CHAPTER 4. ELEMENTS OF THE BUILT ENVIRONMENT – EXISTING CONDITIONS, ENVIRONMENTAL IMPACTS, & MITIGATING MEASURES

4.1. ENVIRONMENTAL HEALTH

4.1.1. Noise - Existing Conditions

Noise is defined as unwanted sound. Intensity, duration and frequency define the character of sound. Three aspects of sound are important in determining the subjective response to sound; these are sound level, frequency content and time varying characteristics. In general, the more densely an area is populated and the higher the intensity of land uses there are, the noisier it will be. Noise is inseparable from modern society, however, excessive noise can interfere with thought, communication and sleep, cause annoyance, health problems, loss of hearing and have secondary effects such as economic loss, property devaluation and disturbing wildlife.

The level of sound is a measure of its intensity, expressed in decibels (db). The frequency (spectrum) of a sound refers to its pitch and is expressed in Hertz or cycles per second. Most of the sounds we hear in the environment are a combination of many frequencies at many levels. Common terms and measures for noise and sound are:

- dBA: Sound is measured on a logarithmic decibel (Db) scale. A more common measure of sound, dBA is based on this scale but is weighted to account for frequency and pitch, which affect human perceptions of sound. It is important to note that 3 DBA is considered the minimum perceptible change in noise level and that a 10 DBA sound increase is perceived as a doubling of loudness. Therefore, changes in noise levels of 3 DBA may be considered a minor impact.

Table 4.1: Typical Noise Levels

Sound Source	dBA
Threshold of Hearing	0
Soft Whisper	30
Remote Park Area	35
Window Air Conditioner	55
Quiet Conversation at 3 Feet	60
Vacuum Cleaner at 10 Feet	70
Major Highway at 100 feet	75
Busy Urban Street	80

- Average Day Night Level (LDN): LDN averages the total volume (in dBA) of noise collected over a 24-hour period. Nighttime noise (10:00 pm to 7:00 am) is counted at 10 decibels higher than actually measured to compensate for the fact that night sound is considered more intrusive than daytime noise.

- Leq: Measures the sound level occurring over a designated time period.

- Lmax: Represents the maximum sound level of a noise source.

- Receiving Property: Building or other property where sound is received.

- Sensitive Receptor: Places or activities that are particularly sensitive to noise intrusions such as , hospitals, schools and libraries.

- EDNA: Means the environmental designation for noise abatement, being an area or zone (environment) within which maximum permissible noise levels are established.

Many factors such as humidity, proximity to water, temperature, elevation and background noise can affect noise levels at a receiving site. Other factors that can affect noise levels include the design and type of construction of buildings, vegetation and sound barriers.

4.1.1.1. Noise Standards, Guidelines and Regulations

The Federal Noise Control Act (1972) assigns primary responsibility for regulating non-transportation noise to state and local governments. State and local governments also regulate motor vehicles not involved in interstate commerce. Federal noise authority preempts local and state noise regulations for three major noise sources: aircraft, railroads and motor vehicles engaged in interstate commerce.

According to Federal Aviation Administration noise standards, Land areas experiencing LDN of 65 dBA or less are considered unaffected by aircraft noise. Land uses occurring within an area of LDN of 65 dBA or higher should be compatible with noise impact produced by aircraft.

The Federal Transit Administration specifies that a peak hour increase of 3 dBA (Leq) or less is considered insignificant. A peak hour increase of 4 to 10 dBA (Leq) is considered possibly significant, and may require mitigation. An increase of more than 10 dBA is considered a serious impact.

Federal Highway Administration indicates noise impacts from highways occur when noise levels substantially exceed existing levels or exceed the following criteria for various land use categories:

- Unique tracts of land in which serenity are of extraordinary significance = 57 dBA (Leq).
- Homes, libraries, schools, churches, hospitals, outdoor recreation areas = 67 dBA (Leq).

- Commercial and Industrial uses = 72 dBA (Leq).

The Revised Code of Washington (RCW) Chapter 53.54, Aircraft Noise Abatement, authorizes airports with 20 or more jet aircraft flights per day to undertake several programs for the purpose of alleviating and abating jet aircraft noise. Bellingham International Airport does not presently have nor does it plan to have 20 or more jet aircraft flights per day. However, the airport has included and considered the provisions and intent of the airport noise abatement statute in their FAR Part 150 study, which assesses noise and land use compatibility. The airport has also provided mitigation measures through its Noise Compatibility Program.

The Washington State Department of Ecology has established the following maximum permissible environmental noise levels (WAC 173-60-040):

Table 4.1.1.1: Maximum Permissible Noise Levels

EDNA of Noise Source	EDNA of Receiving Property		
	Class A	Class B	Class C
Class A (Residential, Hospitals Resorts, Parks)	55 dBA	57 dBA	60 dBA
Class B (Commercial Uses)	57 dBA	60 dBA	65 dBA
Class C (Industrial, Agricultural)	60 dBA	65 dBA	70 dBA

Between the hours of 10:00 pm and 7:00 am the above noise limitations in receiving properties are reduced by 10 dBA in Class A EDNAs. Noise limitations can be exceeded for specified brief periods of time.

In addition, Whatcom County and the City of Bellingham have adopted regulations regarding excessive noise from a wide variety of sources.

4.1.1.2 Sources of noise in the City, UGA, and Urban Fringe Subarea

Traffic

Vehicular traffic noise is a combination of noise created by engines, tires, exhaust and air movement. There are a number of factors that influence noise generated by traffic, including but not limited to vehicle type, traffic volumes, speed, inclines and pavement surface. Other conditions such as distance, vegetation, terrain, and natural and manmade obstacles also affect vehicular noise.

Areas that are most affected by traffic noise are along the I-5 corridor and along high volume roadways. Some areas may be more affected by noise than others due to terrain, vegetative buffers, and proximity to roads. As growth occurs within the planning area, traffic noise will increase and will impact a larger area and population, especially along Guide Meridian, Sunset Drive, Lakeway Drive, Bakerview Road, Northwest Avenue, Marine Drive, Bennett Drive, Hannegan Road, Squalicum Parkway, Old

Fairhaven Parkway, Alabama Street, and Britton Road. Noise level peaks from traffic sources recorded by Devco Consultants in 1986 are: Trucks 83 dBA, School buses 71 dBA, and 73 dBA from automobiles.

AIRCRAFT

Aircraft noise affects primarily those areas immediately surrounding the Bellingham International Airport and the Runway Protection Zone and under the various flight paths. The Bellingham International Airport has acquired some residential properties along Marine Drive that are impacted by noise and are within the Runway Protection Zone. Additional aircraft noise comes from occasional seaplanes operating from Bellingham Bay and Lake Whatcom and medical helicopter flights from St. Joseph Hospital.

Industry

Older industrial plants generate noise in Bellingham and in the UGA, especially along Marine Drive and near the Bellingham International Airport. Other sources of industrial noise include heavy machinery, and heating, ventilation and cooling systems.

Railroad

A main north-south rail line runs along the west coast and through the City of Bellingham and its UGA. Railroad operations include freight and passenger service, staging and switching. Railroad operations can vary on a day-to-day basis. The type, design, and number of engines influence railroad noise. Other factors include the type of cars, weight, cargo, speed, grade, and track conditions. Additional noise is generated by warning bells and whistles at crossings, during switching operations and at the rail yard. Train noise recorded in 1986 by Devco Consultants near the airport was 67 dBA. The areas most affected by railroad noise are along Bellingham Bay, Marine Drive, Wynn Road and Curtis Road. Decreased noise exposure is possible with new technology such as welded steel rails and streamlined cars.

Construction

Construction activities may cause short -term noise impacts to nearby properties. Construction noise is generally produced from heavy machinery. Construction noise impacts are most likely to occur within City neighborhoods that can accommodate infill development, have undeveloped parcels, near undeveloped or underdeveloped commercial, or industrial areas, and within the undeveloped Urban Fringe Subarea

Shoreline

Areas located adjacent to the shoreline along Bellingham Bay, Lake Whatcom, Lake Padden and Emerald Lake may be impacted by noise from boating and recreational activities.

GENERAL URBAN NOISE

The City of Bellingham, the UGA, and the Urban Fringe Subarea are affected by typical urban noise generated by traffic, construction, emergency services, machines, commercial and household activities. In general, urban noise is correspondingly greater

the more densely an area is populated and the higher the intensity of land uses there are.

4.1.2. Noise - Environmental Impacts

As the population of Bellingham and Whatcom County grows, noise impacts from vehicles, commercial, industrial, construction and other sources will increase. The impacts of the four alternatives are similar. The alternatives that allow the expansion of the UGA will expand urban noise levels to previously rural areas. The alternatives that allow higher densities will tend to concentrate noise levels in areas that are already impacted. Residential areas adjacent to highways, arterials and industrial areas will have additional noise impacts under all alternatives. Unless there is an increase in train operations, an increase in flights or an airport expansion, additional train and aircraft noise impacts are not expected. However, as population increases in urban areas along the Vancouver-Seattle rail corridor, as well as the broader Pacific Northwest region, it is possible that Bellingham could experience an increase in both commuter rail and regional jet service. In general, as population increases, it is likely that noise complaints will rise and short-term noise impacts from construction activities will occur under all the alternatives to accommodate Bellingham's projected 20-year growth.

With all alternatives, Residential areas adjacent to highways, and arterials will have additional noise impacts, as will rural areas within the UGA. The No Action alternative will allow noise levels to increase gradually as residential, industrial and commercial areas develop to allowed zoning densities and uses. The higher densities under the Infill and Infill and Adjusted UGA alternative will allow noise levels to increase within Bellingham and the UGA. Construction activities will have a larger short-term impact due to the increased density. Construction-related noise impacts should cease at the termination of construction activities. Since the Adjusted UGA and Infill and Adjusted UGA alternatives will allow the expansion of the UGA, increased noise levels will occur in areas that were previously planned for rural development and will possibly affect wildlife.

4.1.3. Noise - Mitigating Measures

A variety of noise mitigation measures can be utilized to minimize noise impacts for all four alternatives: No Action, Infill, Adjusted UGA, and Infill and Adjusted UGA. These include the following mitigation measures:

- Traffic management measures such as traffic control devices and signing for time restrictions, prohibitions of certain vehicle types and exhaust brakes and modified speed limits.
- Vehicular noise can also be attenuated with the construction of sound walls, change of vertical and horizontal alignment, sound absorptive pavement and acquisition of property.
- Require noise attenuating construction materials for buildings near noise producing areas.
- Require buffers or sound barriers for noise sensitive land uses near noise producing areas.

- Limit construction activities to daytime hours and require contractors to utilize standard noise mitigation measures to reduce any impacts on the surrounding area from the construction.
- Encourage the use of construction techniques and equipment that minimize noise.
- Develop a noise awareness program and enforce existing rules and regulations.
- Encourage monitoring of the Port of Bellingham's Noise Compatibility Program.
- Monitor the flight path and flight times of the medical helicopter to St. Joseph Hospital.
- Establish a Geographic Information System (GIS) program to identify areas impacted by noise sources and complaints regarding noise.
- Encourage use of alternative transportation and public transportation to help reduce background vehicular noise.
- Encourage the use of vehicle types that minimize noise such as vehicles with electric motors and hybrid vehicles.
- Utilize land use designations to allow uses based on existing development patterns and to permit only those uses that are compatible near noise generating land uses.

4.1.4 Risk Of Explosion

4.1.4.1 Existing Conditions

The storage, use and transport of hazardous materials pose a risk of explosion. The greatest threat of explosion occurs with uses that utilize hazardous materials in industrial and commercial areas and with the transport of hazardous materials along truck routes, rail corridors and pipelines.

Railroad

A main north-south rail line runs along the west coast and through the City of Bellingham and its UGA. There is the potential for explosion if a train has a collision or derails. The areas in the planning area with the most potential to be affected by a train explosion are throughout west Bellingham along Bellingham Bay, Marine Drive, Wynn Road and Curtis Road.

Vehicular

Trucks carrying hazardous materials have increased potential for explosions if they are involved in a traffic accident. Areas that have the most potential for traffic accidents and therefore have the most potential for possible explosions are along the I-5 corridor, along high volume roadways, and at intersections. As density increases within the City and the UGA, explosions could impact a larger population, especially along Guide Meridian, Bakerview Road, Northwest Avenue, Marine Drive, Bennett Drive, Hannegan Road and Britton Road.

Industrial and Commercial Uses

Industrial plants that utilize hazardous materials in the planning area have explosion potential. Establishments that have the greatest threat of explosions typically involve

the use of flammable material in confined spaces. These may include businesses such as woodworking shops, paint stores and businesses that use and dispense petroleum products. Older businesses are less likely to have up to date fire safety precautions in place.

Pipelines

Transmission of hazardous liquids and gases by pipeline is an essential transportation mode for moving and distributing these products. While pipelines offer an efficient and convenient method of transport, there is potential for ruptures and uncontrolled leaks of products, which may be highly flammable, explosive, or toxic.

There are natural gas and gas/oil transmission lines within the northern and eastern portions of Bellingham, the UGA and the Urban Fringe Subarea. Also there are several natural gas distribution lines that traverse the City of Bellingham, the UGA and the Urban Fringe Subarea (See Figure 4.x). Many of the areas were not heavily populated at the time that the transmission lines were installed. Over time, increased density and incompatible uses have grown in areas near the pipelines. It is expected that with increased demand for natural gas and petroleum, there will be a need to expand the capacity of the pipelines in the near future.

Except for pipelines, regulations to reduce the risk of explosions and the response to explosions related to hazardous materials are the same as those outlined in section 4.1.7, Hazardous Materials. Pipelines are regulated under a number of federal, state and local regulations. The Federal Department of Transportation through the Office of Pipeline Safety is the regulator of interstate natural gas and hazardous liquid pipelines and intrastate natural gas and hazardous liquid pipelines that are over 15 miles in length and over a certain pipe diameter. The Federal Energy Regulatory Committee has authority to site interstate natural gas lines. State and local safety provisions regulating interstate pipelines are expressly preempted by federal jurisdiction, with the exception that the state is allowed to increase safety standards and regulate the location of intrastate pipelines that do not meet the above threshold requirements. Local government also has authority to impose conditions through NEPA, SEPA or if the pipeline requires a shoreline permit. Recently, the Washington State Legislature has granted the State Utilities and Transportation Commission authority to conduct inspections for the Federal Office of Pipeline Safety.

4.1.4.2. Risk of Explosion - Impacts

The impacts detailed under Section 4.1.5.2. Hazardous Materials-Impacts are applicable to this section. The higher densities allowed under the Infill and Infill and Adjusted UGA alternatives will increase densities within the UGA, which may increase the number of people that could be exposed to explosions at any one time, particularly in areas near highways, arterials and pipelines. As the population grows and the demand for hazardous materials grows, there will continue to be the threat of an explosion and risk of exposure, damage and contamination under all alternatives.

4.1.4.3. Risk of Explosion - Mitigating Measures

Many of the mitigating measures identified in Section 4.1.7 Hazardous Materials-Mitigating Measures, are applicable to this section as well as additional mitigating measures that apply to pipelines:

- Utilize land use designations and allow uses based on existing development patterns that provide a separation between industrial and residential land uses.
- When industrial land uses are in close proximity to residential land uses, provide, enhance and maintain adequate buffers to minimize risk of exposure.
- Support the planning efforts of the Local Emergency Planning Committee including but not limited to coordination between jurisdictions and response teams, training, and tracking of hazardous materials.
- Traffic management measures such as traffic control devices, specified truck routes and signing for time restrictions, and modified speed limits.
- Continue education regarding the safe use, storage, disposal and recycling of hazardous materials and waste.
- Develop information/education and notification programs to alert the public of pipeline location and safety considerations when making land purchase or development decisions near transmission pipelines.
- Require pipeline operators to provide accurate 'as-built' pipeline maps as a condition of approval for any development permit. In addition to scaled plan maps, which shall be accurate to the parcel level, pipeline information (pipe size, allowable pressure, fuel type, etc) shall also be provided. Provide update copies of all major pipeline routes to Whatcom County Sheriff's Office Division of Emergency Management.
- Seek intervenor status on all pipeline proposals which may not be within the County's regulatory authority, so as to preserve the County's legal right to retain a voice in the proposal. The County would review a pipeline proponent's application materials and file comments with the reviewing bodies according to the appropriate procedure and within the timelines provided. Staff should engage in continual and ongoing communication with the regulatory authorities regarding the project as the need or occasion arises.
- Require transmission pipeline proponents to notify all fire districts, water and sewer districts, and jurisdictions with urban growth areas where the siting of new pipelines crosses those service areas.
- Monitor transmission pipeline construction to ensure pipelines are installed in accordance with all applicable critical areas regulations.
- Encourage the Office of Pipeline Safety to enact stronger safety measures for transmission pipelines, and to encourage pipeline applicants to voluntarily enact stronger safety measures than required by federal law.
- Utilize GIS based siting criteria for evaluating transmission pipelines which are consistent with comprehensive plan policies for transmission pipelines and the recommendation in the *Natural Gas and Hazardous Liquid Pipeline Background Report.*

- Encourage transmission pipelines to follow established corridors where possible. Require applicant justification for proposed deviations.
- Discourage transmission pipelines within urban growth areas.
- No transmission pipeline facilities should be constructed or located in critical areas without fully mitigating the project impact.
- Restrict the location of transmission pipelines in high-risk landslide areas where evidence of instability could be ascertained by recent events, or verifiable geological conditions.
- For natural gas transmission pipelines, encourage siting of critical facilities and high occupancy facilities pursuant to the regulations of WAC 480-93-020, and 480-93-030 (not closer than 500' from a 500 psi pressure or greater pipeline, not closer than 100' from a pipeline with a pressure between 250 and 499 psi) and as hereafter amended.

4.1.5. Hazardous Materials

4.1.5.1. Existing Conditions

There are four characteristics that can cause a material to be hazardous and pose a threat to health or to the environment: ignitability, corrosivity, reactivity, and toxicity. Hazardous materials are found in residential, commercial and industrial uses. Hazardous materials and wastes include many common substances, such as lead acid batteries, drain cleaner, paint thinner, petroleum products, solvents, ink sludge, pesticides, herbicides, antifreeze and chlorine. These materials do not immediately pose a threat if they are treated properly.

Hazardous materials are widely utilized and available. Many of these substances such as paint, solvents, corrosive cleaners and pesticides are available to the general public through hardware, garden, auto and grocery stores, and are stored in homes. A survey for King County found that people who reside in multi-family developments tend to store less hazardous materials than people who reside in single-family developments. Many commercial and industrial uses such as medical facilities, auto facilities, plating facilities, dry cleaners, manufacturing facilities, and sewer and water treatment plants utilize hazardous materials and produce hazardous wastes.

Under the Federal Emergency Planning and Community Right-to-Know Act, Section 312, reporting requirements, all commercial users of hazardous materials are required to have a list of the substances that are used. Larger users of hazardous materials are required to register the chemicals that are utilized. The reportable threshold for all hazardous substances are 10,000 pounds stored at any one time and 500 pounds or less for extremely hazardous substances. The reporting thresholds for retail gas stations are 75,000 gallons for gasoline and 100,000 gallons for diesel. There are approximately 35 sites in the Bellingham area that are required to register the type, amount, location, storage method, pressure and other information regarding hazardous materials. There has been a reduction in the number of retail gas stations required to report due to a reduction in the reporting threshold for gas stations. There are 7 facilities within the Bellingham area that reported on-site releases of hazardous

materials in 2001. In addition, there are approximately 24 sites within the Bellingham area that the Department of Ecology has ranked as sites that have been contaminated, including one superfund site. Some of these sites may be able to be redeveloped as Brownfield sites.

Hazardous materials are also transported by rail, truck and pipeline. The transport of hazardous materials can pose an additional risk of exposure, contamination and explosion due to the possibility of collisions or pipeline rupture. Hazardous materials and the risk of explosion impacts are addressed in the previous section.

Improper storage and disposal of hazardous wastes may lead to contamination of soil or groundwater. Leaky underground storage tanks (LUST) are the most likely to cause soil and groundwater contamination. Approximately 105 LUST sites have been identified within the Bellingham area. Most of these sites are in the process of being, or have been cleaned.

Under the Washington State Model Toxins Control Act, the responsibility for identifying and scheduling cleanup of contaminated sites lies with the Department of Ecology. The Department of Ecology maintains a database of known and potential hazardous waste sites. The database describes the sites, the affected environment and the status of the contaminants. Cleanup of contaminated sites can be a long and costly process due to legal issues, analysis required and standards.

Regulation of hazardous materials has many layers and is complex. Federal regulations (SARA Title III) address reporting, planning and the public's right to know about hazardous materials. The Local Emergency Planning Committee (under the Whatcom County Sheriff's Office, Emergency Management Division) has developed a Hazardous Materials Contingency Plan that addresses the potential for and response to hazardous materials and waste spills. The plan takes into consideration factors such as the type of material, response capability, potential contamination, weather, and circumstances (time of day, population density) to determine the appropriate response to an incident. Other regulations address hazardous materials within a particular context such as storage, packaging, labeling, exposure, education, record keeping, releases, reporting, transportation, recycling, disposal, and clean up.

There are several locations within the Bellingham area that accept oil and antifreeze and one site that accepts limited types of hazardous wastes for recycling and disposal. The Department of Ecology has established a Nuclear Waste Program to dispose of low-level mixed and commercial nuclear waste. Whatcom County also provides homeowner education regarding proper disposal and handling of household hazardous wastes and oversight of generators, transporters and treatment of biomedical waste.

4.1.5.2. Hazardous Materials – Impacts

The higher densities allowed under the Infill and Infill and Adjusted UGA alternatives will increase densities within the UGA, which may increase the number of people that could be exposed to hazardous materials at any one time and may also increase the

possibility of discovering a previously unknown contaminated site. Development pressure may provide an economic incentive to clean up such sites. Under these two alternatives, it is likely that there may be less storage of hazardous materials due to increased multi-family housing development.

The Infill and Adjusted UGA and Adjusted UGA alternatives will allow the expansion of the UGA into formerly rural and industrial areas, which may increase the possibility of discovering unknown contaminated sites and may increase the potential for contamination in formerly rural areas.

The potential for the release of hazardous materials and waste is primarily in commercial and industrial areas. As the population grows, there will continue to be the risk of exposure or contamination under all alternatives. Under land use alternatives that require expansion of the UGA, the ability to provide rapid emergency response for a hazardous materials event will be reduced unless additional response capability is provided through additional staffing and emergency operations office space.

4.1.5.3. Hazardous Materials – Mitigating Measures

A variety of mitigating measures can be utilized to minimize the risk of contamination or exposure to hazardous materials and waste. These include the following:

- Utilize land use designations and allow uses based on existing development patterns that provide a separation between industrial and residential land uses.
- When industrial land uses are in close proximity to residential land uses, provide, enhance and maintain adequate buffers to minimize risk of exposure.
- Support the planning efforts of the Local Emergency Planning Committee including but not limited to coordination between jurisdictions and response teams, training and tracking of hazardous materials.
- Traffic management measures such as traffic control devices and signing for time restrictions, and modified speed limits
- Train appropriate public employees to recognize hazardous materials and possible contaminated sites.
- Continue education regarding the safe use, storage, disposal, and recycling of hazardous materials and wastes.
- Develop a system to track contaminated sites and require assessment and cleanup for development proposals that may involve a contaminated site.
- Require a site assessment for contamination prior to public purchase or transfer of land.
- Encourage and offer incentives to promote Brownfield redevelopment.

4.2. LAND USE; POPULATION, HOUSING AND EMPLOYMENT GROWTH FORECASTS; AND LAND SUPPLY ANALYSIS

4.2.1. Existing Conditions

4.2.1.1. Land Use

Since 1980, land use in the City of Bellingham has been guided by comprehensive plans. In 1980 "The Bellingham Plan" was adopted. It included all the elements that later became required under the provisions of the 1990 State Growth Management Act (GMA). This plan also set up the neighborhood planning system still in use today. In response to adoption of the GMA, the Bellingham Plan was replaced by the 1995 Bellingham Comprehensive Plan. This plan contains goals and policies within sections on Land Use, Housing Transportation, Community Design, Public Facilities, Utilities, Parks and Open Space. The current process to update the 1995 plan is expected to be completed by the end of 2004. The many issues associated with population growth in general and the Comprehensive Plan update in particular, are the central reasons for this document.

Bellingham's Urban Growth Area (UGA) was established in 1997 with the adoption of the Whatcom County Comprehensive Plan and joint City and County adoption of the Urban Fringe Subarea Land Use Plan. The County Comprehensive plan contains general goals and policies applicable to all urban growth areas (Goal 2M) and goals and policies specific to the Bellingham UGA (goal 2S). Although under the jurisdiction of Whatcom County, the manner and scale of growth in the UGA will have a tremendous impact on the future of Bellingham. This EIS is intended to contribute important information to help the City and County update the Urban Fringe Subarea Plan.

The Urban Fringe Subarea of Whatcom County was established in 1984 with the adoption of the first Urban Fringe Subarea Plan (UFS Plan). The Subarea includes approximately 19,610 acres to the north, northeast and northwest of Bellingham. The study area for the Urban Fringe Subarea update and this EIS also includes parts of Bellingham's UGA that were previously located in two other County Planning Subareas: Lake Whatcom Subarea (Geneva UGA); and Chuckanut-Lake Samish Subarea (Yew Street Road UGA and one small additional review area). For purposes of this chapter of the EIS, discussion of Urban Fringe Subarea refers to areas outside the existing boundaries of Bellingham's UGA, including the 5-year review areas identified in the 1997 UFS Plan. This plan designated as five-year review areas several areas that were determined to be worthy of future consideration for inclusion in the Urban Growth Area as warranted by land supply needs. The following section is intended to provide a basic understanding of the existing pattern of land use and development in the city, the UGA, and the Urban Fringe Subarea of Whatcom County.

4.2.1.1.1. City of Bellingham Land Use

Located within Whatcom County, the City of Bellingham is generally described as the area east of Bellingham Bay and the Bellingham International Airport, west of Lake Whatcom and Squalicum Mountain, north of Chuckanut Mountain and Chuckanut Bay, and south of Kelly Road. This city includes approximately 16,350 acres (25.5 square miles). This figure excludes that portion of the city limits covered by Bellingham Bay, Lake Whatcom and Lake Padden.

Early settlements around Bellingham Bay began in the 1850s, with the construction of a lumber mill at the mouth of Whatcom Creek. The community was later named Whatcom. Within a few years, additional settlements were created in Fairhaven, Bellingham and Sehome. The communities grew steadily and in the 1880s, Whatcom and Sehome incorporated. Fairhaven followed suit in 1890. The communities voted to consolidate into a single municipality called Bellingham in 1903.

Land use within the city is governed by the zoning designations contained in the 23 neighborhood plans. The city land use categories and acreages are shown in Table 4.2.1.1.1.A., below.

Table 4.2.1.1.1.A: Bellingham Zoning Categories

City Zoning (general use type)	Acreage	% Of Total
Residential Single	6,868	42.0%
Residential Multifamily	2,653	16.2%
Commercial	1,336	8.2%
Industrial	2,348	14.4%
Public	2,261	13.8%
Institutional	336	2.0%
Mixed – Commercial/Industrial	102	.6%
Mixed – Industrial/Residential Multi	86	.5%
Mixed – Residential Single/Residential Multi	6	-
Mixed – Institutional/Residential Multi	29	.2%
Mixed – Public/institutional	9	-
Mixed – Commercial/Industrial/Res. Multi	305	1.9%
Total	**16,349 Acres**	**99.8%**

Land Use Development (zoning) Ordinance, Subdivision Ordinance, and a variety of other design, development and environmental regulations control land development in Bellingham.

Residential Development

Residential development is the dominant land use in the city in terms of total acreage. Approximately 60% of the total land area is zoned for residential development. The City had approximately 31,340 dwelling units in 2003. This total includes 15,651 single-family dwellings and 15,687 multi-family units (48.7%). The average housing density in single-family zoned areas of the city was 3.8 units per acre in 2003. The average density in multi-family areas was 14.8 units per acre. Overall, the residential areas of the city contain an average density of 6 units per acre. (The average density calculations are for **developed** residential acreage only, excluding undeveloped land and land within neighborhoods devoted to non-residential uses such as roads, parks, schools, commercial uses etc.) The number of single and multi-family dwelling units per neighborhood in 2003 is summarized in Table 4.2.1.1.1.B: City Housing by Neighborhood, below:

Table 4.2.1.1.1.B: City Housing by Neighborhood

Neighborhood	Single Family Dwelling Units	Multi Family Dwelling Units	Total Units	Average Developed Density – Units/Acre[1]
Alabama Hill	1,024	149	1,173	4.2
Birchwood	1,029	1,261	2,290	4.8
CBD	8	498	506	66.0
Columbia	1,507	165	1,672	6.7
Cornwall Park	816	22	838	4.5
Edgemoor	811	6	817	2.1
Fairhaven	143	179	322	12.8
Guide Meridian	136	1,383	1,519	6.1
Happy Valley	616	2,494	3,110	11.8
Lettered Streets	621	597	1,218	13.1
Meridian	37	521	558	7.5
Mount Baker	858	1,120	1,978	6.4
Puget	946	1,276	2,222	7.9
Roosevelt	1,120	1,535	2,655	8.3
Samish	1,063	199	1,262	3.4
Sehome	498	951	1,449	12.5
Silver Beach	948	522	1,470	3.9
South	255	544	799	3.1
South Hill	926	542	1,468	7.3
Sunnyland	887	55	942	7.4
WWU	0	1,204	1,204	6.7
Whatcom Falls	731	48	779	2.9
York	671	416	1,087	12.3
TOTALS:	**15,651**	**15,687**	**31,338**	**6.0**

Source: City of Bellingham Planning Department Residential Land Supply Study, July 2003.
Notes: 1. Neighborhood average residential density calculated by dividing the total Residentially **developed** acreage by the total number of dwelling units.

As can be seen in the table, significant residential development has occurred in all of Bellingham's neighborhoods. The following summarizes the information in the table.

Most single family residences:
1. Columbia
2. Roosevelt
3. Samish
4. Birchwood
5. Alabama Hill

Fewest single family units:
1. WWU
2. CBD
3. Guide Meridian
4. Fairhaven
5. South

Most multi-family dwelling units:
1. Happy Valley
2. Roosevelt
3. Puget
4. Guide Meridian
5. Birchwood

Fewest multi-family units:
1. Edgemoor
2. Cornwall Park
3. Whatcom Falls
4. Sunnyland
5. Alabama Hill

Most total dwelling units:
1. Happy Valley
2. Roosevelt
3. Birchwood
4. Puget
5. Mt. Baker

Fewest total dwelling units:
1. CBD
2. Fairhaven
3. Meridian
4. Whatcom Falls
5. Edgemoor

Highest density:
1. CBD
2. Fairhaven
3. Lettered Streets
4. Sehome
5. York

Lowest density:
1. Edgemoor
2. Whatcom Falls
3. South
4. Samish
5. Silver Beach

Commercial and Industrial Land Uses

Approximately 25% of the total city acreage is zoned for commercial and industrial development – 8.2% zoned for commercial uses, 14.4% zoned for industrial uses, and 3% for a mix. Many existing zoning categories allow a mix of uses. Commercial uses are allowed in many of the city's industrial zones for example.

The Greater Bellingham Area (city limits + UGA) is home to about 62% of the total employment in Whatcom County. In 2003, the city had over 3.2 million square feet of office space and over 8.2 million square feet of retail space.

Large commercial and office uses are concentrated in a few areas of the city, including the CBD; the Meridian, Cordata Parkway and Bakerview corridors; the waterfront; and in Fairhaven. Smaller commercial and office centers are located at Barkley Village, Sehome Village, Sunset Square, the Lakeway/I-5 interchange area, Old Town, the Fountain District and along the Northwest Road and Samish Way corridors.

Marine and heavy industrial uses are primarily located on the Bellingham waterfront and in Fairhaven. Light industrial uses are concentrated along the State/James Street, Iowa Street and Hannegan/Bakerview Road corridors.

Public and Institutional Land Uses
There are over 2,200 acres of land devoted to public uses in the city (13.8% of the total city acreage). Public zoning is used for a range of public uses, including parks, recreational facilities, trails, open space, schools, and other local governmental facilities.

Bellingham is home to several large "institutional" uses. Approximately 2% of the total city acreage (336 acres) are designated for public or quasi-public campus type developments such as Western Washington University, Whatcom Community College and the St. Joseph' Hospital.

4.2.1.1.2. Bellingham Urban Growth Area Land Use

The Bellingham UGA was first established as the Bellingham Urban Service Area (USA) in the mid-1980s. The City and County identified and designated the area as appropriate for urban levels of development at that time. Whatcom County placed urban zoning designation on land in the UGA and urban levels of development began to occur (once services such as sanitary sewer and water became available from the City).

Subsequent to adoption of the Growth Management Act by the State in 1990, Bellingham's Urban Service Area was designated an Urban Growth Area in 1997. When a detailed plan for the UGA (the 1997 Urban Fringe Subarea Plan) was jointly adopted by the city and county, about 2,000 acres appropriate for urban levels of development were added to the UGA, bringing the total acreage to about 7,340 acres (11.5 square miles). Most notably, substantial areas along the I-5 corridor and in the Bakerview/Hannegan industrial area were added and rezoned to allow industrial uses. The Urban Fringe Plan also included an extensive review of the UGA's zoning designations. A new zoning category, Urban Residential Mixed, was developed and applied to over 1,600 acres in the UGA. Performance bonuses were included in the new zone, allowing an increase in density from 4 units/acres up to 10 units/acre if certain public amenities were included in the development and/or if development rights were purchased from the Lake Whatcom Watershed.

Bellingham's UGA is separated into 3 distinct geographic areas: 1.) Northern UGA, 2.) Yew Street UGA, and 3.) Geneva UGA. These areas are divided into seven smaller analysis areas for purposes of land use planning.

Land use within the Bellingham UGA is governed by Whatcom County Comprehensive plan and zoning, subdivision and development regulations. City development standards are applied to development in the UGA on a case-by-case basis per an interlocal agreement originally adopted by the City and County in 1997 and amended in 2002.

Land in Bellingham's UGA has County zoning designations as shown in Figure 4.2.1.1.2.A. and Table 4.2.1.1.2.B.

Table 4.2.1.1.2.A: Bellingham UGA Zoning

County Zoning Category	Acreage
Rural 2-Acres/Dwelling Unit (R-2A)	1
Rural Residential, 2 Dwelling Units/Acre (RR-2)	781
Urban Residential, 3 Dwelling Units/Acre (UR-3)	1,418
Urban Residential, 4 Dwelling Units/Acre (UR-4)	533
Urban Residential Medium, 18 Units/Acre (URM-18)	47
Urban Residential Mixed (URMX)	1,632
General Commercial (GC)	55
Neighborhood Commercial (NC)	2
Light Impact Industrial (LII)	1,647
Heavy Impact Industrial (HII)	127
Gateway Industrial (GI)	124
Airport Operations (AO)	956
Recreation Open Space (ROS)	20
Total	**7,341 Acres**

Source: Whatcom County Planning, February 2004.

Residential Development

Residential development is also the dominant land use in the Bellingham UGA. Over 4,400 acres are zoned for residential land uses (60% of the total UGA land area), These areas contained over 4,500 dwelling units in 2003. The overwhelming majority of these units (70%) are single family. The developed densities (units/acre) in these areas are very low, averaging 1.8 units per acre in single-family areas and 9 units per acre in multi-family areas. Overall, the residential areas of the Bellingham UGA have developed at an average density of 2.3 units per acre in 2003 as shown below:

Table 4.2.1.1.2.B: Bellingham UGA Residential Densities

UGA analysis Area	Single Family Dwelling Units	Multi Family Dwelling Units	Total Units	Average Developed Density – Units/Acre [1]
Northwest	479	978	1,457	4.6
West Central	102	2	104	0.5
North Central	12	0	12	0.3
East Central	206	4	210	0.9
Northeast	504	22	526	2.2
North Watershed	550	18	568	2.9
South Watershed	873	33	906	2.2
Southeast	504	290	794	2.5
Totals	**3,230**	**1,347**	**4,577**	**2.3**

Source: City of Bellingham Planning Department, July 2003.

Notes: 1. Neighborhood average residential density calculated by the dividing the total residentially **developed** acreage by the total number of dwelling units. The developed density calculation excludes undeveloped land and land devoted to non-residential uses.

Existing residential areas in the Bellingham UGA are further described in the following summaries:

Alderwood-Bennett Drive
The neighborhood located around Alderwood Elementary School is a dense collection of houses and apartments. Most of the UGA multi-family housing is located in this neighborhood, along with other housing types. The majority of the area is zoned Urban Residential Mixed Use (URMX). The County's most intense residential zoning designation, Urban Residential Medium Density 18 (URM 18) allows multi-family development and is applied to an area along McLeod Road. Other parts of the neighborhood are zoned Urban Residential 3 and 4 (UR 3 and UR 4).

Britton Road
There are several large subdivisions near Britton Road, northeast of the Bellingham city limits. The neighborhood is mostly developed at relatively low suburban densities. Lot sizes generally range from about 8,500 to 14,500 square feet. Residences in the neighborhood have a complete range of urban services available, including Bellingham city sewers, natural gas and public transit. A few multi-family structures have been constructed to the south of the Tweed Twenty development, and duplexes have been built on the eastern edge. Most of the area is zoned URMX. The southern portion of the area near Hillsdale Road is within the Lake Whatcom watershed. County and City policies addressing the water quality of Lake Whatcom discourage increased density within the watershed.

King Mountain
A small residential community exists on King Mountain. Most of the neighborhood's houses are in the King Mountain Terrace and King Mountain Terrace, First Addition subdivisions. Many houses in these subdivisions were constructed in the 1960s and 1970s, and have impressive views of Northern Puget Sound. There is a single-family subdivision being constructed west of James Street and King Mountain Road. A few large houses have been built on the west side of King Mountain Road. Most of the area is zoned Residential Rural two houses per acre (RR-2), but the surrounding area to the north, west and east is zoned Rural Five Acre (R 5A). Poor slope stability affects portions of this area.

Marine Drive
A substantial residential mixed-use community stretches out along Marine Drive and the shores of Bellingham Bay. This neighborhood is characterized by diversity. Near the Bellingham city limits, there are industrial and commercial uses co-mingled with residential uses. The character becomes less industrial farther from the city. There are several long and short subdivisions in this area.

Aldrich Road/Northwest Road
This residential area is zoned URMX and is located between Northwest Avenue and Aldrich Road, just north and west of the Bellingham City limits. The area is characterized with large lots with a rural ambiance. Many of the properties in this area

are constrained with critical areas such as streams, slopes and wetlands. Lack of public sewer has constrained higher density development in this area.

Yew Street
The Yew Street area currently has low-density zoning (RR2, UR3 and UR4) and large tracts of undeveloped land, giving it a rural character. Isolated portions of this area have steep and possibly unstable slopes. There are concentrations of housing in four subdivisions along Yew Street and two mobile home parks in the south portion of the area.

Geneva
Geneva is a mostly developed, low-density single-family residential neighborhood that is within the Lake Whatcom watershed. County and City policies addressing the water quality of Lake Whatcom discourage increased density in this area.

Commercial and Industrial Land Uses
The majority of the commercial and industrial uses in the UGA are located near the airport, near Marine Drive and adjacent to the city limits in the Bakerview/Hannegan Road area and along Guide Meridian Road. There are also several businesses along Mount Baker Highway.

The Marine Drive area immediately west of the Bellingham city limits has a variety of light and heavy industrial uses, including the Tilbury Cement Company and the Oeser wood treatment plant. East Bakerview and Hannegan Roads have a concentration of light industry as well. The Bellingham International Airport has a variety of industrial uses surrounding it.

Public and Quasi Public Land
Public and quasi-public land uses include schools, government offices, churches, and public recreation such as a golf driving range. The Port of Bellingham owns over 962 acres of airport and related property. The State of Washington owns 160 acres between Curtis Road and the airport, 153 acres near the intersection of Smith Road and Mission Road, 75 acres near Mount Baker Highway and the city limits, and a recreational access site on Toad Lake. Whatcom County ownership includes Little Squalicum Beach Park, and the Nooksack River delta, and a mental health facility on Mount Baker Highway. The City of Bellingham owns several parcels used for water, utilities and drainage structures.

4.2.1.1.3. Urban Fringe Subarea Land Use
This section looks at existing land uses and development patterns on lands in the Urban Fringe Subarea outside of the Bellingham UGA.

The Urban Fringe Subarea is a transition area where urban land uses meet rural, agricultural, and forestry uses. Situated between the urban land uses of the city of Bellingham and the rural Nooksack Valley, the Subarea's land uses have characteristics

of both areas. Agricultural, residential, and commercial land together account for the majority of the Urban Fringe Subarea.

Land Use/Zoning Designations
There are presently nine zoning classifications that designate the types of land uses allowed within the subarea outside of the Bellingham UGA:

Table 4.2.1.1.3: Zoning Categories and Acreage in the Whatcom County Urban Fringe Subarea outside the City of Bellingham and UGA.

Land Use/Zoning Designation	Number of Parcels	Number of Vacant Parcels	Total Acres
Agriculture	82	26	1485
R10A/Rural	58	27	655
R5A/Rural	1,807	315	10,711
R2A/Rural	133	35	402
RR1/Rural	452	101	675
RR2/Rural	485	214	329
NC	11	1	12
GC	6	0	19
ROS	8	0	25
Total acres	3,042	718	14,313

Historically, the land use patterns in the Urban Fringe Subarea arose in response to opportunities and constraints presented by the natural features of the land and economic opportunities along transportation corridors and shorelines. Since the 1970's, land use in the Subarea has been controlled by the Whatcom County Comprehensive Plan and zoning regulations.

Residential Uses
Residential uses are prevalent in the Urban Fringe Subarea, with most housing located near the Bellingham City limits and Bellingham Bay. Housing is also concentrated along main transportation corridors such as Guide Meridian, Northwest Avenue and Kelly Road. This is especially true in the north part of the subarea, where most homes are single-family dwellings built close to the road, predominantly on five acre and larger parcels, leaving large vacant tracts behind them. Though housing is distributed throughout the subarea, there are several distinct neighborhoods within the Urban Fringe outside of the UGA:

Toad Lake
Several subdivisions have been platted around Toad Lake, near the eastern edge of the subarea. Subdivisions wrap around the entire lake, and cover parts of the surrounding hills. Though platted in the late 1950s and early 1960s, many lots are still vacant.

Steep slopes and soils constraints for septic systems are partly responsible for the lack of development.

Marietta/ Country Lane
Marietta is a small neighborhood located along Marine Drive, just east of the Nooksack River and is fully within the 100-year floodplain. The neighborhood consists mostly of single-family residences. The Country Lane and western end of Marine Drive adjacent to Marietta is developed as a suburban density residential area with density of one to two housing units per acre. These development patterns predate the Growth Management Act.

Commercial and Industrial Uses
Clusters of small businesses are located along Guide Meridian and Mt. Baker Highway, and there are a few home occupations in the rural portions of the subarea.

Agricultural Uses
Agricultural uses are primarily in two areas: 1) the western part of the subarea in and near the Nooksack River floodplain (zoned Agriculture) and 2) east of Guide Meridian and north of Bakerview Road and Mount Baker Highway. Agricultural land uses often face conflicts in areas that are rapidly urbanizing. Although there are 1,485 acres of land within the Urban Fringe Subarea zoned Agriculture, there are approximately 3,792 acres of land designated as agriculture current use taxation. Urban residential communities and agricultural uses do not always mix well. Agriculture typically produces noise, odors smoke and dust, often in the early morning and into the late evening. These activities are often the source of nuisance complaints by non-farming neighbors. In addition, the encroachment of urban growth can raise the value of agricultural land, making it difficult for farmers to economically stay in business. While these problems are faced in other parts of the county, they are most intense along the interface between agricultural lands and developing urban growth areas.

