

**CITY OF ANACORTES
WATER TREATMENT
PLANT PRESENTS:**

What is the city doing to protect our water supply from flooding?

- ♦ Trained, experienced staff at the Water Treatment Plant are on duty 24 hours a day.
- ♦ Flood Protection Project 1985-1986 (including pumps, reinforced dike toe, and ring dike).
- ♦ Recent improvements to electrical supply system.
- ♦ Installed an emergency 750kV generator in 1996.
- ♦ Three reservoirs storing seven million gallons for the City of Anacortes.
- ♦ On-site storage of flood fighting supplies including a sandbagging machine.
- ♦ Cooperation and communication with Skagit County, Dike Districts and the U.S. Navy.
- ♦ PC-based Emergency Response Plan.
- ♦ Community education and awareness.



CITY OF ANACORTES

Water Treatment Plant
14489 Riverbend Rd
Mount Vernon, WA 98273
Phone: 360-428-1598

FLOOD ON THE SKAGIT



Flood on the Skagit Impact on Fidalgo and Whidbey Islands

Originating in Canada and flowing 162 miles to Skagit Bay, the Skagit is the largest river basin draining into Puget Sound. It covers approximately 3,100 square miles and 1.98 million acres.

The flood plain includes the entire floor of the Skagit River Valley, deltas of the Samish and Skagit Rivers, and the reclaimed tidelands of adjoining Skagit, Samish, and Stillaguamish basins. The flood plain comprises 90,000 acres, including 68,000 acres of farmland downstream and west of Sedro Woolley.

The potential for flood damage in the Skagit basin is greatest in the flood plain, which is primarily agricultural, but also includes a large portion of the county's urban and rural population, manufacturing plants, shopping centers, major transportation routes, and the *Anacortes Water Treatment Plant* which supplies water to Fidalgo Island, Whidbey Island, the town of LaConner, and both refineries on March's Point.

Of course the Skagit floods, but not that often, right?

As of May 5th, 2004, the Skagit River has reached flood stage 66 times since 1900, an average of 2 floods a year. There have been 88 major dike failures since 1894, including five in 1990.

Greater floods have and probably will occur. If all the flood-producing conditions should take place at the same time, the unlikely would become probable!

What kind of flooding has the treatment plant experienced?

The Anacortes Water Treatment Plant was placed into service in February 1970. The bank of the Skagit river at the Water Treatment Plant is at 24 feet. Any water above this level is regarded as a flood. On top of this bank is a dike providing a combined elevation of 38 feet.

December 4, 1975, Peak elevation 34.1 feet. November 30 a cold front moved into Skagit causing a moderate amount of snow accumulation. By December 1, a new front moved in which caused warmer air and raised the freezing level higher and rainfall to occur at lower elevations. Melting snow and rain combined to raise river levels quickly above flood stage. Prior to this event, minor flooding between 1972 and 1974 had occurred and the highest event was 27.5 feet, which is 3.5 feet above flood stage on our gauge.

December 19, 1979, Peak elevation 32 feet. The month of December served up a constant dish of rain, warm temperatures and wind. All of which led to major flooding. At Mount Vernon, Skagit County engineers were concerned that a huge log jam on the Burlington Northern bridge between Mount Vernon and Burlington would destroy that bridge.

December 27, 1980, Peak elevation 31.6 feet. Early on the morning of December 26, the river began rising because of unseasonably warm temperatures and steady, moderate rainfalls. Air temperatures for December 25 saw a high of 61°F and a low of 50°F!

December 5, 1989, peak elevation 30.0 feet. Warm winds and rain caused the Skagit River to start flooding by December 3, reaching its peak elevation on December 5. High water caused the revetment in Mount Vernon to be closed and heavy rains caused mudslides on Chuckanut Drive.

November 11, 1990, peak elevation 34.8 feet. Heavy rains and a high tide helped push the Skagit River well above the highest flood levels experienced at the plant. Fir Island experienced a 250 foot section of dike failure, flooding most of the 8,000 acre delta with up to eight feet of water. This was the worst flooding to hit Skagit County in 40 years.

November 24-25, 1990, peak elevation 35 feet. Heavy rains again, coupled with melting snow pushed the river back up. Hundreds of county residents remained homeless from the last flooding on November 11, now about 1,600 more people are evacuated countrywide, including a number of people from the Riverbend Road (Water Treatment Plant) area! All but a skeleton crew were kept at the plant because the road conditions were deteriorating quickly - all vehicle traffic was prohibited! All staff and other essential personnel were required to walk in and out 1.5 miles from Blade Chevrolet!

Levees along Riverbend Road and elsewhere along the river, were saturated. North of the plant about one-half mile the toe of the dike was failing and a major effort was made to preserve it. Just south of the plant, a large crack approximately six feet appeared in the dike. City and military resources were expended in a successful attempt to prevent a failure.

November 30, 1995, peak elevation 35 feet. November saw rain on 25 of its 30 days with a monthly total of 10.8 inches (213 percent of normal). The Skagit River responded by being above flood stage for 11 days. The average river elevation for November was 155 percent of normal. The railroad bridge that was threatened by flooding in 1979 was closed temporarily due to the accumulated log jam and erosion at the base of the bridge's concrete supports. At the water treatment plant, the flood waters snapped off a three-pile dolphin and eroded portions of a rockcrib. These structures protect our intake station from logs and debris.

October 16-18, 2003 Peak elevation 27.5'. Warm winds and rain caused the Skagit River to begin flooding by October 17th reaching peak elevations on October 18. Heavy rains in the mountains caused mudslides in the Cascade river basin and displaced numerous residents in the upriver communities.

October 20-24, 2003 Peak elevation 34.1'. Warm winds, heavy rains and melting snow caused the river to flood again. Hundreds of county residents remain homeless from the flooding on October 16-18, numerous residents are evacuated countywide including the Riverbend Road (water treatment plant) area. Plant staff and military personnel from N.A.S. Whidbey work 28 hours straight to construct a flood protection wall around the plant. Record turbidities are recorded at the plant, an astounding 5, 475 NTU!! Numerous mudslides are experienced in the up river area as well as re-channelization of the river in the Rockport region. The Town of Concrete recorded a river elevation of 42'.

What could happen if the water treatment plant was flooded?

The Anacortes Water Treatment Plant is located in the flood plain of the Skagit River in the riverbend area west of Mount Vernon where the Skagit surrounds the plant and adjoining farmland on three sides.

During a flood the Anacortes Water Treatment Plant could be heavily damaged, costing millions of dollars and many weeks to return to full service. This means that our customers may be without safe drinking water during this time.