

SULTAN CITY COUNCIL AGENDA ITEM COVER SHEET

ITEM NO: D-1

DATE: June 29, 2010

SUBJECT: Population Forecast

CONTACT PERSON: Deborah Knight, City Administrator

ISSUE:

The issue before the city council and planning board is to discuss the population forecast alternatives for 2030 and 2040 and select a preferred alternative for developing the water system plan and general sewer plan.

STAFF RECOMMENDATION:

Review the May 28, 2010 memo *City of Sultan Population Forecast (population forecast report)* prepared by ECONorthwest.

Evaluate the range of population forecasts from the in Table 8 (below) and the alternative population forecasts in Table 9 of the population forecast report.

Select the medium range forecast of 13,409 people in 2030 as set forth in Table 8 of the population forecast report to prepare the water system plan and general sewer plan.

Table 8. Range of population forecasts, City of Sultan UGA, 2006 to 2040

Year	Low	Medium	High
2006	4,785	4,785	4,785
2010	5,714	5,714	5,714
2015	7,134	7,134	7,134
2020	8,906	8,906	8,906
2025	11,119	11,119	11,119
2030	12,398	13,409	13,881
2035	13,824	16,170	17,329
2040	15,414	19,500	21,634
Change 2025 to 2030			
Number	1,279	2,290	2,762
Percent	12%	21%	25%
AAGR	2.2%	3.8%	4.5%
Change 2025 to 2040			
Number	4,295	8,381	10,515
Percent	39%	75%	95%
AAGR	2.2%	3.8%	4.5%

Source: ECONorthwest, Note: AAGR is average annual growth rate. Green shading denotes the forecast from Snohomish County.

The recommendation is based on two considerations:

1. Maintaining the 2025 population at 11,119 throughout the comprehensive plan, general sewer plan and water system plan. This is consistent with the 7-year comprehensive plan compliance review.

The city cannot change the 2025 population forecast without going through a buildable lands analysis and review process outlined in the county-wide planning policies. The review process includes approval by Snohomish County Tomorrow which could be difficult to achieve since other cities in the region will not evaluate population allocations until the 10-year update beginning in 2012.

There isn't sufficient time to amend the 2025 population allocation by December 31, 2011. If the council decided to delay adoption of the 2011 update to amend the 2025 population allocation, the city would not be prepared to take action on other comprehensive plan initiatives such as realigning zoning densities to relocate moderate and high density uses outside of the floodplain.

2. Using the city's historical growth rate of 3.8% to estimate the population projection for 2030 rather than the lower county rate (2.2%) or the higher rate (4.4%) based on Snohomish County's forecast growth rate for Sultan over the 2006 to 2025 period.

The analysis provided in Table 2 of the population forecast report is compelling. It seems clear despite the ups and downs of the business cycle that the city's growth rate is a steady 3.8%.

Since we've struggled with the current unrealistic expectations of a 4.4% growth rate adopted in 2006, it seems equally as unrealistic assume the city's growth rate might slow to 2.2% after 30+ years of 3.8% growth.

Even during recession, the Office of Financial Management estimates that over the last 3 years (2006-2009) the city's growth rate has been 2.9% (=130 new residents since 2006/4440 city residents in 2006).

SUMMARY:

The population forecast identifies **how** many people will reside in the city's urban growth area (UGA) during the planning period. The population forecast is further refined to identify **where** new residents will live based on the city's future land use map (zoning and densities). Finally, the population forecast is translated into **what** capital improvements are needed to ensure adequate facilities are in place to serve the forecast population at the adopted level of service.

The growth management act requires:

1. A consistent population projection throughout the plan which should be consistent with the Office of Financial Management forecast for the county or the county's sub-county allocation of that forecast. [RCW 43.62.035].
2. Estimates of population densities and building intensities based on future land uses. [RCW 36.70A.070(1)].
3. A forecast of needed capital facilities based on projected population and adopted levels of service (LOS) over the planning period to support the plan's projected 20-year growth. [RCW 36.70A.070(3)(b)].

The city is in the process of updating the 2004 comprehensive plan, 2005 water system plan, 2006 general sewer plan and the Park and Recreation Open Space Plan. Each one of these plans must include a population forecast for the planning period.

Document	Update	Planning Period	Time Frame
Comprehensive Plan	7-year compliance review	20 years	2005-2025
Water System Plan	6-year	20 years	2010-2030
General Sewer Plan	6-year	20 years	2010-2030
Park and Recreation Plan	6-year	15 years	2010-2025

In 2005 as a part of the comprehensive plan 10-year update, the city adopted a population project of 11,119 for the year 2025. Because the 7-year update to the comprehensive plan is to ensure compliance with the growth management act and regional goals and policies, it would be difficult to change the population projection of 11,119 for the year 2025.

The city will have the opportunity, consistent with the Puget Sound Regional Growth Strategy (RGS) to amend its population projection during the 10-year update. The 10-year update will begin in 2012 and be completed in 2015. During the 10-year update the city will work with Snohomish County and other small cities in the region to allocate the 37,000 people the Puget Sound Regional Council (PSRC) estimates will move to small cities in Snohomish County between 2000 and 2040.

The issue for the city council and planning board is to review the range of population forecasts prepared by ECONorthwest in the *City of Sultan Population Forecast* report and select a population projection for 2030 so work can proceed on developing the water system plan and general sewer plan.

DISCUSSION:

The population forecast report prepared by ECONorthwest is divided into five sections:

1. Historical population growth since 1980 – Table 2
2. Forecasts of population growth – Snohomish County, water/sewer plans, and the Puget Sound Regional Council's regional growth strategy

3. Expected growth in Snohomish County's small cities from the PSRC regional growth strategy – Table 6 and Table 7
4. Sultan urban growth area (UGA) population forecast - Table 8
5. Alternative population forecasts – Table 9

Historic population growth since 1980

Since 1980 the City of Sultan has grown at a steady rate of 3.8%. Table 2 below shows the steady rate of growth at the state, county and local level. During each decade there are peaks and valleys of growth but the overall rate has been remarkably even.

