Whatcom County 20-Year Capital Facilities Plan

Whatcom County Comprehensive Plan – Appendix E ■ Revised February 2014

ICF Jones & Stokes

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Whatcom County 20-Year Capital Facilities Plan

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Executive Summary

The Capital Facilities Plan (CFP) is one of the elements of the Whatcom County's comprehensive plan that is required by Washington's Growth Management Act (GMA). Capital facilities generally have very long useful lives, significant costs, and are not mobile.

The focus of the CFP is the planning and provision of needed public facilities for the County's unincorporated and countywide populations. It is also intended to support the County's 10-year review of urban growth areas. The County's population base and other demand factors, together with the adopted LOS, are the principal factors considered in the CFP.

This Capital Facilities Plan represents the six-year period of 2010-2015 of forecasted need for public facilities, along with specific capital projects expenditures and revenues. The County's adopted projections for population and employment growth to 2029 are also considered in this CFP.

Contents of the Plan

The CFP Element of the comprehensive plan is presented in three sections:

I.	Introduction	Purpose of the CFP, statutory requirements, and methodology.
II.	Capital Improvements	List of proposed capital projects, including financing plan, and reconciliation of project capacity to level of service standards.
III.	Implementation	Summary of management tools that will be used to implement the CFP.

Growth Assumptions

For purposes of capital facility planning coordination, Comprehensive Plan population and employment forecasts were created to the year 2029. A Geographic Information System (GIS) was utilized to break down the population, household, and employment forecasts by capital facility provider. Capital facility purveyors were provided with these forecasts as a planning tool to assist service providers in understanding implications of growth under each alternative that the County considered in the development of this CFP.

Public Facility Costs

The cost of capital improvements for 2010-2015 and, when available, for 2016-2029 are provided in the Capital Facilities Plan.

Public Facility Financing

The purpose of this financial analysis is to support the financing plan for the CFP that is required by RCW 36.70A.070(3)(d). Revenue estimates have been developed to assist in project planning, and represent realistic, but not exact, estimates of revenue available for the CFP.

Forecasts of revenues were prepared for County-provided services. The revenue sources and forecasts for municipal and special district service providers are also summarized from available plans and compared to typical revenue sources for those service providers. More detail on CFP financing can be found in the Capital Facilities Revenue Analysis section of the CFP.

CFP Level of Services Consequences

The CFP outlines the level of service (LOS) consequences of growth for the County both to 2015, and in a longer-term review to 2029. LOS consequences are as follows for each County maintained and owned facility:

Public Buildings

County-wide Office Space

With capacity projects programmed in the next six years, the County will be able to maintain its LOS for County-wide Office space to 2015. The County anticipates that it will be able to continue to meet its County-wide Office space needs to 2029 with an LOS standard of 0.63 square feet per capita.

Unincorporated Office Space

With capacity projects planned for the 2010-2015 time period, the County will be able to maintain current LOS standards for unincorporated office space through 2015 and 2029.

Maintenance and Operations

The County will be able to maintain its LOS standards for maintenance and operations facilities for all time periods through 2029.

Sheriff's Office and Juvenile Detention (County)

Sheriff's Office

The CFP shows that the County will be able to meet LOS standards for Sheriff's Office facilities serving unincorporated Whatcom County in 2015. With capacity projects from the 2010-2015 timeframe, the County will be able to meet LOS standards under this category for 2029 as well.

Emergency Management

The CFP shows that the County is expected to maintain its current LOS standard for emergency management facilities when 2010-2015 capacity projects are taken into account in both 2015 and 2029 horizon years.

Jails

The County is expected to maintain its existing LOS standard for jails when capacity projects for 2010-2015 are included. The County has a reserve in this capital facility category in both 2015 and 2029.

Juvenile Detention

With a LOS standard of 0.125 beds per 1,000, the County is projected to maintain adequate juvenile detention space to the 2029 horizon year. The County currently has no juvenile detention capacity projects planned.

Parks and Recreation

Parks

When considering capacity projects that the County has for the 2010-2015 timeframe, the County will be able to maintain its developed parks LOS standard through the 2029 planning horizon.

Trails

With a proposed LOS standard of 0.60 miles of trail per 1,000 population, the County expects to have adequate trails to meet this standard in 2029 with planned capacity projects.

Activity Center

The County has plans to construct one additional activity center during the planning period. With this additional center, the County expects to meet its LOS standard of 5 activity centers per 100,000 population by 2029.

Sanitary Sewer

A review of LOS standards found in individual sewer purveyor's plans in relation to population and employment projections indicate that the City of Bellingham, Birch Bay Water and Sewer District, City of Lynden, City of Sumas, and Lake Whatcom Water and Sewer District have adequate sewage treatment capacity to meet projected demands through 2029. The City of Everson shows a sewage treatment deficit in 2029 and the city's own analysis of sewage treatment capacity indicates that it has available capacity to meet approximately 8 to 12 years of residential growth and that expansion of the sewage treatment plant will be necessary. In addition, the City of Blaine expects to provide an additional 0.7 MGD of sewage treatment capacity when its new wastewater treatment plant starts operation in 2010. With this additional sewage treatment

capacity, the City of Blaine is expected to have a sewage treatment capacity reserve in both 2015 and 2029. The City of Nooksack, which shares a sewage treatment plant with City of Everson, is expected to have a sewage treatment deficit in 13 to 15 years. Expansion of the Everson sewage treatment plant would be needed to accommodate growth in City of Nooksack to 2029. Water District 13, serving a portion of the Columbia Valley UGA, has existing capacity and planned improvements to serve growth within its boundaries. The Columbia Valley Water District does not provide sewer service at the present time. Additional sewer planning will be needed to serve new urban growth in the undeveloped portion of the Columbia Valley UGA that is not addressed in a comprehensive sewer plan. The City of Ferndale would have sewage treatment deficits in 2029 if no improvements were made to the existing wastewater treatment plan. However, Ferndale adopted a comprehensive sewer plan in 2011 to address needed improvements to serve planned growth over the 20-year planning period. For those service providers without an adopted plan, the Capital Facilities Implementation section of this CFP provides options for addressing any identified deficiencies in their capital planning process.

Water Systems

A comparison of the water system plans of urban water systems in Whatcom County shows that most of the water systems plan for populations greater than that projected for their service area as part of the Whatcom County 2029 capital facility planning process. This indicates that these water systems generally plan conservatively for drinking water needs, particularly given the time it takes to seek new water supplies to serve growth. Water District 13, City of Everson, City of Nooksack, City of Sumas, Water District 7, and Lake Whatcom Water and Sewer District all plan for populations lower than that found in the Whatcom County 2029 CFP projections, potentially indicating a need to update their analysis with updated population and employment figures as part of their planning for water system needs. Birch Bay Water and Sewer District's Plan identified a near-term need for additional water sources, and is actively working with its partner, the City of Blaine, to obtain new water sources. In addition, when the Ecology water rights calculation for the City of Lynden of 1,110 gpm is considered, instead of the City's source capacity estimates, then the City of Lynden experiences water deficits in the planning period. Other urban area water purveyors identify storage and/or distribution projects that will be needed to continue providing service at adequate levels over the planning period. For those service providers with plans, a variety of short and long-term projects are identified to address deficiencies (see Urban Water Systems Capital Project and Funding Section).

Schools

School enrollment projections are affected by demographic trends and a variety of alternative educational programs which make projecting traditional public school enrollment more difficult. A review of school district capacity in the County calculated for this analysis through 2029 reveals that the Bellingham, Blaine, and Lynden school districts are expected to have school capacity deficits by 2015. By 2029, the three deficits anticipated in the districts mentioned above

~~are larger. In some cases, the districts may elect to accommodate future capacity through additional long-term projects or the addition of portable classrooms.~~

~~Solid Waste~~

~~The County does not have any landfills located within the County. Solid waste is shipped outside of the County through two solid waste transfer facilities. The Solid Waste LOS standard analysis shows that the County can expect an increase from 2008 of 147,070 tons of solid waste generated per year to 189,884 tons of solid waste per year by 2029.~~

~~Stormwater~~

~~Although the County does not have a formal and explicit capital facility LOS standard for stormwater facilities, the County has adopted a stormwater compliance program in accordance with the National Pollution Discharge Elimination (NPDES) Phase II program. This program applies to specific areas of the County currently designated as UGAs, or urbanized areas in or near the cities of Bellingham and Ferndale. Goals of the program include detection and elimination of illicit discharges to surface waters, controlling runoff from new development, redevelopment, and new construction, pollution prevention and operation and maintenance for municipal operations, and public education, stormwater monitoring and report requirements.~~

~~Transportation~~

~~As population and employment are projected to increase, the resulting increase in traffic is expected to degrade the LOS on the transportation system. The Transportation section of this CFP provides a summarized list of the county roads with projected 2029 volume to capacity (V/C) ratios that exceed LOS standards. The Transportation section summarizes the total projected lane-miles expected to be deficient. In addition projects are identified in the Transportation Capital Projects and Funding section of this CFP that will address identified deficiencies.~~

~~Transit~~

~~Public transit providers typically provide LOS standards which are difficult to relate to capital facility needs with respect to changes in population over time. For example, Whatcom Transportation Authority (WTA) provides one capital facility standard of a shelter at each transit stop that has 25 boardings or more.~~

~~Fire Protection~~

~~Most fire districts in Whatcom County do not have their own adopted capital facility plans. In some cases, districts have recently been reorganized or consolidated into fire protection authorities. However, the cities of Bellingham and Lynden fire departments both have adopted capital facilities plans, and North Whatcom Fire and Rescue, Fire District 7, Fire District 8 and Fire District 14 have adopted CFPs addressing their facility needs.~~

Whatcom County adopted a level of service standard in 2011 based upon response times and fire ratings. There will necessarily be a transition period in which the County will work with the fire districts to develop or amend CFPs in accordance with the new county-wide LOS standards. For capital facility planning purposes, fire districts that have not yet developed or amended CFPs in accordance with the County's adopted LOS standards are evaluated under a square feet per emergency incident method of calculating LOS.

The square feet per emergency incident method is utilized for fire protection LOS analysis in this CFP for fire districts that have not yet developed or updated their plans to address the county-wide LOS standards adopted by the County in 2011. Based upon information provided by the County Fire Marshal's Office, all four fire districts serving urban areas that were evaluated under the incident per square foot method are expecting to have a future deficit in capital facilities by 2029. Most fire districts serving rural areas are also expected to have capital facility deficits by 2029 based on this analysis. The exceptions are Fire District 18 and Fire District 5 both of which show small facility surpluses in 2029.

The County adopted county-wide fire level of service standards based upon response times and fire ratings in 2011. The Fire District 7, Fire District 8 and Fire District 14 CFPs were developed to meet the new LOS standards. The County may incorporate by reference fire district CFPs as they are adopted or amended in accordance with the new county-wide LOS standards. The Capital Facilities Implementation section of this CFP identifies measures that service providers without adopted or amended CFPs can take to address any identified deficiencies.

CFP Source Documents

The source documents used in preparing this CFP are the capital improvement plans prepared routinely as required by the State, and that are necessary for obtaining funding. These individual capital improvement plans define projects and proposed funding for those projects required to rehabilitate existing facilities and to provide level of service capacity to accommodate new growth in the county.

Generally, the proposed new capacity, replacement, and rehabilitation capital facilities and financing for 2010-2015 reflect the general planning goals and policies, as well as land use infrastructure requirements, identified in each provider's long-range planning document.

For example, each of the urban water systems has a water system plan that (1) identifies existing facilities, needs for rehabilitation and new capacity facilities, (2) evaluates methods to meet those needs, and (3) recommends capital facilities, and estimates costs, and funding options.

The CFP planning process described above combined with the LOS methodology used to identify the requirements for and affordability of future capital facilities constitutes the capital facilities planning process. This process enables the County to make more (1) informed decisions about its investment of public dollars, and (2) timely decisions about maintaining levels of service in accordance with the goals, policies, and implementation programs of this CFP.

Introduction

Capital Facilities Plan Purpose

In 2009, the County focused on the required 10-Year Urban Growth Area (UGA) Review in which the County considered: growth forecasts and allocations, urban growth boundaries, and comprehensive plan and zoning designations. The population and employment growth to 2029 is a key assumption of this CFP.

Capital facilities are the facilities needed to support growth. They include roads, sewers, parks and recreation, and facilities for drinking water, stormwater, garbage disposal and recycling, and all the government buildings which house public services, including law enforcement, fire protection and schools.

The purpose of the CFP is to use sound fiscal policies to provide adequate public facilities consistent with the land use element and concurrent with, or prior to, the impacts of development in order to achieve and maintain adopted standards for levels of service.

Growth Management Act

The CFP is required by the State Growth Management Act (GMA). The GMA requires the CFP to identify specific facilities, include a realistic financing plan, and make adjustment to the plan if funding is inadequate. Capital facilities are important because they support the growth envisioned in the County's Comprehensive Plan.

RCW 36.70A.070(3) requires the capital facilities plan to include "a six-year plan that will finance such capital facilities within projected funding capacities and clearly identifies sources of public money for such purposes." RCW 36.70A.070(3) requires that all capital facilities have "probable funding" to pay for capital facility needs, or else the County must "reassess the land use element." Recent Western Washington Growth Management Hearings Board cases indicate a Comprehensive Plan should have a 20-year plan for capital facilities, though only 6 years need to be fully financed; additionally, existing developed areas that are un-sewered should be addressed as well as undeveloped areas in UGAs. (Diel et al. v. Mason County 06-2-0005; Irondale Community Action Neighbors V. Jefferson County 04-2-0022 and 03-2-0010) The cases also appear to favor the County's and cities' current approach of not allowing urban development in UGAs until urban services are available.

Capital Facilities

The CFP presents capital improvement projects, and the financing plan to pay for these projects. It also contains the inventory of existing facilities, a list of existing and planned facilities, the LOS (level of service) standards and forecast of future needs, and possible non-capital alternatives to achieving the LOS standard.

Each type of public facility is presented in a separate subsection, which follows a standards format.

- Overview: A narrative summary of the various capital facilities being considered in the CFP.
- Inventory of Current Facilities: A list of existing capital facilities, including the name, capacity, and location.
- Level of Service (LOS) Capacity Analysis: A table outlining the County or service provider LOS standards is presented for each type of public facility. This section includes the calculation of the amount of facility capacity that is required to achieve and maintain the standard for LOS.
- Capital Projects and Financing Plan: This section of the CFP lists capital improvements that will address existing deficiencies, make available facilities for future growth, and repair or replace obsolete or worn our facilities through the end of the planning period. A more detailed financing plan is provided for County-provided facilities in the six-year period (2010-2015), while major projects and general funding is identified for the remainder of the planning period (2016-2029). For non-County providers, capital project funding is provided along with listing of projects identified in the service providers' most recent plans.

Land Use Projections

Whatcom County's current Comprehensive Plan addresses plans, policies, and growth allocations through the year 2029. This CFP considers regional growth for the County through the period 2009-2029. This CFP is based upon the County Council's recommendations for growth through the 2029 plan horizon.

Table 1 lists the population and employment growth assumptions used in this CFP countywide.

Table 1. Regional Growth Population and Employment Assumptions

	Population/Jobs Growth 2008–2029	Total Population/Jobs 2029
Population	55,602	246,602
Jobs	33,188	118,038

Source: Whatcom County PDS, Berk & Associates

Assumptions

This CFP is based on the following sources of information and assumptions:

- Adopted and Proposed Capital Facility Plans: The capital plans of each service provider, particularly those serving UGAs, was collected and reviewed including inventories, levels of service, planned facilities, growth forecasts, and potential funding.
- Growth Forecasts: Forecasts of population and job growth were allocated to each UGA and the rural areas. The current 2008 population and employment as well as the 2029 growth for each capital facility service provider were then estimated by special district boundary; to obtain six-year estimates, a straight-line projection was used. The capital plan assumptions are compared to the County's regional growth forecasts. The assumptions are included in Appendix 1.
- Revenue Forecasts: Forecasts of revenues were prepared for County-provided services to the 2029 horizon year. The revenue sources and forecasts for municipal and special district service providers are also summarized from available plans and compared to typical revenue sources for those service providers.

Capital Facilities Revenue Analysis

This section discusses Whatcom County's Capital Facilities Revenue for County-provided facilities and services. Each capital facility and service provider is treated by category prior to reviewing the capital facility inventories, LOS standards, and proposed projects. It assumes that the County continues to be responsible for Birch Bay and Columbia Valley. In the past, the County had conducted an incorporation study for Birch Bay UGA. Analysis of revenue without Birch Bay UGA is included in Appendix 2.

Non-County provided capital facility providers (e.g., sewer, water, schools, fire, and transit) are treated separately prior to the capital project section under each capital facility category.

Introduction

The purpose of this financial analysis is to support the financing plan for the CFP that is required by RCW 36.70A.070(3)(d). These revenue estimates have been developed to assist in project prioritization and planning, and represent realistic, but not exact, estimates of revenue available for the CFP.[1]

Estimated future revenues have been projected for the Plan's 2009-2029 time period, in year of expenditure dollars[2]. These revenues have been grouped according to the following categories:

- Dedicated Capital Revenues – these revenues are required by law to be used for specific types of capital expenditures.
- General Capital Revenues – these revenues must be used for capital, but the types of projects are not restricted.

[1] The revenue estimates are not intended to be precise forecasts. Exact funding levels are difficult to predict given the uncertainties of funding sources. The estimates discussed in this section are to be used for planning purposes; actual revenues are highly sensitive to local, state, and federal policy decisions; personal choices of residents; and other market forces.

[2] Year of expenditure dollars have been inflated to the year in which they are expected to be received.

- Potential Policy Options – these policy options may make additional capital revenues available to the County via policy changes.

Some of the funds discussed in this analysis may be used to fund the maintenance and operations of existing capital facilities or to construct new ones. However, if maintenance and operations costs of existing facilities increase faster than inflation, jurisdictions are confronted with difficult decisions regarding whether to fund these costs, at the expense of building new capital, or to adjust LOS standards. Those decisions will be made by the County Council and executive leadership of the County according to the County's needs and opportunities.

Assumptions

The revenue projections included in this analysis are based on the assumption that all UGAs in Whatcom County will be annexed by their respective cities by the end of the study period, and that Birch Bay and Columbia Valley will remain unincorporated for the duration. To the extent that a city's UGA represents land that is needed to accommodate the next 20 years of projected growth, and that actual patterns of growth are in line with the patterns envisioned in the Comprehensive Plan, one would expect that most or all of these areas will be annexed during the study period.

Assuming complete annexation also gives this analysis the most conservative estimate of future revenues. A discussion of the implications of more scaled-back levels of annexation follows the base revenue projections.

Dedicated Capital Revenues

Transportation

Road Levy

This Property Tax is collected by Whatcom County specifically for transportation funding and accounts for a large portion of the County's transportation funds. Since the passage of Initiative 747 in 2001, property tax increases are restricted to 1.0% of the previous year's revenues plus new construction. In inflation-adjusted terms, revenues from property tax are actually declining, since the 1.0% allowed increase does not keep pace with inflation (which has averaged about 3.5% since 1980), or population growth.

Assumptions: Because real estate is currently appreciating slower than recent historical averages, this analysis assumes a 2.0% growth rate in assessed value for 2009 and 2010, less than the assumed general inflation rate of 3.5%. Beginning in 2011, assessed value is assumed to increase at 4.0% annually, in keeping with historical averages.

If a jurisdiction does not adjust the Property Tax levy rate annually to collect the full 1.0% allowed increase in revenues, the difference between the collected value and the legally allowed 1.0% increase becomes "banked capacity" which may be collected in future years. Currently Whatcom County has banked capacity of approximately $1.0 million. For this portion of the

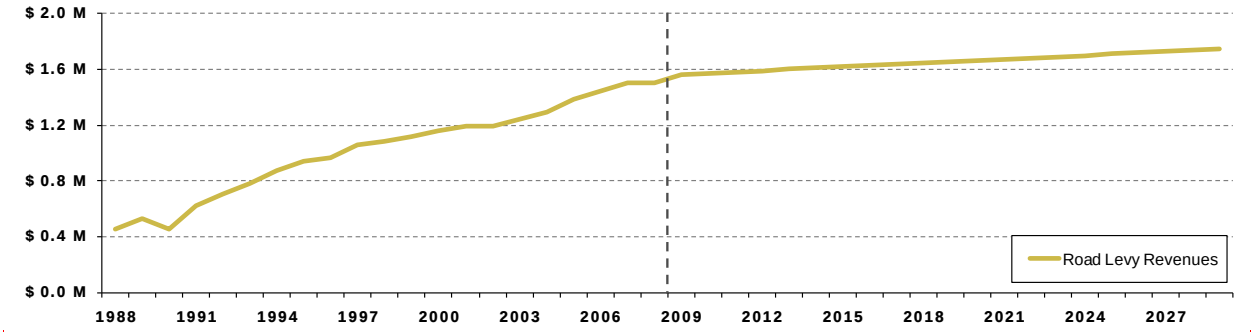
analysis we have assumed that the County will *not* increase the levy rate to collect this banked capacity, nor will they collect the allowed 1.0% increase, but will continue to collect funds at a level equal to the previous year's revenues, plus new construction. By not taking the maximum allowed annual revenue increase, the County's banked capacity will increase each year.

Because assessed value is increasing while the property tax revenues increase only with new construction, the levy rate necessarily declines each year. However, because there are assumed incorporations and annexations throughout the study period, there is a counter-influence of less assessed value to support the same revenue base, which puts upward pressure on the levy rate. The result (in most years) is that the levy rate, although decreasing, does so at a slower rate than it would without the incorporations and annexations.

Road Levy revenues may be used for operations and maintenance as well as capital needs. Based on current spending practices, 10% of these revenues are assumed to go towards capital.

Figure 1 shows historical Road Tax revenue to the left of the dotted line, and projected revenues to the right.

Figure 1. Whatcom County Road Levy Revenues 1988-2029 (Allocated for Capital Projects)



Source: Washington State Department of Transportation, Berk & Associates analysis.

Table 2 shows estimated total Road Levy revenues in four summary time periods. The first three summary time periods are six years, and the last is two years.

Table 2. Projected Future Whatcom County Road Levy Revenues 2010-2029 (Allocated for Capital Projects)

Road Levy	Total 2010-2015	Total 2016-2021	Total 2022-2027	Total 2028-2029	Total 2010-2029
Estimated Future Revenues	$ 9,565,786	$ 9,889,790	$ 10,220,402	$ 3,481,452	**$ 33,157,429**

Source: Washington State Department of Transportation, Berk & Associates analysis.

State Motor Vehicle Fuel Tax

Counties and cities receive a portion of the State Motor Vehicle Fuel Tax (MVF) based on a complex reimbursement formula based largely on road miles within the jurisdiction. State MVF Tax rates have seen a series of voter-approved increases in recent years. Most of these additional

funds, however, are earmarked for specific transportation projects throughout the State, and local jurisdictions are not expected to see an increase in average revenues. In addition, after 2008, no increase in the state rate is expected again in the near future.

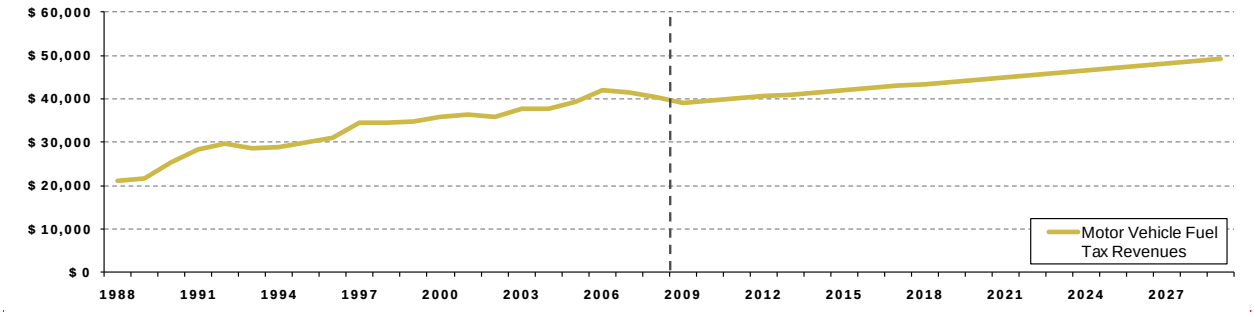
Assumptions: Revenues in this category have been projected using estimated revenues per centerline miles of road in the unincorporated county. There are two counter forces changing miles of road within this area. Road miles increase as the County builds new roads and expands current ones, and road miles decrease in the unincorporated areas through annexation and incorporation. To account for both of these forces, this analysis uses recent historical trends in centerline miles of roads as they relate to population in the unincorporated County. The rate of growth in road miles is about 0.2% annually.

Fuel Tax revenues per mile of road are assumed to increase at an annual average rate of 1.0% - slower than assumed average inflation of 3.5%. Fuel Tax revenue increases have slowed statewide in recent years, averaging 2.3% from 2000 to 2006. In general, gas tax dollars are likely to be under pressure with potentially increasing fuel prices and the increasing emergence of hybrid and alternative fuel cars.

Historically, Whatcom County has used the majority of these dollars for maintenance and operations expenses. The only portion of the MVF Tax the County puts toward capital is the 1% required by state law that must go toward establishing and maintaining paths and trails for pedestrians, equestrians, and bicyclists. Given the pressures on revenues discussed above, and given continuing increases in the costs of road operation and maintenance, it is unlikely that the County will decide to begin dedicating a portion of its MVF Tax revenues toward transportation capital projects. Based on recent history and legislation, we have assumed 1.0% of the County's total fuel tax revenue will continue to be used for paths and trails capital expenditures in the future, with the rest being utilized for maintenance and operations.

Figure 2 shows 1.0% of the historical MVF Tax revenue to the left of the dotted line, and projected revenues available for paths and trails capital to the right.

Figure 2. Whatcom County Motor Vehicle Fuel Tax Revenues 1988-2029 (Allocated for Capital Projects)



Source: Washington State Department of Transportation, Berk & Associates analysis.

Table 3 shows anticipated total Motor Vehicle Fuel Tax revenues available for paths and trails capital in four summary time periods.

Table 3. Projected Future Whatcom County Motor Vehicle Fuel Tax Revenues 2010-2029 (Allocated for Capital Projects)

State Fuel Tax	Total 2010-2015	Total 2016-2021	Total 2022-2027	Total 2028-2029	Total 2010-2029
Estimated Future Revenues	$ 244,877	$ 262,322	$ 280,986	$ 98,032	**$ 886,218**

Source: Washington State Department of Transportation, Berk & Associates analysis.

Transportation Grants

State Transportation Grants

Grants are an important funding source for transportation capital projects; however, these funds are distributed in a competitive process making it difficult to determine future grant funding levels. State grants are primarily funded with the state-levied portion of the MVF Tax.

There have, in recent years, been increases in the State MVF Tax rate. However, many of these additional funds were earmarked for specific large projects, although there was some allocation to local jurisdictions. The Transportation Partnership Act of 2005 provided some additional funds to the Transportation Improvement Board and the County Road Administration Board, for a total of $80 million to be disbursed to local jurisdictions as grants over a 16-year period. However, these increases in funds are very small relative to demand, with requests to the Transportation Improvement Board overreaching available funds by 800%.

For this analysis, recent historical grant revenue trends were considered. However, because the current grant-funding climate is shifting, future revenues have been estimated to be lower than recent trends. This is due, in part, to other financial forces.

One of those forces is the passing of I-747. Because jurisdictions within the State have had their property tax capped at a rate (1.0%) lower than inflation (3.5%), inflation-adjusted revenues are declining each year. This impacts transportation spending in two ways. First, property tax funds that are collected for transportation spending are therefore able to purchase less each year. Second, property tax funds that are non-restricted and are used for other jurisdictional necessities are also declining. Cities and counties often then must pull from non-restricted funds that were going towards capital projects and put them towards other immediate needs. This creates a second tightening of funds available for capital.

In addition, as explained in the MVF Tax discussion, fuel tax revenue is declining in inflation-adjusted terms and able to fund less and less each year.

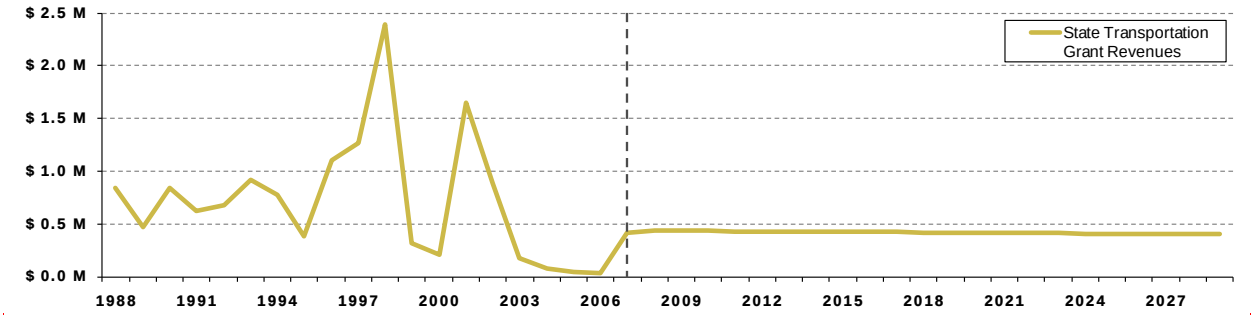
Because jurisdictions are feeling the squeeze these forces are putting on their capital funding programs, they are competing for, and relying more heavily on, grants. As more jurisdictions compete, securing grant funding becomes more difficult.

Assumptions: These revenues have been estimated on a per capita basis on the assumption that over time a jurisdiction will generally receive its "fair share" of available grant revenues. Since 1988 Whatcom County has averaged $10.60 per capita in grant revenues per year. However, given the forces discussed previously, this number has been lower in recent years averaging $5.74 per capita since 2000. This analysis assumes $5.00 per capita in the future with no annual increase. Total revenues are therefore expected to change on pace with changes in population.

For this analysis average annual dollars are assumed in each year. However, in reality these dollars will vary greatly from year to year since they are awarded on a project-specific basis.

Figure 3 shows historical state grant revenues to the left of the dotted line, and projected revenues to the right.

Figure 3. Whatcom County State Transportation Grant Revenues 1988-2029 (Allocated for Capital Projects)



Source: Washington State Department of Transportation, Berk & Associates analysis.

Table 4 shows estimated total state grant revenues in four summary time periods.

Table 4. Projected Future Whatcom County State Transportation Grant Revenues 2010-2029 (Allocated for Capital Projects)

State Grants	Total 2010-2015	Total 2016-2021	Total 2022-2027	Total 2028-2029	Total 2010-2029
Estimated Future Revenues	$ 2,567,461	$ 2,509,891	$ 2,450,205	$ 803,074	**$ 8,330,631**

Source: Washington State Department of Transportation, Berk & Associates analysis.

Federal Transportation Grants

Federal transportation grants are funded through the federal portion of the fuel excise tax. The federal gas tax rate has fluctuated between $0.183 and $0.184 per gallon since 1994. The majority of these funds are deposited into the Highway Trust Fund and disbursed to the states through the Highway and Mass Transit Accounts.

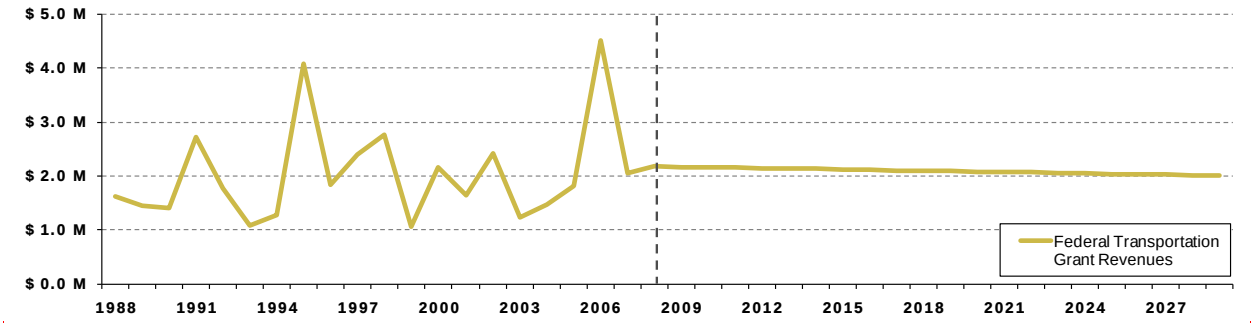
As with state grants, these funds are distributed in a competitive process making it difficult to determine future grant funding levels.

Assumptions: Because of this increase in competition for grant dollars and decrease in available grant funds, grant revenues have been estimated at lower levels than recent historical rates. Since 1988 Whatcom County has received an annual average of $29.10 per capita of federal grant funding. This average has been slightly lower in recent years, averaging $27.86 per capita since 2000. Future average annual per capita federal grant dollars were estimated at $25.00 with no annual increase. As with state grant dollars changes in total revenues are expected to occur at the rate of change in the population. In addition, average annual dollars are assumed in each year while in reality these dollars will vary greatly from year to year since they are awarded on a project-specific basis.

Federal Grant estimates in this analysis include Federal Forest Title I payments, which have averaged about $830,000 annually since 2000. Historically, Whatcom County has used all Title I payments for operations and maintenance of schools and roads. However, Title I payments may legally be used for capital, and therefore these dollars are included for future capital spending if the County so chooses.

Figure 4 shows historical federal grant revenues (including all Federal Forest Title 1 payments) to the left of the dotted line, and projected revenues to the right.

Figure 4. Whatcom County Federal Transportation Grant Revenues 1988-2029 (Allocated for Capital Projects)



Source: Washington State Department of Transportation, Berk & Associates analysis.

Table 5 shows anticipated total federal grant revenues in four summary time periods.

Table 5. Projected Future Whatcom County Federal Transportation Grant Revenues 2010-2029 (Allocated for Capital Projects)

Federal Grants	Total 2010-2015	Total 2016-2021	Total 2022-2027	Total 2028-2029	Total 2010-2029
Estimated Future Revenues	$ 12,837,306	$ 12,549,456	$ 12,251,023	$ 4,015,371	**$ 41,653,156**

Source: Washington State Department of Transportation, Berk & Associates analysis.

Table 6 shows total projected dedicated transportation revenues for Whatcom County in four summary time periods.

Table 6. Projected Total Transportation Revenues 2010-2029 (Allocated for Capital Projects)

Transportation Revenues	Total 2010-2015	Total 2016-2021	Total 2022-2027	Total 2028-2029	Total 2010-2029
Estimated Future Revenues	$ 25,215,430	$ 25,211,459	$ 25,202,615	$ 8,397,929	**$ 84,027,434**

Source: Whatcom County, Washington State Department of Transportation, Berk & Associates analysis

General Capital Revenues

Real Estate Excise Tax

Real Estate Excise Tax (REET) revenues are levied in two portions and must be expended on capital projects. Since the REET is based on the total value of real estate transactions in a given year, the amount of REET revenues a county receives can vary substantially from year to year based on the normal fluctuations in the real estate market. During years when the real estate market is active, revenues are high, and during softer real estate markets (as we are currently seeing), revenues are lower.

REET is levied in two sections, REET I (the first 0.25%), and REET II (the second 0.25%), for a total tax of 0.5% of total assessed value. REET I and REET II revenues must be spent on capital projects that are listed in a county's current capital facilities plan. The definition of capital facilities, according to RCW 82.46.010 is:

> *those public works projects of a local government for planning, acquisition, construction, reconstruction, repair, replacement, rehabilitation, or improvement of streets; roads; highways; sidewalks; street and road lighting systems; traffic signals; bridges; domestic water systems; storm and sanitary sewer systems; parks; recreational facilities; law enforcement facilities; fire protection facilities; trails; libraries; administrative and judicial facilities...*

REET II follows the above guidelines, but is more restricted, as it may not be spent on recreational facilities, law enforcement facilities, fire protection facilities, trails, libraries, or administrative or judicial facilities (RCW 82.46.035).

It is up to the discretion of each jurisdiction to choose how to spend REET funds within the above parameters. Whatcom County has traditionally allocated 40% of REET II to Parks and 60% to Public Works, including funding 75% of the wages and benefits of the Parks Department Construction Coordinator, who supervises REET parks projects. Since none of these distributions are formal policies, County decision makers may in the future decide to allocate REET funds to whichever capital projects they choose.

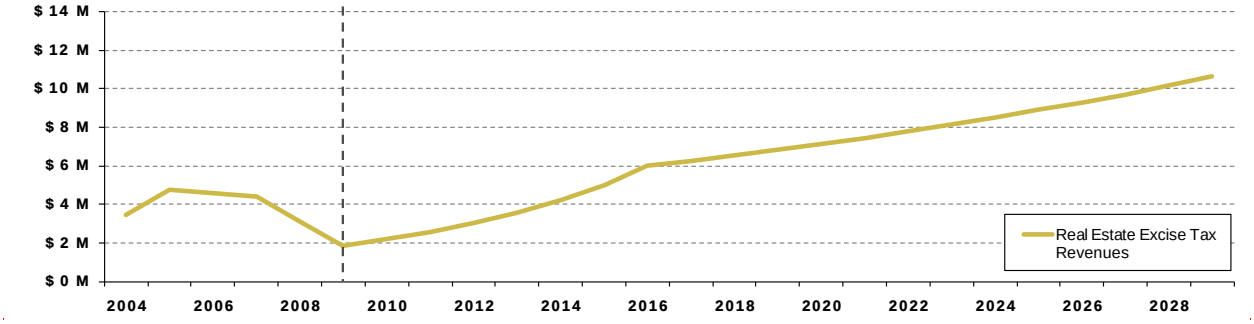
Assumptions: Because REET dollars are directly related to the sale of real estate, which is in a slow period in 2009, this analysis assumes a slower-than-average annual rate of turn-over of existing property at 2% in 2009, increasing incrementally to 7.0% by 2016, implying an eight-year recovery period from the current economic recession. The exception to this is turn-over in

Birch Bay which is assumed at 8.0% for the entire study period for residential property and 4.0% for commercial.

Because REET revenues must be used for capital projects, this analysis assumes all REET revenues are available for the capital projects discussed in this plan.

Figure 5 shows historical Real Estate Excise Tax revenue to the left of the dotted line, and projected revenues to the right.

Figure 5. Whatcom County Real Estate Excise Tax Revenues 2004-2029



Source: Whatcom County, Berk & Associates analysis.

Table 7 shows anticipated total Real Estate Excise Tax revenues in four summary time periods.