Current Use Taxation Parcels
To preserve agricultural, forestry, and open space land, Washington State law permits qualifying parcels to be taxed on the basis of their current use value rather than the usual assessment practice of using highest and best use market value. Current use tax deferments can provide considerable property tax savings for the landowner, thereby fostering the continuation of the use. Although the current use tax programs are intended to promote long-term commitment to the current use and there is a liability for back taxes plus interest when withdrawn from this status, often, economic conditions in terms of higher property values for development outweigh these liabilities. Thus, current use taxation frequently is used as a holding pattern until it becomes economical to withdraw from the program and develop the property. There are five current use tax programs established by RCW 84.34 and RCW 84.33.

- Open Space Open space
- Open Space Timber
- Open Space Agriculture

- Farm and Agriculture
- Designated and Classified Forest Land

Approximately 24% of the Subarea is in some sort of current use taxation. There are 11 acres in open space-open space, 427 acres in open space-timber, 3,792 acres in open space-agriculture, and 646 acres in designated forest. Open space provides important visual relief from the built environment, and is an important factor in preserving the county's quality of life. The Growth Management Act mandates preserving open space and Current Use Taxation programs help the County meet those requirements.

4.2.1.2. Population

The Washington State Growth Management Act requires cities and counties to adopt comprehensive plans and set urban growth area boundaries to accommodate the projected population. Countywide population growth projections must be within the range provided by the State Office of Financial Management (OFM). Growth forecasts help communities to plan for land use, transportation, environmental protection, neighborhood character, school capacity, parks and open space, police, fire and emergency services and affordable housing to meet the needs of the projected population.

4.2.1.2.1. Whatcom County Population Forecast, 2002 - 2022

The State Office of Financial Management (OFM) provides counties with population growth forecasts to be used for planning under the GMA. Historically, OFM has under estimated growth in some counties, including Whatcom County. The OFM forecast for Whatcom County projects a growth of between 33,000 and 109,000 additional residents over the next 20 years. OFM only provides growth forecasts for counties, not for individual cities or UGAs.

To obtain more detailed projections tailored to local circumstances, the Cities, County and Port of Bellingham contracted with ECONorthwest to generate 5,10,15 and 20-year population, employment and housing growth forecasts. The *Whatcom County Population and Economic Forecasts* (hereafter referred to as the "ECONorthwest Study") was completed in May 2002. ECONorthwest provided low, baseline, and high growth estimates for the County and each Urban Growth Area. The Countywide forecasts are summarized in the following table:

Table 4.2.1.2.1.A: Whatcom County Population Growth Forecast 2022

	2002[1]	2007	2012	2017	2022	Total Growth	Percent Increase
Low Forecast	173,471	182,901	194,248	204,916	215,850	42,379	24.4%
Baseline Forecast	173,471	187,980	202,848	217,574	231,928	58,457	33.7%
High Forecast	173,471	195,931	217,426	238,636	261,084	87,613	50.5%

Sources: ECONorthwest Study, 2002
Notes: 1) The ECONorthwest's baseline 2002 population estimate for Whatcom County was used as the starting point for these forecasts.
2) OFM provides population low, mid and high growth estimates for counties. OFM's 2022 projections for Whatcom County range from 205,991(low) to 236,837 (mid) to 281,122 (high).

Greater Bellingham Area Population Forecast, 2002 - 2022
The ECONorthwest study includes growth forecasts for each city and UGA and the unincorporated areas of the County. Table 4.2.1.2.1.B. contains ECONorthwest's low, mid and high-growth scenarios for Bellingham and the associated UGA (hereafter referred to as the "Greater Bellingham Area").

Table 4.2.1.2.1.B: Greater Bellingham Area Population Growth Forecast 2022

	2002	2007	2012	2017	2022	Total Growth	Percent Increase
Low Forecast	81,454	86,612	92,647	98,403	104,228	22,774	30%
Baseline Forecast	81,454	88,565	95,756	102,866	109,818	28,364	35%
High Forecast	81,454	90,700	99,629	108,439	117,472	36,018	44%

Source: ECONorthwest study, 2002
Notes: 1) Bellingham + UGA 2000 population was estimated by Econorthwest to be 78,040.
2) ECONorthwest's baseline forecast (81,454) for the 2002 population was used to calculate total growth.
3) By way of comparison, projections done by the City and County in the early 1990s estimated that the City and UGA population would be 95,640 by 2015. Using ECONorthwest's mid forecast, the 2015 population would be about 99,300 and 104,000 in the high scenario.

The Whatcom County Growth Management Oversight Committee (GMOC) consisting of planning staff from Bellingham, Blaine, Everson, Ferndale, Lynden, Nooksack, Sumas and Whatcom County was formed in 1990 to coordinate growth management planning within Whatcom County. The GMOC evaluated the various population growth forecasts

provided by the State Office of Financial Management (OFM) and by ECONorthwest. The consensus of the GMOC was that ECONorthwest's city and countywide "high scenario" forecasts were the best to collectively use in updating comprehensive plans. This forecast is between the mid and high range forecasts provided by the State OFM.

The ECONorthwest forecasts and the recommendations of the GMOC were then reviewed by the individual jurisdictions. The Bellingham Planning Commission and City Council held public hearings to review the forecasts. Each city then recommended a preferred forecast to the Whatcom County Council. The County Council then held hearings and eventually adopted a set of forecasts based on citizen testimony and the recommendations of the cities.

The cities and the county eventually agreed to use a 20-year growth forecast that was slightly higher than the baseline estimate recommended in the ECONorthwest study. The adopted forecast increases the projected growth for the cities and reduces the forecast for the unincorporated areas. The adopted forecast is well within the range provided by the State OFM and therefore complies with the requirement of the GMA.

For the Bellingham area, the adopted forecast is slightly less than ECONorthwest's high scenario estimate. The adopted forecasts are summarized in Table 4.2.1.2.1.

Table 4.2.1.2.1.C: Adopted 20-Year Population Growth Forecasts

	2002 Population Estimate[1]	Adopted 20-Year Population Growth Forecast[2]	Total Forecasted Growth, 2002-2022	Percent of 20-Year County *Growth*
Bellingham	81,454	113,055[3]	31,601	51.4%
Blaine[4]	4,959	7,942	2,983	4.9%
Everson	2,321	3,912	1,591	2.6%
Ferndale	10,396	17,322	6,926	11.3%
Lynden	10,186	16,900	6,714	10.9%
Nooksack	997	1,881	884	1.4%
Sumas	1,032	1,669	637	1.0%
SUBTOTAL	**111,346**	**162,681**	**51,335**	**83.5%**
Unincorp. County Areas[5]	62,125	72,236	10,111	16.5%
Totals	**173,471**	**234,917[6]**	**61,447**	**100%**

Notes:
1. 2002 population estimates are from ECONorthwest Study.
2. The forecasts for cities include their UGAs.
3. Bellingham's 2022 growth estimate is a 3,237 increase to ECONorthwest's baseline scenario forecast of 109,818. The result is a corresponding reduction in the growth forecast for the unincorporated areas of the county.
4. Growth forecasts for Blaine, Everson, Ferndale and Lynden are based on ECONorthwest's high scenario estimates.
5. Unincorporated county category includes areas not part of a city or city UGA.
6. The adopted Countywide growth forecast of 234,917 is between the baseline and high growth scenarios provided by ECONorthwest. It is also within the range provided by the State Office of Financial Management (205,991- 281,122) and therefore is consistent with the requirements of the GMA.

As shown in Table 4.2.1.2.1.C., the adopted 2022 population growth forecast for the Greater Bellingham Area (city + UGA) is 113,055. This forecast equates to a total 20-year growth of 31,600, or 1,580 people/year. It should be noted that historic growth in the Bellingham urban area over the past 12 years was 22,320 (1,860 people/year). The actual population growth will be monitored by the city and adjustments will be made to the forecast as conditions warrant.

4.2.1.3. Employment Projections 2002 – 2022

The ECONorthwest study includes low, baseline and high range 20-year employment growth projections for Whatcom County and the Greater Bellingham Area. In general, the forecasts show employment growing steadily as the population increases. The current largest sectors in the Whatcom County economy, the service and retail sectors, are expected to generate the majority of the new jobs. The study allocates employment growth mostly to areas where these activities take place now. For example, the Greater Bellingham Area now has approximately 62% of the total jobs in the county. The city's share of total jobs is expected to grow to 68% by 2022, for many of the same reasons over half the countywide population growth is projected for Bellingham.

More specifically, the ECONorthwest study forecasts approximately 6,500 new retail jobs, 15,700 new commercial jobs and 4,900 new industrial jobs in the Greater Bellingham Area by 2022. This is an increase of 27,000 new jobs, a 44% increase in total employment during the planning period.

4.2.1.4. Greater Bellingham Area Commercial/Industrial Land Demand

The ECONorthwest study estimates that approximately 600 acres of developable retail/commercial land and 260 acres of developable industrial land are needed to accommodate the 20-year job growth in the retail, commercial and industrial sectors of the Bellingham economy.

Many commercial and industrial zoning classifications in the Greater Bellingham Area allow a mix of commercial and industrial uses. Therefore for purposes of evaluating land supply, it is necessary to combine the demand forecasts for retail, commercial and industrial lands as shown in Table 4.2.1.4.

Table 4.2.1.4: Greater Bellingham Area
20-Year Commercial and Industrial Land Requirements

	Retail Land Required (Acres)	Commercial Land Required (Acres)	Retail and Commercial Combined	Industrial Land Required (Acres)	Total Land Required (Acres)
Bellingham	306	303	609	263	872

Source: ECONorthwest Study
Notes: 1. Land area refers to net land area—net of undevelopable land, etc. 2. The ECONorthwest baseline commercial and industrial land demand forecasts were modified by staff to reflect the adopted population growth forecast (113,055) that is between ECONorthwest's baseline and high growth scenarios.

4.2.1.5. Greater Bellingham Area Commercial and Industrial Land Supply

The Bellingham Planning Department conducted an extensive survey of the commercial and industrial zoned lands in the city and UGA in 2002 and 2003. Vacant and underutilized lands (land that has the potential to add more development under current rules) were identified. The result is an estimate of the total land potentially available for commercial and industrial development (or total supply). The total land supply was then reduced by 76% to eliminate public and quasi-public lands, critical areas, land needed

for infrastructure, and to allow for market-factors. The results of the land supply analysis are shown in Table 4.2.1.5.

Table 4.2.1.5: Greater Bellingham Area Commercial and Industrial Land Supply

Commercial & Industrial Land Supply	Bellingham	Urban Growth Areas	Total City + UGA
Gross Developable Acres	1,644	1,247	2,889
Critical Areas Reduction	535	458	993
Infrastructure Reduction	353	331	684
Market Factor Reduction	311	212	523
Net Developable Acres	**444**	**243**	**687**

Source: City of Bellingham Planning Department Land Supply Analysis, July 2003.

The net buildable commercial and industrial land supply within the City of Bellingham is 443 acres, and the net buildable supply in the UGA is 243 acres. The combined net buildable commercial and industrial land within the City and UGA is 687 acres. The supply appears to be about 200 acres short of meeting the projected demand over the next 20 years.

4.2.1.6. Residential Land Requirements 2002 - 2022

One of the key requirements of the GMA is that cities and urban growth areas must show that they have enough properly zoned, developable land area to accommodate the projected growth for a 20-year planning period. The following assumptions and trends were considered when forecasting the demand for housing in the Greater Bellingham Area:

- The population in the City of Bellingham and UGA is expected to increase by 31,600 people in the 20-year period between 2002 and 2022.

- The average household size is currently 2.24 persons per household and may continue to decline due to increasing numbers of childless couples, single-parent families, and college students. About 70% of the 12,000 students enrolled at WWU live off campus. (For planning purposes, 2.24 persons per household is assumed.)

- 50% of the housing stock in Bellingham is currently multi-family or mobile home, and the percentage of multi-family units is likely to continue to increase.

- The Greater Bellingham Area will need approximately 14,100 additional dwelling units over the next 20 years to accommodate the projected population growth of 31,600.

Table 4.2.1.6.A. Forecasted Residential Housing Unit Demand 2002 - 2022

	Existing Housing Units 2002	Forecasted 20-year Population Growth	Household Size	Forecasted Housing Unit Demand – 2022	Average Yearly Housing Unit Demand
Adopted growth forecast	35,611	31,600	2.24	14,100	705

Source: City of Bellingham, 2000 Census, ECONorthwest Study, 2002

Housing type and density have broad implications when planning for future residential land supply. Table 4.2.1.6.B. illustrates that the amount of land needed to accommodate the projected 20-year population growth varies widely depending on the number of housing units per acre. For example, at a density of 2 units per acre over 7,000 additional acres would need to be developed with houses to accommodate the forecasted growth. Only about 1/3 of that land area would be needed if areas can be developed at 6 units per acre.

Table 4.2.1.6.B: 2022 Residential Land Requirements
(For Different Average Densities)

		Acres of Developable Residential Land Required in Greater Bellingham Area 2022					
	Forecasted 20-year Housing Unit Demand	2 units per acre	3 units per acre	4 units per acre	6 units per acre	8 units per acre	10 units per acre
New Dwelling Units	14,100	7,054	4,703	3,527	2,351	1,764	1,410

Source: ECONorthwest Study 2002, Bellingham Planning Department

4.2.1.7. Residential Land Supply

The GMA requires that each jurisdiction have enough developable land to accommodate the 20-year projected population growth. The previous section established that, based on population growth projections, the projected 20-year demand for new dwelling units in the Greater Bellingham Area is 14,100. Depending on average residential density, this housing demand could require 1,400 to over 7,000 acres of developable residential land.

The City of Bellingham Planning Department staff conducted an extensive survey of the residentially zoned parts of the Greater Bellingham Area in 2002 and 2003. Vacant and underutilized lands (land that has the potential to add more housing under current rules) were identified. The total potential supply was then reduced by a number of factors to come up with a more realistic estimate of the land area that will be available for housing

(or net supply). See Table 4.2.1.7.A. for a summary of the results of the residential land supply analysis.

The process of identifying net buildable land is summarized in the following steps:

Begin by documenting all lands in the city and UGA. From this gross acreage:

- Remove all public land. (Public land includes land owned by federal, state or local governments, port district, school district, fire district etc.).
- Remove all quasi-public land. (Quasi-public land is land owned by religious organizations, private utilities, private schools, private open space, etc.)
- Classify the remaining land as fully developed, partially developed, vacant, or redevelopable. Remove the fully developed land.

From the total land area that is partially developed, vacant and redevelopable:

- Subtract 31.7% (30% city, 31% UGA) to account for critical areas such as wetlands + 50' buffer, streams + 50' buffer (city) or 100' buffer (UGA), steep slopes and floodplains (CAO acres). Note that critical areas reductions vary parcel-by-parcel. Some properties have no reduction and others are 100% impacted by wetlands/buffers. The figures shown are averages.

- Subtract 16.5% for land needed for future roads, utilities, stormwater treatment facilities and public/quasi public uses (Infrastructure acres).
  City - Overall reduction = 14%. 18.5% in single-family areas, 8.5% in multi-family areas.
  UGA - Overall reduction = 21%. 26.5% in single-family areas, 16.6% in multi-family areas.
  (It should be noted that the stormwater reduction shares some overlap with the critical areas reduction. The land supply study of existing plats found an overlap between designated critical areas, open space, and stormwater facilities that when added to the 10% stormwater reduction brings the total stormwater area to 16% to 18%.

- Subtract 14.2% of the land to account for market factors such as:
  1. Land kept off the market due to owner preference.
  2. Land not developing due to high development costs.
  3. Land developing below maximum density due to developer or market preferences, political considerations, etc. City overall reduction = 14%.
     UGA overall reduction = 15%. Reductions broken down as follows:

Partially developed land -	25%
Vacant land -	15%
Redevelopable land -	25% to 50%

     The lower percentage is used where redevelopable land has improvement to total value ratio is less than .25. A higher percentage was applied to land where the improvement to total value ratio was greater than .25.

The land supply study indicates that there is a gross supply of about 4,000 acres of residential zoned land in the Greater Bellingham Area. Reductions for the above factors decreased the available land supply by 62.4%, resulting in a net supply of 1,520 acres of land actually available for housing (990 city and 530 UGA). The current zoning density was applied to the net land supply, resulting in an estimated base capacity of about 7,275 additional dwelling units in the city and 1,800 units in the UGA.

Recent Changes in the Residential Land Supply
The following recent events suggest revisions to the base dwelling unit capacity are necessary to gain a more accurate estimate of the current dwelling unit supply:

1. The commercial areas in downtown Bellingham and Fairhaven have seen significant new residential development for the first time in a number of years. In downtown for example, 140 units have been built in the last 4 years and additional projects with about 400 units are in the planning or permit review stage. In Fairhaven, 36 units have been constructed and over 100 more are in the planning stage. Supportive comprehensive plan goals and policies, lower impact fees, and programs such as the Multi-family Tax Exemption Program make it reasonable to assume that some housing construction will continue in these areas. For long range planning purposes, it is reasonable to assume that an average of 50 units per year could be built. Thus capacity for an additional 1,000 dwelling units were added to the city's land supply, bringing the total existing capacity to 8,275 units.

2. Whatcom County very recently approved changes to the URMX zoned areas of the Bellingham UGA that increase the minimum density requirement from 4 to 6 units per acre. This increases the base capacity of these areas by about 400 units. As a result, the total UGA dwelling unit capacity increases from 1,810 to 2,210 units.

With these additions, the capacity of the existing land base grows to approximately 10,485 dwelling units. The residential land supply study is summarized in the following Table 4.2.1.7.A. For additional information, see *Land Supply Study Methodology and Summary Tables*, City of Bellingham Planning, July 2003.

Table 4.2.1.7.A: Greater Bellingham Area 2002 Residential Land Supply

	Gross Developable Acres	Less CAO Acres[1]	Less Infrastructure Acres[2]	Less Market Factor Acres[3]	Net Developable Acres	Potential Dwelling Units
City	2,387	746	326	324	991	8,275
UGA	1,660	536	340	252	531	2,210
TOTALS	4,047	1,282	666	576	1,522	10,485

Source: Land Supply Study, Bellingham Planning Department, July 2003, updated Feb. 2004.

Notes 1. CAO acres - 31.7% overall reduction for unbuildable environmentally sensitive areas.

2. Infrastructure acres - 16.5% overall reduction for roads, stormwater facilities, etc.

3. Market factor acres – 14.2% overall reduction for land held off the market and land developed at less than maximum density due to market preference.

The remaining capacity/potential dwelling unit supply in the City neighborhoods is shown in Table 4.2.1.7.B. The potential new unit count uses existing zoning and development regulations. The figures are net total buildout after reductions from the supply of land for critical areas, infrastructure requirements, and market factors.

Table 4.2.1.7.B: 2003 Residential Capacity in Existing Bellingham Neighborhoods

Neighborhood	Existing Dwelling Units	Net Potential New Units	Percent of City New Unit Capacity[1]	Total Potential Buildout
Alabama Hill	1,173	66	0.8%	1,239
Birchwood	2,290	309	3.7%	2,599
CBD[2]	506	666	8.0%	1,172
Columbia	1,672	50	0.6%	1,722
Cornwall Park	838	59	0.7%	897
Edgemoor	817	113	1.4%	930
Fairhaven[2]	322	367	4.4%	689
Guide Meridian	1,519	1,894	22.9%	3,413
Happy Valley	3,110	271	3.3%	3,381
Lettered Streets	1,218	88	1.1%	1,306
Meridian	558	364	4.4%	922
Mt. Baker	1,978	1,398	16.9%	3,376
Puget	2,222	117	1.4%	2,339
Roosevelt	2,655	243	2.9%	2,898
Samish	1,262	581	7.0%	1,843
Sehome	1,449	75	.9%	1,524
Silver Beach	1,470	160	1.9%	1,630
South	799	802	9.8%	1,601
South Hill	1,468	109	1.3%	1,577
Sunnyland	942	64	.8%	1,006
WWU	1,204	0[3]	0%	1,204
Whatcom Falls	779	446	5.4%	1,225
York	1,087	33	.4%	1,120
TOTALS	**31,338**	**8,275**	**100%**	**39,613**

Source: City of Bellingham Planning Department Residential Land Supply Study, July 2003.

Notes: 1. Calculation represents the percent of total city dwelling unit capacity in each neighborhood.
2. The commercially zoned parts of the CBD and Fairhaven neighborhoods are forecasted to receive a total of 1,000 additional dwelling units during the planning period. The split was 2/3 CBD, 1/3 Fairhaven.

The projected 20-year demand for housing is 14,100 new housing units within the City and UGA. This equates to a demand for approximately 705 new units per year. Under the current zoning, the developable land in the City of Bellingham and UGA contains capacity for about 10,485 housing units, which is about a 14 year supply if the population growth forecast holds true.

To accommodate the forecasted population growth over the next 20 years, residential capacity within the City and UGA would need to be increased by about 3,600 housing units. Options to increase residential land capacity include:

- revising zoning and development regulations in appropriate areas of the City to allow higher density residential development (Alternative 2);
- revising zoning and development regulations in appropriate areas of the existing UGA to allow higher density development (also Alternative 2);
- expanding the boundaries of the UGA to make more land available for residential development (Alternative 3);
- Any combination of the above (Alternative 4).

4.2.2. Population Growth and Land Demand – Impacts of the Alternatives

All of the alternatives studied in this EIS assume that population in the Greater Bellingham Area (city + UGA) will increase by about 31,600 over the next 20 years.

All of the alternatives studied in this EIS assume that total employment in the Greater Bellingham Area will increase by 44% over the next 20 years as forecasted by ECONorthwest in 2002.

Each of the alternatives studied in this document implies a different distribution pattern of development for the forecasted population, housing and employment growth as discussed below.

4.2.2.1. Alternative 1 – No Action

Under this no change alternative, the forecasted 20-year population and employment growth would be accommodated on vacant and underused lands within existing city and UGA boundaries. **No changes to current zoning, environmental and other development regulations would occur under this alternative.**

Residential Development - New residential development would occur where vacant land is currently available. Development patterns in the city and UGA would likely reflect existing zoning and development regulations in place for the last 25 years (Bellingham is 11th in the state in total population and 54th in overall density). The resulting development would likely be suburban style low density, (the average developed density in city single-family areas is 3.8 dwelling units/acre) with detached single-family homes on non-connected streets. New multi-family development would be more attractive and function better than in the past, due to the adoption of multifamily design guidelines in 2002.

New residential development would be concentrated in <u>a few</u> neighborhoods listed below that have the majority of the vacant single and multi-family zoned land supply (see Figure 1.8.1.4. for a map of the areas and Table 4.2.1.7.B. for a list of the remaining development capacity in all the neighborhoods).

- R1: Guide Meridian (Cordata);
- R2: Mount Baker (Barkley UDC);
- R3: Downtown (MF Exemption District) and Fairhaven
- R4: Whatcom Falls;
- R5: Samish; and
- R6: South.

In the Bellingham UGA, use of existing zoning and development regulations would likely produce low-density residential development (current average developed density is 2.3 units/acre) in the following areas of the existing UGA. See Figure 1.X for a map of these areas:

- R7: Yew Street;
- R8: Dewey Valley;
- R9: James St/Bakerview; and
- R10: Northwest/Aldrich.

Some of these areas may contain infrastructure needs or environmental limitations that may delay development or add significantly to the cost of housing.

The forecasted population increase of 31,600 people will require about 14,100 additional dwelling units over the 20-year planning period. Staff conducted a thorough land supply analysis in 2002/2003. The results of this analysis estimate that the current capacity of vacant lands in Bellingham and the UGA is approximately 10,485 dwellings (8,275 city and 2,200 in the UGA) as shown in Table 4.2.2.1.

Table: 4.2.2.1: Alternative 1 – Existing Residential Dwelling Unit Capacity

AREA	DWELLING UNITS
City	7,275
Downtown & Fairhaven	1,000
UGA	2,210
Total Units	10,485
Deficit	- 3,615

Source: City of Bellingham Planning Department, 2003 Land Supply Analysis

Under Alternative 1 then, the city and UGA do not have sufficient land area and dwelling unit capacity to accommodate the expected 20-year population growth. If the forecasted growth does occur, over 3,600 dwelling units (14,100 minus 10,485) that could not be located in the Bellingham area would likely go to the UGAs of other cities and the rural areas of the County.

Commercial and Industrial Development - In the City and UGA, the No Change Alternative would be expected to result in new commercial and industrial development that is predominately land intensive one-story buildings with large, sparsely landscaped parking lots. Commercial development would continue in areas of the city with existing developable land such as: the Guide Meridian/Cordata area; Sunset/Barkley area; Downtown Bellingham; in Fairhaven; and along the Lincoln Street corridor between

Lakeway Center and Sehome Village. New industrial development would continue to occur in areas currently zoned industrial: the Rimland Pacific Business Park in the Woburn/Barkley area; the Hannegan/Bakerview industrial area; the Orchard Street/Squalicum Creek area in the Mount Baker and Cornwall Park neighborhoods; in the Whatcom Creek/Iowa Street corridor; and the port areas of downtown and Fairhaven.

The anticipated 20-year employment growth is expected to result in a demand for up to 872 acres of developable commercial and industrial zoned land in the city and UGA. The City's 2003 land supply analysis indicates that there are currently about 687 acres of developable commercial and industrial zoned land in the city and UGA. The analysis shows that there will be a need for about 200 additional developable acres over the 20-year planning period that would not be addressed under this alternative.

Generally then, future development under existing zoning and development regulations as in Alternative 1 would be expected to have the following impacts:

- Continued land intensive low-density (2, 3 and 4 units/acre) single family style development similar to what has occurred in many of the more recently developed parts of the City and UGA.
- Further increases in the cost of housing as the urban area land supply gets tighter due to existing zoning and development regulations that encourage, or in some areas require, low density development.
- Increased traffic congestion in areas east of I-5 where suburban development patterns in the city and county funnel all traffic to a few major collector streets such as Sunset Drive, Bakerview Road, Hannegan Road, Lakeway Drive and Meridian Street.
- As the urban area land supply is depleted, very low-density single-family development (one dwelling unit per one, two, five and 10-acre parcels) will occur in rural areas of the County. This could place additional development pressure on agricultural and forestry land, and on land in the Lake Whatcom and Lake Samish watersheds. Longer commute times is also a likely outcome of this alternative as over 65% of the total countywide employment and many of the services are in the Greater Bellingham Area.
- Additional development pressures will be placed on the smaller cities, whether or not they have the capacity to provide services.
- Encourage future "leap frog" expansion of Bellingham's UGA into the rural areas north and east of the current urban area after all available land in the City and UGA is developed under existing low density zoning. Again, this would place pressure on important agricultural and forestry lands to convert to residential use.
- Assure that the current transfer of development rights (TDR) program will fail to get significant density out of the Lake Whatcom Watershed due to a lack of receiving areas within the City and UGA.

Mitigating Measures

- Reduce the population forecast for the Bellingham area. This could potentially reduce the demand for land area for new housing and employment. Because the expected countywide growth will occur, other areas of the county would be required to make up the difference.

- Make better use of the remaining land supply by:

    1. Promoting the use of cluster subdivision provisions, planned unit development rules, or other innovative and flexible development techniques designed to achieve minimum or target densities, especially on parcels with environmental constraints such as wetlands or steep slopes.

    2. Reducing the number of dwelling units "lost" due to land set aside for roads and other utilities in new developments. This could be accomplished by revising development standards to allow flexible road standards and/or by calculating allowed density based on the gross square footage of a site.

    3. Adopting minimum density requirements in targeted areas appropriate for growth.

4.2.2.2. Alternative 2 – Infill

"Infill" as it is commonly used in land use planning, is the process of developing vacant or under-used land within existing urban areas that are already largely developed. Under this alternative, the expected land demand for housing and employment over the next 20-years would be accommodated within the existing city UGA boundaries. All neighborhoods in the Greater Bellingham Area would be expected to accommodate some additional housing under this alternative.

As has been established, the forecasted 20-year demand for new dwelling units (14,100 dus) exceeds the estimated existing supply (10,485 dus) by 3,600 units. Therefore, additional capacity will be needed during the planning period. This could be accomplished by:

- Encouraging more efficient use of public infrastructure (roads, schools, parks, etc.) where additional capacity already exists or can be added.
- Promoting the use of cluster subdivision provisions, planned unit development rules, or other innovative and flexible development techniques designed to achieve minimum or target densities, especially on parcels with environmental constraints such as wetlands or steep slopes.
- Reducing the number of dwelling units "lost" due to land set aside for roads and other utilities in new developments. This could be accomplished by revising development standards to allow flexible road standards and/or by calculating allowed density based on the gross square footage of a site.
- Adopting minimum density requirements in targeted areas appropriate for growth.
- Encouraging housing to develop at densities that support transit along major transportation corridors.

- Reducing impact and other development related fees in targeted infill areas.
- Increasing impact and development fees on low-density developments in suburban and rural areas so that developers pay a higher percentage of the true costs to the community for public facilities and services needed to support the development.
- Requiring some existing neighborhoods in the city and UGA to become denser where existing infrastructure such as roads, parks, trails, and schools has capacity to support additional population growth (Alternative 2 is generally illustrated in Figure 1.8.1.2.) For example:

    1. A long-term vision for the future of Bellingham's waterfront industrial areas is currently being developed. Residential development in these areas would require zoning and development regulation changes but could add significant housing to the existing supply. The exact amount of potential new housing has not yet been determined. The future buildout capacity depends on the scope of the area found suitable for housing. For future planning purposes, a target range of 500 to 2,000 new dwelling units could be added to the base 20-year capacity. If significant acreage is converted to residential use, additional commercial/industrial land would be needed in another area of the City or UGA.

    2. Zoning changes are being considered for a 23-acre underdeveloped part of the Old Town area of Bellingham. These changes, if approved, could potentially add capacity in the range of 500 to 1,500 dwelling units.

    3. A process is underway to update the subarea plan for Bellingham's existing UGA. In this process, the existing low-density suburban zoning is being reviewed. Areas that may be appropriate for increased capacity based on land characteristics, infrastructure requirements, existing development patterns are being identified. Zoning changes, minimum density requirements and other changes to development regulations could potentially add capacity for 1,300 to 3,100 new dwelling units.

Future growth under Alternative 2 would primarily be encouraged in or near "urban development centers" and "town centers" identified in the 1995 Bellingham Comprehensive Plan. The centers include areas where public infrastructure (roads, water, sewer, schools, parks, police and fire protection) are already in place, and where a range of employment and service opportunities are available. The designated urban development centers would be expected to receive much of the higher density development:

- Downtown Bellingham, especially the multifamily tax exemption district;
- The Bellingham Central Waterfront, including Old Town, Port, Georgia-Pacific properties;
- Bellis Fair/Cordata, including West Bakerview area; and
- The Barkley Village /Sunset Mall area.

Town center areas identified in the 1995 comprehensive plan are defined by the presence of adequate public infrastructure, but a narrower range of employment and service opportunities. They include:

- WWU/Sehome Village area;
- Lakeway Center area;
- Northwest/Birchwood commercial area; and
- Fairhaven commercial area.

Residential densities in and around the urban development centers and town center can be expected to increase as various regulatory mechanisms such as accessory unit housing, small lot development, zero lot line, townhouse, cottage housing, and mixed use development are enacted to encourage infill. Each urban development center or town center will be evaluated for the potential to accommodate additional concentrations of mixed residential in conjunction with industrial and commercial uses. Density within these areas would be higher than in the surrounding areas and higher than under the other three alternatives.

City commercial and light industrial development would also occur in existing urban development centers and town centers under this alternative. In addition, approximately 200 additional acres of developable commercial and industrial zoned land is needed to accommodate the forecasted 20-year employment growth. If existing commercial/industrial land is converted to residential use, it may need to be replaced in other portions of the City and UGA.

In the Bellingham UGA, higher residential densities would be encouraged around potential neighborhood centers, These small (2 to 5 acre) centers could provide convenience shopping opportunities and other services within walking and biking distance (1/4 to 1/2 mile) of a surrounding residential population. Examples of potential sites for locating neighborhood centers in the UGA includes:

- NC 1:The south and west sides of the Bennett/Marine Drive intersection;
- NC 2: An area just south of the Bennett/Cottonwood intersection;
- NC 3: The northeast corner of the James Street/Telegraph intersection;
- NC 4: The northwest corner of the Britton/East McLeod intersection;
- NC 5: The west side of the East McLeod/Sunset Drive intersection;
- NC 6: The east side of the Yew Street/San Juan Boulevard intersection;

In 2003, City and County planning staff evaluated the land base of the existing Bellingham UGA to identify environmental constraints, proximity to transportation corridors, and appropriate locations for neighborhood centers. Based on this effort, the following UGA areas may be able to support residential density increases when the full range of urban services becomes available:

- UGA 1: Alderwood;

- UGA 2: Northwest/Aldrich;
- UGA 3: James St/Bakerview
- UGA 4: Dewey Valley; and
- UGA 5: Yew Street.

The Urban Fringe Plan update process will include further discussions regarding UGA growth and development issues, including:

1. appropriate densities
2. potential neighborhood center locations
3. potential new commercial and industrial areas
4. other zoning and development regulation issues
5. potential changes to the city/county interlocal agreement governing annexation and other planning issues

In January 2004, the Whatcom County Council approved zoning text amendments for portions of the Bellingham UGA that are zoned Urban Residential Mixed (URMX) that increased the minimum density from 4 to 6 units per acre if public sewer and water can be obtained from the City of Bellingham.

The infill growth scenario contained in Alternative 2 is consistent with the State Growth Management Act, the city and county comprehensive plans, the County-wide Planning Policies and Visions for Bellingham. The infill scenario encourages compact growth in mixed use areas that can be more efficiently and affordably served by public facilities and all modes of transportation including pedestrian, bicycle, and transit. Adoption of an infill strategy could also allow UGA land to accommodate residential development while preserving valuable environmental features.

The Infill Alternative would generally require zoning changes to be made, allowing higher density development, in the City, the UGA, or both. Changes to zoning and density provisions would require a public review process and review by the city and county (for areas in the UGA) Planning Commissions and Councils.

Staff chose to make some assumptions about future zoning and potential 20-year buildout in order to assess the impact of changes that would be needed to achieve the Infill Alternative. Those assumptions include:

1. 1,000 new dwelling units would be constructed in the commercially zoned areas of downtown Bellingham and in Fairhaven over the planning period. Recent experience shows that these areas are developing at approximately 50 to 100 units per acre. Residential use of commercially zoned land could create a demand for additional commercial land in other portions of the City or UGA.

2. Zoning changes in the Old Town and Central Waterfront areas of Bellingham would result in minimum of 500 and a maximum of 2,000 new dwelling units

built during the planning period. In each case, the resulting units per acre calculation would depend on the size of the area rezoned. Alternate commercial/industrial land may be needed in other areas of the City and UGA to replace land converted to residential use.

3. Appropriate areas of the Bellingham UGA would be rezoned to increase the allowable density. This would add the potential for between 1,200 (at a density of about 8 units per acre) and 3,000 (at a density of about 12 to 18 units/acre) new dwelling units to the existing supply.

Three different ways of applying the infill alternative are presented for comparison purposes:

Alternative 2A: No zoning changes in City or UGA
Natural Infill in Downtown MF Tax District and Fairhaven
Rezone portions of Old Town and Waterfront for higher density residential development

Alternative 2B: No zoning changes in City
Natural Infill in Downtown and Fairhaven
Rezone portions of UGA at 8 units per acre
Rezone portions of Old Town and Waterfront for higher density residential development

Alternative 2C: No zoning changes in City
Natural Infill in Downtown and Fairhaven
Rezone portions of UGA at 12-18 units per acre
Rezone portions of Old Town and Waterfront for higher density residential development

Table 4.2.2.2: Potential Residential Dwelling Unit Capacity Available Through Various Applications of Alternative 2

	Alternative 2A	Alternative 2B	Alternative 2C
City + UGA (existing densities)	7,275 + 2,210 = 9,485	9,485	9,485
Downtown/FH infill	1,000	1,000	1,000
UGA rezone	0	1,210	2,980
Old Town Rezone	500-1,500	500	500-1,500
Waterfront Rezone	500-2,000	500	500-2,000
Total Potential Units	**11,485 – 13,985**	**12,700**	**14,470 – 16,970**
Surplus or Deficit	**- 2,615 to –115**	**- 1400**	**+370 to +2,870**

Source: City of Bellingham Planning Department, 2003 Land Supply Analysis

As the table shows, Alternatives 2A and 2B do not increase the infill capacity enough to accommodate the forecasted 20-year dwelling unit demand of 14,100. Alternative 2C, which increases densities in appropriate areas of the UGA to 12-18 units per acre, and rezones portions of Old Town and the Bellingham Waterfront, increases the infill capacity enough to meet the forecasted 20-year demand.

The 1990 State Growth Management Act and the 1995 Bellingham Comprehensive Plan both contain goals and policies that require the city to plan for and manage the forecasted growth. The city comprehensive plan and the GMA recognize that the real threat to the region's environment and quality of life is not simply population growth, but the continuation of past low density development patterns that will impact rural agricultural and forestry lands.

Compact infill development usually has less impact on the environment than low-density development. Some of the advantages of infill are listed below:

- Infill development is less expensive for local government to provide public facilities and services such as sewer and water, parks, police and fire protection, roads and schools. Low-density development in outlying areas is more expensive to serve. Most jurisdictions have averaged the costs of services across all users rather than charging the full cost of serving more distant development. This has made outlying development relatively less expensive for the developer, while straining local government budgets.
- Infill development offers increased mobility for those who can't or prefer not to drive. Filling in the gaps creates higher average densities that in turn support more frequent transit service. Communities across the country have learned that

it is impossible to build their way out of traffic congestion. New or expanded roadways quickly fill up as fast as they are built as a result of longer commutes due to spread out development. People who do not have to spend all their time traveling to work, shopping, school, and services have more time for family, community affairs and recreational activities.

- Infill development helps increase the supply of housing that meets the needs and budgets of a range of homeowners. Household sizes are getting smaller. Elderly or empty nesters, small families, single parent households and single individuals make up a larger share of the housing market than ever before. However, most new houses are built for a larger traditional family. An increased supply of smaller-sized housing that might be seen in infill projects can offer more affordable housing choices.

Conversely, artificial limits on the supply of developable land can increase land costs and make housing more expensive.

- Infill development that results in investment and redevelopment in downtown and adjacent neighborhoods is critical to the health of a city. Infill brings more people to support downtown and neighborhood commercial centers. Infill through reinvestment can add value to adjacent properties and tax dollars to support public services.
- Socially, infill development provides more opportunities for people to live in distinctive neighborhoods with more chances for social interaction than is typical in low-density developments. Infill can help return jobs, purchasing power and new amenities to an existing neighborhood.
- Compact Infill development can take development pressure off of environmentally sensitive lands. However, overly restricting the supply of developable land in the Greater Bellingham Area could force more of the population growth into the rural and agricultural areas of the county.

There are a number of obstacles that must be overcome if infill development is going to be successful in Bellingham:

- Many vacant parcels in established neighborhood have site constraints that make development difficult, Lot size, shape, topography, the presence of brownfields (polluted sites) wetlands or streams can all discourage investment by restricting development potential.
- Existing Infrastructure may be inadequate or the cost to install new facilities prohibitive. Increased population in portion sof the City or UGA will create a demand for additional parks and open space in areas where land supply is limited.
- Neighborhood opposition can result in a lengthy, uncertain permitting process.
- Readily available and less expensive land on the fringe makes infill development less attractive to developers.
- The allure of rural living remains strong in this area, especially for middle and upper middle class families with children.

- Financial institutions may be reluctant to finance what are often seen as "risky" infill projects.

4.2.2.3. Alternative 3 – Expanded UGA

Under this alternative, land inside the current city and UGA boundaries would retain existing zoning and residential densities. Much of the projected population growth would be accommodated in areas that would be added to Bellingham's UGA and rezoned for urban densities and uses. Alternative 3 examines several areas outside the existing UGA boundary for potential inclusion in the UGA and rezone to urban densities.

The 1997 Urban Fringe Plan identified four priority areas to consider for inclusion in the Bellingham UGA when the need arises for more land area to accommodate the forecasted population growth. These "5 Year Review" areas are shown on Figure 1.8.1.3, and discussed in detail below.

The "Five Year Review Priority Areas"

4.2.2.3.1. Five-Year Review Area A1: "Bear Creek"

Existing Conditions

The Bear Creek area encompasses a total of 517 acres that is zoned Rural 5 Acre (R5A) between the existing UGA and Northwest Road on the west, the Slater Road right-of-way on the north, the Cordata PUD on the east, and the existing UGA on the south. The Cornwall Church of God constructed a large new church campus at the southwest corner of this area in 2000. The area is sparsely settled with existing homes primarily located along Aldrich Road.

The most prominent environmental feature is Bear Creek, which is a salmon-bearing stream that bisects the area and flows to Silver Creek, the Nooksack River, and to Bellingham Bay. The City Land Supply Analysis reveals that the 517 total acres are reduced to 341 gross acres available for development after accounting for existing development and roads. After further reductions for critical areas, infrastructure requirements, and market factors, however, there are only 66 net acres available for new development. At the current R5A zoning, this area has a development potential for 13 additional single family dwelling units. If the area was added to the UGA and zoned for urban residential development at a base of six and a maximum of ten units/acre, between 400 and 660 potential dwelling units would be added to the current supply. Allowing densities higher than 6 per acre could add more to the supply, but the area contains extensive wetland and stream corridors that could limit the development potential.

Impacts

The Bear Creek area includes approximately 203 acres of critical area features, such as streams, slopes, and wetlands. The uneven distribution of these environmental features throughout the area would make construction of public sewer, water, and transportation infrastructure challenging as well as expensive for

developers. Stream crossings and wetland buffers could create difficulties and would likely result in pockets of high-density development rather than a contiguous pattern of urban development.

If this area were to be included within the Bellingham UGA, significant transportation network improvements would be needed for efficient circulation. Northwest Road would require improvement to urban arterial standards, including bicycle lanes, curb, gutter, sidewalk, and street lighting. These improvements would probably have to be constructed with private funding, such as a Local Improvement District (LID), and transportation impact fees from new development. Horton Road would need to be extended west as an urban arterial from the Cordata PUD to Northwest Road. The Horton/Aldrich intersection would require full improvements and traffic controls. Aldrich Road would require improvements to urban standards. Slater Road would need to be extended east to Aldrich Road as an urban arterial with a possible connection to the Cordata North/Caitac 5-year Review Area.

City sewer does not currently exist beyond the city limits, but City water has been extended along Northwest Road to the new church campus at the southwest corner of the Bear Creek area. Sewer and water pipes are often placed underneath or alongside streets and would face the same environmental challenges and expense for developers.

Law Enforcement within the Bear Creek area is currently provided by the Whatcom County Sheriff's Office. Fire protection and emergency medical service is currently provided by Whatcom County Fire District #8. These agencies would continue to provide these services if this area is included within the Bellingham UGA until such time as property owners chose to annex to the City of Bellingham. Urban levels of development would require higher levels of response, and would therefore create additional expense to the Sheriff's Office and Fire District #8. Future annexation of this area to the City would require negotiation for transition of capital facilities and revenue according to the Interlocal Agreement between the City and Fire District #8.

School-age children from the Bear Creek area attend the Ferndale School District. Urban levels of development would generate additional school-age children and therefore a need for additional bus transportation, classrooms, educational facilities, and teachers. The Ferndale School District could collect school impact fees from new development, but these fees could only be used toward capital facilities, such as portable classrooms or new school buildings.

According to the 2003 City Land Supply Analysis, the Bear Creek area has 341 gross acres, but only 66 net acres of land available for development. This represents a reduction of 81% due to the presence of extensive environmental features. Development would be challenging and expensive and would likely have to occur in pockets at fairly high densities. This would be expensive and inefficient to serve with the full range of urban services.

