3.8 PUBLIC SERVICES & UTILITIES

3.8.1 Fire

3.8.1.1 Existing Conditions

Fire Services Providers

Fire services within the Subarea are provided by the City of Everett, Fire District 1, and Fire District 11. In addition, Boeing and Paine Field operate fire and emergency response teams. See Figure 3.8-1 for the location of fire district boundaries.

City of Everett. The SW Everett/Paine Field Subarea is primarily served by the City of Everett's Fire Department which has approximately 164 employees (2.2 employees per 1,000 population within City limits) serving the Everett area. The Department's goal is to maintain a four-minute response time. The Fire Department also provides basic life support and advanced life support services through Medic One and other emergency vehicles. They maintain a reserve fleet of 8 emergency vehicles and a hazardous materials van. Private companies are also contracted to transport non-emergency related victims. Adequate fire service is provided to the SW Everett/Paine Field Subarea; however, response time can vary due to site location, topography and response unit location at the time of the call. See Figure 3.8-1 for Fire Station locations. Stations within the SW Everett/Paine Field Subarea and in the near vicinity are:

- Fire Station #4 at 5920 Glenwood Avenue
- Fire Station #6 at 9520 Evergreen Way

Fire services in Everett are funded through the City's general fund expenditures. Emergency medical services (911) are funded through a special tax levy that must be approved by the voters every six years. In addition, some facilities, such as construction of new fire stations, are funded through general obligation bonds.

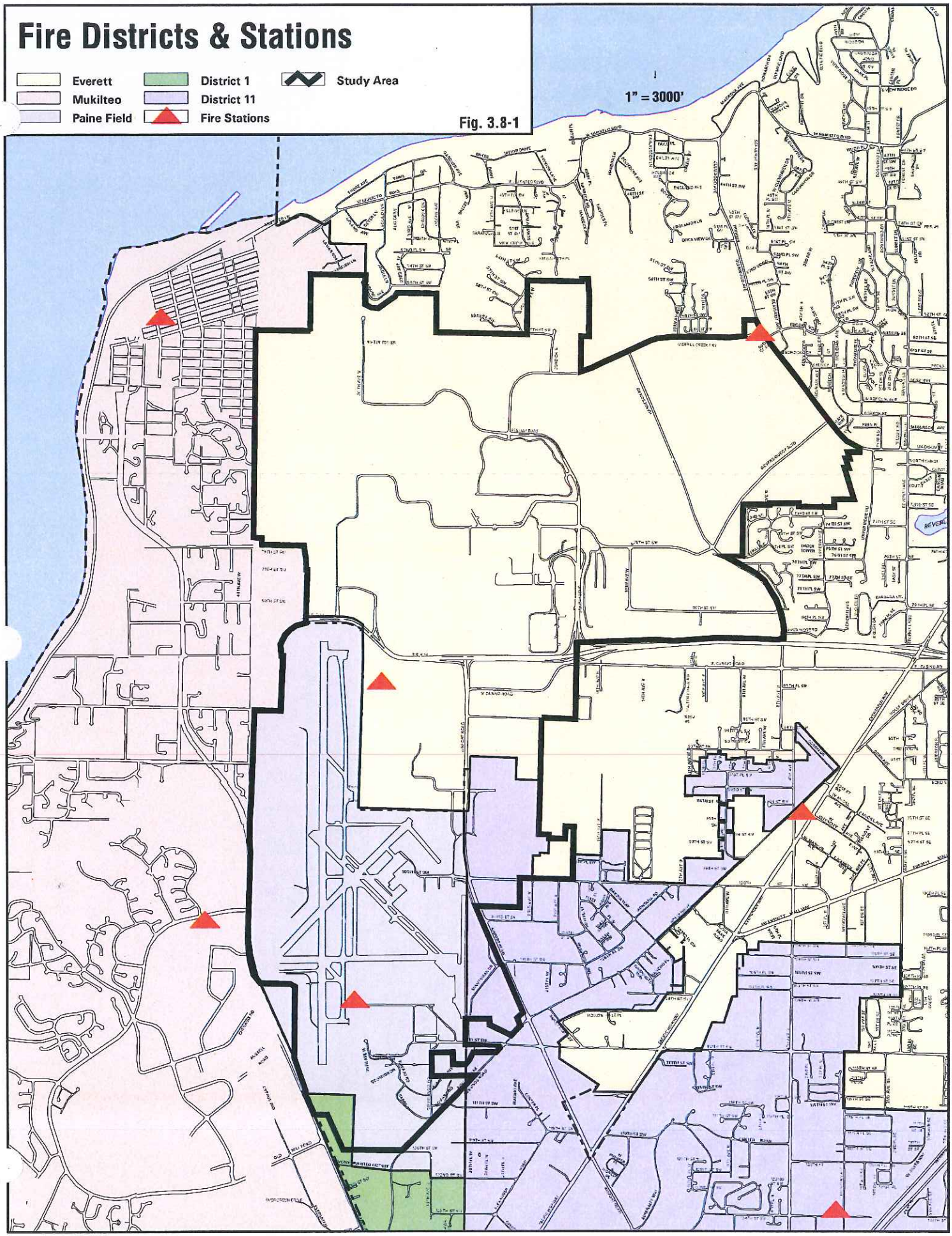
Paine Field. Snohomish County's Paine Field operates its own fire and crash rescue crew. A 10-person staff is maintained with 2-3 people on each shift, 24 hours a day. The fire crew is also trained and qualified to contain hazardous materials spills. Additional services provided by the crew include: security, safety, inspection of fuel tanks, CPR and First Aid certification courses. The airport also maintains cooperative agreements with the City of Everett, Snohomish County Fire District #1, Snohomish County Fire District #11, and an informal agreement with Boeing to respond to runway incidents.

Fire Districts & Stations

Everett
Mukilteo
Paine Field
District 1
District 11
Fire Stations
Study Area

1" = 3000'

Fig. 3.8-1



Boeing. The Boeing Company operates its own fire response team for on-site emergencies. The site is within the Everett Fire Department's service area also. As such, no mutual aid agreement is necessary for the City to respond if Boeing's emergency service capabilities were not adequate in specific instances. Boeing currently provides 1.9 fire fighters per 1,000 employees, and has agreed to maintain the same ratio of fire fighters for its approved expansion up to 33,500 employees.

Boeing has an agreement with Paine Field to provide crash rescue aid, if needed, and provide aid off-site with a 5,000 gallon tanker truck. Joint training between the City of Everett, Paine Field, and Boeing is held on a regular basis.

Fire District 1. A small vacant area at the southwest corner of the Subarea is served by Fire District 1, including parcels owned by Paine Field and Swanson.

Fire District 11. Fire District 11 serves a portion of the Subarea generally located east of Paine Field and south of the Everett City limits, including some Paine Field properties east and west of Airport Road.

A study is currently underway to address the possibility of a joint operating agreement between the City and Fire District 11, and between Fire District 1 and Fire District 11.

Mukilteo Fire Department. The Mukilteo Fire Department serves an area at the northwest corner of Paine Field Airport. Note that Paine Field's Master Plan includes a recommendation that all airport property within the Mukilteo City limits be deannexed. If this area is deannexed, provision of fire services must be resolved.

3.8.1.2 Regulatory Framework

City of Everett

The City of Everett has established standards for new construction to reduce potential fire damage:

- EMC 16.03 adopts portions of the Uniform Fire Code (UFC), with modifications, and includes requirements for fire vehicle access to sites. Adopted portions of the Uniform Fire Code provide standards for fire hydrant spacing, number and location; minimum main size; fire flow determination procedures; building and site identification (addressing) requirements; fire safety practices during construction; trash collection and storage; hazardous materials storage, standpipe requirements; etc.

- EMC 16.76 regulates automatic fire detection and fire suppression systems. This requires that sprinkler systems and fire alarm systems be provided with the type based on building use, size, and construction type.

- EMC 46.44 regulates fire lanes and access roadways. This requires developments to provide unobstructed access for fire department apparatus and other emergency equipment and personnel, and provides standards for such access.

- EMC 14.16 regulates the number and location of fire hydrants and standpipes and fire flow requirements. It requires that hydrants be available to all buildings and requires that adequate fire flow be provided as established in the "Guide for Determination of Required Fire Flow" published by the Insurance Service Office of the Municipal Survey Service, and the standards of the American Water Works Association.

- The Uniform Building Code (UBC), adopted in EMC 16.01 also includes requirements for fire safety, such as standpipe requirements.

All development must comply with the requirements in effect at time of application for building permits. Uniform Fire Code (UFC) standards are revised every three years. City regulations may change more frequently. See Table 3.8-1 for an example of Fire Department comments provided on a recently reviewed manufacturing project. The nature of requirements for specific projects will vary depending upon the nature of the proposed construction, including building size, construction type, and proposed use.

Snohomish County

Snohomish County is responsible for permitting all development in unincorporated Snohomish County, including Paine Field. Fire Districts do not have separate development standards or permitting authority. Snohomish County has adopted standards similar to Everett's to reduce potential fire damage. These standards are included in the Uniform Fire Code, Uniform Building Code, and Title 16, the County Fire Code. All development in Snohomish County must comply with the requirements in effect at time of application for building permits.

3.8.1.3 Impacts of Development

Higher concentrations of land uses can be served by fewer fire stations and equipment. However, the increased employment and population would increase traffic on area roadways and could impact the Fire Departments' ability to respond in the most timely manner.

Additional fire fighting services will be needed to serve the SW Everett/Paine Field Subarea under any of the three alternatives. Within the Subarea, demand will increase the fastest under Alternative Three, the more aggressive development scenario, and the slowest under Alternative 2. However, it is assumed that employment within the overall Everett Planning Area is the same under all three alternatives; growth is just shifted within the planning area. Fire services in Everett will continue to be funded through the City's general fund.

3.8.1.4 Proposed Thresholds

None.

Table 3.8-1
Example of Fire Department Requirements for a Recent Manufacturing Proposal

1. Based upon 156,000 square feet of Type V-N, sprinklered construction, the fire flow requirement is 4,000 GPM.

2. Four available fire hydrants are required for Phase 1 of the project. When Phase 2 is constructed, an additional two hydrants will be required. Hydrants shall be located within 200 driving feet, but no closer than 50 feet of every structure. Location of hydrants shall be approved by the Fire Marshal.

3. An approved automatic suppression system shall be provided as required by EMC 16.76. Plans for any such system must be submitted to the Building and Fire Departments for examination and approval. Such plans must include plans for the underground mains that will supply the sprinkler system. The Building Department issues sprinkler system permits and assesses plan review fees.

   Above ground sprinkler piping must be hydrostatically tested as established in NFPA Standard 13. Underground piping must be hydrostatically tested and flushed as established in NFPA Standard 24 for private fire mains. All such tests must be witnessed by a Fire Dept. inspector. Contractors' materials and test certificates must be submitted to the Everett Fire Dept. prior to issuance of any Certificate of Occupancy.

4. An approved automatic fire detection system must be provided as required by EMC 16.76. Plans for such system must be submitted to the Fire Marshal for review and approval prior to installation. Submittal shall include cut sheets of all equipment intended for use. Appropriate trip tests, witnessed by a Fire Department inspector, must be performed prior to final acceptance of the system.

   Fire alarm systems shall be installed according to NFPA Standard 72 and under permit of the Building Dept. Electrical inspections and approval are required prior to calling for acceptance tests.

5. A portable fire extinguisher with a minimum UL rating of 2-A must be provided within 75 feet of travel distance on each floor of all portions of each building during construction and prior to occupancy.

6. Fire lanes must be provided as required in EMC 46.44. Fire lanes must be identified by red curbs with white stenciling stating, "No Parking - Fire Lane" and vertical signs stating "No Parking - Fire Lane - Tow Away Zone." Location must be approved by the Fire Marshal.

7. The premises must be clearly identified by the correct address at the street entry. Buildings must be clearly identified so as to be visible and legible from the access road. Individual suites, where applicable, shall be clearly visible and legibly identified from the access road.

8. The City of Everett prohibits outdoor burning, including burning of construction debris.

9. Premise identification and all required Fire Department access roads and fire hydrants shall be in service prior to commencement of construction.

10. Fire safety practices during construction must be in compliance with the UFC, Article 87.

11. Any security fencing erected around the construction site must be located so as to not obstruct any existing hydrant, fire protection equipment, or Fire Dept. access. If Fire Dept. access is obstructed, gates or other openings shall be provided.

12. In order to expedite plan review, a hazardous materials inventory list shall be provided as a part of the submittal for building permit. The storage, handling and use of hazardous materials must be in compliance with Article 80 of the UFC, 1991 Edition. The storage, handling, and use of flammable or combustible liquids shall comply with Article 79 of the UFC, 1991 Edition.

13. Dumpsters over 1.5 cy capacity must be located a minimum of 5 feet from the building per UFC 11.302(b), 1991 Edition.

3.8.1.5 Potential Measures to Reduce the Impacts of Development

Potential mitigation measures to reduce the impacts to fire services include:

1. All development within the City of Everett must comply with the fire safety requirements of the Everett Municipal Code, Uniform Fire Code, and Uniform Building Code in effect at time of application for building permits. This includes provisions for fire hydrants, fire flow, fire alarm systems, sprinkler systems, Fire Department access, etc.

2. All development within Snohomish County must comply with the fire safety requirements of Snohomish County in effect at time of application for building permits.

3. Water main extensions will be required to serve specific sites. (See Section 3.8.6: Public Water)

4. The City/County could increase fire prevention construction standards and specifications to reduce the risk of fires and the amount of damage.

5. On-site fire services may be provided by large or specialized businesses, such as Paine Field and Boeing.

3.8.2 Police

3.8.2.1 Existing Conditions

Police Services Providers

City of Everett. The City of Everett portion of the SW Everett/Paine Field Subarea is served by the Everett Police Department (EPD). Currently, the Department has 190 officers and support personnel, or 2.4 employees per 1,000 population within the City limits.

The Police Department headquarters is located in City Hall in downtown Everett. The EPD also maintains a small precinct facility located at Fire Station #6 (9520 Evergreen Way), to serve the south Everett area. Development of a south precinct is being analyzed. However, no new facilities are currently planned, except for the expansion of police offices in the existing City Hall.

Police response time can vary due to the location of responding officers at the time of the call, location of site, traffic and service required. Mutual aid agreements exist between the City of Everett, neighboring jurisdictions and Snohomish County.

City of Everett police services are funded through the general fund (most employees), criminal justice funding (12 employees), and by federal grants (4 employees).

Private Security. Businesses often provide on-site private security. For example, Boeing provides 1.4 security officers per 1,000 employees, and has agreed to provide the same ratio of security officers for its approved expansion up to 33,500 employees. Boeing's security force provides 24-hour protection, with approximately 11 security officers on duty during any shift. Boeing is in the City of Everett Police Department response area, and Everett police are available to respond upon request. However, on-site security has been sufficient in the past, and the Everett Police Department has only responded during Boeing employee strikes.

Snohomish County. Police service to Paine Field is provided by the Snohomish County Sheriff's Office.