Table 7. Projected Future Whatcom County Real Estate Excise Tax Revenues 2010-2029

Real Estate Excise Tax	Total 2010-2015	Total 2016-2021	Total 2022-2027	Total 2028-2029	Total 2010-2029
Estimated Future Revenues	$ 20,500,716	$ 40,209,412	$ 52,296,150	$ 20,755,910	**$133,762,188**

Source: Whatcom County, Berk & Associates analysis.

Rural Counties Public Facilities Tax

Washington State allows rural counties to impose a local sales tax to fund capital projects that have an economic development purpose and finance personnel positions in economic development offices. This tax, which is deposited in the County's Public Utilities Improvement Fund, is not an additional sales tax for residents, but rather is given to the jurisdiction in the form of a tax credit against the 6.5% state sales tax. This tax, which is deposited in the County's Public Utilities Improvement Fund, is currently levied at 0.09% in Whatcom County and is collected countywide.

The definition of a Rural County is any county with a population of less than 100 persons per square mile. Once that level is exceeded, the county may no longer collect this tax. Whatcom County, with a land area of 2,119.5 square miles, is estimated to cross this threshold in 2017. This revenue is assumed to end in the year after the population limit is exceeded.

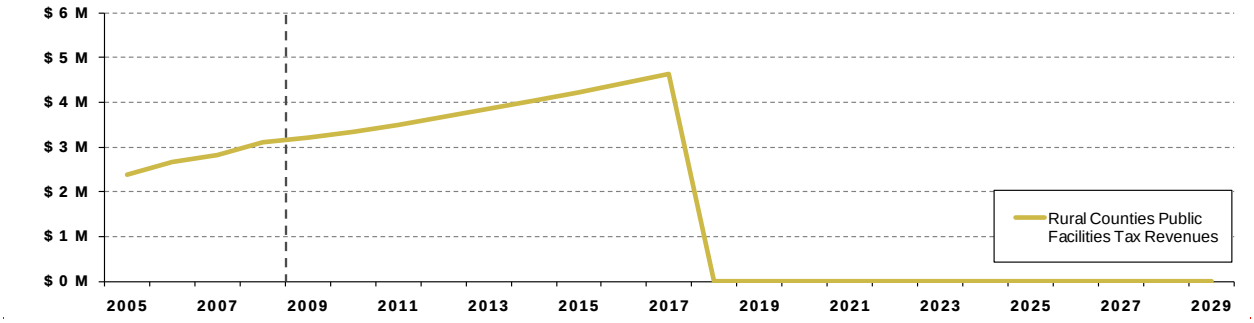
Assumptions: Because this tax is collected on retail sales we have based future projections on an assumed increase of 3.5% in per capita taxable retail sales within the County. The total revenue is

therefore expected to increase at the rate of inflation for each person within the County and additional revenue will be received as the population increases countywide. Revenues are assumed to discontinue after the total County population passes 211,950 people.

Historically, Whatcom County has chosen to fund 1.5 FTEs and a portion of its economic development services out of Rural Counties Public Facilities Tax revenues. This is a policy option that County decision makers could reconsider in the future if they would like to dedicate more of these funds to capital projects.

Figure 6 shows historical Rural Counties Public Facilities Tax revenue to the left of the dotted line, and projected revenues to the right.

Figure 6. Whatcom County Rural Counties Public Facilities Tax Revenues 2005-2029 (Available for Capital Projects)



Source: Whatcom County, Berk & Associates analysis.

Table 8 shows anticipated total Rural Counties Public Facilities Tax revenues in four summary time periods.

Table 8. Projected Future Whatcom County Rural Counties Public Facilities Tax Revenues 2010-2029 (Available for Capital Projects)

Rural Sales Tax	Total 2010-2015	Total 2016-2021	Total 2022-2027	Total 2028-2029	Total 2010-2029
Estimated Future Revenues	$ 22,605,853	$ 9,074,264	$ -	$ -	**$ 31,680,117**

Source: Whatcom County, Berk & Associates analysis.

Total General Capital Revenues

Table 9 summarizes total general capital revenues in four summary time periods.

Table 9. Projected Total General Capital Revenues

General Capital Revenues	Total 2010-2015	Total 2016-2021	Total 2022-2027	Total 2028-2029	Total 2010-2029
Estimated Future Revenues	$ 43,106,570	$ 49,283,676	$ 52,296,150	$ 20,755,910	**$165,442,306**

Source: Whatcom County, Washington State Department of Transportation, Berk & Associates analysis

Total Capital Revenues

Table 10 summarizes total capital revenues (transportation and general) available in four summary time periods.

Table 10. Projected Total Capital Revenues

Total Capital Revenues	Total 2010-2015	Total 2016-2021	Total 2022-2027	Total 2028-2029	Total 2010-2029
Estimated Future Revenues	$ 68,321,999	$ 74,495,136	$ 77,498,765	$ 29,153,840	**$249,469,740**

Source: Whatcom County, Washington State Department of Transportation, Berk & Associates analysis

Impact of Reduced Levels of Annexation

Based on the structures used for each revenue projection outlined above, if the UGAs in Whatcom County were not completely annexed by the end of the study period, revenues would increase from the base, 100% annexation assumption. All else being equal, Whatcom County would have more assessed value of real property in the unincorporated parts of the County, leading to higher road levy and REET revenues; it would have more road miles, leading to higher state fuel tax distributions; and it would have more population remaining in the unincorporated areas of the County, leading to higher state and federal grant revenues.

Potential Policy Options

Road Levy Banked Capacity

As discussed in the first section of this analysis, if a jurisdiction does not increase the Property Tax levy rate annually to collect the full 1.0% allowed increase in revenues, the difference between the collected value and the allowed 1.0% increase becomes "banked capacity" which may be collected in future years. Currently Whatcom County has banked capacity of approximately $1.0 million. Going forward, the policy decision to not take the 1.0% increase will lead to increasing banked capacity.

If the County chooses not to take this banked capacity, it increases each year. Under this scenario, by the end of the study period (2029), total estimated banked capacity is about $5.2 million.

Stormwater Management Revenue

A funding mechanism will be necessary to adequately respond to mandated stormwater activities in the Lake Whatcom watershed and the entire National Pollutant Discharge Elimination System (NPDES) Phase II regulated areas. To meet the goals and objectives outlined in the Lake Whatcom Stormwater Management Plan, additional ongoing and stable funding sources will be required. With the creation of a funding mechanism the County aims to enhance its programmatic activities (public education and material support), increase staff presence in the regulated areas

and the Lake Whatcom watershed, and will be able to begin constructing more capital projects to deal with existing stormwater and phosphorus related runoff issues.

The County is currently evaluating several potential funding mechanisms as possibilities for funding these necessary improvements to the stormwater management system.

Transportation Impact Fees

Impact fees are a financing tool that requires new development to pay a portion of the costs associated with infrastructure improvements that are "reasonably related" to that development. The GMA allows agencies to develop and implement a transportation impact fee program to help fund some of the costs of transportation facilities needed to accommodate growth. State law (Chapter 82.02 RCW) requires that impact fees be related to improvements to serve new developments and not existing deficiencies; assessed proportional to the impacts of new developments; allocated for improvements that reasonably benefit new development; and spent on facilities identified in the Capital Facilities Plan.

Legally, financing for improvements that will serve the new development cannot rely solely on impact fees and must include other sources of public funds, and the fees must be structured in a manner that ensures that funds collected do not exceed a proportionate share of the costs of improvements reasonably related to new development.

The County is considering the implementation of a transportation impact fee and has recently completed a study report. If the County were to implement this fee, revenues would vary based on the chosen fee rate and the types and amount of development that occurs.

Park Impact Fees

The same state law that authorizes transportation impact fees described above also authorizes the County to adopt impact fees for parks and recreational facilities. The same rules and conditions for transportation impact fees would apply to park impact fees.

Six-Year Funding Balance

Estimated revenues from *dedicated* sources within the six-year time period (2010-2015) have been compared to capital project costs showing a gap of $5.3 million regarding transportation facilities and $82.5 million for general capital facilities.

The $5.3 million transportation deficit is the difference between six-year estimated transportation capital expenses, and *dedicated* transportation capital revenues projections. The County may choose to balance this deficit using general capital funds, other state and federal sources, and unused debt capacity. For example, the County passed its 2010-2015 six-year Transportation Improvement Program (TIP) in September 2009, where it has balanced its six-year transportation capital revenues and expenses using local, state, and federal funds.

Regarding general capital facilities, if the Consolidated Services Building is delayed beyond the six-year planning period, the deficit will be reduced by $24 million to approximately $58.5 million. Also, in 2009, Whatcom County lowered the level of service for trails. Therefore, considering planned trail improvement projects over the six-year planning period, there would be a net reserve of trails by 2015. One option to reduce expenditures in the six-year planning period would be to construct several of the high-cost trail segments later in the 20-year planning period with the assumption that the County's revenue situation will improve in the future.

In addition, the County's unused long-term debt capacity, according to the County's 2009-10 Final Budget, is about $315 million, which far exceeds the six-year costs presented above. Therefore, it would be possible to issue bonds to cover the deficits shown if revenue is increased, expenses decreased, or programs reprioritized to make debt service payments.

Other Service Providers

For service providers other than Whatcom County we have presented general funding information for each type of service in the appropriate sections below. For review of the specific funding sources for each provider we have relied on the most current Comprehensive Plan available for that provider and have supplied specific comments where appropriate.

Economic Development Planning

In addition to this CFP and the County's Comprehensive Plan Economic Element, the County has also engaged in an economic development strategy through the Economic Development Investment (EDI) Program. The program plans for and funds infrastructure including but not limited to roads, bridges, water facilities, sanitary sewer facilities, and storm sewer facilities. Economic development planning efforts also resulted in a report entitled the 2002 Greater Whatcom Comprehensive Economic Development Strategy (CEDS) which identifies goals and strategies for growing the Whatcom County economy without sacrificing its natural assets. The Study identifies and prioritizes actions for achieving its goals. It also identifies projects, including their cost and potential funding sources, that are needed to help the County achieve its economic development goals. The CEDS project list was most recently updated in 2008.

Public Buildings (County)

Overview

Whatcom County public buildings include government administrative offices and maintenance and operations facilities. Since Whatcom County provides some services for the County as a whole, and other services oriented more specifically to unincorporated areas, this category is broken down into "county-wide" and "unincorporated" categories.

Inventory of Current Facilities

County-wide Administrative Office Space

The 2009 inventory of County government administrative office space that serves the population of the entire County is 153,063 square feet at seven locations. This inventory is shown in Table 11 below.

Table 11. County-Wide Administrative Office Space

Facility Name	Location	Size (Sq. Ft.)
County Courthouse	311 Grand Avenue	94,378
509 Girard Street Office	509 Girard Street	13,189
Forest Street Annex	1000 North Forest Street	5,817
1500 N. State Street Office (leased)	1500 N. State Street	12,281
3373 Mt. Baker Highway Parks Office	3373 Mt. Baker Highway	2,110
Civic Center Annex	322 North Commercial	14,981
Central Plaza Building	215 N. Commercial	10,307
Total	-	**153,063**

Source: Whatcom County Six Year Capital Improvement Program (CIP) 2009-2014

Office Space Serving Unincorporated Area

The 2009 inventory of County government office space that serves only unincorporated areas of Whatcom County (i.e., does not serve city residents) is 28,512 square feet at four locations. This inventory is shown in Table 12.

Table 12. Administrative Office Space Serving Unincorporated Areas

Facility Name	Location	Size (Sq. Ft.)
Northwest Annex	5280 & 5256 Northwest Dr.	21,438
1000 N. Forest St.	1000 N. Forest St.	670
Copper Building	2011 Young Street	6,000
Civic Center Annex [1]	322 North Commercial	404
Total	-	**28,512**

1 Planning and Development Services primarily provides services to the unincorporated population, although several Natural Resources Planning staff members provide services to the County-wide population.

Source: Whatcom County Six Year CIP 2009-2014

Maintenance and Operations

The 2009 inventory of County operations and maintenance facilities management space is 44,411 square feet. This inventory is shown in Table 14 below.

Table 13. Maintenance and Operations Facilities

Facility Name	Location	Size (Sq. Ft.)
Central Shop (Maintenance and Operations)	901 W. Smith Rd.	35,773
316 Lottie Street (Facilities Management)	316 Lottie Street	4,978
Minimum Security Correction Facility (Facilities Management Storage)	Division Street	3,660
Total	-	**44,411**

Source: Whatcom County Six Year CIP 2009-2014

Level of Service Capacity Analysis

Chapter 4 of the Whatcom County Comprehensive Plan establishes LOS standards for administrative facilities (i.e., government office space), among other things. Whatcom County has adopted LOS standards for its office space serving county-wide population, its office space serving unincorporated population, and its maintenance and operations facilities as shown in Table 14 below.

Table 14. Administrative Level of Service (LOS) Standards

Category	LOS Standard
Office Space (County-Wide Population)	0.63 sq ft per capita
Office Space (Unincorporated Population)	0.51 sq ft per capita
Maintenance and Operations Facilities	0.41 sq ft per capita

Source: Whatcom County Comprehensive Plan, chapter 4.

Office Space Serving the County-Wide Population

The LOS standard (Table 15) for office space serving county-wide population is established by policy in the Chapter 4 of the Whatcom County Comprehensive Plan.

With implementation of Whatcom County's six-year plan, the square feet of office space available rises from 153,063 to 164,563. With the planned office space additions, there would be no deficiencies over the 20-year planning period.

Table 15. County-Wide Office Space LOS Requirements Analysis

Time Period	Whatcom County Population (County-Wide)	Square Feet Needed to Meet LOS	Square Feet Available	Net Reserve or (Deficiency)
County-Wide Office Space LOS = 0.63 square feet per capita				
2008	191,000	135,610	153,063	17,453
Capacity Projects (to 2015)				
Central Plaza Building[1]			+ 0	
Consolidated Services Building			+ 11,500	
2015	207,922	130,991	164,563	33,572
2029	246,602	155,359	164,563	9,204

1 The Central Plaza Building is being purchased in 2009. Prior to that, it was leased. Therefore, it does not add square footage to the inventory.

Source: ICF Jones & Stokes

Office Space Serving Unincorporated County Population

The existing LOS standard for Office Space serving unincorporated Whatcom County population outlined in Chapter 4 of the Whatcom County Comprehensive Plan is 0.51 square feet per capita. The current LOS results in a deficit of 15,880 square feet of office space in 2008. If assuming current UGAs are annexed over the planning period, deficiencies in county office space serving unincorporated areas is expected to decrease by 2015.

With one capacity project planned in the 2010-2015 six-year planning period, Whatcom County anticipates expanding county office space serving unincorporated Whatcom County by 51,000 square feet. This provides Whatcom County with a surplus of office space for both 2015 and 2029.

Table 16. Unincorporated County Office Space LOS Requirements Analysis

Time Period	Whatcom County Population (Unincorporated)	Square Feet Needed to Meet LOS	Square Feet Available	Net Reserve or (Deficiency)
Current Unincorporated Office Space LOS = 0.51 square feet per capita				
2008	87,044	44,392	28,512	(15,880)

Time Period	Whatcom County Population (Unincorporated)	Square Feet Needed to Meet LOS	Square Feet Available	Net Reserve or (Deficiency)
Capacity Projects to 2015				
Consolidated Services Building			+51,000	
2015	71,688	36,561	79,512	42,951
2029	81,221	41,423	79,512	38,089

Source: ICF Jones & Stokes

Maintenance and Operations

The existing LOS standard for maintenance and operation facilities set by policy in Chapter 4 of the Whatcom County Comprehensive Plan is 0.41 square feet per capita of unincorporated County population. Whatcom County's existing inventory of 44,411 square feet of maintenance and operations space is adequate to provide a surplus of maintenance and operations facility space for both 2015 and 2029.

Table 17. Maintenance and Operation Facilities LOS Requirements Analysis

Time Period	Whatcom County Population (Unincorporated)	Square Feet Needed to Meet LOS	Square Feet Available	Net Reserve or (Deficiency)
Current Maintenance and Operations Facilities LOS = 0.41 square feet per capita				
2008	87,044	35,688	44,411	8,723
2015	71,688	29,392	44,411	15,019
2029	81,221	33,301	44,411	11,110

Source: ICF Jones & Stokes

Capital Projects and Funding

The following capital projects support anticipated growth in the County for the Office Space (both county-wide and unincorporated) and Maintenance and Operation facilities.

Countywide Administrative Office Space

One improvement project is proposed to provide additional square footage to meet future needs and to consolidate County services. This project would add approximately 11,500 square feet of County-owned office space to serve the entire population of Whatcom County as shown in Table 18 below.

Table 18. Office Space Improvement Projects to Serve County-wide 2010-2015

Site No. and Project Cost/Revenue (thousands $)	Square Feet	2010	2011	2012	2013	2014	2015	2016-2029	Total
#8 Consolidated Services Building[1]	11,500 [2]								
Cost		12,000	12,000	0	0	0	0	0	24,000
Revenue – Bonds		12,000	12,000	0	0	0	0	0	24,000

1 This project may be delayed to the latter part of the six-year planning period, or perhaps beyond the six-year planning period, because of the current decline in governmental revenue.

2 The overall size of the Consolidated Services Building is planned for approximately 62,500 square feet. However, only about 11,500 square feet would be utilized for office space that serves County-wide population.

Note: This project is the same building and has the same project costs as in Office Space for Unincorporated population noted below.

Source: Whatcom County Six Year CIP 2009-2014.

Office Space That Serves Unincorporated Areas

One improvement project, a Consolidated Services Building, is proposed to provide additional square footage to meet anticipated need for office space serving unincorporated areas by 2015. This project would add approximately 51,000 square feet of government office space to serve the unincorporated population of Whatcom County.

Table 19. Office Space Improvement Projects To Serve Unincorporated Areas 2010-2015

Site No. and Project Cost/Revenue (thousands $)	Sq Ft	2010	2011	2012	2013	2014	2015	2016-2029	Total
#5 Consolidated Services Building[1]	51,000 [2]								
Cost									See [3]

1 This project may be delayed to the latter part of the six-year planning period, or perhaps beyond the six-year planning period, because of the current decline in governmental revenue.

2 The overall size of the Consolidated Services Building is planned for approximately 62,500 square feet. However, only about 51,000 square feet would be utilized for office space that serves Whatcom County's unincorporated population.

3 For costs of this building, please see Table 18. This is the same building.

Source: Whatcom County Six Year CIP 2009-2014.

Maintenance and Operations

There are no improvement projects identified that would add usable maintenance and operations space within the 2010-2029 planning period. Only maintenance projects are proposed.

Sheriff's Office and Juvenile Detention (County)

Overview

County law enforcement facilities include Sheriff's office facilities that principally serve unincorporated areas as well as jails and emergency operations facilities that serve the County as a whole. Juvenile Detention is operated by the Juvenile Court Administration Department, but is included in this category because it is law enforcement related.

Inventory of Current Facilities

Sheriff's Office

The 2009 inventory of Sheriff's facility space is 98,916 net square feet of total space serving the County. This includes approximately 22,733 square feet of office space serving the unincorporated population of the County. This inventory is shown in Table 20 below.

Table 20. Sheriff's Office Facilities

Facility Name	Location	Office Space (Sq. Ft.)	Other (Sq. Ft.)	Total Size (Sq. Ft.)
Public Safety Building - Sheriff's Facility	311 Grand Ave.	15,102	58,183	73,285
Minimum Security Correction Facility	2030 Division Street	6,000	18,000	24,000
Inspector's Office, Civic Center Building	322 N. Commercial	500	0	500
Cascade Satellite Office (leased space in business park northwest of Smith Rd/Guide Intersection)	5373 Guide Meridian	730	0	730
Kendall Satellite Office (space utilized at no charge in the Fire District 14 fire station)	-	121	0	121
Birch Bay Fire Hall		192	0	192
Nugent's Corner Fire Hall		88	0	88
Total	-	**22,733**	**76,183**	**98,916**

1 The Sheriff's Office also has storage and evidence facilities at various locations in Whatcom County.

2 The County has two mobile homes and an old detention facility in Point Roberts but the County does not provide formal office space for the resident deputies stationed there. The resident deputies operate out of their homes or utilize space at the U.S. Customs office at the border.

3 The Sheriff's Office will vacate the office space at the Public Safety Building, Minimum Security Correction Facility, Inspector's Office at the Civic Center Building, and Cascade Satellite Office by 2015. Additionally, the Sheriff's Office will occupy the 4,500 square foot space at the Laurel Fire Station by 2010 (space that was formerly occupied by Emergency Management).

Source: Whatcom County Six Year CIP 2009-2014.

Emergency Operations

The Emergency Management/Emergency Operations Center (EOC), which serves the entire population of the County, presently occupies 2,250 square feet in the Olympic Coordination Center. This inventory is shown in Table 21 below.

Table 21. Emergency Operations Office Space

Facility Name	Location	Size (Sq. Ft.)
Olympic Coordination Center	3888 Sound Way	2,250

Source: Personal communication: e-mail of 6/23/09, Doug Dahl of Whatcom County Emergency Management confirmed that the County Emergency Management would move into the Olympic Coordination Center in 2009.

Jail Facilities

An inventory of County jail beds is located in Table 22 below. The existing Main County Jail Facility is located in the Public Safety Building next to the County Courthouse in downtown Bellingham. It was designed for 148 beds, although it currently regularly serves 283 to 300 beds due to double bunking, some internal remodeling, and the use of temporary beds in the general housing areas. None of the ancillary functions (kitchen, medical area, booking area, etc.) have increased in area to accommodate additional offenders. Additionally, the jail is not in compliance with building code requirements for double bunking, fire exiting, and seismic events, although a plan is being created to bring the facility into compliance.

The Minimum Security Work Center opened in 2006 in a new location on Division Street. This facility has 150 beds for minimum security offenders and the Jails Alternative program, plus office space for Jails Alternative, work release, electronic home monitoring, and other related jail programs.

Table 22. Jail Facility Inventory

Facility Name	Location	Beds
Public Safety Building Jail	311 Grand Ave.	283
Minimum Security Correction Facility	2030 Division Street	150
Total	-	**433**

Note: Correction facilities are considered to be "full" when they have reached 95% of their maximum number of beds. Therefore, the Public Safety Building Jail is effectively out of beds once the inmate count has reached 268 beds and the Work Center has reached 143 beds(Note source: email communication from Wendy Jones, Chief of Whatcom County Sheriff's Office, Corrections Bureau (March 4, 2009)).

Source: Whatcom County Six Year CIP 2009-2014 and email communication with Wendy Jones, Chief of Whatcom County Sheriff's Office, Corrections Bureau, (March 4 and March 10, 2009).

Juvenile Detention Facilities

The 2009 inventory of County juvenile detention facilities includes 32 beds serving the countywide population. The juvenile detention facility is located on the sixth floor of the County Courthouse. An inventory of juvenile detention beds is located in Table 23.

Table 23. Juvenile Detention Inventory

Facility Name	Location	Beds
County Courthouse Juvenile Detention Facility	311 Grand Avenue	32

Source: Whatcom County Six Year CIP 2009-2014.

Level of Service Capacity Analysis

Chapter 4 of the Whatcom County Comprehensive Plan establishes level of service (LOS) standards for various law enforcement related facilities, including office space for the Sheriff's Office serving unincorporated Whatcom County, Emergency Management office space serving the County as a whole, and the number of jail and juvenile detention beds per 1,000 population as shown in Table 24 below.

Table 24. Law Enforcement Level of Service Standards

Category	LOS Standard
Sheriff's Office (unincorporated)	0.26 sq ft per capita
Emergency Management	0.011 sq ft per capita
Jails	1.42 beds per 1,000 population
Juvenile Detention	0.125 beds per 1,000 population

Source: Whatcom County Comprehensive Plan, chapter 4.

Sheriff's Office (Unincorporated County) Level of Service Capacity Analysis

The Whatcom County Comprehensive Plan provides a LOS standard for office space for the Sheriff's Office that serves unincorporated Whatcom County (Table 25). This LOS standard is 0.26 square feet per capita. There are no deficiencies when this LOS standard is applied to projected Unincorporated County population out to the 2015 6-year planning horizon.

The County has plans to add 25,000 square feet of office space serving unincorporated Whatcom County by 2015. However, the Sheriff's Office would also switch other office space by 2015. With the new office and other space changes, there would be a total of 29,900 square feet of office space available by 2015. Applying the established LOS standard to County population projections shows that with the additional space, there will be no deficiencies in office space for the Sheriff's Office serving unincorporated areas in 2015 and 2029.

Table 25. Sheriff's Office (Unincorporated County) Level of Service Requirements Analysis

Time Period	County Population (Unincorporated)	Square Feet Needed to Meet LOS standard	Square Feet Available	Net Reserve or (Deficiency)
Current Sheriff's Office (Unincorporated County) LOS standard = 0.26 sq. ft. per capita				
2008	87,044	22,631	22,733	102
Capacity Projects to 2015				
Sheriff's Office at Law and Justice Center Campus			+25,000	
2015	71,688	18,639	29,900 [1]	11,261
2029	81,221	21,117	29,900 [1]	8,783

1 Although the Sheriff's Office will add a new law and justice center campus that of 25,000 sq. ft, the Sheriff's Office will also switch other office space by 2015. With the new office and other space changes, there would be a total of 29,900 square feet of office space available by 2015.

Source: ICF Jones & Stokes.

Emergency Management Level of Service Analysis

The Whatcom County Comprehensive Plan establishes a LOS standard of 0.011 square foot of emergency management space per capita on a countywide basis. The County has an existing surplus of emergency management space when using 2008 population estimates.

The County has one capacity project that will add 3,250 square feet of emergency management space. This would provide a reserve of emergency management space through both 2015 and 2029 planning horizons.

Table 26. Emergency Management Level of Service Requirements Analysis

Time Period	County Population	Square Feet Needed to Meet LOS standard	Square Feet Available	Net Reserve or (Deficiency)
Current Emergency Management LOS Standards = 0.011 sq. ft. per capita				
2008	191,000	2,101	2,250	149
Capacity Projects to 2015				
Sheriff's Office Emergency Management space at Law and Justice Center Campus			+3,250[1]	
2015	207,922	2,287	3,250	963
2029	246,602	2,713	3,250	537

1 There would be a total of 3,250 square feet available, because Emergency Management would move from the existing 2,250 square foot space to a new 3,250 square foot space at the new Law and Justice Center Campus.

Source: ICF Jones & Stokes.

Jail Level of Service Analysis

The Whatcom County Comprehensive Plan sets a jail LOS standard of 1.42 beds per 1,000 population. This standard results in a surplus of jail beds in 2015. There are indications, based on a recent master facilities plan compiled as part of new jail planning process, that this number under-represents the current use of the existing adult corrections facilities. A review of the jail population over the past 2 years has shown a significant increase in the offender population, growing from an average daily population (ADP) of 261 in 2006, to an ADP in 2008 of 428. This is due primarily to the added capacity resulting from the opening of the new Minimum Security Work Center. This higher ADP represents utilization of 2.24 beds per 1,000 people in the County in 2008. In the short-term, the County will be adding an additional 50 beds to the Minimum Security Work Center on Division Street to address short-term jail needs. The County also has plans for construction of a new law and justice center jail facility, tentatively scheduled to open with 600 beds.[3] The new jail would replace both the current main jail facility and the 150-bed Minimum Security Correction Facility on Division Street, resulting in a net increase of 167 jail beds over existing conditions.[4].

The increased number of jail beds means that, by application of the County's adopted LOS standard, the County will have a net reserve of 252 jail beds by the end of the 2029 planning horizon.

Table 27. Jails Level of Service Requirements Analysis

Time Period	County Population	Beds Needed to Meet LOS standard	Beds Available	Net Reserve or (Deficiency)
Current Jail LOS Standard = - 1.42 beds per 1,000 population				
2008	191,000	271	433	162
Capacity Projects to 2015				
New Jail at the Law and Justice Center Campus			+167[1]	
Minimum Security Correction Facility (Division Street)			+50[2]	
2015	207,922	295	600	305
2029	246,602	350	600	250

1 Construction of new 600 bed jail facility would allow replacement of existing main jail facility and relocation of the 200 jail beds (150 existing + 50 proposed) from the Minimum Security Correction Facility on Division Street to the new jail. The increase in jail beds is +167 over 2009 levels, as the new jail replaces the other two facilities.

2 The 50 beds shown as an addition to Minimum Security Correction Facility on Division Street are temporary. They are meant to address a short-term need, until the new 600 bed jail facility is constructed.

Source: ICF Jones & Stokes.

[3] Additional projections and analysis indicate there may be a need for more than 600 beds, but these are still under review.

[4] The net increase will be 117 new beds once the 50 new beds are added to the Minimum Security Work Center at Division Street.

Juvenile Detention Level of Service Analysis

The Whatcom County Comprehensive Plan sets a LOS standard of 0.125 beds per 1,000 population for juvenile detention in the County. The County meets this LOS standard with the current 2008 population.

By 2015, the County will have a surplus of 6 juvenile detention beds based upon future population projections. This surplus is expected to decrease from 6 beds to 1 bed by 2029.

Table 28. Juvenile Detention Level of Service Requirements Analysis

Time Period	County Population	Beds Needed to Meet LOS standard	Beds Available	Net Reserve or (Deficiency)
Juvenile Detention LOS Standard = - 0.125 beds per 1,000 population				
2008	191,000	24	32	8
2015	207,922	26	32	6
2029	246,602	31	32	1

Source: ICF Jones & Stokes.

Capital Projects and Funding

The following capital projects support anticipated growth in the County for the Sheriff's Office, Emergency Management, and the Jail and Juvenile Detention facilities.

Sheriff's Office Facilities

At the current time, one Sheriff's Office improvement project is proposed to locate new facilities in the County. The purpose of this project is to achieve reduced response times and otherwise upgrade service to the public in a manner of design and function yet to be determined. This project would add approximately 25,000 square feet of space at the campus of the proposed Law and Justice Center. The proposed Sheriff's Office would be proximate to planned new criminal justice facilities.

Table 29. Sheriff's Office Space Improvement Projects 2010-2015

Site No. and Project Cost/ Revenue (thousands $)	Square Feet	2010	2011	2012	2013	2014	2015	2016-2029	Total
Sheriff's Office at Law and Justice Center Campus [1]	25,000[2]								
Cost			500	200	4,000	2,500			7,200
Revenue (Cash reserves, General Fund, REET I, and Bonds.)			500	200	4,000	2,500			7,200
Total			500	200	4,000	2,500			7,200

1 The location of the Sheriff's Office facility has not yet been determined.

2 The Sheriff's Office facility is planned for approximately 28,250 square feet total. About 25,000 square feet would be utilized for Sheriff's office space and the remainder would be allocated to Emergency Management.

Source: Whatcom County Six Year CIP 2009-2014.

Emergency Management Facilities

One improvement project to provide space for Emergency Management/Emergency Operations Center (EOC) is proposed to meet anticipated needs by the year 2015 and beyond. This project would allocate 3,250 square feet of space in the new Sheriff's Office facility to house Emergency Management/EOC as shown in Table 30.

Table 30. Emergency Management/EOC Improvement Projects 2010-2015

Site No. and Project Cost/Revenue (thousands $)	Square Feet	2010	2011	2012	2013	2014	2015	2016-2029	Total
Sheriff's Office Division of Emergency Management space at the Law and Justice Center Campus [1]	3,250 [2]								
Cost									See [3]

1 The location of the Sheriff's Office facility has not yet been determined.

2 The overall size of the Sheriff's Office facility is planned for approximately 28,250 square feet. Approximately 3,250 square feet would be utilized for Emergency Management on a day to day basis. It is assumed that, in an emergency, other space in the building would be utilized for the EOC.

3 See Table 29 above for costs and revenues of the Law and Justice Center Campus building.

Source: Whatcom County Six Year CIP 2009-2014.

Jail Facilities

Whatcom County will be siting and constructing a new law and justice center, tentatively scheduled to open with 600 beds. At the time the new law and justice center is open, the offenders at the minimum security corrections facility would be relocated to the new center. A location for the new law and justice center has not been selected, but it is anticipated to come on line no later than 2015. An additional 50 work release beds are being proposed at the minimum security facility on an interim basis.

Table 31. Jail Improvement Projects to Serve County-Wide 2010-2015

Site No. and Project Project Cost/ Revenue (thousands $)	Beds	2010	2011	2012	2013	2014	2015	2016-2029	Total
New Jail at the Law and Justice Center Campus [1]	600 [2]								
Cost		4,000	2,000	8,000	10,000	17,000			41,000
Revenue Jail Fund, General Fund, REET and bonds		4,000	2,000	8,000	10,000	17,000			41,000
#2 Minimum Security Correction Facility (Division Street)	50								
Cost		324							324
Revenue Jail Fund		324							324
Total		4,324	2,000	8,000	10,000	17,000			41,324

1 The location of the new jail has not yet been determined. Construction of the new jail at the Law and Justice Center Campus would not be completed until approximately 2015.

2 There are indications, based on a recent master facilities plan compiled as part of new jail planning process, that this number under-represents the current use of the existing adult corrections facilities. A review of the jail population over the past 2 years has shown a significant increase in the offender population, growing from an average daily population (ADP) of 261 in 2006, to an ADP in 2008 of 428. This is due primarily to the added capacity resulting from the opening of the new Minimum Security Work Center. This higher ADP represents utilization of 2.24 beds per 1,000 people in the County in 2008.

Source: Whatcom County Six Year CIP 2009-2014.

Juvenile Detention Facilities

There are no improvement projects currently proposed for juvenile detention facilities that would increase the number of permanent beds in the 2010-2015 six year planning period.

Parks and Recreation (County and Special Districts serving UGAs)

Overview

The County categorizes its Parks and Recreation facilities into parks, trails, and activity centers. The inventory of parks includes developed park acreage. The County also owns a number of undeveloped park facilities that are not counted in the parks inventory. Trails are counted in terms of miles of developed trails.

In addition, there are two special parks districts in the County that serve UGAs: Lynden Regional Parks District and the Northwest Parks and Recreation District. These parks and recreation districts are presented after County facilities.

Inventory of Current Facilities

Parks

The County's 2009 inventory of developed park facilities is shown in Table 32 below. This inventory shows approximately 1,847 acres of developed and/or usable parks at various locations throughout the County. The County owns a large amount of undeveloped park properties that serve a variety of passive park needs, such as hiking and wildlife viewing. In some cases, a portion of undeveloped park property may be converted to developed parks, reducing the overall cost of park development since the land is already owned by the County. This inventory does not include undeveloped parks that are not readily useable by the general public.

Table 32. Current Developed Park Inventory

Park Name	Capacity (Acres)
Monument Park	6.90
Lighthouse Marine Park	20.50
Semiahmoo Park	17.90
Birch Bay Properties (includes several properties)	0.27
Sunset Farm Equestrian Center	69.50
Bay Horizon Park	48.00
Hovander Homestead Park/Tennant Lake Interpretive Center	333.40
Northwest Soccer Park & Northwest Baseball Complex	35.00
Alderwood Property	0.20
Bayview Marine	1.40
Teddy Bear Cove	11.19
Chuckanut Mountain Park	140.00
Nugent's Corner River Access	14.00
Lummi Island Stairway (Beach Access)	0.01
Samish Park	30.60
Squires Lake Park	84.20
Ted Edwards Park	3.90
Lake Whatcom Property North	218.00
Park Headquarters	4.50
Silver Lake Park	412.10
Maple Beach Park	0.50
Deming Homestead Eagle Park	33.00
Josh VanderYacht Memorial Park	3.00
Jensen Family Forest Park	22.70
Point Whitehorn Marine Reserve Park	54
Lily Point Marine Reserve Park	276
Sunset Beach (Lummi Island)	6
Total	**1,846.77**

Source: Whatcom County Six Year CIP 2009-2014 and Comprehensive Parks, Recreation and Open Space Plan (April 2008).

Trails

As the 2009 inventory shows below, the County currently has approximately 51 miles of trails in various locations throughout the County.

Table 33. County Trails Inventory

Trail Name	Capacity (Miles)
Bay Horizon	0.25
Bay Crest	0.21
Bay to Baker Maple Falls-Glacier	0.35
Canyon Lake	4.50
Salal	1.18
Madrona	0.78
Hemlock	3.53
Lower Salal	1.30
Huckleberry	0.43
Lost Lake	3.07
Raptor Ridge	0.40
Chuckanut Ridge	0.36
Deming Homestead Eagle Park	0.30
Jensen	0.61
Hovander Marrietta Coast Millennium Trail	4.90
Interurban	2.80
Lake Samish	1.30
Lake Whatcom Park	4.02
Lily Point	4.17
Monument Park	0.18
Ostrom Property	0.66
Pine and Cedar Lakes	3.62
Silver Lake Park	3.10
Soccer Trail	0.30
Squires Lake	2.14
Stimson Reserve	4.04
Teddy Bear Cove	0.33
Semiahmoo East Paved	0.63
Semiahmoo West Footpath	0.45
Halverson	0.31
Sunset	0.57
Total	**50.81**

Source: Whatcom County CIP 2009-2014.

Activity Centers

The County operates 12 activity centers that provide a variety of year-round programs for various age groups. Activity centers are facilities that are open for public use for events and a variety of activities throughout the year. The activity center inventory is shown on Table 34 below.

Table 34. County Activity Center Inventory

Activity Center Name	Capacity (units)
Plantation Rifle Range	1
Roeder Home	1
Bellingham Senior Activity Center	1
Blaine Community /Senior Center	1
Everson Senior Center	1
Ferndale Senior Center	1
Lynden Community Center	1
Point Roberts Community Center	1
Sumas Community Center	1
Welcome Valley Senior Center	1
Bay Horizon	1
Van Zandt Community Hall	1
Total	**12**

Source: Whatcom County CIP 2009-2014

Other Parks Districts

Lynden Regional Parks District

The Lynden Regional Park and Recreation District (LRPRD) was formed in 1996 with the purpose of maintaining and improving the public parks and recreational facilities within the Lynden School District's borders. The LRPRD is committed to providing public parks and recreation services to residents within the district's boundaries.

The LRPRD lists the following parks as included in the District: Bender Fields, Berthusen Park, Centennial Park, and Lynden City Park (LRPRD, May 2009), and all but Berthusen Park lie in the City limits. The LRPRD owns a portion of the Bender Fields Recreation Complex (about 21 acres). Within the District boundaries and outside the city limits, the City of Lynden owns and maintains Berthusen Park. This park facility is approximately 300 acres and is located about 3 miles northwest of Lynden's city limits. Besides providing picnic areas and interpretive trails, Berthusen Park is also the home of the antique tractor showing grounds, the Lynden Shotgun Club, and the Lynden Model Airplane Club.

Northwest Parks and Recreation District

The Northwest Parks and Recreation District encompasses the City of Blaine and its associated UGA, the Birch Bay UGA, the northern portion of the Cherry Point UGA, and some nearby rural areas. This parks and recreation district has been inactive until 2007, at which time it passed a levy to provide additional parks in the Blaine and Birch Bay areas. However, at this time, the parks and recreation district has no inventory of capital facilities.

