



## Executive Summary

*VISION 2040 is the regional long-range growth management, environmental, economic, and transportation strategy for the central Puget Sound region. VISION 2040 contains a numeric Preferred Growth Alternative (referred to as the regional growth strategy in the VISION 2040), the region's multicounty planning policies, and related goals, potential implementation actions, and monitoring measures. VISION 2040 provides a comprehensive regional approach to manage growth through the year 2040 for King, Kitsap, Pierce, and Snohomish counties and their respective cities and towns.*

The central Puget Sound region has looked ahead to the year 2040 and developed a preferred strategy for accommodating the forecasted 1.7 million additional residents and 1.2 million additional jobs.<sup>1</sup> This strategy builds upon and improves the existing regional growth strategy, VISION 2020, which was adopted in 1995.

The strategy (referred to as the Preferred Growth Alternative in the environmental review) identifies a preferred way for the region's cities, towns, and unincorporated areas to grow. The Preferred Growth Alternative represents a unifying perspective about the roles that different types of communities should play in accommodating growth as each county and its cities develop. The Preferred Growth Alternative is intended to guide the region's cities and towns as they work on countywide and local policies and plans.

### Purpose of Developing VISION 2040

The region has engaged elected officials, agencies, interest groups, and individuals in a process aimed at strengthening the VISION and extending it to 2040.

The objective has been to refresh our common vision for how and where growth should occur. This has been done to keep the region's growth management desires current and accessible to the public. The goal has been to refocus our commitment to an environmentally friendly and economically successful growth pattern that can be efficiently served by infrastructure, services, and amenities.

The updated growth vision provides a common framework for the region's leadership to coordinate efforts to provide the resources necessary to support the needs of a growing population.

The growth vision also allows the region to take the necessary public policy steps to bend growth trends, if necessary, to promote the desired growth pattern. It provides regional guidance to future work on countywide growth targets, countywide planning policies and local comprehensive plans.

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<sup>1</sup> The figures 1.7 million new people and 1.2 million new jobs refer to growth from the base year 2000 (which is needed for modeling and analysis purposes) and the year 2040. When discussing growth from the year 2005 (the year the analysis was begun for the Draft Environmental Impact Statement), the figures 1.6 million new people and 1.1 million new jobs are used. To maintain consistency, the year 2000 and 2005 figures have been used in the Draft and Supplemental Draft Environmental Impact Statements.



This Final Environmental Impact Statement presents and discusses the potential significant environmental impacts that may occur upon implementation of VISION 2040's regional growth strategy (referred to as the Preferred Growth Alternative in the environmental review), as well as four other four conceptual growth alternatives that distribute forecasted growth into different types of areas throughout the region.

## Contents of Executive Summary

The Executive Summary contains the following information: (a) background on the existing VISION and the update process, (b) description of the growth distribution alternatives, (c) summary of the analysis and key findings regarding potential impacts, (d) discussion of the environmental review process, and (e) next steps. Additional information on the outreach process to agencies and the public is included in *Chapter 3 - Introduction and Background*.

### A. Background

Nearly two decades ago citizens, interest groups, business leaders, and elected officials came together to create VISION 2020, the long-range growth, economic, and transportation strategy for the central Puget Sound region encompassing King, Kitsap, Pierce, and Snohomish counties.

The vision has helped to guide how and where we grow and how we establish planning and investment priorities. It provides local jurisdictions, the public, the business community, and interest groups with a regional vision to which they can contribute.

VISION 2040 recognizes that our Puget Sound communities are connected by shared ecosystems, transportation systems, and the economy. It recognizes that the region's economic health is dependent on its ability to get goods to market and people to their jobs, and that the ability to preserve open space and parks depends on the fiscal health of its communities. VISION 2040 also recognizes that the way land is developed affects air and water quality, the character of neighborhoods, and the cost of transportation and utilities (see *Chapter 3 – Introduction and Background* in the full document).

VISION 2040 contains the region's multicounty planning policies that are required by the Washington State Growth Management Act. These framework policies and strategies address land use, economic prosperity, transportation, the provision of adequate public services, and the protection of the environment (see *VISION 2040* document and *Chapter 7 – Discussion of Multicounty Planning Policies*).

### VISION 2040 PURPOSE AND NEED

Beginning in 2003, the Puget Sound Regional Council engaged in a public dialogue regarding whether to revise the existing VISION, which was last updated in 1995. Over the five-month scoping period, Regional Council staff had contact with over 2,000 individuals, organizations, and local jurisdictions throughout the region, and received comments raising more than 1,200 points (see *VISION 2020 Update Scoping Report* at [psrc.org](http://psrc.org)).

**VISION 2020 MAP**

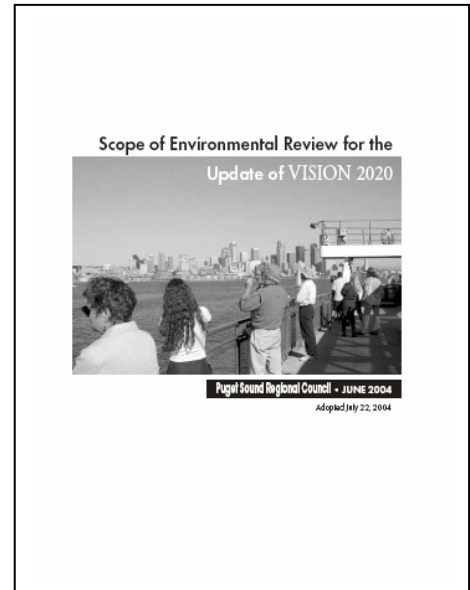


Commenters believed the VISION needed to be updated, and expressed the following broad themes for the update:

- Build on the current VISION.
- Think long range.
- Be bold and provide regional leadership.
- Broaden the VISION to cover regional issues not currently addressed.
- Be specific when possible — for example, add measurable objectives to policies.

Based on these comments, the Regional Council’s Executive Board unanimously agreed that it was time to create VISION 2040. The purpose of the update was defined as follows:

- Extend the VISION to 2040 to allow it to continue to lead growth management efforts in the region.
- Engage in a public discussion of growth, its impacts, and the region’s preferred strategy for managing growth.
- Strengthen strategies and policies to add detail, clarity and to make implementation and monitoring easier.
- Support related regional goals and initiatives for growth management.
- Keep the VISION current, relevant and useful to decision-makers and the public.



These themes and the defined purpose created the framework in which VISION 2040 was developed (see *Chapter 1 – Purpose and Need*).

The ideas raised in the public review were further researched in a series of 10 issue papers that were developed under the guidance of the Regional Council’s Growth Management Policy Board. These are available in *Appendix I-F: Compilation of Issue and Informational Papers*.

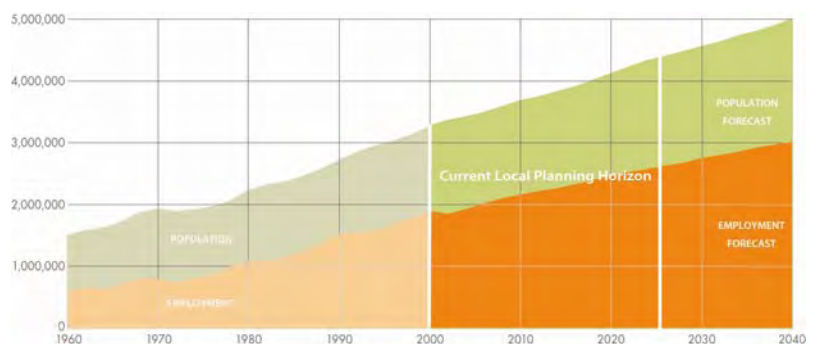
## A CENTRAL QUESTION — WHERE AND HOW TO ACCOMMODATE FUTURE GROWTH?

The Growth Management Act requires regions, counties, cities and towns to plan for forecasted growth. Over the past decade, jurisdictions in the region have done this through the adoption of local comprehensive plans and associated activities.

VISION 2040 is also about accommodating forecasted growth, with 1.7 million additional residents and 1.2 million additional jobs<sup>2</sup> anticipated by the year 2040. Maintaining and enhancing the region’s quality of life in the face of this growth is a monumental challenge, and the manner in which the region should accommodate the next 35 years worth of growth is the central question of the update.

VISION 2040 addresses the questions of “where” growth should and should not occur (as far as location and amounts). It also considers “how” development should take place, meaning its design, building types, and development practices. The selection of a preferred growth alternative will help answer the where question. Updating the region’s multicounty planning policies will help answer the how question.

**POPULATION AND EMPLOYMENT TRENDS AND FORECASTS**



<sup>2</sup> See footnote on page ES-1.



For both questions, the Final Environmental Impact Statement continues the process of considering the effects of the growth alternatives on the region's people, the built environment (such as housing, land use, and transportation), the natural environment (such as ecosystems, water resources, and air quality), and other resources (such as energy, public services, and visual quality). See *Chapter 5 – Environmental Effects and Mitigation* for more information.

## **CREATING GROWTH DISTRIBUTION ALTERNATIVES**

The Regional Council's Growth Management Policy Board took action in September 2005 to identify the alternatives to be included in the Draft Environmental Impact Statement. The alternatives were selected in response to suggestions made during the comment period and reflected the following:

- The alternatives should represent regional growth patterns that are highly distinct from one another and represent a wide range of choices. Of the four alternatives, two should represent a wider distribution of population and employment between the four counties than current conditions and two should represent greater concentration. The "No Action" alternative is to be defined as the continuation of currently adopted growth targets, with the targets extended to 2040 to match PSRC's regional growth forecasts.
- The growth distributions should be based on groupings of cities and areas (see *"Defining regional geographies to guide the analysis - What are the Regional Geographies"* in the following section), rather than based on individual jurisdictions.
- Constants in all of the alternatives should include: the same amount of forecasted growth, the same existing base of population and employment distributions, the currently designated urban growth area, same transportation network which is based on the adopted metropolitan transportation plan, Destination 2030, and build on the base of the policies and strategies adopted in VISION 2020.

The four alternatives (see *"Definition of Alternatives"* in the following section) were released for public review and comment in a Draft Environmental Impact Statement in May 2006.

## **DEVELOPING A PREFERRED GROWTH ALTERNATIVE**

Between May 2006 and March 2007, following the release of the Draft Environmental Impact Statement, the Regional Council's Growth Management Policy Board led the process to develop VISION 2040, in coordination with other Regional Council boards and committees. During this time, the Board used four tools to develop the Preferred Growth Alternative: (1) the findings in the Draft Environmental Impact Statement, (2) input received during a public review and comment period, (3) staff analysis on a potential Preferred Growth Alternative, which included input from a technical advisory group made up of local jurisdiction staff, and (4) application of the evaluation criteria for selecting a Preferred Growth Alternative that was published in the Draft Environmental Impact Statement.

Using the guidance from the Policy Board, the public review and comment period, as well as from the application of the evaluation criteria, staff developed a draft Preferred Growth Alternative for a focused regional growth pattern that represents a hybrid of the Metropolitan Cities and Larger Cities alternatives. The draft Preferred Growth Alternative was evaluated by a technical advisory group composed of staff from around the region. This group met over the summer of 2006, and used a series of technical evaluation measures, such as economic sector forecasts and growth target projections. Discussion and analysis led them to develop a preliminary Preferred Growth Alternative that they judged to be both reasonable and ambitious (see *Appendix I-A: Preferred Growth Alternative Technical Packet*).

## **TESTING THE "PRELIMINARY" PREFERRED GROWTH ALTERNATIVE**

The draft Preferred Growth Alternative was introduced to the Growth Management Policy Board and discussed at its September 2006 meeting. At its October 2006 meeting, the Board took action to advance the draft Preferred Growth Alternative as a preliminary Preferred Growth Alternative.

As part of the action, Regional Council staff was instructed to conduct initial sensitivity tests and model the performance of the preliminary Preferred Growth Alternative to provide additional information for the Growth Management Policy Board to review and consider at its January 2007 meeting for potential action in February 2007.

The purpose of the initial evaluation was to provide additional information to the Policy Board about how the preliminary Preferred Growth Alternative performed relative to the four alternatives evaluated in the Draft Environmental Impact Statement.



Based on an initial evaluation of 12 initial criteria measures, the preliminary Preferred Growth Alternative performed well when compared to the other alternatives. The preliminary Preferred Growth Alternative fared particularly well in Land Use measures, addresses job/housing balance measures, is strong in transportation measures, and seemed to provide many of the benefits of the focused growth Metropolitan Cities and Larger Cities alternatives. All of this initial evaluation is contained in the evaluation criteria (see *Appendix I-D: Evaluation Criteria*).

Based on the information provided through the testing of the preliminary Preferred Growth Alternative, the Board made a recommendation to the Regional Council's Executive Board to release the Preferred Growth Alternative for analysis in a Supplemental Draft Environmental Impact Statement. Concurrent with this release, a draft VISION 2040 document was also released. The Executive Board took the action to release both documents in March 2007.

## **FINALIZING THE PREFERRED GROWTH ALTERNATIVE AND VISION 2040**

Following the release of the Supplemental Draft Environmental Impact Statement, PSRC held a public comment period on the draft VISION 2040 document and Supplemental Draft Environmental Impact Statement. The comment period went from mid-July through early September, and a total of 175 letters were received, containing nearly 2,000 discrete comments.

During this of the VISION 2040 process, written public comment was the primary tool used by the Regional Council's boards and committee as they work to finalize the VISION and environmental impact statement. Responding to public comments, the Regional Council's Regional Staff Committee, Growth Management Policy Board, Economic Development District Board, and Transportation Policy Board made revisions to VISION 2040's policies and narrative, as well as the Preferred Growth Alternative (called the Regional Growth Strategy in VISION 2040).

At their December meetings, the Transportation Policy Board and Economic Development District Boards took an action to forward their respective sets of recommended edits to the Growth Management Policy Board. Following this, three Public Hearings were held in December at the Auburn City Hall, Edmonds City Hall, and the Kitsap County Administration Building. The purpose of the public hearings was to communicate with the public prior to final Board actions on VISION 2040 in early 2008.

In January, the Growth Management Policy Board reviewed a strike-through version of VISION 2040, prior to making a recommendation to the PSRC Executive Board on the final wording of the document. In March 2008, the Executive Board recommended the final VISION 2040 package to the General Assembly for action in April 2008.

## **UPDATING THE EXISTING MULTICOUNTY PLANNING POLICIES**

The VISION 2040 multicounty planning policies were developed based on almost nine-months of work with the Regional Council's Regional Staff Committee (comprised of local jurisdiction senior planning, public works, and economic development staff) and the Growth Management Policy Board. The policies combine eight policy areas into six, with all of the policy areas being more integrated. The VISION 2040 planning policies are: General (5 policies), Environment (25 policies), Development Patterns (56 policies), Housing (9 policies), Economy (22 policies), Transportation (33 policies), and Public Services (24 policies). Each set of policies is guided by one overarching goal as well as a set of sub-goals.

With the development of the preferred growth alternative, the policies are now structured and align to better implement the VISION. The policies are presented in the companion document to the Final Environmental Impact Statement - VISION 2040. The Final Environmental Impact Statement contains an environmental review of the proposed VISION 2040 multicounty planning policies (see *Chapter 7*).

## **UPDATING THE VISION WITHIN AN ENVIRONMENTAL FRAMEWORK**

Since the VISION was first adopted in 1990, our understanding of the region's environment has grown substantially. Environmental protection and restoration efforts — spurred by the listing of salmon species, damage to sensitive areas, human health objectives, loss of forestlands, and other concerns — have also intensified.

During the initial public outreach period in 2003-2004, many comments emphasized a desire for the Regional Council to use VISION 2040 process to develop an environmental framework within which to address its ongoing land use, employment, and transportation responsibilities. Comments called for the VISION to serve as a driving force that unifies comprehensive plans and countywide planning policies into a regional environmental framework.





