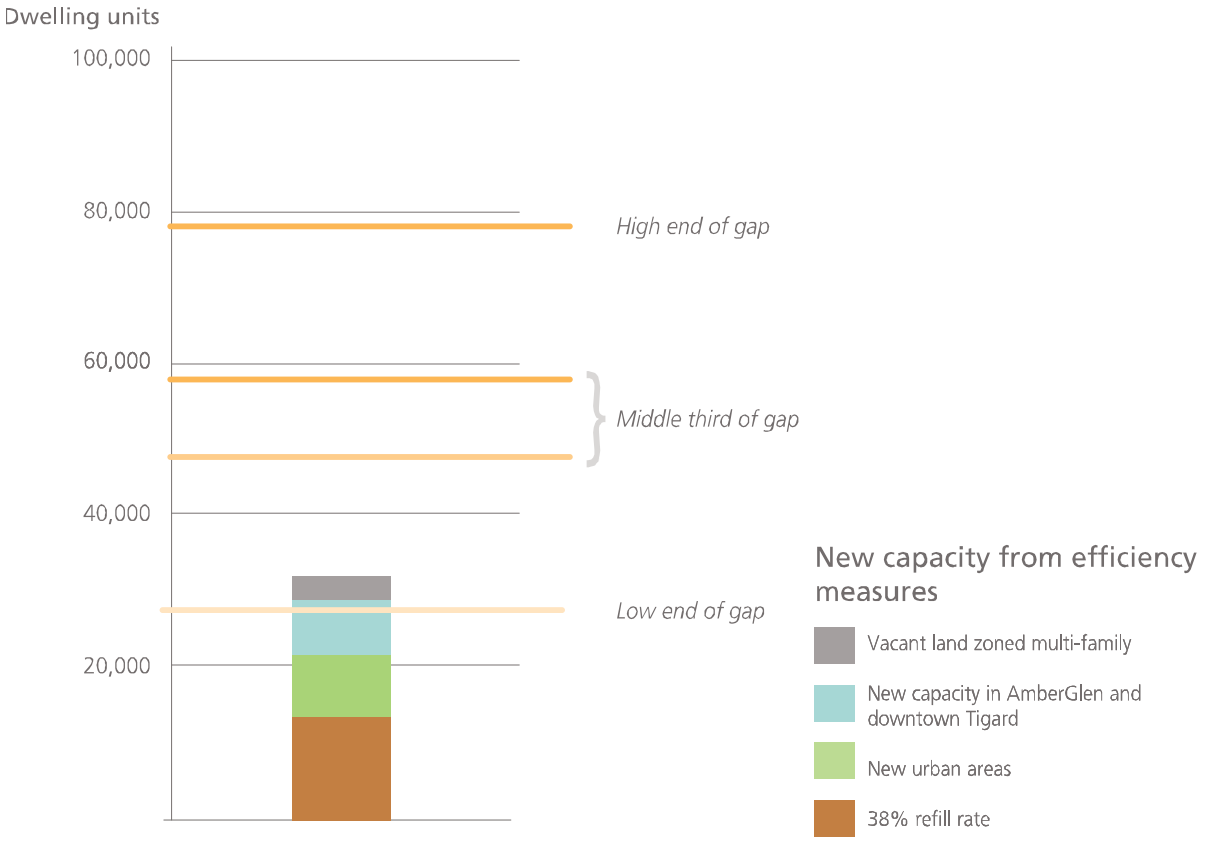
Table 5: summary of additional residential capacity resulting from adopted efficiency measures (through 2030)

Source of additional capacity	Additional capacity (dwelling units)
38% refill rate	13,100
New urban areas	8,350
Market feasibility of vacant land zoned mixed-use (60%)	3,700
New capacity in AmberGlen and Tigard	6,900
Total	**+32,050**

Remaining gap after efficiency measures are accounted for

The efficiency measures that have been described in this document are likely to produce, over the next 20 years, capacity for an additional 32,050 dwelling units beyond what was counted in the 2009 UGR. As depicted in Figure 15, this additional capacity exceeds the lower end of the range capacity gap identified in the 2009 UGR, but does not address the middle third of the range forecast. The adoption of additional efficiency measures is not expected to occur before the end of 2010 and therefore cannot be counted towards addressing the residential need identified in the 2009 UGR.

Figure 15: New residential capacity inside the current UGB from adopted efficiency measures[11]



[11] Refill is a share of total growth. In figure 15, the high end of the gap (79,300 units) is different than what was identified in the 2009 UGR (104,900), which, for illustrative purposes, held constant the dwelling unit capacity generated through refill (rather than expressing it as a share of the high demand forecast). Using a 38 percent refill rate, figure 15 adjusts refill capacity according to the point on the forecast range that is used. This in turn affects the gap. When the Council makes its growth management decision, they will identify the point in the forecast for which they are planning. Refill capacity will be calculated as a share of that number.

Potential residential capacity in urban reserves

With the efficiency measures documented to date, sufficient residential capacity has been identified to accommodate demand on the lower end of the range. However, the Metro Council may wish to consider the likelihood that residential demand will end up at a different point on the range forecast. The Metro Council may also determine that strategic UGB expansions into urban reserves will produce better community and regional outcomes. To provide the Council with options, staff has analyzed urban reserves for possible inclusion in the UGB.

Purpose of urban reserves

In the past, when considering expansion of the UGB, Metro was required by state law to consider the agricultural quality of the soil above everything else. Protecting high-quality farm soils is important and this approach provided a way to decide where not to develop. But it did not provide a method for determining the ideal locations and conditions for developing vibrant urban communities. Nor did it address all of the factors that this region values in its rural lands. With the adoption of urban and rural reserves, the region has a formal method and set of factors for considering what makes a good site for a city. Areas that are currently outside the UGB and that are suitable for urbanization over the next fifty years have been designated as urban reserves. At the same time the designation of rural reserves provides protection for the region's most valuable and financially viable farms and commercial forests. This designation also protects significant natural features like wetlands, rivers and their floodplains and buttes from urban development. If the Metro Council chooses to expand the UGB, the expansion will take place in urban reserves.

Comparison of different UGB expansion options for providing additional residential capacity

The process of narrowing potential options for UGB expansion areas began several years ago with the Shape of the Region study. Throughout 2006, Metro, in partnership with Clackamas, Multnomah and Washington counties; the Oregon Department of Agriculture, and the Oregon Department of Land Conservation and Development, conducted a comprehensive study of the various factors that influence the shape of our region and contribute to the quality of life we enjoy. The study sought to identify how the agricultural economy, natural areas and urban communities all contribute value to this region.

There were three components to the Shape of the Region study:

- An assessment of the agricultural lands surrounding the Metro region and their long-term commercial viability, developed by the Oregon Department of Agriculture
- An inventory of the natural landscape features that define this region
- An analysis of factors that contribute to the development and enhancement of great urban communities

The Shape of the Region study informed the comprehensive and collaborative process that ultimately led to the designation of urban and rural reserves in June 2010. That decision designated 28,615 acres as urban reserves, lands outside the current UGB that will provide for: (a) future

expansion over a long-term period and (b) the cost-effective provision of public facilities and services within the area when the lands are included within the urban growth boundary.

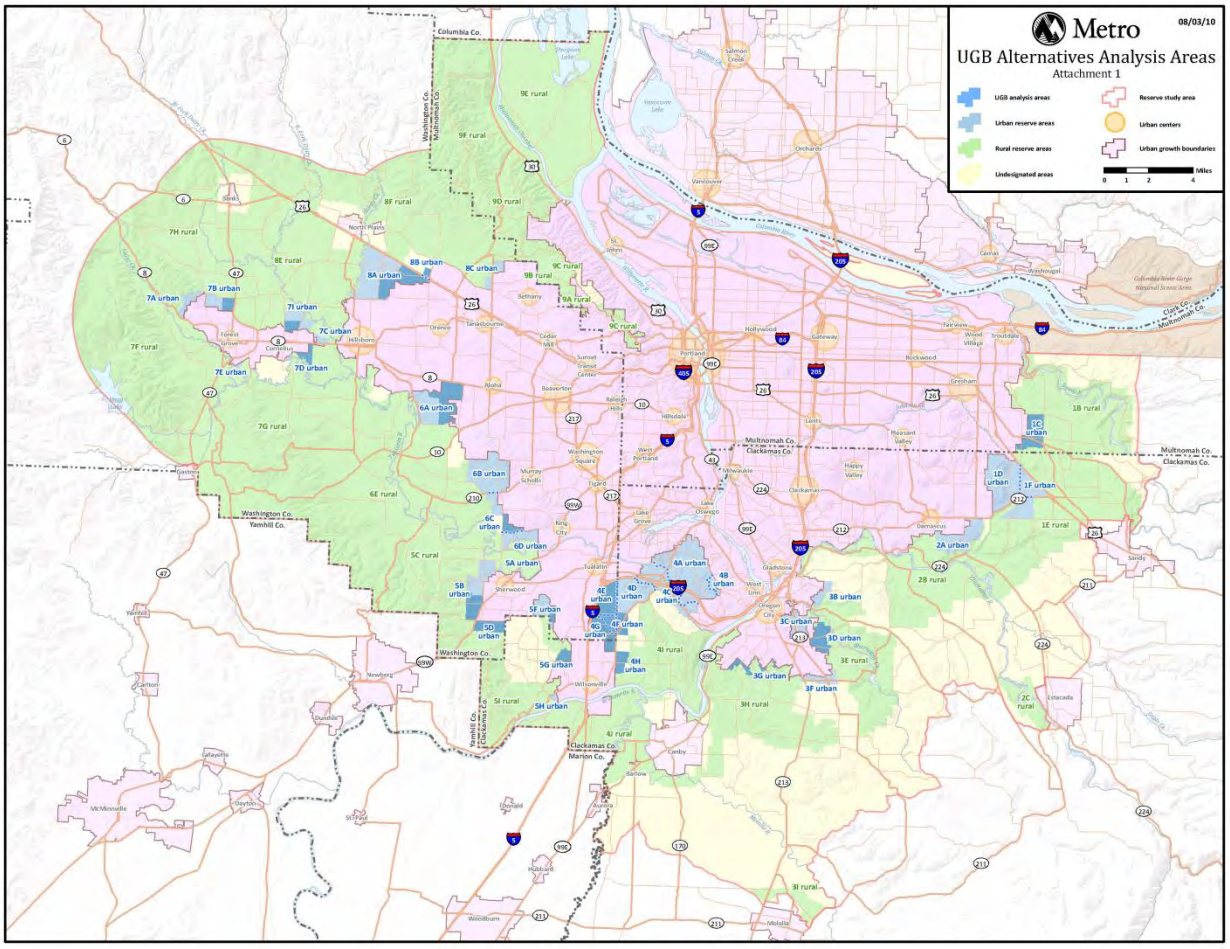
The studies and discussions that led to the designation of urban reserves provide a solid foundation for narrowing the options for possible UGB expansion areas for consideration in December 2010. With that base of knowledge, Metro staff worked with city and county staff during the spring of 2010 to identify 8,298 acres of urban reserves for further study as UGB candidate areas. Those study areas are identified in Figure 16.

In order to satisfy state law, Metro staff needed to study more acres than were identified as being of interest to cities in the region. To provide a comprehensive assessment these 8,298 acres were chosen because they represent a variety of locations around the region and have a variety of topographical characteristics. Additional information about this analysis can be found in Appendix 8.

During the summer of 2010, several cities identified additional lands that they wished to have evaluated as UGB candidates. In order to conduct the analysis necessary to release this recommendation, staff was not able to honor local requests that were received after June 2010. The Metro Council has directed Metro staff to accept additional requests from cities by September 3, 2010. While any additional proposals will not be included in the recommendation issued for public comment beginning August 10, they will be offered for public comment in September and considered by MPAC and the Metro Council before a final recommendation in October and subsequent public hearings in November. Submittals should include the following:

- A formal letter of support from the governing body of the jurisdiction;
- A map of the subject area; and
- An assessment of how the subject area is responsive to Metro's legislative UGB amendment criteria, contained in Metro Code 3.01.020(c) and (d).

Figure 16: UGB alternatives analysis area map



Policy choices (residential)

Comparison of different UGB expansion options

As previously noted, the efficiency measures assessed in this document are sufficient for addressing the low end of the range of need for new dwelling units identified in the 2009 UGR. The Metro Council may determine, however, that strategic UGB expansions into urban reserves will produce better community and regional outcomes.

Appendix 8 describes in detail how the UGB candidate areas are assessed according to the requirements found in Metro Code Section 3.01.020, which implements the UGB factors found in Statewide Planning Goal 14 (Urbanization) and listed as follows:

- Efficient accommodation of identified land needs
- Orderly and economic provision of public facilities and services
- Comparative environmental, energy, economic and social consequences

- Compatibility of the proposed urban uses with nearby agricultural and forest activities occurring on farm and forest land outside the UGB

In addition to the requirements found in Statewide Planning Goal 14, Metro Code calls for the consideration of five additional factors when evaluating land for inclusion in the UGB. The approach to addressing these five factors is also described in Appendix 8.

- Equitable and efficient distribution of housing and employment opportunities throughout the region (this factor will be addressed with further analysis in the fall of 2010)
- Contribution to the purposes of Centers
- Protection of farmland that is most important for the continuation of commercial agriculture in the region (this factor)
- Avoidance of conflict with regionally significant fish and wildlife habitat (this factor is addressed in the assessment required by the state)
- Clear transition between urban and rural lands, using natural and built features to mark the transition (this factor is addressed in the assessment required by the state)

Considerations when determining where to plan in the range

The 2009 UGR identified a need for 27,400 to 104,900 additional dwelling units. There are several factors that should be considered that may make it relatively less risky to plan for the lower- to-middle portion of the residential range:

Short-term versus long-term risks

Planning for lower or higher points in the residential demand range could carry different benefits and risks depending on the timeframe.

- Oregon land use law requires that, every five years, Metro assess the region's capacity to accommodate the numbers of people anticipated to live inside the Metro urban growth boundary (UGB) over the next 20 years. Since this assessment occurs every five years, there is an ability to make course corrections.
- In the short-to-mid-term, there is a surplus of residential capacity in the region, both in the form of vacant land in past UGB expansion areas and in the region's centers and corridors. There are also numerous opportunities for redevelopment and infill.

"Next-generation projects will orient to infill, urbanizing suburbs, and transit-oriented development. Smaller housing units—close to mass transit, work, and 24-hour amenities—gain favor over large houses on big lots at the suburban edge. People will continue to seek greater convenience and want to reduce energy expenses. Shorter commutes and smaller heating bills make up for higher infill real estate costs."

(Urban Land Institute / PricewaterhouseCoopers, 2010)

- The regional and world economies are only beginning to show signs of recovery from the recent recession. Many economists and financiers concur that, in the short-term, little development will be occurring anywhere. This is probably particularly the case with master-planned communities and complicated town center developments (Urban Land Institute / PricewaterhouseCoopers, 2010). Development that does occur in the short-term is likely to be of a smaller scale.

There are, however, longer-term risks associated with planning for the lower end of the residential demand range. Most notably, a UGB expansion is just the first step in making land developable. Planning and infrastructure provision can take years, impacting the region's ability to produce housing quickly when it is ultimately needed. This development lag could lead to longer-term housing shortages inside the UGB. If population growth occurs at a faster rate, a certain amount of residential growth (primarily single-family residential) that would otherwise occur in the Metro UGB may be displaced to neighboring cities and to Clark County, Washington. Many of these displaced households would commute back to the Metro region for work, resulting in increased carbon emissions and transportation infrastructure costs.

History of development in past UGB expansions

The region's original UGB was put into place more than thirty years ago (1979) with the purposes of encouraging the efficient use of land, creating vibrant communities and protecting the region's agricultural and natural heritage. The original UGB contained 227,491 acres. Subsequent expansions have added approximately 28,000 acres to the UGB and make up about 11 percent of the land area of the current UGB. These expansions have been made with the aim of complementing development inside the UGB and minimizing impacts on farmland while providing additional residential and employment capacity.

Residential permit data for the ten-year period from 1998 through 2008[11] indicate that relatively little new development has occurred in these UGB expansion areas (approximately five percent of permitted units) when compared with the amount that has occurred inside the original UGB (approximately 95 percent of permitted units).

UGB expansions are intended to address 20-year needs for housing capacity and some amount of development lag is to be expected. However, our region's ability to develop UGB expansion areas appears hampered by a number of factors including city annexation issues, conflicting visions for urbanization, and a simple lack of funding to pay for infrastructure.

[11] Caveats: A limitation of this data is that not all permitted units were necessarily built. All permit data is from the *Construction Monitor* and is not from Metro's Regional Land Information System, limited efforts were made to remove duplicate records and correct unit values. Locations of building permits are derived by geocoding address information and include an inherent level of error. Permit and unit summaries include the entire 1998-2008 data set, not limited to the range of historic annexations.

The designation of urban reserves provides a new way of identifying lands suitable for urbanization. If UGB expansions are made as part of the 2010 growth management decision, it is hoped, but is an untested theory, that urban reserves have characteristics that will lend themselves to quicker and more efficient urbanization than has occurred in past UGB expansions.

Changing preferences

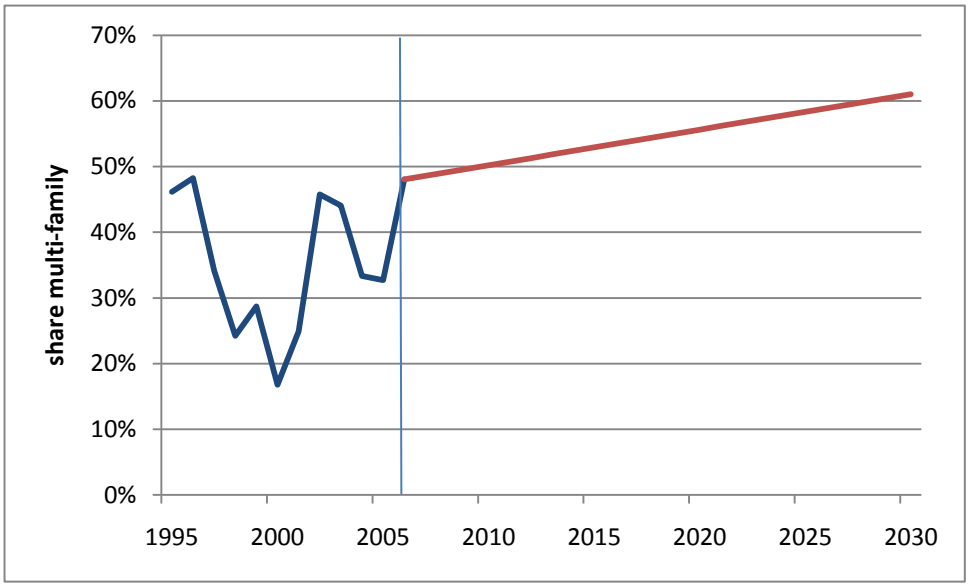
An increasingly wider share of American households wish to have more housing choices, including living in active urban settings and relying less on an automobile to get around (Leinberger, 2010) (Leinberger, 2008) (Nelson, 2006) (United States Environmental Protection Agency, 2010) (Urban Land Institute / PricewaterhouseCoopers, 2010). In 2009, the Institute for Portland Metropolitan Studies convened the Expert Advisory Group on Developing Centers and Corridors. In its report, the advisory group concluded that market trends indicate that compact mixed-use development will be the primary development prototype for the next several decades (The Expert Advisory Group on Developing Centers and Corridors, 2009). This is corroborated by numerous academic studies and MetroScope scenarios.

Looking forward, multifamily development is "...the only place with a hint of hope, because of demographic demand… Locations near transit corridors are prime."
(Urban Land Institute / PricewaterhouseCoopers, 2010)

Figure 17: Orenco in Hillsboro (photo: Metro)

Figure 18 depicts the historic and forecast share of new dwelling units inside the Metro UGB that are multi-family.[12] It is expected that, through the year 2030, approximately 60 percent of demand for new dwelling units inside the Metro UGB will be for multi-family residences. Our region will need to find new ways to ensure that there are adequate multi-family housing options to satisfy future demand.

Figure 18: multi-family share of new dwelling units inside Metro UGB (historic and forecast)



Practical effect of planning for the high end of the residential demand range

In determining where within the range to plan, the Council may want to consider the fact that using a higher point in the range would entail large UGB expansions or aggressive assumptions about the densities that can be achieved in UGB expansion areas. Making large UGB expansions may frustrate regional and community development goals and would be contrary to prevailing public sentiment (Davis, Hibbitts, and Midghall, Inc., 2009).

If it is to meet its goals of reducing carbon emissions, the region must accommodate a substantial amount of future growth as compact, mixed-use development in existing urban centers and corridors (The Expert Advisory Group on Developing Centers and Corridors, 2009) (MacLean & Kennedy, 2006). Large UGB expansions would detract from this effort.

It is also unclear whether UGB expansions will produce the variety of housing choices that may be desired or affordable for the region's future residents. Scenario analysis indicates that, with the levels of public investment that are currently contemplated, economic conditions may not support high densities in many potential UGB expansion areas in the 20-year timeframe.

[12] Forecast is from the MetroScope scenario that informs this analysis.

Table 6 compares the size, price, and type of residences constructed and sold after 1997 in the 1997 UGB with those in post-1997 UGB expansion areas. The median sales price of new homes in post-1997 UGB expansion areas is 140 percent that of new homes in the 1997 UGB. This can be explained by the larger median size of the homes and lots in post-1997 UGB expansion areas as well as the apparent lack of multi-family housing options. These expansion areas would not appear to offer adequate market rate choices that match the budgets of households with low to median incomes, particularly when higher transportation costs are considered.

Table 6: Comparison of sales of newly constructed residences in the 1997 UGB and post-1997 UGB expansion areas

	1997 UGB	Post-1997 UGB expansion areas
Median sales price	$262,000	$367,500
Average square feet of residence	2,008	2,801
Average lot square feet	4,622	13,906[13]
Total residential tax lots (with sales data)	64,724	1,432
Total number of multi-family residences built and sold post 1997	17,073	0
Share of multi-family residential	26%	0%

Source: Regional Land Information System (RLIS) tax lot data
Analysis only includes tax lots zoned single-family, multi-family, mixed-use, and rural residential
Only tax lots with a residence constructed and sold after 1997 are included
Limitations: analysis excludes tax lots that have no associated sales data

Finally, with the designation of a 50-year supply of urban reserves in 2010, the region indicated its desire to grow in a more compact fashion than it has in the past. This intent is expressed in the assumptions that helped to size urban reserves, such as an assumption that future UGB expansions would produce an average of 15 dwelling units per acre over the life of urban reserves. Large UGB expansions in 2010 would set the region on a course of using urban reserves at a faster rate than can be sustained and may compete with efforts to develop the region's centers and corridors.

[13] The average lot size of new construction in recent UGB expansion areas is likely large because there are many such areas that have not yet been zoned at urban densities. Over time, urban zoning is anticipated to reduce this average lot size.

Recommendation on residential capacity

Since the adoption of the 2040 Growth Concept, cities throughout the region have taken actions that will help create the compact communities originally envisioned in the Growth Concept. As was the case with the 2009 UGR, this staff recommendation is informed by an analysis of likely market responses to public policies and investments. This report describes many of the actions taken at the local and regional level that are expected to encourage development at levels closer to what adopted plans describe. Those actions are "counted" in the Capacity Ordinance to the degree that they are likely to produce results over the 20-year time horizon.

The 2009 UGR identified a residential capacity need for an additional 27,400 to 104,900 dwelling units. Out of that range of need, the efficiency actions described in this document are expected to provide capacity for 32,050 dwelling units.

When making the 2010 growth management decision, the Metro Council must decide where to plan in the range forecast of household demand. If the Council decides to plan for a point that is lower in the household range forecast, there is no need for a UGB expansion. However, the Council may wish to consider planning for more residents.[14] In that event, a UGB expansion would be needed.

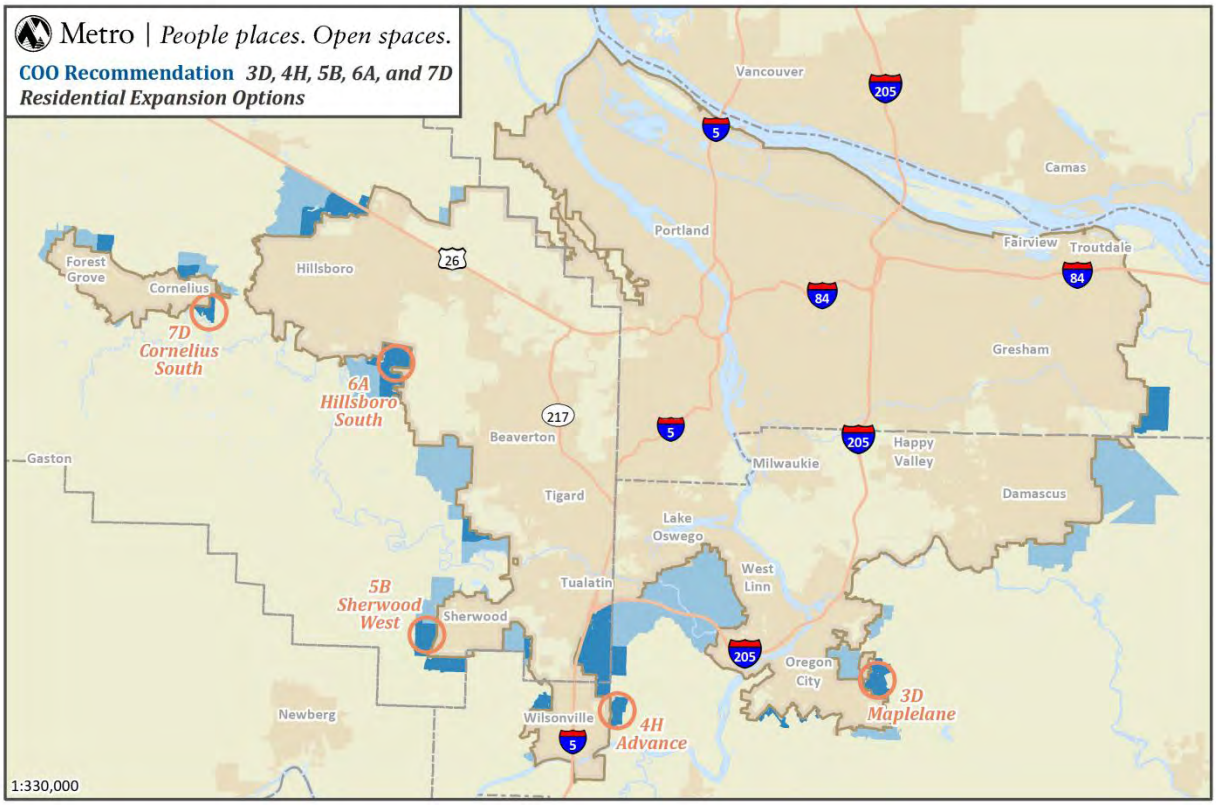
In regards to the question of where in the range to plan, policy makers should consider:

- The implications for communities in the larger seven-county region as well as the possible impacts on the region's transportation facilities if residential growth is displaced.
- The likelihood that actual residential growth will be closer to the middle of the range forecast.
- The fact that the Metro Council will make another growth management decision in 2015, allowing for course corrections, if needed.

To provide the Metro Council with UGB expansion options, staff has analyzed 8,298 acres of urban reserves. Staff's analysis confirms that these areas are all suitable for long-term urbanization. Out of those 8,298 acres, Metro staff analysis identified several possible UGB expansion options that are particularly worthy of consideration in the 2010 growth management decision. These locations all provide substantial areas of flat or relatively flat land that is unconstrained and can be developed at higher densities with minimal impacts to environmental resources (see Appendix 8 for further details on the analysis). If the Metro Council wishes to plan for a point closer to or in the middle-third of the range forecast, Metro's Chief Operating Officer recommends consideration of one or more of the UGB expansion options depicted in Figure 19.

[14] In the middle third of the 20-year forecast range, there is a gap of 44,100 to 62,100 dwelling units

Figure 19: Metro Chief Operating Officer recommendation on options for residential UGB expansions



The amount of additional capacity that would be added from these expansions would depend on the areas that are included as well as the conditions, if any, that are placed on the expansion. Policy makers should make clear their expectations for any UGB expansion areas.

Each of these potential expansion areas comes with unique opportunities and challenges. Staff believes that additional effort is required to ensure that these potential UGB expansions do not have the same outcomes as UGB expansions of the last decade, where there has been little development and the development that has occurred has often consisted of larger, more expensive homes with relatively low densities. Common challenges include:

- Several of the cities that would be responsible for providing governance are still attempting to complete concept plans for previous UGB expansion areas;
- Many of the cities that would be responsible for providing governance have indicated that they currently are not interested in having a UGB expansion that would add territory to their city;
- Infrastructure funding remains a serious challenge for all jurisdictions;
- Topographical and environmental constraints in many candidate areas may preclude higher-density, mixed-use development;

- Many candidate areas are broken into multiple ownerships that may make higher-density, mixed-use development difficult; and
- In the 20-year timeframe, it is unclear that higher-density development is market feasible in urban fringe locations.

Encouraging mixed-use and multi-family development in future UGB expansion areas will be necessary for producing housing that responds to anticipated changes in demographics and housing preferences. As was noted throughout the UGR's analysis, focused public investments are needed to encourage the development of mixed-use communities. This is the case in existing urban centers and corridors and is likely to be even more important in potential UGB expansion areas that currently lack the amenities and commercial cores necessary to support higher densities. Just as it is needed in existing communities, an investment strategy will be essential to realize the full potential of UGB expansion areas. This is illustrated by MetroScope scenario results that indicate that multi-family development is likely to lag in future UGB expansion areas with the levels of community investment that are likely with current funding sources.[15]

Opportunities and challenges for the UGB expansion options depicted in Figure 19 are described below.

South Hillsboro

The Metro Council may wish to consider expanding the UGB to include 1,063 acres in the South Hillsboro area. Among the urban reserves studied as UGB expansion candidate areas, the South Hillsboro area provides a unique opportunity to achieve different outcomes than can be achieved in most other potential UGB expansion areas.

Demonstrating a considerable amount of political will to build a community in the South Hillsboro Area, the City of Hillsboro has done extensive work to plan for this area. Consequently, this area appears more likely to develop in the short-term than other UGB expansion options. Under the existing South Hillsboro concept plan, this proposed UGB expansion would provide capacity for approximately 7,150 additional dwelling units.[16] At the densities contemplated in the South Hillsboro concept plan, this UGB expansion combined with adopted efficiency measures would be sufficient to address the lower end of the range of residential need identified in the 2009 UGR, but would not add sufficient capacity to address the middle-third of the forecast demand range.

Additional qualities that recommend the South Hillsboro area include:

- Large, flat area with a few landowners that control the majority of the land and that are focused on developing their property

[15] MetroScope scenarios indicate that only 17% of the assumed multi-family capacity in prospective UGB expansions may be developed by the year 2030.

[16] The South Hillsboro concept plan assumes capacity for 8,451 dwelling units. The plan includes two areas (Areas 69 and 71) that were previously added to the UGB. Capacity in areas 69 and 71 are already accounted for in the 2009 UGR. Areas 69 and 71 contribute about 1,300 of the 8,451 dwelling units contemplated in the concept plan.

- Few environmental constraints that are located in such a way that development could occur without significant impact to the resources
- Proximity to Tualatin Valley Highway
- Adjacency to other recent UGB expansion areas, whose development would be facilitated by the development of the larger South Hillsboro area[17]

Because of these unique characteristics, it is important that the region not squander the opportunities that the South Hillsboro area provides. Building a community that makes use of this land's full potential will be critical for ensuring that remaining urban reserves last for their intended timeframe. The City of Hillsboro has already undertaken a planning effort for the area and has indicated its intent to develop the area at 12 dwelling units per net buildable acre. This would exceed the requirement for 10 units per net buildable acre found in Title 11 of the Urban Growth Management Functional Plan, but falls short of the 15 units per net buildable acre assumption that was used to size urban reserves. Constraints in other UGB candidate areas mean that the South Hillsboro area likely needs to achieve higher densities in order to help the region achieve the 15 units per net buildable acre average in future UGB expansion areas.

Developing at 12 units per acre will not come without challenges and building at higher densities will require even more regional collaboration. Infrastructure costs are a major concern, particularly the transportation costs associated with crossing an existing heavy rail line. Planning for additional density in this area is not likely to substantially increase infrastructure costs. Because these costs will be substantial regardless of planned densities, staff proposes that it makes sense to maximize public investments for the greatest return.

However, staff suggests that policy makers also consider whether it may be wise to consider postponing a UGB expansion into South Hillsboro until a later date when economic conditions are more favorable for higher density development. A UGB expansion now may allow parcelization and lower-density development to occur, making more ambitious efforts difficult in the long-term.

Another consideration that should be weighed by policy makers is whether a UGB expansion into South Hillsboro may compete with efforts to foster great communities in downtown Hillsboro and AmberGlen, both of which are already inside the UGB and need focused investments. As described in this report and its appendices, the City is petitioning the Metro Council to designate AmberGlen as a regional center. Focused public and private investments will be needed to make the proposed designation amount to more than a name change.

Cornelius South

The Cornelius South area consists of 210 gross acres. The City of Cornelius supports a UGB expansion in the Cornelius South area and its location close to downtown Cornelius may help support the proposed Town Center that the City is petitioning the Metro Council to designate. The

[17] The South Hillsboro area is adjacent to Witch Hazel and Areas 69 and 71, which were added to the UGB in recent years.

Cornelius South area includes a site owned by the Hillsboro School District where it intends to eventually build a high school. A UGB expansion would in this area would allow that to occur.

However, adding residential land to the City of Cornelius will only exacerbate the current imbalance of jobs and housing that Cornelius staff and elected officials often cite. Furthermore, adding land for residential development does not appear likely to improve the fiscal health of the city. The city has requested that the Metro Council consider designating downtown Cornelius a Town Center on the 2040 Growth Concept Map. Adding a new urban area may compete for investments aimed at revitalizing downtown Cornelius. It may also compete with Cornelius' efforts to annex and plan the industrial land that was added to the UGB in 2005.

Advance area (Wilsonville)
The Advance area consists of 316 acres adjacent to the City of Wilsonville. The Advance area is near a previous UGB expansion area that remains undeveloped. Adding the Advance area may offer an opportunity to provide urban services to both areas in a more efficient manner. Alternatively, adding more land in this area may compete with efforts to complete the concept plan for the area added to the UGB in 2002. The Advance area includes an undeveloped site owned by the Wilsonville / West Linn School District where it intends to eventually build a school. A UGB expansion would in this area would allow that to occur.

The city is concentrating on redeveloping its center and has indicated that urban reserve areas adjacent to the city are for longer-term growth aspirations.

Maplelane area (Oregon City)
The Maplelane area consists of 573 acres adjacent to Oregon City. The city is concentrating on redeveloping its center and has indicated that urban reserve areas adjacent to the city are for longer-term growth aspirations. The Maplelane area is near a previous UGB expansion area that remains undeveloped and has not been annexed to the city. Adding the Maplelane area may offer an opportunity to provide urban services to both areas in a more efficient manner. However, adding more land in this area may compete with efforts to complete the concept plan for the area added to the UGB in 2002. Additionally, Oregon City has a requirement that annexations receive voter approval. Any UGB expansion that would add territory to Oregon City would be subject to an annexation vote. The recent history is that proposed annexations have been rejected by voters.

Sherwood West
The Sherwood West area consists of 496 acres adjacent to Sherwood. An additional new urban area in Sherwood may compete for attention with the city's update of its comprehensive plan, development of the Brookman Road expansion area and the planning necessary to prepare the City for future high-capacity transit along the Barbur Boulevard/Highway 99, connecting downtown Portland to Tigard and Sherwood as outlined in the Regional High-Capacity Transit System Plan. Recently, Sherwood has experienced very rapid residential growth but has not seen the same growth in non-residential development, resulting in a jobs-housing imbalance. Adding additional residential land to the city will only worsen the situation.

ADDRESSING EMPLOYMENT GROWTH

The 2009 UGR included analyses of three different types of employment capacity and demand:

- Non-industrial employment
- General-industrial employment
- Large-site industrial employment

The employment section of this document is organized around these categories.

Non-industrial employment

The 2009 UGR identified a potential capacity gap of zero to 1,168 acres for non-industrial employment. Non-industrial jobs are typically found in population-serving sectors such as education, health care, retail, and finance.

Considerations when determining where to plan in the non-industrial employment range

Because the 2009 UGR identified a range of possible capacity needs, this document provides attempts to frame additional factors for Metro Council consideration as it decides where within the range to plan.

Cyclical growth management decisions
Every five years, the Metro Council makes a new growth management decision. Because of the cyclical nature of these decisions, in the short term, there is a reduced risk of planning for the lower end of the range. If growth occurs at a faster rate than anticipated, corrective actions can be taken in the 2015 growth management decision. This reduced risk is reinforced by a number of other factors described below.

Non-industrial employment forecast
The 2009 UGR indicates that, even at the high end of the forecast range, there is adequate non-industrial employment capacity inside the current UGB through the year 2025. At the middle of the forecast range, there is ample capacity inside the current UGB beyond the year 2030. There is a potential capacity gap of 104 acres at the high end of the middle-third of the forecast range.

Preferred locations for non-industrial employment
Non-industrial jobs are typically best-located close to where people live. Higher-density building formats are feasible and common for these types of employment uses. It is expected that many of the adopted efficiency measures assessed in the residential portion of this analysis will also increase the likelihood that zoned employment capacity will be used more efficiently. These efficiency measures are anticipated to sufficiently address any non-industrial employment capacity gap that may exist.

Office vacancy rates

Figure 20: Kruse Way (photo: Cathy Cheney, Portland Business Journal)

> *"The suburban markets will continue to struggle throughout the year in the face of significant vacancy. Competition for tenants is fierce and concession packages are generous, pushing effective rates down to levels not seen in many years in both the Washington Square/Kruse Way and Sunset Corridor submarkets."* (Grubb and Ellis, 2010)

Vacant buildings are not counted as capacity in the UGR (aside from being potential sources of redevelopment capacity, depending on market conditions). Current office vacancy rates indicate that there is considerable existing building capacity to be absorbed before there is any need for additional raw land. This is particularly the case in the region's suburban submarkets. Table 7 summarizes vacancy rates by submarket. These rates are conservative since they do not report tenants seeking sublets to take over unwanted leases.

Table 7: office vacancy rates by submarket, second quarter 2010 (Grubb & Ellis)

Submarket	Vacancy Rate
Portland central business district	10.7%
Clackamas / Sunnyside	13.6%
Columbia Corridor	25.2%
Eastside	7.6%
John's Landing / Barbur Blvd.	14.4%
Lloyd District	6.2%
Northwest	11.8%
Sunset Corridor	27.6%
SW / Beaverton / Sylvan	17.3%
Tualatin / Wilsonville	36.1%
Washington Sq. / Kruse Way	21.7%
Vancouver suburban	17.6%

Recommendation on non-industrial employment

Based on the factors cited above and the fact that the 2009 found no capacity gap at the middle of the forecast demand range, it is recommended that the Metro Council not expand the UGB to provide additional non-industrial employment capacity.

General-industrial employment

The 2009 UGR found that even at the high end of the employment range forecast, there is adequate capacity inside the current UGB to accommodate the next 20 years of general industrial job growth.[18]

Recommendation on general-industrial employment

Because the 2009 UGR did not identify a capacity gap for general industrial employment, no actions to provide additional general-industrial capacity are recommended.

[18] The "general industrial employment" portion of the 2009 UGR looked at industrial land capacity in aggregate, without regard for the configuration or size of individual tax lots. Industrial employment that requires large sites was assessed separately in the 2009 UGR and is addressed separately in this report.

Large sites for traded-sector industrial uses

Figure 21: SolarWorld site, Hillsboro

Attracting and retaining traded-sector industrial companies is important to the region's economic prosperity. Traded-sector companies sell goods to buyers outside of the Metro region, bringing additional wealth into the region. The 2009 UGR identified demand for an additional 200 to 1,500 acres in sites with 50 or more buildable acres for traded-sector industrial uses.

Factors that influence an industrial firm's location choices

The Portland metropolitan region competes with other regions around the country and world to attract new industrial firms. A variety of factors can influence an individual company's location choices. These factors may include:

- Availability of suitable sites
- Presence of research institutions
- Transportation accessibility, including freight connections
- Access to a skilled workforce
- Availability of specialized infrastructure and utilities
- Access to venture capital
- Quality of life
- Tax environment
- Public incentives
- Presence of an industry cluster
- Availability of workforce housing
- Proximity of suppliers
- Proximity of markets
- Personal preferences of company executives

Local and regional efforts to provide additional large industrial sites inside the current UGB

A variety of local efforts are under way to help make better long-term use of large sites already within the UGB and to make the region more attractive to large, traded-sector industrial companies. Some of these efforts are summarized below.

Employment toolkit
Recognizing that the regional vision is implemented at the local level, Metro has been working with its partners to identify new strategies for employment areas and documenting them in the third volume of Metro's Community Investment Toolkit, *Eco-efficient Employment*, that will be released in fall 2010. Metro's Community Investment Toolkit provides tools that support communities in their efforts to create thriving, vibrant places. This volume provides information on specific tools and best practices that governments can implement for designing employment areas in response to climate change and promoting job opportunities for the 21st century. The strategies described in the toolkit fall into three categories:

- **High Performance Infrastructure:** model approaches for building more environmentally and economically sustainable infrastructure systems that reduce resource waste and demand on our current systems.
- **21st Century design:** code changes and planning tools for designing employment areas that facilitate community, attract industry, and reduce the impacts of climate change.
- **Redevelopment:** strategies for redeveloping and reusing underutilized employment and industrial areas for future economic growth.

Brownfield cleanup
Around the region, a number of efforts are under way to clean up brownfields. These efforts will eventually make additional large sites available for new industrial uses, but more work is needed before these sites are available. The Portland Harbor is a uniquely situated multi-modal freight transportation hub with marine, airport, freeway and rail access and is home to several traded-sector industries. Despite strong demand for land in the harbor, there remain several important sites that require additional cleanup. Eighteen such sites have river frontage and range from six to nearly 60 acres, totaling just over 333 acres.

Potential short- term and long-term strategies for providing large sites
During the spring of 2010, Metro convened an MPAC employment subcommittee to discuss strategies for ensuring that the region maintains a competitive supply of large sites to attract traded-sector industrial firms. The recommendations that the subcommittee made to MPAC can be categorized as short-term and long-term strategies.

Potential short-term strategies
- Strengthen Title 4 of the Urban Growth Management Functional Plan (Industrial and Other Employment Areas) to protect against specific conflicting uses (parks, schools, places of assembly) in Regionally Significant Industrial Areas

- Create a large-site-replenishment system
- When making a growth management decision in 2010, consider factors such as the current trend in unemployment rates, the employment forecast, the need for site choices, and the region's history of developing large lots added to the UGB.

Potential long-term strategies

- Pursue new infrastructure funding strategies to make sites development-ready
- Elevate brownfield cleanup to a regional priority
- Require concept planning of urban reserves before UGB expansion
- Revamp Title 4 of the Urban Growth Management Functional Plan to recognize blurry boundaries between employment uses
- Explore the concept of large-lot industrial tax deferral

Potential large-industrial-site capacity in urban reserves

Though several cities around the region have long-term programs to provide additional large-site capacity,[19] there currently is no firm basis for counting any of these actions towards the range of 200 to 1,500 acres identified in the 2009 UGR. Consequently, any additional capacity documented in the 2010 Capacity Ordinance will necessarily result from UGB expansions into urban reserves. Designated urban reserves contain many hundreds of farmland acres that are suitable for industrial purposes.

Urban reserves purpose

In the past, when expanding the boundary, Metro was required by state land use laws to consider the quality of the soil above everything else. Protecting high quality farm soils is important and that system provided a way to decide where not to develop. But it did not provide a method for determining the ideal locations and conditions for developing vibrant urban communities. With the adoption of urban and rural reserves, the region has a formal method for considering what makes a good site for a city. Areas that are currently outside the UGB and that are suitable for urbanization over the next fifty years have been designated as urban reserves. If the Metro Council chooses to expand the UGB, the expansion will take place in urban reserves.

Comparison of different UGB expansion options

The process of narrowing potential options for UGB expansion areas began several years ago with the Shape of the Region study. Throughout 2006, Metro, in partnership with Clackamas, Multnomah and Washington counties; the Oregon Department of Agriculture, and the Oregon Department of Land Conservation and Development, conducted a comprehensive study of the various factors that influence the shape of our region and contribute to the quality of life we enjoy. The study sought to

[19] Cities in the region are working to provide eventual large sites through brownfield cleanup, tax lot assembly, or planning new urban areas.

identify how the agricultural economy, natural areas and urban communities all contribute value to this region.

There were three components to the Shape of the Region study:

- An assessment of the agricultural lands surrounding the Metro region and their long-term commercial viability, developed by the Oregon Department of Agriculture
- An inventory of the natural landscape features that define this region
- An analysis of factors that contribute to the development and enhancement of great urban communities

The Shape of the Region study informed the comprehensive and collaborative process that ultimately led to the designation of urban and rural reserves in June 2010. That decision designated 28,615 acres as urban reserves, lands outside the current UGB that will provide for: (a) future expansion over a long-term period and (b) the cost-effective provision of public facilities and services within the area when the lands are included within the urban growth boundary.

The studies and discussions that led to the designation of urban reserves provide a solid foundation for narrowing the options for possible UGB expansion areas for consideration in December 2010. With that base of knowledge, Metro staff worked with city and county staff during the spring of 2010 to identify 8,298 acres of urban reserves for further study as UGB candidate areas. Those study areas are identified in Figure 16. In order to satisfy state law, Metro staff needed to study more acres than were identified as being of interest to cities in the region. Additional information about this analysis can be found in Appendix 8.

During the summer of 2010, several cities identified additional lands that they wished to have evaluated as UGB candidates. In order to conduct the analysis necessary to release this recommendation, staff was not able to honor local requests that were received after June 2010. Metro's Chief Operating Officer has agreed to accept additional requests from cities by September 3, 2010. While any additional proposals will not be included in the recommendation issued for public comment beginning August 10, they will be considered by MPAC and the Metro Council before a final recommendation in October and subsequent public hearings in November. Submittals should include the following:

- A formal letter of support from the governing body of the jurisdiction;
- A map of the subject area; and
- An assessment of how the subject area is responsive to Metro's legislative UGB amendment criteria, contained in Metro Code 3.01.020(c) and (d).

The same factors that were used to assess UGB study areas for residential uses were used for large industrial site uses. A full report is available in Appendix 8.

Considerations for determining where in the range to plan for large industrial sites

Because the range of 200 to 1,500 acres is broad, this document is intended to provide additional information to assist the Metro Council in deciding where within the range to plan. Among the factors to consider are:

- Employment in small businesses
- Employment forecast
- Short-term vs. long-term risks
- Market choices of sites
- Current unemployment rates
- Current industrial building vacancy rates
- History of development on large lots brought into the UGB
- Key traded-sector uses will require cleanup of brownfield sites
- Protection of industrial areas
- Whether a large-site replenishment system will be adopted

Employment forecast

The UGR's original forecast-based assessment indicated that there was unmet demand for 200 to 800 acres in large-lot configurations. However, there are limitations to predicting future large-lot demand with an economic forecast-based approach. Large-lot demand will be the product of the decisions of a relatively small number of large companies along with the broader sector trends anticipated in the forecast. The region's recent history indicates that development of large lots for industrial uses is a relatively rare occurrence.

There are legitimate policy reasons to consider a wider range of demand for large lots, using the initial forecast-based approach for a sense of scale. Doing so gives policy makers the flexibility to weigh the risks and benefits of providing too much or too little large-lot capacity. With that reasoning and on the advice of the Metro Policy Advisory Committee, the range of 200 to 1,500 acres was accepted by the Metro Council.

Short-term vs. long-term risks

The 2010 growth management decision is intended to provide capacity for large-lot industrial employment through the year 2030. However, the Metro Council will again face this question in 2015, allowing for course corrections if necessary. To help foster a prosperous economy, it is important that the Council make a decision that positions the region for prosperity for the next five years, a time period over which the forecast indicates little positive job growth as the economy slowly recovers from the current recession. However, because planning, annexation and infrastructure provision take time, the Council should also consider this decision in light of the longer twenty-year timeframe.

Market choices of sites
Individual industry sectors and clusters have specific transportation network, infrastructure, and labor needs. Efforts to attract firms in these sectors could be more successful if there were a variety of sites from which to choose. When deciding where within the 200-to-1,500-acre range to plan, the Metro Council should consider whether future firms have adequate site choices.

Current unemployment rates
Though land availability is just one factor that affects local employment prospects, it can be an important factor for attracting large, traded-sector industrial employers. Opportunities to create new family-wage jobs should be cultivated, particularly given the Portland metropolitan area's higher-than-average unemployment rate. As of May 2010, the unemployment rate for the Portland region was 10.2 percent (not seasonally adjusted), compared to the United States average of 9.3 percent (United States Bureau of Labor Statistics, 2010). According to the 2009 regional employment forecast, jobs lost during the recession are not expected to be fully recovered until 2014 or 2015.

There are a variety of reasons why the Portland metropolitan area has a track record of higher-than-average unemployment. In part, the region's reliance on the manufacturing sector and, historically, extractive industries have left it susceptible to economic downturns. It is also widely acknowledged that another reason for the Portland area's high rate of unemployment is that the region continues to attract young, well-educated people who arrive despite not having job prospects. In the long-run, the region's youth-magnet status is expected to help the economy turn around (Grubb and Ellis, 2010). Likewise, the high-tech manufacturing sector is anticipated to be one of the first to generate jobs.

Current industrial building vacancy rates
The UGR does not inventory the region's supply of vacant industrial buildings.[20] This is a potential source of additional short-term capacity for some firms. However, many traded-sector firms, particularly those with substantial capital investments in equipment, may prefer to own buildings that are constructed to specification. Nevertheless, current rents and vacancy rates can be informative if taken in context. Rents for existing industrial buildings are at their lowest rates in 10 years,[21] which may encourage more firms to locate in existing buildings, perhaps easing short-term competition for large, vacant parcels.

[20] The UGR inventories vacant land capacity and capacity that may be generated through infill and redevelopment. In the case of large lot capacity, the UGR assumes that vacant land was the only potential source of capacity.

As of the first quarter of 2010, the average industrial vacancy rate for the greater Portland market was 8.8 percent (Grubb and Ellis, 2010). Table 8 summarizes industrial vacancy rates by submarket.