3.8.2.2 Impacts of Development

Development under each of the alternatives would require an expansion of police staffing and facilities. Demand will increase the fastest in the SW Everett/Paine Field Subarea under Alternative Three, the more aggressive development scenario, and the slowest under Alternative 2. However, it is assumed that employment within the overall Everett Planning Area is the same under all three alternatives; growth is just shifted within the planning area. Relocation of this growth within the planning area will not result in a change in demand for police services.

3.8.2.3 Proposed Threshold

None.

3.8.2.4 Potential Measures to Reduce the Impacts of Development

Potential mitigation measures to reduce the impacts on the need for police services include:

1. Businesses within the Subarea could voluntarily participate in crime watch programs. The Everett Police Department currently has very limited crime watch programs for business and commercial properties, and does not currently have the resources to provide these programs on a larger scale. An increase in the extent of crime watch programs could result in less crime, but would require additional police resources.

2. Large business complexes could provide on-site security personnel.

3. All developments should provide adequate lighting of parking lots and others areas which have an increased risk for crime. Illumination should be a minimum of 3-4 foot candles. (The City of Everett Zoning Code requires that all parking lots with more than 10 spaces provide security lighting. Lighting must be shielded in a manner that does not disturb residential uses.)

4. Security should be considered in site and building design. The following measures will enhance site security:
   - The more large non-opening business windows that are visible to parking areas, the safer the area is from assaults and thefts.
   - Metal security bay doors should be secured with 3/8" case-hardened steel hasps or chain and padlocks with 1/2" case-hardened steel shackles.

- The perimeter doors should be solid core or metal with double cylinder dead-bolts installed. If doors open to the outside, or hinges are exposed, pin hinges should be provided.
- If store-front glass doors are part of the project, they should have locking case bolts top and bottom. The door should have a maximum security dead-bolt with 1-3/4' throw and 3/4" laminated steel.
- If offices will be handling cash, an actual money safe should be installed (for next day receipts only). Seismic detectors and passive infrared alarm sensors should also be installed in the room.
- A monitored fire and intrusion alarm system zoned for each entity should be provided. To provide protection in case of armed robbery, include remote panic buttons and/or foot trips if using a customer counter.

3.8.3 Schools

3.8.3.1 Existing Conditions

The SW Everett/Paine Field Subarea is located in Mukilteo School District #6. The Sno-Isle Skills Center and the Mukilteo School District #6 bus barn facility are located in the SW Everett/Paine Field Subarea along Airport Road in the R-S zoned area. The Applied Technology Center is also located within the SW Everett/Paine Field Subarea, north of Merrill Creek Parkway. The Applied Technology Center is a joint project of Everett and Edmonds Community Colleges and was constructed on land donated by Fluke Manufacturing. The Sno-Isle Skills Center and bus barn sites are at or near development capacity. The Applied Technology Center has additional expansion capacity. Figure 3.8-2 shows the location of schools in the area.

3.8.3.2 Impacts of Development

Overall, there are no direct impacts to school capacity resulting from commercial, manufacturing, or industrial activities that are expected to develop in the SW Everett/Paine Field Subarea. Existing and future school facilities may be impacted by the noise generated from manufacturing, airport, and vehicular activities as the Subarea develops.

Development within the SW Everett/Paine Field Subarea will generate increased taxes, a portion of which will be allocated to school facilities.

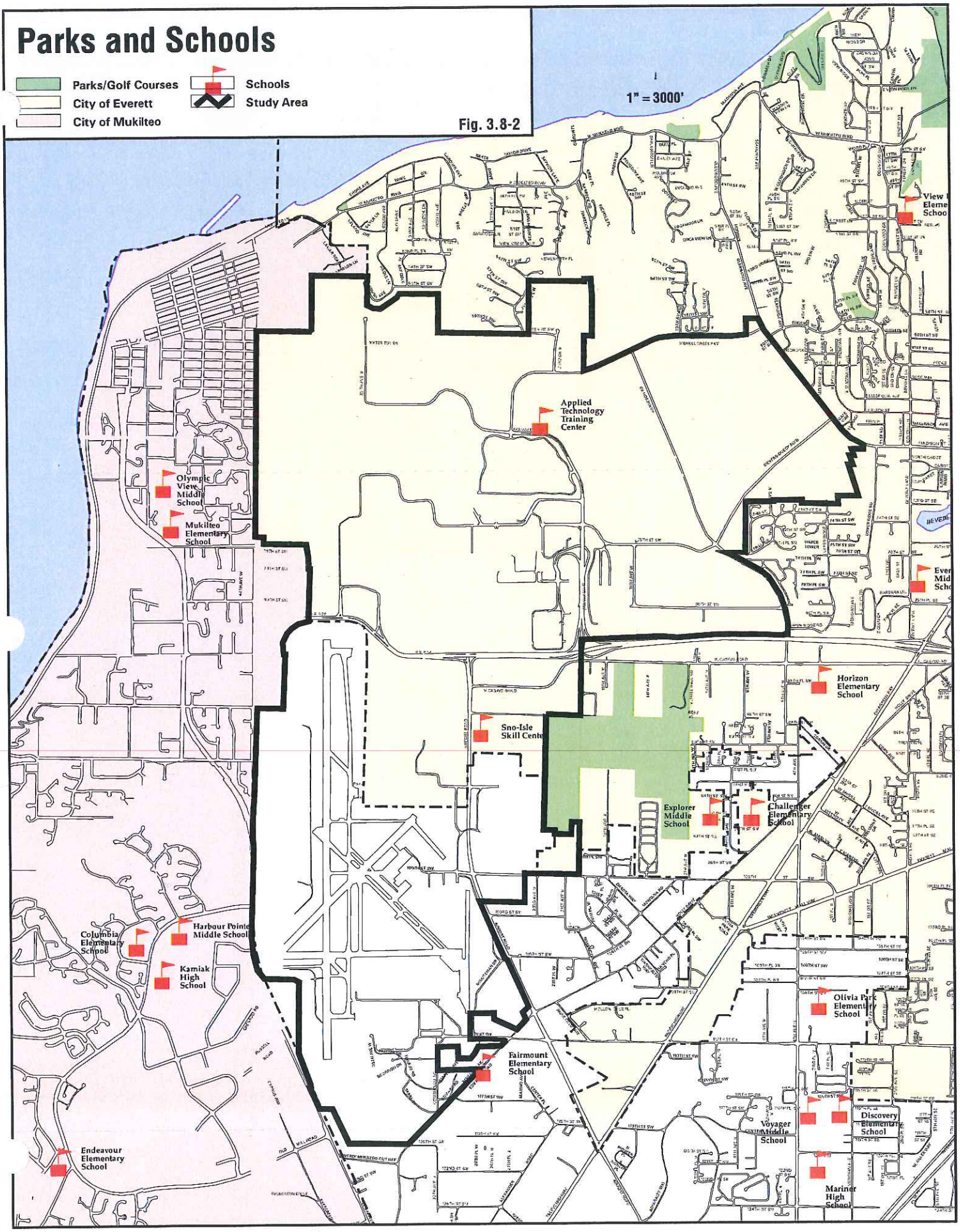
Residential uses are only permitted in the B-1, Neighborhood Business zoned property at the corner of Glenwood and Merrill Creek Parkway. It is not expected that residential use will develop on this property; however, the possibility exists. The City's SEPA policy related to mitigation of impacts to schools requires that residential developers negotiate with the affected school district to reach a voluntary agreement to mitigate the impacts of the development on the school district. If a voluntary agreement is not reached, the City will evaluate the impacts of a proposal and decide whether to issue a Determination of Significance (an environmental impact statement is required) or a Determination of Non-Significance.

Parks and Schools

Parks/Golf Courses
City of Everett
City of Mukilteo
Schools
Study Area

1" = 3000'

Fig. 3.8-2



3.8.3.3 Proposed Thresholds

None.

3.8.3.4 Potential Measures to Reduce the Impacts of Development

If the B-1 zoned property at the corner of Glenwood and Merrill Creek Parkway develops with residential uses, the applicant must voluntarily mitigate impacts to the Mukilteo School District in a manner acceptable to the District. A written letter or agreement must be provided to the City by the School District or Applicant prior to issuance of permits for the property. If an agreement is not provided, additional SEPA review will be required.

3.8.4 Parks and Recreation

3.8.4.1 Existing Conditions

City of Everett

Park and recreation facility development within the City is directed by the City of Everett's Parks and Recreation Plan (1992-1997), the National Recreation and Parks Association standard and the 1985 Statewide Comprehensive Outdoor Recreation Plan. Currently, the entire Everett Planning Area has 1,420 acres of open space and public park land, equaling approximately 5% of the planning area.

The SW Everett/Paine Field Subarea itself has limited recreation facilities. Existing parks and recreation facilities adjacent to or near the Subarea are shown in Figure 3.8-2 and include:

- Kasch Memorial City Park - This 60-acre City park is accessed from Airport Road. Formerly the Bomarc missile site, Kasch Park was dedicated to the City of Everett in 1972 when the Paine Field military base was declared surplus. The park has been improved to include four lighted softball fields, two little league fields, three lighted all-weather soccer fields, a caretaker's facility, athletic office, and restrooms. Kasch Park is the largest athletic complex in the City system and is heavily used by league organizations from the City and southwest County areas. The undeveloped portion of the park contains an extensive wetland bog that is the major tributary to Swamp Creek and the headwaters for Lake Washington. The adopted park master plan recommends development of interpretive signage and a wetland access trail around the bog area.

- WE Hall Park & Golf Course - Located on SW Casino Road adjacent to Paine Field, this 142-acre facility provides three competition soccer fields, a little league field, two tennis courts, playgrounds, restrooms, and parking areas. This facility also contains an 18-hole golf course.

- Bridle Park - This is a one-acre undeveloped park located on Sound Avenue.

- Alder Street Park - Located on 49th Street SW and Dogwood Drive, this neighborhood park is 0.8 acre.

- Lions Park - This neighborhood park is 3.4 acres, and is located at 7530 Cascade Drive.

- Two unnamed parks (currently called Merrill Creek 1 and Merrill Creek 2) have recently been developed north of Merrill Creek Parkway in conjunction with residential developments. One is located near Glenwood Avenue and includes a sport court, benches and trail on a 1.8 acre site. The second is located on 13th Avenue West and includes children's' play equipment and benches on a .15 acre site.

Paine Field and the City of Everett have had discussions regarding the potential construction of a public park in conjunction with a wetland mitigation bank at Narbeck Swamp, a Category 1 wetland. The project may include a semi-passive park and educational facilities associated with preservation of existing wetlands and construction of new wetlands.

Additional recreation opportunities are provided in and adjacent to the Subarea on nearby school facilities, private recreation facilities and public rights-of-way. Schools are available to the public during the weekends and after school hours during the week. Private recreation facilities within the Subarea include the Longshots (Achilles USA) golf driving range, which is open to the public, and the Boeing recreation facility, which is for use by Boeing employees only. In addition, many employees in the SW Everett/Paine Field Subarea use sidewalks for walking and running during lunch times and breaks.

The City is in the process of developing a trail plan for pedestrians and bicycles as part of the City's Capital Facilities Plan. Some of the proposed trails extend into the Subarea, either along public right-of-ways or through private and public properties. For example, the current proposal includes a north/south connector trail between Mukilteo Blvd. and Merrill Creek Parkway. The final trail plan will address the process, requirements, and costs for implementation of the trail system.

Snohomish County

Snohomish County operates one facility within the Subarea and one nearby facility:

- Paine Field Recreation Center - This facility was originally part of the Paine Field military base improvements. The property includes a little league baseball field operated by the Mukilteo Little League, and a recreation center with an indoor gymnasium, associated facilities, and a ball field. There are currently no plans to redevelop these facilities as part of the Paine Field Master Plan. The facilities are currently managed by the Mukilteo YMCA.

- Picnic Point Park - This 53.6 acre property contains 1,200 linear feet of sandy beach shoreline. The park has been improved to provide an overhead access of the railroad tracks along with walking trails, picnic facilities, and parking areas.

- Big Gulch - Snohomish County owns much of the Big Gulch ravine.

Snohomish County's Comprehensive Park and Recreation Plan lists several proposed recreational facilities that would directly service the SW Everett/Paine Field Subarea:

- Japanese Gulch - As a proposed possible regional woodland resource conservancy park, the project would acquire the wooded hillside ravine and railroad right-of-way owned by the Burlington Northern Railroad. The heavily wooded ravine would conserve this sensitive wildlife habitat and open space, as well as affording trail access from the Southwest Everett area to the fishing pier on Possession Sound.

- Shoreline Trail - This proposed trail is listed as one of the routes that is being pursued as part of a regional system of facilities that would be managed by either the County and/or local jurisdictions in cooperative ventures. The shoreline trail is proposed as a multi-purpose bike and hike trail that would link the saltwater shoreline areas and the urban populations of Edmonds, Mukilteo, and Everett with the river walk, Lowell-Snohomish, and Centennial Trail Systems. The local section of the trail would extend north through Harbour Pointe, onto Paine Field, then north past Boeing and down Japanese Gulch on the railroad right-of-way to the bicycle corridor along Marine View Drive.

- Paine Field Vicinity - The County has plans to develop a regional field complex within the boundaries or in the vicinity of Paine Field to provide competitive playing facilities.

City of Mukilteo

Several parks/clubs in the City of Mukilteo are likely to be used by employees of the Subarea. These include Mukilteo State Park, located on the Sound near the ferry terminal and Harbour Pointe Golf Club. According to Mukilteo's recently adopted comprehensive plan, the city has named the hillsides surrounding Japanese Gulch as a potential park site.

3.8.4.2 Impacts of Development

Park planning standards are traditionally based on population, rather than employment levels. Therefore, even though employees use facilities near their place of employment, the City of Everett and Snohomish County have not required commercial or industrial developments to provide recreational facilities for employees. The City requires residential developments to provide on-site recreation facilities or pay a voluntary cash contribution to the City to mitigate impacts on public park and recreation facilities.

Park purchase, construction, and maintenance is funded through the City's general fund and grant moneys, unless constructed as part of a residential development.

All alternatives assume the same total population in the SW Everett/Paine Field Subarea. The major difference between the alternatives is that the location of employment assumed in Everett's GMA Comprehensive Plan within the planning area has been shifted. Under the Faster Growth Alternative, employment has been shifted to the SW Everett/Paine Field Subarea from North Everett, and under the Slower Growth Alternative, less employment would occur in the SW Everett/Paine Field Subarea than assumed under Existing Plans. The location of population (housing) would not be significantly different than that analyzed in the GMA Comprehensive Plan.

As the SW Everett/Paine Field Subarea develops, new employees will demand and use public and private recreation facilities in the area. Some employers, such as Boeing, will voluntarily

provide facilities for employees. Provision of these on-site facilities will partially mitigate the impact on public parks and recreation facilities.

3.8.4.3 Thresholds

None.

3.8.4.4 Potential Measures to Reduce the Impacts of Development

1. Require the development of park facilities within both private and public developments, reducing the demand on public recreation sites.

