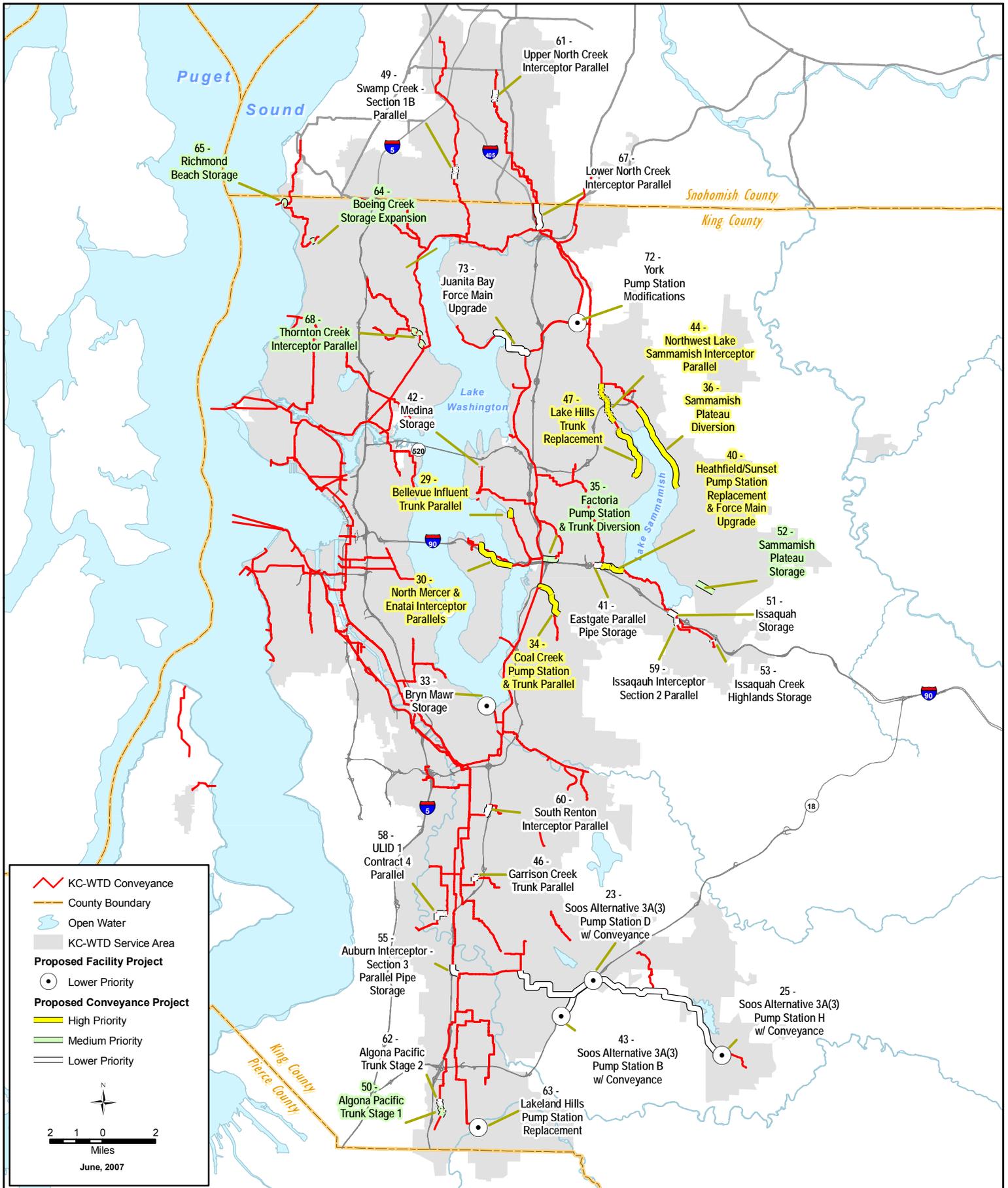


## Appendix B

# Project Descriptions Summaries

The conveyance improvement project descriptions and cost estimates listed in this Appendix are **planning-level estimates** in 2006 dollars of what is likely to be needed to expand capacity within the conveyance system over time. Prior to actual implementation of these projects, field verification of the capacity need will be performed. Projects will also go through an extensive design process where the scale, timing, and estimated cost of the project may be substantially revised.

June 2007



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## Hidden Lake Planning Basin

**Project Name:**

**Boeing Creek Storage Expansion**

**Project No.**

64

**Project Location:**

Sewer Agency: Ronald Wastewater District

Jurisdiction: City of Shoreline

Planning Basin: Hidden Lake

**Project Description:**

The Boeing Creek Storage Expansion Project is a 1.1 Million Gallon in-line storage facility located adjacent to Shoreview Park in Shoreline. This Project is in addition to the current Hidden Lake Pump Station Replacement and Sewer Improvement Project (project #14 in the CSI update) currently under construction. The current project is intended to take the Hidden Lake Planning basin System to a 10 to 20-yr level of service and is scheduled to be complete in spring of 2009.

This storage expansion project consists of a 1,220 foot extension of the 12 foot diameter storage pipe that is currently under construction. The storage expansion will limit flow to the capacity of the Hidden Lake Pump station and 2,400-foot forcemain where the available capacity is projected to be exceeded. The storage will further limit storage demand at the downstream Richmond Beach Storage Project.

**Project Facilities Construction Estimate:**

Name	Facility Description	DIA (in)	Length (ft)	(\$2006) Construction Estimate
Boeing Creek Pipe Storage Expansion	Pipe	144 in.	1,221	\$4,300,000
<b>Total:</b>				<b>\$4,300,000</b>

**Estimated Total Project Cost:**

Present construction cost for this project was estimated to be \$4.3M. To calculate project cost, the construction cost was factored by contingency, sales tax, and allied costs. A project contingency of 40% was recommended because this project was not subjected to a third-party CSI evaluation. Construction contingency, sales tax, and allied costs are assumed to be 10%, 8.8%, and 53.1%, respectively. **The present project cost is estimated to be \$9.1M.**

**Capacity Needs Addressed by the Project:**

Boeing Creek Trunk
Hidden Lake Pump Station
Richmond Beach Force Main
Richmond Beach Interceptor

**Year 20-yr Peak Flow Exceeds Capacity:**

<2000

**Estimated Level Of Service:**

2 to 5-yr prior to current project, 10 to 20-yr once current project is complete

**Upstream Projects Affecting Project:**

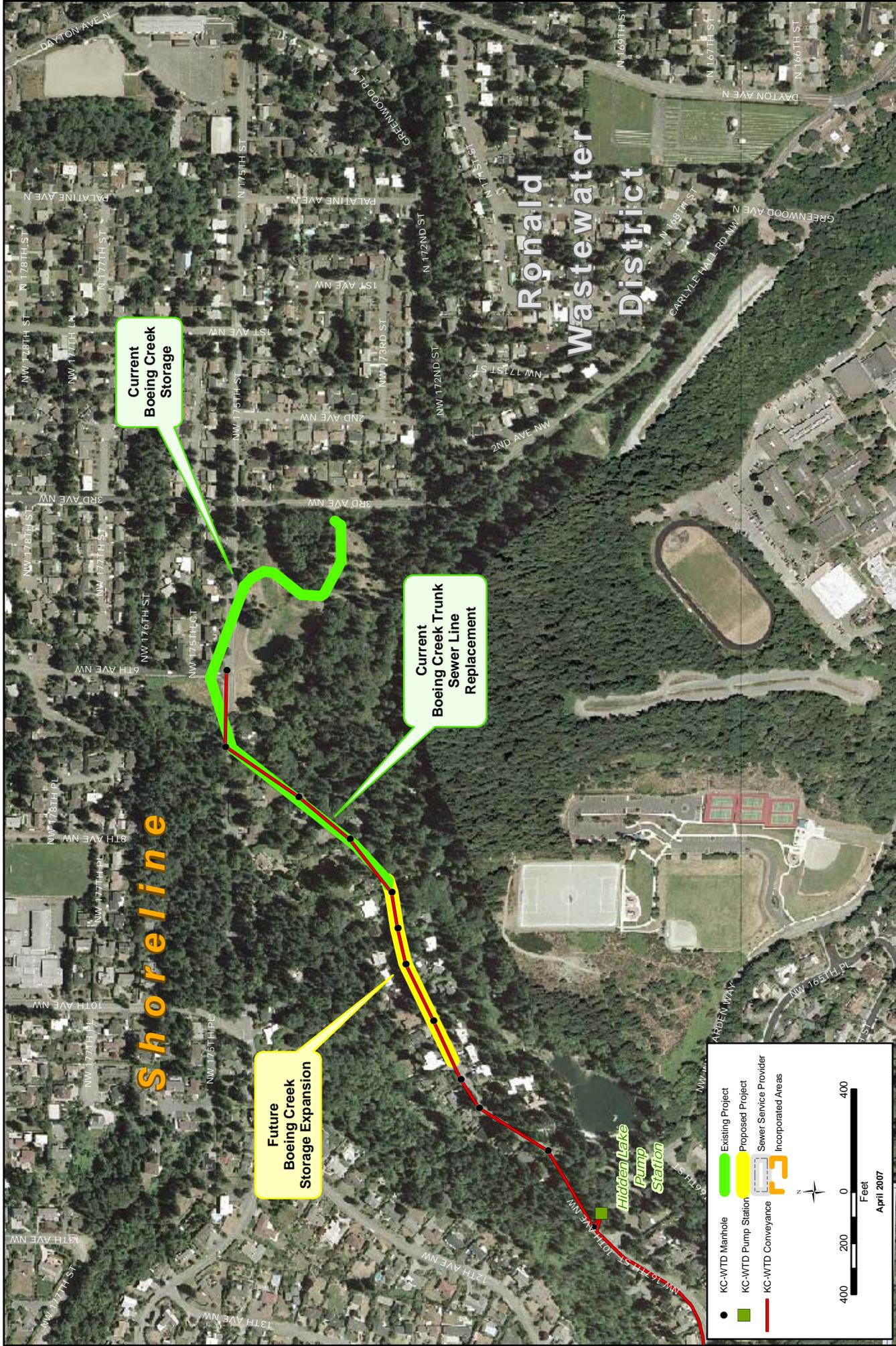
none

**Downstream Projects Affected By Project:**

Peak flows reduced by this project will alleviate the need to parallel the Hidden Lake Pump Station force mains and will limit the size of the Richmond Beach Storage Project.