Level of Service Capacity Analysis

Chapter 4 of the Whatcom County Comprehensive Plan establishes LOS standards for developed parks, trails, and activity centers (Table 35).

Table 35. Parks and Recreation Level of Service (LOS) Standards

Category	LOS Standard
Developed Parks	9.6 acres per 1,000 population
Trails	0.60 of a mile per 1,000 population
Activity Centers	5 centers per 100,000 population

Source: Whatcom County Comprehensive Plan, Chapter 4.

Developed Parks Level of Service Analysis

The Whatcom County Comprehensive Plan outlines an LOS standard of 9.6 acres per 1,000 population for developed parks. Compared to the current inventory of 1,846 acres of developed park, there is a 2008 surplus of 12 acres of developed park land.

Accounting for the County's capacity projects in the 2010-2015 timeframe, the County expects to add approximately 730 acres of developed park to the park system by 2015. With this additional capacity, the County is expected to have a net reserve of developed park by 2015 and 2029.

Table 36. Developed Parks Level of Service Requirements Analysis

Time Period	County Population	Acres needed to meet LOS standard	Acres Available	Net Reserve or (Deficiency)
Developed Parks LOS Standard = 9.6 acres per 1,000 population				
2008	191,000	1,834	1,846	12
Capacity Projects to 2015				
South Fork County Park			+582	
Sunnyside Landing Park			+6	
Dittrich Park Lake Samish			+24	
Cherry Point/ Point Whitehorn Industrial Area			+35	
Lake Whatcom County Park (south unit)			+83	
2015	207,922	1,996	2,576	580
Columbia Valley Park			+17.5	
2029	246,602	2,367	2,593	226

Source: ICF Jones & Stokes

Whatcom County Trails Level of Service Analysis

The Whatcom County Comprehensive Plan establishes a LOS standard of 0.60 mile per 1,000 population for County trails. Using this standard compared to 2008 population estimates, Whatcom County experiences a deficit of 64 miles of trails.

However, with County trail capacity projects for the 2010-2015 period accounted for, the County has a net reserve of approximately 32 miles of trail in 2015, and a reserve of approximately 9 miles of trail by 2029.

Table 37. Trails LOS Requirements Analysis

Time Period	County Population	Miles needed to meet LOS standard	Miles Available	Net Reserve/ (Deficiency)
Trails LOS Standard = 0.60 miles per 1,000 population				
2008	191,000	115	51	(64)
Capacity Projects to 2015				
Bay to Baker Trail			+14	
Chuckanut Mountain Trails			+2.7	
Hertz North Lake Whatcom Trail Extension			+1	
South Fork County Park			+3	
Olsen Property Trail			+3	
Coast Millennium Trail			+10	
Lake Whatcom County Park South Trail			+2	
Sunnyside Landing Connector Trail			+1.75	
Camp 2 – Lake Whatcom to Squires Lake Trail			+4	
Nooksack River Trail – Ferndale to Lynden			+11.75	
Nooksack River Trail – Lynden to Everson			+6.5	
Sumas Mountain Trail			+7	
Lake Whatcom Trail			+39.3	
2015	207,922	125	157	32
2029	246,602	148	157	9

Source: ICF Jones & Stokes.

Activity Center Level of Service Analysis

The Whatcom County Comprehensive Plan establishes an activity center LOS standard of 5 activity centers per 100,000 County population. The County has a net reserve of activity centers in 2008 with this standard applied.

Including the County's capacity project of adding the East Whatcom Regional Resource Center in the 2010-2015 timeframe, there will be no deficits for activity centers in either 2015 or 2029.

Table 38. Activity Centers Level of Service Requirements Analysis

Time Period	County Population	Centers needed to meet LOS standard	Centers Available	Net Reserve or (Deficiency)
Activity Center LOS Standard = 5 centers per 100,000 population				
2008	191,000	10	12	2
Capacity Projects to 2015				
East Whatcom Regional Resource Center			+1	
2015	207,922	10	13	3
2029	246,602	12	13	1

Source: ICF Jones & Stokes.

Other Parks and Recreation District LOS Analysis

The Lynden Regional Parks and Recreational District does not have established LOS standards. The City of Lynden has an established parks and recreation standard for parks and recreation facilities located within the city limits. The city's CFP specifically excludes Berthusen Park from its LOS analysis since the park is located outside city limits and serves as a regional park (page 229, City of Lynden Capital Facilities Element). As mentioned above, the Northwest Parks and Recreation District has only recently reactivated itself. The Northwest Parks and Recreation District adopted its Parks Master Plan on May 12, 2009. The District's new Master Plan contains recommended LOS standards for neighborhood, community, and regional parks as well as trails (NW Park & Recreation District 2, Master Plan Document, April 2009, page 7). These LOS standards are as follows:

- Neighborhood Parks: 1.0 acre per 1,000 population
- Community Park: 5.2 acres per 1,000 population
- Regional/Facility: 7.0 acres per 1,000 population
- Trail: 0.5 acres per 1,000 population.

It should be noted that Northwest Parks & Recreation District LOS standards do not represent County LOS standards for parks and trails.

County population projections for the two parks and recreation districts indicates that the Lynden Regional Parks & Recreation District can expect approximately 17,304 people by 2015 and 21,200 by 2029. The Northwest Parks and Recreation District can expect a population of approximately14,404 by 2015; and 19,900 by 2029.

Capital Projects and Funding

Capital projects and the funding needed to complete them for Whatcom County developed parks, trails, and activity centers in the 2010-2015 time frame are included below.

Developed Parks

The following park improvement projects are proposed to provide additional developed and/or usable park space to meet the anticipated future needs. These projects would add 747 acres of developed and/or usable park space to Whatcom County, as shown below.

Additionally, improvement projects are proposed on parkland already in the inventory of existing developed park facilities. These projects will add recreational facilities at these parks, but will not add acreage to the inventory.

The total cost and funding sources of for the developed park improvement projects are shown in Table 39.

Table 39. New Developed Park Facilities – Park Improvement Projects 2010-2029

Site No. and Project Cost/Revenue (thousands $)	Acres	2010	2011	2012	2013	2014	2015	2016-2029	Total
#25 South Fork Community Park	582								
Cost			45	500					545
Revenue Foundation Grants, Park Improvement Fund, and REET II			45	500					545
#26 Sunnyside Landing Park	6								
Cost		200	50						250
Revenue Grants and REET II		200	50						250
#27 Dittrich Park Lake Samish	24								
Cost			250	250	250	351.5			1,101.5
Revenue Grants and REET II			250	250	250	351.5			1,101.5
#28 Cherry Point/ Point Whitehorn Industrial Area Access	35								

Site No. and Project Cost/Revenue (thousands $)	Acres	2010	2011	2012	2013	2014	2015	2016-2029	Total
Cost				157	250	157			564
Revenue Grants				157	250	157			564
#29 Lake Whatcom County Park (south unit)	83								
Cost			20		250	250			520
Revenue Grants and REET II			20		250	250			520
Columbia Valley UGA Park	17.5								
Cost								TBD	TBD
Revenue Grant, General Fund, Recreation Service Area special taxing district, developer contributions[1]								TBD	TBD
Total	747.5	200	365	907	750	758.5			2,980.5

1 Foothills Subarea Plan FSEIS, December 2008, pg. 92-94; and Draft Foothills Subarea Plan, October 2007, p. 43.
Source: Unless otherwise noted, Whatcom County Six Year CIP 2009-2014.

Trail Improvements

There are 13 trail improvement projects proposed to provide additional trails to meet the anticipated need by the year 2015. These projects would add 106.7 miles of trails in Whatcom County to meet future needs of County residents.

Table 40. Trail Improvement Projects 2010-2015

Site No. and Project Cost/Revenue (thousands $)	Miles	2010	2011	2012	2013	2014	2015	2016-2029	Total
#32 Bay to Baker Trail	14 [1]								
Cost		1,442.9	1,442.9	1,442.9	1,442.9	1,442.9			7,214.6
Revenue		1,442.9	1,442.9	1,442.9	1,442.9	1,442.9			7,214.6

Site No. and Project Cost/Revenue (thousands $)	Miles	2010	2011	2012	2013	2014	2015	2016-2029	Total
Conservation Futures, Levy and Grants									
#33 Chuckanut Mountain Trails	2.7								
Cost			26	25	25				76
Revenue Conservation Futures, Levy and Grants			26	25	25				76
#34 Hertz North Lake Whatcom Trail Extension	1.0								
Cost		1,500	65						1,565
Revenue Grants, Donations and REET II		1,500	65						1,565
#35 South Fork County Park	3								
Cost			100	200	200				500
Revenue Grants, REET II, Donation			100	200	200				500
#36 Olsen Property Trail	3								
Cost		100	68	68	68	68			372
Revenue Grants, REET II		100	68	68	68	68			372
#37 Coast Millennium Trail	10 [1,2]								
Cost		4,808.4	188.4	188.4	188.4	188.4			5,562
Revenue		4,808.4	188.4	188.4	188.4	188.4			5,562
#38 Lake Whatcom County Park	2								

Site No. and Project Cost/Revenue (thousands $)	Miles	2010	2011	2012	2013	2014	2015	2016-2029	Total
South Trail									
Cost					158	158			316
Revenue Grants and REETII					158	158			316
#39 Sunnyside Landing Connector Trail	1.75								
Cost						73.5			73.5
Revenue Grants and REETII						73.5			73.5
#40 Camp 2 – Lake Whatcom to Squires Lake Trail	4 [1]								
Cost						168			168
Revenue Grants and Donation						168			168
#41 Nooksack River Trail – Ferndale to Lynden	11.75 [1]								
Cost			5,428.5	615	615	615			7,273.5
Revenue Grants and REET II			5,428.5	615	615	615			7,273.5
#42 Nooksack River Trail – Lynden to Everson	6.5 [1]								
Cost			3,003	343	343	343			4,032
Revenue Grants and REET II			3,003	343	343	343			4,032
#43 Sumas Mountain Trail	7 [1]								
Cost						322			322
Revenue						322			322

Site No. and Project Cost/Revenue (thousands $)	Miles	2010	2011	2012	2013	2014	2015	2016-2029	Total
Grants and donations									
#44 Lake Whatcom	39.3 [1,3]								
Cost			176	176	176	176			704
Revenue Grants, REET II, and Donations			176	176	176	176			704
Total	106.7	7,851	10,498	3,058	3,216	3,555			28,179

1 Trail segments identified are preliminary, and represent preferred trail alignments. Final trail alignments and lengths are pending land acquisition, property easement negotiation and final trail design.

2 The overall length of the Millennium Trail will be approximately 45 to 50 miles, developed with other partners from the public and private sectors. Most of this length will consist of existing or new trails on lands that are not owned by the County. The new portion on County lands, including road right-of-way will be 10-12 miles.

3 Trails identified are predicated on pending Department of Natural Resources (DNR) re-conveyance transaction with the Lake Whatcom watershed.

Source: Whatcom County Six Year CIP 2009-2014.

Activity Centers

One activity center improvement project, the East Whatcom Regional Resource Center located in the Columbia Valley/Kendall UGA, is proposed within the six-year planning period as shown below.

Table 41. Activity Center Improvement Projects 2010-2015

Site No. and Project Cost/Revenue (thousands $)	2010	2011	2012	2013	2014	2015	2016-2029	Total
#13 East Whatcom Regional Resource Center								
Cost	4,000	2,250						6,250
Revenue Grants, EDI funds, legislative appropriation, and bond.	4,000	2,250						6,250

Source: Whatcom County Six Year CIP 2009-2014.

Other Parks and Recreation Districts

The Northwest Parks & Recreation District approved its first parks master plan in May 2009. This new parks master plan includes a three-year capital improvement program that identifies projects and estimated costs (see Table 42 below).

Table 42. Northwest Parks & Recreation District Projects 2010-2015

Project Cost/Revenue (thousands $)	2010	2011	2012	2013	2014	2015	2016-2029	Total
Bay Horizon Park Children's Play Structure								
Cost	40							40
Bay Horizon Park Upgrade to Gymnasium								
Cost	35							35
Bay Horizon Park Develop Sports Fields								
Cost		70	70					140
Trail Connection between Lincoln Rd and Dakota Creek								
Cost		15	15					30
Acquire Property for Saltwater Access								
Cost			150					150
Total	75	85	235					395

Source: NW Park & Recreation District 2 Master Plan Document, April 2009.

Existing Structures

The County also addresses capital projects that make improvement to a variety of existing structures. The County Six-Year CIP for 2009-2014 included five projects providing upgrades and improvements to the Division Street Minimum Security Correctional Facility, Civic Center Annex, Jail, Courthouse, and the Point Roberts Sheriff's Facility. The total of the improvements found in the 2009-2014 timeframe accounted for the County Six-Year CIP is $5,718,000. When

~~removing 2009 projects to provide a 2010-2015 project cost, the total project cost for existing structure projects is $3,004,000.~~

Sanitary Sewer

Overview

There are a total of 10 wastewater collection systems and seven wastewater treatment facilities that serve UGAs in Whatcom County. Most of the facilities provide services within city limits with plans for future service to areas designated as UGAs. However, some systems provide service to unincorporated UGAs (Birch Bay Water and Sewer District, Water District 13, and Lake Whatcom Water and Sewer District).

Inventory of Current Facilities

The following cities and sewer districts (in alphabetical order) provide sanitary sewer services in the County:

- City of Bellingham maintains a collection system within its city limits and operates wastewater treatment facilities that are also used by Lake Whatcom Water and Sewer District. The city plans future service within its UGA and for connections to both undeveloped properties and those that are using septic systems within the city limits.
- Birch Bay Water & Sewer District owns and operates a collection and treatment system that serves the Birch Bay UGA and portions of the Blaine and Cherry Point UGAs.
- City of Blaine provides a collection and a wastewater treatment system for property within the city limits. There is a second wastewater treatment facility located in Blaine that was constructed in 1986 to treat wastewater from the Port of Bellingham and fish processors that lease from the Port of Bellingham other than T.M. Protein. The city plans to serve portions of its UGA that are not served by Birch Bay Water and Sewer District.
- The City of Everson maintains a collection system to serve property within the city limits. The city's sewer system also provides wastewater treatment for the City of Nooksack. Both cities provide funding for operation and maintenance of the treatment facility. The city sewer utility plans future service to areas within its UGA.
- The City of Ferndale provides a sewer collection and treatment facility for property within the city limits as well as future service to the city's UGA.
- Lake Whatcom Water & Sewer District (formerly called Water District 10) maintains a sanitary sewer collection system that serves the UGA adjacent to Lake Whatcom, east of the city limits. This special district relies upon the City of Bellingham wastewater system for treatment.
- The City of Lynden provides sewer collection and treatment facilities for property within the city limits and future collection and treatment to the city's UGA.
- City of Nooksack constructed a wastewater collection system for property within the city limits in 1989. The city has plans to provide future service to unserved properties within its city limits and to properties within its associated UGA. By agreement with the City of Everson, Nooksack pumps its sewage for treatment at the wastewater treatment plant located in

Everson. Nooksack also provides funding for the operation and maintenance of the Everson wastewater treatment plant.

- The City of Sumas provides a wastewater collection system for property within the city limits. Since 1999, the city has had wastewater treatment provided at a large regional treatment facility in Abbotsford, BC owned and operated by Fraser Valley Regional District. The city sanitary sewer utility has plans to extend service to UGA property upon annexation.
- Whatcom County Water District 13 provides wastewater collection and treatment to a portion of the Columbia Valley UGA in unincorporated Whatcom County.

An inventory of existing wastewater facilities located in the County is presented in the table on the following pages. The table summarizes millions of gallons treated per day, the most current existing flow data, and surpluses or deficits for each of the wastewater systems in the County. Existing population served is also noted.

Table 43. Sanitary Sewer Inventory

System Name	Collection System		Treatment Plant			Service Area		Notes
	Miles of Pipe	Collection System Existing Conditions	Existing Flow (mgd)	Design Flow (mgd)[1]	Surplus/ Deficit (mgd)	2008 Population Served[2]	Existing Connections (ERU)	
City of Bellingham	324	The city operates and maintains approximately 324 miles of mains and force mains. The system includes 27 pump stations and associated force mains, and one Combined Sewer Overflow (CSO) structure. Modeling indicates that portions of the interceptor downstream from Oak Street are close to capacity. The system needs improvements to collection system to limit CSO events to the allowable frequency and volume. Long Term Simulation modeling shows needs for additional 10 mgd conveyance and treatment capacity, or 1.7 MG of storage to limit CSOs to 1 event per year in 2026. Additional collection system improvements are required to maintain CSO volumes at current "baseline" levels.	12.5	20	7.5	86,990	26,100	
Lake Whatcom Water & Sewer District	82.18	District has completed several improvement projects including Lake Louise Rd Interceptor and Sudden Valley Sewage Detention Basin. District also has an ongoing program to upgrade aging sewer lift stations. District is also working to decrease potential build-out density within the district boundaries which allowed the district to decommission Clematis Pump Station.	0.75	4.6	3.85	10,690	3,729	Relies on City of Bellingham WWTP. Flow is restricted by contract with city to 3,200 gpm (4.6 mgd).
City of Blaine	40	The existing service area for the Blaine sewage treatment system is the Blaine city Limits. The City of Blaine wastewater collection system consists of gravity sewers, force mains and eight pumping stations. The collection system is divided into two primary areas which are separated by Drayton Harbor. The Semiahmoo portion of the service consists of the Resort Semiahmoo. Effluent from	0.496	0.8	0.304	4,780	2,391	

System Name	Collection System		Treatment Plant			Service Area		Notes
	Miles of Pipe	Collection System Existing Conditions	Existing Flow (mgd)	Design Flow (mgd) [1]	Surplus/ Deficit (mgd)	2008 Population Served [2]	Existing Connections (ERU)	
		Central Blaine is collected at Pump Station 1 on Marine Drive, where it is pumped through a submerged pipeline under the entrance to Drayton Harbor to the sewage treatment plant. The city invests in reducing I&I in the collection system as well as investing in additional off-line storage for peak rain events.						
Birch Bay Sewer System Plan	52	District operates 11 pumps, 7 of which follow the beach line. The district monitors its I/I in the collection system.	0.901	1.28	0.379	5,970	6,658 [3]	
City of Everson	8.52	Consists of 9 pump stations in City of Everson (in addition, 4 pump stations are located in Nooksack to serve that population). Rehabilitation of manholes occurred in mid-1990's and study of I&I finds that it does not exceed EPA standards.	0.270	0.44	0.170	2,380	716	
City of Ferndale	58.48	Ferndale's existing collection system contains more than 308,000 lineal feet of sewer piping (gravity and force main). It is made up of piping 4 to 48 inches in diameter. Approximately 64% of the system consists of 8-inch gravity sewers. There are also 17 pumping stations currently used for transmission of wastewater flows.	2.18	3.23	1.05	11,280	5,183	
City of Lynden	37	Collection system includes 14 operating pump stations. Three existing pump stations and some associated force mains and piping were identified as having inadequate capacity for projections to 2024. In addition sewer extensions will be needed to service new development.	1.31	2.18	0.87	11,610	4,440 [4]	
City of Nooksack	6.89	Wastewater collection system has sufficient capacity for future flows. The city anticipates extension of existing collection system to serve	0.075	See Notes	N/A	1,140	250	Relies on City of Everson

System Name	Collection System		Treatment Plant			Service Area		Notes
	Miles of Pipe	Collection System Existing Conditions	Existing Flow (mgd)	Design Flow (mgd) [1]	Surplus/ Deficit (mgd)	2008 Population Served [2]	Existing Connections (ERU)	
		new development. The city requires annexation of unincorporated areas of the UGA prior to service.						WWTP. Flow restricted to 154,000 gpd (0.154 mgd).
City of Sumas	10	Collection system will be extended to serve new development within city jurisdiction. New extensions to portions of the city that require crossing natural barriers of Bone Creek and Sumas River are anticipated to be more expensive capital projects. The city requires annexation of unincorporated areas of the UGA prior to service.	0.2325	See Notes	N/A	1,280	900	Relies on WWTP in Abbotsford, BC. Contract limits to 339,500 gpd in 2008, increasing to maximum 400,000 gpd by 2019.
W.C. Water District #13 Sewer	4.47	Water District 13 owns, operates and maintains two pump stations, approximately 20,200' of pressure and gravity sewer pipe, a wastewater treatment plant and a 3,400' force main that transfers flows from the treatment plant to the 1.71 acre drainfield.	0.062 [6]	0.125	0.063	920	379 [5]	

mgd = million gallons per day, gpd = gallons per day, I/I = inflow and infiltration, CSO = combined sewer overflow, WWTP = wastewater treatment plant, N/A = not available

1 Based on the average day flow during peak flow month as reported on National Pollutant Discharge Elimination System (NPDES) permit.

2 2008 Population provided by Berk & Associates estimates or comprehensive sewer plan. For Ferndale, population serve is for 2010 (City of Ferndale Comprehensive Sewer Plan, 2011, p. 11).

3 Birch Bay uses "Equivalent Living Units". Information is from May 2009 Birch Bay Comprehensive Sewer Plan (see page 5-2). Information is from December 2008.

4 2007 data. Assuming 2.5 persons per ERU (Personal communication, Tammy Adams, Wastewater Plant Manager and Dean Martin, July 10, 2009).

5 Source is from Foothills Subarea Plan Final Supplemental Environmental Impact Statement (December 2008), p. 83

6 Whatcom County Water District No. 13 Comprehensive Sewer Plan (August, 2012), p. 6-1

Sources: Unless otherwise noted source comes from Department of Ecology NPDES Permit data (accessed via Internet February 5, 2009); review of latest sewer system plan; and Berk & Associates for 2008 population.

Level of Service Capacity Analysis

The adequacy of existing sewer facilities to meet present and future needs is based on the estimated gpd of wastewater for the current population and the projected future population. This figure represents the LOS standard for sewer service for sewer providers.

Most of the 10 sewer service providers have developed their own LOS standard based upon their local geography and service area demographics. Table 44 outlines LOS standards established by each sewer provider.

Table 44. Sewer Level of Service Standards

Service Provider	LOS Standard
City of Bellingham	102 gallons/capita/day [1]
Birch Bay Water and Sewer District	85 gallons/capita/day
City of Blaine	300 gallons/household/day
City of Everson	300 gallons/household/day
City of Ferndale	193 gallons/capita/day [2]
Lake Whatcom Water & Sewer (formerly Water District 10)	198 gallons/day/connection [3]
City of Lynden	100.7 gallons/capita/day [4]
City of Nooksack	250-275 gallons/household/day [5]
City of Sumas	300 gallons/household/day [5]
Whatcom County Water District 13	67 gallons/capita/day [6]

1 Section 4.3.2 Per capita flows, page 4-6, City of Bellingham Comprehensive Sewer Plan, June 2009.

2 Derived from City of Ferndale Comprehensive Sewer Plan, pp. 9 and 11, 2011. The LOS for Ferndale is based upon peak month flow.

3 Lake Whatcom Water and Sewer District Comprehensive Sewer Plan, page 8, September 2007.

4 City of Lynden General Sewer Plan, page 4-1, December 2007.

5 Personal communication from Erin Osborn to Matt Aamot, Email July 14, 2009, citing communication with Rollin Harper of Sehome Planning.

6 Derived from Water District No. 13 Comprehensive Sewer Plan, pp 3-3 and 6-1, 2012. The LOS for Water District 13 is based upon the peak month flow.

Table 45 identifies how future population and employment for each sewer service provider affects treatment capacity based on existing treatment capacity mentioned in Table 43 above.

As can be seen from the analysis in Table 45, only the City of Everson is anticipated to experience a sewage treatment deficit in 2015. The City of Everson's response to the County's CFP growth projections indicate that the city has sufficient capacity to serve the majority of growth anticipated in the 20-year timeframe. In response to the highest growth alternative considered in planning this CFP Everson indicates that the city has available capacity to accommodate approximately 8 to 12 years of residential growth, and that expansion of the treatment plant will be necessary (Memorandum from Rollin Harper of Sehome Planning & Development Services to Matt Aamot, dated April 8, 2009, page 3). See narrative under City of

Everson Treatment below for more detailed information. The City of Blaine expects to provide an additional 0.7 MGD sewage treatment capacity when its new wastewater treatment plant starts operation in 2010. This will increase the 2015 reserve shown for Blaine in Table 45.

Table 45. Sewer Level of Service Analysis for 2015

Service Provider	Current Treatment Capacity (MGD)	2015 Treatment Capacity Surplus (Deficit) expressed in MGD
Bellingham	20.00	10.44
Birch Bay Water & Sewer	1.28	0.69
Blaine	0.80 [1]	0.06
Everson [2]	0.29	(0.01)
Ferndale	3.23	0.64
Lynden	2.18	0.85
Nooksack [3]	0.15	0.03
Sumas	0.39	0.22
Lake Whatcom Water & Sewer District (formerly Whatcom County Water District 10)	4.60	3.82
WC Water District 13	0.125	0.051

1 City of Blaine anticipates opening a new wastewater treatment plant in 2010 which will increase treatment capacity to 1.5 MGD. With the anticipated additional treatment capacity, the City expects to have additional reserve available in 2015. [City of Blaine website: http://www.ci.blaine.wa.us/, accessed April 24, 2009].

2 Everson's Treatment Plant has a total capacity of 0.44 mgd. However, 2/3 of capacity, or 0.29 mgd are owned by Everson, while 1/3 of capacity or approximately 0.15 mgd is owned by neighboring Nooksack.

3 This analysis uses 275 gallons/household/day as a LOS measure, the upper end of the range provided by the City of Nooksack in communication with Erin Osborn, as communicated in email to Matt Aamot, July 14, 2009.

Table 46 below provides an LOS analysis for sewer providers to the 2029 planning horizon. The 2029 LOS analysis finds sewage treatment deficits for the cities of Blaine, Everson, Ferndale, and Nooksack. The City of Everson's expectation of a sewage treatment deficit is consistent with the city's analysis (Schome Planning & Development Services 2009). The same communication from Schome Planning & Development Services indicated that the City of Nooksack, sharing the same Everson sewage treatment plant, is expected to have sufficient sewage treatment capacity for the next 13 to 15 years and an expansion of the Everson sewage plant may be needed to accommodate some growth occurring outside the current city limits (Schome Planning & Development Services 2009). The LOS analysis for City of Nooksack to 2029 in Table 46 confirms this assessment. Although the City of Blaine shows a deficit in Table 46, when accounting for the additional 0.7 mgd of sewage treatment capacity that is expected to be available in 2010, the City is expected to have a net reserve of sewage treatment capacity in 2029. The City of Ferndale would also experience a sewage treatment capacity deficits in 2029 if no additional capacity were constructed. However, the City of Ferndale Comprehensive Sewer Plan (2011) includes plans to almost double the capacity of the wastewater treatment plan, which will

more than accommodate wastewater flows through the year 2029. Individual jurisdictions and districts have planned projects that may help alleviate some or all of the deficits identified in Table 46. More discussion is provided below by service provider.

Table 46. Sewer Level of Service Analysis for 2029

Service Provider	Current Treatment Capacity (MGD)	2029 Treatment Capacity Surplus (Deficit) expressed in MGD
Bellingham	20.00	8.86
Birch Bay Water & Sewer	1.28	0.5
Blaine [1]	0.80	(0.29)
Everson [2]	0.29	(0.09)
Ferndale [3]	3.23	(0.99)
Lynden	2.18	0.49
Nooksack [4]	0.15	(0.03)
Sumas	0.39	0.16
Lake Whatcom Water & Sewer District (formerly Whatcom County Water District 10)	4.60	3.79
WC Water District 13	0.125	0.018

1 City of Blaine anticipates opening a new wastewater treatment plant in 2010 which will increase treatment capacity to 1.5 MGD. With the anticipated additional treatment capacity, the City will be able to meet the projected sewer flow requirements to 2029. [City of Blaine website: http://www.ci.blaine.wa.us/, accessed April 24, 2009]

2 Everson's Treatment Plan has a total capacity of 0.44 MGD. However, 2/3 of capacity, or 0.29 MGD are owned by Everson, while 1/3 of capacity or approximately 0.15 MGD is owned by neighboring Nooksack.

3 The City of Ferndale Comprehensive Sewer Plan (2011) includes planned improvements to increase the capacity of the wastewater treatment plant from 3.23 MGD to 6.37 MGD (p. 13 and Exhibit H). This will increase the capacity by 3.14 MGD and address the deficit that would occur if no capacity improvements were planned.

4 This analysis uses 275 gallons/household/day as a LOS measure, the upper end of the range provided by the City of Nooksack in communication with Erin Osborn, as communicated in email to Matt Aamot, July 14, 2009.

Capital Projects and Funding

Population

Table 47 below identifies each sewer provider's latest sewer plan's horizon year and population, as well as the populations expected under County's 2029 population projection. This table serves to provide an order of magnitude check with respect to the population that each service provider is planning on serving in comparison to the latest population projections for the 2029 Whatcom County CFP.

Table 47. Population Comparison: Sewer Plans and 2029 Population Projection

Service Provider	Horizon year of Capital Plan	Capital Plan Population	2029 Population Projection
Bellingham	2026	122,007	109,200
Birch Bay Water and Sewer	2029	11,307	9,160
Blaine	2025	10,871	9,040
Everson	2024	4,202	3,610
Ferndale	2034	24,600[1]	21,827[2]
Lynden	2024	18,235	16,790
Nooksack	2024	2,039	2,080
Sumas	2024	1,625	2,080
Lake Whatcom Water and Sewer District (formerly Water District 10)	2027	13,936	11,190
W.C. Water District 13	2029	1,595	1,595

1 The City of Ferndale Comprehensive Sewer Plan (p. 3) uses a 2029 population projection of 20,707 for the Ferndale UGA, consistent with the Whatcom County Comprehensive Plan. The Sewer Plan extrapolates the population projection to 2034 for consistency with the City's planning horizon date.

2 This projection is higher than the projected UGA population because City sewer currently serves two existing areas east of the City that are outside the UGA.

Source: Berk & Associates (2029 population projection); each individual purveyor capital facility plan for horizon year and capital plan population columns.

Capital Project Funding

Sewer services and capital are funded primarily by the users of the system through service charges and connection fees. These rates are adjusted as needed to fund capital and operational needs. Some grant programs exist for the construction of sewer facilities and upgrades, but, like many grant programs, they are generally very competitive.

In addition to this general approach to funding, the following Capital Facilities plans list additional possible funding sources:

- The City of Ferndale – The Ferndale Comprehensive Sewer Plan states that the City has various funding sources available for sewer capital projects including (but not limited to) sewer rates and connections fees, bonds, loans, grants, utility local improvement district (ULIDs), and developer extension contracts.
- The City of Lynden – The City considered using $4,000,000 in capital reserves as well as a bond or Public Works Trust Fund loan to fund their desired capital improvements.

City of Bellingham

The City of Bellingham maintains and operates a wastewater collection and treatment system that provides existing service to the city limits as well as sewer service zones within the Bellingham

UGA. The existing sewer network is most dense in the central city, and there appear to be portions of the city, particularly in the south that are not yet served by sewer. There are also less extensive sewer networks extending into the city's UGA. The City has established a potential future sewer service area that extends beyond the city limits and encompasses all of the city's UGA not currently served by Lake Whatcom Water and Sewer District (formerly Water District 10). The city's current Comprehensive Sewer Plan (Carollo Engineers, 2009) indicates that the city's long-range sewer system plan accounts for sewage treatment capacity for approximately 122,007 people by 2026 (Carollo Engineers, 2009). This is a larger population than the 109,200 projected under this CFP. The city's sewer service area and population forecast excludes Lake Whatcom Water and Sewer District.

The city's sewage treatment plant is designated for a two phase expansion to accept future demand. The phase one facilities plan has just begun and will be sized to accept future Biological Oxygen Demand as required in the city's Ecology permit. A phase two expansion is expected in the 20 year planning period. This expansion will build on the upcoming facilities plan to adequately size the treatment plant capacity to meet future needs.

Birch Bay Water and Sewer

Birch Bay Water and Sewer District adopted a Comprehensive Sewer Plan in 2009. The district's plan indicates where current sewer service exists and establishes a future service area that consists of portions of the Birch Bay, Blaine, and Cherry Point UGAs. The plan does not appear to identify future service lines. A review of a GIS layer of existing sewer lines indicates that sewer is concentrated along the coast of the Birch Bay UGA, though there are less extensive networks of sewer lines inland in the Birch Bay UGA. The sewer district's 2009 plan had higher population projections in the 2029 horizon year for the district than the 9,160 anticipated in planning for this CFP. The 2009 Sewer Plan indicates that the district will exceed existing capacity by 2019. However, with the wastewater treatment plant upgrade projects noted in the 2009 Comprehensive Sewer Plan, the District will be able to accommodate the growth anticipated to 2029. (Birch Bay Water and Sewer District and CHS Engineers 2009, pages 6-6 through 6-7)

City of Blaine

The 2004 City of Blaine General Sewer Plan and its 2005 update shows major existing sewer service lines and some future sewer trunk lines. The City of Blaine Comprehensive Plan includes a map showing future sewer service area as portions of the Blaine and Birch Bay UGAs not served by Birch Bay Water and Sewer District. A GIS layer showing existing sewer lines indicates that large areas of the city east of I-5 are not served by sewer or close to sewer trunk lines. Table 46 above indicates that the City of Blaine reaches a sewage treatment deficit by 2029 using existing treatment capacity. However, the City of Blaine 2005 General Sewer Plan and 2006 Comprehensive Plan both indicate that the City has plans to upgrade and expand sewage treatment plant capacity to meet future demands for service, Ecology National Pollutant Discharge Elimination System (NPDES) requirements, and to replace aging infrastructure. The city plans to complete construction on its new wastewater treatment plant and begin operation in 2010 (City of Blaine 2009). The new wastewater treatment plant's design capacity of 1.5 mgd

would accommodate projected wastewater flows to the end of the 2029 CFP planning period. Another major component of the city's capital improvement plan is a program for reduction of inflow and infiltration (I&I).

City of Everson

The City of Everson does not have a sewer comprehensive plan. The sewer system was addressed in the 2004 update of the Everson Comprehensive Plan. Wilson Engineering also provided an analysis of the sewer system in a memorandum prepared in early 2007.

Collection & Transmission

The Everson sewer system includes a collection and transmission system that serves all of the incorporated portions of the city except for a small number of residential customers and one industrial customer located on Mission Road. The City operates a system of sewer lift stations that direct sewage to the Everson sewage treatment plant. Sewage from the City of Nooksack is also transmitted to the Everson treatment plant through a system of lift stations.

Treatment

The Everson sewage treatment plant has a capacity of 440,000 gallons per day (gpd). Of this total Everson owns two-thirds or 294,800 gpd. According to the 2007 memorandum prepared by Wilson Engineering, at that time the City had 222 ERUs of capacity available in the treatment plant. Although this amount of capacity is sufficient to serve the majority of growth anticipated within the existing City limits, it is insufficient to meet the anticipated demands to 2029 as seen on Table 46. Depending on the rate of growth, the available capacity is sufficient to accommodate approximately 8 to 12 years of residential growth. Therefore, expansion of the treatment plant will be necessary. The City is beginning work on a sewer comprehensive plan that will address future needs at least through 2029. This plan will be developed in conjunction with the City of Nooksack and will be funded in part through the Community Development Block Grant program.

Improvements and Financing

All system extensions necessary to serve new development will be provided by developers. The City may participate in constructing a new east-west connector to serve the City's industrial zone and would need to access Community Economic Revitalization Board (CERB) and Economic Development Initiative (EDI) funding at that time. The City also has planned to extend the sewer system to serve the residential area along Mission Road as part of the Mission Road Phase 3 project. Funding for this project has not yet been identified. It is recognized by the City that expansion of the sewage treatment plant will require the City to secure major sources of funding, primarily low-interest loans. The Everson Comprehensive Plan shows the locations of some but not all of the system extensions necessary to serve new development in the Everson UGA. The City has identified creation of a comprehensive sewer plan as a key project in the City's future plans for sewers (personal email communication, Erin Osborn to Matt Aamot, July 14, 2009).

City of Ferndale

The City of Ferndale provides sewer service inside the City limits, and plans to provide service to areas within the UGA as they are annexed to the City. The City also serves two areas outside the UGA, east of the City, but has no plans to expand service in these areas. The LOS analysis in Table 45 indicates that the City would experience a sewage treatment capacity surplus in 2015. The LOS analysis in table 46 indicates that the City would experience a sewage treatment deficit by 2029 if no improvements were made to the wastewater treatment plan. However, the City has plans to expand wastewater treatment capacity (City of Ferndale Comprehensive Sewer Plan, 2011, Exhibit H). Implementation of the Sewer Plan will increase the capacity of the wastewater treatment plan from 3.23 MGD to 6.37 MGD (p. 13). This will increase the capacity by 3.14 MGD and address the deficit that would occur if no capacity improvement were planned. Ferndale's Comprehensive Sewer Plan states that the "City's existing sewer collection and treatment systems have sufficient capacity (with planned improvements) to provide sewer service to growth within the City limits and UGA for the next twenty years" (p. 26).

City of Lynden

The City of Lynden General Sewer Plan (BHC Consultants 2007) indicates that the city provides service to areas within the city limits, and will provide future service to areas within its UGA. The Sewer Plan indicates future sewer trunk lines to serve areas of the city and UGA not currently served (BHC Consultants 2007). The sewer plan provides for a sewer system population of 18,235 people by 2024, which is greater than the 16,790 anticipated by 2029 under this CFP. The LOS analysis in Table 46 above indicates a small sewage treatment reserve in 2029 with existing sewage treatment capacity. The city's General Sewer Plan anticipates planning for additional sewage treatment capacity in 2019. A series of pump station and force main improvements are planned as part of the city sewer system's capital improvement plans to maintain system capacity within the planning period.

City of Nooksack

The City of Nooksack does not have a sewer comprehensive plan. The Nooksack sewer system was addressed in the 2004 update of the Nooksack comprehensive plan in the Capital Facilities Element. Wilson Engineering also provided an analysis of the Nooksack sewer system in a memorandum prepared in early 2007.

Collection & Transmission

The City of Nooksack maintains a system of collection and transmission pipes and four sewer lift stations that direct sewage to the Everson sewage treatment plant.

Treatment Capacity

The Everson sewage treatment plant has a total capacity of 440,000 gallons per day (gpd). Of this total, Nooksack owns one-third, which equals 145,200 gpd. The 2007 memorandum prepared by Wilson Engineering states that the City of Nooksack had 230 additional ERUs available. The available capacity is insufficient to meet the growth anticipated in this CFP. Available ERUs

appear to be sufficient to accommodate anticipated growth over the next 13 to 15 years. Expansion of the Everson sewage treatment plant will be necessary to accommodate some of the growth that will occur outside of current city limits.