4.2.2.3.2. Five-Year Review Area A2: "Cordata North/Caitac"

Existing Conditions

The area west of Guide Meridian has been referred to by many names over the years, including Cordata North, North Bellingham Golf Course, Caitac, and most recently Larabee Springs. For the purposes of this EIS, this area will be referred to as the Cordata North/Caitac area to reflect its proximity to the Cordata PUD and it's majority ownership. This area comprises 701 acres at the southwest corner of Guide-Meridian (SR 539) and Smith Road. The area is zoned Rural 10 Acre (R10A) and the existing development pattern includes some single family homes, home occupations, and businesses along the Guide Meridian, but the predominant land use is the North Bellingham Golf Course.

The City Land Supply Analysis reveals that the 701 total acres are reduced to 556 gross acres available for development after accounting for existing development and roads. After further reductions for critical areas, infrastructure requirements, and market factors, however, there are only 194 net acres available for new development. At the current R5A zoning, this area has a development potential for 22 additional single family dwelling units.

Impacts

Owners of the Caitac property have indicated a desire to annex to Bellingham. They have produced a preliminary development scenario that includes about 1,800 dwelling units on the site. The proposed development scenario includes a mix of single and multi-family housing. Also included are areas for retail commercial and offices (36 acres) and public uses such as a school site, parks and open space. The North Bellingham Golf Course occupies 163 acres of the property.

The area includes approximately 124 acres of critical area features, such as streams, slopes, and wetlands. The streams in this area drain to the Bear Creek/Silver Creek system. Due to the presence and impact of the golf course, however, this area may be conducive to a mix of residential densities in a fairly contiguous development pattern between the city limits and Smith Road. In addition, 520 acres of this area, including the golf course, is owned by Caitac, Inc. This is the largest single land-holding within the Urban Fringe Subarea south of Smith Road and presents a unique opportunity to design a cohesive development that includes a mix of densities, housing styles and price ranges, with neighborhood shops, a town center, schools, and local police and fire protection facilities.

If this area were to be included within the Bellingham UGA, significant transportation network improvements would be needed for efficient traffic circulation. Washington State will be widening the Guide Meridian to 4 lanes from Horton Road to Ten Mile Road in 2005-2007. Cordata Parkway would have to be extended north to Smith Road as an urban arterial, including bicycle lanes, curb, gutter, street trees, setback sidewalk, and street lighting. Internal roads would have to be constructed to urban residential standards. Smith Road would need to be improved to urban arterial

standards for the full length of property abutting Smith and the Smith/Guide Meridian intersection would need to be reconstructed with turning lanes and fully signalized. These improvements would probably have to be constructed by developers and transportation impact fees would be required.

Smith Road is an important east-west County arterial, but currently does not have a connection to Interstate 5. The State Department of Transportation is currently conducting a study to determine the feasibility of creating a truck bypass route to ease truck congestion on the Guide Meridian. An important element of this study is to examine the feasibility of constructing a new interchange at Smith Road and Interstate 5. This would create an important east-west transportation connection between Interstate 5 and SR 542, the Mt Baker Highway.

In addition to the transportation improvements listed above, an east-west arterial should be considered through the Cordata North/Caitac area to connect Slater Road, Aldrich Road, and Kelly Road. This would create an important east-west arterial parallel to Smith Road across the Urban Fringe Subarea from Interstate 5 to the Mt Baker Highway. Whatcom County already owns the Slater Road right-of-way, Aldrich Road already exists and could be improved to arterial standards, a new section of arterial through the Cordata North/Caitac site could be built, and Kelly Road already exists between the Guide Meridian and the Mt Baker Highway and could be improved to arterial standards over time.

City sewer does not currently exist beyond the city limits, but the City will place sewer beneath the Guide-Meridian when WSDOT widens it to four lanes in 2005-2007. Sewer and water infrastructure are often placed underneath or alongside streets and could be accommodated in this area.

Law Enforcement is currently provided by the Whatcom County Sheriff's Office and fire protection and emergency medical service is currently provided by Whatcom County Fire District #4. These agencies would continue to provide these services if this area is included within the Bellingham UGA until such time as property owners chose to annex to the City of Bellingham. Urban levels of development would require higher levels of response, and would therefore create additional expense to the Sheriff's Office and Fire District #4. Future annexation of this area to the City would probably require a new satellite police station in order to provide an urban level of law enforcement. Annexation would also require a new City Fire Station and negotiation for transition of capital facilities and revenue according to the Interlocal Agreement between the City of Bellingham and Fire District #4. The majority property owner has expressed a desire to have the property rezoned to a mixed use designation and annexed to the city. Annexation would ensure that city development and environmental standards would be required.

School age children from the Cordata North/Caitac area attend the Meridian School District. Urban levels of development would generate additional school-age children and therefore a need for additional bus transportation, classrooms, educational

facilities, and teachers. The Meridian School District does not currently collect school impact fees from new development for use toward capital facilities, such as portable classrooms or new school buildings. Medium to high density residential development could create a need for two new schools in the area.

4.2.2.3.3. Five Year Review Area A3: "Stuart-Smith"

Existing Conditions

The Stuart – Smith 5-Year Review Area encompasses 940 total acres east of the Guide Meridian between the southeast corner of the Guide Meridian/Smith Road intersection and the city limits just south of Stuart Road. This area is currently zoned Rural 5 Acres (R5A) and is sparsely developed with large lot single family homes. Most of the existing homes in this area are located along Guide Meridian, Smith Road, Kelly Road, and Kline Road.

The most prominent environmental feature of this area is Spring Creek, which is a salmon-bearing stream that flows south through most of the area and drains to Squalicum Creek and to Bellingham Bay. The City Land Supply Analysis reveals that the 940 total acres are reduced to 733 gross acres available for development after accounting for existing development and roads. After further reductions for critical areas, infrastructure requirements, and market factors, however, there are only 226 net acres available for new development. At the current R5A zoning, this area has a development potential for 42 additional single family dwelling units.

Impacts

Adding the Stuart – Smith area to the Bellingham UGA and rezoning to an urban density with a minimum of six dwelling units per acre and a maximum of 10/acre could add between 1,350 and 2,260 dwelling units to the existing supply. Because of its location on Guide Meridian, It appears unlikely that all of this area would be rezoned for residential uses. So predicting the exact buildout is difficult at this time.

The Stuart - Smith area includes approximately 256 acres of critical area features, such as streams, slopes, and wetlands. Spring Creek and its associated wetlands throughout the area could make construction of public sewer, water, and transportation infrastructure challenging as well as expensive for developers. Stream crossings and wetland buffers could present challenges and may result in pockets of high-density development rather than a contiguous pattern of urban residential development.

If this area were to be included within the Bellingham UGA, significant transportation network improvements would be needed for efficient traffic circulation. Washington State will be widening Guide Meridian to 4 lanes from Horton Road to Ten Mile Road in 2005-2007. Smith Road would need to be improved to urban arterial standards for the full length of property abutting Smith and the Smith/Guide Meridian intersection would need to be reconstructed with turning lanes and fully signalized. Stuart, Thomas, and Horton Roads would be difficult to extend east due the

presence of Spring Creek. Kline Road connects the Guide-Meridian to Hannegan Road and would need to be improved to urban arterial standards. Kelly Road connects the Guide-Meridian to the Mt Baker Highway and would also need to be improved to urban arterial standards, especially if the Cordata North/Caitac area to the west is also connected to Kelly Road.

A Deemer/Tull corridor would need to be extended north along the west side of Spring Creek and through the Stuart-Smith area as a parallel arterial to the Guide Meridian. There may also be a need to explore the possibility of a new north-south connection between Kellogg Road and Thomas Road. These improvements would probably have to be constructed by developers and transportation impact fees would be required.

City sewer does not currently exist beyond the city limits, but the City will place sewer beneath the Guide-Meridian when WSDOT widens it to four lanes in 2005-2007. Sewer and water infrastructure are often placed underneath or alongside streets and would encounter the same development challenges in this area.

Law Enforcement is currently provided by the Whatcom County Sheriff's Office and fire protection and emergency medical service is currently provided by Whatcom County Fire District #4. These agencies would continue to provide these services if this area is included within the Bellingham UGA until such time as property owners chose to annex to the City of Bellingham. Urban levels of development would require higher levels of response, and would therefore create additional expense to the Sheriff's Office and Fire District #4. Future annexation of this area to the City would probably require a new satellite police station in order to provide an urban level of law enforcement. Annexation would also require a new City Fire Station and negotiation for transition of capital facilities and revenue according to the Interlocal Agreement between the City of Bellingham and Fire District #4.

School age children from the Stuart - Smith area attend the Meridian School District. Urban levels of development would generate additional school-age children and therefore a need for additional bus transportation, classrooms, educational facilities, and teachers. The Meridian School District does not currently collect school impact fees from new development for use toward capital facilities, such as portable classrooms or new school buildings. Medium to high density residential development could create a need for a new school in the area.

4.2.2.3.4. Five-Year Review Area A4: "Queen Mountain"

Existing Conditions

The Queen Mountain area is a 38-acre parcel under single ownership. It is zoned Rural 5 Acre (R5A) and is currently forested and undeveloped. The southeastern slope of Queen Mountain rises from the center of this area. The City Land Supply Analysis reveals that the 38 total acres are reduced to 36 gross acres available for development after accounting for an existing rural road. After further reductions for

critical areas, infrastructure requirements, and market factors, however, there are only 11 net acres available for new development. At the current R5A zoning, this area has a development potential for 2 additional single family dwelling units. Approximately 13 acres are affected by critical area features, such as steep slopes and wetlands.

Adding this area to Bellingham's UGA and rezoning it to urban density of 6 to 10 dwelling units per acre could add between 66 and 110 new units to the current supply.

If this area were included in the Bellingham UGA, street access would be required from Irongate Road to the south and new streets to the east. An east-west arterial connection could also be explored between James Street and Irongate Road along the existing Montgomery Road. Sewer and water utilities would also be required and would face the same development challenges as road construction.

Law Enforcement is currently provided by the Whatcom County Sheriff's Office and fire protection and emergency medical service is currently provided by Whatcom County Fire District #4. These agencies would continue to provide these services if this area is included within the Bellingham UGA until such time as property owners chose to annex to the City of Bellingham. Urban levels of development would require higher levels of response, and would therefore create additional expense to the Sheriff's Office and Fire District #4. Future annexation of this area to the City would require negotiation for transition of capital facilities and revenue according to the Interlocal Agreement between the City of Bellingham and Fire District #4.

School age children from the Queen Mountain area attend the Bellingham School District. Urban levels of development in this area would generate additional school-age children and therefore a need for additional bus transportation, classrooms, educational facilities, and teachers. The Bellingham School District would collect school impact fees from new development for use toward capital facilities, such as portable classrooms or new school buildings.

4.2.2.3.5. Five-Year Review A5: "Toad Lake"

Existing Conditions

The Toad (Emerald) Lake RR2 designation is part of the Urban Fringe Subarea but lies just outside the existing UGA boundary at Britton Road. It includes approximately 460 acres and 160 dwelling units, 145 of these in the Emerald Lake Subdivision plats. About 200 acres are in the more westerly portion of the area and are accessed from Emerald Lake Road at Britton Road. The southeastern area of the RR2 is accessed from Toad Lake Road and contains more undeveloped and unplatted land. The primary impetus for inclusion in the Urban Growth Area is the desire for sewer service in portions of the area. The area is characterized by steep slopes facing west and also surrounding Toad Lake. Dwelling units in the more westerly area tend to be newer and of better quality than those in the immediate

vicinity of the lake. Some lots have significant territorial views. Dwellings in the lake area are a mix of vacation cabins, mobile homes and what appear to be assorted non-conforming structures.

The major local access roads are Emerald Lake Way and Toad Lake Road. Emerald Lake Way serves the main developed area, which has a small network of paved subdivision roads. Many dwellings in the RR2 zones are accessed by narrow graveled or dirt lanes, especially in the area near the lake. WTA transit service is available along Britton Road, but it is doubtful that ridership numbers could justify the expense of expanding WTA service into the Toad Lake area. The area receives water from Water District 7, fire protection from District 4 and law enforcement service from the Whatcom County Sheriff's department.

Impacts

Development capacity based on current zoning is estimated at just over 300 without services and at 800 dwelling units with services. Extension of sewer could improve septic problems, but costs may be substantial given the terrain and would have to be borne totally by private sources. Because of steep slopes, narrow winding roads, and a significant number of substandard dwellings and access roads, including this area in an Urban Growth Area and encouraging more urban development presents the greatest problem for police and fire services, whether delivered from the City or the Fire District. Urban response times cannot be provided by Bellingham Police or Fire Departments. The development capacity of the area does not support the cost of new facilities and services. Increased development could contribute to transportation level of service problems in the Sunset/Mt. Baker Highway corridor and take capacity from areas easier to serve with the full range of urban services.

If the area was added to the UGA and zoned for urban residential development at a base of six and a maximum of ten units/acre, between 770 and 1,280 potential dwelling units would be added to the current supply. Steep slopes, environmental features, utility service issues and limited access for emergency services will likely limit the potential for additional urban development in this area.

The impact on estimated residential development capacity of adding these expansion areas to the UGA is summarized in the following three scenarios and in Table 4.2.2.3.

Alternative 3A: No zoning changes in City or UGA
Natural Infill in Downtown and Fairhaven
Add ALL 5-Year Review Areas to UGA at 4 Unit/Acre

Alternative 3B: No zoning changes in City or UGA
Natural Infill in Downtown and Fairhaven
Add ALL 5-Year Review Areas to UGA at 6 Unit/Acre

Alternative 3C: No zoning changes in City or UGA
Natural Infill in Downtown and Fairhaven
Add only Cordata North/Caitac and Stuart/Smith
5-Year Review Areas to UGA at 6-10 Units/Acre (Assumes that 80% of 420 net developable acres are developed with residential)

Table 4.2.2.3: Potential Residential Dwelling Unit Capacity Available Through Various Applications of Alternative 3

Area	Alternative 3A	Alternative 3B	Alternative 3C
City + UGA (Existing)	8,275 + 2,210 = 9,485	9,485	9,485
Downtown/FH Infill	1,000	1,000	1,000
5-Yr Review Area	2,500	3,750	2,015-3,360
Total Units	**12,985**	**14,235**	**12,500-13,845**
Surplus or Deficit	**-1,115**	**+135**	**-1,600 to -255**

Source: City of Bellingham Planning Department , 2003 Land Supply Analysis

As the table shows, Alternatives 3A and 3C do not increase the dwelling unit capacity enough to meet the forecasted 20-year demand of 14,100 units. Alternative 3B does increase the capacity enough to meet the projected demand. Alternative 3C would be close to the forecasted demand if the higher density (10 units per acre) is achieved.

It should be noted that historic development patterns in the Bellingham UGA have yielded an average of 2.3 houses per acre of developed land. This equates to an average lot size of just under 19,000 square feet per dwelling unit. So simply adding land to Bellingham's UGA does not ensure consistency with city, county and state goals to prevent low density development patterns from spreading into rural, agricultural and forestry areas. Allowing the newly added areas to develop consistent with the existing 2.3 units per acre developed density in the UGA would be expected to:

- Result in sprawling large-lot housing developments dominated by detached single family housing, similar to what has occurred in many of the more recently developed parts of the city and UGA.
- Result in scattered developments that are isolated and do not create "neighborhoods."
- Create increased traffic congestion on the main arterials leading to Bellingham from the UGA.

- Create increased response time for police, fire and EMS services as population growth locates further from the city core.
- Result in higher housing costs as urban capacity roads, gas, electricity, water, sewer and stormwater and other facilities are extended to rural areas of the expanded UGA.
- Result in more areas that cannot be economically served by transit.
- Discourage infill in existing developed areas as more land at the fringe of the urban area is made available for urban levels of development.

Adding one or more of the 5-Year Review Areas to the UGA with densities consistent with the kinds of urban densities found in many Bellingham neighborhoods (6 to 10 units per acre) would be expected to:

- Create a demand for extension of public facilities and services such as sewer and water, parks, police and fire protection, roads and schools. Medium to high-density development would be less expensive to serve than if these areas are developed at lower density.
- Create increased traffic congestion on major collector streets serving the 5-year review areas.
- Urban density development in the 5-year review areas that are adjacent to arterial roads could support extension of transit service and decrease dependence on single occupancy vehicles.
- Increase the supply of housing to meet the needs and budgets of a range of homeowners. An increased supply of smaller-lot or multi-family housing that would be created in a medium density new residential area could offer more affordable housing choices.
- Create new mixed-use neighborhoods with more chances for community interaction than traditional in low-density residential developments. The large parcels of vacant land available in some of the 5-year review areas would allow development of a planned community with a mix of single and multi-family housing, services, recreational opportunities and jobs within a single development project. There are not vacant parcels of this size available within the existing city of urban growth area.
- Reduce development pressure on rural land that is within commuting distance of Bellingham. Adding an adequate supply of fully-serviced home sites or housing units to the Urban Growth Area would provide an attractive alternative to development on rural and suburban density parcels currently available within the Urban Fringe Subarea, Lake Whatcom watershed and Lake Samish area.

4.2.2.4. Alternative 4 – Infill and Expanded UGA

Under this alternative, the net projected shortfall in 20-year housing capacity would be addressed by a combination of zoning revisions where appropriate in both the City and existing UGA to allow/require higher residential densities along with an expansion of the UGA boundary. This alternative would be intended to create a more compact urban area surrounded by high to medium to low densities radiating out from the urban core.

The infill alternative (see Alternative 2) establishes that zoning changes and an emphasis on infill within the existing city limits and UGA boundaries could add from 2,200 to 6,480 dwelling units to the current supply. This would increase the total City and UGA infill capacity from the current 10,485 to between 12,700 and 16,965 dwelling units. Based on the forecasted 20-year population growth (31,600), the no change (Alternative 1) and lower infill scenario would result in a need to add some land to the UGA to make up the remaining shortage in the supply.

As stated in the discussion of Alternative 3 (UGA Expansion), the adopted Urban Fringe Subarea Plan identified 4 "priority areas" to be evaluated for inclusion in the UGA should the need for additional land arise. The estimated dwelling unit capacity under 3 different UGA expansion scenarios is shown in Table 4.2.2.2.4.

The Infill and Expanded UGA Alternative would generally require that zoning changes be made in the City, UGA, or both and the UGA boundary be expanded into one, several, or all of the 5-Year Review Areas. Staff had to make some assumptions about future zoning and potential 20-year buildout in order to assess the impacts of changes that would be needed to implement this alternative. Those assumptions include:

1. 1,000 new dwelling units would be constructed in the commercially zoned areas of downtown Bellingham and in Fairhaven over the planning period. Recent experience shows that these areas are developing at approximately 50 to 100 units per acre (This could create a need for commercial land in other portions of the City or UGA).

2. Zoning changes in the Old Town and Central Waterfront areas of Bellingham would result in minimum of 1,000 and a maximum of 3,500 new dwelling units built during the planning period. In each case, the resulting units per acre calculation would depend on the size of the area rezoned (Additional commercial or industrial land would need to be added to replace the land converted to residential use).

3. Appropriate areas already in the Bellingham UGA would be rezoned to increase the allowable density. This would add the potential for between 1,200 (at a density of about 8 units per acre) and 3,000 (at a density of about 12 to 18 units/acre) new dwelling units to the existing supply.

4. The remaining developable land in the 5-Year Review Areas, if added to the UGA, would develop at around 6 dwelling units/acre.

City staff has examined achieving infill and adjusting the UGA boundary through the following six applications of Alternative 4:

Alternative 4A: No zoning changes in the City or UGA
Natural Infill in Downtown and Fairhaven
Rezone portions of the existing UGA at 8 units per acre

No Rezones of Old Town and Waterfront
Add ALL 5-Year Review Areas to the UGA at 6 units per Acre

Alternative 4B: No zoning changes in the City or UGA
Natural Infill in Downtown and Fairhaven
Rezone portions of existing UGA at 8 units per acre
No rezones of Old Town and Waterfront
Add only Cordata North/Caitac and Stuart/Smith Road
5-Year Review Areas to UGA at 6 units per Acre*
**(Assumes that 80% of 420 Acres developed as Residential)*

Alternative 4C: No zoning changes in the City and existing UGA
Natural Infill in Downtown and Fairhaven
Rezone portions of the existing UGA at 8 units per acre
Rezone portions of Old Town and Waterfront at moderate density
Add only Cordata North/Caitac and Stuart/Smith Road
5-Year Review Areas to the UGA at 10 units per Acre*
**(Assumes that 80% of 420 Acres developed as Residential)*

Alternative 4D: No zoning changes in the City and existing UGA
Natural Infill in Downtown and Fairhaven
Rezone portions of the existing UGA at 8 units per acre
Rezone portions of Old Town and Waterfront at minimum density
Add only North/Caitac and Stuart/Smith Road
5-Year Review Areas to UGA at 6 units per Acre*
**(Assumes that 80% of 420 Acres developed as Residential)*

Alternative 4E: No zoning changes in the City (General)
Natural Infill in Downtown and Fairhaven
Rezone portions of the existing UGA at 8 units per acre
Rezone portions of Old Town and Waterfront at medium density
Add only Cordata North/Caitac and Stuart/Smith Road
5-Year Review Areas to UGA at 6 units per Acre*
**(Assumes that 80% of 420 Acres developed as Residential)*

Alternative 4F: No zoning changes in the City (General)
Rezone portions of the existing UGA at 12-18 units per acre
Natural Infill in Downtown and Fairhaven
No Rezones of Old Town and Waterfront
Add only Cordata North/Caitac and Stuart/Smith Road
5-Year Review Areas to UGA at 10 units per Acre*
**(Assumes that 80% of 420 Acres developed as Residential)*

Table 4.2.2.4: Potential Residential Dwelling Unit Capacity Available Through Various Applications of Alternative 4						
	Alt. 4A	**Alt. 4B**	**Alt. 4C**	**Alt. 4D**	**Alt 4E**	**Alt 4F**
City + UGA (existing)	9,485	9,485	9,485	9,485	9,485	9,485
Downtown/FH Infill	1,000	1,000	1,000	1,000	1,000	1,000
UGA Rezone	1,210	1,210	1,210	1,210	1,210	2,980
Old Town Rezone	0	0	0	500	1,500	0
Waterfront Rezone	0	0	0	500	2,000	0
5-Yr Review Areas	3,750	2,015	3,360	2,015	2,015	3,360
Total Units	**15,445**	**13,710**	**15,055**	**14,710**	**17,210**	**16,825**
Surplus or Deficit	**+1,345**	**-390**	**+955**	**+610**	**+3,110**	**+2,725**

Source: City of Bellingham Planning Department , 2003 Land Supply Analysis

Of the six scenarios, only Alternative 4B does not increase existing dwelling unit capacity enough to meet the forecasted 20-year demand for 14,100 new dwelling units.

Higher density development in the city, the existing UGA and the expanded UGA would be expected to:

- Allow more efficient use of public infrastructure (roads, schools, parks, etc.) where additional capacity already exists or can be added.
- Encourage development of housing along major transportation corridors, at densities that make transit economical.
- Create increased traffic congestion in areas east of I-5 where suburban development patterns funnel all traffic to a few major collector streets.
- Increase the supply of housing to meet the needs and budgets of a range of homeowners. An increased supply of smaller-lot or multi-family housing that would be created in a medium density new residential area could offer more affordable housing choices.
- Create new mixed-use neighborhoods with more chances for community interaction than traditional in low-density residential developments. The large parcels of vacant land available in some of the 5-year review areas would allow development of a planned community with a mix of single and multi-family housing, services,

recreational opportunities and jobs within a single development project. There are not vacant parcels of this size available within the existing city of urban growth area.

- Reduce development pressure on rural land that is within commuting distance of Bellingham. Adding an adequate supply of fully-serviced home sites or housing units to the Urban Growth Area would provide an attractive alternative to development on rural and suburban density parcels currently available within the Urban Fringe Subarea, Lake Whatcom watershed and Lake Samish area.

4.2.3. Population Growth and Land Supply – Mitigating Measures

Many of the mitigation measures that could address the impacts of growth, sprawl and infill development are addressed in other sections of this EIS dealing with the various aspects of the natural and man made environments such as traffic, aesthetics, noise, habitat, open space, light and glare.

Some additional potential mitigation tools include:

- Adopt an interlocal agreement between Bellingham and Whatcom County that requires all new development in the Bellingham UGA to use city development and environmental standards. The agreement could address permit review responsibilities and revenue sharing.
- Adopt strategies to encourage areas in the UGA to annex to the City *before* they are allowed to develop. This could eliminate dual government development review and simplify and standardize the building and land use permitting process.
- Consider adopting an ultimate city boundary and prohibiting urban levels of development outside the boundary. The City and County could begin purchasing land, easements or development rights just outside the boundary to create a permanent greenbelt or buffer area separating urban from rural areas.
- Encourage changes to the URMX zoned areas of the UGA and similar large lot zoned areas in the city to increase the allowed density, decrease minimum lot sizes, require minimum densities, and facilitate a workable TDR program.
- Promote the use of cluster subdivision provisions, planned unit development rules, or other innovative and flexible development techniques designed to achieve minimum or target densities on parcels with environmental constraints such as wetlands or steep slopes.
- Consider adopting “floating zones” that would encourage development of true mixed-use neighborhood centers as identified in the Bellingham Comprehensive Plan.
- Review population forecasts and land supply at intervals that coincide with comprehensive plan updates.
- Support and encourage Whatcom County to limit low-density development (1 dwelling unit per 1 to 5 acres) outside urban growth areas.
- Review the suitability of lands within the existing UGA for urban development. Land not suited for urban levels of development because of environmental constraints or difficulty in providing public services such as water, sanitary sewer, and police and fire protection, could be removed from the UGA.
- Discontinue past practices allowing low-density development within some city neighborhoods and most of the existing UGA.

- Ensure that assigned zoning densities fully utilize the infrastructure potential.
- Require minimum densities to ensure full build out of available land.
- Require mixed housing types, mixed-use development and the preservation of open space.
- Consider requiring the purchase or transfer of development rights for UGA expansion requests and for request to increase densities through rezones.
- Adopt City of Bellingham design guidelines for all multifamily projects in the Bellingham UGA.
- Identify priority areas where infill development is appropriate. If needed, focus community resources to make such areas ready for infill. Make infill attractive for developers through the use of incentives such as reduced impact fees, priority permit processing, and flexible site and building design standards. Adopt strategies and standards to ensure that infill development contributes to the character, function and desirability of a neighborhood.
- Increase existing impact fees to require new development to pay a larger share of the full cost of the services and capital projects necessitated by new development. Consider enacting impact fees for parks and fire and emergency services facilities.

4.3. HOUSING

4.3.1. Housing - Existing Conditions

The Community Development Division of the Bellingham Planning and Community Development Department publishes a consolidated plan every 5 years to address housing conditions and housing needs. The *Consolidated Plan* is a planning document that provides an assessment of the City's community development needs, proposes strategies to address those needs, and annually identifies specific activities to implement strategies. The current plan is effective from 2003 through 2007. The 2004 Action Plan contains proposed activities for 2004. Much of the information below is also contained in the *2003-2007 Consolidated Plan.*

4.3.1.1. Demographic Trends

Population Trends

Bellingham's population has grown at an increasing rate since 1980. The population increased 29% between 1990 and 2000, adding approximately 15,000 more people. By 2022, the population is estimated to increase another 30% to 40%. The primary source of population growth has been in-migration.

Age Distribution

In 2000, the median age in Bellingham was 30.4 years. Between 1980 and 2000, there was a decline in children aged five to 17, as well as a decline in young adults aged 25 to 44. During this period, Bellingham experienced a substantial increase in those aged 45 to 59. The percentage of people aged 65 and older grew between 1980 and 1990 (from 13.3% to 14.1%) and then declined to 12.5% by the year 2000.

Racial/Ethnicity
Whatcom County's racial mix has become more diverse over the years. In Bellingham, the white population dropped from 93.8% to 87.9%. Between 1990 and 2000, the Asian/Pacific Islander population increased from 2.8% to 4.4% and the Hispanic population increased from 2.4% to 4.6%. Additionally, 5.3% identified themselves as "other" or "two or more races" on the 2000 census, as compared to just under one percent in 1990.

4.3.1.2. Employment/Income Trends, 1990 - 2000

According to the 2000 U.S. Census, the 1999 median household income in Bellingham was substantially below the median for Washington State (almost 30% lower). It was also lower than Whatcom County as a whole (nearly 20% lower), but the high ratio of student population to total population in Bellingham undoubtedly affects these numbers. Nearly 22% of Bellingham residents and 11.5% of Whatcom County residents identified themselves as college students in the 2000 census.

According to the 2000 Census, almost 21% of the population in Bellingham were living below the federal poverty level in 1999. This is also much higher than in the County or the State, but once again, the high percentage of college and university students in Bellingham tends to lower the Bellingham income numbers to some extent. The 2000 censu also reported, however, that over one-third of single female householders with children under 18 live in poverty, and almost two-thirds of single female households with children under five live in poverty. The higher percentage of population in Bellingham living below the federal poverty level is also partially due to the need to live in close proximity to general social support services and public transportation options.

Median family income in Bellingham, while substantially higher than median household income, is still lower than in Whatcom County and the State, as shown in Table 4.3.1.2., below. The median household income in Bellingham rose 14.7% between 1989 and 1999. This was considerably less than the previous decade (1980-1990), when median household income rose 76.7%. The change in per capita income and median family income was also much lower in the 1990s than in the 1980s. Per capita income rose 41.7% between 1989 and 1999 compared to 89.2% between 1979 and 1989.

Table 4.3.1.2: Income - 1999

Income	Bellingham	Whatcom County	Washington
Median household income	**$32,530**	**$40,000**	**$45,775**
Per capita income	**$19,483**	**$20,025**	**$22,975**
Median family income	**$47,196**	**$49,325**	**$53,760**

Source: 2000 US Census

Employment
The general trend of employment in Bellingham has been changing from the higher-wage, career-oriented types of employment toward the lower-wage jobs typically found in the retail and service sectors. The average wage in Whatcom County has declined significantly since its peak in 1971.

Unemployment
Whatcom County has experienced a relatively high unemployment rate over the last few decades compared to State and national averages. County unemployment rose to 6.8% in 2001, climbed to 8% in 2002, but as of July 2003 was back down to 6.1%. The unemployment increase is due in part to the national recession that began in March of 2001, the terrorist events of September 11, 2001, and massive layoffs in Washington State. The rapid growth of low-wage, part-time employment has also given rise to unforeseen social costs, including lack of medical insurance.

Underemployment
Underemployment is also a chronic and severe problem for the economy of Bellingham due to the increasing prevalence of lower-wage, non-career track retail and service sector jobs.

Job Development and Training
For Whatcom County, the administrator for job services is the WorkSource-Whatcom Career Center (WorkSource). This agency operates as a community one-stop career center and housing services for both job seekers and businesses. WorkSource is certified by the Northwest Workforce Development Council and operates under the Workforce Investment Act.

Educational Facilities
Continuing Education facilities in Bellingham include Bellingham Technical College, Whatcom Community College, and Western Washington University. Each contributes to the economic development of the community, together offering a variety of courses, training, certifications, and degrees.

Economic Development
Numerous agencies and organizations contribute to Bellingham's economic development. These agencies include the Bellingham Whatcom Economic Development Council, Port of Bellingham, Chamber of Commerce, Western Washington University's Small Business Development Center, City of Bellingham, Business Service Center, and the Partnership for a Sustainable Economy for Whatcom County.

Interviews with several key leaders indicated a great deal of coordination among economic development agencies and businesses. However, they also indicated that additional efforts could benefit the community. Issues discussed to improve coordination include agreement on an overall vision and movement toward a one-stop business center.

Opportunities to redevelop downtown are also in the planning process. These plans not only increase the area's potential as a vibrant business center, but also initiate new housing sources through renovation or conversion of existing structures. Despite several mitigating factors working against efforts to redevelop housing in the downtown area, there have been recent successes in redeveloping mixed-used structures. Further steps are being taken to reduce barriers to additional redevelopment in the area.

In order to foster economic development in the downtown area, community leaders suggested reviving the façade improvement program in order to stimulate visual improvements, as well as making reinvestments more attractive. Moreover, inadequate parking and use of parking meters downtown were also identified as problematic issues.

Another economic development consideration is that of inadequate wages, which keeps low- and moderate-income persons from contributing to the economy. Several actions are possible to alleviate this problem, such as working to attract businesses that generate higher wages, assisting those in need to improve their language skills, and providing assistance with childcare costs to low-income families.

4.3.1.3. Housing Stock

As discussed in Section 4.2., above, residential housing is the dominant user of land in the City of Bellingham, the UGA, and the Urban Fringe Subarea. Detached single family residential housing in Bellingham has been developed on a variety of lot sizes (4,000 to 20,000 square feet). Much of the residential development in the UGA is single family detached housing on lots ranging from 10,000 square feet to 1 acre in size. Most of the development in the Urban Fringe Subarea is detached single family residential that has developed on large rural lots (1-10 acres). As the land supply has tightened over the years, however, the cost of both land and housing has increased in the greater Bellingham area.

Some new forms of housing have appeared in the Bellingham housing market, including co-housing, townhouses, condominiums, duplexes, and single family detached houses on small lots (4,000 square feet). As economic conditions and demographics continue to change, the Bellingham housing market will have to continually evolve to meet the needs of residents. A wide variety of housing types is needed to allow for the provision of affordable housing to all economic segments of the community.

Between 1990 and 2000, the total number of housing units in Bellingham increased by 7,360, or 32%, and the 2000 U.S. Census recorded a total of 29,425 housing units. While all housing types increased, most of the growth was in multi-family housing, which increased by 65%. Approximately 50% of housing units were single-family units, 47% were multi-family, and the remainder were mobile homes, RVs, or boats, as shown in Figure 4.3.1. Rental units now outnumber owner occupied units – 51.8% rental units and 48.2% owner occupied units (this is affected by student population) and is projected to increase to 56% of housing units by the year 2010. Following national trends, the

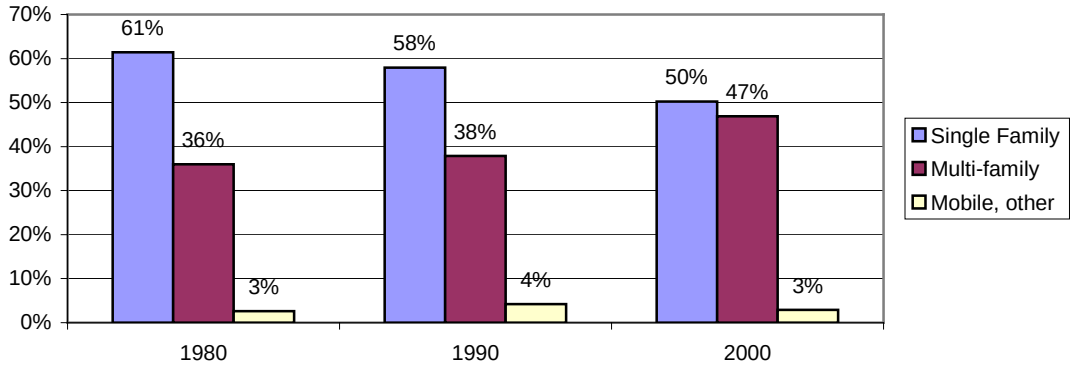
average household size in Bellingham declined from 2.27 to 2.24 and in Whatcom County, the decline was from 2.53 to 2.51. One third of all households in Bellingham were one person living alone.

Table 4.3.1.3.A: Change in Housing Units, 1990 to 2000

	1990 Housing Units	2000 Housing Units	Unit Increase	% Increase	Average Unit Increase Per Year
Whatcom County	**55,742**	**73,893**	**18,151**	**32.5%**	**1,815**
City of Bellingham *	**22,114**	**29,474**	**7,360**	**33.3%**	**736**

Source 1990 and 2000 U.S. Census
***** Note that separate dwelling unit counts for the Bellingham UGA were not available.

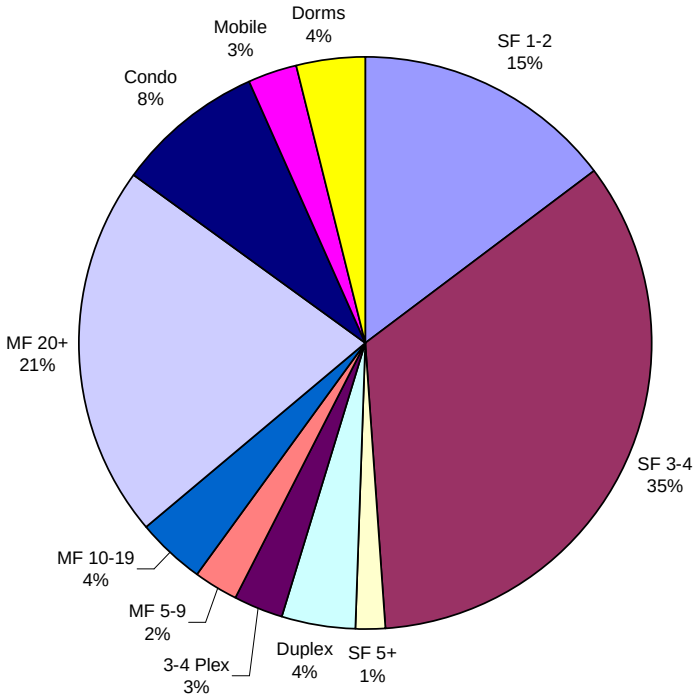
Graph 4.3.1.3.B. - Bellingham Housing Type by Census Year



Source: City of Bellingham, Planning & Community Development Department, Building Division

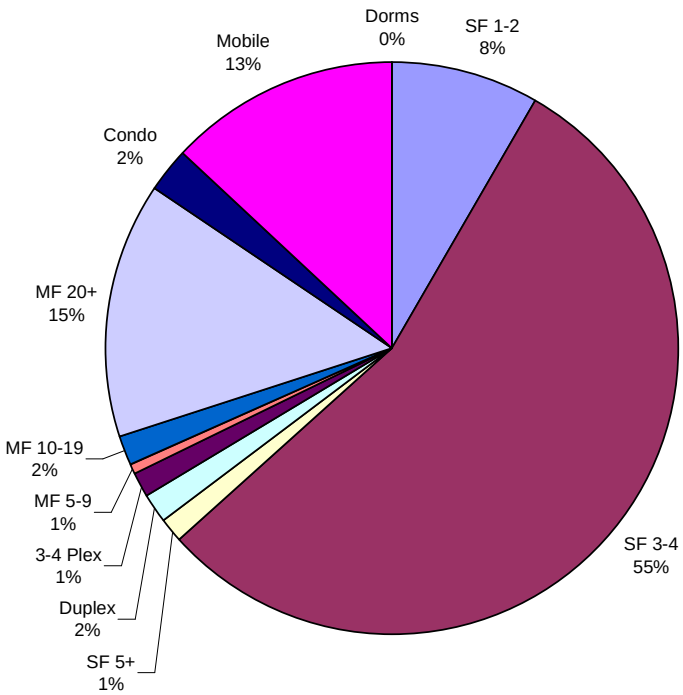
Housing Condition
In July of 2002, a 25% sample "windshield" survey of four residential neighborhoods was conducted to determine the overall condition of single family housing in the area. The Survey Criteria and Rating System from this survey can be found in Appendix E. The overall condition of single family housing in the four neighborhoods was sound, in part reflecting the investment of Community Development Block Grant (CDBG) housing repair funds in the neighborhoods since the 1970's. A scattering of active rehabilitation is currently being undertaken in the neighborhoods, indicating on-going investment, particularly in the Roosevelt (West) and Lettered Streets Neighborhoods. The condition of over 75% of housing units surveyed was determined as "basically sound" or "sound."

Chart 4.3.1.3.C. Bellingham (City Limits) Housing Stock by Percentage - 2003



Source: 2003 City of Bellingham Land Supply Analysis

Chart 4.3.1.3.D. Bellingham UGA Housing Stock by Percentage - 2003



Source: 2003 City of Bellingham Land Supply Analysis

4.3.1.4. Housing Cost and Affordability

Housing Cost

While incomes in Bellingham are lower that state and county incomes, housing costs are comparable. The median value of an owner-occupied housing unit in 1989 was $89,100, and has risen 75% to $156,000 in 2000. In 1989, the median contract monthly rent was $371, as compared to $613 by the time the 2000 census was completed.

Specific data from the 2000 U. S. Census regarding housing type and cost was not available for the UGA outside of the City. Countywide, household size was slightly larger than in Bellingham, and the percent of single-family units was higher. In the County, average household size was 2.51 people per household, and approximately 61% of the units were single-family. The 2000 U. S. census estimated that the median house value and monthly rental cost in the County was very similar to that within the City of Bellingham, but median household income was lower in the County than in the City.

In 2002, the City and County estimated a population of 81,454 within the City and UGA combined. Approximately 30,900 housing units were estimated within the City, and 5,000 housing units were estimated in the UGA, outside the City limits. The Whatcom

County Real Estate Research Report data indicate that 2002 was a record setting year for Whatcom County real estate sales activity. The number of homes sold increased 12% above the 2001 level. The median price of all of the single family homes sold in Whatcom County increased to $159,000, while the median price of a home sold in Bellingham increased to $163,000. During the first and second quarter of 2003, median home sale price was reported to be $174,100 in the City and $170,400 in the County. According to the Washington Center for Real Estate Research, the median price for a house in Whatcom County in the first quarter of 2004 was reported to be $194,600.

Housing Affordability

Achieving the "American dream" of buying a single family home is becoming more difficult for many young families in Bellingham. The acquisition of the necessary amount for a down payment to purchase a home is almost impossible for many young families.

The lower their income, the more cost-burdened and overcrowded households tend to be. In many cases rents are not affordable for most low-income households. Families are spending a higher percent of their income on housing costs. In Bellingham, 53% of renters were paying in excess of 30% of their households' income for rent. According to Department of Housing and Urban Development (HUD) guidelines, a family of four making $15,000 a year would be considered very low-income. To be considered affordable, this household would only pay up to $375 each month for rent and utilities; however, the fair market rent for a two-bedroom apartment is $708 a month, almost twice what this type of household could afford.

According to the 2000 Census, approximately 47% of the renters in Whatcom County paid 30% or more of their household income for rent, and approximately 26% of the home-owners in the County paid 30% or more of their household income for housing.

4.3.1.5. Housing Need and Assisted Housing

Of the more than 7,500 very low-income households in Bellingham, over 70% reported having housing problems. Most of these households are paying more than 30% of their income for housing costs and utilities.

Section 8 Housing Assistance

Currently the Bellingham Housing Authority (BHA) administers 1,693 Section 8 housing vouchers for the entire county. The BHA administers a total of 101 Section 8 project-based housing certificates. The wait list for Section 8 tenant-based housing was open with 1,837 households on the list. People are generally assigned housing on a first-come, first-served basis, subject to appropriate unit size and type availability.

Public Housing

The Housing Authority currently owns and/or manages 528 units of public housing, with 397 designated for the elderly, 24 units of single-family housing, and the remainder made up of multi-family units. As of May 2002, the waiting list was 1180 households.

The elderly generally have to wait about four months and families generally receive a unit within six to 12 months.

Other Housing Authority Units

The BHA has a production goal of at least 100 units per year. Currently, it owns or has substantial interest in 641 housing units in addition to public housing and Section 8 units. A private management firm manages most of these units. All housing owned or substantially owned by the BHA is designated as Multi-Family Crime Free Housing.

Shelter Plus Care

The Shelter Plus Care program has implemented five grants since its start in 1995. Three of these five grants are still operating and serve homeless persons with mental illness. The Housing Authority currently administers a total of 150 Shelter Plus Care units.