Table 8: Industrial Vacancy Rates by submarket-- First Quarter 2010, Portland, OR (source: Grubb and Ellis)

Submarket	Total Vacant
217 Corridor / Beaverton	12.4%
Clark County	9.9%
Close-in SE	5.7%
Gresham / outer SE	10.8%
I-5 South Corridor	11.6%
Milwaukie / Clackamas	7.9%
NE / Columbia Corridor	8.9%
Northwest	10.6%
Rivergate	11.4%
Sunset Corridor	7.1%
Swan Island / Close-in NE	1.8%

History of development on large lots brought into the UGB since 2002

Figure 22: Genentech, Hillsboro (photo: Genentech)

In 2002, 2004 and 2005, the Metro Council expanded the UGB to provide 20-year capacity for employment growth. These UGB decisions added to the UGB a total of 53 large lots (25 or more gross acres) with Title 4 designations (Industrial and Other Employment Areas). Of those 53 large lots, one has developed, resulting in jobs (Genentech in Hillsboro). Genentech currently uses 15 of its 75 acres. These expansions were intended to meet 20-year demand, so it is premature to conclude that the lots are not needed. To date, barriers to development in UGB expansion areas have included city annexation difficulties, shortages of infrastructure funds, and economic

conditions. Meanwhile, there have been a number of recent instances of high-tech manufacturing firms choosing to locate in existing urban areas or existing buildings.[22]

Key traded-sector uses will require cleanup of brownfield sites

Figure 23: Arkema site, Portland (photo: Arkema Group)

The UGR did not include brownfields in its inventory of large lots. Some of these contaminated sites provide irreplaceable marine terminal access. Key traded-sector industries will require marine terminal access and cannot be accommodated through UGB expansions.[23] Clean-up will be essential in order to accommodate these priority sectors. New sources of funding are needed for clean-up. Federal and state legislative changes are needed to reduce future property owner liabilities. However, no new commitments to clean up brownfields have been adopted to support the development readiness of large sites in the region.

Protection of industrial areas

Title 4 (Industrial and Other Employment Areas) of the Urban Growth Management Functional Plan seeks to provide and protect a supply of sites for employment by limiting the types and scale of non-industrial uses in Regionally Significant Industrial Areas (RSIA), Industrial and Employment Areas. In recent years, the Metro Council and others have expressed concern that Title 4 does not preclude certain non-industrial uses. Metro's Chief Operating Officer recommends that the Metro Council consider adopting changes to Title 4 that would prohibit schools, places of assembly, and parks in RSIAs. These restrictions would apply to existing and future RSIA-designated lands, including any areas added to the UGB in 2010 and designated RSIA. These changes would help to protect the region's long-term supply of large industrial sites and would reduce the potential risk of planning towards the higher end of the 200-to-1,500-acre range.

Large-site replenishment mechanism

As described in the section of this document on proposed Framework and Functional Plan changes, Metro's Chief Operating Officer recommends the creation of a large-site replenishment system that ensures that the region maintains a competitive supply of large sites inside the UGB for traded-sector industrial uses. Having this type of system in place would reduce the risk of planning towards the lower end of the 200-to-1,500-acre range.

[22] Recent examples include Solaicx in Portland, Sanyo in Salem, XsunX in Wood Village, Oregon Crystal Technologies and Solexant in Gresham, Uni-Chem in Eugene, and SolarWorld and Allvia in Hillsboro.

[23] The 2009 forecast did not determine what share of future employment would require marine terminal access. In some cases, marine terminal uses have relatively less-intensive employment, but play a critical role in the regional economy for freight movement.

Recommendation on large-site industrial capacity

The 2009 UGR indicated that there is traded-sector-industrial demand for 200 to 1,500 additional acres on sites with 50 or more acres. Metro's Chief Operating Officer recommends that the region support the traded-sector economy by maintaining an adequate supply of large industrial sites with the following actions:

- Elevate brownfield cleanup to a regional priority and target efforts on large industrial sites within the Urban Growth Boundary;
- Limit division of large industrial sites;
- Create a large-site inventory[24] and a system to replenish this inventory upon development;
- Strengthen protection of key traded-sector industrial sites by prohibiting new schools, places of assembly and parks and recreational facilities; and

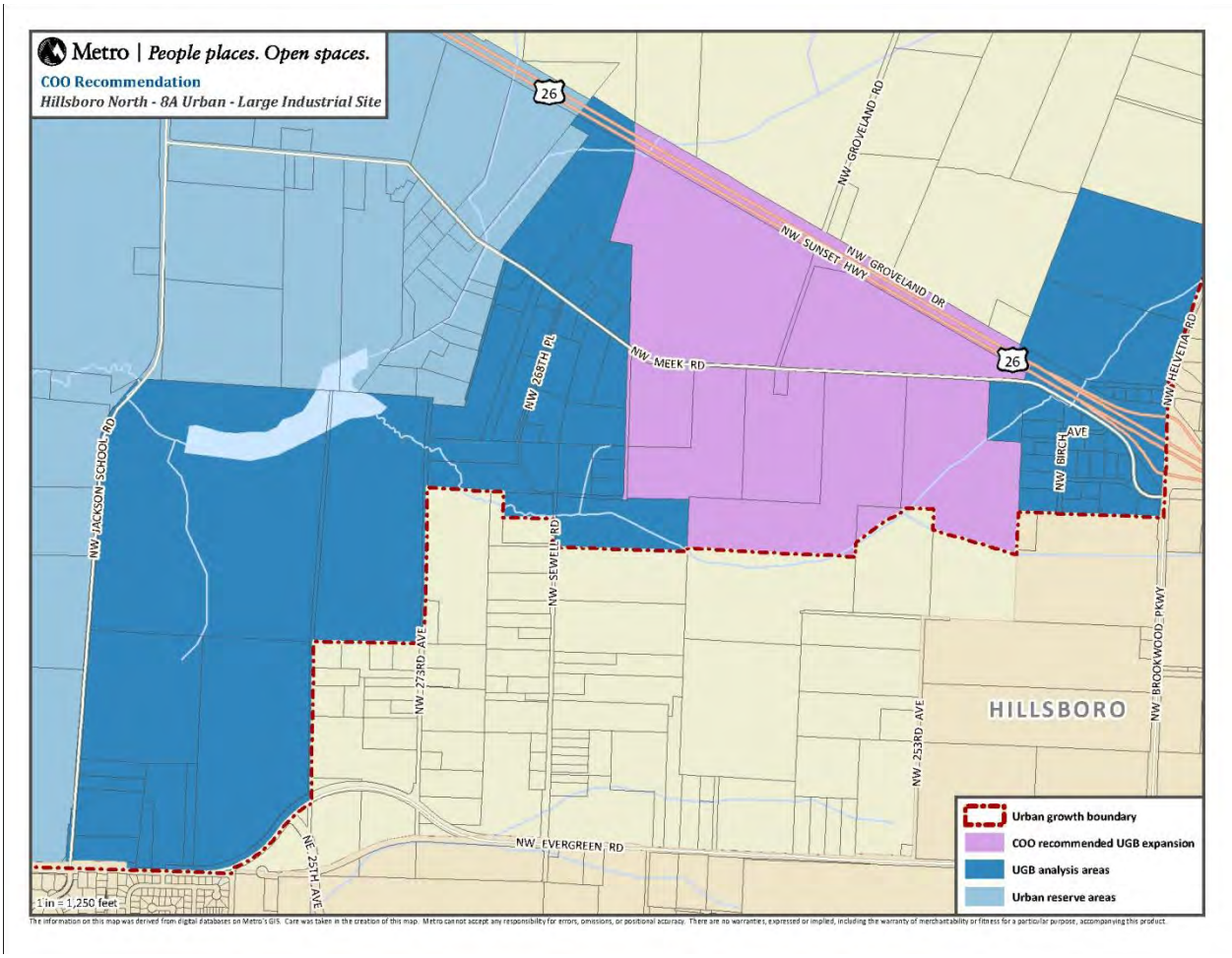
With the above conditions assumed, Metro's Chief Operating Officer recommends that the Metro Council strategically add 310 acres of industrial land to the urban growth boundary north of Hillsboro. This expansion should only be made if there is certainty that this land will supply lots over 50 acres. This recommended UGB expansion for industrial employment is depicted in Figure 24. Staff believes that this area lends itself to large-site industrial development for the following reasons:

- The site is flat, a requirement for the large industrial building format
- Infrastructure services could be extended from future development of the Evergreen area
- The site has access to Highway 26
- The site would complement an existing high-tech manufacturing cluster in the City of Hillsboro
- The City of Hillsboro has a track record of successfully delivering infrastructure services to UGB expansion areas
- The City of Hillsboro is actively engaged in efforts to recruit high-tech manufacturers

If the Council wishes to plan for a higher point in the range of large-site industrial demand, there are additional urban reserves north of Hillsboro that are suitable.

[24] For the purposes of this inventory, large sites are defined as single or contiguous tax lots in common ownership, totaling at least 50 gross buildable acres that have been designated under Title 4 as Industrial or Regionally Significant Industrial Areas. The large-site inventory is described in more detail in Appendix 5.

Figure 24: Metro Chief Operating Officer recommended UGB expansion to meet large-site industrial employment demand



To ensure that the area is protected for industrial uses, Metro's Chief Operating Officer recommends that the Metro Council apply the Regionally Significant Industrial Area designation to this expansion area. Recommended changes to Title 4 (Industrial and Other Employment Areas) of the Urban Growth Management Functional Plan would prohibit several uses in Regionally Significant Industrial Areas. Prohibited uses would include new schools, places of assembly, recreation facilities and parks (with exceptions for habitat protection).

In weighing large-site industrial growth management options, policy makers should consider several questions, including:

- Will the proposed UGB expansion help the region to achieve its six desired outcomes?
- What conditions, if any, should be placed on this proposed UGB expansion area? What conditions or tools would encourage landowners to assemble their tax lots, making the site more development ready?

If the Metro Council expands the UGB as proposed, the region would have a supply of 18 large industrial sites inside the UGB.[25] To maintain this target number of large industrial sites inside the UGB, Metro staff recommends that the Council consider adopting the large-site replenishment system described in Appendix 5.

PROPOSED UPDATES TO THE REGIONAL POLICIES

The region has worked for the last 15 years to implement its long-range plan, the 2040 Growth Concept. The Regional Framework Plan and the Urban Growth Management Functional Plan have helped to guide those efforts. In some cases, however, it has become clear that these implementing plans need updating to reflect today's better understanding of how to support community and regional goals. Likewise, contemporary concerns such as global climate change may deserve greater recognition in regional plans.

Over the years, the Metro Council, MPAC, and the Metro Technical Advisory Committee (MTAC) have sought several updates to these plans. The proposed updates would help the region to realize its long-term vision and would support the 2010 growth management decision.

Proposed changes to the Regional Framework Plan

The Regional Framework Plan was originally adopted in 1997. The Framework Plan is a statement of the Metro Council's policies concerning land use, transportation and other planning matters that relate to the implementation of the 2040 Growth Concept.

In June 2010, the Metro Council adopted several changes to the Framework Plan as a part of the urban and rural reserves ordinance (Ordinance no. 10-1238A). Those changes to the Land Use chapter of the Framework Plan are:

- A new section that describes Metro Council policy on urban and rural reserves
- An updated section that sets Metro Council policy on the management of the urban growth boundary
- An updated section on neighbor cities in light of the urban and rural reserves decision
- A repeal of the section on protection of Agriculture and Forest Resource Lands in light of the designation of rural reserves

Based on Council and advisory committee discussion over the last few years, Metro staff proposes a number of additional updates to the policies set forth in the Land Use chapter of the Framework Plan. Staff believes that the proposed changes remain true to the original intent of the 2040 Growth Concept and more clearly articulate the Metro Council's policy positions.

[25] For the purposes of this inventory, large sites are defined as single or contiguous tax lots in common ownership, totaling at least 50 gross buildable acres that have been designated under Title 4 as Industrial or Regionally Significant Industrial Areas. The large-site inventory is described in more detail in Appendix 7.

The proposed changes to the Land Use chapter of the Framework Plan are summarized below. The full text of the proposed update to the Framework Plan is included as Exhibit A to the draft Capacity Ordinance. A redline version is also included to show proposed changes.

Use the defined six desired outcomes for a successful region to guide growth management decisions

In June 2008, the Metro Council, with the endorsement of MPAC, adopted Resolution no. 08-3940 which defined six desired outcomes for a successful region. Staff proposes incorporating the six desired outcomes into the Framework Plan to give them more official status as Metro Council policy. The six desired outcomes are:

- People live and work in vibrant communities where they can choose to walk for pleasure and to meet their everyday needs.
- Current and future residents benefit from the region's sustained economic competitiveness and prosperity.
- People have safe and reliable transportation choices that enhance their quality of life.
- The region is a leader in minimizing contributions to global warming.
- Current and future generations enjoy clean air, clean water and healthy ecosystems.
- The benefits and burdens of growth and change are distributed equitably.

These would replace the fundamentals currently found in the Framework Plan.

Measure performance to guide growth management decisions

The Metro Council has expressed its desire to take an outcomes-based approach to growth management. Reporting the region's historic and forecasted performance is an important element of implementing that type of decision-making model. Staff proposes that the Framework Plan should express the intent to provide performance information to help guide growth management decisions.

Prioritize public investments in Centers, Corridors, Station Communities, Main Streets, Employment and Industrial Areas

The region intends to focus population and employment growth in centers, corridors, station communities, main streets and employment areas, but has not yet expressly stated its intent to strategically invest scarce public dollars in these specific 2040 design types. Staff proposes making this policy intent explicit.

Encourage elimination of barriers to compact, mixed-use, pedestrian-friendly and transit-supportive development in centers, corridors, station communities, and main streets

Since the adoption of the 2040 Growth Concept, some of the barriers to compact development have become more apparent (such as some parking requirements). Staff proposes that the Framework Plan should be amended to expressly state that it is the policy of the Metro Council to encourage the elimination of such barriers in targeted 2040 design types. Staff also proposes that the Framework

Plan should underline the importance of creating the conditions for infill and redevelopment to occur in targeted 2040 design types.

Address housing affordability through a combination of actions, including investments in transportation facilities and transit services that make transportation more affordable, which in turn make more household income available for housing and other needs

An unintended side effect of improving communities is that they often become more expensive places to live, reducing housing options for lower-income or fixed-income households. Second to housing costs, many households spend a substantial portion of their income on transportation expenses. Metro staff proposes that it be the policy of the Metro Council to take a holistic approach to ensuring an affordable cost-of-living that acknowledges both housing and transportation costs. This would be an addition to existing housing affordability policies.

Provide affordable housing in UGB expansion areas

Planning for new urban areas offers a unique opportunity to ensure that development forwards community and regional goals. A commonly-held goal is that households of a variety of incomes have choices of where to live. Metro staff proposes that it should be the policy of the Metro Council to ensure that affordable housing is addressed in planning for new urban areas. Councilor Robert Liberty is convening a group of MPAC members to come up with new policy language.

Provide urban areas with access to parks, trails and natural areas

Currently, the Land Use chapter of the Framework Plan addresses access to parks, trails and natural areas in several sections. Staff proposes that an integrated system of parks, trails and natural areas is essential for fostering vibrant communities and that it should be a clearly stated Metro Council policy to provide urban areas with access to these amenities. The proposed change would add a section to the Land Use chapter that would specifically address this policy.

Strengthen employment in the region's traded-sector industries

Attracting and retaining traded-sector industrial firms is important to the region's economic prosperity. Traded-sector industrial firms sell products to consumers elsewhere in the country and world, bringing wealth into the Metro region. MPAC and its 2010 employment subcommittee proposed that the Metro Council should consider adopting a policy to maintain a supply of large sites for traded-sector industrial uses inside the UGB.

Staff's proposal for implementing such a system is described in concept in Appendix 5 and the proposed implementing legislation is found in Titles 4 and 14 of the Urban Growth Management Functional Plan (proposed revisions are described later in this document). With a large-industrial-site replenishment system, a target number of large vacant sites would be maintained inside the UGB. If construction begins on a large site, within a year the target inventory would be replenished either through tax lot assembly or brownfield cleanup. If a site is not made available through an efficiency measure, a fast-track UGB expansion would be made into urban reserves. In order to reflect changing economic conditions, the target number of sites would be reassessed every five years in a new UGR.

Proposed changes to the Urban Growth Management Functional Plan

The Urban Growth Management Functional Plan contains the detailed requirements that are intended to lead to implementation of the 2040 Growth Concept and the policies found in the Framework Plan. City and county comprehensive plans and implementing ordinances must be consistent with the Functional Plan. Experience has pointed to the potential need to revise portions of the Functional Plan to lead to more effective implementation of the 2040 Growth Concept. Some proposed changes are also necessary to make the Functional Plan conform with proposed changes to the Framework Plan.

As a reminder, the Metro Council has recently made several changes to the Functional Plan:

- On June 10, 2010, the Metro Council, as part of its consideration of the 2035 Regional Transportation Plan, repealed Title 2 (Regional Parking Policy) and included the topic in the revised Regional Transportation Functional Plan. (Ordinance no. 10-1241A)
- As part of its June 10, 2010 decision on urban and rural reserves, the Metro Council repealed Title 5 (Neighbor Cities and Rural Reserves) and amended Title 11 (Planning for New Urban Areas). (Ordinance no. 10-1238A)

Title 1 (Requirements for Housing and Employment Accommodation)
Currently, Title 1 specifies minimum zoned capacity for jobs and housing for each city and unincorporated area within the UGB. Many cities have now exceeded these requirements. Staff proposes that Title 1 should apply to housing capacity only and that Table 1, which specifies minimum zoned capacities for each city and each county's unincorporated areas, should be replaced with a no-net-loss policy. The proposed Title 1 and a redline version are included as Exhibit D to the draft Capacity Ordinance.

Title 4 (Industrial and Other Employment Areas)
Title 4 is intended to protect industrial areas and the public facilities that serve them from conflicting uses. Title 4 does not, however, prohibit several uses that have occurred that diminish the region's capacity for industrial employment. Staff proposes that Title 4 be amended to prohibit new schools, places of assembly, recreational facilities and parks (with exceptions for habitat protection) in Regionally Significant Industrial Areas. Staff also proposes amending Title 4 to implement the large-site replenishment concept, which is described in Appendix 5. Proposed revisions to Title 4 include limitations on the division of tax lots that comprise large sites. The proposed Title 4 and a redline version are included as Exhibit E to the draft Capacity Ordinance.

Title 6 (Central City, Regional Centers, Town Centers and Station Communities)
Many of the Corridors identified on the 2040 Growth Concept map have tremendous potential for revitalization. Currently, Title 6 seeks to encourage development in centers and station communities but is silent on corridors. Staff recommends the inclusion of corridors in Title 6 and revisions that include provisions that would link strategies for centers and corridors with a community investment strategy. Staff also recommends revisions to Title 6 that would provide local jurisdictions with a safe harbor for addressing the state Transportation Planning Rule as they

update plans for their communities. The proposed Title 6 is included as Exhibit H to the draft Capacity Ordinance. Proposed changes are minimal, so no redline version is provided.

To identify investment priorities and to provide local jurisdictions with a means to address Transportation Planning Rule requirements, staff proposes that the Metro Council adopt a revised Title 6 map, which would depict center boundaries and indicate instances where a city had officially adopted center boundaries.[26] Proposed revisions to Title 6 would make cities that have adopted official center boundaries eligible for regional investments.

In 2009, Metro released a State of the Centers Report that profiled the region's 37 town and regional centers, reporting the numbers of people, types of businesses, and activity levels (such as whether the centers are intended to be 18- or 24-hour communities) in each center. These descriptions generally resonated with city and county elected officials and staff, allowing them to envision how their communities might grow. Staff proposes that setting targets for activity levels in the Functional Plan for targeted 2040 design types (such as centers and corridors) would help communities and their elected officials to examine whether current policies are likely to produce desired community outcomes.

Title 8 (Compliance Procedures)
Title 8 outlines the requirements for local jurisdiction compliance with the provisions of the Functional Plan. Experience has demonstrated that the compliance process and annual compliance reporting place onerous burdens on cities, counties, and Metro. The Metro Council has indicated its desire to emphasize a more collaborative, outcomes-based approach to implementing the 2040 Growth Concept. Consequently, staff recommends revisions to Title 8, which would streamline the compliance process. The proposed Title 8 and a redline version are included as Exhibit I to the draft Capacity Ordinance.

Title 9 (Performance Measures)
Staff recommends repealing Title 9, which calls for a biennial report on performance and specifies several performance measures that should be included. Competing staffing priorities have resulted in sporadic completion of the performance report. Additionally, the Functional Plan is intended to articulate requirements for cities and counties, not for Metro. As written, Title 9 instructs Metro to track performance. The Functional Plan is, therefore, not the appropriate location for this type of requirement.

As part of an outcomes-based approach to growth management, performance measures (historic and forecasted) have been incorporated into the 2009 urban growth report and this report. These measures of performance include such factors as the share of the region's households and jobs in centers and corridors, the percentage of residential units built through redevelopment or infill (refill) and measures of affordability for residents. These measures will continue to be tracked to illustrate progress in meeting the region's six desired outcomes. Staff believes that this approach to performance reporting is more useful for informing policy decisions.

[26] The proposed Title 6 map is included as Exhibit H to the draft Capacity Ordinance

Other efforts are underway that will refine measures of performance and link the reporting directly to decision-making. These efforts include the analysis proposed in the Climate Prosperity initiative[27], the Climate Smart Communities program[28], and in the next Nature in Neighborhoods[29] reporting. Additionally, the "Greater Portland Vancouver Regional Indicators" project being led by the Portland Institute for Metropolitan Studies will provide periodic performance reporting on a variety of measures. Through the engagement of a diverse group of stakeholders, the Regional Indicators project will define desired outcomes, measures, and targets for a broad range of economic, environmental and equity factors. The Metro Council and Metro's policy advisory groups will be able to consider these results to inform policy decisions.

Title 10 (Functional Plan Definitions)
If the Metro Council decides to adopt some or all of the proposed changes to the Urban Growth Management Functional Plan and the Transportation Functional Plan, it will be necessary to revise definitions in Title 10. The proposed Title 10 is included as Exhibit K to the draft Capacity Ordinance. Given the purpose of Title 10, no redline version is provided.

Title 14 (Urban Growth Boundary and Urban Reserves)
Currently, urban growth boundary and urban reserves procedures are located in Metro Code Chapter 3.01. Staff proposes repealing Chapter 3.01 and moving its contents to a new Title 14 of the Urban Growth Management Functional Plan. This change will make it easier for local government staff and the public to find the requirements associated with the UGB and reserves. Title 14 would also implement the previously described large-site replenishment concept. The proposed Title 14 is included as Exhibit M to the draft Capacity Ordinance. Because this is a new title, no redline version is provided.

Proposed 2040 Growth Concept map changes

Center designations
Initially adopted in 1995, the 2040 Growth Concept presents a vision that guides development in the region. The 2040 Growth Concept Map illustrates this regional vision through the designation of centers, corridors, employment and industrial areas and other regional transportation, parks, trails and natural area features. Though local jurisdictions determine the boundaries of their centers and corridors, changes to the location or type of Center on the map require Metro Council action. In

[27] The Portland Metro Climate Prosperity Greenprint is the joint effort of public and private sector representatives from the Portland metropolitan area. It provides a roadmap to accelerate the region's leadership in green development and clean technology. It starts from the premise that the Portland metropolitan region can simultaneously strengthen its economy, reduce carbon emissions, and maintain a focused leadership position in the global green economy.
[28] Under legislation passed in 2009 (House Bill 2001), Metro, as the Metropolitan Planning Organization for the Portland metropolitan area, must plan for reductions in transportation-related carbon emissions. The State of Oregon will provide Metro with greenhouse gas reduction targets in 2011. Metro is actively engaged with local elected officials and advisory committees to begin the scope of work on developing scenarios for consideration in 2012.
[29] Nature in Neighborhoods is Title 13 of Metro's Urban Growth Management Functional Plan. The purpose of this title is to conserve, protect and restore a continuous ecologically viable streamside corridor system that is integrated with upland wildlife habitat and the surrounding urban landscape.

making their determination, Council must consider consistency between the changes and adopted center and corridor policies.

Three local jurisdictions, Happy Valley, Cornelius and Hillsboro, have requested changes to centers on the 2040 Growth Concept Map in order to better align their development aspirations with regional policies and investments. The Chief Operating Officer recommends that Metro Council approve these changes as illustrated in the revised 2040 Growth Concept Map as shown in Exhibit O. These requests are to:

- Relocate the existing Town Center in Happy Valley from King Road to Sunnyside and SE 172nd Avenue, about two miles to the east.
- Change the Main Street designation in downtown Cornelius to a Town Center designation.
- Expand the existing Tanasbourne Town Center to include the adjacent AmberGlen area and change the designation from a Town Center to Regional Center.

As described in more detail in Appendix 6, these changes are consistent with existing Metro policy. They are also consistent with newly proposed policies for centers that would link regional investments with local actions. In order to receive the benefits of regional investments, these centers will be expected to implement the mix and intensity of zoning, parking management, street and access improvements and other investments that support walkable areas, productive bus or high-capacity transit service and leverage successful private investments. In order to develop as successful, vibrant centers, the Chief Operating Officer advises that, if the Council approves these changes, the Council should be explicit in its expectations for local actions. Each center will require additional investments and actions, including:

- Additional development and intensity in Happy Valley Town Center necessary to support transit service, mixed-income housing, public spaces, and employment.
- Continued and more diverse public, private and non-profit partnerships to supplement the limited resources in Cornelius to help develop their downtown as a 2040 Town Center.
- New implementation strategies in Hillsboro's AmberGlen/Tanasbourne area to encourage the provision of mixed-income housing, densities necessary to support future high-capacity transit and to achieve non-single-occupant-vehicle targets, and bring the existing development up to the mixed-use and multi-modal transportation standards envisioned for a Regional Center.

The revised 2040 Growth Concept Map in Exhibit O also includes some changes to the depiction of the major highways and arterials, high capacity transit lines, parks, trails, and open space in order to reflect the new Regional Transportation Plan investments, changes to Vancouver and Clark County Plans and other updates. In addition to identifying the urban growth boundary location, the 2040 Map now depicts adopted urban and rural reserves.

Title 4 Map designations

The Title 4 Map depicts the locations that are subject to the provisions of Title 4 of the Urban Growth Management Functional Plan (Industrial and Other Employment Areas). Title 4 is intended to protect industrial areas and the public facilities that serve them from conflicting uses. Staff has

received formal requests from Oregon City and Tigard to amend the Title 4 Map. Staff anticipates including a proposal for these amendments to the Title 4 map in the Capacity Ordinance that will be considered by the Metro Council in December 2010. Additional information regarding this proposal will be available in the fall of 2010.

LONGER-TERM RECOMMENDATIONS

In the course of the public discussion of the 2009 UGR and the 2010 Capacity Ordinance, there have been several recurring topics that deserve greater attention in coming years. No specific action is recommended on these issues in the context of the 2010 Capacity Ordinance, but staff recommends that they be considered as future work programs.

Protect industrial lands

Stakeholders have indicated the importance of maintaining a competitive supply of large sites to attract traded-sector industrial firms. Regulations are essential for protecting large industrial sites from conversion to non-industrial uses. However, there is a need to tailor land use regulations and other strategies to achieve a better balance of public and private sector benefits and burdens. MPAC has recommended further work on two possible options:

Balance public and private interests with a large-lot industrial tax deferral program
Oregon's farm use tax assessment program could serve as a model for tax assessment of large, vacant industrial sites. Under the farm use assessment system, lands kept in active farm use are assessed at a lower rate through use of a tax deferral. The MPAC employment subcommittee recommended Metro staff research the feasibility of an industrial tax deferral program. Such a system could offset the use restrictions placed on these sites as they await industrial development. The program would also seek to ensure that public infrastructure investments serve their intended purpose (to serve future industrial areas). Depending on the circumstances, market-rate back taxes could be collected on properties that get used or rezoned for non-industrial purposes.

MPAC also recommended further exploration of the applicability of this concept for large, vacant industrial sites. Because this type of program would require legislative changes, it is a longer-term recommendation.

Issues for further discussion regarding a large lot tax deferral system

- How much foregone tax revenue would such a system entail? Are there other funding mechanisms that could limit the fiscal impacts to cities if this program were instituted?
- What are the financial incentives and disincentives that would need to be created in order for the program to work? For example, what level of back taxes may need to be incurred to discourage conversion of industrial land to non-industrial uses?
- Is there a way to use this type of program as an incentive to encourage lot assembly?
- What legislative changes would be necessary and how likely is it that efforts to change the law would be successful?

Focus Title 4 of the Urban Growth Management Functional Plan on protecting Regionally Significant Industrial Areas

Title 4 of the Urban Growth Management Functional Plan seeks to provide and protect a supply of sites for employment by limiting the types and scale of non-industrial uses in Regionally Significant Industrial Areas, Industrial and Employment Areas. In the longer-term (during 2011), MPAC recommended changes to Title 4 and the Title 4 map. These changes would implement the recommendations of the 2004 Greater Metropolitan Employment Lands Study (GMELS). Generally, the proposed changes are:

- Work with local governments in the region to identify key industrial sanctuaries with unique site characteristics or infrastructure facilities.
- Focus regulations on protecting the region's most important industrial areas and their associated public facilities (e.g. transportation facilities)
- Loosen regulations in other employment areas to allow for a wider range of uses that reflects the sometimes blurry lines between industrial and non-industrial uses

Monitor development in UGB expansion areas

UGB expansions into urban reserves will represent an attempt to improve on the outcomes of previous UGB expansions which, for a variety of reasons, have sometimes failed to develop. Typical obstacles to development have included:

- Infrastructure funding shortfalls
- Infrastructure funding timing issues (system development charges do not provide up-front funding)
- City annexation issues
- Concept plan disagreements
- Lack of development demand in some locations
- Topography

Though state law requires Metro to assess the likelihood that local and regional actions and investments will increase development inside the UGB, there is not a similar burden of proof that there are public resources to pay for infrastructure in UGB expansion areas. In light of this, staff recommends ongoing monitoring of development in UGB expansions. If, over the longer-term, UGB expansions into urban reserves fail to develop, staff recommends working with the legislature to create a requirement for a finding that urban services and municipal governance can be provided and development is likely to occur in UGB expansion areas in order to expand the boundary. State law requires Metro to assess the likelihood that local and regional actions and investments will increase development inside the UGB. The burden of proof should at least be in balance, allowing a

richer conversation about investing in existing communities or choosing to develop farm and forest land. Staff also recommends a policy discussion about the relationship among land use law, city government and municipal finance. The lack of connection among these topics makes implementation of good planning challenging.

Monitor performance

One aspect of implementing an outcomes-based approach to growth management is to have reliable performance information and targets. This report and the 2009 UGR attempt to provide performance information, including scenario results, to inform policy deliberations. There is, however, a need for ongoing work to further refine performance measures, data collection, and the process for how performance information gets used in policy decisions. Staff recommends that this work proceed on several fronts, including staff and Council engagement in the Climate Prosperity initiative, the Climate Smart Communities program, and the Regional Indicators project.

ADVISORY COMMITTEE AND PUBLIC REVIEW PROCESS AND TIMELINE

The recommendations described in this document are being released now to allow for further discussions to inform the growth management decision that the Metro Council intends to make in December 2010. A draft of the Capacity Ordinance that will be considered by the Metro Council in December 2010 is included as an attachment to this report. Discussions this fall represent a continuation of the last several years of dialogue on how the region can best position itself to foster communities that best embody the six desired outcomes. During the fall of 2010, a number of open houses will be held to allow for members of the public to comment on the proposed strategies. During the fall, proposed strategies will also be discussed on several occasions by MTAC and MPAC, including topics such as:

- Where in the residential forecast range should the Metro Council plan?
- The 2009 UGR identified unmet demand for 200-to-1,500 acres in large-site configurations for traded-sector industrial uses. Where within this range should the Metro Council plan?
- If UGB expansions are to be made, where should they occur?
- How might UGB expansions benefit existing communities?
- How would necessary public facilities be paid for in UGB expansion areas?
- What conditions should be attached to any UGB expansions?
- Are the proposed updates to the Regional Framework Plan and the Urban Growth Management Functional Plan likely to lead to improved regional and community outcomes?
- Should the Metro Council adopt proposed changes to the 2040 Growth Concept map, recognizing new center boundaries and new centers?
- How might the region collaborate to move forward with a community investment strategy?

Next steps

Fall 2010: MPAC and MTAC discussions of growth management options; open houses to solicit public input

December 2010: The Metro Council will submit plans to accommodate at least 50 percent of any 20-year capacity need (through local and regional actions inside the boundary or through expansions) to the Oregon Land Conservation and Development Commission. The Metro Council intends, however, to make a complete growth management decision in December 2010.

December 2011: Final state deadline to accommodate identified 20-year capacity need through urban growth boundary expansions. The Metro Council intends, however, to make a complete growth management decision in December 2010.

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Appendix 1:

Possible outcomes of current policies

August 2010

Metro | *People places. Open spaces.*

TABLE OF CONTENTS

PURPOSE

This technical appendix is intended to provide documentation of the scenario that informs the draft 2010 Capacity Ordinance. This scenario was conducted to inform several aspects of the Capacity Ordinance analysis, including:

- Test the effectiveness of a variety of adopted efficiency measures
- Provide information about the possible outcomes of continuing current policy and investment trends

Scenarios tested

Throughout this document, two different scenarios are compared:

UGR scenario: refers to the medium growth scenario that informed the 2009 UGR.

Capacity Ordinance scenario: refers to the medium growth scenario that informs the 2010 Capacity Ordinance.

Disclaimer

This scenario is for research purposes only and to help inform policy discussions. To the degree possible, scenario assumptions reflect policies currently in place. To make the model function, however, some assumptions must be made about policy decisions that have not yet been rendered. This is the case, for instance, with assumed future UGB expansions. It is anticipated that many of model's assumptions will change as new local and regional policies are adopted. Different assumptions would produce different results.

About MetroScope

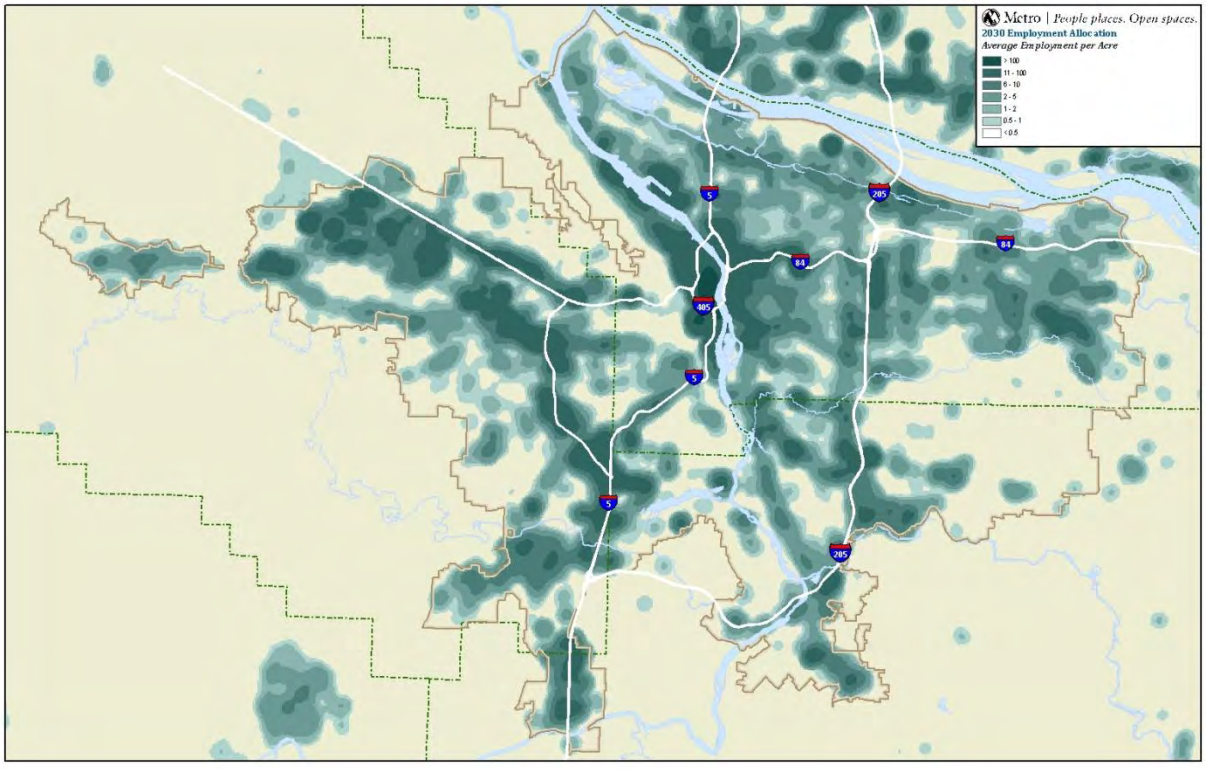
MetroScope is an integrated land use and transportation simulation model that operates on economic principles. The model's main purpose is to estimate where the region's employment and housing will locate in the future. The total number of households and jobs that the model attempts to locate is determined in a separate forecast (the middle of the 2009 range forecast is used for these scenarios). Along with the prediction of location choices, the model estimates outcomes such as housing price appreciation. These outcomes are, in part, the consequences of policy choices made both by Metro and local jurisdictions and larger macroeconomic factors that are part of the household and employment forecast. Regional and local policy choices include, for example, UGB expansions, investments in transportation facilities, and zoning designations. MetroScope provides a means of considering how the market might respond to those choices in the long term.

A MetroScope scenario seeks equilibrium, the price point(s) at which housing or employment demand matches supply. For example, if demand for housing in a particular census tract outstrips capacity, prices will increase until supply-and-demand equilibrium is reached.

SCENARIO RESULTS

Distribution of jobs in the 7-county area (year 2030)

One of the primary results that MetroScope scenarios can provide is the future distribution of jobs in the region. The map below shows the year 2030 job distribution results for the Capacity Ordinance scenario. Darker colors represent areas with more employees per acre.



SCENARIO RESULTS

Distribution of jobs in the 7-county area (year 2030)

Why does this measure matter?

Centers and corridors are the locations most likely to provide people with walkable access to everyday needs and transportation choices offering the potential to reduce transportation costs to the individual and to the employer. Employment areas[1] are designated as such to minimize conflicts with other uses.

The Capacity Ordinance scenario indicates future UGB expansions into urban reserves may attract more jobs than the expansions assumed in the UGR scenario.

Applies to desired outcomes

- ✓ Vibrant, walkable communities
- ✓ Economic competitiveness and prosperity
- ✓ Transportation choices
- ✓ Leadership on climate change
- ✓ Clean air and water, healthy ecosystems

[1] RSIA, Industrial, and Employment areas designated under Title 4 of the Urban Growth Management Functional Plan are included in "other areas" here. "Other areas" also includes neighborhoods. Jobs that locate in neighborhoods would be consistent with local zoning and are likely to be retail and service uses that serve the neighborhood.

Figure 1: Capacity Ordinance scenario - distribution of new jobs (2005 - 2030)

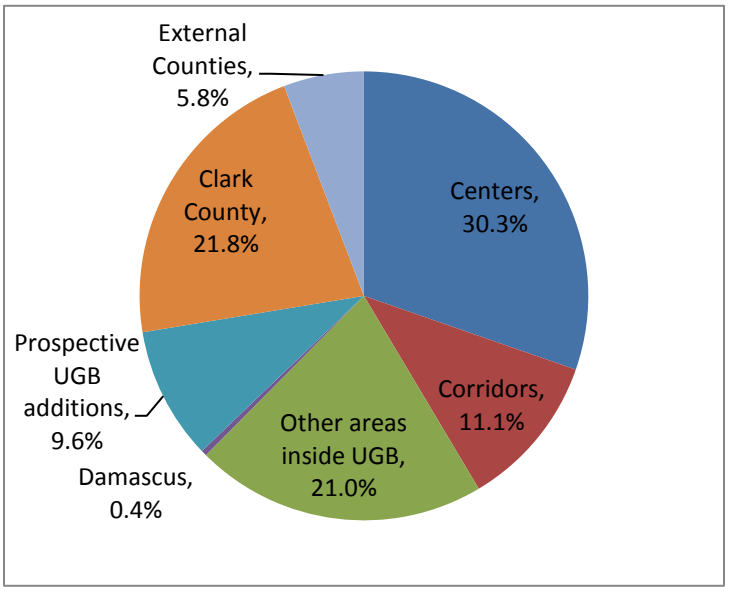
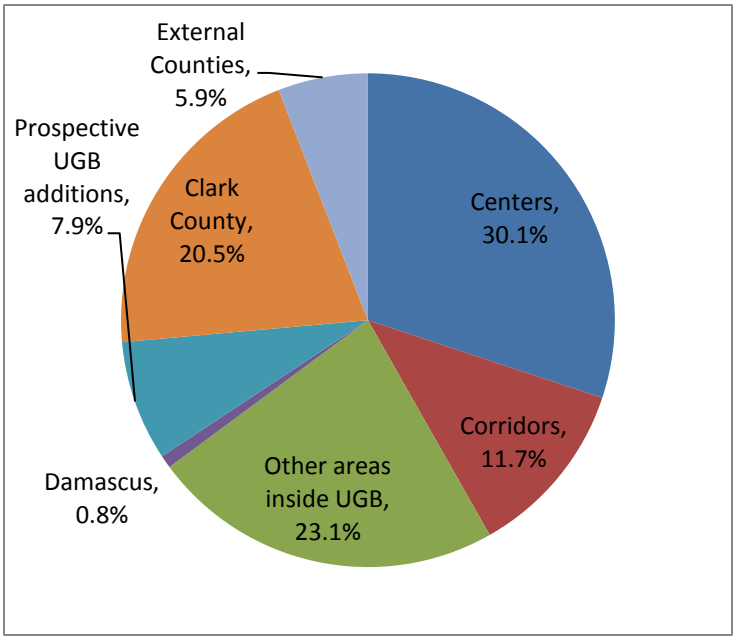


Figure 2: UGR scenario - distribution of new jobs (2005-2030)



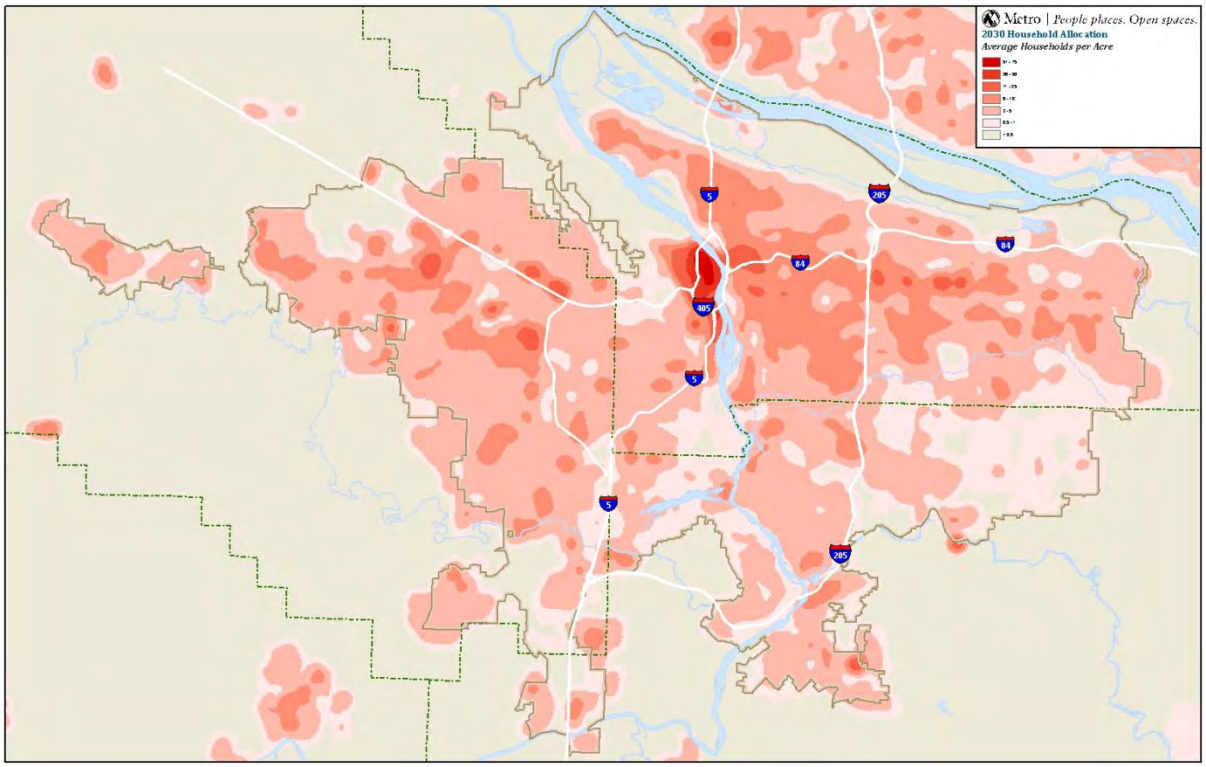
Notes:

- *"External counties" refers to Yamhill, Columbia, and Skamania counties*
- *"Prospective UGB additions" refers to assumed future UGB expansion areas*
- *"Other areas inside the UGB" refers to all non-center and non-corridor areas inside the Metro UGB, including neighborhoods and Title 4 industrial and employment areas*

SCENARIO RESULTS

Distribution of households in the 7-county area (year 2030)

One of the primary results that MetroScope scenarios can provide is the future distribution of households in the region. The map below shows the year 2030 household distribution results for the Capacity Ordinance scenario. Darker colors represent areas with more households per acre.



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SCENARIO RESULTS

Distribution of households in the 7-county area (year 2030)

Why does this measure matter?

Centers and corridors are more likely to provide people with walkable access to everyday needs, access to jobs, and access to transportation choices. These characteristics reduce transportation costs to the individual and will be crucial to reducing greenhouse gas emissions.

Compared to the UGR scenario, the Capacity Ordinance scenario shows an increase in the share of new residences in centers and corridors – newly-adopted policies appear to help implement the 2040 Growth Concept.

Applies to desired outcomes

- ✓ Vibrant, walkable communities
- ✓ Economic competitiveness and prosperity
- ✓ Transportation choices
- ✓ Leadership on climate change
- ✓ Clean air and water, healthy ecosystems

Figure 3: Capacity Ordinance scenario - distribution of new households (2005 - 2030)

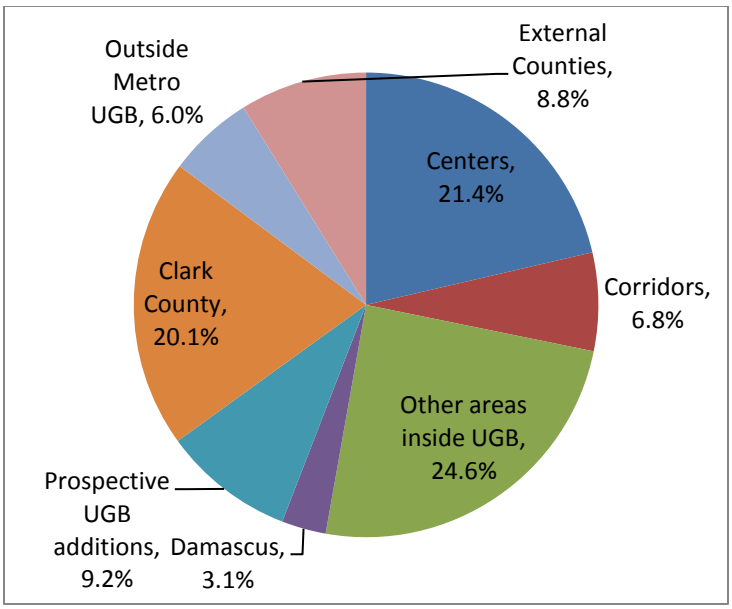
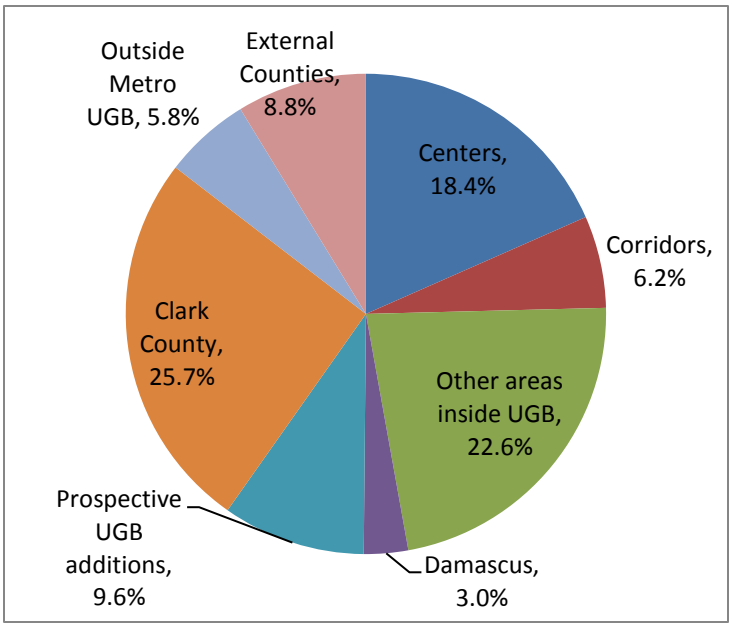


Figure 4: UGR scenario - distribution of new households (2005 - 2030)



Notes:

- *"External counties" refers to Yamhill, Columbia, and Skamania counties*
- *"Prospective UGB additions" refers to assumed future UGB expansion areas*
- *"Other areas inside UGB" refers to all non-center and non-corridor areas inside the Metro UGB, including neighborhoods and Title 4 industrial and employment areas*

SCENARIO RESULTS

Residential refill rate (2005 to 2030)

UGR scenario:	39 percent
Capacity Ordinance scenario:	41 percent

Applies to desired outcomes

- ✓ Vibrant, walkable communities
- ✓ Economic competitiveness and prosperity
- ✓ Transportation choices
- ✓ Leadership on climate change
- ✓ Clean air and water, healthy ecosystems
- ✓ Equity

Why does this measure matter?

The refill rate is the share of new residential development (percent of new dwelling units) that occurs through redevelopment or infill (in the case of these scenarios, the percent by the year 2030). Thus, refill rate is an important measure how efficiently land is used. Refill can be influenced through policy and investment actions. Higher refill rates are a good indication that policies and market conditions support the implementation of the 2040 Growth Concept with its emphasis on focusing growth in existing urban areas. Compared to the UGR scenario, the Capacity Ordinance scenario indicates a higher refill rate. The higher rate is likely caused by local and regional investments such as the 2035 State RTP that attract households to existing urban centers and corridors, as well as more modest future UGB expansions (scaled according to adopted urban reserves). By the year 2040, the refill rate moderates somewhat, most likely because additional UGB expansions are assumed available for development in later years.

SCENARIO RESULTS

Average one-way commute distance for households in the 7-county area (year 2030)

UGR scenario:	12.5 miles
Capacity Ordinance scenario:	12.4 miles

Applies to desired outcomes

- ✓ Vibrant, walkable communities
- ✓ Economic competitiveness and prosperity
- ✓ Transportation choices
- ✓ Leadership on climate change
- ✓ Clean air and water, healthy ecosystems

Why does this measure matter?

Commute miles are a useful indicator of overall travel behavior. Longer commutes tend to be an outcome of living in suburban or exurban locations.2 These same location choices also tend to produce long trips for meeting other needs, such as going to the grocery store. The scenarios indicate that there could be big differences in average commute distance, depending on where residents and employers locate.