Commenters noted that VISION 2040 is uniquely suited to create a unifying vision of the ways in which current environmental planning efforts interconnect at the regional level. The VISION has the potential to meaningfully affect these issues because of both the collaborative process being used in the update and through the use of multicounty planning policies.

This Final Environmental Impact Statement begins the process of developing an environmental framework, and contains a Regional Environmental Baseline chapter that seeks to draw together the regional environmental picture, raise the level of regional environmental analysis, and be useful for other planning efforts (see *Chapter 2 – Regional Environmental Baseline*).

## B. The Growth Distribution Alternatives

Over the past two years, the Regional Council has continued to engage in discussions with a wide range of interest groups, county planning directors, countywide staff, and elected officials across the region in order to develop a series of growth distribution alternatives that would undergo environmental analysis. These conceptual alternatives were defined to represent a wide, but realistic, range of regional growth options and embody distinct sets of choices for accommodating growth on a regional scale in cities, unincorporated urban areas, and rural areas (see *Chapter 3 – Introduction and Background*).

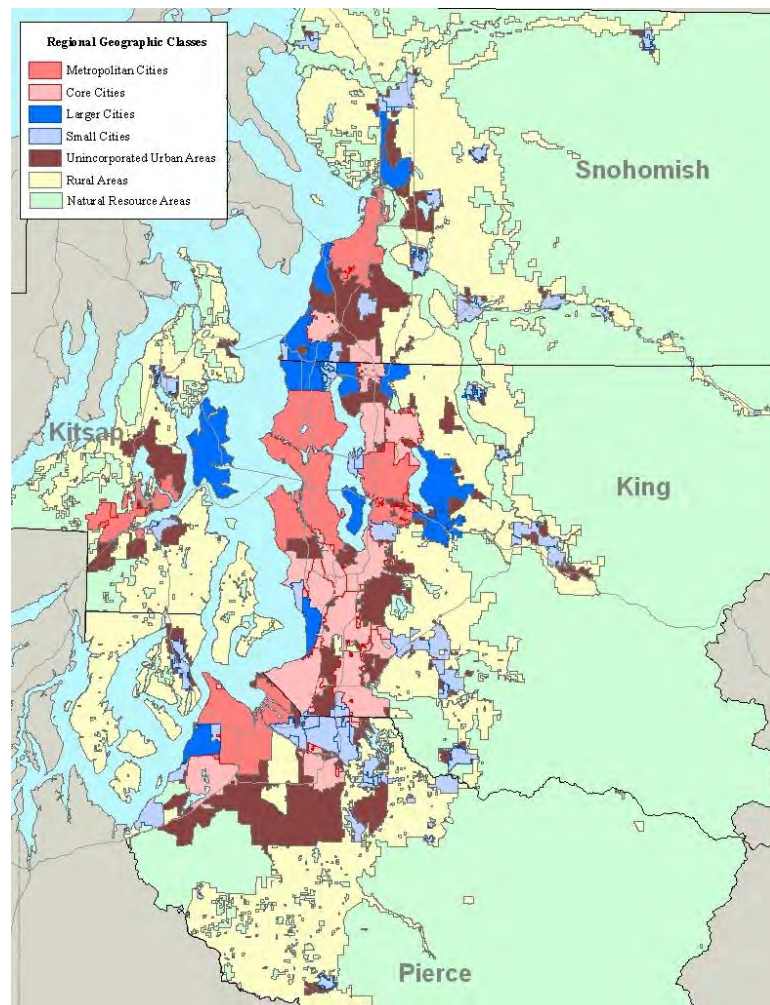
### DEFINING REGIONAL GEOGRAPHIES TO GUIDE THE ANALYSIS

#### What are the Regional Geographies

To create all of the regional growth alternatives for the environmental review, the Regional Council distributed the year 2040 forecasts for regional population and employment growth into six separate geographic categories within the region. Regional geographies are defined by the idea that the different types of cities and unincorporated areas will play a variety of roles in the region's future. These categories are based on current boundaries and reflect how existing population and employment occurs in these areas, how growth is anticipated in current plans, as well as current thinking about the roles these areas might play in the region's future.

These roles range from major hubs of activity – seen in the region's five central metropolitan cities – to less intensely developed regional, subregional and small cities. While relative amounts of emphasis within regional geographies may differ somewhat between counties, the roles of regional geographies within each county are structured to be consistent with the overall approach for the region as a whole.

**FIGURE 1-1: REGIONAL GEOGRAPHIES MAP**



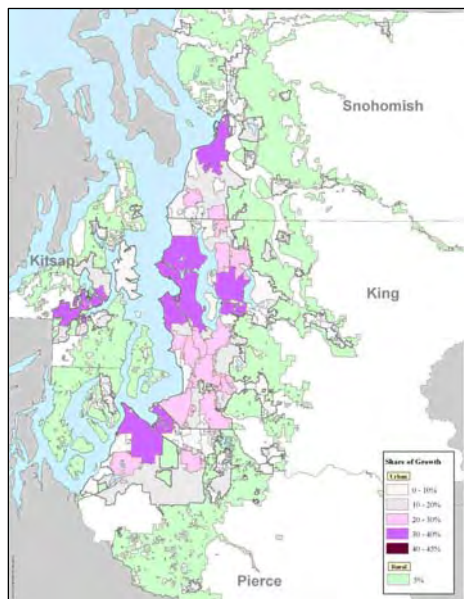
The regional geographies, shown in figure 1-1, are described below.

- **Metropolitan Cities.** The region's largest cities in each county containing designated Regional Growth Centers. Regional Growth Centers serve as a key framework for the region's adopted long-range multimodal transportation system. *Bellevue, Bremerton, Everett, Seattle, Tacoma* (5 cities, 216 square miles).
  - **Core Cities.** The region's core cities containing designated Regional Growth Centers. Regional Growth Centers serve as a key framework for the region's adopted long-range multimodal transportation system. *Auburn, Bothell, Burien, Federal Way, Kent, Kirkland, Lakewood, Lynnwood, Puyallup, Redmond, Renton, SeaTac, Silverdale (Kitsap County), and Tukwila* (13 cities, plus unincorporated Silverdale, 197 square miles).
  - **Larger Cities.** The region's inner-ring cities with combined population and employment over 22,500. Many of these cities contain important local and regional transit stations, park-and-ride facilities, ferry terminals, and other transportation connections. *Bainbridge Island, Des Moines, Edmonds, Issaquah, Kenmore, Marysville, Mercer Island, Mountlake Terrace, Mukilteo, Sammamish, Shoreline, University Place, and Woodinville* (13 cities, 131 square miles).
  - **Small cities.** The region's small cities and towns. These jurisdictions represent a wide variety of communities, from historic towns and growing new cities, bedroom communities with limited retail and commercial activity and growth potential, to freestanding cities and towns separated from the region's contiguous urban growth area. As such, they have been divided into three sub-categories:
    - **Type A:** Small Cities and Towns (located inside the contiguous urban growth area). These are often surrounded by larger jurisdictions, often with greater potential to absorb both population and employment growth than purely residential communities. *Algona, Arlington, Black Diamond, Bonney Lake, Brier, Covington, DuPont, Edgewood, Fife, Fircrest, Gig Harbor, Lake Forest Park, Lake Stevens, Maple Valley, Medina, Mill Creek, Milton, Newcastle, Normandy Park, Orting, Pacific, Port Orchard, Poulsbo, Ruston, Steilacoom, and Sumner.*
    - **Type B:** Small Residential Towns (inside the contiguous urban growth area). Small residential enclaves with little capacity to accommodate a great deal of future growth. *Beaux Arts, Clyde Hill, Hunts Point, Woodway, and Yarrow Point.*
    - **Type C:** Free-Standing Cities and Towns (outside the contiguous urban growth area). *Buckley, Carbonado, Carnation, Darrington, Duvall, Eatonville, Enumclaw, Gold Bar, Granite Falls, Index, Monroe, North Bend, Roy, Skykomish, Snohomish, Snoqualmie, South Prairie, Stanwood, Sultan, and Wilkeson.*
- In the alternatives, Type A received a larger share of the geographic class distribution of population and employment growth than Types B and C (51 cities, 159 miles).
- **Unincorporated urban growth areas.** Areas within designated urban growth areas that are not within the boundaries of incorporated cities and towns (289 square miles).
  - **Rural Areas.** Lands outside of urban growth areas that are not designated as resource areas under the Growth Management Act (1528 square miles).
  - **Natural Resource Areas.** Include forests, agricultural lands, mining lands, and shorelines (3807 square miles). Note: The alternatives did not distribute additional population and employment in these areas.



## DEFINITION OF ALTERNATIVES

Using the regional geographies as the framework for development of the alternatives, the Regional Council's Growth Management Policy Board and Regional Staff Committee met monthly over a 10-month period to advise and provide direction to Regional Council staff. In September 2005, the Growth Management Policy Board took action to select growth distribution alternatives to be included in the environmental analysis (see *Chapter 4 – Definition of Alternatives*). The Regional Council's Executive Board took an action to proceed for the preferred growth alternative in March 2007. The preferred growth alternative and the other four conceptual alternatives are defined on the following pages.



### Preferred Growth Alternative

The Preferred Growth Alternative is a hybrid of the alternatives studied in the Draft Environmental Impact Statement, and accommodates future growth in a compact regional pattern. Particularly with the population figures, the Preferred Growth Alternative has more focus than current plans (Growth Targets Extended Alternative), with growth envisioned for the already densely urbanized regional geographies of metropolitan cities and core cities. The Preferred Growth Alternative is not as focused as the Metropolitan Cities Alternative, given that some impacts began to arise in the analysis when growth became too concentrated.

Similar to the Growth Targets Extended and Metropolitan Cities alternatives, the largest shares of the region's future growth would occur in the region's five major metropolitan cities: Seattle, Bellevue, Everett, Bremerton and Tacoma. Growth would also be focused into the region's core cities – those larger municipalities that are already envisioned as

important locations for regional concentrations of growth. In this alternative, considerable redevelopment could occur in the region's metropolitan and core cities, with most new jobs reinforcing these areas as major regional employment centers. Job growth would be accompanied by a significant concentration of new residential growth in a variety of types and styles including new high-rise and mid-rise apartments, condominiums and townhouses built near job centers and in areas close to high capacity transit systems.

In the Preferred Growth Alternative, centers in larger cities would play an important and increased role over time as places that accommodate growth. These areas would develop in and around traditional downtown main streets, town centers and neighborhood shopping areas, key transit stations, ferry terminals, park and ride facilities, and other transportation and service centers. They would provide local and regional services and amenities, and would likely experience substantial redevelopment and increased activity, becoming more significant regional job centers. Many new mid- and low-rise apartments, condominiums and townhouses could also be built in these areas, although likely at lower intensities and at a reduced scale when compared to development in the larger regional growth centers in metropolitan and core cities.

At a smaller scale, locally-designated city and town centers would also serve similar roles for small cities, providing services and housing that support vital and active communities, at intensities appropriate to smaller municipalities. Growth in unincorporated urban growth areas would be prioritized in areas that are affiliated for annexation into incorporated jurisdictions. In the Preferred Growth Alternative, significantly less residential growth would occur in the region's rural areas than the trend suggested in current plans.

The growth strategy continues to promote preserving existing Manufacturing and Industrial Centers. These are locations for intensive manufacturing, industrial and related uses. Manufacturing Industrial Centers, along with more active regional growth centers and city centers, can help the region to achieve a closer balance between jobs and housing within the counties and regional geographies, which can encourage people to live closer to their jobs and minimize long commutes.



The Preferred Growth Alternative responds to the following policy direction:

### **SUSTAIN THE EXISTING VISION 2020 POLICY**

- Focus growth in the urban growth area
- Within the urban growth area, concentrate growth in centers
- Protect rural and resource lands
- Minimize environmental impacts of growth
- Make efficient use of existing infrastructure and investments

### **VISION 2040 PROPOSED POLICY REFINEMENTS**

#### **Regional** – *Population and Employment.*

- More effectively distribute growth to and within the urban growth area
- Minimize rural developments
- Achieve a closer balance between jobs and housing within the counties and regional geographies
- Distinguish between different roles of regional geographies
- Support growth in subregional centers

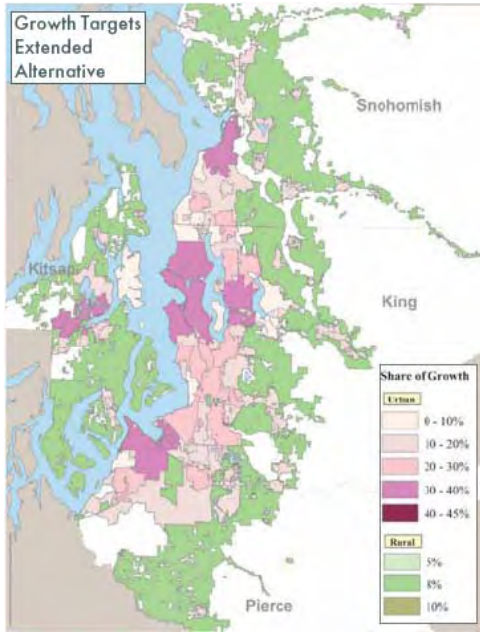
**Population:** *More effectively distribute growth to and within urban areas, minimize rural development, and focus more growth in cities with Regional Growth Centers and in King County.*

- Emphasizes places with Regional Growth Centers as primary places for population growth
- Metropolitan Cities: increases future role relative to year 2000 share
- Core Cities: increases future role
- Larger Cities: increases future role, emphasizes growth in subregional centers
- Small Cities: increases future role, slightly less than planned share. emphasizes smaller subregional and town centers
- Unincorporated Urban Growth Area: increases future role, less than planned share. focuses on existing urbanized areas especially areas affiliated for annexation
- Rural Areas: decreases future role; minimizes population growth, commensurate with existing and desired rural character

**Employment:** *Continue current policy for employment, emphasizing a concentrated regional pattern with focus on centers, pursue increased regional share of employment to Snohomish, Pierce and Kitsap counties.*

- Emphasizes places with Regional Growth Centers as primary places for job growth
- Metropolitan Cities: continued strong job growth; less than planned share, but with larger roles for Everett, Tacoma and Bremerton
- Core Cities: increases future role
- Larger Cities: increases future role; emphasizes growth in subregional centers
- Small Cities: increases future role, slightly less than planned share; emphasizes smaller subregional and town centers and commercial & retail districts to serve surrounding rural and unincorporated areas
- Unincorporated Urban Growth Area: focuses on existing urbanized commercial areas and future commercial and retail to serve maturing residential communities; recognizes regional Manufacturing and Industrial Centers
- Rural Areas: maintains current role; emphasizes appropriate rural economic development, commensurate with existing and desired rural character





## Growth Targets Extended Alternative

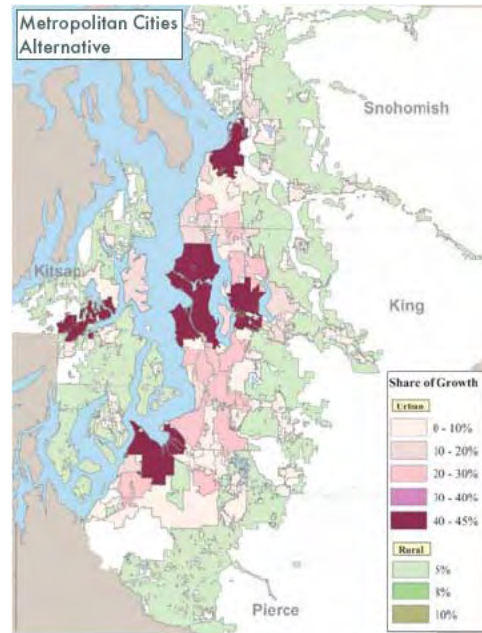
This alternative continues and emphasizes the population and employment growth patterns anticipated in current adopted growth targets, extended to match PSRC's 2040 regional growth forecasts. Future land use designations in local comprehensive plan maps provided a guide for the distribution of growth within regional geographies. Since these targets represent adopted public policy, which would presumably continue if no action were taken to alter the current regional growth vision, this is the No Action Alternative.