City of Bellingham

The City operates both a Housing Development Program and a Home Rehabilitation Program. The Housing Development Program assists in the production of affordable housing through partnerships with firms or agencies. The Home Rehabilitation Program provides zero and low-interest loans to rehabilitate single family and small multi-family (up to four units) housing for low-income people.

Needs of Homeless Persons

A 1997 Shelter Survey interviewed 765 homeless individuals in Bellingham and Whatcom County. More than 30% were in families and the median age was 31. Females headed 89% of single parent households. Information collected during the survey and planned subsequent surveys has been used to prioritize homeless projects.

The Bellingham/Whatcom County Coalition for the Homeless prepares and regularly updates a Gaps Analysis for the City's *Continuum of Care* plan. The purpose of this analysis is to calculate the "gap" that exists between needs and available housing or services for homeless. Services and projects are then prioritized according to the size of the gap, in addition to other factors.

Special Populations Housing and Service Needs

Certain populations require special housing and service needs tailored to their specific conditions and problems. These populations include victims of domestic violence, people with developmental disabilities, the mentally ill, the elderly, and substance abusers.

Lead-Based Paint and Lead Hazards

Properties at risk for lead hazards are deteriorated units (particularly those with deteriorating roofing and plumbing systems) and units where unsafe practices were used in rehabilitation. Several cases of elevated lead in the blood of children have been identified since screening began in 1996. HUD provides revised estimates of the latest information on lead hazards based on census data.

Barriers to Affordable Housing
The 1995 City of Bellingham *Comprehensive Plan* identifies several areas affecting development of affordable housing. These include Zoning, Land Use, Subdivision Requirements, Impact Fees, Licensing and Permits, and Extension of Transportation, and Utility Service. Bellingham is monitoring available land, zoning, and land use to accommodate projected population increases and housing requirements of all income groups. Development costs, fees, building code requirements, and rising housing prices are all barriers to affordable housing. Other barriers include those related to fair housing, which is discussed in the section on fair housing.

Fair Housing
In 1996, the City of Bellingham's Community Development Division (CD) created and submitted the first *Analysis of Impediments to Fair Housing* for the City of Bellingham, which the City used to guide its fair housing actions. In 2002, the City contracted with the Fair Housing Center of South Puget Sound to complete a new *Analysis of Impediments to Fair Housing*. Strategies that address impediments over the next five years are listed in the Strategic Plan section of this document. Actions the City plans to undertake in 2004 to address impediments can be found in the *2004 Action Plan*.

Targeted Areas
Home Investment Partnerships Program (HOME) and CDBG funds are targeted to serve households with incomes at or below 80% of the area median income. Seventeen census track block groups in Bellingham have been identified by HUD as being occupied by residents of which 51% or more have incomes at or below 80% of the area median. These block groups are known as CDBG Census Block Groups. The City targets CDBG funds to improvement projects that are most likely to provide area-wide benefits for residents of these Census Block Groups. The City of Bellingham's Neighborhood Initiatives Program (NIP) is an example of this targeting and provides funding and technical assistance for neighborhood improvement projects. While each area has varying issues, all can benefit from projects that improve recreational facilities, housing, safety, and services.

4.3.2. Housing - Impacts
Land supply, zoning, density, housing type, development standards, impact fees, and location can all have significant impacts on the price and availability of housing. The various alternatives considered will impact the lot sizes, density and type of housing that are allowed within the City and UGA, which will have an impact on price and availability.

Alternative 1- No Action
Under this alternative, the zoning and development regulations would remain the same as they are today. Approximately 8,275 dwelling units could be constructed within the City and an additional 2,212 could be built in the UGA. The combined infill capacity of the City and UGA under the current zoning is approximately 10,487 dwelling units, which is 3,613 units short of the projected demand for 14,100 housing units by the year 2022.

Limitations on lot sizes and multi-family development in the UGA would discourage the construction of affordable housing units in the Bellingham UGA. Land supply shortages could increase the cost of vacant residential land and drive up the cost of existing housing. Potential housing impacts of this alternative include:

- Increased residential land costs in the City and UGA, due to limited supply.
- Large single-family residential lots due to zoning density and minimum lot sizes.
- Lower percentage of multi-family housing due to limitations on the percent, location and type of multi-family residential units allowed in the UGA.
- Increased residential demand in smaller cities and rural portions of the County where land and housing prices are cheaper.
- Increased demand for public and non-profit subsidized housing programs.

Alternative 2- Infill

Under the infill alternative, density would be increased within the existing City Limits and UGA to accommodate the projected demand for 14,100 housing units by the year 2022. Existing infill capacity within the City is 8,275 housing units.

Current infill capacity of the UGA is estimated to be 2,212 units. The proposed zoning changes in the draft Urban Fringe Subarea Plan would increase the UGA infill capacity to a minimum of 3,447 and a maximum of 5,149 housing units. Combined with the projected infill increases that could be accommodated within the City, total infill capacity of the City and UGA would be a minimum of 11,722 units. This would be an insufficient number of residential units and would require an additional 2,378 housing units to accommodate the adopted population growth projection of 31,600 over the next 20 years. Potential housing impacts of this alternative:

- Minimum residential densities will be established in the City and UGA.
- Density within the City and UGA will be substantially increased, with smaller single-family lot sizes and a greater percentage of multi-family housing.
- The character of existing low-density residential areas could be impacted by greater density and traffic.
- The cost of new residential lots and rental units within the City and UGA could be more affordable due to increased number of single-family residential lots per acre, increased percent of land zoned for multi-family units, and increased density in some multi-family areas.
- Infill, redevelopment, and increasing market pressure for residential could have the unintended consequence of gentrifying some areas and forcing lower income people to move further from the general social supports services and public transportation service that they rely upon.
- Future residents wanting a single-family home on a large lot would need to rent or purchase an existing vacant lot or home, or live outside of the City or UGA.
- The value of existing larger-lot single-family homes would likely increase due to decreased supply.

- With smaller lot sizes and a greater percentage of multi-family housing, the demand for public open space and recreational facilities will increase.

Alternative 3- Adjusted UGA

Under this alternative, all of the increased demand for housing would be provided by expanding the UGA. The zoning within the City and UGA would remain the same, and approximately 10,487 housing units would be built within the existing City Limits and UGA. The remainder of the projected housing needs would be met by expanding the UGA boundary. In order to accommodate the 5,518 dwelling units that cannot be achieved under the existing City and UGA zoning, the UGA would need to be expanded by approximately 1,380 acres (2.16 square miles) at a density of 4 dwelling units per acre. Potential housing impacts of this alternative include:

- Large single-family residential lots would be available within the City and UGA due to existing low- density zoning and large minimum lot sizes.
- Lower percentage of multi-family housing within the City and existing UGA due to limitations on the percent, location and type of multi-family residential units.
- Increased housing cost due to the limited number of units available within the existing City and UGA and the expense of extending utilities and services to new residential areas in the expanded UGA.
- Per capita costs of providing urban services (sewer, water, roads, public transportation, police, fire protection, emergency services, schools, parks, libraries, etc.) to an expanded low density urban area will be increased.

Alternative 4- Infill and Adjusted UGA

Under this alternative, density would be increased in portions of the existing City Limits and UGA that have capacity for increased density. The remainder of the projected housing demand would be met by adjusting the UGA boundary. Increased density within the City would increase infill capacity to add additional units. The remainder of the projected housing needs would be met through infill and expansion of the UGA. The staff proposed zoning changes in the UGA would provide capacity for a minimum of 3,447 and a maximum of 5,149 housing units within the existing UGA.

If density increases cannot be achieved within the City and UGA, additional residential units would need to be added to the UGA. At net densities of 6-10 units per acre, this would require up to 1,000 acres of developable residential land to be added to the UGA. Potential housing impacts of this alternative include:

- Minimum residential densities would be established in the City and UGA.
- Density within the City and UGA would be increased, with smaller single-family lot sizes, greater percentage of multi-family housing, and higher multi-family densities in areas that have infrastructure capacity.
- The cost of new residential lots and rental units within the City and UGA could be more affordable due to an increased number of single-family residential lots per acre, increased percent of land zoned for multi-family units, and increased density in some multi-family areas.

- Future residents wanting a single-family home on a large lot would need to rent or purchase an existing vacant lot or home, or live outside of the City or UGA, but additional small and moderate size single-family lots would be available.
- With smaller lot sizes and a greater percentage of multi-family housing, the demand for public open space and recreational facilities would increase.

4.3.3. Housing – Mitigating Measures

Under all alternatives considered, the strategic plan contained in the Community Development Division's 2003 – 2007 Consolidated Plan, should continue to be implemented to address Bellingham's affordable housing needs.

- Multi-family design standards could be adopted to set standards for design, landscaping, parking, lighting, open space and amenities to make new multi-family development more livable and attractive.
- Impact fees or other types of developer-financed improvements could be required for new residential projects to ensure that parks, open space and amenities are developed to serve new residential areas.
- Community recreation facilities, gathering areas, meeting spaces and design in higher density residential areas could help encourage community interaction and neighborhood unity that is often lost in multi-family neighborhoods where the majority of the residents are renters.
- Landscaping, height restrictions and building setbacks could be adopted to create transition areas that buffer new higher density residential areas from existing larger lot single-family residential areas.
- Incentives could be established to provided design flexibility, density bonuses or reduced fees for developers who provide a mix of housing types, densities and affordability within a housing development.
- Additional public and non-profit subsidized housing programs could be developed to increase the supply of affordable housing as housing costs rise.
- If housing supply is constrained within the Bellingham UGA by adopting Alternatives 1 or 2, there will be increased residential demand in other parts of the County. These impacts could be mitigated by providing an adequate supply of urban density lots and the required public services and facilities within the Urban Growth Areas of the smaller Cities and County UGAs, and improving regional transit facilities to transport small City residents to jobs in Bellingham.
- Increased residential demand in rural areas, resulting from Alternatives 1 or 2, could be mitigated by adopting impact fees to charge new development for the cost of extending public services to serve low-density rural residential development.

4.4. LIGHT AND GLARE

4.4.1. Light and Glare- Existing Conditions

Both natural sunlight and artificial light are necessary for health, safety, security and livability. Natural sunlight can be blocked by tall buildings or reflected by glass, metal, wet streets and polished surfaces. Except for variable reflection off of vehicles and wet

streets, glare from sunlight is minimal as there are not a great number of tall buildings with glass facades within the planning area. Artificial light emanates from a variety of sources within the Bellingham, the UGA and the Urban Fringe Subarea. There are a wide variety of lighting types used for industrial, commercial, and residential purposes, including facility lighting, street lighting, parking lot lighting, and lighted signage.

4.4.2. Light and Glare-Impacts

As all four alternatives anticipate an increase in population and development, there will be an increased need for light for commercial, safety and security uses, which will increase the potential for light pollution and increased energy consumption. There are three types of light pollution:

- Sky glow is the type of light that impedes the view of the night sky.
- Light trespass is the spilling of light beyond the boundary of the property where the source is located.
- Glare. There are three types of glare:
    1. Disability glare reduces the contrast of images that are normally seen without the presence of glare; commonly know as "night blindness."
    2. Discomfort glare occurs when an area of high illumination is encountered.
    3. Nuisance glare occurs under light trespass conditions.

The higher densities allowed within the City and UGA under the Infill alternative will help contain sky glow, but may increase localized light trespass and glare. The increased densities and taller buildings could also impede access to sunlight. The Infill and Adjusted UGA alternative will have slightly more extensive light and glare impacts as the Infill alternative. The Adjusted UGA alternative will allow the expansion of the UGA into formerly rural areas, which may expand the possibility of light pollution in the form of sky glow. The No Action alternative will allow sprawl to spread into the rural areas of the County, which could increase the possibility of light pollution in the form of sky glow.

4.4.3. Light and Glare- Mitigating Measures

Light trespass and glare impacts can be subjective and it may be difficult to eliminate adverse impacts on surrounding areas. Sky glow is the result of cumulative, wide spread light impacts while glare and light trespass have localized impacts. Potential mitigation measures include:

- Utilizing timed interior and exterior lighting for commercial, public and industrial uses.
- Sign regulations that help minimize the illumination, spill over and size of signs, including regulations that minimize the frequency of flashing electronic signs.
- Require design review that addresses building mass and scale so as not to impede sunlight.
- Larger buildings may use glass of low reflectance, tilting the glass to prevent glare and alternating glass with other materials.
- Require a lighting plan and an analysis of the cumulative impacts of the lighting for large projects. The plan should address positioning, angle and height of the illumination.

- Develop standards that require low lumen lighting that is shielded and directed downwards and away from adjacent properties.
- Require screening and landscaping to minimize spill over from exterior lighting and vehicle headlights.
- Minimize development in the rural areas of the County utilizing mitigation measures to minimize sky glow.

4.5. AESTHETICS AND URBAN DESIGN

4.5.1. Aesthetics and Urban Design – Existing Conditions

Urban design includes both the physical pattern and the aesthetic quality of urban development. Urban design policies and regulations can help to determine how new development might best fit into the pattern of existing urban areas to ensure that it will function as a community while ensuring attractiveness and livability. Urban design guidelines can help to maintain the valued aesthetic character of an area and can influence how it will look in the future.

Urban design policy decisions can affect development patterns, streetscapes, variety of transportation options, public safety, skylines and architecture, and quality of life. Urban design policy is implemented through zoning regulations such as land use, density, setbacks, building heights, landscaping, lot coverage, separation of land uses, pedestrian amenities, transit-oriented development, low-impact development, building bulk and scale, and architectural standards.

Development Pattern

The City of Bellingham is generally characterized by higher-density urban development, much of which dates back to the early 1900's. The UGA is generally characterized as being in transition from lower rural density to higher suburban and urban density development. The remainder of the Urban Fringe Subarea is generally characterized by low-density, rural development.

Streetscape and Transportation Alternatives

Transportation and street standards play a significant role in urban design. The construction of roads can influence the location of new industrial, commercial, and residential development. New development can influence the physical streetscape and character of a transportation corridor. Higher density urban development that is supported by urban streets with sidewalks, bicycle lanes, and transit bus pull-outs and shelters can accommodate reliance on a number of different transportation modes, including pedestrian, bicycle, transit, and private automobile. Lower density rural development that is supported by minimum standard rural roads does not support alternatives to the private automobile. Rural arterial roads can only accommodate multiple modes of transportation when bicycle lanes and bus stops are provided.

Skyline and Architecture

Historically, urban areas have developed as focal points of human activity that evolve with an increasing degree of intensity over time. In most cases, urban areas grow vertically as well as horizontally. Higher land values usually require that more space for

human activity be accommodated on less land. This typically results in multistory buildings being constructed in urban areas, resulting in a distinct skyline and urban profile. In some Pacific Northwest cities, such as Seattle, Portland, and Vancouver, British Columbia, high land values have resulted in the construction of high-rise apartments, condominiums, and business offices. Urban design can be applied to new buildings to make them fit in with and even enhance a city's skyline or urban profile. Some urban buildings can become visual icons that are internationally recognizable, such as Seattle's Space Needle or San Francisco's Trans-America Pyramid.

Neighborhood Character

In 2001, Bellingham adopted Multifamily Residential Design Guidelines that are applied to all new multifamily construction. The purpose of the design guidelines is to ensure that new development fits in with existing neighborhoods and results in safe, well-designed residential living environments. These design guidelines can help to provide balance that is critical to implementing Bellingham Comprehensive Plan policies that encourage infill development while protecting neighborhood character.

4.5.2. Aesthetics and Urban Design - Impacts

Each alternative results in a different degree of urban intensity and distribution. Impacts of new development occur adjacent to established neighborhoods or as different types of new development are built adjacent to each other. As urban development spreads and/or intensifies, urban design will become increasingly important to ensure compatibility between and among established and new land uses while creating a livable community. The impacts of each alternative greatly depend upon the urban design standards applied at the time of development.

The Infill alternative will focus development within the existing City limits and UGA and will require the accommodation of 14,100 additional dwelling units and related urban services. This intensification of urban land use will require compact, high-density development; possibly impacting established neighboring lower density neighborhoods. Increased density may result in decreased physical and visual access to open space, increased traffic congestion, and an increased demand on parks and recreational facilities. This alternative would help maintain the City's compact form while creating a clear delineation between the rural areas of the County and the urban City. With increased densities there would be an increase in multi-family projects, which would be required to utilize Bellingham's design standards. The Infill alternative would also be expected to result in increased viability for pedestrian-, bicycle-, and transit-oriented development.

The No Action and Adjusted UGA alternatives would allow continued low-density urban growth to expand within the City and into other areas of the County, impacting previously rural areas with unplanned development without the influence of urban design principles. The No Action and Adjusted UGA alternatives would be expected to result in sprawling, low-density, auto-oriented rural residential and commercial development.

Under the Infill and Adjusted UGA alternative, higher densities would be allowed within the City and the UGA and Bellingham's Residential Multifamily Design Guidelines would be implemented to mitigate impacts on established neighborhoods. The UGA boundary would be adjusted slightly to accommodate additional housing needs and, where adjusted, minimum densities would be adopted to ensure that development within the UGA occurs at urban densities. Development outside the UGA boundary would be limited to rural densities.

4.5.3. Aesthetics and Urban Design – Mitigating Measures

Standardized urban design mitigation measures are difficult to apply uniformly as each area has its own particular character, attributes and needs. Urban design standards can apply to types of projects such as subdivisions, multi-family housing and commercial developments and can be tailored to a particular neighborhood. Urban design mitigation would be difficult to apply to low density sprawl, as would be allowed under the No Action and Adjusted UGA alternatives. Many of the mitigating measures included in the light and glare, historic, transportation, land use and parks sections of this document can be applied in this section. Other mitigating measures include:

- Create a peripheral long-term 'Urban Reserve' area by decreasing the permitted rural densities (downzoning) outside of the UGA until included within higher density UGA as may be needed beyond the 20 year planning time frame.
- Expand the County Transfer of Development Rights (TDR) program to apply to the Rural areas of the Urban Fringe Subarea to encourage development in appropriate centers or along major transportation corridors that can be served by transit.
- Adopt City of Bellingham zoning, development standards, and residential multifamily design guidelines for all projects within the UGA.
- Develop design guidelines for commercial developments and subdivisions.
- Design guidelines should utilize zero lot lines, single family attached, reduced setbacks, pedestrian amenities, reduced parking, narrower streets, variable height limits, building scale and floor area ratios.
- Encourage mixed housing types, mixed-use development, and the preservation of natural areas.
- Encourage low-impact development techniques that utilize landscaping and natural areas for stormwater runoff and energy efficiency.
- Consideration should be given to impacts on view sheds and view corridors and appropriate mitigating measures applied to protect view.
- Incorporate streetscape and landscape regulations into the design guidelines.
- Preserve and enhance significant historical and architectural features.
- Encourage the retention of existing forests or replacement of existing native vegetation.
- Create an architectural review board to review large developments or developments in historic areas.
- Utilize pedestrian-, bicycle-, and transit-oriented development standards.

4.6. HISTORIC AND ARCHAEOLOGICAL RESOURCES

4.6.1. Historic and Archaeological Resources - Existing Conditions

Historic resources include specific sites, buildings or neighborhoods that have elements of archeological, historical, or architectural interest or other features that may have a special value to the community. Historical resources can be lost through development, lack of maintenance, fire, inappropriate alterations and redevelopment.

Archeological Resources

Pursuant to RCW 27.53 Archaeological Sites and Resources, archeological sites are protected from unauthorized disturbance. The State Office of Archaeology and Historic Preservation maintains a record of archaeological sites and advises on the possible impacts and mitigations when these sites are located on property being developed. If an archeological site is discovered or artifacts are unearthed during construction, the State Office of Archaeology and Historic Preservation must be contacted for further direction. A report titled Identification of *Prehistoric Archaeological Resources in the Northern Puget Sound Study Unit*, (BOAS, Inc., 1987) provides a description of the prehistoric environment and inhabitants of Island, San Juan, Skagit and Whatcom counties as well as a bibliography of available archeological studies. Theses studies have identified ancient sites or settlements within the Bellingham area.

Historic Structures and Sites

Older buildings can give a neighborhood character and identity as well as attract tourists and increase property values. There are 31 sites listed on both the National Historic Register and the Washington Historic Register, 2 additional sites listed only on the Washington Historic register, and 2 historic districts as well as several sites of local historic interest within and near Bellingham (See Table 4.6.1., below). In addition, each neighborhood plan identifies landmarks within the neighborhood.

Table 4.6.1. Historic Structures and Sites

National Register Sites

1.	Aftermath Clubhouse	1300 Broadway
2.	B & B Furniture Building	1313 Bay Street
3.	Bellingham National Bank Building	101-111 E. Holly Street
4.	Alfred L. Black House	158 S. Forest Street
5.	Wardner's "Castle"/Hilltop House	1103 15th Street
6.	J.J. Donovan House	1201 N. Garden Street
7.	Edward Eldridge Homesite	2915 Eldridge Avenue
8.	Flatiron Building	1311-1319 Bay Street
9.	Roland G. Gamwell House	1001 16th Street
10.	Great Northern Railroad Station	Holly/D Street
11.	C.X. Larrabee House	405 Fieldstone Road
12.	Leopold Hotel	1224 Cornwall Avenue
13.	Robert L. Morse House	1014 N. Garden Street
14.	Mount Baker Theatre	106 N. Commercial Street
15.	Old Main Building	Western Washington University
16.	Captain George Pickett House	910 Bancroft Street
17.	Victor A. Roeder House	2600 Sunset Drive
18.	Lottie Roth Block	1106 W. Holly Street
19.	Whatcom Museum of History and Art	121 Prospect Street
20.	YWCA Building	1026 N. Forest Street
21.	Eldridge Historic District	
22.	Fairhaven Historic District	
23.	Sehome Hill Historic District	
24.	Federal Building	104 W. Magnolia
25.	Elk's Club Building	1412 Cornwall
26.	George H. Bacon House	2001 Eldridge Avenue
27.	County Courthouse/T.G. Richards Bldg	1308 E Street
28.	Fairhaven Library	1117 12th Street
29.	Federal Building	104 W. Magnolia
30.	Laube Hotel	1226 N. State Street
31.	Oakland Block	Holly/Champion
32.	J.J. Richards Building	1308 E Street
33.	Terminal Building	1101-03 Harris Avenue
34.	Washington Grocery Building	1133-35 Railroad Avenue

State Register Sites

1.	Morse Hardware Company Building	1025 N. State Street
2.	Old Whatcom County Courthouse	1308 E Street
3.	Terminal Building	1101-1103 Harris Avenue
4.	Wardner's "Castle"/Hilltop House	1103 15th Street
5.	Fort Bellingham Site (Urban Fringe)	1346 Marine Drive

Local Historic Registry

1.	Mount Baker Theatre	106 N. Commercial Street
2.	Bellingham/Whatcom County Museum	121 Prospect
3.	Old Courthouse	1308 E Street
4.	Leopold Hotel	1224 Cornwall Avenue
5.	Young Women's Christian Association	1026 N. Forest
6.	Roeder Home	2600 Sunset Drive
7.	Lairmont Manor	405 Fieldstone Road
8.	Roth Block	Holly and G Streets
9.	Monahan & McHugh Building	Magnolia and Cornwall

The City of Bellingham has established a Landmark Review Board, which provides guidance regarding historic structures and districts. The Board maintains a register of the City's landmarks, reviews proposals that may alter a designated landmark or historic district and pursues other activities regarding historic preservation.

Bellingham's City Council adopted a policy in April 1988, recognizing the importance of historic buildings and that the design, materials and location of the buildings may make compliance with current regulation impracticable or impossible. The policy mandates that "City code enforcement staff provide maximum flexibility when applying building and fire codes to the renovation of existing older building." Financial assistance to restore and preserve historic buildings are available, including but not limited to state and federal tax credits, economic development funds from HUD and City funds for façade improvements.

4.6.2 Historic and Archeological Resources - Impacts

As there has not been a comprehensive assessment of archaeological sites within the county, impacts to archeological sites must be evaluated individually as development is proposed. As all four alternatives; No Action, Infill, Adjusted UGA, and Infill and Adjusted UGA, must accommodate the projected 20-year growth, there will be increased pressure to build on vacant land, which may have archeological significance. There also will be pressure to redevelop properties, possibly resulting in impacts to historic structures. The Infill alternative will likely have the least impact as it encourages higher density within urban areas and there may be pressure to redevelop land adjacent to or near historic sites. The No Action alternative may increase development in other areas of the County, possibly exposing archeological sites to development pressure. The Infill and Infill and Adjusted UGA alternatives may increase pressure to redevelop historical sites. The Adjusted UGA and Infill and Adjusted UGA alternatives may create additional pressure to develop previously rural tracts of land increasing the possibility of impacting archeological sites.

4.6.3 Historic and Archeological Resources - Mitigating Measures

Various actions and programs can help mitigate impacts to the No Action, Infill, Adjusted UGA, and Infill and Adjusted UGA alternatives. These include the following mitigating measures:

- Continue to survey and review sites for inclusion in the historical register. Sites that are not currently considered historic may be viewed differently in the future.
- Continue implementing existing programs, procedures and regulations, (Landmark Review Board, financial incentives, building and fire codes.) to identify and conserve historic and archaeological resources.
- Expand design review outside of the already established historical districts.
- Increase public education and awareness of historical sites and development proposals that may affect these sites.
- Consider creation of a heritage park to which buildings can be moved when this is the only alternative for preservation.
- Review development proposals in conjunction with the Lummi Nation Tribal Historic Preservation Office and the Washington State Department of Archaeology to determine whether sites contain known archaeological resources or has the potential for such resources.
- Require areas that are found to have significant artifacts to be examined by an archaeologist working in conjunction with the Lummi Nation Tribal Historic Preservation Office to develop recommendations concerning preservation and protection.

4.7. TRANSPORTATION AND CIRCULATION

Transportation is intricately tied to land use and the pattern of development that evolves as an urban area grows. A transportation system includes various travel modes, such as pedestrian, bicycle, bus, automobile, freight truck, marine ferry, railroad, and airplanes. A multi-modal transportation network includes and connects all of these different travel modes in an effective and efficient manner, including connections within and between modes.

The City of Bellingham and Whatcom County strive to provide and manage an efficient multi-modal transportation network throughout the Bellingham, the UGA and the Urban Fringe Subarea. Both local governments work with Bicycle and Pedestrian Advisory Committees and the local transit bus provider - Whatcom Transportation Authority (WTA) to plan for and accommodate multiple travel modes.

Various agencies and companies also provide transportation services and facilities in Bellingham and the UGA planning area. The Port of Bellingham provides and manages marine and air transportation facilities for both passengers and freight. Railroad passenger transportation is provided by Amtrak and railroad freight transportation is provided by the Burlington Northern and Santa Fe railroad. The Alaska Marine Highway system operates out of the Bellingham Cruise Terminal and provides vehicle and passenger service between Bellingham and Haines, Alaska. Greyhound Bus Lines operates out of the Fairhaven Transportation Center and provides nationwide bus passenger service. The Washington State Department of Transportation (WSDOT) builds, maintains, and improves state highways and the Interstate 5 freeway through

Bellingham. Many private companies provide local bus, ferry, auto and truck rental, taxi, and air passenger service.

As transportation providers, the City of Bellingham and Whatcom County are responsible for improving and maintaining the network of local public streets, bike lanes, and sidewalks. With the exception of state and Interstate highways, transportation infrastructure in the Bellingham UGA and the Urban Fringe Subarea is primarily the responsibility of Whatcom County, but is connected to, and directly affects, the transportation infrastructure inside the City of Bellingham. Therefore, new public roads, bike lanes, and sidewalks will be constructed to connect different portions of the Bellingham UGA and the Urban Fringe Subarea as they develop.

According to GMA, an underlying assumption of urban growth areas is that the city will ultimately annex its UGA and assume responsibility for the road network. Therefore, a carefully planned and coordinated transportation system is essential. Whatcom County and the City of Bellingham must work together to develop a unified street standard for the Bellingham UGA and the Urban Fringe Subarea to provide safe and efficient multi-modal movement of people and goods and adequate levels of service as these areas develop to urban densities and are ultimately annexed to the City.

New and improved transportation facilities will be needed as growth occurs. The amount that is spent on building new roads and on improving existing ones is at least partially dependent on the land use alternatives that are chosen and the demands that those alternatives will put on the various transportation modes. Providing transportation infrastructure at the same time as, or in advance of, development can be much more cost-effective than retrofitting inadequate road infrastructure after development has occurred.

Level of Service (LOS) Standards

Level of service (LOS) is one method of measuring motor vehicle traffic congestion, traffic flow, and, generally, how a particular segment of roadway or intersection is functioning. LOS is measured on a scale of A through F as follows:

- LOS A and B represent free-flowing traffic (60% to 70% of road capacity) where drivers are able to travel at the posted speed limits and experience infrequent stops at signalized intersections.

- LOS C represents road volumes at 70% to 80% of capacity and drivers progress through signalized intersections reasonably well, and if the signals are properly timed, with infrequent stops.

- LOS D represents somewhat congested conditions where maneuverability is restricted by traffic volumes at 80% to 90% of road capacity and drivers are able to progress through intersections with relatively brief but more frequent stops.

- LOS E (recommended standard for the City of Bellingham) represents considerably congested conditions with 90% to 100% of road capacity, where drivers have to stop at almost every traffic signal and often wait through more than one green cycle in order to proceed.

- LOS F represents severely congested conditions traffic volume exceeds road capacity and drivers experience stop and go conditions with long waits at intersection where traffic may be backed up for several blocks.

4.7.1. Transportation and Circulation - Existing Conditions

4.7.1.1 City of Bellingham

4.7.1.1.1. Street Network

Figure 4.7.1. illustrates the street network serving Bellingham the UGA and the Urban Fringe Subarea. There are approximately 100 miles of arterial streets within the City of Bellingham and about 100 signalized intersections. The arterial streets are categorized as principal, secondary and collector depending on their function and physical design. The purpose of the categories is to define appropriate street design standards and to establish eligibility for road improvement funding from various sources.

Principal Arterials: Provide a linkage between major population and activity centers and are designed to carry volumes in excess of 10,000 vehicles per day (vpd). Bellingham design standards for principal arterials recommend an 80 foot wide right-of-way with four or more lanes of moving traffic and bicycle and pedestrian facilities on a 40-60 foot wide paved area. Speed limits range from 25 to 35 miles per hour and access to these streets is limited to 300 to 600 foot intervals whenever possible. Examples of principal arterials include Meridian Street, Northwest Avenue, Hannegan Road, Bakerview Road, Sunset Drive, Lakeway Drive, and Old Fairhaven Parkway.

Secondary Arterials: Collect and distribute traffic between neighborhoods and commercial areas. These streets are designed to carry 5,000 to 15,000 vpd. Design criteria recommend up to four lanes of moving traffic within a 60 to 80 foot wide right-of-way. Typical pavement width is 40-60 feet, with bicycle lanes inside the curbs and pedestrian facilities outside the curbs. Access to secondary arterials is limited to 150 to 300 foot intervals and the typical speed limit on secondary arterials is 25-35 miles per hour. Examples of secondary arterials include Airport Drive, Marine Drive, Telegraph Road, Cordata Parkway, Alabama Street, Orleans Street, Woburn Street, Yew Street and Samish Way.

Collector Arterials: Provide for the traffic needs within neighborhoods. Pedestrian and bicycle facilities are necessary for efficient transportation within neighborhoods. Traffic volumes on these streets range from 1,500 to 5,000 vpd. Design standards recommend two lanes of moving traffic, with parking bicycle and pedestrian facilities within a 60 to 80 foot wide right-of-way. Pavement widths typically range from 36 to 46 feet and speed is generally limited to 25 miles per hour. Examples of collector arterials include

Birchwood Avenue, Cedarwood Avenue, Deemer Road, Kellogg Road, Aldrich Road, Puget Street, Broadway, Forest Street, Willow Road, Donovan Avenue, North Shore Drive and Barkley Boulevard.

Local Access Neighborhood Streets: Provide direct access to individual residences. Local access roads are low speed, low volume roadways with frequent property access crossings. Local design standards require a minimum 60 foot right-of-way (50 feet for cul-de-sacs) with two lanes on 20-36 feet of pavement (28 foot pavement width is most often used). Curbs, gutters and sidewalks are required on all but minimum standard (20' wide) streets. Pedestrian and bicycle safety is a necessary consideration on all streets.

4.7.1.1.2. Bicycle and Pedestrian Facilities

Bellingham's transportation system has evolved into a multi-modal network designed for passenger and freight vehicles, bicycles, pedestrians, and transit riders. While there are missing links in the bicycle and pedestrian networks, on- and off-street bicycle facilities link many neighborhoods, parks, schools, the downtown area, Fairhaven, and other commercial centers, and a complete trail system exists along several major greenway corridors including the Interurban, South Bay, Whatcom Creek, and Squalicum Creek (Bay-To-Baker) Trails.

In addition to the 100 miles of arterial streets, there are currently 258 miles of pedestrian sidewalks and numerous enhanced pedestrian street crossings located at non-signalized intersections. Bellingham Comprehensive Plan policy is to include sidewalks and marked bicycle lanes on all new and, where possible, on reconstructed arterial roads. Currently Bellingham has 21 miles of marked bicycle lanes, 27 miles of additional unmarked bicycle routes, and 34 miles of developed off-street, multi-use trails providing alternative transportation connections for both bicyclists and pedestrians. In addition, Bellingham currently has 6 grade-separated street crossings available for bicyclists and pedestrians (See Figure 4.7.2.). The City of Bellingham has an active Bicycle and Pedestrian Advisory Committee. Based on their recommendations, the City is identifying and prioritizing on-street bicycle facilities and pedestrian facilities to complete these networks. Bellingham will continue to emphasize this multi-modal approach in the future to enhance infill development and to make sure that all parts of the City are well connected via the transportation network.

Existing Deficiencies

The City of Bellingham has adopted LOS E for all arterial roads. However, there are some arterials on which mitigation is not feasible and therefore those arterials are allowed to function at LOS F. According to the Bellingham Public Works Traffic Division, the City road segments and/or intersections listed below currently operate at LOS E or F during the PM peak hour:

- Northwest Avenue between Illinois Street and Birchwood Avenue
- Meridian Street between I-5 and Bakerview Road
- Lakeway Drive between Ellis Street and Lincoln Street
- Iowa Street between State and Woburn
- Woburn Street between Illinois and Ohio

- Hannegan Road between Division and Bakerview
- Bakerview Road between Deemer and Hannegan
- James Street between Sunset and Bakerview
- Chuckanut Drive between Old Fairhaven Parkway and Hawthorne

4.7.1.1.3. Transportation Improvement Program

The Bellingham Public Works Department prepares an updated *Six-year Transportation Improvement Program* every year for City Council adoption as part of the budgeting process. This document serves as a tool for land use planners and traffic engineers to plan, program and budget for necessary multi-modal transportation improvement projects. Transportation capital improvements are funded through various sources, including local street funds, state Transportation Improvement Board funds, Local Improvement Districts (LID), Real Estate Excise Tax (REET) funds, developer contributions, and Transportation Impact Fees (TIF).

4.7.1.2 Whatcom County

4.7.1.2.1. Road Network

Whatcom County roads serve the Bellingham UGA and the rural lands of the Urban Fringe Subarea. Traffic counts on County roads serving the planning area vary widely from a low of fewer than 100 vpd to as high as 20,000 vpd on Guide Meridian although generally, the rural roads carry fewer than 5,000 vpd until they approach urban areas.

Whatcom County uses the Federal Functional Classification system to classify its road network. The County circulation system encompasses three broad road classifications with more precise divisions within each. The classifications are: Arterials, Collectors, and Local Roads (Access roads). County roads are classified by function and average daily traffic volumes (ADT) as described below.

Arterials primarily provide for longer trips. They serve regional needs by providing connections between major communities and have limited access. In rural areas there are two types: Principal Arterials/interstates and Minor Arterials.

Principal arterials are intended to connect transportation modes and communities and to carry high volume intra-city traffic movement, including transit, pedestrian, bicycle, trucks, private vehicles, emergency and service vehicles. These arterials are usually designed to carry motor vehicle traffic volumes between 25,000 to 40,000 vpd. Minimum right-of-way is usually 80 feet or more, providing for as many as four traffic lanes of 12 feet each, two auxiliary lanes of 12 feet each, and a divider of 20 feet. Design speed may vary between 35 and 55 miles per hour (mph) during off-peak hours of traffic demand.

- According to the Federal Functional Classification system, Maplewood Avenue is the only principal arterial serving the Bellingham UGA and the Urban Fringe Subarea.

Minor Arterials are generally intended to interconnect major arterials with small geographic areas. Minor arterials are usually designed to carry traffic volumes between 5,000 to 25,000 vpd. Minimum right-of-way width is usually 80 feet or more, providing two 12-foot travel lanes and the potential for four travel lanes. Minor arterials are generally designed to include right-of-way for bicyclists and pedestrians. Design speed may vary between 25 and 35 mph.

- According to the Federal Functional Classification system, Lakeway Drive and Cable Street are minor arterials.

Collector roads function to connect local traffic to arterials and to provide local access. Major and Minor Collectors work to centralize traffic from streets that provide direct access to properties and transport them to the higher classified arterial. Collectors are intended to carry residential, commercial or industrial traffic to major or minor arterials. Generally, collectors are designed to carry motor vehicle traffic volumes between 3,000 to 10,000 vpd. Minimum right-of-way standard is usually 60 to 80 feet, providing two moving traffic lanes (which may vary in width) and exclusive right-of-way for parking, pedestrians, and bicyclists.

- According to the Federal Functional Classification system, Lake Whatcom Boulevard and Bennett Drive are major collectors.

- According to the Federal Functional Classification system, Smith Road, Hannegan Road, Northwest Drive, and Marine Drive are minor collectors.

Local Access roads provide access to individual properties and are broken into three classifications: General Access roads are through routes not otherwise classified that also provide short distance circulation; Local Access roads primarily serve local trips; Minor Access roads provide direct access to adjoining properties, and are generally dead ends or small loops. Residential or local streets are intended to carry only residential traffic to collector arterials. Minimum right-of-way standard is usually 60 feet or less, depending on number of lots served, providing for two travel lanes, and depending on adjacent land use density and type of development may provide exclusive space for cyclists and pedestrians. Parking may or may not be provided on the street. Design speed is usually 25 mph.

4.7.1.2.2. County Bicycle and Pedestrian Facilities

Whatcom County also has an active Bicycle and Pedestrian Advisory Committee that works with the County Planning, Parks and Public Works Departments. Current Whatcom County Comprehensive Plan policy is to include no less than 4 feet of paved shoulder for all new and reconstructed roads, which can serve as bicycle routes. In 2003, the Whatcom County Council adopted an update of the 1994 draft Whatcom County Bicycle Plan created by the Bicycle and Pedestrian Advisory Committee. The Plan identifies bicycle routes and needed improvements along major transportation corridors throughout Whatcom County.

Trails planned or existing in the Bellingham UGA include:

- Little Squalicum Beach trail and boardwalk
- West Airport Trail
- June Road Trail (west-side access to Whatcom Community College)
- Dewey Valley Trail (a segment of the Bay-To-Baker Trail)
- Sudden Valley Trail connector (to Bellingham)
- Coast Millennium Trail

4.7.1.2.3. Level of Service (LOS) Standards

Based on existing conditions, most of the Bellingham UGA and Urban Fringe Subarea roads function at a LOS of D or higher. Congestion frequently occurs at those segments of arterials closest to the city limits, where volumes tend to build and peak between 3 and 6 P.M. These segments provide a transition between rural and urban traffic volumes.

4.7.1.2.4. Transportation Improvement Plan

Whatcom County's Six-Year Transportation Improvement Plan (TIP) lists and prioritizes scheduled transportation improvements projects. Included in the TIP is a listing of how all the improvements will be funded, when construction will begin and end, and what type of road construction will occur. The projects listed on the current TIP are projected to use all of the available funding. Specific recommendations on roadways to be improved, the extent of the improvements, and projected costs and funding sources can be found in Whatcom County's 2004-2009 TIP.

4.7.1.3. Washington State Department of Transportation (WSDOT)

4.7.1.3.1. State Highways

In Whatcom County, the state highway system includes one freeway, Interstate 5; and seven state highways: SR 9 (Canadian Border – King County), SR 11 (Chuckanut Drive), SR 539 (Guide Meridian), SR 542 (Mount Baker Highway), SR 546 (Badger Road), SR 548 (Grandview Road-Blaine Road), and SR 543 (Blaine Truck Crossing). State highways play a very important role in the County, Bellingham and UGA street network (See Figure 4.x). In fact, all major points of entry into and through Bellingham (except Lakeway Drive) are state highways.

Interstate 5 is the major north-south connection for the west coast of the United States. It provides connections to Vancouver, B.C. to the north and Seattle, Olympia, Portland, Sacramento, Los Angeles, and Tijuana, Mexico to the south. SR 9 is indirectly connected to Bellingham via SR 542 (Mount Baker Highway) and provides connections between Canada, Sumas, eastern Whatcom County, and north King County. SR 11 (Chuckanut Drive) connects Bellingham to Skagit County, SR 539 (Guide Meridian) connects Bellingham to Lynden and Canada, and SR 542 (Mount Baker Highway) connects Bellingham to eastern Whatcom County and the Mount Baker Snoqualmie National Forest recreational lands and wilderness areas. All of these highways fall under the administration of the Washington State Department of Transportation

(WSDOT). Long-range improvements to state highways in the Bellingham UGA are listed in Washington's Transportation Plan 2003-2022.

While state highways allow a large volume of vehicle traffic to move people and goods into and through Bellingham, they can also create an impediment to efficient, safe functioning of the bicycle and pedestrian networks and pedestrian/transit connections. The barrier created by I-5 creates a need for planning and engineering to ensure safety and egress for bicycles and pedestrians to cross. Many of the state highways that serve as intra-city arterials do not have adequate bicycle and pedestrian facilities and the large volume of motor vehicle traffic creates obstacles in connecting neighborhoods and in achieving a connected and continuous bicycle and pedestrian network. State highway maintenance can also create challenges and safety concerns for bicyclists.

4.7.1.3.2. Access Management

In 1991, the legislature enacted Washington access control legislation. Under WAC Chapter 468-52, the Washington State Department of Transportation was charged with the implementation of the access control classification system and the establishment of standards and procedures for the regulation and control of ingress to and egress from the State Highway System. Key among the specifications are the spacing of access points for intersections and private driveways. The classification system consists of five categories or classes, which manage access to adjacent properties. The Guide Meridian is identified as being Class 3 within Bellingham's UGA and the Urban Fringe Subarea. This classification scheme requires that development be carefully planned for new access points, driveways be consolidated wherever possible, and rear lot line routes of entry be used wherever feasible. The City of Bellingham requires driveways to be a minimum of 300 feet apart on arterials, such as the Guide Meridian, but encourages a distance of 600 feet wherever possible.

4.7.1.4. Whatcom Council of Governments (WCOG)

The Whatcom Council of Governments (WCOG) is responsible for urban transportation planning in Whatcom County. This responsibility is established by Title 23 (Highways), and Title 49 (Transportation), Code of Federal Regulations. The Governor of Washington designated WCOG as the Metropolitan Planning Organization (MPO) responsible for carrying out federal transportation requirements and as the Regional Transportation Planning Organization (RTPO) responsible regional transportation planning requirements imposed by the Growth Management Act (GMA).

In October 2001, WCOG completed the Whatcom Transportation Plan (WTP) for Whatcom County. The WTP consolidates and updates the 1996 Metropolitan and Regional Transportation Plans (MTP and RTP) into one Plan. The WTP meets the combined transportation planning requirements imposed by Federal and State transportation agencies including the 1991 Intermodal Surface Transportation Efficiency Act (ISTEA), the 1998 Transportation Equity Act for the 21st Century (TEA-21) and the Washington State GMA. The WTP was adopted by the RTPO and MPO Policy Boards and will be referenced as the regional component of City and County Comprehensive Plan Transportation Elements.