Compared to the UGR scenario, the Capacity Ordinance scenario indicates a slightly shorter average commute distance for households in the seven-county region. Though modest from the perspective of an individual commuter, shorter commutes can have a cumulative impact in the seven-county region. Without improvements in fuel efficiency, additional reductions in travel will be necessary to reduce carbon emissions.

[2] MetroScope scenarios do not assume that all employment is in central Portland. Employment and residential distributions throughout the region are the primary outputs of the scenario that determine commute distances.

SCENARIO RESULTS

Residential source greenhouse gas emissions (in billions of pounds per year by year 2030)

UGR scenario:	32.02 billion lbs
Capacity Ordinance scenario:	31.77 billion lbs

Applies to desired outcomes

✓ Leadership on climate change

✓ Clean air and water, healthy ecosystems

Why does this measure matter?

Residential sources are responsible for a large portion of greenhouse gas emissions. In 2004, residential and commercial energy consumption accounted for 30 percent of all emissions in the state of Oregon (State of Oregon, 2008). In these scenarios, no technological improvements in energy efficiency are assumed. Greenhouse gas emissions are calculated based on historic residential energy consumption patterns for various housing types and sizes. Any reductions in residential-source greenhouse gas emissions in these scenarios would be the result of smaller residential square footages. Smaller square footages tend to accompany shifts to multi-family housing. In a study of greenhouse gas emissions in Toronto, Canada, Norman et al (2006) found that lower-density residences produced approximately 2 to 2.5 times more greenhouse gases than higher-density residences.

Though this analysis does not provide a comparison with historic residential emission rates, it is a safe assertion that with more households in the region by the year 2030, both scenarios would represent an increase in greenhouse gas emissions (all other things being equal). Along with shifts to smaller residences and compact development patterns, technological improvements in energy efficiency will be essential.

SCENARIO RESULTS

Mix of housing types and ownership

Why does this measure matter?

The region will see an increase in the total numbers of all housing types by the year 2030. However, the likely increase in multi-family residences (both owned and rented) is particularly noteworthy. The potential increase in multi-family units (180,000 more by 2030) is greater than the increase in single-family units (116,000 more by 2030). Researchers such as Dr. Arthur C. "Chris" Nelson, who has conducted pioneering research on urban settlement patterns, growth management and housing, have suggested that the focus of planning efforts should be apartment and condominium choices. Providing those choices will also be an important element of any strategy to increase transit ridership and reduce carbon emissions.

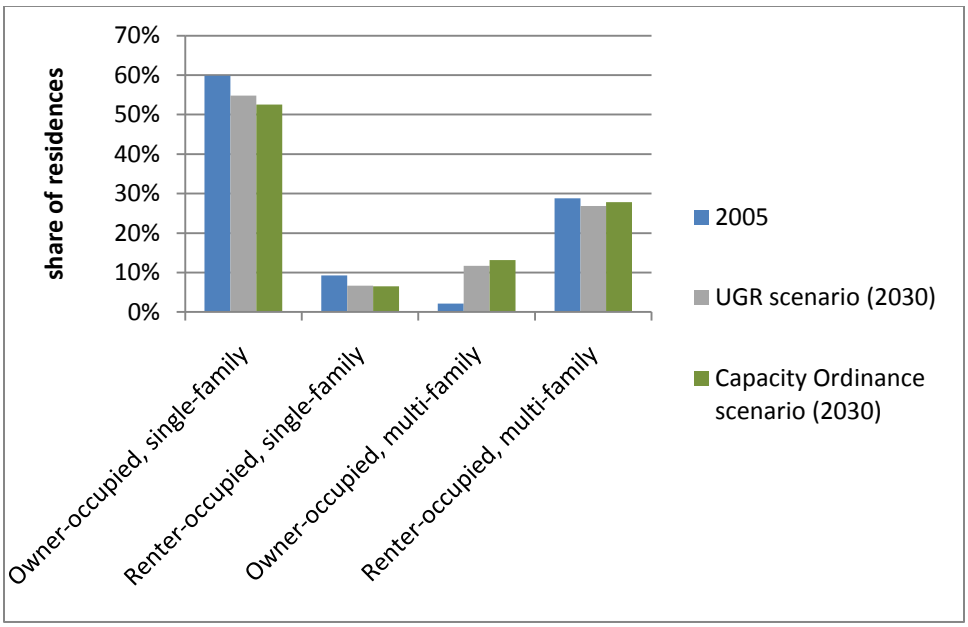
Applies to desired outcomes

✓ Vibrant, walkable communities

✓ Transportation choices

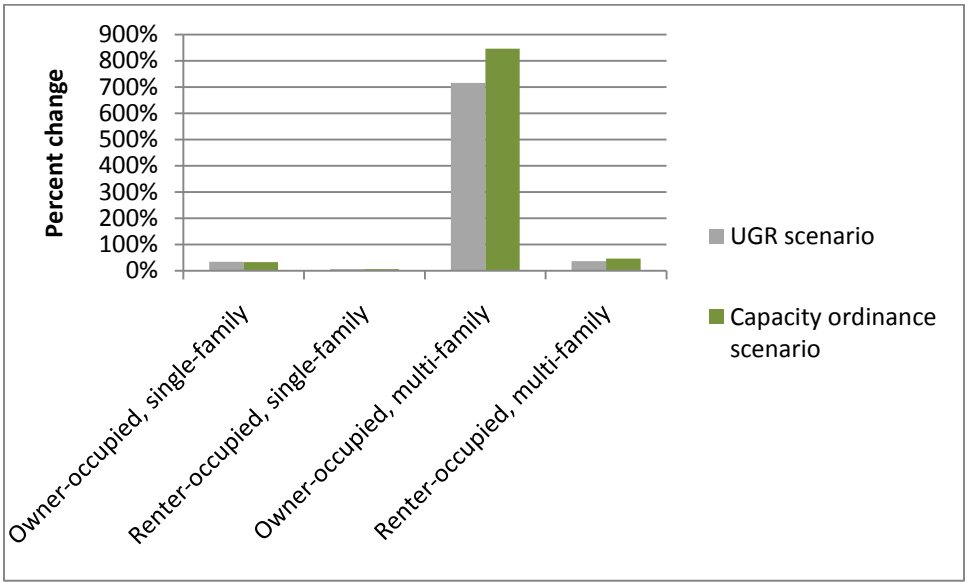
✓ Leadership on climate change

Figure 5: share of all residences inside Metro UGB by type and ownership



Expressed as a percent change from 2005 to 2030, the shift in housing production towards multi-family is noteworthy.

Figure 6: percent change in numbers of residences by type and ownership (inside Metro UGB, 2005 to 2030)



SCENARIO RESULTS

Future household incomes

Why does this measure matter?

Household incomes are expected to vary considerably from location to location. However, there are not major differences in average household incomes under the two scenarios. Table 1depicts average annual household incomes for the years 2005 and 2030 under two scenarios. The average household income for residents of renter-occupied multi-family units is forecasted to be about 60 percent of the average household's income in the Metro UGB.

Applies to desired outcomes

- ✓ Economic competitiveness and prosperity
- ✓ Equity

Table 1: Annual average household income (2005$)[3] in the year 2030 under two scenarios (households inside Metro UGB)

	2005	UGR scenario (2030)	Capacity Ordinance Scenario (2030)
All households	$52,300	$55,700	$56,100
Renter-occupied, multi-family	$35,400	$33,800	$33,900

[3] Does not account for possible future inflation

SCENARIO RESULTS

Future mix of household types

Why does this measure matter?

MetroScope scenarios model 400 types of households4, which vary by household size, income, householder age and whether children are present. To make analysis and presentation feasible, the 400 types have been simplified to eight household types.

These eight household types are ranked roughly commensurate with income (income generally increases from household type one to household type eight). Differences in household characteristics translate into different choices of housing types and locations and transportation modes, as well as level of cost burden.

Applies to desired outcomes

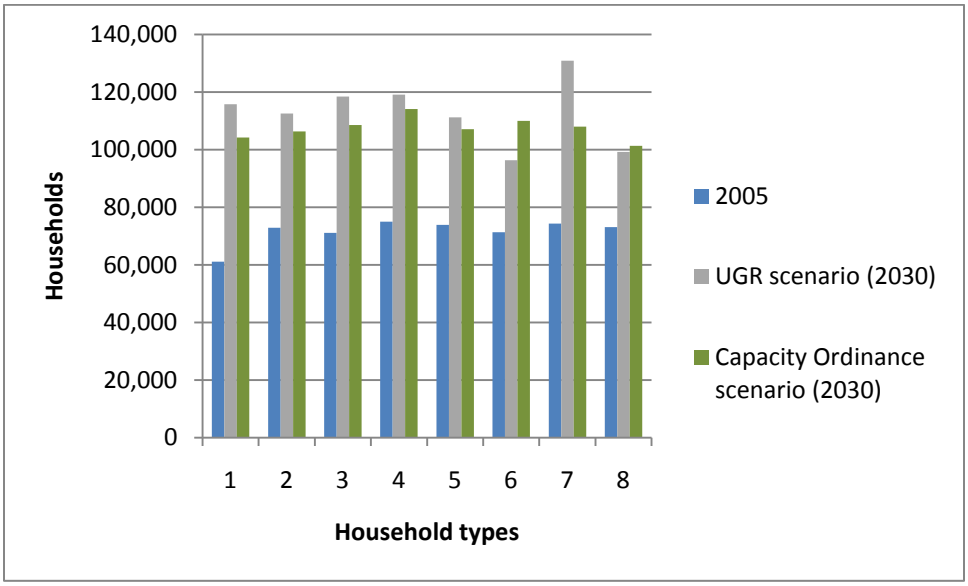
- ✓ Vibrant, walkable communities
- ✓ Economic competitiveness and properity
- ✓ Equity

[4] Household refers to the residents, not the residence

Table 2: generalized types of households referred to in MetroScope scenarios

Household type	Characteristics
1	These are some of the lowest-income households. Among renters, these are exclusively single-person households—primarily the elderly. Owners have a more even age and household size distribution.
2	These households can be of any age, but their income is among the lowest. These households are primarily childless.
3	With a bit more income than household type two, these households are primarily in the 25 to 44 age bracket, mostly without children, although about a third of homeowners have children.
4	With a broad age distribution and approaching middle income, these households are usually childless, especially among renters.
5	These households are larger and wealthier. The majority of homeowners have children.
6	With more income than household type five. Almost half of these households are between 25 to 44 years of age. Although the majority do not have children, two- and three-person households are most common.
7	Mostly without children, these households include very high-income couples, especially among owners.
8	Most of the homeowners in this household type have children. They are high wage earners.

Figure 7: Number of households by type inside UGB



SCENARIO RESULTS

Future housing and transportation affordability

A definition of "cost-burdened"

Homeownership represents an economic choice that requires some level of equity investment (recent lending practices notwithstanding). Defining cost-burden for homeowners is somewhat more difficult than for renters since many homeowners regard their homes as not just a residence but as an investment. Homeowners often spend a substantial portion of their income on their home, but do not necessarily perceive these expenditures as a burden. This is particularly the case for affluent homeowners or older homeowners without current income. For these reasons, this analysis assumes that to be cost-burdened, a household must rent, not own.

Because this analysis includes housing and transportation costs, the standard rule that no more than 30 percent of one's income should be spent on housing needs adjustment. In 2007, many low-to-moderate-income households in the United States spent well over 50 percent of their income on housing and transportation[5]. In 2007, the national median percentage of income spent on these costs was 45 percent. In the absence of an accepted standard, this report proposes that **if a household rents its residence and spends 50 percent or more of its income on transportation and housing, it is considered cost-burdened.**

Definition:

For this analysis, a cost-burdened household rents and spends 50 percent or more of its income on housing and transportation.

Calculating housing and transportation affordability

In order to produce estimates of future housing and transportation expenditures for different household types in different locations, both historic and forecasted data are used:

Historic data: United States Bureau of Labor Statistics data on housing and transportation expenditures are augmented with other historic data on income levels, demographics, housing preferences and travel behavior.

Forecast data: MetroScope scenarios produce forecast data on household types (household size, income, age of householder), patterns of renting versus owning, and location choices.

Scenario results are analyzed and linked with the historic data. This analysis produces expenditure estimates for future households, depending on factors such as the household type, renting versus owning, and location.

Possible outcomes of continuing current policies and investment trends

As is the case today, in the year 2030, the amount that households spend on transportation and housing costs is likely to vary widely from community to community. Costs are likely to be lowest for those living

[5] Source: United States Bureau of Labor Statistics

in smaller square footage condos or apartments, particularly in locations with access to multiple modes of transportation, including transit. Many of the region's urban centers and transportation corridors will be the most affordable places to live. However, because of high market demand in these locations, many lower-income households are likely to struggle to cover housing and transportation costs.

Future housing costs

Scenarios indicate that, with population growth and a continuation of current policies and investment trends, housing costs for households inside the Metro UGB will increase in the future. Table 3 depicts annual housing expenditures for all households and for households in renter-occupied, multi-family housing, which are often most susceptible to cost-burden. Because homeownership is often regarded as an investment, owners are often willing to spend a greater share of their income on housing.

Table 3: Average annual housing expenditures (2005$) per household (households in Metro UGB)

	2005	UGR scenario (2030)	Capacity Ordinance scenario (2030)
All households	$19,200	$27,200	$29,300
Renter-occupied	$10,400	$12,800	$13,100

Table 4: Average share of annual household income (2005$) spent on housing (households in Metro UGB)

	2005	UGR scenario (2030)	Capacity Ordinance scenario (2030)
All households	37%	49%	52%
Renter-occupied	29%	38%	39%

Future transportation costs

Scenarios indicate that, with a continuation of current policies and investment trends, transportation costs for households inside the Metro UGB will, on average, remain about the same in the future (see Table 5). As depicted in Table 6, residents of renter-occupied multi-family housing are forecast to spend a greater portion of their income on transportation than the average household in the Metro UGB.

Table 5: Average annual transportation expenditures (2005$) per household (households in Metro UGB)

	2005	UGR scenario (2030)	Capacity Ordinance scenario (2030)
All households	$5,400	$5,600	$5,500
Renter-occupied	$3,800	$3,900	$3,900

Table 6: Average share of annual household income (2005$) spent on transportation (households in Metro UGB)

	2005	UGR scenario (2030)	Capacity Ordinance scenario (2030)
All households	10%	10%	10%
Renter-occupied, multi-family	11%	12%	12%

Future cost burden

With a continuation of current policy and investment direction, the number of cost-burdened households could double by the year 2030. In the year 2005, there were approximately 95,500 cost-burdened households inside the Metro UGB (about 17 percent of all households or about 45 percent of renter households in the region). By the year 2030, about 22 percent of all households and 67 percent of renter households in the UGB could be described as cost-burdened. Many of these households will be seniors on fixed incomes and the working class, some of which will have school-aged children. These results represent worsening conditions when compared to the results of the UGR scenario.

Table 7: cost-burdened households in 2005 and 2030 (households inside Metro UGB)

	Year 2005	UGR scenario (2030)	Capacity Ordinance scenario (2030)
Total cost-burdened households	95,500	153,300	189,700
Share of all households that are cost-burdened	17%	18%	22%
Share of renter households that are cost-burdened	45%	54%	67%

Increases in cost burden are, in part, the result of competition for residences in central locations. Increased demand in urban centers and corridors is a result of many factors, including population growth, adopted policies, and changing demographics. High market demand supports the development of multi-story buildings (where zoning allows), but this type of construction often requires more expensive materials and structured parking, leading to higher costs per square foot of residence. These increased costs per square foot are partially offset by having choices of smaller residences and multiple transportation options. While the increase in demand in centers and corridors is a primary goal of the 2040 Growth Concept, it is clear that additional strategies and investments are needed to ensure that these locations remain options for a variety of income levels.

Possible causes of cost burden:

- Increased numbers of future cost-burdened households appear to be caused by escalating housing costs rather than rising transportation costs.
- Inadequate funding for infrastructure: this constrains housing supply, which in turn makes it unaffordable for some households.
- High market demand in urban centers and transportation corridors: this increases the value of land and the per-square-foot cost of housing. Multi-story development often requires more expensive construction materials and structured parking. Without public investments or choices of smaller residences, these higher costs get passed on to residents.
- Insufficient transportation cost savings: Transportation cost savings offset housing price increases, but are not enough to guarantee affordability.
- Market rate housing is out of reach at lower wage levels.

The distribution of cost-burden is uneven throughout the region. These scenarios indicate that with a continuation of current policies and investment trends, this uneven distribution will persist in the future. Locations that offer the most affordable housing and transportation are likely to have higher concentrations of cost-burdened households. These scenarios indicate that urban center and corridor locations that offer the most affordable housing and transportation options could be home to many cost-burdened households. The central city, centers, corridors, and centrally-located neighborhoods are areas that are likely to remain in high demand amongst higher income households as well.

Table 8 provides a summary of the possible distribution of cost-burdened households in the years 2005 and 2030. Areas that have lower numbers and percentages of cost-burdened households have not necessarily provided affordable housing options. In some cases, there are fewer cost-burdened households simply because there are limited affordable options from which to choose.

Table 8: Number and percent of cost-burdened households by subarea (2005 and 2030)

	2005		UGR scenario (2030)		Capacity Ordinance Scenario (2030)	
	Number of cost-burdened households	Share of renter households that are cost-burdened	Number of cost-burdened households	Share of renter households that are cost-burdened	Number of cost-burdened households	Share of renter households that are cost-burdened
Portland central city	6,500	66%	13,900	78%	15,600	86%
Northeast Portland	7,400	51%	10,300	58%	12,900	75%
Gresham – Wood Village - Fairview - Troutdale	7,400	41%	10,500	43%	17,600	70%
East Portland	7,800	49%	11,300	49%	11,600	50%
Southeast Portland	16,200	55%	20,000	61%	23,100	71%
West Portland	11,700	57%	19,700	73%	22,800	87%
North Portland	4,000	53%	5,800	55%	6,300	60%
Lake Oswego	900	19%	2,500	52%	2,500	53%
Gladstone - Clackamas	2,100	45%	3,000	52%	3,400	63%
Milwaukie	2,700	44%	3,400	46%	3,300	46%
Happy Valley	1,600	31%	3,500	49%	3,500	48%
Damascus	200	45%	700	58%	900	71%
Oregon City	1,600	39%	6,200	68%	6,700	70%
West Linn	500	27%	900	40%	800	41%
Wilsonville	1,300	43%	2,200	59%	3,200	80%
North Hillsboro	2,100	22%	6,100	44%	8,700	59%
East Washington County	5,500	35%	8,000	35%	14,300	64%
South Beaverton	4,200	40%	5,200	45%	5,200	46%
Tigard - King City	3,300	37%	4,500	43%	7,800	72%
Tualatin	1,300	31%	1,700	37%	2,700	46%
Sherwood - Scholls	400	35%	1,000	57%	1,600	76%
SW Beaverton	1,900	24%	4,200	45%	5,100	54%
South Hillsboro	1,900	32%	4,000	53%	4,700	63%
Forest Grove - Cornelius	3,000	79%	4,500	86%	4,900	85%
TOTAL	**95,500**	**45%**	**153,300**	**54%**	**189,700**	**67%**

Figure 8 and Figure 9 depict the share of households that could be cost-burdened in the year 2030 (by subarea—rough approximations of city boundaries, portions of larger cities, or combinations of smaller cities). Though cost-burdened households are predicted to be distributed throughout the region, there are several concentrations including ones in the Portland central business district, southeast Portland, and west Portland, where housing and transportation options could be most affordable, and in outlying areas where housing prices may be lower, but transportation costs are higher.

Figure 8: share of all households that are cost-burdened in 2030 (Capacity Ordinance scenario)

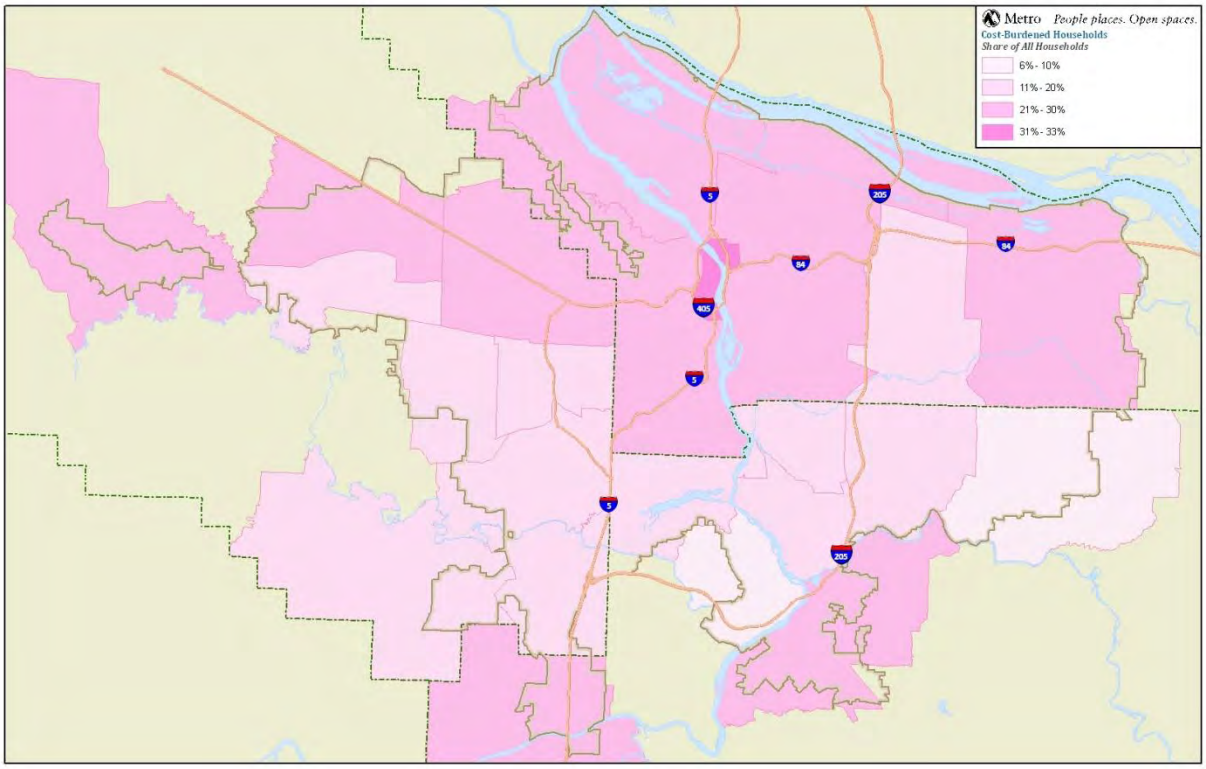
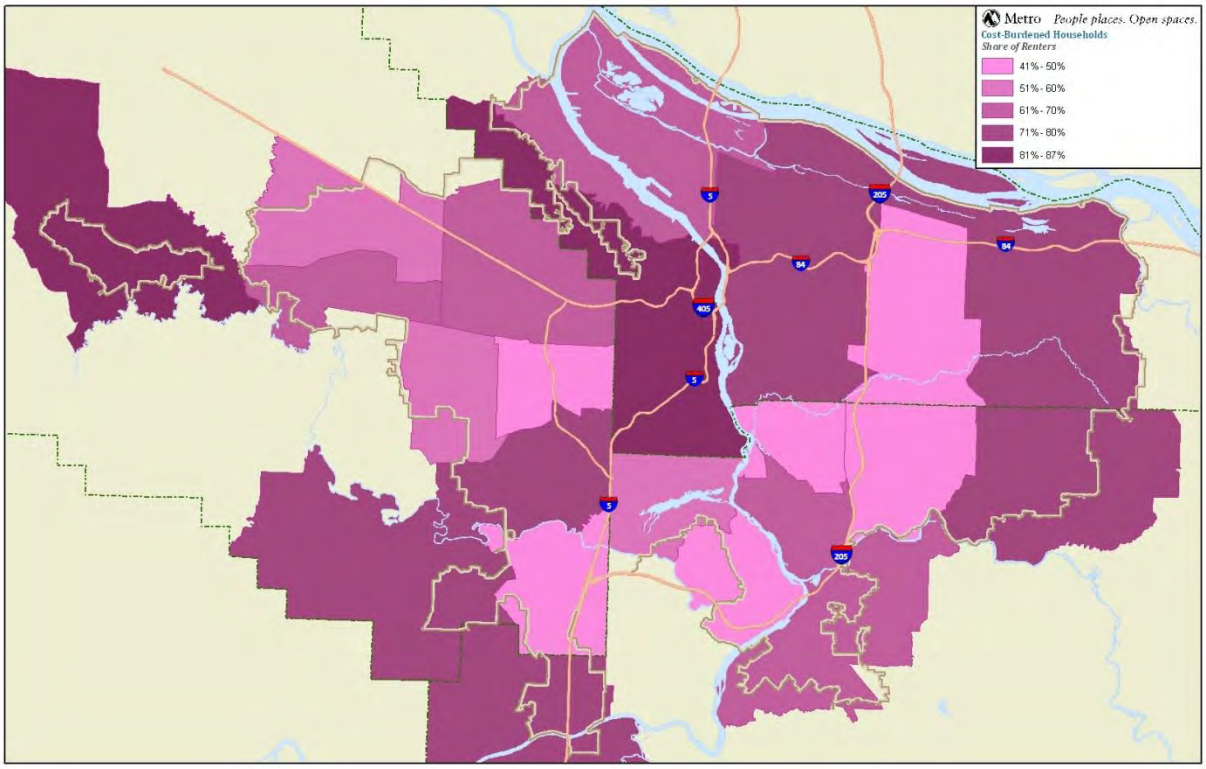


Figure 9: share of renter households that are cost-burdened in 2030 (Capacity Ordinance scenario)



Policy choices

Urban centers and corridors are likely to be some of the region's least costly communities in the future, but this does not mean that they are affordable for all. The Metro region's leaders are counting on housing in centers and corridors to remain affordable in order to manage growth in a way that protects existing single-family neighborhoods and addresses new challenges such as climate change. To do so, concerted efforts are needed.

- New infrastructure investments can make better use of existing land inside the UGB.
- Incentives for mixed-use, multi-family development can reduce housing costs even further in urban centers and corridors.
- Policies that encourage the construction of smaller residences can provide more housing choices.
- Transit investments in centers and corridors can reduce transportation costs for residents.
- Wages are an important component of affordability. Ensuring a healthy regional economy will be essential.
- Household utilities represent a significant portion of housing expenditures. Programs that allow households to reduce utility consumption or costs will be important.
- Publically-subsidized housing will remain essential.

Collaborative efforts are needed to preserve our region's livability and affordability. A failure to maintain affordable housing choices in the central city, centers, and corridors may put additional growth pressures on existing single-family neighborhoods and push more residents to less central locations where they could be more susceptible to increases in energy prices.

SCENARIO ASSUMPTIONS

The assumptions used for this and other MetroScope scenarios fall into three major categories. The details of these categories are explained further in this document.

- **Demand:** A forecast establishes the total number of new households and jobs in the 7-county region that are distributed in the scenario.
- **Supply:** Capacity assumptions in the Metro UGB, Clark County, neighbor cities, and rural areas are based on inventories of vacant and buildable land as well as existing zoning.
- **Other variables:** Other assumptions that affect scenario behavior include the transportation network, construction costs, residential incentives, and consumer preferences.

Demand:

Population and employment forecast assumptions

MetroScope scenarios assume fixed population and employment control totals. The assumed totals are from a range forecast for the year 2040 for the larger 7-county region that includes all of Washington, Clackamas, Multnomah, Columbia and Clark counties, most of Yamhill County, and a small portion of Marion County.

Given a set of policy and investment assumptions, MetroScope predicts a possible future distribution of new households and jobs in the 7-county region. As an equilibrium model, MetroScope will find a "home" for all forecasted households and jobs; the model will not identify a capacity gap (because the maximum zoned capacity for the 7-county area easily accommodates the growth forecast).

This scenario assumes the midpoint of the 2009 range forecast that was accepted by the Metro Council in December 2009. The midrange forecast indicates 1,381,000 households and 1,707,400 jobs in the 7-county region by the year 2040. Assuming different points on the range forecast would produce different scenario results.

Supply:

Metro UGB supply: zoning

Regional Land Information System (RLIS) data, maintained by Metro, provide zoning assumptions for scenarios. The three counties (Clackamas, Multnomah, and Washington) provide Metro with quarterly updates to the RLIS zoning data. Local zoning designations are translated into 44 generalized zoning classifications, each of which has an assumed maximum zoned capacity. RLIS zoning data used for this scenario are as of January 2010.

Metro UGB supply: vacant land

Vacant land is defined in two ways:

1. Tax lots with no improvement value or buildings.
2. Partially developed parcels with an undeveloped portion of at least one-half acre.

Using aerial photography, Metro conducts surveys of vacant land inside the UGB. This survey is conducted using the aerial photographs as well as building permit and tax assessor data. All parcels inside the UGB are examined to determine if they qualify as vacant.

The vacant land designation does not indicate whether or not the parcel is for sale, if there are plans to develop it, if there are constraints to its development (e.g. zoning or environmental constraints such as wetlands or steep slopes), or if there is a market demand for its development.

For consistency and to allow for comparison with the scenarios that informed the 2009 UGR, this MetroScope scenario assumes the 2007 vacant land survey.

Metro UGB supply: buildable land

Buildable land is identified by deducting environmentally constrained land from the vacant land inventory. This MetroScope scenario assumes the 2007 buildable lands survey.

Metro UGB supply: refill land

"Refill" refers to both redevelopment and infill development. Redevelopment occurs when a structure is removed and another is built in its place. Infill occurs when more units are constructed on an already-developed site. Since "vacant" land includes any tax lot or any part of a tax lot that has a vacant portion larger than ½ acre, infill only includes development on an existing developed lot or partially developed lot with a vacant portion smaller than ½ acre.

Refill development tends to occur when market conditions make it profitable to develop (or redevelop). Thus, refill capacity is based on the relationship between a tax lot's size, land value, and improvement value. Metro calculates refill capacity in consultation with local jurisdiction staff.

For scenario modeling purposes, tax lots that have a high enough ratio of land to improvement value and that are of sufficient size are counted as refill capacity. This determination varies by county and by zoning designation. Like zoned capacity, refill capacity will not necessarily get used in the model simply because it exists. MetroScope scenarios subject refill capacity to a simulated market test. Whether or not the capacity gets used in the scenario is a function of many factors including price, accessibility, and zoning.

Metro UGB supply: recent UGB expansion areas

In reality, lands are not immediately developable upon their inclusion in the UGB. In order for lands to be developable, planning must have been completed and infrastructure financing needs to be in place. To mimic that delay, this scenario assumes that lands that were previously added to the UGB are not immediately developable. By the end of the delay, it is assumed that infrastructure funding has become available through an unspecified mechanism. These timing assumptions are the same as those used for the 2009 urban growth report (UGR) scenarios and are based on advice received from county and city planning staff and the Metro Technical Advisory Committee.

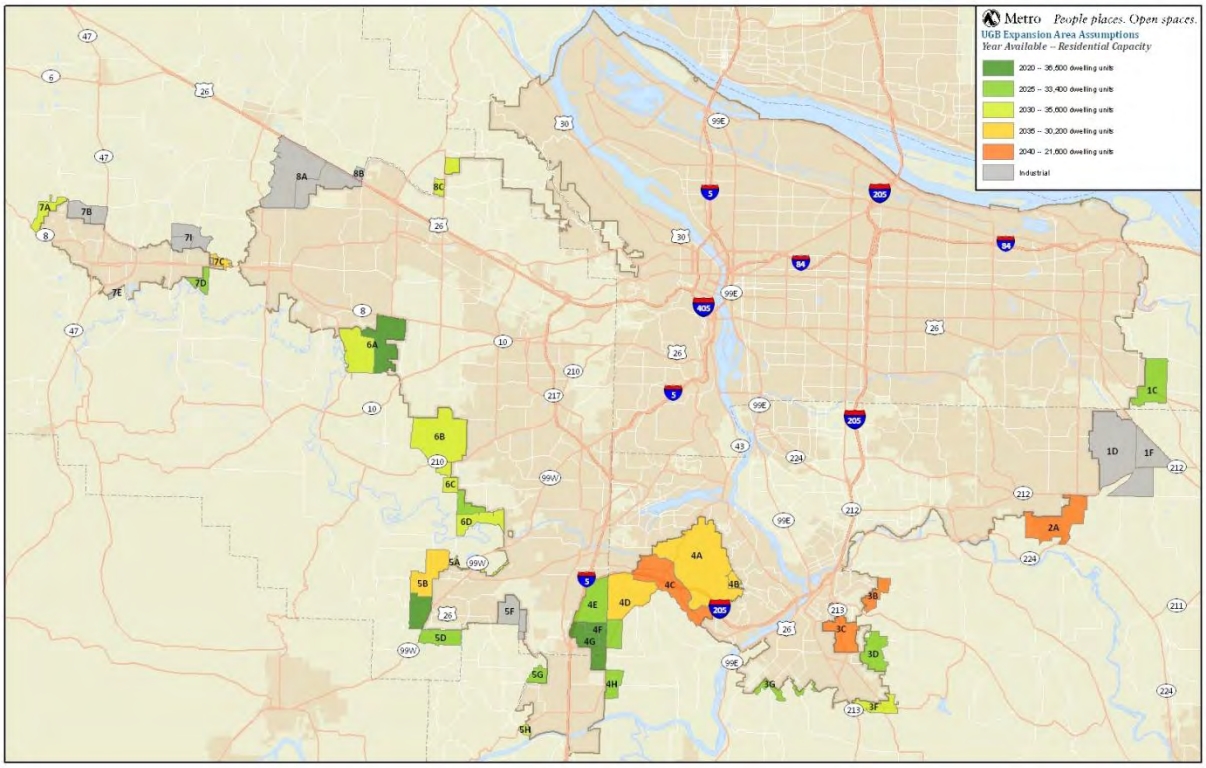
Metro UGB expansion area (past expansions only)	Assumed date of availability for development
Happy Valley	2010
Damascus	2020
All other areas added to the Metro UGB since 1998 (other than Happy Valley and Damascus)	2015

Metro UGB supply: prospective UGB expansions

The scenarios that informed the 2009 UGR assumed a continuation of past policies and trends, including the trend of expanding the UGB according to state-mandated land hierarchies. The new scenario, conducted to inform the 2010 Capacity Ordinance assumes that future UGB expansions will be made in urban reserves. The size of adopted urban reserves makes less land available for assumed future UGB expansions than historic usage and less than was assumed in previous scenario work.

Figure 10 shows the sequence of prospective UGB expansions that are assumed for this scenario. The assumed timing of future UGB expansions was determined in consultation with city and county planning departments.

Figure 10: assumed availability and capacity of prospective UGB expansion areas



Clark County supply: zoning

Zoning for Clark County is assumed to be the zoning that was in place in January 2010. The scenarios that informed the 2009 UGR assumed the zoning that was in place in 2005.

Clark County supply: vacant, buildable land

For vacant buildable land in Clark County, Washington, Metro used the county's January 2010 data. The 2009 UGR used the county's 2005 data. Clark County uses a different methodology for inventorying its vacant, buildable land than Metro.

Clark County supply: refill land

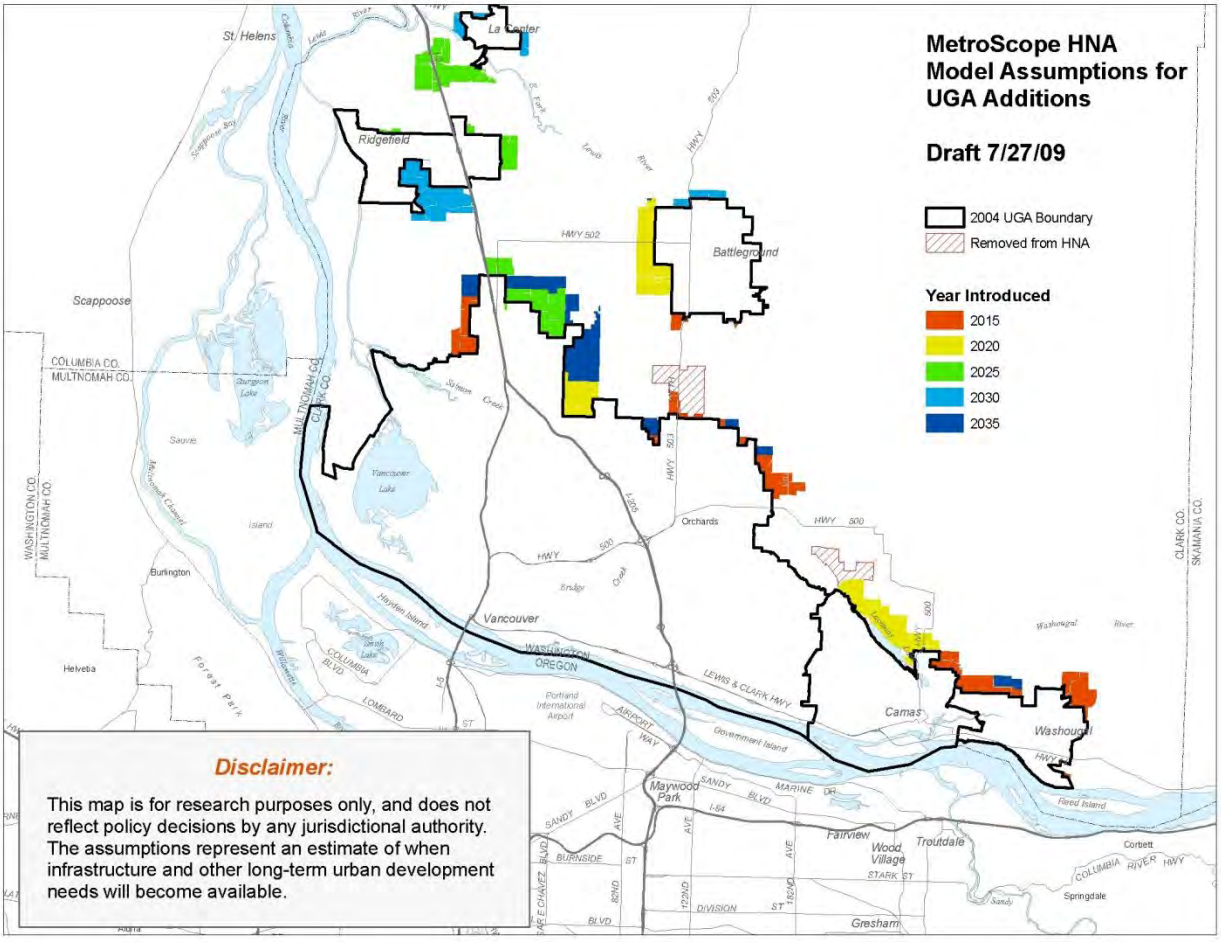
Clark County has a different method than Metro for identifying refill capacity. However, for MetroScope modeling purposes, Metro's refill definitions are applied to Clark County land.

Clark County supply: prospective urban growth area expansions

In January 2008, Clark County added approximately 19 square miles of urban growth areas. A portion of the 19 square mile expansion was overturned and was appealed at the Washington State Superior Court.

Scenario assumptions for Clark County urban growth boundary expansions are based on the Superior Court decision. The timing and zoning assumptions were determined by Clark County staff. Those timing assumptions are depicted on the map below.

Figure 11: assumed availability of prospective Clark County urban growth areas



Neighbor City supply:
MetroScope scenarios distribute growth not just to the Metro UGB and to Clark County, but to cities outside of the Metro UGB that are within the 7-county area (e.g. Canby, Sandy, Banks, North Plains, Newberg, etc.). Oregon's State economist's 2004 county-level population forecast is used to estimate future growth in these cities. Neighbor city capacities are assumed to match forecasted population growth.

City	County	Assumed capacity for new dwelling units
Canby	Clackamas	7500
Sandy	Clackamas	3000
Molalla	Clackamas	5000
Estacada	Clackamas	1000
North Plains	Washington	2500
Gaston	Washington	1000
Banks	Washington	2000
Clatskanie	Columbia	1000
Ranier	Columbia	600
Prescott	Columbia	400
Columbia City	Columbia	800
St. Helens	Columbia	2400
Scapoose	Columbia	1100
Vernonia	Columbia	500
Newberg	Yamhill	16000
Dundee	Yamhill	1000
Yamhill	Yamhill	2400
McMinville	Yamhill	8400
Dayton	Yamhill	1500
Amity	Yamhill	3400
St. Paul	Marion	1000
Aurora	Marion	3500
Gervais	Marion	2500
Woodburn	Marion	8500

Measure 49 rural residential supply:
The passage of Measure 37 and its subsequent replacement by Measure 49 created the possibility of additional residential capacity outside of urban growth boundaries. The maximum possible amount of rural (non-UGB) Measure 49 capacity was assumed for these scenarios: three dwelling units of capacity for each residential-zoned Measure 37 claim, for a total of 6,087 dwelling units. It is unlikely that all of those Measure 37 claims have been re-filed under Measure 49 and unlikely that all those that were re-filed will be built. However, they are considered as available capacity in

these scenarios. The effects of this Measure 49 capacity on the overall (7-county) household distributions in these scenarios is likely negligible.

Other variables:

Accessibility: transportation network

This MetroScope scenario assumes the 2005 network for the 2005, 2010 and 2015 Metroscope allocation runs and then uses the 2035 State RTP network for the 2020, 2025 and 2035 iterations. The scenarios that informed the 2009 UGR used the 2035 "True" Financially-Constrained RTP. The "True" Financially Constrained RTP network only includes those projects that are in the Financially Constrained RTP for which there is an identified source of funding for construction (some projects in the Financially Constrained RTP only have an identified source of funding for planning and engineering).

Notable 2035 State RTP mobility projects **included** in this scenario's transportation network are:

Notable transit mobility projects

- Columbia River Crossing light rail train
- Milwaukie light rail
- SW corridor high-capacity transit
- WES service improvements
- I-205 bus rapid transit from Clackamas Town Center to Tualatin
- On-street bus rapid transit Division/Powell

Notable throughway mobility projects

- I-5 Columbia River Crossing
- Sunrise from I-205 to 172nd Ave.
- OR 217, US 26 & I-5/I-84 Interchange Improvements
- Operational improvements on I-205
- Operational improvements on I-5
- Additional interchange improvements on OR 217, US 26, I-5, I-205, and I-84

Notable arterial mobility projects

- I-5/99W Connector Alternative 7 (three arterial improvements including Southern Arterial)
- Sellwood Bridge

The project list for the 2035 State RTP also includes billions of dollars of investments in "community-building" projects, such as sidewalk improvements. For scenario purposes, community-building projects are handled differently than mobility projects. See the "Consumer preference: neighborhood score" section of this appendix for a description of how community-building projects are handled in this scenario.

Construction costs: system development charges

This scenario assumes that all new dwelling units are assessed a $25,000 per dwelling unit system development charge. For modeling purposes, this charge appears as an additional construction cost.

Construction costs: residential incentives

Cities throughout the region have implemented effective strategies for attracting more households to their centers and corridors. These strategies include urban renewal, tax abatement, and investments in public amenities. These scenarios assume that residential incentives will be in place in the future as well. The guiding principle for making incentive assumptions for these scenarios was to err on the side of being conservative and only include those locations that have active urban renewal or that have some other identifiable tool in place that acts as a residential incentive (for instance, a vertical housing tax credit).

These scenarios assume varying levels of residential incentives in different locations. Three different incentive levels are assigned:

Tier A: $50,000 per dwelling unit

Tier B: $25,000 per dwelling unit

Tier C: $10,000 per dwelling unit.

The upper end of the range, $50,000 per dwelling unit, was estimated through staff discussions with the Portland Development Commission and the City of Portland.

Assumptions are also made regarding the timing of the incentive (expressed as the percentage of the total number of incented units that are available to the market in each five year increment). The level and timing of incentives assumed in this scenario are professional judgments made by staff. The table below summarizes this scenario's residential incentive assumptions. Changes to the assumptions used for the 2009 UGR scenarios are highlighted. These new incentive locations are included here on the advice of local jurisdictions, who have indicated that the incentive will be in place in 2010.[6] Incentive assumptions for the 2009 UGR scenarios were reviewed by staff from the three counties, the City of Portland, MTAC, and the Portland Development Commission.

[6] Wood Village adopted an urban renewal district in February 2010. It was inadvertently omitted from updated scenario assumptions.

					Percent of dwelling units with incentive available (timing)							
Location	Type	Active urban renewal? (residential only)	Reason for incentive assumption (other than active urban renewal)	Tier*	2010	2015	2020	2025	2030	2035	2040	Total number of incented units
Downtown	CC	yes		A	20%	40%	40%					13,500
North Macadam	CC	yes		A	33%	33%	33%					7,500
Oregon Conv. Center	CC	yes		A	33%	33%	33%					3,000
River District	CC	yes		A	25%	25%	25%	25%				24,000
South Park Blocks	CC	yes		A	25%	25%	25%	25%				2,000
Beaverton	Reg. Ctr.	Anticipated	urban renewal adoption anticipated	B		20%	20%	20%	20%	20%		2,000
Clackamas	Reg. Ctr.	yes		B	25%	25%	25%	25%				2,000
Gateway	Reg. Ctr.	yes		B	25%	25%	25%	25%				2,000
Gresham	Reg. Ctr.		Vertical housing tax abatement	B	33%	33%	33%					2,000
Hillsboro	Reg. Ctr.	Anticipated	urban renewal adoption anticipated	B		20%	20%	20%	20%	20%		2,000
Oregon City	Reg. Ctr.	yes		C	33%	33%	33%					2,000
Vancouver	Reg. Ctr.		Parking revenues go to redevelopment. City built parking structure	B	20%	20%	20%	20%	20%			6,000
Gladstone	Town Ctr.	yes		C	20%	20%	20%	20%	20%			1,200
Hollywood	Town Ctr.		TOD tax abatement	B	25%	25%	25%	25%				1,200
Lake Oswego	Town Ctr.	yes		B		20%	20%	20%	20%	20%		1,200
Lents	Town Ctr.	yes		B		20%	20%	20%	20%	20%		1,200
Milwaukie	Town Ctr.	Anticipated	vertical housing tax abatement; urban renewal adoption anticipated	B		20%	20%	20%	20%	20%		1,200
Rockwood	Town Ctr.	yes		B	20%	20%	20%	20%	20%			1,200
Sherwood	Town Ctr.	yes		C		20%	20%	20%	20%	20%		1,200
Tigard	Town Ctr.	yes		C		20%	20%	20%	20%	20%		1,200
Amberglen	Town Ctr.		significant amenity investments planned	B		20%	20%	20%	20%	20%		5,000
Interstate	Non-ctr. UR	yes		A	25%	25%	25%	25%				8,000
MLK	Non-ctr. UR	yes		A	20%	20%	20%	20%	20%			3,500
Villebois	Non-Ctr UR	yes		C	33%	33%	33%					2,500
Portland TOD (1/4 mile radius around MAX stations at NE 60th, NE 82nd, 122nd, 148th, SE Division, Portland portion of 162nd	Non-Ctr UR		TOD tax abatement	C	25%	25%	25%	25%				1,200 at each location
Canby	City	yes		C			20%	20%	20%	20%	20%	600
Sandy	City	yes		C			20%	20%	20%	20%	20%	600

Consumer preferences: neighborhood score

Recognizing that residents are willing to pay different prices for different locations, MetroScope scenarios have an input assumption called neighborhood score. A neighborhood score is assigned to each census tract. The score represents the relative market desirability of the census tract and is based on historic residential sales prices. Statistical regression analysis is used to determine what portion of a residence's value can be attributed to its location (neighborhood). This statistical analysis controls for private improvements (e.g. lot size, residential square footage, number of bathrooms, age of house, number of bedrooms, etc).

In the 2009 UGR scenarios, the neighborhood score remained static through the course of the scenario. Past studies have indicated, however, that neighborhood scores change over time, sometimes due to public investments in amenities (see Appendix 2 for information about price premiums associated with urban amenities). For this scenario, neighborhood scores were conservatively increased in some locations to reflect the over $3 billion in public investments included in the 2035 State RTP as "community-building" projects in centers, corridors, main streets

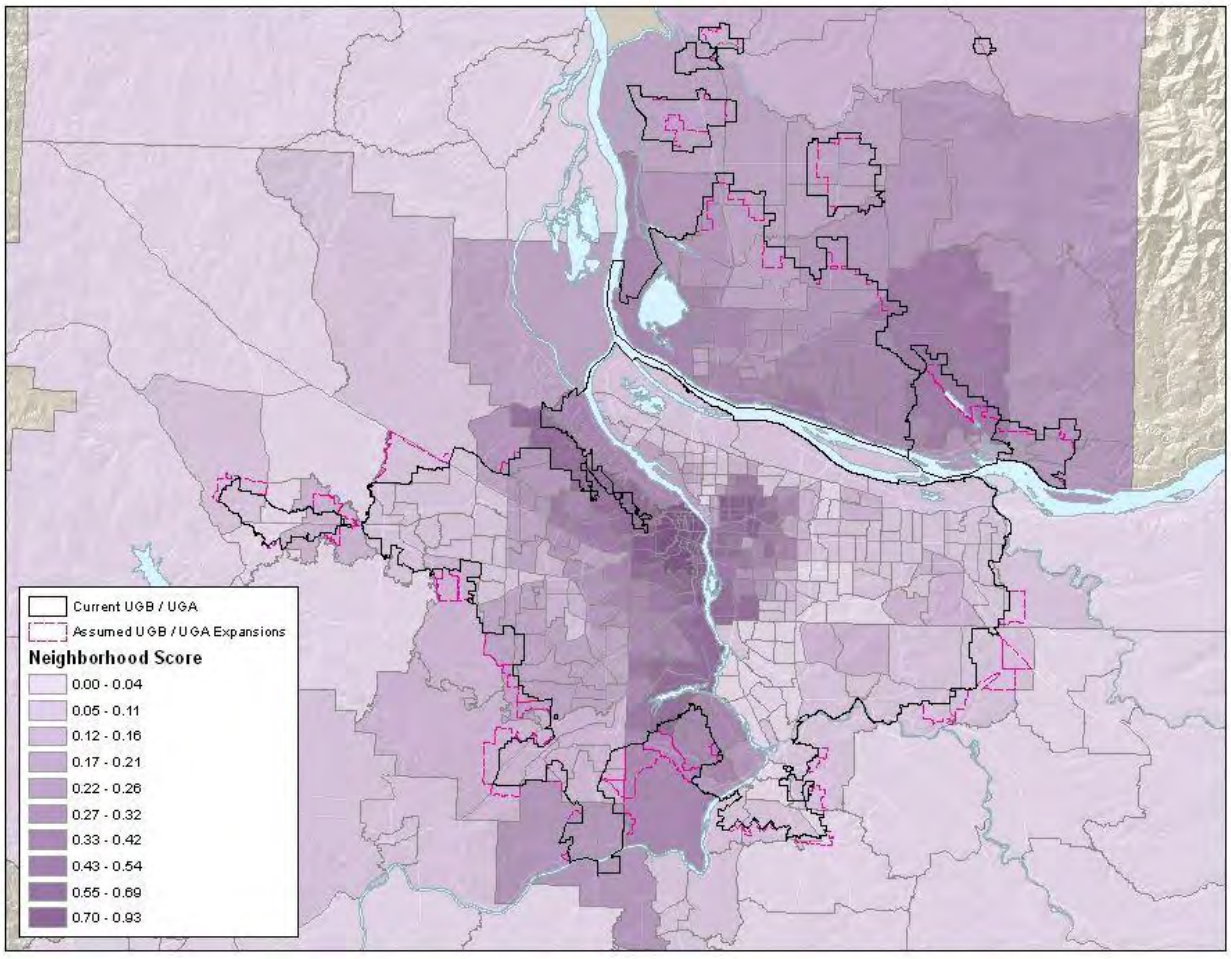
and station communities. Scores for neighborhoods that already have particularly high or low historic scores were not adjusted with the rationale that there are diminishing returns on investments in locations with high scores and that especially low scores are likely to persist in some locations. Neighborhoods with moderate scores are believed to be ones that are most likely to respond to community-building investments. Therefore, where warranted by community-building investments in the State RTP, scores were adjusted for neighborhoods that currently have moderate scores.