Improvements and Financing

All system extensions necessary to serve new development will be provided by developers. It is recognized by the City that expansion of the Everson sewage treatment plant will require the City to secure major sources of funding, primarily low-interest loans. The Nooksack Comprehensive Plan does not show the locations of system extensions necessary to serve new development in the Nooksack UGA. The City has identified creation of a comprehensive sewer plan in conjunction with the City of Everson comprehensive sewer plan project as a key project in the City's future plans for sewers (personal email communication, Erin Osborn to Matt Aamot, July 14, 2009).

City of Sumas

The City of Sumas does not have a comprehensive sewer plan. The Sumas sewer system was addressed in the 2004 update of the Sumas Comprehensive Plan. The Sumas Comprehensive Plan addresses the 20-year period from 2004 through 2024 including a 2024 population of 1,750.

Collection & Transmission

The City of Sumas owns and maintains a sewage collection and transmission system that includes gravity sewer lines and a small number of sewer lift stations. The Sumas system directs sewage to a discharge into the City of Abbottsford system in British Columbia, Canada.

Treatment

The City has an ongoing contract with the City of Abbotsford to receive and treat sewage collected in Sumas. This contract provides for the receipt and treatment of a maximum volume of 400,000 gallons per day through December 31, 2028. Discharges from the Sumas system are metered on a daily basis. A review of City records from February 2009 indicates that typical maximum effluent levels are approximately 270,000 gallons per day total. One-third of the City's total maximum daily discharge is generated by a single industrial customer. Using the conversion factor of 300 gallons per day per equivalent residential unit (ERU), the total contract amount equates to 1,333 ERUs. The available capacity of 130,000 gallons per day is equivalent to approximately 433 ERUs. Excluding the one large industrial customer, which generates the equivalent of 300 ERUs, leaves an available capacity of 1,033 ERUs for the remainder of the City. This available capacity equals a 72% increase over the current City typical maximum daily volume of 180,000 gallons per day or 600 ERUs (e.g., maximum daily volume without considering the single large industrial use). This CFP assumes a population increase from 1,279 to 2,080 along with a comparable level of employment, representing a 63% increase through 2029. On this basis it appears that Sumas has sufficient sewer service capacity to meet its needs through 2029.

Improvements and Financing

All system extensions necessary to serve new development will be provided by developers. The City has recently completed a sewer lift station that was designed to be deep enough to receive gravity flows from all of the currently designated areas within the Sumas unincorporated UGA[5]. No additional major City-funded improvements to the sewer system are anticipated at this time. The Sumas Comprehensive Plan shows the locations of sewer main extensions necessary to serve new development in the Sumas UGA.

Lake Whatcom Water and Sewer District (Formerly Water District 10)

Lake Whatcom Water and Sewer District includes areas within Bellingham's UGA and rural areas surrounding Lake Whatcom within its sewer service area. The district relies upon the City of Bellingham's sewer system for treatment capacity. As noted in Tables 46 and 47 above, the sewer district's contract with City of Bellingham provides adequate treatment capacity through both 2015 and 2029.

The district plans sewer extensions to newly developing areas on an as-needed basis. The 2007 Lake Whatcom Sewer Plan identifies several future service extensions to serve vested developments, including a handful of vested lots located within the district's boundaries, but outside of the UGA. The 2007 Plan notes a number of collection system improvements, including upgrades to various district pumping stations.

Water District 13

Water District 13, provides sewer service to a portion of the Columbia Valley UGA. The LOS analysis in Table 45 indicates that the District would experience a sewage treatment capacity surplus in 2015. The LOS analysis in Table 46 indicates that the District would also experience a sewage treatment surplus in 2029. However, the District plans to make improvements to the wastewater treatment plant and other components of the system over the 20-year planning period (Water District No. 13 Comprehensive Sewer Plan, 2012, pp. 7-10 and 7-11. The Columbia Valley Water District, which provides water service to a portion of the Columbia Valley UGA, currently does not provide sewer service. As noted in the Foothills Subarea Plan (May 11, p 12-5) in the future Water District 13 may contract with its neighboring water district to provide sewer service to the portion of the Columbia Valley UGA served by the Columbia Valley Water District.

Sewer System Capital Projects and Financing

Sewer providers have identified capital projects as noted in Table 48 below, broken down by service provider, to accommodate the future needs of sewer service in the County. Specific revenue sources are not identified for the non-County service providers included in Table 48

[5] Refers to the UGA approved by Whatcom County as of the 2004 County Comprehensive Plan. UGA boundaries have decreased with the 2009 Whatcom County Comprehensive Plan.

below. Sewer providers obtain their revenue from a variety of sources, including but not limited to service charges, connection fees, and grants, as noted at the beginning of this section.

Table 48. Sewer Projects

Project Costs/Revenue (thousands $)	2010	2011	2012	2013	2014	2015	2016-2029	Total
City of Bellingham								
Wastewater Treatment Plant Phase 1 and 2 Improvements								
Cost	5,990	3,320	16,340	28,250			16,030	69,930
Priority 1 and 2 Collection System Improvements [1]								
Cost	3,430	23,470	2,340	800	5,020	9,780	37,690	82,530
Infiltration & Inflow (I&I) Study								
Cost			520	2,080				2,600
I & I Improvements								
Cost	1,286	1,624	1,606	1,838	2,005	1,974	17,858	28,191
Birch Bay Water and Sewer District								
Wastewater Treatment Plant Headworks								
Cost	2,000							2,000
Wastewater Treatment Plant New Process Water								
Cost	41							41
Wastewater Treatment Plant - 2 new oxidation ditches								
Cost					3,591			3,591
Wastewater Treatment Plant – New Flow Split Structures								
Cost					103			103

Project Costs/Revenue (thousands $)	2010	2011	2012	2013	2014	2015	2016-2029	Total
Wastewater Treatment Plant – Upgrade Aerobic Digesters								
Cost					385			385
Wastewater Treatment Plant – Convert to Digestion								
Cost					309			309
Wastewater Treatment Plant – Gravity Belt Thickener								
Cost					1,504			1,504
Wastewater Treatment Plant – New Dewatering								
Cost					3,248			3,248
Wastewater Treatment Plant – Secondary Sedimentation								
Cost							2,470	2,470
Wastewater Treatment Plant – Demolish Small Secondary Clarifiers								
Cost							52	52
Wastewater Treatment Plant – Demolish Primary Clarifiers								
Cost							52	52
Wastewater Treatment Plant – New UV Modules								
Cost							102	102
Wastewater Treatment Plant – Third New Oxidation Ditch								
Cost							1,978	1,978

Project Costs/Revenue (thousands $)	2010	2011	2012	2013	2014	2015	2016-2029	Total
Continue 16 and 18 inch force mains from Pump Station #3 to Pump Station #4								
Cost	1,066							1,066
Increase Pump Station #2 Capacity								
Cost	2,850							2,850
Increase Pump Station #3 Capacity								
Cost		344						344
Pump Station #6 Upgrade and force main capacity								
Cost		1,318						1,318
Increase Pump Station #7 capacity and replace force main								
Cost						341		341
Replace electrical system including standby generator and relocate from vault to building								
Cost	365							365
Upgrade Pump Station #8								
Cost						336		336
Increase Station Capacity (#P-8)								
Cost							359	359
Modify pump station and 18" force main (#P-9)								
Cost			1,252					1,252
Increase Pump Station Capacity (#P-10)								

Project Costs/Revenue (thousands $)	2010	2011	2012	2013	2014	2015	2016-2029	Total
Cost							1,834	1,834
Construct submersible pump station north of Semiahmoo Drive near Semiahmoo Dr/Birch Pt Rd (#P-11)								
Cost							1,750	1,750
Construct submersible pump station west of Semiahmoo Drive (#P-12)								
Cost							638	638
Construct submersible pump station south of Hall/Blaine Rd. (#P-13)								
Cost	1,169							1,169
Construct submersible pump station south of Lincoln Rd and wet of Harbor View Rd. (#P-14)								
Cost							711	711
Construct submersible pump station at intersection of Harbor View Rd and Drayton Harbor (#P-15)								
Cost							1,775	1,775
Continue evaluation of sewer system (Collection-1)								
Cost	350							350

Project Costs/Revenue (thousands $)	2010	2011	2012	2013	2014	2015	2016-2029	Total
Install parallel gravity sewer between Pump Stations #5 and #4 (Collection-2)								
Cost		1,305						1,305
Install parallel gravity sewers between pump stations #6 and #5 (Collection-3)								
Cost		1,272						1,272
Install parallel gravity sewers between pump stations #7 and #6 (Collection-4)								
Cost						1,336		1,336
Install parallel gravity sewers between pump stations #8 and #7 (Collection 5)								
Cost						1,583		1,583
Construct 10" parallel sewer between Birch Pt Rd and Selder Rd (Collection 6)								
Cost							132	132
Construct 21" sewer between Birch Pt Rd and Selder Rd (Collection-7)								
Cost							1,218	1,218
Construct 10" sewer north of Birch Pt Rd to receive discharge from Pump Station A force main. (Collection-8)								
Cost							891	891

Project Costs/Revenue (thousands $)	2010	2011	2012	2013	2014	2015	2016-2029	Total
Construct 18" sewer north of intersection of Semiahmoo Dr/Birch Point Rd north along Semiahmoo Dr. (Collection-9)								
Cost							1,000	1,000
Construct 15" sewer from Semiahmoo Dr/Birch Pt Rd north along Semiahmoo Dr. (Collection-10)								
Cost							1,410	1,410
Construct parallel 10" sewer and 8" sewer (Collection-11)								
Cost							288	288
Construct 24" parallel sewer beginning east of Birch Bay Drive/Alderson Rd east along Alderson Rd. (Collection-12)								
Cost			649					649
Construct 15" parallel sewer from west of Blaine Rd /Alderson Rd along Alderson Rd. (Collection-13)								
Cost			576					576
Construct 10" sewer from Birch Bay Dr/East Golf Course Dr east along East Golf Course Dr. – replace 8" sewer (Collection-14)								
Cost							367	367

Project Costs/Revenue (thousands $)	2010	2011	2012	2013	2014	2015	2016-2029	Total
Construct 18" parallel sewer from Harbor View Rd/Birch Bay Dr north along Harbor View Rd and associated construction (Collection-15)								
Cost							750	750
Construct 12" sewer beginning at Harbor View Rd. (Collection-16)								
Cost							442	442
Construct 12" sewer from Harbor View/Anderson Rds east along Anderson Rd. (Collection-17)								
Cost							1,476	1,476
Construct 15" parallel sewer along Cedar Ave to Anderston Rd and parallel 8" sewer line (Collection-18)								
Cost							340	340
Construct 21" sewer from Cedar Ave/Anderson Rd north parallel to Cedar Rd. (Collection-19)								
Cost							525	525
Construct 10" sewer from north of Shintaffer/ Anderson Rds north to Lincoln Rd. (Collection-20)								
Cost		545						545

Project Costs/Revenue (thousands $)	2010	2011	2012	2013	2014	2015	2016-2029	Total
Construct 18" sewer at intersection Drayton Harbor/Harbor View Rds. (Collection-21)								
Cost							1,126	1,126
Construct 12" sewer at Harbor View Rd/Drayton Harbor Rd northward (Collection-22)								
Cost							498	498
Construct 18" sewer from south of Blaine Rd/Birch Bay – Lynden Rd south along Blaine Rd (Collection-23)								
Cost	522							522
Construct 12" sewer from intersection of Blaine Rd/Arnie Rd, south along Blaine Rd (Collection-24)								
Cost	442							442
Construct 12" sewer beginning south of intersection of Blaine Rd/ Birch Bay-Lynden Rd east (Collection-25)								
Cost							986	986
Construct parallel 15" and 18" sewer (Collection-26)								
Cost							784	784
Construct parallel 10" 12" and 15" sewer through Anchor Manor (Collection-27)								

Project Costs/Revenue (thousands $)	2010	2011	2012	2013	2014	2015	2016-2029	Total
Cost							960	960
Construct 10" sewer from Blaine Rd/Loomis Trail Rd north along Blaine Rd to Drayton Harbor Rd (Collection-28)								
Cost							990	990
Construct 8" parallel sewer as noted in detail project description (Collection-29)								
Cost							72	72
Acute and Chronic Toxicity Testing (O-1)								
Cost	5							5
Outfall Evaluation (O-2)								
Cost	15							15
Effluent Mixing Study (O-3)								
Cost		35						35
Application for NPDES Permit Renewal (O-4)								
Cost			6					6
Engineering Report Update (O-5)								
Cost				60				60
Comprehensive Sewer Plan Update (O-6)								
Cost				80				80
Water Reclamation Engineering Report (O-7)								

Project Costs/Revenue (thousands $)	2010	2011	2012	2013	2014	2015	2016-2029	Total
Cost							60 (timing TBD)	60
City of Blaine[2]								
Construct New Wastewater Treatment Facility for West Blaine or convey to Birch Bay (T-3)								
Cost	500	4,012						4,512
Proposed New Sewer Sub-Main Extensions (locations unspecified) (P-3 through P-5 & P-8)								
Cost		860						860
Proposed new Sewer Sub-Main Extension along Jerome Street (P-6)								
Cost		400						400
Proposed Sewer Sub-Main Extension along Harvey Road (P-7)								
Cost		390						390
Proposed Sewer Sub-Main Extension along Old Mill Road (P-9)								
Cost		380						380
City of Everson								
Comprehensive Sewer Plan [3]								
Cost								TBD
Miscellaneous Capital Projects								
Cost	18							18

Project Costs/Revenue (thousands $)	2010	2011	2012	2013	2014	2015	2016-2029	Total
City of Ferndale[4]								
General Planning, Telemetry and Programs								
Cost		25.0	278.1	217.5	5.5	5.6	635.2	1,166.9
Misc. and Maintenance								
Cost		5.0	5.2	5.3	5.5	5.6	99.0	125.6
Sewer Collection Projects								
Cost		887.5	903.9	554.3	426.6	401.7	6,738.9	9,912.9
Sewer Pump Station Projects								
Cost		95.0	566.5	1,060.9	437.1	562.8	3,710.6	6.342.9
Vehicle and Heavy Mobile Equipment								
Cost		55.0	20.6	21.2	21.9	61.9	756.0	936.6
Wastewater Treatment Plan Improvements								
Cost		97.0	453.2	461.5	92.9	377.0	5,916.4	7,398.0
City of Lynden								
Pump Station 3 & FM								
Cost	120							120
Pump Station 9								
Cost	30	120						150
Pipe Replacements								
Cost	100	100	100	100				400
Infiltration/ Inflow Study								
Cost	100							100
Asset Management Update								
Cost		100	100					200

Project Costs/Revenue (thousands $)	2010	2011	2012	2013	2014	2015	2016-2029	Total
Fats, Oils, and Grease (FOG) Study								
Cost	20							20
TV Pipe Inspection								
Cost	10	10	10	10				40
Treatment Outfall Improvements								
Cost	350							350
Biosolids Dryer								
Cost		80	160	2,060				2,300
Compost Screen								
Cost	100							100
New Front Loader								
Cost	150							150
City of Nooksack								
Everson Treatment Plant								
Cost	76							76
Comprehensive Sewer Plan [3]								
Cost								TBD
City of Sumas [5]								
No Projects Noted								
Lake Whatcom Water and Sewer District (formerly W.D. 10)								
Sewer Collection System I&I Improvements								
Cost	77	77	77	77	77	77		462
Rehabilitate Sewer Manholes Pilot Project								
Cost			70					70
Sewer Tightline Project								

Project Costs/Revenue (thousands $)	2010	2011	2012	2013	2014	2015	2016-2029	Total
Cost		250						250
Old Lakeway & Euclid Interceptor Pigging								
Cost	52							52
Boulevard Pump Station Retrofit								
Cost					257			257
Agate Bay Pump Station Retrofit & Generator Placement								
Cost		297						297
Strawberry Point Pump Station Retrofit								
Cost	267							267
Tomb Pump Station Retrofit								
Cost				257				257
Afternoon Beach Pump Station								
Cost		257						257
Geneva Pump Station Retrofit								
Cost				257				257
Edgewater Pump Station Retrofit								
Cost						257		257
Country Club Pump Station Retrofit								
Cost					257			257
Par Lane Pump Station Retrofit								
Cost						257		257
Dellesta Pump Station Retrofit								
Cost					257			257

Project Costs/Revenue (thousands $)	2010	2011	2012	2013	2014	2015	2016-2029	Total
Rocky Ridge Pump Station Retrofit								
Cost				307				307
Lakewood Pump Station Retrofit								
Cost							257	257
Water District 13 [6]								
Replace Influent Pump Station Equipment (WWTP)								
Cost			169					169
Replace Comminutor (WWTP)								
Cost						81		81
Install New Floating Surface Aerator (WWTP)								
Cost						18		18
Purchase Additional Drainfield Property								
Cost						40		40
Reserves for Annual Maintenance Fund								
Cost			5	5	5	5	25	45
NW Service Area New Pipe								
Cost					347			347
NE Service Area New Pipe								
Cost					250			250
Easements for Existing Facilities								
Cost			10					10

Project Costs/Revenue (thousands $)	2010	2011	2012	2013	2014	2015	2016-2029	Total
Developer Extension Manual								
Cost				5				5
Easements for Future Facilities								
Cost					10			10
Infiltration and Inflow Study								
Cost				10				10
Discharge Permit: Required Studies								
Cost			20	20		10		50
Comprehensive Sewer Plan Update								
Cost						65		65
Reline Lagoon No. 2 (WWPT)								
Cost							98	98
Replace Influent Pump Station Force Main								
Cost							121	121
Wastewater Treatment Plant (WWTP) Upgrade								
Cost							7,822	7,822
Reline Lagoon No. 3 (WWTP)								
Cost							98	98
Refurbish Chlorination Equipment (WWTP)								
Cost							20	20
2nd Phase NW Service Area New Pipe								
Cost							809	809

Project Costs/Revenue (thousands $)	2010	2011	2012	2013	2014	2015	2016-2029	Total
2nd Phase NE Service Area New Pipe								
Cost							1,617	1,617

1 Collection system improvements includes: remote wet weather facility and priority 1, 2, 3 collection system improvements.

2 City of Blaine 2005 Sewer System Plan. Note: Plan only shows projects in individual years from 2005-2010, and in a lumped group 2011-2025. All projects shown in 2011 are projects included in the 2011-2025 timeframe.

3 Source: Personal communication (email) from Erin Osborn to Matt Aamot, July 14, 2009.

4 See the City of Ferndale Comprehensive Sewer Plan (2011) for more detailed information on these projects.

5 No projects noted per personal communication (email) from Erin Osborn to Matt Aamot, July 14, 2009.

6 See the Water District No. 13 Comprehensive Sewer Plan (2012) for more detailed information on these projects.

Water Systems

This section identifies current water supply and transmission inventories within the County.

Public water systems are classified into two categories, Group A and Group B systems. Group A water systems serve 15 or more connections or 25 or more people/day for 60 or more days/year. A Group B water system is a public water system that serves less than 15 connections or fewer than 25 people/day for 60 days or more/year. A full description of Groups A and B water systems can be found in WAC 246-290-010.

For purposes of this Capital Facilities Plan, water systems are divided into those that serve urban growth areas (Urban Water Systems) and those that provide 50 or more connections located outside of UGAs (Rural Area Water Systems). A summary of the countywide water planning process encompassed in the Whatcom County Coordinated Water System Plan is presented first followed by inventories of urban water service providers. Information about rural water service providers is included in Appendix 3.

Whatcom County Coordinated Water System Plan (CWSP)

The CWSP was prepared by the Whatcom County Water Utility Coordinating Committee (WUCC) representing individual water utilities located throughout the County.

The CWSP was developed to ensure that County water purveyors meet state and federal laws governing potable water supply in conjunction with the Washington State Department of Health (DOH) and State Department of Ecology (Ecology). The Whatcom County CWSP (February 2000) presents an assessment of municipal and industrial water supply needs in the County and a program to effectively provide water supply and service to customers throughout the area.

The CWSP represents the continued efforts of the County in managing the County's potable water resources according to all applicable State and County public policy. The current CWSP provides further refinement of process and strategy for existing water utilities to define their role in a program consistent with adopted land use policies and projected growth strategy. The CWSP establishes agreed upon water system service boundaries, and identifies future population growth that waters systems must plan on providing over the long-term. The County is responsible for updating, maintaining, and implementing the CWSP.

The February 2000 Whatcom County CWSP identified 186 Group A water systems and 183 Group B water systems that constitute the public drinking water systems currently found within Whatcom County. This Capital Facilities Plan inventories water facilities owned by public and private entities in Whatcom County, including all Group "A" Community Water Systems with 50 or more connections located within the County as identified by the State Department of Health.

Urban Water Systems (within UGAs)

Overview

There are 14 systems that provide primary service to the County's UGAs.

Inventory of Current Facilities

This section of the CFP inventories each of the major 14 Group A Water Systems that provides water service to Whatcom County's UGAs. Table 49 provides an inventory of water systems that identifies the name of each water system, the portion of the County population the system serves, and the existing DOH approved connections. The inventory identifies both existing connections, as identified by DOH records, as well as an equivalent residential unit (ERU) number of connections. This is helpful to note if a water system has commercial or industrial connections that use larger amounts of water than a typical residential unit.

Level of Service Capacity Analysis

Water system purveyors provide a LOS standard, generally expressed in water consumption of gallons per capita (or per connection) per day. When applying this standard to existing and future population, household, and employment estimates, and comparing to the water source capacity noted in the inventory table above, a water system provider can obtain a sense for how planned growth will affect water service into the future.

Each water service provider is required to prepare a water system plan (WSP) and a program of capital improvements that address the system's anticipated needs within their designated water service area, consistent with local land use plans. When the utility is requested to provide water service, it will identify that portion of the planned capital facilities as well as other installations which are necessary to provide the service necessary. As growth occurs, the full level of water service will eventually be provided throughout the service area of the utility in a planned development plan program which meets governmental requirements and minimizes overall costs to the customers. More detail on planned improvements for urban water service providers is provided under Capital Projects and Funding, below.

Table 50 identifies both water system plan LOS standards, or in the absence of an LOS standard identified in the individual water system plan, a comparable Countywide standard for urban water systems identified in the Whatcom County Coordinated Water System Plan.

Table 49. Water System Inventory (Serving UGAs)

System Name	Connections		Water Rights [1]			Capacity		Service Area		
	Existing	Approved	Qa (afy)	Qi (gpm)	Qi (cfs)	Source Capacity (gpm)	Storage Capacity (MG)	2008 Population Served [2]	Existing Connections (ERU)	System Owner or Operator
City of Bellingham	26,259	unspecified	Not determined	-	125	25,000	25.4	85,538	51,845 [3]	City of Bellingham
Water District 2	552	821	See [4]	See [4]	See [4]	1,100	26.3	1,472	N/A	Water District 2
Water District 7	634	1,145	See [4]	See [4]	See [4]	500	0.33	1,991	634	Water District 7
Lake Whatcom Water & Sewer	3,719 [5]	unspecified	1,758.3	1,946		4,074 [5]	2.5 [5]	10,881	3,719 [5]	Lake Whatcom Water System
City of Blaine	2,421	unspecified	2,560	2,170	-	3,044	4.6	4,676	8,695 [6]	City of Blaine
Birch Bay Water System	4,583	unspecified	See [7]	See [7]	See [7]	800	3.1	6,168	5,877	Birch Bay Water and Sewer District
Columbia Valley Water District	1,362 [8]	unspecified	427	400	-	400	0.76	2,257	974 [8]	Columbia Valley Water District
Water District 13	361	1,338	454	450	-	900	0.3	795	374 [9]	Water District 13
City of Everson	789	unspecified	601	800	-	1,700	0.48	2,300	801	City of Everson
City of Ferndale	4,696	unspecified	2,055	2,870	-	5,800	2.7	10,902	N/A	City of Ferndale
PUD 1	N/A	N/A	49,923.8 [10]		83	24,684 [1] [1]	0.03	32 [12]	N/A	PUD 1
City of Nooksack	448	unspecified	See [13]	See [12]	See [13]	316	0.7	1,103	315	City of Nooksack
City of Sumas	496	unspecified	3,744 [14]	3,910 [14]	-	5,100	0.5	1,300	400	City of Sumas
City of Lynden	4,400	unspecified	1,792 [15]		11.7 [1] [5]	2,917	4.2	11,445	3,820 [16]	City of Lynden

Qa = Annual Quantity; Qi = Instantaneous Quantity; afy = acre feet per year; gpm = gallons per minute; cfs = cubic feet per second, N/A = Not Available.

1 Water rights are as provided by Department of Ecology comment letter from Doug Allen to David Stalheim, June 22, 2009.Columbia Valley Water District Instantaneous quantity (Q) is from the District's 2013 Water System Plan Update (p. 45)

2 Population source: Berk & Associates, 2009. For the Columbia Valley Water District population served is from the Water Facilities Inventory Form on the Washington State Department of Health website: https://fortress.wa.gov/doh/eh/portal/odw/si/intro.aspx.accessed June 21, 2013. For Water District 13 population served is from the Water Facilities Inventory form on the Washington State Department of Health website: https://fortress.wa.gov/doh/eh/portal/odw/si/intro.aspx.accessed July 12, 2013.

3 Source: City of Bellingham Water System Plan, June 2009, page 2-9.

4 Purchases water from City of Bellingham (Department of Ecology, June 22, 2009).

5 Lake Whatcom Water and Sewer District Water System Comprehensive Plan (August 2009). Note: Source and storage capacity consists of compilation of the component systems found on District's Water Facilities Inventory forms located in Section 10 of Plan.

6 Source; Blaine Water System Plan (July 2008), Table 2.7 ERU estimate for the year 2006.

7 Purchase water from City of Blaine (Department of Ecology, June 22, 2009).

8 The number of connections is from the Water Facilities Inventory form on the Washington State Department of Health website: https://fortress.wa.gov/doh/eh/portal/odw/si/intro.aspx. Accessed June 21, 2013. ERUs are from the Columbia Valley Water District 2013 Water System Plan Update (p.36).

9 For Water District 13, existing connections are from the Water Facilities Inventory Form on the Washington state Department of Health website: https://fortress.wa.gov/doh/eh/portal/odw/si/intro.aspx, accessed July 12, 2013. ERUs were derived from the Water Facilities Inventory From and the Whatcom County Water District #13 Small Water System Plan (2012) pp. 13-14.

10 Of this amount, 6,264 afy is for irrigation supply only (Department of Ecology, July 22, 2009).

11 Source is from Whatcom County Coordinated Water System Plan's System Assessment and Inventory (March 1999).

12 Population for PUD 1 is only 32 because the majority of the PUD service area consists of commercial and industrial customers.

13 Purchases water from City of Sumas (Department of Ecology, June 22, 2009)

14 Of these amounts, 422.2 afy/ 299 gpm is to be used for streamflow mitigation only (Department of Ecology, June 22, 2009)

15 Lynden also holds a surface water right for 70 afy/ 0.57 cfs to serve (only) the EDB and 1, 2 DCP contaminated area west of the City (Department of Ecology, June 22, 2009). Note: per Department of Ecology comment letter of June 22, 2009, City of Lynden asserts that they have 6,623.5 afy for Qa and 14,734 gpm for Qi. DOE believes, supported by state Attorney General review, that Lynden has 1,792 afy and 11.7 cfs (5,251 gpm). DOE is currently entered into an Memorandum of Understanding with Lynden that precludes enforcement on their continued exceeded of their water right, until such time as DOE and Lynden resolve the dispute over their rights, the City acquires more rights, or City work within their existing rights in city planning and development (Department of Ecology, June 22, 2009).

16 City of Lynden Water System Plan, August 2008, p. 1-4, Table 1-1.

Sources: Unless otherwise noted, Washington Department of Health, Washington Department of Ecology (water rights), and individual water system plans.

Table 50. Water Level of Service (LOS) Standards

Service Provider	LOS Standard (Average Daily Demand)
City of Bellingham	199 gallons/day/ERU [1]
Water District 2	210 gallons/day/ERU [2]
Water District 7	221 gallons/ERU/day
Lake Whatcom Water and Sewer (formerly Water District 10)	219 gallons/day/ERU [3]
City of Blaine	300 gallons/household/day
Birch Bay Water and Sewer District	140 gallons/capita/day [4]
Columbia Valley Water District	215 gallons/day/ERU [5]
Whatcom County Water District 13	205 gallons/day/ERU [6]
City of Everson	300 gallons/ERU/day
City of Ferndale	140 gallons/capita/day [4]
PUD 1	140 gallons/capita/day [4]
City of Lynden	235 gallons/day/ERU
City of Nooksack	250 gallons/day/ERU [7]
City of Sumas	225 gallons/day/residential connection

1 City of Bellingham Water System Plan, Tables 2-8 and 2-11 (June 2009).

2 Whatcom County Water District #2, Draft Water System Plan, August 4, 2009, page 2-5.

3 Lake Whatcom Water and Sewer District Water System Comprehensive Plan (August 2009). Based on water demand forecast for the combined Geneva/Sudden Valley portion of the District (Appendix B of Water System Plan).

4 Where an LOS standard was not specifically identified in a water system plan, the average daily water consumption figure for urban water systems was taken from the CWSP, Table 3-4, page 3-5 (February 2000). Other LOS standards found in Table 50 are provided in gallons/ERU/day or gallons/household/day rather than gallons/capita/day noted in the Whatcom County CWSP.

5 Columbia Valley Water District, 2013 Water System Plan Update, 2013, pp. 36 and 61

6 Whatcom County Water District #13 Small Water System Plan, 2013, p. 18

7 Personal communication. Email from Erin Osborn to Matt Aamot, July 14, 2009.

Table 51 provides an overview of the planning horizon year and horizon year population for the latest urban water system plans in comparison to Whatcom 2029 population projections. As can be seen by a review of the table, most urban water systems plan conservatively for drinking water needs, particularly given the time it takes to seek new water supplies to serve growth. The Water District 13 WSP projected population of 1,170 is lower than the population of 1,665 projected in the CFP for 2029. The City of Everson's WSP projected population of 3,114 is lower than the population of 3,337 projected in this CFP for the 2029 horizon year. Nooksack's WSP projected population is lower than the 2,047 population projected in this CFP's horizon year. Sumas' WSP projected population of 1,625 is lower than the 2,095 anticipated in the city by 2029. Although Lake Whatcom Water District's 2027 horizon year population is lower than that projected for the district by 2029 in this CFP, the district's plan also includes a build-out population which is more conservative than the district's 2029 horizon population considered in this CFP.

Table 51 also identifies each urban water system's horizon year average daily demand (ADD) in millions of gallons per day. The table shows that most of the water systems are proactively planning in a long-range and conservative fashion in order to be prepared to obtain future water resources, as needed. As can be seen from a review of individual water system descriptions in the next section, most districts have identified capital improvement projects in both the near-term and long-term planning in order to be prepared for future population growth in their districts.

Birch Bay Water and Sewer District's Plan identified a near-term need for additional water sources, and is actively working with its partner, the City of Blaine, to obtain new water sources. In addition, if the DOE water rights calculation for the City of Lynden of 1,110 gpm is considered, instead of the City's source capacity estimates, then the City is expected to experience a future water deficit.

Capital Projects and Funding

Capital Project Funding

Water services and capital improvements are funded primarily by the users of the system through water rates and general facilities charges. Water rates can be adjusted to match the funding required for capital and operational needs. Connection fees are usually charged to developers when a development necessitates expansion of the district's capacity. Improvements and new infrastructure that will benefit the majority of the district are funded through water rates, capital improvement fees, revenue bonds, or state or federal programs. These programs include the Public Works Trust Fund, a revolving loan fund designed to help local entities through low-interest loans; and the Drinking Water State Revolving Fund, which involves low-interest, federally-funded loans.

Table 51. Population Comparison: Water Plans and 2029 Population Projection

Service Provider	Horizon year of Capital Plan	Capital Plan Population	Horizon Year ADD (mgd)	2029 Population Projection
Birch Bay Water/ Sewer	2035	14,326	2.39	9,616
City of Bellingham	2028	122,672	18.3	107,648
City of Blaine	2027	11,587	3.45	8,647
City of Everson	2022	3,114	0.46 [1]	3,337
City of Ferndale	2026	19,334	1.84	17,550
City of Lynden	2027	20,120	4.0	15,312
City of Nooksack	2022	1,881	N/A [2]	2,047
City of Sumas	2018	1,625	N/A [2]	2,095
Columbia Valley Water District	2030	N/A [3]	0.29	3,584
PUD 1	N/A [4]	N/A [4]	N/A [4]	32

Service Provider	Horizon year of Capital Plan	Capital Plan Population	Horizon Year ADD (mgd)	2029 Population Projection
Lake Whatcom Water and Sewer (W.C. Water Dist. 10)	2027	10,855[5]	0.87[6]	11,368
W.C. Water Dist. 2	2029	N/A[7]	0.25 [8]	1,646
W.C. Water Dist. 13	2031	1,170[9]	0.13[10]	1,665
W.C. Water District 7	2027	2,100 [11]	0.20 [8]	2,719

N/A = Not Available

All figures in this table, unless noted below, are population figures. Employment or residential equivalents are not considered in this table unless specifically noted.

1 Based on system design standard of an ADD of 300 gpd/ERU, and a horizon year estimate of 1,540 ERUs.

2 Latest WSP does not identify a horizon year ADD.

3 The Columbia Valley water District 2013 Water System Plan Update does not include a specific 20-year population projection. A household projection of 1,149 has been derived from the Water System Plan. This is lower than the 1,249 households projected in this CFP. However, in the 2013 Water System Plan Update, the District's water service area has been reduced in size and will serve fewer households.

4 Since PUD1 provides retail water service only to areas characterized by and designated for industrial and commercial uses, the district's 2004 WSP does not provide population projections or a horizon year. PUD 1 also owns and operates the Grandview potable water supply system – retail (Jilk, Stephan, PUD 1, memorandum to Matt Aamot commenting on Whatcom County 10-Year Urban Growth Area review documents, April 20, 2009).

5 Although Lake Whatcom Water and Sewer District's 2027 horizon year anticipates a population of 10,855, the plan indicates a "build-out" population of 15,192.

6 Lake Whatcom Water and Sewer District, Water System Comprehensive Plan (August 2009). See Appendix B for forecast to 2027. Also, there is a build-out forecast of 1.2 MGD.

7 Water District 2 August 2009 Draft Water System Plan does not identify population. The plan indicates that the District plans to serve a total of 1,175 ERUs, or 797 service connections (Whatcom County Water District 2 Draft Water System Plan, August 4, 2009, Tables 2-9 and 2-10. Applying the City of Bellingham average household size of 2.5 and occupancy rate of 94.4% to the 797 projected water connections results in a future population of 1,881 in 2029.

8 Based on analysis of ADD/ERU compared to projected number of ERUs in WSP.

9 Whatcom County Water District #13 Small Water System Plan, 2012, p. 14. Water District 13 could potentially serve a total of 1,338 connections (Water System Plan, p. 14). Applying the "Whatcom County Foothills" UGA average household size of 2.80 and occupancy rate of 78.4% (U.S. Census, 2010) results in approximately 2,937 people that could be served by the 1,338 connections.

10 Whatcom County Water District #13 Small water System Plan, 2012, p. 15.

11 Water District 7 only identifies connections rather than population. The district plans to serve 888 connections by 2027. Applying the Bellingham average household size of 2.5 and occupancy rate of 94.4% results in approximately 2,100 people served by the 888 connections in 2027. However, Water District 7 is approved to serve up to 1,145 residential service connections (State Department of Health letter from Richard Rodriguez and John Thielmann to James Trowbridge dated January 5, 2009). Therefore the District could serve a population of about 2,700.

Any plans involving funding mechanisms not mentioned above are explained below:

- Birch Bay Water System – The District will institute Latecomer's Agreements to help fund any water main that serves property beyond that owned by the developer financing the project.
- City of Everson – The City plans to pursue Community Development Block Grants and Community Investment Fund Grants to finance major water system improvements. If these applications are unsuccessful, then the low-interest loans listed above will be used.
- City of Ferndale – The City may, under certain conditions, construct new infrastructure for specific areas as Utility Local Improvement Districts.
- City of Lynden – In addition to the funding mechanisms listed above, the City expects to receive between $125,000 and $51,000 annually from interest income through the year 2013.

Birch Bay Water and Sewer

The Birch Bay Water and Sewer District obtains its water supply from the City of Blaine (well field). The district's Comprehensive Water Plan (2009) indicates that existing water supply is only sufficient through 2011 (page ES-3). The district's plan states that additional water supply, including use of surplus storage, and/or conservation will be necessary to meet the demand beyond that time. The district's 2009 Comprehensive Water Plan includes several new supply and distribution projects expected to address supply deficiencies. Besides its residential and commercial customers, the district provides water supply to BP Cherry Point Refinery through a wholesale agreement with PUD 1 (see below). The district plan's 2035 population projection of 12,913 is greater than the population projection considered for the district's water service area by 2029 in this CFP. Birch Bay's Comprehensive Water Plan indicates that it will extend future service areas to areas within the district boundaries and provides future connection policies. However, it does not provide a map identifying future major service lines. The District is bounded on the east by the Bell Bay Jackson Water Association which served approximately 231 households in 2008, mostly outside of the UGA.

City of Bellingham

The City of Bellingham provides retail water service to the city limits and portions of the Bellingham UGA that are not served and identified as a service area by other water purveyors. The city's water service area overlaps with that of other water districts within the UGA. The WSP does not assume that the city will take over other districts with retail water service areas identified in the Whatcom County CWSP. Instead, the city assumes that it will be the retail water purveyor for areas within its UGA that are not served by other service providers.

The City of Bellingham has adequate water rights and water plant capacity to provide water service to its retail service area under all future growth scenarios listed. The City's 2009 water comprehensive plan, provides for water storage and distribution systems to all of the current city UGAs and has been adequately sized to serve the projected 2028 population of 122,672. The city anticipates that any additional storage required to accept population greater that the 2028 projection can be addressed in the next planning cycle. Future reservoir projects can be up sized to serve additional population load. The city's WSP identifies future service lines extending into the city's UGA.