Under this alternative, cities and counties would continue to encourage growth to focus in urban centers around the region, as well as in unincorporated urban growth areas and rural areas. Many of the region's new jobs would locate in the largest cities, while medium-sized communities would also become larger employment centers. Many new apartments, condominiums and townhouses could be built in downtown areas near job centers. Extensive residential growth would continue in the region's unincorporated urban and rural areas.

## Metropolitan Cities Alternative

This alternative represents the most densely focused regional growth pattern among the alternatives. The largest shares of the region's future growth would occur in the region's five major cities: Seattle, Bellevue, Everett, Bremerton and Tacoma. Growth would also be focused into the region's core suburban cities — those larger suburban municipalities that are already envisioned as important locations for regional growth.

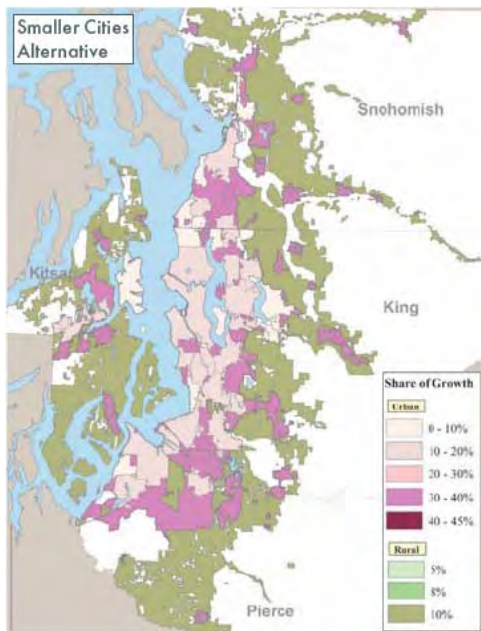
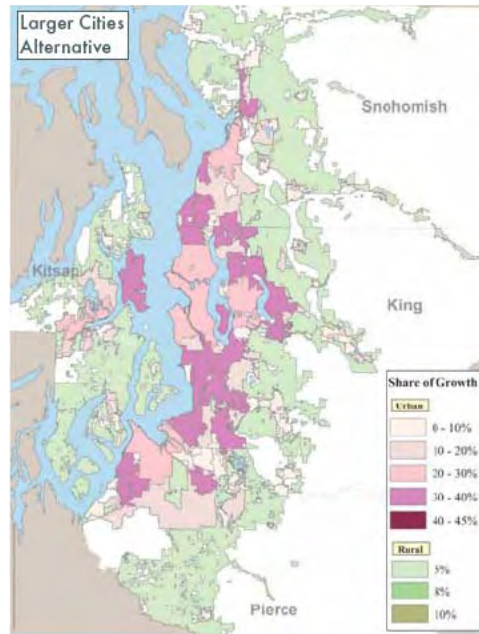
This alternative could result in considerable redevelopment in the region's largest cities, with most new jobs locating in major employment centers, along with new apartments, condominiums and townhouses built near job centers and in areas close to high-capacity transit systems. Much less growth would occur in the region's rural and unincorporated urban areas than is currently planned.



### Larger Cities Alternative

This alternative assumes suburban cities in the region would accommodate the bulk of future population and employment growth. Suburban cities with designated regional growth centers and other larger suburban cities could be the primary locations for new development.

Considerable redevelopment could occur in current town center and neighborhood shopping areas, and suburban cities could become major job centers. Many new apartments, condominiums and townhouses could also be built in these areas. Less growth could occur in the downtown areas of the region’s largest cities, unincorporated urban areas, and rural areas than is currently planned.



### Smaller Cities Alternative

This alternative has the most dispersed regional growth pattern. It would disperse growth within the region’s urban growth area — with smaller and freestanding suburban cities and the unincorporated urban growth areas receiving a sizable amount of population and employment growth.

Redevelopment in what are now small downtowns could produce many more significant local employment centers throughout the region. These smaller downtown areas could also develop with new apartments, condominiums and townhouses. Unincorporated urban growth areas — currently the outskirts of small cities and towns — could experience high amounts of new commercial and residential development. There could also be a high amount of single-family housing built in currently undeveloped rural areas.



**REGIONAL GROWTH ALTERNATIVES COMPARISON  
SHARE OF POPULATION AND EMPLOYMENT GROWTH, BY REGIONAL GEOGRAPHY (2000 TO 2040)**

2000–2040 Growth Allocations		Metropolitan Cities	Core Cities	Larger Cities	Small Cities	Unincorp. UGA	Rural Areas	TOTAL
<b>Preferred Growth Alternative</b>	Population	32%	21%	11%	9%	21%	7%	100%
		540,000	363,000	181,000	148,000	362,000	118,000	1,712,000
	Employment	42%	29%	9%	8%	9%	3%	100%
		511,000	352,000	110,000	101,000	113,000	31,000	1,218,000
<b>Growth Targets Extended Alternative</b>	Population	26%	17%	9%	10%	24%	13%	100%
		452,000	286,000	151,000	179,000	413,000	229,000	1,712,000
	Employment	45%	28%	7%	9%	8%	3%	100%
		545,000	347,000	80,000	109,000	98,000	41,000	1,219,000
<b>Metropolitan Cities Alternative</b>	Population	40%	25%	15%	10%	5%	5%	100%
		685,000	428,000	257,000	171,000	86,000	86,000	1,712,000
	Employment	45%	30%	10%	5%	5%	5%	100%
		549,000	366,000	122,000	61,000	61,000	61,000	1,219,000
<b>Larger Cities Alternative</b>	Population	20%	30%	30%	5%	10%	5%	100%
		342,000	514,000	514,000	86,000	171,000	86,000	1,712,000
	Employment	20%	30%	30%	5%	10%	5%	100%
		244,000	366,000	366,000	61,000	122,000	61,000	1,219,000
<b>Smaller Cities Alternative</b>	Population	10%	10%	5%	30%	35%	10%	100%
		171,000	171,000	86,000	514,000	599,000	171,000	1,712,000
	Employment	10%	10%	5%	30%	35%	10%	100%
		122,000	122,000	61,000	366,000	427,000	122,000	1,219,000

Notes: Totals may vary due to rounding. The percentages represent what was adopted by PSRC's Growth Management Policy Board adopted in September 2005. For each alternative, the shaded areas represent the geographies of focus. Please see the footnote on page 3 of the Executive Summary for more information on the total growth figures.

**How does the Preferred Growth Alternative relate to the VISION 2040 Regional Growth Strategy and Multicounty Planning Policies**

VISION 2040's regional growth strategy is comprised of two parts. First is a *growth concept* that builds on the foundation provided in VISION 2020, emphasizing the role of the urban growth area and urban centers in accommodating future population and employment. The second part contains *specific guidance* for the distribution of growth to regional geographies. The growth concept fits within the regional geographies framework, with growth focused into the urban growth area and into centers of different sizes and scales in all cities.

The environmental impact statement analyzes the specific guidance for a growth pattern contained in the Preferred Growth Alternative, which is commensurate with the analysis of the four alternatives included in the Draft Environmental Impact Statement. It is referred to as the Preferred Growth Alternative (or PGA in the figures) in the environmental review to ensure that it is analyzed and considered in a manner consistent with the alternatives in the Draft Environmental Impact Statement.

The multicounty planning policies in VISION 2040 are designed to implement the Preferred Growth Alternative, and the potential impacts and potential mitigation measures of the Preferred Growth Alternative are discussed in the sub-sections of *Chapter 5: Environmental Effect and Mitigation*.

As the primary policy statements for implementing the regional growth strategy, multicounty planning policies provide an integrated framework for addressing land use, economic development, transportation and other infrastructure, and environmental planning. The multicounty planning policies and Preferred Growth Alternative also guide countywide planning policies and local jurisdiction comprehensive plans, thereby helping to ensure that other planning documents are consistent the Preferred Growth Alternative (see *Chapter 7: Discussion of Multicounty Planning Policies*).



## C. Description of Analysis, Key Findings Regarding the Alternatives, and Areas of Uncertainty or Controversy

The subsequent bullets and table summarize the content, analytical framework, and key findings regarding potential impacts, and are drawn from each of the analysis chapters (*Chapters 5 and 6*).

### DESCRIPTION OF ANALYSIS AND APPROACH

- The alternatives, which are conceptual in nature, are analyzed at a level of detail that is appropriate for a regional plan. Therefore, the analysis is not site-specific and is conducted at a regional scale that considers major geographic features, typical current environmental conditions, and broad geographies such as counties or classes of cities.
- Constants in all of the alternatives include the same amount of forecasted growth, the same existing base of population and employment distributions, the currently designated urban growth area, same transportation network which is based on the adopted metropolitan transportation plan, Destination 2030, and each builds on the base of the policies and strategies adopted in VISION 2020.
- There is variability regarding how the alternatives could actually be implemented. Each alternative could accommodate population and employment growth at the local level within a range of actual on-the-ground patterns, depending on local decisions regarding development densities, policy choices, market conditions, and the particular land parcels on which growth occurs. Given the variability, and the long-range nature of the VISION, discussions of impacts and mitigations are described as potentials and therefore terms such as could, likely, or might are used interchangeably.
- Each analysis chapter is structured around a set of resources or characteristics that are unique to the element of the environment. However, the chapters generally contain the same sections. These are as follows:
  - Affected environment, including the physical setting, current trends, and regulatory setting.
  - Analysis of alternatives, including impacts common to all alternatives and analysis of each alternative.
  - Cumulative effects.
  - Potential mitigation measures.
  - Significant unavoidable adverse impacts.
- The analysis considers the likely environmental consequences that may occur directly, indirectly, or cumulatively following the adoption of an updated VISION. As a plan level action, the adoption of an updated VISION would have relatively few *direct* impacts; rather, it would have *indirect* impacts, with actions that others could take in response to the VISION and to future demands posed by increased growth (such as infrastructure or housing development) being the actions expected to have *direct* impacts. Also considered in the analysis are *cumulative* effects, which are other past, present, and reasonably foreseeable future actions that could alter the environment, regardless of what agency or person undertakes the action.

### KEY FINDINGS COMMON TO ALL ALTERNATIVES

- All of the alternatives will increase the number of people and jobs in the region by over 50 percent. This increase in human activity will have impacts. As anticipated by the Regional Council's Growth Management Policy Board when they adopted the alternatives for environmental review and analysis, the alternatives and their impacts present a wide, but realistic, range of distinct sets of choices for accommodating growth on a regional scale.
- The alternatives have different regional and localized impacts, both topically and geographically, because they vary the amount of growth that occurs in given geographies and alter the broad regional pattern of growth. The differences in localized impacts are dependent on where and at what levels the growth occurs. Localized impacts include higher levels of traffic, noise, and air quality pollution, or the amount of development that could occur in or near currently undeveloped lands. Depending on where growth occurs, more development could alter or remove natural landscapes, increase impervious surfaces, or affect properties with historic significance. For local governments, levels of growth could require providing different levels of public services and facilities than currently anticipated in adopted plans.



- The alternatives' regional and localized impacts present a complex set of tradeoffs. For example, some alternatives concentrate growth in areas that would potentially expose more people to higher noise and traffic levels by increasing densities in already dense areas but at the same time keep growth away from pristine habitat areas. Some alternatives are estimated to result in lower region-wide air quality emissions but higher concentrations of emissions closer to major concentrations of growth.
- Generally, alternatives with a more focused growth pattern (such as Metropolitan Cities, Preferred Growth, and Larger Cities) have potentially lower overall environmental impacts, but high growth areas could have higher localized impacts with higher development impacts on people and/or services. Because less land would likely be required to meet growth needs, growth in rural or natural resource areas could be reduced or avoided. Compact growth also reduces the regional levels of automobile use and congestion, and improves transit use, carpooling, walking and bicycling, which in turn lowers air pollution, water pollution, and energy use. Redevelopment of older properties to today's standards could also improve localized conditions and environmental performance in a wide array of areas, ranging from transportation to energy, hazardous materials, and stormwater. Regionally, governments could provide public services more efficiently and public services and other cultural and educational amenities could be closer to more people. However, the localized costs for providing services and facilities in the highest growth areas would be concentrated, with some governments bearing higher costs than others.
- Alternatives with a more dispersed growth pattern (such as Smaller Cities or Growth Targets Extended) have potentially higher overall environmental impacts, and higher impacts on natural resources and/or plants and animals. Because growth would be more spread out throughout the region, some of the localized impacts of growth would be less intensive for any given community. With growth spread through the region, there could be more pressure to develop in rural and resource areas. Regionally, higher levels of automobile use, higher levels of congestion, and lower levels of transit use and other travel modes are estimated. There could also be less pressure to redevelop underutilized areas within existing cities. The costs of providing public services would likely be higher, but would be spread among governments throughout the region.
- The potential impacts or benefits to people and/or services involve more tradeoffs than the potential impacts on resources, plants and animals. For example, denser housing can have impacts on existing residents but may provide additional housing opportunities for new residents. Similarly, spreading growth throughout the urban area may allow more people to live in single-family homes, but it can also potentially increase the number of families that need to have additional automobiles. On the other hand, growth on aquifer recharge lands, increases in air pollution emissions, or development adjacent to, or in, significant habitat areas create impacts to natural resources, plants and animals that are more technically straightforward to judge.

## KEY FINDINGS REGARDING EACH ALTERNATIVE

The Preferred Growth Alternative shares, and intensifies, some of the localized impacts of current plans (Growth Targets Extended Alternative) for the region's major cities (the metropolitan cities), including intensified development and activity levels, affecting the amount of traffic, noise, and the need for public services in areas where growth would be focused. The growth patterns of the Preferred Growth Alternative could also provide economies of scale for brownfields redevelopment, and the higher potential need for retrofits to older infrastructure, while reducing expansion of infrastructure in less developed or rural areas. It could have impacts on already degraded urban waterways, and result in potential exposure to traffic, air pollution, noise, and hazardous waste sites for residents and employees in these areas.

The Preferred Growth Alternative is similar to the other focused growth alternatives discussed in the Draft Environmental Impact Statement (Metropolitan Cities and Larger Cities) on measures such as the amount of vehicle miles traveled, delay, trip times, and levels of air pollution emissions at the regional level. It could require less land than under current plans (Growth Targets Extended Alternative) to meet population and employment growth needs, resulting in lower levels of development and associated infrastructure in the region's undeveloped areas. The Preferred Growth Alternative also has some of the lowest estimates for impervious surface coverage at the regional level.

For the region's general population as well as its minority and low-income residents, the Preferred Growth Alternative is likely to have some of the best access among employment, services, and residences through transit. It also has the potential for more multifamily housing development, and an increased potential for providing more affordable housing units in areas with better transit service.