After identifying projects in the State RTP that qualify as "community-building" investments, the impact of those projects was estimated by first adding up the total expenditures on projects for each Census Tract. The total values were then divided by the sum of households and employees in the tract, to create a sort of "per capita" measure of investment by census tract. This method helps to normalize across zones covering different areas, with varying population and employment. In order to focus on areas with significant public investments, only census tracts with investments of at least $500 per household/employee were considered for a neighborhood score improvement.

Census tracts with an existing neighborhood score between 0.10 and 0.50 were assumed to be the most likely to respond positively to community-building investments in public infrastructure. There were 84 census tracts in total with a neighborhood score in the 0.10 to 0.50 range and at least $500 in community-building investments. These per household and employee investments were then ranked, highest to lowest. Natural breaks in this ranking were observed between the few zones that had the very highest levels of investment, up to $33,800 per household/employee, and many more zones with low to moderate investments of $500 to $5000 per household/employee. So the census tracts were divided along these breaks into four groups, and neighborhood scores were adjusted as follows. The neighborhood scores for the top five census tracts, with investments of $13,000 to $33,800 per household/employee, were increased by 20%. Neighborhood scores for the next eight, with investments of $5,300 to $8,100, were bumped up by 15%. The following 38 tracts, with investments of $1,700 to $4,800 were increased by 10% and the bottom 33, with investments of $500 to $1,600, were increased by 5%. Overall, these changes increase the average neighborhood score in these 84 zones from 0.23 to 0.25.

Figure 12 displays this scenario's neighborhood score assumptions. A higher score (darker color) indicates that the census tract has a higher market desirability.[7]

Figure 12: assumed neighborhood scores by Census Tract



[7] Areas with sparse residential sales data (i.e. rural areas) may exhibit exaggerated neighborhood scores (the result of a small number of high value sales). Urbanized areas with more sales activity are likely to have more accurate neighborhood scores.

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Appendix 2:

How public investments stimulate private development

August 2010

Metro | *People places. Open spaces.*

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JOHNSON REID
LAND USE ECONOMICS

ASSESSMENT OF RESIDENTIAL EFFICIENCY MEASURES

JULY 21, 2010 | METRO

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I. INTRODUCTION

As part of Metro's ongoing efforts to assess the carrying capacity of the Region's residential land inventory, Johnson Reid developed a modeling framework to supplement and expand upon Metro's existing models.

The model developed is a "production" model, in that it approaches the question of the anticipated nature of future development from the perspective of a developer. Key inputs are incorporated into a determination of what development form returns the greatest value to the underlying property. The model is based on a series of simplified decision pro formas, which represent a range of prospective development forms, using different construction techniques and having distinct density and cost characteristics. The output of the model can be represented as an assumed predominant development form given a set of assumptions within a specified geographic area.

This document will summarize the key components of the model and general output results. The report also addressed price premiums associated with a range of neighborhood characteristics. This information is derived based on a review of existing literature as well as original hedonic modeling. It should be noted that the model incorporates a number of significant variables that are highly dynamic, which will likely shift substantively over the planning horizon.

II. METHODOLOGY

GENERAL OVERVIEW

Our approach to this assignment was to develop a "production" model, which mimics a developer's decision tree and solves for the highest and best use residential development form. We use a pro forma based predictive model to generate predominant residential development profiles for a series of delineated subareas. This model evaluates highest and best use development forms under a range of assumptions, based on the implied residual property value[1] under each use. This allows us to calculate the likely predominant development form within a series of geographic subareas.

This section outlines the characteristics of the production model developed, and the relationship between changes in assumptions and key variables and predicted development form. Extensive work was done to quantify to the extent possible price premiums associated with a range of factors, primarily literature review as well as original hedonic modeling. A key output of this work is identification of the marginal impact of a range of potential public actions on the anticipated form and magnitude of development activity.

The model can be broken up into three primary categories that are determinative of final development form: achievable pricing, cost to develop, and threshold returns. The following is a schematic of the general range of assumptions in the model, as well as a discussion of the key components.

[1] Residual Property Value reflects the maximum supportable acquisition value of the property under an assumed development program.

SCHEMATIC OF MODEL

A key objective of this model is to develop a theoretical construct within which to evaluate the impact of a range of public investments and actions on the anticipated form of development. The analysis will assess the level to which investments such as public transit and streetscape can change achievable residential pricing, which the model can convert into a marginal anticipated impact on development form using a development model approach (production model). Public investments and actions can have a significant impact on pricing, the cost to develop as well as threshold returns.

ACHIEVABLE PRICING

Achievable pricing in the market is the variable that has the most significant impact on development form. The model approaches pricing at a geographic district level, and then allows for additional

adjustments to pricing based on specific locations within the district. Current achievable pricing can be determined with a considerable level of reliability, but pricing would be expected to shift over time. Metro's MetroScope[2] modeling can provide input to supportable assumptions with respect to anticipated shifts in housing prices over time.

Current achievable pricing can be established for both rental and ownership housing at the regional and district level using readily available sources of current market information. For rental units, these would include periodic surveys completed by groups such as the Metro Multi-Family Housing Association, Norris Beggs & Simpson and Norris & Stevens. While these surveys are valuable, care should be taken to differentiate between new product and general market patterns, as the model is predicated on new development trends.

Current achievable pricing patterns for ownership housing can be derived from sources such as the Realtor's Multiple Listing Service (RMLS) and New Home Trends. As with the rental product, the model is driven by assumptions with respect to achievable pricing for new product as opposed to the general market average.

The variables in the model are based on an assumed achievable price per square foot for rental as well as ownership product. Adjustments by district are based on observed patterns in the secondary survey materials.

COST TO DEVELOP

Cost to develop is another key determinant on final development forms. For this analysis, we chose five alternative development forms:

Development Form	Description	Example Photo
High Rise	Steel and concrete construction. Assumed density was a 12.0 FAR. Local examples are found in the South Waterfront and recent Pearl District projects.	

[2] MetroScope is an interactive transportation and land use forecasting tool developed by Metro.

Mid-Rise	Also steel and concrete construction, but limited in height to 4-7 stories. These are seen locally in early urban projects, or areas in which a high-rise solution is considered too large in scale.	
Type V Construction over Podium	Wood frame and/or steel stud construction over a single story concrete podium. This is a common construction type on infill sites in the close-in eastside neighborhoods.	
Type V Construction with Surface	Typically wood frame construction with surface parking, carports or stand-alone garages. Construction is usually two to three stories high, with a density approaching 30 units per acre. This is the predominant form in most suburban contexts in the metro area.	
Duplex/Townhomes	Also typically wood frame, these units often have parking under the unit. Projects can be fee simple or with condominium ownership of the ground.	

As a general rule, the higher density development forms have a higher cost per square foot to construct. This is offset by a greater achievable density (units/acre), which has value when the achievable price is higher than the cost of construction excluding land. When achievable pricing is below construction costs, there is no marginal value associated with the increase in density and development forms with delivery values greater than achievable pricing are deemed to be not viable.

Construction cost assumptions are derived in the model based on R.S. Means median values for the development forms evaluated. The R.S. Means numbers are based on real project experience, but are necessarily backward looking as they are based on recent experience. This can provide for some short-term bias in the estimates, but the bias will shift over time and be less significant over a longer term planning horizon.

We recognize that the basic development forms used in our analysis do not represent the full spectrum of potential outcomes, but at a district level we feel that they can adequately address what a "predominant development form" assumption should be.

THRESHOLD RETURN

Achievable pricing and the cost to develop are reconciled with an assumed threshold rate of return necessary to induce development. While developers don't always make money, their going in assumption always reflects an expectation of return to offset the risk inherent in development. Acceptable rates of return can vary considerably over time, and reflect factors such as the perceived risk associated with a particular form of real estate relative to other available returns. Not all developers calculate returns in a consistent manner, as their individual deal structures and anticipated dispositions vary.

For this analysis, we selected a measure of threshold return that is easily tracked and simple to calculate. For income properties, the threshold return is expressed as a risk spread between current market capitalization rates[3] and the project's initial return on cost at stabilization. Within the analysis, we are assuming a 2% risk spread. This allows for some dynamism by area as well as over time. Capitalization rates move substantially over time, and tend to track with outside variables such as treasury rates and financing costs. In addition, capitalization rates can vary considerably by the nature and type of product, with lower capitalization rates seen in areas perceived to represent lower levels of risk.

For the ownership residential product, the assumed threshold rate of return was set at a 20% return on sales, which reflects that the gross profit after sales commission is 20% greater than the cost of construction.

As a general rule, the threshold return is a function of returns available for other investments, and their relative perceived level of risk. Real estate is a highly cyclical industry with extended delivery times and considerable construction and market risk, and as such typically demands higher return

[3] A capitalization rate (cap rate) is a commonly used way to value an income property (investment property). Net operating income before taxes is divided by the cap rate to establish a market value.

levels. Threshold returns dropped during the last construction cycle as higher rates of leverage (allowable debt levels, which lower equity requirements) and increased non-recourse loan availability reduced perceived risk levels to developers. This is no longer the case in terms of the availability of non-recourse loans, but market rates of return have remained quite low.

HIGHEST AND BEST USE

The underlying assumption was that development patterns would largely occur in the form determined to represent the highest and best use, defined as the development form that generated the greatest residual property value. In other words, marginal development activity would largely be consistent in form with what the model indicates would support the greatest value for the underlying property.

The highest and best use determination is based on the allowable use that has the highest indicated residual property value between the five alternative development forms and two tenure options (owner and renter). An entitlement screen is necessary, as use types identified as having the greatest residual values may not be allowable under existing zoning. This can represent either a density restriction (allowable densities are below what is market supportable), or a mandated density (minimum densities are above what is market supportable).

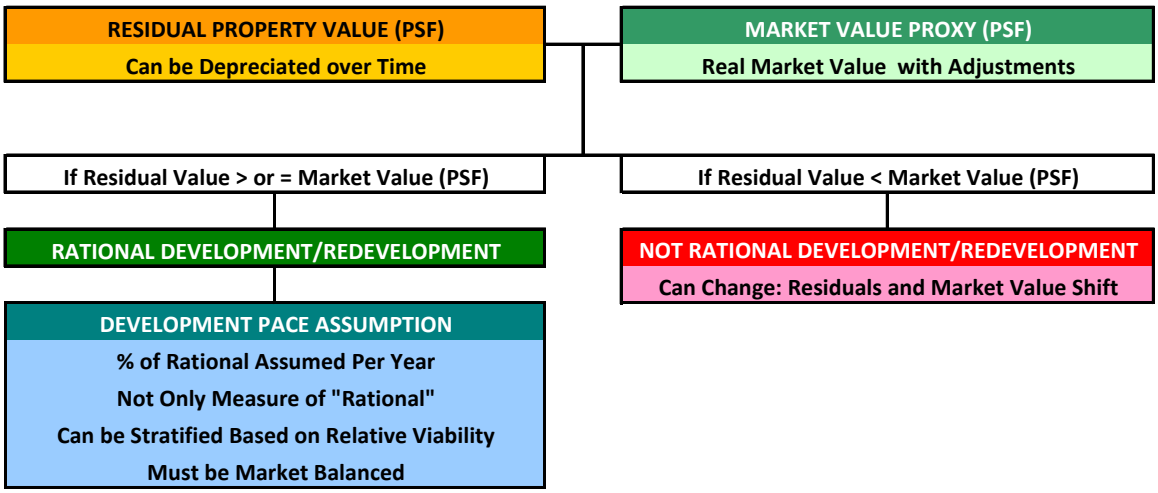
Another key screen that should be monitored is what is referred to as a "market screen". While the analysis is likely to identify a use as the highest and best use in an area, the market may not support full build-out in that use type. As an example, if rental residential development in Type V construction over a podium is identified as the highest and best use, it is unlikely that all new housing developments will be rental apartments, as the rental market serves approximately 35% of households in the Portland metropolitan area. If the market was completely built-out in this manner, it would likely get substantially over-built and achievable pricing would drop.

Ability to pay is another factor to consider with the highest and best use determinations. While achievable pricing at the margin may be adequate to support relatively costly cost housing forms such as high-rise condominiums, there is a limit to how many households would be able to afford this option. MetroScope has output related to the implied housing cost burden, which needs to be considered in these calculations.

REDEVELOPMENT

The determination of residual property values also provides key input into predicting redevelopment activity. As a general rule, redevelopment is considered plausible when the residual land value under the highest and best use development scenario is equal to or greater than the estimated current value of the property, including improvements.

REDEVELOPMENT MODEL SCHEMATIC



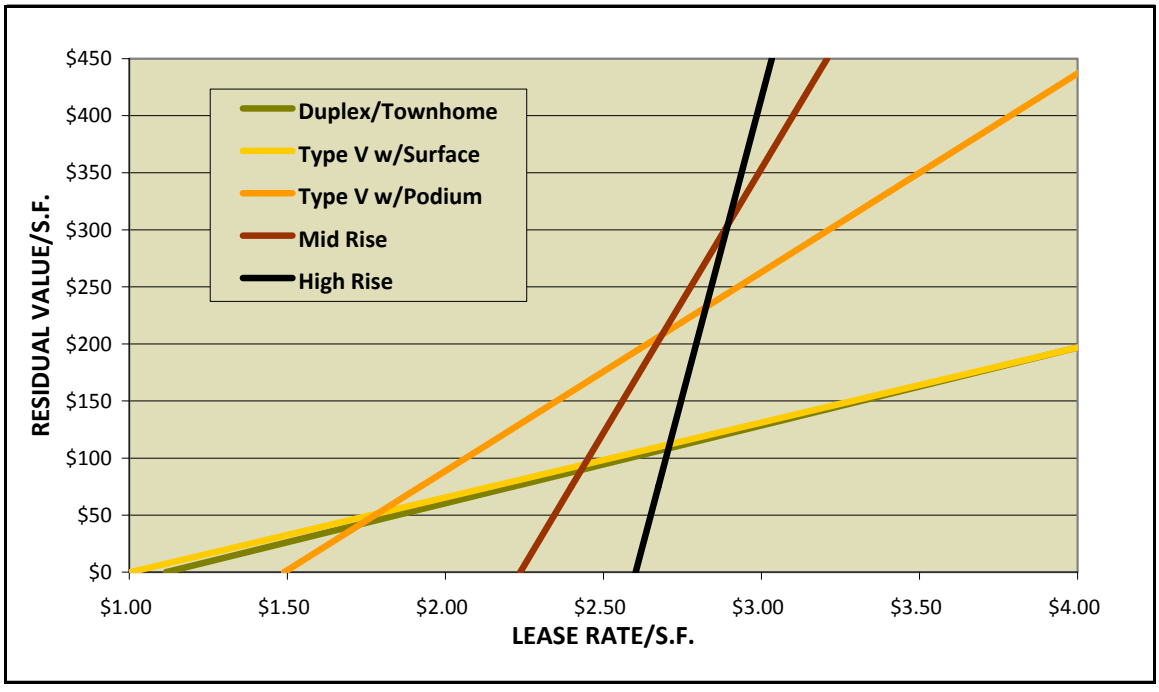
If the residual value is greater to or equal to the market value of the property, it is assumed to represent a rational development or redevelopment opportunity. While development and/or redevelopment is considered viable in these instances, it does not necessarily mean that it will be developed with the study time frame. There are a number of additional factors that impact redevelopment, and we assume that only a portion of opportunities identified as viable will be realized within the study horizon.

III. GENERAL OUTPUT

The residential development model generates a general relationship between the five basic development forms, under both a rental and ownership assumption. Within the model, achievable pricing is the independent variable while costs to development and threshold returns are givens and outside of the developer's control. Based on the assumptions used, we can generate a simple graphic that demonstrates the basic relationship between the development forms.

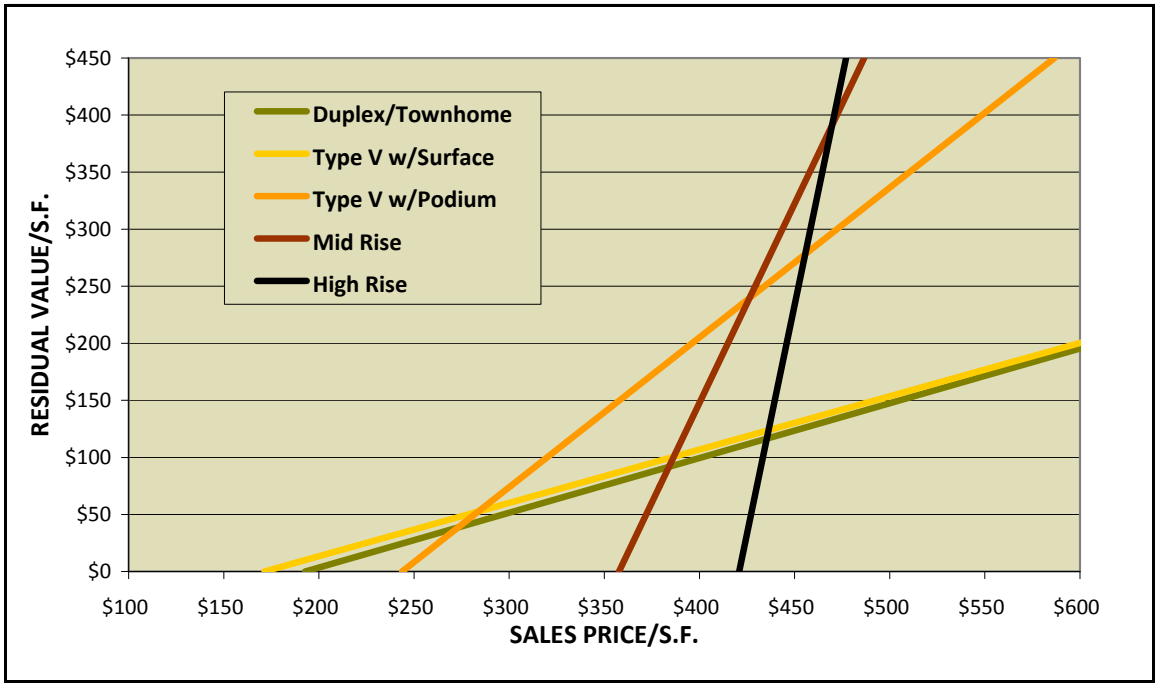
As shown in the following graphic, the pro formas for the development prototypes support different residual property values under different achievable lease rates for rental residential product. Under each assumed lease rate, the development form that supports the highest residual property value is considered the highest and best use, assuming the form is entitled. As shown in the graphic, a market with achievable pricing at $1.50 per square foot would see Type V construction with surface parking as representing the highest and best use. As achievable rents approach $1.60 per square foot, Type V construction with podium parking transitions into the highest and best use. When achievable pricing assumptions move above $2.40, we see Mid-Rise and High-Rise products becoming the indicated highest and best use.

RENTAL RESIDENTIAL DEVELOPMENT



The model indicates a similar pattern for ownership residential product. In this case the transition between Type V surface parked development and Type V podium development is at an achievable sales price of around $270 per square foot.

OWNERSHIP RESIDENTIAL DEVELOPMENT



In both cases, the marginal benefit of the higher costs per square foot for construction are offset by greater achievable densities when achievable pricing is high enough.

The generalized relationships shown cannot account for all potential permutations associated with the cost of delivering products. There are significant economies of scale associated with many development forms, which are difficult to efficiently design and construct on small sites, or sites with topographical on configuration limitations. Conversely, there are market driven limits to the amount of product that is feasible to develop in a market, which argues against large-scale developments in markets that are insufficiently deep to support them.

IV. DISTRICTS

Viable development forms vary substantially throughout the Portland metropolitan area. This is primarily due to differences in achievable pricing and can be reflected in the model. As noted previously, we can set achievable pricing at a district level based on secondary market data sources. While the generalized relationships between development forms remain constant, we find that geographic districts within the region vary substantially in achievable pricing, and subsequently likely predominant residential development forms.

A matrix of current achievable pricing assumptions for new construction was generated for eleven distinct geographic districts. These numbers were derived from a combination of data sources, including New Home Trends, Realtor's Multiple Listing Service, and the Metro Multifamily Housing Association. The following table summarizes the baseline assumptions by district used in our model:

ASSUMED PRICING BY DISTRICT

District		Rental $/SF	Price/ SF
1	Portland CBD	$2.16	$371
2	Close-In Eastside	$1.72	$275
3	Close-In Westside	$1.79	$250
4	East Multnomah County	$1.38	$250
5	East Clackamas	$1.43	$250
6	Milwaukie/Gladstone	$1.39	$250
7	Oregon City	$1.41	$250
8	Lake Oswego/West Linn	$1.63	$363
9	Beaverton	$1.43	$250
10	SW Suburbs	$1.39	$250
11	NW Suburbs	$1.46	$250

The assumed pricing matrix reflects per square foot baseline pricing by district for new product. Rental rates are expressed by monthly rate, while the price per square foot reflects ownership pricing. These prices are not necessarily reflective of actual achievable rents in the current markets, but theoretical achievable rents if the area was fully amenitized. The model also allows for further refinement in achievable pricing based on level of amenity adjustment. The baseline rents are set to reflect a 100% location[4], with locations considered less desirable discounted from those baseline levels.

The market is currently unusually fluid, and pricing estimates are seen as less reliable than normal under these conditions. The pricing matrix is set up as a dynamic input into the model, allowing for regular updating as appropriate.

V. AMENITY RELATED PREMIUMS

A variety of public investment types, ranging from parks to transit to other public facilities, has a demonstrated record of affecting the economic value of the built environment nearby. This section provides a broad review of notable research into the economic premiums created by public investment types, nationwide and in the Portland metro area. This section also discusses original hedonic modeling intended to identify economic premiums from a variety of public investment types that have not yet generally been explored in the Portland metro area.

LITERATURE REVIEW

For almost 30 years, significant economic and statistical research has been published that attempts to quantitatively explain the many different variables that can affect the value of a home. The original study that framed the issue in modern statistical methodology was Sherwin Rosen's 1974 study "Hedonic Prices and Implicit Markets: Product Differentiation in Perfect Competition" published in the *Journal of Political Economy*.

[4] A 100% location refers to the most desirable/marketable location within a market.

That study introduced a rigorous statistical process – hedonic modeling – that enables estimates of how individual factors, isolated among many different ones, affect home prices. For instance, the methodology lets research answer the questions:

- *Does a nearby city park distinctly affect the value of a home no matter what the many physical features of a home may be?*
- *Does the park positively affect value?*
- *By how much does the park distinctly contribute to the appeal and price of the home?*

Over the past fifteen years, as statistical modeling software has become far more sophisticated and economical while data sets have become more detailed and easier to access, a highly diverse and robust body of literature has grown that analyzes many different factors affecting home values. These include "amenities" such as parks, proximity to employment centers, and school districts. Research also explores the negative, housing price impacts of "disamenities," or such things as landfills and noise from freeways.

For purposes of this specific analytical effort, we focus on published research literature that has sought to identify the impact of specific public facility and amenity investments and their impact upon home values.[5] The literature review is divided into four general categories of study, in order of how long the topic has been researched – and therefore the more "robust" and rigorous the body of literature is. These are:

- Impact of parks and open space upon home values;
- Impact of non-automobile transportation investment upon home values;
- Impact of commercial services or "urban amenities" upon home values; and
- Impact of street design and pedestrian connectivity amenities upon home values.

A conclusion section summarizing findings follows thereafter. A discussion of caveats to the published literature is also included, primarily among them the issue of single-family residential property value bias. The overwhelming majority of studies in the literature, and among those summarized below, attempt to estimate the value of different public investments on residential values as measured by single-family residences. Detached homes are the prevalent residence type nationwide and thus represent a multitude of data observations with easily measurable economic values and other independent determinants.

As the use of this analysis will be treatment of public investments that may enhance the economic viability of higher-density residential choices, largely attached residential development, the literature is useful in establishing economic value parameters but not necessarily indicative of choices made by households who prefer attached residential product. Accordingly, we caveat the single-family residential bias of these results, as well as later discuss a "self-selection" bias among households who prefer attached residential development and have unique preferences for amenities as well.

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[5] The yet-unpublished study, *Hedonic Price Effects of Pedestrian and Transit-Designed Development* (Keith Bartholomew & Reid Ewing, Department of City & Metropolitan Planning, University of Utah, 2009) and "The Economic Benefits of Open Space, Recreation Facilities and Walkable Community Design" (published in Active Living Research, March, 2010, Robert Wood Johnson Foundation, http://activelivingresearch.org) were identified as the most recent surveys of academic and non-profit/advocacy literature. Jointly, both works serve as the foundation of this literature review.

RESIDENTIAL VALUE IMPACTS OF PARKS & PUBLIC FACILITIES

The value of park space as an amenity generally to communities and specifically residential development is one of the oldest issues of study in both planning and real estate economics, extending to 1926 analysis of the financial return of New York's Central Park.[6] Open space, and specifically urban park space, are long established as important public investments for maintaining robust, healthy communities – assuming they are well-maintained and safely managed. Review of more modern research literature indicates the following about the distinct impact of different park and open space amenities upon nearby home values:

- Capitalization of the benefits of public park space into residential development is typically concentrated between 500 and 3,000 feet from park space, with declining benefit as distance increases.[7]
- For larger, regional parks, measurable positive home value impact goes out to 1,500 feet distance; however 75% of the benefit is within 500 to 600 feet of the park.[8]
- Park space design maximizes value capitalization with the "Edge Principal," i.e. longer narrow parks with greater edge are of higher value than parks with wider or round parks.[9]
- Parks with emphasis on natural areas (woods, ponds, etc.) exhibit higher value capitalization than improved, flat open spaces for social or athletic functions.[10]
- Although numerous empirical studies have been conducted nationwide with a diverse array of results, in general larger, passive-use and well-maintained parks add anywhere from 10% to 20% additional value to residential development within 3-4 blocks, all else equal.[11]
- The most thorough review of park amenity impact literature generally concludes the size of the park and proximity to it are the best indicators of positive economic value created by the park.[12] Generally, higher park size and greater proximity to the park – open space or improved space – contribute to economic value of a residence. Economic distinction between improved park space and open/natural park space was more mixed.

Nearly all of the above studies focused on a diversity of urban residential form, i.e. attached residential development as well as detached, and capitalized property values associated with parks.

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6 Metropolitan Conference of City and State Park Authorities (1926). Parks as investments. New York City. Cited in L.H. Weir (1928), Parks*, A Manual of municipal and county parks*. New York: A.S. Barnes.

7 Crompton, J.L. (2001). The Impact of Parks on Property Values: A Review of the Empirical Evidence. *Journal of Leisure Research*, Vol. 33, No. 1, pp. 1-31.

8 Crompton, J.L. (2004). *The proximate principle: The impact of parks, open space and water features on residential property values and the property tax base.* Ashburn, VA: National Recreation and Park Association.

9 Little, C. E. (1990). *Greenways for America*. Baltimore: John Hopkins University Press.

10 Kaplan, R. & Kaplan, S. (1990). *The experience of nature*. New York: Cambridge University Press.

11 Crompton, J.L. (2001). The Impact of Parks on Property Values: A Review of the Empirical Evidence. *Journal of Leisure Research*, Vol. 33, No. 1, pp. 1-31.

12 McConnell, V. and Walls, M. (2005). *The value of open space: Evidence from studies of nonmarket benefits*. Cambridge, MA: Lincoln Institute of Land Policy.

A study of parks and capitalized values within the City of Portland in 2000,[13] which largely focuses on detached, single-family housing actually found less marginal impact of parks on prices and, therefore, premiums paid by households to live near parks. Findings of the study indicated:

- Overall, park space proximity displayed a 1.43% price premium to nearby, largely single-family homes;
- Golf course open space by far exhibited the greatest price premium estimated at 5.97%;
- General public park space benefited proximate homes by 1.28% on average.

Later work by Netusil with Lutzenheiser[14] studying Portland, Oregon data estimated that the optimal size of a park should be that of a golf course. Finally, a study of the impact of street trees upon home values throughout the Portland metropolitan area indicated that the number of trees fronting a property and within 100 feet of the property can, all else equal, increase the price of a home by $8,000 (2008 dollars).[15]

RESIDENTIAL VALUE IMPACTS OF NON-AUTOMOBILE TRANSPORTATION IMPROVEMENTS

With significant capital investment in local-serving rail nationwide over the last twenty years, and increasing bicycle and pedestrian right-of-way more recently, a body of literature has grown that statistically estimates the impact of various non-automobile transportation access and proximity.[16]

Rail Transit Impacts

The great concentration of statistical research has focused on rail transit, and particularly light-rail or streetcar transit proximity to a home, and to a lesser extent commercial property. Heavier commuter rail impacts upon property values have also been studied. The following is a summary of key findings from the standout, more-often cited published studies, most accessibly surveyed by a 2001 paper by consulting firm Parsons Brinckerhoff.[17]

Nationwide Residential Impacts

- Homes have sold for between $197 to $272 more for every 100-foot greater proximity to a light rail station in San Jose and San Diego, California, respectively, while similar analysis found no effect in Sacramento.[18]

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13 Bolitzer, B. & Netusil, N.R. (2000). The impact of open spaces on property values in Portland, Oregon. *Journal of Environmental Management*, Vol. 59, pp. 185-193.

14 Lutzenhiser, M., and Netusil, N.R. (2001). The effect of open spaces on a home's sale price. *Contemporary Economic Policy* 19 (3): 291-298.

15 White, R. (2009). Spreading the green and sharing the wealth. *Metroscape* 27-30.

16 The reader is also invited to review two studies that provide alternative methodology to hedonic modeling to estimate the value of rail/streetcar transit in the Portland metro area: "Portland Light Rail Transit Land Development Experience & Application," E.D. Hovee & Company, LLC Memorandum to David Unsworth & Jillian Detweiler, TriMet, July 28, 2008; and *Portland Streetcar Development Oriented Transit*, Office of Transportation and Portland Streetcar, Inc., April 2008.

17 Parsons Brinckerhoff. (2001). The effects of rail transit on property values: A summary of studies (Project 21439S). Cleveland, OH: NEORail.

18 Landis, J. R. Cervero, S. Guhathakurta, David Loutzenheiser, and M. Zhang. (1995). *Rail Transit Investments, Real Estate Values, and Land Use Change: A Comparative Analysis of Five California Rail Transit Systems.*

- Average home prices decline by between $1,600 and $2,300 for every 100 feet distance from the commuter rail station to the home in San Francisco and New York, respectively.[19]
- Apartment rents decrease by an average of 2.5% for each 530-foot distance from Washington D.C. Metro stations.[20]
- Single-family homes enjoy nearly 7.0% higher values located in Los Angeles communities with commuter rail.[21]
- Conversely, similar studies found contradictory evidence in San Francisco, namely no significant impact of a rail station on home price but did find that within 1,000 feet of CalTrain right-of-way, house prices are generally $51,000 lower, all else equal,[22] while a Boston study found residential prices 20% lower within 400 feet of heavy commuter or freight rail.[23]

Nationwide Commercial Impacts

- Commercial space in Santa Clara County, California within ¼ mile of a light rail station demonstrated up to $0.05 greater rent per square foot, all else equal, while office space sales within the ¼ mile of a light rail station recorded $4.87 higher price per square foot, all else equal.[24]
- Commercial space per square foot in Washington, D.C. decreases by $2.30 for every 1,000-foot distance from a commuter rail station.[25]
- Alternatively, a study found no impact of commercial property impacts from rail station access in San Diego.[26]

Portland Metro Area Residential Impacts

- Within 100 feet of a light rail station, Portland homes have sold for $663 more than other homes all else equal.[27] Alternatively, other analyses have found that for every 100 foot distance from light rail, homes sell for $75 less.[28]

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19 Lewis-Workman, S. & Brod, D. (1997) *Measuring the Neighborhood Benefits of Rail Transit Accessibility*. Transportation Research Record 1576, pp.147-153.

20 Benjamin, J. and G. Stacy Sirmans. (1996). "Mass Transportation, Apartment Rent and Property Values." *The Journal of Real Estate Research*, Vol. 12, No. 1.

21 Fejarang, R. (1994). *Impact on Property Values: A Study of the Los Angeles metro Rail*. Preprint, Transportation Research Board, 73rd Annual Meeting, Washington, D.C., January 9-13.

22 Landis, J. R. Cervero, S. Guhathakurta, David Loutzenheiser, and M. Zhang. (1995). *Rail Transit Investments, Real Estate Values, and Land Use Change: A Comparative Analysis of Five California Rail Transit Systems.* Monograph 48, Institute of Urban and Regi*/onal Studies, University of California at Berkeley.

23 Armstrong, R. (1994) Impacts of Commuter Rail Service as Relected in Single-Family Residential Property Values. Preprint, Transportation Research Board, 73rd Annual Meeting.

24 Weinberger, R. (2000). *Commercial Property Values and Proximity to Light Rail: Calculating Benefits with a Hedonic Price Model*. Presented at Transportation Research Board 79th Annual Meeting, Washington, D.C. January 9-13.

25 Federal Transit Administration. (2000). *Transit Benefits 2000 Working Papers: A Public Choice Policy Analysis.* Washington, D.C.: Federal Transit Administration, Office of Policy Development.

26 Landis, J. R. Cervero, S. Guhathakurta, David Loutzenheiser, and M. Zhang. (1995). *Rail Transit Investments, Real Estate Values, and Land Use Change: A Comparative Analysis of Five California Rail Transit Systems.*

- Within 200 feet of a light rail station, Portland homes have sold for $2,300 more than others, all things equal.[29]
- Beginning at a distance of 100 meters, every meter distance beyond was estimated to reduce Portland area home prices by $32.20 on average.[30]

The most recent, comprehensive national survey of hedonic home price analysis of transit proximity conducted by Cervero[31] indicates in general, within a ¼ mile to ½ mile radius, home price escalation is typically anywhere from 6.4% to 45% reflecting significant geographic variation and sensitivity to study specifications.

Finally, in what is perhaps the most pertinent and recent study on the issue, Michael Duncan of the University of North Carolina at Charlotte studied the differences in how detached, single-family residences and condominium units distinctly capitalize the benefits of rail proximity.[32] His laboratory was the San Diego metropolitan statistical area and its transit oriented development areas. Findings include:

- Condominium units within 1/4 mile of a rail station had, all things equal, $22,452 greater property value than like condominium units beyond a quarter-mile but within a mile of the rail station.
- The condominium unit proximity premium translates into a value boost of 16.6%, all things equal.
- Single-family residential units within ¼ mile of a rail station had, on average, $11,800 greater value than like homes beyond a quarter-mile, but within one mile of the station.
- The single-family premium, comparable to other findings in the literature review, translates into a 5.7% property value boost for proximity to a rail station, all else equal.

Commercial Development Impacts

A less robust body of literature now exists that is beginning to empirically support the contention that commercial uses proximate to residential areas boosts the value of homes, all things equal. In other words, research is indicating potential home value premiums for being within a "15-minute neighborhood" or a "16-hour district" in current planning terms.

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27 Al-Mosaind, M. K. Dueker, and J. Strathman. (1993). *Light Rail Transit Stations and Property Values: A Hedonic Price Approach.* Portland, OR: Center for Urban Studies. Preprint, Transportation Research Board, 72nd Annual Meeting.

28 Lewis-Workman, S. & Brod, D. (1997) *Measuring the Neighborhood Benefits of Rail Transit Accessibility*. Transportation Research Record 1576, pp.147-153.

29 Dueker, K. and M. Bianco. (1999). *Light Rail Transit Impacts in Portland: The First Ten Years.* Presented at Transportation Research Board, 78th Annual Meeting.

30 Chen, H., A. Rufulo, and K. Dueker. (1998). *Measuring the Impact of Light Rail Systems on Single Family Home Prices: A Hedonic Approach with GIS Applications.* Prepared for the Transportation Research Board, 77th Annual Meeting.

31 Cervero, R., S. Murphy, C. Ferrell, N. Goguts, Y. Tsai, G.B. Arrington, et al. 2004. Transit-oriented development in the United States: Experiences, challenges, and prospects (TCRP 102). Washington, DC: Transportation Research Board.

32 Duncan, M. (2008). Comparing Rail Transit Capitalization Benefits for Single-Family and Condominium Units in San Diego, California. *Transportation Research Record: Journal of the Transportation Research Board*, No. 2067, Transportation Research Board of the National Academies, Washington, D.C., pp 120-130.

Unlike the large volume of research on impacts of transit proximity, research on commercial development impacts is far less uniform in its findings of positive benefits. Some studies find value in being near a commercial district in general, while others find that being too close to the traffic, noise, and lights from various commercial property types translate into lower residential values in the immediate vicinity. For instance:

- Early research has found that being immediately adjacent to commercial offerings has a negative impact to property values, while homes that are not immediately next door to commercial development decrease in value by roughly $1,500 for every 33 feet away from retail.[33]
- A 2008 analysis in King County, Washington found interesting, but mixed results regarding transit-oriented development mix and residential values.[34] The study identified increased value for lower-cost housing to be near retail job opportunities, while proximity to retail reduced value for higher-end homes, all things equal.
- A 1999 study of the Kentlands New Urbanist, planned community development in Maryland indicated generally positive residential value impacts of mixed uses, including parks and open space as well as commercial uses, proximate to residential areas.[35]

The research team of Yan Song of the University of North Carolina and Garrit-Jan Knaap of the University of Maryland has published a series of studies on the impacts of various New Urbanism design, mixes of use, and infrastructure feature impacts upon housing values, most notably in 2003.[36] Studying Washington County, Oregon, they have found the following relationships via hedonic modeling, though with results sensitive to specification:

- In general, residential development proximate to commercial development enjoys greater values.
- However, homes have higher value, all things equal, when within a more homogenous, single-family residential area compared to homes within a mix of uses.
- The closer single-family homes are to multi-family homes, values tend to decrease.

Measuring the impact of proximate commercial development on residential home values is in practice the most difficult relationship to model statistically. Among other things:

- Commercial development size, forms, and services can vary widely;
- Unlike dedicated park or open space, commercial services can easily change within a five-year timeframe or shorter depending upon the health of the center;
- Traffic noise, visibility, and access in relationship to residential areas can be highly variable;
- Individual retail or service establishments can have very different appeal (café vs. tavern) at different times of day, to different demographics; *and*

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33 Li, M. and J.H. Brown. (1980). Micro-Neighborhood Externalities and Hedonic Housing Prices. *Land Economics* 56 (2): 125-141.

34 Mathur, S. 2008. Impact of Transportation and Other Jurisdictional-Level Infrastructure and Services on Housing Prices. *Journal of Urban Planning and Development* 134 (1): 32-41.

35 Tu, C. and M. Eppli. (1999), Valuing New Urbanism: The Case of Kentlands. *Real Estate Economics* Vol. 27.

36 Song, Y. and G. Knapp. (2003), New Urbanism and Housing Values: A Disaggregate Assessment. *Journal of Urban Economics* 54: 218-238.

- The value of being near a district in general as compared to specific types of commercial/non-residential development can be difficult to statistically distinguish.

To counter these problems in estimating commercial amenity values, the 2007 Urban Living Infrastructure study for Metro's Transit Oriented Development Program comprised a hedonic model of residential values as a function of specific commercial offerings within a 1.5 block distance. Home sales proximate to six key, mixed-use districts in the Portland metro were analyzed. Important findings specific to this metro area included:

- Specialty grocers, which sell gourmet goods and organic produce as well as have a café and flower store in-house, had very significant positive impacts to residential values nearby.
- Cinemas, typically single-screen and vintage in established commercial districts, also had substantial positive property value impact, likely signaling such an amenity as an anchor for entertainment and dining after business hours, i.e. the "16-hour district."
- Book shops, garden stores, and a few other unique commercial offerings were also found to have positive property value impact for homes nearby.
- Many other amenities were studied and had positive impact estimates, but were not "statistically significant" or statistical confidence in the estimates was not as strong.
- Alternatively, some commercial offerings were estimated to act as property value "disamenities," most notably pub/taverns primarily for alcoholic beverage consumption, day spas likely due to resident/non-resident parking conflict, and record stores.

RESIDENTIAL VALUE IMPACTS OF STREET DESIGN & NON-AUTO CONNECTIVITY

As economic research into the impacts of transit and open space upon residential values has become more robust, the second area of increasing new research has to do with New Urbanist street design, pedestrian connectivity, and even bicycle connectivity. Published research into each has only recently emerged and as such, a review indicates the body of work is from conclusive. A summary of key studies is found for each topic below.

Connected Street Patterns

New Urbanist residential development in different parts of the country has increasingly utilized "connected" street patterns, i.e. neighborhood grid-type systems rather than cul-de-sacs, etc. Research has followed seeking to identify which street system type is preferred by buyers and if that value is capitalized into home prices. Published research to date is mixed in findings:

- Song and Knaap in their 2003 study of Washington County, Oregon homes found homes have higher value, all else equal, in developments with grid-like connectivity in addition to value being nearby commercial development.[37]
- A 2007 study of Seattle-area residential development found that more traditional grid-like street patterns increase home values where neighborhoods are more homogenously residential, while grid-like street patterns have negative effects on property values when higher traffic volume uses such as commercial are nearby.[38]

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37 *Ibid.*

38 Matthews, J. and G. Turnbull. (2007) Neighborhood Street Layout and Property Value: The Interaction of Accessibility and Land Use Mix. *Journal of Real Estate Finance and Economics* 35: 111-141.

- Alternatively, two studies – one in 1990[39] and the other in 2002[40] – generally found that neo-traditional features such as grid-patterned streets and alleyways had lower capitalized values in home prices than cul-de-sacs and more typical suburban driveway/garage form.

Traffic Calming vs. Traffic Disamenity

Regardless of street layout, traffic calming devices have been studied for their impact upon residential values with mixed results in two older studies identified, potentially dependent upon the specific type of traffic calming device.

- Most recently, it was found that speed tables – street-wide speed bumps with a flat plateau in the middle - in residential areas to slow traffic had little discernible impact upon home values when neighborhoods without calming devices were compared.[41]
- In a much older study[42], diagonal diverters were the topic of study in a comparison of highly similar neighborhoods with and without the improvements. Diagonal diverters are barriers running diagonally across an existing four-way intersection that prevents through-traffic for automobiles, but maintains through-traffic for bicycles and pedestrians. The study found that home values appreciated faster in neighborhoods with the device than without.

Interestingly, the study of noise created by auto-friendly street design has far more robust research published and gives more confidence about the need for pedestrian-friendly design in different instances. The most prominent studies on the topic find that negative value impacts of street noise range from 0.2% value reduction per decibel of noise[43] to 0.6% value reduction[44], while a third indicates the negative value impact only occurs above 65 decibels of noise.[45]

On a related topic, research has occurred on a still-limited scale regarding the replacement of traffic-intensive freeways and associated noise with boulevards or other less-intensive automobile uses. The most notable paper on the topic,[46] prepared for the University of California Transportation Center in December of 2007, provided hedonic modeling of home prices as effected by the

39 Asabere, P. (1990) The Value of a Neighborhood Street with Reference to Cul-De-Sac. *Journal of Real Estate Finance and Economics* 3 (2): 185-193.

40 Guttery, R.S. (2002). The Effects of Subdivision Design on Housing Values: The Case of Alleyways. *Journal of Planning Education and Research* 23 (3): 265-273.

41 Edwards, V. and W. Bretherton. (1998) The Economic Impact of Speed Humps on Housing Values. Paper presented at the 1998 Institute of Transportation Engineers Annual Meeting, Toronto, Ontario. Washington, DC: ITE.

42 Bagby, D. (1980). The Effects of Traffic Flow on Residential Property Values. *Journal of the American Planning Association* 46: 88-94.

43 Bateman, I., B. Day, I. Lake, and A. Lovett. (2001). *The Effect of Road Traffic on Residential Values: A Literature Review and Hedonic Pricing Study.* Norwich, UK: Economic & Social Research Council.

44 Wilhelmsson, M. (2000). The Impact of Traffic Noise on the Values of Single-Family Houses. *Journal of Environmental Planning and Management* 43 (6): 799-815.

45 Thebe, M. (2004). Planes, Trains, and Automobiles: The Impact of Traffic noise on House Prices. *Journal of Real Estate Finance and Economics* 28 (2/3): 209-234.

46 Cervero, R., Kang, J. and K. Shively. (2007). "From Elevated Freeways to Surface Boulevards: Neighborhood, Traffic, and Housing Price Impacts in San Francisco." Working Paper, University of California Transportation Center.

replacement of the Embarcadero Freeway Corridor and the Central Freeway Corridor in San Francisco with more pedestrian-friendly, less auto-intensive boulevards. Highlights include:

- Before and after freeway replacement, proximity to automobile noise translated into disamenities, or home value discounts for homes proximate to the two corridors.
- A modest amenity benefit was estimated within ¾ miles from the new Embarcadero Boulevard after 2000, controlling for proximity to the waterfront.
- Values of homes proximate to the new Octavia Boulevard, the replacement of the Central Freeway Corridor, jumped by $116,000 in 2005, all else equal.
- The study also reviewed traffic patterns and usage to find that replacement of the freeways with Boulevards did not cause measurable negative impact to property values or neighborhoods with dispersion of traffic in the wake of freeway replacement.

"Walkability"

The term "walkability" has become common in both planning and real estate realms due in part to the increasingly New Urbanist orientation of residential development nationwide. "Walkability," however, is an inexact term generally reflecting relative proximity of a residential or commercial property to other commercial or employment destinations. To be "walkable," a property is usually within a mile of a destination and pedestrian connectivity is typically convenient.

Most recently, the private software company Front Seat launched its Walk Score methodology[47] and website to increasing notoriety and popularity in real estate and formal planning circles. A "Walk Score" is assigned by the service based on ¼-mile distance increments from a residence or business to other key commercial destinations. The ratings system is largely distance-driven, rather than infrastructure-driven; safe pedestrian access is not necessarily guaranteed in a "high" Walk Score (within ¼ mile distance).[48] In other words, the ratings system does indicate proximity, but does not indicate safe pedestrian or bicycle infrastructure or connectivity. This is particularly true for a Walk Score from one commercial address to another.

It is also not to be confused as a measure of how much walking or bicycling takes place. A home may have a high Walk Score, but the proximity of the home to a commercial area can just as likely indicate a very short, convenient drive via automobile to the commercial area in question. Even so, Walk Score has become a short-hand algorithm for proximity of a residential use or commercial use to a wide menu of commercial uses as a proxy for lesser need for an automobile.

Walk Score has specifically been utilized as a measure of "walkability" in recent studies of commercial property impacts upon residential and other commercial properties. The work of researchers Gary Pivo of the University of Arizona and Jeffrey Fisher of the University of Indiana best represents rigorous academic study of walkable proximity, or "Walk Score," between property types.

- Their 2009 study[49] of Walk Score premiums on a variety of residential, commercial and industrial properties nationwide found, on average, a 5% to 8% value gain for every 10 point gain in a property's Walk Score. The study also found, however, that higher Walk Score

47 http://www.walkscore.com/about.shtml

48 http://www.walkscore.com/methodology.shtml

49 Pivo, G. and J. Fisher. (2009). "Effects of Walkability on Property Values and Investment Returns." Working Paper. Responsible Property Investing Center, Boston College and University of Arizona, and Binecki Center for Real Estate Studies, Indiana University.

translates into mixed effects on commercial property returns and capitalization rates depending upon use, with the most negative effect upon retail property return measures.

- Their follow-up 2010 study[50] further explored the mixed results of walkability and income properties specifically with a more detailed methodology. They found that for every ten-point increase in Walk Score, property value increased by 1% to 9% on average and more generally correlated with lower capitalization rates and higher income.

Bicycle Connectivity

With bicycle mobility planning gaining momentum in different parts of the country, bicycle connectivity has become increasingly studied in academic literature. Interestingly, study methodologies are a bit more diverse and yield mixed conclusions about the value of bicycle access investment upon property values.

Opinion survey studies have historically been more numerous in gauging the effect of bike paths, on and off-road, and bike trail greenbelts upon residential home values *purely from the perception of property owners*. An unpublished review of survey studies in Colorado, Seattle, Omaha, Vancouver, Monmouth County, New Jersey, Santa Rosa, California, three National Park Service trails indicates that property owners nearby bike trails of various forms generally view the investment as an amenity, and specifically either boost nearby property values slightly or not at all.[51]

Hedonic modeling of bike value impacts on property value, alternatively, provides far more mixed results. Unlike existing property owner surveys, hedonic modeling offers the advantage of being able to control numerous variables that affect the value of a property, as well as simultaneously study a far larger sample of properties than just immediate property owners. Hedonic modeling is a more recent focus of research.

- The Delaware Transportation survey study[52] included a more simple hedonic model of bike access value impact for properties with only a handful of variables and found significant, positive impacts of being near bike paths.
- Alternatively, researcher Kevin Krizek of the University of Minnesota has published a series of papers on the various benefits of bike access upon property values and finds results depend highly upon the path type and urban or suburban setting. His most oft-cited study[53] of various districts and path types in the Twin Cities metro area finds that in a more urban environment, for every 400 feet closer to a roadside bike path, home values decline by nearly $2,300. For every 400 feet closer to an off-road path, value increases by $510. In a suburban setting, every 400 feet closer to a roadside path decreases home value by $1,059, while every 400 feet closer to an off-road path decreases home value by $240.

50 Pivo, G. and J. Fisher. (2010). "The Walkability Premium in Commercial Real Estate Investments." Working Paper, Responsible Property Investing Center, University of Arizona, and Binecki Center for Real Estate Studies, Indiana University.

51 Racca, D. and A. Dhanju. (2006). "Property Value/Desirability Effects of Bike Paths Adjacent to Residential Areas." Project Report, Delaware Center for Transportation and the State of Delaware Department of Transportation.

52 *Ibid.*

53 Krizek, K. (2006). Two Approaches to Valuing Some of Bicycle Facilities' Presumed Benefits. *Journal of the American Planning Association* 72 (3): 309-320.

The Krizek study controls for automobile/bicycle traffic volume issues and conflict potential, but subsequent hedonic research has focused on appropriate bicycle path buffers and their effect on bicycle commuting patterns. No studies were identified that takes the next step of drawing a relationship between on-street bicycle path buffers and property values.

CONCLUSIONS & CAVEATS

After a review of the most notable literature on the topic of various public investments and property values, we come to the following conclusions about what guidance research can give to Metro regarding development potential, in order of confidence and robustness of the literature.