City of Blaine

The City of Blaine's Comprehensive Water System Plan (CHS Engineers 2008) provides a city population projection of 11,587 by 2027, larger than anticipated for the city water service area by 2029 in this CFP. The city provides water to both the Birch Bay Water and Sewer District and the Bell Bay Jackson Water Association. The 2008 WSP notes that the city has adequate supply to meet projected demand through the 2027 planning period considered (City of Blaine Comprehensive Water System Plan, CHS Engineers, July 2008). The Comprehensive Water Plan shows a series of capital improvements needed in the planning period to 2027 to maintain capacity and provide adequate distribution. The city's WSP does not appear to show water

service extensions to areas within the city or UGA that are not currently served. However, the city's future service policies indicate that the city is planning to serve those areas.

City of Everson

The City of Everson's 2005 WSP addresses anticipated growth through the year 2022, including a city population of 3,114. The Everson water system is also addressed in the Capital Facilities Element of the Everson Comprehensive Plan, which anticipated growth through 2024, including a projected population of 4,202.

Source / Water Rights

The City of Everson holds water rights authorizing a maximum instantaneous pumping rate of 800 gallons per minute and a maximum annual withdrawal of 601 acre feet. Given adequate storage, which Everson has developed, the annual withdrawal maximum is the system limiting factor in terms of source of supply. The Everson WSP uses the figure of 300 gallons per day per equivalent residential unit (ERU) to analyze the system capacity. On this basis, the Everson source is equivalent to 1,788 ERUs. In 2002 the Everson water system served 1,147 ERUs of which 440 went to serve two large water association customers and 707 went to regular City customers. Assuming a total increase of 15 ERUs for the water associations from 2002 to 2029 would leave 626 ERUs of capacity to serve new growth within the City service area for a total of 1,333 ERUs for the City.

For 2008 the City estimates that the Everson water system is serving 1,238 ERUs (440 ERUs for the water associations and 798 ERUs in the City). The CFP population projection equates to an 45% increase in population over the 21-year period from 2008 through 2029. Using the 2008 City ERU estimate of 798 and applying an 45% increase would result in the need for a total of 1,157 ERUs in 2029. This represents an increase of 359 ERUs. This number of ERUs falls within the non-water association capacity of 1,333. It is important to note that the above analysis includes the City's continuing to supply 455 ERUs to the two water associations. In 2004 the City instituted a series of rate increases that are intended to reduce water consumption by the associations. Under the terms of their supply agreements, the City also has the ability to reduce the total volume of water supplied to the associations. Given the above factors and considering the fact that the Everson water system plan utilized a relatively conservative 300 gallons per day per ERU, the City concludes that it has adequate source capacity to accommodate anticipated growth through the 2029 CFP horizon year.

Storage

In 2006 the City constructed a third water storage reservoir. The system analysis completed in 2007 indicated that total storage is equivalent to 1,900 ERUs. Adding the 455 ERUs noted above for the water associations to the 1,157 ERUs calculated previously as being necessary to supply the City's future needs in 2029 yields a total of 1,612 ERUs. This total is less than the ERUs supported by the storage capacity; therefore, the City concludes that it has more than enough storage to accommodate anticipated growth through 2029.

Improvements and Financing

In the past few years the city has completed two major capital projects. These include construction of a third water storage reservoir and installation of a manganese treatment facility that allows full use of the city's deep well (and full instantaneous pumping capacity). The new reservoir was paid for out of capital reserves and the manganese plant is being financed through a low-interest loan from the Drinking Water State Revolving Fund. Payment on this loan will be covered by revenue from existing water rates. The city anticipates that all new extensions to serve new development will be provided by developers. The only exception to this might be the installation of a new trunk line in conjunction with construction of a major east-west connector to serve the city's industrial zone. If the city were to participate in construction of such a facility, it is anticipated that state CERB funding and County EDI funding would be utilized. The Everson Comprehensive Plan shows the locations of some but not all of the system extensions necessary to serve new development in the Everson UGA.

The city's WSP indicates that the City will serve areas of the city and its UGA that are not currently served, though the Plan does not map future service lines into these areas at this time.

City of Ferndale

The City of Ferndale 2006 WSP indicates that the city has adequate water rights and contracts to meet water system demands to the end of its 2026 planning period (City of Ferndale 2006). As noted in Table 51 above, the city is planning to serve a retail water service population greater than the CFP population projection to 2029. The city has identified water storage capacity improvements that will be needed in the 20-year planning period, as well as near-term distribution improvements needed to meet fire flow requirements (City of Ferndale 2006). The city has some neighboring small water associations which are surrounded by the city water service area on many sides. These include the Central Water Association, Ferndale Mobile Village, Northwest Water Association, and the Mountain View Water Association among others. These water associations each serves between 50 and 200 households in 2008. They all experience additional growth through the 2029 planning horizon because they are located mostly within the Ferndale UGA. There does not appear to be any plan for the City of Ferndale to take over these smaller water services.

City of Lynden

The City of Lynden WSP (Gray & Osborne, 2008) indicates that the city has adequate water supply to meet the needs of population growth over the 20 year period. However, the City of Lynden and Ecology have an existing dispute over the city water rights. Where the City of Lynden indicates that it has 5.91 million gallons per day (MGD) in water rights, Ecology believes that the city only has approximately 1.599 (MGD) in water rights (Fabiniak and Rodriguez, pers. Comm.). The city has entered into a memorandum of agreement (MOA) with Ecology to address long-standing water right issues between the city and Ecology. Resolution of water supply issues for City of Lynden is important for future planning in the city's water service area. Using water rights amounts that Ecology believes the city possesses, it is expected that the city will experience water supply deficits based on the Whatcom 2029 of this CFP.

The city's water plan also identifies capital projects needed in the 6-year planning period, as well as some longer term projects. Six-year planning capital projects include construction of a new treatment plant with additional capacity, acquisition of land for a new reservoir, and a variety of distribution improvements to improve fire flow. The city's WSP includes a map showing future water extensions within the city limits, but not extending into the surrounding unincorporated UGA.

The city borders several water associations, including five associations that receive wholesale water from the city: Berthusen Water Association, the Twin Ditch Water Association, the Meadowbrook Water Association, the EDB Service Area, and the Stickney Island Association. The Berthusen Water Association has a service area overlap with Lynden in its western UGA. The city's water system plan addresses service policies in its western UGA, and indicates that many of the five water associations mentioned above may be annexed to the city's water system if they are within the city's retail water service area.

City of Nooksack

The Nooksack water system is addressed in the Nooksack WSP that was approved by the Washington Department of Health on February 22, 2006. The Nooksack WSP addresses the 20-year period through 2022. This includes a 2022 population of 1,881. The Nooksack water system is also addressed in the 2004 update of the Nooksack Comprehensive Plan. The Nooksack Comprehensive Plan addresses the 20-year period ending in 2024 and includes a 2024 population of 2,039.

Source

The City of Sumas provides the source of supply to the Nooksack water system. The City of Sumas provides up to 199 acre feet of water annually to Nooksack per the terms of a mutual supply agreement between the two cities and the Nooksack Valley Water Association (NVWA). The City of Sumas has indicated a willingness to supply an increased quantity of water to the City of Nooksack if necessary to support growth, and the City of Sumas has more than adequate water rights to be able to provide such an increased supply.

Storage

The City of Nooksack shares storage with the Nooksack Valley Water Association. Combined storage includes three reservoirs totaling 700,000 gallons. The Nooksack WSP indicates that the City has enough storage capacity to serve a population of 1,881. The CFP projects a 2029 population allocation of 2,047 for the City of Nooksack. Although the total storage described above is jointly owned, NVWA utilizes more than 70% of the total storage. Additional analysis will be necessary to determine whether enough additional storage capacity is available or can be made available to accommodate growth under the CFP projections without constructing additional storage capacity. However, if additional storage capacity is needed, the City is prepared to participate in such a project to ensure that new growth under the CFP can be fully accommodated through 2029.

Improvements and Financing

All system expansions necessary to serve new development will be paid for by developers. The City is currently preparing construction plans for a new booster pump that will increase system pressures to well above State minimum standards throughout the entire system. This improvement will be paid for out of capital reserves. Similarly, if construction of a new 500,000 gallon water storage reservoir is necessary, the City will share the costs with NVWA and will pay its share out of capital reserves. The Nooksack WSP shows the locations of some but not all of the system extensions necessary to serve new development in the Nooksack UGA.

City of Sumas

The Sumas water system is addressed in the Sumas WSP that was approved by the Washington Department of Health on December 4, 2000. The Sumas WSP covers the 20-year period from 1998 to 2018 including a 2018 population of 1,625. The City is currently in the process of updating its WSP. In addition to municipal customers, the City of Sumas supplies wholesale water to the Sumas Rural Water Association, the Nooksack Valley Water Association and the City of Nooksack.

Source / Water Rights

The City of Sumas owns and operates seven wells located in two major well fields (Sumas well field and May Road well field). These wells provide a significant quantity of water on both an instantaneous and annual basis. The City holds numerous water rights that allow a total withdrawal of approximately 3,322 acre feet of water annually. Based on past and ongoing analyses, the Sumas well fields and water rights provide a source of supply well in excess of the future needs of the City's retail and wholesale customers through the year 2029. For example, the existing Sumas WSP indicates that in 2018, with conservation included, the Sumas water system would still have over 1,000 acre feet of excess capacity.

Storage

The City of Sumas owns a 500,000 gallon storage reservoir that provides storage for both the City and the Sumas Rural Water Association (SRWA). The Sumas WSP indicates that the Sumas reservoir provided sufficient capacity to meet the City's needs through 2018. However, the WSP also indicates that to serve both the City and the SRWA systems an additional 60,000 gallons of storage would be needed by 2005 and an additional 160,000 gallons of storage would be needed by 2019. In 2002 the SRWA constructed an additional 500,000 gallon reservoir that provides storage to both SRWA and the City. The City of Sumas is in the process of updating its water system plan. The preliminary storage analysis indicates that the City's 500,000 gallon reservoir is sufficient to meet the City's needs through 2029 and the combined storage of 1,000,000 gallons is sufficient to meet the needs of the combined systems.

Improvements and Financing

System extensions required to serve new development will be provided by developers. A system of new water mains will be extended into the City's UGA as new developments are approved

following annexation. The City does not have any plans for major City-funded water system improvements. Ongoing operation and maintenance costs are covered by existing water rates.

Columbia Valley Water District

The Columbia Valley Water District's WSP (2013) indicates that the district has sufficient supply to meet the district's water needs to its 2030 planning horizon and beyond so long as unaccounted water loss can be reduced. The district's capital projects include water main and pressure zone improvements to help meet growing demand expected within the district's boundaries. The district also has plans to address unaccounted water loss, which should enable the district to utilize water more efficiently. The district's plan generally shows a schematic representation of future water lines in the north service area.

PUD 1

PUD 1 provides water service to both the Grandview industrial/commercial service area north of Ferndale, as well the Cherry Point UGA (an industrial area). PUD 1's Comprehensive Water Plan (Donald E. Wright 2004) does not measure water demand in population as most other WSPs do. The majority of the district's water service customers are industrial and commercial customers. The PUD's Comprehensive Water Plan indicates that it has sufficient water supply to meet the district's needs to the end of the district plan's 20-year planning period (2024). The plan includes a series of capital improvements including the acquisition of other potable water system treatment plants and water distribution and storage improvements. Although the district's plan does not include maps showing future water service extensions, portions of the narrative on future water service indicate the district's future water service plans to serve its entire district.

Lake Whatcom Water and Sewer District (Water District 10)

The Lake Whatcom Water and Sewer District Water System Comprehensive Plan (2009) indicates that the district has adequate supply to meet its 20-year planning needs. The district takes water supply and provides service to four separate areas: Sudden Valley, Geneva, North Shore/City, and North Shore/Wells. City of Bellingham water is provided to most of these subareas. The North Shore/City subarea is served partially by City of Bellingham water and partially by well water, while the North Shore/Wells subarea is served exclusively by well water. A review of population projections found in Table 51 indicate that the district is planning for less growth by 2027 than projected in this CFP to 2029. However, the district's build-out plans are for a population of 15,192, which is larger than the CFP 2029 horizon year population projections for the district.

The district's plan identifies a number of capital improvement projects for maintaining system reliability and distribution with expected growth. The district does not specifically identify future water service lines within the district.

Water District 2

Water District 2's Draft WSP (2009) includes plans to serve approximately 797 connections by 2029. When translating this to population, the district is planning for a population that is slightly

larger than that being projected to 2029 for the district in this CFP. The district's plan identifies capital improvements needed by the district over the 20-year period ending in 2029. These improvements include the systematic replacement of the district's water distribution system over the 20-year period which in many cases will address fire flow issues. Additional projects necessary to provide fire flow in the Bellingham UGA have also been identified and are likely to be paid for by developers. The plan indicates that the district has enough water supply for its planning period. The district's plan does not specifically identify future water service lines within the district. Water District 2 and City of Bellingham have an overlap in service areas south of the Bellingham Airport according to the County's CWSP.

Water District 13

Table 51 indicates that Water District 13's WSP (2012) anticipates a smaller population than the district population being considered under the CFP 2029 horizon year. However, the WSP also indicates that the State Department of Health has approved more connections than needed to serve the population growth projected by the District (p. 14). The Water District 13 Water System Plan indicates that it has adequate water supply to serve its service area by the district's planning horizon year of 2031. The district's capital improvement plan identifies a variety of projects that are needed to ensure adequate water service. The district's plan does not show future service extensions within its service area.

Water District 7

The Whatcom County Water District 7 WSP (Reichardt & Ebe 2008) indicates that the district has enough water supply to serve its customers in the 20-year period ending in 2028. However, the District does not plan for as large a population as is being projected under the CFP 2029 horizon for population projections (see Table 51).

The district's plan indicates a need for a new storage facility in one of the pressure zones to improve water pressure, as well as a variety of distribution system improvements in order to maintain adequate water service in the district's planning period. The district's plan shows future service extensions in figures found within the water system's service area.

Capital Projects and Funding

The urban water service providers have identified capital projects as noted in Table 52 below, broken down by service provider, to accommodate the future needs of urban water service in Whatcom County.

Note that specific revenue sources are not identified in Table 52 below. Water district providers obtain their revenue from a variety of sources, including but not limited to connection charges, as noted at the beginning of this section.

Table 52. Urban Area Water Projects

Project Costs/Revenue (thousands $)	2010	2011	2012	2013	2014	2015	2016-2029	Total
Birch Bay Water & Sewer District								
New Booster Pump Station - Portal Way at Blaine Connection (SU-3)								
Cost	446							446
General Facilities Charge	446							446
New Source and 10" Transmission Main at Portal Way (SU-4)								
Cost							1,260	1,260
General Facilities Charge							1,260	1,260
16" Transmission Main from Blaine Rd Booster Pump Station along Hall and Dearborn to Drayton Harbor Rd. (SU-5)								
Cost							791	791
General Facilities Charge Local Facilities Charge							791	791
14" Transmission Main on Blaine Rd from Double R Ranch to Alderson Rd. (SU-6)								
Cost							688	688
Booster Pump Station Upgrade at Blaine Rd. (SU-7)								
Cost							526	526
18" Transmission Main on Blaine Rd from Blaine meter to Blaine Rd Booster Pump Station (SU-8)								

Project Costs/Revenue (thousands $)	2010	2011	2012	2013	2014	2015	2016-2029	Total
Cost							1,178	1,178
Replace Birch Point Reservoir at existing site (ST-2)								
Cost						1,400		1,400
General Facilities Charge Rates						1,400		1,400
Kickerville Reservoir upgrades at existing site (ST-3).								
Cost							667	667
Rates							667	667
Replacement Semiahmoo Reservoir (ST-4)								
Cost							1,018	1,018
General Facilities Charge Rates							1,018	1,018
Point Whitehorn Reservoir at Point Whitehorn (ST-5)								
Cost							606	606
General Facilities Charge							606	606
3" Distribution Main Replacement along Birch Bay Drive (T-4)								
Cost	366							366
Rates	366							366
Abandon Distribution Main from Loft Lane to Gemini St. (T-5)								
Cost	3							3
Rates	3							3

Project Costs/Revenue (thousands $)	2010	2011	2012	2013	2014	2015	2016-2029	Total
Waste Water Treatment Plant Meter Relocations to Pt. Whitehorn Booster Pump Station area (T-6)								
Cost		45						45
Rates		45						45
Point Whitehorn Booster Pump Station at Pt. Whitehorn (T-7)								
Cost							122	122
General Facilities Charge							122	122
Replace Distribution Main from Pt. Whitehorn Booster Pump Station to Pt. Whitehorn Rd. (T-8)								
Cost							137	137
General Facilities Charge							137	137
Birch Point Booster Pump Station at existing site (T-9)								
Cost							526	526
General Facilities Charge							526	526
12" Transmission Main from Birch Point Booster Pump Station to replacement Semiahmoo Reservoir (T-10)								
Cost							785	785
General Facilities Charge							785	785
Semiahmoo Booster Pump Station (T-11)								
Cost							395	395

Project Costs/Revenue (thousands $)	2010	2011	2012	2013	2014	2015	2016-2029	Total
General Facilities Charge							395	395
10" Transmission Main generally at Birch Point along Birch Point Rd and along southeast side of Cannery Hill (T-12)								
Cost							2,566	2,566
General Facilities Charge Local Facilities Charge							2,566	2,566
Main Replacement at multiple locations in District (T-13)								
Cost							500	500
Rates							500	500
City of Bellingham								
King Mountain Reservoir (ST-2) (1.9 MG)								
Cost			450	5,890				6,340
Upper Yew Reservoir (1.35 MG) (ST-1)								
Cost							5,919	5,919
Padden Reservoir 457 South Pressure Zone (ST-3) (2.5 MG)								
Cost							8,997	8,997
730 Alabama Hill Pressure Zone Reservoir (1.5 MG) (ST-4)								
Cost							4,858	4,858
519 Dakin & Yew Pressure Zone Reservoir (2.2 MG) (ST-5)								
Cost							5,937	5,937

Project Costs/Revenue (thousands $)	2010	2011	2012	2013	2014	2015	2016-2029	Total
New 40th Street Pump Station (PS-1)								
Cost							2,664	2,664
New Kerney Road Pump Station (PS-2)								
Cost	300	3,950						4,250
Consolidated Pump Station Upgrade (PS-3)								
Cost							1,295	1,295
Reveille Street Pump Station Upgrade (PS-4)								
Cost							1,503	1,503
New 950 Zone Constant Pressure Pump Station located near Upper Yew Reservoir (PS-5)								
Cost							1,705	1,705
New James Street Pump Station (PS-6)								
Cost	2,980							2,980
870 Upper Yew Reservoir West Connection (PL-1)								
Cost							1,702	1,702
870 Upper Yew Reservoir East Connection (PL-2)								
Cost							1,689	1,689
King Mountain Reservoir West Connection (PL-3)								
Cost							2,853	2,853
Transmission Main Extension to 950 Rezone Area (located near Upper Yew Reservoir) (PL-4)								

Project Costs/Revenue (thousands $)	2010	2011	2012	2013	2014	2015	2016-2029	Total
Cost							459	459
Yew Street Transmission Main Extension (PL-5)								
Cost							2,060	2,060
Annual Main Replacement (PL-6)								
Cost	600	2,600	1,600	1,600	1,600			8,000
Mt. Baker Highway Replacement II (PL-8)								
Cost		100	400	400				900
Hydraulic Model 3-year updates (PN-1)								
Cost	100							100
Metering Program (M-1) (throughout service area)								
Cost		2,000	2,000	2,000	3,000			9,000
Nooksack Diversion Passage (DV-1)								
Cost					10,000			10,000
City of Blaine								
New Source: Prospecting for new wells and water rights (SU-1)								
Cost			200					200
New Source: Completion of Well #8.1 (SU-8)								
Cost	210							210
Telemetry System Upgrades including system for Well #9 (SU-9)								
Cost	20	20						40

Project Costs/Revenue (thousands $)	2010	2011	2012	2013	2014	2015	2016-2029	Total
Replacement of Chlorination Treatment System and associated building (SU-10)								
Cost			250					250
Rehabilitate or reconstruct Well 2 and other wells in well field (SU-11)								
Cost				50				50
Replace transmission main from Birch Bay Water District north to Hughes Avenue and east to I-5 (T/D-4)								
Cost	1,250							1,250
Construction of 630-zone Booster Pump Station (BPS-1)								
Cost	1,500							1,500
Sweet Road Water Main Upsizing East toward well field – Phase 1 (T/D-5)								
Cost		1,250						1,250
Sweet Road Water Main Upsizing East toward well field – Phase 2 (T/D-6)								
Cost			1,250					1,250
Sweet Road Water Main Upsizing East toward well field – Phase 3 (T/D-7)								
Cost				1,250				1,250

Project Costs/Revenue (thousands $)	2010	2011	2012	2013	2014	2015	2016-2029	Total
E Street Replacement of 6" main with 8" main and associated pipe on E Street between 6th and 12th Streets (T/D-13)								
Cost							145	145
11th Street Pipe Replacement between H Street and B Street (T/D-14)								
Cost							250	250
Addition of Standby Power Generator at Lincoln Park for Booster Pump Stations #2 and #5 (BPS-3)								
Cost				115				115
Water Distribution Extension (East Blaine) Local Improvement Districts								
Cost	1,000	1,000	1,000	1,000	1,000	1,000	2,000	8,000
Reservoir #1 Replacement (ST-1) (location to be determined in conjunction with project SU-1)								
Cost					500	4,000		4,500
Construction of Additional Reservoir for 330 Zone (ST-4) (location to be determined)								
Cost				500	5,100			5,600
Construction of East Blaine Reservoir for 630 Zone (ST-3)								
Cost		2,500						2,500

Project Costs/Revenue (thousands $)	2010	2011	2012	2013	2014	2015	2016-2029	Total
Water System Plan Update (P-2)								
Cost				60				60
City of Everson								
Miscellaneous Capital Projects								
Cost	23.9	24.7						48.6
Mission Road Expansion Project								
Cost							TBD	TBD
City of Ferndale								
Upgrade Pipe in Labounty, Sunset to I-5 (ref #38)								
Cost	365							365
Upgrade Pipe in Pacific Place (ref# 39)								
Cost	85							85
Upgrade the Axton Pressure Zone by Moving Pressure Reduction Valves and Pipe in Deer Creek Drive (ref# 43 & 44)								
Cost	115							115
Water System Plan Update (no ref #)								
Cost		100						100
New Tank, Booster Station & Connecting Pipeline North of Smith (ref # 40 & 41)								
Cost		3,185						3,185
City of Lynden [1]								
Additional Treatment Plant Upgrade (WS-2)								

Project Costs/Revenue (thousands $)	2010	2011	2012	2013	2014	2015	2016-2029	Total
Cost	2,000	12,000	7,000					21,000
Site and Construct 1.0 MG Reservoir in northeastern part of service area(ST-1)								
Cost				250				250
Replace undersized water mains along Glenning Street and 14th Street (D-3)								
Cost				425				425
Replace undersized water mains along British Columbia Avenue (D-4)								
Cost				103				103
Replace undersized water mains along Garden Drive and Garden Circle (D-5)								
Cost				576				576
Replace undersized water mains along Line Road for fire flow (D-6)								
Cost							83	83
Install water main along 8th Street between Grover Street and Liberty Street (D-7)								
Cost							105	105
Replace undersized water mains along South Prairie Drive and Park View Drive east of Depot Road (D-8)								
Cost							238	238

Project Costs/Revenue (thousands $)	2010	2011	2012	2013	2014	2015	2016-2029	Total
Replace undersized water mains along East Badger Road for fire flow (East) (D-9)								
Cost							536	536
Replace undersized water mains along East Badger Road for fire flow (Center) (D-10)								
Cost							118	118
Replace undersized water mains along East Badger Road for fire flow (West) (D-11)								
Cost							770	770
Replace pipes in Benson Road for improved fire flow (D-12)								
Cost							160	160
Replace undersized water mains along Cedar Drive and West Park Street to Cedar Court and along West Park Street north of Cedar Drive (D-13)								
Cost							259	259
Install water main connecting Woodcreek Road and Double Ditch Road (D-14)								
Cost							125	125
Replace undersized water mains along South Meadow Lane and Meadow Lane (D-15)								

Project Costs/Revenue (thousands $)	2010	2011	2012	2013	2014	2015	2016-2029	Total
Cost							209	209
Install a water main connecting 19th Street Court and South Pine Court (D-16)								
Cost							41	41
Expansion of water system to Northeastern part of service area (M-1)								
Cost							926	926
City of Nooksack [2]								
New Booster Pump at Gillies Road (south of city limits)								
Cost Cash Reserves	250 [2]							
City of Sumas [3]								
No Projects currently planned [3]								
Columbia Valley Water District								
Replace AC Mains							1,103	1,103
Replace cul-de-sac Lines						122	1,931	2,053
Residential Meter Replacement			8	27	28	28	224	315
Service Line Replacement							139	139
Fire Hydrant Replacement				10	11	11	86	118
Water Main Emergency Repairs				10	11	11	86	118
Financial Plan Rate Study Update				8				8
Vulnerability Assessment Update							11	11

Project Costs/Revenue (thousands $)	2010	2011	2012	2013	2014	2015	2016-2029	Total
Future Water Supply Study					8			8
Comprehensive Water System Plan Update							49	49
Telemetry System Upgrade/Replacement							136	136
Demo abandoned Reservoir #1							51	51
Campers Tanks Debris Removal and Channel					46			46
Solar Retrofit for Office						71		71
Reservoir Maintenance				9				9
Leak Detection and Audit						11		11
Well Head Security Fencing				3				3
Booster Pump Replacements							196	196
Well Pump Replacements							59	59
Retrofit Campers Tanks				21				21
Santa Fe Pressure Tests Analysis and Design				27				27
Santa Fe Pressure Issue Construction					72			72
New Office/Shop Facility							403	403
Replace Well/Source Flow Meters				13				13
Replace Full-Size Pick-up (used)				7				7
Staff Communications Upgrade				1				1

Project Costs/Revenue (thousands $)	2010	2011	2012	2013	2014	2015	2016-2029	Total
Back Up Generator for Office				6				6
Water District No 13 Emergency Tie							53	53
PUD 1 [4]								
Cross Connection Control Program (OP-1)								
Cost								2
Emergency Response Program (OP-6)								
Cost								7.5
Water Conservation Program (OP-7)								
Cost								5
Grandview – Northgate Supply Reliability (IMP-1)								
Cost								20
Grandview – Northgate Chlorination Reliability (IMP-2)								
Cost								1
Water System Telemetry and Alarms – Phase 2								
Cost								70
Meter Testing and Replacement (IMP-4)								
Cost								2.5
Grandview – Northgate Emergency Power (IMP – 5)								
Cost								15
Grandview – Northgate Reservoir Piping (IMP-6)								

Project Costs/Revenue (thousands $)	2010	2011	2012	2013	2014	2015	2016-2029	Total
Cost								5
Cherry Point Potable System Acquisition (EXP-1)								
Cost								100
Cherry Point Potable Water System Storage (EXP-1.1)								
Cost								250
Cherry Point Potable Water System Treatment (EXP-1.2)								
Cost								10
Cherry Point Water System Transmission System								
Cost								500
Cherry Point Potable Water System Emergency Power (EXP-1.4)								
Cost								75
Expansion of Water System to Unserved Areas of Grandview – Northgate Distribution System (EXP-2)								
Cost								1,000
Grandview – Northgate Additional Storage (OP-101)								
Cost								75
Grandview – Northgate Ferndale Intertie (IMP-101)								
Cost								10

Project Costs/Revenue (thousands $)	2010	2011	2012	2013	2014	2015	2016-2029	Total
Cherry Point Potable Water System Storage (IMP-102)								
Cost								750
Cherry Point Potable Water System Treatment (IMP-103)								
Cost								400
Grandview – Northgate Water Distribution Expansion (EXP-101)								
Cost								500
Cherry Point Potable Water Distribution Expansion (EXP-102)								
Cost								500
Lake Whatcom Water & Sewer District (formerly Water District 10)								
Engineering reports benefiting future customers								
Cost	5.4	5.4	5.4	5.4	5.4	5.4	21.6	54
Computers (office server) – Replace hardware, network security, and operating system								
Cost	5.6		5.6		5.6		11.2	28
Computers (staff workstations) – Replace/Update Hardware, operating system, and software								
Cost	5.4	5.4	5.4	5.4	5.4	5.4	21.6	54
Meter Reading Handheld Data Collectors								
Cost	10.4							10.4

Project Costs/Revenue (thousands $)	2010	2011	2012	2013	2014	2015	2016-2029	Total
Computers – Replace Utility Billing Printer								
Cost		2.0				2.0	2.0	6
Sudden Valley Water Treatment Plant – Replace Generator Transfer Switch								
Cost	54							54
Sudden Valley Water Treatment Plant – Raw Water Pump Emergency Bypass Port								
Cost	5.4							5.4
Water Service Rebuilds								
Cost	50.4	50.4	50.4					151.2
Replace Pressure Reduction Valves (PRVs)								
Cost	14	14						28
Smoke Blower								
Cost	5.6							5.6
Trailerable Genset								
Cost	33.6							33.6
Replace Backhoe								
Cost	134.6							134.6
Sudden Valley Water Treatment Plant – Emergency Generator Upgrade								
Cost		325						325
Replace Office Staff Vehicle								
Cost		17.9					17.9	35.8

Project Costs/Revenue (thousands $)	2010	2011	2012	2013	2014	2015	2016-2029	Total
Sudden Valley Water Treatment Plant – Raw Water Pump Motors								
Cost			29.1					29.1
Blow-off Installations at Dead Ends								
Cost			33.6					33.6
Reservoirs – Inspection and Maintenance								
Cost			24.2					24.2
Replace Camera Equipment								
Cost			33.6					33.6
Replace Tool Truck								
Cost			56			56	56	168
Division 22 Reservoir (0.5 MG)								
Cost				664.7				664.7
Replace Meter Reading Van								
Cost				22.4				22.4
Eagleridge Fire Pump Control Upgrade								
Cost					56			56
Sudden Valley Replace AC and 2" PVC Water Lines								
Cost					82.4			82.4
Lowell & Oriental PRVs								
Cost					185			185
Sudden Valley Water Treatment Plant Clearwell Overflow Drain								

Project Costs/Revenue (thousands $)	2010	2011	2012	2013	2014	2015	2016-2029	Total
Cost					80.9			80.9
Agate Heights Water Treatment Plant – Additional Capacity								
Cost					300			300
Geneva Area Water Main Replacement								
Cost						158.6	907.9	1,066.5
Geneva Street Water Main Replacement								
Cost							232	232
Sudden Valley Water Treatment Plant – Transfer and Transmission Pump								
Cost						425		425
Replace Sudden Valley Water Treatment Plant Filters								
Cost						17.9	17.9	35.8
Replace Small Dump Truck								
Cost						75.7		75.7
Replace Mini Excavator								
Cost						58.2		58.2
Replace Light Truck								
Cost						28		28
Replace Fire Hydrants								
Cost							403.5	403.5
Inspection and Maintenance of Reservoirs								
Cost							24.2	24.2

Project Costs/Revenue (thousands $)	2010	2011	2012	2013	2014	2015	2016-2029	Total
Replace Dump Truck (used)								
Cost							53.9	53.9
Water District 2								
Fort Bellingham Rd, replace 4" pipe with 8" pipe								
Cost								62
Olympic View Drive, replace 4" with 8" pipe								
Cost				50				50
Howard Street, replace 4" pipe with 8" pipe								
Cost				32				32
Bancroft RD, replace 4" pipe with 8" pipe								
Cost					62			62
Marine Drive, replace 8" with 16" pipe								
Cost								704
Update Water System Plan								
Cost						15		15
Water District 13[5]								
Emergency Backup Power at Well sites								100
Storage Tank Piping Modifications								50
Replace/add Valves at System Junctions			2	2	2	2	28	36
Install 8" Loop from Well #1 to Fall Valley Rd								86
Install 8" Loop Clear Valley Dr. to Boulder Valley Ln								90

Project Costs/Revenue (thousands $)	2010	2011	2012	2013	2014	2015	2016-2029	Total
Rate Study						25		25
Water District 7								
Upgrade Britton Road Pump Station								
Cost	60							60
Install 8" Main on Emerald Lake Way								
Cost	220							220
Construct Emerald Lake Tank								
Cost		200						200
Upgrade Roma Road Pump Station								
Cost		40						40
Construct Academy Booster Pump Station								
Cost		180						180
Upgrade the Pumps and Pressure Reducing Valve in the Sapphire Trail Pump Station								
Cost		65						65
Supervisory Control And Data Acquisition System								
Cost	75							75
Upgrade the Pressure Reducing Valve in Control Vault A to 6"								
Cost		15						15
Upgrade the Pressure Reducing Valve in Control Vault B to 6"								

Project Costs/Revenue (thousands $)	2010	2011	2012	2013	2014	2015	2016-2029	Total
Cost		15						15
Remove the Woodlake Meadows Pressure Reducing Valves								
Cost		15						15
Replace Ex. 4" water main on Emerald Lake Way & Swamp Creek Road with 8"								
Cost			180					180
Replace Ex. 4" Transmission Main on Emerald Lake Way with 8"								
Cost					145			145
Replace 6" Main on Hillsdale with 10"								
Cost					180			180
Connect Wildhaven Crest with Vineyard Road								
Cost					125			125
Install 8" Main along Toad Lake Road & Squalicum Mt. Rd. Construct new pump station.								
Cost							300	300

1 City of Lynden, City's Water System Plan rolls up years 2014-2027. Projects found in 2014-2027 timeframe are shown in total column only.

2 City of Nooksack's Water System Plan does not include projects within the timeframe of the Whatcom County CFP. This specific project actually going to bid in 2009. (Personal communication email Erin Osborn email to Matt Aamot, July 14, 2009.)

3 City of Sumas' Water System Plan does not include projects within the timeframe of the Whatcom County CFP. No projects are currently shown in the City's 6-year or 20-year planning periods (Personal communication email Erin Osborn to Matt Aamot, July 14, 2009.)

4 PUD #1 Water System Plan does not include a specific year of improvement for capital projects. Projects are prioritized by near term (2004-2010) and long term (2011-2023) projects (October 2004 Comprehensive Water Plan, Public Utility District #1, Donald C. Wright, Consulting Engineer, Chapter 9). For purposes of this CFP, all projects are only listed in the total column.

5 Some projects in the Whatcom County Water District #13 Small Water System Plan (2012) do not have implementation dates.

~~Schools~~

~~Overview~~

~~This section evaluates the seven public school districts that serve Whatcom County.~~

~~Inventory of Current Facilities~~

~~Inventories of the school districts' existing facilities located in Whatcom County are presented in this section. The inventories are summarized below. Each inventory lists the schools in alphabetical order for each level of school (i.e., elementary, middle/junior high) and high/senior high school). The inventory also includes the number of students that each school can accommodate (i.e., its enrollment capacity). Where detailed information is available, enrollment capacity has been broken down into permanent enrollment capacity and portable enrollment capacity (temporary or moveable facilities).~~

~~Bellingham School District~~

~~The Bellingham School District is the largest school district in the County. The current enrollment capacity of the Bellingham School District can be found in Table 53 below.~~

Table 53. Bellingham School District Current Enrollment Capacity

School	Current Enrollment Capacity	Portable Enrollment Capacity	Total Enrollment Capacity
Elementary			
Alderwood	338	45	383
Birchwood	203	113	315
Carl Cozier	360	0	360
Columbia	225	0	225
Geneva	450	45	495
Happy Valley	338	90	428
Larrabee	158	68	225
Lowell (temporarily closed)	293	0	293
Northern Heights	405	0	405
Parkview	338	23	360
Roosevelt	405	0	405
Silver Beach	405	0	405
Sunnyland	270	90	360
Wade King	450	0	450
Subtotal	***4,635***	***473***	***5,108***
Middle			
Fairhaven	650	0	650
Kulshan	650	25	675
Shuksan	525	0	525
Whatcom	450	100	550
Subtotal	***2,275***	***125***	***2,400***
High			
Bellingham	1,050	0	1,050
Sehome	1,000	25	1,025
Squalicum	1,200	25	1,225
Subtotal	***3,250***	***50***	***3,300***
Total K-12	**10,160**	**648**	**10,808**

Source: Bellingham School District No. 501 Capital Facilities Plan 2009-2015 (July 2009).

Blaine School District

The Blaine School District encompasses the City of Blaine and its UGA, as well as the Birch Bay UGA, and outlying rural areas. The school district inventory of facilities can be found in Table 54 below.

Table 54. Blaine School District Current Enrollment Capacity

School	Permanent Enrollment Capacity	Portable Enrollment Capacity	Total Enrollment Capacity
Primary			
Blaine (P-2)	440	0	440
Elementary			
Blaine (3-5)	580	0	580
Pt. Roberts (K-2)	60	0	60
Middle School			
Blaine (6-8)	540	0	540
Senior			
Blaine (9-12)	740	0	740
Total K-12	**2,360**	**0**	**2,360**

Source: City of Blaine Comprehensive Plan, Capital Facilities Element (September 2006).

Ferndale School District

The Ferndale School District encompasses the City of Ferndale, its UGA, and rural areas including the Lummi Reservation and Lummi Island. The Ferndale School District's current enrollment capacity is listed on Table 55 below.

Table 55. Ferndale School District Current Enrollment Capacity

School	Permanent Enrollment Capacity	Portable Enrollment Capacity	Current Enrollment Capacity
Elementary			
Beach	60	0	60
Central	254	61	315
Custer	500	0	500
Eagleridge	300	200	500
Mountain View	401	99	500
Cascadia	505	0	505
Skyline	500	0	500
Subtotal	***2,520***	***360***	***2,880***
Middle			
Horizon	650	0	650
Vista	650	0	650
Subtotal	***1,300***	***0***	***1,300***
High			
Ferndale	1,535	0	1,535
Windward (leased facility)	300	0	300
Clearview High School (at North Bellingham)	0	60[1]	60
Subtotal	***1,835***	***60***	***1,895***
Total K-12	**5,655**	**420**	**6,075**

1 Clearview High School also has 1 portable used as an office, and 1 portable used for storage. No student capacity assumed for these 2 portables.

Source: Ferndale Schools Capital Facility Plan and School Impact Fee Ordinance (December 2005); and email correspondence from Shawn Flaherty of Ferndale School District (February 27, 2009 and March 6, 2009).

Lynden School District

The Lynden School District encompasses the City of Lynden and its UGA along with surrounding outlying rural areas. The school district's current enrollment capacity is listed on Table 56 below.

Table 56. Lynden School District Current Enrollment Capacity

School	Current Enrollment Capacity
Elementary/Intermediate	
Bernice Vossbeck Elementary (Grades K-5)	369
Fisher Elementary (Grades K-2) [1]	360
Isom Intermediate (Grades 3-5) [1]	390
Subtotal	***1,119***
Middle	
Lynden [2]	550
Subtotal	***550***
High	
Lynden [3]	550
Subtotal	***550***
Total K-12	**2,219**

Note: Lynden School District also provides instruction through the Parent Partnership Program (grades K-12). This program is housed in leased facilities and therefore not included in the District's inventory of permanent facilities.