The WTP consists of three basic components: 1) a comprehensive set of policies for roadways, public transportation and non-motorized transportation, 2) a set of recommendations for each mode, and 3) lists of future transportation projects. Specific transportation improvement projects are detailed in three sections: 1-3 year projects, 4-6 year projects, and 7-20 year projects. The Plan was developed without benefit of a working, calibrated transportation demand model. The need for such a model to portray and analyze transportation and land use growth scenarios, as well as system improvement alternatives is evident. WCOG is in the process of developing a regional, bi-national model that will have the capacity to represent, and analyze, forecast transportation scenarios. Future revisions of the plan will include comprehensive, in-depth computer-based traffic analyses.

4.7.1.5. Whatcom Transportation Authority (WTA)

Whatcom Transportation Authority (WTA) provides varying levels of public transportation service to all parts of Whatcom County (except Newhalem and the Mount Baker National Forest). WTA's Public Transportation Benefit Area (PTBA) covers over 760 square miles and is one of the largest service areas in the United States. Approximately 172,080 people live within this area. To help meet the diverse transportation needs of this population WTA operates a family of services including fixed route, paratransit (specialized, dial-a-ride, dial-a-ride flex, and safety net), commuter connection, vanpool, and rideshare services.

WTA services are funded by a 0.6% sales tax levied within the PTBA. Prior to the passage of I-695 in 1999, WTA was funded by a 0.3% local sales tax and monies closely matching sales tax revenue from the Motor Vehicle Excise tax. I-695 resulted in a loss of approximately 42% of WTA's funding. This precipitated service cutbacks in 2000 along with open staff positions that went unfilled. In March 2002 the voters of Whatcom County elected to raise their sales tax by 0.3%. This essentially replaced the lost Motor Vehicle Excise tax funding and prevented further major service cutbacks. Sales tax revenue is now WTA's primary source of funding comprising roughly 90% of its revenue. User fares provide another 9 percent. Together these sources cover operating expenses, capital expenditures, and depreciation costs related to the delivery of public transportation services. The WTA has also been successful in obtaining state and federal grants to replace vehicles and to construct needed facilities enabling the agency to stretch its funds for more local service.

The WTA operates out of its new facility located at 4111 Bakerview Spur Road. This facility brings all of WTA's maintenance, operations, and administrative functions together in one place. The main Downtown Bellingham Station is located on the site of the old Burlington Northern freight station on Railroad Avenue. Other facilities include Park and Ride stations in Ferndale, Lynden, and the Birch Bay outlet mall; and over 950 bus stops and 91 passenger shelters at bus stops. The WTA Park and Ride stations are also served by the Airporter Shuttle, which goes to and from the Seattle-Tacoma International Airport ((SEATAC). In addition, five informal park and ride lots exist in rural areas, often in church parking lots along routes connecting rural communities to Bellingham. The current fixed route rolling stock includes 40 total vehicles with an

average age of 8 years. All vehicles are equipped with wheelchair lifts and a bicycle rack. The WTA also operates 38 demand responsive paratransit vehicles (average age 3 years) equipped with wheel chair lifts for persons with disabilities and the elderly. The full WTA fleet includes 34 full-size Orion buses, 4 Trolley Replica Vehicles, 4 Commuter Connection large vans, and 16 Vanpool vehicles.

WTA currently has 40 fixed routes operating six days a week with weekday service spans of approximately 12 hours. During weekdays most fixed route buses run on either 30-minute or 60-minute headways. The 30-minute headway routes service Boulevard Drive to/from the Fairhaven area, Western Washington University, the Garden Street/Knox Street corridor (AM and PM Peak only), the Alabama Street corridor, and the Eldridge Avenue/Alderwood Street corridor (AM and PM Peak only). Most routes operate once per hour but major destinations (WWU, Bellis Fair/Cordata, Fairhaven, Lakeway Center, Sehome Village, Barkley Village, Sunset Square, and Whatcom Community College) are served by multiple routes, making the effective frequency much greater.

Routes serving areas farther from Bellingham such as Sudden Valley, Blaine, Gooseberry Point, Kendall and Sumas operate with longer headways of approximately 90 minutes during peak hours. In addition five routes operate only when WWU is in session. One of those routes, Route 90 shuttles students between the Civic Field park and ride lot and campus and is largely funded by WWU. All routes operate on Saturdays except WWU shuttles. Saturday service however, has a shorter span of service beginning at 9 am and ending between 5 and 6 pm. In September 2003 WTA increased its evening and Sunday service. A total of four evening and Sunday routes now serve high density neighborhoods within Bellingham connecting major cross town retail centers such as Bellis Fair and Sunset Square without requiring passengers to transfer downtown.

In 2002, WTA provided approximately 2.65 million passenger trips, over 1.2 million service miles on fixed routes, over 150,000 passenger trips on demand responsive paratransit service for the elderly and persons with disabilities, and over 55,000 passengers on its commuter connection and vanpool services. Despite WTA carrying larger numbers of passengers each year, 75% of workers over the age of 16 in Whatcom County drive alone to work, while only 2.2 % use public transportation according to the 2000 Census.

WTA is presently undertaking a long range strategic planning process with a goal of reshaping WTA into an organization that will be better able to respond to future public transportation needs of Whatcom County. The process will review all aspects of WTA's services and WTA's role in the community. Detailed discussions about WTA's mission, vision and values, locations where new services may be warranted, how existing service could be modified and what other service models might be appropriate in Whatcom County will take place. WTA expects to finalize the plan in early to mid 2004. WTA is looking for broad community input on WTA's future role in the county and how WTA should prioritize its services to best meet the community's public transportation

needs. For more information about the development of WTA's strategic plan the reader should contact WTA at 676-7433.

4.7.1.6. Marine Transportation

The Port of Bellingham operates a variety of facilities (See Figure 4.x) within Bellingham and the Urban Fringe Subarea. These facilities support a full range of activities including freight and passenger movement, retail businesses, industrial production, commercial services, recreation, foreign trade and tourism, and large ship and boat construction, maintenance and repair facilities around Bellingham Bay, which require specialized facilities and locations. Access to these facilities uses different modes of transportation including air, water, rail, trucking, commercial busses, pedestrian, bicycle, transit, taxis and private motor vehicles.

Squalicum Harbor

Located on 327 acres, the Squalicum Harbor facilities include the Harbor Center building, two retail malls, two yacht clubs, a major hotel complex, several restaurants, industries, and fish processors, and a regional U.S. Coast Guard station. A year-round public moorage facility with capacity for 1,700 commercial and pleasure boats is located on 207 acres at the harbor. There is also a public boat launch with parking for 96 car/truck-trailer combinations. In addition to permanent moorage facilities, there are 1,500 feet of visitor berthage available for transient vessels. Port plans include adding over 80 slips within the inner Squalicum Harbor. The Squalicum Harbor multi-use trails connect to city trails.

Whatcom International Shipping Terminal (WIST)

Located in Downtown Bellingham, WIST is a year-round marine cargo facility with three berthing spaces for cargo ships. A rail spur connects the facility to a Burlington Northern mainline in front of the site. Commodities handled at WIST include aluminum ingots, liquid chemicals, lumber, fertilizer and automobiles. The Port and City of Bellingham formed the Waterfront Futures Group in 2003 and are working together to plan the future use of the City's waterfront; how to provide multi-modal access to the waterfront; and how to integrate the waterfront with downtown Bellingham in the 21st century.

Fairhaven Transportation Center

The Fairhaven Transportation Center is located on the city's south side and includes the Bellingham Cruise Terminal, dry docks, seafood processing plants, and a public boat launch. This multi-modal transportation facility serves passengers arriving and departing by Greyhound bus, Amtrak Cascades rail service, the Alaska Marine Highway ferry service, and privately operated commuter ferries to and from the San Juan Islands. WTA bus service is available at the Fairhaven Transportation Center and the location provides easy access to state highways and Interstate 5.

4.7.1.7. Air Transportation

Bellingham International Airport

Bellingham International Airport (BLI) is owned and operated by the Port of Bellingham and is classified as a commercial service airport providing scheduled and charter air service to the public, and general Aviation facilities and services to the community and region. The Bellingham International Airport is located in the UGA adjacent to Bellingham's northwestern city limits, four miles northwest of downtown Bellingham and four miles southeast of downtown Ferndale.

The airport was originally built as a federal facility in 1941 and was constructed with three runways; two runways have since been closed. The north-south runway remains open and provides adequate annual operational coverage for all aircraft currently using the airport. Two air carriers provide passenger service to several locations in the region. This consists of light aircraft service to island destinations west and southwest of Bellingham, and direct service to Seattle and Portland on regional airline-class aircraft. As of late winter 2002 there were approximately 17 daily commercial flights. A third air carrier is being sought for increased connectivity, scheduling, and destination access. An additional regional airline had served Bellingham prior to the terrorist attacks of September 11 2002 and the recession in the economy and airline industry. Other scheduled service may return to the community as the national and regional economies, and the airline industry recover. Charter operators also provide air service using jet transport-class aircraft such as the MD-80-series and Boeing 737-series aircraft.

The airport property consists of an irregularly shaped parcel of land bounded on the east by Interstate 5, on the south by Airport Road, Bancroft Road and the Burlington Northern Railroad, on the west by Wynn Road and the Curtis Road industrial area in the westernmost UGA and on the north by the Interstate Northwest Industrial Area and the Ferndale UGA. Opportunities to extend the airport's runway are severely constrained by existing roads, including I-5 to the north. There is some potential to extend airport property to the west into rural Whatcom County; however, the Port presently has no plans for expansion.

Existing facilities at the airport include the terminal building and parking lot with over 700 short-term and long-term spaces, a fire station, a U.S. Customs inspection station, a maintenance compound, and general aviation area. The 2003 Airport Master Plan indicates that the airport passenger terminal building is inadequate, especially with new security requirements, and will have to be expanded in the future. For detailed information on future plans at Bellingham International Airport, see the 2003 Airport Master Plan and supporting documents. Few opportunities currently exist for travel to and from the airport other than by private automobile or taxi.

4.7.1.8 Rail Transportation

As was the case with many cities in the western United States, railroads played a significant role in Bellingham's early development. Although the City has little control over the railroads within its boundaries, the railroads do have significant impacts on the community. Industrial land use patterns in and near Bellingham are interrelated with rail lines in the City and rail service to the Port's industrial areas is an essential link in

the transportation system. The Burlington Northern and Santa Fe Railroad operates freight trains serving Bellingham. Amtrak operates passenger trains between Portland, Seattle, and Vancouver, B.C. The Amtrak station in south Bellingham is part of the Fairhaven Transportation Center and provides an important link with the Greyhound bus terminal, Amtrak Cascades rail service, the Alaska Marine Highway ferry service, privately operated commuter ferries to and from the San Juan Islands and WTA bus service. The location also provides easy access to state highways and Interstate 5. Pedestrian and bicycle access to passenger rail are also important links in the transportation system. However, railroad tracks can create a barrier to safe access to the waterfront and trail system to and along the waterfront.

4.7.2. Transportation and Circulation - Impacts

While the growth alternatives discussed in this EIS are based on the same 20-year population projection, each alternative distributes the growth (primarily the residential growth) in different ways. Options exist for mitigating impacts other than by roadway width increases (which can have the effect of reducing mode share for non-motorized modes and transit.)

The alternatives differ in the amount of land required for urban growth and the intensity with which that land is developed in terms of residential densities, allowable building height, size and floor area of commercial and industrial structures, and the mix of land uses. Population growth is expected to create additional demand for transportation facilities and services under all four alternatives. However, the impacts on the various modes of transportation and associated capital improvements are different for each alternative.

The major areas for commercial and industrial employment growth and, therefore peak hour motor vehicle trip generation are assumed to be similar under each alternative. While there could be an increase in industrial and commercial zoned land, the impacts will be primarily on the same major arterial corridors. Therefore, the improvements proposed in City and County Six-Year Transportation Improvement Programs and the Capital Facilities and Transportation Elements of City and County Comprehensive Plans are expected to mitigate the impacts of future development and the corresponding increased demand on city streets.

Alternative 1 - No Action

Under this alternative, growth would occur within existing City limits and UGA boundaries at existing zoning and residential densities. Generally, the No Action Alternative would be expected to:

- Create a shortage of land for urban residential development resulting in increased housing costs and pushing development and transportation impacts into surrounding cities and their UGAs and the rural areas of the County.
- Continue the present pattern of low-density residential development both in the City and in the UGA.
- Continue the present trend of dependence on private automobiles for transportation;

- Increase traffic congestion on City and County arterials;
- Increase commuting times for drivers, and transit riders;
- Increase air and water pollution from motor vehicles due to increase in vehicle miles traveled;
- Reduce efficiency and cost-effectiveness of public transportation;
- Require costly capital improvements and maintenance of the transportation network.
- Decrease opportunities for bicycle and pedestrian commute trips.

Alternative 2 - Infill
Under the infill alternative, zoning would be adjusted, where possible, in both the City and the existing UGA to achieve higher residential densities than County and City zoning currently allow. Urban development would be directed into the City and the UGA resulting in less development pressure on the other cities, their UGAs and the rural areas of the County. An emphasis would be placed on mixed uses, and residential densities would be concentrated around designated neighborhood commercial centers. Generally, an emphasis on infill development and zoning changes to allow higher densities where public infrastructure capacity already exists would be expected to:

- Depending on the degree of infill possible, possibly create some shortage of land for urban residential development resulting in increased housing costs and pushing development and transportation impacts into surrounding cities and their UGAs and the rural areas of the county.
- Support higher density, compact urban development
- Increase traffic congestion on City and County arterials;
- Create more opportunities for walking and bicycling in the compact urban core;
- Potentially decrease commuting times for drivers, transit riders, and bicyclists;
- Reduce dependence on private automobiles, to some degree, for transportation for convenience shopping and employment purposes;
- Increase air and water pollution from motor vehicles (including busses), although to a lesser degree than Alternative 1, due to growth-related increase in vehicle miles traveled;
- Potentially increase efficiency, cost-effectiveness, and demand for public transportation;
- Increase capacity of existing transportation system by providing increased opportunities for pedestrian transit and bicycle commute trips.
- Make development of new and maintenance of existing transportation facilities and services more cost effective as a result of serving more people in the same area;
- Create additional demand for less-expensive pedestrian and bicycle capital improvements to the transportation network; and

Alternative 3 - Adjusted UGA
Under this alternative, land inside the City and existing UGA would retain its existing zoning and residential densities and the UGA boundary would be adjusted sufficiently to accommodate the projected population growth. Land added to the UGA would be

rezoned from rural densities to densities of between 4 and 10 units per acre and would become eligible for City sewer and water and annexation. Expansion of the UGA boundary at existing residential densities and under existing development conditions would be expected to have impacts similar to Alternative 1, and would generally:

- Depending on how large the expanded UGA becomes, provide more than enough land for the projected 20-year population growth.
- Continue the present pattern of low-density residential development in the City, in the UGA and in the enlarged UGA;
- Increase dependence on private automobiles for transportation;
- Increase traffic congestion on City and County arterials;
- Increase commuting times for drivers, transit riders, and bicyclists;
- Increase air and water pollution from motor vehicles due to increase in vehicle miles traveled;
- Reduce efficiency and cost-effectiveness of public transportation;
- Require costly capital improvements and maintenance of the transportation network.
- Reduce opportunities for pedestrian, transit, and bicycle commute trips.

Alternative 4 - Infill and Adjusted UGA

Under this alternative, residential densities would be increased, where possible, in both the City and the UGA and the UGA boundary would be expanded just enough to accommodate the projected 20-year population growth. An emphasis would be placed on mixed, rather than segregated, land uses and residential densities could be concentrated around designated pedestrian-oriented neighborhood commercial centers. Higher density development in both the City and the UGA would generally be expected to:

- Create compact, high-density urban areas surrounded by moderate to high-densities radiating out from the urban core;
- Potentially decrease dependence on private automobiles in both the compact urban areas and areas designated pedestrian-oriented neighborhood commercial centers are surrounded by higher density residential development;
- Create more opportunities for walking and bicycling in the compact urban core and areas designated as pedestrian-oriented neighborhood commercial centers;
- Create an increase in traffic congestion on City and County arterials due to increased population;
- Potentially decrease commuting times for drivers, transit riders, and bicyclists living in the compact urban core and where designated, pedestrian-oriented neighborhood commercial centers;
- Potentially create less air and water pollution from motor vehicles than other alternatives due to potential decrease in vehicle miles traveled;
- Potentially increase the efficiency and cost-effectiveness of and demand for public transportation;
- Potentially result in long-term cost savings for providing and maintaining transportation facilities and services due to shorter trips in the urban core and designated pedestrian-oriented neighborhood commercial centers; and

- Create additional demand for less-expensive pedestrian and bicycle capital improvements to the transportation network.
- Increase capacity of the transportation system by providing increased opportunities for pedestrian, transit and bicycle commute trips, and decreasing SOV commute trips.

4.7.3. Transportation and Circulation – Mitigating Measures

As the City, UGA, and 5-Year Review Areas develop at urban densities over the 20-year planning period many transportation improvements will be required throughout the planning area based on the impacts described above. The transportation improvement projects listed below are all identified in City and County Six-Year TIP's, Transportation Elements of City and County Comprehensive Plans, and the Whatcom Transportation Plan.

Consistent with City and County Comprehensive Plan Transportation policies, the arterial road projects listed below would include bicycle lanes and sidewalks unless topography, environmental factors, or right-of-way constraints do not allow them. If standard facilities cannot be included, innovative solutions should be considered to provide for bicycle and pedestrian travel and safety. Some of the arterials listed below are in or near sensitive environmental features, such as wetlands, streams, or steep slopes and construction may not be environmentally or economically feasible. After analyzing the projected growth in traffic during the planning period, the City of Bellingham Bicycle and Pedestrian Advisory Committee has recommended Transportation Demand Management (TDM) mitigation methods be considered in advance of and concurrent with roadway expansion.

It is anticipated that all of the transportation improvement projects identified in both the City of Bellingham and Whatcom County 2004-2009 Transportation Improvement Programs (TIP) will need to be completed during the 20-year planning period.
The Bellingham Public Works Department has recommended the following list of projects in addition to those listed in the 2004-2009 TIP to maintain level of service (LOS) E on arterial streets. In some instances, constructing additional travel lanes and removing parking on existing arterials may create opposition from businesses and property owners, making capacity improvements difficult to accomplish. In these cases, the use of TDM mitigation methods can increase effective capacity without road expansion.

4.7.3.1. Improvements to Existing City Streets

Where missing, pedestrian and bicycle facilities should be included in all of these projects whenever possible.

1. Northwest/Elm/Dupont/Prospect/Bay corridor needs 4 travel lanes and left turn lanes (may be accomplished by removal of on-street parking). High Priority bike lane. Retain and enhance pedestrian facilities where possible.

2. Iowa Street corridor between Moore Street and Woburn Street needs channelization for 4-lane and 5-lane operation. Move poles to provide sidewalk travel width. Provide marked Bike lanes.

3. Cornwall Avenue corridor between York Street and Illinois Street needs 4 travel lanes and left turn lanes (may be accomplished by removal of on-street parking).

4. James Street corridor between Alabama Street and Sunset Drive requires 4 travel lanes and a left turn lane (may be accomplished by removal of on-street parking). Improve school crossing at Maryland.

5. Airport Way corridor between West Bakerview and Airport Drive needs 5-lane urban improvements including bike lanes sidewalks and enhanced pedestrian crossings.

6. Meridian Street corridor between Illinois Street and Interstate 5 needs 5-lane urban improvements. Improve continuity of pedestrian and bicycle facilities along corridor, including under Interstate 5.

7. Holly Street corridor between Broadway Street and Lakeway Drive needs rehabilitation of existing street with safety and efficiency improvements for all modes, including pedestrian and bicycle.

8. Lakeway Drive corridor between Holly Street and the City limits needs 5-lane urban improvements, including bike lanes, and enhanced pedestrian crossings. (City requests County improve Lakeway Drive to 5 travel lanes between City limits and Austin Street/Lake Louise Road. An alternative option could include 4 lanes with turn lanes at intersections, where warranted).

9. Chuckanut Drive (SR 11) corridor between City limits and Old Fairhaven Parkway needs 3-lane urban improvements. Bike lanes and sidewalks for pedestrian safety improvements on both sides of corridor.

10. Harris Street corridor between 4th Street and 10th Street/Old Fairhaven Parkway needs 3-lane urban improvements. Bike lanes and sidewalk on both sides of corridor.

11. Sunset Drive (SR 542) corridor between Woburn Street and City limits/McLeod Road needs 5-lane urban improvements including bike lanes, sidewalks and enhanced

pedestrian crossings (City requests State improve SR 542 from City limit to Mount Baker Ski Area, including a shoulder for bicycle travel).

12. Squalicum/Roeder/Cornwall/Chestnut/State/11th/Finnegan/12th corridor (Truck route) urban improvements need completion and non-standard links need rehabilitation. Enhanced pedestrian crossing improvement at West Street and Squalicum Parkway

13. Samish Way corridor needs 3-lane improvements for the entire corridor. Bicycle lanes should be included to enhance the Bike Route to Lake Padden. Sidewalks should be included along this corridor and enhanced pedestrian crossings should be installed at 40th and 36th streets. Pedestrian safety improvements should be made at the Interstate 5 Freeway off-ramp at Samish Way.

14. Woburn Street corridor between Alabama Street and East Illinois Street needs on-street parking removed and widening to 5 lanes. Bike Lanes, sidewalks, and enhanced pedestrian crossing should be installed at trail crossings.

4.7.3.2. New City Streets

1. 24th Street between Old Fairhaven Parkway and Viewcrest Road (If development warrants).

2. Eliza Avenue between Westerly Drive and East Bakerview Road.

3. New Deemer Road collector arterial between East Bakerview Road and Kellogg Road.

4. New Lopez Street collector arterial between Yew Street and Raymond Street.

5. New San Juan Boulevard secondary arterial between 40th Street and Yew Street.

4.7.3.3. Interstate 5 Improvements (WSDOT)

The City will encourage WSDOT to improve bicycle and pedestrian facilities and safety in all projects, wherever possible.

1. Widen to six lanes between Samish Way interchange and Meridian Street interchange.

2. Reconstruct ramps at the Lakeway Drive interchange, including improvement for pedestrian safety.

3. Widen Meridian Street interchange underpass to seven lanes and reconstruct ramps, including improved bicycle and pedestrian safety facilities.

4. Northwest Road interchange; possible deletion of direct access ramps. Replace with frontage road or collector-distributor road system between Meridian Street and Bakerview Road, including improved bicycle and pedestrian safety facilities.

5. Widen the West Bakerview interchange overpass to four/five lanes and reconstruct ramps, including improved bicycle and pedestrian safety facilities.

6. Pedestrian under or over crossings to connect neighborhoods, at following suggested locations: Gladstone St., Carolina St., Maple St. to Ashley St., or Consolidation Ave., Donovan St., Douglas St.

7. Improve Old Fairhaven Parkway Interchange, including enhanced bicycle and pedestrian safety facilities.

4.7.3.4. Urban Growth Area Transportation Improvements

Bellingham and Whatcom County Public Works traffic engineers have identified a need for the transportation improvements listed below in the Bellingham UGA to provide an efficient street network for traffic circulation as the UGA develops at urban densities over the 20-year planning period. The projects listed below are identified in City and County Six-Year TIP's, Transportation Elements of City and County Comprehensive Plans, and the Whatcom Transportation Plan.

Consistent with City and County Comprehensive Plan Transportation policies, the arterial road projects listed below would include bicycle lanes and sidewalks unless topography, environmental factors, or right-of-way constraints do not allow them. If standard facilities cannot be included, innovative solutions should be considered to provide for bicycle and pedestrian travel and safety. Some of the arterials listed below are in or near sensitive environmental features, such as wetlands, streams, or steep slopes and construction may not be environmentally or economically feasible.

Northwest UGA

1. Marine Drive between Bennett Drive and Lummi Shore Road needs reconstruction, bike lanes, and bridge improvements.

2. Maplewood Avenue needs reconstruction, widening, drainage, shoulders, bike lanes, and bus stops.

3. New June Road collector arterial between Stuart - W. Kellogg Road and Aldrich Road, including bicycle lanes, if right-of-way and adjacent wetlands permit.

4. New Cordata Parkway secondary arterial between Horton Road and north UGA boundary.

5. New Kline Road secondary arterial between Cordata Parkway and west UGA boundary.

6. Coast Millenium Trail: marked on-street bike lanes, signed off-street bike paths.

North Central UGA

1. Guide Meridian (SR 539) improved to 5 travel lanes between Horton Road and Canadian border (WSDOT).

2. East Bakerview Road improved to 4-lane primary arterial including bike lanes between Hannegan Road and Deemer Road.

3. James Street Road improved to secondary arterial between Woodstock Way and Kellogg Road.

4. Telegraph Road improved to secondary arterial between Deemer Road and James Street Road.

5. New Deemer/Tull Road collector arterial between Kellogg Road and Horton Road.

6. New Kellogg Road collector arterial between Cory Street and James Street Road.

7. Hannegan Road improved to 4 travel lanes with bicycle lanes between Woburn Street and Smith Road (Bicycle facilities may be in the form of paved shoulders).

8. Hannegan Road turn lanes, intersection improvements, and bike lanes between Bellingham City limits and Lynden City limits (Bicycle facilities may be in the form of paved shoulders).

Northeast

1. East Bakerview Road improved to primary arterial between Hannegan Road and Mount Baker Highway (SR 542).

2. Britton Road improved to secondary arterial between Barkley Boulevard and Mount Baker Highway (SR 542).

3. SR 542 improved to 4 lanes with bicycle lanes between McLeod Road and SR 9 at Nugent's Corner (WSDOT).

4. Bay to Baker Trail: marked on-street bike lanes, signed off-street bike paths.

East

1. Lakeway Drive improved to 5 lanes between City limits and Austin Street (An alternative option could include 4 lanes with turn lanes at intersections, where warranted).

2. Lake Louise Road: Several sections between Cable Street and Lake Whatcom Boulevard need widening, straightening and reconstruction.

3. Lake Whatcom Boulevard improved with shoulders in various sections.

4. North Shore Road bike lanes or separated use trail along BPA utility corridor from Bellingham City limits to North Shore/Ken Hertz Trail, if feasible.

Southeast

1. Yew Street Road improved to secondary arterial between San Juan Boulevard and Samish Way.

2. New Consolidation Parkway/San Juan Boulevard extension east into UGA.

3. New Governor Road collector arterial between Samish Way and San Juan Blvd.

4. New Wildwood Avenue collector arterial between Governor Road and 40th Street.

5. New unnamed east-west collector arterial between Governor Road and Yew Street Road.

6. Lookout Mountain (Galbraith) trails: North/South connecting Whatcom Falls Park to Lake Padden Park, East/West connecting Lake Louise Road to City and County Park properties and Yew Street Road (Whatcom County Bicycle Plan).

4.7.3.5. Future Streets for 5-Year Review/UGA Expansion Areas

Bellingham and Whatcom County Public Works traffic engineers have identified a need for the following transportation arterials to provide an efficient street network for traffic circulation in the event that the UGA boundary is expanded to include the 5-Year Review Areas and rezoning allows development at urban densities over the 20-year planning period. Arterial roads include bicycle lanes and sidewalks unless topography, environmental factors, or right-of-way constraints do not allow them. Some of the arterials below are in or near sensitive environments, such as wetlands, streams, or steep slopes and construction may not be feasible. In the case that standard facilities cannot be included, innovative solutions should be considered to provide for bicycle and pedestrian travel and safety.

Northwest UGA

1. New Van Wyck Road secondary arterial from West Horton Road to Pacific Highway.

2. Slater Road improved to secondary arterial between Interstate 5 and Northwest Road.

3. New Slater Road secondary arterial between Northwest Road and Hannegan Road.

4. Possible future extension of Slater Road between Hannegan Road and SR 542.

North Central UGA

1. The continuation of the Cordata Parkway secondary arterial to West Smith Road.

2. New Irongate Road secondary arterial between East Bakerview Road and Hannegan Road.

4.7.3.6. Other Mitigating Measures

The following mitigating measures could be incorporated into the proposed Bellingham Comprehensive Plan to mitigate the adverse impacts of all four alternative growth scenarios:

1. Continue City participation in the regional transportation planning process through the Whatcom County Council of Governments.

2. Develop and maintain a concurrency management system to ensure that adequate transportation facilities are available to serve new development.

3. Utilize the City of Bellingham travel demand forecasting model to anticipate future traffic growth so transportation facilities can be provided in a timely and coordinated manner.

4. Implement Bellingham's Multifamily Design Review Guidelines to encourage development to be transit supportive, pedestrian-oriented, and bicycle friendly.

5. Establish Level of Service (LOS) standards for all transportation modes to identify deficiencies and demand for improvements.

6. Encourage land use patterns that reduce vehicle trips and vehicle miles traveled. Alternatives 2 and 4 emphasize this approach.

7. Develop neighborhood commercial centers and locate higher density housing convenient to jobs and services to ensure pedestrian and bicycle access to transit lines, and to encourage bicycle, pedestrian and transit commute trips. Alternatives 2 and 4 emphasize this approach.

8. Give higher priority to developing and maintaining transportation facilities such as the bicycle and pedestrian trails network that mitigate impacts on the environment, reduce energy consumption, and promote increased physical activity .for the maintenance of better public health,

9. Seek available transportation grant funding, collect Transportation Impact Fees (TIF), and identify new funding sources, such as Real Estate Excise Taxes (REET) to support necessary transportation system improvements.

10. Identify “Multi-Modal Corridors” throughout the City of Bellingham and the UGA and require new development to provide facilities or contribute TIF’s for all modes of transportation, including pedestrian, bicycle, transit, and motor vehicles.

11. Develop a Transportation Demand Management program aimed at reducing congestion, air pollution and energy consumption by requiring large employers and major new developments to reduce the number of single occupant vehicles being driven to and from those projects. Focus areas should include downtown Bellingham, Western Washington University, Cordata/Bellis Fair, Saint Joseph's Hospital, and industrial areas along Woburn and Hannegan near Sunset Drive.

12. Review parking requirements for major commercial and industrial uses for the purpose of reducing the supply of parking thereby providing a disincentive to automobile use.

13. Evaluate the potential to convert and/or replace the City's conventional gasoline and diesel-fueled vehicles to alternatively fueled vehicles.

14. Whatcom County and Bellingham should cooperate to establish a Transportation Impact Fee system for the proposed Urban Growth Area.

15. Link the pedestrian network to encourage pedestrian and transit commute trips.

16. Link the bicycle network to encourage bicycle commute trips.

Table 4.7.1. SELECTED TRAFFIC COUNTS FOR ARTERIALS IN BELLINGHAM AND THE UGA (Source: Bellingham and Whatcom County Public Works Departments)

TRAFFIC COUNTS (VPD) – MAJOR ARTERIAL STREETS IN OR NEAR THE NORTHWEST BELLINGHAM UGA													
ARTERIALS	**1988**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1999**	**2000**	**2001**	**% Chg**
Northwest Drive													
S of Bakerview	6,313	6,574	7,684				7,700		8,300	10,200		10,700	**70%**
N of Bakerview	4,752	4,671					6,200		6,700	7,200		6,900	**45%**
S of Slater		4,344				5,975						6,952	**60%**
N of Slater		4,682				6,285						7,417	**58%**
S of Smith		2,801		5,443			6,148	7,980				5,435	**94%**
N of Smith		3,488		4,222			4,344	4,753				4,097	**18%**
Slater Road													
W of Northwest Dr		1,185				2,664		2,874				3,350	**183%**
Aldrich Road													
N of Northwest Dr	865											1,194	**38%**
S of Smith Rd	585											1,166	**99%**
Smith Road													
W of Northwest Dr		2,536		2,797			3,484	3,177				3,503	**38%**
E of Northwest Dr		2,433		3,114			3,325	3,858				4,371	**80%**
W of Aldrich	+1,800											4,862	**170%**
E of Aldrich	+1,745											5,427	**211%**
West Bakerview Road													
W of Northwest Dr	6,422	6,714										14,400	**124%**
E of Northwest Dr							14,300		16,600	18,300			**28%**
Cordata Parkway													
N of Bakerview					12,200		13,000		12,600	14,600		15,000	**23%**
S of Horton					2,400		2,800		3,200	4,500		6,700	**179%**
Interstate 5													
N of Sunset									55,000		55,000		**0%**
N of Meridian									42,000		42,000		**0%**
N of Northwest									41,000		47,000		**15%**
N of Slater									32,000		40,000		**25%**

NOTES: + = 1983

TRAFFIC COUNTS (VPD) – MAJOR ARTERIAL STREETS IN OR NEAR THE ***NORTH CENTRAL BELLINGHAM UGA***													
ARTERIALS	**1988**	**1990**	**1991**	**1992**	**1993**	**1995**	**1997**	**1998**	**1999**	**2001**			**% Chg**
Smith Road													
W of Meridian	*2,304				3,467	3,510							**52%**
E of Meridian	**2,338		3,628		3,694	4,252							**82%**
Meridian Street													
S of Bakerview					37,000	32,000	37,700		36,100	41,700			**13%**
S of Horton					24,000	21,800	26,500		22,900				**-5%**
East Bakerview Road													
E of Meridian						9,900	9,900		12,900				**30%**
W of James	4,918	7,526				12,341							**151%**
E of James	4,380	5,639				10,399							**137%**
W of Hannegan	**5,093					8,184							**61%**
James Street Road													
S of City Limit						4,100	6,500		8,000				**95%**
N of City Limit	3,862		4,750				6,251						**62%**
S of Telegraph	**3,715	4,327				5,930		9,644					**160%**
N of Telegraph	*2,175							5,786					**166%**
S of Bakerview	**2,606			3,561	3,602	5,257				4,990			**91%**
N of Bakerview	**644	809				874		995		#920			**43%**
Telegraph Road													
W of Deemer	1,590				3,600	3,400	3,500		8,400				**428%**
W of James	1,680	2,466						4,596					**174%**
E of James								88					**N/A**
Deemer Road													
S of Bakerview	617								1,600	2,100			**240%**
Hannegan Road													
S of Bakerview	**6,795		8,913		10,100	10,377	13,400			17,000			**150%**
N of Bakerview	**7,993		9,122			10,275			12,000	12,000			**50%**

NOTES: * = 1987, ** = 1989, # = 2002 traffic counts.

TRAFFIC COUNTS (VPD) – MAJOR ARTERIAL STREETS IN OR NEAR THE *NORTHEAST BELLINGHAM UGA*

ARTERIALS	1988	1990	1991	1992	1993	1995	1997	1999	2001				% Chg
Britton Road													
S of SR 542	^2,257			4,706		2,785	2,423	2,867					**27%**
N of Emerald Lake	**4,308		4,689				2,824		2,587				**-40%**
N of Northshore	**5,928				6,400	4,800	5,800	5,700					**-4%**
Hillsdale Road													
E of Britton	+963					1,751			2,232				**132%**
Barkley Boulevard													
W of Woburn						4,191	4,200	8,100	8,100				**93%**
E of Woburn						4,300			11,600				**170%**
W of Chandler									7,900				**N/A**
W of Britton							5,900						**N/A**
Chandler Parkway													
N of Barkley								1,800	2,900				**61%**
McLeod Road													
E of Sunset								4,000	5,000				**25%**
East Bakerview Road													
E of Hannegan	**1,339		1,467			1,653							**24%**
Dewey Road													
W of SR 542		795				740			1,307				**64%**
Sunset Drive													
E of Woburn					12,700	12,800	12,000	15,900	16,800				**32%**
E of McLeod									11,900				**N/A**
Woburn Street													
S of Sunset					11,800	14,500			15,800				**34%**
S of Barkley							16,200	17,700	18,400				**14%**
S of Alabama					7,800	8,800	10,000	11,300					**45%**
N of Lakeway					9,300	8,600	11,700	12,300	11,400				**23%**
Alabama Street													
W of Northshore					9,900	8,600	9,000	10,400					**5%**
W of Woburn					16,900	20,300	17,700	19,000	18,900				**12%**
W of Pacific					17,100	21,700	19,800	20,400					**19%**
Northshore Drive													
W of Britton					10,300	5,800	6,800	7,400	8,800				**-15%**
E of Britton					3,100	2,400	3,300						**7%**

Notes: + = 1983, ^ = 1984, ** = 1989, # = 2002

TRAFFIC COUNTS (VPD) – MAJOR ARTERIAL STREETS IN OR NEAR THE ***EAST BELLINGHAM UGA***													
ARTERIALS	**1988**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1999**	**2000**	**2001**	**% Chg**
Lakeway Drive													
E of Lincoln/I-5									23,000	25,800		23,300	**1%**
E of Puget					20,900		23,000			25,800			**23%**
E of Yew					19,200		20,000		18,600	20,700		20,400	**6%**
E of Electric					12,000		11,900		11,900	12,000			**0%**
W of City Limit													
W of Oriental								11,706				13,019	**11%**
E of Euclid	%5,686							9,423					**66%**
W of Austin	+4,388	°9,161								9,965			**127%**
Oriental Avenue													
S of Lakeway	%623							663					**6%**
Euclid Avenue													
N of Lakeway	623										603	#699	**12%**
Austin Street													
S of Cable		1,771										#2,729	**54%**
Lake Louise Road													
S of Freemont	**1,380	1,593	2,272	2,225		2,496		2,533					**84%**
Lake Whatcom Blvd													
S of Coronado			3,519				4,214			4,818		#5,410	**54%**
Electric Avenue													
N of Lakeway					8,000		6,400		7,400	11,000		7,900	**-1%**

NOTES: + = 1983, °1985, % = 1986, ** = 1989, # = 2002

TRAFFIC COUNTS (VPD) – MAJOR ARTERIAL STREETS IN OR NEAR THE ***SOUTHEAST BELLINGHAM UGA***													
COUNTY ARTERIALS	**1988**	**1990**	**1991**	**1993**	**1994**	**1995**	**1997**	**1999**	**2001**				**% Chg**
Woburn Street													
N of Lakeway				9,300		8,600	11,700	12,300	11,400				**23%**
Yew Street													
S of Lakeway				4,600		4,100	4,500	6,500	4,500				**-2%**
S of City limit	**2,939	3,039	3,855	3,305	4,191		5,059	5,149	4,909				**67%**
N of Samish	*1,377				2,102		2,922	3,375	3,162				**130%**
Samish Way													
S of Galbraith	°1,361	1,281				1,722							**27%**
E of Yew	*1,428			2,266			3,691	3,058	2,839				**99%**
W of Yew	**1,995			3,600		2,300	3,400	6,200	3,900				**96%**
S of Larrabee				6,100		4,100	8,700	7,500	5,100				**-2%**
S of Lincoln				10,500		15,000	19,000	19,000					**81%**
Lincoln Street													
S of Lakeway				8,100		10,400	8,600	9,800	11,200				**38%**

NOTES: ° = 1985, * = 1987, ** = 1989

TRAFFIC COUNTS (VPD) – MAJOR ARTERIAL STREETS IN OR NEAR THE ***WEST BELLINGHAM UGA***													
ARTERIALS	**1988**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1999**	**2000**	**2001**	**% Chg**
Marine Drive													
W of Bennett	+3,944	*4,160			4,067		5,026						**27%**
E of Alderwood	*3,811											#3,759	**-1%**
W of Alderwood		5,316										#5,861	**10%**
Bennett Drive													
N of Marine	**4,921		4,069		2,287		5,207		5,207	6,050		5,087	**3%**
S of Airport/Baker	α6,851	5,537		6,382			7,130						**4%**
N of Airport/Baker	%1,460	α1,937						5,548		2,526		4,258	**192%**
Cottonwood Avenue													
E of Bennett							989		958	1,130		1,180	**19%**
Cedarwood Avenue													
E of Bennett							1,503		1,509	1,461		1,487	**-1%**
Alderwood Avenue													
N of Marine		2,807						3,472				#2,001	**-29%**
W of Bennett	α2,243						2,051					#3,527	**57%**
Maplewood Avenue													
S of Bakerview	**1,872		2,247	2,478	2,287		2,070				1,030		**-5%**
Airport Way													
W of Bennett	α5,532	5,839						8,452			9,390		**70%**
Curtis Road													
N of Country Lane	*376								500			528	**40%**
S of Rural Ave									759			686	**-10%**
Rural Avenue													
S of Slater						1,648			1,387			#1,352	**-18%**
Slater Road													
E of Rural						9,306			8,959	9,533		#12,449	**34%**
W of Rural		5,049				8,103			7,739	8,363		#11,138	**121%**

NOTES: % = 1986, * = 1987, α = 1988, ** = 1989, # = 2002

4.8. PUBLIC SERVICES AND FACILITIES

4.8.1. Fire Protection and Emergency Medical Services (EMS)

4.8.1.1. Fire Protection and EMS - Existing Conditions

4.8.1.1.1. City of Bellingham

The Bellingham Fire Department and Whatcom Medic One provide fire suppression, life safety education, code compliance, and emergency medical services (EMS) out of six fire stations and two county ambulance stations (See Figure 4.8.1.). The Life Safety Division performs fire code plan reviews for new commercial building construction, coordinates inspections of current commercial/multi-family residential occupancies, investigates fires, and provides public safety education services.

The Bellingham Fire Department received a Class 3 rating from the Washington Survey and Rating Bureau (WSRB) in 1993. Class 1 is the best rating, and nationwide only a proportionally small number of cities have the Class 1 rating. Class 10 is the lowest rating and essentially means that a jurisdiction or area does not have the ability to provide timely and/or effective fire protection services. The better the City's WSRB rating, the less homeowners pay for fire insurance. The Department incorporated many of the recommended changes identified during the 1993 survey, including upgrades to the City water system and the construction of a new fire station (Fire Station 6 on Deemer Road) to serve the northern city area. The City's Class 3 rating was reviewed and re-confirmed by the Bureau in 2002. The Bellingham Fire Department presently operates the following facilities:

<u>Bellingham Station 1, Headquarters: 1800 Broadway</u>
This station was built in 1992 and serves as the Fire Department Administrative Headquarters. The station houses the Operations Battalion Chief, one engine company crew, two medic unit crews, one reserve engine, one reserve medic unit, the Arson van, and the Multiple Casualty/Rehabilitation unit. This station provides first response fire and EMS services to the downtown, central residential areas of the City, and a portion of County Fire District #8 that lies within the UGA. The two medic units provide citywide and countywide medic unit response. The administrative programs housed in the office spaces include the Countywide Medic One Ambulance Division, the countywide fire dispatch Communications Division, the Life Safety Division, and the Administrative Division. These programs have grown to such an extent that the Department's Training Division is housed in a leased office space across the street from the station, prompting a recent office space needs study, which concluded that the Broadway facility is inadequate to meet the anticipated space demands over the 20-year planning period.

<u>Bellingham Station 2: 1590 Harris Street</u>
The Fairhaven Station was opened in 2001 and currently houses one engine, one reserve medic unit, and a workstation for the Bellingham Police Department. Fire Station 2 serves as the first response fire and EMS facility for the south side of Bellingham and provides a reserve medic unit response for south Whatcom County as

part of the Whatcom Medic One program. The Fairhaven facility is adequate to meet the anticipated demand during the 20-year planning period.

Bellingham Station 3: 1111 Indian Street
The Indian Street Station was built in the mid-1980's and was extensively remodeled in the mid-1990's. This station currently houses one engine company, one ladder company, a rescue unit, and reserve medic unit. The crews operating out of this station cover the largest first response territory in the City and provide specialized rescue and aerial ladder operations for the entire city and surrounding fire jurisdictions on a mutual aid basis. The Indian Street facility is adequate to meet anticipated demand during the 20-year planning period.

Bellingham Station 4: 2306 Yew Street
The Yew Street Fire Station was built in the late 1980's and currently houses one engine company, one reserve medic unit, and one reserve engine company. The crew operating out of this station provides fire response for the eastern portion of the city, including the east side of Lake Whatcom that lies within the City limits. The Yew Street facility is adequate to meet anticipated demand during the 20-year planning period.

