

# Public Infrastructure

## Water

*\* Please note that while this information is up-to-date to the greatest extent possible, much of the information is from 1999. More current information will be prepared for future plan insertion when it becomes available.*

Residents of the Suquamish Village obtain their water from both public and private wells. There are approximately 1,244 public water connections served by the Public Utilities District (PUD #1) in the Suquamish area (see Figure 7). The system is approved for 2,749 connections, leaving approximately 1,505 available connections.

There are approximately 590 vacant lots within the boundary. Once the requirements for nonconforming lots are in place, the maximum number of buildable lots is reduced to approximately 510, a reduction of 80 building sites. The number of newly created lots that could be produced through the subdivision provisions allowed within the Suquamish Village is approximately 15. This would produce a total of approximately 525 legal buildable lots, which leaves adequate water connections available to serve the entire Suquamish Rural Village. Any needed capacity expansion is to be done at the developer's expense.

The PUD water system is chlorinated, but no fluoride is added to the system. The PUD samples seven different pressure zones once a month to test the water for acceptability. In case of emergency, there are seven separate reservoir tanks that hold a total of approximately 805,000 gallons of water.

Suquamish is located in the fire protection district boundaries of North Kitsap Fire and Rescue. There is sufficient fire flow and hydrants to serve the Suquamish Village. Any new development will have to meet existing fire flow requirements.

The Suquamish Tribe possesses federally reserved water rights, presently not quantified. Various agencies will work cooperatively with the Tribe on a government-to-government level to ensure that the Tribe's water rights are not infringed.

Any further information or details regarding the water system in Suquamish can be located in the Kitsap Public Utility District Comprehensive Plan.

## Sewer

Most of the Suquamish Village is currently served by sanitary sewer service (see Figure 8). In 1998 Kitsap County Public Works completed the expansion of the Suquamish Wastewater Treatment Facility to accommodate existing development and growth in the area.

As noted by Resolution 090-1998, based on Growth Management Act directives, the County is not permitting any sewer main extensions in areas outside of Urban Growth Areas, except for areas of more intensive rural development (ie, Rural Villages). Upon adoption of the Suquamish Rural Village Sub-Area Plan, the County will allow main extensions and connections, as outlined in Resolution 090-1998, to any area within the sewer service boundary. This boundary is a predetermined sewer service area that was agreed upon between the County and the Tribe. Although the Suquamish Rural Village boundary extends beyond this agreed upon boundary, sewer service can only be provided in that predetermined area. Any further extension of the service area boundary to extend sewer service into the remainder of the Suquamish Village requires County and Tribal consent, per the Interlocal Agreement dated September 11, 1995. The only exception to this is found in section 3.4 of the agreement which establishes a special reserve of 50,000 gallons per day (gpd) average peak monthly flow for the exclusive use of the Tribe, its agencies, members and permittees, outside the sewer service area.

The Suquamish Wastewater Treatment Plant, is designed to treat 400,000 gallons of sewage per day. During 1998, the average flow treated was approximately 190,500 gpd. Subtracting the Tribe's allocated flow from outside the service boundary, and their anticipated flow inside the boundary, as well as the current average daily flow to the plant, results in approximately 158,750 gpd of remaining capacity. With a design flow of 250 gpd per parcel, it is estimated that an equivalent of 635 residences can still be served in the treatment plant as of October 2005.

There are approximately 590 vacant lots within the boundary. Once the requirements for nonconforming lots are in place, the maximum number of buildable lots is reduced to approximately 510. The number of newly created lots that could be produced through the subdivision provisions allowed within the Suquamish Village is approximately 15. This would produce a total of approximately 525 legal buildable lots, which leaves adequate sewer connections and capacity available to serve the entire Suquamish Rural Village.

Any proposed on-site sewage disposal must receive approval from the County Health Department upon meeting specific requirements.

## **Stormwater**

Suquamish is located on the east slope of a hill that reaches approximately 300 feet above Puget Sound. The hillside was originally covered with forests and a variety of vegetation typically found in the Puget Sound lowlands. The limited amount of surface water runoff generated in the forested environment was carried to small streams by many shallow gullies and larger ravines. The two main streams still in existence in the Suquamish area are Cowling Creek and

Grovers Creek. Grovers Creek is a shallow gradient stream which flows south from the headwaters near Hansville road to its discharge at the north end of Miller Bay. This stream has many tributaries that contribute surface and ground water runoff from the hills west and to the east of the main stem. Cowling Creek is a steeper gradient stream which flows northeast from the headwaters at Lincoln Road to the discharge at the west side of Miller Bay. This stream has many small tributaries and roadside ditches that contribute surface water, stormwater and ground water runoff from the hills and areas around Miller Bay.

