



CITY OF KIRKLAND

Department of Public Works

123 Fifth Avenue, Kirkland, WA 98033 425.587.3800

www.kirklandwa.gov

MEMORANDUM

To: Kurt Triplett, City Manager

From: Noel Hupprich, P.E., Senior Project Engineer
Ray Steiger, P.E., Public Works Director

Date: July 22, 2011

Subject: TOTEM LAKE FLOOD CONTROL MEASURES -- FUNDING REQUEST

RECOMMENDATION:

It is recommended that City Council authorize the use of \$218,000 from the Surface Water Construction Reserve to complete maintenance work on the conveyance system for the Totem Lake Flood Control Measures. Revisions to this project will be included in the 2011-16 CIP Update process. Council is being asked to approve additional funding now since expenditures will occur before the update to the CIP is adopted.

BACKGROUND DISCUSSION:

At their regular meeting on July 19, 2011, City Council received an update on the Totem Lake Flood Control Measures project (Attachment A). The update described work completed to-date by staff and the City's design consultant, CH2MHill of Bellevue, WA, as part of the Capital Improvement Project (CSD-0059). The update provided current findings and specific maintenance activities that were recommended to be completed this year that will alleviate seasonal flooding in the area. Those recommendations include removal of sediment and invasive vegetation along the Juanita Creek drainage channel in Washington State Department of Transportation (WSDOT) right-of-way, and the removal of an active beaver dam further downstream.

At the time the City Council update was prepared, permitting and details of the maintenance work were being finalized. Staff has secured permitting for sediment and invasive vegetation removal through an expedited Hydraulic Project Approval (HPA) from Washington Department of Fish and Wildlife (WDFW). In addition, the HPA allows for sediment removal in a settling basin located in the Totem Lake Mall parking lot upstream of the WSDOT right-of-way drainage channel. This additional work was identified during the permitting process and is recommended to be completed this year as well (Attachment B).

The criteria under the City's programmatic permit, which governs normal operations and maintenance activities, restricts removal of beaver dams that have been active *for more than one year*. After recent review by WDFW and City Staff, this appears to be the case for this dam. Staff is continuing to work to resolve this issue expeditiously, and once permitting is secured, City Maintenance staff will complete the downstream dam removal.

The work can be completed this summer due to extremely cooperative permitting process by the WDFW, access granted by the WSDOT, and the availability and agreement by the King County "Rivers Team" to perform the work under an existing interlocal with the City.

Funding for the Project comes from the King County Flood Control Zone District's Sub-Regional Opportunity Fund. The total Project budget is \$117,000 in 2011 as identified in the 2011-2016 CIP (Table 1). Based on the work done by CH2MHill earlier this year in identifying the scope of work and estimates to complete the improvements, staff has updated the costs for the project, and pending Council approval later this fall, the revised CIP includes an additional \$218,000 in the 2011 budget from surface water funds and \$168,000 in 2012 from the annual King County Flood Control Zone District's Sub-Regional Opportunity Fund resulting in a total project budget of \$503,000.

The amount estimated to complete the planned work in 2011 exceeds the 2011 budget by \$218,000. Staff request Council authorization to use \$218,000 from the Surface Water Construction Reserve to fully fund the planned work this year. The table below shows a breakdown of the budget and additional funding needed to complete work planned for 2011.

Table 1. Current and requested funding for SD-0059

Current CIP			
2011	2012	Total	Funding Source
117,000	-	117,000	King County Flood Control
Revised CIP			
2011	2012	Total	Funding Source
117,000	168,000	285,000	King County Flood Control
218,000	-	218,000	Surface Wtr. Construction Rsv.
335,000	168,000	503,000	

With City Council approval, the County services contract will be finalized and work will begin mid August. Prior to construction, the City's website will be updated with schedule information, project signs will be placed to identify the work to be done, and information regarding the Project will be included in the upcoming Totem Lake newsletter update. With Council concurrence and based on the community's interest in the ongoing Totem Lake revitalization process, a "ground breaking" ceremony is anticipated to be done immediately prior to actual construction. The work is anticipated to be completed by the end of September 2011. Design work and monitoring for future Totem Lake drainage improvements will continue after construction and Staff will include subsequent improvements in the upcoming CIP update process.