1 Capacity figure includes 1 portable classroom at both Fisher and Isom Elementaries.

2 Enrollment capacity includes 4 portable classrooms.

3 Enrollment capacity includes 6 portable classrooms.

Source: Lynden School District No. 504 Six Year Capital Facilities Plan (June 2006)

Meridian School District

The Meridian School District is mostly rural with only a portion of its southernmost boundaries contained within a portion of the Bellingham's UGA. The school district's inventory of current enrollment capacity can be found in Table 57 below.

Table 57. Meridian School District Current Enrollment Capacity

School	Permanent Enrollment Capacity	Portable Enrollment Capacity	Total Enrollment Capacity
Elementary			
Irene Reither Primary (grades K-3)	380	100	480
Ten Mile Creek (Grades 4-5)	164	100	264
Subtotal	***544***	***200***	***744***
Middle			
Meridian Middle School	494	0	494
Subtotal	***494***	***0***	***494***
High			
Meridian High School	460	50	510
Subtotal	***460***	***50***	***510***
Total K-12	**1,498**	**250**	**1,748**

Source: Meridian School District No. 505 Capital Facilities Plan 2009-2015, Adopted June, 2009, and personal communication Timothy Yeomans, Meridian School District (July 30, 2009).

Mount Baker School District

The Mount Baker School District serves the Columbia Valley UGA and rural areas in eastern Whatcom County. The current enrollment capacity and inventory of facilities is shown in Table 58 below.

Table 58. Mount Baker School District Current Enrollment Capacity

School	Total Enrollment Capacity
Elementary	
Acme	274
Harmony	407
Kendall	574
Subtotal	***1,255***
Junior High	
Mount Baker	428
Subtotal	***428***
Senior High	
Mount Baker	944
Subtotal	***944***
Total K-12	**2,627**

Source: Mount Baker School District Capital Facilities Plan (May 2013). "Total Enrollment Capacity" does not include portables.

Nooksack Valley School District

The Nooksack Valley School District encompasses the cities of Everson, Nooksack, Sumas, and their associated UGAs, as well as surrounding rural areas. The school district's most recent inventory and enrollment capacity can be found in Table 59 below.

Table 59. Nooksack Valley District School District Current Enrollment Capacity

School	Current Enrollment Capacity
Elementary	
Sumas	320
Nooksack	360
Everson	300
Subtotal	***980***
Middle	
Nooksack Valley Middle School	762
Subtotal	***762***
Senior	
Nooksack Valley High	960
Subtotal	***960***
Total K-12	**2,702**

Note: Capacity figures based on ratio of 20 students per room (K-3), 25 students per room (4-6), 30 students per room (7-12), and 12 handicapped students per room (K-12).

Source: Cities of Everson, Nooksack, and Sumas Comprehensive Plan Capital Facilities Element

Level of Service Capacity Analysis

An LOS capacity analysis was applied to each County school district based on a student to household ratio that was developed by comparing 2008 Office of Superintendent of Public Instruction enrollment numbers to estimates of households by school district. The results, expressed in the number of students a school is able to accommodate based on the enrollment capacity inventories noted above are shown in Table 60 and 61 below. Where numbers are shown as positive, a school district is projected to have a net reserve of school capacity in terms of the number of students it can accommodate in existing classroom space. Where numbers are shown in the negative, a school district is projected to have a deficit of school capacity in terms of the number of students it can accommodate in existing classroom space.

Enrollment projections are affected by demographic trends (i.e., aging population in many areas, or larger college-age populations in others); and changing trends in alternative school methods including but not limited to home schooling, Running Start program, and online schooling. In order to provide a projection extending to the 2029 time frame, Whatcom County has utilized a straight-line method of projecting forward existing student to household ratios which are more

likely to provide larger enrollment projections into the future since they do not take into account the factors mentioned above. For example, the 2015 LOS analysis in Table 60 below is predicated on an assumption of increased enrollment in all school districts shown. However, in comparison, the Office of the Superintendent of Public Instruction (OSPI) six year projections to 2014 indicate that the Bellingham, Ferndale, and Mount Baker school districts should all expect some decrease in enrollment over that time period (OSPI website: http://www.k12.wa.us/SchFacilities/Programs/EnrollmentProjections.aspx; accessed on July 29, 2009).

The 2015 LOS analysis shows that Bellingham, Blaine and Lynden school districts experience net capacity deficits within the 2015 timeframe Although Bellingham School District shows a net student capacity deficit in 2015, it should be noted that OSPI projects Bellingham's student enrollment to actually decline between 2009 and 2014, rather than increase (OSPI website, July 2009). The Blaine School District shows a minor projected deficit in 2015 of three students. School Districts can address any deficiencies that they have by providing additional capacity projects, as noted in the next section, by adding temporary classroom spaces (e.g. portable classrooms), or by increasing the number of students accommodated in a classroom (adjusting LOS standards).

Table 60. Whatcom County School District 2015 Level of Service Analysis: Student Capacity [1]

School District	Student/ Household Ratio	2015 School Facility LOS (Students)
Bellingham [2]	0.263	(134)
Blaine[3]	0.372	(3)
Ferndale	0.528	181
Lynden [4]	0.466	(491)
Meridian [5]	0.565	515
Mount Baker	0.322	790
Nooksack Valley	0.567	888

1 LOS analysis compares the student capacity of school districts to projected enrollment. Where information is available, it includes portable facilities.

2 The LOS analysis for Bellingham School District accounts for the additional 450 student capacity over existing inventory that are included in the district's 6-year capital facilities plan (Bellingham School District, 2009).

3 The LOS analysis for Blaine School District accounts for the addition of 180 student capacity resulting from upgrades to the high school building (personal communication, Jim Kenoyer, Blaine School District, August 5, 2009).

4 The LOS analysis for Lynden School District accounts for the additional 396 student capacity over existing inventory that are included in the district's 6-year capital facilities plan (Lynden School District).

5 The LOS analysis for the Meridian School District accounts for the additional 324 permanent student capacity over existing inventory that are included in the district's 6-year capital facilities plan (Meridian School District, 2009), as well as 400 student capacity in the form of portables (personal communication, Timothy Yeomans, Meridian School District, July 20, 2009).

Table 61 below shows school district LOS capacity in 2029. As can be seen by this analysis, deficits are experienced in the same three school districts by 2029, only the deficits are larger. School districts can address deficiencies through additional capacity projects during the planning

period, by adding temporary classroom spaces (e.g. portable classrooms), or by increasing the number of students accommodated in a classroom (adjusting LOS standards).

Table 61. Whatcom County School District 2029 Level of Service Analysis: Student Capacity [1]

School District	Student/ Household Ratio	2029 School Facility LOS (Students)
Bellingham [2]	0.263	(2,037)
Blaine [3]	0.372	(282)
Ferndale [4]	0.528	407
Lynden [5]	0.466	(853)
Meridian [6]	0.565	240
Mount Baker	0.322	596
Nooksack Valley	0.567	434

1 LOS analysis compares the student capacity of school districts to projected enrollment. Where information is available, it includes portable facilities.

2 The LOS analysis for Bellingham School District accounts for the additional 450 student capacity over existing inventory that are included in the district's 6-year capital facilities plan (Bellingham School District, 2009).

3 The LOS analysis for Blaine School District accounts for the addition of 180 student capacity resulting from upgrades to the high school building occurring in the six-year planning period, as well as the addition of 600 more student capacity arising from a new elementary school planned for late in the 2029 planning period (personal communication, Jim Kenoyer, Blaine School District, August 5, 2009).

4 The LOS analysis for Ferndale School District accounts for the additional 1,750 student capacity over existing inventory that are included in the 7-20 year period in the district's 2005 Capital Facilities Plan (Ferndale School District, 2005). There are no capacity projects identified in the 6-year planning period.

5 The LOS analysis for Lynden School District accounts for the additional 396 student capacity over existing inventory that are included in the district's 6-year capital facilities plan (Lynden School District).

6 The LOS analysis for the Meridian School District accounts for the additional 324 permanent student capacity over existing inventory that are included in the district's 6-year capital facilities plan (Meridian School District, 2009), as well as 400 student capacity in the form of portables (personal communication, Timothy Yeomans, Meridian School District, July 20, 2009).

Capital Projects and Funding

Table 62 below outlines the County school district projects planned in the 2010-2015 and the longer term 2016-2029 timeframes. Several of the capital projects below add to individual school district enrollment capacities and are accommodated in the LOS analysis above. However, detail on the capacity increases available, particularly for the latter part of the planning period, is not available from all school districts at this time.

Capital Project Funding

School Districts in Washington State fund capital improvements with both State and local dollars. Local capital financing is usually achieved through two primary mechanisms. The first is an excess property tax levy, in which residents of the school district vote to finance a capital bond with an increase in property taxes. In this case, the annual bond cost is spread equally over the life of the bond. Therefore, if property values increase over time the levy rate necessarily declines to generate the same annual revenue.

The second financing tool is a school impact fee, which is designed to recover costs from new development for the facility improvements necessary because of that development. This fee is usually charged to new residential development based on the average students generated per household.

Additional comments on the School Districts' Comprehensive Plans are discussed below:

- Meridian School District – The District relies heavily on issuing bonds and receiving state matches to fund capital projects. As of May 2006, the District total debt is $3.6 million, and it has $28.5 million in additional borrowing capacity.
- Mt. Baker School District – The District relies on reserves, a levy, timber revenue and state grants to fund capital improvements.
- Lynden School District – The District is relying heavily on voted bonds and corresponding state matches to fund its capital facilities.
- Ferndale School District – The school relies on bonds and state matches to fund capital improvements, but would like to implement school impact fees.
- Bellingham School District – Although the District mostly relies on secured local funding, it does sometimes rely on voted bonds to supplement local funding.

Bellingham School District

According to the Bellingham School District No. 501 2009-2015 Capital Facilities Plan, new growth over the next six years will create the need to complete one new elementary school. The new elementary school is planned on Aldrich Road. This new elementary school is expected to add 450 students to the district's permanent capacity. A 2006 Bond measure approved by the district's voters provided funding for the new elementary school.

An extensive review of existing facilities will be conducted as part of any future bond issue. During that process, the district will reevaluate enrollment projections and identify additional capacity enhancement projects (Bellingham School District CFP, July 2009). In addition, Bellingham School District staff reviewed preliminary population and student generation information developed during the planning process. To accommodate a student population in the range of 13,200 to 13,300, which is approximately the number of students associated with the Bellingham population projection, the district estimated that it would need a total of two new elementary schools in addition to the Aldrich Road elementary noted above; one new middle school, and one new high school. The District further estimated that these capital improvements would cost the district approximately $95 million in 2009 dollars (Personal communication, Ron Cowan to Matt Aamot, May 15, 2009).

The District plans to rely less heavily on portable classrooms than it currently does. Therefore, the additional schools noted in the long range planning period are expected to accommodate most of additional student capacity, although estimates of the amount of capacity provided by each facility are not currently available. The District will continue to actively monitor enrollment projections and respond by programming additional projects as needed.

Blaine School District

The Blaine School District's December 2007 Study and Survey indicates that the city has plans to purchase a school site in the Birch Bay area that will allow for future expansion of K-12 education facilities beyond the single 38-acre campus that the district owns in Blaine (Kenoyer pers. comm.). The December 2007 Study and Survey also includes projects related to the modernization and expansion of the existing high school (expected to add 23 general classrooms), conversion of primary school playsheds to classrooms, elementary school additions, and gym conversion and modernization for the Middle School. The District expects that improvements to the high school will provide additional capacity of up to 180 students in the six-year planning period (Kenoyer pers. comm., August 5, 2009). In addition, the District also has longer-term plans for the construction of a new elementary school in the latter part of the District's 20-year planning horizon that will provide capacity for an additional 600 students (Kenoyer pers. comm., August 5, 2009). The Study and Survey identifies projects and costs in the six year planning period.

Ferndale School District

The Ferndale School District does not have any capacity projects identified within the 6-year planning period. However, with portable capacity, the district expects to accommodate its 2015 student population. The Ferndale School District has plans to construct one elementary and one high school during the 7-20 year planning period. These projects are expected add approximately 1,750 classroom capacity spaces and result in the projected enrollment capacity surplus identified in Table 61.

Lynden School District

The Lynden School District has plans to construct one middle school during the planning period. This project, which occurs in the six-year planning period, will add space for approximately 300 students to the district's enrollment capacity. In addition, the district's Six-Year Capital Facilities Plan (June 2006) identifies an additional capacity of 60 students resulting from the Fisher Elementary modernization project, and an additional 36 students resulting from the Isom Elementary expansion project. Additional capacity for projects outside the six-year planning period are not identified in the district's adopted Six-Year Capital Facilities Plan. However, the district indicates that construction of a middle school to replace the current middle school, and construction of an additional elementary school that could accommodate up to 400 additional students are projects that the district is considering in the long-term (personal communication, Rick Thompson, Lynden School District. July 30, 2009). The district is not planning to rely on portable classroom capacity except for emergencies or to accommodate unexpected growth. The district did note that current student enrollment projections for the district are lower than shown in this Plan. However, the district will continue to monitor growth trends and respond to changes in projections accordingly.

Meridian School District

The Meridian School District plans to construct additions to two of its schools during the planning period. The district divides its improvements into Phase 1 (completion in 2-7 years), and

Phase 2 (completion in 8 to 25 years). Planned additions in Phase 1 include construction of instruction space at Meridian High School, and acquisition of land for a new elementary school. Phase 1 also includes upgrades and modernizations to Meridian High School, Irene Reither Primary School, and Ten Mile Creek. Phase 1 improvements are expected to provide additional capacity for 144 elementary students and 180 additional high school students (Meridian School District No. 505 Capital Facilities Plan 2009-2015, Adopted June 2009, page 7). The District also plans to address additional student capacity needs in the six-year period through acquisition of portables that could accommodate up to 400 additional students (personal communication, Timothy Yeomans, Meridian School District, July 30, 2009). Phase 2 improvements, beyond the six-year planning period include a remodel that includes additional classroom space at Meridian Middle School, as well as construction of a new elementary school. Phase 2 also includes upgrade and modernization projects. However, the district's 2009-2015 Capital Facilities Plan does not identify the amount of capacity expected to be provided by these longer term projects. The District will continue to actively monitor enrollment projections and respond by programming additional projects as needed.

Mount Baker School District

The Mount Baker School District Six-Year Capital Facility Plan (May 2013) indicates that the District has adequate classroom space to serve projected student enrollment through the entire 20-year planning period (p.12). While the District does not plan to add classroom space, it does plans to invest in facility improvements, maintenance and technology upgrades.

Nooksack Valley School District

The Nooksack Valley School District is currently in the process of updating its 1998 Capital Facilities Plan. The district has no plans for new schools or additional facility capacity at this time. The district has not experienced increases in enrollment capacity in recent years, and the district is currently in process of updating its CFP facilities plan for the first time since 1998. The outcome of the current district planning effort may result in new capital projects which would most likely be improvements to existing facilities in the latter part of the district's 6-year planning period. The Whatcom County 2029 CFP projections will help inform the district's future capital facility planning (Silvas pers. comm.).

Table 62. School District Capital Projects

Project Costs/Revenue (thousands $)	2010	2011	2012	2013	2014	2015	2016-2029	Total
Bellingham School District								
Aldrich Elementary								
Cost	10,000	4,300						14,300
Revenue Bonds	10,000	4,300						14,300
Portables								

Project Costs/Revenue (thousands $)	2010	2011	2012	2013	2014	2015	2016-2029	Total
Cost				300				300
Revenue Bonds Impact fees				300				300
Future Elementary Property Purchase								
Cost	1,500							1,500
Revenue Bonds	1,500							1,500
Blaine School District [1]								
High School Modernization and Expansion								30.000
Birch Bay Primary/ Elementary School Site								1,500
Campus Primary/ Elementary School Modernization and Expansion								4,539
Stadium Improvements and Pipeline Fields Restrooms and Fields Addition								3,961
Ferndale School District								
Elementary #9 – Site Acquisition								
Cost			1,800					1,800
Revenue			1,800					1,800
Elementary #9 Construction								
Cost							13,500	13,500
Revenue							13,500	13,500
High School #2 New Construction								
Cost							41,500	41,500
Revenue							41,500	41,500
Lynden School District								

Project Costs/Revenue (thousands $)	2010	2011	2012	2013	2014	2015	2016-2029	Total
New Middle School Construction (Capacity Costs only)								
Cost	9,072							9,072
Revenue	9,072							9,072
New Middle School Construction (without new capacity costs)								
Cost	23,898							23,898
Revenue	23,898							23,898
Meridian School District								
Elementary Classroom additional and related common area improvement at Irene Reither/Ten Mile Creek								
Cost			3,980					3,980
Revenue State match, bonds, mitigation/ impact fees			3,980					3,980
High School Addition								
Cost				20,000				20,000
Revenue State match, bonds, mitigation/ impact fees				20,000				20,000
Various Portables								
Cost					75			75
Revenue Bonds, mitigation/ impact fees					75			75
Mount Baker School District [2]								

Project Costs/Revenue (thousands $)	2010	2011	2012	2013	2014	2015	2016-2029	Total
Facility improvements, maintenance and technology upgrades				1,000	1,000	1,000	4,000 to 9,000	7,000 to 12,000
Nooksack Valley School District								
No Projects Currently Identified [3]								

1 The Blaine School District does not have a CFP that identifies project costs and revenues. The district has a State Study and Survey which is described in the narrative above. The State Study and Survey identifies projects and their costs in summary fashion. For that reason, project dollars are only shown in the total column.

2 The Mount Baker School District CFP indicates that the District plans to invest between $7 million and $12 million in capital facility improvements, maintenance and technology projects from 2012-2022. The Mount Baker School district Superintendent indicated on June 18, 2013 that approximately $1,000,000 of this amount would be invested each year from 2013-2015.

3 The Nooksack School District does not have a CFP. The district has hired someone to prepare a survey of facilities as of July 2009. The district does not have any projects planned, except maintenance, in the foreseeable future. (Personal communication email from Erin Osborn to Matt Aamot, July 14, 2009.)

Solid Waste (County)

Overview

State law (RCW 70.95.010) requires counties to plan an integrated solid waste management system that emphasizes waste reduction and recycling. Management of solid waste that cannot be recycled or managed alternatively can be incinerated, placed in a landfill, or a combination of the two.

Whatcom County Public Works Solid Waste Division is the lead planning agency for solid waste management in the County. The Solid Waste Division is responsible for several program areas encompassing waste prevention, economically efficient recycling and disposal systems, litter control, hazardous waste education and disposal opportunities, the monitoring of the county's closed landfills, and comprehensive planning, as well as providing support for the Whatcom County Solid Waste Advisory Committee.

The County prepared a Draft Comprehensive Solid Waste Management Plan in 2007 which serves as the basis for the solid waste component of the Capital Facilities Plan.

Inventory of Current Facilities

The County's solid waste system is a combination of private and public entities. The County's hazardous waste disposal facility, Disposal of Toxics, is owned by the County, but operated by a private firm.

The County relies upon privately operated disposal facilities for solid waste disposal service. Because of the absence of any County landfill, privately owned disposal facilities will continue to find it necessary to export waste. These facilities include two transfer stations and five drop-off sites, which are shown in Table 63 below. Certified solid waste haulers in the County are Sanitary Service Company (SSC), Blaine Bay Refuse, and Nooksack Valley Disposal (NVD) (Personal Communication from Penni Lemperes to Matt Aamot, July 28, 2009). There are numerous recycling collection sites located throughout the County.

See Table 63 below for a current inventory of solid waste facilities in the County.

Table 63. Solid Waste Facility Inventory

Name	Owner	Operator	Location
Hazardous Waste Disposal	-	-	-
Disposal of Toxics	Whatcom County	Whatcom County	3505 Airport Drive
Transfer Stations	-	-	-
Regional Disposal Co	Regional Disposal Co	Regional Disposal Co	1524 Slater Rd, Ferndale
Recycling & Disposal Svcs. (RDS)	RDS	RDS	4916 LaBounty Place, Ferndale
Solid Waste Drop-Sites			
Birch Bay	Whatcom County (lease to Sanitary Service Company)	Sanitary Service Company	4297 Birch Bay-Lynden Rd, Blaine
Cedarville	Whatcom County (lease to Sanitary Service Company)	Sanitary Service Company	Cedarville Rd off of Mt. Baker Highway, Everson
Sanitary Service Company (SSC)	Sanitary Service Company	Sanitary Service Company	1001 Roeder Ave., Bellingham
Nooksack Valley Disposal	Nooksack Valley Disposal	Nooksack Valley Disposal	250 Birch Bay-Lynden Rd, Lynden
Point Recycling and Refuse (PRR)	Whatcom County (lease to Point Recycling and Refuse)	Point Recycling and Refuse	Off Johnson Road, Pt Roberts.
Recycling Drop-Off Locations	-	-	-
Alrite Recycling Center	N/A	N/A	1900 Racine
Birch Bay Recycling	N/A	N/A	4297 Birch Bay-Lynden Rd.
Cedarville Recycling	N/A	N/A	Cedarville Road (off Mt. Baker Highway)
City Organics	N/A	N/A	Bellingham
"Clean Green" Facility	N/A	N/A	North of Lakeway Dr. on Woburn
Disposal of Toxics Facility	N/A	N/A	3505 Airport Drive
Green Earth Technology	N/A	N/A	774 Meadowlark Rd, Lynden
Jiffy Lube	N/A	N/A	Multiple locations
Jim's Automotive Experts	N/A	N/A	102 E. Main, Everson
Lynden Christian Paper Depot	N/A	N/A	503 Drayton, Lynden
Master Lube	N/A	N/A	111 E. Maple
Nooksack Valley Disposal	N/A	N/A	250 Birch Bay-Lynden Rd.

Name	Owner	Operator	Location
Northwest Recycling	N/A	N/A	1419 C. Street
Northwest Recycling Warehouse	N/A	N/A	1515 Kentucky Street
Point Recycling and Refuse	N/A	N/A	Off Johnson Rd., Point Roberts
Recycling and Disposal Services	N/A	N/A	4916 LaBounty Place
Regional Disposal Co.	N/A	N/A	1524 Slater Road
Relectronics	N/A	N/A	1000 C Street
Safe and Easy Recycling	N/A	N/A	2001 Iowa Street, Ste. F
Sanitary Service Company	N/A	N/A	1001 Roeder Avenue
Schuck's Automotive	N/A	N/A	Multiple locations
Z Recyclers	N/A	N/A	6129 Guide Meridian

N/A = not available

Sources: Whatcom County Solid Waste Plan (2007), Internet review of Whatcom County Public Works Solid Waste Division website information on location of disposal and recycling sites (accessed February 6, 2009), and personal communication from Penni Lemperes to Matt Aamot, July 28, 2009 and August 12, 2009.

The entire County is served by private waste collection services. In unincorporated areas, solid waste service is provided to residents on a mandatory basis by four private companies operating under certificates issued by the Washington Utilities and Transportation Commission (WUTC).

Level of Service Capacity Analysis

The existing LOS for municipal solid waste is calculated based upon future solid waste generation rates derived from a table found in the 2007 Whatcom County Solid Waste Management Plan (Waste Disposal Projections, Whatcom County, 2007, page 23).

Table 64 uses the same rates of waste disposal projections found in the 2007 Whatcom County Solid Waste Management Plan to project future waste disposal rates to 2015 and 2029 under updated population projections developed for those horizon years.

Table 64. Solid Waste LOS Analysis

Year	Population	Solid Waste Generation Rate (tons solid waste per capita per year)	Solid Waste Production (tons/year)
2008	191,000	0.77	147,070
2015	207,922	0.77	160,100
2029	246,602	0.77	189,884

Source: ICF Jones & Stokes

The County uses waste generation forecasting as a vital element of solid waste management planning. The County uses this data to help address waste prevention, recycling and special waste issues. The County updates its waste generation models periodically and uses them in conjunction with program and facility planning and evaluation.

~~Capital Projects and Funding~~

~~Capital Project Funding~~

~~As noted above, solid waste collection throughout the County is mostly provided by privately owned and operated companies, except for the County's hazardous waste disposal facility. Municipalities and private firms have financed their programs through user revenues paid to the County, which are directed to a dedicated Solid Waste Fund, used to fund capital projects. This fund is also eligible to apply for state grand funds to assist solid waste financing.~~

~~Capital Projects~~

~~Currently, the Solid Waste Division has no capital projects (Personal Communication from Penni Lemperes to Matt Aamot, July 28, 2009).~~

Stormwater (County)

Overview

Storm drainage facilities within unincorporated Whatcom County include a diverse combination of natural and constructed conveyance systems and quantity and quality control facilities. Ownership, maintenance responsibility, and stewardship of drainage facilities take place through a variety of means.

In 1999, the Whatcom County Comprehensive Water Resources Plan was developed in response to the County's new and expanding obligations around water issues, including stormwater. Developed by the County water team with input from the local community, the plan is the centerpiece of efforts to create an effective framework for coordinating the county's wide-ranging work in protecting water resources, including addressing stormwater.

In response to increasing federal and state mandates to local governments to manage stormwater and to the County's desire to improve its own stewardship of sensitive watersheds, the County established a Stormwater Division within the Public Works Department in 2005. The Stormwater Division is responsible for the design, engineering, and construction of County-owned stormwater facilities, the vast majority of which are road-related stormwater conveyance systems (culverts and ditches, etc.).

Inventory of Current Facilities

Stormwater facilities include the natural and constructed stormwater conveyance systems (i.e., stormwater pipe, ditches, catch basins, and other structures), rate control facilities, and runoff quality enhancement facilities. Topography and flows govern the nature and function of the County's drainage infrastructure without consideration of property ownership, land use, or political boundaries.

Conveyance systems include natural and constructed open channels, pipe systems and culverts. These systems may be located on private property or within County right-of-way. The division of ownership, function, and location determines the entity responsible for facilities maintenance.

Rate control facilities include retention and detention ponds, tanks, and vaults. The common purpose of these facilities is to reduce the rate of stormwater flow from a specific site or area to reduce the potential for localized flooding, or downstream erosion problems. These facilities are designed to hold a volume of run-off based on the amount of impervious area and a particular storm event. These facilities may be located on public or private property depending upon the area being served.

Runoff quality enhancement includes such facilities as water quality ponds and bio-filtration swales. The purpose of these facilities is to remove a certain type and/or amount of pollutant from the runoff before it is discharged into a water body or collection system or dispersed over the

ground for infiltration. These facilities may be located on public or private property depending upon the area being served.

The County has completed an inventory map of the County drainage system. The County will update and maintain a detailed inventory of stormwater facilities in compliance with its National Pollutant Discharge Elimination Permit (NPDES) Phase II Stormwater Management Program. A summary of the current stormwater facility inventory is included in Table 65 below.

Table 65. Inventory of Public Stormwater Facilities

Type of System	Quantity (number of units)
Cross Culverts	3,253
Driveway Culverts	11,664
Other Culverts	45
Outfalls	644
Yard Drain	22
Total Facilities	**15,568**

Source: Whatcom County Stormwater Division data (2009).

Level of Service Capacity Analysis

Although the County does not have a formal and explicit capital facility LOS standard for stormwater facilities, the County has adopted a stormwater compliance program in accordance with the NPDES Phase II. This program applies to the following areas of the County: areas that are currently designated as UGAs, or urbanized areas in or near the cities of Bellingham and Ferndale.

Urbanized areas are defined as areas with a population of more than 1,000 people. The specific watershed subbasins that are part of the NPDES Phase II program include:

- Chuckanut Bay
- Chuckanut/Padden Watershed
- Lake Whatcom
- Hillsdale/Emerald Lake
- North Bellingham/King Mountain
- Northwest Bellingham/Airport
- Silver Creek and Barrett Lake Watershed Urbanized Area
- Ferndale East and West UGA

Goals of the program include detection and elimination of illicit discharges to surface waters, controlling runoff from new development, redevelopment, and new construction, pollution prevention and operation and maintenance for municipal operations, public education, stormwater monitoring and report requirements.

~~Capital Projects and Funding~~

~~The County has placed an increasing emphasis on the protection of sensitive watersheds. This has resulted in the adoption of a comprehensive stormwater plan for Lake Whatcom, as well as the request from the Lake Samish community for county assistance in the preparation of a stormwater plan for that watershed. In addition, the Birch Bay community has developed a stormwater plan which will be implemented primarily with funds from the Birch Bay Watershed and Aquatic Resources Management subzone of the Flood Control Zone District.~~

~~Capital Project Funding~~

~~Stormwater facilities are generally funded through the creation of a stormwater utility/management fee based on the total impervious surface of an owned property. If such a fee is not imposed then these services may be funded with miscellaneous capital dollars, such as Real Estate Excise Tax revenues.~~

~~Capital Projects~~

~~Whatcom County has identified the following capital projects for stormwater (Table 66). Most existing projects that have been identified are found in the Lake Whatcom watershed. Whatcom County expects to identify new capital projects as the Stormwater Division completes additional stormwater plans.~~

Table 66. Whatcom County Stormwater Projects

Project Costs/Revenue (thousands $)	2010	2011	2012	2013	2014	2015	2016-2029	Total
Silver Beach Creek Stream stabilization								
Cost	50							50
Revenue REET II, grants	50							50
Silver Beach Creek main channel velocity reductions								
Cost	150							150
Revenue REET II, grants	150							150
Silver Beach Creek upper channel velocity and volume								
Cost	230							230
Revenue REET II, grants	230							230
Hillsdale subbasin drainage retrofits								
Cost	210							210
Revenue REET II, grants, FCZD interlocal	210							210
Velocity reductions, Toad Lake at Academy Road								
Cost		200						200
Revenue REET II, fees, grants		200						200
Silver Beach Creek Culvert Replacement								
Cost		260						260
Revenue REET II, fees, grants		260						260
Total	640	460						1,100

Source: Whatcom County Six Year Capital Improvement Program (CIP) 2009-2014

Transportation (Countywide)

Overview

Whatcom County's transportation network is principally made up of County roads as well as state highways, such as I-5 and SR-9, which provide intercity and interstate connections. In addition to the roadway network, Whatcom County also operates a daily ferry service between Gooseberry Point and Lummi Island.

Inventory of Current Facilities

The 2009 inventory of transportation facilities shows a total of 951 miles of County roads (approximately 362 miles are classified as an arterial or collector roadways). Additionally, there are approximately 217 miles of state highways in Whatcom County. State highways include I-5, SR-9, SR-542, SR-548, SR-539, SR-544, SR-546, SR-547, SR-11, and SR-543, all of which serve vital transportation network connections. The table below summarizes the existing miles of countywide arterial roadways by County functional classification.

Table 67. Inventory of County Roadways by Functional Classification

Functional Classification	Total Miles of Roadway (centerline miles)	Percent of Total
Rural Major Collector	155	16%
Rural Minor Collector	164	17%
Urban Principal Arterial	0.3	0%
Urban Minor Arterial	27	3%
Urban Collector Arterial	16	2%
Other Road Classifications	589	62%
Subtotal	**951.3**	**100%**
State Routes	217.2	19%
County Roads	951.3	81%
Total	**1,168.5**	**100%**

Source: Whatcom County Public Works GIS roads data layer, (2008); and email correspondence with Elizabeth Sjostrom of WSDOT for state routes (February 20, 2009).

In addition to the roadway network discussed above, the County owns one ferry vessel which it uses to provide its Lummi Island ferry service.

Level of Service Capacity Analysis

County LOS Standards

Whatcom County establishes a LOS standard for transportation facilities in Chapter 6 of its Comprehensive Plan.

Whatcom County's existing transportation LOS standards are as follows:

Policy 6A-3 Establish the following levels of service (LOS) for purposes of maintaining transportation concurrency:

- A volume-to-capacity ratio less than 0.75 during weekday p.m. peak hours for county arterials and collectors located outside of urban growth areas, except for specified primary routes as shown on Map 14A (of Whatcom County Comprehensive Plan), which shall have a volume-to-capacity ratio less than or equal to 0.90 (LOS D).
- A volume-to-capacity ratio less than or equal to 0.90 (LOS D or better) during weekday p.m. peak hours for county arterials and collectors within urban growth areas not associated with cities, which may be reduced for concurrency evaluation purposes in accordance with Policy 6A-4.
- A volume-to-capacity ratio less than or equal to 0.9 during weekday p.m. peak hours (equivalent to LOS D) for county arterials and collectors within city urban growth areas, which may be reduced for concurrency evaluation purposes in accordance with Policy 6A-4.
- Coordinate with Whatcom Transit Authority to ensure adequate transit service in urban areas.
- 513 ferry passenger trips annually per capita Lummi Island population.

Policy 6A-4 For proposed developments in designated urban growth areas, increase the volume-to-capacity ratio standard for impacted transportation facilities by 0.05 if at least one of the following amenities is existing or is committed to being provided as part of the development:

- Transit service and stops within one quarter mile walking distance accessible from the development using non-motorized facilities that meet or are functionally equivalent to Whatcom County Road Standards.
- Non-motorized facilities that meet or are functionally equivalent to Whatcom County Road Standards along the impacted facility.

LOS Analysis

The Transportation LOS analysis is taken from an analysis prepared for the 10-Year UGA Review Final Environmental Impact Statement (Final EIS). Details on the travel demand forecast methodology can be found in Chapter 3.9 of that document.

Model of Future Traffic Conditions

Using the Whatcom Council of Governments regional model, the projected population and employment growth was used to estimate the number of trips that will be generated in 2029[6]. These trips are then distributed among transportation analysis zones and assigned to the street network. The result is a model of projected future traffic conditions under each future land use scenario.

The future transportation network also reflects future improvement projects for which funding has been committed. For the future analysis reflected in the Final EIS, improvement to four lanes was assumed on the following state highways:

[6] The analysis in the EIS was based on population and employment growth by the years 2029-2031. The EIS does not discern any difference in the probable impacts or mitigation measures whether that population is reached in 2029, 2031, or any other year about that time. The EIS results were reported for the upper range of 2031, but are found applicable to the year 2029 as reported in this CFP.

- SR 539 (Guide Meridian) from Horton Road to Bay Lyn Drive
- SR 542 (Sunset Drive) from Woburn Street to McLeod Road

LOS Analysis of Future Traffic Conditions

After the future 2029 traffic volume on each analysis road segment was projected, it was divided by the road's capacity to calculate the volume to capacity (V/C) ratio. For any segments on which projected V/C would exceed the adopted LOS standard for that road a potential adverse impact was identified, and mitigation identified that would lower V/C to a level within adopted standards.

Results of this analysis were compared to analysis completed for the County's impact fee calculation project (Transpo Group 2008). Potential differences in results can be explained by differences in some baseline assumptions. Namely, the analysis completed for the 10-Year UGA Review reflects 2029 conditions, while the impact fee analysis was completed for 2027 conditions. In addition, the analysis presented for the 10-Year UGA Review reflects adjustments that were made to land use assumptions, based upon updated information that indicated a higher level of growth was occurring in rural areas than was previously assumed. For these reasons, the 10-Year UGA Review analysis could potentially identify deficiencies in addition to those identified for the impact fee analysis.

LOS Impacts on County Roads

This section describes impacts to County Roads. It is meant to provide an order of magnitude analysis of the regional growth alternatives studied in the EIS; the final County Council action was in the range of the analysis. The analysis focuses on the County's adopted LOS standard for roadway segments. The analysis supplements previous County transportation analyses by providing a cumulative traffic analysis for a new horizon year of 2029 testing new growth alternatives.

Recent subarea planning processes have produced more local transportation analyses at a finer level of detail, including intersection analyses:

- *Final Supplemental Environmental Impact Statement, Foothills Subarea Plan*. December 19, 2008. Prepared by Whatcom County Planning and Development Services (transportation analyses by Transpo Group, Inc.).
- *Birch Bay Transportation Planning Study*. January 2009. Prepared by Transpo Group, Inc. for Whatcom County (adopted as Birch Bay Community Plan, Appendix A under Ordinance 2009-036).

As population and employment are projected to increase under all of the studied alternatives, the resulting increase in traffic is expected to degrade the LOS on the transportation system under all alternatives. Table 68 summarizes the county roads with projected 2029 V/C ratios that exceed LOS standards, under one or more alternatives. Table 69 summarizes the total projected lane-miles expected to be deficient under each of the alternatives.