2. Encourage the development of park facilities within both private and public developments.

3. When a trail system plan is adopted as part of the City's Capital Facilities Plan, require properties to participate in the cost of construction of elements of the trail system that serve employees in the Subarea.

3.8.5 Communications

3.8.5.1 Existing Conditions

Telephone

Telephone service in the SW Everett/Paine Field Subarea is provided by General Telephone and Electric, Northwest (GTE). GTE currently serves the Everett area with approximately 55,000 residential and commercial telephone lines. By the year 2012, GTE plans to have over 170,000 lines in service. Operations include aboveground switching stations and aerial and buried cable.

Telephone line service levels are determined by measuring the typical use rate of lines in any specific facility. When the typical use rate reaches 85-90% of capacity, new cable is added or smaller capacity cable is replaced with a larger capacity cable. This results in a virtually limitless capacity for telephone service.

New telephone cable construction will be required for almost all proposed developments in the Subarea. GTE's engineering begins when they are notified of construction schedules and telephone requirements.

Any relocation costs incurred in the development process that impact GTE must be paid by the developer, including a rearrangement of existing cables on premises or on the right-of-way. Prior to commencement of GTE's engineering for such rearrangement, a deposit is required.

The developer must also provide a means of placing GTE facilities on the site. GTE requires the developer to provide a suitable combination of conduit and trenching and/or riser conduit to

accommodate GTE's network communications cable within a site. Provided that an acceptable combination of conduit and/or trenching is incorporated into the project to accommodate GTE's entrance cable, there are no costs to the developer for GTE's cable.

To insure timely telephone service, GTE requests ninety (90) days lead time for engineering, procurement, and installation of cable and/or GTE's equipment.

Cellular Service

Both US West Communications and AT&T Wireless Services provide cellular phone service to the SW Everett/Paine Field Subarea. Cellular service requires the following facilities to operate:

- an overlapping system of receiving and transmitting towers ("cells");
- mobile telephone switching offices (MTSO);
- connections to local telephone companies; and
- microwave relay antennas at some towers.

Expansion of cellular services is completed by increasing the capacity of the existing system or building new cell sites. US West expansion follows their 15-year comprehensive plan. AT&T Wireless Services bases expansion on annual growth, revenues and projections. Both companies receive a fair division of business based on the division of available radio frequencies.

Fiber Optics Network

GTE is in the process of establishing a fiber optics communication system. A fiber optic network has been installed within portions of the SW Everett/Paine Field Subarea. (For competitive reasons, GTE does not want the location of the network mapped.) Fiber optics are easily expanded by installing larger replacement cables or new cables. If a developer requests fiber optic service and justifies the request to GTE, fiber optics service can be provided to any site within the **Subarea** within 45 days. The network is installed at GTE's cost. GTE will work with the developer to customize service and costs allocation for work within a specific site.

Cable TV

Under City Ordinance No. 1140-85, cable television service is provided to the area through a franchise operated by VIACOM. This franchise license will expire in July 11, 2000. VIACOM serves approximately 14,000-15,000 current subscribers in the Everett area with 178 miles of overhead lines and 47 miles of underground lines. A 150-foot tall tower and a 5-meter diameter earth station receive and process signals at a site located on 76th Street SW in Southwest Everett.

Cable TV installation is driven directly by demand and funded directly through subscriber charges and hook-up fees. The location of housing is more important in determining cable demand than the location on employment. VIACOM believes the system is well equipped to serve anticipated new development by adding trunk and distribution facilities.

3.8.5.2 Regulatory Framework

SEPA

Most communication facilities are exempt from SEPA review. Exemptions include: "All communication lines, including cable TV, but not including communication towers or relay stations." In addition, buildings necessary to serve communications systems, such as switching stations, are often too small[1] to require SEPA review.

A new state law which becomes effective June 6, 1996 (ESHB 2828) requires the Department of Ecology to create a categorical exemption from SEPA for the siting of personal wireless service facilities meeting specified conditions. These include:

- Microcells attached to existing structures that are not schools or residences.
- Antennas attached to existing structures that are not schools or residences, where the existing structure is in a commercial, industrial, manufacturing, forest or agricultural zone.
- Personal wireless service towers less than 60 feet in height located in commercial, industrial, manufacturing, forest, or agricultural zones.

The categorical exemption would not apply to a project in an environmentally sensitive area.

Microcells are defined as antennas that are either 4 feet in height with an area of not more than 580 square inches, or if a tubular antenna, not more than 4 inches in diameter and 6 feet in length.

City of Everett

Engineering and Public Services Requirements. The City of Everett issues permits to franchises to install underground utilities in the public right-of-way. These franchises must obtain Utility Permits from the Engineering and Public Services Department. Construction work must comply with all applicable standards in the City's Design and Construction Standards and Specifications, including Section 3-9, *Underground Utilities.*

Subdivision and Binding Site Plan Ordinances. The City's Subdivision and Binding Site Plan Ordinances (EMC Title 18) require that underground wiring be provided for all communication facilities. These requirements apply to all lots in the Subarea that have been created through these ordinances.

Zoning Code. The City's Zoning Code regulates "above ground utility and communication facilities." These uses are permitted in the C-2, M-1, M-2, and M-M zones through Review Process II (Planning Director determination with notice to property owners within 300 feet), and in the R-S zone through Review Process III (Hearing Examiner determination). Review Processes II and III require the applicant to show how the project meets general and specific criteria (Section 41.150.C and D of the Zoning Code).

The Zoning Code also includes standards for antennae:

- The height of antennae (including dish antennae) shall not exceed 5 feet above the maximum permitted building height above the base elevation of the principal building, and

[1] less than 4,000 sf

shall not exceed the horizontal distance between the base of the antenna and the nearest property line.

- Any freestanding dish antenna shall be considered to be an accessory structure and shall be subject to the setback requirements pertaining thereto.

GMA Comprehensive Plan. The Capital Facilities and Utilities Element of the Everett Comprehensive Plan includes goals and implementation measures related to communication facility siting and construction. Goals include:

- To ensure the delivery of appropriate and adequate utilities to accommodate the demand associated with projected population growth in Everett over the next twenty years.
- To facilitate the provision of utilities while ensuring environmentally sensitive, safe and reliable service that is visually compatible with the surrounding land uses and results in reasonable economic costs.

Implementation measures include:

- When possible, the City shall minimize encroachment on view and solar access of existing residences by new utility facility construction or improvements.
- Compliance with Section 37, the Environmentally Sensitive Areas section, of the City zoning code.

Snohomish County

Snohomish County permits electromagnetic transmission and receiving facilities, transmission wires or pipes and supports, and other utility structures in the LI - Light Industrial and BP - Business Park zones. These types of facilities are exempted from minimum lot area requirements. Utility structures must be setback 20 feet from lots in residential zones.

The Snohomish County Zoning Code also exempts the following structures from height limitations:

- Towers and masts used to support commercial radio and television antennae, provided that such structures are at least 50 feet from any adjoining lot line.
- Towers, masts, or poles supporting telephone and/or other communication lines.

Federal Aviation Authority (FAA)

FAA review is required for construction of projects exceeding certain thresholds that may affect navigable airspace. Federal Air Regulation Part 77 and FAA Advisory Circular AC 70/7460-21 (Proposed Construction or Alteration of Objects that may Affect the Navigable Airspace) require developers to notify FAA before construction begins. Notification provides the FAA the opportunity to:

- recognize potential aeronautical hazards to discourage, prevent or minimize the adverse effects to aviation;
- assure that pilots are alerted to airspace changes made as a result of the structure;
- recommend appropriate marking and lighting to make such objects visible to pilots; and
- depict obstructions on aeronautical charts for pilotage and safety.

Any facility greater than 200 feet in height aboveground level must notify the FAA. In addition, notification is required for projects located within 20,000 feet of Paine Field, if the object exceeds a slope of 100:1 horizontally (100 feet horizontally for each 1 foot vertically) from the nearest point of the nearest runway. See Figure 3.1-3, the Airport Airspace Plan, for the location of areas around Paine Field affected by Part 77.

Other

Telephone service is regulated by the Washington Utilities and Transportation Commission (WUTC) and the Federal Communication Commission (FCC).

Cable services are regulated by the Nation Cable Television Association guidelines and the FCC.

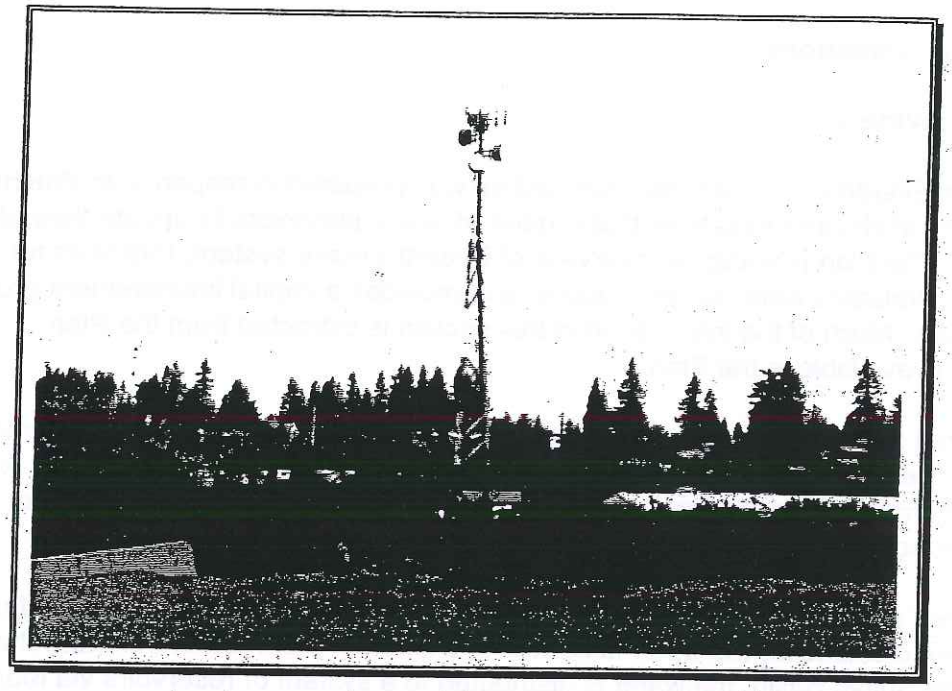
3.8.5.3 Impacts of Development

Since all alternatives assume that employment and population within the Everett Planning Area are the same, the impacts of the three alternatives on the provision of communication services should not be significantly different.

Construction of underground communication facilities in the public right-of-way generally occurs in easements located along the edge of the improved right-of-way or under the roadway pavement. Construction involves removal of pavement, trenching, conduit placement backfill, and pavement patching. Impacts can include traffic congestion; erosion from the construction site or fill stockpiles; tracking of dirt from construction equipment into the roadway; air pollution from dust and equipment; and construction through environmentally sensitive areas (streams, wetlands, steep slopes).

Construction of aboveground communication facilities generally results in impacts similar to those listed for underground facilities. In addition, facilities such as aboveground wires, switching buildings, communication towers, and antennae, can result in visual impacts, including interference or obstruction of views and designs which are inconsistent with the character of an area. New technology is resulting in smaller satellite dishes and antenna requirements.

Photo 3.8-1
Example of a Communications Tower



3.8.5.4 Proposed Thresholds

Most communication facilities are exempt from SEPA review. This SEPA analysis covers all aboveground communication facilities provided that view analysis is completed in the Special Property Use permit process.

3.8.5.5 Potential Measures to Reduce the Impacts of Development

The following mitigation measures would reduce the impacts of communication facilities:

1. Require all communication lines to be installed underground.

2. Design aboveground communication facilities to be compatible with nearby structures and/or screen the facilities from view.

3. The Special Property Use permit process for aboveground utilities must include analysis of impacts to views from the proposed facilities, as well as adequate screening requirements.

4. Antennae and tower proposals and all proposals for structures to be added to the top of existing buildings: The FAA must be notified prior to issuance of a determination of consistency to determine if FAA height restrictions apply to the proposal.

3.8.6 Public Water Supplies

3.8.6.1 Existing Conditions

Public Water Providers

The 1994 *City of Everett Water System Plan Update* was prepared in response to Washington State Department of Health regulations that require all water purveyors to update their plans every six years. The Plan provides an overview of Everett's water system, forecasts future water demands, evaluates water supply options, and provides a capital improvement program and financing plan. Much of the information in this section is extracted from the Plan. Additional detail is available in the Plan.

The City of Everett supplies the City with water for human consumption, home use, commercial and industrial processes, and fire fighting. In addition, the City provides water to other water distributors in Snohomish County, including Alderwood, Silver Lake, and Mukilteo Water Districts, and Snohomish County PUD.

The City of Everett withdraws water from the Sultan River system approximately 20 miles east of Everett. Before distribution, the water is treated in a filtration plant located in the Sultan Basin[2]. From the Sultan Basin, the water is distributed to a system of reservoirs via four transmission lines. Additional chlorination treatment is provided at various locations in the transmission and storage system.