Bellingham Station 5: 3314 Northwest Avenue
The Northwest Avenue Fire Station was built in 1971 and is the oldest of all current Bellingham fire stations. It houses one engine company, one reserve medic unit, and the countywide hazardous materials (HazMat) quick response unit. This station covers the northwestern central area of the city, and a portion of Fire Whatcom County Fire District #8 that lies within the UGA. This station was modestly remodeled in 1994 to upgrade the kitchen, sleeping, and exercise areas and is adequate to meet anticipated demand during the 20-year planning period.

Bellingham Station 6: 4060 Deemer Road
The newest of the current Bellingham Fire Stations, Station 6 was opened in May 2002. It houses one engine company, one reserve aerial ladder, the countywide HazMat response unit (semi-tractor/trailer), and one reserve medic unit. This station covers the north portion of the city including the Bellis Fair Mall and the surrounding commercial area along Guide Meridian Street (SR539) and is adequate to meet anticipated demand during the 20-year planning period.

Training Center/What-Comm 911 Communications Center: 300 Alabama Street
The existing training facility is located at Alabama and Iron Streets at the former site of Fire Station 4. This building houses the public safety answering point (PSAP) for all county 911 calls and almost all law enforcement dispatching services. The Fire Department has a small training room, drill ground, and three-story concrete drill tower. The facility is located in a residential neighborhood, and any significant fire ground drill activities create high noise impact for neighbors. The Bellingham Fire Department can no longer conduct large-scale fire stream operations because of concerns about over-spray onto adjacent properties. Lot size and classroom sizes are inadequate for Fire Department training operations. To accommodate the current need for training facilities,

the Department is using available alternative facilities, including vacant Georgia Pacific pulp mill property and Whatcom County Fire District #4's drill ground. A centrally located modern fire training facility is needed to enhance existing and future fire service.

4.8.1.1.2. Interlocal and Mutual Aid Agreements in the Bellingham UGA

Fire protection and suppression services in and adjacent to the Bellingham UGA are provided by Whatcom County Fire District #'s 2, 3, 4, 6, 7, 8, 9 and 10 (See Map 4.x). In addition to providing fire protection, suppression, and EMS within their respective boundaries, a county-wide Mutual Aid Agreement allows the county fire districts and the City of Bellingham to provide fire protection services to neighboring fire districts as needed. The Port of Bellingham is currently responsible for providing fire protection for aircraft fires and rescues at the Bellingham International Airport.

In 2002, the City entered into an interlocal agreement with Whatcom County Fire District #8 to provide structure fire suppression services to the portion of District #8 that lies within Bellingham's UGA, including the I-5 corridor up to Slater Road. The City proposed a similar interlocal agreement with Fire District #4 to provide fire protection for the East Bakerview area that lies in close proximity to the new Deemer Road station, but Fire District #4 declined and no further discussions are planned at this time.

Countywide fire and EMS dispatching is facilitated by the Prospect Communications Center at 1800 Broadway in Bellingham, which is staffed with civilian dispatchers employed by the Bellingham Fire Department. These dispatchers are specially trained to deal with fire and emergency medical situations, and provide crucial life saving emergency medical care by telephone prior to the arrival of the first responders. All calls related to fire, rescue, hazardous materials, or medical emergencies are initially answered by the WhatComm Communications Center, staffed and administered by Bellingham Police Department employees who then route the calls to the appropriate responders.

4.8.1.1.3. Whatcom Medic One EMS and Ambulance Transport

<u>Whatcom Medic One</u>

Since 1974, Whatcom Medic One pre-hospital emergency medical services (EMS) has been the centerpiece of a coordinated system of pre-hospital emergency care linked to the County's single emergency department at Saint Joseph's Hospital. First response EMS is predominately provided by a two-tiered system with fire districts providing medical first response and the Bellingham Fire Department providing advanced life support (paramedic) response and emergency transport, operating as "Whatcom Medic One," the official designation of the ambulance service. Most of the fire districts have ambulances, but only provide basic life support (BLS) transport when Medic One ambulances are unavailable. Advanced life support (ALS) is provided by 4 ambulances staffed by Bellingham Fire Department paramedics stationed at City of Bellingham and Whatcom County Fire District Stations.

As a general rule, any paramedic-supported ambulance unit responding to over 3,000 calls per year is considered very busy and should be considered for relief. Given the large countywide response area, Medic One units have longer out of service times per incident, resulting in the need to begin planning and implementation of additional staffed medic units when a unit reaches a 2500-call threshold.

Historically, emergency medical responses have grown by an average of 4 percent per year. In 2002-2003, EMS incidents increased a total of 17 percent. In 2003, Whatcom Medic One ambulances responded to over 10,800 incidents as follows: Medic 1 and 2 ambulances responded to about 2,900 incidents each while the Medic 3 ambulance responded to 2,060 incidents and the Medic 4 ambulance responded to 2,200 incidents. In addition, reserve units responded to another 840 incidents in 2003. Current incident response, population growth, and resulting EMS response projections highlight the current need for additional ambulance transport capability and response.

Whatcom County and the City of Bellingham are signatories to a joint powers agreement that governs the administration of the Medic One program and defines the financial terms to pay for the program costs. Revenues generated by fees for service pay 45% of the costs of providing the Whatcom Medic One paramedic program. The remaining 55% of the costs are evenly split between Whatcom County and the City of Bellingham. During the past 5 years, the revenue from user fees has represented slightly more than 50% of the total revenues, while the City and the County have contributed about 22% each. Some minor additional revenues are generated from other sources, such as investment income on the program's fund balance. As with other public services, the cost to provide EMS has increased, while revenue and funding for EMS have decreased due to cuts in Medicare reimbursements for ambulance transport, anti-tax initiatives passed by voters, and shrinking General Fund revenues.

In 1999, a long-term strategic planning process for emergency medical services was initiated. This process was completed in August 2002 with the presentation of the Whatcom County EMS Strategic Plan. The plan contains specific recommendations to assure long-term quality and responsive EMS services. The most important recommendation of the study was to sustain the existing high quality EMS system in the County and City with an EMS tax levy approved by 60% of the voters to replace the General Fund contributions of the City and County and reduce existing pressure on the General Fund budgets of each respective government.

The Bellingham City Council and the Whatcom County Council approved the placement of a countywide EMS Tax Levy on the November 4, 2003 general election ballot and the measure failed by a large margin with only 43.8% of county residents voting in favor of the EMS Tax Levy. As a result, there could be severe funding shortfalls for both the City of Bellingham and Whatcom County general funds. The failed EMS Tax Levy could also potentially result in the disintegration of the countywide paramedic program provided by Whatcom Medic One. In December 2003, the City of Bellingham notified Whatcom County that after December 31, 2004, Bellingham Fire Department

paramedics may not be available to respond to emergency medical calls outside of the Bellingham city limits due to inadequate funding.

Private Sector Ambulance Transport
Cascade Ambulance, a private transport company, provides inter-facility, nursing home, and other non-emergency ambulance transport and carried 2,298 medical patients in 2001. This is a valuable private sector service that complements the public sector ambulance service and is likely to see its business grow in the future as the County's population and number of retirees increase.

Aeromedical Ambulance Service
Airlift Northwest, a not-for-profit advanced life support air transport service provides helicopter aero-medical transport throughout Whatcom County. The helicopter is based at Saint Joseph's Hospital in Bellingham and performed 18 inter-facility and emergency transports in 2001 (1 on Lummi Island, 5 at Mt. Baker, and 12 in rural Whatcom County). As with other services, costs are increasing much faster than revenues and available funding. The low number of scene responses has become a major concern for Airlift Northwest and if the number of transports does not increase, then the helicopter service may become economically unsustainable.

4.8.1.1.4. Whatcom County Fire Protection Districts

Fire protection, suppression, and EMS in the Urban Fringe Subarea and in Bellingham's UGA are provided by a combination of career, paid staff, and volunteer-based Whatcom County Fire Protection Districts listed in Table 4.x below. Fire station locations and district boundaries are shown on Map 4.x.

Table 4.8.1.1: Whatcom County Fire Protection Districts

Fire District	Bellingham UGA and 5-Year Review Areas Served by Fire Districts	Total District Square Miles	Estimated District Population (2001)
No. 2	Geneva UGA	15.0	6,500
No. 3	North Guide Meridian UGA	93.0	15,000
No. 4	Northeast UGA	44.0	9,500
No. 7	Larrabee Springs 5-Yr Review Area	72.0	17,500
No. 8	West and Northwest UGA	45.5	13,000
No. 9	Southeast "Additional Review Area"	8.0	2,000
No. 10	Yew Street UGA	3.0	900
Port	Bellingham Int'l Airport UGA		Non-Residential

Source: 2002 Whatcom County EMS Strategic Plan

Each local Fire District elects Fire Commissioners, who then select the Fire Chief for the District. In addition to providing fire protection, fire suppression and EMS within their respective boundaries, a countywide mutual aid contract allows the districts and the City of Bellingham to provide fire protection services to neighboring fire districts when needed. The Port of Bellingham is responsible for providing its own fire protection for aircraft and crash rescue fires at the Bellingham International Airport.

District fire chiefs plan fire station locations, purchase fire-fighting apparatus and equipment, and train volunteer firefighters. In accordance with standard fire protection practices, fire stations are generally located with respect to existing and anticipated land uses and densities, the physical environment, fire flow requirements, and desired minimum response time. As a result, most dwellings are generally located within two to five miles of any district fire station.

All of the rural fire districts are staffed predominately by volunteer firefighters. The volunteer firefighters typically reside within their district boundaries and attend weekly EMS, rescue, and fire suppression training sessions. Almost all of these firefighters are trained to either the First Responder (FR) or Emergency Medical Technician (EMT) level of pre-hospital emergency medical care.

Section 9 C of the Interlocal Cooperation Agreement between Whatcom County and the City of Bellingham allows the Bellingham Fire Department to review and provide comment to the Whatcom County Technical Review Committee on development proposals within the existing UGA. The City's review is intended to assure that Whatcom County applies urban fire standards consistent with those of the City of Bellingham.

There are numerous issues that will affect the future of rural Fire Districts in the Bellingham UGA, including lack of adequate funding and difficulty with volunteer staffing. In many fire districts, population and requests for service are increasing at levels not anticipated. Although requests for service continue to increase, voter approved anti-tax measures have limited the ability to fund the system. While the costs of providing fire response service continue to increase, Federal and State regulations require additional firefighter training. This additional time required for training has hindered the ability of the fire districts to attract volunteers willing to donate increasing amounts of personal time. The continued increase in the EMS call load (demand for service) is significant, and requires adequate and stable funding to ensure effective and timely emergency response.

In 1999, the City of Bellingham and surrounding Whatcom County Fire Districts commissioned a Fire Protection Services Master Planning Study as mentioned in Section 9.C. of the 1997 Interlocal Agreement Between the City of Bellingham and Whatcom County. The Master Planning Study included the following findings and recommendations:

- Fire District #'s 2, 4, and 8 should pursue functional consolidation in order to reduce administrative costs and eliminate duplicative capital acquisition;
- A new, consolidated District should have a 5-member Board of Commissioners to provide the greatest amount of representation in the combined service area; and
- Through a facilities planning process, certain existing facilities should be abandoned and new facilities constructed in order to decrease response times, maximize facility use, and centralize administration and training functions.

The recommendations of the 1997 Master Planning Study have not been implemented by Fire District #'s 2, 4, and 8.

Fire District #2

Fire District #2 serves a total area of 15 square miles, including the Geneva UGA and the Sudden Valley area. Presently, District #2 has 41 volunteers, 2 full-time firefighters, 2 part-time paid firefighters, and a full-time administrative secretary working out of two modern fire stations. The district also employs 4 resident firefighters who reside at the Geneva Fire Station, located at 4518 Cable Street, which primarily serves the Geneva UGA, and secondarily the Sudden Valley area. The City of Bellingham participated in the needs assessment and planning process for the reconstruction of the Geneva Fire Station in 2001, which will allow this facility to meet City Fire Department standards if the Geneva area is annexed to the City in the future. The Sudden Valley Station is located at 2135 Lake Whatcom Boulevard and primarily serves the Sudden Valley area and secondarily the Geneva UGA area. Each station has a classroom with capacity to seat 50 people for fire training sessions. Local community associations and neighborhood groups also use the training rooms on a regular basis for meetings.

District #2's Fire Chief expressed some concern with respect to delivering an adequate level of service to the Geneva area. Volunteers respond from their homes to the station, which can add time to call response. Due to the steep topography in many parts of District #2, narrow winding roads can have grades exceeding 12 percent. This can add time to call response, especially during adverse weather conditions. The street network in the Geneva area is primarily residential with one major arterial roadway, Cable Street - Lakeway Drive, providing a connection to the City of Bellingham. If this arterial is blocked for any reason, it could seriously hamper response efforts.

The potential build-out and projected growth under existing zoning densities in both the Geneva and Sudden Valley areas will increase the demand for service within District #2. Current call volume is at levels that can be maintained by a combination of career and volunteer firefighters, but a significant increase in call volume coupled with a decrease in volunteers, would require 24-hour per day staffing to provide an adequate response to emergencies. Funding a full-time, paid staff of firefighters would require District #2 to pass a property tax levy, resulting in a greater cost to taxpayers.

Fire District #3

Fire District #3 serves the eastern portion of the Larrabee Springs (Caitac) 5-Year Review Area adjacent to Guide Meridian north of the city limits (approximately one-half of a square mile). The remainder of the District's 93 square mile service area is north of and outside of the planning area. The District has 80 volunteers and 2 full-time employees serving out of 5 fire stations at the following locations, all of which are outside the planning area: 307 19th Street in Lynden; 6028 Guide Meridian; 8118 North Enterprise Road; 1507 East Badger Road; and 633 East Wiser Lake Road. Fire District #3 participates in the County's Mutual Aid agreement for assistance to neighboring districts and the City of Bellingham.

Fire District #4

Fire District #4 serves a 44 square mile area northeast of the Bellingham City limits. The District has 52 volunteers, 2 paid firefighters, and 3 fire stations located at 1295 East Bakerview Road; 2631 North Shore Road; and District Headquarters at 4142 Britton Loop Road constructed in 2001. Mutual aid is provided with adjacent Districts and the City of Bellingham. Fire District #4 built a large fire training facility at District Headquarters on Britton Loop Road, which can be used by other fire districts and the City of Bellingham on a fee basis.

Annexation of residential areas in the UGA to the City of Bellingham has become a concern for Fire District #4. The City of Bellingham established an Urban Service Area from the City limits north to Smith Road in 1984 and has approved extensions of public sewer and water utilities into the north and northeast portions of the UGA. This allowed residential development at 3 and 4 units per acre under County zoning, which limits densities to 1 house per 5 acres without public sewer and water. This practice resulted in the creation of extensive low-density neighborhoods, such as Northern Heights and other subdivisions that have occurred since 1984. As development increased in these areas, Fire District #4 passed voter-approved general obligation bonds to generate revenue to purchase new equipment and fund new fire stations to provide an adequate level of volunteer-based fire response.

Landowners in the unincorporated UGA can petition for annexation to the City at any time. This makes planning for fire needs and resources more difficult and can result in financial impacts to property owners, Fire Districts, and the City. Property owners would be required to continue paying any outstanding Fire District bonds even after annexation to the City. While this would soften the immediate financial impact of annexation on the Fire District, it could create revenue problems for the District in the long-term. Upon annexation, the City would immediately become responsible for providing emergency services to these already developed areas, potentially creating the need for additional fire resources.

Fire District #7

Fire District #7 serves a total area of 72 square miles, mostly surrounding Ferndale and including the Cherry Point industrial area. The western two thirds of the Larrabee Springs (Caitac) 5-year review area lies within District #7's jurisdiction. The District is staffed with 70 volunteer firefighters and EMT's and 18 full-time staff (16 firefighters and 2 office staff). Fire District #7 responds from 6 fire stations, including 2 stations in Ferndale at 2020 Washington Street and 6081 Church Road and 4 stations in unincorporated Whatcom County at 4047 Brown Road, 5368 Northwest Road, 5491 Grandview Road, and 1886 Grandview Road, which also serves as the location for Whatcom Medic One's Medic 3 Unit.

The District has acquired 10 acres of land for a future fire training facility and industrial fire station at 3560 Douglas Road, East of Ferndale, and has been actively improving the site for future development. Fire District #7 has Mutual Aid Agreements with all fire

districts in unincorporated Whatcom County and all municipal fire departments for fire, aid, and hazardous material incidents. Inadequate funding and difficulty in recruiting volunteer and career staff will continue to affect Fire District #7 as land within its service boundaries is developed. The District has identified a need for 9 additional firefighters in order to staff Station 3 at 5368 Northwest Road, immediately north of Smith Road and Northwest Road intersection (outside the planning area) with a minimum of 3 firefighters available on an around-the-clock basis.

Fire District #8

Fire District #8 serves all of the Bellingham UGA south of Slater Road and west of the city limits to the Nooksack River. The District's 45.5 square mile service area includes the Lummi Indian Reservation. The District has 39 volunteers and 5 full-time paid firefighters serving out of 4 fire stations located at 752 Marine Drive, West Bakerview Road and Northwest Drive (inside the city limits), 2600 McKenzie Road (Gooseberry Point, outside the planning area), and 4600 Curtis Road. District #8 participates in the Countywide Mutual Aid Agreement. The District also provides fire protection and suppression services to the Port of Bellingham for structures at the Bellingham Airport, and provides backup crash fire rescue services for air crash incidents.

In 2002, the City entered into an interlocal agreement with Fire District #8 to provide structure fire suppression services to the District's area that lies within the UGA, including the I-5 corridor from the Bellingham city limits to Slater Road.

Fire District #9

Fire District #9 serves an 8 square mile rural area south and east of Lake Padden Park and the southeast city limits, including the "Templeton Additional Review Area" adjacent to Lake Padden Park. The District has 20 volunteers based out of 2 fire stations located at 5170 Samish Way and at 705 West Lake Samish Drive (outside the planning area). Fire District #9 also provides fire response along Interstate 5 from the Bellingham city limits to the Skagit County line and to additional forested lands with a large number of homes in the urban-forest interface. Mutual aid is provided with adjacent Districts and the City of Bellingham.

Fire District #10

Fire District #10 serves three square miles including Yew Street UGA, which encompasses a one-half-mile-wide corridor on either side of Yew Street Road, between the Bellingham City limits to the north and Samish Way to the south. Fire District 10 currently has 18 volunteers based out of one fire station at 2095 Yew Street Road. Mutual aid is provided with Districts #2, 6, and 9, and the City of Bellingham and there is also an Automatic Response Agreement with Fire Districts #2 and 9 for structure fires.

The biggest concern for Fire District #10 is the ultimate annexation of the Bellingham UGA. Approximately 80-85% of the District is within the UGA boundary and may eventually be annexed to Bellingham. The District is hesitant to plan for a new fire station or new fire or medical response vehicles because the timing and extent of UGA annexation is uncertain. The District could have a difficult time getting a general

obligation bond approved by area residents for this same reason. The District has been successful in recruiting volunteers and has set a goal of creating a pool of 25 volunteers available for fire response, but retention of volunteers may be difficult due to the uncertainty of future annexation and possible elimination of the District. As with other fire districts, obtaining State funding for fire protection has been difficult due to anti-tax initiatives.

Bellingham International Airport
The Port of Bellingham, though lying within District #8, has its own separate fire brigade and mutual aid agreements with the City and County. The Port has 8 staff that are trained to respond to air crashes at the Bellingham International Airport. The City of Bellingham Fire Department is currently exploring options for providing fire protection services to the Port of Bellingham Airport and Industrial area along with Fire District #8. Initial talks with the Port and Fire District #8 included the possibility of building a joint Airport/District #8/BFD fire station on airport property.

4.8.1.2. Fire Protection and EMS - Impacts

The Bellingham Fire Department and Whatcom County fire districts currently determine personnel and resource needs based on existing zoning, residential densities, and population growth projections. The 2002 Whatcom County EMS Strategic Plan is based on the 2002 ECONorthwest population projections formulated for the City of Bellingham and Whatcom County.

Population growth and infill developments are expected to place additional demands on fire-related service delivery and EMS calls under all alternatives. Annexations are expected to create financial and service area impacts for rural fire districts under all alternatives. Revision of the Interlocal Cooperation Agreement between the City and County may be required to address the potential impacts of annexation.

Alternative 1 – No Action
Under this alternative, infill growth would occur within existing City limits and UGA boundaries at existing zoning and residential densities. If the City continues to approve sewer and water utility extension into the UGA prior to annexation, then residential development could be expected to occur according to the County's UGA zoning which allows densities from two to ten single-family units per acre and up to 24 multi-family dwelling units per acre. As the available urban land supply in the UGA is used up, growth will be directed to the rural areas of the County and to the other cities and their UGAs to the extent they are able to accommodate additional growth. Generally, this alternative would:

- Create a low-density suburban ring around the existing city limits;
- Create Increased traffic congestion and increased response time for emergency vehicles;
- Cause financial impacts to fire districts when built-out residential portions of the UGA annex to the City;

- Require increased fire flow in some areas as they reach potential build-out;
- Require recruitment and hiring of additional firefighters and paramedics; and
- Require additional emergency response equipment to maintain existing service levels.

Alternative 2 - Infill
Under an infill alternative, zoning would be adjusted, where possible, in both the City and the existing UGA to achieve higher residential densities than County and City zoning currently allow. Urban development would be directed into the City and the UGA resulting in less development pressure on the rural areas outside of Bellingham's UGA. Generally, an emphasis on infill development where public infrastructure capacity already exists would:

- Require increased fire flow for high-density, compact growth areas;
- Require recruitment and hiring of additional firefighters and paramedics;
- Require additional emergency response equipment in order to maintain existing service levels;
- Result in long-term cost savings for providing fire protection and emergency medical services;

An infill emphasis designed to use land more efficiently by encouraging more people to live on less acreage could have the unintended consequence of leading some people to seek larger rural lots in the county. Low density rural zoning outside the existing Bellingham UGA has allowed much of the area to be subdivided into 5 and 10-acre parcels. If there proves to be a significant market demand for large lots in fairly close proximity to the City, this low-density development could add a significant financial burden to rural fire districts. Low-density, sprawling residential development just beyond the Bellingham UGA would be expected to:

- Increase vehicle trips generated and thus increase traffic congestion;
- Increase response time to emergency scenes because of greater travel distances and increased traffic congestion on the rural roads that serve these areas;
- Generate less property tax revenue for Fire Districts; and
- Have a higher per capita cost of fire and emergency service than high-density development.

Alternative 3 – Adjusted UGA
Under this alternative, land inside the City and existing UGA would retain its existing zoning and residential densities and the UGA boundary would be expanded as much as necessary to accommodate the projected population growth at existing residential densities. Wherever the UGA boundary is expanded, land will be rezoned from rural densities to urban densities and will become eligible for annexation to the City. Similar to Alternative 1, expansion of the UGA boundary at existing residential densities would be expected to:

- Create increased traffic congestion and response time for emergency vehicles;
- Result in financial impacts as a result of annexation of built-out residential areas;
- Require increased fire flow in some areas as they reach potential build-out;

- Require recruitment and hiring of additional firefighters and paramedics;
- Require additional emergency response equipment to maintain existing service levels.

Alternative 4 – Infill and Adjusted UGA
Under this alternative, zoning would be adjusted, where possible, in both the City and the UGA to allow higher residential densities. A minor expansion of the UGA boundary would take place to accommodate the net shortfall of land deemed necessary to accommodate projected population growth. Land inside the minor expansion areas would be zoned to achieve higher densities than the County currently allows in the existing UGA. This alternative would create a compact urban area surrounded by densities radiating out from the urban core in concentric rings. Higher density development in the City, the existing UGA, and areas for minor UGA expansion would be expected to:

- Result in increased emergency call volume.
- Require additional paid and volunteer fire fighters and paramedics.
- Require additional emergency response vehicles.
- Result in shorter response times to emergency scenes.
- Increase land values and generate additional property tax revenue.
- Result in long-term cost savings to serve more people in less land area.

4.8.1.3. Fire Protection and EMS - Mitigating Measures

- Regardless of the growth alternative adopted, a new funding source will have to be secured in order to sustain a Countywide Whatcom Medic One EMS. Voter approval of a 6-year EMS Tax Levy would have provided enough funding to maintain the current EMS system through 2009.
- Regardless of the growth alternative adopted, the City of Bellingham faces the need to replace the existing training center at 910 Alabama Street and develop a new training center. The City will need to construct a modern, centrally-located training center, possibly developed in conjunction with other fire districts and/or other emergency response agencies, with classrooms, offices, and facilities for simulation of fire response conditions within the planning period. No cost estimate is available at this time and the ultimate cost of a new fire-training center will depend on the location.
- Encourage continued coordination between the Bellingham Fire Department and the Whatcom County Fire Districts and between all of the Fire Districts that serve the Bellingham UGA.
- Develop an Interlocal Annexation Agreement between the City of Bellingham and Whatcom County to assure that land within the Bellingham UGA is not developed at urban residential densities until annexation occurs or until the full range of urban services is made available.
- Discontinue the practice of extending City sewer and water utilities into the Bellingham UGA prior to annexation.
- Require new development in the City of Bellingham to pay impact fees for fire protection facilities as allowed by RCW 82.02.090 (7).

- Develop a concurrency management system to assure that adequate fire protection and emergency medical facilities, equipment, and personnel are in place at the time that new development is approved or within a reasonable amount of time.
- Encourage educational efforts by Fire Districts to promote volunteer firefighter recruitment in rural areas.
- Encourage adoption of the 1999 Whatcom County Fire Service Master Planning Study, which recommended functional consolidation of Fire Districts #2, 4, and 8 to achieve maximum service efficiency and maximum cost savings.

4.8.2. Law Enforcement

4.8.2.1. Law Enforcement - Existing Conditions

The City of Bellingham Police Department, the Whatcom County Sheriff's Office, and the Washington State Patrol (WSP) provide local law enforcement service in Bellingham and its Urban UGA. All are part of a Mutual Aid Agreement, which allows law enforcement agencies to assist each other with equipment and personnel when needed. The WSP is primarily responsible for traffic enforcement on State administered highways such as Interstate 5 (SR 5), Guide Meridian (SR 539), Mount Baker Highway (SR 542), and Chuckanut Drive (SR 11).

4.8.2.1.1. City of Bellingham Police Department

The Bellingham Police Department provides law enforcement service within the incorporated city limits. Police Headquarters are located at 505 Grand Avenue in downtown Bellingham, one or two blocks from the Bellingham City Hall, the Whatcom County Courthouse, the Whatcom County Sheriff's Office, the Bellingham Municipal Court, and the Whatcom County Jail. The Police Headquarters includes a 24,000 square foot main building and a 4,500 square foot training center. Approximately 10,000 square feet of space are leased in accessory buildings at various locations for vehicle and evidence storage. In addition to basic law enforcement activities, such as patrol, traffic, and criminal investigations, the Police Department provides a full range of crime prevention, planning, and educational programs designed to ensure the rights and safety of the City's residents.

The Police Department has worked closely with the Bellingham School District to provide police officers in schools for children's safety and to help administer the Drug Abuse Resistance Education (DARE) program. In 2003, due to budget constraints and staffing shortages, the Police Department reassigned 6 DARE Officers to patrol duty and investigations. One police officer will continue to be assigned to each of Bellingham's three high schools, but if the School District wishes to carry on the DARE program at elementary and middle schools, it will have to do so without staffing from the Police Department.

Over the past 20 years (1982-2002), the population within the city limits served by the Police Department has grown from approximately 46,000 to 70,000. This represents an increase of 52% over 20 years, or an average increase of about 2.6% per year. Some of this population increase is attributable to annexations although most of the

annexations during that period were commercial and industrial land. During this same 20-year time period the Police Department has seen the number of incidents requiring police assistance increase from 23,000 calls for service in 1982 to 54,000 calls for service in 2002. This is a service demand increase of 135% over 20 years, or an average increase of about 6.7% per year.

Existing Deficiencies

The 1995 Bellingham Comprehensive Plan establishes the following levels of service (LOS) based on national law enforcement standards for urban areas:

- 1 patrol officer per 750 calls for service per year; and
- 1 investigative officer per 5 patrol officers

In 2002, the Bellingham Police Department received 54,000 calls for service. According to the adopted LOS measurement, the minimum staffing level for this volume of service calls requires 72 patrol officers and 14.5 investigative officers. In 2003, the Bellingham Police Department employs 58 patrol officers and 12 investigative officers, which means that the City is not achieving the adopted LOS standard for law enforcement and that there is a LOS deficit of 14 patrol officers and 2.5 investigative officers. If calls for service continue to increase at the same average rate over the next 20 years, the police department could be receiving up to 73,000 calls for service by 2022, which would require up to 97 patrol officers and 19.5 investigative officers.

4.8.2.1.2. Whatcom County Sheriff's Office

Law enforcement in unincorporated Whatcom County, which includes the Bellingham UGA, is provided by the Whatcom County Sheriff's Office. The Sheriff's Office is located in the Whatcom County Courthouse complex (Public Safety Building) on Grand Avenue in downtown Bellingham and consists of four Divisions: Corrections, Services, Operations, and Emergency Management. The Sheriff's Office serves an area of approximately 2,152 square miles and, in 2003, employs a total of 154 full-time employees including clerical staff and 60 corrections staff for the County jail.

The Inter-local Cooperation Agreement between Bellingham and Whatcom County also provides for a joint local organization for emergency service. The interlocal agreement allows the Bellingham Police Department to perform specific services in the Bellingham UGA and other areas of the County when called upon. Some of these services include: providing additional manpower, a canine unit, and a S.W.A.T. team when needed.

The Whatcom County Sheriff's Office received 22,689 calls for service in 1992, or approximately 62 calls per day. In 2002, the Sheriff's Office received 26,930 calls for service, or approximately 74 calls per day. This represents an 18.7% increase in service demand over the past 10 years, or an average annual increase of about 1.9%. The average response time to a call is from 12 to 20 minutes, with emergency calls requiring less response time.

In June 2003, the Sheriff's Office received Whatcom County Council approval to create 7 neighborhood offices throughout the County for Sheriff's deputies. This should decrease response times to some localities and serve as field offices for deputies to access information from the central office in downtown Bellingham. Six of the new neighborhood offices will be located in existing fire stations around the county and the seventh office will be centrally located perhaps along Smith Road north of Bellingham.

Existing Deficiencies

In June 2000, the Whatcom County Law and Justice Plan documented existing conditions and deficiencies throughout the law and justice system serving Whatcom County. Of particular concern is the overcrowding and inadequacy of the existing Whatcom County Jail, which is used by all jurisdictions within the County. County officials estimate that the existing County Jail facility has approximately 8 to 10 years of useful life remaining. The County Jail was built in 1983 and was designed to accommodate 148 inmates, but averages 80 to 100 more than that and can house up to 260 inmates. The lack of jail space means that only the most serious offenders, such as felons, are being housed at the jail while many offenders arrested for other crimes are released because there is no space to detain them. A Sheriff's Office study in March 2003 found that at least 16 alleged offenders per day could not be booked into Whatcom County Jail because of space restrictions.

In June 2003, the Whatcom County Council approved $25,000 to hire a consultant to study the possibility of creating a temporary, minimum security jail. The County Sheriff's Office is working with the Port of Bellingham to determine how to convert an existing building, located at 3873 Airport Way on Bellingham International Airport property, into a dormitory-style jail with capacity for 70 beds. Preliminary costs for the conversion are estimated to be $500,000 and the County Sheriff's Office would like to have a temporary facility available to house offenders by the beginning of 2004. The County has also commissioned a consultant to create a Master Facilities Plan that will include a new permanent County Jail, which may hold up to 1,000 inmates eventually, but would not be constructed and available to house offenders until 2008 or 2009. The estimated cost to construct a new Whatcom County Jail is between 12 and 17 million dollars, which could be funded through general obligation bonds approved by the voters of Whatcom County.

The June 2000 Whatcom County Law and Justice Plan also documented a severe personnel deficit for the Whatcom County Sheriff's Department. The Plan established that, using the national norm of 12 commissioned officers per 10,000 residents; the County should have 98 sheriff's deputies. In fact, the Whatcom County Sheriff employed 63 deputies in the year 2000, which equated to a law enforcement deficit of 35 deputies. However, Whatcom County's unincorporated population in 2000 was 74,249, which according to the national standards would require 89 officers. The estimated population for unincorporated Whatcom County in 2002 was 76,452 residents, requiring 92 deputies according to national standards. In June 2003, the County Sheriff's Office employs 58 deputies and 12 detectives, which means that there is a law enforcement deficit of 22 Whatcom County Sheriff deputies. The estimated

population for unincorporated Whatcom County in 2022 is 94,859 residents, which would require 114 deputies. The April 2003, County-wide Facilities Master Plan assumes that the existing ratio of 1.03 Sheriff Deputies per 1,000 population will be maintained and projects that about 98 Sheriff Deputies will be needed by 2022.

Bellingham Urban Growth Area Law Enforcement Demand

For decades the City has extended City sewer and water utilities into portions of the Bellingham UGA beyond the City limits. This practice has allowed residential development to occur at higher densities than would otherwise be permitted by County zoning. The result is that urban population concentrations exist just outside the City limits that are not served by urban law enforcement service.

Two regions of the Bellingham UGA have very high demand for law enforcement service. The highest demand for law enforcement comes from the Marine/Bennett/Alderwood/Hollywood/McLeod region between Interstate 5 and the Bellingham International Airport. Industrial, commercial, and high-density residential land uses have been increasing in this area for many years. The second highest demand for law enforcement service comes from the Tweed Twenty/Northern Heights/Britton/Hillsdale region. Several large single-family subdivisions have been constructed in this region since the early 1970's and additional homes continue to be constructed in the area.

These high demand areas are adjacent to the city limits and, due to extension of City sewer and water utilities, have a greater intensity of land use and population density than other sections of the Bellingham UGA. For the year 2002, the Sheriff's Office received 2,398 calls for service in these two areas alone. As urban uses intensify and population increases in the Bellingham UGA, the Sheriff's Office anticipates a rise in violent crimes, misdemeanors, vandalism, traffic accidents, and service calls. Because parts of the UGA generate a high demand for law enforcement services, the County Sheriff's ability to provide law enforcement response to the rest of the County is diminished.

When parts of the UGA areas are annexed to the City, demand for law enforcement from the County Sheriff's Office will be reduced. At the same time, there will be an immediate and significant financial and resource impact on the Bellingham Police Department. The City will suddenly have to provide law enforcement to areas where crimes are already being committed.

Port of Bellingham

Security at the Bellingham International Airport is under the jurisdiction of the federal government, but contracted out to the Transportation Security Agency. The Whatcom County Sheriff's Office provides uniformed law enforcement presence during passenger screening. In accordance with an inter-local agreement, the Bellingham Police and the County Sheriff's Office respond to incidents at the airport to ensure that the response time mandated by the Federal Aviation Administration is met.

4.8.2.2. Law Enforcement – Impacts

The Bellingham Police Department and Whatcom County Sheriff's Office currently determine personnel and resource needs based on calls for service, existing zoning, residential densities, and population growth projections. Population growth and infill developments are expected to create additional demand for law enforcement services under all alternatives. Annexations are expected to create fiscal and service area impacts for law enforcement agencies under all alternatives. A new County jail will be required under all alternatives. Revision of the Interlocal Cooperation Agreement between the City and County may be required to address the potential impacts of annexation.

Alternative 1 – No Action

Under this alternative, infill growth would occur within existing City limits and UGA boundaries at existing zoning and residential densities. If the City continues to approve sewer and water utility extension into the UGA prior to annexation, then residential development could be expected to occur according to the County's UGA zoning which allows densities from two to ten single-family units per acre and up to 24 multifamily dwelling units per acre. Generally, this alternative would be expected to:

- Create a low-density suburban ring around the existing City limits;
- Create increased traffic congestion and increased response time for law enforcement;
- Require recruitment, training, and hiring of additional Sheriff Deputies in UGA as residential areas reach potential build-out;
- Require additional law enforcement response equipment to maintain existing service levels; and
- Create financial impacts on the Bellingham Police Department and require additional City Police Officers, vehicles, and law enforcement equipment when built-out residential portions of the UGA annex to the City.

Alternative 2 - Infill

Under an infill alternative, zoning would be adjusted, where possible, in both the City and the existing UGA to achieve higher residential densities than County and City zoning currently allow. Urban development would be directed into the City and the UGA resulting in less development pressure on the rural areas outside of Bellingham's UGA. Generally, an emphasis on infill development where public infrastructure capacity already exists would:

- Create higher-densities inside City limits and the existing UGA boundaries, potentially resulting in long-term cost savings for providing law enforcement services due to geographic containment of response areas;
- Require recruitment, training, and hiring of additional Sheriff Deputies in the UGA as residential areas reach potential build-out;
- Require additional law enforcement response equipment to maintain existing service levels; and

- Result in financial impacts on the Bellingham Police Department and require additional City Police Officers, vehicles, and law enforcement equipment when built-out residential portions of the UGA annex to the City.

An infill emphasis designed to use land more efficiently by encouraging more people to live on less acreage could have the unintended consequence of leading some people to seek larger rural lots in the county. Low-density rural zoning outside the existing Bellingham UGA has allowed much of the area to be subdivided into 5 and 10-acre parcels. If there proves to be a significant market demand for large lots in fairly close proximity to the City, this low-density development could add a significant financial burden to the Whatcom County Sheriff's Office. Low-density, sprawling residential development just beyond the Bellingham UGA would be expected to:

- Increase vehicle trips generated and thus increase traffic congestion;
- Increase response time for County Sheriff because of greater travel distances and increased traffic congestion on the roads that serve these areas; and
- Have a higher per capita cost of law enforcement service than high-density development.

Alternative 3 – Adjusted UGA

Under this alternative, land inside the City and existing UGA would retain its existing zoning and residential densities and the UGA boundary would be expanded as much as necessary to accommodate the projected population growth at existing residential densities. Wherever the UGA boundary is expanded, land will be rezoned from rural densities to urban densities and will become eligible for annexation to the City. Similar to Alternative 1, expansion of the UGA boundary at existing residential densities would be expected to:

- Create increased traffic congestion and increased response time for law enforcement;
- Require recruitment, training, and hiring of additional Sheriff's Deputies as residential areas reach potential build-out;
- Require additional law enforcement response equipment to maintain existing service levels;
- Result in financial impacts on the Bellingham Police Department and require additional City Police Officers, vehicles, and law enforcement equipment when built-out residential portions of the UGA annex to the City; and
- Create a need for a north Bellingham Police Station.

Alternative 4 – Infill and Adjusted UGA

Under this alternative, zoning would be adjusted, where possible, in both the City and the UGA to allow higher residential densities and a minor expansion of the UGA boundary would take place to accommodate the net shortfall of land deemed necessary to accommodate projected population growth. Land inside the minor expansion areas would be zoned to achieve higher densities than the County currently allows in the existing UGA. This alternative would create a compact urban area surrounded by densities radiating out from the urban core in concentric rings. Higher density

development in the City, the existing UGA, and areas for minor UGA expansion would be expected to:

- Result in increased law enforcement service call volume;
- Require additional law enforcement officers and vehicles;
- Result in shorter response times to emergency scenes; and
- Result in long-term cost savings to serve more people in less land area;

4.8.2.3. Law Enforcement - Mitigating Measures

- The Bellingham Police Department has a current need to hire 14 additional patrol officers and 2.5 investigative officers just to bring the existing law enforcement service into compliance with the minimum LOS standards adopted in the 1995 Bellingham Comprehensive Plan. If calls for service continue to increase at the same average rate over the next 20 years, the Bellingham Police Department may need to hire 25 additional patrol officers and 5 additional investigative officers to maintain the minimum LOS standards.
- If the community is willing to accept a lower level of service for law enforcement, the City Council could adjust the Law Enforcement LOS standard in the Bellingham Comprehensive Plan. This should only be considered if lower law enforcement service delivery can still comply with national law enforcement standards.
- Regardless of the growth alternative adopted, a new Whatcom County Jail will need to be constructed during the planning period. The estimated cost for this new jail facility ranges from 12 million to 17 million. The County could seek a County-wide general obligation bond to finance a new jail.
- Regardless of the growth alternative adopted, if built-out portions of the Bellingham UGA are annexed to the City of Bellingham, there will be immediate financial and resource impacts to the Bellingham Police Department. Annexations should be carefully planned and possibly phased to reduce the immediate impact to the Police Department. The City should explore revenue sharing agreements and mitigation costs to proponents of annexation in built-out areas.
- Modify the Interlocal Annexation Agreement between the City of Bellingham and Whatcom County to assure that land within the Bellingham UGA is not developed at urban residential densities until annexation occurs, until the full range of urban services is made available, and until mitigation fees can cover the City's cost to provide law enforcement service to newly annexed areas;
- Discontinue the practice of extending City sewer and water utilities into the Bellingham UGA prior to annexation;
- Develop a concurrency management system to assure that adequate law enforcement personnel are in place at the time that new development is approved or within a reasonable amount of time;
- Seek all possible state and federal grant money available for law enforcement programs.

4.8.3. Parks, Recreation, and Open Space

4.8.3.1 Parks, Recreation, and Open Space - Existing Conditions

Land set aside for recreation, parks or open space influences quality of life, and has important economic, recreational, environmental and aesthetic benefits. A wide variety of neighborhood and community parks, open space areas, trails, greenways and recreational opportunities are within the greater Bellingham area.

There are approximately 42 acres of City owned parkland and open space per 1,000 people within the City of Bellingham. There are approximately 272 acres of parkland and open space per 1,000 people when the resources of Whatcom County, the City of Bellingham, the State of Washington, the Port of Bellingham and the Bellingham School District as well as private organizations are included.

There are 22 neighborhood parks, 8 community parks, 18 special use areas, which include facilities such as sports fields, waterfront access points, aquatic facilities, tennis courts, ball fields and indoor facilities within the City of Bellingham. Open space areas have limited public use and can include areas that are considered to be environmentally sensitive. In anticipation of future growth, this inventory includes properties owned by the City of Bellingham and Whatcom County within the Urban Fringe Subarea, including approximately 60 acres on Lookout Mountain, 90 acres on Samish Hill, property on King Mountain and several other smaller developed and undeveloped parcels. County owned properties may be turned over to or be managed by Bellingham if annexed.

Both the City of Bellingham and Whatcom County have identified additional potential local and regional trail corridors and park sites within the UGA and the Urban Fringe Subarea. Many of the parks are enhanced and connected by greenways with multi-use trails. Other trails include the South Bay, Squalicum Creek (Bay-To-Baker), Whatcom Creek, and the Interurban Trail. There are approximately 34 miles of developed off-street, multi-use trails within the City of Bellingham.

As part of the planning process, the GMA requires jurisdictions to retain open space, enhance recreational opportunities, conserve fish and wildlife habitat, increase access to natural resource lands and develop parks and recreation facilities. In addition, the County must identify open space corridors within and between UGAs. Whatcom County has adopted a level of service of 9.6 acres of parkland per 1,000 people, 0.75 miles of trail per 1,000 people and 6 activity centers per 100,000 people. The City of Bellingham has adopted a level of service of 1.6 acres of neighborhood parks per 1,000 people, 10 acres of community parks per 1,000 people and 24 acres of open space per 1,000 people.