Table 2. Population growth, Washington State, Snohomish County, City of Sultan, 1980 to 2009

Year	Washington State	Snohomish County	Sultan
1980	4,132,353	337,720	1,578
1985	4,415,785	381,094	1,850
1990	4,866,663	465,628	2,236
1995	5,470,104	527,649	2,568
2000	5,894,143	606,024	3,344
2005	6,256,400	655,800	4,225
2009	6,668,200	704,300	4,555
Change 1980 to 2009			
Number	2,535,847	366,580	2,977
Percent	61%	109%	189%
AAGR	1.7%	2.6%	3.7%
Change 1990 to 2009			
Number	1,801,537	238,672	2,319
Percent	37%	51%	104%
AAGR	1.7%	2.2%	3.8%
Change 2000 to 2009			
Number	774,057	98,276	1,211
Percent	13%	16%	36%
AAGR	1.7%	2.2%	3.8%

Source: Washington State Office of Financial Management. Note: AAGR is average annual growth rate.
<http://www.ofm.wa.gov/pop/april1/cociseries/default.asp>

Forecasts of Population Growth

The Puget Sound Regional Council, Snohomish County and the City of Sultan all forecast future population growth within the city limits and UGA. These population projections are based on assumptions that can be a starting point for future population projections.

Table 5. Water and wastewater facilities population forecast, City of Sultan UGA, 2006 to 2025

Year	Water Plan	Sewer Plan
2006	4,785	4,785
2025	11,119	11,119
Change in population for 2006 to 2025		
Number	6,334	6,334
Percent	132%	132%
AAGR	4.5%	4.5%

Source: Water plan forecast: City of Sultan Comprehensive Plan Appendix O Water and Sewer Plan Draft Amendments, August 2008
 Sewer plan forecast: General Sewer Plan, Amendment No 2, September 2008
 Note: AAGR is average annual growth rate

Expected Growth in Snohomish County’s Small Cities

This section of the population forecast report begins to look forward beyond the 2025 planning period of the 2004 comprehensive plan. The population forecast beyond 2025 begins to move beyond the 7-year compliance update and looks toward the 10-year update.

The Puget Sound Regional Council has allocated 37,000 residents to small cities within Snohomish County for the 40-year planning period between 2000 and 2040. Small cities include Brier, Darrington, Gold Bar, Granite Falls, Index, Snohomish, Sultan, and Woodway.

During the 10-year update which will begin in 2012, the small cities in Snohomish County will begin discussions on how the 37,000 people allocated by the PSRC regional growth strategy (RGS) should be allocated.

Table 6 and Table 7 of the population forecast report analyze two ways of allocating future population to meet the RGS. Tables 6 and 7 provide a range of population growth that Sultan might need to accommodate to meet the PSRC’s Vision for growth in Snohomish County’s small cities. The actual distribution may be different.

The alternative 2040 population allocations shown below illustrate how the PSRC small city’s allocation could be divided between Sultan and the other small cities.

Table 6 assumes the future population allocated to small cities will be distributed among the small cities based on the percent growth that these cities had over the 2000 to 2009 period. For example, Sultan accounted for 22% of the growth in small cities over the 9-year period.

Table 6. Growth in small cities, based on growth trends over the 2000 to 2009 period, Snohomish County small cities, 2000 to 2040

	Growth 2000 to 2009		Pop. Growth to Reach 37,000		
	Population Change	% Small City Growth 2000 to 2009	2010 to 2040 Growth	Average Annual Growth	2040 Population
Brier	107	2%	623	21	7,113
Darrington	369	7%	2,150	72	3,655
Gold Bar	136	3%	792	26	2,942
Granite Falls	1,028	19%	5,988	200	9,363
Index	(2)	0%	(12)	-	143
Snohomish	651	12%	3,792	126	12,937
Stanwood	1,667	31%	9,711	324	15,301
Sultan	1,211	22%	7,054	235	11,609
Woodway	254	5%	1,480	49	2,670
Total	5,421	100%	31,578	1,053	65,733

Source: Regional Growth Strategy, Amended May 28, 2009, PSRC
 Population change from 2000 to 2009 is based on Office of Financial Management population estimates
 Note: The numbers in Table 6 may not add up exactly as a result of rounding.
 Note: The list of small cities does not include Lake Stevens, which is expected to be taken out of the small city category in the near future.

Table 7 assumes future population to small cities will be distributed based on the percent of growth these cities are forecast to have over the 2006-2025 planning period. For example, Sultan is forecast to grow by 31% over the 20 year planning period.

Table 7. Growth in small cities, based on forecast growth over the 2006 to 2025 period, Snohomish County small cities, 2000 to 2040

	Forecast Growth 2006 to 2025		Pop. Growth to Reach 37,000		
	Population Change	% Small City Growth 2000 to 2009	2025 to 2040 Growth	Average Annual Growth	2040 Population
Brier	1,310	6%	1,082	72	8,775
Darrington	532	3%	440	29	2,108
Gold Bar	617	3%	510	34	3,141
Granite Falls	3,728	18%	3,080	205	9,155
Index	35	0%	29	2	221
Snohomish	4,342	21%	3,588	239	16,424
Stanwood	3,357	17%	2,774	185	10,954
Sultan	6,334	31%	5,234	349	14,912
Woodway	5	0%	4	-	945
Total	20,260	100%	16,741	1,115	65,735

Source: Regional Growth Strategy, Amended May 28, 2009, PSRC
 Population change from 2000 to 2009 is based on Office of Financial Management population estimates
 Note: The numbers in Table 6 may not add up exactly as a result of rounding. Note: The list of small cities does not include Lake Stevens, which is expected to be taken out of the small city category in the near future.

