

# Tributary 0057 Sediment Study & Channel Relocation Project

## Background

The Tributary 0057 Sediment Study was identified in the 5-year Surface Water CIP program of the adopted 2008 Surface Water Management Plan (Resolution 08-161). The adopted CIP plan reserves \$750,000 to complete the initial 0057 sediment study and design / construct capital improvement projects recommended in the study (\$250,000 in 2009-10; \$500,000 in 2011-12).

In April 2009, Gray & Osborne Inc. was retained by the City to study the flooding and sediment issues associated with Tributary 0057 (Budget: \$191,133). The Tributary 0057 Drainage Basin is generally bounded by 72nd Avenue NE to the west, NE 148th Street to the south, 83rd Avenue NE to the east, and the Sammamish River to the north. The Tributary 0057 Sediment Study was initiated because of difficulties in maintaining the existing sediment vault in NE 170th Street and the potential flooding impacts that result when sediment overloads the vault, most recently during the December 2007 Storm Event. The focus of the study was to investigate the sediment problems in the drainage basin, develop capital improvement project alternatives to properly manage the sediment load, and recommend a preferred alternative for implementation.

On June 21st, 2010, City Council approved the Final Tributary 0057 Sediment Study report recommending Alternative 10 for implementation and authorized the City Manager to complete the final plans, specifications, and estimate (PS&E) and obtain required easements.

Alternative 10 consisted of removing the existing sediment vault in NE 170th Street (along with the existing pipe running north from the vault) and constructing a combined 60 linear feet of box culvert across NE 170th Street (8' x 8') and 200 linear feet of open channel (11 feet wide) lined with ecology blocks through private property north to Tract C of Wildcliffe Shores Condominiums, where a natural sediment trap would be constructed. The estimated cost to design and construct Alternative 10 (from pre-design report with built-in 30% contingency) was \$558,000. When combined with the 2009/2010 preliminary design budget of \$191,100, the overall project budget would be \$749,100.

In the fall of 2010, City Staff met with property owners north of NE 170th Street to discuss the recommended Alternative 10. Tributary 0057 is classified as a Type 2 Stream, which requires 100-foot stream buffers. Given this information, property owners were reluctant to allow the open channel concept on their property because it would establish 100-foot stream buffers that would severely limit the use of their properties. For this reason, City Staff is proposing a revised alternative that will keep the stream underground in a box culvert under NE 170th Street and the private properties, a total length of 260 feet. The revised alternative would reduce the minimum setback requirement to 15 feet from the new drainage easement and lessen project impacts to the private property owners however it will increase the estimated cost to design and construct from \$558,000 to \$635,800. This increase is due to several factors listed below:

- The design and construction costs to install a box culvert over the entire project length is more expensive than the open channel concept (Alternative 10);
- A portion of the design budget (\$36,750) was scheduled to be spent in the 2009/2010 budget cycle but was never expended.

## **Schedule**

On October 26th, 2009, City Staff and Gray & Osborne, Inc. presented the initial field assessment of the Tributary 0057 drainage basin to City Council, which included locations of the major sedimentation sources, deposition areas, and stream channel conditions.

On November 5th, 2009, City Staff and Gray & Osborne, Inc. hosted the first of two open house meetings to discuss initial field observations with the public. Citizens were encouraged to provide input and share local knowledge of this stream and drainage basin.

On April 26th, 2010, City Staff and Gray & Osborne, Inc. presented the draft sediment study report to City Council. In the draft report, ten potential project areas in the drainage basin where sediment could be managed were identified. Four potential project areas were further evaluated as capital improvement project alternatives, from which one recommended alternative was determined.

On May 11th, 2010, City Staff and Gray & Osborne, Inc. held the second of two open house meetings to receive public comment on the Draft Tributary 0057 Sediment Report and recommended alternative.

On June 21st, 2010, City Council approved the Final Tributary 0057 Sediment Study report recommending Alternative 10 for implementation and authorized the City Manager to complete the final plans, specifications, and estimate (PS&E) and obtain required easements.

In the fall of 2010, City Staff met with property owners north of NE 170th Street to discuss the recommended Alternative 10.

The design was completed in 2011. Bid documents will be completed by March 2012. Construction is scheduled for the Summer of 2012. The project construction is estimated to take 6 weeks to complete.

## **Project Manager**

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## **Project Documents Attached**

- Tributary 0057 Sediment Report
- City Council and Open House Presentation - May 2010