**Preliminary Project Alternatives Evaluation:**

No further alternatives were evaluated. The anticipated costs of upgrading the pump station, force main, and gravity pipes would not be cost effective in comparison based on previous work for the current Hidden Lake Pump Station Replacement and Sewer Improvement Project



# Boeig Creek Storage Expansion

Hidden Lake  
Planning Basin

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- KC-WTD Manhole
- KC-WTD Pump Station
- KC-WTD Conveyance
- Existing Project
- Proposed Project
- Sewer Service Provider
- Incorporated Areas

400 200 0 400  
Feet  
April 2007



**Project Name:**  
**Richmond Beach Storage**

**Project No.**  
 65

**Project Location:**  
 Sewer Agency: Ronald Sewer District  
 Jurisdiction: City of Shoreline  
 Planning Basin: Hidden Lake

**Project Description:**  
 The Richmond Beach Storage Project is a 1.6 Million Gallon in-line storage facility located at the Richmond Beach Pump Station. This Project is in addition to the current Hidden Lake Pump Station Replacement and Sewer Improvement Project (project #14 in the CSI update) currently under construction. The current project is intended to take the Hidden Lake Planning basin system to a 10 to 20-yr level of service and is scheduled to be complete in spring of 2009.

The project consists of three 12 foot diameter parallel storage pipes, each extending 610 feet in length. The storage will maintain capacity in the Richmond Beach Pump station, as well as 8,725 feet of force main and gravity feed pipeline where the available capacity is projected to be exceeded. The three storage pipes will all fit within the King County property.

**Project Facilities Construction Estimate:**

Name	Facility Description	DIA (in)	Length (ft)	(\$2006) Construction Estimate
Richmond Beach Parallel Pipe Storage	Pipe	144 in	1,834	\$6,620,000
<b>Total:</b>				<b>\$6,620,000</b>

**Estimated Total Project Cost:**  
 Present construction cost for this project was estimated to be \$6.6M. To calculate project cost, the construction cost was factored by contingency, sales tax, and allied costs. A project contingency of 40% was recommended because this project was not subjected to a third-party CSI evaluation. Construction contingency, sales tax, and allied costs are assumed to be 10%, 8.8%, and 53.1%, respectively. **The present project cost is estimated to be \$14.0M.**

**Capacity Needs Addressed by the Project:**

Richmond Beach Force Main & Pump Station
Richmond Beach Interceptor

**Year 20-yr Peak Flow Exceeds Capacity:**  
 <2000

**Estimated Level Of Service:**

2 to 5-yr prior to current project, 10 to 20-yr once current project is complete

**Upstream Projects Affecting Project:**

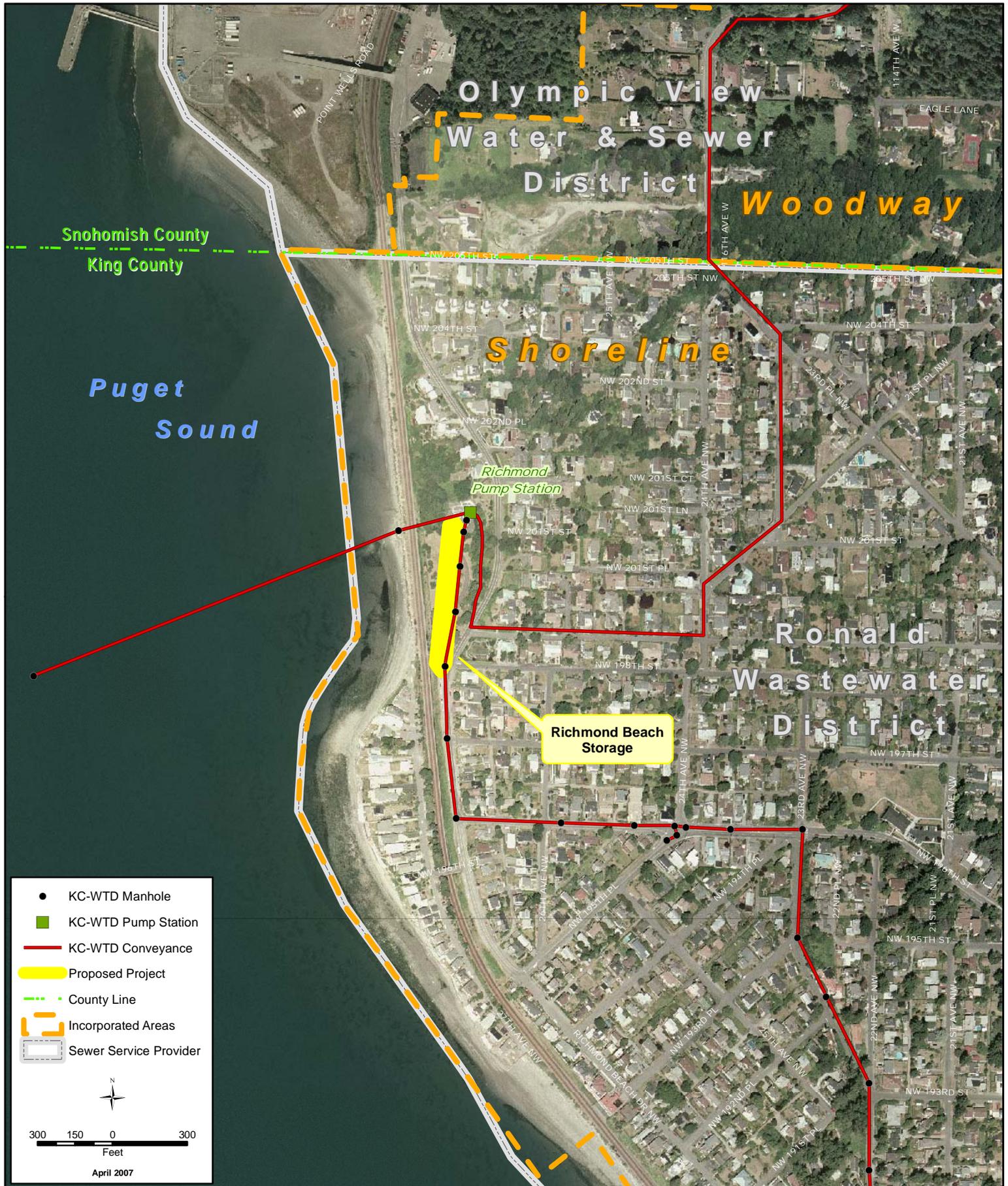
Boeing Creek Storage Extension Project will limit peak flow to this facility, and, therefore, affects the size of this project.

**Downstream Projects Affected By Project:**

This project alleviates the need to upgrade the Richmond Beach Pump Station and parallel/replace the Richmond Beach force main and gravity sewer.

**Preliminary Project Alternatives Evaluation:**

No further alternatives were evaluated. The anticipated costs of upgrading the pump station, force main, and gravity pipes would not be cost effective in comparison.





## Northeast Lake Washington Planning Basin

**Project Name:**

**Bellevue Influent Trunk Parallel**

**Project No.**

29

**Project Location:**

Sewer Agency: City of Bellevue Utilities

Jurisdiction: City of Bellevue

Planning Basin: NE Lake Washington

**Project Description:**

The Bellevue Influent Trunk Parallel Project provides additional capacity to 1,600 feet of existing King County pipeline. The project consists of 21 in parallel pipeline and a microtunnel stream crossing.

