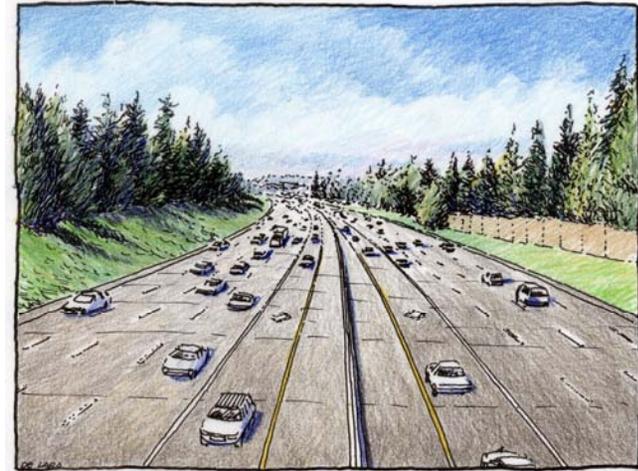




Existing Conditions

From this...



To this...

Design Visualization

## I-405 Kirkland – SR 520 to SR 522

The Kirkland Nickel Project, located in Kirkland, Washington, adds one additional lane northbound from NE 70th to NE 124th and southbound from SR 522 to SR 520. The total project cost for the Kirkland Nickel Project is \$163,700,000. This project constructs 10.5 lane miles of additional roadway capacity, and includes rebuilding and adding capacity to the NE 116th Street Interchange and connecting arterials. The project will be built in two stages. Stage 1 builds a lane in each direction from NE 85th Street to NE 124<sup>th</sup> Street. A design-build contract was awarded to Kiewit Construction Company in October 2005. Stage 2 begins construction in 2008.

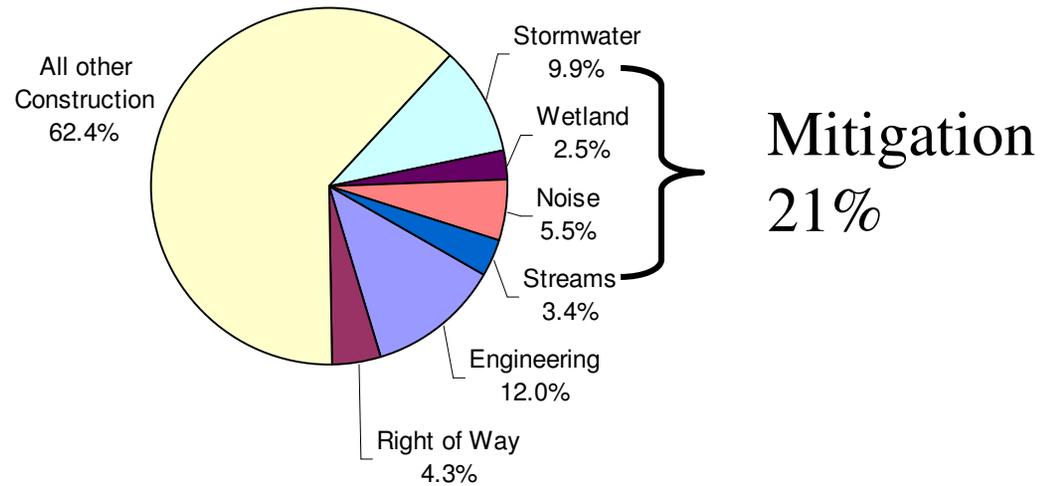
Environmental mitigation for the Kirkland Nickel Project includes: stormwater facilities to provide detention and water quality treatment; three wetland mitigation sites totaling 12.1 acres; stream protection and fish passage culvert replacement at Forbes Creek; construction of five new noise walls; and relocation of four existing noise walls.

# I-405 Kirkland – SR 520 to SR 522



Congestion relief is  
\$15.6 million per lane mile.

Total project cost is \$163.7M  
for 10.5 new lane miles.



