



Snohomish County Chatham Acres Acquisition

Full Mitigation Best Practice Story

Snohomish County, Washington

Chatham Acres, WA - A flood in December 1999 caused major damage to Chatham Acres, a small community located on the North Fork Stillaguamish River. In a process known as avulsion, the river abandoned its existing path and cut an entirely new 200-foot wide, 800-foot long channel through Chatham Acres before rejoining its original course.



As the river's path changed its course, one home was washed away. Fortunately the house was unoccupied at the time and no one was hurt. Ten other residences in the area, however, were immediately threatened by the avulsion. Something needed to be done to prevent additional damages or destruction of the homes by flooding or further migration of the river.

Most of the homes in Chatham Acres had been constructed in the 1930s, before the implementation of Flood Insurance Rate Maps (FIRMs). Unknowingly, the homes were built within the Stillaguamish River's floodway. Over the decades the river had been steadily eroding away the bank upstream, moving closer to Chatham Acres and increasing the risk until the 1999 flood caused the catastrophic avulsion.

In response to the immediate problem, the Chatham Acres Homeowner's Association (CAHA) applied for and received approval to construct a section of rip-rap along the affected shore. Rip-rap is a method of armoring a river bank to prevent erosion by laying a blanket of large angular rock on it. Properly functioning rip-rap resists hydraulic pressure, dissipating the energy of flowing water or waves.

It became clear early in the project that the rip-rap would suffice only as a temporary solution. Soon after it was in place, three more flood events caused the loss of an additional 50 feet of riverbank. The river had also begun to erode the shoreline behind the rip-rap.

In addition to the ongoing erosion at the site of the 1999 event, an even larger threat was developing 650 feet upstream from the rip-rap location.

The Stillaguamish River appeared to be changing course and would likely enter Placid Creek, a parallel stream to the Stillaguamish, which would lead to even greater and more damaging avulsion throughout the area.

Snohomish County officials and the Chatham Acres residents began looking into other courses of action to resolve the problem. A series of public meetings was held to discuss options, and a number of ideas were heard, including more armoring of the riverbank with rock, elevating six of the most flood-prone homes, and rebuilding the Placid Creek "plug" to reduce the threat of avulsion through Placid Creek. In the end, the residents requested and the county agreed to apply for grant assistance to acquire the 10 threatened properties.

In June 2002, an application was filed for the Federal Emergency Management Agency's (FEMA) Hazard Mitigation Grant Program (HMGP) requesting funding for the purchase and demolition of the Chatham Acres homes. The proposed removal of the residences and restoration of the area to its natural state offered life sustaining, ecological, and financial benefits.

The most important advantage to the acquisition approach was safeguarding the lives and property of those in the endangered area. With the residences gone, not only would the immediate threat be resolved, but any potential problems arising from future flooding and avulsion would be removed as well.

The County agreed as part of accepting the grant to never develop anything on the property and put restrictive easements on the property title to ensure this. Another major reason the acquisition strategy was selected was due to its favorable effect on the area's ecology. The 30-acre area of Chatham Acres sits on the left bank of the North Fork Stillaguamish, and it is considered a core spawning ground of the endangered Chinook salmon.

The river is also a migration route for several other species of fish, including trout, Coho salmon, and steelhead. Many other forms of wildlife make their home in the vicinity, such as the rare bald eagle. Removing the homes and restoring the area

increased the wild habitat available for these animals.

When beginning to plan the project, an assessment of possible losses was calculated to determine whether or not it was financially feasible. The total loss, if nothing were done to resolve the problem and future avulsion continued to occur, was estimated to include the destruction of most if not all of the homes.

It was determined by examining previous damages that another overtopping of the river and Placid Creek would almost certainly occur again, virtually guaranteeing the future destruction of some of the properties.

The HMGP grant provided the necessary funding to acquire the threatened properties, and by 2005 the land was acquired and the homes removed. The entire purchase amounted to \$1,899,000, with more than \$1,400,000 covered by the HMGP grant. The overall lifetime savings accrued by avoiding the flood damages that would have occurred had the area not been purchased was estimated to be nearly \$4 million.

During the course of the project, two other positive developments occurred. While assessing the properties for the demolitions, the contractor determined that much of the house material could be recycled for future use. When calculating the value of the reclaimed material, in comparison with the originally quoted figure the demolitions would cost, a significant savings resulted. Additionally, two of the homes designated as historic were saved and relocated prior to the scheduled destruction.

Now that Chatham Acres has been restored to its natural state, the only County maintenance takes the form of educational signage used to inform the public of the area, its history and its habitat. Thanks to the rules governing these property acquisitions, Chatham Acres will never be developed again. It is only a matter of time before the area's natural processes completely restore themselves.

Activity/Project Location

Geographical Area: **Single County in a State**

FEMA Region: **Region X**

State: **Washington**

County: **Snohomish County**

City/Community: **Darrington**

Key Activity/Project Information

Sector: **Public**

Hazard Type: **Flooding**

Activity/Project Type: **Acquisition/Buyouts**

Activity/Project Start Date: **06/2002**

Activity/Project End Date: **12/2005**

Funding Source: **Hazard Mitigation Grant Program (HMGP)**

Application/Project Number: **9999**

Activity/Project Economic Analysis

Cost: **\$1,899,000.00 (Actual)**

Non FEMA Cost:

Activity/Project Disaster Information

Mitigation Resulted From Federal Disaster? **Unknown**

Value Tested By Disaster? **Unknown**

Repetitive Loss Property? **Unknown**

Reference URLs

Reference URL 1: <http://www.fema.gov/government/grant/hmgp/index.shtm>

Reference URL 2: <http://www.floodsmart.gov>

Main Points

- A flood in December 1999 caused major damage to Chatham Acres, a small community located on the North Fork Stillaguamish River.
- One house was washed away as a result of the erosion and ten other residences in the area were immediately threatened by the avulsion.
- Most of the homes in Chatham Acres had been constructed in the 1930s, before the implementation of Flood Insurance Rate Maps (FIRMs). Thus, unknowingly, the homes were built within the Stillaguamish River's floodway.
- In response to the immediate problem, the Chatham Acres Homeowner's Association (CAHA) applied for and received approval to construct a section of rip-rap along the affected shore.
- However, it became clear early on that the rip-rap would not suffice alone.
- In June 2002, an application was filed for the Federal Emergency Management Agency's (FEMA) Hazard Mitigation Grant Program (HMGP) requesting funding for the purchase and demolition of the Chatham Acres homes.
- Thanks to the rules governing property acquisitions, Chatham Acres will never be developed again.



A Chatham Acres Home



Open land with grass, trees, and plants.



North Fork Stillaguamish River