- For all environmental analysis topic areas, the Preferred Growth Alternative falls within the range of the four conceptual growth alternatives analyzed in the Draft Environmental Impact Statement in terms of potential environmental effects. And, on nearly all measures, the Preferred Growth Alternative performs better than current plans (Growth Targets Extended).
- Under the ***Preferred Growth Alternative***, planned growth would be focused inside the urban area and, within the urban area, in cities with regional and subregional centers. Growth in unincorporated urban areas is envisioned as occurring in the affiliated annexation areas, and growth in rural areas is minimized as compared to current plans. The focus of growth creates a better jobs-housing balance than exists today in all of the regional geographies, including in unincorporated urban and rural areas.
  - This alternative shares, and intensifies, some of the localized impacts of Growth Targets Extended (described below) for metropolitan cities, including density increases, economies of scale for brownfields redevelopment, and the higher potential need for retrofits to older infrastructure.
  - The density increases would occur in already denser urban areas, which could impact existing neighborhoods. Depending on localized, project-level mitigation activities, it could impact already degraded urban waterways, and result in potential exposure to traffic, air pollution, noise, and hazardous waste sites for residents and employees in these areas.
  - This alternative is similar to the other focused growth alternatives (Metropolitan Cities and Larger Cities) on measures such as the amount of vehicle miles traveled, delay, trip times, and levels of air pollution emissions at the regional level.
  - This alternative requires less land than under current plans (Growth Targets Extended) to meet population and employment growth needs, resulting in lower levels of development and associated infrastructure in the region's more pristine areas. The alternative also has some of the lowest estimates for impervious surface coverage at the regional level.
  - For the region's general population as well as its minority and low-income residents, this alternative is likely to have some of the highest access between employment, services, and residences through transit. It also has the potential for more multifamily housing development, and an increased potential for providing more affordable housing units in areas with better transit service.
- The ***Growth Targets Extended Alternative*** allocates residential growth to the densest urban areas and the least dense outlying areas, while concentrating employment growth into the densest urban areas. This results in the greatest distances between jobs and housing. While having some of the characteristics of concentrated growth, the alternative also has a relatively high level of growth in the outlying areas, thereby sharing some of the characteristics of dispersed growth.
  - This alternative is estimated to have the highest adverse impacts on the transportation system, the highest air pollution emissions, and some of the highest potential impacts to the region's natural resources.
  - At the same time, it also provides many of the benefits of compact growth, such as placing a high number of the region's residents and employees near key public services, major transportation networks, and cultural and historic resources (which, if protected, provides an opportunity for access and association). This allocation also allows more land and economic development in the rural area than some of the others, which may be a benefit to some residents and businesses in these areas.
  - This approach has mixed results regarding serving the region's minority and low-income residents. This approach results in a concentrated commercial land use pattern in areas that have higher levels of transit service. However, because it spreads residents throughout the region, it potentially makes the connection between jobs, homes and services more difficult to serve by transit.
  - This alternative has the potential for an economy of scale for positive actions such as brownfields redevelopment, and potentially increased revenue for retrofit and upgrades to existing, older infrastructure.
- The ***Metropolitan Cities Alternative*** results in the most focused growth pattern, allocating residential and employment growth to the densest urban areas, and decreasing growth in the least dense outlying areas as compared to Growth Targets Extended.
  - This alternative shares, and intensifies, some of the localized impacts of the Preferred Growth and Growth Targets Extended Alternatives for metropolitan cities, including crowding, economies of scale for brownfields redevelopment, and the higher potential need for retrofits to older infrastructure.



- There would likely be much greater density in already denser urban areas, which could impact existing neighborhoods. It would have perhaps the highest impact on already degraded urban waterways, and result in the highest levels of potential exposure to traffic, air pollution, noise and hazardous waste sites for residents and employees in these areas.
- This alternative is estimated to result in the lowest levels of regional vehicle use, higher transit ridership levels, lower levels of congestion and delay and lower levels of air pollution emissions at the regional level. This alternative requires less land to meet population and employment growth needs, resulting in lower levels of development and associated infrastructure in the region's more pristine areas.
- For the region's general population as well as its minority and low-income residents, this alternative is likely to have better access between employment, services, and residences through transit. It also has the potential for more multifamily housing development, and an increased potential for providing more affordable housing units in areas with better transit service than the other alternatives.
- The **Larger Cities Alternative** results in the third most focused growth pattern, allocating residential and employment growth in the larger suburban areas, with more moderate amounts of growth in the densest urban areas as compared to the Metropolitan Cities and Preferred Growth Alternatives.
  - This alternative shares some of the potential benefits of the Metropolitan Cities and Preferred Growth Alternatives with high transit levels, lower levels of congestion and delay, lower levels of air pollution emissions at the regional level, and lower levels of development and infrastructure in or near the region's more pristine areas.
  - Growth in the larger cities would result in higher levels of urbanization than exists today, and higher localized impacts such as traffic, air quality, noise, and redevelopment.
  - This alternative's impacts diverge from the Metropolitan Cities and Preferred Growth Alternatives primarily in its impacts within the region's densest areas. By shifting population and employment growth from the metropolitan cities to the largest cities, some transportation performance measures improve, and air pollution emissions decrease, and the potential intensification of metropolitan cities is reduced and spread over many more cities (meaning, impacts in more areas, but at a potentially lower level).
  - For the region's minority and low-income residents, this alternative is likely to be fairly similar to the Metropolitan Cities and Preferred Growth Alternatives. Differences could exist in housing affordability and transit access between residences and jobs and services.
- The **Smaller Cities Alternative** results in the most dispersed growth pattern, allocating residential and employment growth to the smallest and freestanding suburban cities and to the outlying areas, and significantly reducing growth in the dense urban areas as compared to the other three alternatives.
  - This alternative shares, and is estimated to increase, some of the regional adverse impacts of Growth Targets Extended, including high impacts on the transportation system, high levels of air pollution emissions, and the highest potential impacts to the region's natural areas and species. This alternative has the highest amount of growth allocated close to the region's urban growth area boundary and near natural resources areas, creating the highest potential for conversion of land.
  - This alternative's impacts diverge from Growth Targets Extended in that it allocates little growth to the region's densest areas, meaning the adverse and positive impacts described for the Metropolitan Cities, Preferred Growth, and Larger Cities alternatives are not likely to occur in these denser areas. Conversely, localized impacts would occur in small cities and towns, in the unincorporated urban growth area, and in the rural area.
  - The impacts to public services and facilities are estimated to be the highest under this alternative, with the highest anticipated need for extensions of services and facilities into areas that are currently not planning for major improvements or investments, and with lesser potential for economies of scale.
  - For minority and low-income residents, this alternative results in a commercial pattern that is the most difficult to serve by transit. Also, public services and facilities are likely to be more spread throughout the region. These factors may increase costs and create difficulties for accessing employment and services.





## DESCRIPTION OF ANALYSIS AND SUMMARY OF POTENTIAL IMPACTS TABLE

Note: Names of the regional geographies are shown in lower case and shortened (i.e., metropolitan cities is referred to as metro cities, larger cities is referred to as larger cities, etc.) and the names of alternatives are shown in upper case.

### 5.1 — Population, Employment, and Housing

#### Contents and Analysis

This chapter describes historical and current population, employment and housing characteristics in the central Puget Sound region. Some highlights regarding how these characteristics could potentially be impacted under the growth distribution alternatives are noted below.

#### Impacts Common To All

- All of the alternatives increase the number of people, jobs, and housing in the region. The alternatives vary by location in terms of mix of uses, allocations to each county, and allocations to the regional geographies.
- The alternatives vary the mix of population and employment allocated to each county. Alternatives that allocate comparable amounts of both population and employment growth to given geographies are likely to result in better job-housing balances.
- Where growth occurs, the pattern and type of housing and employment sites would vary by alternative. The alternatives that focus growth the most would likely involve more multifamily or mixed-use developments, whereas more alternatives that disperse growth could allow more single-family development.

Characteristics of Alternatives/ Preferred Growth Alternative	Distinct Impacts Growth Targets Extended Alternative	Metropolitan Cities Alternative	Larger Cities Alternative	Smaller Cities Alternative
<ul style="list-style-type: none"> <li>• High levels of growth in cities. A share of growth, particularly employment, to metro and core cities outside of King County to address jobs-housing balance.</li> <li>• Population and employment focused in metro cities, core cities, and then unincorporated urban areas.</li> <li>• Growth in unincorporated urban areas occurs in affiliated annexation areas.</li> <li>• Concentrates <u>growth</u> inside the UGA and within the UGA inside cities, with the majority inside cities with regional centers.</li> <li>• Employment growth in the larger and small cities, as well as in unincorporated urban areas would double by the year 2040.</li> </ul>	<ul style="list-style-type: none"> <li>• Second highest levels of population and employment growth in Kitsap, Pierce &amp; Snohomish.</li> <li>• Population distributed throughout region, with focus in metro cities, as well as unincorporated urban and rural areas (higher than other alternatives). Employment focused in metro and core cities. Rural is lower than in other alternatives.</li> <li>• The amount of population in the small cities and unincorporated urban areas would double by the year 2040 as compared to the amount that existed in the year 2000.</li> </ul>	<ul style="list-style-type: none"> <li>• Highest levels of population &amp; employment growth in King.</li> <li>• Population and employment focused in metro cities, core cities, and larger cities.</li> <li>• Population shifted to metro cities, core cities, and larger cities from unincorporated urban and rural areas. Employment very similar to Growth Targets Extended, meaning little shifting of allocations as under Growth Targets.</li> <li>• The amount of employment in larger cities and rural areas would double by the year 2040.</li> </ul>	<ul style="list-style-type: none"> <li>• Second highest levels of population &amp; employment growth in King.</li> <li>• The amount of employment in Kitsap &amp; Snohomish would double by 2040.</li> <li>• Population and employment focused in core and larger, then metro cities.</li> <li>• Population shifted to core and larger cities from unincorporated urban, rural, then metro cities.</li> <li>• Employment shifted from metro cities.</li> <li>• The amount of population in core cities would double by the year 2040.</li> <li>• The amount of employment in larger cities would grow by four times by the year 2040.</li> <li>• The amount of employment in unincorporated urban and rural areas would double by the year 2040.</li> </ul>	<ul style="list-style-type: none"> <li>• Highest levels of population &amp; employment growth in Kitsap, Pierce &amp; Snohomish.</li> <li>• The amount of employment in Kitsap, Pierce &amp; Snohomish more than double by 2040.</li> <li>• Population and employment focused in small cities and unincorporated urban areas.</li> <li>• Population and employment shifted to small cities and unincorporated urban areas from metro cities and core cities.</li> <li>• The amount of population in small cities would triple, and employment would grow by almost four times by the year 2040.</li> <li>• The amount of population in unincorporated urban would more than double and the amount of employment would grow by over four times by the year 2040.</li> <li>• The amount of employment in rural areas would triple by 2040.</li> </ul>



**Common Impacts to Housing**

- All alternatives have varying levels of potential for displacement of employment sites and housing through redevelopment. This would typically occur in urban areas that today have less intensive development, and where capital costs are comparatively low. However, new development could create additional supply of jobs and housing sites.
- All the alternatives would likely produce price pressure on housing costs. All else held constant, housing costs are typically lower, per-unit, for multifamily versus single-family. Alternatives that result in higher levels of non-single-family homes (multifamily, townhouses, condominiums) may allow for a wider range of homeownership opportunities at varying price levels.
- Costs for housing, and affordable housing, are based on a complex set of site-specific factors. Redevelopment and infill are complex and urban land prices are high. At the same time, cost of living factors (particularly the potential for additional transportation costs) can be higher in outlying areas.

**Distinct Impacts to Housing**

<b>Preferred Growth Alternative</b>	<b>Growth Targets Extended Alternative</b>	<b>Metropolitan Cities Alternative</b>	<b>Larger Cities Alternative</b>	<b>Smaller Cities Alternative</b>
<ul style="list-style-type: none"> <li>• Focus of population into metropolitan and core cities, and in unincorporated urban areas would lead to mix of multifamily and infill development, as well as single family homes and townhouses.</li> </ul>	<ul style="list-style-type: none"> <li>• Potentially high amounts of multifamily in denser urban areas and single-family in less dense outlying areas.</li> </ul>	<ul style="list-style-type: none"> <li>• Likely the highest amount of multifamily housing of any of the alternatives, although in cities that are used to having this type of housing development.</li> </ul>	<ul style="list-style-type: none"> <li>• Housing met through a mix of single- and multifamily housing (potentially lower amounts of multifamily than under Metropolitan Cities, and in cities less used to this type of housing development).</li> </ul>	<ul style="list-style-type: none"> <li>• Potentially highest amount of traditional single-family housing.</li> </ul>

**5.2 — Land Use**

**Contents and Analysis**

This chapter discusses existing and planned land use policies and development patterns, as well as the region’s overall urban and rural form. Some highlights regarding potential impacts to these policies and development patterns under the growth distribution alternatives are noted below.

**Impacts Common To All**

- All of the alternatives will change land use conditions in some locations in the region. Where large amounts of growth are allocated, there are potential adverse and positive impacts. These could include crowding, densification, and changes to existing neighborhoods, but also allow for increased amenities, a wider range of lifestyle options and localized revitalization.
- The alternatives vary in terms of their impacts to overall development patterns in the region, consumption of land in less-developed areas, and the future urban to suburban to rural regional form.
- The allocations will affect how many jurisdictions could need to revisit their comprehensive plans to ensure that they are planning to accommodate a sufficient amount of growth.
- The land use changes would typically be most intensive in the regional geographies that are the focus of the alternative’s growth pattern. The Growth Targets Extended Alternative would distribute growth among a broader array of geographic classes, while the others could more than double the amount of growth for some cities.

**Distinct Impacts**

<b>Preferred Growth Alternative</b>	<b>Growth Targets Extended Alternative</b>	<b>Metropolitan Cities Alternative</b>	<b>Larger Cities Alternative</b>	<b>Smaller Cities Alternative</b>
<ul style="list-style-type: none"> <li>• Densification in corridors and nodes through infill and redevelopment, and in currently less-developed unincorporated urban areas.</li> <li>• The regional land use pattern would consist of highly developed cities (metropolitan and core cities), a</li> </ul>	<ul style="list-style-type: none"> <li>• Overall densification throughout region, especially in the most and least developed areas.</li> <li>• Second most consumption of land in the unincorporated urban and rural areas through new development.</li> <li>• Changes to region’s urban and rural form are widespread.</li> </ul>	<ul style="list-style-type: none"> <li>• Densification in already heavily developed areas through redevelopment of less dense properties. Less change elsewhere than under Growth Targets Extended.</li> <li>• Metro cities would likely need to revise plans to allow higher-intensity</li> </ul>	<ul style="list-style-type: none"> <li>• Densification of suburban areas through redevelopment of less dense properties as well as new development. Less change elsewhere than under Growth Targets Extended.</li> <li>• Larger cities and core cities could need to revise plans to allow higher</li> </ul>	<ul style="list-style-type: none"> <li>• Densification in outlying areas through new development, and much less change in currently denser urban areas than the other alternatives.</li> <li>• Small cities, which typically have less high-density development, would likely need to substantially revise</li> </ul>