# I-405 Kirkland – SR 520 to SR 522

## Stormwater Mitigation

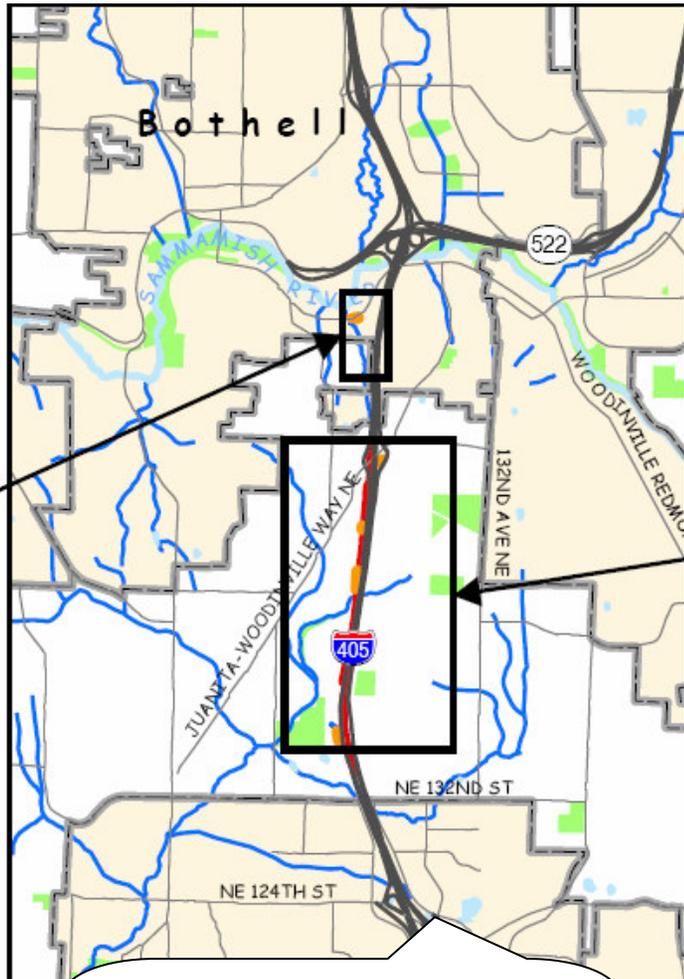
The Kirkland Nickel Project will build new stormwater facilities that will treat 36 acres of impervious surface for a cost of \$16,215,000. Seven ponds and two vaults will be constructed primarily within existing right of way, with the exception of one detention pond that requires acquisition of private property.

Right of way for this pond is \$1.1M with the acquisition allowing for future I-405 capacity improvements as part of the I-405 Master Plan. In addition, temporary erosion control measures will be provided during construction.



*What a typical vault may look like*

# Stormwater Treatment Facilities



- Treatment facility cost \$657,465
- Capacity 21,780cf
- Impervious area treated 2.36ac
- \$6.40/sf of impervious area



- Treatment facility cost \$300,888
- Capacity 6,534cf
- Impervious area treated 0.45 ac
- \$15.35/sf of impervious area

- Treatment facility cost \$1,889,168
- Capacity 33,106cf
- Impervious area treated 1.62ac
- \$26.77/sf of impervious area

- Treatment facility cost \$493,540
- Capacity 28,314cf
- Impervious area treated 1.47ac
- \$7.71/sf of impervious area

- Treatment facility cost \$595,354
- Capacity 26,136cf
- Impervious area treated 2.02ac
- \$6.77/sf of impervious area