- **Parks & Open Space:** The oldest and most-studied topic of parks and impacts upon property values overwhelmingly indicates positive correlation between type of park space (unimproved/open higher than improved), size of space (larger having higher impact) and access to park space from residential areas.
- **Transit:** Transit, rail in particular, has highly robust academic research over a period of time lending empirical confidence to the idea that proximity to rail is a positive amenity for property owners. Studies are not quite as voluminous, and are limited to metro areas large enough and dense enough where commuter rail investment has been possible. Results are also varied by nature of rail (heavy vs. light) and geographic location.
- **Commercial Amenity:** An increasing body of work is finding positive, though admittedly mixed, benefits for proximity of various property types to commercial development. While some studies indicate noise and traffic nuisance as a concern, others find being nearby a commercial district but "not too close" has positive impacts. The Metro Urban Living Infrastructure study went as far as to identify specific business types that have unique, significant impacts upon property values as potential indicators of urban development catalysts.
- **Traffic Nuisance/Calming:** Although research into the efforts to calm the nuisance, or perception of nuisance, of traffic nearby residential areas have not been robust, a more persuasive body of research has estimated the negative impact to property values of residences nearby noisy/auto-intensive roads and related noise.
- **Walkability/Connectivity:** Although not precisely defined, the impact of being reasonably proximate to commercial and employment areas via distance only or connectivity of street design indicates positive, but again mixed, impacts to property values. Research is limited and conclusions are difficult to draw. Furthermore, some design elements such as alleys have been identified as having negative value impacts.
- **Bicycle Connectivity:** Statistical analysis of the value of bike trail/path improvements on property values is limited at this time. The most rigorous analysis has found that bike paths are generally negative for residential property values in suburban environments and mixed in benefit in an urban environment. Alternatively, numerous property owner surveys generally reflect a positive perception of being near trails by those property owners.

Review of all of the above indicates significant, rigorous analysis of the topic at hand. But it is also worth noting the caveats and limitations of the hedonic modeling body of work.

- **Detached Residential Bias:** As indicated at the beginning of this section, the overwhelming topic of study is the impact of amenities to single-family homes or land zoned for single-family residential development. Demographic and product "tastes" can be significantly

different enough for attached residential form that sensitivities to public investments may be somewhat different.

- **Geography:** The vast majority of studies scrutinize property values in specific cities or districts of cities all over the United States, including studies in this literature review. Studies cited above, however, are identified as significant ones in the body of work and frequently take a regional approach for comparison purposes. However, household behavior in hotter climates may or may not be indicative of household behavior in the milder Pacific Northwest climate where year-round bicycling, for instance, is less subject to weather extremes.
- **Time & Amenity Saturation:** As time moves on, a new and unique park may generate significantly positive improvement values nearby. But with depreciation and construction of other parks in greater saturation, the uniqueness of the park or any other public investment declines and impact value likely declines as well.
- **Nominal Dollar Values:** With time changing, the results of many studies identified were expressed in terms of current dollars. Unfortunately 1999 dollars for example provides little indication of value impacts in 2010.
- **Self-Selection:** Topics of study – parks, bike paths, walkability – are all amenities but it can also be said that "beauty is in the eye of the beholder." While development patterns in the Portland metro area indicate increased interest in urban, attached residential forms, the public amenities analyzed in these studies likely apply to that specific share of the regional population: those seeking to be nearby specific public investments.
- **Urban & Suburban Differences:** Some studies in the literature review attempted to identify different value impacts of public investments and indeed found differences between urban and suburban residential areas.

Upon conclusion of the following section, which discusses a new set of measurements of public investment upon property values in the Portland metro area, a reconciliation of literature review findings and new analysis results is provided to indicate potential urban amenity values for policy consideration.

HEDONIC MODELING

Overview

JOHNSON REID conducted several iterations of an econometric, hedonic model of metro area improvement values as potentially determined by various public investment types and other typical indicators of development value. Hedonic, or personal preference/pleasure, modeling seeks to explain observed behavior when there are likely numerous and widely varied factors and preferences involved in that behavior. Hedonic modeling is particularly powerful in dealing with the issue of property value analysis because it enables:

- The ability to measure many determinants of the value of a property; *and*
- The ability to understand the *marginal* or isolated value of an individual property feature, such as off-street parking, presence of street trees, or pedestrian access.

In mathematical notation, the relationship of interest is between the observed behavior (market value of a residential, mixed-use, or commercial property) and the potential factors that contribute to the value of those properties:

(1) Price = f (Locational, Physical, Environmental, Economic, Other)

or, Price is a function of Locational, Physical, Environmental, Economic and Other factors. Here, "Other" factors include those likely difficult to observe, specifically the unique preferences of property owners, investors, and other factors that can be difficult to objectively observe.

In statistical notation for hedonic modeling of property values, Equation (1) is expressed as follows:

(2) $P = \alpha + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \ldots + \beta_n x_n + \varepsilon$

where:

P = Price

α = A fixed (constant) dollar figure independent of the value property owners place on factors described in Equation (1)

β = The dollar value that a property owner places on a specific property feature

x = An individual feature of a property that has a unique dollar value

n = The total number of property features that factor into its estimated value

ε = Unpredictable determinates of property value, or "random error"

Equation (2) can be understood as follows:

> *The value of a property can be expressed in terms of a the basic value for the ownership of a property in general (α), n different and unique features of a property (x), the dollar value that an owner places on each feature (β), and unpredictable factors (ε).*

JOHNSON REID then created a hedonic model of property values throughout the Portland metro area utilizing an original data set compiled by Metro for this study. Over 1,600[54] properties were sampled throughout the metro area, specifically in the following designated areas:

- Three Regional Centers: Clackamas, Gresham, and Hillsboro;
- Two Town Centers: Happy Valley and Tanasbourne;
- Pearl District; and
- Corridors: Fifteen designated corridors in all three of the metro area counties. A detailed list of all centers and corridors in the study can be found in the Appendix.

For every property observation and its market value,[55] Metro compiled a wide menu of qualitative and quantitative data on a host of issues ranging from zoning, property age and quality, primary use,

[54] Due to incomplete data fields and irregularities in some observations, Johnson Reid and Metro agreed that a number of observations should be excluded, leading to a final observation count of 1,346 properties throughout the metro area.

presence of street trees, property access, traffic volume and speeds, and a number of other physical and economic factors. In all, a total of 30 property quality variables were utilized to explain the values of properties in the sample. A detailed list of all variables, ranging from pedestrian environment to property construction type to location is found in the Appendix.

For the vast majority of information, JOHNSON REID constructed qualitative "dummy" or indicator variables, which simply assign a value of 1 or 0 depending upon whether or not the property does or does not have a certain quality. For instance, the indicator variable for commercial zoning was assigned a value of "1" if the property is zoned for commercial and a "0" if not.

Centers & Corridor Value Premium Results

On the following page is a comprehensive hedonic model "run" for the Centers/Corridors/non-Pearl District data set typical of various model specifications possible. We would generally observe the following:

- The model run utilizes the majority of the geographic, locational, and public investment variables as constructed and observed by Metro staff.
- The dependent variable is the natural logarithm of Real Market Value (RMV) per square foot.
- Independent variables are the natural logarithms of data observation values for each variable, as well as many indicator or "dummy" variables assessing qualitative information.
- The model attempts to correct for heteroskedasticity, or the risk that observations in different districts will have different variation.

Corridor & Center Locational Findings

A total of 22 locational dummy variables were utilized in the model. Accordingly, Coefficient ("Coef." or "premium" estimates should be read as the value of being within a specific corridor or center relative to being in the Pearl District, the Happy Valley Town Center, and the Clackamas Regional Center. Significant, high-value commercial development roughly equated statistically and the three districts "dropped out" as coefficients during statistical analysis.

Coefficient estimates are generally what one would expect, with the vast majority of the other centers and corridors showing a discount relative to the Pearl District, all things equal. Coefficient estimates themselves are individually somewhat problematic alone, however, and should be viewed as relative magnitude or relative discount compared to other districts.

Detailed results including locational variables are found in the Appendix of this report.

Corridor & Center Property Quality Findings

[55] Assessed real market value per square foot was utilized as the dependent variable for measure rather than transaction sales value. To wit, sales transactions records and prices were of far lesser consistency upon review than assessed real market value as indicated in tax records. Neither measure is perfect, but assessed real market value is at least consistent in its merits and problems.

Like locational variables, property quality variables also generally make intuitive sense as to what would indicate higher or lower value for a commercial or attached residential development. As with locational variables, however, the magnitude of individual coefficients or "premiums" is misleading and should be read as relative to a baseline variable.

- Construction age: A property built before 1994 is corroborated by the model as having a negative premium value to a new development or even development between 1994 and 2000.
- Zoning: Zoning coefficient estimates generally make intuitive sense relative to one another. Specifically, relative to mixed use residential zoning (MUR), more commercial-related zoning had relative price premiums. Public facility zoned-property surprisingly had the highest relative value. Commercial zoning was the only coefficient to demonstrate statistical significance.
- Number of floors: Somewhat surprisingly, more floors in a building indicate a discount. This likely reflects the lower value of a building with the more floors of rental apartment development – the most common type of such structure – the structure has. The coefficient is not statistically significant.
- Construction types: Value coefficients for different construction material types generally also make intuitive sense. Relative to wood frame, typically low-rise construction, predominantly concrete low-rise construction has a slight discount. Unsurprisingly, steel and glass construction indicates a significant relative premium to wood frame at over 13%, all things equal.
- Depreciated Value: In contradictory manner, the model estimates that properties indicated to be recently in poor quality indicate a 1% premium over new construction, all things equal, though the coefficient fails to be statistically significant.
- Street Parking Only: Unsurprisingly, buildings primarily served by on-street parking had a negative premium of 2%. This estimate is, of course, endogenous as land value indicates the economic efficiency gained by structured parking versus surface parking provision.

Corridor & Center Property Neighborhood & Public Investment Findings

Public amenity investments generally contribute positive property value compared to those properties that do not benefit from such proximity.

- Neighborhood Score: A higher neighborhood score results in a significant price premium according to model results. Again, it is important to emphasize self-selection for this variable as urban, walkable neighborhoods are preferred by only a percentage of the population.
- Traffic Speed and Volume: Higher-speed roads are found to cause a nearly 15% price discount, all things equal. Traffic volume, alternatively, shows a modest premium of 3% by the model, likely reflecting the appeal of higher volume traffic by commercial enterprises. Neither coefficient is statistically significant.
- Bike Racks & Street Furniture: Bike racks have a statistically significant price premium relative to properties without bike racks nearby, estimated at roughly 22%, all things equal, and statistically significant. Street furniture is associated with an estimated discount of 19%, though statistically insignificant.

- Street Design: Property values are estimated to enjoy a modest value premium of 7% when proximate to roads of greater than two lanes. This result likely underscores the value of access and visibility for vehicular traffic to commercial development. Left turn access, alternatively, is associated with a 6% discount based on model results. Both coefficients are statistically insignificant. Two-way traffic, on the other hand, is estimated to modestly improve values by up to 3%, the coefficient is not statistically significant in this specification. Street trees negatively contribute to property value to the tune of -17% discount, all else equal, though the coefficient is not statistically significant. Findings given the above indicate the conflict between pedestrian "friendliness" for districts, but at the same time clear visibility and access for commercial properties also in the districts.
- Street Frontage and Connectivity: Model results indicate that significant sidewalk exposure and street frontage with maximum pedestrian access both negatively affect property values. Though larger, the negative price effect all else equal is statistically significant for street frontage impacts. We would cite this as further evidence of the impact of the importance of preserved visibility and vehicular access in balance with pedestrian visibility and access for business viability.
- Cul-de-Sac Layout: Consistent with research literature, properties that are situated in suburban-style cul-de-sac street layout are estimated to experience a negative price effect, though not in a statistically significant manner.

Corridor & Center Findings Conclusions

We generally find the results of modeling to indicate the following:

- Commercial building property value effects are important in centers and corridors. Greater visibility and ease of vehicular access are important for property values in balance with pedestrian access and landscaped environment based on sample observations.
- Relative discounts vs. premiums generally corroborate intuitive understanding, though the importance of commercial visibility and access – even for ground floor retail in mixed use projects – should not be understated.
- Magnitudes of coefficient estimates should be interpreted in relation to one another and "all else equal" rather than read as exact premium or discount estimates. Unfortunately, all else equal rarely exists.
- Bike racks clearly indicate additional value per foot for properties in center and corridor areas.
- The model itself has an adjust-R^2 of roughly 80%, indicating that the majority of variation in property values is being explained by the model as specified.
- There is likely collinearity among different variables as is usually the case, however a standard test was run utilizing Stata and only two variables indicated significant risk of collearity: incompatible zoning and industrial zoning. Industrial zoning was subsequently dropped from the model(s).

In general, our results corroborate hedonic model results expressed in the literature review for other metro areas as well as previous studies of the Portland metro area. As is the case in all econometric studies, the model is sensitive to specification and variation in results is usually a consequence. Results expressed above, therefore, should be viewed as a one-time snapshot of public amenity investments and their impact upon property values, rather than a definitive indication of public investment tools.

PUBLIC AMENITY PREMIUMS: EVIDENCE & CONCLUSIONS

A careful reading of the literature, as well as the hedonic modeling exercise summarized above, indicates a number of different economic, physical, and public features that alone or "all else equal" positively contribute to property values. Although tempting, it would defy common sense to assume that all of the different public environment variables and private development qualities would cumulatively offer high property value premiums. A literal reading of the above analyses would indicate that a transit station, a specialty grocery store, and a golf course-sized park all within a quarter mile of a property would generate a combined value premium of well over 100%, all else equal, for example.

In reality, amenities do not "stack" cumulatively; they reflect self-selection by households that prefer such amenities; and are highly location-specific given household location preferences. In other words, amenity improvements combine differently for different parts of a metro area, different households, and in different permutations. For example:

- Proximity to rail, for example, has very different value potential for a central city resident whose rail commute is seven minutes versus a suburban resident whose commute via the nearby station is 45 minutes.
- Alternatively, the nearby development of a new park in an unsaturated suburban community would have different value for a suburban household than a new park for an urban household already proximate to a number of city parks.

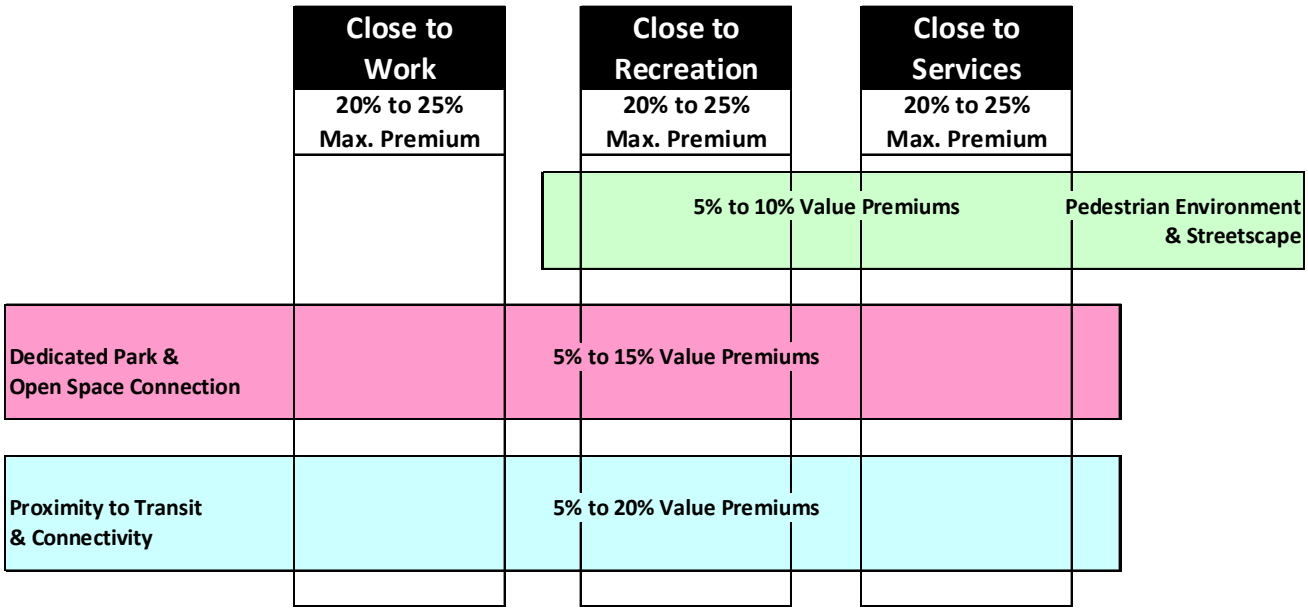
Rather, an appropriate approach to considering different amenties and their values is to consider location and spending behavior among households who strongly prefer or marginally prefer to live in attached housing. For such households, location preferences are very high – proximity to employment, recreation, and services is generally of higher value than for households that prefer single-family residential development.

In essence, the value of the various locational features and amenities in a geographic area capitalized into property values is a reflection of the ability of the household to substitute transportation expense for housing expense. In other words, a premium for being near a transit station is really a shift of the household's spending on nearby transit rather and away from frequently more-expensive automobile expenses. The same is true for proximity to shopping and services, as well as recreation opportunities. The greater ability to walk or bicycle, rather than incur automobile travel time and expense, enables greater substitution from traditional travel expense to housing expense. The shift, of course, is preferable for only a share of population based on life stage, employment, age, and other factors.

Given this behavior among households who prefer attached housing, the following schematic was created to illustrate the relationship between the three primary drivers of convenience - Work, Recreation, and Services – the various amenities identified in the literature review and the model results, and JOHNSON REID's experience working with various jurisdictions and private development interests on the issue of property values and location throughout the metro area.

As the schematic illustrates, each of the three primary locational needs of households that prefer attached housing – rental or ownership – generally achieve no more than a 20% to 25% price premium by category. In other words, a condominium within convenient walking distance or convenient transit ride to a major employment center generally does not fetch more than a total

premium of 25% compared to similar properties with no such convenience. The same can be said for being near parks, open space or other recreation, and great convenience to shopping and services.



Within each of the three location needs, however, different amenity investments contribute differently to property values.

- Proximity to transit in the literature indicates anywhere from 5% for single-family residences to 20% for various condominium-type development according to analysis.
- Transit & Connectivity do, however, contribute to the convenience premium for all three locational needs if the property is not immediately close to employment, recreation, or services.
- Dedicated Park & Open Space similarly contributes to property values in their convenience to all three locational needs, generally offering a 5 to 15% locational premium at most for proximity to such offerings based on previous findings. Such investment not only improves residential recreation and quality of life, but park space frequently amenitizes employment areas and commercial areas.
- Finally, Pedestrian Environment & Streetscape affords the lowest marginal premiums based on literature review and findings. We find that such improvements are symptomatic of more urban, dense locales rather than causal factors. However, some improvements can and do enhance pedestrian accessibility that did not previously occur according to the literature review. Combined premiums, based on findings review, would not likely combine distinctly for more than 5% to 10% value enhancement.

Given the above, we conclude the following:

- Fundamentally, proximity or convenience to Work, Recreation, and Services are the most significant drivers of property value from the transportation spending substitution effect. In other words, without significant proximity or convenience to one or a combination of the

three, substantial public investment in parks, transit that does not make one of the three convenient, or streetscape will have little measurable impact in inducing higher-density development.

- Individual, major amenity investments or a combination of various smaller amenity investments aimed at enhancing convenience to employment, recreation, or services, will not likely combine for more than a distinct 20% to 25% price premium, with premiums likely greater in areas with less connectivity or amenity saturation.
- For areas such as the Pearl District, which are highly amenitized in all of the above categories, a cumulative price premium from those amenities likely doesn't exceed 60% to 75% all else equal. All other districts and corridors should likely expect lower combined premiums from relative investment levels.
- We would not anticipate much greater than a 20% to 25% maximum premium for a single or combined public investment in most suburban corridor locations based on relative district pricing differences and predominant automobile-dependent development pattern.

IMPACTS OF MARKET INTERVENTIONS

The model can provide a structure within which to evaluate the marginal impact of a series of potential market interventions. These can be roughly divided into exogenous variables and variables that can be affected by local actions and regional policy. Variables such as the cost of materials and baseline lending terms are typically outside of local control. There are a number of areas in which local jurisdictions and policy makers have an ability to substantively impact the development process, which can be modeled using the framework developed.

Policy sensitive market shifts can be categorized by their impact on the three primary components of a highest and best use determination.

ACHIEVABLE PRICING

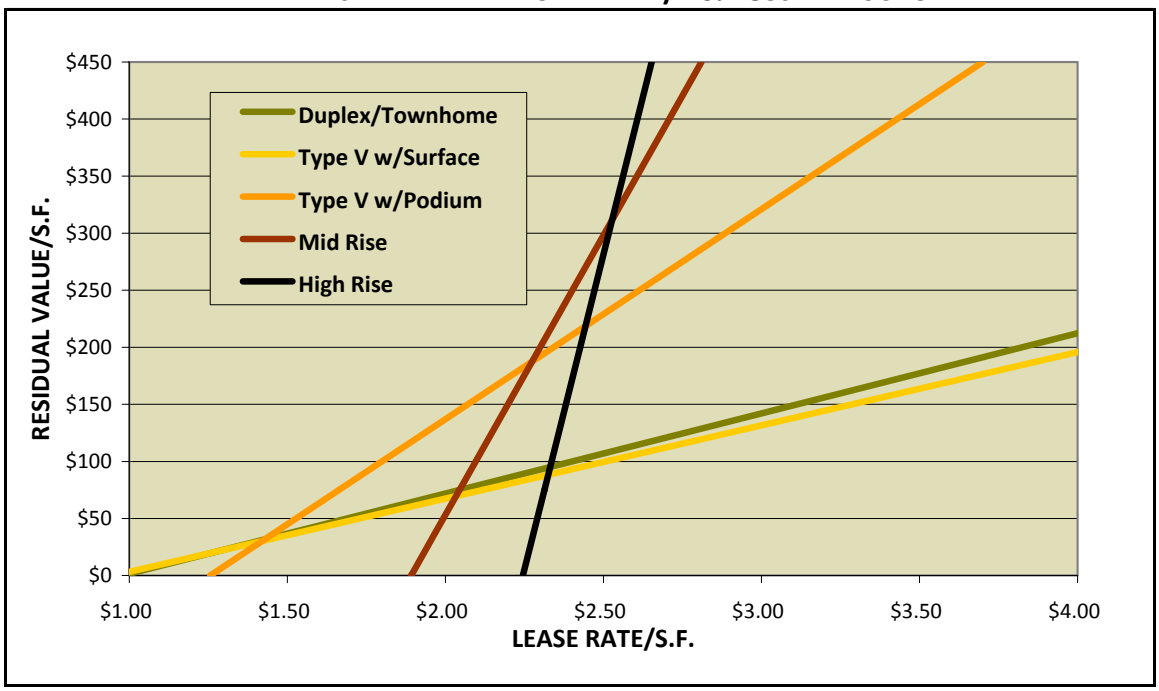
Achievable pricing in an area is a function of a complex set of variables, many of which can be impacted by intentional interventions. A key determinant of achievable pricing is the perceived level of amenity associated with any location. This can be related to items such as convenience (proximity to employment and services), community amenities (school districts), and physical amenities (views, golf courses). Public investments in areas such as transit and public realm improvements can significantly impact achievable pricing, as can support for highly valued tenants such as specialty grocers.

The net impact of a shift in achievable pricing on development form is dependent upon the districts current pricing. As shown previously, there is a direct relationship between achievable pricing and predicted development densities. This relationship is reflected in a step function, in which the development form with the greatest return shifts when pricing passes a threshold level. For a district in which current pricing is close to an inflection point that will support higher density development forms, a marginal shift upward in achievable pricing may result in a higher density of predicted development.

COST TO DEVELOP

Common market interventions are related to directly impacting the cost to develop. These include measures such as SDC waivers, land write-downs, parking management districts, tax credits and advantageous lending terms. As shown in the following two graphics, if a 10% cost reduction was assumed in the model, the transition point between uses would shift to lower price points.

RENTAL RESIDENTIAL DEVELOPMENT W/ 10% COST REDUCTION



In this case, the 10% reduction in cost shifts the inflection point between Type V surface and podium parked product from approximately $1.60 to approximately $1.45 per square foot. Public policy that serves to reduce the cost to develop can be expected to shift marginal density levels higher when the cost shift changes the highest and best use determination. If achievable market pricing in the preceding example was $1.50 per square foot, the 10% cost reduction would be expected to shift marginal construction from Type V surface parked at 30 units per acre to Type V with podium parking at 87 units per acre. If done in a market with achievable market rents at $1.00 per square foot, there would be no expected impact on the form of development in this case.

THRESHOLD RETURN

Within the model, the "threshold return" is intended as a proxy for the expected profit necessary to induce development. Real estate development entails considerable risk, and predicted returns need to be commensurate with that risk if new development is to be assumed. As with any investment, higher perceived risks require higher expected rates of return. The following are key areas of risk in real estate development:

- ***Entitlement*** – *Securing entitlements for development is often an uncertain and time consuming portion of the development process. Even when the proposed development represents an outright allowed use under the code, a project may be subject to issues such as design review requirements and neighborhood outreach which may impact entitled uses and/or add time to the process.*

- ***Financing*** – *Financial commitments can be fluid during the development process, with lenders and/or equity partners backing out of deals or renegotiating terms mid-*

development. These players can also limit flexibility. In addition, financing commitments are subject to appraisal, which always carries risk.

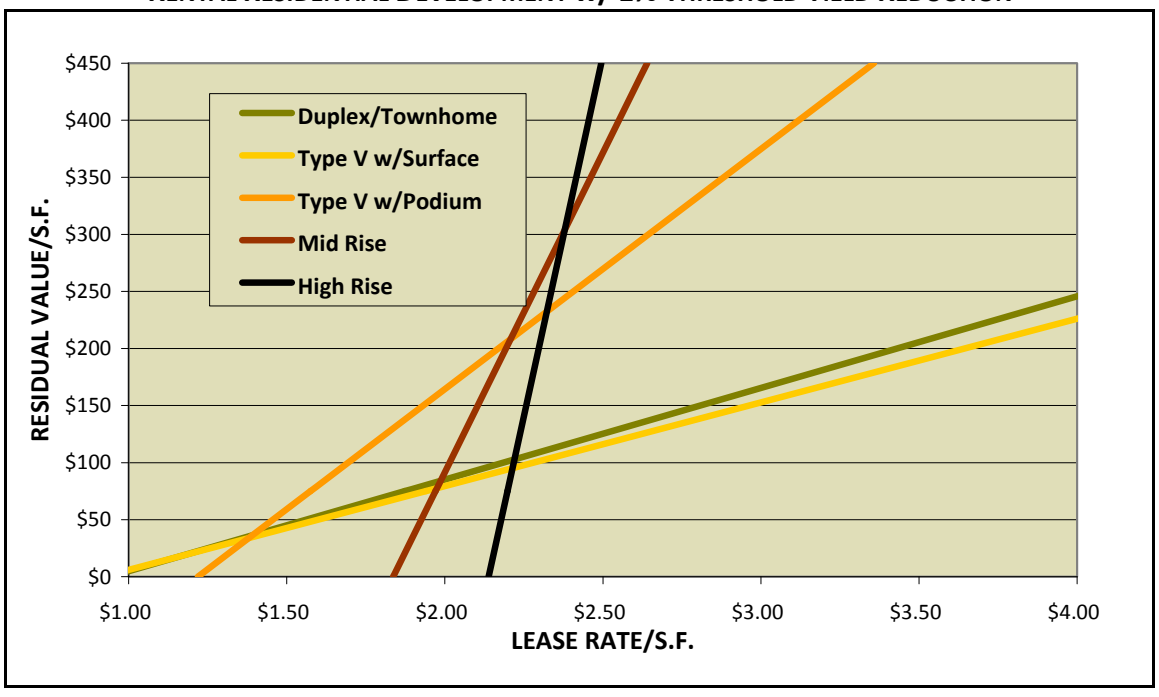
- ***Construction*** *– There are many risk factors associated with construction. The cost of materials can fluctuate significantly, timing delays can impact contractor availability windows, unforeseen problems may emerge during site-work, etc.*

- ***Market*** *– Actual achievable rent levels and/or sales prices may be significantly different than assumed at the time development was initiated. In addition, capitalization rates often shift significantly, which has a pronounced impact on income properties.*

Developments that are unprecedented locally are typically considered to carry an unusual amount of risk, if not by the developer then certainly by the lender. The amount of debt financing available will be largely subject to the results of a bank-commissioned appraisal, which will have difficulty establishing a value for an atypical development form.

We can run a permutation of the basic relationship between uses and run the model assuming a reduction in the threshold yield from 8.0% to 7.0% for rental residential product. As shown in the following graph, the reduction in threshold yield shifts the inflection point between Type V surface and podium parked product from approximately $1.60 to approximately $1.40 per square foot. While the 1% differential in the rate of return seems negligible, the change from 8% to 7% reflects a 12.5% reduction in actual return.

RENTAL RESIDENTIAL DEVELOPMENT W/ 1% THRESHOLD YIELD REDUCTION

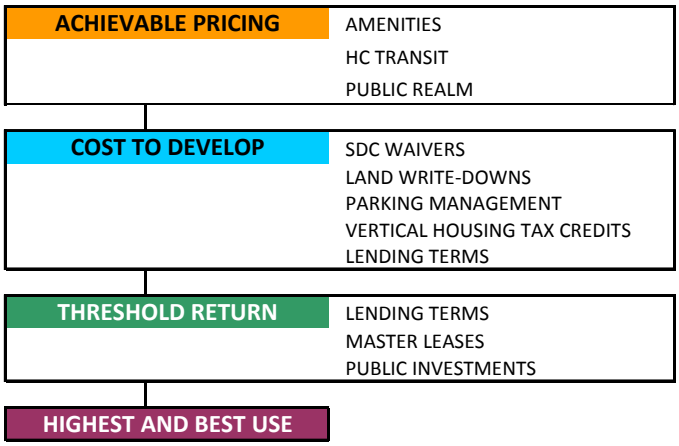


The primary underlying dynamics of a threshold return are largely outside of local control, and are related to variables such as available interest rates. There are two key areas of return that are significant in assessing yield, the cost of first position debt (secured by the property and often a

personal guarantee) and equity (cash, or subordinated debt, which serves as equity). First position debt often has attractive interest rates, as it is considered more secure. The equity portion of financing typically has a considerably higher cost, as it has a higher level of risk.

POLICY EFFORTS

There are areas in which public policy can impact perceived risk, many of which have been used over the years. The following categories some policy-sensitive variables and/or market interventions, and their impact on components of the highest and best use determination:



Each of these areas of market intervention can change the highest and best use determination, and subsequently the prevailing form of development assuming it is consistent with local entitlements. The marginal impact of any particular policy measure can be addressed using the methodological construct outlined in the model, and will vary substantially by geographic area within the Portland metropolitan area.

The anticipated effectiveness of policy efforts within specific districts can be predicted with the modeling framework developed as part of this assignment. The model can address marginal shifts in the form and magnitude of development and redevelopment activity, as well as providing a more rigorous and reliable methodology to assess the likelihood of redevelopment at the parcel and district level.

INCIDENCE

A key consideration in evaluating public interventions in the development market is the concept of "incidence". Incidence is a common concept in economic disciplines such as tax theory, and relates to who actually pays or benefits from a particular policy. In the case of market interventions, it is important for jurisdictions or agencies to understand the impact of their actions. Over time, the market will capitalize a subsidy into factors such as land value.

Many areas with a substantial record of market intervention have altered local market conditions as a result of the likelihood of intervention in future projects. An area that cuts development cost by waiving SDCs or offsite requirements may find that land values are subsequently higher to reflect the

availability of lower construction costs in that area. This can offset the marginal advantage offered by the public intervention, and reduce its usefulness over time.

If the policy objective for market intervention is to alter the form of development, these impacts need to be understood and monitored.

CONCLUSION

Our analysis indicates that public intervention in the residential housing market can have a measurable impact on the form of development, as well as the likelihood of redevelopment. Public investments in measures such as transit, public open spaces and services have a demonstrated ability to increase achievable pricing. As outlined in the production model developed, in many cases these shifts in pricing can alter the highest and best use equation within a market and change the predominant development form.

While many of the investments in infrastructure and services are supportable based solely on their amenity value to residents, these investments can also be utilized to encourage a change in development form. The effectiveness of these investments in shifting forms will depend upon the current market conditions in the area, and the extent to which a marginal shift would be predicted to shift achievable pricing to a level that supported a higher intensity development form. Markets with current achievable pricing only moderately below that necessary to support a more urban development form are likely to see a better return on public investment than a market with current pricing well below the threshold necessary to support a different form.

The analysis and model is geared towards a broad regional assessment. The methodological approach developed in this analysis can also be utilized for more detailed assessments of planning areas or districts. In addition, it allows for sensitivity testing of the marginal impact of more specific public investments on anticipated development forms. Market parameters will vary widely throughout the region, in terms of pricing as well as market responsive product types.

The model utilizes a number of variables that would be expected to vary substantively over time. As a result, these variables should be tracked and updated on a regular basis. While Metro is using this analysis to inform a longer term planning effort, the model is also able to provide meaningful data and output for short-term and more targeted policy decisions.

DEFINITION OF TERMS

- Site Size: This refers to the site size in square feet, and is intended to represent usable. In most urban contexts, the usable will be close to the total square footage, but the actual usable may be substantially lower if impacted by inefficient configuration, wetlands or other site characteristics that reduce the site's developable area. In general, as sites get smaller configuration issues become more significant, as there are less options to mitigate impacts.

- Floor Area Ratio (FAR): This is a common planning term, reflecting the ratio of built space to usable site area.

- Efficiency: Building efficiency refers to the percentage of a building that is leaseable or saleable. Corridors and common areas are not typically counted in this calculation, and building forms with extensive public areas and enclosed corridors will have lower efficiency ratios. The efficiency ratio is inherently lower in condominium buildings as opposed to rental apartments, as unit sizes are measured in different ways.

- Parking Ratio: This is an important variable, and one that is impacted by market demands, financing requirements as well as zoning requirements. This is policy sensitive to the extent that policy is fundamentally impacting parking. While publicly-mandated parking requirements can be removed, market and/or financing factors may still require significant ratios.

- Operating Expenses: These apply to rental apartments, and represent items such as property management fees, property taxes, utilities and maintenance.

- Cost/Construct: The cost to construct reflects the costs to improve the property, largely related to the new structures but may also include substantial demolition or off-site cost requirements. In this model, the costs are limited to construction of the building(s), interior finishes, contractor profit and architectural fees. This is derived from RS Means, which summarizes building experience reports by construction type and area.

- Soft Costs: Additional soft costs are an integral part of the overall cost of construction. These include engineering, traffic studies, system development charges, impact fees, financing costs and developer fees.

- Parking Costs: This is broken down as an average all in cost per space delivered.

- Capitalization Rate: The Capitalization Rate or Cap Rate is a ratio used to estimate the value of income producing properties. Put simply, the cap rate is the net operating income divided

by the sales price or value of a property expressed as a percentage. Investors, lenders and appraisers use the cap rate to estimate the purchase price for different types of income-producing properties. A market cap rate is determined by evaluating the financial data of similar properties which have recently sold in a specific market.

- Risk Spread: This represents the percentage differential between an acceptable rate of return on cost and the prevailing market capitalization rate.

- Efficiency: Building efficiency refers to the percentage of a building that is leaseable or saleable.

CONSTRUCTION TYPES

Type I

Typically these are concrete frame buildings made of noncombustible materials. All of the building elements (structural frame, bearing walls, floors and roofs) are fire resistance rated.

Type II

These buildings are constructed of noncombustible materials. Typically these are masonry bearing walls structures with steel studs for walls and steel bar joists for floor and roof structures. IIA has fire rated building elements (structural frame, bearing walls, floors and roofs). IIB is the most common construction type for commercial buildings because the building elements are not required to be fire resistance rated but still must be non-combustible.

Type V

Type V construction is typically wood frame construction. V-A requires fire rated assemblies for all building elements (structural frame, bearing walls, floors and roofs); this is often seen in older construction that predates sprinklers but still not commonly used. V-B is very common because it does not require any fire rating.

DETAILED ECONOMETRIC RESULTS

ECONOMETRIC ANALYSIS RESULTS OF PUBLIC INVESTMENT TOOLS IN CENTERS & CORRIDORS

lrmv	Coefficient	t score	P>|t|	95% Confidence Interval	
n_score	0.74	1.11	0.27	-0.56	2.04
_94_const	0.04	0.54	0.59	-0.11	0.18
pre_94_const	-0.16	-2.15	**0.03**	-0.30	-0.01
mfr_zon	0.01	0.10	0.92	-0.14	0.16
com_zon	0.35	3.36	**0.00**	0.14	0.55
mue_zon	0.03	0.31	0.76	-0.14	0.20
sfr_zon	0.39	1.38	0.17	-0.16	0.95
pf_zon	0.41	1.49	0.14	-0.13	0.96
incomp_zon	0.12	0.47	0.64	-0.37	0.60
lspeed	-0.15	-1.00	0.32	-0.43	0.14
lvolume	0.03	0.33	0.74	-0.16	0.23
lhalf_sfr	0.02	0.18	0.86	-0.18	0.21
lhalf_mfr	0.00	-0.04	0.97	-0.14	0.13
lstruc	0.85	36.42	**0.00**	0.81	0.90
prim_sfr	-0.06	-0.64	0.52	-0.24	0.12
prim_mu_res	0.42	4.28	**0.00**	0.23	0.61
prim_rental	-0.18	-2.02	**0.04**	-0.36	-0.01
prim_retail	0.15	1.30	0.20	-0.08	0.38
prim_off	0.04	0.30	0.77	-0.22	0.29
prim_ind	-0.30	-2.33	**0.02**	-0.55	-0.05
lfloors	-0.07	-0.97	0.33	-0.20	0.07
conc_brick~t	-0.07	-0.94	0.35	-0.21	0.07
steel_glas~t	0.13	1.59	0.11	-0.03	0.28
renov	0.04	0.30	0.76	-0.20	0.28
deprec	0.01	0.07	0.95	-0.20	0.22
bike_racks	0.22	2.12	**0.03**	0.02	0.43
st_furn	-0.19	-1.58	0.11	-0.43	0.05
street_only	-0.02	-0.30	0.77	-0.14	0.10
_lanes	0.07	0.90	0.37	-0.08	0.21
two_way	0.03	0.65	0.52	-0.05	0.10
left_turn	-0.06	-1.22	0.22	-0.17	0.04
street_front	-0.20	-2.18	**0.03**	-0.38	-0.02
sidewalk75	-0.12	-0.33	0.74	-0.82	0.58
trees50	-0.17	-0.46	0.64	-0.88	0.54
trad_grid	0.43	1.95	**0.05**	0.00	0.85
cul_de_sac	-0.16	-0.25	0.80	-1.39	1.08
constant	6.54	5.11	**0.00**	4.03	9.05

The following is a brief description of each of the variables utilized in the model:

Dependent Variable: Real market value of the observed property. As the model is log – log in specification, the dependent variable is really the natural log of real market value.

- lrmv (log value): natural log of the real market value of the property observation;

Locational Variables: The following variables are solely utilized to "account for" or capture the unique economic variation between different centers and corridors in the study.

- pearl_district (dummy): 1 if observation is located in the Pearl District;
- clack_center (dummy): 1 if observation is located in Clackamas Regional Center;
- gresh_center (dummy): 1 if observation is location in Gresham Regional Center;
- happyv_center (dummy): 1 for location in Happy Valley Town Center;
- hills_center (dummy): 1 for location in Hillsboro Regional Center;
- tanasb_center (dummy): 1 for location in Tanasbourne Town Center;
- centrale_center (dummy): 1 for location in Central Eastside;
- 122_148_burn_corr (dummy): 1 for location along the 122nd to 148th portion of East Burnside;
- alberta_corr (dummy): 1 for location along the Grand to 32nd portion of Alberta;
- allen_beav_corr (dummy): 1 for location along the Allen corridor in Beaverton;
- cornel_corr (dummy): 1 for location along the Route 8 corridor in Cornelius;
- divis_20_39_corr (dummy): 1 for location between 20th and 39th along the SE Division corridor;
- glis_48_72_corr (dummy): 1 for location between 48th and 72nd along the NE Glisan corridor;
- kruse_corr (dummy): 1 for location along the Kruse Way corridor in Lake Oswego;
- lwr82nd_corr (dummy): 1 for location along the Lower SE 82nd corridor;
- lwrlomb_corr (dummy): 1 for location along the Lower N Lombard corridor;
- mclough_corr (dummy): 1 for location along the SE McLoughlin corridor;
- outse_div_corr (dummy): 1 for location along the Outer SE Division corridor;
- outerse_stark_corr (dummy): 1 for location along the Outer SE Stark corridor;
- pachi_tig_corr (dummy): 1 for location along the Pacific Highway corridor in Tigard;
- sellw_13_corr (dummy): 1 for location along the 13th Ave corridor in Sellwood;
- tvhi_corr (dummy): 1 for location along the Tualatin Valley Highway corridor in Beaverton/Aloha/Hillsboro;

Qualitative Variables: The following variables are meant to model the physical quality of the sample observations, as well as the various types of neighborhood qualities and public investments that may affect enhanced property values based on the literature review.

- n_score (value): Metro's Neighborhood Score for the property;
- _94_const (dummy): 1 if improvement constructed between 1994 and 2000;

- pre_94_const (dummy): 1 if improvement constructed before 1994;
- vac_const (dummy): 1 if property is vacant;
- mfr_zon (dummy): 1 if property zoning is MFR multifamily residential;
- com_zon (dummy): 1 if property zoning is COM or primarily commercial;
- mue_zon (dummy): 1 if property zoning is MUE mixed-use employment;
- pf_zon (dummy): 1 if property zoning is PUB or public facility;
- incomp_zon (dummy): 1 if property use is incompatible with zoning;
- lspeed (log value): natural log of modeled speed for nearest street segment;
- lvolume (log value): natural log of modeled automobile volume for the nearest street segment;
- lhalf_sfr (log value): natural log of number of single-family residential dwellings within a half-mile;
- lhalf_mfr (log value): natural log of number of multifamily residential dwellings within a half-mile;
- lfloors (log value): natural log of the number of stories in the building structure;
- conc_brick_struct (dummy): 1 if the primary construction material for the building is concrete or brick typical of low-rise construction;
- steel_glass_struct (dummy): 1 if the primary construction material for the building is a combination of steel, concrete and/or glass typical of mid-rise and high-rise construction;
- renov (dummy): 1 if the property was observed to be recently renovated or remodeled based on Metro staff observation of tax record data;
- deprec (dummy): 1 if the property was observed to have deferred maintenance or dated quality based on Metro staff observation of tax record data;
- bike_racks (dummy): 1 if bike racks are immediately present near the property;
- st_furn (dummy): 1 if street furniture is immediately present near the property;
- street_only (dummy): 1 if the building is parked only on-street;
- struct_park (dummy): 1 if the building is primarily parked by internal structured parking;
- trad_design (dummy): 1 if Metro staff observed traditional design in the property;
- _lanes (dummy): 1 if the primary road near the property has more than two lanes;
- two_way (dummy): 1 if the primary roadway near the property has two-way traffic;
- left_turn (dummy): 1 if the primary roadway near the property enables left turns;
- street_front (dummy): 1 if the building directly fronts the sidewalk/roadway or has minimal but pedestrian-friendly/landscaped setback from the sidewalk;
- sidewalk75 (dummy): 1 if Metro staff observed sidewalks in more than 75% of the property's surrounding area;

- trees50 (dummy): 1 if Metro staff observed street trees planted on more than 50% of the area surrounding the property; *and*
- cul_de_sac (dummy): 1 if the property access is via a suburban/cul-de-sac street layout as opposed to a grid pattern.

Linear regression

Number of obs	1346
F(52, 1289)	.
Prob > F	.
R-squared	0.8961
Root MSE	.3384

lrmv	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
pearl_dist	(dropped)					
clack_center	(dropped)					
gresh_center	-.6995432	.8227902	-0.85	0.395	-2.313698	.9146116
happyv_cen~r	(dropped)					
hills_center	.2522438	.8589919	0.29	0.769	-1.432932	1.937419
tanasb_cen~r	-.2563281	.9570467	-0.27	0.789	-2.133868	1.621212
centrale_c~r	-.8268383	.4231055	-1.95	0.051	-1.656889	.0032126
_148_burn_~r	-.1513192	.8980519	-0.17	0.866	-1.913123	1.610485
alberta_corr	-.1143948	.5876596	-0.19	0.846	-1.267269	1.038479
allen_beav~r	-.1329063	.932286	-0.14	0.887	-1.961871	1.696058
cornel_corr	-.1527516	.9347463	-0.16	0.870	-1.986543	1.681039
divis_20_3~r	-.3079474	.5114039	-0.60	0.547	-1.311223	.695328
glis_48_72~r	-.1830298	.5439078	-0.34	0.737	-1.250071	.8840118
kruse_corr	-.4486796	1.276574	-0.35	0.725	-2.95307	2.055711
lwr82nd_corr	-.1567235	.9120319	-0.17	0.864	-1.945953	1.632506
lwrlomb_corr	-.3558589	.7209774	-0.49	0.622	-1.770277	1.058559
mclough_corr	-.3351376	.9142534	-0.37	0.714	-2.128726	1.45845
outse_div_~r	-.2755084	.9142546	-0.30	0.763	-2.069099	1.518082
outerse_st~r	-.1122046	.8939294	-0.13	0.900	-1.865921	1.641512
pachi_tig_~r	-1.151555	.856904	-1.34	0.179	-2.832635	.5295241
sellw_13_c~r	-.1563114	.4686772	-0.33	0.739	-1.075765	.7631423
tvhi_corr	-.3600532	.9068029	-0.40	0.691	-2.139025	1.418918
n_score	.7400585	.6649689	1.11	0.266	-.5644816	2.044599
_94_const	.0398098	.0738636	0.54	0.590	-.1050962	.1847158
pre_94_const	-.1590961	.0738685	-2.15	0.031	-.3040118	-.0141805
mfr_zon	.0078116	.0776509	0.10	0.920	-.1445243	.1601476
com_zon	.3472377	.1033889	3.36	0.001	.1444087	.5500667
mue_zon	.0271265	.0871875	0.31	0.756	-.1439185	.1981715
sfr_zon	.3904692	.2829286	1.38	0.168	-.1645818	.9455203
pf_zon	.4131831	.2764975	1.49	0.135	-.1292514	.9556176
incomp_zon	.1163109	.2482876	0.47	0.640	-.3707812	.603403
lspeed	-.1456958	.1455589	-1.00	0.317	-.4312542	.1398625
lvolume	.0331934	.1009487	0.33	0.742	-.1648484	.2312352
lhalf_sfr	.017562	.0997807	0.18	0.860	-.1781884	.2133124
lhalf_mfr	-.002554	.0695471	-0.04	0.971	-.1389919	.133884
lstruc	.851139	.0233696	36.42	0.000	.8052925	.8969856
prim_sfr	-.0605511	.0939444	-0.64	0.519	-.2448517	.1237496
prim_mu_res	.4158853	.0972526	4.28	0.000	.2250946	.6066761
prim_rental	-.1822744	.0903571	-2.02	0.044	-.3595376	-.0050112
prim_retail	.1517426	.1171499	1.30	0.195	-.0780829	.381568
prim_off	.0387783	.1296974	0.30	0.765	-.2156629	.2932195
prim_ind	-.2991658	.1284399	-2.33	0.020	-.55114	-.0471916
lfloors	-.0668457	.0690471	-0.97	0.333	-.2023026	.0686112
conc_brick~t	-.0671165	.0714775	-0.94	0.348	-.2073416	.0731085
steel_glas~t	.1264546	.0797509	1.59	0.113	-.0300012	.2829103
renov	.0375662	.1236163	0.30	0.761	-.204945	.2800774
deprec	.007092	.1066225	0.07	0.947	-.2020805	.2162646
bike_racks	.2243743	.1056774	2.12	0.034	.0170557	.4316929
st_furn	-.1940468	.1225235	-1.58	0.113	-.4344142	.0463205
street_only	-.0185358	.0620328	-0.30	0.765	-.1402321	.1031604
trad_design	.4750167	.6163625	0.77	0.441	-.734167	1.6842
_lanes	.0654083	.0723136	0.90	0.366	-.0764569	.2072734
two_way	.0251285	.0389367	0.65	0.519	-.0512578	.1015148
left_turn	-.0638571	.0525182	-1.22	0.224	-.1668877	.0391735
street_front	-.2005185	.0917735	-2.18	0.029	-.3805604	-.0204767
sidewalk75	-.1188397	.3569071	-0.33	0.739	-.8190223	.581343
trees50	-.1677431	.36265	-0.46	0.644	-.8791921	.543706
trad_grid	.4251297	.218054	1.95	0.051	-.00265	.8529094
cul_de_sac	-.1574	.6302416	-0.25	0.803	-1.393812	1.079012
_cons	6.538009	1.279686	5.11	0.000	4.027513	9.048506

Metro White Paper:

Using hedonic analysis to estimate achievable market rents/prices and a real estate pro forma to estimate additional redevelopment capacity

BACKGROUND

This analysis examines how much additional residential capacity can arise from redevelopment of selected centers and corridors in the Metro region. The 2009 UGR (and MetroScope analysis) estimates that half of today's high density multi-family zoned capacity in the region will go under-utilized during the next 20 years. The analysis indicates that developer costs and market acceptance will be too high a hurdle for the market to efficiently clear. This suggests that if the achievable rents/prices for high-density development forms could be increased, then more of the high-density zoned capacity could be within reach of the market. Our study estimates the value of investing in public amenities; its impact on raising achievable prices/rents for condos and apartments; and on the subsequent market responses that higher prices/rents may produce for residential redevelopment densities. Higher achievable rents allow for a shift in the "highest and best use" equation to favor higher density anticipated redevelopment formats with higher associated residual property values.

The high-density multi-family development form offers the region significant development capacity, but a significant proportion is not accessible to the market either today or in the future. Residential supply in the Metro UGB is based on local zoning in place today. In some areas, zoning is well ahead of market acceptance. Zoning densities are too high and the cost to develop at the minimum density is too expensive for the achievable prices/rents that can be fetched from the market today (or in the future.) Because the market is unable to access this high-density zoning capacity, the UGR has discounted its effective carrying capacity in its 20 year analysis. Ideally, development occurs when markets are allowed to clear such that market preferences, development costs, entitlement rights, and development subsidies (if any) come together at equilibrium market prices. The market clearing price and quantity is set by market participants, that is, buyers (or renters) and sellers (i.e., developers). The analysis reveals that the same conditions prevail for redevelopment which is also hampered by a market that is unable to clear without higher achievable prices/rents and quantities (i.e., densities).

We perform an hedonic analysis to first quantify the value homeowners and renters would pay for the public amenities. Secondly, a pro forma real estate model is employed to determine how additional public investments/subsidies shift price points to allow redevelopment to higher density multifamily projects than otherwise would be produced by the market. This production model approach will yield a range for how much more capacity might be generated when public investments are concentrated in centers and corridors to help stimulate higher density redevelopment opportunities.