Sultan UGA Population Forecast

This section presents the population forecast for Sultan’s UGA. ECONorthwest developed high, medium, and low growth rates for Sultan to show a range of population

growth scenarios. Each of the three forecast alternatives would meet the allocations of population to small cities described in Tables 6 and 7.

The **Low** population forecast projects that Sultan’s UGA will grow to 12,398 people by 2030, an increase of 1,279 people between 2025 and 2030. The growth rate used in the low forecast (2.2% average annual growth) is based on the County’s historical growth rate over the 1990 to 2009 period.

The **Medium** population forecast projects that Sultan’s UGA will grow to 13,409 people by 2030, an increase of 2,290 people between 2025 and 2030. The growth rate used in the medium forecast (3.8% average annual growth) is based on the Sultan’s historical growth rate over the 1990 to 2009.

The **High** population forecast projects that Sultan’s UGA will grow to 13,881 people by 2030, an increase of 2,762 people between 2025 and 2030. The growth rate used in the high forecast (4.5% average annual growth) is based on Snohomish County’s forecast growth rate for Sultan over the 2006 to 2025 period.

Table 8. Range of population forecasts, City of Sultan UGA, 2006 to 2040

Year	Low	Medium	High
2006	4,785	4,785	4,785
2010	5,714	5,714	5,714
2015	7,134	7,134	7,134
2020	8,906	8,906	8,906
2025	11,119	11,119	11,119
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Change 2025 to 2030			
Number	1,279	2,290	2,762
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Number	4,295	8,381	10,515
Percent	39%	75%	95%
AAGR	2.2%	3.8%	4.5%

Source: ECONorthwest Note: AAGR is average annual growth rate. Green shading denotes the forecast from Snohomish County.

Alternative Population Forecast

ECONorthwest provides some alternative population forecasts for consideration during the 10-year update in Table 9 of the *City of Sultan Population Forecast* (population forecast report). The alternative population forecasts assumes the city does not meet the Snohomish County population target by 2025.

- The **Low** population forecast projects that Sultan’s UGA will grow to 11,078 people by 2040, at an average annual growth rate of 2.5%. This scenario **would not result in a population that would meet the allocations of population to small cities described in Tables 6 and 7.**
- The **Medium** population forecast projects that Sultan’s UGA will grow to 13,075 people by 2040, at an average annual growth rate of 3.0%. **This scenario would result in a population to meet the allocation of population to small cities described in Table 6 but not Table 7.**
- The **High** population forecast projects that Sultan’s UGA will grow to 17,004 people by 2040, at an average annual growth rate of 3.8%. The high population forecast assumes that Sultan continues to grow at its historical rate. **This scenario would result in a population to meet the allocation of population to small cities described in Tables 6 and 7.**

Table 9. Alternative population forecasts, City of Sultan UGA, 2006 to 2040

Year	Low	Medium	High
2006	4,785	4,785	4,785
2010	5,282	5,386	5,554
2015	5,976	6,244	6,693
2020	6,761	7,239	8,065
2025	7,649	8,392	9,718
2030	8,654	9,729	11,710
2035	9,791	11,279	14,111
2040	11,078	13,075	17,004
Change 2006 to 2030			
Number	3,869	4,944	6,925
Percent	51%	59%	71%
AAGR	2.5%	3.0%	3.8%
Change 2006 to 2040			
Number	6,293	8,290	12,219
Percent	82%	99%	126%
AAGR	2.5%	3.0%	3.8%

Source: ECONorthwest

Note: AAGR is average annual growth rate

Green shading denotes the forecast from Snohomish County.

ALTERNATIVES:

1. Discuss the population forecast report and accept the staff recommendation to keep the 11,119 population allocation for 2025 and use the population allocation of 13,409 for 2030 as shown in Table 8 to prepare the water system plan and general sewer plan.

This alternative will allow work on the water system plan and general sewer plan to move forward. City staff will return to the city council and planning board with

a discussion of where the future population of 2,290 people would be allocated within the city. This decision has a direct impact on the size and cost of future infrastructure improvements.

2. Discuss the population forecast report and **do not accept** the staff recommendation to keep the 11,119 population allocation for 2025. Direct staff to the city council and planning board preferred alternative. This alternative implies the city council and planning board want to adjust the population allocation rather than wait until the 10-year update. This would redirect the city's work from completing the 2011 comprehensive plan update to adjusting the population allocation.
3. Discuss the population forecast report and direct staff to return with additional analysis for the city council and planning board's consideration.

This alternative implies the city council and planning board need additional information before making a decision.

The city council and planning board should act quickly to make a decision in order to keep the water system plan and general sewer plan on schedule.

The consultants need the 2030 population allocation in order to complete the land use and capital facilities sections of the plan updates.

RECOMMENDED ACTION:

Review the May 28, 2010 memo *City of Sultan Population Forecast (population forecast report)* prepared by ECONorthwest.

Evaluate the range of population forecasts from the in Table 8 (below) and the alternative population forecasts in Table 9 of the population forecast report.

Select the medium range forecast of 13,409 people in 2030 as set forth in Table 8 of the population forecast report to prepare the water system plan and general sewer plan.

ATTACHMENT

A - May 28, 2010 memo *City of Sultan Population Forecast (population forecast report)* prepared by ECONorthwest.