# Stormwater Treatment Facilities

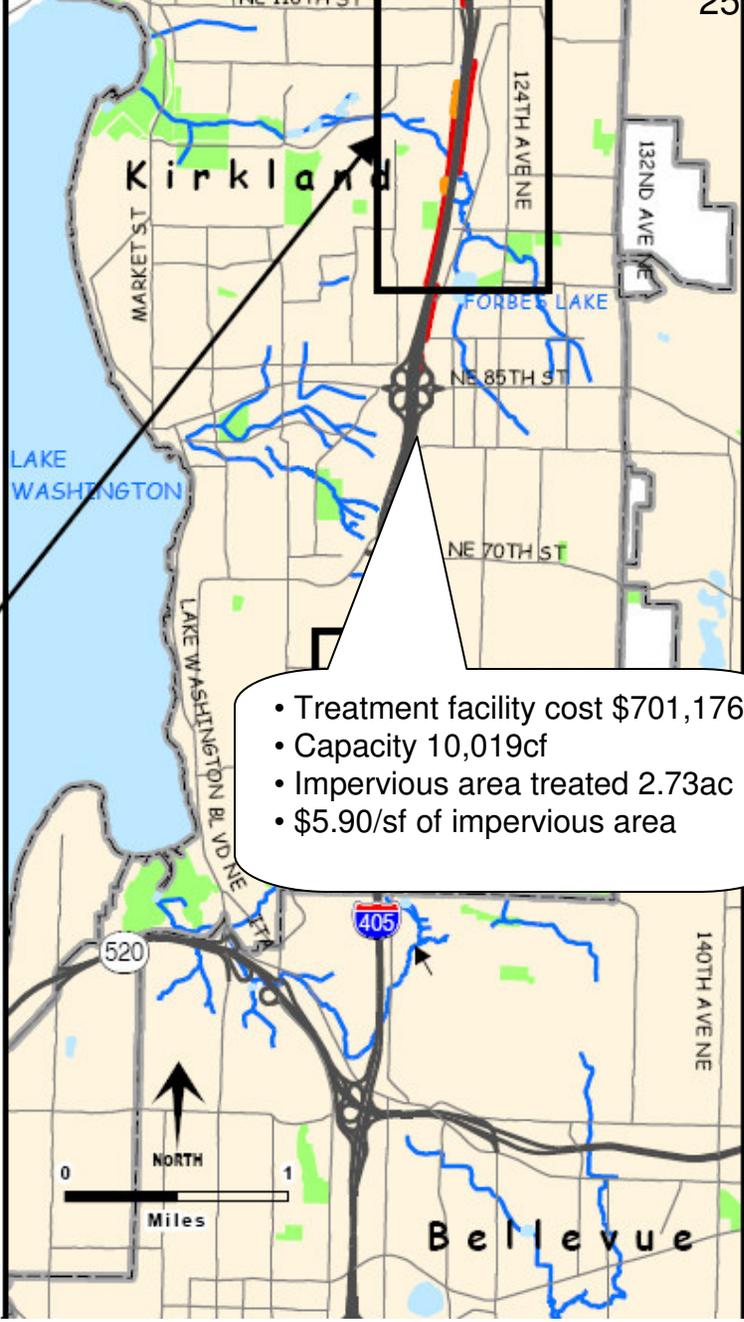
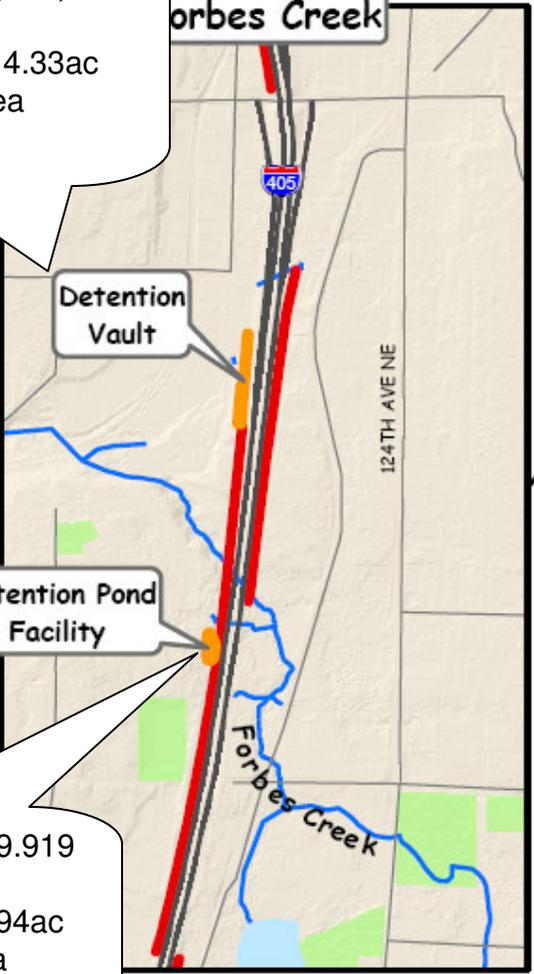
- Treatment facility cost \$5,333,188
- Capacity 200,376cf
- Impervious area treated 14.33ac
- \$8.54/sf of impervious area

	Detention Pond		Stream
	Ecology Embankment		Park
	Municipality		Lake
	Arterial Road		
	Freeway		