This analysis considers how much additional capacity can be gained when the value of public amenities are quantified into a pro forma real estate framework. This framework includes ten

proto-type development forms and estimates the development form which is the most profitable to build. An amenity versus no amenity approach combines the hedonic analysis with the pro forma to estimate whether public investment(s) are indeed enough to shift market clearing to a higher-density development format.

METHODOLOGY

Metro staff contracted with the consulting firm Johnson-Reid to assist in the estimation of the hedonic model. Johnson-Reid has prepared a formal write up of their results.[1] Metro staff has also prepared a brief report describing our independent hedonic analysis. These reports describe the results of the hedonic measurement analysis and form the basis for the real estate price premium employed in the pro forma.

The price premium is employed in the pro forma real estate model to calculate a residual real estate value. The premium adds to the baseline achievable prices/rents. The residual real estate value is an estimate of the maximum acquisition price that can be incorporated into a development while still yielding an acceptable return for the developer. We use the residual real estate value on ten different development forms with the price premium adding to baseline achievable prices/rents. This is the pricing filter employed to screen out potential sites in selected corridors and centers which have the potential to redevelop.

The price premium represents an estimate based on observed sales information, assessor data, and discernible site characteristics gathered specifically from primary data collection sources and compiled into the hedonic modeling data set. The price premium represents the value homeowners and renters are willing to pay for neighborhood characteristics and public amenity investments that have been capitalized into the sales price or value of the real property. Hedonic measurement techniques are used to estimate the price premium from the public amenity items in our study.

The redevelopment screen using the pro forma valuation with the price premium is applied to five selected corridors or centers, including:

- Foster
- Interstate/Prescott
- Gresham center
- Milwaukie center
- Lake Oswego center

We assume ten typical development forms for the pro forma with commensurate achievable prices/ rents, cost of construction, capitalization rates and operating costs. These ten forms are divided into

[1] Please refer to the Johnson-Reid report *Residential Carrying Capacity Analysis* for more detailed information on methodology and assumptions.

two ownership categories: own (condominiums) and rent (apartments/townhomes). There are five building types:

- High rise (FAR =12)
- Mid-rise (FAR = 5.5)
- Type 5 construction over podium
- Type 5 construction with surface parking
- Townhomes/Duplexes

A generalized district-level pro-forma is developed for each of the ten development forms. Highest and best use calculations with and without price premiums applied. Highest and best uses were calculated for each of the five project areas (i.e., centers and corridor locations). The redevelopment screen was used to filter out potential redevelopment sites/acres.

A difference analysis was performed on the potential redevelopment acres that compared what could be the highest and best uses with and without price premiums. The net difference in increased capacity from redevelopment owed to a price premium on public investments was based on redeveloping sites only if the price premium ramped up development to a higher/denser development form as compared to a highest and best use when price premiums were excluded and redevelopment would have occurred at a lesser density development form.

ASSUMPTIONS AND FINDINGS

The hedonic analysis suggests that we can expect a range of public amenities such as improving neighborhood design, streetscape design, adding street car or light rail facilities could impart a **price premium between 5 to 60%** for a center or corridor area. A **price premium of 20% for non-central city locations is more realistic** as it's very unlikely that a suburban center or corridor will have the full set of public amenity investments that has been incorporated into our hedonic equations.[2]

[2] Please review the Johnson-Reid 2010 report *Residential Carrying Capacity Analysis* for more detail on how these price premiums were developed.

Consequently, we assume a 20% premium in our real estate pro-forma analysis for the five study areas. Combining the price premium with district area achievable prices/rents yields these highest and best use estimates for the five locations. These prices are necessarily averages for each district and do not represent any particular site or project. They are generalized representations of highest and best use estimates.

- Foster $70 per square foot Type 5 podium rental
- Interstate/Prescott $70 Type 5 podium rental
- Gresham center $36 Type 5 surface ownership
- Milwaukie center $25 Type 5 surface ownership
- Lake Oswego center $144 Type 5 podium ownership

Also, we have generalized assumptions for the five building types assumed in our pro forma.

Building Type	**FAR**	**Avg. Unit Size**	**Units/Acre**
High Rise	12	850	518
Mid-Rise structured parking	5.5	850	227
Type 5 Podium parking	2	850	87
Type 5 Surface parking	0.6	850	30
Duplex/Townhome	0.6	1200	22

A comparison of highest and best use for each study area indicates only Foster, Interstate/Prescott and Lake Oswego Center having the pro forma market pricing to shift redevelopment forms from a lower density product type (without price premium) to a higher density product (with price premium). The change in density as a result of moving to a higher and better use is 57 dwelling units an acre, or the jump from Type 5 with surface parking to podium parking. The additional density of building at 2.0 FAR and podium parking permit development at 87 dwelling units per acre versus 30 units in our generalized pro forma for the study areas.

Assuming a redevelopment screen of $70 for Foster, Interstate/Prescott and $144 for Lake Oswego Center, we get 28.5 and 63.0 acres of land that could be redeveloped. Additional density which accords 57 more dwelling units per acre and the nearly 92 more redevelopment acres yields an **estimated top-end of about 5,200 more dwelling units** that could be added to the residential supply/capacity calculations.

If the redevelopment screen was tightened to $50 a square foot for the three study areas that saw their theoretical densities rise as a result of the pricing premium, it would result in about 15 acres of possible redevelopment in Foster, Interstate/Prescott or Lake Oswego. **This amounts to about 1,000 more dwelling units as a low end estimate.**

CONCLUSION

The value that households ascribe to investments in public amenities can be measured using statistical analysis called hedonic modeling. This analysis statistically isolates what people are willing to pay to live close to public amenities. People are willing to pay more to have access to public goods, but it is difficult to quantify and measure a public goods underlying value without hedonic statistics. Metro staff, with help from Johnson-Reid, has estimated a price premium of about 5% to 60% that can be attributed to public investments in transportation infrastructure, community and neighborhood design and development of public assets adjacent to corridors and centers in the region. The more likely price premium seems to be about 20% for suburban locations.

This price premium is employed in a generalized district-level pro forma real estate analysis and is used as a screening device that can filter out existing development to pick out potential redevelopment. Ten different development forms are modeled in the pro forma. The pro forma is then capable of estimating which development form can be built given market rents/prices against development and operating costs. A development form emerges as the highest and best use. The residual value from the highest and best development form becomes the filter value for selecting redevelopment sites in our five study areas.

The results from our analysis of the five study areas illustrates redevelopment possibilities and what could be expected as additional realizable capacity that can be traced to higher achievable rents/prices. The price premium is owed to the proximity and access to nearby public investments. People are willing to pay more to be close to these amenities. The higher achievable price/rents permit developers to build apartments and condos at a higher density than otherwise. As a result, we come up with a maximum capacity adjustment of 5,200 dwelling units and a low-end estimate of 1,000 units depending upon our assertion of the price premiums on rents and housing prices in each subarea.

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Appendix 3:

Local actions to achieve aspirations

August 2010

Metro | *People places. Open spaces.*

PURPOSE

The Vision for the Portland Metro Region is memorialized in the 2040 Growth Concept, the guiding planning document for the region whose foundation is built upon the collaboration of city, county and regionally elected officials and citizens. This plan represents the combination of our shared responsibilities to the region as well as the combined aspirations of each individual community. The approach of the 2040 Growth Concept is to make the most of what we have by focusing development in our existing downtown, mainstreets and employment areas. This approach also protects our farm and forest resources for the future.

In 2009, Metro Council approved the Urban Growth Report, which documented the residential and employment capacity available to meet forecast needs in the region over the next 20 years. The 2010 Capacity Ordinance describes the additional local and regional actions and investments that that the region can count toward meeting this forecast need. This appendix describes examples of the local actions and investments that have been made that increase the available residential and employment capacity as well as efforts that are underway that will increase capacity in the future. Only actions that have been completed or demonstrate a reasonable likelihood for completion have been counted towards meeting the region's 20 year residential and employment needs. This appendix focuses primarily on residential capacity in centers and corridors. Examples of local actions and investments include:

- zone changes
- investments in new and existing infrastructure
- transportation and transit investments
- new financing tools
- parking managements policies

These investments and actions were researched over the last two years as part of Metro's Local Aspirations Process. The purpose was twofold:

- Take inventory of the region's goals at the local level, and determine how Metro could assist local governments with their aspirations
- Identify actions and investments that would lead to increased use of existing zoned capacity

Metro staff has engaged local partners through the extensive **Local Aspirations** process, and reviewed local plans in an effort to accurately identify those actions that have already been taken to influence residential capacity in the region.

In addition to the examples found here, many other cities are also engaged in planning activities that will eventually lead to increased use of available capacities. For example, the City of Beaverton is currently engaged in outreach with their citizens related to their Civic Plan. The City of Milwaukie is actively working on plans for downtown revitalization, including code updates, habitat restoration and brownfield remediation. Forest Grove and the City of Portland are currently updating their Comprehensive Plan under Periodic Review, and will lay out a path for future growth

and prosperity. These efforts will have significant and long lasting results. For example, the City of Portland effort is the first update to their Comprehensive Plan in over 30 years.

What is clear from Metro's work on capacity estimates is that there is a large amount of underutilized residential capacity within the Region's Centers, Corridors, and Station Communities. In addition to adding zoned capacity to the region, the goal is to better utilize existing capacity. The work done through Local Aspirations, the adoption of the 2035 Regional Transportation Plan (RTP), and the review of local plans has allowed Metro to compile actions and investments that either have occurred or are likely to occur in the immediate future. With the adoption of the RTP in June of 2010, Metro and the Region have committed to a specific list of transportation-related investments that complement and work in conjunction with local actions to increase the utilization of zoned capacity. It should be noted that there are limitations to the information presented in this appendix. The information focuses on residential capacity, with a focus on Centers and Corridors. Information concerning commercial districts and established residential neighborhoods is not explored in depth.

LOCAL ACTIONS

Gresham

The City of Gresham has focused its aspirations on several locations throughout the City, including the Rockwood Town Center, Springwater Employment Area and their Regional Center, which includes two distinct neighborhoods: Civic Neighborhood and Downtown Gresham. Gresham has adopted policies and made investments to support development within these areas and has plans for additional actions.

Downtown represents the more historic portion of Gresham. The area has a significant amount of employment, commercial development, and medium and higher density residential development. The City recently updated their zoning code Downtown to address design and density and spur further private investment. The City's investment in downtown is already starting to pay off in the form of existing Transit Oriented Development (TOD), new public spaces, green street construction, and important amenities that serve to activate the area. New businesses include a brew pub, restaurant, full service grocery store, as well as other important commercial uses. In 2011, the City plans to take additional steps to promote and leverage private investment, including consideration of urban renewal and development of a new parking management plan with new parking ratios.

While the downtown represents the historic portion of Gresham, Civic Neighborhood represents the future of the City. Meant to house new jobs and high density housing, the area already serves as the government and retail center of the city. To better facilitate access to Civic Neighborhood and promote private investment, the City of Gresham and Metro have started construction a new MAX light rail station. Proposed TOD development in this station area is expected to leverage additional private investment, as it has elsewhere in the center, with developments such as the Beranger and the Crossings.

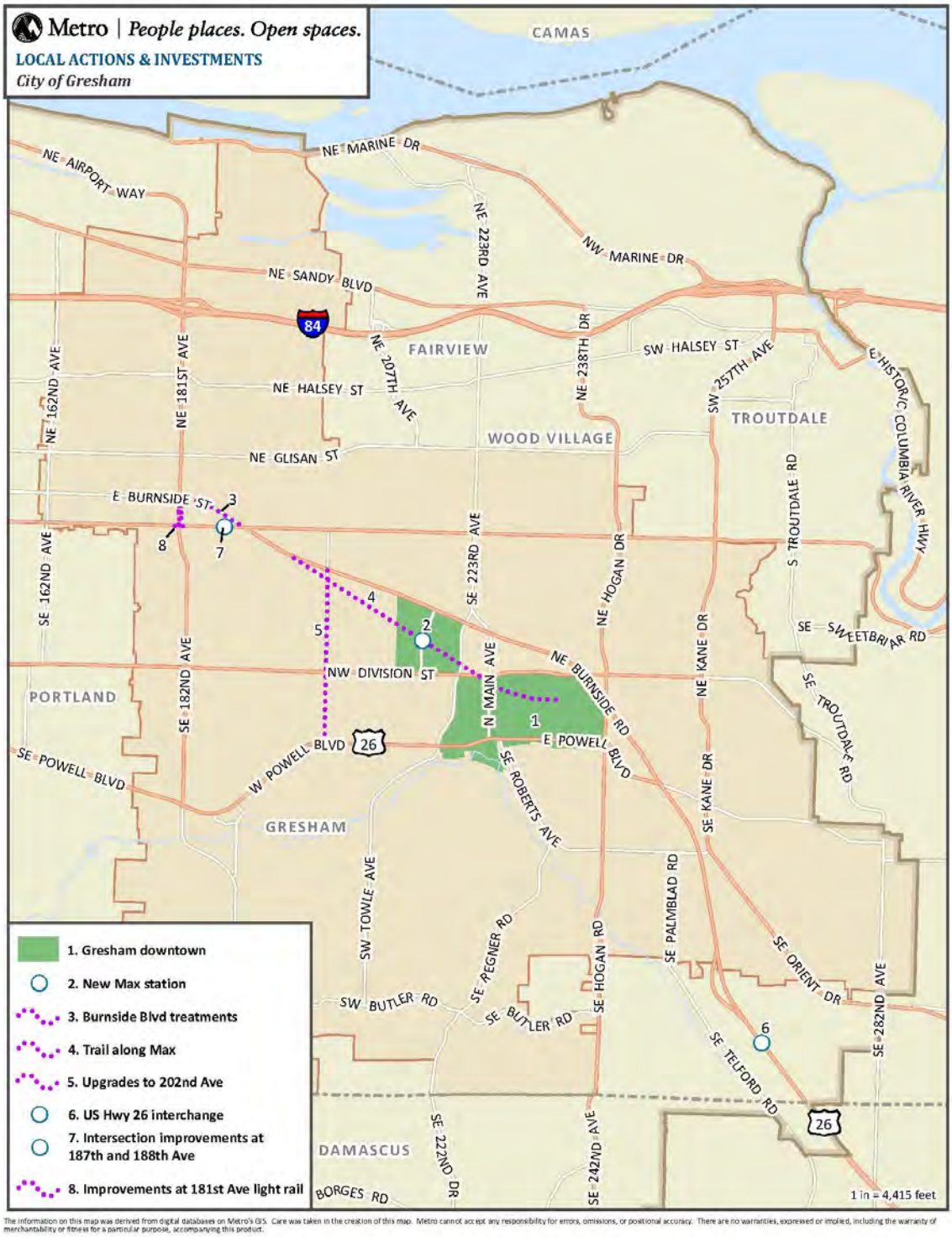
From a broader perspective, the City is currently engaged in the following activities:

- A comprehensive review of their entire fee structure in an attempt to determine proper cost-recovery charges for all areas of service provided. This review includes looking at the current System Development Charges methodology and its impact on targeted areas, such as Civic Neighborhood and Downtown Gresham.
- The City also has a program that allows for deferring payment of SDCs until occupancy or financing SDCs over a period of up to 10 years. The purpose is to defray up-front development costs to encourage purchase or lease of property prior to re-payment.
- The City of Gresham Capital Improvement Program also calls for several new projects that will encourage development at full zoned capacity, including an upgrade to a sewer line in the Regional Center.
- Upgrades and new utility connections are planned for the Springwater area to facilitate additional housing and attract new employers.

The Regional Transportation Plan includes new projects that will contribute to the utilization of existing zoned capacity and provide new amenities to support further redevelopment within the City. Examples include:

- Burnside boulevard treatments: SE 181st to Stark
- Construct bike/pedestrian trail along MAX alignment from Cleveland Ave to Ruby Junction
- Upgrades to 202nd from Burnside to Powell
- Highway interchange on U.S. 26 near 267th Avenue
- Realign intersection of SE 187th Avenue/SE 188th Avenue at Stark St. to improve safety and neighborhood access
- Improve sidewalks, lighting, crossings, bus shelters, benches at SE 181st LRT station, on Stark St. and other intersecting streets.

Figure 1: City of Gresham 2010 Actions/Investments



Wood Village

The City of Wood Village, a small community in the Metro region, has articulated a desire to have a more vibrant and active mixed-use center at the heart of its town. To achieve this goal, the City set out to adopt the necessary policies and make the investments needed to stimulate private development. In 2009-2010, the City undertook the following work:

- Wood Village currently shares their Town Center with the City of Fairview. This co-center concept requires coordination with the City of Fairview, which is ongoing. Wood Village adopted an Urban Renewal District within their portion of the Town Center on February 23, 2010. The adoption of urban renewal will allow the City to focus efforts on expanding housing choices and support critical infrastructure projects that are the key to a successful center.
- Adopted a Vertical Housing Tax Credit (VHTC) Program. Experience shows that the state's VHTC Program yields higher density residential development where permitted by land use regulations. The city of Wood Village was approved by the Oregon Department of Housing and Community Services to implement the VHTC program in specific portions of the Town Center November 24, 2009.
- Adopted new zoning to allow cottage-style housing on September 15, 2009. Adoption of cottage housing offers an option to both condo and single-family residential housing with smaller, more affordable units with dedicated common areas. Additional housing options for the city's residents will allow for more optimal utilization of zoned capacity in these areas.
- Participated in the Metro Brownfield Recycling Program, which allowed for the assessment and remediation of a City-owned, contaminated property that will now be utilized for future redevelopment.

Taken as individual actions, each of these efforts stand to influence market utilization of capacity to some small extent. However, taken together as they apply to the Wood Village Town Center, they have the ability to significantly affect the market utilization of the zoned capacity currently in place. Although Wood Village is only one square mile in size, these actions and investments stand to contribute to the region's capacity needs.

Figure 2: City of Wood Village 2010 Actions/Investments

Hillsboro-AmberGlen

The City of Hillsboro has recently spent considerable time and effort planning for the AmberGlen/Tanasbourne Town Center. Actions and investments in the area include:

- Recently adopted a comprehensive plan amendment for the AmberGlen area. In conjunction with the Tanasbourne Town Center, the City hopes to establish a new, mixed-use community that focuses on high-density housing, open public spaces, public transit and new employment. The plan calls for an additional 5,000 dwelling units to be built within the study area. With a wide-range of building types, the plan will serve a diverse market and provide a wide array of housing styles.
- Poised to start work on the adoption of zoning in the plan area. The City is seeking to have the new zoning in place by the end of 2010. The plan calls for new high capacity transit, which Hillsboro is actively pursuing through the System Expansion Policy process, identified in the recently adopted RTP.

- Partnering with Tri-Met to study potential right-of-way needs for a future light rail spur through AmberGlen and Tansasbourne.
- Undertaking an Urban Renewal Feasibility Study for AmberGlen/Tanasbourne, with the hope of identifying a funding source that will be needed for the large public investment planned in the area.
- Kaiser Permanente has broken ground on a new one million square foot hospital in Tanasbourne, which will bring hundreds of new jobs to the center.

The Regional Transportation Plan includes new projects that will contribute to the utilization of existing zoned capacity and provide new amenities to support further redevelopment within the City. Examples include:

- Capacity improvements to Highway 26 and 185th interchange in an attempt to improve access into the AmberGlen area and fix nearby congestion problems
- Pedestrian improvements in AmberGlen to fill in missing sidewalks
- Walker Road extension- Construct 3 lane with bike lanes and sidewalks
- Stucki Avenue extension- Construct 3 lane with off-street bike lanes and sidewalks, Realign intersection of Walker and Stucki
- 194th Avenue extension- Construct 2/3 lane with sidewalks and LRT in part or all of new segment
- Integrate existing streets into an urban street grid--extension of NW Stucki Avenue to near the Qatama LRT station, realignment of SW Walker Road to AmberGlen Parkway and the extension of NW Wilkins across the OHSU primate site to SW 185th Avenue

Hillsboro-Downtown

The City of Hillsboro is focusing on revitalizing its downtown through new planning efforts and targeted investments. Engaging their public in a long visioning process, the City has started to see new projects and zoning become a reality.

- Passed a new Urban Renewal Plan for downtown on April 20, 2010. This financing and redevelopment tool will provide the funding needed to achieve development goals for downtown Hillsboro.
- Adopted code changes downtown, which are meant to streamline development processes and clearly articulate the design features that the community is seeking.
- Opened a new Inter-Modal Transit facility, which provides parking for bicycle and transit riders and adds 800 new parking spaces. The additional parking will support redevelopment by eliminating, in some cases, the need for on-site parking.
- Parking Management Plan for downtown now underway, in conjunction with new parking requirements that plan to address the off-street parking issues in more urban settings.

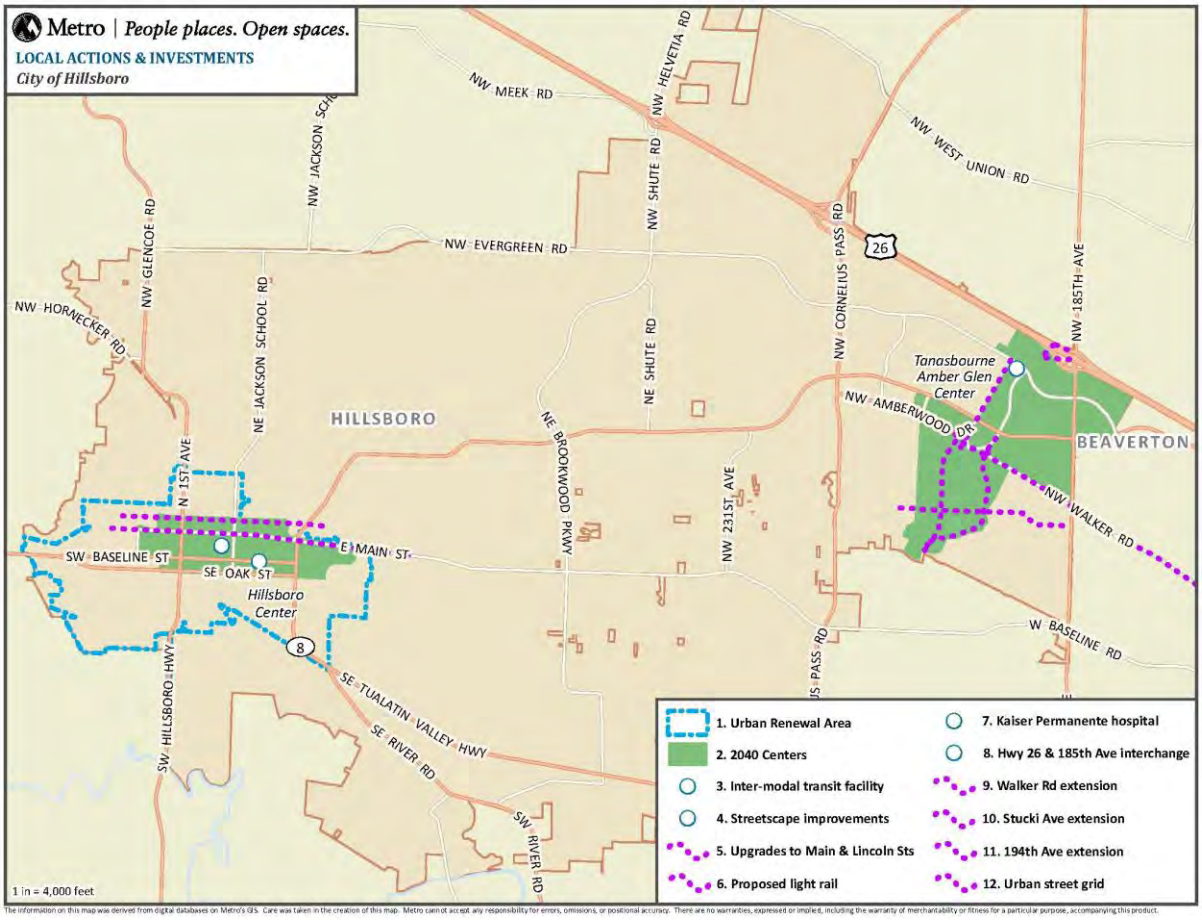
The Regional Transportation Plan includes new projects that will contribute to the utilization of existing zoned capacity and provide new amenities to support further redevelopment within the City. Examples include:

- Streetscape and gateway improvements include street trees and landscaping, pedestrian and bicycle facilities, curb extensions, traffic calming, public art, way-finding on key streets downtown
- Change Main and Lincoln Streets to two-way traffic

Projects identified in the recently adopted Urban Renewal Plan will also support the success of Downtown Hillsboro. Projects include:

- A second civic square or public plaza with a focus on the connection between the 10th Avenue business community and the commercial district
- Multi-use pathway or boardwalk along 1st Avenue/Hillsboro Highway connecting the Jackson Bottom Wetlands Preserve to the downtown area and connecting Dairy Creek Park to 1st Avenue and other regional trail connections to the downtown area

Figure 3: Hillsboro 2010 Actions/Investments



Tigard-Downtown

Tigard has been working diligently on its long-term aspirations. To support their aspirations and make Tigard an even more desirable location to live and work, the City has adopted new policies and investments meant to utilize their existing capacity more efficiently. New policies and investments meant to utilize their existing capacity more efficiently include:

- Adopted new zoning in Downtown, in an effort to increase the allowed density and promote the area as a desirable place to live. The proposed changes will authorize an additional 1,900 dwelling units in the center. These zoning changes, coupled with existing Urban Renewal and an Affordable Housing Tax Abatement Program will help bring new development downtown.
- Expanded the Tigard Town Center boundary to include the area known as the Tigard Triangle. By expanding the boundary, the City is committing to making the investments and incentives available that will spur redevelopment in this area. The Tigard Triangle is

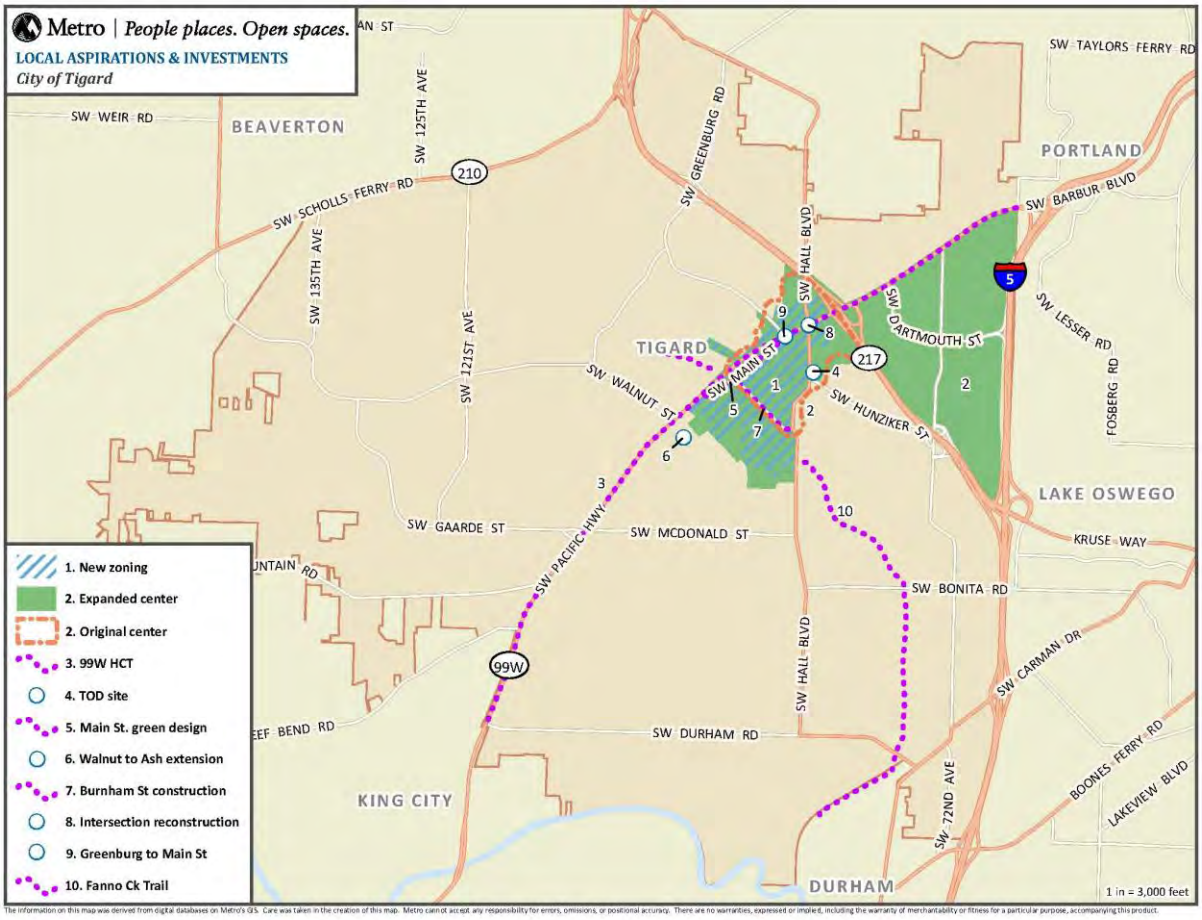
predominantly seen as mixed-use with an emphasis on employment-related uses. This will compliment the commercial and residential development planned for downtown.

- The 99W corridor has been selected as the Region's next priority for the expansion of High Capacity Transit. The City is now engaging new planning efforts to determine a future mix of land uses best suited to take advantage of this strategic regional investment.
- Working in partnership with private development and the Metro TOD program, the City is assisting in the construction of a new, senior housing project known as the Knoll. This project represents the first TOD-style development found in Downtown Tigard.

The Regional Transportation Plan includes new projects that will contribute to the utilization of existing zoned capacity and provide new amenities to support further redevelopment within the City. Examples include:

- Upgrade Main Street to a complete streetscape with Green Design features
- Walnut to Ash Street extension
- Burnham Street green street construction
- Reconstruction of the 99W/Hall Boulevard/Main Street intersection
- Add one travel lane on Hwy 99W through the intersection, turn lanes on the Greenburg and Main approaches, add bike lanes, and widen sidewalks
- Continued design and construction of Fanno Creek Trail

Figure 4: Tigard-Downtown 2010 Actions/Investments



Oregon City

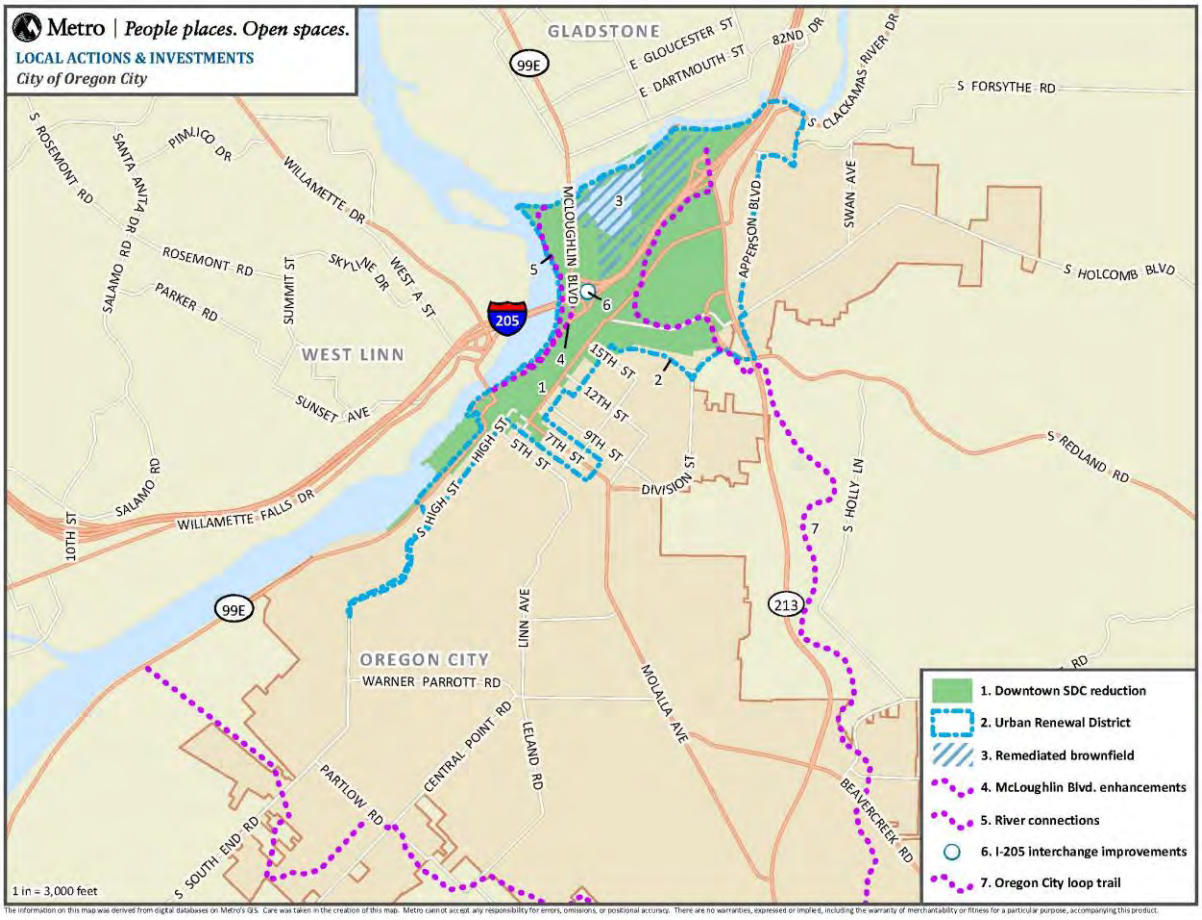
As the only Regional Center in the south part of the Metro Region, Oregon City is uniquely situated to provide housing, jobs, and essential services to a growing sector of the population. The City is focusing its efforts in Downtown where it strives to provide more housing choices and foster the development of local businesses to serve the community. City policies and investments made to attract development downtown, include:

- Adoption of a 10% reduction in Transportation System Development Charges for the Regional Center and Molalla Corridor.
- Adoption of an Urban Renewal District
- Brownfield assessment and remediation to prepare a site for new development. The site is currently known as The Coves, a planned 109-acre mixed-use community with 224 condos, 78 acres of open space and four restaurants that will be located next to Clackamette Cove north of Interstate 205 and east of Oregon 99E behind the Oregon City shopping center.

The Regional Transportation Plan includes new projects that will contribute to the utilization of existing zoned capacity and provide new amenities to support further redevelopment within the City. Examples include:

- McLoughlin Boulevard Enhancement Project- major street and pedestrian improvements from 10th Street to the I-205 overpass
    - Landscaped medians, street trees, native plant revegetation along the banks of the Willamette River, on-street parking, decorative lighting, public art
    - Bypass lane converted into a general purpose lane.
    - The new signalized street connection to 99E at 12th Street
    - New crosswalks to the river at 12th Street and 14th Street
    - The Willamette Terrace, river-viewing platform across from 13th Street with architectural anchors and a series of public art installations
- Plazas, trails and other amenities connecting the edge of the Clackamas river with the Willamette River into downtown Oregon City
- I-205 interchange improvements
- Oregon City Loop Trail

Figure 5: Oregon City 2010 Actions/Investments



Lake Oswego

Situated along Highway 43, south of the City of Portland, Lake Oswego has seen continued investment in downtown. With the adoption of urban renewal, investment in new streetscapes, transportation improvements, and a new plaza, the City has created a vibrant and attractive Town Center.

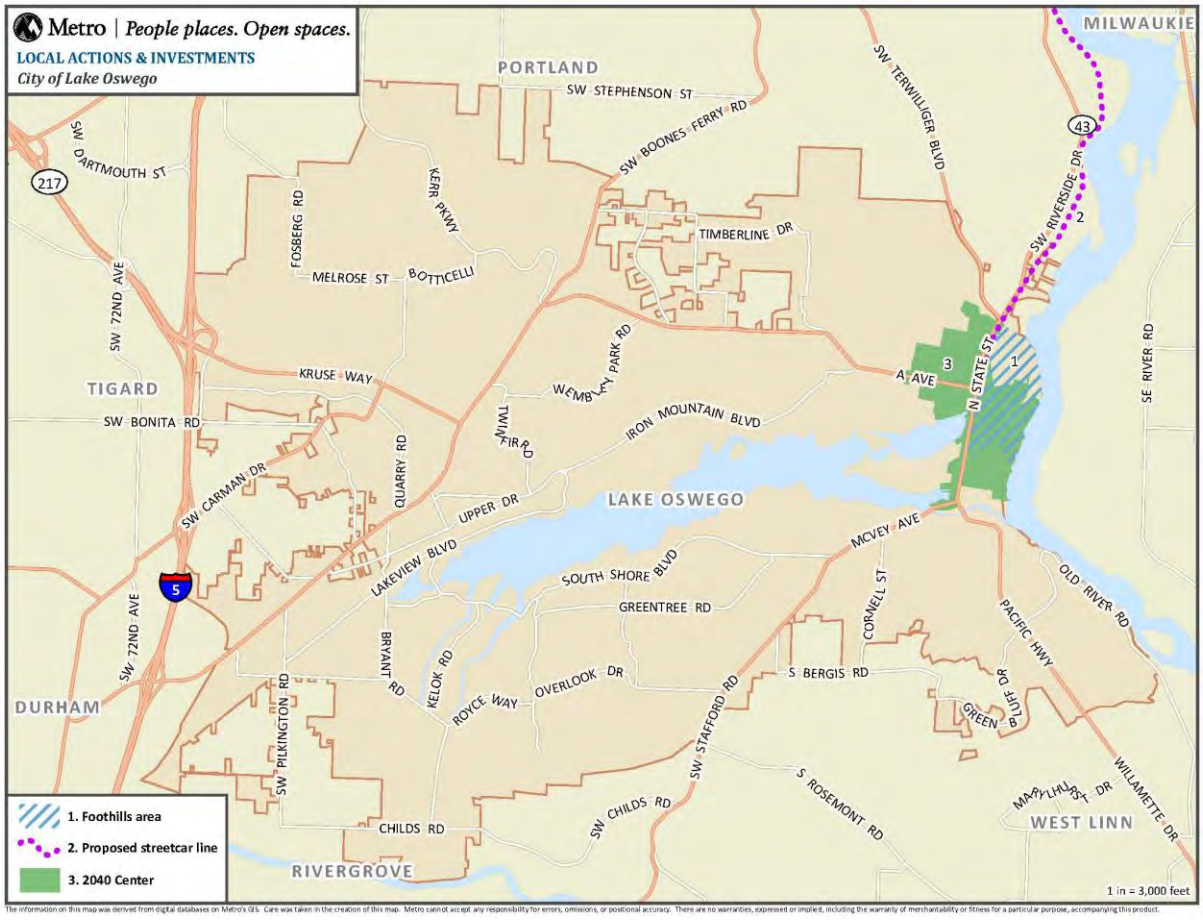
In conjunction with a streetcar extension south from downtown Portland along Highway 43, the City is planning for expansion of the town center to the adjacent Foothills Area. Encompassing roughly 19 acres, the Foothills area in Lake Oswego is an area generally considered to be prime redevelopment land, adjacent to a downtown with strong real estate demand. Previous visioning efforts focusing on the Foothills area stated a desire for mixed-use redevelopment, emphasized by new public space and improved connections from downtown to the river. To stimulate private investment in the Foothills area, the City embarked on the design and construction of the nine acre Foothills Park. The City plans to start the process to up-zone in the Foothills area late-2010 or early-2011.

In addition to the Foothills area, the City continues to invest resources and efforts in its downtown. With a thriving business community and future access to Lake Oswego via streetcar, the city is clearly poised to see new growth.

The Regional Transportation Plan includes new projects that will contribute to the utilization of existing zoned capacity and provide new amenities to support further redevelopment within the City. Examples include:

- Streetcar for the 5.7 mile corridor between Lake Oswego and downtown Portland scheduled to open in 2018.
- A Avenue street treatments
- Lake Oswego to Portland trail system

Figure 6: Lake Oswego 2010 Actions/Investments



Illustrative list of community-building projects in adopted local capital improvement plans

City	Facility	Category	Location	2nd Intersection (if linear)	Cost
Beaverton	Beaverton Creek Trail segment (.14 miles)	trail	Hall Blvd. / MAX line	Lombard Ave. / MAX line	$90,000 (rough estimate by Metro)
Beaverton	Laurelwood Ave. sidewalk	pedestrian	Laurelwood Ave. / Beaverton Hillsdale Hwy	Laurelwood / Birchwood	$343,000
Beaverton	Erickson Creek greenspace (1.5 acres)	park	Farmington Rd. / Menlo Dr.		$500,000 (rough estimate by Metro)
Cornelius	Arboretum City Park improvements	park	Baseline / 12th		$24,000
Cornelius	Baseline streetscape	pedestrian	Baseline / 10th	Baseline / 19th	$736,000
Forest Grove	Town Center pedestrian improvements	pedestrian	Main St. / Pacific Ave.		$50,000
Forest Grove	Furnishings for renovated library	civic	Pacific Ave. / Birch St.		$200,000
Forest Grove	18th Ave. sidewalks	pedestrian	18th Ave. / Hawthorne	18th Ave. / Maple	$190,000
Gresham	Main City Park improvements	park	Main / Powell		$1,720,000

City	Facility	Category	Location	2nd Intersection (if linear)	Cost
Gresham	Main City Park improvements (2nd phase)	park	Main / Powell		$7,494,215
Gresham	Center for the Arts	civic	NE 3rd / NE Hood		$16,480,000
Gresham	Center for the Arts Plaza	park	NE 3rd / NE Hood		$3,045,220
Gresham	Civic Neighborhood parks and trails	park	bounded by NW Wallula, NW Burnside,NW Eastman, NW Division		$662,900
Gresham	Civic Neighborhood Station Plaza	park	MAX / NW Civic Dr.		$2,136,800
Gresham	Downtown urban plazas and parks	park	NE Elliot / NE 3rd		$ 5,424,804
Gresham	Rockwood urban plazas and parks	park	Rockwood URA boundaries		$7,397,460
Gresham	Skate Park (@ Main City Park)	park	Main St. / Powell		$351,832
Gresham	Skate Park (@ Main City Park) phase II	park	Main St. / Powell		$750,000
Gresham	SW Community Park	park	W Powell / W Powell loop		$13,309,547
Gresham	Pat Pfeiffer Park (Rockwood)	park	Burnside / 172nd		$2,422,559
Gresham	Civic Neighborhood TOD improvements	pedestrian	bounded by NW Wallula, NW Burnside,NW Eastman, NW Division		$213,239
Gresham	Stark Street Arterial Blvd improvements	boulevard	Stark / 190th	Stark / 197th	$3,256,458

City	Facility	Category	Location	2nd Intersection (if linear)	Cost
Gresham	Hood St bike / ped improvements	ped and bike	NE Hood St. / NE Division	NE Hood St. / E Powell	$1,284,000
Gresham	NE 5th bike / ped improvements	ped and bike	NE 5th / Hood	NE 5th / Cleveland	$1,392,601
Gresham	NW Wallula Ave bike / ped improvements	ped and bike	NW Wallula / Stark	NW Wallula / MAX line	$1,870,193
Gresham	NE Cleveland bike / ped improvements	ped and bike	NE Cleveland / Powell	NE Cleveland / Stark	$1,564,262
Gresham	Downtown Plan improvements	pedestrian	bounded by Burnside, Eastman Pkwy, SE 5th, NE Liberty		$8,288,005
Gresham	Rockwood Plan bike / ped street improvements	ped and bike	Rockwood URA boundaries		$8,896,423
Gresham	Sandy Blvd. bike / ped improvements	ped and bike	entire length of Sandy through Gresham		$2,929,500
Gresham	Division St. regional blvd. improvements	boulevard	NE Division / NE Cleveland	NE Division / NE Burnside	$6,000,000
Gresham	Burnside regional blvd. improvements	boulevard	Burnside / 181st	Burnside / Eastman	$8,000,000
Gresham	181st regional blvd. improvements	boulevard	181st / Glisan	181st / Yamhill	$2,000,000
Gresham	NE 3rd festival St.	pedestrian	NE 3rd / NE Hood	NE 3rd / NE Kelly	$600,058
Gresham	MAX path (Rockwood to Gresham)	trail	MAX / NW 11-Mile Ave.	MAX / NE Cleveland	$1,252,178
Gresham	Springwater Trail access (SW Walters)	ped and bike	Springwater Trail / SW Walters		$1,000,000

City	Facility	Category	Location	2nd Intersection (if linear)	Cost
Gresham	Springwater Trailhead at Main City Park	trail	Main St. / Powell		$529,289
Gresham	162nd / Burnside pedestrian access to MAX	pedestrian	162nd / Burnside		$304,380
Gresham	181st / Burnside pedestrian access to MAX	pedestrian	181st / Burnside		$710,220
Gresham	188th / Burnside pedestrian access to MAX	pedestrian			$1,318,980
Gresham	197th / Burnside pedestrian access to MAX	pedestrian	197th / Burnside		$405,840
Gresham	City Hall pedestrian access to MAX	pedestrian / plaza	NW 12th / Eastman		$332,039
Gresham	Hood St. pedestrian access to MAX	pedestrian	NE Hood / NE 4th	NE Hood / NE Powell	$736,681
Gresham	Cleveland Station pedestrian access to MAX	pedestrian	NE Cleveland / NE 6th		$553,398
Gresham	Central Station pedestrian access to MAX	pedestrian	MAX / NW Civic Dr.		$500,000
Gresham	Main St. pedestrian access to MAX	pedestrian	Main St. / NW Division	Main St. / NE 5th	$2,000,000
Gresham	Division St. ped and bike improvements	ped and bike	Division St. / 174th	Division St. / Wallula	$160,000
Gresham	Glisan bike improvements	bike	Glisan / 162nd	Glisan / 202nd	$140,000
Gresham	Glisan sidewalks (193rd to 202nd)	pedestrian	Glisan / 193rd	Glisan / 202nd	$19,111

City	Facility	Category	Location	2nd Intersection (if linear)	Cost
Gresham	Main St. pedestrian improvements (Division to 5th)	pedestrian	Main / Division	Main St. / NE 5th	$550,000
Gresham	Rockwood redevelopment plan implementation	pedestrian	bounded by 181st, Burnside, Stark		$500,000
Gresham	Rockwood Town Center future streets (complete network)	pedestian	various streets in vicinity of Burnside / 181st		$1,000,000
Gresham	Cultural Marketplace	redevelopment capital costs	Burnside / 188th		$2,000,000
Gresham	190th streetscape	ped and bike	190th / Stark	190th / Yamhill	$2,000,000
Gresham	181st Ave. boulevard improvements	boulevard	181st / Glisan	181st / Yamhill	$2,400,000
Gresham	201st Ave. pedestrian improvements	pedestrian	201st / Stark	201st / Burnside	$960,000
Gresham	201st and Stark intersection upgrade	pedestrian	201st / Stark		$960,000
Gresham	Satellite Plaza	park	188th / Stark		$1,000,000
Gresham	Rockwood Town Center parks (at least 2 new parks)	park	roughly bounded by 179th, Davis, NW Eleven-Mile, Main St.		$2,400,000
Gresham	Gresham Fairview Trail access	trail	199th / Burnside		$1,200,000
Gresham	Stark St. boulevard	boulevard	Stark / 190th	Stark / 197th	$1,150,000

City	Facility	Category	Location	2nd Intersection (if linear)	Cost
Gresham	Burnside Rd. boulevard phase I	boulevard	Burnside / 181st	Burnside / 197th	$1,834,336
Gresham	188th / Burnside pedestrian improvements	pedestrian	188th / Burnside		$1,000,000
Gresham	188th / Stark pedestrian realignment	pedestrian	188th / Stark		$1,000,000
	197th / Burnside pedestrian improvements	pedestrian	197th / Burnside		$1,800,000
Gresham	188th MAX station improvements	civic	188th / Burnside		$4,950,000
Gresham	Rockwood Community Center	civic	182 / Burnside		$6,480,000
Gresham	Rockwood Town Center MAX line landscaping	other	181st / Burnside	Burnside / Stark	$2,400,000
Gresham	181st (Rockwood) MAX Station improvments	civic	181st / Burnside		$4,800,000
Gresham	Burnside boulevard improvements phase II	boulevard	Burnside / Stark	Burnside / 197th	$3,000,000
Hillsboro	10th Ave. Bike Lane	bike	10th Ave. / Walnut	10th Ave. / Main	$160,513
Hillsboro	Oak St. Bike Lane	bike	Oak St. / TV Hwy	Oak St. / Dennis	$267,876
Hillsboro	Cornell Rd. bike lanes	bike	Cornell Rd. / Elam Young	Cornell Rd. / Ray Circle	$637,800
Hillsboro	Cornell Rd. bike lanes	bike	Cornell Rd. / Grant St.	Cornell Rd. / 25th	$321,026

City	Facility	Category	Location	2nd Intersection (if linear)	Cost
Hillsboro	Baseline Rd. bike lanes	bike	Baseline Rd. / Lisa	Baseline / 231st	$1,993,125
Hillsboro	28th Ave. bike lanes	bike	28th Ave. / Grant	28th Ave. / Main	$1,078,955
Hillsboro	Butler/Amberwood bike lane	bike	Butler / Brookwood	Butler / John Olsen	$1,076,819
Hillsboro	Walker Rd. bike lanes	bike	Walker / Amberglen Pkwy	Walker / 185th	$287,010
Lake Oswego	Boones Ferry Rd. ped / bike improvements (Lake Grove Village Center)	ped and bike	Boones Ferry / Madrona	Madrona / Kruse Way	$16,000,000
Lake Oswego	Lake Grove Village Center (Hallmark festival street)	pedestrian	Hallmark / Mercantile	Hallmark / Douglas	$2,000,000
Lake Oswego	Chow Corner regional sidewalk	pedestrian	Boones Ferry / Jean Rd.		$100,000
Lake Oswego	State Street sidewalk and street tree replacement	pedestrian	State St. / George Rogers Park	State St. / Terwilliger	$530,000
Lake Oswego	Library to Adult Community Center pathway	trail	4th St. / E Ave.		$60,000
Lake Oswego	Lake Grove Village Center ped / bike improvements	ped and bike	Boones Ferry / Kruse Way		$8,000,000

City	Facility	Category	Location	2nd Intersection (if linear)	Cost
Lake Oswego	Lake Grove Village Center parking facilities	parking	Boones Ferry / Kruse Way		$1,000,000
Milwaukie	Milwaukie Riverfront Park	park	bounded by Willamette River, Kellogg Creek, Johnson Creek, and McLoughlin Blvd.		$5,901,963
Milwaukie	Lake Rd. multimodal improvements phase I	ped and bike	Lake Rd. / Oatfield	Lake Rd. / Freeman	$4,800,960
Milwaukie	Jackson St. streetscape	ped and bike	Jackson St. / Main St.	Jackson St. / 21st	$1,215,000
OR City	Oregon City swimming pool improvements	civic	Jackson St. / 12th		$3,000,000
OR City	Washington Street improvements (bike lanes)	bike	Washington / 12th	Washington / 16th	$1,400,000
OR City	Washington Street improvements (bike lanes)	bike	Washington / 7th	Washington / 12th	$750,000
OR City	McLoughlin Blvd. enhancement	boulevard	McLoughlin / Clackamas River bridge	McLoughlin / railroad tunnel	$3,700,000
OR City	Molalla Ave. boulevard improvements	boulevard	Molalla / Dewey St.	Molalla Ave. / Hwy 213	$7,102,765
OR City	Hwy 99E sidewalks	pedestrian	Hwy 99E / Clackamas River bridge	Hwy 99E / Dunes Dr.	$80,000
OR City	Hwy 99E sidewalks	pedestrian	Hwy 99E / Tumwater	Hwy 99E/ Hedges	$150,000