Table 68. Roadways with Deficient Segments by 2029

Analysis ID	Road Name	Location	Milepost			V/C Standard	Peak Hour V/C of Each Alternative				
			Beg	End	Length		No Action Current Comp. Plan	No Action Trends	Action Alt. X	Action Alt. Y	Executive Recommendations
97	Cable Street	Terrace Avenue N - Lakeview Street	0.00	0.04	0.04	0.9	1.31	1.35	1.32	1.33	1.31
98	Cable Street	Lakeview Street - Lake Whatcom Boulevard	0.04	0.51	0.47	0.9	1.31	1.35	1.32	1.33	1.31
126	Everson Goshen Road	SR 542 - Kelly Road	0.00	0.99	0.99	0.75	0.87	0.91	0.94	0.93	0.94
127	Everson Goshen Road	Kelly Road - Smith Road E	0.99	1.99	1.00	0.75	0.86	0.90	0.93	0.92	0.93
128	Everson Goshen Road	Smith Road E - Hemmi Road E	1.99	4.00	2.01	0.75	0.87	0.89	0.93	0.92	0.93
129	Everson Goshen Road	Hemmi Road E - Central Road	4.00	5.00	1.00	0.75	0.91	0.94	0.95	0.96	0.95
130	Everson Goshen Road	Central Road -- Pole Road E	5.00	6.01	1.01	0.75	0.91	0.94	0.95	0.96	0.95
131	Everson Goshen Road	Pole Road E - SR 544	6.01	6.08	0.07	0.75	0.95	1.00	1.00	1.02	1.00
161	Hannegan Road	Bellingham City Limits - Van Wyck Road	1.71	1.96	0.25	0.9	1.10	1.16	1.16	1.15	1.14
162	Hannegan Road	Van Wyck Road- Kelly Road	1.96	2.97	1.01	0.9	1.06	1.10	1.09	1.11	1.10
163	Hannegan Road	Kelly Road - Smith Road E	2.97	3.98	1.01	0.9	1.05	1.08	1.08	1.09	1.08
164	Hannegan Road	Smith Road E - Axton Road E	3.98	4.99	1.01	0.9	0.95	0.96	0.96	0.97	0.95
165	Hannegan Road	Axton Road E - 0.25 mile north of Laurel Road E	4.99	5.79	0.80	0.9	0.95	0.97	0.97	0.98	0.96

Analysis ID	Road Name	Location	Milepost		Length	V/C Standard	Peak Hour V/C of Each Alternative				
			Beg	End			No Action Current Comp. Plan	No Action Trends	Action Alt. X	Action Alt. Y	Executive Recommendations
167	Hannegan Road	Tenmile Road - SR 544	6.55	8.07	1.52	0.9	0.91	0.94	0.94	0.96	0.95
168	Hannegan Road	SR 544 Bridge #245 (drainage ditch)	8.07	10.07	2.00	0.9	0.95	0.96	0.98	0.99	0.98
169	Hannegan Road	Bridge #245 (drainage ditch) - Lynden City Limits	10.07	11.58	1.51	0.9	0.96	0.99	1.03	1.04	1.01
243	Lakeway Drive	Bellingham City Limits - Lowe Avenue	0.00	0.42	0.42	0.9	1.70	1.73	1.71	1.71	1.69
244	Lakeway Drive	Lowe Avenue - Terrace Avenue N	0.42	0.63	0.21	0.9	1.56	1.60	1.57	1.58	1.51
288	Marine Drive	Lummi Shore Drive - Bridge #5 (Portage Slough)	0.00	0.36	0.36	0.75	0.91	1.01	0.93	0.99	0.94
289	Marine Drive	Bridge #5 (Portage Slough) - Ferndale Road	0.36	0.85	0.49	0.75	0.91	1.01	0.93	0.99	0.94
290	Marine Drive	Ferndale Road - Bridge #3 (Nooksack River)	0.85	1.04	0.19	0.75	0.75	0.81	0.79	0.81	0.79
291	Marine Drive	Bridge #3 (Nooksack River) - 264 feet east of Bridge #3	1.04	1.09	0.05	0.75	0.75	0.81	0.79	0.81	0.79
293	Marine Drive	Bancroft Road - Old Marine Drive	3.06	3.26	0.20	0.9	0.88*	0.93	0.92	0.94	0.93
294	Marine Drive	Old Marine Drive - Bridge #172 (GN Railroad Overpass)	3.26	3.37	0.11	0.9	1.01	1.08	1.06	1.08	1.07
295	Marine Drive	Bridge #172 (GN Railroad Overpass) - 211 feet east of Bridge #172	3.37	3.41	0.04	0.9	0.88*	0.93	0.92	0.94	0.93
296	Marine Drive	211 feet east of Bridge #172 (GN Railroad Overpass) - 53 feet east of Old Marine Drive	3.41	3.71	0.30	0.9	1.01	1.08	1.06	1.08	1.07

Analysis ID	Road Name	Location	Milepost		Length	V/C Standard	Peak Hour V/C of Each Alternative				
			Beg	End			No Action Current Comp. Plan	No Action Trends	Action Alt. X	Action Alt. Y	Executive Recommend-ations
297	Marine Drive	53 feet east of Old Marine Drive – Alderwood Avenue	3.71	3.92	0.21	0.9	0.88*	0.93	0.92	0.94	0.93
326	Northwest Drive	Bellingham City Limits - 0.43 mile northwest of Trout Lake Drive	0.56	1.68	1.12	0.9	1.11	1.18	1.18	1.18	1.16
327	Northwest Drive	0.43 mile northwest of Trout Lake Drive - Slater Road	1.68	2.38	0.70	0.9	1.06	1.11	1.10	1.14	1.11
328	Northwest Drive	Slater Road - Smith Road W	2.38	3.65	1.27	0.9	0.92	0.96	0.96	0.98	0.95
410	Slater Road	Lake Terrell Road – 0.7 mile west of Haxton Way	1.19	2.99	1.80	0.75	0.72*	0.81	0.79	0.86	0.85
413	Slater Road	Ferndale Road - Bridge #512 (Nooksack River)	5.16	5.84	0.68	0.75	0.83	0.92	0.87	0.93	0.89
414	Slater Road	Bridge #512 (Nooksack River) - Northern Pacific Railroad Crossing	5.84	6.54	0.70	0.75	0.83	0.92	0.87	0.93	0.89
450	Terrace Avenue N	Lakeway Drive - Cable Street	0.00	0.16	0.16	0.9	1.31	1.35	1.32	1.33	1.31

*V/C values marked with asterisk do not exceed adopted LOS standards.

Table 69. Projected Roadway Segment Deficiencies by 2029

	No Action Current Comp. Plan	No Action Trends	Action Alt. X	Action Alt. Y	Executive Recommendations
Total Deficient Lane-Miles	45.3	49.4	49.4	49.4	49.4
Percent of Deficient Lane-Miles[1]	6.2%	6.8%	6.8%	6.8%	6.8%

[1] Percentage of total of modeled lane-miles of County road (727.9 miles).

Capital Projects and Funding

Table 70 identifies the County's Six-Year Transportation Improvement Program.

Table 71 identifies the roadways locations that have been identified for improvement between 2016 and 2029. Some projects were identified in the Final EIS in order to meet adopted County roadway segment LOS standards; all action alternatives in the Final EIS were found to require the same improvements. Planning-level costs for recommended projects are also summarized in Table 71.

Table 71 also identifies the recommended improvements that are identified under the County's current impact fee calculation project (Transpo Group 2008). The projected impacts and identified improvements on Hannegan Road and Slater Road as part of the 10-Year UGA Review are consistent with the projections completed for the County impact fee analysis. These are in addition to those identified as part of the 10-Year UGA Review. The analysis completed for this 10-Year UGA Review reflects 2029 conditions, while the impact fee analysis was completed for 2027 conditions. In addition, the analysis presented for the 10-Year UGA Review reflects adjustments that were made to land use assumptions, based upon updated information that indicated a higher level of growth was occurring in rural areas than was previously assumed. For these reasons, a longer planning horizon and an update of land use, this 10-Year UGA Review analysis has identified impacts and mitigation on four additional roads, as compared to the impact fee analysis.

The 2027 impact fee analysis (Transpo 2008) lists additional transportation projects that are based on more localized and refined analyses including the County's current Comprehensive Plan, Transportation Improvement Program (TIP), subarea plan studies, etc. The impact fee study is hereby incorporated by reference:

- The Transpo Group, Inc. May 2008. Whatcom County Transportation Impact Fee Program Study Report (Draft). Prepared for Whatcom County.

The WCOG is presently in the midst of a Whatcom Transportation Plan Update scheduled for completion by June 30, 2012. The Plan update will include development of a new countywide travel demand forecasting model, which is scheduled for completion in early 2010. In addition, it

~~is possible that as part of the update process, a coordinated functional classification and LOS measurement system will be developed between Whatcom County and cities.~~

~~Due to the results of Whatcom County's 10-Year UGA Review, including selection of a regional growth alternative, together with the pending WCOG countywide model update in 2010, it is expected that Whatcom County will review its Transportation Element, TIP, and make Comprehensive Plan Transportation Element amendments as needed in its next Comprehensive Plan Update scheduled for completion in 2011.~~

Table 70. Six-Year Transportation Improvement Program

TIP Priority #	20-Yr ID[1]	Project Name	CRP No.	Total 2010-2015	Local Funds[2] 2010-2015	2010	2011	2012	2013	2014	2015
				($ in Thousands)							
1	R-4	Lincoln Road - I	902008	$3,700	$1,300	$600	$3,100	$0	$0	$0	$0
2	S-15 I-3	Birch Bay Lynden Rd/Blaine Rd SR 548		$20	$20	$20	$0	$0	$0	$0	$0
3	WC-20	Yew St. Road, Phase 2	998001	$3,425	$1,197	$3,425	$0	$0	$0	$0	$0
4		West Illinois/Timson Way	905002	$5	$5	$5	$0	$0	$0	$0	$0
5	M-1 M-2	Birch Bay Dr. Pedestrian Facility	905002	$10	$10	$10	$0	$0	$0	$0	$0
6		Potter Road, S. Fork Nooksack River Bridge	998027	$900	$105	$450	$450	$0	$0	$0	$0
7		Sulphur Creek Bridge #422		$1,415	$190	$1,415	$0	$0	$0	$0	$0
8		Slater Road/ Nooksack River Bridge		$750	$750	$750	$0	$0	$0	$0	$0
9	WC-6	Haxton Way Non-Motorized Improvements		$100	$100	$100	$0	$0	$0	$0	$0
10	I-1	Birch Bay Lynden Rd/Portal Way		$790	$40	$20	$20	$750	$0	$0	$0
11		Middle Fork Bridge #140	904019	$450	$0	$450	$0	$0	$0	$0	$0
12		Clearbrook Rd/Johnson Creek Bridge #302	905017	$800	$0	$800	$0	$0	$0	$0	$0
13	R-8	Portal Way/Dakota Creek Bridge #500		$5	$5	$5	$0	$0	$0	$0	$0
14	WC-5	Haxton Way Road Reconstruction		$500	$0	$0	$0	$0	$0	$500	$0
15		Pt. Roberts Transportation	999015	$400	$400	$50	$350	$0	$0	$0	$0

TIP Priority #	20-Yr ID[1]	Project Name	CRP No.	Total 2010-2015	Local Funds[2] 2010-2015	2010	2011	2012	2013	2014	2015
				($ in Thousands)							
		Improvement									
16	WC-11	North Shore Road	902007	$50	$50	$0	$0	$50	$0	$0	$0
17	EIS-10 WC-15	Slater Road Intersections		$10	$10	$10	$0	$0	$0	$0	$0
18	R-4	Lincoln Road - II		$5	$5	$0	$0	$0	$0	$0	$0
19	WC-12	Siper Road		$5	$5	$0	$0	$5	$0	$0	$0
20	WC-10	Marine Drive 2 (Alderwood Ave to McAlpine Rd)		$5	$5	$0	$0	$5	$0	$0	$0
21	WC-10	Marine Drive, Little Squalicum Bridge #1		$5	$5	$0	$0	$5	$0	$0	$0
22		Mountain View Road		$5	$5	$0	$0	$0	$0	$0	$5
23	EIS-5	Hannegan Road/Scott Ditch Bridge #245		$5	$5	$5	$0	$0	$0	$0	$0
24		Legoe Bay Road Protection		$50	$50	$50	$0	$0	$0	$0	$0
25		Noon Road /Ten Mile Creek Bridge #240		$300	$300	$300	$0	$0	$0	$0	$0
26		Assink Road, Fishtrap Creek Bridge #256		$320	$320	$0	$0	$0	$0	$320	$0
27		South Pass Rd., Saar Creek Bridge #212		$350	$350	$0	$0	$0	$0	$350	$0
28		Northwest Drive/ Bear Creek Culvert		$478	$58	$478	$0	$0	$0	$0	$0
29		South Pass Road Repair		$545	$92	$545	$0	$0	$0	$0	$0
30		Manley Rd Culvert Repair		$240	$30	$240	$0	$0	$0	$0	$0

TIP Priority #	20-Yr ID[1]	Project Name	CRP No.	Total 2010-2015	Local Funds[2] 2010-2015	2010	2011	2012	2013	2014	2015
				($ in Thousands)							
31		Emerald Lake Way Slide Repair		$532	$104	$532	$0	$0	$0	$0	$0
32		Rutsatz Rd		$307	$39	$307	$0	$0	$0	$0	$0
33		Ferry Upgrade/Refurbish (Whatcom Chief)	905014	$850	$0	$850	$0	$0	$0	$0	$0
34	WC-22	Ferry Dock Improvements	905014	$600	$600	$500	$100	$0	$0	$0	$0
35		Various Ferry Parking and Staging		$10	$10	$10	$0	$0	$0	$0	$0
36		Ferry Dock Relocation	906006	$15	$5	$15	$0	$0	$0	$0	$0
37		Various Bridge Rehab		$1,600	$1,600	$250	$250	$250	$250	$300	$300
38		Subdivision Overlays		$850	$850	$0	$0	$0	$250	$300	$300
39		Structural Overlays		$850	$850	$0	$0	$0	$250	$300	$300
40		Right of Way Acquisition		$180	$180	$20	$20	$20	$20	$50	$50
41		Unanticipated Site Improvements		$1,900	$1,900	$400	$300	$300	$300	$300	$300
42		Gravel Conversions		$50	$50	$50	$0	$0	$0	$0	$0
43		Stormwater Quality Improvements		$450	$450	$0	$0	$0	$150	$150	$150
44		Non Motorized Transportation Improvements		$750	$750	$50	$50	$50	$200	$200	$200
45		Fish Passage Project		$650	$650	$0	$0	$50	$200	$200	$200
46		RR Crossing Improvements		$180	$180	$20	$20	$20	$40	$40	$40
47		Neighborhood Traffic Calming		$180	$180	$20	$20	$20	$40	$40	$40
		Total		**$25,597**	**$13,810**	**$12,752**	**$4,680**	**$1,525**	**$1,700**	**$3,050**	**$1,890**

Note:
1 If project also appears outside of the 6-year planning time frame, its 20-year plan ID is also shown.

2 Local funds are specifically identified to show County local funding assumptions. The remainder of funds are expected to be provided by Federal and State sources, including grants and loans (Whatcom County Six-Year Transportation Improvement Program 2010-2015, Attachment A).

Table 71 – Whatcom County Transportation Improvement Projects

ID	Portion of project in 6-Year Plan	Project Name	Location/ Project Limits	Proposed Improvement	Estimated Project Cost
I-3	X	Birch Bay-Lynden Road/ Harborview Road	Intersection	Construct intersection improvements to include turn lanes and install traffic signal when warranted	$3,000,000
R-1		Birch Bay-Lynden Road Widening	Portal Way to UGA limit just east of Blaine Road	Widen to rural major collector standards including turn lanes at major access locations and paved shoulders for non-motorized trips.	$1,500,000
R-2		Birch Bay Lynden Road Widening	UGA limit just east of Blaine Road to Harborview	Widen to urban principal arterial standards including turn lanes and non-motorized facilities	$1,800,000
R-3		Birch Point Connector Road	Birch Pt. Road to Shintaffer Road	Construct new 2-lane connection at urban standards including non-motorized facilities and new intersection with Semiahmoo Drive	$2,000,000
R-4	X	Lincoln Road Extension and Improvement	Shintaffer Road to Blaine Road (SR 548)	Reconstruct existing road and construct 2-lane urban arterial to Blaine Road with non-motorized enhancement including construction of roundabouts at intersections with Blaine Road and Harborview Road.	$9,000,000
R-8	X	Portal Way/Dakota Creek Bridge #500	Bridge	Bridge replacement or rehabilitate structure	$5,000,000
S-15	X	Birch Bay Lynden Road/Blaine Road (SR 548)	Intersection	Construct intersection improvements to include roundabout or install turn lanes and traffic signal, when warranted	$3,000,000
S-17		Grandview Road (SR 548)/ Vista Drive	Intersection	Construct intersection improvements to include roundabout or install turn lanes and traffic signal when warranted	$3,000,000

ID	Portion of project in 6-Year Plan	Project Name	Location/ Project Limits	Proposed Improvement	Estimated Project Cost
EIS-5	X	Hannegan Road	BR #245 (Drainage ditch)- Lynden City Limits	Add left-turn lanes at intersections and driveways and widen the road meet the rural major collector standard.[1]	$11,380,000
EIS-3		Hannegan Road	Bellingham City Limits - Van Wyck Road	Add left-turn lanes at intersections and driveways and widen the road to meet the urban minor arterial standard.[1]	$3,868,000
EIS-4		Hannegan Road	Van Wyck Road - SR 544	Add left-turn lanes at intersections and driveways and widen the road meet the rural major collector standard.[1]	$9,673,000
WC-6	X	Haxton Way Non-motorized improvements – 2 phases	Gooseberry Pt to Slater Rd.	Reconstruct to Major Collector	$3,000,000
WC-7		Lake Louise Rd.	Sudden Valley Gate 13 to Austin St.	Reconstruct to Major Collector standards including non-motorized facilities	$8,000,000
WC 8		Lake Louise Rd.	Sudden Valley Gate to Whatcom Blvd.	Reconstruct to Major Collector standards including non-motorized facilities	$8,000,000
WC-9		Lake Whatcom Blvd High Bridge #115	Entire bridge	Replace existing bridge including widening 1 lane and non-motorized improvements.	$5,500,000
WC-10	X	Marine Drive	Bennett Drive to Locust St.	Reconstruct to Urban Minor Arterial standards with non-motorized facilities	$1,400,000
WC-14		Slater Rd.	Hannegan Rd. to Northwest Dr.	Construct 2-lane extension road to Kelly Rd. at Collector standards with non-motorized facilities	$4,000,000
EIS-10	X	Slater Road	Ferndale Road - Northern Pacific Railroad Crossing	Add left-turn lanes at rural major collector standards. Add left-turn lanes and a signal at Ferndale Road when warranted (2008 Transportation Impact Fee Program WC-15).	$2,592,000
WC-19		Yew St. Rd.-Samish connector (amalgamation of several projects)	Yew St. (San Juan Blvd) and Samish Way	Construct new 2-lane connection at urban standards including non-motorized facilities	$1,000,000
I-2		Birch Bay-Lynden Road/ Kickerville	Intersection	Construct intersection improvements to include	$3,000,000

ID	Portion of project in 6-Year Plan	Project Name	Location/ Project Limits	Proposed Improvement	Estimated Project Cost
		Rd.		roundabout or install turn lanes and traffic signal, when warranted	
I-4		Birch Bay Drive/ Harborview Rd	Intersection	Improve/ redesign the intersection with turn lanes, and install traffic signal, when warranted	$3,000,000
R-6		Harborview Road	Birch Bay Drive to Birch Bay-Lynden Road	Improve roadway to urban principal arterial standards including non-motorized facilities	$200,000
R-7		Harborview Road	Birch Bay-Lynden Road to Drayton Harbor Rd	Improve roadway to major collector standards including non-motorized facilities	$200,000
M-1	X	Birch Bay Drive	Alderson Road to Shintaffer Road	Improve roadway to urban minor arterial standards including non-motorized facilities	$1,000,000
M-2	X	Birch Bay Drive	Alderson Road to Point Whitehorn Road	Improve to urban minor arterial standards including non-motorized facilities	$1,800,000
M-8		Portal Way	Birch Bay – Lynden Road to Loomis Trail Road	Reconstruct to rural collector standards including paved shoulders for non-motorized travel.	$1,200,000
M-13		Jackson Road	Birch Bay Drive to Grandview Road	Reconstruct to rural collector standards including paved shoulders for non-motorized facilities	$1,200,000
S-5		Blaine Road (SR 548)/ Drayton Harbor Road	Intersection	Improve / redesign the intersection with turn lanes and install traffic signal when warranted	$2,000,000
S-6		Blaine Road (SR 548) / Loomis Trail Road	Intersection	Improve/redesign the intersection with turn lanes and install traffic signal when warranted	$2,000,000
WC-5	X	Haxton Way	Kwina Rd to Slater Rd.	Reconstruct to Major Collector standards including structural overlay, drainage and non-motorized enhancement	$3,000,000
WC-11	X	North Shore Rd.	Bellingham City limits to Y Rd.	Reconstruct to Minor Arterial standards with non-motorized facilities enhancement (bike lane), clear zones	$8,000,000

ID	Portion of project in 6-Year Plan	Project Name	Location/ Project Limits	Proposed Improvement	Estimated Project Cost
WC-12	X	Siper Rd.	SR 9 (Nooksack Rd.) to Hopewell Rd.	Reconstruct to Collector Standards including drainage system and non-motorized facilities	$5,000,000
WC-13		Slater Rd. (along Kelly)	Hannegan to SR 542 (Mt. Baker Highway)	Upgrade from Local to Collector class and reconstruct at Collector standards including drainage system and nonmotorized facilities	$10,000,000
M-6		Drayton Harbor Road	Harborview Road to Blaine Road	Improve to rural collector standards with shoulders for non-motorized travel.	$1,800,000
M-10		Birch Point Road	Semiahmoo Drive to Shintaffer Road	Reconstruct to urban minor arterial standards including non-motorized facilities	$3,000,000
M-14		Loomis Trail Road	Blaine Road to Portal Way	Reconstruct to rural collector standards including paved shoulders for non-motorized travel.	$1,200,000
M-15		Semiahmoo Drive	Blaine city limits to Birch Point Road	Reconstruct to rural collector standards including paved shoulders for non-motorized travel.	$2,000,000
M-16		Shintaffer Road	Lincoln Road to Birch Point Road	Reconstruct to rural collector standards including paved shoulders for non-motorized travel.	$600,000
M-17		Vista Drive	Bay Road to Grandview Road	Reconstruct to rural collector standards including paved shoulders for non-motorized travel.	$1,500,000
M-18		Bay Road	Blaine Road to Vista Road	Reconstruct to rural collector standards including paved shoulders for non-motorized travel.	$2,600,000
M-19		Alderson Road	Birch Bay Drive to Blaine Road	Reconstruct to rural collector standards including paved shoulders for non-motorized travel.	$600,000
WC-1		Bakerview Rd.	E Bakerview to Aldrich Rd	Reconstruct to urban arterial, standards including non-motorized facilities	$3,000,000
WC-21		San Juan Blvd.	40th St. to 48th St.	Construction and extension of new Urban	$7,700,000

ID	Portion of project in 6-Year Plan	Project Name	Location/ Project Limits	Proposed Improvement	Estimated Project Cost
				Arterial (2 phases) with non-motorized facilities	
EIS-1		Lakeway Drive/ Terrace Avenue N/ Cable Street	Bellingham City Limits - Lake Whatcom Boulevard	Widen to 4 lanes at urban minor arterial standards.	$12,402,000
EIS-2		Everson Goshen Road	SR 542 - SR 544	Add left-turn lanes at rural major collector standards.	$7,993,000
EIS-6		Marine Drive	Lummi Shore Drive (North of Cagey Road) - Country Lane	Add left-turn lanes at rural major collector standards.	$1,833,000
EIS-7		Marine Drive	Bancroft Road - Alderwood Avenue	Add left-turn lanes at urban minor arterial standards.	$3,157,000
EIS-8		Northwest Drive	Bellingham City Limits - Smith Road W	Add left-turn lanes at rural minor arterial standards.	$5,526,000
EIS-9		Slater Road	Lake Terrell Road - 0.70 mile west of Haxton Way (1.8 miles)	Add left-turn lanes at rural major collector standards.	$2,140,000

1. The proposed improvements of Hannegan Road reflect the minimum level needed to accommodate the projected 2029 volumes within adopted LOS standards. The improvements in this table reflect a lower level of improvement and slightly different boundaries than the recommendations for Hannegan Road presented in the County's impact fee calculation project (Impact Fee Program WC-2, WC-3, and WC-4; Transpo Group 2008). Recommendations from both efforts reflect planning-level estimates. As part of project implementation, the County will determine the appropriate level of improvement through more detailed project-level analysis.

Source: The Transpo Group (2008) and ICF Jones & Stokes

Transit

Overview

Whatcom Transportation Authority (WTA) is the primary provider of public transportation services in Whatcom County. WTA provides fixed-route bus service in Bellingham and throughout Whatcom County. Complementary paratransit service is offered in conjunction with broader senior and disabled service under the Specialized Transportation program. WTA also offers vanpool leasing, ridematching and commuter van service from selected markets.

Inventory of Current Facilities

The WTA operates 26 fixed routes with 40 transit coaches (primarily 35- and 40-foot Orion buses). Specialized Transportation paratransit service is provided by 34 mini-buses with a capacity to carry 16 passengers each. WTA owns and manages a fleet of 23 vans for its two commuter van services. Table 72 below summarizes the park & ride facilities that WTA serves along with routes that serve them.

Table 72. Whatcom Transportation Authority Park & Ride Facilities

Park & Ride	Location	Served by Routes	Number of Parking Stalls
Ferndale Station	1671 Main Street	27, 70X, 55	134
South Bellingham East	I-5 and Old Fairhaven Parkway (Exit 250 East side)	105	29
South Bellingham West	I-5 and Old Fairhaven Parkway (Exit 250 West side)	105	24
Lake Samish	I-5 at Exit 246	-	19
Lynden Station	1945 Front Street	26	89
Northwest Avenue	East of Northwest on McLeod Rd.	232	(Not listed)
Birch Bay Square	South side of mall	70X, 55	10
Blaine Library	3rd and G Street	70X, 55	10
Lincoln Creek	Lincoln Street, north of I-5 on-ramp	80X, 90A&B, 190	(Not listed)
Fairhaven Park & Ride	Harris and 4th	(Not listed)	237
Blaine Library	3rd and G Street	(Not listed)	10

Source: Whatcom Transportation Authority website (accessed February 6, 2009), and WSDOT Choices website: http://www.wsdot.wa.gov/Choices/ParkRide.cfm#Whatcom; accessed on March 4, 2009.

Level of Service Capacity Analysis

Public transit providers typically provide LOS standards difficult to relate to capital facility needs with respect to changes in population over time. For example, Whatcom Transportation Authority (WTA) provides one capital facility standard of a shelter at each transit stop that has 25 boardings or more (WTA Strategic Plan, page 2-43, September 2004).

Capital Projects and Funding

Capital Project Funding

According to WSDOT's 2007 Summary of Public Transportation, WTA is expected to receive $2 million in 2010 from Federal Section 5309 Grants, and between $1.5 million and $1.9 million annually from 2010-2013 from Federal Section 5307 Grants. These are the only funds reserved for capital, as other revenue sources such as farebox revenues and sales tax may also be used for operating expenses.

Capital Projects

The WTA breaks down capital outlays under categories that include Vehicles, Public Facilities, Strategic Partnerships, Street Side Improvements, and Technology Projects. The WTA's September 2004 Strategic Plan identified the following projects that will occur during the County CFP planning period. The WTA currently does not have any capital projects except for ongoing fleet replacement (personal communication, Rick Nicholson email, August 11, 2009).

Table 73. Transit Capital Projects[1]

Project Costs/Revenue (thousands $)	2010	2011	2012	2013	2014	2015	2016-2029	Total
Whatcom Transportation Authority								
Vehicle Purchase - 11 Fixed Route Buses, 5 Specialized Buses, 9 Pool Vans								
Cost	5,394							5,394
Safety and Security Projects								
Cost	100							100

Source: WTA Strategic Plan, Six-year Strategic Business Plan, Chapter 5. (September, 2004)

Fire Protection

Overview

The County is served by 15 different fire departments or districts, 13 of which serve unincorporated portions of the County:

- City of Bellingham
- City of Lynden
- Fire District 1
- Fire District 4
- Fire District 5
- Fire District 7
- Fire District 8
- Fire District 11
- Fire District 14
- Fire District 16
- Fire District 17
- Fire District 18
- Glacier Fire District 19
- North Whatcom Fire and Rescue (Fire District 21)
- South Whatcom Fire Authority

The cities of Bellingham and Lynden have their own fire departments. Fire District 7 serves the City of Ferndale and the Cherry Point UGA. North Whatcom Fire and Rescue (Fire District 21) serves the City of Blaine and the Birch Bay UGA. Fire District 14 serves the City of Sumas and the Columbia Valley UGA. Fire District 1 serves the cities of Everson and Nooksack.

Each city and fire protection district is assigned a numeric fire protection rating (a Class 1 rating is considered best) by the Washington Surveying and Ratings Bureau. Insurance companies fund the Bureau to perform on-site inspections of fire districts to determine the rating. The Bureau analyzes five areas: average response time, water supply, communication network, schedule of fire inspections, and existing conditions of fire stations. Fire station evaluations focus on the age of vehicles, amount of personnel training, and whether the facilities are staffed or not. Insurance companies use the fire protection rating to help determine insurance rates on all fire insurance policies. Quality of fire service can have a significant impact on fire insurance rates with the greatest impact experienced by commercial occupancies.

In addition to fire protection services, the agencies listed here provide responses to medical emergencies. In fact, EMS calls account for 75% of the responses by most fire protection agencies.

A countywide 911 dispatch system is jointly operated by the City of Bellingham Fire and Police Departments and administered by a countywide governmental board called "What-Comm Administrative Board" (Boyd pers. comm.).

Inventory of Current Facilities

Table 74 summarizes the capital facilities for each fire district. It also includes each district's fire rating and service population. Unless otherwise stated, the 2008 population is based on estimates prepared for the CFP update process.

Table 74. Fire Facilities Inventory

Fire Protection Provider	Number of Stations	Fire Rating [1]	Fire Units [2]	EMS Services (Y/N)	Service Area Population (2008)	Serves UGA (Y/N)
City of Bellingham	8 [3]	3	22	Y	78,500	Y
City of Lynden	1	5	6	Y	11,350	Y
North Whatcom Fire & Rescue (District 21)	10 [4]	N/A	32	Y	28,246 [5]	Y
Fire District 1	2	8T [6]	10 [7]	Y	8,460	Y
Fire District 4	3	6	13	Y	8,600 [8]	Y
Fire District 5	2	6	6	Y	1,370	N
Fire District 7	6	6/5 [9]	24	Y	19,530	Y
Fire District 8	2	6-8A	10	Y	6,240	Y
Fire District 11	1	8	5	Y	1,610	N
Fire District 14	3	6-10 [10]	22	Y	9,830	Y
Fire District 16	3	N/A	N/A	Y	1,160	N
Fire District 17	2	6	8	Y	1,520	N
Fire District 18	2	N/A	N/A	Y	2,460	N
Glacier Fire District 19	1	7	4	Y	1,630	N [11]
South Whatcom Fire Authority	6	N/A [12]	26	Y	13,000 [13]	Y

N/A = Not Available; Y/N = Yes or No

1 Fire rating is based upon the Washington Surveying and Ratings Bureau (WSRB). Insurance companies use the Bureau's ratings to help determine insurance rates on all fire insurance policies.

2 Fire units include fire and/or emergency response units such as fire engines, water tenders, and medic units.

3 Two of the 8 stations are medic stations that serve unincorporated areas of the County, one serving northwest and the other north and east of the Bellingham city limits. Station 1 also houses the countywide fire/EMS dispatch center. (Boyd, Bill, Fir e Chief, Bellingham Fire Department, personal communication, April 14, 2009 email.)

4 Includes 3 career fire stations and 7 volunteer fire stations. Source: North Whatcom Fire and Rescue Capital Facilities Plan, August 2009, Exhibit 1).

5 Source: North Whatcom Fire and Rescue Capital Facilities Plan, August 2009

6 This indicates a tanker rating, which means that the rating is achieved through additional water for fire flow provided from tanker trucks (Personal email communication from Erin Osborn to Matt Aamot, July 14, 2009).

7 Per email communication from Erin Osborn to Matt Aamot (July 14, 2009), this figure includes 3 fire engines with 1,000 gallon water tanks, 2 tanker trucks with 3,000 gallon capacity (water delivery at 1,000 gallons per minute), 3 aid cars, and 2 rescue boats.

8 Personal communication, Email from Bill McLaughlin to Matt Aamot, on February 25, 2009.

9 Fire rating for Cherry Point is 6 and fire rating for Ferndale is 5 (Personal communication between Gary Russell and Alex Cleanthous, July 1, 2009)

10 The WSRB ratings vary within Fire District 14 from 6(in Sumas) to 10 (in outlying areas), depending on location and type of structure.

11 Although Glacier Fire District 19 does not specifically serve the Columbia Valley UGA, it is part of a mutual aid agreement that would provide back-up to Fire District 14 which does include the Columbia Valley UGA within its service area.

12 At time of inventory, the South Whatcom Fire Authority has not received a rating for the whole agency. Agency was formed in January 2009. Currently, Geneva and Sudden Valley communities are rated Class 5; Yew Street Road and Chuckanut Drive areas are rated a Class 6; and the Lake Samish Area is rated Class 8.

13 Personal communication, Email from Bill Hewitt to Matt Aamot, on March 10, 2009.

Source: Individual district plans and district communications with County staff.

Level of Service Capacity Analysis

Methods that can be used to determine LOS for fire districts include square feet per emergency incident, response time and fire ratings. Whatcom County adopted a LOS standard tied to response time and fire ratings in 2011. Fire district capital facility plans submitted in 2011 or later will be reviewed against the new county-wide LOS standards. For capital facility planning purposes, a method that ties fire and EMS response incidents to projected population, employment, and/or land use (square feet per incident) is being utilized for fire districts until they develop new capital facility plans that meet the adopted County LOS standard.

Whatcom County will consider adoption of fire district capital facility plans by reference into the Whatcom County Comprehensive Plan, as they are approved by the districts.

Square Feet per Incident

This Capital Facilities Plan will rely on analysis based on a square feet per incident for fire districts that have not yet adopted or revised their capital facility plans to meet the County LOS standard. The methodology in the plan is based upon review of records received from the Whatcom County Fire Marshal's Office for Fire Districts. These records include 2008 existing square feet of fire district facilities, and calls for fire and aid service for the years 2006-2008 were used to provide average annual calls for service per district. This information and a LOS methodology are outlined in Table 75 below.

A review of the Fire District LOS analysis provided in Table 76a below indicates that all districts serving urban growth areas that were evaluated under the square feet per incident method would have a fire facility deficit by 2029, if new facilities were not added.

Table 75. Level of Service Standard for Fire Districts: Square Feet per Incident

Fire District	Total Facility Size (2008) (Square Feet)	Average Annual Calls For Fire and Aid Service (2006-2008)	Square Feet Per Incident
Districts serving UGA and Rural Areas			
Fire District 1	17,008	682.3	24.93
Fire District 4	25,314	531.3	47.64
North Whatcom Fire and Rescue	72,422	2,362.3	30.66 [1]
South Whatcom Fire Authority	35,418	734	48.25
Districts serving only Rural Areas			
Fire District 5	8,250	134.0	61.57
Fire District 11	4,200	60.67	69.23
Fire District 16	9,100	121.3	75.0
Fire District 17	6,892	89.7	76.86
Fire District 18	5,400	118.7	45.51
Fire District 19	3,600	84.0	42.86

1 North Whatcom Fire and Rescue prepared a draft Capital Facilities Plan (undated) that was reviewed and evaluated as part of the preparation of the Capital Facilities Plan. This undated version of the District's draft CFP included a square foot per incident measurement as one of many factors reviewed in evaluating the District's ability to respond to emergency incidents, whether fire or medical (Square feet per incident for North Whatcom Fire and Rescue was listed as 35.64 in the undated draft). Since that time, North Whatcom Fire and Rescue has prepared and adopted an updated Capital Facilities Plan (dated August 15, 2009) which does not utilize a square footage per incident analysis. The updated methodology relies on response time and fire station geographic coverage to arrive at a number of stations and apparatus needed to maintain recent ratios to existing development. Most fire districts in Whatcom County do not currently have this information. For this reason, and to ensure consistency of analysis, the North Whatcom Fire and Rescue Square Feet per Incident in Table 75 utilizes the information obtained from the Whatcom County Fire Marshal's Office.

Source: Whatcom County Fire Marshal's Office, Warner Webb, email to Matt Aamot, April 23, 2009.

Table 76a indicates that all fire districts serving urban growth areas that were evaluated under the square feet per incident method are projected to experience deficits in 2029. With the exception of Fire District 4, all fire districts serving urban areas also have higher fire facility deficits than their rural counterparts in 2029. All rural fire districts, with the exception of Fire Districts 5, and 18 are expected to have facility deficits in 2029. All fire districts can reduce these anticipated fire facility deficits with capital facility projects that maintain or replace facilities and equipment in the 2009-2029 planning period.

Response Time/Fire Rating

Whatcom County adopted the following level of service standards in 2011:

> Urban levels of service for fire protection shall be a response time of 8 minutes 80% of the time when the department covering the urban area has staffed the fire station. When the fire station is not staffed the response time shall be 10 minutes 80% of the time, or a WSRB Rating of a 6.

Rural levels of service for fire protection shall be a response time of 12 minutes 80% of the time when the department covering the rural area has staffed the fire station. When the fire station is not staffed the response time shall be 14 minutes 80% of the time, or a WSRB Rating of an 8.

Staffed stations shall be a fire station that is staffed 24 hours a day 7 days a week 365 days a year. Staff may be paid, volunteer, or combination of the two.

There will necessarily be a transition period in which the County will work with fire districts to develop capital facility plans that meet the adopted LOS standards. Fire district capital facility plans that have been developed utilizing the County LOS are shown in Table 76b below.

Table 76a. Fire District Level of Service Analysis-Square Feet Per Incident[1]

Fire District	Annual Average Calls For Fire and Aid Service (2006-2008)	Incidents per capita (2008)	Total Facility Size (2008) (Square Feet)	Level of Service Square Feet Per Incident	2029 Projected Facility Reserve/(Deficit) Expressed in Square Feet of Facilities
Districts serving UGA and Rural Areas					
Fire District 1	682.3	0.08	17,008	24.93	(4,952)
Fire District 4 [4]	531.3	0.05	25,314	47.64	(2,428)
North Whatcom Fire and Rescue	2,362.3	0.10 [2]	72,422	30.66 [3]	(37,498)
South Whatcom Fire Authority [4]	734	0.05	35,418	48.25	(3,308)
Districts serving only Rural Areas					
Fire District 5	134.0	0.07	8,250	61.57	549
Fire District 11	60.67	0.04	4,200	69.23	(1,164)
Fire District 16	121.3	0.12	9,100	75.0	(1,853)
Fire District 17	89.7	0.06	6,892	76.86	(2,865)
Fire District 18	118.7	0.05	5,400	45.51	85
Fire District 19	84.0	0.05	3,600	42.86	(380)

1 Fire districts that have not developed capital facility plans that incorporate the county-wide level of service standard for fire protection, adopted in 2011, are included in Table 76a. The steps used to calculate the results are as follows:

a) Determine incidents per capita: Average calls for service 2006-2008 supplied by Whatcom County Fire Marshal / 2008 estimated population (Draft Environmental Impact Statement, 10-Year Urban Growth Area Review, May 2009, Appendix D)

b) Determine square feet per incident: Current square footage of fire stations supplied by Whatcom County Fire Marshal / Average calls for service 2006-2008

c) Calculate 2029 incidents: Future 2029 population of each district (Appendix D) x incidents per capita

d) Calculate square footage required: 2029 estimated incidents x Square feet per incident

e) Compare to square footage available: 2008 inventory of fire station square footage supplied by Whatcom County Fire Marshal

f) Calculate Reserve (Deficit): Square footage available – square footage required

2 The district's own population estimate of 2008 population (28,246) is higher and was developed based on 2000 U.S. Census calculation of district population plus the City of Blaine, which annexed to the district in 2004 (District Plan, p. 3). Population estimates prepared for the CFP analysis indicate a lower population including Blaine of 23,570. If assuming the higher

population, the incident per capita would be 0.08. For a conservative analysis the higher 0.10 rate was applied to the future growth numbers. If using the Districts 2008 population as a base and the net increase of each alternative, the results would be 15% lower than the square footage estimates above.