**Project Facilities Construction Estimate:**

Name	Facility Description	DIA (in)	Length (ft)	(\$2006) Construction Estimate
RE*BELLINF.RO7-06(6)	Pipe	21 in.	1,556	\$670,000
Meydenbauer Creek Stream Crossing	Microtunnel	21 in.	100	\$510,000
<b>Total:</b>				<b>\$1,180,000</b>

**Estimated Total Project Cost:**

Present construction cost for this project is estimated to be \$1.2M (in 2006 dollars). To calculate project cost, the construction cost is factored by contingency, sales tax, and allied costs. A project contingency of 40% is recommended because this project was not subjected to a third-party CSI evaluation. Construction contingency, sales tax, and allied costs are assumed to be 10%, 8.8%, and 53.1%, respectively. **The present project cost is estimated to be \$2.5M.**

**Capacity Needs Addressed by the Project:**

Bellevue Influent Trunk

**Year 20yr peak flow exceeds capacity:**

<2000

**Estimated Level of Service in 2000:**

2 to 5 yr.

**Upstream Projects Affecting Project:**

None

**Downstream Projects Affected By Project:**

None

**Preliminary Project Alternatives Evaluation:**

***Storage***

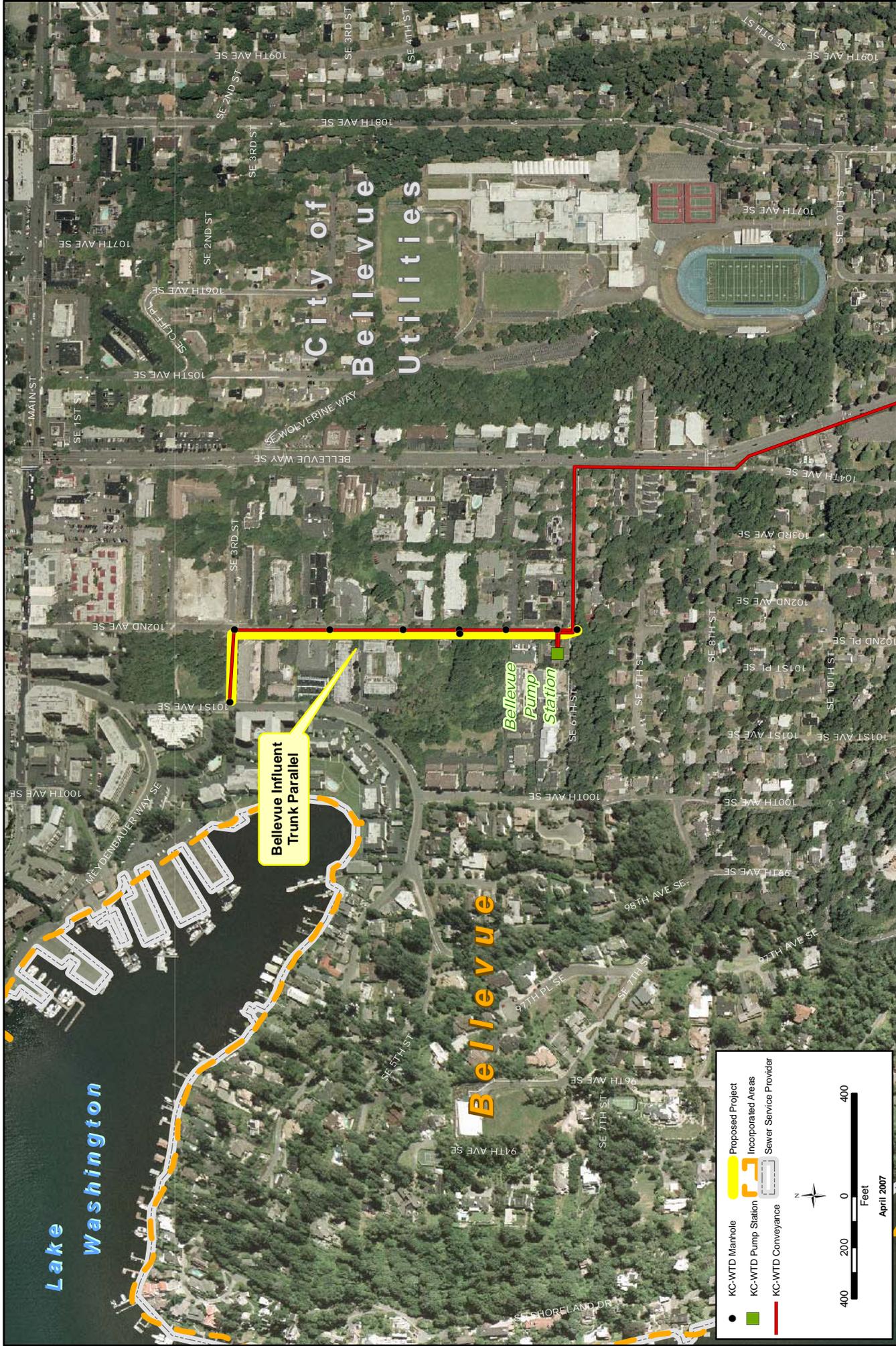
Storage was precluded from evaluation due to the limited length of parallel pipe needed and the extent of the exceedance in the existing pipe reach.

***Pipeline Diversion***

No potential pipeline diversions were identified.

***Pipeline Replacement***

The age and condition of the existing pipeline did not warrant replacement at the time of the latest facility inspections.



**Bellevue Influent Trunk Parallel**

**Bellevue Pump Station**

- KC-WTD Manhole
- KC-WTD Pump Station
- KC-WTD Conveyance
- Proposed Project
- Incorporated Areas
- Sewer Service Provider

N

0 200 400  
Feet

April 2007

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# Bellevue Influent Trunk Parallel

NE Lake Washington  
Planning Basin



**Project Name:**  
**North Mercer and Enatai Interceptor Parallels**

**Project No.**  
 30

**Project Location:**  
 Sewer Agency: City of Mercer Island Maintenance, City of Bellevue Utilities  
 Jurisdiction: City of Mercer Island, City of Bellevue  
 Planning Basin: NE Lake Washington

**Project Description:**  
 The North Mercer and Enatai Interceptors Parallel Project parallels 13,500 feet of existing King County pipeline in North Mercer Island and western Bellevue with overland pipeline ranging in diameter from 15 to 21 inches. The project includes horizontal directional drilling to cross the East Channel in Lake Washington, as well as microtunneling to cross below the I-90 freeway.

**Project Facilities Construction Estimate:**

Name	Facility Description	DIA (in)	Length (ft)	(\$2006) Construction Estimate
North Mercer Interceptor 1	Pipe	21 in.	5,660	\$2,410,000
North Mercer Interceptor 2	Pipe	15 in.	3,430	\$1,160,000
N Mercer Way and SE 35th St	Jack and Bore	15 in.	110	\$360,000
RE*ENATAI.RO8-01B(13)	Microtunnel	30 in.	3,000	\$6,820,000
RE*ENATAI.RO8-01C(1)	Horizontally Drilled Pipe	24 in.	1,348	\$1,000,000
<b>Total:</b>				<b>\$11,750,000</b>

**Estimated Total Project Cost:**  
 Present construction cost for this project is estimated to be \$11.8M (in 2006 dollars). To calculate project cost, the construction cost is factored by contingency, sales tax, and allied costs. A project contingency of 40% is recommended because this project was not subjected to a third-party CSI evaluation. Construction contingency, sales tax, and allied costs are assumed to be 10%, 8.8%, and 53.1%, respectively. **The present project cost is estimated to be \$24.9M.**

**Capacity Needs Addressed by the Project:**

Enatai Interceptor (primary need)
North Mercer Island Interceptor

**Year 20-yr Peak Flow Exceeds Capacity:**  
 <2000

**Estimated Level of Service:**  
 2 to 5-yr.

**Upstream Projects Affecting Project:**

none

**Downstream Projects Affected By Project:**

none

**Preliminary Project Alternatives Evaluation:**

***Storage***

Storage was precluded from evaluation due to the exceedance in the existing pipe reaches. Storage alternatives will be re-examined in the preliminary design phase.

***Pipeline Diversion***

No potential conveyance diversions were identified.

***Pipeline Replacement***

The age and condition of the existing pipeline did not warrant replacement at the time of the latest facility inspections.



# North Mercer Interceptor and Enatai Interceptor Parallels

NE Lake Washington Planning Basin

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**King County**  
Department of  
Natural Resources and Parks  
**Wastewater Treatment  
Division**

- KC-WTD Mainhole
- KC-WTD Pump Station
- KC-WTD Conveyance
- Proposed Project
- Incorporated Areas
- Sewer Service Provider

500 250 0 500 Feet  
April 2007



**Project Name:**  
**Medina Storage**

**Project No.**  
 42

**Project Location:**  
 Sewer Agency: City of Bellevue Utilities  
 Jurisdiction: City of Medina, City of Clyde Hill  
 Planning Basin: NE Lake Washington

**Project Description:**  
 The Medina Pipe Storage Project is a 70,000 gallon underground storage facility located at the intersection of NE 24<sup>th</sup> St and 84<sup>th</sup> Ave NE in Bellevue.

This 12-ft diameter in-line storage pipe, extending 70 ft south along 84<sup>th</sup> Ave NE, will limit downstream flow to the Medina Trunk. The project includes a small pump station to pump the stored flow out after a peak flow event.

This project will eliminate the need to parallel 14,000 feet of the Medina Trunk, where the 20yr peak flows after 2009 are projected to exceed the available capacity.