June 13, 2010

TO: Deborah Knight
CC: Bill Grimes
FROM: Beth Goodman and Bob Parker
SUBJECT: CITY OF SULTAN PRELIMINARY POPULATION FORECAST

The City of Sultan is in the process of updating its Comprehensive Plan, as part of a 7-year Growth Management Act (GMA) required update. The City has an existing population forecast that extends to 2025 but needs a population forecast that extends to 2030 for the Comprehensive Plan update. In addition, the City's existing forecast is based on Snohomish County's 2007 Buildable Lands Report, which allocated a specific population to Sultan for 2025. The City wishes to reconsider that allocation when the County next updates its Buildable Lands Report.

Population forecasts serve several purposes. Population forecasts allow municipalities to estimate the amount of infrastructure capacity that is necessary to provide. This ensures that municipalities have sufficient capacity to accommodate projected growth. The population forecast also allows municipalities to develop estimates of how much housing will be needed. These estimates in turn allow for an estimate of how much land will be needed to accommodate housing growth.

DATA SOURCES AND METHODS

The population forecasts presented in this memorandum build from a range of secondary data sources. All of the data used in developing the forecasts are from easily available standard sources:

1. The Washington Office of Financial Management provides current population estimates and long-term state and county population forecasts;
2. The 2007 Snohomish Buildable Lands Report provides population targets and capacities for each urban growth area (UGA) in the County;
3. The City of Sultan Comprehensive Plan provides forecasts of growth used as the basis for water and wastewater system development; and
4. The Puget Sound Regional Council's (PSRC) *Vision 2040* report provides growth strategies for population within the region, including for Snohomish County.

FORECASTING METHODS

The literature about population forecasting identifies many accepted approaches to projecting or forecasting population. More robust approaches use component models (natural increase plus migration). Simpler approaches extrapolate from historic trends. At large geographic levels, migration becomes less of a factor making component models more accurate. For smaller regions such as Snohomish County, migration and other factors are more difficult to document, making it more difficult to accurately forecast growth in areas with a relatively small population. Appendix A discusses issues with small area forecasts in more detail.

At the national or state level, employment growth has a larger effect on population growth. Standard cohort-component models can provide relatively accurate forecasts of population growth in larger areas where the migration component is small. Such models are frequently applied in areas where there is relative stability in demographic characteristics and vital statistics (e.g., birth and death rates).

Table 1 summarizes several methods for forecasting population in small areas. These methods are relatively simple and rely on past trends as an indicator of future growth. A number of assumptions are implicit in these methods: (1) past growth is a good indicator of future growth; (2) factors affecting local population growth will not change substantially; and (3) selection of base year can significantly affect the forecast.

Table 1. Basic population forecasting methods for small areas

Method	Description
Trend extrapolation	Uses historical population growth rates and extrapolates them into the future.
Ratio trend	Uses current city/county ratio of population and extrapolates to the future.
Comparative	Past growth pattern is compared with growth patterns of larger, older areas. Should consider social, economic, political, and other variables.

Source: ECONorthwest

The forecasts presented in this memorandum uses the **trend extrapolation** method, which compounds population growth. This method uses historical trends as the basis to determine future growth. The forecast compounds population growth by assuming that as the population gradually grows, the number of people added each year will also grow.¹ The forecast also considers a ratio method to forecast a range of Sultan's

¹ Compounding population growth is mathematically similar to compound interest on a bank account. As more population accumulates, the same percent change will result in greater absolute growth over time. For example, if an

potential share of Snohomish County's growth allocated to small cities. We chose these methods because they are (1) consistent with historical population growth trends, (2) a relatively simple approach that builds from historical data and assumptions about future City and County growth policies, and (3) allow for the assumption that the incorporated communities will grow at different rates from each other and the County.

ORGANIZATION OF THIS MEMORANDUM

The remainder of the memorandum is organized into the following sections:

1. **Historical Population Growth** describes the historical population growth in Sultan, Snohomish County, and Washington State.
2. **Forecasts of Population Growth** presents existing population forecasts for Sultan.
3. **Sultan UGA Population Forecast** presents high, medium, and low range forecasts for the Sultan UGA.
4. **Appendix A, Issues With Small Area Forecasts** describes common problems observed with small area population forecasts.

area has 1,000 people and grows at 3% per year, the first year the area will grow by 30 people (to 1,030 people) and the second year the area will grow by 31 people (to 1,061 people).

HISTORICAL POPULATION GROWTH

Table 2 shows population growth in Washington State, Snohomish County, and the City of Sultan for the 1980 to 2009 period. Table 2 shows that the City of Sultan grew at an average annual growth rate (AAGR) of about 3.7% between 1980 to 2009, adding 2,977 people over the 29 year period. The City's growth rate of 3.7% was higher than the County growth rate (2.6%) or the State average (1.7%).

Table 2. Population growth, Washington State, Snohomish County, City of Sultan, 1980 to 2009

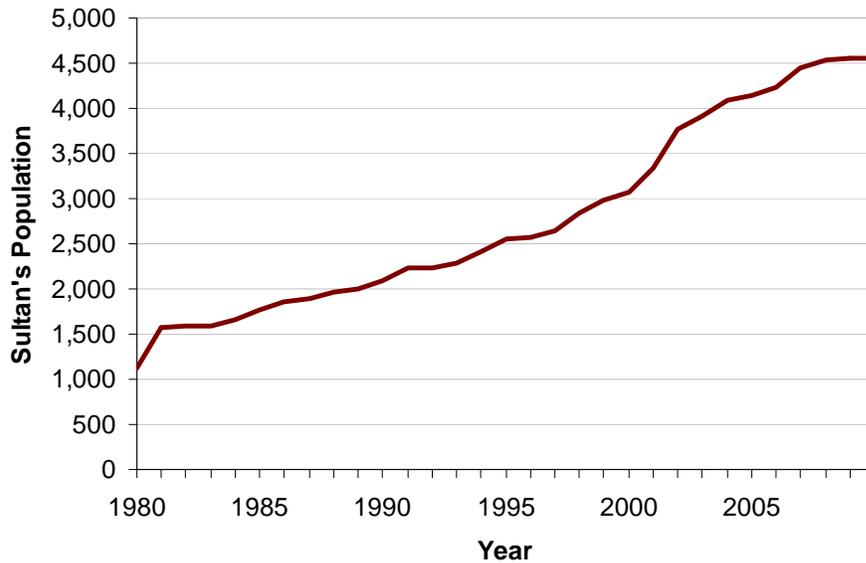
Year	Washington State	Snohomish County	Sultan
1980	4,132,353	337,720	1,578
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Source: Washington State Office of Financial Management