<p>second set of moderate density cities (the larger cities), and other areas of lower density urban and/or rural character</p> <ul style="list-style-type: none"> <li>• Metro cities and core cities would likely need to revise plans to allow higher-intensity development in local areas targeted for growth.</li> <li>• Changes to residential nature of unincorporated areas with additional job growth.</li> <li>• There would be the need to plan for some additional growth in metro cities, and to core cities as a group. Need to plan for less growth in unincorporated urban and, to a greater extent, in rural areas.</li> <li>• Estimates of proximity to transit (population and employment within ¼ mile of existing or planned transit routes) show over 120,000 more people living near transit than under Growth Targets Extended, the no action alternative.</li> <li>• Estimates of proximity to the urban growth area boundary (population and employment within ¼ mile of either side of currently designated boundaries) show over 40,000 less people living near the boundary than under Growth Targets Extended.</li> </ul>	<p>Land use could potentially change in all parts of the region from what exists today.</p> <ul style="list-style-type: none"> <li>• All jurisdictions might need to plan for more residential growth than they currently have planned for in their local plans, based on their adopted residential growth targets for 2022/2025.</li> <li>• Proximity to transit estimated to be the second lowest, with about 6,000,000 people living and working close to transit routes.</li> <li>• Proximity to the urban growth area boundary estimated to be the second highest, with 720,000 people living and working close to the boundary.</li> </ul>	<p>development in local areas targeted for growth.</p> <ul style="list-style-type: none"> <li>• Least consumption of land in the unincorporated urban and rural areas.</li> <li>• The most differentiation would exist between the region's urban and rural areas. Land use in the less developed parts of the region might not change significantly from what exists today.</li> <li>• Shifts in residential allocations from Growth Targets Extended means that fewer jurisdictions, including metro cities, core cities and larger cities, might need to plan for more growth than they currently have planned for in their local plans.</li> <li>• There could be the need to plan for much less growth in unincorporated urban and rural areas, and only a little more in small cities than adopted targets.</li> <li>• Proximity to transit estimated to be highest, with almost 450,000 more people living and working near transit than Growth Targets Extended.</li> <li>• Proximity to the urban growth area boundary estimated to be the lowest, with about 95,000 fewer people living and working near the boundary than Growth Targets Extended.</li> </ul>	<p>amounts of growth.</p> <ul style="list-style-type: none"> <li>• Least consumption of land in the unincorporated urban and rural areas.</li> <li>• The region would have two tiers of urban, and much less developed areas. Land use in these less developed parts of the region might not change significantly from what exists today.</li> <li>• Shifts in residential allocations from Growth Targets Extended means that only core cities and (especially) larger cities might need to plan for more growth than they currently have in their local plans.</li> <li>• There could be the need to plan for only a little more in metro cities, less in small cities, much less in unincorporated urban, and less in rural areas than adopted targets.</li> <li>• Proximity to transit estimated to be second highest, with almost 300,000 more people living and working near transit than Growth Targets Extended, but 150,000 fewer than Metropolitan Cities.</li> <li>• Proximity to the urban growth area boundary estimated to be second lowest, with about 70,000 fewer people living and working near the boundary than Growth Targets Extended, but about 25,000 more than Metropolitan Cities.</li> </ul>	<p>their plans to accommodate higher amounts of growth.</p> <ul style="list-style-type: none"> <li>• Most consumption of land in the unincorporated and rural areas through new development.</li> <li>• The least differentiation would exist between the region's urban to rural areas. Land use in the most urban parts of the region might not change significantly from what exists today.</li> <li>• Shifts in residential allocations from Growth Targets Extended means only small cities, unincorporated urban areas and, to a lesser extent, rural areas could need to plan for more growth than they currently have in their local plans. Instead, metro cities, core cities, and larger cities might need to plan for much less.</li> <li>• Proximity to transit estimated to be the lowest, with over 250,000 fewer people living and working near transit than Growth Targets Extended and over 700,000 fewer than Metropolitan Cities.</li> <li>• Proximity to the urban growth area boundary estimated to be the highest, with over 300,000 more people living and working near the boundary than Growth Targets Extended, and about 400,000 more than Metropolitan Cities.</li> </ul>
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### 5.3 — Transportation

#### Contents and Analysis

This chapter describes the region’s existing and planned transportation services and infrastructure. Some highlights are noted below regarding how the growth distribution alternatives are served by, and impact, the planned system based on a wide range of transportation performance indicators.

#### Impacts Common To All

- Future transportation conditions under each of the alternatives are based on the region’s existing long-range transportation plan, Destination 2030 (which plans for transportation out to the year 2030). The alternatives vary in their impacts on the planned transportation system, and each could require some level of change regarding the mix or timing of investments and programs that are currently adopted in Destination 2030.
- A number of transportation performance indicators are considered in the analysis, and most are estimated to be different in 2040 than they are in the base year 2000.
  - With the increase in population and employment, overall trip making in the region is estimated to increase by approximately 72 percent by the year 2040 under all of the alternatives. While overall trips are similar among the alternatives, distinctions exist in terms of trip times and distances (see the subsequent “Distinct Impacts” section). The choice of modes (i.e., driving, transit, nonmotorized) is also more variable than overall number of trips, and therefore dependent on the alternative. This is reflected in the range of estimated increases in trips in the following modes:
    - o Single-occupancy vehicle trips are estimated to increase between 63 – 72 percent by the year 2040, but are estimated to constitute a slightly lower share of overall trips.
    - o Transit trips are estimated to increase between 76 – 146 percent by the year 2040, but are estimated to constitute a slightly higher share of overall trips.
  - With increased trip making in all modes, the amount of total vehicle miles traveled in the region is estimated to increase by between 49 to 67 percent by the year 2040. The choice of facility (i.e., freeway or arterial) is variable among the alternatives:
    - o Vehicle miles traveled on the freeway system are estimated to increase 43 – 53 percent.
    - o Vehicle miles traveled on the arterial system are estimated to increase 53 – 81 percent.
  - Reflecting the increased number of trips, mode choices, and total miles traveled, the total vehicle hours traveled are also estimated to increase by between 63 to 107 percent by the year 2040. Vehicle hours traveled has a wider range of variability (reflecting more distinctions among the alternatives for this measure) than miles traveled, both for total hours and for hours on freeways or arterials:
    - o Vehicle hours traveled on the freeway system are estimated to increase 48 – 99 percent.
    - o Vehicle hours traveled on the arterial system are estimated to increase 66 – 111 percent.

#### Distinct Impacts

Preferred Growth Alternative	Growth Targets Extended Alternative	Metropolitan Cities Alternative	Larger Cities Alternative	Smaller Cities Alternative
<ul style="list-style-type: none"> <li>• The improved job-housing balance at the county and regional geography level improves all transportation performance indicators as compared to Growth Targets Extended.                             <ul style="list-style-type: none"> <li>– Shorter work trip distances and work trip times</li> <li>– Middle of the alternatives for average non-work trip distances and non-work trip times.</li> </ul> </li> <li>• Closest to other focused growth alternatives for vehicle miles and hours traveled, delay, performing most similarly on</li> </ul>	<ul style="list-style-type: none"> <li>• In part because of the spatial mismatch and distances between population and employment centers (and therefore a mismatch between trip origins and destinations), this alternative is estimated to result in the longest trip distances and times:                             <ul style="list-style-type: none"> <li>– Longest average work trip distances.</li> <li>– Longest average non-work trip distances (similar to Smaller Cities).</li> <li>– Longest average work trip times.</li> </ul> </li> <li>• Similarly, the allocations are expected to result in</li> </ul>	<ul style="list-style-type: none"> <li>• The concentration of the greatest shares of both population and employment into the fewest locations creates the most proximity between trip origins and destinations. This is estimated to result in much lower trip distances and times compared to Growth Targets Extended:                             <ul style="list-style-type: none"> <li>– Shortest average work and non-work trip distances (similar to Larger Cities).</li> <li>– Shortest average work and non-work trip times (similar to Larger Cities).</li> </ul> </li> <li>• The allocations, and the ability to make</li> </ul>	<ul style="list-style-type: none"> <li>• While still focused in the urban area, this alternative spreads population and employment over a larger area than under Metropolitan Cities, although it is more focused than Growth Targets Extended or Smaller Cities. This alternative also puts new growth closer to residential concentrations that existed in 2000. These factors are estimated to result in lower trip distances and times:                             <ul style="list-style-type: none"> <li>– Shortest average work and non-work trip distances (similar to Metropolitan</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• This alternative allocates the most amount of growth in the outlying areas of the alternatives. However, population and employment allocations are comparable, creating less of a mismatch between origins and destinations as compared to Growth Targets Extended, which results in the following:                             <ul style="list-style-type: none"> <li>– Longest average non-work trip distances (similar to Growth Targets Extended).</li> <li>– Longest average non-work trip times.</li> </ul> </li> <li>• Even though trip distances and times</li> </ul>





<p>these measures to Metropolitan Cities.</p> <ul style="list-style-type: none"> <li>• The allocations of growth to metro cities and core cities, where transit service is most available, results in the second highest estimated percentage of trips being made by transit, and is estimated to result in the second highest percentage of "activities" (such as retail, entertainment, schools) being accessible by transit. For both sets of measures, the Preferred performs better than Growth Targets Extended.</li> <li>• Allocations to areas with higher levels of bike trails, lanes, and paths, as well as sidewalks, results in this alternative as estimated to have the second highest percentage of walking or biking trips.</li> </ul>	<p>the highest amount of miles and hours spent traveling on both freeways and on arterials (although miles on arterials are similar to Smaller Cities). Growth Targets Extended also has the highest amount of delay on both arterials and freeways.</p> <ul style="list-style-type: none"> <li>• The allocations of residential growth to metro cities, as well as the long trip times and high delay, result in this alternative having the second highest percentage of trips being made by transit.</li> </ul>	<p>trips using alternative modes (see next set of bullets), result in this alternative having the lowest amounts of arterial miles traveled (although at levels similar to Larger Cities).</p> <ul style="list-style-type: none"> <li>• The allocations of growth to metro cities and core cities, where transit service is most available, results in the highest estimated percentage of trips being made by transit. In addition, the concentration of growth is estimated to result in the highest percentage (by a large margin) of "activities" (such as retail, entertainment, schools) being accessible by transit.</li> <li>• For similar reasons, this alternative is estimated to have the highest percentage of walking or biking trips.</li> </ul>	<p>Cities).</p> <ul style="list-style-type: none"> <li>– Shortest average work and non-work trip times (similar to Metropolitan Cities).</li> <li>– The allocations under this alternative result in the lowest amounts of total vehicle miles traveled. Interestingly, this alternative is similar to aspects of both Smaller Cities and Metropolitan Cities regarding vehicle miles traveled: <ul style="list-style-type: none"> <li>– Lowest vehicle miles traveled on freeways (similar to Smaller Cities).</li> <li>– Lowest vehicle miles traveled on arterials (similar to Metropolitan Cities).</li> <li>– Lowest vehicle hours traveled and the lowest total amount of delay.</li> </ul> </li> <li>• Similar to Metropolitan Cities (but lower), this alternative allocates growth to areas that have higher levels of transit service. This, with the concentration of jobs and residences close together, leads to higher percentages of trips being made using transit, walking and biking.</li> </ul>	<p>are some of the highest, the impacts of the trips are more evident on the region's arterials rather than its freeways :</p> <ul style="list-style-type: none"> <li>– Lowest vehicle miles traveled on freeways (similar to Larger Cities).</li> <li>– Lowest vehicle hours traveled and lowest total hours of delay on freeways.</li> <li>• The allocations under this alternative result in the lowest accessibility of activities by transit, the lowest percentages of trips being made by transit, and the lowest percentage of trips being made by walking or biking.</li> </ul>
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## 5.4 — Air Quality

### Contents and Analysis

Air pollution comes from many different sources, including industry, transportation, construction, and agriculture. It affects both human health and the natural environment. Some highlights are noted below regarding how the growth distribution alternatives could impact air quality in relation to a number of pollutants, including particulate matter, carbon monoxide, ozone, toxics and greenhouse gases.

#### Impacts Common To All

- All of the alternatives would increase urban area activities that create air pollution. This includes pollution from construction activities, commercial and industrial actions, shipping, aviation, and surface transportation.
- Air pollution emissions from motor vehicles are estimated based on travel demand model results. Impacts from other sources are assessed qualitatively. Since the alternatives would affect the projected demand for transportation, which directly causes pollution from vehicle emissions, the alternatives have different air quality results.
- Due to technological improvements (cleaner fuels and vehicles) assumed by the air quality model in forecast years (between 2000 and 2040), emission estimates in the year 2040 are lower than current rates. With these assumptions, where emissions standards exist, none of the alternatives is forecast to cause them to be exceeded.

#### Distinct Impacts

Preferred Growth Alternative	Growth Targets Extended Alternative	Metropolitan Cities Alternative	Larger Cities Alternative	Smaller Cities Alternative
<ul style="list-style-type: none"> <li>• Given transportation results for total vehicle miles traveled, this alternative is estimated to have air quality emissions that are better than Growth Targets Extended, and close to the other focused growth alternatives.               <ul style="list-style-type: none"> <li>– Near Growth Targets Extended on carbon monoxide.</li> <li>– The Preferred Growth Alternative performs close to the other focused growth alternatives for emissions of volatile organic compounds, nitrogen oxides, PM<sup>2.5</sup> and carbon dioxide.</li> </ul> </li> <li>• On coarser particulate matter (known as PM<sub>10</sub>), which is estimated in three specific industrial areas, the results are the second lowest in all three areas.</li> </ul>	<ul style="list-style-type: none"> <li>• Given some of the highest transportation results for vehicle miles and hours traveled, as well as hours of delay, this alternative is estimated to have the highest levels of air quality emissions for a number of pollutants:               <ul style="list-style-type: none"> <li>– Highest carbon monoxide.</li> <li>– Highest ozone emissions, but at levels similar to Smaller Cities.</li> <li>– Highest fine particulate emissions (known as PM<sub>2.5</sub>), but at levels similar to Smaller Cities.</li> <li>– Highest carbon dioxide emissions (a greenhouse gas), but at levels similar to Smaller Cities.</li> </ul> </li> <li>• On coarser particulate matter (PM<sub>10</sub>), the results are more varied:               <ul style="list-style-type: none"> <li>– Second lowest in Kent.</li> <li>– Second highest in the Duwamish area.</li> <li>– Second highest in Tacoma.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Given some of the lowest transportation results, this alternative is estimated to have some of the lowest levels of emissions:               <ul style="list-style-type: none"> <li>– Second lowest in carbon monoxide.</li> <li>– Lower ozone emissions, at levels similar to Larger Cities.</li> <li>– Lower fine particulate emissions (PM<sub>2.5</sub>), but at levels similar to Larger Cities.</li> <li>– Lower carbon dioxide emissions, but at levels similar to Larger Cities.</li> </ul> </li> <li>• On coarser particulate matter (PM<sub>10</sub>), the concentration of growth near the three specific industrial areas results in this alternative having the highest levels of emissions in the Duwamish area and in Tacoma.</li> </ul>	<ul style="list-style-type: none"> <li>• Given some of the lowest transportation results, this alternative is estimated to have some of the lowest levels of emissions:               <ul style="list-style-type: none"> <li>– Lowest in carbon monoxide.</li> <li>– Lower ozone emissions, at levels similar to Metropolitan Cities.</li> <li>– Lower fine particulate emissions (PM<sub>2.5</sub>), but at levels similar to Metropolitan Cities.</li> <li>– Lower carbon dioxide emissions, but at levels similar to Metropolitan Cities.</li> </ul> </li> <li>• On coarser particulate matter (PM<sub>10</sub>), the movement of growth from the metro cities to the larger cities results in this alternative having the highest levels of emissions in Kent, but second lowest in the Duwamish area and the lowest in Tacoma.</li> </ul>	<ul style="list-style-type: none"> <li>• The transportation results for this alternative were more variable than the others (for example, having the lowest vehicle miles traveled on freeways but the second highest on arterials). This results in a variable set of results on levels of air quality emissions on a number of pollutants:               <ul style="list-style-type: none"> <li>– Second highest carbon monoxide.</li> <li>– Second highest ozone emissions, but at levels similar to Growth Targets.</li> <li>– Second highest fine particulate emissions (PM<sub>2.5</sub>), but at levels similar to Growth Targets.</li> <li>– Second highest carbon dioxide emissions, but at levels similar to Growth Targets.</li> </ul> </li> <li>• On coarser particulate matter (PM<sub>10</sub>), the movement of growth away from metro cities and larger cities is estimated to result in the lowest emissions in Kent and the Duwamish area, and the second lowest in Tacoma.</li> </ul>



## 5.5 — Ecosystems

### Contents and Analysis

This chapter summarizes existing ecosystem conditions and features in the region and refers to natural resource features and conditions, specifically vegetation, wetlands, streams, lakes and other waterbodies, marine resources, fish, and wildlife. Some highlights are noted below regarding how the alternatives could impact areas identified as having regionally significant habitats, and the overall functioning of the region's ecosystems.