**Project Facilities Construction Estimate:**

Name	Facility Description	DIA (in)	Length (ft)	(\$2006) Construction Estimate
Medina Tube Storage	Pipe	144 in.	82	\$520,000
<b>Total:</b>				<b>\$520,000</b>

**Estimated Total Project Cost:**  
 Present construction cost for this project is estimated to be \$0.5M (in 2006 dollars). To calculate project cost, the construction cost is factored by contingency, sales tax, and allied costs. A project contingency of 40% is recommended because this project was not subjected to a third-party CSI evaluation. Construction contingency, sales tax, and allied costs are assumed to be 10%, 8.8%, and 53.1%, respectively. **The present project cost is estimated to be \$1.1M.**

**Capacity Needs Addressed by the Project:**

Medina Trunk
Eastside Interceptor - Section 1
Medina Force Main
Eastside Interceptor - Section 3

**Year 20-yr Peak Flow Exceeds Capacity:**  
 2009

**Estimated Level Of Service:**  
 ~20-yr

**Upstream Projects Affecting Project:**

none

**Downstream Projects Affected By Project:**

This project alleviates the need to parallel 14,000 feet of the Medina Trunk. It also provides a small benefit to reduce flows in the ESI through Renton.

**Preliminary Project Alternatives Evaluation:**

***Pipeline Diversion***

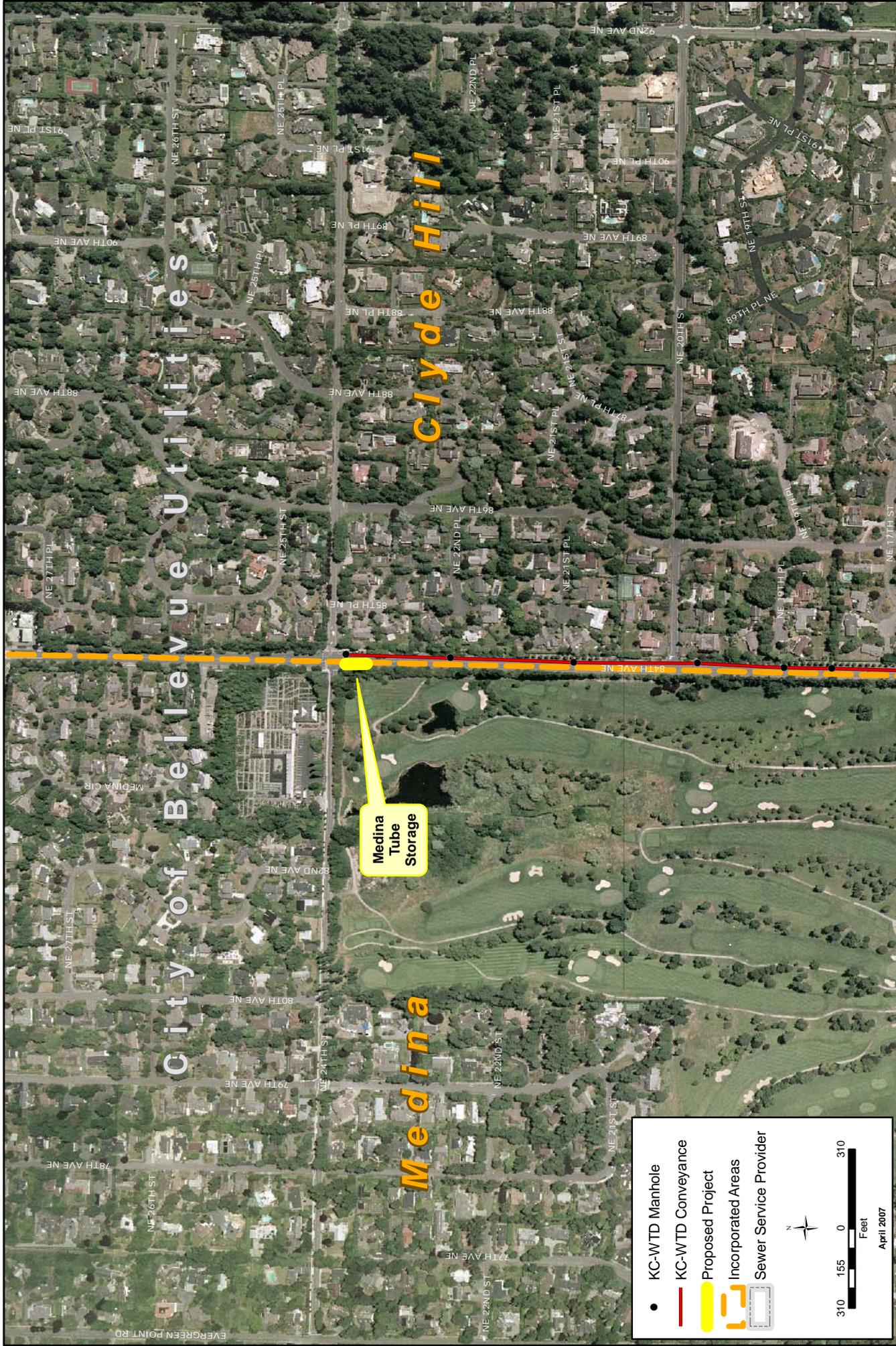
No potential conveyance diversion routes were identified.

***Pipeline Parallel***

The higher costs anticipated with paralleling approximately 14,000 feet of existing King County pipeline precluded this alternative from evaluation. A pipeline paralleling project would further entail two jack and bore street crossings.

***Pipeline Replacement***

The age and condition of the existing pipeline did not warrant replacement at the time of the latest facility inspections.



**Medina Storage**  
NE Lake Washington  
Planning Basin

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**King County**  
Department of  
Natural Resources and Parks  
**Wastewater Treatment  
Division**

- KC-WTD Manhole
- KC-WTD Conveyance
- Proposed Project
- Incorporated Areas
- Sewer Service Provider

310 155 0 310  
Feet  
April 2007



**Project Name:**  
**Factoria Pump Station and Trunk Diversion**

**Project Location:**

Sewer Agency: City of Bellevue Utilities  
 Jurisdiction: City of Bellevue  
 Planning Basin: NE Lake Washington

**Project No.**

35

**Project Description:**

The Factoria Pump Station and Trunk Diversion project limit flows to the existing capacity along 7,100 ft of the Factoria Trunk, as well as the Wilburton Pump Station. Located along SE 32<sup>nd</sup> St, the project consists of a 5.0 mgd pump station, an 18 inch pressure main, and two jack and bore street crossings. The pump station would operate during peak events to divert flows from Factoria Trunk to the Eastside Interceptor – Section 8 via a force main microtunneled beneath the Interstate 405 Freeway.

**Project Facilities Construction Estimate:**

Name	Facility Description	Capacity (mgd)	TDH (ft)	(\$2006) Construction Estimate
Factoria Pump Station	Pump Station	5	66	\$2,306,000
<b>Subtotal:</b>				<b>\$2,306,000</b>
Name	Facility Description	DIA (in)	Length (ft)	(\$2006) Construction Estimate
Factoria Diversion - Force Main	Pipe	18 in.	1,600	\$299,000
SE 32nd St and Richards Rd	Jack and Bore	18 in.	200	\$369,000
SE 32nd St and 128th Ave SE	Jack and Bore	18 in.	100	\$295,000
Factoria Diversion - Microtunnel	Microtunnel	18 in.	900	\$1,564,000
<b>Subtotal:</b>				<b>\$2,527,000</b>
<b>Total:</b>				<b>\$4,833,000</b>

**Estimated Total Project Cost:**

Present construction cost for this project is estimated to be \$4.8M (in 2006 dollars). To calculate project cost, the construction cost is factored by contingency, sales tax, and allied costs. A project contingency of 40% is recommended because this project was not subjected to a third-party CSI evaluation. Construction contingency, sales tax, and allied costs are assumed to be 10%, 8.8%, and 53.1%, respectively. **The present project cost is estimated to be \$10.2M.**

**Capacity Needs Addressed by the Project:**

Factoria Trunk

**Year 20-yr Peak Flow Exceeds Capacity:**  
<2000

**Estimated Level Of Service:**  
5 to 10-yr

**Upstream Projects Affecting Project:**  
none

**Downstream Projects Affected By Project:**  
Eliminates the need to parallel the Factoria Trunk and upgrade the Wilburton Pump Station.