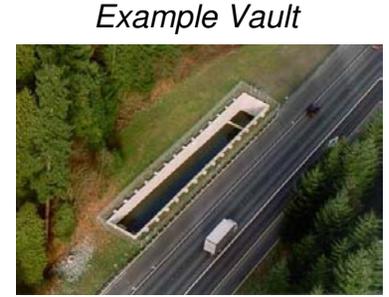
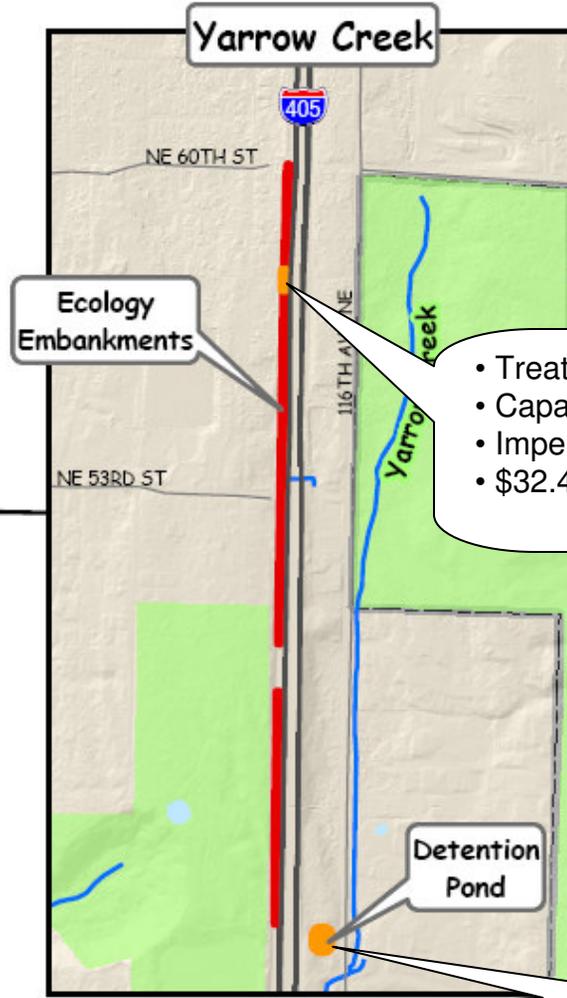
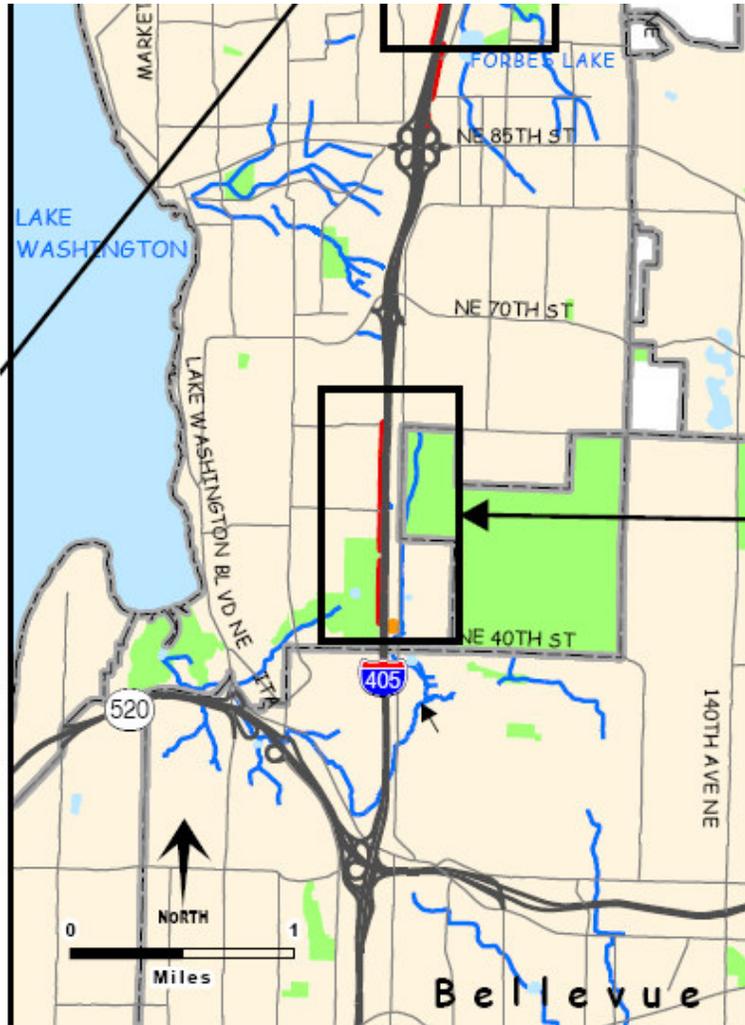
Example Vault