Attachments: (3)



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MEMORANDUM

To: Kurt Triplett, City Manager

From: Ray Steiger, P.E., Public Works Director

Date: July 7, 2011

Subject: TOTEM LAKE FLOOD CONTROL MEASURES UPDATE

RECOMMENDATION:

It is recommended that City Council receive this update of the ongoing Totem Lake Boulevard Flood Control Measures Project – CNM 0059.

BACKGROUND DISCUSSION:

The Totem Lake area has experienced a number of flood events during the fall and winter months over the past few years. Development in the basin, natural erosion, and surface water runoff, combined with the growth of vegetation, accumulation of sediment, and other factors along the watercourse downstream of Totem Lake are restricting its natural flow (Attachment A). The City has been required to close roads in the vicinity of Totem Lake with regular frequency, and this has had a profound impact on commerce and travel in the Totem Lake neighborhood (Attachments B, C, D). In response to these issues, a City sponsored capital improvement project was developed with the majority of funding provided by the King County Flood Control Zone District's Sub-Regional Opportunity Fund.

In early 2011, the City contracted with the consulting firm CH2M Hill, of Bellevue, WA, to undertake a detailed survey of the drainage system from Totem Lake, downstream (and west) to approximately Juanita High School. The drainage system includes piped conveyance and natural open channels for this Juanita Creek tributary that eventually enters Lake Washington at Juanita Beach Park. Using GIS and survey techniques, the Consultant worked with City staff to measure the water surface level along the Project limits, to ascertain the system and watercourse geometry, and to locate the stream/watercourse channel bottom. The survey also confirmed specific locations of considerable accumulations of sediment along the watercourse, the presence of significant invasive vegetation, and a number of beaver dams. The identification of these "stream barriers" indicates that there are a finite number of locations along the drainage course that appear to impact the entire Totem Lake basin (Attachment E).

From the Consultant's findings, two locations along the drainage course, #1 and #4, appear to be critical and are being addressed immediately; their impacts appear to be such that their removal will likely alleviate future area flooding. In association with the Consultant's findings, staff is proceeding with securing all appropriate State permitting for addressing these locations.

Location #1 is adjacent to I-405, immediately upstream of twin culverts that cross I-405 (Attachment E). Due to the density of the grasses and vegetation along this drainage channel there is a significant accumulation of sediment blocking the flow of water. Working closely with the Washington State Department of Transportation (WSDOT), the City has been granted access through the WSDOT right-of-way west of Totem Lake Boulevard. Further, because the City does not have large enough equipment to access Location #1, staff has been in conversation with the King County Rivers Group to have the work performed under an existing 2008 Interlocal Agreement with the City. The County crews are uniquely qualified for watercourse work, as it is their primary focus for King County, and they are available to immediately proceed with this maintenance activity.

Location #4, further to the west, is an active beaver dam for which the City has had a State Department of Fish and Wildlife programmatic permit for dam removals in the past. The activities to do away with this barrier require hand removal of the various materials used to build the dam. The permit lapsed in 2010; however, it has already been renewed by the State.

The Consultant's recommendation is to address locations #1 and #4 immediately and, by doing so, the hydraulic modifications may result in minimizing or eliminating the other known downstream barriers. Staff will be monitoring the water level upon removal of the barriers and will also prepare additional measures to remove other barriers, as needed and as future funding for this Project becomes available. Initial estimates are that the removal of these two initial barriers will provide up to three feet of additional storage capacity to Totem Lake – this will become valuable as we approach the next fall and winter rainy seasons.