- The majority of ecological damage occurs with habitat loss through development. The initial development actions, including clearing, grading, and the change in land surface, have the most impacts, meaning that new development has significantly higher potential impacts than redevelopment.
- Development in or near pristine areas has a far greater impact than development in already-developed areas.
- Transportation networks contribute significantly to the transformation of land and are a key factor in the fragmentation and isolation of habitat. Further, transportation-related pollutants are a primary source of damage to ecosystems.

### Impacts Common To All

- All of the alternatives are likely to reduce and impact habitats and ecosystem functions compared to today through their potential to remove vegetation, increase paved or impervious surfaces, increase runoff, and provide more sources and quantities of water quality pollutants. The region's increased demand for water supply could also affect conditions in the region's rivers, streams and lakes, impacting aquatic species.
- The highest impacts would likely occur due to loss or alteration of habitat due to development, with redevelopment having a much lower potential for further impacts than new development. Redevelopment also provides the potential for retrofits to infrastructure and redevelopment of properties to undo existing damage and reduce the overall net impact of growth.
- The region's increased demand for water supply could affect conditions in the region's rivers, streams, and lakes, which would impact aquatic species.
- Concentrating growth has the potential to create economies of scale for mitigation strategies and/or for conservation actions. For instance, a more concentrated growth pattern could use less land and allow more natural areas to be preserved.

### Distinct Impacts

Preferred Growth Alternative	Growth Targets Extended Alternative	Metropolitan Cities Alternative	Larger Cities Alternative	Smaller Cities Alternative
<ul style="list-style-type: none"> <li>• Similar to focused growth alternatives for potential adverse impacts to areas identified as regionally significant habitats.</li> <li>• More growth in urbanized areas than Growth Targets Extended reduces potential risks to ecosystems.</li> <li>• Similar to the other focused growth alternatives for potential air and transportation pollution impacts to ecosystems.</li> <li>• High potential need for programs to protect, restore and enhance incorporated and urban area ecosystems.</li> <li>• Lower than Growth Targets Extended, and about equal to Larger Cities, regarding the risk of conversion.</li> <li>• Estimates of proximity to natural resource areas (population and employment within ¼ mile of designated lands) are the second lowest, and very similar to Larger Cities, with nearly 50,000 fewer than Growth Targets.</li> </ul>	<ul style="list-style-type: none"> <li>• Growth in outlying areas results in second highest potential risk of adverse impacts to identified regionally significant habitats.</li> <li>• Growth allocations lead to second highest risk to less developed (and therefore potentially more pristine) lands and habitat areas through development and associated infrastructure-impacts.</li> <li>• Highest potential air and transportation pollution impacts to ecosystems.</li> <li>• High potential need for programs to protect and potentially restore/enhance urban ecosystems.</li> <li>• High potential need for conservation programs.</li> <li>• Proximity to natural resource areas are the second highest, with over 300,000 people living and working close to these areas.</li> </ul>	<ul style="list-style-type: none"> <li>• Lowest potential risk of adverse impacts to identified regionally significant habitats.</li> <li>• Concentration of growth into already developed areas results in lowest risk to pristine lands and habitat areas through development and associated infrastructure-related impacts.</li> <li>• Second lowest potential air and transportation pollution impacts to ecosystems, similar to Larger Cities.</li> <li>• High potential need for programs to protect, restore, and enhance urban ecosystems.</li> <li>• Lower than Growth Targets Extended, and about equal to Larger Cities, regarding the risk of conversion.</li> <li>• Proximity to natural resource areas estimated to be similar to Larger Cities. These alternatives are estimated to have about 50,000 fewer people living and working near these areas than Growth Targets Extended.</li> </ul>	<ul style="list-style-type: none"> <li>• Very similar to Metropolitan Cities in risk of adverse impacts to identified regionally significant habitats.</li> <li>• Shift of growth from metro cities (currently most developed) to larger cities (less developed) and double the amount of growth in unincorporated urban spreads out growth and therefore potentially increases risks to ecosystems as compared to Metropolitan Cities.</li> <li>• Least potential air and transportation pollution impacts to ecosystems, similar to Metropolitan Cities.</li> <li>• Lower than Growth Targets Extended, and about equal to Metropolitan Cities, regarding the risk of conversion.</li> <li>• Similar proximity to natural resource areas as Metropolitan Cities (but with about 7,500 more people living and working near these areas than that alternative).</li> </ul>	<ul style="list-style-type: none"> <li>• Highest potential risk of adverse impacts to identified regionally significant habitats.</li> <li>• Growth in least developed areas results in highest potential for impacts on remaining pristine lands and habitat areas.</li> <li>• Second highest potential air and transportation pollution impacts to ecosystems.</li> <li>• Highest potential need for conservation programs.</li> <li>• Highest potential risk of conversion.</li> <li>• Proximity to natural resource areas estimated to be highest, with about 45,000 more people living and working near these areas than Growth Targets Extended and 95,000 more than Metropolitan Cities.</li> </ul>



**5.6 — Water Quality and Hydrology**

**Contents and Analysis**

Water resources are key elements of this region's setting and overall quality of life. This chapter describes existing water resources and hydrology, and covers five primary topics: (1) impervious surfaces and stormwater runoff, (2) impaired waters, (3) sole source aquifers, (4) large contiguous floodplains, and (5) wetlands, lakes, rivers and streams. Some highlights are noted below regarding how these resources could potentially be impacted under the growth distribution alternatives.

**Impacts Common To All**

- All of the alternatives have the potential to remove natural landscapes and create new impervious surfaces, including pollution-generating surfaces such as roads and parking lots (however, levels of imperviousness, and therefore impacts, vary among the alternatives). Regional growth has the potential to aggravate existing water quality problems in the region's rivers, lakes and streams, as well as in the Puget Sound itself. Impacts would be due to urban construction, stormwater runoff, wastewater discharges, and changes in temperature and water quantity.
- Development could increase impervious surfaces over sole source aquifers, which reduces the ability of groundwaters to be replenished by rainfall filtering through the ground.
- More paved or impervious surfaces, along with development in floodplains, would increase the potential for increased flooding. Development would also have the potential to affect watersheds by filling wetlands, and further developing the areas adjacent to the Puget Sound and lakes, rivers and streams.
- Growth would require additional sources for water supply, and could reduce natural flows in rivers, lakes and streams. Water withdrawals from aquifers can also reduce water flowing into rivers, lakes and streams.
- Development in rural areas is more likely to cause impacts to water resources due to septic systems, proximity to more pristine stretches of rivers, and proximity to floodplains (which occur throughout the region, but many are associated with agricultural lands).
- Alternatives that reduce vehicle miles and hours traveled (and therefore water pollution due to roadway runoff) are likely to have fewer impacts.

**Distinct Impacts**

<b>Preferred Growth Alternative</b>	<b>Growth Targets Extended Alternative</b>	<b>Metropolitan Cities Alternative</b>	<b>Larger Cities Alternative</b>	<b>Smaller Cities Alternative</b>
<ul style="list-style-type: none"> <li>• Lower levels of impacts (similar to Metropolitan Cities) because of lower rural area growth, and lower levels of vehicle miles traveled and delay.</li> <li>• Lower levels of impacts (similar to Metropolitan Cities) in terms of potential impacts to water quality and hydrology from roadway runoff pollutants.</li> <li>• Given the improved jobs-housing balances at the county and regional geography levels, estimated to result in the lowest amount of land across the region that falls into the highest impervious surface category (greater than 30 percent), with about 730 square miles.</li> </ul>	<ul style="list-style-type: none"> <li>• Some of the highest levels of impacts to water quality and hydrology (similar to Smaller Cities) because of second highest rural area growth and highest vehicle miles traveled and delay.</li> <li>• Highest potential impacts to water quality and hydrology from roadway runoff pollutants.</li> <li>• Highest amount of land falls into the highest impervious surface category), with 1,020 miles in that category, which is 290 square miles greater than the Preferred Growth alternative.</li> </ul>	<ul style="list-style-type: none"> <li>• Lower levels of impacts (similar to Larger Cities) because of lower rural area growth, and lower levels of vehicle miles traveled and delay.</li> <li>• Some of the lowest potential impacts to water quality and hydrology from roadway runoff pollutants.</li> <li>• Tied for second least amount of land estimated to be in highest impervious surface category, with about 260 square miles less than Growth Targets, but 30 square miles greater than the Preferred Growth alternative.</li> </ul>	<ul style="list-style-type: none"> <li>• Lower levels of impacts (similar to Metropolitan Cities) because of lower rural area growth, and lower levels of vehicle miles traveled and delay.</li> <li>• Similar to Metropolitan Cities in terms of potential impacts to water quality and hydrology from roadway runoff pollutants.</li> <li>• About the same amount as Metropolitan Cities in terms of land in highest impervious surface category, with about 240 square miles less than Growth Targets Extended, but 50 square miles greater than the Preferred Growth alternative.</li> </ul>	<ul style="list-style-type: none"> <li>• Some of the highest levels of impacts (similar to Growth Targets Extended), with more growth but less vehicle miles traveled and delay.</li> <li>• Similar to Growth Targets Extended in terms of potential impacts to water quality and hydrology from roadway runoff pollutants.</li> <li>• Second highest amount of land estimated to be in highest impervious surface category, with about 90 square miles less than Growth Targets Extended and about 200 square miles more than the Preferred Growth alternative.</li> </ul>





**5.7 — Public Services and Utilities**

**Contents and Analysis**

Public services and utilities reviewed include: (1) solid waste collection and disposal, (2) sanitary sewer systems, (3) water supply, (4) fire protection and police services, (5) health and emergency medical services (including hospitals), and (6) schools. Some highlights are noted below regarding potential impacts to public services and utilities under the growth distribution alternatives.

All Services/Utilities

**Impacts Common To All**

- Growth patterns are likely to mean increased demand, under each alternative, for all public services and facilities. Effects on service levels and costs of service are based primarily on population and proximity, and will therefore vary by county and service area for each alternative.
- Economies of scale for investments exist for most service areas. In general, larger systems and facilities have advantages of efficiency and associated ability to efficiently increase size of operations, although providers generally plan for timeframes that are longer than local comprehensive plans.
- Under growth management, all jurisdictions are planning for growth in capital facilities and utilities. The alternatives, however, represent different levels of growth than under currently adopted plans. Those jurisdictions and areas that are already planning for major growth in demand will be less impacted (and may have greater options) than areas planning for a more limited amount of growth.
- Metropolitan Cities, Preferred Growth and Larger Cities alternatives increase demand closer to existing facilities are likely to be more cost-effective to serve than those alternatives (such as Growth Targets Extended and Smaller Cities) that build far from existing facilities. However, site-specific issues are a key factor that will ultimately determine actual costs.

**Common Impacts for Solid Waste**

- Solid waste generation is anticipated to increase over time, with potential need for expansions in capacity to process it — particularly for transfer stations (increased landfill needs more likely met outside the region).
- Increases in demand could possibly be met through expanded hours of service or other approaches that minimize the need for additional facilities that are difficult to site.
- Density increases create potential to increase different types of recycling and thereby reduce waste.

**Distinct Impacts**

Solid Waste

Preferred Growth Alternative	Growth Targets Extended Alternative	Metropolitan Cities Alternative	Larger Cities Alternative	Smaller Cities Alternative
<ul style="list-style-type: none"> <li>• Increased need for increased services as in urban areas than under Growth Targets Extended.</li> <li>• Potential economy of scale for waste reduction in metro and core cities.</li> <li>• Potential for improved waste reduction and recycling in metro cities and in core cities.</li> </ul>	<ul style="list-style-type: none"> <li>• High potential need for increased services and for increased facilities in most cities.</li> <li>• Potential need to change collection and management methods to accommodate increased demand in outlying areas.</li> <li>• Potential economy of scale for waste reduction in metro cities.</li> <li>• Kitsap and Snohomish have second highest demand and potential for new or expanded stations in outlying areas.</li> </ul>	<ul style="list-style-type: none"> <li>• Highest potential need for increased services and for increased facilities in metro cities and then core cities.</li> <li>• Potential for improved waste reduction and recycling in metro cities and in core cities.</li> </ul>	<ul style="list-style-type: none"> <li>• Similar to Metropolitan Cities in urban areas.</li> <li>• Highest potential need for increased services and for increased facilities in larger cities and then core cities.</li> <li>• Potential for improved waste reduction and recycling in larger cities and in core cities.</li> </ul>	<ul style="list-style-type: none"> <li>• Highest potential need for additional services and facilities in small cities, and unincorporated urban and rural areas.</li> <li>• Similar to Growth Targets Extended, potential need to change collection and management methods to accommodate increased demand in outlying areas.</li> <li>• Highest potential impacts in outlying areas to Kitsap, Pierce and Snohomish counties.</li> </ul>



**Common Impacts for Wastewater Systems**

- Under all alternatives, current sewer capacity likely not sufficient and would likely require system upgrades and expansions.
- In general, larger systems and facilities have advantages of efficiency and associated ability and resources to increase size of operations.
- Growth in small cities and unincorporated urban areas could impact smaller sewage systems and may necessitate change in technology, which has cost implications.
- Smaller city systems may need expansions, or may choose to contract with regional providers or adjacent jurisdictions. In all jurisdictions that are the focus of the alternative’s growth, siting new treatment facilities is likely difficult.

**Distinct Impacts**

	<b>Preferred Growth Alternative</b>	<b>Growth Targets Extended Alternative</b>	<b>Metropolitan Cities Alternative</b>	<b>Larger Cities Alternative</b>	<b>Smaller Cities Alternative</b>
<b>Wastewater Systems</b>	<ul style="list-style-type: none"> <li>• Potential to require improvements and possibly expansions in metro cities and core cities.</li> <li>• Creates demand for sewers in areas with larger service providers. Demand is distributed throughout the region to more cities and agencies, in a manner similar to existing plans. This alternative will require additional system planning.</li> <li>• Cost for extending services to outlying areas would be less than under Growth Targets Extended.</li> </ul>	<ul style="list-style-type: none"> <li>• Potential to require expansion of sewers into currently underserved areas.</li> <li>• Creates demand for sewers in areas currently planning for major upgrades, with demand distributed throughout the region to more cities and agencies, in a manner most similar to existing plans.</li> <li>• Extending service could have high per unit costs given the distances.</li> <li>• Growth in rural areas would likely be served by septic systems and could have site-specific impacts on water quality.</li> </ul>	<ul style="list-style-type: none"> <li>• Potential to require improvements and possibly expansions in metro cities and core cities.</li> <li>• Creates additional demand for treatment systems in areas with larger service providers., but systems with even higher capacity would be needed.</li> </ul>	<ul style="list-style-type: none"> <li>• Potential to require improvements and possibly expansions in larger and then core cities.</li> <li>• Creates demand to extend sewer capacity to areas currently not expecting major upgrades, and demand would likely greatly exceed planned systems capacities for many of the larger cities.</li> </ul>	<ul style="list-style-type: none"> <li>• Potential to require expansion of sewers into currently underserved areas.</li> <li>• Creates demand for sewers in small cities and outlying areas, most of which are currently not expecting major upgrades.</li> <li>• Extending service could have high per unit costs given the distances.</li> <li>• Growth in rural areas would likely be served by septic systems and could have site-specific impacts on water quality.</li> </ul>

**Common Impacts for Water Supply**

- Water Supply**
- Under all alternatives, current water capacity may not be sufficient and could require upgrades to some systems, perhaps by 2020. Additional supply will potentially be needed by 2020.
  - More options and system flexibility exist to meet future water supply and demand in larger population-service areas (although growth in these areas could require retrofits and expansions of service/facilities).
  - Impacts could be more severe in areas not currently planning for major increases, as water rights processes are complex and extensions are costly.
  - Other issues, such as new restrictions that could be needed under the Endangered Species Act, or changes in water supply dues to climate change, make long-range regional analysis and forecasting more uncertain.