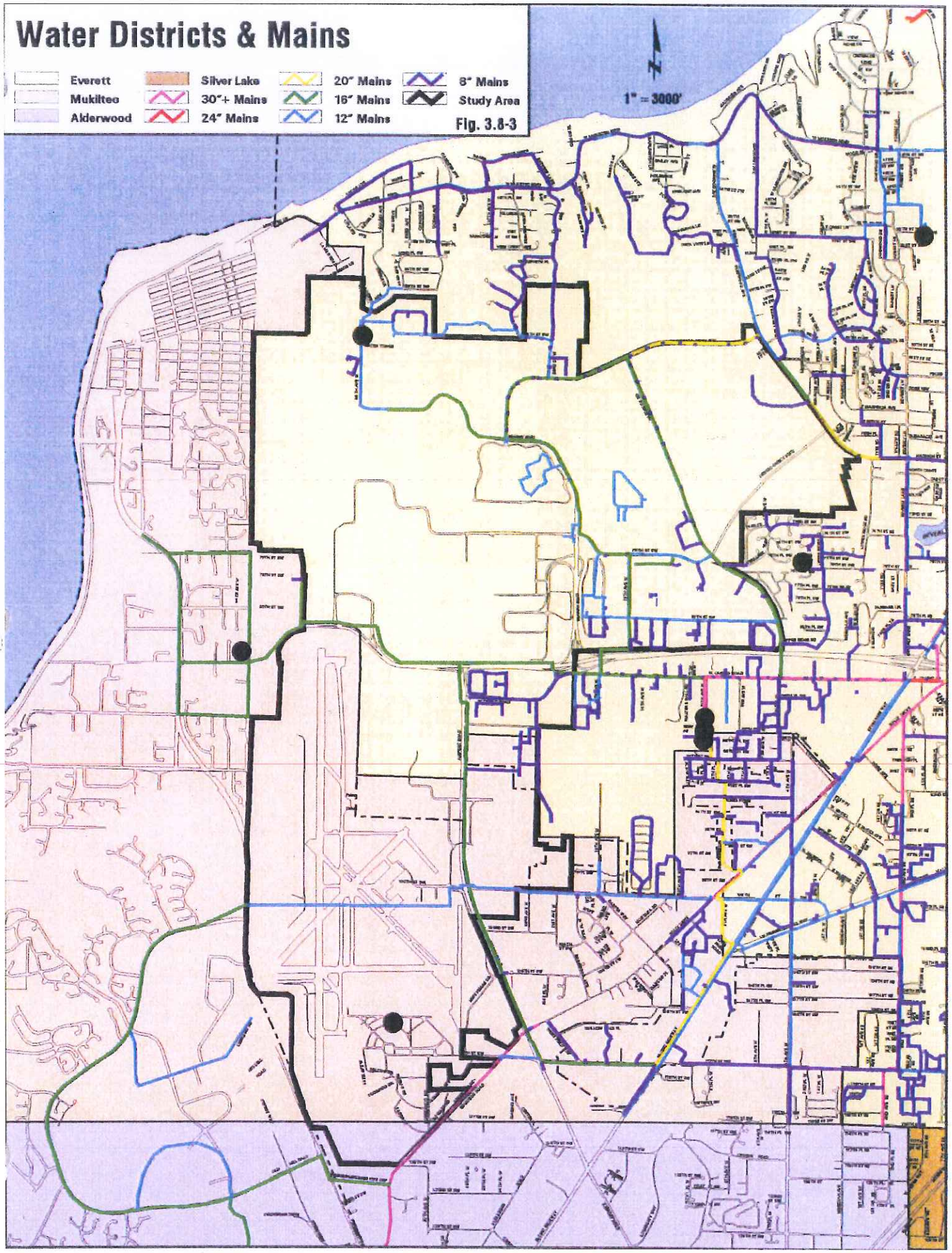
Within the SW Everett/Paine Field Subarea, water is provided by the City of Everett and Mukilteo Water District. The Mukilteo Water District serves Paine Field and portions of the City at the south end of the Subarea. Figure 3.8-3 shows the Water District boundaries within the Subarea, as well as the existing water distribution system.. Mukilteo Water District is in the process of revising their Water System Comprehensive Plan, and a revision should be adopted this year. The District's *1990 Water System Comprehensive Plan* has been used as an information source for this section. New information available from the plan revision process may result in changes to the proposed water system improvements identified in this document.

3.8.6.2 Regulatory Framework

City of Everett

Design and Construction Standards and Specification Manual, Section 5, Water Distribution. The City's Standards Manual requires that water main extensions be provided when a property does not front on a water main or when the existing water main is not adequate for the increased use proposed. The manual includes standards for construction plans; easements; pipe size and materials; joints, fittings and valves; backflow prevention; trench excavation, looped mains, and construction requirements such as dewatering of trenches, etc.

[2] Except for water supplied to Kimberly Clark (formerly Scott Paper Company), which is not filtered.


Water Districts & Mains
Everett
Mukilteo
Alderwood
Silver Lake
30"+ Mains
24" Mains
20" Mains
16" Mains
12" Mains
8" Mains
Study Area
1" = 3000'
Fig. 3.8-3

Fire Flow Requirements. The Everett Municipal Code has established specific standards for new construction that include fire hydrant spacing, minimum main size, fire flow determination procedures, and looping of water mains. All development must comply with the requirements in effect at time of application for building permits. Current requirements include the following:

- Fire hydrants must be installed within 200 driving feet of any commercial structure.

- The minimum size for a water main serving a fire hydrant is 6 inches. City policy increases the code requirement to a minimum of 8 inches for dead-end water mains. In addition, looped water mains are required for any new development with a fire flow requirement of 2,500 gallons per minute or more.

- The Everett Municipal Code requires the Fire Marshal to use Insurance Service Office (ISO) guidelines to determine the fire flow requirement for new construction. The Engineering and Public Services Department then determines the ability of the existing distribution system to meet the fire flow requirements with 20 psi residual pressure. If the system cannot provide the required fire flow, the developer is required to revise the building construction (e.g., specify a sprinklered building or fire-resistant construction - See Section 3.8.1 for sprinkler requirements) and/or make necessary improvements to the water distribution system to meet the required fire flow.

  Note: A developer's own insurance requirements or building sprinkler design criteria often require higher pressure for lower flows and may be more difficult to meet than ISO guidelines.

Water Connection Fees. Developers are required to pay special charges to the City for connection to the water system per Ordinance 1171-85, as amended. These charges are based on projected water usage and can be substantial. Applicants are encouraged to obtain a copy of the ordinance and determine estimated charges prior to building permit application. The actual charges are computed by the Public Works Department per the ordinance in effect at the time of building permit issuance.

Water Pressure: Conditions Placed Using SEPA Substantive Authority. In most cases, fire flow determines the requirements for provision of water lines to a site, since fire flow requirements are generally greater than demand for processed water and domestic water. However, water pressure is a major factor in determining design of water distribution systems. The City uses a guideline of 40 - 80 psi under normal operating conditions in designing a water system to a site.

Design of improvements on individual sites may be affected by this standard. If a site is required to reduce pressure below 80 psi, the cost is generally minor. However, if 40 psi cannot be achieved on a site, it can be very expensive to upgrade a system. The latter is generally not expected to be a problem in the Subarea.

In the past the City has used its SEPA substantive authority to require improvements that enable developments to fall within the 40 - 80 psi pressure range, such as requirements for installation of pressure reducing valves.

Mukilteo Water District

Mukilteo Water District provides standard specifications and requirements for extensions by developers. The standard specifications are approved by DSHS and are on file with that office. Professional engineers must submit plans for any modifications or extension to the system for review and approval by the District's manager and engineer.

In their 1990 Water System Comprehensive Plan, the District describes the minimum requirements for distribution system development in the Mukilteo Water District:

- All pipelines should be constructed of materials meeting the requirements of the American Water Works Association.
- Designs should be approved by the District engineer.
- In general, all water mains should be looped where feasible so dead end lines are minimized.
- In industrial districts, the minimum size of a water main should be 8" in diameter when arranged with regular intersection points. Larger mains may be required for high flow requirements or for mains with long distances between intersecting points. The water mains should be sized so the normal maximum velocity does not exceed 8 feet per second.
- Fire hydrants should be installed at all intersections. Hydrant spacing in industrial districts should not exceed 330 feet.
- Valves should be installed at intersections. In industrial areas, valve spacing should not exceed 500 feet.

Mukilteo Water District also uses the "Guide for Determination of Fire Flow" published by the Insurance Services Office. For planning purposes, the District's standard for fire flows is 4,000 gpm for institutional, industrial and large commercial facilities and 3000 gpm for small commercial facilities.

3.8.6.3 Future Improvements

City of Everett

The *1994 Water System Plan Update* projected necessary future water system improvements based upon population forecasts for the Everett Water Service Area[3], historical use data, and a proposed conservation plan. A 50-year horizon was used for planning purposes. This information was used to project demand for overall water supply and transmission needs. In addition, a hydraulic analysis was completed to determine distribution system requirements.

[3]The source of data used for the population and employment forecasts included *Puget Sound Subarea Forecasts: Model Calibration and Forecasts* (Puget Sound Regional Council, April 1992). Additional information was obtained from the Washington State Office of Financial Management, the U.S. Bureau of the Census, and the Snohomish County Planning Department growth management estimates of population growth. It is estimated that the 1992 numbers were similar to or higher than the population and employment forecasts eventually adopted in the City's GMA Comprehensive Plan.

The Water System Plan analyzed the water system by pressure zones. Water distribution systems are typically divided into "pressure zones," where the water pressure in each zone varies from 40 to 100 pounds per square inch. The boundaries of the pressure zones are established by ground surface elevation, and the zones are interconnected through pressure-reducing valves and pump stations.

The hydraulic analysis considered peak-hour demand for water and fire flow requirements. The analysis assumed/projected future peak-hour demand for the SW Everett area as 2.7 gpm/acre peak flow (approximately 4,000 gallons per acre per day peak flow). The analysis also assumed fire flow requirements of approximately 3,500 gpm for commercial and industrial/manufacturing uses[4].

Peak Water Use. Fire flow requirements are generally the limiting factor when any location uses less than a peak of 1.5 million gallons/day.

The Water System Plan contains the Capital Improvements Plan (CIP) through the year 2020. Improvements which have been identified are very dependent on the location, rate and type of future use. The recommended capital improvements include water supply, storage system, and pumping system improvements that will serve the SW Everett Paine Field Subarea as well as other portions of the City's Water Service Area. The Water System Plan addresses a "skeletonized" version of the water system. Additional mains may be required for better water circulation, more efficient service or demands beyond what was anticipated.

In order to serve the Mukilteo Water District at buildout, two water main improvements are needed. These improvements are a parallel water main in Hardeson Road, and a 16-inch main from the end of Seaway Boulevard at 36th Avenue West across Japanese Gulch to 40th Avenue W and south on 40th Avenue W to 76th Street SW. The latter improvement is also required to provide fire flow to commercial/industrial development on the west side of Japanese Gulch. This improvement will need to be operational by the year 2000 or when any of the commercial/industrial property is developed, whichever occurs first.

An 8-inch main connecting the Kasch Park water main to 100th Street SW is needed to eliminate an existing dead-end main and provide improved fire flow when adjacent property is developed. This main can be constructed after the year 2020, unless it is needed prior to that time to serve future development along the proposed route. An alternative to this connection is to connect into a Mukilteo Water District line which runs from 100th Street to the northeast corner of the Bomarc property.

Southwest Everett is currently supplied with water strictly from one pressure zone, but the majority of the area will be supplied from a different pressure zone as the water distribution system is improved. This will require a few capital improvements, including the above-mentioned parallel 16-inch water main in Seaway Boulevard; a parallel 20-inch water main in Glenwood Avenue; a parallel 16-inch water main in Hardeson Road; and a pressure-sustaining valve at 36th Avenue West and Seaway Boulevard. The pressure-sustaining valve will provide increased fire flow capability along 36th Avenue west (north of Seaway Boulevard), while still ensuring an adequate residual pressure. All of the improvements described above, except the

[4] Fire flow requirements generally range from 2,500 to 4,000 gpm for commercial uses and 3,000 to 5,000 gpm for industrial/manufacturing uses.

parallel Hardeson Road water main, will need to be operational by the year 2020. The Hardeson Road water main can be delayed beyond the year 2020, but must be operational prior to buildout of SW Everett.

Financing. The required water system improvements will be financed by a combination of state and federal grants, hookup charges, rate ordinance increases, bond sales, and changes in the cost-of-service contracts. In addition specific distribution system improvements are needed that will service developments within the Subarea. These improvements will be financed by developer extensions and latecomer's agreements. In cases where the City has plans for a larger main than the size of the required developer extension, the larger main is constructed and the City reimburses the developer for the "oversizing."

Table 3.8-2 summarizes the improvements needed to service the Subarea, as well as cost, responsibility for financing, and timing of the improvement.

See Figure 3.8-4 for the location of proposed distribution system Improvements.

As discussed above, the *Water System Plan* addresses a "skeletonized" version of the water system. Additional mains may be required for better water circulation, more efficient service or demands outside of what was anticipated. For example, Intrawest proposed a development on a parcel south of Merrill Creek property, which has not been constructed. Fire flow requirements for the proposed 155,000 sf sprinklered facility was 4,000 gpm. The required fire flow therefore exceeded the projected fire flow of 3,500 gpm analyzed in the *Water System Plan*. In order to meet fire flow requirements, Intrawest would have to construct a looped watermain on the site within a 15 foot public easement, or alternatively, an additional water main that were not projected in the *Water System Plan*. This water line would connect to a line on the Sabey property. See Figure 3.8-5.

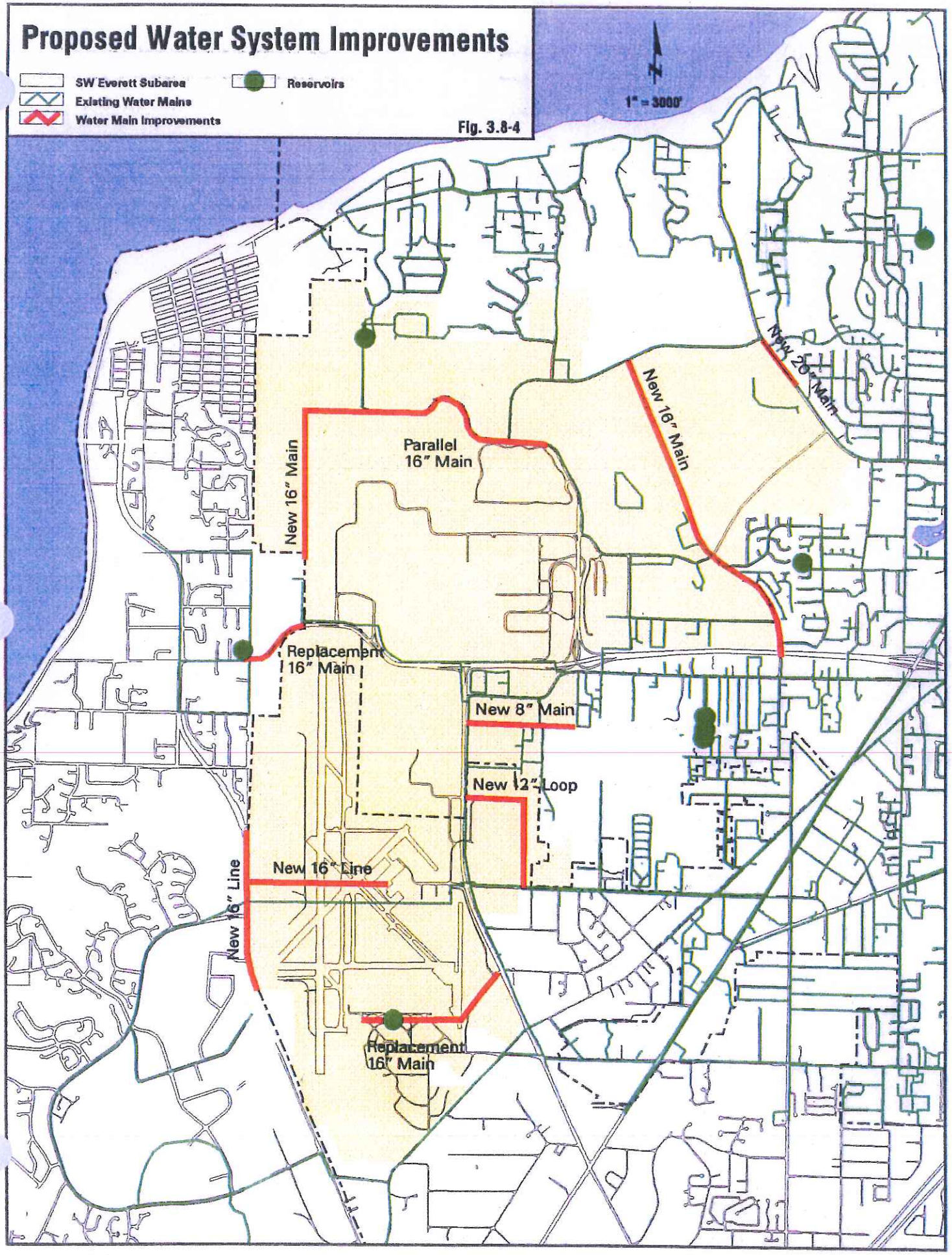
The Intermec Water Pressure Zone, a small area at the north end of the Subarea, will be the area where it is hardest to meet fire flows if requirements exceed 3,500 gpm. Developments which need fire flows over 3,500 gpm may be difficult to meet anywhere in the Subarea, but particularly the Intermec Water Pressure Zone, without additional improvements to the system. The cost of any such additional improvements to the system must be borne by the proposed development generating the need for the improvement.