City of Kirkland 2011 Totem Lake Flood Control Feasibility Analysis



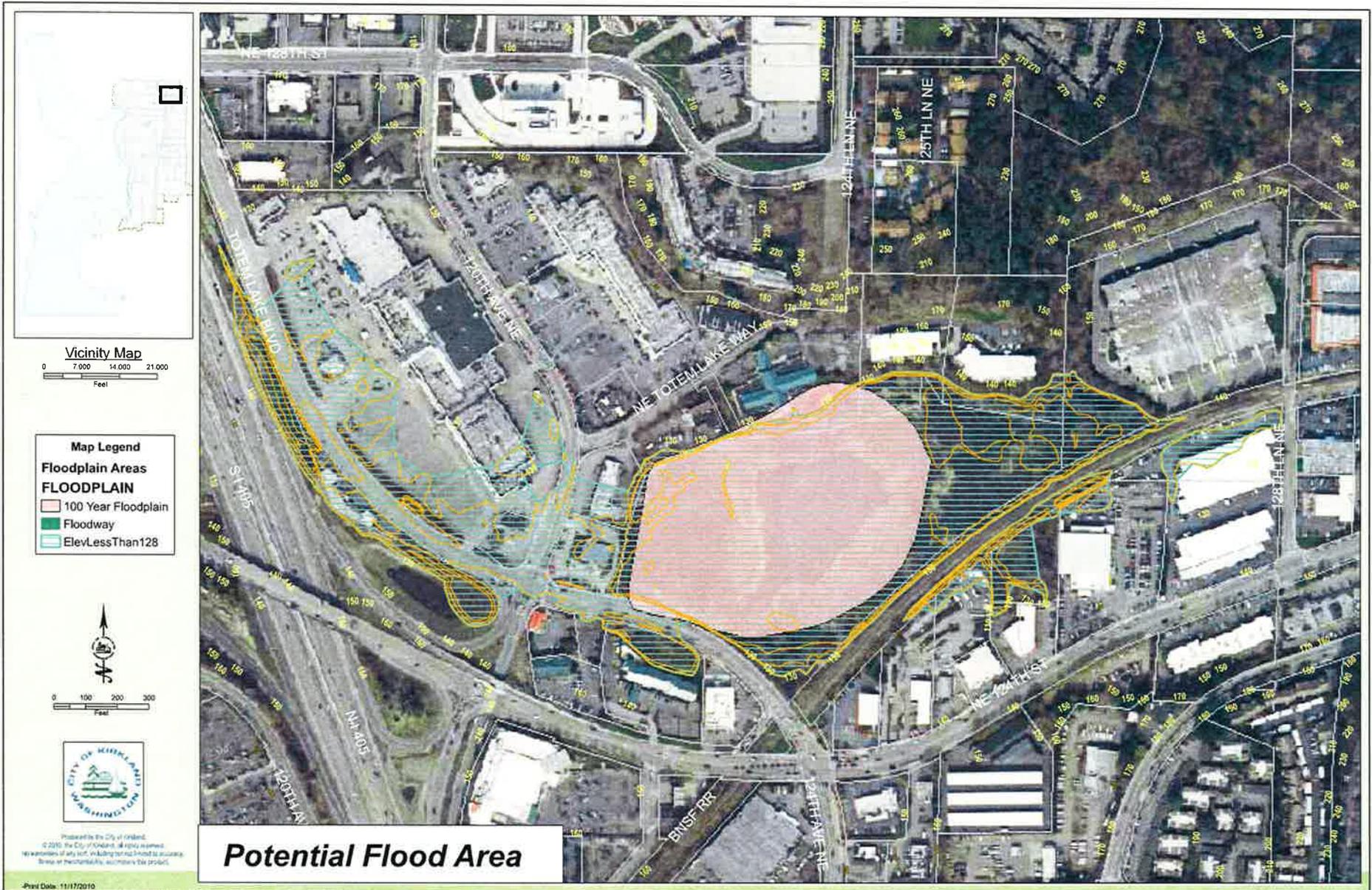




Figure 13: Intersection of Totem Lake Blvd and NE 120th Street, Facing South



Figure 14: Totem Lake Blvd and Totem Lake Mall, Facing East

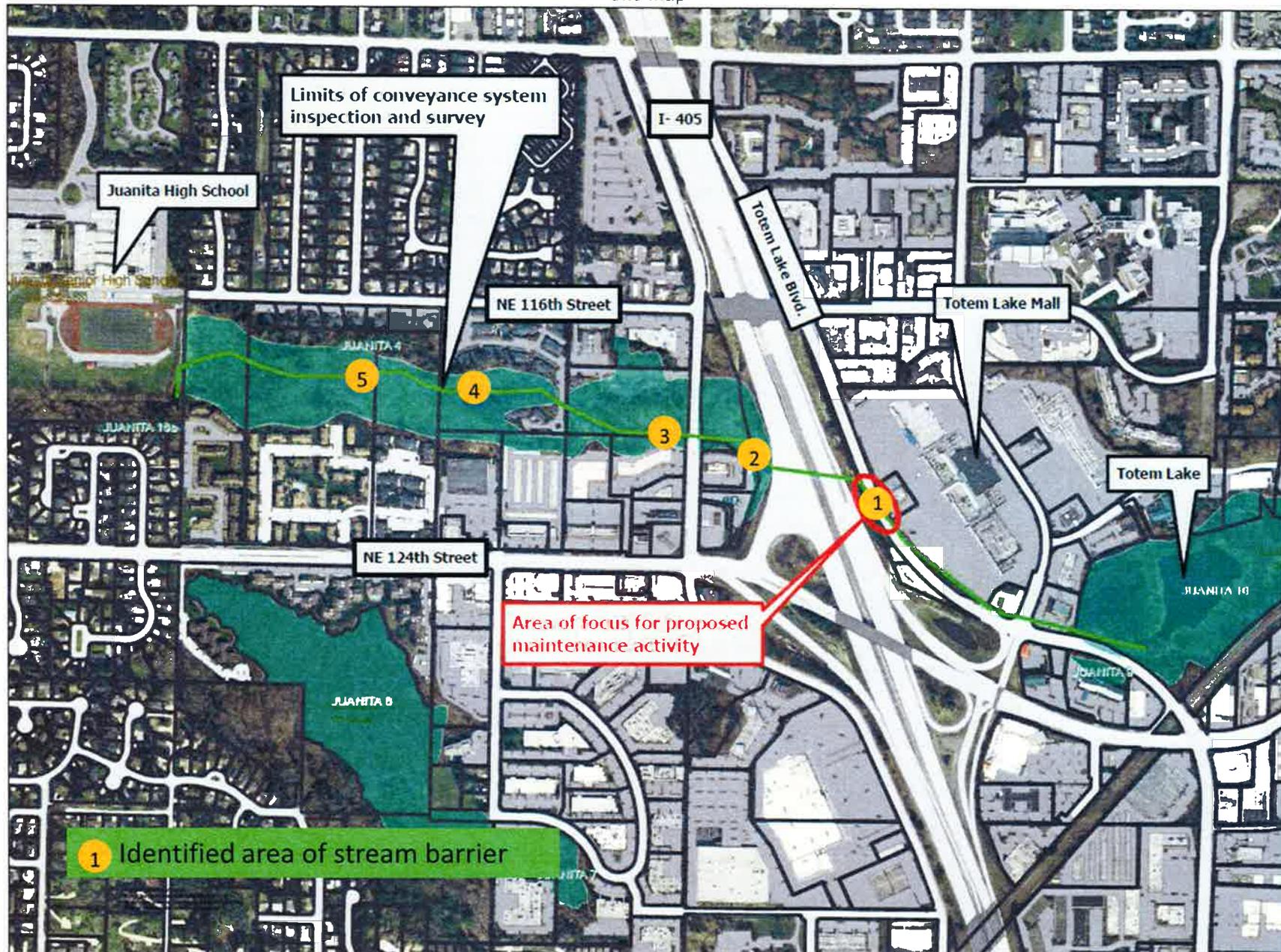


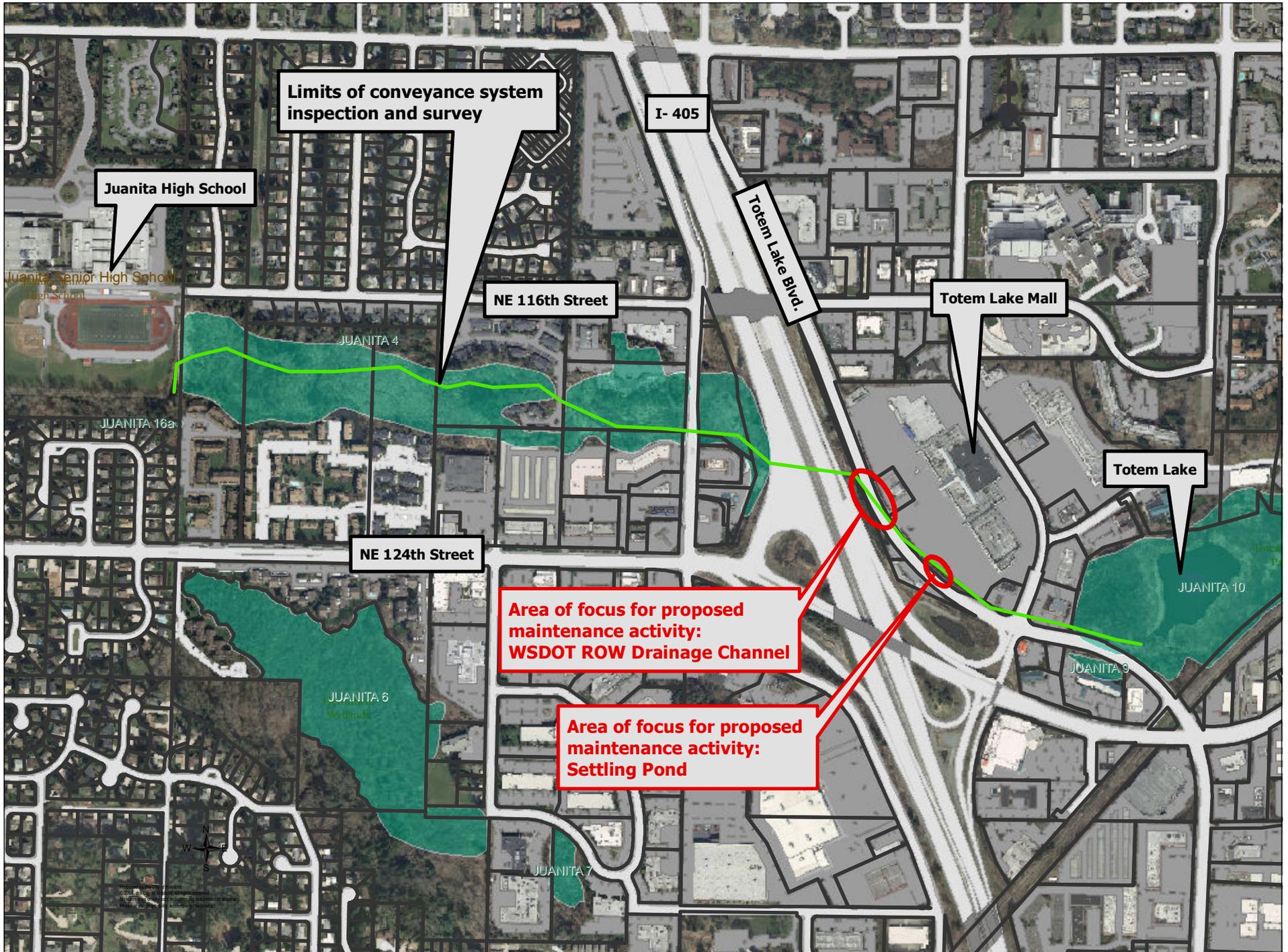
Figure 5: Pizza Hut Entrance and Totem Lake Blvd, Facing East



Figure 6: Pizza Hut Entrance and Totem Lake Blvd, Facing North

Totem Lake Flood Control and Feasibility Analysis
Site Map





FISCAL NOTE

CITY OF KIRKLAND

Source of Request							
Ray Steiger, Public Work Director							
Description of Request							
Request for \$218,000 from the Surface Water Construction Reserve to provide funding for Totem Lake Boulevard Flood Control Measures project (CSD 0059). Budget revisions for this project are included in the 2011-16 CIP Update, however expenditures are expected to occur in 2011 prior to Council approval of the CIP update.							
Legality/City Policy Basis							
Fiscal Impact							
Recommended Funding Source(s)							
Reserve	Description	2012 Est End Balance	Prior Auth. 2011-12 Uses	Prior Auth. 2011-12 Additions	Amount This Request	Revised 2012 End Balance	2012 Target
	Surface Water Construction	3,376,431	0	0	218,000	3,158,431	N/A
Revenue/Exp Savings							
Other Source							
Other Information							

Prepared By	Neil Kruse, Senior Financial Analyst	Date	July 25, 2011
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