The natural runoff condition has been severely altered by removal of the forest canopy and construction of impervious surfaces associated with roads, businesses and residences. To allow for development of the parcel layer that was created in the early 1900s, natural drainage paths have been channeled, re-routed or eliminated and wetland areas have been drained and filled. The lack of a coordinated infrastructure plan and the subsequent development of the platted land have resulted in nuisance flooding of property and the erosion of drainage ways and steep slopes.

Deforestation and urbanization have also interrupted the natural filtration and infiltration processes, which serve to cleanse runoff in the forested condition. More efficient collection of higher volumes of runoff and their subsequent discharge to streams have altered stream flow regimes by increasing the frequency and duration of peak flows and reducing the quality of water delivered to the streams.

Localized flooding and other stormwater management problems have been frequently observed in the Suquamish Village area, particularly within or downstream of developed areas; thus raising concern over the need to improve local water quality and stormwater facilities. Future development in the basin will increase runoff, magnifying the existing drainage problems, and potentially create new problems.

A Suquamish Regional Stormwater Improvement Project was performed for the Kitsap County Surface Water Management Division in 1999, in order to determine what projects may be needed within the Suquamish area to prevent flooding and other stormwater management problems. Additionally, part of the project was to assess what alternatives might be available to address those problems, and to recommend capital projects and other improvements within the Suquamish area.

In total, 55 separate flooding and drainage problems were identified. A Capital Improvement Plan was developed and prioritized and a total of 12 preferred projects were selected for implementation over the next 5 to 10 years, addressing approximately 75 percent of the flooding and drainage problems that had been identified.

Recently completed improvements as a result of this project include a new storm drain and resurfacing of Angeline Ave. Kitsap County is planning additional improvements consistent with the Final Capital Improvement Plan.

## **Goals, Polices and Recommendations**

The following goals and policies target achieving certain components or elements of community vision and provide for specific, often adoptable or legislative, guidance to identify or accomplish actionable items (eg, projects, ordinance changes). The goals and policies should be considered by the community as overarching themes and activities in community development.

### **Goals**

- GOAL SW-1** To support development of a comprehensive approach to stormwater management that will identify, prioritize, and implement projects to control flows, reduce flooding, and enhance water quality by:
- Preserving natural drainage channels, wetlands, and riparian corridors.
  - Identifying opportunities and encouraging coordination between Road, Wastewater, Stormwater and private land development projects.
  - Providing information and making recommendations that assist the County in developing policy and implementing programs.
  - Providing community input into the County's mapping and data gathering efforts to better identify and prioritize potential community improvements.
- GOAL SW-2** Create a stormwater management system that is based on the utilization of natural drainage ways to the maximum extent practicable.
- GOAL SW-3** Augment the natural system with constructed facilities that complement the natural system by taking advantage of opportunities for filtration, infiltration, and flow control where feasible and reasonable.
- GOAL SW-4** Develop the system in a manner that uses all known and reasonable technology to ensure that flow rates are controlled and runoff quality is enhanced with the goal of ensuring that stormwater discharges meet applicable standards.

## **Policies**

- POLICY SW-1** Preserve the natural drainage system to the maximum extent possible and reasonable.
- POLICY SW-2** Identify the remaining areas of the natural drainage system in the County's Geographical Information System (GIS) as critical drainage areas and restrict land development as necessary to ensure that the natural systems capacity for flow control and water quality enhancement are not compromised.
- POLICY SW-3** Retain natural vegetation by limiting the amount of clearing and grading on individual lots to that necessary for construction of proposed improvements.
- POLICY SW-4** Limit the amount of impervious surface on individual lots to reduce future increases in stormwater runoff.
- POLICY SW-5** Continue to review proposed land development projects to ensure that the projects are coordinated with on-going regional stormwater system planning and development.
- POLICY SW-6** Continue to ensure that new development meet the requirements of applicable stormwater regulations.
- POLICY SW-7** Use structural and non-structural methods to provide for increased treatment of runoff from urbanized areas.
- POLICY SW-8** Schedule the construction of capital projects identified and prioritized in the regional stormwater study currently underway in Suquamish over a ten-year period.

## **Recommendations**

The following recommendations are not binding, but are appropriate targets for further policy analysis by the community and should be implemented when possible.

- REC SW-1** Adopt regulations requiring no net loss of remaining natural drainage ways and wetlands.
- REC SW-2** Specify a minimum lot size that could be developed.

- REC SW-3** Limit amount of clearing and grading on individual lots.
- REC SW-4** Adopt permanent regulations requiring drainage review for each building permit application.
- REC SW-5** Continue County planning, designing and constructing of stormwater conveyance and runoff treatment capital projects.
- REC SW-6** Continue Health District monitoring of water quality in streams and marine waters and reporting of results to the Community Council.
- REC SW-7** Continue Suquamish community involvement to provide input to the County on stormwater issues. The community could assist the County in the identification and prioritization of capital projects and serve as a sounding board for proposed stormwater regulations.