City	Facility	Category	Location	2nd Intersection (if linear)	Cost
OR City	Center St. sidewalks	pedestrian	Center St. / 2nd	Center St. / Telford	$400,000
OR City	Division St. sidewalks	pedestrian	Division St. / Selma	Division St. / 12th	$27,000
OR City	Division St. sidewalks (westside)	pedestrian	Division St. / Gilman Park Dr.	Division St. / Anchor	$90,000
OR City	Division St. sidewalks (eastside)	pedestrian	Division St. / 15th	Division St. / Anchor	$45,000
OR City	Linn Ave. sidewalks	pedestrian	Linn Ave. / Jackson	Linn Ave. / Oak	$90,000
OR City	S. 2nd St. sidewalks	pedestrian	S. 2nd / Tumwater	S. 2nd / Center	$36,000
OR City	15th St. sidewalks	pedestrian	15th St. / Hwy 99E	15th St. / Taylor St.	$750,000
OR City	Molalla Ave. bike lanes	bike	Molalla / 7th St.	Molalla Ave. / Hwy 213	$32,480
OR City	Washington Street bike lanes	bike	Washington St. / Hwy 213	Washington St. / 5th	$30,000
Portland	Dawson Park improvements (N. Interstate URA)	park	N. Williams / NE Morris		$1,800,000
Portland	N. Interstate URA park improvements	park	Interstate URA		$2,770,000
Portland	O'Bryant Square park development (downtown)	park	SW Park / Washington		$4,000,000
Portland	River District Neighborhood Park development	park	NW 11th / NW Overton		$4,875,000

City	Facility	Category	Location	2nd Intersection (if linear)	Cost
Portland	South Park Block 5 redevelopment	park	SW 9th / SW Yamhill		$6,870,000
Portland	South Waterfront Greenway development	park	Curry St. @ Willamette River		$9,000,000
Portland	South Waterfront neighborhood park development	park	SW Moody / SW Curry		$4,000,000
Portland	Springwater Trailhead at 82nd	trail	Springwater Trail / 82nd Ave		$1,650,000
Portland	Tanner Springs Park rainwater pavillion construction	park	NW 10th / NW Marshall		$140,000
Portland	Willamette Greenway trail redevelopment	trail	east side of Willamette River (north Portland)		$750,000
Portland	Interstate Firehouse Cultural Center upgrade	civic	N. Interstate / N. Emerson		$74,000
Portland	Director Park street enhancements (Central City)	pedestrian	SW 9th / SW Yamhill		$1,382,000
Portland	Gateway URA park development	park	Gateway URA		$1,500,000
Portland	Lents URA park development	park	Lents URA		$ 624,000
Portland	East Burnside / Couch improvements (bridge to 14th)	ped and bike	bounded by E. 3rd / NE 14th / E. Burnside / NE Couch		$18,051,393
Portland	NE Cully Blvd ped / bike improvements	ped and bike	NE Cully / NE Prescott	NE Cully / NE Killingsworth	$5,424,726
Portland	SE Division streetscape (SE 11th to 39th)	ped and bike	SE Division / SE 11th	SE Division / SE 39th	$6,094,354

City	Facility	Category	Location	2nd Intersection (if linear)	Cost
Portland	Gateway Phase II streetscape	ped and bike	102nd Ave. in Gateway URA		$475,000
Portland	Gibbs St. pedestrian bridge over I-5	ped and bike	Gibbs / SW Moody	Gibbs / SW Kelly	$11,494,525
Portland	N. Denver St. streetscape, bike / ped improvements	ped and bike	N. Denver / N. Watts	N. Denver / N. Argyle	$2,722,170
Portland	N. Killingsworth streetscape	ped and bike	N. Killingsworth / N. Commercial	N. Killingsworth / NE Martin Luther King	$652,000
Portland	Russell St. streetscaping	ped and bike	N. Russell / N. Albina	N. Russell / N. Interstate	$2,990,836
Portland	St. Johns Town Center pedestrian improvements	pedestrian	N. Ivanhoe / N. Richmond	N. Ivanhoe / New York	$2,071,926
Portland	Barbur sidewalk infill	pedestrian	Barbur Blvd. (unspecified intersections)		$2,000,000
Portland	N. Interstate livability improvements (transp)	pedestrian	Interstate URA		$750,000
Portland	Lents Town Center streetscape	ped and bike	SE Foster / SE 92nd		$2,251,790
Portland	Lents Town Center traffic safety improvements (for livability)	pedestrian	Lents URA		$905,000
Tigard	Fanno Creek Plaza	park	SW Main / SW Burnham		$4,877,000
Tigard	Main Street / green street retrofit	ped and bike	Main St. / 99W	Main St. / Greenburg	$700,000
Tigard	Hall Blvd at Hwy 99W (gateway to downtown)	pedestrian	Hall Blvd. / 99W		$435,000

City	Facility	Category	Location	2nd Intersection (if linear)	Cost
Tigard	Burnham Street reconstruction	pedestrian	Burnham / Main	Burnham / Ash	$9,746,463
Tigard	Library facility enhancements	civic	SW Hall / SW Omara		$100,000
Tigard	Fanno Creek Trail (Hall Blvd. / Fanno Creek)	trail	Hall Blvd. / Fanno Creek		$120,000
Tigard	Fanno Creek Trail (Main St. to Grant St.)	trail	Main St. / Grant St.		$185,000
Tigard	Fanno Creek Trail (Bonita and 74th to Cook Park)	trail	Bonita / 74th	Cook Park	$730,000
Tigard	Fanno Creek Trail (Railroad Row Loop)	trail	SW Tigard St. / SW Main St.		$594,000
Tigard	Tree canopy replacement	tree	citywide		$600,000
Tigard	Community park acquisition and development	park	North Central Tigard (unspecified)		$1,220,000
Tigard	Brown Property Trail (library to Bonita Park)	trail	SW Milton Ct. / SW Bonita		$555,780
Tigard	Fanno Creek Park (25 acres next to plaza)	park	SW Main / SW Burnham		$2,226,350
Tigard	Tigard Triangle local improvement district	pedestrian	SW Dartmouth / SW 69th		$2,280,303
Tigard	Commercial street intersection (Lincoln to Main)	pedestrian	Commercial St. / Lincoln	Commercial St. / Main	$800,000
Tualatin	Boones Ferry Rd. sidewalks	pedestrian	Boones Ferry / Tualatin Sherwood Rd.	Boones Ferry /Tualatin High School	$500,000
Wilsonville	Town Center ped / bike connection	ped and bike	Town Center Loop E. / SW Wilsonville Rd.		$70,642

City	Facility	Category	Location	2nd Intersection (if linear)	Cost
Wilsonville	Transit Center amenities	civic	SW Barber St. / SW Barber St. (???)		$150,000
TOTAL					**$345,600,078**

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Appendix 4:

Illustrations of the possible impacts of public investments

August 2010

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PURPOSE

The 2040 Growth Concept, the guiding planning document for the region, articulates a desire to focus development in the designated 2040 design types. These include designated centers, corridors, main streets, station communities and employment areas. The 2040 Growth Concept strives to create active and successful places within the region. What has become clear since the adoption of the 2040 Plan is that to create these lively downtowns and thriving employment areas, the public must invest its limited dollars wisely; in a way that stimulates private development. However, the investments needed to stimulate private development are as varied as how the market responds.

The 2009 Urban Growth Report documented that the region has a large amount of underutilized residential capacity within Centers, Corridors, and Station Communities, indicating that the market is not producing the return on investment needed to build to higher densities. If the achievable rents/prices for high-density development forms could be increased, then more of the high-density zoned capacity could be within reach of the market.

To better answer the questions of how much and what type of public investments are most effective, Metro has undertaken a study that uses hedonic measurement techniques to estimate the price premium from public amenities and a pro forma real estate model to calculate the effect on real estate values. This research demonstrates that investments in public amenities in areas with little to no amenities can result in a significant increase in additional development potential and more efficient use of infill land. With further study and analysis, these results can help communities identify the types of investment needed to support their development aspirations and realize the unused zoned capacity within the region.

This appendix summarizes this research and illustrates the effect of a package of investments in public amenities at two locations within the region.

Methodology

The methodology to estimate the effect of public investments on the market builds on the work completed by Johnson-Reid and described in Appendix 2 of this document. By using a hedonic modeling process, Johnson-Reid estimated the value homeowners and renters would pay for specific public amenities. Reid's research pointed to higher rents in areas with public investments in urban amenities, such as streetscape design, connectivity and bicycle racks. The results of the Johnson-Reid work allowed Metro, and their consultant Fregonese Associates, to estimate a 20% increase in achievable rents on a building when a full package of amenities were assumed in a study area. For example, if a particular study area had an achievable rent of $\$1.00/ft^2$ on a particular building type, that achievable rent would increase to $\$1.20/ft^2$ on that same building type if a full package of amenities were assumed to be in place.

With the assistance of the consulting firm Fregonese Associates, Metro employed a pro forma real estate model to determine how additional public investments could shift price points to support redevelopment to higher density multifamily projects than otherwise would be produced by the

market. This approach yielded a range for how much more high density residential development might be generated when public investments are concentrated in centers and corridors. It identified increases in achievable rents and changes in the equation of what building types a developer could feasibly construct and which parcels become "ripe" (gain enough value) to warrant redevelopment. By utilizing real-time construction costs and land values, Fregonese Associates was able to determine what types of buildings could "pencil out" or be built while still providing a standard return on investment to the developer

Application of Methodology in selected communities

To test the theory of how public investments would increase the market, this analysis evaluated the effect of a package of public amenities in three communities that represented a range of existing amenity levels and market conditions. The three communities, shown on the following pages, were in Southeast Portland, Lake Oswego and Gresham. In each of these locations, the analysis showed a significant increase in the amount of land that becomes "ripe," for development due to additional public investments as well as a marked shift in feasible building types toward more dense, multistory types.

Envision Tomorrow, a suite of urban and regional planning tools, developed by Fregonese Associates, was used to model the land use scenarios within each community and estimate the effect of the amenities on achievable rents. National studies have shown that use of this set of tools have been successful to identify financially feasible development opportunities and needed adjustments to existing land use regulations to encourage new development. The scenario process included developing assumptions for prototype buildings, existing and future amenity values, prototype development assumptions and land use scenarios.

Prototype buildings

This analysis assumed ten prototype residential buildings that reflected different costs, price points, and tenure options. These buildings were chosen to represent a range of redevelopment types throughout the Metro Region that consistently achieve densities above those in single family residential areas. The building types and tenure options were:

- High rise (rental and ownership)
- Mid rise with structured parking (rental and ownership)
- 3-story with podium parking (rental and ownership)
- 3-story with surface parking (rental and ownership)
- Duplex/townhome (rental and ownership)

Existing and future amenity assumptions

The definition of an area's amenity status included characteristics related to:

- Neighborhood score-index that measures the relative desirability of a neighborhood
- Traffic speed and volume-average speed limit and total number of vehicle lanes
- Bike racks and street furniture-accessibility to either feature

- Street design-pedestrian accessibility, street trees, cul-de-sac design vs. linear streets
- Street frontage and connectivity-average block size, sidewalk density

Each of the districts was then assigned a typology code based on the frequency and quality of the amenities. By establishing a baseline typology, along with existing achievable rents, the study was clearly able to see the added benefit of moving the targeted areas into a high amenity category. An area categorized as having a high amenity package was granted the full 20% increase to achievable rents, thus influencing the redevelopment potential and building type that could be built on a site. These categories were

- Typology 1: high amenity-area with full package of amenities in place
- Typology 2: large amenity-area that falls short in one or two amenity categories
- Typology 3: moderate amenity-area with an average number of amenities
- Typology 4: limited amenity-area with limited number of positive amenities
- Typology 5: no amenities-area with no amenities found
- Typology 6: disamenity-area shows a negative market reaction to existing design, etc.

The three study neighborhoods were each assessed and assigned a typology code given their current conditions:

Location	Current Typology	Future typology
SE Portland/Foster-Lents Town Center	3 (moderate amenity)	1 (high amenity)
Lake Oswego Town Center	2 (large amenity)	1 (high amenity)
Gresham Regional Center	3 (moderate amenity)	1 (high amenity)

Prototype Development

Starting at the building and parcel level, the physical, parking and financial assumptions were tailored for each prototype. For example, the rental residential prototypes assumed 1 parking space per unit while the owner-occupied residential prototypes assumed 1.5 spaces per unit. The financial assumptions – specifically the achievable rents and sales prices – were further adjusted for each of the three neighborhood study areas, based on geographic location. The reason behind this decision was that each neighborhood presents a unique set of variables related to the cost of land and market value of homes. Applying one set of achievable rents and sales prices would not have accurately reflected the unique set of conditions within each jurisdiction. There are clear market differences between what a person will pay for a house in downtown Portland versus downtown Gresham. This is not a judgment of value, but merely an acknowledgment that the market is varies greatly over the Metro region. For Metro to truly understand how the market will react to public investment, each area must be modeled under the most accurate existing market conditions possible. Johnson Reid's generalized pro forma analysis was used to estimate the residual land value for each prototype by district and level of amenity. Using the Return on Investment (ROI) model, the physical assumptions of Johnson Reid's hypothetical building prototypes were further refined and the impacts of amenities on specific types of residential buildings were modeled.

Scenario Building

Envision Tomorrow also includes a Scenario Builder, an ArcGIS-based modeling and evaluation application capable of combining different development types into a future growth scenario. Ranging from the neighborhood to the regional scales, the model illustrates potential for redevelopment, not forecasts or predictions. The model estimates possible futures based on what already exists, evident trends, and the assumptions about amentity values. In essence, this redevelopment screen indicates what would be likely to happen if no new investments were made within each area. By applying the high amenity package Fregonese was able to use the Scenario Builder to create and compare two land use scenarios for each of the three neighborhood study areas. The first scenario tested the likely development opportunity sites and types of development under current (baseline) conditions. The second scenario assumed that public investments transformed the area into a neighborhood with a high level of amenities (Typology 1). The scenarios looked exclusively at how the high amenity category might affect total residential development in each area.

FINDINGS

For each of the three study neighborhoods, the study showed that few sites were ripe for development or redevelopment given today's market conditions and the levels of amenities currently found in the area. Most of the developments which might pencil were duplexes/townhomes or 3-story buildings with surface parking on highly underdeveloped sites. However, increasing the level of amenities to the high amenity level, the model demonstrated that a larger number of parcels "tipped" towards redevelopment, or a denser form of redevelopment. In particular, many parcels on which a three-story building with surface parking might be feasible under current conditions could support a three-story building with structured parking under a scenario with high levels of amenities. This effect on the market resulted in significant increases in residential density without raising building heights or even reducing parking ratios.

For the three test areas used in this illustration, each showed an increased market response to high levels of amenities. The differences between each location reflect the existing market conditions, existing level of amenities, the number of parcels that demonstrated redevelopment potential and the level of existing zoning. The illustrations in the following pages show current conditions in a portion of the area studied, the addition of public amenities, including bike lanes, pedestrian crossings and other street design improvements and the resulting three to five story buildings that become market ready due to the effect of the public amenities on rents/prices.

Scenario summary: increase in residential units feasible by study area

	Units in Baseline Scenario (existing typology score)	Units in High Amenity Scenario (high typology score)	% Increase
SE Portland/Foster-Lents Town Center	551	2,018	266%
Lake Oswego Town Center	878	2,084	137%
Gresham Regional Center	1,764	9,696	450%

SUMMARY

As Metro's consultants, Fregonese Associates illustrated how specific development sites might be affected with additional public investments in the study areas. The illustrations highlight current conditions, public investments, and redevelopment potential. It is important to note that the buildings illustrated in each redevelopment scenario are achievable (i.e. they "pencil out") at these locations, based on the assumed public investment in infrastructure and amenities.

The three study neighborhoods represent only a sample of the locations that Metro is currently exploring in an attempt to study the impact of public investments on the market. More work is needed to refine this analysis and approach. Further evaluation of the effects of public amenities at other locations around the region, different building types and proto-type assumptions and how the market reacts to targeted investments at a local and regional level would all improve the ability to estimate the effect of public investments on the market. Further research may show that public investment has a greater impact on achievable rents in targeted areas. With a better understanding of how public investment can leverage private development, the region can make more educated decisions about how best to invest and implement the 2040 Growth Concept to create the vibrant places communities envision.

ILLUSTRATION EXAMPLES

Lake Oswego

Figure 1: Existing Conditions: 2nd Street, facing north towards B Avenue

Figure 2: Initial Public Improvements

Infrastructure investments: streets trees, bicycle signage, sidewalk widening

Figure 3: Redevelopment Potential

New development: 3-story with podium parking

City of Portland-Lents/Foster Corridor

Figure 4: Existing Conditions- Foster and 84th Avenue, facing west

Figure 5: Initial Public Improvements

Infrastructure investments: street trees, bus shelter, pedestrian crossings, bike lane, sidewalk widening

Figure 6: Redevelopment Potential

New development: 3-story with podium parking

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Appendix 5:

Focus on jobs – maintaining a competitive supply of large sites for industrial uses

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PURPOSE

Local traded-sector industrial firms such as Intel, Precision Castparts, Boeing, and SolarWorld provide residents with family-wage jobs and bring wealth into the Metro region by selling products to consumers worldwide. These types of firms also have multiplier effects in the region's economy, indirectly creating jobs in other sectors. When deciding where to locate, large industrial firms often consider multiple regions[1]. Having a supply of developable sites available in the Metro region is a basic requirement for remaining competitive in a global economy.

PROPOSAL

It is proposed that the region adopt a performance-based system that maintains a competitive supply of large sites inside the urban growth boundary (UGB) for traded-sector industrial jobs. The Metro Policy Advisory Committee proposed a large-site replenishment mechanism to achieve this purpose. This system would ensure that an additional large site is made available for every large site that is developed. Maintaining a competitive supply would be achieved through:

- Brownfield cleanup
- Focused investments to ensure that sites are developable
- Tax lot assembly
- Regulatory protection of industrial sites from conflicting uses
- Strategic UGB expansions

Implementing legislation

If the Metro Council supports the creation of a replenishment system, the policy would be described in the Regional Framework Plan and would be implemented through Titles 4 (Industrial and Other Employment Areas) and 14 (Urban Growth Boundary) of the Urban Growth Management Functional Plan.

To achieve the purposes of the replenishment mechanism, regulations that protect the region's supply of large industrial sites from non-industrial uses will be essential. The region should also focus investments in a way that supports development on industrial lands, including the cleanup and reuse of contaminated sites.

[1] Frequently-mentioned competitors include Albuquerque, Austin, and Salt Lake City

Baseline inventory of large sites for monitoring

Metro has compiled a draft inventory of large, vacant industrial and employment sites inside the UGB (attached to this appendix). For the purpose of the inventory, the following criteria were used to identify large sites:

- The site must be large – the site must have one or more adjacent tax lots in common ownership that comprise at least 50 gross acres.
- The site must be mostly vacant – the site must be vacant or have minimal improvements. An exception is made for large sites that have been added to the UGB to meet industrial needs, but that had existing improvements at the time of the expansion (this is likely to be the case with future UGB expansions as well).
- The site must be intended for industrial or employment uses – the site must be designated under Title 4 of the Urban Growth Management Functional Plan (Industrial and Other Employment Lands)[2] or have industrial zoning. These designations help to protect the site from conflicting uses and division into smaller sites.
- The site must be developable – less than 25 percent of the site must be covered with slopes of 10 percent or greater.

Local planning staff had the opportunity to review the draft inventory for accuracy. If the Metro Council implements a large-site replenishment mechanism, a final large-site inventory would be adopted by an order of Metro's Chief Operating Officer after the adoption of the December 2010 Capacity Ordinance. The final inventory would include any large sites added to the UGB as part of the 2010 growth management decision. The final inventory of large sites would establish the target number of large sites to maintain inside the UGB through the year 2014 (the year that a new urban growth report analysis will be conducted)[3].

Large-site replenishment

With a replenishment mechanism, if a large site in the inventory gets developed or if a portion of a large site gets developed, leaving fewer than 50 vacant acres, one additional large site would be

[2] Title 4 is intended to protect the region's supply of industrial lands from conflicting uses.

[3] The replenishment mechanism would be suspended during any year that a new Urban Growth Report Analysis is being conducted (e.g., 2014 and 2019).

made available in the UGB[4] within one year. The trigger for the mechanism would be that the jurisdiction responsible for planning the area notifies Metro that construction has begun[5].

To satisfy state law, Metro, in coordination with cities and counties in the region, would first seek to identify measures that make an additional large site inside the UGB available for industrial use. Examples of efficiency measures include tax lot assembly or brownfield cleanup. If no efficiency measures are in place, a Major UGB Amendment process would be completed within a year of the initial notice that a large site had developed[6]. The UGB expansion would occur in adopted urban reserve areas. Advance completion of concept planning for potential expansion areas would facilitate the decision of which site to bring into the UGB. A proposed fast-track UGB expansion mechanism could be used to expedite this process.

Cyclical reassessment of large site supply and demand

Regional large-site demand and supply would be reassessed in the 2014 UGR, which would be the basis for a growth management decision in 2015. The supply of large sites that results from those decisions would be the new target inventory inside the UGB to maintain through 2020. The large-site replenishment process would again be used in those intervening years to maintain a competitive supply within the UGB.

Protection of large sites

In order to maintain a competitive supply of large sites, it is also necessary to protect sites from conflicting uses and division into smaller sites. All applicable Title 4 and zoning protections would continue to protect large sites. It is proposed that Title 4 include additional protections including the prohibition of new schools, parks, and places of assembly on Regionally Significant Industrial Areas. It is also proposed that Title 4 would prohibit division of a lot or parcel smaller than 50 acres that is part of an inventoried large site.

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[4] The replacement large site would not necessarily be provided in the same jurisdiction or submarket area as the site that gets developed. This is because Metro is obligated first to attempt to identify measures that would make more efficient use of land inside the UGB. Given Metro's charge to plan for regional growth, these efficiency measures may take place in any jurisdiction in the Metro UGB. Likewise, some cities in the region are landlocked—an expansion of the UGB cannot provide a replacement large site.

[5] Jurisdictions would also, at an earlier date, notify Metro that land use approvals have been granted for a large site, allowing additional time to identify a replacement site in case construction proceeds. The one year period would, however begin upon notification that construction has begun.

[6] UGB expansions will not necessarily be able to provide a large site with all tax lots in common ownership. If a tax lot assembly strategy is not already described in concept plans, such expansions should include a condition that the city responsible for planning is required to adopt a strategy for tax lot assembly. UGB expansions will also not necessarily be able to provide sites that are completely vacant. Regardless of ownership patterns or development status at the time of UGB expansion, it is proposed that any area added to the UGB under this replenishment mechanism should be included in a revised large-site inventory. Tax lot assembly needs or development status would be noted in the inventory to assist policy makers in identifying strategies for making sites development ready.

SHARED RESPONSIBILITIES

This proposed replenishment concept will not work without collaboration between Metro and local governments.

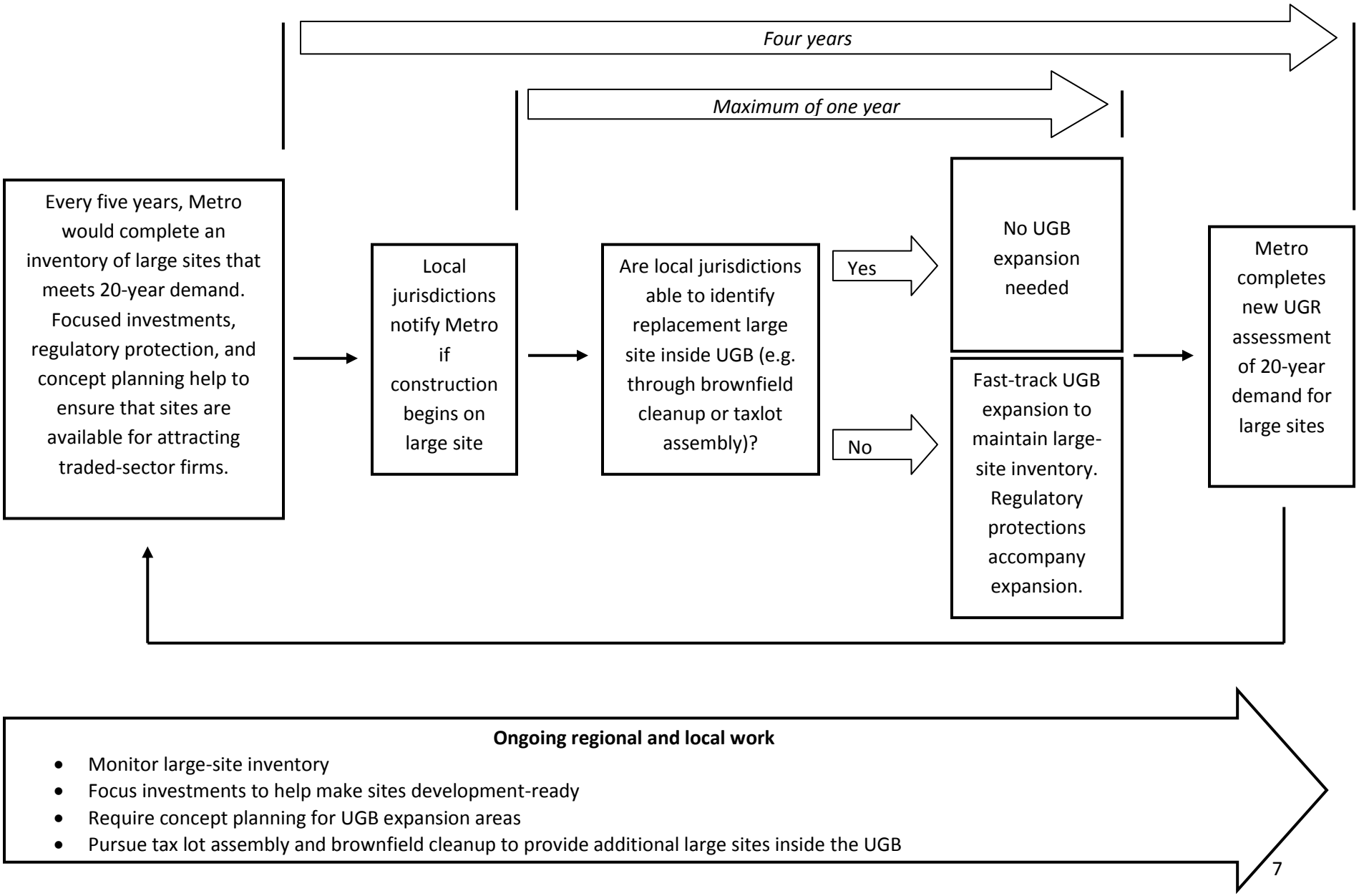
Responsibilities of Metro

- Convene regional leaders from the public and private sectors to identify critical public investment gaps and recommend methods to fill those gaps, including:
    - Make the most of existing development finance tools and identify new tools to support our communities
    - Focus regional resources on specific priority investments to catalyze private investment
- Ensure that regulatory protections of industrial lands are enforced by cities and counties
- Maintain inventory map of large industrial sites
- Reassess adequacy of large-site inventory as economic conditions evolve (as part of the UGR, every five years)
- Make strategic UGB expansions when needed

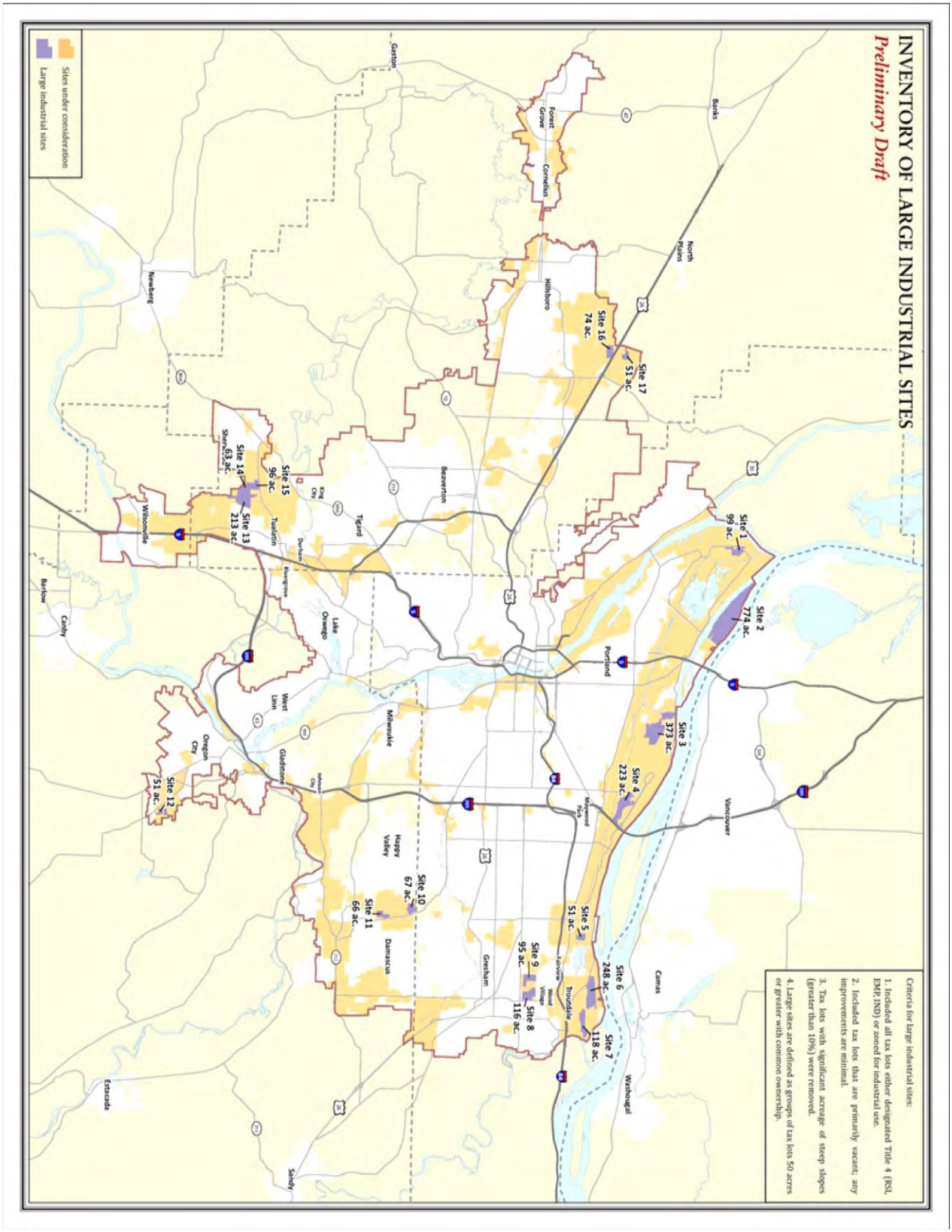
Responsibilities of local governments

- Participate in a Community Investment Strategy to make large sites developable
- Enforce regulatory protections of industrial lands
- Pursue brownfield cleanup and tax lot assembly opportunities
- Notify Metro when an inventoried large site is developed
- Complete concept planning before UGB expansions are made

Large-site replenishment concept



Draft large-site inventory



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Appendix 6:

Requests from local jurisdictions to amend their regional design types

August 2010

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Table of Contents

On file at Metro:

Summary of existing Metro policies on centers

Local jurisdiction requests to change center designations

BACKGROUND AND INTRODUCTION

Three jurisdictions, Happy Valley, Cornelius and Hillsboro, have requested changes to their center locations or designations on the 2040 Growth Concept Map. Staff recommends that the Metro Council approve these changes and adopt the revised 2040 Map as shown in Exhibit O to the 2010 Capacity Ordinance. This appendix describes these requests and the policies that guide Council consideration of these requests. Available on file at Metro is a summary of Metro policies on centers and the requests from the local jurisdictions including the supporting information they provided.

The 2040 Growth Concept Map

In 1995, after extensive public involvement, the Metro region adopted the 2040 Growth Concept to guide future development and within the region and protect farm and forestland outside the urban area. It focuses development in mixed-use centers, corridors and employment areas connected by a multi-modal transportation system. Regional policies guide the region toward achieving this vision. Local and regional investments are critical in order to achieve the vibrant places residents envision.

The 2040 Growth Concept Map illustrates this regional vision and the Regional Framework Plan narrative fully describes it. The map, adopted by Council, identifies central city, regional and town centers, station areas, main streets and corridor locations as a focus for mixed-use, residential and employment development. Changes to the map represent changes to growth management policy and are subject to Metro Council approval. In the past 15 years, the Metro Council has acted on only two requests for changes, reflecting the intentionality of the vision. However, the 2040 Growth Concept is a living document and it is appropriate to have these designations evolve over time as conditions change.

Policies that guide center designations

When considering a request to change the 2040 Map, the Council turns to existing policies in the Regional Framework Plan, Regional Urban Growth Management Functional Plan, Regional Transportation Plan and Regional Transportation Functional Plan for guidance. Policies on centers have been updated over the years, including some revisions as a result of the Regional Transportation Plan. The Metro Council may adopt other new policies on centers, such as those that align regional investments with local actions that are included in the recommendations in this Community Investment Strategy. A summary of existing policies is on file at Metro. Local jurisdictions that have requested changes have been asked to describe how their proposal is consistent with existing policies that set expectations for Regional Centers and Town Centers, as summarized in Table 1.

Table 1: Summary of existing Metro policy for Regional and Town Centers

Policy	Regional Centers	Town Centers
Accessible	The center is accessible to hundreds of thousands of people.	The proposed center is accessible to tens of thousands of people.
Zoning	The area is zoned for a mix of housing types to provide housing choices. The area is zoned to allow the number of residents and employees needed to support High Capacity Transit.	The area is zoned for a mix of uses that makes, or will make the center walkable.
Enhancement strategy	The city has adopted a strategy of actions and investments to enhance the proposed center.	The city has adopted a strategy of actions and investments to enhance the proposed center.
Public Transit	The area is served by high-capacity transit or is proposed to be served in the 2035 Regional Transportation Plan (RTP) and meets or is planned to meet the transit system design standards proposed in the RTP.	The area is served by public transit.
Multimodal and connectivity standards	The city has adopted a plan for a multimodal street system that meets or will meet connectivity standards in the Regional Transportation Plan.	The city has adopted a plan for a multimodal street system that meets or will meet connectivity standards in the Regional Transportation Plan.
Non-SOV targets	The city has adopted a strategy that calls for actions and investments to meet the non-SOV modal targets in the RTP.	The city has adopted a strategy that calls for actions and investments to meet the non-SOV modal targets in the RTP.
Parking Management	The city has a parking management program consistent with that in the recently adopted RTP.	The city has a parking management program consistent with that in the recently adopted RTP.

Other considerations

Experience over the last 15 years has shown that the centers develop at varying rates, dependent upon market conditions, political leadership, financial resources and other factors. Leading planning and development experts have advised the region over the years of the need to focus investments in fewer centers to achieve the greatest impact and to align land use plans with

economic and market realities. To anticipate these concerns over potential new or relocated centers, the three local jurisdictions have been asked to respond to additional considerations:

- How would a center change detract from or support other nearby centers to serve as the center of urban life and market area for a regional center or town center?
- If there are multiple regional and town centers located within your jurisdiction, describe how you will prioritize and focus development efforts among them.
- Recognizing that zoning alone will not achieve the kind of vibrant and active centers envisioned by the 2040 Growth Concept, describe your jurisdiction's plans for promoting development through partnerships, incentives, investments and other actions.
- What kind of market analysis has your jurisdiction completed that indicates that the development you have planned will support the level of activity you envision for your center?

REQUESTS FOR CENTER CHANGES

The mayors from the three cities submitted requests for changes to their centers to the Metro Council and described how their proposed changes were consistent with existing policy and addressed additional considerations. Their requests, including adopted resolutions in support of the requests, are attached to this appendix. The following summarizes the requests and demonstrates the policy consistency that supports the staff recommendations.

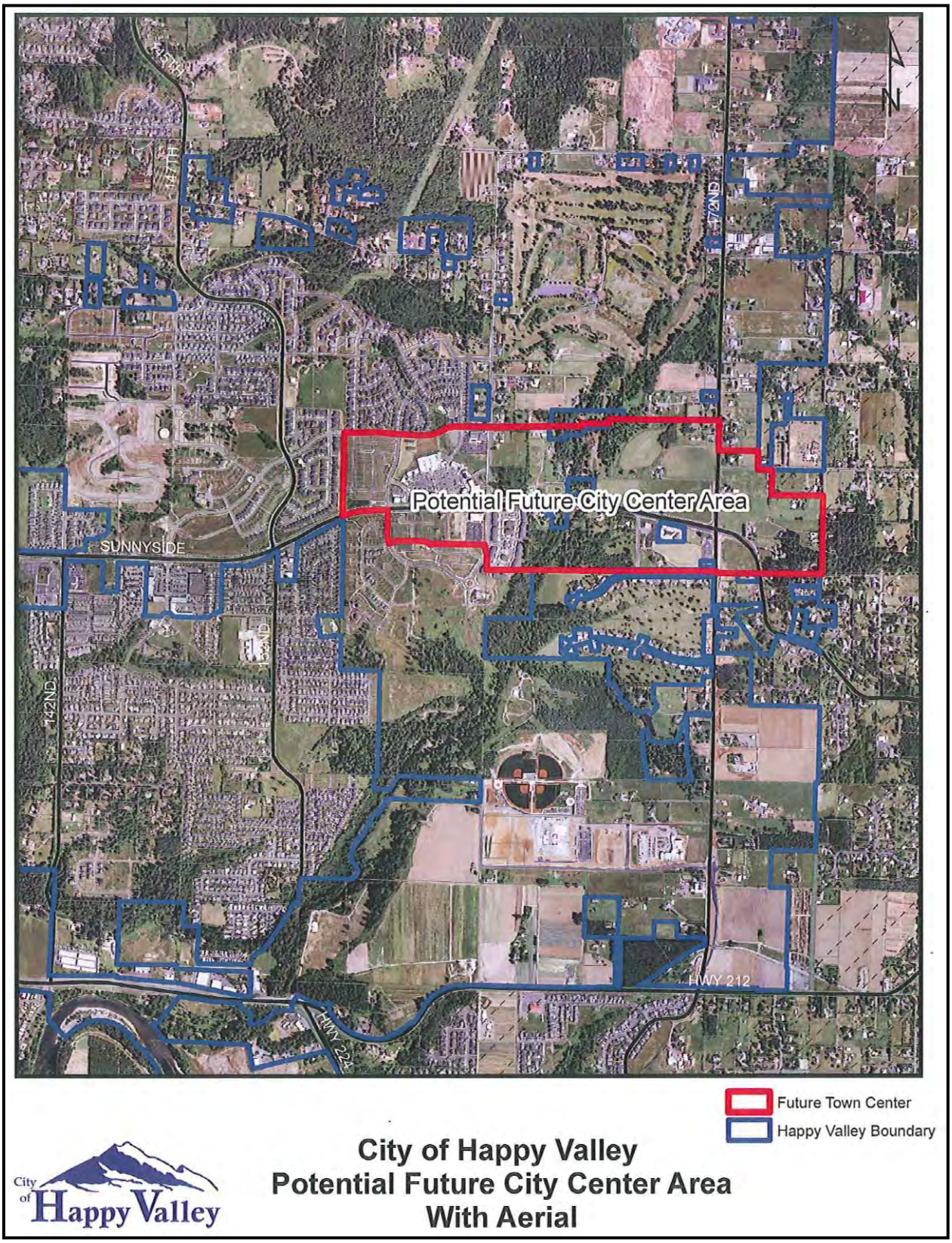
Happy Valley Town Center

Happy Valley has requested a relocation of their existing Town Center designation from King Road to Sunnyside/SE 172nd, about two to three miles to the east, to a commercial area called, coincidentally, the Happy Valley Town Center. Fifteen years ago, when the 2040 Growth Concept was adopted, Happy Valley had a population of less than 5,000. The City has grown significantly since then and has a forecast population of over 30,000 by 2030. The City has concluded that the King Road area has limited potential to develop into a Town Center. The King Road area houses local fire and police offices but has no commercial zoning and is surrounded by an existing single family neighborhood that has not supported increased development along King Road.

The proposed Town Center houses the new city hall and new commercial development, is surrounded by a mix of single and multi-family development and is identified in the City's plans for continued growth. Recent investments have widened and improved road, bicycle and sidewalk access. To support the Town Center designation, the City has received a grant to fund the up-zoning of parts of the center area, develop parking management plans and identify other tools to support the center.

Figure 1: View east along Sunnyside Road in Proposed Happy Valley Town Center

Figure 2: Proposed Happy Valley Town Center location



The following summarizes the consistency of the proposed Happy Valley Town Center relocation with Metro policies:

Town Center policies	Summary response for Happy Valley
Accessible to tens of thousands:	The new location is more central to growth areas in Happy Valley
Mix of uses and walkable:	Area has mix of residential, commercial and civic, institutional uses and new street investments. City is proposing to up-zone, which will allow for an increased mix and intensity of uses.
Strategy to enhance:	Adopted resolution in support of town center change and submitted request for TGM grant to initiate zone changes, parking management and other plans to support center.
Public transit service:	Happy Valley has annexed to Tri Met service area but has limited service. Additional services would be needed to support the proposed Happy Valley Town Center location.
Meet multi-modal, connectivity standards	Happy Valley's Transportation system plan requires a multi-modal street system that meets or exceeds regional requirements. Some roads already constructed, others are planned.

Additional Considerations	Summary response for Happy Valley
Detract from other centers?	No. Instead of adding, this replaces existing center and is distant from Damascus center.
Partnerships for success?	City maintains partnerships with local business groups, property owners, business operations and offers expedited design review and financial support of major infrastructure needed for growth. Additional partnering is proposed.
Analysis to support request?	Location reflects market shifts to areas of new development patterns, additional economic analysis to support center underway.

Happy Valley - summary and recommendations

Happy Valley has grown significantly in the last 15 years and will continue to grow by tens of thousands as well as serve growth in adjacent Damascus to the east. The relocation of the Town Center is consistent with this growth pattern. The city will need to continue to promote a mix of uses, investments and tools to support additional transit services and the walkable, vibrant place envisioned as a Town Center. The City has expressed their intent to continue with these efforts as part of the Town Center designation. Metro's Chief Operating Officer supports this request for a center designation change. In order to develop as a successful, vibrant center, the Chief Operating Officer advises that policy makers be explicit in their expectations for additional development and intensity in the Happy Valley Town Center necessary to support transit service, mixed income housing, public spaces, and employment along with these continued investments and actions.

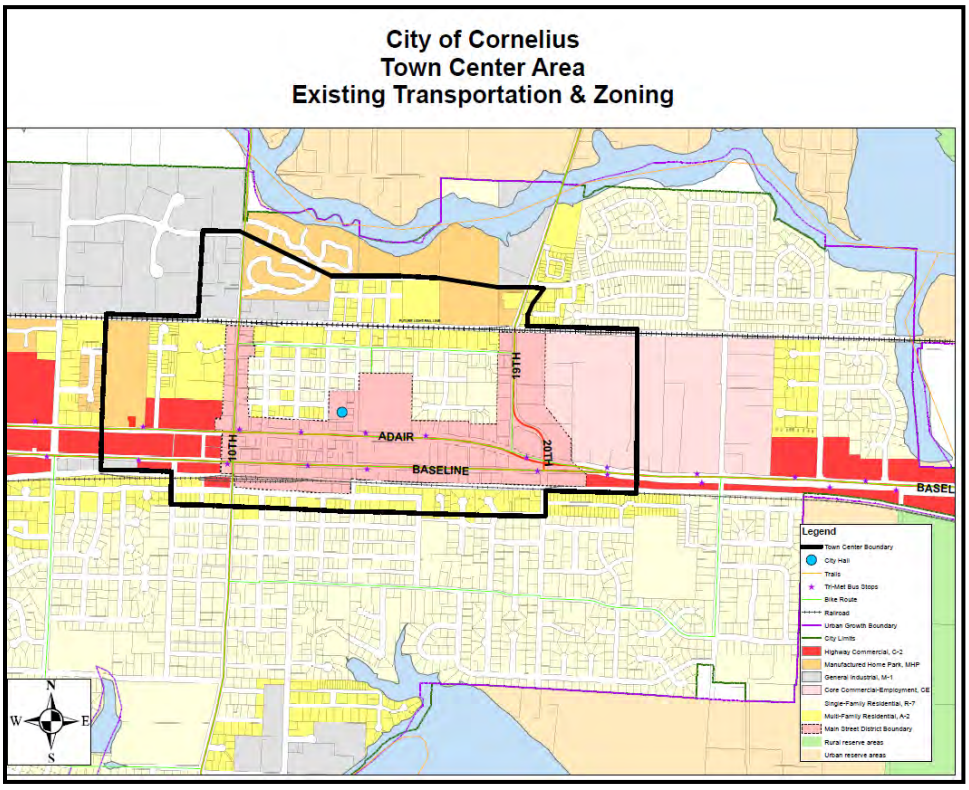
Cornelius Town Center

The City of Cornelius has requested to change the designation in their downtown from a Main Street to a Town Center. Cornelius is the only city in the Metro area that does not have or share a Town Center designation. While other Main Street designations on the 2040 map are typically ½ block deep along a commercial corridor, the Cornelius main Street has always included a district of multiple blocks in the center of the downtown with commercial and residential zoning. The area functions as the center of the community with medical clinics and other activity generators. Since the 2040 Concept was adopted, Cornelius has completed plans and development guides for their Main Street district and has invested in street and other infrastructure in the area.

As part of this proposal, the City of Cornelius envisions a larger district for the Town Center, including the area envisioned as future high capacity transit in the Regional Transportation Plan. The City has plans for continued redevelopment and investment in this area.

Figure 3: N. Adair Street in proposed Cornelius Town Center

Figure 4: Proposed Cornelius Town Center Boundary



The following table summarizes the consistency of Cornelius' request with town center policies:

Town center policies	Summary response for Cornelius Town Center
Accessible to tens of thousands:	Cornelius has a population of over 11,000 residents and 350 businesses. The town Center will serve this and future growth as well as adjacent areas.
Mix of uses and walkable:	Area has mix of residential, commercial and civic, institutional uses and an established, walkable street grid system.
Strategy to enhance:	Cornelius has developed strategies for the downtown area and will continue to implement and refine these strategies. Recent examples include an adopted Master Plan for parks and trails.
Public transit service:	Cornelius is served by a relatively high-performing, frequent bus service and the City envisions high capacity transit in the future.
Meet multi-modal, connectivity standards	Cornelius has a transportation system plan that meets or exceeds connectivity standards and promotes multi-modal use.

Additional Considerations	Summary response for Cornelius Town Center
Detract from other centers?	Though located near centers in Hillsboro and Forest Grove, Cornelius has developed its own market niche and is not expected to detract from other centers. The Town Center is the focus for downtown Cornelius.
Partnerships for success?	The City maintains partnerships with local public, non-profit and business organizations, has worked successfully with them in the past and expects to continue to do so in the future.
Analysis to support request?	Studies by the State and private firms indicate the market will continue to gradually intensify following public incentives, private investment, public transit and overall improvement of the community's health and attractiveness.

<u>Cornelius - summary and recommendations</u>

The City of Cornelius's downtown Main Street district functions as their Town Center and is poised to continue in this role. Metro's Chief Operating Officer supports changing the designation from

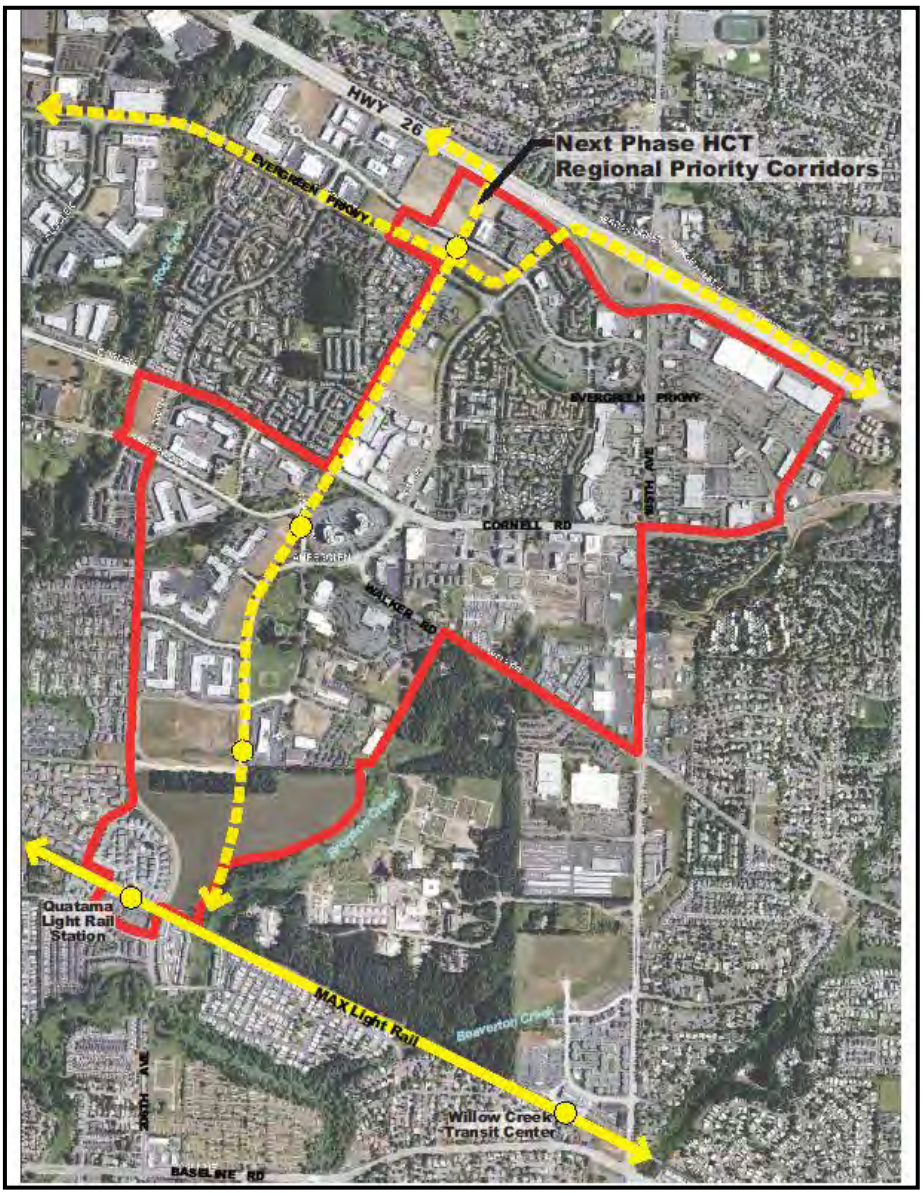
Main Street to Town Center to align this function with the regional vision. As one of the smaller towns in the Metro area with limited resources, future intensity and development of the Town Center will depend on continued public, private and non-profit partnerships and the COO advises that policy makers be explicit in their expectation that these partnerships be of service to supporting the Town Center.