Note: AAGR is average annual growth rate

<http://www.ofm.wa.gov/pop/april1/cociseries/default.asp>

Figure 1 shows Sultan's population growth over the 1980 to 2009 period. The City's growth has been relatively linear over the 29-year period. The fastest period of growth occurred in the early 2000's. Since 2008, Sultan's growth has flattened out, probably as a result of the national recession and housing market decline.

Figure 1. Population growth, City of Sultan, 1980 to 2009

Source: Washington State Office of Financial Management
<http://www.ofm.wa.gov/pop/april1/cociseries/default.asp>

FORECASTS OF POPULATION GROWTH

SNOHOMISH COUNTY FORECAST

As part of the *Vision 2040* project, the PSRC adopted a regional growth strategy for Snohomish County in April 2008 and amended the growth strategy in May 2009. Table 3 presents the regional growth strategy for Snohomish County. Table 3 shows that Snohomish County is forecast to grow by about 446,000 people over the 2000 to 2040 period, an increase of 74% at an average annual growth rate of 1.4%.

Table 3 shows the allocation of growth within the County, based on the size of city. Small cities, which includes Sultan, are forecast to grow from 42,000 people in 2000 to 78,000 people in 2040, an increase of about 37,000 people (88% increase) at an average annual growth rate of 1.6%.²

² Snohomish County's small cities currently include: Brier, Darrington, Gold Bar, Granite Falls, Index, Lake Stevens, Snohomish, Stanwood, Sultan, and Woodway.

Table 3. Snohomish County Regional Growth Strategy, 2000 to 2040

Regional Geography	Metro Cities	Core Cities	Larger Cities	Small Cities	Unincorp'd UGAs	Rural	TOTAL
2000 Population	99,000	48,000	147,000	42,000	158,000	112,000	606,000
Pct Share by Regional Geography	16.4%	7.9%	24.3%	6.9%	26.0%	18.5%	100.0%
RGS Pop Allocation 2000-2040	90,000	40,000	85,000	37,000	148,000	46,000	446,000
Pct Share by Regional Geography	20.2%	9.0%	19.0%	8.3%	33.2%	10.3%	100.0%
2040 Population	190,000	88,000	232,000	78,000	306,000	158,000	1,052,000
Pct Share by Regional Geography	18.0%	8.3%	22.1%	7.5%	29.1%	15.0%	100.0%

Source: Regional Growth Strategy, Amended May 28, 2009, PSRC
<http://www.psrc.org/growth/vision2040/background>

Table 4 presents Snohomish County's population forecast for the Sultan UGA for 2006 to 2025. The forecast projects that Sultan's population will increase from 4,785 people in 2006 to 11,119 people in 2025, an increase of 6,334 people over the 19 year period at an average annual growth rate (AAGR) of 4.5%. The forecast projects that about 40% of growth will occur in unincorporated parts of Sultan's UGA.

Table 4. Population forecast, Sultan UGA, 2006 to 2025

	2006	2025 Target	Change 2006		
			to 2025	Percent	AAGR
Sultan UGA	4,785	11,119	6,334	132%	4.5%
Sultan City	4,440	8,190	3,750	84%	3.3%
Unincorporated	345	2,929	2,584	749%	11.9%

Source: Snohomish County 2007 Buildable Lands Report, Table 1

Note: AAGR is average annual growth rate

http://www1.co.snohomish.wa.us/Departments/PDS/Divisions/LR_Planning/Information/Demographics/Buildable_Lands/

SULTAN WATER AND WASTEWATER FACILITIES PLANNING

The City of Sultan's water and wastewater facilities planning is based on forecasts of expected population growth. Table 5 shows the population forecast that is the basis for Sultan's water and wastewater facilities planning. Both plans assume that population in Sultan's UGA will increase from 4,785 people in 2006 to 11,119 people by 2025, an increase of 6,334 people at an average annual growth rate of 4.5%. This forecast is consistent with the City's adopted forecast of 11,119 people by 2025.

Table 5. Water and wastewater facilities population forecast, City of Sultan UGA, 2006 to 2025

Year	Water Plan	Sewer Plan
2006	4,785	4,785
2025	11,119	11,119
Change in population for 2006 to 2025		
Number	6,334	6,334
Percent	132%	132%
AAGR	4.5%	4.5%

Source: Water plan forecast: City of Sultan Comprehensive Plan Appendix O Water and Sewer Plan Draft Amendments, August 2008
 Sewer plan forecast: General Sewer Plan, Amendment No 2, September 2008
 Note: AAGR is average annual growth rate

EXPECTED GROWTH IN SNOHOMISH COUNTY'S SMALL CITIES

Table 3 shows that the PSRC's Vision 2040 assumes that small cities in Snohomish County will accommodate 37,000 additional population between 2000 to 2040. The Vision 2040 does not describe how that population will be allocated among the small cities. The forecasted growth may be absorbed by these small cities in many different ways. This section describes two potential ways that the 37,000 people may be allocated among the cities: (1) based on recent growth trends and (2) based on Snohomish County's forecast of growth over the 2006 to 2025 period.