- Treatment facility cost \$909,919
- Capacity 44,432cf
- Impervious area treated 2.94ac
- \$7.11/sf of impervious area



- Treatment facility cost \$701,176
- Capacity 10,019cf
- Impervious area treated 2.73ac
- \$5.90/sf of impervious area

# Stormwater Treatment Facilities



- Treatment facility cost \$986,856
- Capacity 12,197cf
- Impervious area treated 0.72ac
- \$32.47/sf of impervious area

- Treatment facility cost \$644,627
- Capacity 29,621cf
- Impervious area treated 1.82ac
- \$8.13/sf of impervious area



# I-405 Kirkland – SR 520 to SR 522 Noise Mitigation

For the Kirkland Nickel Project, the results of feasible/reasonable noise assessment indicated that five new noise walls and relocation of four existing walls would be required for noise mitigation.

A total of 160,000 square feet of noise walls will be constructed during the project for a total cost of approximately \$9,069,000.



# I-405 Kirkland – SR 520 to SR 522

## Wetland Mitigation

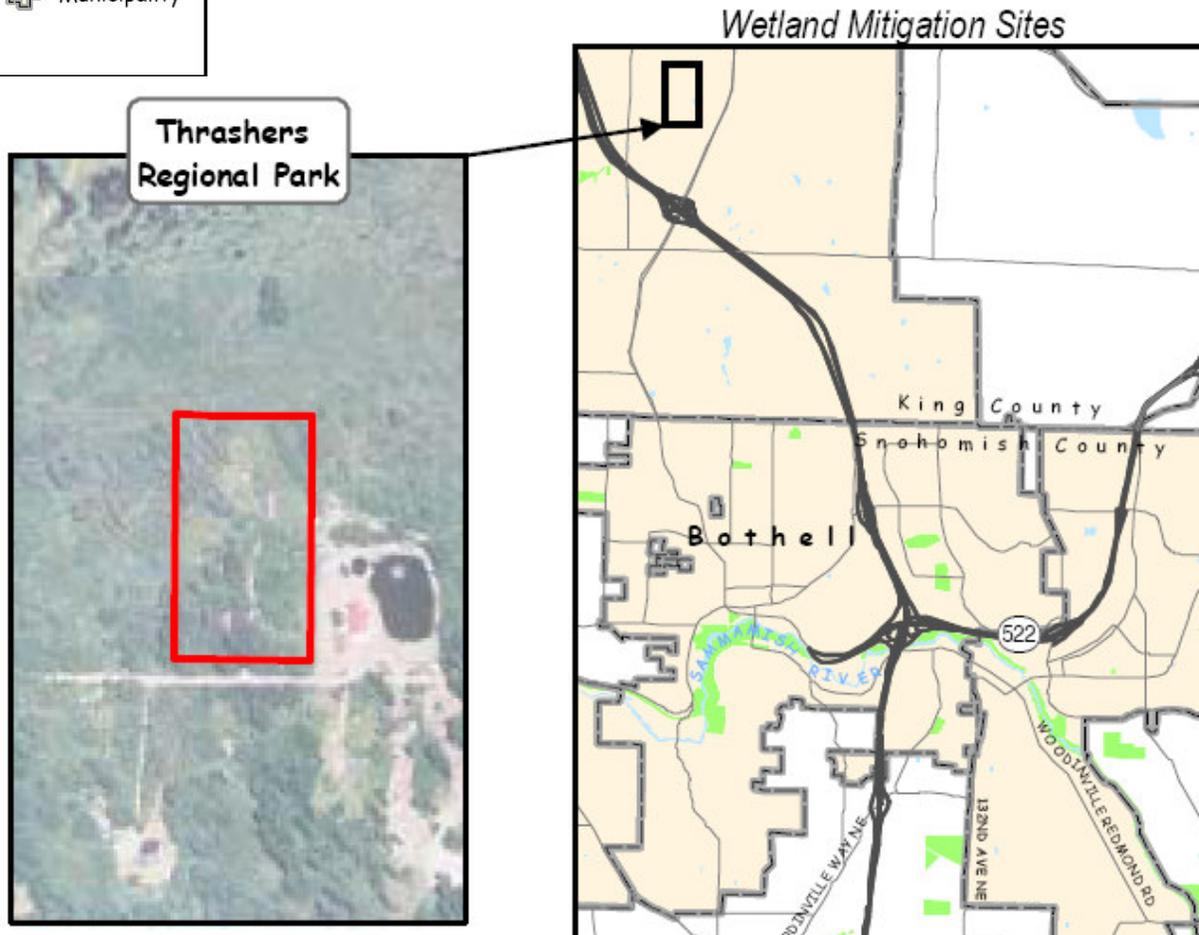


The project impacts 1.7 acres of wetland and 2.9 acres of wetland buffer. Three mitigation sites will be built for the entire project (12.1 acres total). Two sites at Forbes Lake in Kirkland (7.4 acres) required acquisition of two private parcels and the use of one parcel owned by Kirkland Parks Department. The third mitigation site, which required acquisition of a private property, will be built at Thrashers Corner in Bothell, Washington (4.7 acres).

All three mitigation sites, costing \$4,016,000, will be built as part of Stage 1 construction—five years ahead of the wetland impacts incurred as part of Stage 2 construction. Of the 12.1 acres of mitigation, 2.4 acres are new wetlands creation, 2.2 acres are wetland enhancement, 3.9 acres are wetland preservation, and 1.5 acres are buffer enhancement.

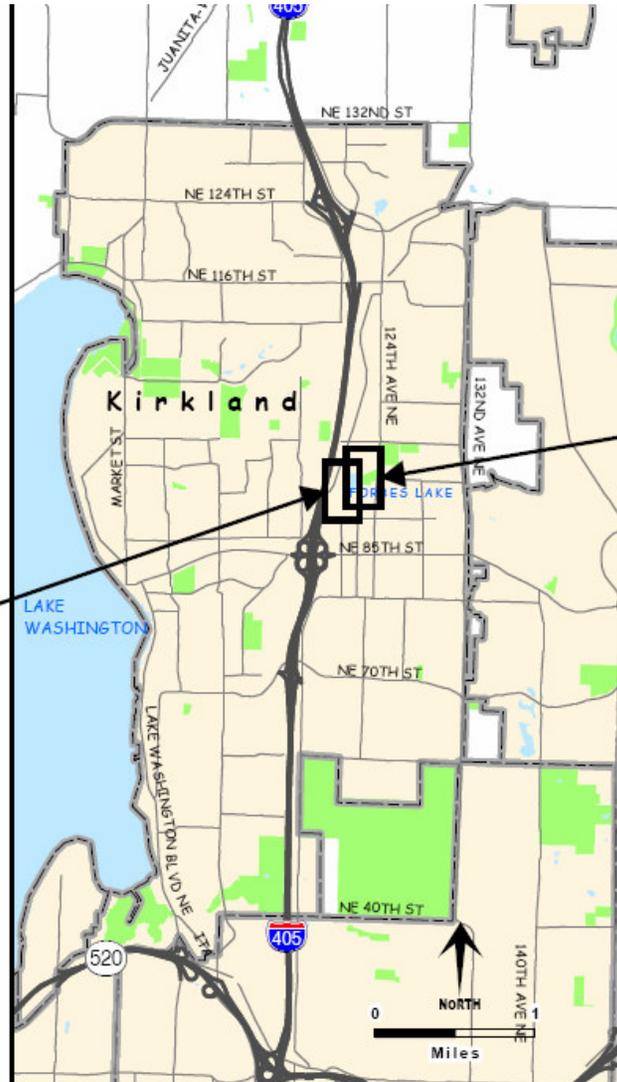
# I-405 Kirkland – SR 520 to SR 522 Wetland Mitigation