4.8.3.2. Parks, Recreation, and Open Space - Impacts

As the population of Bellingham and Whatcom County grows, under all alternatives, there will be an increasing need for parks, trails and recreation facilities as well as increased pressure to develop potential open space areas. Under all of the growth alternatives, some growth of park and recreational facilities will occur outside of the

current City limits, and possibly outside of the existing UGA boundary. As areas develop there will be decreasing opportunities to acquire or preserve open space and parkland, and increasing use of existing facilities and open space areas. As the land supply decreases, it is likely that the cost of acquiring land for parks or open space will increase. The Infill and Infill and Adjusted UGA alternatives may increase the amount of multi-family residential units and thereby increase and concentrate the demand for activity centers, parks and open space. The No Action alternative will increase the need for recreational facilities and parks within Bellingham. The Adjusted UGA and Infill and Adjusted UGA alternatives may allow lower density development and decrease the opportunities to acquire additional park and open space properties.

4.8.3.3. Parks, Recreation and Open Space - Mitigating Measures

- The City of Bellingham and Whatcom County should continue to review and revise adopted levels of service and Capital Facilities Plans, in order to adapt to changing demands.
- The City of Bellingham and Whatcom County should coordinate planning and acquisition efforts in order to maximize opportunities.
- In accordance with the GMA, the Urban Fringe Subarea Plan should identify appropriate sites for recreation and open space in relation to environmentally sensitive land and areas with increased density.
- Preserve existing sensitive areas to utilize as open space by encouraging development regulations that promote clustered, mixed use, high-density development.
- Continue to implement and update the goals and policies in the Recreation chapter of the Whatcom County Comprehensive Plan, the Whatcom County Natural Heritage Plan, the Whatcom County Comprehensive Parks and Recreation Open Space Plan, the Whatcom County Bicycle Plan and the City of Bellingham's Comprehensive Recreation, Parks and Open Space Plan along with the appropriate capital facilities plans.
- Maintain existing levels of service for park, recreation, and open space facilities.
- Adopt or revise park, recreation and open space impact fees for new development.
- Utilize appropriate land use designations to minimize development pressure on properties that have high open space or parkland value.
- Increase requirements for active and passive open space in multi-family developments.
- Continue to develop and implement various financial incentives to preserve open space areas, including but not limited to tax benefits, purchase or donation of conservation easements, and the purchase or transfer of development rights.
- Continue to utilize grants, donations and other funding sources to acquire parks and open space.
- Collaborate with private and public organizations to identify, acquire preserve, operate and maintain park and open space areas.
- Identify and preserve critical areas such as stream corridors to establish links between opens spaces and parks.

- Utilize existing funding sources such as conservation futures and explore new funding sources, such as bonds, to acquire parks and open space areas.
- Combine recreational amenities, such as trails, with critical areas and open space, where there is an adequate buffer from wetlands and topography suitable for the development of safe public recreational facilities.

4.8.4. Public Schools

4.8.4.1. Public Schools - Existing Conditions

Public education in Bellingham, the UGA and the Urban Fringe Subarea is provided by four individual school districts that are each responsible for planning, financing, constructing, and maintaining public school facilities. School district boundaries do not coincide with city limits, urban growth areas, or Whatcom County planning subarea boundaries (See Figure 4.8.4.).

4.8.4.1.1. Bellingham School District #501

Bellingham School District (BSD) #501 provides Kindergarten through 12th grade public education to all of the City of Bellingham with the exception of the north half of the Cordata Planned Unit Development. District boundaries also cover most of the City's UGA (except the industrial and commercial zoned areas north and northeast of the airport); rural areas generally west of the Bellingham International Airport to the Nooksack River and east of Hannegan Road almost to Noon Road; and the Toad Lake 5 year review area. The District's northern boundary generally follows the east-west Van Wyck Road alignment with minor variations. Beyond the Urban Fringe Subarea and Bellingham UGA, the district extends south to the Skagit County boundary and southeast to include Sudden Valley.

The District provides basic educational programs in 13 elementary schools, 4 middle schools, 3 high schools, and one alternative high school. Students who are struggling with the high school workload or the structure of traditional high school learning environment may attend Options Alternative High School, which shares the Bellingham High School campus (See Table 4.8.4.1.1., below, for individual school sites, capacities, and enrollment).

Table 4.8.4.1.1: Bellingham School District #501 Inventory of School Facilities Serving Bellingham the UGA and the Urban Fringe Subarea

	Site Acres	Facility Sq Ft	Student Capacity	2003-2004 Enrollment	Capacity Used
Elementary					
Alderwood	10.7	30,947	300	269	90%
Birchwood	4.6	33,510	350	350	100%
Carl Cozier	4.2	45,390	500	405	81%
Columbia	3.0	35,041	300	206	69%
Geneva	8.8	52,013	500	496	99%
Happy Valley	7.5	39,697	450	424	94%
Larrabee	1.3	18,260	200	192	96%
Lowell	3.2	35,427	300	316	105%
Northern Heights	16.0	50,108	500	362	72%
Parkview	4.1	33,882	375	275	73%
Roosevelt	14.2	50,140	600	391	65%
Silver Beach	10.0	48,364	500	398	80%
Sunnyland	2.9	32,607	325	317	98%
Yew Street Site	15.7	n/a	n/a	n/a	n/a
Other				24	
Elem. Subtotal	*106.2*	*505,386*	*5,200*	*4,425*	*Avg 86%*
Middle School					
Fairhaven	13.6	89,480	700	567	81%
Kulshan	17.0	74,497	700	658	101%
Shuksan	15.7	87,964	700	521	74%
Whatcom	8.2	103,844	700	689	98%
M. S. Subtotal	*54.5*	*355,785*	*2,800*	*2,435*	*Avg 89%*
High School					
Bellingham	16.5	166,164	1,200	1,041	87%
Sehome	41.0	175,624	1,525	1,040	80%
Squalicum	39.0	178,616	1,475	1,186	91%
Other				33	
Options H.S.	(BHS)	(at BHS)	?	118	
H. S. Subtotal	*96.5*	*520,404*	*3,700*	*3,385*	*Avg 86%*
Grand Total	*257.2*	*1381575*	*11,700*	*10,245*	*Avg 87%*

Sources: Bellingham School District, 2001 Facilities Long Range Master Plan, March 2004 Draft Capital Facilities Plan (2004-2009) and Bellingham School District Administration personal contact September-October 2003.

In 2001, the Bellingham School District adopted a Facilities Long-Range Master Plan to examine anticipated school population growth, existing school facilities, and the District's ability to house the expected future student population. According to the 2001

Facilities Long Range Master Plan, the overall Bellingham School District population is expected to increase by 26% between 2000 and 2020, but district officials are expecting an overall school enrollment increase of 10.6%. The difference is due to an expected decrease in the number of students per household.

The 2001 Facilities Long Range Master Plan predicts an enrollment shift within the district to the east and to the north with declining student populations in the central portion of the district, the near southwest, and the north central corridor. The Master Plan predicts that this will result in declining enrollment for Parkview, Carl Cozier, Lowell and Larrabee Elementary Schools and increasing enrollment for Alderwood, Northern Heights, Silver Beach, and Geneva Elementary Schools, as well as the District's Yew Street site for a future elementary school.

Elementary Schools

The District's 2001 Facilities Long Range Master Plan projects an increase of 425 elementary students by 2020 and anticipates that the elementary school population will be accommodated through 2010. The Master Plan recommends development of the Yew Street site sometime after 2010. When the Yew Street elementary school site is developed, it is anticipated that the District will convert the Lowell and Larrabee Elementary Schools to use for special programs. The Master Plan also predicts that the acquisition of an additional site in the North/Northwest area would accommodate long-term growth and recommends development of a new northwest elementary site by 2020.

While Sudden Valley is not part of the planning area, it is a part of the Bellingham School District and development there affects the District's ability to respond to student populations, facility needs, and transportation requirements. The 2001 Master Plan states that if additional sewer capacity were to become available to the Sudden Valley area, then the need for a new elementary school would be justified. Whatcom County Water District #10 removed the sewer moratorium for buildable lots in Sudden Valley at the beginning of 2003 and many residential lots there are now being built upon.

Middle Schools

The 2001 Master Plan projects an increase of 259 middle school students by 2020 and anticipates that no middle school expansion will be needed prior to 2015. The Plan predicts that there will be a shift in student enrollment that will reduce pressure on areas around Fairhaven and Whatcom Middle Schools while student load in the Shuksan Middle School area will generally remain stable. The Master Plan predicts that strong growth will be experienced in the southeast and east central portions of the District, and further states that Kulshan Middle School will be able to accommodate this projected growth.

High Schools

The 2001 Master Plan predicts an increase of 400 high school students by 2020 and states that the locations of Bellingham high schools are ideal for accommodating the

predicted shift in population. The Master Plan predicts that the District should be adequately served by the existing high school facilities through the year 2020.

4.8.4.1.2. Ferndale School District #502

Ferndale School District #502 serves the northwest central portion of the Urban Fringe Subarea including the part of Bellingham's UGA consisting of the industrial zoned area north and northeast of the airport and the 5 year review area between Northwest Road and Cordata. The District also serves the part of the Subarea west of the Nooksack River, on the western edge of the Subarea. The District provides K-12 public education at 7 elementary schools, 2 middle schools, one high school, and one alternative high school. Students living in the northwest Urban Fringe Subarea attend North Bellingham Elementary School located at the southwest corner of the Smith/Northwest Road intersection, Vista Middle School located on Vista Drive in Ferndale, and Ferndale High School located on Golden Eagle Drive in Ferndale. Students who are better served by a learning environment other than the traditional high may attend Clearview Alternative High School, which shares the Ferndale High School campus.

The Ferndale School District has experienced steady growth and in 1999 constructed Horizon Middle School to serve the western portion of the City of Ferndale. The Ferndale School District received a grant from the Bill and Melinda Gates Foundation to create a new small high school modeled after "High Tech High" in San Diego, California. The District is completing a conversion and update to the former Ferndale Band Boosters building between Labounty Drive and Interstate 5 for the new high school and classes are scheduled to begin in January 2004. This new small high school will be limited to 400 students, 100 per grade level, but available to all students within the district through an application process. Currently all 9th and 10th graders in the Ferndale District are eligible to apply and the school will be limited to 100 students total in 2004.

Table 4.8.4.1.2: Ferndale School District #502 Inventory of School Facilities Serving Bellingham, the UGA and the Urban Fringe Subarea

School	Student Capacity	2003-2004 Enrollment	Capacity Used
Elementary			
North Bellingham	500	398	80%
Middle School			
Vista	650	459	71%
High School			
Ferndale	1,535	1,470	96%
Clearview	75	55	73%
Subtotal	*2,760*	*2,382*	*Avg 80%*
High Tech High School	400	100	25%
Grand Total	*3,060*	*2,482*	*Avg 71%*

4.8.4.1.3. Meridian School District #505

Meridian School District #505 serves a large part of the north central part of the Urban Fringe Subarea north of Van Wyck Road, including the north half of the Cordata Planned Unit Development (PUD) and the Larrabee Springs (Caitac) Five-year Review Area. District boundaries also include the industrial zoned area east of Guide Meridian, the five-Year Review Area east of that, and the rural part of the Subarea east of that almost to Noon Road. The District provides K-12 public education at one primary school, two elementary schools, one middle school, and one high school. Students living in the north central Urban Fringe Subarea attend Irene Reither Primary School on East Hemmi Road, Ten Mile Creek Elementary School on East Hemmi Road, Meridian Middle School on Ten Mile Road, and Meridian High School on West Laurel Road. All of these schools presently are using portable classroom facilities in addition to their permanent structures to accommodate students.

In March 2001 Meridian School District voters approved a bond issue for school facilities improvements. The bond helped to alleviate some of the current overcrowding by funding the installation of two portable classrooms and the addition of a new gymnasium and improvements to the parking lot and ball fields at Meridian Middle School in 2002. Meridian School District has not constructed any new schools since 1993 and none are currently planned. The Ten Mile Creek Elementary School was constructed to allow for future expansion that could double its existing size and capacity.

Table 4.8.4.1.3: Meridian School District #505
Inventory of School Facilities Serving the Urban Fringe Subarea

	Facility Sq Ft	Student Capacity	2003-2004 Enrollment	Capacity Used
Primary (K-3)				
Irene Reither	40,521	435	409	94%
Elementary (4-5)				
Ten Mile Creek	19,600	250	239	96%
Middle School				
Meridian	61,360	614	359	58%
High School				
Meridian	106,988	640	527	82%
Total	*228,469*	*1,939*	*1,534*	*Avg 83%*

4.8.4.1.4. Mount Baker School District # 507

Mount Baker School District #507 serves the northeast portion of the Urban Fringe Subarea from just west of Noon Road eastward. The District provides K-12 public education at 3 elementary schools, one junior high school, and one high school. Students living in the northeast Urban Fringe Subarea attend Harmony Elementary School on Sand Road north of Mount Baker Highway (SR 542), and Mount Baker Junior High and High Schools, both located on a single Junior/Senior High School campus in

Deming. All of these schools are presently using portable classroom facilities in addition to their permanent structures to accommodate students.

Mount Baker School District recently reconstructed the Mount Baker Junior High and High School complex, which updated major portions of the school facility and provided additional classroom space. The District does not have any current plans for new schools.

Table 4.8.4.1.4: Mount Baker School District #507 Inventory of School Facilities Serving the Urban Fringe Subarea

	Site Acres	**Student Capacity**	**2003-2004 Enrollment**	**Capacity Used**
Elementary				
Harmony	7	450	408	91%
Jr/Sr High School Site				
Mount Baker	12	1,175	1,100	94%
Grand Total	19	1,625	1,508	Avg 93%

4.8.4.1.5. School Impact Fees

The GMA allows cities and counties to collect impact fees, on behalf of public school districts, for public school facilities (RCW 82.050 - .100). Currently the Bellingham School District is the only district collecting impact fees for school facilities within the City or UGA. In 1992, the Bellingham School District and the Bellingham City Council adopted a School Impact Mitigation Ordinance (Ordinance 10333) to authorize the collection of funds from new residential development within the Bellingham city limits to help offset the costs of new or upgraded school facilities to serve the new development. In 1998 the Bellingham School District Board of Directors adopted a Capital Facilities Plan in Support of School Impact Fees in accordance with the requirements of the Growth Management Act and based on the premise that all new residential development built within the District will generate additional students. The City and County now require that project owners/developers enter into a Single-family or Multi-family Mitigation Agreement with the Bellingham School District prior to final project approval. The Bellingham School District revised its Capital Facilities Plan in 2003 and the Bellingham City Council reauthorized the School Impact Fee Ordinance in 2004.

Through these agreements, a school impact fee of $1,481 per single-family dwelling unit and $164 per multi-family dwelling unit is collected by both the City of Bellingham and Whatcom County at the time of building permit issuance and remitted to the Bellingham School District. The County does not collect school impact fees on pre-existing lots of record or on short plat lots.

In accordance with RCW 82.02 and the Mitigation Agreements, the fees collected can only be used for projects specified in the District's Capital Facilities Plan and cannot be used to "catch up" with past level of service deficiencies. In the Bellingham School

District Agreements, the projects are specified as "*purchase and development of additional classrooms"*.

4.8.4.2. Public Schools - Impacts

The Bellingham, Ferndale, Meridian, and Mount Baker School Districts currently determine public school facility, personnel, and resource needs based on existing zoning, residential densities, and population growth projections. Population growth and infill development projects are expected to increase the demand for public school services under all alternatives.

Alternative 1 – No Action

Under this alternative, infill growth would occur within existing city limits and UGA boundaries at existing zoning and residential densities. If the City continues to approve sewer and water utility extension into the UGA prior to annexation, then residential development would be expected to occur according to the County's UGA zoning which allows densities from two to ten single-family units per acre and up to 24 multifamily dwelling units per acre. The Bellingham School District #501's 2001 Facilities Long Range Master Plan did not account for zoning changes or increased densities in the City or UGA and therefore largely reflects this no action growth scenario. Generally, the no action alternative would be expected to:

- Create a low-density suburban ring around the existing City limits;
- Require additional school facilities to maintain adequate service levels, especially for the School Districts serving the rural portions of the Urban Fringe Subarea;
- Require recruitment and hiring of additional teachers, special educators, administrators, and support staff; and
- Create increased traffic congestion and increased time and expense for school bussing programs;

If the existing zoning, city limits, and UGA boundaries do not change, then the available land supply in Bellingham and the existing UGA would be consumed early within the 20-year planning period. Land and housing prices would be expected to escalate quickly and development would be expected to occur in rural areas and other where land and housing prices are cheaper. This would tend to push development and population growth into other cities and their UGAs in the County as well, particularly Ferndale and the outlying rural areas served by other School Districts. Low-density residential development in these school districts would require additional school facilities, additional teachers, support staff, instruction material and equipment purchased, and expensive school bus transportation to serve a dispersed rural population.

Alternative 2 – Infill

Under an infill alternative, zoning would be adjusted, where possible, in both the City and the existing UGA to achieve higher residential densities than County and City zoning presently allow. Urban development would be directed into the City and the UGA resulting in less development pressure on the rural areas outside of Bellingham's

UGA. Generally, an emphasis on infill development where public infrastructure capacity already exists would be expected to:

- Require renovation of some existing school facilities to serve high-density, compact growth areas, especially within the Bellingham School District;
- Require some additional school facilities to serve high-density, compact growth areas, especially within the Bellingham School District;
- Require recruitment and hiring of additional teachers, special educators, administrators, and support staff, especially within the Bellingham School District; and
- Create more pedestrian and transit-oriented facilities thus allowing more children to walk or use transit to travel to school, potentially decreasing the need and cost for school bus service.

An infill emphasis designed to use land more efficiently by encouraging more people to live on less acreage could have the unintended consequence of leading some people to seek larger rural lots in the county. Low density rural zoning outside the existing Bellingham UGA has allowed much of the area to be subdivided into 5 and 10-acre parcels. If there proves to be a significant market demand for large lots in fairly close proximity to the City, this low-density development could add a significant financial burden to school districts.

Alternative 3 – Adjusted UGA

Under this alternative, land inside the City and existing UGA would retain its existing zoning and residential densities and the UGA boundary would be expanded as much as necessary to accommodate the projected population growth at existing residential densities. Wherever the UGA boundary is expanded, land will be rezoned from rural densities to urban densities and will become eligible for annexation to the City. Similar to Alternative 1, adjusting the UGA boundary at existing residential densities would generally be expected to:

- Push development and population growth to the northwest, north, and northeast rural areas served by the Ferndale, Meridian, and Mount Baker School Districts
- Create a low-density suburban ring around the existing northern City limits;
- Require additional school facilities to maintain adequate service levels, especially for the Ferndale, Meridian, and Mount Baker School Districts serving the rural portions of the Urban Fringe Subarea;
- Require recruitment and hiring of additional teachers, special educators, administrators, and support staff, especially for the Ferndale, Meridian, and Mount Baker School Districts serving the rural portions of the Urban Fringe Subarea; and
- Create increased traffic congestion and increased time and expense for school bussing programs for all school districts.

Alternative 4 – Infill and Adjusted UGA

Under this alternative, zoning would be adjusted, where possible, in both the City and the UGA to allow higher residential densities and a minor expansion of the UGA boundary would take place to accommodate the net shortfall of land deemed necessary

to accommodate projected population growth. Land inside the minor expansion areas would be zoned to achieve higher densities than the County currently allows in the existing UGA. This alternative would create a compact urban area surrounded by densities radiating out from the urban core. Higher density development in both the City, the existing UGA, and areas for minor UGA expansion would be expected to:

- Require renovation of some existing school facilities to serve high-density, infill growth areas, especially within the Bellingham School District;
- Require some additional school facilities to serve high-density, infill growth and adjusted UGA areas, primarily for the Bellingham and Meridian School Districts;
- Require recruitment and hiring of additional teachers, special educators, administrators, and support staff, primarily for the Bellingham and Meridian School Districts; and
- Create more pedestrian and transit-oriented facilities thus allowing more children to walk or use transit to travel to school, potentially decreasing the need and cost for school bus service.

4.8.4.3 Public Schools - Mitigating Measures

- The Bellingham, Meridian, Ferndale, and Mount Baker School Districts should examine City and County land supply analysis maps, continue to monitor demographic changes (particularly distribution of students), and take a proactive stance in acquiring land to provide facilities to meet the needs of an expanding student population;
- The Bellingham, Meridian, Ferndale, and Mount Baker School Districts should work with the City of Bellingham and Whatcom County Planning Departments to provide consistency between School District Capital Improvement Plans and the City and County Comprehensive Land Use Plans;
- School Districts should seek approval of bond issues and capital levies to address major school facility needs.
- School Districts should examine the possibility of building smaller neighborhood-oriented schools that would allow more students to walk or ride to school, which could decrease the cost of providing school bus service.
- Encourage the adoption of a school impact fees by Whatcom County and all of the school districts that serve the UGA and the Urban Fringe Subarea. School Districts should examine what other school districts and communities of similar size in Washington charge for school impact fees and set local school impact fees accordingly.
- School Districts should examine possible ways to maximize use of existing school facilities, such as split shift school days where some students attend morning classes and some students attend afternoon/evening classes.

4.8.5. Public Library Services

4.8.5.1. Public Libraries - Existing Conditions

Both the City of Bellingham and Whatcom County provide public library services to residents of the UGA and the Urban Fringe Subarea. The Bellingham and Whatcom County libraries have reciprocal service allowing any Whatcom County library card holder to check out books at the Bellingham and Fairhaven libraries and any Bellingham library card holder to check out materials from any of the Whatcom County branch libraries. The Bellingham and Whatcom County libraries share an integrated computer catalog and circulation system that is accessible to patrons online using home computers. The libraries also provide interlibrary loan services.

4.8.5.1.1. City of Bellingham Public Libraries

Bellingham has a long history of public library service. The Bellingham Bay Public Library Association was organized in June 1891 and the first public library was located at the intersection of Holly Street and Cornwall Avenue. Today, the Bellingham Public Library operates two facilities. The Main Library located in the Civic Center of downtown was constructed in 1951 and extensively remodeled in 1983 and 1984. The Fairhaven Branch Library, located on the city's south side, was constructed in 1904 and remodeled in the mid-1980s.

Together, the Civic Center and Fairhaven libraries house a collection of nearly 290,000 books, records, audiotapes, videotapes, compact disks, DVDs and maps (up from 260,000 in 1994). Visitors to the two libraries have nearly doubled during this same period. The number of materials circulated doubled in the 20-year period between 1973 and 1993, and is expected to double again during the planning period. The Civic Center library also houses a downstairs Children's Library with a collection of over 50,000 children's books as well as videos, tapes, CD's, CD-ROMS, books on tape, books on CD, and magazines. The Children's Library also offers free storytimes for children 8 years old and under on a regular basis.

Table 4.8.5.1.1: Bellingham Public Library Circulation

	1994	1995	1996	1997	1998	1999	2000	2001	2002
Circulate	1,045,022	1,044,820	1,056,689	1,043,934	1,016,351	1,02,985	1,021,587	1,079,211	1,118,121
Collect	259,996	267,584	274,495	279,188	283,396	292,669	299,048	297,072	330,580

All property owners, renters, and university students within Whatcom County may apply for a library card granting free borrowing privileges at the Bellingham libraries. Non-residents and visitors may also borrow items from the library for a fee. The Bellingham Library offers three types of outreach service for those who cannot readily visit either the Civic Center or Fairhaven libraries due to age, illness, or disability. Once-a-month library service is scheduled at 15 of Bellingham's senior citizen residential centers, which allows residents to gather together in a common area to read and check out library books and materials. A similar monthly service is scheduled at 14 of Bellingham's health care centers and nursing homes. Library books and materials are brought to each room in the facility allowing residents to choose books or media that

they enjoy. Individuals who are confined to their homes for 3 months or more, or who are living in an adult care home, are eligible for home delivery service.

4.8.5.1.2. Whatcom County Library System

The Whatcom County Library System has been serving the public since 1945 and is comprised of nine (9) branch libraries, including Blaine, Ferndale, Lynden, Sumas, Everson, Deming, Maple Falls, Lummi Island, Point Roberts, and an Administrative Services branch near the Smith Road and Northwest Road intersection. Each of these branch libraries is owned by the cities or communities in which they are located. A Bookmobile also travels to smaller rural communities throughout Whatcom County, such as Sudden Valley, Acme, Wickersham, and Lake Samish.

The Whatcom County Library System currently has a collection of 11,000 reference books available to the public as well as magazines, audiotapes, videotapes, CDs, and DVDs. Outreach service and home delivery are available for those who can't get to a branch library due to age, illness, or disability. All permanent residents and property owners of Whatcom County and Bellingham have borrowing privileges. County residents may also use any branch of the Fraser Valley (Canada) Regional Library.

The Whatcom County Library System is financed through a county-wide Library District that includes all incorporated cities except Bellingham. The Library District collects a property tax levy annually to pay for library materials, services, and maintenance of the branch facilities. Financial security has become a concern for the Whatcom County Library System due to statewide anti-tax initiatives and declining tax revenues in the face of increasing public demand for library services.

4.8.5.2. Public Libraries - Impacts

Population growth and infill development are expected to place additional demands on the Bellingham and Whatcom County public library services under all alternatives.

4.8.5.2.1. City of Bellingham Public Libraries - Impacts

The need for expanded Bellingham Library facilities has become critical. The main library at the Civic Center currently experiences standing room only at children's programs, frequent overcrowding, no shelving for normal growth, long queues at the computers and even longer lines at the circulation desk. Frequently the main library hosts over 1400 users a day and circulation at the Fairhaven Branch Library has doubled over the last five years. The trend line shows continued increases in numbers of library users. For several years now, Bellingham Public Library's circulation has compared with the top five cities of similar size for circulation per capita, averaging over 16 items per year.

The current main library facility and existing Civic Center location have site and structural limitations that would make remodeling and expansion difficult. The Bellingham Library administration and the City of Bellingham have determined that a new 70,000 square foot library is needed at a different location in the downtown area, but in close proximity to the Civic Center. The City anticipates asking voters to approve

a general obligation bond in the November 2004 general election that would allow the City to buy land and construct a new main library.

The City of Bellingham has discussed a branch library system in the past as early as 1980 (See Capital Facilities Element of the 1995 *Bellingham Comprehensive Plan*) as one means of alleviating pressure on the main library at the Civic Center. A branch system is more expensive in terms of capital outlay for land acquisition and building construction or remodel, as well as on-going operating and maintenance costs, but branch libraries can also increase local accessibility to public library service. Much of the housing growth in Bellingham is occurring in the north and northeast portions of the city and urban growth area and it is quite likely that there will be a need for a new branch library in this area in the future.

A Bellingham Library Master Plan, which identifies future branch library locations, might provide the best tool to allow the City to continue providing high-quality public library services and facilities as the population grows in the future. If Bellingham becomes an increasingly attractive retirement location, there would be a corresponding increase in the demand for the library's outreach program to retirement communities and nursing homes and home delivery service for those who are confined to their homes.

4.8.5.2.2. Whatcom County Library System - Impacts

Like Bellingham, the Whatcom County Library System is experiencing an increase in the use and demand for public library services at all of its branches. In recent years, there has been an influx of ethnic immigrants, including Russians, Hispanics, and East Indians, who have chosen to settle in rural and agricultural areas of Whatcom County. The Whatcom County Library System is experiencing an increase in the demand for library materials that are either translated to or produced in the native languages of these people, especially Russian.

Whatcom County is also becoming increasingly attractive as a retirement location, and if this continues there may be a corresponding increase in the demand for the County library's outreach program to retirement communities and nursing homes and home delivery service for those who are confined to their homes.

The branch library system allows for service to be provided in proportion to the population residing in each community, but increasing demand in the face of decreasing revenues makes it very difficult for smaller communities to finance public services. Whatcom County and the community of Kendall are exploring the possibility of constructing a multi-service community center that would be able to house a public library, a rural Sheriff's field office, and other vital community services.

Alternative 1 – No Action

Under this alternative, infill growth would occur within existing City limits and UGA boundaries at existing zoning and residential densities. If the City continues to approve sewer and water utility extension into the UGA prior to annexation, then residential development could be expected to occur according to the County's UGA zoning which

allows densities of one to ten single family units per acre and up to 24 multifamily dwelling units per acre. Generally, this alternative would be expected to:

- Create a low-density suburban ring around the existing City limits;
- Create increased traffic congestion and travel time for Bellingham library patrons from suburban areas;
- Require additional library facilities in Bellingham to maintain existing service levels; and
- Create additional pressure for branch libraries in suburban areas.

Alternative 2 - Infill

Under an infill alternative, zoning would be adjusted, where possible, in both the City and the existing UGA to achieve higher residential densities than County and City zoning currently allow. Urban development would be directed into the City and the UGA resulting in less development pressure on the rural areas outside of Bellingham's UGA. Generally, an emphasis on infill development where public infrastructure capacity already exists would be expected to:

- Create a high-density, compact city and urban growth area;
- Create increased traffic congestion and travel time for Bellingham library patrons from suburban areas; and
- Require additional library facilities in Bellingham to maintain existing service levels.

Alternative 3 – Adjusted UGA

Under this alternative, land inside the City and existing UGA would retain its existing zoning and residential densities and the UGA boundary would be adjusted as much as necessary to accommodate the projected population growth at existing residential densities. Wherever the UGA boundary is expanded, land will be rezoned from rural densities to urban densities and will become eligible for annexation to the City. Similar to Alternative 1, expansion of the UGA boundary at existing residential densities would be expected to:

- Create a low-density suburban ring around the existing City limits;
- Create increased traffic congestion and travel time for Bellingham library patrons from suburban areas;
- Create additional pressure for branch libraries in suburban areas; and
- Require additional library facilities in Bellingham to maintain existing service levels.

Alternative 4 – Infill and Adjusted UGA

Under this alternative, zoning would be adjusted, where possible, in both the City and the UGA to allow higher residential densities and a minor expansion of the UGA boundary would take place to accommodate the net shortfall of land deemed necessary to accommodate projected population growth. Land inside the minor expansion areas would be zoned to achieve higher densities than the County currently allows in the existing UGA. This alternative would create a compact urban area surrounded by densities radiating out from the urban core in concentric rings. Higher density development in the City, the existing UGA, and areas for minor UGA expansion would be expected to:

- Create a high-density, compact city and a moderate-density urban growth area;
- Create increased traffic congestion and travel time for Bellingham library patrons from suburban areas;
- Create additional pressure for branch libraries in suburban areas; and
- Require additional library facilities in Bellingham to maintain existing service levels.

4.8.5.3. Public Libraries - Mitigating Measures

- Regardless of the growth alternative adopted, the City of Bellingham faces the need to replace the existing main library at Civic Center. The City will need to construct a modern, centrally located 70,000 square foot library, possibly developed in conjunction with other civic improvements. No cost estimate is available at this time and the ultimate cost of a new library will depend on the site location.
- A general obligation bond could provide a funding source to construct a new 70,000 square foot library.
- Encourage continued coordination between the Bellingham and Whatcom County library systems that serve the UGA and the Urban Fringe Subarea;
- Explore the potential development of a branch library system to serve various portions of the UGA and the Urban Fringe Subarea;

4.8.6. Water Supply

4.8.6.1. Water Supply - Existing Conditions

4.8.6.1.1. City of Bellingham

The Bellingham water system was created in 1895 when the city of Whatcom granted Bellingham Bay Waterworks Company a franchise. Lake Whatcom was used as the source for this water system. In 1892, the city of New Whatcom purchased the water facilities. The 1890 census recorded 8,135 residents living within the present Bellingham City limits. Rapid growth occurred from 1900 to 1910 and by 1930, the population had reached 30,823.

South Bellingham was known as Fairhaven before incorporation and was served by a separate, privately owned water system until 1935. Lake Padden was used as the source for this water system. In 1960, a dam was constructed on the Middle Fork of the Nooksack River and water was routed through a diversion tunnel and pipeline to supplement the water level in Lake Whatcom, the main drinking water reservoir for the City of Bellingham. Lake Padden was then abandoned as a water source for the south section of the city.

The city's water filtration plant was constructed in the late 1960's and began operation in November 1968 with six mixed media filters. The existing system serves an area that varies in elevation from sea level to approximately 800 feet and encompasses roughly 30 square miles. The system is separated into 11 pressure zones served by 14 reservoirs and 12 pump stations with the reservoirs having a combined storage

capacity of 28.5 million gallons. The water distribution system consists of approximately 377 miles of City-maintained pipeline.

The hydraulic capacity of the City's Water Filtration Plant is approximately 48 million gallons per day (MGD). An additional 50 MGD became available with the closure of the Georgia-Pacific pulp mill operation in downtown Bellingham. The current average demand is 11 MGD and is expected to increase to 17 MGD by 2015, as a direct result of projected population increase. Additional capacity will also be needed to meet peak summer demands.

The Bellingham Water System provides direct service to a total of 25,467 dwelling units in the City and the service area, approximately 23,103 of which are inside the city limits. The City is also involved in the wholesaling of water to various districts and associations in an ultimate service that reaches as far north as Smith Road, in the Urban Fringe Subarea (See Figure 4.8.6.).

Future Supply and Demand Management
The City of Bellingham has conducted a lengthy investigation into the future requirements and demands on the drinking water system. A rigorous and detailed evaluation of each particular aspect of the system was performed in 1993. The study includes interrelationships among water quality concerns, filtration effectiveness, reservoir interactions and cost-effectiveness of pumping operations. The results of this study are detailed in the 1993 Bellingham Comprehensive Water Plan. Major improvements to the water system necessary to accommodate the projected population increase to the year 2015 are summarized below:

- Expansion of the water treatment/filtration plant to a capacity of 32 MGD from its current treatment of 24 MGD (peak production);
- Pumping and transmission improvements to better refill certain reservoirs;
- Construction of additional storage within the system to provide more uniform pressures and fire flow;
- Creation and expansion of certain service zones to supply specific areas with adequate pressure, especially north of the city.

The City of Bellingham is presently updating the Comprehensive Water Plan and expects to complete the update in 2004. The City also recently completed the Water Rate Study addressing rates and system development charges.

4.8.6.1.2. Urban Service Areas and Urban Fringe Subarea

Water service in Bellingham's Urban Service Areas and the Subarea is provided by public entities (municipalities, special purpose districts), private entities (water associations), or by individual property owners (wells and surface water withdrawals). Map 4.x shows water districts and associations. Each of these entities provides varying degrees of stability, predictability, and service. The City of Bellingham presently provides direct service to approximately 2,364 households outside the city limits, within

the existing urban service area. In addition, three Whatcom County water districts provide service to the parts of the UGA and to parts of the Urban Fringe Subarea.

Whatcom County's water provisioning strategies have been examined and outlined in the "Whatcom County Coordinated Water System Plan Update", February 2000. The city of Bellingham has been a participant in this process along with other Whatcom County water purveyors.

4.8.6.1.3. City of Ferndale

The city of Ferndale provides water service to an area in the northwest part of the Urban Fringe Subarea, west of Interstate 5 and south of Slater Road.

4.8.6.1.4. Whatcom County Water District #2

Whatcom County Water District #2 was established in 1946 as a Utility Local Improvement District and provides water service to customers generally located between Silver Creek, Curtis Road, Wynn Road, and Bennett Drive to Marine Drive and Bellingham Bay. Water District #2 has an Interlocal Agreement with the City of Bellingham to purchase Lake Whatcom reservoir water for resale and distribution to its customers. Water District #2 began with 64 residential connections and experienced major service expansions in 1953, 1969, 1978, and 1993. Water District #2 has Washington State Health Department approval for 821 service connections, but currently serves 523 connections with an estimated population of 1,400 persons. According to the zoning currently applied to land within District boundaries, the ultimate buildout of Water District #2 may require up to 1,322 residential service connections.

4.8.6.1.5. Water District #7

Water District #7 is located in the Lake Whatcom and Squalicum Creek watersheds and serves a small area in the Subarea around Britton and Toad Lake Roads. The District purchases water from the City of Bellingham and resells and distributes it to their customers. In 2002, an additional pump station was constructed on Britton Road, which allowed District #7 to expand service. In 2003, the District served 551 residential connections and has Washington State Health Department approval for 1,145 connections.

4.8.6.1.6. Lake Whatcom Water and Sewer District

(Former Water District #10)
Lake Whatcom Water and Sewer District (LWWSD) was formed in 1968 and provides water and sewer services to approximately 3,400 residences in the area around Lake Whatcom. In July 1977, the District assumed ownership and operation of the Geneva Water Corporation. Prior to that time, the Geneva Water Corporation purchased its water from the City of Bellingham. LWWSD operates a water treatment plant in Sudden Valley that provides water to Sudden Valley and Geneva residences. The District distributes water purchased from the City of Bellingham to its Eagleridge customers along the north shore of Lake Whatcom, and also operates a well supply system on the North Shore serving approximately 50 residences. All water distributed by LWWSD meets or surpasses EPA Safe Drinking Water standards. The District currently serves

approximately 3,400 residences, and expects to serve an additional 1,650 residences on the South Shore and an additional 50-100 on the North Shore within the next 20-25 years.

4.8.6.1.7. Community Water Associations

Seven community water associations currently serve the planning area. Water associations are small, rural cooperative water distribution organizations, which are not required to define a boundary of service, and are, not required to provide service to anyone. Although the water associations in the planning area own, operate, and maintain their water system infrastructure, a primary water source for many is the City of Bellingham.

Deer Creek Water Association is the largest community water association with 325 existing connections and an approved capacity for up to 467 connections. The water system is located adjacent to Guide Meridian Road generally between Axton Road, north of the Urban Fringe Subarea, and Horton Road. There is overlap between the Deer Creek Water Association and the City of Bellingham's Urban Service Area along Guide Meridian just north of Horton Road. A new reservoir, constructed in 1991, allowed the association to increase the number of shareholders and connections. The Deer Creek Water Association obtains water from two wells that pump approximately 350 gallons per minute (gpm).

Wahl Water Association is located adjacent to Smith Road between Noon and Mission Roads in the northeast corner of Urban Fringe Subarea. Currently there are 55 connections with capacity for 5 additional connections.

Smith Road Water Association is located adjacent to Smith Road from Aldrich Road to approximately a mile and a quarter east of Guide Meridian Road. Currently there are 21 connections with no potential for additional connections. Water is obtained from one well.

Victor Water Association is located adjacent to Hannegan and Smith Roads. Currently there are 22 connections with no potential for additional connections. Water is obtained from one well.

Kelly Road Water Association is located adjacent to Kelly and Hannegan Roads and serves 18 residential connections.

Rose Valley Water Association is located adjacent to Kelly and Hannegan Roads and serves 10 residential connections.

Glen Cove Water Association is located in the Geneva UGA along Euclid Avenue. This association buys water from the City to provide service to 15 single-family residences.

Northwest Water Association is primarily outside the Subarea boundary but provides service to a small area south of Slater Road between Northwest Drive and Interstate 5.

Belden Acres Water Association provides water to residences on Larson Road, East of Guide Meridian Road.

Yaude's Water Association serves a small area north of Mount Baker Highway between Noon Road and Everson Goshen Road.

Montgomery Road Water Association is in the Bellingham UGA, north of East Bakerview Road, off of James Street Road and Montgomery Road.

Spring Valley Water System is inside the UGA in the north half of the Yew Street Road area near Hannah Creek, east of Yew Street Road.

Forest Park Mobile Home Park Water Association is inside the UGA in the north half of the Yew Street Road area east of Yew Street Road.

Yew Tree Acres Water Association is inside the UGA in the south half of the Yew Street Road area adjacent to Yew Street Road.

Chuckanut Trail Water Association serves an area east of Chuckanut Drive, primarily south of the Bellingham city limits but with some service just inside the city limits.

River Road Water Association in the extreme northwest corner of the Subarea provides service west of the Nooksack River, north and south of Slater Road.

4.8.6.2. Water Supply - Impacts

While the growth alternatives discussed in this EIS are based on the same 20-year population projection, each alternative distributes the growth (primarily the residential growth) in different ways. The alternatives differ in the amount of land required for urban growth and the intensity with which that land is developed in terms of residential densities, allowable building height, and size and floor area of commercial and industrial structures. Population growth is expected to create additional water demand for residential, commercial, and industrial uses under all four alternatives. Increased demand due to population growth will require additional infrastructure, such as storage tanks, water mains and pump stations, but the impacts vary by geographic area and are different for each alternative.

This DEIS anticipates that the four alternatives will have the following general impacts on water supply for Bellingham, the UGA, and the Urban Fringe Subarea:

Alternative 1 - No Action
Under this alternative, infill growth would occur within existing City limits and UGA boundaries at existing zoning and residential densities. Generally, the No Action Alternative would be expected to:

- Continue the present pattern of relatively low-density residential development both in the City and in the UGA. The net effect of this development pattern would create a shortage of land for urban residential development resulting in increased housing costs and pushing development impacts into surrounding cities and their UGAs and the rural areas of the county.
- Reduce efficiency and cost-effectiveness of public water supply infrastructure;
- Require costly extension of water supply infrastructure improvements and maintenance of new, extensive water supply infrastructure; and
- Require water districts and water associations to assess the demand for water from the supply system, estimate system improvements, and upgrade distribution system if required to meet the need.

Alternative 2 - Infill
Under the infill alternative, zoning would be adjusted, where possible, in both the City and the existing UGA to achieve higher residential densities than County and City zoning currently allow. Urban development would be directed into the City and the UGA resulting in less development pressure on the other cities, their UGAs and the rural areas of the County. An emphasis would be placed on mixed uses and residential densities would be concentrated around designated neighborhood commercial centers. Generally, an emphasis on infill development and zoning changes to allow higher densities where public infrastructure capacity already exists would be expected to:

- Create compact, high-density urban areas surrounded by moderate to high-densities radiating out from the urban core;
- Increase efficiency and cost-effectiveness of public water supply infrastructure;
- Require modifications to existing transmission lines as the water main and laterals are upgraded in the existing zones;
- Require water storage facility enhancements where infill occurs;
- Reduce the cost of new water supply infrastructure as a result of serving more people in the same area; and
- Reduce the cost of maintenance for new water supply infrastructure.

Alternative 3 - Adjusted UGA
Under this alternative, land inside the City and existing UGA would retain its existing zoning and residential densities and the UGA boundary would be adjusted sufficiently to accommodate the projected population growth. Land added to the UGA would be rezoned from rural densities to single family densities of between 4 and 10 units per acre and multi-family residential densities as high as 24 units per acre. These areas would become eligible for City sewer and water and annexation. Expansion of the UGA

boundary at existing residential densities and under existing development conditions would be expected to have impacts similar to Alternative 1, and would generally:

- Continue the present pattern of relatively low-density residential development both in the City and in the UGA. The net effect of this development pattern would create a shortage of land for urban residential development resulting in increased housing costs and pushing development impacts into surrounding cities and their UGAs and the rural areas of the county.
- Reduce efficiency and cost-effectiveness of public water supply infrastructure;
- Require costly extension of water supply infrastructure improvements and maintenance of new, extensive water supply infrastructure, and
- Require water districts and water associations to assess the demand for water from the supply system, estimate system improvements, and upgrade distribution system if required to meet the need.

Alternative 4 - Infill and Adjusted UGA
Under this alternative, residential densities would be increased, where possible, in both the City and the UGA and the UGA boundary would be expanded only enough to accommodate the remainder of the projected 20-year population growth. An emphasis would be placed on mixed, rather than segregated, land uses and residential densities could be concentrated around designated pedestrian-oriented neighborhood commercial centers. Higher density development in both the City and the UGA would generally be expected to:

- Create compact, high-density urban areas surrounded by moderate to high-densities radiating out from the urban core;
- Increase efficiency and cost-effectiveness of public water supply infrastructure;
- Require modifications to existing transmission lines as the water main and laterals are upgraded in the existing zones;
- Require water storage facility enhancements where infill occurs;
- Reduce the cost of new water supply infrastructure as a result of serving more people in the same area;
- Reduce the cost of maintenance for new water supply infrastructure; and
- Require water districts and associations to assess their capability for providing water service to their customers.

4.8.6.3. Water Supply - Mitigating Measures

- The City's Comprehensive Water Plan needs to be coordinated with the Comprehensive Land Use Plan to ensure that the overall management of the water system is balanced and integrated properly.
- All areas that exist outside the Bellingham UGA, including public water districts and community water associations, need to be evaluated for any detrimental effects they may have on the drinking water system as a whole.