**Preliminary Project Alternatives Evaluation:**

***Storage***

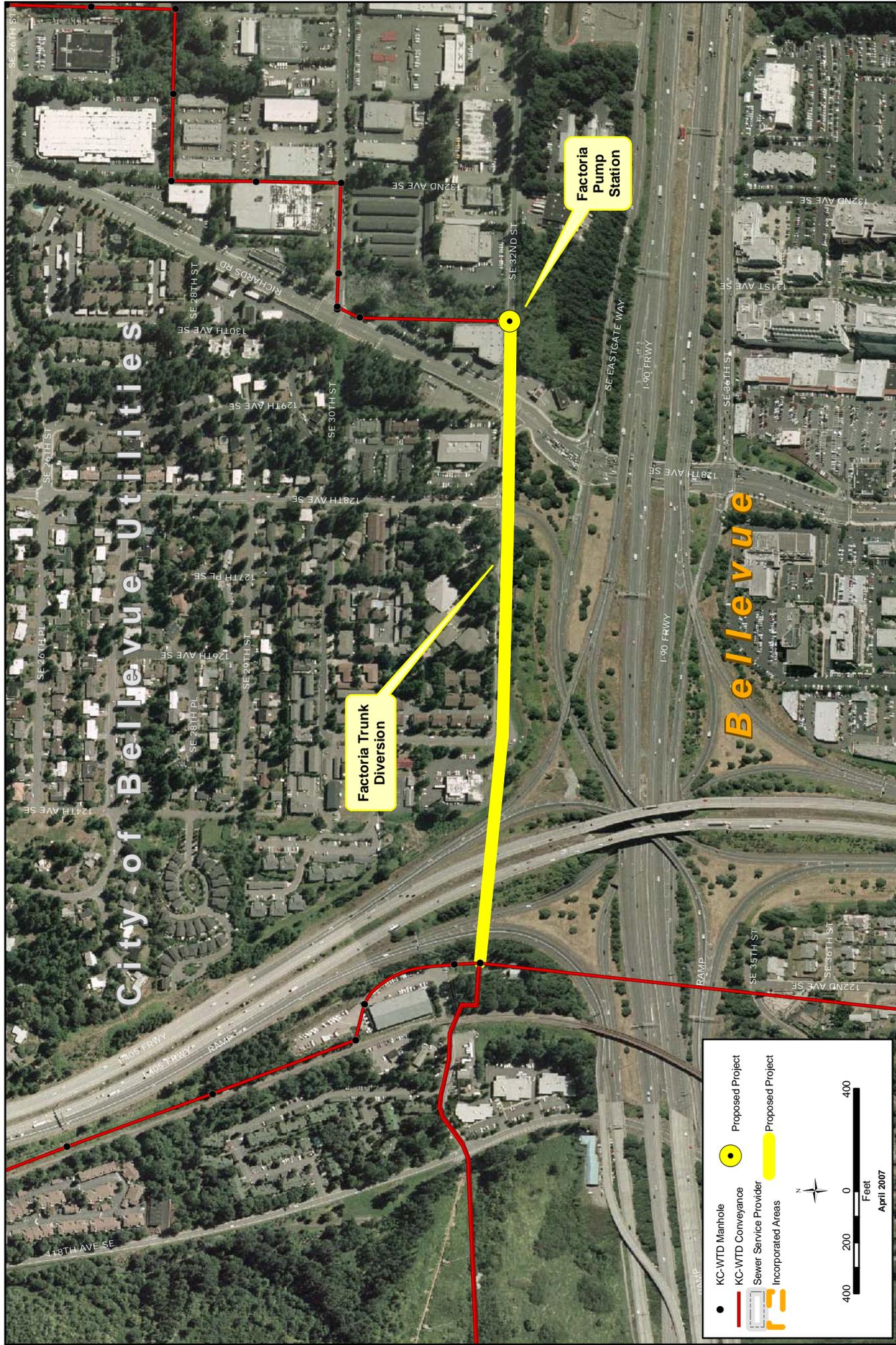
Storage was not considered for this project. The anticipated storage costs to maintain downstream capacity would be prohibitive.

***Pipeline Parallel***

Pipeline paralleling was determined to be unfeasible due to cost as well as the permitting required for construction in wetland areas.

***Pipeline Replacement***

Pipeline replacement was not considered for this project due to the age and expected condition of the existing pipeline at the time of construction and permitting required for construction in the wetland areas.



City of Bellevue Utilities

Bellevue

Factoria Pump Station

Factoria Trunk Diversion

- KC-WTD Manhole
- KC-WTD Conveyance
- Sewer Service Provider
- Incorporated Areas
- Proposed Project
- Proposed Project

400 200 0 400 Feet

April 2007

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# Factoria Pump Station and Trunk Diversion

NE Lake Washington Planning Basin



**Project Name:**

**Juanita Bay Pump Station Forcemain Upgrade**

**Project No.**

73

**Project Location:**

Sewer Agency: City of Kirkland Public Works, Northshore Utility District

Jurisdiction: City of Kirkland

Planning Basin: Northeast Lake Washington

**Project Description:**

The Juanita Bay Pump Station Forcemain Upgrade involves replacing an existing 9850 foot long 18" diameter forcemain with a 24 " diameter forcemain. The Juanita Bay Pump Station is currently being replaced with a new pump station with increased pumping capacity. During design of the new pump station it was determined that the existing pair of force mains (18" and 24" diameter) can safely convey 20 yr peak flows from the new station and replacement of the smaller 18" diameter force main can be implemented at a later date.

**Project Facilities Construction Estimate:**

The construction estimate for the project was performed as part of the Draft Juanita Bay Pump Station and Forcemain Improvements Predesign Report prepared by the Brown and Caldwell / HDR design team in March 2003. The report is available from the Juanita Bay Pump Station Project files.

The report recommended alternatives 1A, 1B or 1C. These are alternatives that look at minor route variations based on the existing forcemain alignment to put the new pipe in public ROW.

The estimated construction cost of the Draft predesign alternatives were presented in 2002 dollars ranging from \$6.8M to \$10.8M. (Appendix A, page 1) For the purpose of the CSI Program Update these costs were averaged and inflated at 3% per year arrive at a 2006 construction cost of \$9.9M. This planning level project has not were based on TABULA cost estimates.

**Estimated Total Project Cost:**

The estimated total project cost for the CSI Program update is based on allied costs of 55% of construction cost in the predesign report (page 4-2). **The estimated total project cost is \$15M**

**Capacity Needs Addressed by the Project:**

Juanita Bay Forcemains

**Year 20-yr Peak Flow Exceeds Capacity:**

2020. (*Note that the design peak capacity of the new station is greater than the current 20-yr peak flow.*)

**Upstream Projects Affecting Project:**

Juanita Bay Pump Station

**Downstream Projects Affected By Project:**

none

**Preliminary Project Alternatives Evaluation:**

Alternative alignments and analysis are detailed in the previously mentioned draft predesign report.

The Draft predesign report was reviewed by a peer consultant in July of 2005 who suggested that other alternatives could be identified and evaluated as they may reduce construction and other impacts and associated costs. Additional identification and evaluation alternatives beyond those identified in the draft predesign report is recommended.



**Current Juanita Bay Pump Station Replacement**

**Future Force Main Upgrade**

**Kirkland**

**Kirkland Sewer Agency**

**Northshore Utility District**

**Lake Washington**

- KC-WTD Manhole
- Existing Project
- Proposed Project
- KC-WTD Conveyance
- Incorporated Areas
- Sewer Service Provider

500 250 0 500 Feet  
April 2007

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**Juanita Bay Pump Station Replacement and Force Main Upgrade**  
NE Lake Washington Planning Basin

**King County**  
Department of Natural Resources and Parks  
**Wastewater Treatment Division**



## North Green River Planning Basin

### Project Name:

**South Renton Interceptor Parallel**

### Project No.

60

### Project Location:

Sewer Agency: City of Renton Public Works

Jurisdiction: City of Renton

Planning Basin: North Green River Planning Basin

### Project Description:

The South Renton Interceptor Parallel Project provides additional capacity to 2,400 feet of existing King County pipeline. The project consists of a 24 in. paralleling pipe and a jack and bore road crossings.

### Project Facilities Construction Estimate:

Name	Facility Description	DIA (in)	Length (ft)	(\$2006) Construction Estimate
RE*SRENTON.R18-16(9)	Pipe	24 in.	2,387	\$1,260,000
SW 41st St and East Valley Road	Jack and Bore	24 in.	140	\$420,000
<b>Total:</b>				<b>\$1,680,000</b>

### Estimated Total Project Cost:

Present construction cost for this project was estimated to be \$1.7M. To calculate project cost, the construction cost was factored by contingency, sales tax, and allied costs. A project contingency of 40% was recommended because this project was not subjected to a third-party CSI evaluation. Construction contingency, sales tax, and allied costs are assumed to be 10%, 8.8%, and 53.1%, respectively. **The present project cost is estimated to be \$3.6M.**

### Capacity Needs Addressed by the Project:

South Renton Trunk

### Year 20-yr Peak Flow Exceeds Capacity:

2011

### Upstream Projects Affecting Project:

There is a potential initial I/I reduction project upstream of the South Renton Interceptor Parallel project. Sewer System Evaluation Surveys (SSES) for 4 potential projects is scheduled for 2007-8. Based on the SSES results, 2 to 3 of the potential projects will be identified for I/I reduction work in the service area. These projects will be constructed

in 2010 and flow monitoring will be conducted the following wet season in 2010/2011 to measure the amount of I/I reduction achieved. Depending upon the effectiveness of the I/I reduction, there is a possibility of reducing, delaying, or eliminating the need for downstream capital conveyance projects. As the initial I/I reduction project work continues the results will be integrated into the scope and prioritization of capital conveyance projects.

**Downstream Projects Affected By Project:**

none

**Preliminary Project Alternatives Evaluation:**

***Storage***

Anticipated costs and minimal downstream benefits due to flow reduction precluded storage from evaluation as a potential cost-effective alternative.

***Pipeline Diversion***

No potential conveyance diversions were identified.