Table 3.8-2
Water System Capital Improvements Needed for the Portion of the SW Everett/Paine Field Subarea Served by the City of Everett

Capital Improvement Needed	Cost	Responsibility for Funding	Properties That May Be Required to Fund all or a portion of the Improvement	Estimated Timing of Improvement
Evergreen Way pump station expansion.	$700,000	City		1996
Connection between City's water line and the Mukilteo Water District; Reservoir No.4	unknown	City		2000
20-inch main on Glenwood Avenue	$352,000	City and/or Developer	Associated Sand and Gravel*	2008
16-inch parallel main on Seaway Boulevard	$396,000	City and/or Developer	Lots 1, 2a and 2b of Seaway Center, Intermec Bhend Boeing Fluke*	2008
16-inch main on Hardeson road	$299,000	City and/or Developer	Merrill Creek Centre Merrill Creek Assoc. Associated Sand and Gravel*	After year 2020
8-inch main on Kasch Park to 100th Street SE or connect into MWDs line at the NE corner of the Bomarc property.	$68,000	Developer	Puget Sound Industrial Associates**	At time of development
16-inch main from Seaway Boulevard and 36th Ave. W across Japanese Gulch to 40th Ave. W and south on 40th to 76th Ave SW	$456,000	Developer and/or City	Properties west of Japanese Gulch (approximately 294 NDA) and properties that front on 40th Ave. W *	At time of development or 2000, whichever comes first

* Participation in funding by specific properties is based upon the assumption that one or more of these parcels will not have adequate fire flow without the improvement. If the improvement is not needed to meet fire flow requirements or other site specific development requirements, participation in funding would not be required. If a smaller improvement is needed to meet fire flow requirements, the City will share in the cost of constructing the improvement.

** This improvement is need to improve water quality by avoiding deadend lines.


Proposed Water System Improvements
SW Everett Subarea
Existing Water Mains
Water Main Improvements
Reservoirs
Fig. 3.8-4
1" = 3000'
N
New 20" Main
New 18" Main
Parallel 16" Main
New 16" Main
Replacement 16" Main
New 8" Main
New 12" Loop
New 16" Line
New 16" Line
Replacement 16" Main

Example of Looped Main to Meet Fire Flow Requirements

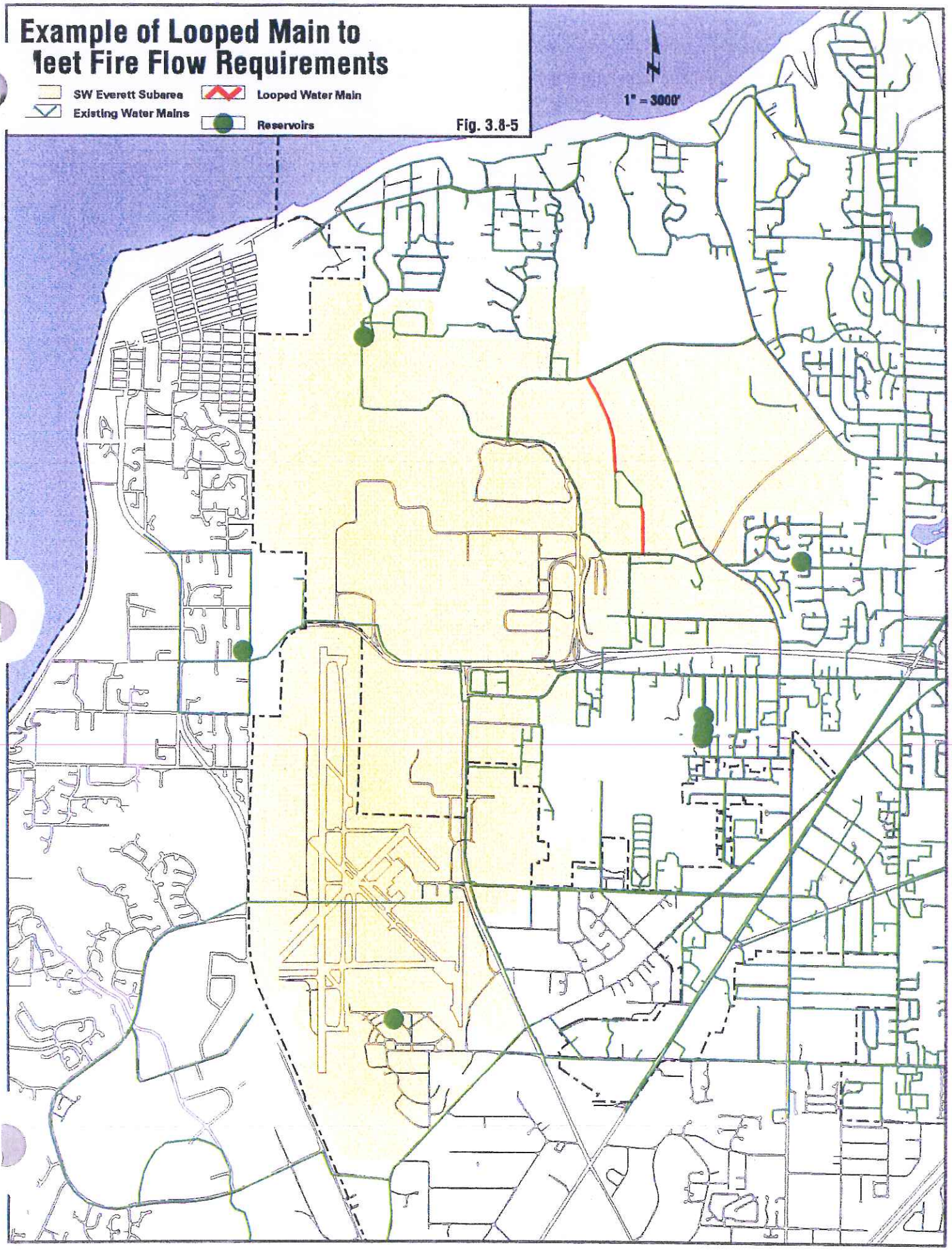


Fig. 3.8-5

Mukilteo Water District

The Mukilteo Water District serves Paine Field properties, as well as properties north of 100th St. and east of Airport Road. The Mukilteo Water District is in the process of updating their Comprehensive Water System Plan. Information regarding the District's proposed facilities is based upon information in the preliminary draft of the revised plan and is subject to change before the plan is adopted.

The Water District Comprehensive Plan indicates the available fire flow at 4,000 gpm. If the fire flow requirement for new construction is in excess of 4,000 gpm, the developer must pay for the development of fire flow improvements to the system. The policy of the District is to provide water to new developments whenever the intended land use is in conformance with existing regulations, the design standards of the District can be maintained, and required fire flows are available. Any extension installed to serve a new development is installed at the developer's full expense; subject to reimbursement from other benefited properties, if any, when requested.

As with the City's planning, Mukilteo Water District analyzed facility needs based upon pressure zones. Figure 3.8-4 shows the location of proposed improvements on or adjacent to Paine Field properties, and a description of those facilities follows. Note that the District generally finances storage and transmission improvements, while distribution facilities are generally developer funded through developer extensions or Local Improvement Districts. Some distribution facilities are financed through from the District's Maintenance Fund.

General System Improvements. The City of Everett provides water to Mukilteo Water District. Everett plans to construct a new pipeline - Everett Pipeline No. 6 - to supply water to its purveyors, including the Mukilteo Water District. The construction of the pipeline will benefit the District by ensuring the provision of the water needed to meet the District's future demands. The first phase of the pipeline is currently planned for 2001.

Storage. A new 6.3 MG reservoir was constructed in 1995, and Mukilteo Water District predicts that they have sufficient storage capacity through 2015. However, several improvements are needed for storage facilities that serve Paine Field properties. Seismic evaluations of two reservoirs (No. 2 and No. 4) are planned to be completed by 1997. The evaluations will determine if modifications are necessary to meet current standards for seismic design. The outlet to Reservoir No. 4 will be equipped with a seismic valve and vault by 1997 in order to preserve water supply during an earthquake.

By 2010, the District plans to install a small booster pump at the inlet to Reservoir No. 4 to allow the reservoir to fill to the overflow elevation. This will provide additional available storage to be utilized by the District during periods of high demand. The City's Water System Plan identifies Reservoir No. 4 as a potential future storage facility for the City of Everett. Discussions with Everett may lead the District to move the scheduled completion of Reservoir No. 4 improvements to an earlier date. The District also plans to paint Reservoir No. 4 by 2015.

Transmission. The District plans to relocate Everett's Casino Road master meter and chlorination facility to provide a redundant source of supply to the northern area of the District's 715 pressure zone. This will benefit the area west of Paine Field's runway.

The realignment of SR 525 (Paine Field Blvd.) near the northwest corner of Paine Field will have an impact on some of the District's transmission lines. The District plans to replace the impacted portion of a 16 inch pipe section located along Casino Road from 40th Ave. W to 44th Ave. W. The replacement will provide a direct link between Everett's Casino Road Reservoirs and the District's Reservoirs No. 2 and 5.

The existing 10" main on 109th St. SW from 30th Ave. W to 35th Ave. W should be replaced with a 16" main. This would replace the line east of the Reservoir No. 4 and the supply to the Reservoir.

The District plans to construct a new 16-inch transmission line along SR 525 from 96th St. SW and 44th W to 106th St. SW. This will serve development on the west side of Paine Field and will improve the fire flow and grid distribution system of the connected areas.

As the industrial and commercial properties west of Paine Field develop, a 12" transmission line will also be constructed under the airport runway along 100th Street SW from SR 525 to 32nd Ave. W to provide a secondary redundant supply source. This is planned to be completed in 2004.

A new 16" transmission main is proposed along Minuteman Lane between the 16" main at 106th St. SW and Airport Road to the 12" main at 109th Street SW and 28th Ave. W. This main would provide an additional connection from the service area east of Airport Road to Reservoir No. 4. This is recommended for construction between 1995 and 1999.

Distribution. Two distribution improvements are needed in the area to strengthen the grid distribution system: A new 12" loop from Airport Road at 93rd Street SW east to 22nd Ave. W and then south on 22nd Ave. W to 100th St. SW. This would occur as the area develops.

In addition, there are some pockets of old asbestos cement and steel water mains still in service on Paine Field property that must be replaced over time. These old mains are primarily located in the Navy Housing Area on the southern end of airport property.

Paine Field will be responsible for installation of water mains needed for development of the Paine Field properties.

Table 3.8-3 summarizes the planned capital improvements in the Mukilteo Water District that will benefit portions of Paine Field properties.

Table 3.8-3
Water System Improvements Needed for the Portion of the SW Everett/Paine Field Subarea Served by the Mukilteo Water District

Improvement Needed	Cost	Funding Source	Year Planned
Mukilteo Share of Everett Pipeline No. 6	$2,500,000	Capital Improvement Fund	2001
Seismic Evaluation of Reservoirs No. 2 and 4	$7,500	Capital Improvement Fund	1997
Seismic Valve and Vault at Reservoir No. 4	$75,100	Capital Improvement Fund	1997
Inlet/Outlet Booster Station at Reservoir No. 4	$329,200	Capital Improvement Fund/City of Everett	2010
Paint 4.5 MG Reservoir No. 4	$334,900	Water Maintenance Fund	2015
Relocation of Casino Road Master Meter and Chlorination Facility	$79,300	Water Capital Improvement Replacement Fund & City of Everett	1996
16-Inch line along Casino Road from 40th Ave. W to 44th Ave. W (Area impacted by realignment of Paine Field Blvd.)	$209,000	Water Capital Improvement Replacement Fund	1998
16-inch line along SR 525 from 96th St. SW and 44th Ave. W to 106th St. SW	$508,300	Capital Improvement Fund	1999
16-inch line along 109th St. SW from Reservoir No. 4 to 30th Ave. W	$107,800	Water Capital Improvement Replacement Fund	2002
16 inch line along Minuteman Lane from Airport Road to 109th St. SW	$250,400	Capital Improvement Fund	2003
12 inch line along 100th St. SW from SR 525 to 32nd Ave. W	$480,500	Capital Improvement Fund	2004

3.8.6.4 Impacts of Development

Under any of the Alternatives, demand for water would increase.

The City's 1994 Water System Plan Update and Mukilteo's 1990 Water System Comprehensive Plan and preliminary draft update identify the facilities that will be needed and the estimated timing of construction of those improvements as noted above. The timing of improvements is dependent upon the location and timing of proposed development. Under Alternative 3, the Faster Growth Alternative, the timing of specific improvements may need to be accelerated. However, because the Subarea is a small portion of Everett's total water system, the timing of

transmission and treatment facilities expansions should not be significantly impacted by the timing of buildout in SW Everett. The timing of improvements to the Evergreen Way pump station may be impacted, but they are proposed to be completed by 1997. Joint use/development of the Mukilteo Water District Reservoir No. 4 may also be required sooner under the Faster Growth Alternative.

The City's plans include construction of a new water pipeline #6 which will mainly serve the south County area. Currently, the City is preparing a report which looks at alternatives for delaying construction of the pipeline. Delaying the pipeline may affect the timing of improvements to the local area, but will not impact Mukilteo Water District's ability to serve businesses under the Faster Growth Alternative.

Large irrigation systems have the potential to greatly exceed planned water capacities. For example some irrigation systems can require 50 gpm/acre of water, while peak hour demand has been planned for 2.7 gpm/acre.

Clearing, excavation and grading will be required for the construction of water lines to service large areas and individual developments. While some of the required improvements will be constructed in existing improved right-of-ways (such as water lines in Hardeson Road and Glenwood Avenue, water line construction has the potential to impact environmentally sensitive areas such as streams, wetlands, steep slopes, and their buffers. For example, a new 16-inch water line from Seaway Blvd. to the west side of Japanese Gulch will require crossing of Japanese Gulch Stream; steep slopes with landslide and erosion hazards; buffers; a Washington Department of Fish and Wildlife priority habitat; and potentially, some wetlands. Impacts for individual projects are most likely to occur when looped water mains are needed to provide required fire flow. Even when the water lines are not located in environmentally sensitive areas and their buffers, construction activities have the potential to impact nearby ESAs. This has occurred in the past when contractors stored equipment or materials outside the construction site in ESAs, landslides or erosion from construction sites damaged ESAs, or stormwater runoff impacted streams and wetlands. See the discussion of impacts of utility construction under the Earth and Surface Water sections of this EIS.