Recent growth trends alternative

The assumption in Table 6 is that the 37,000 people will be allocated to the small cities based on growth patterns over the 2000 to 2009 period. Table 6 shows that the small cities grew by 5,421 people over the nine year period, with the majority of growth in: Stanwood (31%), Sultan (22%), Granite Falls (19%), and Snohomish (12%). To meet the 37,000 persons goal, the small cities will need to add 31,578 people over the 2010 to 2040.

Table 6 assumes that these people will be distributed among the small cities based on the percent of growth that these cities had over the 2000 to 2009 period. For example, Sultan accounted for 22% of growth in the small cities over the nine year period and would account for 22% of the additional 31,578 people in small cities.

Table 6. Growth in small cities, based on growth trends over the 2000 to 2009 period, Snohomish County small cities, 2000 to 2040

	Growth 2000 to 2009		Pop. Growth to Reach 37,000		
	Population Change	% Small City Growth 2000 to 2009	2010 to 2040 Growth	Average Annual Growth	2040 Population
Brier	107	2%	623	21	7,113
Darrington	369	7%	2,150	72	3,655
Gold Bar	136	3%	792	26	2,942
Granite Falls	1,028	19%	5,988	200	9,363
Index	(2)	0%	(12)	-	143
Snohomish	651	12%	3,792	126	12,937
Stanwood	1,667	31%	9,711	324	15,301
Sultan	1,211	22%	7,054	235	11,609
Woodway	254	5%	1,480	49	2,670
Total	5,421	100%	31,578	1,053	65,733

Source: Regional Growth Strategy, Amended May 28, 2009, PSRC

Population change from 2000 to 2009 is based on Office of Financial Management population estimates

Note: The numbers in Table 6 may not add up exactly as a result of rounding.

Note: The list of small cities does not include Lake Stevens, which is expected to be taken out of the small city category in the near future.

Snohomish County's forecast alternative

The assumption in Table 7 is also that the 37,000 people will be allocated to the small cities but based on the patterns described in the Snohomish County population forecast for the 2006 to 2025 period. Table 7 shows that the small cities are forecast to grow by 20,260 people over the 19 year period, with the majority of growth in: Sultan (31%), Snohomish (21%), Granite Falls (18%), and Stanwood (17%). To meet the 37,000 persons goal, the small cities will need to add 16,741 people over the 2025 to 2040.

Table 7 assumes that these people will be distributed among the small cities based on the percent of growth that these cities are forecast to have over the 2006 to 2025. For example, Sultan accounted for 31% of growth in the small cities over the nine year period and would account for 31% of the additional 31,578 people in small cities.

Table 7. Growth in small cities, based on forecast growth over the 2006 to 2025 period, Snohomish County small cities, 2000 to 2040

	Forecast Growth 2006 to 2025		Pop. Growth to Reach 37,000		
	Population Change	% Small City Growth 2000 to 2009	2025 to 2040 Growth	Average Annual Growth	2040 Population
Brier	1,310	6%	1,082	72	8,775
Darrington	532	3%	440	29	2,108
Gold Bar	617	3%	510	34	3,141
Granite Falls	3,728	18%	3,080	205	9,155
Index	35	0%	29	2	221
Snohomish	4,342	21%	3,588	239	16,424
Stanwood	3,357	17%	2,774	185	10,054
Sultan	6,334	31%	5,234	349	14,912
Woodway	5	0%	4	-	945
Total	20,260	100%	16,741	1,115	65,735

Source: Regional Growth Strategy, Amended May 28, 2009, PSRC

Population change from 2000 to 2009 is based on Office of Financial Management population estimates

Note: The numbers in Table 6 may not add up exactly as a result of rounding.

Note: The list of small cities does not include Lake Stevens, which is expected to be taken out of the small city category in the near future.

Tables 6 and 7 provide a range of population growth that Sultan might need to accommodate to meet the PSRC's Vision for growth in Snohomish County's small cities.

SULTAN UGA POPULATION FORECAST

This section presents the population forecast for Sultan's UGA. ECO developed high, medium, and low growth rates for Sultan to show a range of population growth scenarios. We expect to revise the forecasts based on input from City staff. The forecast growth rates are based on: official population estimates from the State, Snohomish County's forecast of population to 2025, and historical growth trends. Each of the three forecast alternatives would meet the allocations of population to small cities described in Tables 6 and 7. The forecasts presented in Table 8 are:

1. The **Low** population forecast projects that Sultan's UGA will grow to 12,398 people by 2030, an increase of 1,279 people between 2025 and 2030. By 2040, the low forecast shows that Sultan's population will reach 15,414 people. The growth rate used in the low forecast (2.2% average annual growth) is based on the County's historical growth rate over the 1990 to 2009 period. The low population forecast assumes that Sultan's growth rate will decrease from 4.5% to 2.2% after 2025 and that Sultan will only grow at the same rate as the County.
2. The **Medium** population forecast projects that Sultan's UGA will grow to 13,409 people by 2030, an increase of 2,290 people between 2025 and 2030. By 2040, the medium forecast shows that Sultan's population will reach 19,500 people. The growth rate used in the medium forecast (3.8% average annual growth) is based

on the Sultan's historical growth rate over the 1990 to 2009 period and is very similar to the City's growth rate over the last 29 years (3.7%). The medium population forecast assumes that Sultan's growth rate will decrease from 4.5% to 3.8% after 2025. This assumption seems reasonable, given that Sultan's historical growth rate has been stable over a long period.