***Pipeline Replacement***

The age and condition of the existing pipeline did not warrant replacement at the time of the latest facility inspections.





## North Lake Sammamish Planning Basin

### Project Name:

**Lake Hills Trunk Replacement**

### Project No.

47

### Project Location:

Sewer Agency: City of Redmond Public Works

Jurisdiction: City of Redmond

Planning Basin: Northwest Lake Sammamish

### Project Description:

The Lake Hills Trunk Replacement Project replaces the entire 13,300 feet length of the Lake Hills Trunk with pipeline ranging in diameter from 12 in to 27 in. The project includes replacement of Lake Hills siphon with 18 in and 12 in twin barrels. It was assumed imported fill would provide sufficient protection to the siphon without including concrete encasement in the cost estimate.

### Project Facilities Construction Estimate:

Name	Facility Description	DIA (in)	Length (ft)	(\$2006) Construction Estimate
WE*LKHILLST.DISC(13)	Pipe	21 in.	2,371	\$770,000
Culvert	Jack and Bore	21 in.	25	\$260,000
NE Bell. Red. Rd and W Lk. Sam. Pkwy	Jack and Bore	21 in.	60	\$300,000
WE*LKHILLST.T-04(3)	Pipe	24 in.	326	\$130,000
WE*LKHILLST.T-17A(2)	Pipe	27 in.	442	\$200,000
WE*LKHILLST.T-31(20)	Pipe	21 in.	6,000	\$2,700,000
180th Ave NE and NE 33rd St	Jack and Bore	21 in.	60	\$340,000
WE*LKHILLST.ENTR(3)	Parallel Pipes	18 in / 12 in.	4,140	\$1,210,000
Culvert	Jack and Bore	18 in / 12 in.	25	\$280,000
Idylwood Creek	Microtunnel	18 in / 12 in.	100	\$880,000
<b>Total:</b>				<b>\$7,070,000</b>

### Estimated Total Project Cost:

Present construction cost for this project is estimated to be \$7.1M (in 2006 dollars). To calculate project cost, the construction cost is factored by contingency, sales tax, and allied costs. A project contingency of 40% is recommended because this project was not subjected to a third-party CSI evaluation. Construction contingency, sales tax, and allied costs are assumed to be 10%, 8.8%, and 53.1%, respectively. **The present project cost is estimated to be \$15.0M.**

### Capacity Need Addressed by the Project

Lake Hills Trunk

**Year 20-yr Peak Flow Exceeds Capacity:**  
<2000

**Estimated Level of Service:**  
2 to 5-yr.

**Upstream Projects Affecting Project:**  
none

**Downstream Projects Affected By Project:**  
none

**Preliminary Project Alternatives Evaluation:**

***Storage***

Storage was precluded from evaluation due to the extent of the exceedance in the existing pipe reaches.

***Pipeline Diversion***

No potential conveyance diversions were identified.

***Pipeline Paralleling***

The age and condition of the existing pipeline likely warrant replacement at the time of the latest facility inspections.



- KC-WTD Manhole
- KC-WTD Conveyance
- Proposed Project
- Other CSI Projects
- - - Incorporated Areas
- ☐ Sewer Service Provider

  
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**Project Name:**  
**Northwest Lake Sammamish Interceptor Parallel**

**Project No.**  
 44

**Project Location:**  
 Sewer Agency: City of Redmond Public Works  
 Jurisdiction: City of Redmond  
 Planning Basin: Northwest Lake Sammamish

**Project Description:**  
 The Northwest Lake Sammamish Interceptor Parallel provides additional capacity to 10,600 feet of existing King County pipeline along West Lake Sammamish Pkwy NE and the Sammamish River. Paralleling diameters range from 24 in to 42 in. The project includes five jack and bore road and culvert crossings, and a microtunnel crossing of the Sammamish River.

**Project Facilities Construction Estimate:**

Name	Facility Description	DIA (in)	Length (ft)	(\$2006) Construction Estimate
WE*NWLKSAM.R19D-08(9)	Pipe	42 in.	3,192	\$4,190,000
NE Redmond Way	Jack and Bore	42 in.	60	\$410,000
WE*NWLKSAM.R19D-27(18)	Pipe	30 in.	5,562	\$4,300,000
Culvert 1	Jack and Bore	30 in.	25	\$280,000
Culvert 2	Jack and Bore	30 in.	25	\$280,000
Culvert 3	Jack and Bore	30 in.	25	\$280,000
WE*NWLKSAM.R19D-32A(6)	Pipe	24 in.	1,649	\$530,000
Culvert 1	Jack and Bore	24 in.	25	\$260,000
WE*NWLKSAM.R19D-09(1)	Microtunnel	24 in.	175	\$580,000
<b>Total:</b>				<b>\$11,110,000</b>

**Estimated Total Project Cost:**  
 Present construction cost for this project is estimated to be \$11.1M (in 2006 dollars). To calculate project cost, the construction cost is factored by contingency, sales tax, and allied costs. A project contingency of 40% is recommended because this project was not subjected to a third-party CSI evaluation. Construction contingency, sales tax, and allied costs are assumed to be 10%, 8.8%, and 53.1%, respectively. **The present project cost is estimated to be \$23.5M.**

**Capacity Needs Addressed by the Project:**  
 NW Lake Sammamish Interceptor

**Year 20-yr Peak Flow Exceeds Capacity:**  
 <2000

**Estimated Level of Service**

5 to 10 yr.

**Upstream Projects Affecting Project:**

none

**Downstream Projects Affected By Project:**

none

**Preliminary Project Alternatives Evaluation:**

***Storage***

Storage was precluded from evaluation due to the extent of the exceedance in the existing pipe reaches.

***Pipeline Diversion***

No potential conveyance diversions were identified.

***Pipeline Replacement***

The age and condition of the existing pipeline did not warrant replacement at the time of the latest facility inspections.





## North Lake Washington Planning Basin

**Project Name:**

**[CSI] Swamp Creek - Section 1B Parallel**

**Project No.**

49

**Project Location:**

Sewer Agency: Alderwood Water and Wastewater District

Jurisdiction: Unincorporated Snohomish County

Planning Basin: North Lake Washington Planning Basin

**Project Description:**

The Swamp Creek - Section 1B Parallel Project provides additional capacity to 2,540 feet of existing King County pipeline. The project consists of a 36 in parallel pipeline, one jack and bore road crossing, and one microtunnel stream crossing.

Additional downstream pipe reaches in the Swamp Creek Trunk S1-79 may also require paralleling to provide adequate capacity. It is recommended that these pipe reaches be re-examined with detailed flow monitoring and analysis prior to the pre-design phase.

**Project Facilities Construction Estimate:**

Name	Facility Description	DIA (in)	Length (ft)	(\$2006) Construction Estimate
Swamp Creek - Section 1 Parallel Pipe	Pipe	36 in.	2,540	\$3,370,000
228th St SW	Jack and Bore	36 in.	60	\$320,000
Swamp Creek Stream Crossing	Microtunnel	36 in.	50	\$780,000
<b>Total:</b>				<b>\$4,470,000</b>

**Estimated Total Project Cost:**

Present construction cost for this project is estimated to be \$4.5M (in 2006 dollars). To calculate project cost, the construction cost is factored by contingency, sales tax, and allied costs. A project contingency of 30% is recommended because this project was subjected to a third-party CSI evaluation. Construction contingency, sales tax, and allied costs are assumed to be 10%, 8.8%, and 53.1%, respectively. **The present project cost is estimated to be \$9.0M.**

**Capacity Needs Addressed by the Project:**

Swamp Creek Trunk

**Year Required:**

2017

**Upstream Projects Affecting Project:**

none

**Downstream Projects Affected By Project:**

none

**Preliminary Project Alternatives Evaluation:**

Because this project was previously subjected to a third-party CSI evaluation, no further alternatives were investigated. Storage should be considered during pre-design.





**Project Name:**  
**Upper North Creek Parallel**

**Project No.**  
 61

**Project Location:**  
 Sewer Agency: Alderwood Water and Wastewater District  
 Jurisdiction: Unincorporated Snohomish County  
 Planning Basin: North Lake Washington Planning Basin

**Project Description:**  
 The Upper North Creek Parallel Project provides additional capacity to 2,500 feet of existing King County pipeline in Snohomish County. The project consists of an 18 in. paralleling pipe and a microtunnel stream crossing.

This parallel project on North Creek Interceptor is in addition to the North Creek Pipeline project currently in design (project #423596). The Current project is upgrading capacity through parallels and replacement of approximately 3 miles of gravity sewer in Unincorporated Snohomish County and the Snohomish Portion of the City of Bothell. The current project is upgrading portions of the Interceptor acquired from Alderwood Water and Wastewater District in 2001 that were under capacity at the time of acquisition.