3.8.6.5 Proposed Thresholds

The analysis in the *Water System Plan* projected the overall future peak-hour demand for the area at 2.7 gpm/acre (approximately 4,000 gpa/day peak flow), and assumed fire flow requirements of approximately 3,500 gpm for commercial and industrial/manufacturing uses. Based upon the proposed design of the water system, any development using more than 2.7 gpm/acre has the potential to affect water pressure on other sites. Additional analysis will be required for development proposals with a peak hour demand above 2.7 gpm/acre and/or a fire flow requirement of 3,500 gpm or greater. The additional analysis may be as simple as calculations completed by the Public Works Department prior to a pre-application meeting on a specific development proposal. The additional analysis must determine how the proposal's water demand will affect the entire water supply and distribution system. Projects with no additional major improvements needed and no adverse cumulative impacts on the water supply and distribution system are covered by this analysis.

The 2.7 gpm/acre is an overall average peak hour demand assumed for planning in large areas such as the study area. However, there will undoubtedly be site-specific proposals with larger

demand. For example large irrigation systems can exceed 50 gpm/acre demand. Other land uses with demands much lower than 2.7 gpm/acre, such as warehouses, are assumed to occur to offset the higher demand land uses, resulting in an overall area wide average of 2.7 gpm/acre.

The impacts of construction of the new water line to service development west of Japanese Gulch is not covered in this EIS. Additional analysis is required to review alternative routes for the line which will minimize the impacts of the proposal.

3.8.6.6 Potential Measures To Reduce the Impacts of Development

1. New developments and expansions must comply with the City of Everett's *Design and Construction Standards and Specification Manual, Section 5, Water Distribution.* A few of these standards and specification requirements include: water main extensions would be required if the property does not front on a water main or the existing system/main is not sufficient to meet the proposed use. Installments of a fire hydrant or water mains may also be required by the Fire Marshal. All new developments must submit as-builts for all utilities to the City prior to final approval.

2. Looped water mains may be required for some sites to meet fire flow requirements and to protect water quality. Pressure reducing valves may be required when looped systems are constructed.

3. Recycling of runoff water from bus or truck washing facilities may be required.

4. Water mains may need to be extended to serve specific sites.

5. Fire Marshal to provide Public Works with the required fire flow for proper sizing of main, determination of extension's linear footage.

6. Developments must pay special charges for connection to sewer, water systems per City of Everett Ordinance 1171-85 or per Mukilteo Water District requirements, as applicable.

7. New water system facilities should avoid environmentally sensitive areas to the maximum extent possible. Where water lines must be constructed through environmentally sensitive areas, best management practices should be followed. (See the mitigation measures discussed in Section 3.4) .

8. Developments must construct improvements necessary to provide a water pressure of 40-80 psi under normal operating conditions as required by Public Works.

9. The City's Water System Plan includes measures to reduce consumption of water, including requiring the use of water efficient plants and landscape design; commercial and industrial water audits, and installation of efficient plumbing fixtures.

10. Where utility connections are required through adjacent properties or connecting into residential areas, easements should be located in such a manner as to minimize the visual impact on the adjoining properties to the greatest extent feasible and must be revegetated in accordance with an approved master landscaping plan. Landscaping must be consistent

with Public Works requirements for protection and maintenance of the utility easement and facilities and should generally consist of native shrubs and groundcover.

11. The City/County should recommend or require that native drought tolerant landscaping be provided and that irrigation be limited following establishment of plantings.

3.8.7 Sewer

3.8.7.1 Existing Conditions

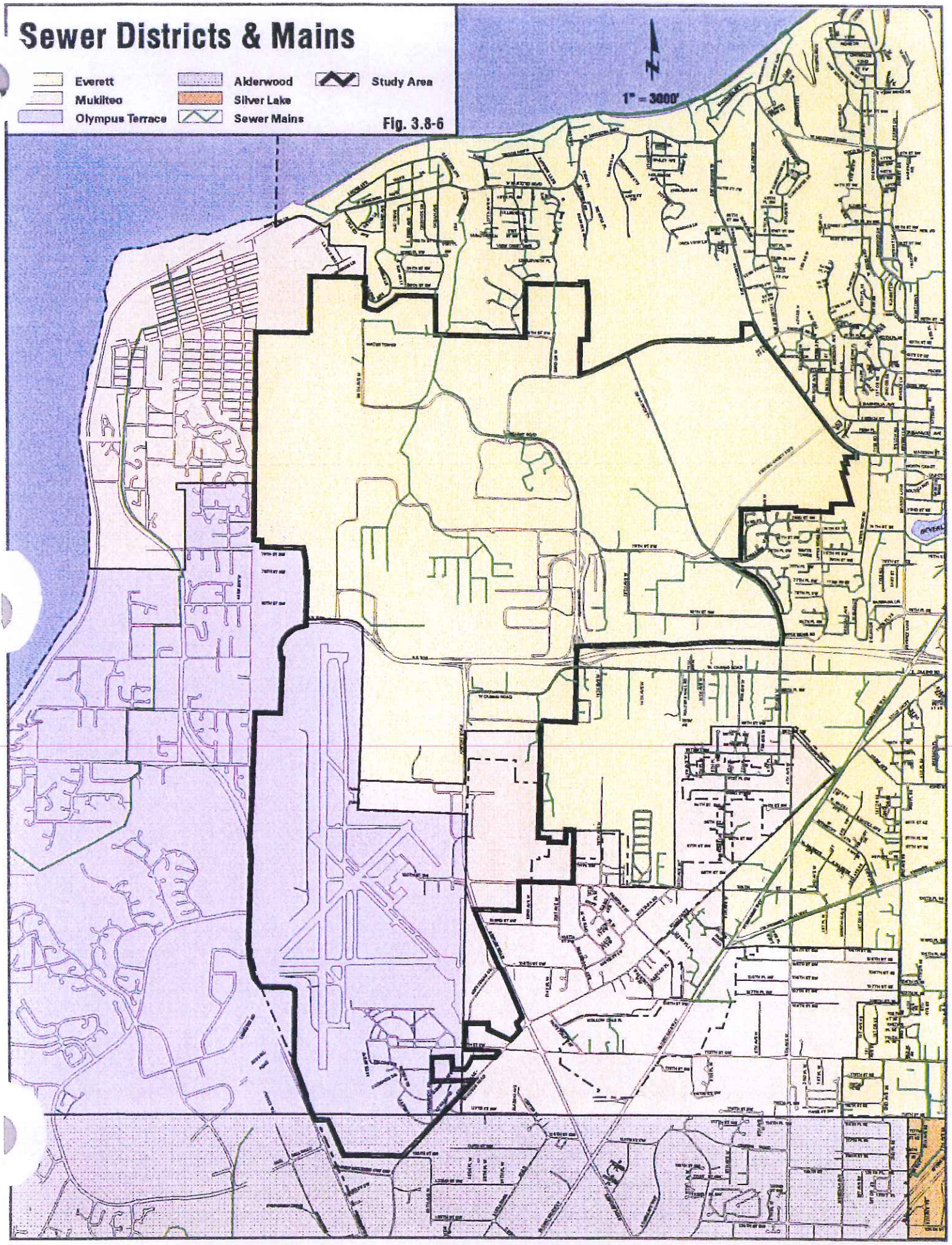
Service Providers

Sanitary sewer service to the SW Everett/Paine Field Subarea is provided by the City of Everett Department of Public Works, Utilities Division; Olympus Terrace Sewer District; and Mukilteo Water District. Figure 3.8-6 shows the location of sewer district boundaries and service agreement areas within the Subarea, as well as existing sewer mains that serve the SW Everett/Paine Field Subarea. Figure 3.8-7 shows the service area for each major trunk line in Southwest Everett.

City of Everett. Within the City limits portion of the project, Everett provides sanitary sewage collection and treatment, except for a small area served under agreement with the Mukilteo Water District. All of the collected sanitary sewage in the Everett system and Mukilteo Water District is transported to the city's sanitary sewage treatment plant, known as the Water Pollution Control Facility (WPCF).

Everett's sewer system began in 1890, and has expanded numerous times since. Most of the sewer system serving the Southwest Everett and Paine Field area was constructed after 1960. Everett's Water Pollution Control Facility was initially constructed in 1960. Several improvements have been made since that time. It currently consists of a grit and debris removing headworks facility, a trickling filter system, a solids contact chamber, two aeration ponds, an oxidation pond, a polishing pond, chlorination facilities, dechlorination facilities, and a system for discharging the treated effluent into the Snohomish River.

Everett's Water Pollution Control facility is sized and permitted to provide 25.5. million gallons per day (mgd) of primary and secondary treatment. Average daily treatment provided in 1995 was 17.8 mgd. An application has been submitted to the State Department of Ecology requesting that the rated capacity be increased to ~~32.3~~ 31.4 mgd. Significant capacity improvements to the WPCF will be required around the year ~~2003~~ 2002 under the current permit conditions and 2015 under the proposed conditions to accommodate growth anticipated in the entire service area. In 1991, the City adopted an Interim Water Conservation Program, to encourage conservation of water which also translates into reductions in sanitary sewage generation. A variety of water conservation measures which were incorporated into the 1995 Water System Plan Update should result in savings of over 8 million gallons of potable water per day by 2002.


Sewer Districts & Mains
Everett
Mukilteo
Olympus Terrace
Alderwood
Silver Lake
Sewer Mains
Study Area
Fig. 3.8-6
N
1" = 3000'

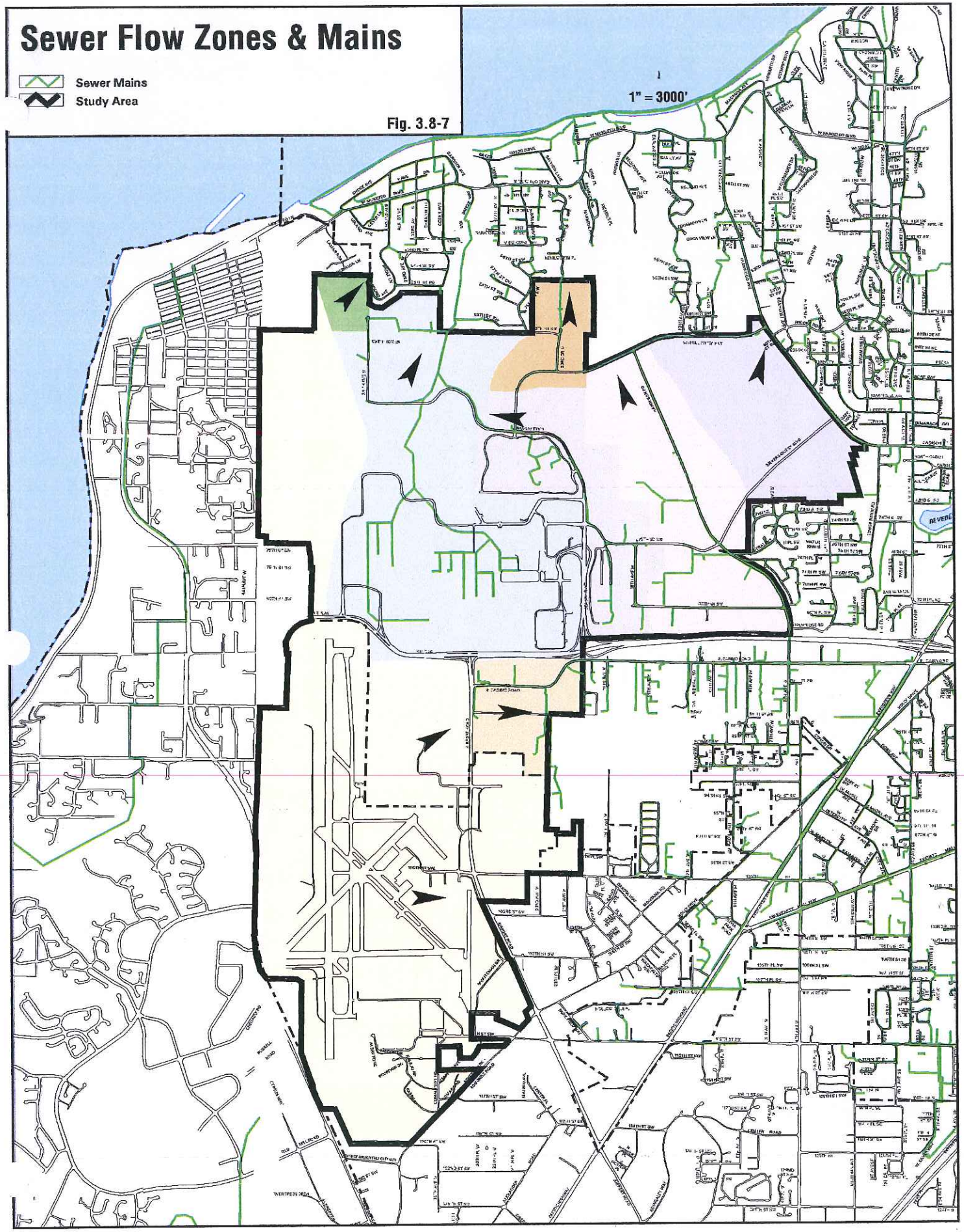
Sewer Flow Zones & Mains

Sewer Mains

Study Area

1" = 3000'

Fig. 3.8-7



Everett's system has over 300 miles of sewer mains, trunks, interceptors and laterals. The Everett sewer service area is divided into two functioning areas. North Everett has a combined sanitary and stormwater system, while the south end, including Southwest Everett, generally only provides for sanitary sewage collection. An area adjoining Mukilteo Boulevard ~~contains a substantial number of illegal roof drain connections to the sanitary system~~ north of the study area has a high rate of infiltration and inflow. Stormwater is conveyed in the natural drainage ways in south Everett, and is discussed under the Stormwater section of this EIS.

A portion of the study area, west of Japanese Gulch is not currently served by sanitary sewer. Olympus Terrace would not serve this area unless it is annexed to the Olympus Terrace Sewer District. Service from Everett would require construction across Japanese Gulch.

Paine Field Airport. Paine Field has agreements with the Olympus Terrace Sewer District and the Mukilteo Water District for wholesale sewer service. Airport Road is the drainage boundary, with the Olympus Terrace Sewer district receiving flow from the portion of the airport west of Airport Road, and the Mukilteo Water District receiving flow from the Bomarc Business Park and other airport property east of Airport Road. Maintenance of the sewage collection system on airport property is the responsibility of the airport.