- An aggressive water conservation program including distribution of water saving devices along with public education has been proposed and will help to limit water waste. Continued implementation and development of this program is a priority.
- Continued implementation of the City's water supply management system, water quality and water treatment programs and facility maintenance operations must be coordinated together for a reliable and economical water distribution system. The City has the necessary water rights to continue supplying the projected growth. The City has insured its ability to meet the needs of projected growth by owning sufficient area at the water treatment plant to expand for the additional treatment.
- Encourage water districts and associations serving the Urban Fringe Subarea to inventory existing water systems, monitor distribution systems, and maintain reliable service as part of a conservation program.

4.8.7. Stormwater

4.8.7.1. Stormwater - Existing Conditions

4.8.7.1.1. City of Bellingham

Bellingham's surface water system consists of natural and constructed drainages that eventually discharge to the marine waters of Puget Sound. The major creeks in Bellingham are Squalicum Creek, Whatcom Creek, Padden Creek and Chuckanut Creek. In addition, a small area of land in the northern part of the city drains to Silver Creek, a tributary of the Nooksack River and to the river itself.

Until 1984, stormwater system improvements had no defined funding mechanism and were typically a minor element of road or sanitary sewer projects, leaving no dedicated funds for more far-reaching system improvements. In 1984, the City began collecting a 0.25% excise tax on the sale of real estate and dedicating the proceeds to drainage improvements. In 1990, a building permit fee structure was established that generated funds specifically for stormwater systems. This fee system is based on development projects contributing fees based on the amount of newly created impervious surface. In 2001 the City enacted a monthly stormwater fee to augment the system development charges specified above. This change has created a stable funding mechanism for dealing with stormwater issues. In 2001, the Washington Department of Ecology issued a new stormwater manual detailing best management practices that are now required for new stormwater systems in the City.

The City commissioned a comprehensive drainage study in 1973 and again in 1992. The 1992 Watershed Master Plan resulted in a basin planning approach to surface water issues. The Plan detailed the need for additional regional detention systems, conveyance improvements and water quality treatment systems throughout the city. The Watershed Master Plan, while being a useful document, is scheduled for update to meet new standards for stormwater management. In addition, a planning process was started in 1999 to look at water management holistically. The Water Resource Inventory Area 1 (WRIA 1) planning process is a joint venture with the County, Cities,

the Tribes, and service providers. Stormwater funding from Bellingham and staffing from Whatcom County aid in the continuation of this important work.

Existing and Future Demands
The results of the old Watershed Master Plan study illustrated a number of existing and future problems within the stormwater system. Specifically, the Plan delineated where detention facilities are needed and should be placed. It describes needed conveyance system improvements and addresses water quality issues. The updated Watershed Master Plan will be used to corroborate and modify detention and water quality needs for existing and developing areas. The revisions from the update will result in greater protection of water resource areas.

4.8.7.1.2. Urban Growth Area and Urban Fringe Subarea
The responsibility for managing stormwater in Bellingham's UGA and the Subarea is vested primarily with Whatcom County. In December 1984, Whatcom County adopted countywide development standards, which have been expanded and made specific as they relate to requirements for land development activities in the County. Specific standards set forth the required design, construction and maintenance provisions that must be met by developers. In many cases, a specific drainage study is required. County Engineering and Maintenance review development plans. Through the Interlocal Cooperation Agreement, the City of Bellingham reviews all major developments within the City's Urban Service Areas and can require compliance with the City's standards and regulations. Other agencies involved with City/County stormwater management include drainage, diking and conservation districts, the Washington State Department of Ecology, Fisheries and Wildlife, Transportation, Army Corps of Engineers and the Federal Emergency Management Agency.

4.8.7.2. Stormwater – Impacts

Alternative 1 – No Action
The no action alternative would leave the zoning and growth areas as they are now. This alternative would limit the amount of available service area and would have less facility demands than the other alternatives. With no incentives to build within core areas, however, it would be expected that development would gravitate toward outlying areas, distributing impacts to a larger geographic area. This alternative is similar to the others in that development in the Subarea will require construction of storm water and drainage facilities.

Alternative 2 – Infill
Under the infill alternative, existing stormwater drainage systems would have to be analyzed to determine where increased densities might create an impact to the system. Systems that were originally installed in developed areas may or may not have enough reserve capacity to accommodate density increases, or specifically, increases in impervious surfaces. In general, density increases near the core areas of the city would likely have less impact on the system since these areas are closest to receiving waters and large trunk systems. Difficulties may lie in trying to have these same areas provide

proper water treatment, since water treatment facilities can be somewhat land consumptive.

While zoning in the portion of the Subarea outside Bellingham's Urban Service Area will not change under this alternative, development of vacant land will occur at existing densities and will increase the amount of impervious surface in rural areas. The speed and volume of stormwater flowing across sites and into drainage channels will be minimal, however. Clearing vegetation, particularly on hillsides can cause erosion and contamination of surface water.

Alternative 3 – Adjusted UGA
Enlarging the UGA has the potential to create the greatest impact without careful planning. This would require a greater expansion of stormwater facilities and increased operation and maintenance considerations. Degradation of water quality due to development is difficult to mitigate completely. Because of this, sensitive receiving waters such as Lake Whatcom may be affected by expanded urbanization.

Alternative 4 - Infill and Adjusted UGA
This alternative would combine the impacts discussed under Alternatives 2 and 3, however the amount of area needed for an enlarged UGA would be less than under alternative 3..

4.8.7.3. Stormwater - Mitigating Measures

- In order to mitigate detrimental impacts, new development and redevelopment should utilize all known and reasonable technologies (AKART) to limit its effects on stormwater and the environment. AKART presently includes the use of the 2001 Department of Ecology Stormwater Manual for Western Washington. Programs and regulations should be consistently administered to meet this standard.
- Low Impact Development standards and technologies should be incorporated wherever possible to aid in the reduction of stormwater impacts.
- The recommended improvements in the Watershed Master Plan and WRIA planning process should be implemented.
- Regional detention and water quality facilities should be used wherever feasible to provide economies in space.
- Regulations that govern ongoing stormwater discharge from existing developed areas should be vigorously enforced to limit pollutant loading.
- To the extent that is financially possible, existing stormwater systems should be retrofitted with Best Management Practices (BMP's) that reduce pollutant loading from the existing condition.

4.8.8. Sanitary Sewer

4.8.8.1. Sanitary Sewer -- Existing Conditions

4.8.8.1.1. City of Bellingham

Sewers constructed of vitrified clay pipe were first installed in 1892 throughout the developed areas of Bellingham, The sewers collected both sewage and rainwater and discharged into Whatcom Creek and Bellingham Bay. Starting in 1908, probably because of sewer overloads, some storm sewers were installed in developed areas of the city. Most of these early sewers are still in use. The ones carrying sewage have been intercepted ahead of their discharge points, and flows are now pumped to the wastewater treatment plant. Original storm water connections into sewers have since been disconnected.

The City first provided primary wastewater treatment in 1947, discharging effluent into a shallow part of Bellingham Bay from a treatment plant located near the mouth of Whatcom Creek. Prior to that time, the City's collection system for sanitary sewage and storm water were a combined type where sewage and runoff were conveyed directly into Bellingham Bay by the same pipe. Collection systems constructed after the wastewater treatment plant was built have sewage separated from stormwater. The operation at Whatcom Creek continued, with the City expanding the treatment capability from its initial 4.5 million gallons per day (mgd) to 11.0 mgd in 1960. Beginning after the plant construction and continuing since, the City has operated a storm/sanitary separation project to alleviate the excessive amounts of water flow to the plant during rainfall.

In 1974 Bellingham replaced the Whatcom Creek facility with the Post Point Pollution Control Plant, which is located on the south side of Bellingham, west of Fairhaven. The new facility began providing primary treatment for a peak flow of up to 55 mgd of primary treatment for people served by the sewer system. At Post Point, treated wastewater is disinfected and discharged into Bellingham Bay through a deep water pipe and outfall. The sludge is de-watered by centrifuge and then incinerated on location. To comply with Federal and State regulations requiring secondary treatment of wastewater, construction of a seven million dollar, high-purity oxygen secondary treatment facility was completed in 1993. Bellingham's secondary wastewater treatment system is 95% efficient at removing waste prior to disposal of effluent into Bellingham Bay.

<u>Future Demand</u>

The existing Post Point wastewater treatment facility was designed for a capacity of 18 million gallons per day. The average flow currently generated is about 12 million gallons per day. The City of Bellingham anticipates that the expanded and upgraded sewage treatment facility will have a useful life of at least 20 years from its completion in 1993, based on expected flows from the projected population. Currently, the sanitary sewer system serves approximately 21,742 connections with a large number of residences still on local septic systems within the city limits. To meet Federal and State requirements for the planning period, it will be imperative that the City monitor and

produce estimates of how much flow from domestic, industrial, and infiltration and inflow (I/I) sources will be entering the treatment facility.

Population projections for a relatively small area such as the Bellingham UGA are only an approximate guide for estimating future domestic water flow. Economic changes on a local scale will have an impact on the population as well as an influence on the industrial water flows to the treatment plant.

The system's hydraulic capability is dependent on the treatment and the transmission of the wastewater during specific times of the day and the year. By reducing the amount of infiltration/ inflow during short duration storm events, the treatment facility and wastewater collection system will be able adequately perform as designed. An abatement program to eliminate all unwanted water intrusion has been ongoing since the early 1970's.

4.8.8.1.2. Urban Growth Area and Urban Fringe Subarea

Wastewater systems in Bellingham's UGA and the Urban Fringe Subarea include publicly operated municipal or district systems, individual or small group septic tank systems, and individual industrial systems. Public systems and industrial systems are monitored by the Washington Department of Ecology and operate under federal and state regulations. In the Subarea, disposal of wastewater is accomplished by either a centralized sewage collection system with treatment of domestic and industrial wastewater, or by individual on-site wastewater disposal septic systems.

4.8.8.1.3. Lake Whatcom Water and Sewer District (former Water District #10)

Lake Whatcom Water and Sewer District (LWWSD) was formed in 1968 and provides water and sewer services to approximately 3,400 residences around Lake Whatcom and expects to serve an additional 1,650 residences on the South Shore and an additional 50-100 on the North Shore within the next 20 to 25 years. Since LWWSD does not have a sewage treatment plant, the District contracts with the City of Bellingham to transport, treat and dispose of domestic sewage from the District at a maximum flow rate of 3,200 gallons per minute. The District operates and maintains a total of 340,000 lineal feet of gravity sewer and 72,000 lineal feet of pressure sewer, including 27 sewage pump stations. There are three distinct sewage interceptors that deliver wastewater from the District collection systems to the City of Bellingham's Silver Beach trunk sewer in Whatcom Falls Park. These three trunk sewer systems are the north shore interceptor, the Lake Whatcom Blvd. interceptor, and the Lake Louise Road interceptor. The Sudden Valley and Geneva areas are considered a "linked system", sharing the Lake Whatcom Blvd. and Lake Louise Road interceptors to some degree.

In areas where properties are located below Lake Whatcom Boulevard and cannot utilize direct gravity flow, gravity collectors drain the wastewater towards the Lake and the effluent is then pumped back to the Lake Whatcom Interceptor via one of the smaller pump stations operated by the District.

The Lake Whatcom Interceptor is a ten-inch interceptor that increases to 14 inches and carries gravity flows north along Lake Whatcom Boulevard. Eventually, flows are pumped via the Cable Street Pump Station into a ten-inch force main to the City's Silver Beach Trunk Sewer. The major pump station in the area is the Cable Street pump station. This station pumps not only all the effluent from the Geneva area, but also waste flows from Sudden Valley. The Euclid, Geneva and Strawberry Point pump stations all pump minor flows into the Lake Whatcom Interceptor.

The District has approximately 900 customers in the Geneva area. Currently, the contract with the City limits the district to a flow rate of 2,500 gallons per minute from the south shore of Lake Whatcom. Total available capacity for this area would allow approximately 3,500 additional dwelling units on the south shore. The City restricts the district to a flow of 700 gallons per minute from the north shore. This would allow approximately 1,300 additional hook-ups.

4.8.8.1.4. Yew Street UGA

The City of Bellingham and individual private septic tank systems provide wastewater disposal in the Yew Street Urban Service Area. The City provides sewer service only in the areas immediately north of Lake Padden and the northern half of Yew Street. The sewer line directly north of Lake Padden serves 80 residential units and the northern Yew Street line serves approximately 74 residential units.

4.8.8.2. Sanitary Sewer -- Impacts

While the growth alternatives discussed in this EIS are based on the same 20-year population projection, each alternative distributes the growth (primarily the residential growth) in different ways. The alternatives differ in the amount of land required for urban growth and the intensity with which that land is developed in terms of residential densities, minimum lot sizes, allowable building height, and size and floor area of commercial and industrial structures. Population growth is expected to create additional demand for sanitary sewer infrastructure under all four alternatives, but the impacts vary by geographic area and are different for each alternative.

This DEIS anticipates that the four alternatives will have the following general impacts on sanitary sewer infrastructure for Bellingham, the UGA, and the Urban Fringe Subarea:

Alternative 1 - No Action

Under this alternative, infill growth would occur within existing City limits and UGA boundaries at existing zoning and residential densities. Generally, the No Action Alternative would be expected to:

- Continue the present pattern of relatively low-density residential development both in the City and in the UGA. The net effect of this development pattern would create a shortage of land for urban residential development resulting in increased housing costs and pushing development impacts into surrounding cities and their UGAs and the rural areas of the county.

- Reduce efficiency and cost-effectiveness of public sewer infrastructure;
- Require costly extension of sewer infrastructure to outlying areas;
- Require more expensive maintenance of new, extensive sewer infrastructure;
- Require sewer districts to assess the demand for sewage treatment and negotiate with the City of Bellingham to treat sewage to meet the need;
- Potentially require sewer districts to pursue the construction of costly independent sewage treatment facilities; and
- Increase the risk of surface and groundwater contamination due to individual septic system malfunction and failure;

Alternative 2 - Infill
Under the infill alternative, zoning would be adjusted, where possible, in both the City and the existing UGA to achieve higher residential densities than County and City zoning currently allow. Urban development would be directed into the City and the UGA resulting in less development pressure on the other cities, their UGAs and the rural areas of the County. An emphasis would be placed on mixed uses and residential densities would be concentrated around designated neighborhood commercial centers. Generally, an emphasis on infill development and zoning changes to allow higher densities where public infrastructure capacity already exists would be expected to:

- Create compact, high-density urban areas surrounded by moderate to high-densities radiating out from the urban core;
- Increase efficiency and cost-effectiveness of public sewer infrastructure;
- Require modifications to existing transmission lines as the sewer mains and laterals are upgraded in the existing zones;
- Require sewage treatment facility enhancements as infill occurs;
- Reduce the cost of new sewer infrastructure as a result of serving more people in the same area; and
- Reduce the cost of maintenance for new sewer transmission infrastructure.

Alternative 3 - Adjusted UGA
Under this alternative, land inside the City and existing UGA would retain its existing zoning and residential densities and the UGA boundary would be adjusted sufficiently to accommodate the projected population growth. Land added to the UGA would be rezoned from rural densities to densities of between 4 and 10 units per acre and would become eligible for City sewer and water and annexation. Expansion of the UGA boundary at existing residential densities and under existing development conditions would be expected to have impacts similar to Alternative 1, and would generally:

- Continue the present pattern of relatively low-density residential development both in the City and in the UGA. The net effect of this development pattern would create a shortage of land for urban residential development resulting in increased housing costs and pushing development impacts into surrounding cities and their UGAs and the rural areas of the county.
- Reduce efficiency and cost-effectiveness of public sewer infrastructure;

- Require costly extension of sewer infrastructure to outlying areas;
- Require more expensive maintenance of new, extensive sewer infrastructure;
- Require sewer districts to assess the demand for sewage treatment and negotiate with the City of Bellingham to treat sewage to meet the need;
- Potentially require sewer districts to pursue the construction of costly independent sewage treatment facilities; and
- Increase the risk of surface and groundwater contamination due to individual septic system malfunction and failure.

Alternative 4 - Infill and Adjusted UGA
Under this alternative, residential densities would be increased, where possible, in both the City and the UGA and the UGA boundary would be expanded only enough to accommodate the remainder of the projected 20-year population growth. An emphasis would be placed on mixed, rather than segregated, land uses and residential densities could be concentrated around designated pedestrian-oriented neighborhood commercial centers. Higher density development in both the City and the UGA would generally be expected to:

- Create compact, high-density urban areas surrounded by moderate to high-densities radiating out from the urban core;
- Increase efficiency and cost-effectiveness of public sewer infrastructure;
- Require modifications to existing transmission lines as the sewer mains and laterals are upgraded in the existing zones;
- Require sewage treatment facility enhancements as infill occurs;
- Reduce the cost of new sewer infrastructure as a result of serving more people in the same area; and
- Reduce the cost of maintenance for new sewer transmission infrastructure.

4.8.8.3. Sanitary Sewer – Mitigating Measures

- Currently there is an infiltration/inflow abatement program set up throughout the City for management of the wastewater collection system. The transmission and treatment capacity of the sewer system is greatly impacted by positively removing areas of infiltration/inflow. This will reduce the need for future capital improvements and limit the costs associated with maintenance and operation.

- Specific planning needs to occur when areas are under consideration for annexation or expansion of the boundaries of the service areas. Zoning and development must follow a comprehensive plan to ensure that no unnecessary improvements are required due to loss of available sanitary sewer system capacity.

- The City has continued planning for growth by insuring that the treatment plant has sufficient area to expand additional sewage treatment. Continued planning by updating the Wastewater Conveyance Plan will help meet the projected growth.

4.8.9. Solid Waste

4.8.9.1. Solid Waste - Existing Conditions

4.8.9.1.1. Curbside Garbage Collection

All homes, businesses, and public facilities within the planning area generate municipal solid waste (household trash or garbage). The City of Bellingham began collecting garbage in the mid-1930's, and instituted mandatory door-to door collection in 1950. The Sanitary Service Company (SSC), Inc under contract with the City, collects municipal solid waste from residential customers within the City of Bellingham. SSC is certified by the Washington State Utilities and Transportation Commission and has the exclusive right to collect commercial garbage within the City. SSC has also been granted the exclusive right to collect both residential and commercial solid waste within the Bellingham UGA and the Urban Fringe Subarea.

SSC deposits municipal solid waste at a regional transfer stations located on Slater Road in Ferndale, which are owned and operated by Recomp of Washington, Inc. and Recycling and Disposal Services (RDS). Recomp processes and loads residential and commercial solid waste into railroad cars for transport to southeast Washington for burial in the Roosevelt Landfill. In 2003, Recomp loaded 73,000 tons of municipal solid waste for rail transport to southeast Washington. Recycled materials collected at the Recomp Site are transported to the Parberry Recycling site in Bellingham. RDS collects and processes solid waste from the City "drop boxes" and loads and transports this solid waste via truck and rail to eastern Oregon for burial in the Arlington Landfill.

4.8.9.1.2. Curbside Recycling Collection

Residential recycling was started in Bellingham when a recycling center was established at the (then) Western Washington State College in the early 1970's. In the early 1980's a group of citizens in the Birchwood Neighborhood established a neighborhood recycling system and in 1989, the City established the recycling program in all neighborhoods, combining curbside recycling with the garbage collection contract with SSC. In 1991, the City's Curbside Recycling Program received national recognition when the National Recycling Awards Program, sponsored by the H.J. Heinz Company foundation and the U.S. Conference of Mayors, awarded it "Special Recognition for Innovative Recycling Programs."

Curbside recycling collection is available on a weekly basis on the same day of the week as garbage collection. According to SSC's 2003 collection statistics, Bellingham residents recycle over 37% of what would become residential solid waste, including 30% from curbside recycling, 7% from yard waste composted at the Lakeway/Woburn Clean Green site, and 0.12% from hazardous waste given to the Disposal of Toxics program on Airport Drive. In 2003, SSC collected 5,191 tons of recyclable materials from residential customers in Bellingham. Items that are recycled curbside include bottles, cans, cardboard, mixed paper, newspaper, scrap metal, used motor oil, and lead acid batteries.

Recyclable materials collected by SSC, Inc. are deposited at a recycling facility in the Old Town area of Bellingham, which has been owned and operated by the Parberry family for several decades. The Parberry operation processes and sells and transports Bellingham's recycled materials to a wide variety of domestic and international markets. Recyclable materials are used to produce-glass, steel, and aluminum (35 % by weight (bw)), paper (31% bw), newspaper (22% bw), and cardboard (12 % bw). The remainder is burned, which generates enough power, per day, for 400 homes.

4.8.9.1.3. Curbside Yard Waste Collection

Beginning in 2003, curbside yard waste collection became available from two companies through subscription contract. In spring 2003, City Organics, LLC and SSC, Inc. launched curbside yard waste collection service. Both programs provide year-round curbside collection in 60-gallon bins that residents of Bellingham and Ferndale can use to recycle grass clippings, garden trimmings, branches and leaves. City Organics offers curbside pickup twice per month during summer months and once per month in winter months. SSC offers curbside pickup every other week year-round in conjunction with garbage and recycling pickup.

4.8.9.1.4. Regional Yard Waste Drop-off

The Clean Green Transfer Station is located on the northwest corner of Lakeway Drive and Woburn Street. The site is operated by the Bellingham Public Works Department as one of Whatcom County's waste management programs and accepts residential yard and garden waste from all Whatcom County residents at no charge. In 2003, 5,454 tons of yard waste was deposited at the Clean Green site.

4.8.9.1.5. Toxic and Hazardous Waste

The Whatcom County Disposal of Toxics Program was established in 1984 and the City of Bellingham Public Works Department operates the main Disposal of Toxics Household Hazardous Waste Collection Site located at 3505 Airport Drive. The program has developed into one of the premier household hazardous waste programs in the nation and accepts household hazardous waste from all residents of Whatcom County at no charge. A wide variety of reusable items are also given away for free at the waste collection site.

The Disposal of Toxics Program accepts a wide variety of household chemicals, including paints and paint products, dried oil-base paint, fuels, lawn and garden chemicals, medications, automotive repair and maintenance products, automotive batteries, used motor oil, home maintenance and cleaning products, fluorescent tubes, and mercury from thermostats and switches. The Disposal of Toxics Program will not accept latex paint, asbestos, biomedical waste, smoke detectors, ammunition and explosives, or radioactive materials.

In addition to the main hazardous waste collection site, the Disposal of Toxics Program also operates drop sites for limited quantities of household antifreeze, used motor oil, and drained oil filters at the following locations:

- Water District #10 Antifreeze and Oil Recycling Station
  1010 Lakeview St., east of Bellingham, off Lakeway
- Cedarville Antifreeze and Oil Recycling Station
  Cedarville Rd., 1/4 mile off Mt. Baker Hwy, behind Cowden Gravel
- Birch Bay Antifreeze and Oil Recycling Station
  4297 Birch Bay / Lynden Rd., Birch Bay
- Nooksack Valley Disposal Inc.
  250 Birch Bay / Lynden Rd., Lynden

In 1990, the Whatcom County Disposal of Toxics Program also established the Business Waste Program to provide local businesses with a convenient local opportunity to properly manage chemical wastes. Businesses that generate chemical waste are regulated under the Washington State Dangerous Waste Regulations, WAC 173-303. In Washington State a business can be in one of three generator categories: Small Quantity, Medium Quantity, or Large Quantity Generators. The Disposal of Toxics Program is permitted to handle waste from Small Quantity Generators, which are defined by state regulations as businesses that *never* generate more than 220 pounds of dangerous waste per month, and *never* store more than 2200 pounds at one time.

4.8.9.1.6. Waste Collection in the UGA and Urban Fringe Subarea

Solid waste management for Bellingham's UGA and the Urban Fringe Subarea is guided by Whatcom County's *Solid Waste Management Plan* adopted on March 13, 1990. The Plan was approved by the Department of Ecology in May 1990. The purpose of the Plan is to guide the County's solid waste management program for the next twenty-year planning period. The Plan reviews the County's solid waste management system, identifies problems, projects future needs, recommends improvements to the current system, and establishes solid waste management policies. The Plan complies with appropriate federal, state and local laws.

In 1990, Whatcom County became the first county in the state to enact a Universal Waste Collection Ordinance. The law enlists residents to recycle through curbside collection. The ordinance specifically requires residents to sign up for waste collection if they don't already have it. Individuals and businesses in unincorporated Whatcom County can apply for exemptions to the Universal Collection District ordinance if they agree to provide for safe handling of their own waste. Individuals, municipalities, and private firms have financed the operating program completely through user revenues paid to the County. Revenues are directed to a dedicated Solid Waste Fund, which also receives state grant funds to assist solid waste program financing.

Two privately owned former landfills, Olivine and Georgia-Pacific, are located in the Urban Fringe Subarea. Olivine ash landfill on Thomas Road, off of Pacific Highway is closed and ash is now long-hauled to an out-of-county landfill for disposal. Georgia Pacific owns property at the south end of the Bellingham International Airport landing field that was used for disposal of clarifier sludge, grate ash, and fly ash from the Georgia-Pacific mill. The original purpose of the landfill was to fill depressions that

remained after construction of the present airport, but this landfill is no longer receiving waste.

4.8.9.2. Solid Waste -- Impacts

Solid waste normally contains fairly harmless parts (such as food scraps and paper). It can also contain dangerous chemicals such as pesticides, cleaning chemicals, and paints. The availability of such toxins will increase, as they become part of various industrial and retail products. An excellent example of this is the easy availability of pesticides and herbicides. Over 10,000 new chemicals are brought into the market every year. Few are tested for their toxicity or durability in the environment.

Although the percent of solid waste recycled is increasing, so is the amount of solid waste generated per person and the population. As a result, the total amount of solid waste generated in this country is increasing. Unless the percent of solid waste recycled increases or the amount of solid waste per person decreases, the total solid waste produced by citizens of the city will increase. As solid waste generation increases, the resultant air, water, and land pollution will also increase. The total amount of toxic and hazardous waste, which contaminates municipal solid waste, will also increase.

As all four alternatives assume the same population growth projections, the total amount of solid waste generated will be similar. In general solid waste, recycling, and yard waste pickup can be done more economically under alternatives that limit the geographic extent of urban development.

Alternative 1 – No Action

Under this alternative, infill growth would occur within existing City limits and UGA boundaries at existing zoning and residential densities with no adjustment to the UGA boundary. Generally, this alternative would be expected to:

- Exhaust the available urban residential land supply without accommodating the population growth projected for the 20-year planning period;
- Push projected residential development to other cities, their UGA's and rural areas;
- Create a low-density suburban ring around the existing City limits and UGA; and
- Create increased traffic congestion, increased travel time, increased expense, and decreased efficiency for solid waste, recycling, and yard waste pickup and hauling companies.

Alternative 2 - Infill

Under an infill alternative, zoning would be adjusted, where possible, in both the City and the existing UGA to achieve higher urban residential densities than County and City zoning currently allow. Urban development would be directed into the City and the UGA resulting in less development pressure on the rural areas outside of Bellingham's UGA. Generally, an emphasis on infill development where public infrastructure capacity already exists would:

- Contain the geographic extent of solid waste, recycling, and yard waste pickup areas; and

- Potentially result in long-term cost savings for solid waste, recycling, and yard waste hauling companies.

Alternative 3 – Adjusted UGA
Under this alternative, land inside the City and existing UGA would retain its existing zoning and residential densities and the UGA boundary would be expanded as much as necessary to accommodate the projected population growth at existing residential densities. Wherever the UGA boundary is expanded, land will be rezoned from rural densities to urban densities and will become eligible for annexation to the City. Similar to Alternative 1, expansion of the UGA boundary at existing residential densities would be expected to:

- Create a low- to moderate-density suburban ring around the existing City limits; and
- Generate additional vehicle trips and create increased traffic congestion, increased travel time, increased expense, and decreased efficiency for solid waste collection, recycling, and yard waste pickup and hauling.

Alternative 4 – Infill and Adjusted UGA
Under this alternative, zoning would be adjusted, where possible, in both the City and the UGA to allow higher residential densities and a minor expansion of the UGA boundary would take place to accommodate the net shortfall of land deemed necessary to accommodate projected population growth. Land inside the minor expansion areas would be zoned to achieve higher densities than the County currently allows in the existing UGA. This alternative would create a compact urban area surrounded by densities radiating out from the urban core in concentric rings. Higher density development in both the City, the existing UGA, and areas for minor UGA expansion would be expected to:

- Contain the geographic extent of solid waste, recycling, and yard waste pickup areas; and
- Potentially result in long-term cost savings for solid waste collection, recycling, and yard waste hauling.

4.8.9.3. Solid Waste -- Mitigating Measures

- Continue to seek alternative and environmentally safe ways to dispose of refuse.
- Coordinate refuse plans with the City of Bellingham's population projections and land use plans.
- Encourage the current public service agencies to continue to pick up re-usable clothing. Expand these operations to include all reusable substances by offering free solid waste disposal of any reusable substance.
- Continue educational programs that encourage waste reduction, proper disposal of hazardous waste, recycling, and other programs that promote alternative ways to dispose of solid waste. Encourage the 3-R (reduce/reuse/recycle) and "Third Arrow" philosophies, where a product is not purchased if not needed, reused or purchased second hand, recycled only when their lifetime is over, and recycled products are purchased.

- Support the placement of a recycle fee on all beverage containers. (The "Bottle Bill").
- Require all new residential, commercial, and industrial developments to provide storage areas for recycling facilities and to be designed to allow easy access to recycling trucks.
- Encourage Recomp to find alternatives to incineration of solid waste.

4.8.9.4. Solid Waste -- Unavoidable Adverse Impacts

- The amount of solid waste generated by the citizens of the City of Bellingham and Subarea will increase. Appropriate locations to safely dispose of this waste will decrease.
- Household waste that becomes contaminated by hazardous materials will produce either additional air toxins if such waste is burned, or contamination to ground water if it is put into landfills. Although such air and water contamination may not occur in Whatcom County, we will still be responsible for health and environmental effects in the places where our waste is deposited. This is usually in the dry areas of eastern Washington and Oregon, away from large population centers and in areas where the risk of groundwater contamination is significantly reduced.

4.8.10. Communications Services

4.8.10.1. Communication Services - Existing Conditions

All communications companies serve the Pacific Northwest and include Bellingham, the UGA, and the Urban Fringe Subarea within their service area.

4.8.10.1.1. Telephone and Cellular Telephone Service

In Bellingham, the UGA and the Urban Fringe Subarea, traditional land-line telephone service is provided by Qwest, and Verizon. The Qwest Telephone Company serves the City of Bellingham, the UGA and most of the Urban Fringe Subarea. Verizon Telephone serves the rest of Whatcom County and that portion of the Urban Fringe Subarea north of Waldron Road, halfway between Horton and Kline Roads. Telephone companies are a regulated monopoly. They are the only provider of telephone service, but the services they provide and the rates they charge are regulated by the Washington Utilities and Transportation Commission (WUTC) of the State of Washington. Over 99 % of the citizens of the city are connected into the telephone system.

Numerous companies provide portable cellular telephone communications within the City, the UGA and the Urban Fringe Subarea, including Qwest, Western Wireless, T-Mobile, Sprint PCS, AT&T Wireless, Nextel Communications, Cingular Wireless, and Verizon. Cellular phones are sophisticated radios that connect users to the local telephone network. Over the years, cellular phones have become an essential tool for those responsible for providing emergency services. The use of mobile phones has significantly increased the ability of responders to communicate effectively with the dispatch centers, the jail, the hospital emergency room, and their supervisors. Cellular systems require towers at regular intervals. This may include locations in residential

neighborhoods and parks. There are currently 26 towers located in the City of Bellingham. City of Bellingham regulations limit tower locations, construction techniques, and appearance; but these regulations may not be sufficient to mitigate the impact of a tower near homes. In 2000, Whatcom County adopted regulations governing the placement, development, permitting and removal of personal wireless communications facilities including support structures and antennas (WCC 20.13). To ensure competition, the FCC requires that each market be served by two or more cellular services. The cellular companies are not regulated by the WUTC.

4.8.10.1.2. Television and Cable Services

TCI Cablevision, Comcast, and AT&T provide cable television service to the City of Bellingham and Whatcom County. Cable service is provided in compliance with franchise provisions, local regulations, and Federal Communications Commission (FCC) regulations. Cable and broadcast television services are an important economic and social part of modern American culture. In addition, radio and television broadcast media are essential components of Whatcom County's Emergency Alert System (EAS), allowing for the rapid dissemination of "short-fused" emergency public information and instructions. AT&T has replaced its metallic cable with fiber-optic cable, which allows for the transmission of much more information, including digital information for computer applications. A new fiber-optic cable by Starcom was recently approved in Whatcom County and Bellingham. It will extend from Vancouver to Seattle and provide enhanced communications.

4.8.10.2. Communication Services - Impacts

Population growth under all four alternatives will increase demand for communications facilities. Most communications facilities are unobtrusive and low-impact. They run beneath the streets in conduit or piggyback onto existing power poles. Common impacts from communication utilities are ditches excavated near open water and communication towers erected near residential areas. Federal, state, and local codes regulate communications work near open water. Construction of new telecommunications towers is not so clearly regulated, however. These facilities are located based on topography and optimal communications distance. Although companies attempt to keep towers away from residential neighborhoods, the technically and economically optimal locations are sometimes near homes.

The demand for communications utilities and services is expected to increase under all four alternatives.

Alternative 1 – No Action

Under this alternative, "urban" growth would occur within existing City limits and UGA boundaries at existing zoning and residential densities. If the City continues to approve sewer and water utility extension into the UGA prior to annexation, then residential development would be expected to occur according to the County's UGA zoning which allows densities of one to ten single family units per acre and up to 24 multifamily dwelling units per acre.
Generally, the no action alternative would be expected to:

- Push development and population growth to the northwest, north, and northeast rural areas;
- Create a low-density suburban ring around the existing City limits; and
- Require new additional communications infrastructure facilities to serve the Urban Fringe Subarea;

Alternative 2 - Infill
Under an infill alternative, zoning would be adjusted, where possible, in both the City and the existing UGA to achieve higher residential densities than County and City zoning currently allow. Urban development would be directed into the City and the UGA resulting in less development pressure on the rural areas outside of Bellingham's UGA. Generally, an emphasis on infill development where public infrastructure capacity already exists would be expected to:

- Require retrofitting of some existing communications facilities to serve high-density, compact growth areas, within Bellingham and the UGA;
- Require some new communications infrastructure to meet demand within high-density, compact growth areas, within Bellingham and the UGA.

Alternative 3 – Adjusted UGA
Under this alternative, land inside the City and existing UGA would retain its existing zoning and residential densities and the UGA boundary would be expanded as much as necessary to accommodate the projected population growth at existing residential densities. Wherever the UGA boundary is expanded, land will be rezoned from rural densities to urban densities and will become eligible for annexation to the City. Similar to Alternative 1, expansion of the UGA boundary at existing residential densities would generally be expected to:

- Push development and population growth to the northwest, north, and northeast rural areas;
- Create a low-density suburban ring around the existing City limits; and
- Require new additional communications infrastructure facilities to serve the Urban Fringe Subarea;

Alternative 4 – Infill and Adjusted UGA
Under this alternative, zoning would be adjusted, where possible, in both the City and the UGA to allow higher residential densities and a minor expansion of the UGA boundary would take place to accommodate the net shortfall of land deemed necessary to accommodate projected population growth. Land inside the minor expansion areas would be zoned to achieve higher densities than the County currently allows in the existing UGA. This alternative would create a compact urban area surrounded by densities radiating out from the urban core. Higher density development in both the City, the existing UGA, and areas for minor UGA expansion would be expected to:

- Require renovation of some communications facilities to serve high-density, compact growth areas, within Bellingham and the UGA;
- Require some new communications infrastructure to meet demand within high-density, compact growth areas, within Bellingham and the UGA; and

- Require some new communications infrastructure facilities to serve the Urban Fringe Subarea;

4.8.10.3. Communication Services - Mitigating Measures

- The location of towers should be restricted to nonresidential zones, except where no technical alternative is available.
- Requirements for crossing water bodies and open water need to be clearly stated. Impact to water quality and habitat should not be allowed.
- The City and County Hearing Examiner should continue to review, in residential zones, the construction of new communications transmission towers for local impacts. Construction of communications infrastructure near schools should not be allowed unless no significant EMF impact can be shown; and
- Communications companies should coordinate infrastructure demand planning with City and County Planning Departments and Comprehensive Plan documents.

4.8.11. Electricity and Natural Gas Services

Electricity and natural gas services throughout the UGA and the Urban Fringe Subarea are provided by private utility companies. The Washington State Utilities and Transportation Commission (WUTC) regulate all privately owned utilities in the State of Washington. The WUTC holds hearings to set rates (what we pay) and regulations (what the utility must do). All utilities must supply their services when requested properly under WUTC regulations. The requestor often pays some of the cost of extending the service.

Private utilities are also regulated within the City of Bellingham and Whatcom County by "franchises", which are agreements made between the city or county and the utility. These agreements regulate the use of the City or County right-of-way. Large new utility facilities are usually conditionally permitted uses within residential zoning designations and subject to a public hearing process in front of the City or County Hearing Examiner.

4.8.11.1. Electricity and Natural Gas Services - Existing Conditions

4.8.11.1.1. Electricity Service

Electricity is transmitted into the county by high voltage lines through Canada and Skagit County. The Federal Bonneville Power Administration (BPA) supervises transmission of this power. Puget Sound Energy (PSE) purchases electricity from these high voltage lines.

Puget Sound Energy distributes electricity throughout the County, sending it to smaller substations in the City, the UGA and the Urban Fringe Subarea. Power distribution and high voltage transmission lines and substations are shown on Figure 4.8.10. Demand for electricity is increasing. A number of electric transmission projects are being considered in Whatcom County by BPA and Puget Power to meet these demands. They include:

1. The "N.W. Washington Transmission Project" to reinforce transmission and add local and Canada/U.S. capacity;

2. Reconstruction of several older transmission lines serving Bellingham; and

3. Some smaller substations may have to be rebuilt or relocated to provide for additional growth and reliable power at mid-winter storm peaks.

All residents and employees in the county depend on a steady flow of electricity for light, heat, and the operation of machinery, which makes the use of modern technological conveniences possible.

4.8.11.1.2. Natural Gas

Natural Gas is distributed in Whatcom County by Cascade Natural Gas (CNG). Natural gas is a fuel provided to homes and businesses through underground piping (See Figure 4.8.10). It is a colorless, odorless, flammable, and lighter than air gas. Gas is odorized to make gas leaks more perceptible. Most natural gas in the Bellingham, the UGA and the Urban Fringe Subarea is used for space and hot water heating.

Natural gas is a key alternative for achieving electric power conservation goals. The natural gas used in Bellingham flows from Canada, through Sumas, west to Arco, south down to Britton Road and into Bellingham. Pressure reduction of the gas provides safe volumes and pressures. The gas is then distributed to industrial, commercial, and residential consumers. This gas flows through regulators, which reduce pressure for household consumption.

4.8.11.2. Electricity and Natural Gas Services - Impacts

4.8.11.2.1. Electricity Service

As the region grows, demand for electricity will increase. The electrical transmission system can now carry only a certain amount of electricity (This is called "capacity"). When demand exceeds existing capacity, additional capacity must be added or the system begins to fail. Brown-outs and black-outs are symptoms of system failure.

Additional capacity is provided by new lines and substations to serve growth areas and by the reconstruction of existing lines. Such facilities can only be placed in specific areas (near population centers, on the shortest route possible between high voltage lines and demand, and on rights of way and easements). Most of these areas are near existing residences. Discovering areas which meet the needs of facilities and which are not close to residences will become more difficult as density increases.

As the need for power increases, new transmission lines will be constructed. The Infill and No Action alternatives will have shorter line length but may require larger structures (to carry more power). The Adjusted UGA will have longer line lengths but may require smaller structures. These lines could have a potentially negative impact on views.

4.8.11.2.2. Natural Gas

Natural gas produces carbon dioxide as it burns. This is a fairly harmless gas, but does contribute to global warming. Natural Gas used for heating produces less carbon dioxide than coal and oil burned to create electricity to use for heating.

As demand for natural gas increases, some increase in the size of natural gas pipelines may be needed. Aged or damaged pipelines may cause natural gas to leak out of the lines and into the environment, increasing the potential for explosions such as the Whatcom Creek incident in 1999. This accident was a catalyst for the creation of stricter pipeline safety laws to help avoid future catastrophes of this nature.

The demand for electricity and natural gas utilities and services is expected to increase under all four alternatives.

Alternative 1 – No Action

Under this alternative, "urban" growth would occur within existing City limits and UGA boundaries at existing zoning and residential densities. If the City continues to approve sewer and water utility extension into the UGA prior to annexation, then residential development would be expected to occur according to the County's UGA zoning which allows densities of one to ten single family units per acre and up to 24 multifamily dwelling units per acre.

Generally, the no action alternative would be expected to:

- Push development and population growth to the northwest, north, and northeast rural areas;
- Create a low-density suburban ring around the existing City limits; and
- Require new additional electricity and gas infrastructure facilities to serve the Urban Fringe Subarea;

Alternative 2 - Infill

Under an infill alternative, zoning would be adjusted, where possible, in both the City and the existing UGA to achieve higher residential densities than County and City zoning currently allow. Urban development would be directed into the City and the UGA resulting in less development pressure on the rural areas outside of Bellingham's UGA. Generally, an emphasis on infill development where public infrastructure capacity already exists would be expected to:

- Require renovation of some existing electricity and natural gas facilities to serve high-density, compact growth areas, within Bellingham and the UGA;
- Require some new electricity and natural gas infrastructure to meet demand within high-density, compact growth areas, within Bellingham and the UGA;

Alternative 3 – Adjusted UGA

Under this alternative, land inside the City and existing UGA would retain its existing zoning and residential densities and the UGA boundary would be expanded as much as necessary to accommodate the projected population growth at existing residential

densities. Wherever the UGA boundary is expanded, land will be rezoned from rural densities to urban densities and will become eligible for annexation to the City. Similar to Alternative 1, expansion of the UGA boundary at existing residential densities would generally be expected to:

- Push development and population growth to the northwest, north, and northeast rural areas;
- Create a low-density suburban ring around the existing City limits; and
- Require new additional electricity and gas infrastructure facilities to serve the Urban Fringe Subarea;

Alternative 4 – Infill and Adjusted UGA

Under this alternative, zoning would be adjusted, where possible, in both the City and the UGA to allow higher residential densities and a minor expansion of the UGA boundary would take place to accommodate the net shortfall of land deemed necessary to accommodate projected population growth. Land inside the minor expansion areas would be zoned to achieve higher densities than the County currently allows in the existing UGA. This alternative would create a compact urban area surrounded by densities radiating out from the urban core. Higher density development in both the City, the existing UGA, and areas for minor UGA expansion would be expected to:

- Require renovation of some existing electricity and natural gas facilities to serve high-density, compact growth areas, within Bellingham and the UGA;
- Require some new electricity and natural gas infrastructure to meet demand within high-density, compact growth areas, within Bellingham and the UGA; and
- Require some new additional electricity and gas infrastructure facilities to serve the Urban Fringe Subarea;

4.8.11.3. Electricity and Natural Gas Services - Mitigating Measures

- The City and County Hearing Examiner should continue to review, in residential zones, the construction of new electrical facilities (transmission lines and substations) for local impacts. Construction of electrical facilities near schools should not be allowed unless no significant EMF impact can be shown; and
- Puget Sound Energy should coordinate electricity demand planning with City and County Planning Departments and Comprehensive Plan documents.
- Continue to review construction of utility lines through the conditional use permit process; and
- Puget Sound Energy should coordinate electricity demand planning with City and County Planning Departments and Comprehensive Plan documents.