**Project Facilities Construction Estimate:**

Name	Facility Description	DIA (in)	Length (ft)	(\$2006) Construction Estimate
WW*NCREEK_76-1.44(8)	Pipe	18 in.	2,462	\$1,670,000
Nickel Creek Stream Crossing	Microtunnel	18 in.	100	\$580,000
<b>Total:</b>				<b>\$2,250,000</b>

**Estimated Total Project Cost:**  
 Present construction cost for this project is estimated to be \$2.3M (in 2006 dollars). To calculate project cost, the construction cost is factored by contingency, sales tax, and allied costs. A project contingency of 40% is recommended because this project was not subjected to a third-party CSI evaluation. Construction contingency, sales tax, and allied costs are assumed to be 10%, 8.8%, and 53.1%, respectively. **The present project cost is estimated to be \$4.8M.**

**Capacity Needs Addressed by the Project:**  
 North Creek Trunk

**Year 20-yr Peak Flow Exceeds Capacity:**  
 2029

**Upstream Projects Affecting Project:**

none

**Downstream Projects Affected By Project:**

none

**Preliminary Project Alternatives Evaluation:**

***Storage***

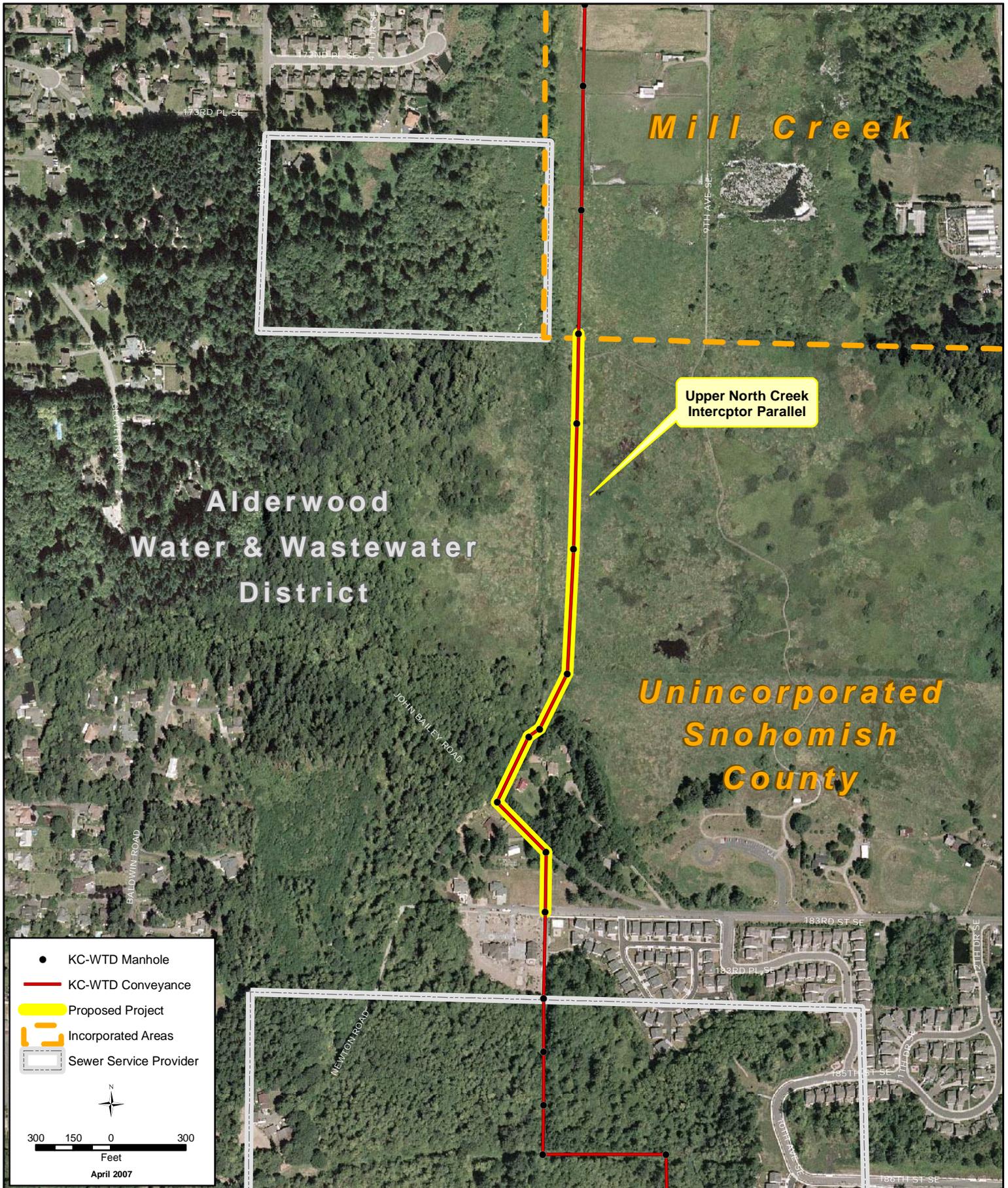
Storage was not evaluated due to the limited length of pipe replacement and the probability of needing a pump station to empty the storage, which would likely make storage not cost effective.

***Pipeline Diversion***

No potential conveyance diversions were identified.

***Pipeline Replacement***

The age and condition of the existing pipeline did not warrant replacement at the time of the latest facility inspections. Replacement should be considered during pre-design, since the existing pipeline will be about 20 years older.



- KC-WTD Manhole
- KC-WTD Conveyance
- ▬ Proposed Project
- - - Incorporated Areas
- - - Sewer Service Provider

  
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**Project Name:**  
**Lower North Creek Interceptor Parallel**

**Project No.**  
 67

**Project Location:**  
 Sewer Agency: City of Bothell Public Works  
 Jurisdiction: City of Bothell  
 Planning Basin: North Lake Washington Planning Basin

**Project Description:**  
 The Lower North Creek Interceptor Parallel provides additional capacity to 6,700 feet of existing King County pipeline. The project consists of 5,600 feet of 36 inch parallel pipeline, a jack and bore street crossing, and a microtunnel stream crossing. (The anticipated alignment is shorter in length than the existing pipe alignment.) As shown on the Project Map this Lower North Creek Parallel Project is in the King County portion of the City of Bothell.

This parallel project on North Creek Interceptor is in addition to the North Creek Pipeline project currently in design (project #423596). The Current project is upgrading capacity through parallels and replacement of approximately 3 miles of gravity sewer in Unincorporated Snohomish County and the Snohomish Portion of the City of Bothell. The current project is upgrading portions of the Interceptor acquired from Alderwood Water and Wastewater District in 2001 that were under capacity at the time of acquisition.

**Project Facilities Construction Estimate:**

Name	Facility Description	DIA (in)	Length (ft)	(\$2006) Construction Estimate
WW*NCREEK.W85-16(16)	Pipe	36 in.	5,600	\$4,300,000
NE 195th St	Jack and Bore	36 in.	60	\$280,000
North Creek Stream Crossing	Microtunnel	36 in.	100	\$840,000
<b>Total:</b>				<b>\$5,420,000</b>

**Estimated Total Project Cost:**  
 Present construction cost for this project is estimated to be \$5.4M (in 2006 dollars). To calculate project cost, the construction cost is factored by contingency, sales tax, and allied costs. A project contingency of 30% is recommended because this project was subjected to a third-party CSI evaluation. Construction contingency, sales tax, and allied costs are assumed to be 10%, 8.8%, and 53.1%, respectively. **The present project cost is estimated to be \$11.5M.**

**Capacity Needs Addressed by the Project:**  
 North Creek Trunk

**Year 20-yr Peak Flow Exceeds Capacity:**  
2024

**Upstream Projects Affecting Project:**  
none

**Downstream Projects Affected By Project:**  
none

**Preliminary Project Alternatives Evaluation:**

Because this project was previously subjected to a third-party CSI evaluation, no further alternatives were investigated.

# Alderwood Water & Wastewater District

Snohomish County  
King County

**Bothell**

City of Bothell  
Public Works

Lower North Creek Interceptor Parallel

North Creek Pump Station

- KC-WTD Manhole
- KC-WTD Pump Station
- KC-WTD Conveyance
- Proposed Project
- County Line
- ▭ Incorporated Areas
- ▭ Sewer Service Provider

April 2007

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## Lower North Creek Interceptor Parallel

North Lake Washington  
Planning Basin



**Project Name:**  
**York Pump Station Modifications**

**Project No.**  
 72

**Project Location:**  
 Sewer Agency: York PS is not in a sewer agency, North Creek PS is in the Bothell Jurisdiction: Unincorporated King County for York PS work, City of Bothell for North Creek PS work  
 Planning Basin: North Lake Sammamish, North Lake Washington

**Project Description:**  
 The York Pump Station Modification Project involves modifications to the York Pump Station and modifications to the piping at the North Creek Pump Station to allow the York Pump Station to pump flows north through the western North Creek force main to the North Creek Pump Station. The flows will be conveyed to Brightwater from there. At the York Pump Station, it will involve changing out some pumps and modifying the piping to the North Creek force main.

In the current configuration York pump station directs flows to the Eastside Interceptor only. This project will offload peak flows from the Eastside Interceptor deliver these flows to Brightwater by modifying existing facilities.