3 North Whatcom Fire and Rescue prepared a draft Capital Facilities Plan (undated) that was reviewed and evaluated as part of the preparation of the Capital Facilities Plan. This undated version of the District's draft CFP included a square foot per incident measurement as one of many factors reviewed in evaluating the District's ability to respond to emergency incidents, whether fire or medical (Square feet per incident for North Whatcom Fire and Rescue was listed as 35.64 in the undated draft). Since that time, North Whatcom Fire and Rescue has prepared and adopted an updated Capital Facilities Plan (dated August 15, 2009) which does not utilize a square footage per incident analysis. The updated methodology relies on response time and fire station geographic coverage to arrive at a number of stations and apparatus needed to maintain recent ratios to existing development. Most fire districts in Whatcom County do not currently have this information. For this reason, and to ensure consistency of analysis, the North Whatcom Fire and Rescue Square Feet Per Incident in Tables 75 and 76 utilizes the information obtained from the Whatcom County Fire Marshal's Office.

4 If using these Districts own 2008 population estimates, the incidents per capita would be higher (incidents per capita divided by smaller population). The facility deficits would be approximately 16% higher for Fire District and 6% higher for the South Whatcom Fire Authority.

Source: ICF Jones & Stokes, Berk & Associates, and Whatcom County Fire Marshal's Office (2008).

Table 76b. Fire District Level of Service Analysis – Response Time/Fire Rating[1]

Fire District	WSRB Rating Standard	Response Time Standard	Meets Adopted LOS?
Districts serving UGA and Rural Areas			
Fire District 7	6 for the Cherry Point UGA	8 minutes 80% of the time for the Ferndale UGA	Yes[2]
Fire District 8		8 minutes 80% of the time for the Bellingham UGA and 12 minutes 80% of the time for rural areas	Yes[3]
Fire District 14	6 for UGAs and 8 for rural areas	10 minutes 80% of the time for the Columbia Valley & Sumas UGAs and 14 minutes 80% of the time for rural areas	Yes[4]

1 Fire districts that have developed capital facility plans that incorporate the county-wide level of service for fire protection, adopted in May 2011, are included in Table 76b.

2 Table 74 and Whatcom County Fire District No. 7 Capital Facility Plan 2011-2029.

3 LOS will be met with planned improvements set forth in the Fire District #8 Capital Facilities Plan (2013)

4 Table 74 and Whatcom County Fires District #14 Capital Facilities Plan (2012)

Capital Projects and Funding

Capital Project Funding

City Fire Departments and Regional Fire Districts usually fund needed capital improvements through a combination of revenue sources. These can include General Fund revenues, excess property tax levies, sales taxes, capital bonds, fire benefit charges, and fire impact fees.

The State of Washington authorizes cities and regional fire districts to levy both "regular" and "special" property taxes to support their operational and capital needs. As part of the regular property tax levy, a fire service provider is authorized to levy a property tax at a total maximum rate of $1.50 per $1,000 of assessed value. However, the total maximum aggregate "regular" property tax levy by all taxing agencies in an area may not exceed $5.60. Occasionally, all local levies will total more than this limit. In this case, "junior" taxing districts, including fire districts, must follow state statute to lower their levy rate so that the total aggregate rate does not exceed the statutory limit. Fire districts may also pass "special" property tax levies for short-term periods without a statutory maximum levy limit.

An Emergency Medical Service property tax may be levied at a total maximum rate of $0.50 per $1,000 of assessed value. This levy must pass by at least 60% of the vote and must be renewed every six years. These funds can be charged by city fire departments, but not by fire districts.

Fire impact fees may be collected on new residential and commercial development to fund facility improvements necessary to serve that development. Additional comments on capital funding strategies of note are discussed below:

- Bellingham Fire Department – The Bellingham Fire Department receives capital dollars from the Medic One Fund, which is funded by a 1% sales tax that can be used for operations or capital; from the first 0.25% of Real Estate Excise Taxes, and from general fund revenues.
- Lynden Fire Department – The City of Lynden Fire Department receives capital funding from the general fund and from impact fees. Impact fees for the fire department are project driven, and are expected to pay a set portion of the costs of needed expansion due to growth.

Capital Projects

Capital projects for the Bellingham Fire Department, Lynden Fire Department, North Whatcom Fire and Rescue (which serves the Birch Bay and Blaine UGAs), Fire District 7 and Fire District 14 are provided below. The following fire districts do not have approved capital facility plans:

- Fire District 1 (serving the Everson and Nooksack UGAs).

As these districts approve capital facility plans, they will be incorporated by reference into the Whatcom County Comprehensive Plan.

Table 77. Fire District/Department Capital Projects [1]

Project Costs/Revenue (thousands $)	2010	2011	2012	2013	2014	2015	2016-2029	Total
City of Bellingham [2]								
Boat House								
Cost	150							150
Revenue REET (1st Quarter)	150							150
Classroom/Office								

Project Costs/Revenue (thousands $)	2010	2011	2012	2013	2014	2015	2016-2029	Total
Cost			1,000					1,000
Revenue REET (1st Quarter)			1,000					1,000
Broadway Fire Station Upstairs Carpet								
Cost	9							9
Revenue REET (1st Quarter)	9							9
Cardiac Monitor/ Defibrilator								
Cost	24							24
Revenue Medic 1 Fund	24							24
Field Computers								
Cost	11	12						23
Revenue Medic 1 Fund	11	12						23
Medic Unit								
Cost		158						158
Revenue Medic 1 Fund		158						158
Rechassis Medic Unit								
Cost	111							111
Revenue Medic 1 Fund	111							111
Thermal Imaging Camera								
Cost	12	12						24
Revenue General Fund	12	12						24
City of Lynden [3]								
Ladder Truck Purchase								
Cost	950							950
Fire Station Remodel – Sleeper								
Cost		380						380

Project Costs/Revenue (thousands $)	2010	2011	2012	2013	2014	2015	2016-2029	Total
New Ambulance								
Cost		130						130
New Pumper Truck								
Cost			600					600
North Whatcom Fire and Rescue (District 21) [4]								
New Station A with engine and aid vehicle (location TBD, but likely northwest area of district)								
Cost								5,723.1
New Station B with engine and aid vehicle (location TBD)								
Cost								5,723.1
Station 62 Seismic Upgrade								
Cost								376.2
Station 63 Seismic Upgrade								
Cost								340
Station 63 Exhaust system								
Cost								140
Station 64 Exterior Skin Replacement								
Cost								117.5
Station 64 Reroof								
Cost								87.5
Station 64 Seismic Upgrade								
Cost								218.7
Station 65 Seismic Upgrade								
Cost								227.5
Station 65 Exterior Skin Replacement								

Project Costs/Revenue (thousands $)	2010	2011	2012	2013	2014	2015	2016-2029	Total
Cost								121.8
Station 68 Seismic Upgrade								
Cost								223.8
Station 68 Site Paving Overlay								
Cost								97.5
Station 69 Seismic Upgrade								
Cost								279.9
Station 69 Site Paving Overlay								
Cost								126.2
Station 70 Seismic Upgrade								
Cost								226.2
Station 71 Seismic Upgrade								
Cost								426.8
Station 71 Exhaust System								
Cost								70
Station 72 Seismic Upgrade								
Cost								285.7
Fire District 7								
New Maintenance Vehicle								
Cost		40						40
Reserves		40						40
New Medic Unit								
Cost		150						150
Reserves		150						150
New Tender								
Cost		320						320
Reserves		320						320
Finalize Short Plat								

Project Costs/Revenue (thousands $)	2010	2011	2012	2013	2014	2015	2016-2029	Total
Cost		35						35
Property Tax Funds		35						35
Station 43 - Carpet & Repairs								
Cost		50						50
Reserves		50						50
Station 45 - New Water Service								
Cost			25					25
Property Tax Funds			25					25
New Staff Vehicle								
Cost				40				40
Reserves				40				40
Refurbish Medic Unit								
Cost				75				75
Reserves				75				75
Station 42 - Remodel								
Cost					1,500			1,500
Voted Bond Issue or impact fees					1,500			1,500
New Staff Vehicle								
Cost						40		40
Property Tax Funds						40		40
New Engine Unit								
Cost						375		375
Reserves						375		375
Replace Two Engines								
Cost							900	900
Reserves							900	900
Station 44 - Improvements								

Project Costs/Revenue (thousands $)	2010	2011	2012	2013	2014	2015	2016-2029	Total
Cost							300	300
Reserves							300	300
Station 2 – Fiber Connection								
Cost							30	30
Reserves							30	30
Station 42 – Remodel								
Cost							108	108
Reserves							108	108
Station 44 – Fiber Connection								
Cost							35	35
Station 43 – Improvements								
Cost							77	77
New Ambulance Unit								
Cost							165	165
Data Terminals for Apparatus and Stations								
Cost							90	90
Department Training Center								
Cost							2,000	2,000
Station 45 – Improvements								
Cost							245	245
Station 46 – Improvements								
Cost							75	75
Station 41 – Support Facility								
Cost							500	500
Fire District 8								
Ambulance Replacement				150				150

Project Costs/Revenue (thousands $)	2010	2011	2012	2013	2014	2015	2016-2029	Total
Fire Engine Replacement					500			500
Utility Vehicle Replacement						50		50
Station 31 Replacement							3,525	3,525
Ambulance Replacement							150	150
Station 34 Remodel							444	444
Command Vehicle Replacement							50	50
Ambulance Replacement							150	150
Command Vehicle Replacement							50	50
New Kwina Station and Apparatus							2,675	2,675
Utility Vehicle Replacement							50	50
Ambulance Replacement							150	150
Command Vehicle Replacement							50	50
Fire Engine Replacement							500	500
Fire Engine Replacement							500	500
Command Vehicle Replacement							50	50
Ambulance Replacement							150	150
Ambulance Replacement							150	150
Utility Vehicle Replacement							50	50
Fire District 14								
Sumas Land Payment								
Cost			13.2	13.2	13.2	13.2	184.8	237.6
Replace Tender								

Project Costs/Revenue (thousands $)	2010	2011	2012	2013	2014	2015	2016-2029	Total
93								
Cost				200				200
Replace Command Vehicle								
Cost					20			20
Replace Ambulance								
Cost							125	125
New Command Vehicle								
Cost							45	45
Columbia Valley Station								
Cost							945	945
Equipment								
Cost							11.5	11.5
New Fire Engine								
Cost							450	450
New Ambulance								
Cost							125	125
Air Station								
Cost							40	40
Kendall Station Addition								
Cost							380,475	380,475
Replace Ambulance								
Cost							125	125
Replace Command Vehicle								
Cost							45	45
Replace Fire Engine								
Cost							250	250
Replace Tender								
Cost							300	300
Refurbish Fire								

Project Costs/Revenue (thousands $)	2010	2011	2012	2013	2014	2015	2016-2029	Total
Engine								
Cost							50	50
Sumas Station Architectural & Engineering costs								
Cost							207	207

1 Specific revenue sources in Table 77 are only provided where identified within the service provider's individual plans.

2 City of Bellingham 2008 Adopted Budget includes Fire Department projects through 2013, while the City of Bellingham Comprehensive Plan Capital Facilities element (Chapter 5) only include fire department projects through 2011. Locations are not provided for projects.

3 City of Lynden Fire Department 2009-2014 Capital Facilities Plan shows projects through 2014. Locations are not provided for projects.

4 North Whatcom Fire and Rescue's August 15, 2009 Capital Facilities Plan identifies cost but does not identify year of funding. Therefore, all project costs are noted only in the Total column. Locations are not provided for new stations, and locations of projects at existing stations are associated with the station number per August 15, 2009 Capital Facilities Plan (page 25).

Sources:
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For Lynden Fire: City of Lynden 2008-2014 Fire Department Capital Facilities Plan
For North Whatcom Fire and Rescue: North Whatcom Fire and Rescue Capital Facilities Plan prepared by Henderson, Young & Company, (August 15, 2009).

For Fire District 7: Whatcom County Fire District No. 7 Capital Facility Plan 2011-2029 (May 2011)

For Fire District 8: Whatcom County Fire District #8 Capital Facilities Plan (2013)

For Fire District 14: Whatcom County Fire District #14 Capital Facilities Plan (2012)

Capital Facilities Implementation

Chapter 4 of the County's Comprehensive Plan contains goals and policies that establish LOS standards, promote adequate facilities to serve growth, and ensure that land use is coordinated and consistent with the capital facilities element.

The County adopts a Six-Year Capital Improvement Program for County facilities in the Whatcom County Comprehensive Plan (Appendix F), and updates it every other year.

The Cities also have adopted capital facility elements in their own Comprehensive Plans. They adopt functional plans for various services, generally every six years. Special districts prepare capital plans typically on a regular basis.

As part of the 10-Year UGA Review and in accordance with GMA, the County has made some determinations of UGA sizing based on projected growth, land capacity, and availability of urban services. In terms of ensuring adequate capital facilities and services, the County may make the following adjustments to balance growth, needed capital facilities, and revenue over time:

- Make a change in LOS standards;
- Add facilities and funding to meet the anticipated demand by 2029; and/or
- Alter growth allocations.

Recognizing that land use and capital facility planning takes time and requires coordination, and that capital facility planning is best accomplished once growth allocations are made and UGA boundaries established as part of the 10-Year UGA Review, the County has adopted policies regarding reconciliation of the Comprehensive Plan and public facility and service plans. The purpose of the reconciliation process is to provide adequate time and information to special districts and cities as they incorporate the growth allocations into their comprehensive plans, and update capital facility plans, during their detailed plan update processes.

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~~Appendix 1~~
~~Growth Estimates by Special District~~

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~~Appendix 2~~
~~Birch Bay Draft Capital Facilities Funding Analysis~~
~~Effects of Birch Bay's Potential Incorporation~~

Whatcom County Comprehensive Plan Update

Capital Facilities Funding Analysis
Effects of Birch Bay's Potential Incorporation
Assumed January 1, 2012

Introduction

Revenue projections in the Capital Facilities Plan are calculated on the assumption that Birch Bay does not incorporate, and therefore remains part of the tax, population, and land bases of Whatcom County through the 2029 planning horizon. This appendix compares the capital revenue projections for Whatcom County to the estimated revenues given a hypothetical Birch Bay incorporation on January 1, 2012. This comparison gives an estimate of how Birch Bay's incorporation would affect Whatcom County's capital revenues.

Dedicated Capital Revenues

Transportation

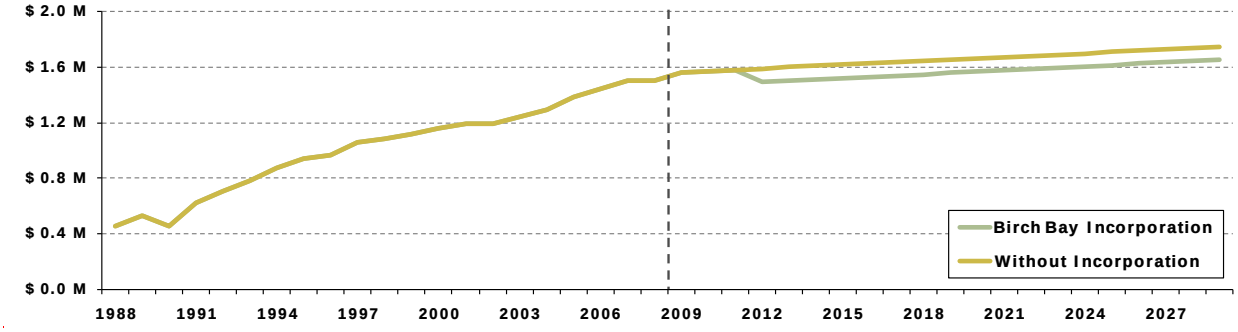
Road Levy

A Birch Bay incorporation would decrease road levy revenues received by Whatcom County, because property taxes paid on assessed value in Birch Bay would no longer accrue to the County.

Currently Whatcom County has banked capacity of approximately $1.0 million. For this analysis we have assumed that the County will not increase the levy rate to collect this banked capacity, nor will they collect the allowed 1.0% increase, but will continue to collect funds at a level equal to the previous year's revenues, plus new construction.

Because assessed value is increasing while the property tax revenues increase only with new construction, the levy rate necessarily declines each year. However, assuming a Birch Bay incorporation in 2012 leaves less assessed value in the unincorporated County to support current revenue levels. Collecting revenues equal to the previous year would therefore necessitate a levy rate increase. Because the County Council is generally conservative when it comes to increasing the levy rate, we have assumed in this case that the rate will remain the same as the previous year, resulting in a decrease in revenues. This scenario therefore increases the County's banked capacity from a total $5.2 million over the study period to $6.3 million.

Exhibit 1 Whatcom County Road Levy Revenues 1988-2029



Source: Washington State Department of Transportation, Berk & Associates analysis.

Exhibit 2 shows estimated total Road Levy in four summary time periods. The first three summary time periods are six years, and the last is two years.

Exhibit 2 Projected Future Whatcom County Road Levy Revenues 2010-2029

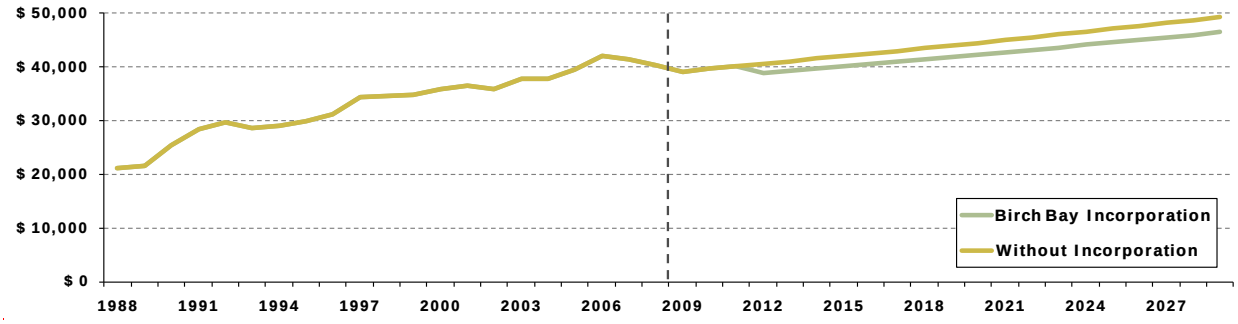
Road Levy	Total 2010-2015	Total 2016-2021	Total 2022-2027	Total 2028-2029	Total 2010-2029
Estimated Future Revenues					
Without Incorporation	$ 9,565,786	$ 9,889,790	$ 10,220,402	$ 3,481,452	**$ 33,157,429**
With Birch Bay Incorporation	$ 9,174,411	$ 9,314,241	$ 9,662,692	$ 3,300,349	**$ 31,451,692**
Change in Revenue	$ (391,375)	$ (575,549)	$ (557,709)	$ (181,103)	**$ (1,705,737)**

Source: Washington State Department of Transportation, Berk & Associates analysis.

State Motor Vehicle Fuel Tax

If Birch Bay incorporated, the County could expect fuel tax revenues to decline, based on the loss in rural centerline road miles. This loss would total about $40,000 over the planning period.

Exhibit 3 Whatcom County Motor Vehicle Fuel Tax Revenues 1988-2029



Source: Washington State Department of Transportation, Berk & Associates analysis.

Exhibit 4 shows anticipated total Motor Vehicle Fuel Tax revenues available for capital in four summary time periods.

Exhibit 4 Projected Future Whatcom County Motor Vehicle Fuel Tax Revenues 2010-2029

State Fuel Tax	Total 2010-2015	Total 2016-2021	Total 2022-2027	Total 2028-2029	Total 2010-2029
Estimated Future Revenues					
Without Incorporation	$ 244,877	$ 262,322	$ 280,986	$ 98,032	**$ 886,218**
With Birch Bay Incorporation	$ 237,838	$ 249,770	$ 265,816	$ 92,347	**$ 845,771**
Change in Revenue	$ (7,039)	$ (12,552)	$ (15,170)	$ (5,685)	**$ (40,447)**

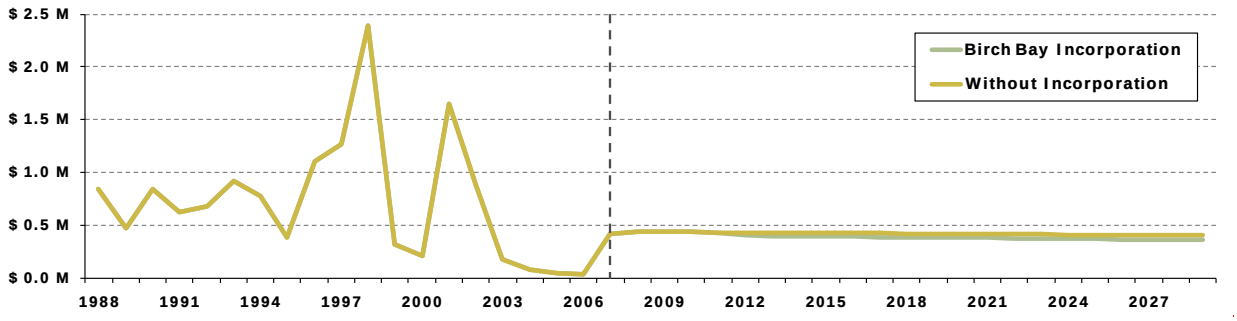
Source: Washington State Department of Transportation, Berk & Associates analysis.

Transportation Grants

State Transportation Grants

Since state grant revenues have been estimated on a per capita basis, Birch Bay's incorporation is projected to result in fewer state grant dollars each year after 2011. The total estimated loss in grant revenue is approximately $650,000 through 2029.

Exhibit 5 Whatcom County State Transportation Grant Revenues 1988-2029



Source: Washington State Department of Transportation, Berk & Associates analysis.

Exhibit 6 shows estimated total state grant revenues in four summary time periods.

Exhibit 6 Projected Future Whatcom County State Transportation Grant Revenues 2010-2029

State Grants	Total 2010-2015	Total 2016-2021	Total 2022-2027	Total 2028-2029	Total 2010-2029
Estimated Future Revenues					
Without Incorporation	$ 2,567,461	$ 2,509,891	$ 2,450,205	$ 803,074	**$ 8,330,631**
With Birch Bay Incorporation	$ 2,444,696	$ 2,302,608	$ 2,215,159	$ 718,556	**$ 7,681,019**
Change in Revenue	$ (122,765)	$ (207,283)	$ (235,046)	$ (84,518)	**$ (649,612)**

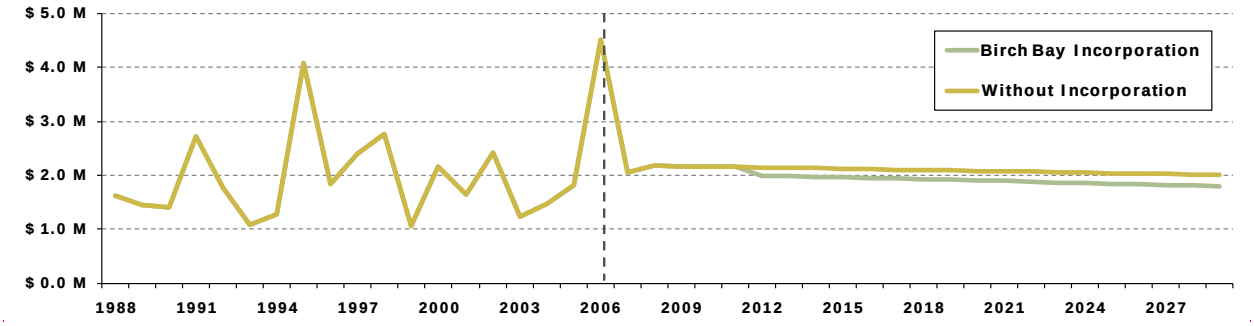
Source: Washington State Department of Transportation, Berk & Associates analysis.

Federal Transportation Grants

Federal grant revenues, like state grants, have been estimated on a per capita basis. Birch Bay's incorporation, and the County's corresponding loss of population, may cause federal grant

revenues to decrease by about $3.2 million over the planning period from the no-incorporation scenario.

Exhibit 7 Whatcom County Federal Transportation Grant Revenues 1988-2029



Source: Washington State Department of Transportation, Berk & Associates analysis.

Exhibit 8 shows anticipated total federal grant revenues in four summary time periods.

Exhibit 8 Projected Future Whatcom County Federal Transportation Grant Revenues 2010-2029

Federal Grants	Total 2010-2015	Total 2016-2021	Total 2022-2027	Total 2028-2029	Total 2010-2029
Estimated Future Revenues					
Without Incorporation	$ 12,837,306	$ 12,549,456	$ 12,251,023	$ 4,015,371	**$ 41,653,156**
With Birch Bay Incorporation	$ 12,223,481	$ 11,513,042	$ 11,075,794	$ 3,592,780	**$ 38,405,097**
Change in Revenue	$ (613,824)	$ (1,036,415)	$ (1,175,229)	$ (422,591)	**$ (3,248,059)**

Source: Washington State Department of Transportation, Berk & Associates analysis.

Exhibit 9 shows total projected dedicated transportation revenues for Whatcom County in four summary time periods. The Overall effect of a Birch Bay incorporation on transportation capital revenues would be a loss of approximately $5.6 million over the 2010-2029 planning period.

Exhibit 9 Projected Total Transportation Revenues 2010-2029

Transportation Revenues	Total 2010-2015	Total 2016-2021	Total 2022-2027	Total 2028-2029	Total 2010-2029
Estimated Future Revenues					
Without Incorporation	$ 25,215,430	$ 25,211,459	$ 25,202,615	$ 8,397,929	**$ 84,027,434**
With Birch Bay Incorporation	$ 24,080,427	$ 23,379,660	$ 23,219,461	$ 7,704,032	**$ 78,383,579**
Change in Revenue	$ (1,135,003)	$ (1,831,799)	$ (1,983,155)	$ (693,897)	**$ (5,643,855)**

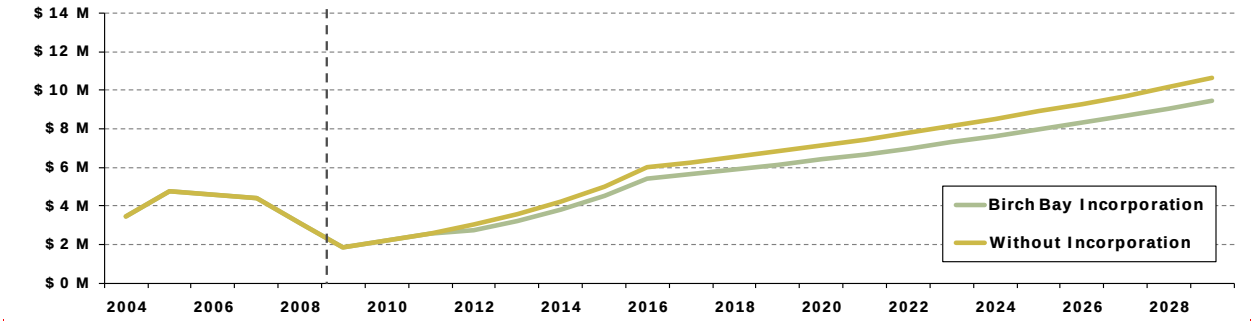
Source: Whatcom County, Washington State Department of Transportation, Berk & Associates analysis

General Capital Revenues

Real Estate Excise Tax

Because REET dollars are directly related to the sale of real estate, which is currently in a slow period, this analysis assumes a slower-than-average annual rate of turn-over of existing property in the unincorporated County at 2% in 2009, increasing incrementally to 7.0% by 2016, implying an eight-year recovery period from the current economic recession. The exception to this is turn-over in Birch Bay, which is assumed at 8.0% for the entire study period for residential property and 4.0% for commercial. Given these assumptions, a Birch Bay incorporation is estimated to reduce County REET revenues by about $280,000 in 2012. This difference increases each year, resulting in a total reduction in REET revenue over the planning period of about $13.4 million.

Exhibit 10 Whatcom County Real Estate Excise Tax Revenues 2004-2029



Source: Whatcom County, Berk & Associates analysis.

Exhibit 11 shows anticipated total Real Estate Excise Tax revenues in four summary time periods.

Exhibit 11 Projected Future Whatcom County Real Estate Excise Tax Revenues 2010-2029

Real Estate Excise Tax	Total 2010-2015	Total 2016-2021	Total 2022-2027	Total 2028-2029	Total 2010-2029
Estimated Future Revenues					
Without Incorporation	$ 20,500,716	$ 40,209,412	$ 52,296,150	$ 20,755,910	**$133,762,188**
With Birch Bay Incorporation	$ 18,991,403	$ 36,100,538	$ 46,745,526	$ 18,507,029	**$120,344,496**
Change in Revenue	$ (1,509,313)	$ (4,108,874)	$ (5,550,624)	$ (2,248,881)	**$ (13,417,692)**

Source: Whatcom County, Berk & Associates analysis.

Rural Counties Public Facilities Tax

The incorporation of Birch Bay would have no effect on the revenues from the Rural Counties Public Facilities Tax, because it is a countywide tax based on total County population.

Exhibit 12 shows anticipated total Rural Counties Public Facilities Tax revenues in four summary time periods.

Exhibit 12 Projected Future Whatcom County Rural Counties Public Facilities Tax Revenues 2010-2029

Rural Sales Tax	Total 2010-2015	Total 2016-2021	Total 2022-2027	Total 2028-2029	Total 2010-2029
Estimated Future Revenues					
Without Incorporation	$ 22,605,853	$ 9,074,264	$ -	$ -	**$ 31,680,117**
With Birch Bay Incorporation	$ 22,605,853	$ 9,074,264	$ -	$ -	**$ 31,680,117**
Change in Revenue	$ -	$ -	$ -	$ -	**$ -**

Source: Whatcom County, Berk & Associates analysis.

Total General Capital Revenues

Exhibit 13 summarizes total general capital revenues in four summary time periods.

Exhibit 13 Projected Total General Capital Revenues

General Capital Revenues	Total 2010-2015	Total 2016-2021	Total 2022-2027	Total 2028-2029	Total 2010-2029
Estimated Future Revenues					
Without Incorporation	$ 43,106,570	$ 49,283,676	$ 52,296,150	$ 20,755,910	**$165,442,306**
With Birch Bay Incorporation	$ 41,597,257	$ 45,174,802	$ 46,745,526	$ 18,507,029	**$152,024,614**
Change in Revenue	$ (1,509,313)	$ (4,108,874)	$ (5,550,624)	$ (2,248,881)	**$ (13,417,692)**

Source: Whatcom County, Washington State Department of Transportation, Berk & Associates analysis

Summary

Given a hypothetical incorporation of Birch Bay in 2012, Whatcom County is estimated to see a reduction in total future capital revenues of approximately $19 million dollars over the study period. Exhibit 14 summarizes the total revenues in four summary time periods.

Exhibit 14 Projected Total Capital Revenues

Total Capital Revenues	Total 2010-2015	Total 2016-2021	Total 2022-2027	Total 2028-2029	Total 2010-2029
Estimated Future Revenues					
Without Incorporation	$ 68,321,999	$ 74,495,136	$ 77,498,765	$ 29,153,840	**$249,469,740**
With Birch Bay Incorporation	$ 65,677,683	$ 68,554,462	$ 69,964,986	$ 26,211,061	**$230,408,193**
Change in Revenue	$ (2,644,316)	$ (5,940,674)	$ (7,533,779)	$ (2,942,778)	**$ (19,061,547)**

Source: Whatcom County, Washington State Department of Transportation, Berk & Associates analysis

~~Appendix 3~~
~~Whatcom County Rural Water Systems~~

~~Rural Area Water Systems~~

~~Table 3-1 identifies the Group A water systems with 50 or more connections that serve rural areas of the County. The inventory data presented in Table 3-1 is derived from State DOH information.~~

Table 3-1 Water System Inventory (Other Group A Water Systems with 50+ Connections)

System ID	System Name	Group Code	Owner Type Description	Residential Population	Nonresidential Population	District Residential Connection	Total Connections	Storage Capacity	Approved Services
250	ACME WATER DISTRICT NO 18	A	Special District	273	295	90	98	150,000	231
1200	ALDERGROVE WATER ASSOCIATION	A	Association	120	-	60	60	47,000	120
1383	CHUCKANUT TRAILS WATER SYSTEM	A	Private	72	-	51	51	305,000	53
3971	GRANDVIEW CENTER BUSINESS PARK WS	A	Private	2	43	4	53	3,400	–
5370	BELFERN WATER ASSOCIATION	A	Private	219	-	74	74	31,500	77
5450	BELL BAY JACKSON WATER ASSOCIATION	A	Association	350	–	177	177	185,000	200
5754	UPPER BAKER WATER SYSTEM	A	Private	7	178	2	123	44,000	–
5875	BERTHUSEN ROAD WATER ASSOCIATION	A	Association	250	–	99	99	66,000	115
7227	BLACK MOUNTAIN RANCH	A	Private	5	67	1	1,033	37,600	1,033
12150	CENTRAL CITY WATER ASSOCIATION	A	Association	285	–	114	114	55,000	125
17050	CUSTER WATER ASSOCIATION	A	Private	365	–	212	217	200,000	315
18418	DEER CREEK WATER ASSOCIATION	A	Association	1,130	–	450	472	270,000	643
18750	DELTA WATER ASSOCIATION	A	Private	420	–	101	159	200,200	174

System ID	System Name	Group Code	Owner Type Description	Residential Population	Nonresidential Population	District Residential Connection	Total Connections	Storage Capacity	Approved Services
18800	DEMING WATER ASSOCIATION	A	Private	245	256	67	89	237,000	89
22895	ELIZA ISLAND BEACH CLUB	A	Private	3	–	86	120	12,000	139
24151	EVERGREEN MOBILE PARK & SALES	A	Private	180	–	60	60	30,000	–
24195	EVERSON WATER ASSOC	A	Association	130	–	50	55	–	66
24840	FERNDALE MOBILE VILLAGE	A	Investor	85	–	54	54	59,000	–
27631	RASPBERRY RIDGE WATER ASSOCIATION	A	Private	138	140	69	70	100,000	74
27755	GLACIER SPRINGS WATER SYSTEM	A	Private	35	–	102	102	68,700	273
28050	GLENHAVEN LAKES CLUB	A	Private	1,720	4	688	727	240,000	909
29014	LOUIE, JOE WATER ASSOCIATION	A	Private	428	43	177	180	121,800	232
30200	GUIDE MERIDIAN WATER ASSOCIATION	A	Association	190	55	71	80	85,000	84
32350	HEMMI ROAD WATER ASSOCIATION	A	Private	236	–	176	181	120,000	256
33364	HILLTOP WATER OWNERS ASSOCIATION	A	Association	70	131	44	55	48,000	–
35800	Intalco Aluminum Corporation WS	A	Private	–	641	-	60	52,000	–

System ID	System Name	Group Code	Owner Type Description	Residential Population	Nonresidential Population	District Residential Connection	Total Connections	Storage Capacity	Approved Services
36268	ISLE AIRE BEACH ASSOCIATION	A	Association	120	–	63	64	75,000	66
43290	LISECC	A	Association	110	–	163	185	200,000	210
44540	LAKE SAMISH TERRACE PARK	A	Investor	115	–	54	65	59,000	65
49890	MABERRY PACKING, INC.	A	Investor	6	250	1	50	–	–
50900	MANTHEYS COUNTRY MOBILE PARK	A	Investor	120	–	58	58	10,000	–
51100	MAPLE FALLS WATER COOP	A	Association	190	3	73	90	83,000	188
52679	SILVER LAKE PARK - MAIN CAMPGROUND	A	County	5	567	2	62	–	–
53250	MEADOWBROOK WATER ASSOCIATION	A	Private	440	–	127	139	232,000	139
56500	MOUNT BAKER WATER ASSOCIATION	A	Association	500	–	210	211	226,000	217
56900	MOUNTAIN VIEW WATER ASSOCIATION	A	Association	186	–	75	75	34,000	95
58950	NEPTUNE BEACH WATER ASSOC	A	Private	200	–	81	81	62,000	–
59394	BAKER LAKE RESORT	A	Investor	–	132	–	80	–	–
59850	NOOKSACK VALLEY WATER ASSOCIATION	A	Private	900	440	258	273	510,000	332
61350	NORTH STAR WATER ASSOC	A	Association	140	–	57	57	11,000	20

System ID	System Name	Group Code	Owner Type Description	Residential Population	Nonresidential Population	District Residential Connection	Total Connections	Storage Capacity	Approved Services
62000	NORTHWEST WATER ASSOCIATION, INC	A	Association	400	–	125	126	25,000	190
63350	OLD SETTLERS WATER ASSOCIATION	A	Association	540	–	180	182	139,000	209
64150	ORCHARD WATER ASSOC	A	Association	153	–	51	51	18,000	59
66116	PARADISE PARK WATER SYSTEM	A	Association	200	–	53	53	32,000	53
67020	PERCIE ROAD WATER ASSOCIATION	A	Association	250	–	106	107	100,000	110
68350	POLE ROAD WATER ASSOCIATION	A	Private	1,500	45	536	598	436,000	996
71290	RATHBONE PARK WATER ASSOC	A	Private	240	–	65	65	30,000	65
73750	ROEDERLAND WATER ASSOCIATION	A	Association	150	–	51	51	–	–
76105	SANDY POINT IMPROVEMENT CO	A	Investor	1,467	–	606	606	390,000	606
79800	SKOOKUM CHUCK WATER ASSOCIATION	A	Association	375	–	127	127	220,000	142
84850	SUMAS RURAL WATER ASSOCIATION	A	Private	484	128	125	176	500,000	208
86200	SUNSET WATER ASSOCIATION	A	Association	174	–	78	78	138,600	106
87772	GLEN COMMUNITY ASSOCIATION	A	Private	–	623	–	1,221	75,000	–
91000	VALLEY VIEW WATER ASSOC	A	Private	120	–	75	75	60,000	81

System ID	System Name	Group Code	Owner Type Description	Residential Population	Nonresidential Population	District Residential Connection	Total Connections	Storage Capacity	Approved Services
92150	WAHL WATER ASSOC	A	Private	165	–	68	68	85,000	58
95750	POINT ROBERTS WATER DISTRICT NO 4	A	County	1,300	142	2,008	2,036	2,500,000	2,953
95915	GLACIER WATER DISTRICT	A	Special District	200	–	564	581	500,000	1,165
95935	WHATCOM MEADOWS	A	Private	3	200	1	588	40,000	588
96888	WILDWOOD RESORT	A	Investor	8	58	2	84	2,400	–
99550	Y-SQUALICUM WATER ASSN	A	Private	250	–	70	70	55,000	70
AB912	Deer Creek Water Assn/Guide South	A	Association	200	–	86	86	–	–

Source: Washington State Department of Health (accessed February 5, 2009 via Internet download).

~~Appendix 4~~
~~Maps~~