Olympus Terrace. The west side of Paine Field is not actually located within the boundary of Olympus Terrace Sewer District (OTSD). However, Olympus Terrace has a contract with Paine Field to accept their sewage. The sewage is treated first by Paine Field, then pumped to Olympus Terrace. (Mukilteo Water District serves that portion of Paine Field lying east of Airport Road.) Paine Field's contract allows them to discharge up to 500,000 gallons per day into the Olympus Terrace system. They currently generate 132,000 gallons per day. In the past, Paine Field generated a significantly greater sewage volume because of infiltration of stormwater into the sewer system. Recently the airport upgraded their system, significantly reducing stormwater flows into the sanitary sewer.

Olympus Terrace Sewer District (OTSD) operates a wastewater treatment plant near the mouth of Big Gulch. The facility was recently expanded to the maximum capacity at their current site. In order to expand further, the District would have to acquire land and build a facility elsewhere. The facility has a capacity of 2.75 million gallons per day, and currently operates at an average of 1.4 million gallons per day. The 500,000 gallon per day limit for Paine Field is the maximum that can be accommodated from Paine Field with Olympus Terrace's existing facilities. Sewage is discharged to the OTSD at Manhole 9-3 on the west side of the airport.

A 12-inch concrete sanitary sewer has been placed in the channel bottom of Big Gulch. In some places, this pipe is exposed and affects the stream morphology. In other places, stream scour may expose the pipe in the future. The long term integrity of this sewer is a serious concern. To prevent acceleration of erosional processes, storm detention systems for development projects draining to this system should be designed to control durations of high flows, not just peak flow rates.

Olympus Terrace will be preparing a comprehensive sewer plan which will consider the expedited flows from Paine Field. It is possible that improvements will be required to the interceptor in Big Gulch. In addition Paine Field intends to conduct a review of the sewer

system requirements on the west side of the airport in light of the recently adopted airport master plan.

Project proposals are analyzed on a case-by-case basis to determine the appropriate sewer main size. Paine Field Airport is responsible for developing the primary sewer main network on the airport. The airport constructs the main to the edge of a leased site where the tenant assumes responsibility for extension to the building(s).

Mukilteo Water District. The Mukilteo Water District (MWD) does not operate their own wastewater treatment facilities. Instead, they collect the sewage and route it to Everett's Water Pollution Control Facility. Sewage from the Bomarc Business Park is discharged to a MWD sewer in 100th St. SW. Mukilteo Water District also provides sewer service to portions of Everett east of Paine Field. This sewage is discharged into the Everett system and treated at the water pollution control facility. Under agreement with the City, Mukilteo Water District continues to serve areas annexed to Everett for ten years after the annexation decision. A small portion of the study area along 100th Street SW is within the area to be served by the Mukilteo Water District.

Boeing. The Boeing Everett Facility has its own sanitary sewer system consisting of a gravity flow collection network. Waste water from the site is conveyed to the City of Everett's system. Average daily discharge is approved for 730,000 gallons.

System Capacity

As noted above, Everett's Water Pollution Control facility is sized and permitted to provide 25.5 million gallons per day (mgd) of primary and secondary treatment. Average daily treatment provided in 1995 was 17.8 mgd.

Paine Field's contract with OTSD allows them to discharge up to 500,000 gallons per day into the Olympus Terrace system. OTSD's system has been designed to accommodate that contracted flow. They currently generate 132,000 gallons per day.

Design of the sanitary sewer system in Southwest Everett is based on an assumption of 1,700 gallons of sewage generation per gross acre per day. ~~Further, the system is designed to accommodate 2.5 times this flow on a peak day, plus 1,100~~ A peaking factor of roughly 2.5 was used to calculate the peak flow in the conveyance system. In addition 1,000 gallons per acre per day of infiltration and inflow is included. Infiltration is the situation in which the sewer pipes allow some groundwater to enter the sewer system, and inflow is the situation in which some properties may have connected stormwater lines to the sanitary sewer line.

3.8.7.2 Regulatory Framework

City of Everett

Public Works *Design and Construction Standards and Specifications Manual:* This Manual requires that sanitary sewer main extensions be provided when the properties do not front on a sewer main or when the existing sewer main is not adequate for the increased use proposed, and provides standards for construction of sewer lines. The standards cover all areas of

construction including alignment tolerance, construction plans, easements, lift stations, manholes, sewer mains materials and trenching, slopes, and side sewers.

The minimum pipe size for sanitary sewer mains is eight (8) inches in diameter. The Utility Superintendent shall determine the pipe size required to serve the surrounding area. Slopes shall be 1% between manholes. Side sewers (which connect the building and the public main) for commercial and industrial buildings shall be a minimum of six (6) inches in diameter. Actual sewer main and side sewer size shall be dependent on the needs of the proposed use and any additional area/uses to be served by the facility.

A Public Works permit is required for all work within the public right-of-way and city utility easements for all sewer improvements. All sewer plans must be approved by the City Engineer. Performance and warranty guarantees are required for all improvements in the public right-of-way.

EMC 14.04 (Ordinance 1171-85) as Amended. This ordinance requires developers to pay special charges for connection to City sewer systems. The charges are based on projected water usage and can be substantial. Applicants are encouraged to obtain a copy of the ordinance and determine estimated charges prior to building permit application. The actual charges will be computed by the Public Works Department per the ordinance in effect at the time of building permit issuance.

EMC 14.08. This requires developments to connect to sewer lines and includes standards for items such as permits, right of entry, inspection and approval of work, repair and maintenance of sewer lines, and limitations on the type of matter that cannot be discharged to sewers, etc.

Industrial Pretreatment Ordinance #2034-95. In 1977 the U.S. Congress passed the Clean Water Act. Subsequently, in 1978, EPA issued the "Pre-Treatment Regulations for Existing and New Sources of Pollution." Additional rules for control of all domestic pollutants discharged into public treatment plants were published in 1981. In 1986, pre-treatment programs in Washington State were placed under the jurisdiction of the State Department of Ecology. Pre-treatment authority for cities the size of Everett was transferred to the cities. As a result, the City of Everett adopted the Pre-Treatment Regulations Ordinance in 1986, with subsequent updates in 1988 and 1995. Everett's industrial pre-treatment program is intended to improve the quality of water discharged from the WPCF, and reduce the amount of heavy metals in the WPCF's sludge. Businesses exceeding discharge limits for specific constituents must treat their sewage prior to discharging into the City's sewer system.

The City of Everett Public Works Department administers the ~~wastewater~~ industrial pretreatment program within the City of Everett and within the sewer service area of the Mukilteo Water District. The program implements provisions of state and federal laws, including the federal Clean Water Act (33 USC 1251 et seq.) and General Pretreatment Regulations (40 CFR Part 403). Industrial pretreatment regulations for businesses on Paine Field Airport (served by Olympus Terrace Sewer District) are administered by the State Department of Ecology.

The City's Pretreatment Ordinance #2034-95 generally requires that non-sanitary domestic discharge be separated from sanitary sewage discharge and be treated prior to discharge into the city's sewer system. The ordinance provides for the issuance of ~~wastewater~~ sewer

discharge permits and discharge authorizations; requires use of all known, available, and reasonable methods of prevention, control, and treatment of ~~wastewater~~ sewage; requires preparation of spill control plans; authorizes monitoring, compliance, and enforcement activities; and requires user reporting. The main objectives of the requirements are to eliminate or reduce the introduction of pollutants into the city's Water Pollution Control Facility (~~wastewater~~ sewage treatment plant) in order to protect the quality of the receiving waters, maintain the operations of the ~~wastewater~~ sewage treatment plant, maintain the quality of biosolids, and protect the health of employees and the public.

Any development with non-domestic discharge; storage of chemicals or materials; floor drains other than required for restrooms or hot water heaters; or food preparation areas[1] must contact the Public Works Industrial Pretreatment section to determine if a permit is required. Most industrial uses will require a permit. Examples of non-industrial uses that will require permits include coin operated laundries, car washes, filling stations, any business with vehicle washing areas, food preparation businesses, and warehouses with floor drains.

Currently there are a number of businesses in Southwest Everett and Paine Field which are required to pre-treat their sewage discharge. Among those are Amtech, Boeing, Community Transit, Fluke, Intermec, Achilles, Overall Laundry, Tramco and Sunquest Aviation.

Conditions on past projects. Conditions on SEPA #15-92 for the Bhend property included: A portion of the sewage can go to the Powder Mill Gulch sewer and a portion to the Sound Avenue sewer. If a sewer connection is made to the manhole at the end of Sound Avenue, the sewer design and installation must take into consideration the limitation of the pump station serving Lot 19 of the Plat of Bridle Park. An easement must be provided for the sanitary sewer connection to Sound Avenue. The amount of sewage discharged into the Sound Avenue system must not exceed the capacity of the local system.

SEPA #9-92 for Puget Sound Industrial Associates (100th St. SW) required that a sewer force main to Casino Road be provided. In lieu of the construction of upgrades to Lift Station #28, the Applicant was required to pay a fee of $20,000 to the City. An alternative sewer service arrangement has since been approved by the Everett Public Works Department. Sewage from this and adjoining properties will enter the Mukilteo Water District system, flow to their lift station on 108th SW, where it will be pumped to Everett's system in Evergreen Way via a new, developer funded force main in 108th Street SW.

Mukilteo Water District. For development of individual parcels, the cost of installing sewer mains is the responsibility of the developer. Sewer mains within the Mukilteo Water District service area are required to meet the District's standards.

Olympus Terrace Sewer District. Paine Field Airport facilities must meet the requirements of the Airport and Olympus Terrace Sewer District.

[1] Grease removal and treatment systems must be provided.

3.8.7.3 Future Improvements (See Figure 3.8-8 for proposed sewer improvements.)

Based upon employment projections in 2020, the following lines in the Subarea are over-capacity and would cost the following amounts to bring up to capacity:

- 2,950 feet of Hardeson Road, from approximately Overall Laundry to Merrill Creek Parkway at a cost of approximately $735,000. (An additional 500 feet are over capacity at buildout.)
- 2,100 feet of Merrill Creek Parkway, from Hardeson Road to the ~~west~~ east 2,100 feet at a cost of approximately ~~$522,000~~ $525,000. An additional 700 feet are over capacity at buildout.

Additional improvements are required in the remainder of the Everett sewer service area by 2020 which are partially the responsibility of the Subarea. These include:

- 450 feet of Third Ave. (An additional 2,200 feet are over-capacity at buildout.)
- 600 feet of Broadway. (An additional 1,800 feet are over-capacity at buildout.)
- Lift station #1 requires upgrading.

For the improvements described above, significant ancillary lengths of several hundreds of feet may be included in the projects due to line deterioration, or other portions of the line close to capacity.

The Water Pollution Control Facility will require significant capacity improvements beginning ~~somewhere~~ around ~~2003~~ 2002 under the existing NPDES permit.

Financing. The required sewer system improvements will be financed by a combination of state and federal grants, hookup changes, rate ordinance revenues and increases, bond sales, and changes to the cost-of-service contracts. In addition, specific collection system improvements are needed that will service developments within the Subarea. These improvements will be financed by developer extensions and latecomers agreements. In cases where the City has plans for a larger main than the size of the required developer extension, the larger main will be constructed by the developer and City will reimburse the developer for the "oversizing."

Proposed Sewer Improvements

SW Everett Subarea
Sewer Mains
Sewer Improvements

Fig. 3.8-8

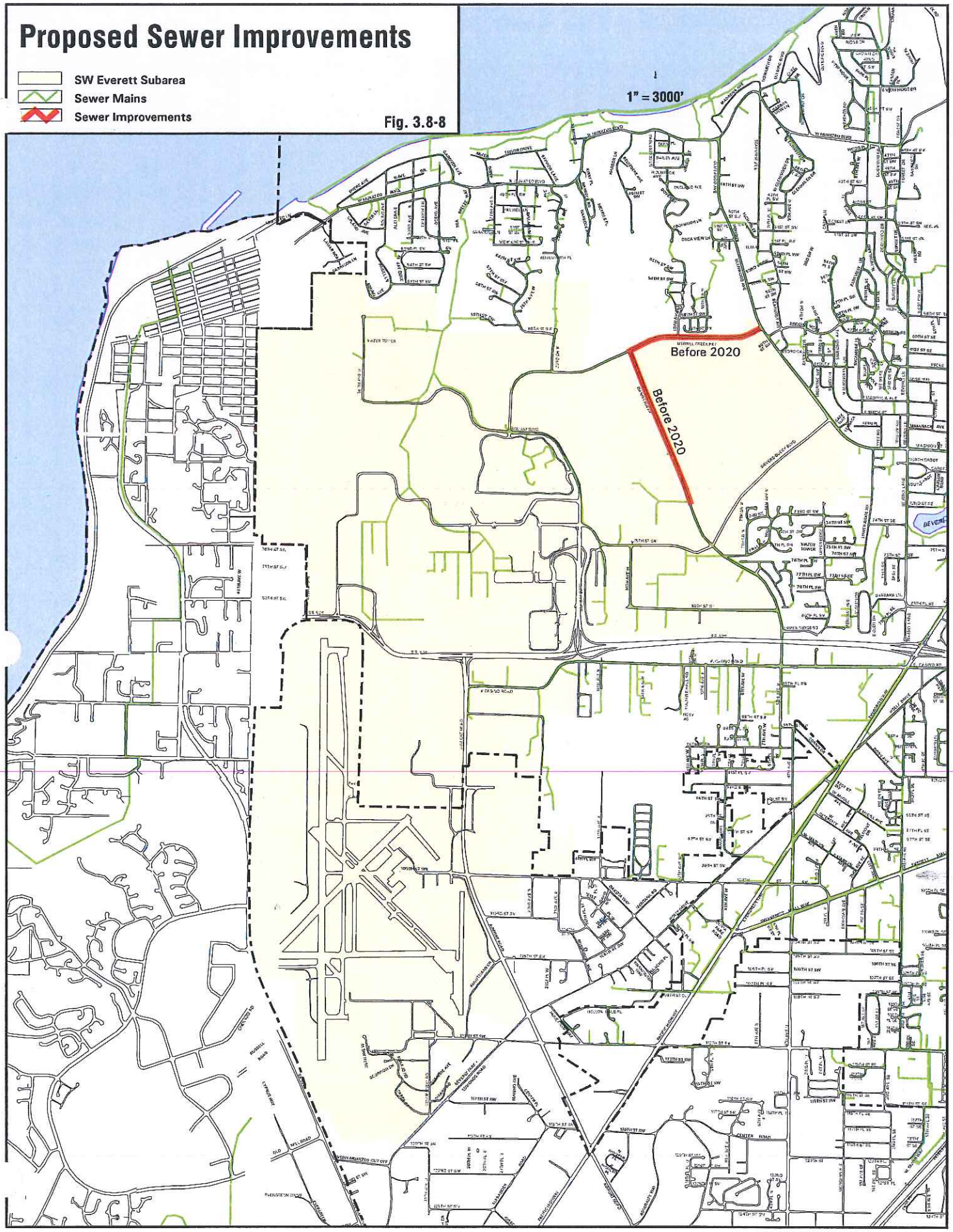


Table 3.8-4 summarizes the improvements needed to service the Subarea, as well as cost, responsibility for financing, and timing of the Improvement.