**Distinct Impacts**

Preferred Growth Alternative	Growth Targets Extended Alternative	Metropolitan Cities Alternative	Larger Cities Alternative	Smaller Cities Alternative
<ul style="list-style-type: none"> <li>Meeting demand in metropolitan and core cities could likely require additional planning to accommodate increased levels of growth in these cities.</li> <li>Potential to use reclaimed water in metro cities and other urban areas where concentrations of growth support economies of scale to fund these types of investments.</li> <li>Lesser impacts in rural and unincorporated urban areas than under Growth Targets Extended.</li> </ul>	<ul style="list-style-type: none"> <li>Creates additional pressure for meeting demand in areas already planning for upgrades.</li> <li>Potential to use reclaimed water in metro cities and other urban areas where concentrations of growth support economies of scale to fund these types of investments.</li> <li>Growth in unincorporated urban and rural areas have the potential to impact water quality and hydrology (see 5.6 – <i>Water Quality</i>).</li> <li>Rural growth allocations could require extensions to serve these areas, or drilling additional wells in some areas.</li> <li>Rural growth allocations could lead to potential impacts in Kitsap (and to lesser extent in Pierce) from septic systems on groundwater drinking supply.</li> </ul>	<ul style="list-style-type: none"> <li>Meeting demand in metro cities and core cities could likely require expanding existing programs, plans, and investments.</li> <li>High potential to use reclaimed water.</li> <li>Lesser impact on groundwater in Kitsap and Pierce.</li> <li>Lesser impact on Snohomish utilities, but still some need for investments in metropolitan cities in Snohomish.</li> </ul>	<ul style="list-style-type: none"> <li>Meeting demand in larger and then core cities could likely require additional planning to accommodate increased levels of growth in these cities.</li> <li>Some potential to use reclaimed water.</li> <li>Decreased growth in metro cities may free water supply for diversion to larger cities.</li> <li>Lesser impact on groundwater in Kitsap and Pierce.</li> <li>Lesser impact on Snohomish utilities.</li> </ul>	<ul style="list-style-type: none"> <li>Highest potential impact given that little planning has been done to address the demand and pressure created for major upgrades under this alternative.</li> <li>Small cities may be impacted because fewer existing or planned supply options exist for areas outside the contiguous urban growth area. Could lead to more reliance on groundwater (some counties already are struggling to meet groundwater supply demands).</li> <li>Unknown potential for using reclaimed water.</li> <li>High levels of growth in unincorporated urban and rural areas have the potential to impact water quality and hydrology (see 5.6 – <i>Water Quality</i>).</li> <li>Rural growth allocations could require extensions to serve these areas, or drilling additional wells in some areas.</li> <li>Rural allocations could mean higher impacts in Kitsap (and to lesser extent in Pierce) from septic systems on groundwater drinking supply.</li> </ul>

**Impacts Common To All**

**Fire and Police**

- Under all the alternatives, added service could be needed, and response times could increase in some areas. This is particularly an issue for unincorporated “islands.”
- Demands on fire and police correlate with growth, meaning there will be localized differences regarding need under each of the alternatives.
- More options exist to meet future supply and demand in larger population-service areas (although growth in these areas could require additional staffing, or retrofits and expansions of existing service/facilities).

**Impacts Common To All**

**Health and Emergency**

- Industry-wide consolidation has the potential to concentrate facilities into fewer locations, with the likelihood that they will be in urban and suburban jurisdictions. Growth allocations to unincorporated urban and rural areas may locate residents and employees in areas more distant from facilities, which could increase response times.
- Under all the alternatives, demands on health, hospital, and emergency services correlate with growth, meaning there will be localized differences regarding need under each of the alternatives.



**Impacts Common To All**

- Under all the alternatives, demands on schools correlate with growth, meaning there will be localized differences regarding need under each of the alternatives.
- Alternatives that spread population over a larger distance may lead to increased transportation costs for school districts.
- Alternatives that concentrate growth may lead to higher needs for building retrofits and higher staffing levels, but fewer new facilities.

**5.8 — Parks and Recreation**

**Contents and Analysis**

This chapter discusses parks and recreation resources with a focus on locally owned parks. The chapter includes a review of typical impacts due to growth. It also includes an analysis of park-to-resident ratios and population and employment proximity to parks, and general qualitative analysis of park maintenance, use, and development issues. Some highlights are noted below regarding how these resources could serve and be impacted by the growth distribution alternatives.

**Impacts Common To All**

- With growth, there would be increased competition for limited facility space, conflicts between different types of recreational users, and displacement of undeveloped open space.
- All alternatives could cause increased demand for and use of existing parks and recreation facilities. In some locations, facilities might be unable to meet demand without expansions or new facilities and services, and increases in maintenance. The increased use has potential to adversely impact some visitors' experiences, while also potentially enlivening the parks.
- Under all alternatives, park acreage-to-resident ratios decline because the alternatives do not include any additions of parks. Adequacy of the ratios varies among counties, and depends on potential access to major public lands and open spaces.

**Distinct Impacts**

<b>Preferred Growth Alternative</b>	<b>Growth Targets Extended Alternative</b>	<b>Metropolitan Cities Alternative</b>	<b>Larger Cities Alternative</b>	<b>Smaller Cities Alternative</b>
<ul style="list-style-type: none"> <li>• Higher potential need than under Growth Targets Extended for increased maintenance and programming in metro cities and core cities.</li> <li>• Potential need for new parks in metro cities and unincorporated urban areas.</li> <li>• Increased competition for land in metro cities could make park development and acquisition more difficult.</li> <li>• Estimates of parks proximity (population and employment within ¼ mile of existing locally owned parks) show about 3,927,000 people living and working close to these park resources. The increased share of growth to cities outside of King (as compared to Growth Targets Extended and the other focused growth alternatives), results in the smaller figure.</li> </ul>	<ul style="list-style-type: none"> <li>• Potential need for increased maintenance and programming in metro cities parks.</li> <li>• Potential need for new parks in unincorporated urban and rural areas, or other approaches for ensuring adequate access and supply of parks.</li> <li>• With increased use due to growth, potential need for cities to continue to assume operation of county parks in less developed areas.</li> <li>• Proximity to parks estimated to be in the middle of the range of the alternatives.</li> </ul>	<ul style="list-style-type: none"> <li>• Highest potential need for increased maintenance and programming in metro cities and then core cities.</li> <li>• Increased competition for land in metro cities could make park development and acquisition more difficult.</li> <li>• Proximity to parks estimated to be the second highest, with over 150,000 more people living and working near these resources than under Growth Targets Extended.</li> </ul>	<ul style="list-style-type: none"> <li>• Potential need for increased maintenance and programming in larger and then core cities parks.</li> <li>• Potential need for new parks in larger cities.</li> <li>• Increased competition for land in larger cities could make park development and acquisition more difficult, but probably to lesser extent than under Metropolitan Cities.</li> <li>• Proximity to parks estimated to be highest with over 180,000 more people living and working near these resources than under Growth Targets Extended</li> </ul>	<ul style="list-style-type: none"> <li>• Potential need for new parks in small cities, and unincorporated urban and rural areas or need for other approaches.</li> <li>• With increased use due to growth, potential need for cities to continue to assume operation of county parks in less developed areas.</li> <li>• Increased competition for land much less a factor for these cities and areas for park development.</li> <li>• Proximity to parks estimated to be the lowest, with about 210,000 fewer people living and working near these resources than under Growth Targets Extended.</li> </ul>

## 5.9 — Environmental Health

### Contents and Analysis

This chapter focuses on how the growth distribution alternatives can impact the possibility of encountering potentially hazardous materials. Other environmental health topics, such as active living, noise, and air quality are also discussed. Some highlights are noted below regarding potential impacts.

#### Impacts Common To All

- All of the alternatives would likely lead to redevelopment or development activities that could potentially occur in the presence of hazardous materials. This could increase the risk of exposure or the spread of contaminants. Contaminated sites are most concentrated in established urban areas.
- When new development occurs in areas with previous releases, cleanup and management of the sites would benefit the environment, but the costs to redevelop a contaminated property could be higher.
- Higher intensity urban development could increase human health impacts due to biological, chemical, and social factors. This includes greater numbers of people in areas with higher levels of air pollution, noise, and other forms of pollution. More dense urban forms can also promote higher rates of physical activity, which provide health benefits.
- Existing regulations are likely to significantly limit any additional releases and the creation of new sites. Therefore, under all the alternatives, there is limited potential for creation of new sites.

#### Distinct Impacts

Preferred Growth Alternative	Growth Targets Extended Alternative	Metropolitan Cities Alternative	Larger Cities Alternative	Smaller Cities Alternative
<ul style="list-style-type: none"> <li>• Higher potential than under Growth Targets Extended to encounter hazardous sites, given their location in older, urbanized areas.</li> <li>• Comparable to Growth Targets Extended in potential for cleanup of sites and development of “brownfield” lands, enabled through economies of scale and the need for developable land.</li> </ul>	<ul style="list-style-type: none"> <li>• Moderate level of potential to encounter hazardous sites, similar to Larger Cities.</li> <li>• Comparable potential to Preferred Growth for cleanup and brownfields development (economies of scale).</li> </ul>	<ul style="list-style-type: none"> <li>• Highest potential to encounter hazardous sites, given their location in older, urbanized areas.</li> <li>• Highest potential for cleanup and brownfields development (economies of scale).</li> </ul>	<ul style="list-style-type: none"> <li>• Moderate potential to encounter hazardous sites, similar to Growth Targets Extended.</li> <li>• Second lowest, but still higher, potential for cleanup and brownfields development (economies of scale).</li> </ul>	<ul style="list-style-type: none"> <li>• Lowest potential to encounter hazardous sites.</li> <li>• Limited potential for brownfields redevelopment.</li> </ul>

## 5.10 — Energy

### Contents and Analysis

This chapter discusses energy issues focusing on the main types of energy in the region, which are electrical power, natural gas, and petroleum. For each of these types, this chapter discusses consumption, sources and availability, and conservation and renewable sources. Some highlights are noted below regarding the potential for impacts to energy under the growth distribution alternatives.

#### Impacts Common To All

- The population and employment growth in all alternatives will increase overall regional energy consumption compared to today, with more concentrated growth having potential to somewhat reduce consumption levels. Under all the alternatives, more energy sources and expanded energy delivery systems will likely be needed.
- Effects on amount of energy used are based primarily on population, and will therefore vary by county and service area for each alternative (meaning, localized differences). This may result in the need to extend facilities into currently underserved areas.
- For electricity and natural gas, the alternatives are relatively similar in terms of how much increase in consumption is estimated. Differentiations exist among the alternatives for petroleum energy use, primarily having to do with amount of vehicle miles traveled and hours of delay and the impact these have on usage.

#### Distinct Impacts



Preferred Growth Alternative	Growth Targets Extended Alternative	Metropolitan Cities Alternative	Larger Cities Alternative	Smaller Cities Alternative
<ul style="list-style-type: none"> <li>Higher potential need for upgrades and retrofits of infrastructure in metro and core cities.</li> <li>Similar to the other focused growth alternatives for vehicle miles traveled and delay measures.</li> <li>Third lowest energy use.</li> </ul>	<ul style="list-style-type: none"> <li>Potential need for upgrades and retrofits of infrastructure in metro cities.</li> <li>Potential need for extending infrastructure to unincorporated urban and rural areas.</li> <li>Highest total daily vehicle miles traveled and highest total daily hours of delay.</li> <li>Highest potential energy use.</li> </ul>	<ul style="list-style-type: none"> <li>Highest potential need for upgrades and retrofits of infrastructure in metro cities.</li> <li>Second lowest vehicle miles traveled and second lowest delay.</li> <li>Second lowest energy use.</li> </ul>	<ul style="list-style-type: none"> <li>Potential need for upgrades of infrastructure in larger cities.</li> <li>Lowest vehicle miles traveled and lowest delay.</li> <li>Lowest energy use.</li> </ul>	<ul style="list-style-type: none"> <li>Highest potential need for extending infrastructure to unincorporated urban and rural areas.</li> <li>Second highest vehicle miles traveled and second highest delay.</li> <li>Second highest energy use.</li> </ul>

### 5.11 — Historic, Cultural, and Archeological Resources

#### Contents and Analysis

The central Puget Sound region has a long cultural history, beginning with indigenous peoples who lived here in a rich ecosystem. The tools, structures, record of their existence, and of the settlers who came after them, are the Puget Sound region's historic and cultural resources. Some highlights are noted below regarding the potential for them to be impacted under the growth distribution alternatives.

#### Impacts Common To All

- Growth under all the alternatives has the potential to adversely impact, while also potentially exposing more residents and employees to, these resources. Both public, and especially private, development can threaten or remove these resources, making recognition and preservation actions important.
- Alternatives that focus growth in or near older urban areas, waterways, and agricultural lands are more likely to have impacts because historic, cultural, and archeological properties are most commonly associated with these areas.

#### Distinct Impacts

Preferred Growth Alternative	Growth Targets Extended Alternative	Metropolitan Cities Alternative	Larger Cities Alternative	Smaller Cities Alternative
<ul style="list-style-type: none"> <li>Higher potential impact to urban resources than under Growth Targets Extended.</li> <li>Closer to focused growth alternatives in terms of potential impact to rural and agricultural area resources. Somewhat lower impacts than Growth Targets Extended given lower allocations to edge of contiguous urban growth area and limits on rural area growth.</li> <li>Higher potential for restoration or reuse than under Growth Targets Extended.</li> </ul>	<ul style="list-style-type: none"> <li>Allocations to metropolitan cities create second highest potential impact to urban resources through redevelopment.</li> <li>Second highest potential impact to rural and agricultural area resources through development on these lands.</li> <li>Given appropriate incentives, increased potential for restoration or reuse of urban historic resources, enabled through economies of scale (but lower than Metropolitan Cities).</li> </ul>	<ul style="list-style-type: none"> <li>Highest potential impact to urban resources.</li> <li>Lowest potential impact to rural and agricultural area resources, with smallest allocations to incorporated and unincorporated areas outside contiguous urban growth area.</li> <li>Highest potential for restoration or reuse.</li> </ul>	<ul style="list-style-type: none"> <li>Second lowest potential impact to urban resources.</li> <li>Second lowest potential impact to rural and agricultural area resources. Somewhat higher than Metropolitan Cities given allocations to incorporated cities near edge of contiguous urban growth area.</li> <li>Lesser potential for restoration or reuse than Growth Targets Extended.</li> </ul>	<ul style="list-style-type: none"> <li>Lowest potential impacts to urban resources (and lowest potential for restoration or reuse).</li> <li>Highest potential impacts to rural and agricultural area resources, but highest potential for discovery of new sites and for acquisition.</li> </ul>



## 5.12 — Visual Quality and Aesthetic Resources

### Contents and Analysis

For many people, the region is defined by its mountains, water, and abundant greenery as well as the inherent aesthetic qualities characterized by visually diverse, stimulating views of rural landscapes, towns, cities, and prominent structures. Some highlights are noted below regarding potential impacts to the visual setting of the region under the growth distribution alternatives.

### Impacts Common To All

- All of the alternatives would require higher levels of development that could add, alter, or remove current visual features in regional and local landscapes.
- Intensification of development in all areas is possible under alternatives, but levels and locations of impacts vary. Intensification could impact vegetation and open spaces, scale and bulk, and the character (mix of uses) of lands, communities, and neighborhoods.
- All alternatives have the potential to enable the development of civic spaces and downtown cores in both larger and small cities.
- Many jurisdictions have implemented design programs — from guidelines to advisory boards. New development and redevelopment will occur under these programs, which have the potential for high quality design, and perhaps improvements to existing aesthetic qualities in some areas.