3. The **High** population forecast projects that Sultan's UGA will grow to 13,881 people by 2030, an increase of 2,762 people between 2025 and 2030. By 2040, the high forecast shows that Sultan's population will reach 21,634 people. The growth rate used in the high forecast (4.5% average annual growth) is based on Snohomish County's forecast growth rate for Sultan over the 2006 to 2025 period. The high population forecast assumes that Sultan will continue to grow at 4.5% after 2025. Maintaining this growth rate will require the City to make investments in public facilities. The City may also need to consider urban growth policies to accommodate this amount of growth, such as policies that promote denser residential development or expanding the City's UGA.

Table 8. Range of population forecasts, City of Sultan UGA, 2006 to 2040

Year	Low	Medium	High
2006	4,785	4,785	4,785
2010	5,714	5,714	5,714
2015	7,134	7,134	7,134
2020	8,906	8,906	8,906
2025	11,119	11,119	11,119
2030	12,398	13,409	13,881
2035	13,824	16,170	17,329
2040	15,414	19,500	21,634
Change 2025 to 2030			
Number	1,279	2,290	2,762
Percent	12%	21%	25%
AAGR	2.2%	3.8%	4.5%
Change 2025 to 2040			
Number	4,295	8,381	10,515
Percent	39%	75%	95%
AAGR	2.2%	3.8%	4.5%

Source: ECONorthwest

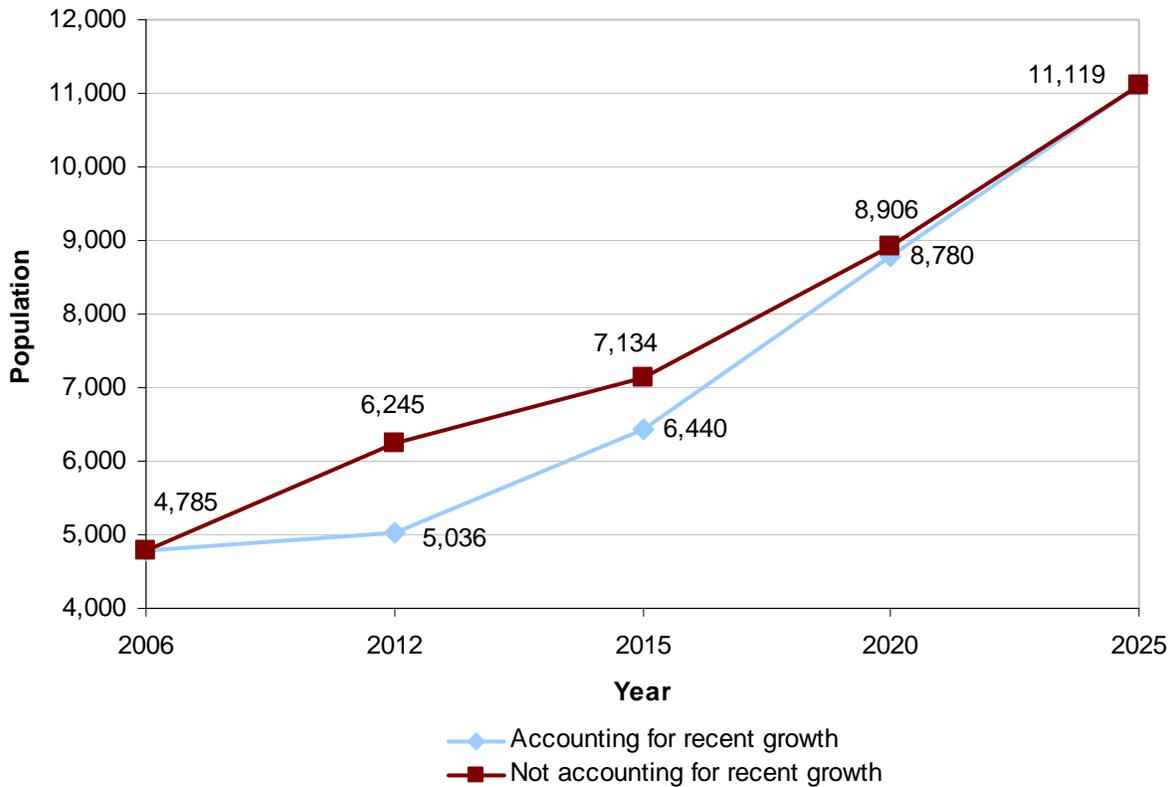
Note: AAGR is average annual growth rate

Green shading denotes the forecast from Snohomish County.

The City is considering asking Snohomish County to revisit the City's forecast for the 2006 to 2025 period when the County updates its buildable lands analysis. Sultan's population has not grown at the forecast rate during the 2006 to 2009 period. Rather than growing at an average of 4.5% annually, Sultan grew at 0.9% between 2006 and 2009. Sultan's population will need to grow at a higher rate in the future to reach the projected growth of 11,119 people by 2025. Figure 2 shows an illustration of Sultan's potential growth curve to reach the target population. Figure 2 assumes that Sultan continues to grow at 0.9% through 2012, based on the slow recovery from the current

recession. By 2012, Sultan would have about 5,036 people, about 1,200 people fewer than the forecast of 6,245 people. Sultan would need to grow faster (7.2% average annual growth) during the 2012 to 2020 period to “catch up” to meet the population target in 2025.