Table 3.8-4
Sewer System Capital Improvements Needed for the Portion of the SW Everett/Paine Field Subarea Served by the City of Everett

Capital Improvement Needed	Cost	Respons-ibility for Funding	Properties That May Be Required to Fund all or a Portion of the Improvement	Estimated Timing of Improve ment
2,950 Feet on Hardeson Road between Overall Laundry and Merrill Creek Pkwy.	$735,000	City and Developer	Merrill Creek Associates, Associated Sand and Gravel, Overall Laundry	Before 2020
2,100 Feet of Merrill Creek Parkway between Hardeson Road and Glenwood	~~$500,000~~ $525,000	City and Developer	Merrill Creek Associates, Associated Sand and Gravel, and Overall Laundry	Before 2020
450 Feet of Third Avenue	~~Unknown~~ $113,000	City or other		Before 2020
600 Feet of Broadway	~~Unknown~~ $150,000	City or other		Before 2020
~~500 Feet of Merrill Creek Parkway west of Hardeson Road~~	~~Unknown~~	~~City and Developer~~		~~Before Buildout~~
2,200 Feet of Third Avenue	~~Unknown~~ $550,000	City or other		Before Buildout[1]
1,800 Feet of Broadway	~~Unknown~~ $450,000	City or other		Before Buildout[1]
Water Pollution Control Facility Expansion	Unknown	City or other		Circa 2002 ~~2003~~[2]
Lift Station No. 1 Upgrade	Unknown	City or other		Before 2020

[1] Some or all of this project may be included in "before 2020".
[2] Under the current NPDES permit.

3.8.7.4 Impacts of Development

City of Everett

Additional development in Southwest Everett and on Paine Field Airport will generate additional sewage flows. Existing systems have generally been designed to accommodate this development. Sewage generation averaging 1,700 gallons per acre per day can be accommodated in most areas of Southwest Everett, and with moderate improvements listed in Table 3.8-3, the remaining areas along Hardeson Road can be served. Ultimately, some minor system improvements will be necessary outside Southwest Everett, and the WPCF will need to be expanded after the year 2003 to accommodate increased sewer flows from the entire service area of the facility.

Mukilteo Water District

The District has plans to upgrade the Holly Drive Lift Station and is investigating the possibility of installing a force main on 108th St. SW.

Olympus Terrace Water District

Olympus Terrace Water Districts sewage treatment facility has sufficient capacity to accommodate the expected growth on Paine Field Airport, and the Airport has a specific agreement to provide the necessary capacity for up to 500,000 gallons per day. Sewage transmission facilities operated by Olympus Terrace have capacity to accommodate that flow.

3.8.6.4 Thresholds

Capacity of the system is 1,700 gallons per gross acre per day, and 4,000 gallons per gross acre per day of instantaneous peak flow.

Some sites may have capacity in excess of the threshold available to serve potential users. If a proposal would exceed 1,700 gallons per gross acre per day and/or 4,000 gallons per gross acre per day of instantaneous peak flow, additional analysis will be required. The additional analysis may be as simple as calculations completed by the Public Works Department prior to a pre-application meeting on a specific development proposal. The additional analysis must determine how the proposal's sewer demand will affect the sewer system. Projects with no additional major improvements needed and no adverse cumulative impacts on the sewer system are covered by this analysis. Additional SEPA analysis will be required for projects that may require major improvements not identified in this DEIS or that may have adverse cumulative impacts on the sewer system.

This DEIS analysis does not cover the impacts of construction of a new sewer main across Japanese Gulch. Additional analysis is required to review alternative routes for the line which will minimize the impacts of the proposal, or alternative means of providing sewers to that area.

3.8.6.5 Potential Measures to Reduce the Impacts of Development

Mitigation methods to be implemented to reduce the impacts to the City of Everett's sewer system include:

1. All developers must contact the Industrial Pretreatment Division of the Public Works Department to determine if a permit is required prior to application for building permits. All necessary permits must be obtained prior to issuance of building permits.

2. If the future use of the site will result in the potential for accidental spills of chemicals, including oils or fuels, to the city's sanitary sewer, an Accidental Spill Prevention Plan will need to be prepared per the direction of the City of Everett's Industrial Pretreatment Program.

3. Special charges for connection to sewer systems per Ordinance 1171-85 and subsequent revisions is required

4. Sewers may need to be extended to serve sites.

5. Water conservation devices, such as water-saving toilets and water restrictors in showers and sinks, should be used to minimize water use and amount of water entering sanitary sewer system.

6. Businesses could be provided with incentives and disincentives to reduce water use, reuse waste water, and reduce sanitary waste volumes.

7. Individual businesses could provide peaking tanks to delay sewage flows to hours when system flows are normally low.

8. Wet industries could be directed to locate where excess capacity exists.

3.8.8 Solid Waste

3.8.8.1 Existing Conditions

Administration

Solid waste generated in Everett, including Southwest Everett, is managed under the 1990 City of Everett Comprehensive Solid Waste Management Plan. Under this plan Snohomish County administers recycling, transfer, transport and disposal services to Everett residents and businesses. They also administer collection, transfer and disposal of moderate-risk waste within Everett. Transport and disposal of mixed municipal waste is provided through contract with private companies. Collection service is provided by franchised haulers regulated by the Washington Utilities and Transportation Commission (WUTC).

Everett has adopted an amendment to the 1995 plan that may result in some changes to the institutional arrangements associated with the management of solid waste in Everett. In the initial option, the City will attempt to negotiate a solid waste management agreement with Snohomish County that is satisfactory to the City, thereby continuing the services currently provided by the County. Failing development of an agreement, the City may elect to operate its own solid waste management system, providing waste reduction, waste recycling, moderate risk waste management, and transfer and disposal services.

Management of solid waste from its generation to final disposition consists of several distinct elements, including: waste reduction and recycling; waste collection; waste transfer, transport and disposal; moderate-risk waste collection; transport and disposal; management of certain other special wastes; and enforcement of laws regulating the improper handling or disposal of wastes. Data on solid waste generation, recycling, and disposal exists at the citywide and system-wide level but is unavailable for smaller geographic areas such as Southwest Everett and Paine Field Airport. Most of the waste generated in the study area is a byproduct of the industrial and other business processes, together with food waste associated with employee activities.

Solid waste generated at Paine Field Airport is, and will continue to be, managed by Snohomish County's comprehensive solid waste management plan. Snohomish County's Solid Waste Management Division provides coordination of waste collection, transfer, transportation, disposal, recycling and moderate risk waste management.

Waste Reduction and Recycling

Waste reduction and recycling are major components of the City's and County's management plan. Waste reduction generally involves providing education and incentives to both producers and users of products which generate waste as a direct byproduct or in product packaging. Much of this effort must be accomplished on a national scale.

Opportunities and markets for recycling are continuously evaluated by the agencies and franchise haulers in an effort to reduce the amount of waste that must be disposed of in landfills. In some cases, markets exist for recycled waste making it possible to increase revenues from waste materials and contain utility rates. Markets for recycled materials have been highly volatile and evolve as uses for waste products are developed and supplies are generated. It will likely be years before the market for recycled waste stabilizes to any significant degree.

Currently, Everett and Snohomish County provide residential collection of certain recyclables through franchised haulers, promotion of commercial recycling, drop-off and buy-back services, and community outreach and education. Materials commonly recycled include yard waste, newspaper, mixed waste paper, glass, metal cans, corrugated cardboard, aluminum cans, certain plastics, vehicle batteries, tires, and scrap metal. Private companies also respond to the market for certain recycled products such as aluminum, scrap metals, plastics, glass, radiators, paper, waste oil, and tires. Some companies, such as Boeing, have developed sophisticated recycling programs which substantially reduce the waste stream which must be directed to landfills. Everett's Zoning Code requires that receptacles for recycled materials be provided at any new commercial or industrial businesses, as well as multiple family developments, and the

City operates a program for working with existing businesses to increase recycling and reduction of waste.

Collection

Solid waste collection services within Southwest Everett are provided under franchise from the Washington Utilities and Transportation Commission (WUTC) by Rubatino Refuse Removal, Inc. Collection services for Paine Field are provided under franchise by Waste Management, Inc. Solid waste generators receive service on a voluntary basis under fees established by the WUTC. Collection schedules are based on the waste generation characteristics of the individual generator. Most of those who do not have waste collected by one of the franchised service providers bring their waste to a transfer station or drop box.

Transfer, Transport, and Disposal

Collected solid waste is transported to one of the Snohomish County Transfer Stations or Drop Boxes. For Southwest Everett and Paine Field, the waste is taken to the Everett Transfer Station east of I-5 on 36th Street. There it is compacted into containers, trucked to the rail loading area in northeast Everett, and shipped by rail to a landfill in Klickitat County. If the City decides to assume administrative responsibility for solid waste in the City limits, a new, City sponsored, solid waste transfer station facility would be developed.

Special Wastes

Special wastes are those that require special handling, either because of their composition or scale. There are several sub-categories of special waste including: construction debris, moderate risk hazardous waste, wastewater treatment plant biosolids, and septage.

Construction-related waste materials may be recycled or disposed depending on the extent waste generators are willing and able to source separate the waste materials. Currently, site clearing vegetation, wood waste, concrete, asphalt, gypsum, and stone are being recycled by some waste generators. Snohomish County accepts limited quantities of construction debris, while larger volumes and items are taken to King County. This construction debris is shipped to eastern Washington or Oregon for disposal in landfills. Everett's proposed solid waste management plan would create a working group to study problems and needs related to construction debris and the potential for developing a receiving facility. Also proposed are changes to permit procedures to require disclosure of disposal sites, and annual publication of a list of local recycling and receiving facilities.

Everett has adopted the Snohomish County Hazardous Waste Management Plan. The County accepts moderate risk waste materials and disposes of it in accordance with state and federal regulations. The County also conducts moderate risk waste "round-ups" periodically throughout the county. Everett's proposed solid waste management plan amendment provides two options for managing moderate risk waste. These options are continuing with current Snohomish County services or developing its own programs to replace existing County programs serving solid waste generators within the city.

Biosolids are municipal wastewater treatment residues. These residues are managed by each sanitary sewer utility. The City of Everett provides sanitary sewer service to Southwest Everett,

while Olympus Terrace Sewer District provides sewer service to Paine Field Airport. Everett manages biosolids through agricultural and forestry applications. Olympus Terrace Sewer District manages biosolids by transporting it on a regular schedule to Moxie, Washington where it is composted.

3.8.8.2 Future Improvements

Snohomish County's Solid Waste Management Plan calls for the development of a new recycling and transfer facility to serve west central Snohomish County, replacing the existing Everett Transfer Station. A site selection process was initiated and a Draft Environmental Impact Statement on three alternatives was developed. To date, the County has not issued a Final EIS nor selected a specific site for the facility. As noted above, if the City decides to manage solid waste generated within its boundaries, it is likely that a solid waste transfer facility will need to be sited within the City limits to serve the community.

3.8.8.3 Impacts of Development

As Southwest Everett and Paine Field continue to develop with industrial, office, warehouse and commercial activities, additional solid waste will be generated by new and expanding businesses. Solid waste generated in Southwest Everett will include land clearing and construction debris, waste materials from resources or packaging used in industrial processes, offices, and warehouse operations, and waste associated with employees, such as food service waste. Biosolids will also be generated as part of industrial processes and use of sanitary sewers by employees.

Solid waste reduction and recycling will continue to be pursued in southwest Everett, but specific estimates are not possible because of the individual nature of the businesses and their responses to the opportunities to reduce or recycle waste. However, greater opportunities exist for waste reduction and recycling in new industrial areas where recycling receptacles are provided and new equipment and processes are initiated. Modern industrial, warehouse and office activities are generally responsive to the economics waste reduction and recycling.

Everett is currently recycling approximately 26% of its solid waste stream. It's solid waste management plan amendment has a target rate of 35% recycling by the year 2015. Specific projections of solid waste generation for Southwest Everett and Paine Field are not possible because of the uncertainty about what companies and industrial processes will occur in the planning area. However, based on *1992 Washington State Waste Characterization Study* conducted by Washington State Department of Ecology (DOE), a general forecast of solid waste disposal for the year 2012 is contained in Table 3.8-5.

Table 3.8-5
Solid Waste Disposal
Pounds/Day/Employee Total Pounds per Day

1995 VS Alts.	MFG.	Retail	Govt./ED WCTU/Fires	TOTAL
1995 EMP	27,694	421	3,224	31,339
Lbs/Day/Emp	6.74	3.61	3.61	6.38*
Total Disposed Waste	186,700	1,500	11,600	199,800
Total Waste Gen**				**307,300**
2012 Existing Plans	36,014	1,995	12,491	50,500
Lbs/Day/Emp	6.74	3.61	3.61	5.84*
Total Disposed Waste	242,700	7,200	45,100	295,000
Total Waste Gen***				**453,700**
2012 Slower Growth	33,839	1,690	8,756	45,029
Lbs/Day/Emp	6.74	3.61	3.61	5.90*
Total Disposed Waste	228,100	6,100	31,600	265,800
Total Waste Gen***				**408,800**
2012 Faster Growth	38,066	2,950	14,435	55,726
Lbs/Day/Emp	6.74	3.61	3.61	5.73*
Total Disposed Waste	256,600	10,700	52,100	319,400
Total Waste Gen***				**491,200**

* Total Lbs/Day/Employee of disposed solid waste is a **derived** rate.
** Total waste generated including 26.7% recycled materials in 1995.
*** Total waste generated including assumed 35% recycled materials in year 2012.

Table 3.8-3 waste disposal forecasts do not include the 25 to 35 percent of the waste stream that should be recycled. Forecasts are based on the assumption that the rate of solid waste disposal per employee remains constant over the study period. It should be noted that the DOE study indicates that the aerospace industry generates only about 5 pounds of waste for disposal per employee. Therefore, because Boeing is a major employer in the area, the projections may overstate the actual amount of waste generated in the area.

The amount of waste generated in the study area requiring disposal is anticipated in the City's current proposed amendment to its solid waste management plan. Southwest Everett and Paine Field will generate between 28% and 33% of the disposed waste in the City of Everett Planning Area, depending on the alternative selected, down from the 45% currently generated in the study area. The amount of solid waste generated will increase as development increases. Additional costs will naturally be incurred for collection, transfer, transport and disposal of the increased solid waste generation. These costs are borne by the generators through the rate structure.

Recycling will increase in proportion to the growth in businesses and employment. Larger employers may be better able to undertake more effective waste reduction and recycling programs, especially if the market cost/income of waste reduction and recycling provides savings in terms of solid waste utility rates.

Moderate risk waste generation will increase, probably in relation to employment growth. Snohomish County or the City will have to manage that waste stream in conformance with state and federal regulations, charging appropriate rates to cover costs.

Biosolids will be generated in proportion to employment levels, plus any biosolids associated with industrial processes. Industrial processes and some commercial activities are required to provide pretreatment of sanitary sewage in accordance with federal, state and local regulations. (See Section 3.8.7)

3.8.8.4 Potential Measures To Reduce the Impacts of Development

None.