### Distinct Impacts

Preferred Growth Alternative	Growth Targets Extended Alternative	Metropolitan Cities Alternative	Larger Cities Alternative	Smaller Cities Alternative
<ul style="list-style-type: none"> <li>• Second highest intensification in scale in currently most-developed areas, with more growth than under Growth Targets Extended.</li> <li>• High potential for loss of vegetation and open space in metro cities and core cities.</li> <li>• Change in character from residential to mixed use in unincorporated urban areas.</li> </ul>	<ul style="list-style-type: none"> <li>• Intensification in scale in currently most-developed areas.</li> <li>• Intensification in scale in unincorporated urban and rural areas.</li> <li>• Impacts to rural character and resources through intensification, including high potential for loss of vegetation and landscapes in rural areas.</li> </ul>	<ul style="list-style-type: none"> <li>• Highest intensification in scale in currently most-developed areas.</li> <li>• High potential for loss of vegetation and open space in metro cities and core cities.</li> </ul>	<ul style="list-style-type: none"> <li>• Third highest intensification in scale in currently most-developed areas.</li> <li>• Potential for loss of vegetation and open space in larger cities and core cities.</li> <li>• Change in scale and character of larger cities, with these cities having much higher levels of employment.</li> </ul>	<ul style="list-style-type: none"> <li>• Highest intensification in scale in small cities, and unincorporated urban and rural areas.</li> <li>• High potential for loss of vegetation and landscapes in rural areas.</li> <li>• Change in scale and residential character of these cities and areas, with them having much higher employment levels.</li> </ul>

## 5.13 — Earth

### Contents and Analysis

This chapter analyzes the growth distribution alternatives in relation to the region's geologic features, which include earthquakes, landslides/erosion, volcanic hazards, flooding, and coal mine subsidence. Each could cause a disaster, however, the severity of the impact and number of people and properties affected could depend on where and how growth is distributed under the different alternatives. Some highlights are noted below regarding impacts.

### Impacts Common To All

- Hazards exist throughout the region. Earthquakes can impact every part of the region, and localized risks may vary. Floodways are more prevalent in agricultural areas, and volcanic hazards are more prevalent adjacent to Mt. Rainier in Pierce County.
- Alternatives that concentrate growth in urban areas expose more population and employees to impacts from localized events. However, urban areas also potentially have higher service levels and greater redundancy of services. Allocations to rural areas spread the risks, but also reduce the potential for higher levels of services.
- Development in rural areas may be near steep slopes, potentially increasing the risk for landslides and erosion.
- Many of the region's industrialized areas are in filled areas with soils susceptible to liquefaction during earthquakes.

### Distinct Impacts





Preferred Growth Alternative	Growth Targets Extended Alternative	Metropolitan Cities Alternative	Larger Cities Alternative	Smaller Cities Alternative
<ul style="list-style-type: none"> <li>Focus of growth within urban area increases risk for impacts from liquefaction in industrial areas resulting from a seismic event, as compared to Growth Targets Extended.</li> <li>Lower growth in rural areas than under Growth Targets Extended decreases risk for growth in floodzones.</li> </ul>	<ul style="list-style-type: none"> <li>Allocations to metro cities mean higher risks for impacts from liquefaction resulting from a seismic event, especially in industrial areas.</li> <li>Allocations to rural areas and second highest amounts of growth to Pierce mean higher potential risks from volcanic activity.</li> <li>Allocations to rural areas have potential to impact, or increase development in, floodzones (see 5.6 – <i>Water Quality</i>).</li> </ul>	<ul style="list-style-type: none"> <li>Allocations to metro cities mean highest risks for impacts from liquefaction resulting from a seismic event, especially in industrial areas.</li> </ul>	<ul style="list-style-type: none"> <li>Dispersal of growth within urban area lessens the risk for impacts from liquefaction in industrial areas resulting from a seismic event, as compared to Metropolitan Cities.</li> </ul>	<ul style="list-style-type: none"> <li>Largest allocations to rural areas and highest amounts of growth to Pierce mean highest potential risks from volcanic activity.</li> <li>Allocations to rural areas have potential to impact or increase development in floodzones.</li> </ul>

## 5.14 — Noise

### Contents and Analysis

This chapter discusses noise impacts based on past noise modeling performed in the region and on other relevant noise information. It focuses on transportation-related noise sources as well as ambient noise characteristics under different development patterns. Some highlights are noted below regarding potential noise impacts under the growth distribution alternatives.

#### Impacts Common To All

- Urbanization affects noise exposure through proximity (crowding, adjacency to noisy land uses, concentrated transportation activity) and through physical changes such as the replacement of vegetation with paved surfaces and buildings. Noise decreases with distance from the source, making mitigation and design important.
- With growth, there would be more noise from sources such as transportation, construction, maintenance, and other commercial and industrial operations. Noise levels would also increase where the physical environment changes, such as when vegetation is replaced with paved surfaces and buildings.
- The highest noise levels are currently in the most developed areas and this would likely continue under all of the alternatives. The differentiation would be in the number of people located, and therefore exposed, to these higher levels of noise under the different alternatives.
- Noise increases begin to be noticeable when levels double, and become readily perceivable when levels triple. It is less known how different noise levels impact wildlife.

## 6 — Environmental Justice Discussion

### Contents

This chapter describes requirements for metropolitan planning organizations to assess whether actions have disproportionate impacts on minority and/or low-income populations in the region. The chapter describes existing locations and trends for minority and/or low-income populations, and assesses the alternatives to determine if there are disproportionate impacts. Some highlights are noted below regarding impacts.



**Analysis and Impacts Common To All**

- Nationally and regionally, higher levels of growth in minority and/or low-income populations are predicted in proportion to the general population. While minority and low-income populations are found throughout the region, some historic concentrations exist in older urban areas.
- None of the alternatives is anticipated to result in disproportionately high and adverse effects on minority and/or low-income populations, although the alternatives may vary in the intensity of growth-related impacts that could occur in localized areas.
- Focus groups conducted in 2005 identified affordable housing and the availability of sufficient transit to access employment and services as the most important issues for minority and/or low-income populations.
- Alternatives (such as Metropolitan Cities, Preferred Growth, and to a lesser extent Larger Cities) that concentrate growth in metropolitan cities and core cities are likely to have higher potential positive and adverse impacts. Impacts range from displacement, different housing and potential transportation costs, to better access to employment and services using transit.
- Alternatives (such as Smaller Cities and to a lesser extent Growth Targets Extended) that disperse growth throughout the region, and farther away from areas that have traditionally had the highest concentrations of minority and/or low-income populations are likely to have fewer impacts. For example, while there could be less pressure for displacement, there could also be less access to jobs and services using transit.
- An overall assessment is that minority and/or low-income populations benefit the most from alternatives that direct new growth into areas that are closer to major employment centers and are better served by transit.

**Analysis and Impacts Common To All**

- All the alternatives will produce price pressure on housing costs. However, costs for housing, and affordable housing, are based on a complex set of site-specific factors, including unit costs, land costs, costs of associated infrastructure, and more (see 5.1 – *Housing*).
- For low- and very low-income populations, full cost-of-living considerations must be taken into account, making the analysis of the alternatives more complex and variable.
- All alternatives have varying levels of potential for displacement of minority and/or low-income populations through gentrification, especially if they increase traffic congestion and lead to more market pressure for movement to closer-in areas.
- Displacement is a key issue, particularly for areas that have good access to job centers, comparatively low housing prices, and high architectural values — all of which are more typically found in older urban areas (where minority and/or low-income populations are most concentrated), as compared to suburban and exurban locations.

**Distinct Impacts**

Preferred Growth Alternative	Growth Targets Extended Alternative	Metropolitan Cities Alternative	Larger Cities Alternative	Smaller Cities Alternative
<ul style="list-style-type: none"> <li>• Growth allocations to metro cities could result in a high potential for displacement.</li> <li>• Housing development in metro cities could likely include more non-traditional housing types, such as multifamily, townhouses, and condominiums, which could provide additional home ownership opportunities..</li> </ul>	<ul style="list-style-type: none"> <li>• Similar to Preferred Growth, growth allocations to metro cities have a high potential for displacement.</li> <li>• Similar to Preferred Growth, there is potential for more non-traditional home ownership opportunities than under the other two alternatives.</li> </ul>	<ul style="list-style-type: none"> <li>• Similar to Preferred Growth, growth allocations to metro cities have a high potential for displacement.</li> <li>• Similar to Preferred Growth, there is potential for more non-traditional home ownership opportunities than under the other two alternatives.</li> </ul>	<ul style="list-style-type: none"> <li>• Displacement is likely to be a lesser issue given the more limited concentration of minority and/or low-income populations outside of the metro cities and core cities areas, unless traffic congestion leads to more market pressure in closer-in areas.</li> </ul>	<ul style="list-style-type: none"> <li>• Displacement is likely to be a very minor issue under this alternative, unless traffic congestion leads to more market pressure in closer-in areas.</li> </ul>



**Distinct Impacts**

	<b>Preferred Growth Alternative</b>	<b>Growth Targets Extended Alternative</b>	<b>Metropolitan Cities Alternative</b>	<b>Larger Cities Alternative</b>	<b>Smaller Cities Alternative</b>
<b>Employment</b>	<ul style="list-style-type: none"> <li>• Second highest concentration of employment within the region, at levels higher than under Growth Targets Extended.</li> <li>• Greater potential for housing to be close to employment centers, potentially providing better access to jobs for minority and/or low-income populations.</li> <li>• Better jobs-housing balance at county and regional geography levels increases potential for residents to live closer to work.</li> </ul>	<ul style="list-style-type: none"> <li>• Middle of the range in terms of concentration of employment within the region, potentially providing better access to jobs for minority and/or low-income populations.</li> <li>• Development in metro cities could bring new employment opportunities.</li> <li>• Residential growth is spread through the region, likely reducing (although not erasing) the potential positive impacts of concentrated employment growth in areas with higher transit levels.</li> </ul>	<ul style="list-style-type: none"> <li>• Highest concentration of employment within the region.</li> <li>• Greater potential for housing to be close to employment centers, potentially providing better access to jobs for minority and/or low-income populations.</li> <li>• Development in metro cities and core cities could bring new employment opportunities.</li> </ul>	<ul style="list-style-type: none"> <li>• Second highest dispersion of employment within the region.</li> <li>• Allocations result in a commercial land use pattern that is difficult to serve by transit (more than under Growth Targets Extended and Metropolitan Cities, but less than under Smaller Cities), which could create challenges for minority and/or low-income populations.</li> <li>• Development in larger cities and core cities could bring new employment opportunities.</li> </ul>	<ul style="list-style-type: none"> <li>• Highest level of dispersion of employment within the region.</li> <li>• Allocations result in a commercial land use pattern that is the most difficult to serve by transit, creating the most challenges for minority and/or low-income populations.</li> <li>• Development in small cities and unincorporated urban areas could potentially lead to the creation of new local activity centers, which might increase employment opportunities.</li> </ul>

**Analysis and Impacts Common To All**

- Transportation**
- Minority and/or low-income populations are, in general, more transit-dependent than other residents. Alternatives (such as Metropolitan Cities, Preferred Growth, and to a lesser extent Larger Cities) that provide better adjacency and transit access between employment and housing sites have more potential to better serve minority and/or low-income populations.
  - Vehicle miles traveled, average trip times, hours of delay, and congestion are likely to impact minority and/or low-income populations similarly to other residents.
  - See 5.3 – *Transportation*, for more information on transit access and other transportation performance results.
  - See 5.2 – *Land Use*, for more information on estimates regarding transit proximity.

**Analysis and Impacts Common To All**

- Air Quality**
- Regional-level air quality impacts are the lowest under alternatives that minimize vehicle miles traveled, delay, and maximize transit and walk/bike mode shares (such as Metropolitan Cities, Preferred Growth, and Larger Cities).
  - Local-level air quality impacts are location-dependent. While minority and/or low-income populations are located throughout the region, the highest concentrations are in King County and in older urban areas in the other counties. Alternatives (such as Metropolitan Cities, Preferred Growth, and to a lesser extent Larger Cities) that concentrate growth into these areas are likely to have higher potential exposure to air quality emissions than alternatives (such as Smaller Cities and to a lesser extent Growth Targets Extended) that disperse growth.
  - See 5.4 – *Air Quality*, for more information on air pollution results.

**Analysis and Impacts Common To All**

- Services/Facilities**
- All alternatives could likely require additional infrastructure. For minority and/or low-income populations, the impacts primarily relate to access and cost.
  - Alternatives (such as Metropolitan Cities, Preferred Growth, and to a lesser extent Larger Cities) that focus development in areas that have existing infrastructure, or are already planning for additional infrastructure, are generally more likely to provide better access to services and facilities. These types of alternatives have the potential for minimizing the need for new infrastructure and potential for meeting increased demand by augmenting existing facilities and services.
  - Understanding the cost implications of retrofitting or expanding existing infrastructure versus building new infrastructure is complex. Generally, the literature suggests that new infrastructure is more expensive, and that the environmental impacts of new infrastructure are likely to be much higher than upgrades to existing infrastructure.
  - See 5.7 – *Public Services and Utilities*, for more information.



### Analysis and Impacts Common To All

- Local-level exposure to hazardous waste sites and to noise and noisy land uses are location-dependent. While minority and/or low-income populations are located throughout the region, the highest concentrations are in King County and in older urban areas in the other counties (which is where the highest concentrations of hazardous waste sites and noisy land uses are located), increasing the potential impacts.
- Alternatives (such as Metropolitan Cities, Preferred Growth, and to a lesser extent Larger Cities) that concentrate growth into these areas are likely to have higher potential exposure to hazardous waste emissions and to noise than alternatives (such as Smaller Cities and to a lesser extent Growth Targets Extended) that disperse growth.
- For hazardous waste sites, alternatives (such as Metropolitan Cities, Preferred Growth, and to a lesser extent Larger Cities) have greater potential than the others to lead to the cleanup of brownfields or other polluted sites. This would provide an environmental and health benefit to minority and/or low-income populations.
- See 5.9 – *Environmental Health*, for more information on results regarding hazardous waste sites and locations.
- See 5.14 – *Noise*, for more information on results regarding noise related impacts.

## SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS

All of the alternatives will increase the number of people in the region by over 50 percent, and the number of jobs by over 60 percent. This will result in increased demand for the use of land for housing and businesses, and require associated supporting infrastructure.

New housing stock will be needed, and existing housing stock or businesses could be removed to provide for higher density redevelopment. Limited development in rural areas will occur, creating environmental impacts. Growth also will lead to an increase in the overall number of trips, which could create higher levels of congestion and increased travel times, but the level of impact will depend on other planning actions.

New buildings and infrastructure could lead to increased impervious surfaces, alteration of land cover and vegetation, and additional parcel fragmentation. Other impacts could include more overall water consumption, causing diversions and water withdrawals from rivers, lakes, and streams, and withdrawals from groundwater sources. For both ecosystem and water resources, the level of impact will depend on future project-specific actions and mitigations.

## AREAS OF UNCERTAINTY OR CONTROVERSY

The long range population and employment forecasts the Regional Council has used to develop the alternatives are based on best available techniques, but there are inherent uncertainties about where and how growth will occur in the region. In addition, due to the size of the four-county region and the large variation of conditions among localized areas, the level of detail for the alternatives and the environmental analysis has been conducted at a broad programmatic scale. Localized impacts of growth could vary, but would depend on more specific actions that would be considered and approved through local or project-level processes.

The cumulative effects discussions for each environmental topic also identify other areas of uncertainty, including larger scale influences that could affect the region. This includes the effects of factors such as climate change and growth influences from nearby areas. Larger-scale geopolitical or economic change could also affect growth rates and environmental effects.



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