Figure 2. Potential growth based on existing population forecast to 2025, City of Sultan,



Source: ECONorthwest

Table 9 presents an alternative forecast of population growth in Sultan, assuming that the City does not meet the Snohomish County population target by 2025. This forecast is illustrative in nature and may require further refinement based on input from City staff. The forecast growth rates are based on: official population estimates from the State and historical growth trends. The forecasts presented in Table 9 are:

1. The **Low** population forecast projects that Sultan’s UGA will grow to 11,078 people by 2040, at an average annual growth rate of 2.5%. The low population forecast assumes that Sultan will grow somewhat faster than the County grew historically, which is substantially slower than the City’s historical growth rate. This scenario would not result in a population that would meet the allocations of population to small cities described in Tables 6 and 7.
2. The **Medium** population forecast projects that Sultan’s UGA will grow to 13,075 people by 2040, at an average annual growth rate of 3.0%. The medium

population forecast assumes that Sultan will grow faster than the County grew historically but slower than the City's historical growth rate. This scenario would result in a population to meet the allocation of population to small cities described in Table 6 but not Table 7.

3. The **High** population forecast projects that Sultan's UGA will grow to 17,004 people by 2040, at an average annual growth rate of 3.8%. The high population forecast assumes that Sultan continues to grow at its historical rate. This scenario would result in a population to meet the allocation of population to small cities described in Tables 6 and 7.

**Table 9. Alternative population forecasts,
City of Sultan UGA, 2006 to 2040**

Year	Low	Medium	High
2006	4,785	4,785	4,785
2010	5,282	5,386	5,554
2015	5,976	6,244	6,693
2020	6,761	7,239	8,065
2025	7,649	8,392	9,718
2030	8,654	9,729	11,710
2035	9,791	11,279	14,111
2040	11,078	13,075	17,004
Change 2006 to 2030			
Number	3,869	4,944	6,925
Percent	51%	59%	71%
AAGR	2.5%	3.0%	3.8%
Change 2006 to 2040			
Number	6,293	8,290	12,219
Percent	82%	99%	126%
AAGR	2.5%	3.0%	3.8%

Source: ECONorthwest

Note: AAGR is average annual growth rate

Green shading denotes the forecast from Snohomish County.

APPENDIX A. ISSUES WITH SMALL AREA FORECASTS³

Planning implies forecasting. To use policies to change the future in ways that decision makers think their constituents would find beneficial, one must first have an idea of what could or is likely to occur in the absence of those policy changes.

Forecasting is usually better, and better received, if it is based on a model of how the world works. In the context of housing and economic development, that understanding must certainly include how households and businesses make decisions about where to locate, and what types of buildings to occupy.

In the context of land use and growth management, the main variables that one must forecast are population and employment, which are then used to forecast the demand for new built space (housing, offices, warehouses, retail stores, and so on). The demand for built space creates a derived demand for land on which to build that space.

The amount of land needed depends on the type and density of space that will be built to accommodate population and employment growth. The type and density of development will be a function of market factors (demand and supply conditions) and public policy (especially about density and infrastructure, but also about transportation, economic development, environmental protection, and so on). This function of forecasting is central to the Sultan Comprehensive Plan: it will allow the City to determine how much land to make available for different uses to accommodate 20 years of population and employment growth.

The main point is that (1) forecasting growth requires a consideration of many variables that interact in complicated ways, and (2) any forecast of a single future is bound to be wrong—there are many possible futures that are more or less likely depending on one's assessment of the likelihood of the assumptions.

Thus, in conjunction with the forecasts, it is useful to describe the limitations of small area forecasts. Following is a discussion of why small area forecasts are highly uncertain:

- Projections for population in most municipalities and counties are not based on deterministic models of growth; they are simple projections of past growth rates into the future. They have no quantitative connection to the underlying factors that explain why and how much growth will occur.
- Even if planners had a sophisticated model that links all these important variables together (which they do not), they would still face the problem of having to forecast the future of the variables that they are using to forecast growth (in, say, population or employment). In the final analysis, all forecasting requires making *assumptions* about the future.

³ This section builds from work previously completed by ECONorthwest.

- Comparisons of past population projections to subsequent population counts have revealed that even much more sophisticated methods than the ones used in the study "are often inaccurate even for relatively large populations and for short periods of time."⁴ The smaller the area and the longer the period of time covered, the worse the results for any statistical method.
- Small areas start from a small base. A new subdivision of 200 homes in Snohomish County would have an effect on total population of 0.1%. That same subdivision in a community of 200 would increase Sultan's housing stock by about 11% – and population by a similar percentage.
- Especially for small jurisdictions in areas that can have high growth potential (e.g., because they are near to concentrations of demand in neighboring metropolitan areas, or because they have high amenity value for recreation or retirement), there is ample evidence of very high growth rates in short-term; there are also cases (fewer) of high growth rates sustained over 10 to 30 years.
- Public policy makes a difference. Municipalities can affect the rate of growth through infrastructure, land supply, incentives and other policies. Such policies generally do not have an impact on growth rates in a region, but may cause shifts of population and employment among municipalities.

Because of the uncertainty associated with small area forecasts, many forecasts present ranges of future population. Municipalities have many reasons to use point forecasts: among the most important are projections of future revenues, need for infrastructure, and need for land. These factors provide sufficient rationale for municipalities to develop and adopt point forecasts. That fact, however, does not mean they are any more accurate.

In summary, the longer the forecast, the greater the potential that actual population growth will vary from the forecast. This implies that municipalities should closely monitor actual population growth so that either (1) plans can be modified to account for variations, or (2) policies can be implemented that increase the likelihood of achieving the population growth.

One final comment on forecasts: population forecasts are often viewed as "self-fulfilling prophecies." In many respects they are intended to be; local governments create land use, transportation, and infrastructure plans to accommodate the growth forecast. Those planning documents represent a series of policy decisions. Thus, how much population a local government chooses to accommodate is also a policy decision. In short, the forecast and the plans based on the forecast represent the municipality's future vision.

⁴Murdock, Steve H., et al. 1991. "Evaluating Small-Area Population Projections." *Journal of the American Planning Association*, Vol. 57, No. 4, page 432.