Hillsboro Tanasbourne / AmberGlen Regional Center

The City of Hillsboro has requested to expand the existing Tanasbourne Town Center to include the adjacent AmberGlen area and change the designation to Regional Center, resulting in a total of eight Regional Centers on the 2040 Map instead of seven. Since the 2040 Growth Concept was adopted, the Tanasbourne area has grown into a sizable commercial destination. Though not mixed use, the commercial area is surrounded by single and multi-family residential. The adjacent AmberGlen site is one of the largest redevelopment opportunities in the region and Hillsboro has developed a public/private partnership for the area. The city estimates development capacity in AmberGlen / Tanasbourne to house over 30,000 residents and 23,000 jobs. The City has initiated a proposal to update the Tanasbourne area plan.

The city of Hillsboro's request for a Regional Center designation is linked with their aspirations to partner with Metro, Tri-Met and the private sector to put the tools and incentives in place to support the highest possible densities. Hillsboro envisions an extension of light rail to serve the area, use of green practices, and urban renewal to finance needed infrastructure.

Figure 5: Proposed Tanasbourne/AmberGlen Center boundary



The table below summarizes the consistency of Hillsboro's request with regional center policies:

Regional Center policy	Summary response for Hillsboro Tanasborne / AmberGlen Regional Center
Accessible to hundreds of thousands	The addition of one more regional center means that the share of population available to other centers is smaller. However, between 2010 and 2030 the Urban Growth Report projects and increase of 224,000 to 301,500 new dwelling units within the Metro area, or an increase in hundreds of thousands of new residents. In addition, the redevelopment planned for Tanasbourne / AmberGlen would increase the number of residents in the center.
Mix of housing types to provide housing choices	The City has a policy to provide a mix of urban housing design types, densities and heights to serve a range of household ages and income levels. The City has not yet adopted specific zoning or tools to promote housing choice.
Allow the number of residents and employees needed to support High Capacity Transit	Plans for AmberGlen are intended to provide for the number of residents and employees necessary to support high capacity transit and the City is continuing to evaluate HCT feasibility.
Strategy to enhance	The City has adopted policies to enhance and develop the AmberGlen area and is initiating the next steps to develop the tools to implement these policies, including consideration of urban renewal.
Served by high-capacity transit or is proposed to be served; meets or is planned to meet the transit system design standards	An extension of HCT to AmberGlen is included in the Regional Transportation Plan as a future corridor. Hillsboro is initiating efforts to apply the system expansion policy in the RTP and document that housing and employment will support HCT.
Multi-modal street system and connectivity standards	Plans for AmberGlen call for an urban street grid to support walking, bicycling and transit use while accommodating vehicles.
Strategy to meet the non-SOV modal targets	Plans for AmberGlen call for mixed use development, parking management, street designs and high capacity transit investments to support non-SOV targets.

Parking management program	Plans for AmberGlen call for a parking management program.

Additional Considerations	Summary response Tanasbourne / AmberGlen Regional Center
Detract from other centers?	To avoid detracting from other centers, Tanasbourne/AmberGlen Regional Center designation depends on continued growth in the region in general and Washington County in particular, stimulating high urban densities in the center and continued investments in other regional centers. In addition, Washington county has 15 town centers (including Cornelius) that need additional investments and market access.
Prioritize if more than one?	Hillsboro has plans and investment tools in place to support the Regional Center downtown and will continue this support.
Partnerships for success?	Property owners in the AmberGlen area have worked closely with Hillsboro to develop the plans for the area. Hillsboro intends to continue this partnership as well as partner with other service providers.
Analysis to support request?	Hillsboro has completed studies in partnership with the property owners to document the economic feasibility for the redevelopment in the AmberGlen area and have proposed additional analysis for the Tanasbourne area.

<u>Tanasbourne / AmberGlen - summary and recommendations</u>

The Tanasbourne/AmberGlen area has the potential to develop into a unique regional center supported by a combination of public and private investments. In many ways, the area is a role model for public private partnerships and for aspirations for density that go beyond the typical suburban levels consistent with the focused development envisioned in the 2040 Growth Concept. Metro's Chief Operating Officer recommends that Metro Council approve this request for a regional center designation to demonstrate commitment to this transformation. Much work has yet to be done to transform this opportunity into reality, however. In order to develop as a successful, vibrant center, the Chief Operating Officer advises that policy makers be explicit in their expectations for local actions as part of their approval of this change. To achieve the aspirations for a Regional Center, Hillsboro will need to move forward on strategies to provide for mixed income housing and housing choice, densities to support HCT and Non-SOV use as well as bring the existing Tanasbourne area up to the mixed use and multi-modal standards of a Regional Center.

OTHER CHANGES TO THE 2040 MAP

Metro periodically updates the 2040 Map to reflect changes in policy that refine and illustrate the 2040 Growth Concept. These recommendations include an updated 2040 Map to reflect consistency with:

- Construction of light rail along Interstate Avenue and I-205.
- Construction of commuter rail along the Beaverton – Wilsonville corridor.
- Planned light rail in the Milwaukie corridor and to Clark County and rapid streetcar in the Lake Oswego Corridor
- Regional transportation plan policies supporting future light rail or high capacity transit in the Southwest Corridor and the Foster/Powell corridor.
- Regional transportation plan policies designating key road alignments in the Sherwood Tualatin corridor, East Metro areas and the Highway 212/224 corridor.
- Urban and rural reserves designations.

In addition, the updated 2040 Map presents a simpler, less cluttered look, by consolidating inner and outer neighborhood designations and industrial and employment area designations, and removing some of the base features such as local roads. Centers shown on the 2040 Map reflect the recommendations for Happy Valley, Cornelius and Hillsboro.

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Appendix 7:

Summary of potential infrastructure funding sources

Metro | *People places. Open spaces.*

INTRODUCTION AND PURPOSE

Securing funding to maintain or improve infrastructure and services in existing communities and accommodate population and employment growth is an important factor in facilitating residential, commercial and industrial development across the region. Regardless of where the development is located—whether in new or existing urban areas—funding for infrastructure is limited and constrained by a variety of factors.

This memo explores the different limitations on funding for infrastructure to support development in existing urban areas and new urban areas as well as the variety of factors that influence whether and how funds are available for infrastructure in these areas. Examples of funding sources used to support development around the region help illustrate the availability of funding sources in existing and new urban areas. While further investments across the region are needed to accommodate anticipated population and employment growth, this memo illustrates that there are a variety of considerations on funding sources used in the region's new and existing urban areas.

KEY FINDINGS

- **Federal and state funding sources for infrastructure have steadily decreased over the years.** Over the last 30 years, "the federal share of infrastructure funding has been declining…and many funds once available to state governments for capital improvements no longer exist" (Metro, Regional Infrastructure Analysis, 2008). This leaves a larger burden on local governments to develop more robust funding tools for infrastructure. Accordingly, the 2035 Regional Transportation Plan update assumes that local funding sources (including system development charges, urban renewal, local gas taxes and vehicle registration fees) will pay for 53 percent of project costs in the plan.[1]
- **Local sources are subject to multiple limitations**. Local funding sources for infrastructure such as system development charges, urban renewal and developer contributions are constrained by a variety of factors. State law prohibits jurisdictions with populations of 50,000 or more from putting more than 15 percent of assessed value or land area in urban renewal and mandates that system development charges only pay for certain capital improvements. In addition, local improvement districts and urban renewal must be approved by a vote of the people, which adds a political dimension to the utilization of these funding sources. Finally, local funding sources are often collected with the sole purpose of funding maintenance like street utility fees or capital projects like system development charges and cannot be used for other purposes. The lack of federal and state resources and the limitations on local sources makes it challenging to utilize local funding sources for infrastructure in new and existing urban areas.
- **There are different funding sources available in new urban areas than there are in existing urban areas.** There are a variety of factors that can influence what local funding sources are available for infrastructure. These include the location of the development, the

[1] This figure is for the State RTP. For the Financially Constrained RTP, local funding sources account for 44 percent of total project costs.

number of developers involved and their willingness to invest up-front capital, the fragmentation of the land and the political will of the jurisdiction. In new urban areas, where land ownership is often less fragmented and there are only a few developers involved at the start, the public sector can work with the developers to invest up-front capital to fund large needed infrastructure improvements.[2] Developers, whose investments will be reimbursed through SDC credits or fees on future development, are willing to put up this money because they will receive a significant economic return on their investment.

Currently, in areas like South Hillsboro and North Bethany significant infrastructure costs will be funded by the local jurisdiction though property taxes, transportation development taxes, community service districts and by private developers through supplemental development fees. This was also the case in South Waterfront, where two major property owners (Oregon Health Sciences University and North Macadam Investors) partnered with the City of Portland to fund the infrastructure needed to redevelop the existing urban area. In existing urban areas, where ownership is more fragmented and each developer is responsible for a smaller portion of infrastructure investment needed to facilitate development, there is less economic benefit that developers will realize by financing infrastructure investments up front. While both existing and new urban areas are able to access traditional funding sources like urban renewal and system development charges, it is this impetus for developers to invest in significant infrastructure improvements that can be more common in new urban areas.

Furthermore, according to Metro's 2008 Regional Infrastructure Analysis[3], "urban developments tend to require the majority of their infrastructure up-front, while urbanizing developments can finance this in phases over many years" (Metro, Regional Infrastructure Analysis, 2008). In existing urban areas, which are more compact and must serve as functional developments for existing residents and employees, all necessary infrastructure must be built up-front. Whereas in new urban areas, which are more spread out, infrastructure investments can be phased over time and targeted to the areas where development is planned. This allows developers in new urban areas to fund infrastructure in segments, while funding infrastructure in existing urban areas at once can be challenging for the multiple developers typically found in an existing urban area.

- **Funding sources for infrastructure are not interchangeable.** Examination of federal, state and local funding sources in this memo reveals that funding sources for infrastructure are often tied to a specific location or development and cannot be used interchangeably. Federal or state funding, in the form of loans or grants, is often authorized for a specific project that meets particular criteria. Local funding sources like urban renewal and local improvement districts can only be used in the areas in which they are levied. System development charges and transportation impact fees are used for a narrowly defined list of projects that is often predetermined through capital improvement plans or transportation plans. For example, taxes and fees raised with a specific purpose, such as Washington County's transportation

[2] This phenomenon is exemplified in the examples section of this memo, which focuses on North Bethany, South Hillsboro and Pleasant Valley.

[3] In 2008, Metro convened infrastructure providers and local jurisdictions across the region to conduct an analysis on the region's infrastructure needs over a 30-year period.

development tax, can only be used to pay for transportation projects. Furthermore, local funding sources are constrained by geography, as a funding source raised in one area cannot be used to fund infrastructure in another. Washington County's Major Streets Improvement Program (MSTIP), approved by Washington County voters, cannot be used outside of Washington County. The examples of funding sources used in developments across the region highlight this fact that funding is often tied to a specific location.

BACKGROUND

Overview

Public investments like transportation and parks help shape the built environment and attract private investments in residential, commercial and industrial development. Private investment in existing urban areas utilizes the zoned capacity within the urban growth boundary to accommodate population and employment growth. As such, public investments in infrastructure are needed to spur private investment activity necessary to accommodate population and employment growth within the urban growth boundary. A 2009 advisory group on development in the region's centers and corridors[4] noted that, "the current level of public investment in compact urban development is not sufficient to address escalating costs of development" (Portland Metropolitan Studies, 2009).

Metro's capacity analysis using Metroscope modeling and market-based pro-forma tools has illustrated the impact of various newly-adopted public infrastructure investments (i.e. light rail) on increasing market capacity to accommodate additional development inside the existing urban growth boundary. However, even accounting for multiple targeted infrastructure investments in existing urban areas, the market is not expected to use 100 percent of zoned capacity within the existing urban growth boundary. As a result, the Metro Council might need to consider strategic urban growth boundary expansions as part of the overall strategy to accommodate projected growth for the upcoming 20-year period.

It is proven that infrastructure investments (like light rail) in focused locations can spur the private investments necessary to accommodate population and employment growth. However, there is limited funding available to support these investments. In that context, one of the factors determining where development can accommodate growth is where funding mechanisms are or will be available to deliver the infrastructure and services that support development.

Historically, infrastructure investments in new urban areas have been funded in a relatively straightforward manner with public sources such as property taxes and federal investments in highway and water infrastructure. Redevelopment in existing urban areas, which often involves reuse of brownfield sites or adding housing and employment to existing areas, represents a different model than development in new areas, and doesn't necessarily have the same funding options. In comparison to funding for new urban areas, these complexities can make it challenging to utilize various local and state funding sources to support infrastructure in existing urban areas.

[4] In the summer of 2009, a group of private finance and development experts were convened by Institute of Metropolitan Studies on Metro's behalf to discuss challenges to developing in centers and corridors. This finding came out of their conversation about the various challenges to compact urban development.

Private capital has also historically preferred financing development in new areas (i.e. more traditional single family housing or low density employment areas) compared to more compact urban development. Despite the fact that recent demographic, economic and environmental trends are favoring compact development in existing urban areas, redevelopment can be perceived to be a higher investment risk for capital investors (Portland Metropolitan Studies, 2009). The more traditional types of development, typically built for one owner/tenant, are seen as well known investment models with less complexity and therefore, fewer early financing requirements to minimize risk. On the other hand, sites with multi-lease or sale requirements typical of compact development, are required by investors to sell or lease a high percentage of the units very early on in the process to get funding from the banks. For example, a 2005 white paper on infill barriers notes that, "because infill and redevelopment projects are often concerned with providing amenities such as transit and pedestrian orientation, access to retail and employment opportunities and green space and residential dwelling units located above commercial development, the capital lending markets consider such projects as risky." (Infill Development: Barriers and Incentives, 2005) This makes private financing sources more expensive than the standardized capital available in new urban areas (Infill Development: Barriers and Incentives, 2005).

While the paradigm is beginning to shift as a result of many successful urban developments across the region, this perception remains. In addition, the recent financial crisis has increased the standard for banks to invest in projects, which makes it less likely to get private capital funding for non-traditional development types (Portland Metropolitan Studies, 2009).

Infrastructure Costs

In 2008, Metro convened infrastructure providers and local jurisdictions across the region to conduct an analysis of the region's infrastructure needs over a 30-year period. The resulting report, the 2008 Regional Infrastructure Analysis, divides infrastructure costs into three categories:

- **Local**—demand related to specific dwelling units
- **Community**—off-site infrastructure attributed to specific dwelling units
- **Regional**—infrastructure that benefits the entire region, though it is difficult to establish a nexus between the need and individual use.

Local and community infrastructure needs are typically addressed by a variety of local funding sources such developer contributions, system development charges and urban renewal. Regional infrastructure needs, are by definition not directly connected to individual use, and are therefore, not typically funded by local sources that are levied on individual development. Regional infrastructure, such as major arterials and bridges, regional water and sewer facilities and transit, are often funded by federal and state formula funding, grants and loans. This memo focuses primarily on local funding sources that are levied on development and used to pay for infrastructure that supports development. However, this memo provides some context on federal and state funding sources.

STATE AND FEDERAL FUNDING SOURCES

Federal Funding Sources

Federal funding sources for infrastructure, which typically fund large highway, water, transit and community development projects, have declined over the last 30 years. The Oregon Task Force in Land Use Planning report notes that, "in the 1970s, federal grants financed 75 percent of water and wastewater project costs and 80 percent of transportation projects. In the 1980s, Congress reduced these grants…and by the 1990s, federal funding sources were further reduced and converted from grants to loans (Oregon Task Force, 2009)." There are a variety of federal programs such as Community Development Block Grants and transportation funding through the Transportation Authorization Bill (SAFETEA-LU)[5] that allocate federal dollars to metropolitan regions, cities and counties based on a formula by population. However, these programs are unable to keep up with the growing needs and inflation across the country. For example, it is projected to cost $250 billion annually over the next 50 years to support "good" infrastructure and the U.S. currently spends about 40 percent of that amount each year (Metro, Regional Infrastructure Analysis, 2008).

State Funding Sources

State funding for infrastructure is provided through road taxes (i.e., state gas taxes, vehicle registration fees, and weight-mile taxes), bond measures, user fees and state lottery dollars. Oregon's gas tax has experienced a decrease in purchasing power relative to the costs for maintaining and building roads, sidewalks, transit systems. In addition, other infrastructure finance tools available to state government have not kept pace with the rate of inflation (Oregon Task Force, 2009).

The state of Oregon employs a set of loan and grant programs funded by these various sources to offset the cost of large infrastructure projects. These programs focus funding on state highways and other transportation projects, clean drinking water, brownfields, Port projects and other special public works projects. Typically state monies are distributed through Business Oregon, the State's Economic Development clearinghouse, or Oregon Department of Transportation, which establish specific criteria to prioritize certain projects.

- **Infrastructure Finance Authority:** The Infrastructure Finance Authority (IFA) was created to ensure that the state's infrastructure needs, namely those around safe drinking water and wastewater systems, are better identified and prioritized to most efficiently use the state's limited resources. The Infrastructure Finance Authority coordinates state funded loans or grants according to state priorities and criteria attached to certain federal funding streams that support the projects such as Community Development Block Grants (CDBG). The IFA assists communities to build infrastructure capacity that addresses public health safety and compliance issues as well as support their ability to attract, retain and expand businesses. The

[5] The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) was signed into law in 2005 and provides guaranteed funding for highways, highway safety, and public transportation totaling $244.1 billion.

IFA also works with municipalities, state agencies and property owners to prepare industrial land for certification.

The fund provides loans for wastewater and safe drinking water investments, community development investments and special works projects such as airport facilities, restoration of publically owned industrial lands, telecommunications facilities, railroads, roadways and bridges and others. The criteria by which infrastructure projects are funded by the state particularly through the Infrastructure Finance Authority vary depending on the federal source of the money. The Safe Drinking Water program's priorities are set by the Health Division and by compliance related issues. The CDBG program's priorities are listed in the Method of Distribution and approved by the U.S. Department of Housing and Urban Development (HUD). The IFA relies on local communities to identify their priorities, and then evaluates the requests through the state's perspective of what's important. According to utility providers, the IFA loans represent such a small percentage of the costs of serving growth in both new and existing urban areas.[6] In addition, the majority of the projects funded in one quarter of 2009 reflected a diverse focus on wastewater, manufacturing projects, community development projects and forest and wood projects (Business Oregon News Room, 2009).

- **Strategic Investment Program:** The Strategic Investment Program is a state economic development initiative that exempts a portion of large capital investments from property taxes for businesses that qualify. The program is available statewide for projects developed by businesses that often require expensive and expansive infrastructure investments, which commonly means manufacturing firms. Once the state enters into a deal with the company under the provisions of the Strategic Investment Program, the program allows for the assessed value of large industrial facilities to be capped at $100 million (with annual increases of three percent). Instead of property taxes, companies pay a community service fee to local governments equal to either 25 percent of the abated property tax savings or $500,000 annually, whichever is greater, up to two million dollars. This program has been instrumental in facilitating the investment and development of Intel in Ronler Acres and Genentech by Shute Road in Hillsboro among other projects. Since this program is designed to attract large and expansive capital investments, it is typically applied to developments on the edges of the region in less developed urban areas and isn't often utilized by companies locating in dense existing urban areas.
- **Funding for Brownfield Assessment and Cleanup:** There is much interest in the region in developing more brownfield sites in existing urban areas to accommodate employment and population growth; however, the funding sources that exist aren't robust enough to address redevelopment needs. As the Port of Portland's comparison of Brownfield and Greenfield development costs concludes that "there is a public value to developing brownfield sites, but there is little to no public money available to do so" (Mackenzie, 2005).

  The state created a brownfield redevelopment fund in 1997 that was re-capitalized in 2006 with nine million dollars to fund cleanup efforts across the state. The primary purpose of this fund is to assist local governments, non-profit organizations and private interests to evaluate

[6] Meeting of select water providers from around the region at Metro, July 28th, 2010

and clean-up contaminated sites for redevelopment (Financial Tools for Brownfield and Infill Redevelopment, 2009). Also, the State runs the Oregon Coalition Brownfields Cleanup Fund (BCF), a brownfields cleanup ongoing loan program, which is capitalized at $2 million. Funds for this program come from the Environmental Protection Agency.

LOCAL FUNDING SOURCES

The following funding sources available to local jurisdictions are strongly connected to specific developments. As such, they are levied on new development and help fund infrastructure to support new development. However, each jurisdiction is responsible for deciding how to utilize these funding sources and how heavily to rely on them. Each funding source described below is subject to specific limitations, which constrain its ability to support needed infrastructure in both new and existing urban areas.

Developer Contributions

The level of developer contributions utilized for a development depends on the particular infrastructure needed to make the land ready for development and are subject to an agreement between a jurisdiction and developers.[7] Developers typically are responsible for investing in on-site or off-site improvements that make the land ready for development. On-site improvements are internal to the development and off-site costs are improvements directly connected to the project. In new urban areas, the few developers who are responsible for contributing to the infrastructure needed to support the development will often realize the economic benefit of making investments in public infrastructure. On the other hand, the multiple property owners in existing urban areas who are responsible for contributing fees to support improvements probably won't realize the economic benefits in the same way.

For development in new urban areas, this involves creating a master plan, clearing and preparing a site, building internal roads, installing utilities, creating parks and open spaces, protecting environmentally sensitive areas, and building any other required elements for place-making. Internal collector streets and other improvements that provide district-level access can also be funded by the developer such as a new intersection or road that would primarily serve a project (Leland Consulting, 2008). For redevelopment in urban areas, this could involve cleaning up a brownfield site (which can be both publicly and privately funded), providing on-site amenities such as a plaza and, depending on the size and location of the site, paying for access and internal circulation within the site. These costs are incurred by the private developer without public funding assistance, though they can sometimes be traded for system development charge credits.

System Development Charges

Under Oregon Revised Statutes, System Development Charges (SDC) are subject to limitations on how they can be assessed and what capital projects they can fund. In addition, jurisdictions make policy decisions about how to assess SDCs on different types of development and what portion of

[7] This phenomenon is exemplified in the examples section of this memo, which focuses on North Bethany, South Hillsboro and Pleasant Valley.

the full cost of growth SDCs should charge. As a result, these considerations seriously impact the capacity of SDCs to fund infrastructure in both new and existing urban areas.

System Development Charges are fees levied on new development to finance improvements and services required to accommodate the development that are larger than just on-site improvements. Services funded by system development charges include transportation, water, sewer, stormwater and parks. Jurisdictions can charge two types of SDCs:

- **Improvement**—charges to fund new infrastructure to serve new development
- **Reimbursement**—charges to fund existing capacity in a system that will be used to serve new development. Oregon law mandates that SDCs can only be used for five infrastructure types: water, sewer, parks, stormwater and transportation. In addition, Oregon law requires that improvement SDCs be based on "a capital improvement plan, public facilities plan, master plan or comparable plan that includes a list of the capital improvements that may be funded with improvement fee revenues and the estimated cost and timing for each improvement."

There is flexibility in Oregon law as to whether SDCs assessed may include a reimbursement fee, an improvement fee, or a combination of the two. However, jurisdictions can only use system development charges for certain types of infrastructure and only for capital projects, not maintenance. In new urban areas, SDCs are typically used for needed basic infrastructure such as roads, parks and creation or increase of water and sewer capacity. To a point, infill development in existing urban areas, which increases the density of residential and commercial development served, can often leverage existing infrastructure services already in place through a hookup or access to existing services. This can take less of a toll on infrastructure services than development on the edge of urban areas. In addition to these technical considerations around SDCs, each jurisdiction decides how to assess SDCs on different types of development, how to use SDCs as incentives and what percent of the cost of infrastructure to charge is a policy matter.

Historically, SDCs have been assessed uniformly across service areas based on system-wide average costs and many jurisdictions in Oregon currently charge a uniform SDC rate for single family and multi housing developments, which can often have different impacts on the system. In order to reflect these differential impacts, a few jurisdictions including Portland, Beaverton, Oregon City and others assess differential SDC rates for transportation and parks based on development impacts. As a result, multi-family and more compact development in existing urban areas is charged less than detached single family houses in new areas, which provides incentives to build more compact development and assess fees that are more reflective of actual costs (Galardi, 2007).

Recently, however, more jurisdictions are revising their SDCs to more realistically reflect the differences in costs between development and redevelopment and the impacts of location on service costs. Gresham's parks, stormwater and transportation SDCs in the new urban areas of Pleasant Valley and Springwater reflect the higher costs required to extend and construct facilities in those areas. A survey undertaken by the City of Portland in 2007 reveals that transportation system development charges assessed by Gresham for the Springwater area were a region-high of $6,416 per residence (Economic Analysis for 2007 Update of Portland's Transportation System Development Charge). These SDCs are intended to support the high costs of serving the area

including a ramp to U.S. 26 priced at around $29 million and water, sewer, and stormwater systems that cost $40 million to $50 million (Mayer, 2009).

On the other hand, some jurisdictions use reduced or waived SDCs as an incentive to encourage compact development. For example, the City of Portland offers substantial reductions (by 30-60 percent) in the transportation system development charge for developments in the Central City located on or near a frequent service bus, streetcar, or light rail line or other projects that either meet minimum density requirements or are located in a commercial zone where no parking is required, no on-site parking is provided, and there are no drive-through facilities. In 2010, the Portland Bureau of Transportation also created two overlay zones where transportation SDCs can be added to the citywide SDC fee. The fees helped pay for the Portland-to-Milwaukie light rail project (Bjork, 2010).

In addition, no jurisdiction in the region charges SDCs that re-coup the full costs of providing services (Galardi, 2007). Instead, most cities and service districts charge about 30 to 50 percent of costs through SDCs (1000 Friends). Cities and counties are not legally prohibited from charging SDCs that re-coup the full service costs, but cities and counties usually charge less than full SDCs for many political and economic reasons.

This is underscored by the fact that each jurisdiction requires different levels of on and off-site improvements for infill development. As part of the development of Metro's 2008 Regional Infrastructure Analysis[8], a survey of over 8,600 residential building permits issued in recent years was conducted in selected jurisdictions in an effort to understand the on- and off-site improvements required for each type of development. The results of this survey, however, did not provide clear and consistent data from which to draw conclusions, due to differences in local jurisdiction's definitions of "infill/minor partitions" and "subdivisions/PUDs", and policies on when off-site infrastructure improvements are required. This highlights the significant variations in policies at the local level on charging developments for improvements to infill development sites. As such, reducing SDCs or charging differential SDCs is a policy decision for each jurisdiction and can be a significant barrier or incentive for different types of development.

Transportation Impact Fee/Transportation Development Tax

In addition to city-wide system development charges, both Clackamas and Washington counties charge Transportation impact fees/transportation development taxes and county-wide system development charges. Similar to SDCs, transportation impact fees are assessed on development to pay for growth and are used to fund specific projects identified in transportation plans (Washington). Clackamas County administers Transportation System Development Charges (TSDC), one-time fees for new or expanded developments in unincorporated Clackamas County. The fee, based on the number of vehicle trips a particular type of development generates, is

[8] As part of the work to develop the 2008 Regional Infrastructure Analysis, Metro hired consultants to study the infrastructure costs in different areas across the region and develop a report called *Comparative Infrastructure Costs: Local Case Studies, 2009*.

intended to cover the cost of transportation facilities needed to serve the new or expanded development and the people who will occupy or use the development.

Prior to 2008, Washington County's transportation impact fee was assessed uniformly on development regardless of whether it was located within cities, unincorporated urban or rural areas. However, in 2008 Washington County voters approved a Transportation Development Tax (TDT) to replace the transportation SDC. The Transportation Development Tax (TDT), a countywide tax applied to all new developments to pay for the transportation infrastructure needed throughout the county to accommodate growth, doubled the charge that developers pay for the impacts on the transportation system. The TDT was projected to bring in enough revenue to construct about 28 percent of the transportation infrastructure in the cities and county's 20-year transportation plans. Eligible projects are on major roads, including sidewalks and bike lanes, as well as transit capital projects like bus shelters.

Urban renewal

Urban renewal can be an especially effective and robust tool for funding infrastructure needed for development. In addition to Portland's aggressive urban renewal portfolio, cities across the region have used urban renewal to varying degrees and have experienced relative success with urban renewal districts in downtowns and employment areas. While typically in this region, urban renewal has been used primarily to fund development in existing urban areas, the requirements of urban renewal allow it to be used for both new and existing urban areas.

However there are some limitations on how urban renewal districts can be established and utilized. In order to establish an urban renewal district, a city must identify a blighted area that needs serious investment. Definitions of "blighted" include an area that lacks necessary infrastructure or has dilapidated infrastructure. However, there are political considerations associated with determining areas as "blighted" that can make it challenging for governments to establish urban renewal districts. In 2007, Washington County considered using it to pay for major infrastructure improvements in the North Bethany area, but faced opposition regarding determining the area as "Blighted" (Pitz, 2007).

In Oregon, jurisdictions with a population of 50,000 or higher can only put 15 percent of their total land or assessed value in urban renewal. For jurisdictions with a population of less than 50,000, this cap is at 25 percent. Roughly half the jurisdictions in the region have established urban renewal districts (including Hillsboro and soon to be, Beaverton[9]). Portland has almost reached their limit of 15 percent land area and assessed value in urban renewal. As a result of this law, there is a limit on how broadly urban renewal can be used in one jurisdiction and therefore, how much infrastructure it can fund.

In addition, urban renewal has been and continues to be a politically sensitive issue. Voters must approve an urban renewal district in their jurisdiction and over the years voters have rejected

[9] In 2008, the City of Beaverton's voters approved a city charter amendment that makes urban renewal available as a tool for the city to use, subject to voter approval. Although an urban renewal program is not yet adopted, it is expected that an urban renewal plan will be on the ballot in Beaverton in November 2010.

several attempts to establish urban renewal districts. Recently, Tualatin voters rejected an extension of an urban renewal district last year (Frank, 2010). Since urban renewal freezes the existing tax base and uses property tax increment for specific projects in the district, other special districts and taxing authorities may oppose urban renewal districts. The special districts working with the 2009 Legislature passed house bill 3056 which impacts the process for determining maximum indebtedness for a new URA and affects how much financial capacity an urban renewal district will have. House bill 3056 also imposes a cap on the value of tax increment revenue that could be collected by an urban renewal area in a given year with the difference being released back to the other taxing districts (EcoNorthwest, A Primer on Urban Renewal Legislation and House Bill 3056, 2009). In essence, this limits financial capability and revenue generation potential for urban renewal, which dilutes its ability to fund infrastructure for new and existing development.

Recently, Portland has received criticism for attempting to inject more flexibility into the utilization of urban renewal revenue by extending the life and geographic boundaries of successful urban renewal districts to pay for needed infrastructure in adjacent areas. The Portland City Council proposed expanding the River District boundaries into Old Town and Chinatown, other downtown pockets and projects in the David Douglas School District. This expansion was intended to pay for a variety of needed infrastructure projects including investments in a post office complex in Northwest Portland, a service center for the homeless in Old Town, downtown's low-income housing stock, Multnomah County offices and a new school for David Douglas. However, this proposal was met with much political and citizen opposition and resulted in a lawsuit (Haberman, 2009).

Street Utility Fees

Street utility fees, which are sometimes called transportation utility fees, are monthly fees collected from residents and businesses based on their impact on the transportation system. Residential and commercial impacts on the transportation system are calculated according to number of trips a specific land use generates. Street utility fees, which are found across the region, are used exclusively for rehabilitation and maintenance of city streets and revenues cannot be used to fund capital projects to expand the transportation system. This provision makes them ineligible to be considered as useful tool to fund capital infrastructure needed to support development throughout the region.

Local Improvement Districts/Business Improvement Districts

A Local Improvement District (LID) is a method by which a discrete group of property owners can share in the cost of infrastructure improvements such as installing water and sanitary sewer lines or transportation improvements. A Business Improvement District applies the same concept to businesses in a given area. By law, LIDs can only be utilized by cities in the region. Most LIDs involve improving a street, building sidewalks, and installing a stormwater management system and are financed by special assessments on property taxes. In addition, special assessments are used to finance reconstruction of deteriorated, substandard, or outmoded facilities, both in older developed areas and in areas newly annexed to a city. What makes LIDs unique is that the costs of the infrastructure improvement are levied on the property owners who directly benefit from the

improvement and costs are apportioned according to the estimated benefit that will accrue to each property.

According to Legislation behind LIDs, local governments can use special assessments for LIDs based on three main factors of benefit. These principles include direct service that benefits a property (i.e. a road providing access), obligation to others (i.e. investing in infrastructure that allows for property to be developed without harming adjacent sites and equal sharing, which means that since each property owner benefits from a sidewalk, they are each responsible for it (Basics about Local Improvement Districts).

Local Improvement Districts require a majority vote of the people who would be taxed, which can limit their success of passing and subsequently funding infrastructure needs. In addition, special assessments can only be levied on the on the property owners that directly benefit from the improvement, which limits the type of improvement that can be financed through this method to ones that can be easily attributed to measureable benefits on the property values of select nearby properties.

County Service District

Though LIDs are unavailable to counties, state statute enables counties to establish Special Districts, which operate similarly to a LID. Special District Funds generated can be used for construction or operation of capital facilities. A district's assessments can be based on property value, in which case, as a property tax, it is subject to the tax limits associated with Measure 50/47. This funding mechanism was discussed as a possibility for North Bethany, with a focus on alternative assessment formulas based on factors such as land area, trip generation or proximity to facilities (Hovee, 2008). Since these mechanisms have been rarely used, the political and legal feasibility of these options has not been frequently tested.

EXAMPLES: NEW URBAN AREAS

The following examples of the sources utilized to fund development-supportive infrastructure in a set of new and existing urban areas illustrates the different funding challenges and opportunities for each community. In addition, these examples highlight how various funding sources can be developed and applied specifically to a district like a system development charge overlay, but not necessarily to the larger community.

North Bethany, Washington County Funding Sources Proposed to Finance $69 million for Transportation (Schmidt, 2010)

a

- $11 million to be raised by establishing community service district in 2011 from MSTIP funds
- $10 million over a 20-year period from a transportation fund collected by countywide property taxes

- 75 percent of North Bethany transportation development taxes to generate $24 million
- Supplemental development fee of over $6000 for a single family home in the area to raise $23 million
- $1.5 million from fund that developers were required to pay into when developing properties around Springville Road (Bjork, 2010).

North Bethany is a newly urbanizing area in Washington County that was brought into the urban growth boundary in 2002. The area is planned primarily as a residential community with adjacent commercial and institutional uses. Major infrastructure investment costs have complicated development in this area and Washington County has worked over the years to identify appropriate and robust funding sources to facilitate the development of this area. Under the current market at the time, land prices were exceptionally high and developers paid top dollar for land under the assumption that the traditional funding arrangement for infrastructure would apply (http://friendsofrockcreek.net/_pdf/KenT_NorthBethany_Presentation_20090513.pdf). This limited their ability and willingness to pay for the huge infrastructure costs needed to make the area ready for development (Gorman, 2007).

Since there were few existing facilities in the area when it was brought into the UGB, there's a wide gap between actual costs and conventional revenue resources. As identified in the North Bethany Concept Plan, the infrastructure necessary for the development of North Bethany is estimated to cost $520 - $540 million in 2007 dollars with transportation needs in the area currently comprising 40 percent of all estimated infrastructure needs (EcoNorthwest, 2009). This underscores the challenge posed by the fact that current charges levied against new development are insufficient to fund the creation of an entire transportation network (Hovee, 2008). A 2007 consultant report found numerous on- and off-site transportation needs created by North Bethany development could equal $289 million, but now the project list has been narrowed to $103 million (Schmidt, 2010).

In previous years, the County has considered the creation of an urban renewal area, a designation that elicited concern from several special tax districts about taking away revenue for service to the area (Pitz, 2007). Currently, the Washington County Commission is focusing on a mix of financing and funding strategies including the creation of a tax district, utilizing county transportation money and increased development fees passed on to homeowners. This mix of strategies would generate $69 million to pay for 12 projects including the construction of a major new road in North Bethany and improvements to Northwest Springville and Kaiser Roads (Schmidt, 2010). Since most of the infrastructure costs are needed up front before development can occur, the County will probably have to bond against future revenue streams—either from SDCs charged to developers or from future new taxes charged to Washington County residents.

South Hillsboro Funding Sources Proposed to Finance $235 million for transportation

- Private developers will pay $164 million to fund local neighborhood streets, collector roads and part of Cornelius

Pass Road and will re-coup some of these costs through an area-specific impact fee assessed to all new development in the area (Leland Consulting, 2008).

- Hillsboro will finance the remaining $39 million with the proposed South Hillsboro Enhanced Traffic Impact Fee that could produce as much as $32.5 million to help fund public improvements.

South Hillsboro is a new urban area that includes land inside and outside the urban growth boundary and is being planned for primarily residential and retail and office uses. The South Hillsboro Community Plan identifies almost $300 million in total infrastructure needs including $203 million of major transportation costs and over $50 million in parks costs needed to implement the full build-out of the 1,566-acre plan area (Hovee, 2008).

While existing connection fees and system development charges are expected to generate sufficient revenues to finance public sewer, water and stormwater infrastructure in the South Hillsboro planning area, additional sources of funding will be required to fully finance public transportation and parks infrastructure. Current developers have agreed to invest in local streets and roads, but they will be reimbursed in part by an area specific impact fee, separate from the County transportation impact fee. This will ensure that all South Hillsboro developers share the cost of providing district-level improvements. The city is planning to finance the rest through the South Hillsboro Enhanced Traffic Impact Fee.

2007 Pleasant Valley Agreement—Funding Sources Proposed to Finance $30 million for Infrastructure

- The three major developers that owned about 120 acres in Pleasant Valley agreed to pay $14 million upfront for new infrastructure including wastewater and water lines, improving transportation and creating parks. The developers will be later reimbursed through credits for System Development Charge

City of Gresham website, http://greshamoregon.gov

- The City of Gresham will pay nearly $16 million for wastewater improvements—with money budgeted from capital improvement plans and loans.10

Pleasant Valley, a 1,400-acre parcel between Gresham and Happy Valley that was brought into the urban growth boundary in 1998, is planned as a residential community with a town center and employment zones. The land, which is split between the cities of Portland and Gresham, lacked the infrastructure required for development to occur, especially urban roads, water and wastewater systems. The Pleasant Valley Plan District calculates the 30-year costs of infrastructure needed in the area as around $450 million (Gresham, 2005).

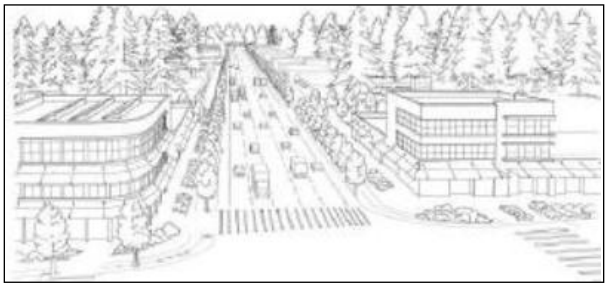
[10] Mara Stine, Gresham Outlook, Development begins in Pleasant Valley, July 2007

In 2007, city officials worked out a deal with a handful of developers to finance development for phase one, which spans 280 acres and will generate more than 1,200 homes and 6 acres of retail space. According to the agreement, the three major developers that owned about 120 acres in Pleasant Valley – agreed to pay $14 million upfront for new infrastructure, including a wastewater line, extending two major water lines and a stormwater management system, removing an unsafe curve from 190th Avenue and making it a two-way road, creating two parks and building environmentally sensitive green streets that better manage stormwater. Gresham planned to later reimburse the developers through credits for System Development Charges (Stine, 2007).

The amount charged to developers was around $25,000 per lot, a majority of which would be paid back over time as a credit for each home they built (Redden, 2009). The agreement, which was finalized in July 2007, fell apart when the housing market crashed and the developers went out of business. Due the downturn in the housing market and the subsequent deterioration of the agreement for funding infrastructure, Pleasant Valley development has slowed. As of 2009, Gresham has completed the sewer improvements for Phase I of the development of Pleasant Valley, making around 120 acres of land ready for development.

Coffee Creek, Wilsonville Potential Funding Sources for Infrastructure

- Developers will pay for local streets and utility connections
- A mix of public and private funding and financing will be used for on- and off-site improvements.



Drawing taken from the Coffee Creek Master Plan

The Coffee Creek area in Wilsonville is a newly urbanizing area that is being planned as an employment area and is designated as a Regionally Significant Industrial Area. According to the Coffee Creek Master Plan, major public infrastructure items including roads, trails, water, sewer, and storm water facilities are estimated to cost approximately $7.6 million over the initial five years. Additional capital costs are expected to require another $26.6 million for on-site public facility investments (excluding local streets, which are assumed to be paid and constructed by private developer(s). The Master Plan also recommended $16.7 million in road costs and the $4 million rail road crossing improvement in Coffee Creek (Otak, 2007).

According to the area's Master Plan, developers will be responsible for providing local streets and utility connections to trunk line systems. However, to maintain flexibility, the plan focuses primarily on collector and arterial roadway improvements, and water and sewer trunk lines and does not identify specific locations for local connections.

EXAMPLES: EXISTING URBAN AREAS

The following case studies highlight the challenges and opportunities of accessing funding for infrastructure improvements in existing urban areas. There are many areas within the urban

boundary that lack basic infrastructure like sidewalks. With highly fragmented land ownership, funding infrastructure in these areas often involves multiple property owners each concerned with only a small portion of the cost. On the other hand, when areas like Orenco Station are developed as a single large greenfield site by one company, it can be easier to facilitate and fund infrastructure improvements. Where property ownership is more dispersed and existing buildings are scattered across the terrain, it's extremely difficult to make changes to an area.

East Portland—Available Funding Sources

- System Development Charges
- Lents Urban Renewal District—$245,000,000 in maximum indebtedness (Annual Urban Renewal Report Covering Fiscal Years 2008-2009 and 2009-2010)

Assurety NW Headquarters in the Lents Town Center, from PDC's website, http://www.pdc.us/ura/lents.asp

The East Portland area, east of 82nd Avenue, encompasses many neighborhoods including Lents and Hazelwood and was annexed into the City around 20 years ago. As such, this area has never enjoyed the investments in infrastructure—sidewalks and other transportation in particular—that have been built in inner Portland neighborhoods and throughout the region. As the area has experienced tremendous growth, it is lagging behind in streets, parks, schools, community centers and other improvements necessary to accommodate the additional people (Redden, East Portland Already Feels Growing Pains, 2007). As East Portland continues to urbanize and experience high rates of infill on large lots, this lack of infrastructure is becoming a more significant issue. In addition, projects in East Portland received less than 10 percent of citywide federal stimulus money (Mirk, 2010).

New development in this area incrementally improves streets and sidewalks, but the network is incomplete, and facilities are overly burdened. This type of infill development contributes in a piecemeal fashion to the completion and improvement of the street network, including sidewalks. In some cases, improvements are required for the developing property, but the improvement may be isolated in a larger area that lacks full improvements, which can act as a barrier to development activity. Developers must cover the cost of their street improvements, but lack assurance that adjacent properties will make similar improvements in a timely manner. In addition, while costs and risks of investing in infrastructure are high, each property owner won't necessarily realize the economic benefits of making the investments and in fact, could experience negative pricing effects of the lack of infrastructure.

The public funding tools available to fund infrastructure improvements in East Portland include urban renewal in Lents, system development charges, and portions of the city's general fund. The Lents urban renewal district, which was established in 1998, covers over 2800 acres, has a maximum indebtedness of $245 million. The last date to issue debt is June 2020. As of June 30, 2009 $58.5 million of maximum indebtedness had been issued. The district is earning about seven

to eight million in property tax income, but in order to get maximum revenue out of the district, more investments need to be made that increase the increment generated. Finally, since there are so many property owners in the district, the City can't develop an agreement with developers to pay for infrastructure improvements.

Gateway—Available Funding Sources

- System Development Charges
- Gateway Urban Renewal District—$164 million in maximum indebtedness (Annual Urban Renewal Report Covering Fiscal Years 2008-2009 and 2009-2010)

The Russellville Commons Transit Oriented Development Project in Gateway Regional Center

Gateway is another area within the Portland boundaries that needs significant infrastructure improvement, especially in the transportation realm, but lacks the cohesive comprehensive strategy to achieve it. Despite its central location and access to major transportation nodes, Gateway has struggled to develop a cohesive sense of place. The street grid in Gateway is bigger and the intersections fewer than in other neighborhoods in Portland, which makes creating a pedestrian-oriented environment more challenging and expensive. Paying for a new, dense street network would financially burden property owners in the area

Even so, developers foot the cost of many infrastructure additions, which increase the cost to build, translating into either smaller units or higher prices (Ryan, 2007). And in Gateway, where market rate units are priced under $200,000 is key, costs for these improvements are more than the property owners or developers can pay and are not justified by the revenue generated by the redevelopment projects (Ryan, 2007). According to a developer in the area, other challenges include land assembly, which the City has since examined as part of the Gateway redevelopment strategy, and creating street access to large parcels (Ryan, 2007).

The Gateway Urban Renewal District was established in 2001 and is capable of financing up to $164 million for public improvements over 20 years. However, lack of development limits the revenue generated by the district. The district comprises 659 acres, with a maximum indebtedness of $164.2 million of which $21.0 million has been issued through 2009. In 2007, a super local improvement district (LID) was considered as part of the Central Gateway Redevelopment Plan to defer infrastructure costs of new projects as well. Currently, PDC is considering expanding the Gateway boundary along a corridor bounded by Northeast Halsey and Southeast Stark streets from 106th to 122nd avenues to place more commercially developable property in the district (Perlman, 2010).

South Waterfront District, Portland 2003 Development Agreement

- In total developers invested a total of $1.6 billion in up front capital and took on payment obligations to service debt on increased TIF (Curl, 2003).
- OHSU paid $17 million for the tram (City Council approves third amendment to South Waterfront Development agreement, 2003)

- PDC paid $274 million with funding from urban renewal and advance borrowing on projected tax increment for fiscal year 2008/2009 (Hovee, 2003).
- The balance of public funding came from local improvement districts; Portland Department of Transportation system development charges; and other federal, state and regional dollars.

2010 North Macadam Transportation System Development Charge

- In 2010, the North Macadam Transportation System Development Charge Overlay was adopted to raise about $22.5 million over 20 years to pay for needed transportation infrastructure and to be used as match for state and federal projects.

South Waterfront is an existing urban area that is being redeveloped from an industrial area into a residential and employment hub for Oregon Health Sciences University (OHSU). The total projected cost of the infrastructure needed to serve development in the area was around $1.9 billion. Though the area was designated as an urban renewal district in 1999, in 2003 the City of Portland signed an agreement with private developers and OHSU to fund the infrastructure needed to redevelop the area. The three principal parties developed and signed a development agreement in 2003 that explicitly outlined funding responsibilities and strategies, which was ultimately feasible because the small number of interests and landowners involved—the City, OHSU and North Macadam Investors. The agreement, which formalized obligations for redevelopment of a 31-acre property in the center of the South Waterfront District, called for public investment in streets and in exchange for the developer's providing land for green space, affordable housing and require construction to attain the highest in environmentally sustainable standards (Curl, 2003).

In 2008, the city of Portland proposed a transportation overlay district, the North Macadam Transportation System Development Charge Overlay District as part of a North Macadam development strategy of $194 million (North Macadam Transportation System Development Charge Overlay Presentation, 2009). The SDC overlay district, which was adopted in 2010, will help address existing transportation needs in the area (Redden, Road Fees May Leap, 2009). The neighborhood, which was built in a former industrial zone with few existing streets, face transportation challenges as a result of regional and local growth in an already constrained transportation system. In addition, part of the promise of this densely planned area is to provide residents and workers with a variety of transportation options, including pedestrian and bicycle paths, a Portland streetcar link and a MAX light-rail line crossing the river. Paying for the improvements is proving difficult, however, in part because of city policies governing transportation system development charges. To address this, a transportation system development

charge overlay is estimated to raise $22.5 million toward the transportation projects (Moore, 2009). In 2008, this fund was used to fund $10 million portion of local match to Portland Milwaukie Light Rail project.

Redevelopment of Reynolds Aluminum Brownfield Site, Troutdale Funding Sources—$36 million

- ODOT grant—$1 million
- ODOT funding—$24 million
- State loans—$11.7 million (Parker, 2010)

The 350 acre Troutdale Industrial Park has been redeveloped by the Port of Portland and the City of Troutdale from an EPA Superfund site into a thriving industrial area home to FedEx offices. The Port of Portland purchased 700 acres of the site for $17 million and made over $30 million in infrastructure improvements for utilities and internal streets and transportation access.

The Port utilized a variety of public funding sources to pay for the cleanup and infrastructure required to make the site shovel ready. Specifically, the Port received a $100,000 grant from Oregon Department of Parks and Recreation for the Reynolds Trail and $1 million grant from ODOT Immediate Opportunity Funds for transportation improvements. The Port also received $24 million from ODOT for improvements at interchange at I-84 and $11.7 million from the state in loans including $3 million from Port Revolving Fund and $8.7 million from Special Public Works Fund (Parker, 2010).

CONCLUSION

Numerous local and regional reports over the past few years have highlighted the expense and challenge to fund infrastructure no matter where it is located. In addition, the funding sources for infrastructure at the federal and state level are decreasing and local funding sources are constrained by state law. For local sources, there are a variety of considerations that impact whether adequate funding sources will be available to support needed infrastructure including the location of the development, the number of developers involved and their willingness to invest up front capital, the political will of the jurisdiction and the fragmentation of the land in question. Finally, funding sources used in the region today are limited by geography and category of expenditure and are not interchangeable.

However, investing in infrastructure is an important element of supporting residential and employment growth. Furthermore, investing in infrastructure strategically in existing urban areas or new areas adjacent to existing urban areas creates a significant public good. Facilitating

redevelopment in existing urban areas ensures that more farmland and forestland is protected and preserved and investment in existing infrastructure is leveraged where possible.

The examples highlighted here underscore the point that each location has its own opportunities and challenges relating to funding infrastructure and that several funding streams can only be applied to the location in which they are levied. In addition, examples like North Bethany highlight the challenges of trying to incorporate regional impacts from development into infrastructure funding strategies. In that context, development that leverages existing infrastructure in place has a smaller impact on regional systems. However, as examples of challenges in Gateway and East Portland highlight, challenges for funding infrastructure improvements in existing urban areas include multiple property owners/potential developers and the need for piecemeal improvements that carry limited financial benefits for developers. These factors mean that infrastructure needs must rely more fully on traditional tools like system development charges and urban renewal, which are each limited in their own way.

Due to all the challenges and complexities associated with funding infrastructure from private development, taxes and impact fees, solutions will need to be tailored to individual locations. The region needs to maximize public resources needed to maintain and improve existing communities and accommodate growth. Success should be measured through the lens of efficiency and the quality of the communities that are fostered.

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