 Wetland	 Lake
 Mitigation Site	 Park
 Arterial Road	 Municipality
 Freeway	



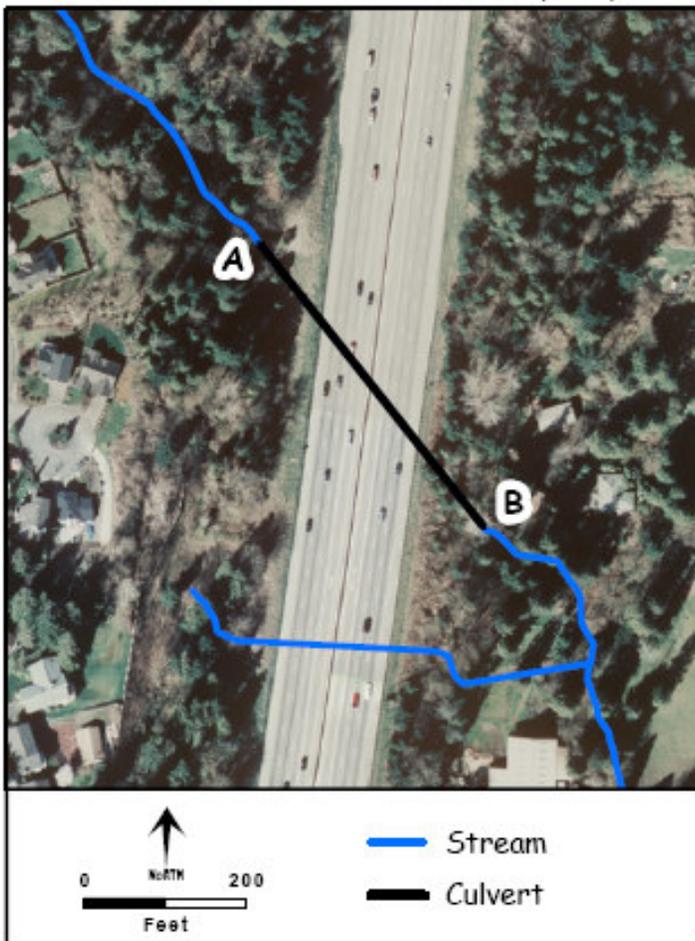
# I-405 Kirkland – SR 520 to SR 522 Wetland Mitigation

 Wetland	 Lake
 Mitigation Site	 Park
 Arterial Road	 Municipality
 Freeway	



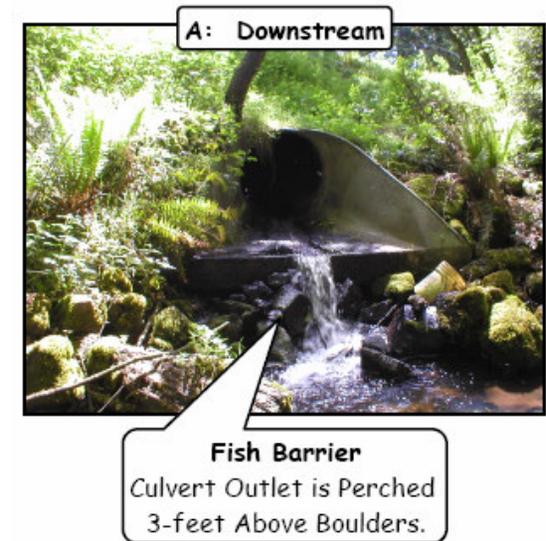
# I-405 Kirkland – SR 520 to SR 522 Fish Passage and Stream Mitigation

*Fish Barrier at Forbes Creek (KL5)*



This project improves fish passage by removing an existing fish barrier at Forbes Creek. It spans four primary watersheds, including Forbes Creek.

The cost of constructing a 78" diameter pipe under I-405, and potential fishway or stream realignment, is \$5,574,000.



# I-405 Kirkland – SR 520 to SR 522

## Cost Summary

Phase Costs	
Preliminary Engineering	\$21M
Right of Way	\$7M
Construction	\$135.7M
<b>Total</b>	<b>\$163.7M</b>

Mitigation Elements	All-in Mitigation Cost (*)	% of Total Project Cost
Noise	\$9.1M	5.5%
Wetland	\$4.0M	2.5%
Stormwater	\$16.2M	9.9%
Streams and Fish Passage	\$5.6M	3.4%
<b>Subtotal of Mitigation Elements</b>	<b>\$34.9M</b>	<b>21.0%</b>
All Other Items	\$129M	
<b>Total</b>	<b>\$164M</b>	

(\*) All-in cost includes allocation of preliminary engineering, right of way, and construction cost.



5.5%

Noise – \$9.1M



9.9%

Stormwater – \$16.2M



2.5%

Wetland – \$4.0M



3.4%

Stream – \$5.6M