**Project Facilities Construction Estimate:**

Name	Facility Description	Capacity (mgd)	(\$2006) Construction Estimate
York Pump Station and North Creek Conveyance Modifications	Pump Station Modification	29	\$4,180,000
<b>Total:</b>			<b>\$4,180,000</b>

**Estimated Total Project Cost:**  
 This project cost originates from the RWSP and is updated to 2006 dollars. A separate cost estimate has not been performed for this project. The updated RWSP cost would translate to a construction cost of \$4.2M with a 30% contingency. Construction contingency, sales tax, and allied costs are assumed to be 10%, 8.8%, and 53.1%, respectively. **The present project cost is estimated to be \$8.4M.**

**Capacity Needs Addressed by the Project:**

Eastside Interceptor - Section 1
York Force Main
Eastside Interceptor - Section 3

**Year 20-yr Peak Flow Exceeds Capacity:**  
 N/A

**Upstream Projects Affecting Project:**

none

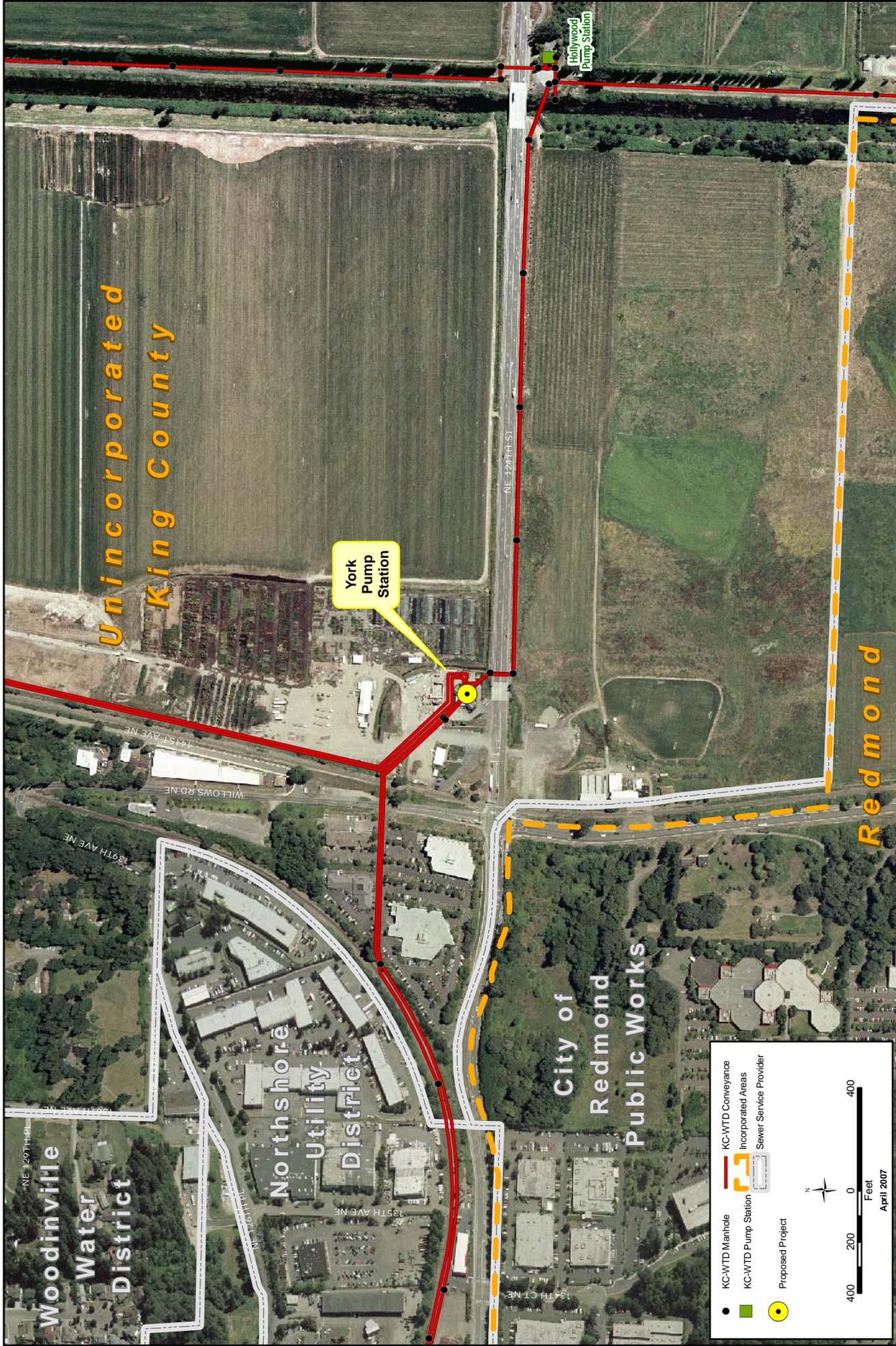
**Downstream Projects Affected By Project:**

none

**Preliminary Project Alternatives Evaluation:**

***Storage***

Storage was not considered as an alternative due to the need to pump a large portion of the flow to Brightwater.



# York Pump Station Modifications

North Lake Sammamish Planning Basin

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**King County**  
 Department of  
 Natural Resources and Parks  
**Wastewater Treatment  
 Division**

- KC-WTTD Manhole
- KC-WTTD Pump Station
- Proposed Project
- KC-WTTD Conveyance
- Incorporated Areas
- Sewer Service Provider

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## Northwest Lake Washington Planning Basin

**Project Name:**

**[CSI] Thornton Creek Interceptor Parallel**

**Project No.**

68

**Project Location:**

Sewer Agency: Seattle Public Utilities

Jurisdiction: City of Seattle

Planning Basin: Northwest Lake Washington

**Project Description:**

The Thornton Creek Interceptor Parallel Project provides additional capacity to 3,100 feet of the Thornton Creek Interceptor. The project consists of parallel pipe ranging in diameter from 42 in to 48 in.

**Project Facilities Construction Estimate:**

Name	Facility Description	DIA (in)	Length (ft)	(\$2006) Construction Estimate
Thornton Creek Parallel - Section A	Pipe	48 in.	1,151	\$1,420,000
Thornton Creek Parallel - Section B	Pipe	42 in.	744	\$500,000
Thornton Creek Parallel - Section C	Pipe	42 in.	1,205	\$1,840,000
<b>Total:</b>				<b>\$3,760,000</b>

**Estimated Total Project Cost:**

Present construction cost for this project is estimated to be \$3.8M (in 2006 dollars). To calculate project cost, the construction cost is factored by contingency, sales tax, and allied costs. A project contingency of 30% is recommended because this project was subjected to a third-party CSI evaluation. Construction contingency, sales tax, and allied costs are assumed to be 10%, 8.8%, and 53.1%, respectively. **The present project cost is estimated to be \$7.6M.**

**Capacity Needs Addressed by the Project:**

Thornton Creek Trunk

**Year 20-yr Peak Flow Exceeds Capacity:**

<2000

**Estimated Level of Service:**

5 to 10 yr.

**Upstream Projects Affecting Project:**

none

**Downstream Projects Affected By Project:**

none

**Preliminary Project Alternatives Evaluation:**

Because this project was previously subjected to a third-party CSI evaluation, no further alternatives were investigated.





## Southeast Lake Washington Planning Basin

**Project Name:**

**Coal Creek Siphon and Trunk Parallel**

**Project No.**

34

**Project Location:**

Sewer Agency: City of Bellevue Utilities

Jurisdiction: City of Bellevue

Planning Basin: NE Lake Washington

**Project Description:**

The Coal Creek Siphon and Trunk Parallel project provides additional capacity to 7,200 feet of existing King County pipeline along Coal Creek Parkway SE. The project consists of an 18 inch inverted siphon, a 21 inch gravity pipeline, and three stream crossings. The use of an inverted siphon along a partial length of the parallel is recommended due to the prohibitive excavation depths a gravity-only pipeline would require. Note that extra permitting costs to transgress approximately 1,100 ft of parkland have not been included in the estimate.

**Project Facilities Construction Estimate:**

Name	Facility Description	DIA (in)	Length (ft)	(\$2006) Construction Estimate
Coal Creek Trunk Parallel - Siphon	Pipe	18 in.	3,090	\$600,000
Coal Creek Park Stream Crossing	Microtunnel	18 in.	100	\$590,000
Coal Creek Pkwy SE Stream Crossing	Microtunnel	18 in.	50	\$520,000
Coal Creek Trunk Parallel - Gravity Feed	Pipe	21 in.	4,850	\$1,350,000
Culvert	Jack and Bore	21 in.	25	\$300,000
<b>Total:</b>				<b>\$3,360,000</b>

**Estimated Total Project Cost:**

Present construction cost for this project is estimated to be \$3.4M (in 2006 dollars). To calculate project cost, the construction cost is factored by contingency, sales tax, and allied costs. A project contingency of 40% is recommended because this project was not subjected to a third-party CSI evaluation. Construction contingency, sales tax, and allied costs are assumed to be 10%, 8.8%, and 53.1%, respectively. **The present project cost is estimated to be \$7.1M.**

**Capacity Needs Addressed by the Project**

Coal Creek Trunk

**Year 20-yr peak Flow Exceeds Capacity:**

<2000

**Estimated Level of Service:**

2 to 5 yr.

**Upstream Projects Affecting Project:**

none

**Downstream Projects Affected By Project:**

none

**Preliminary Project Alternatives Evaluation:**

***Storage***

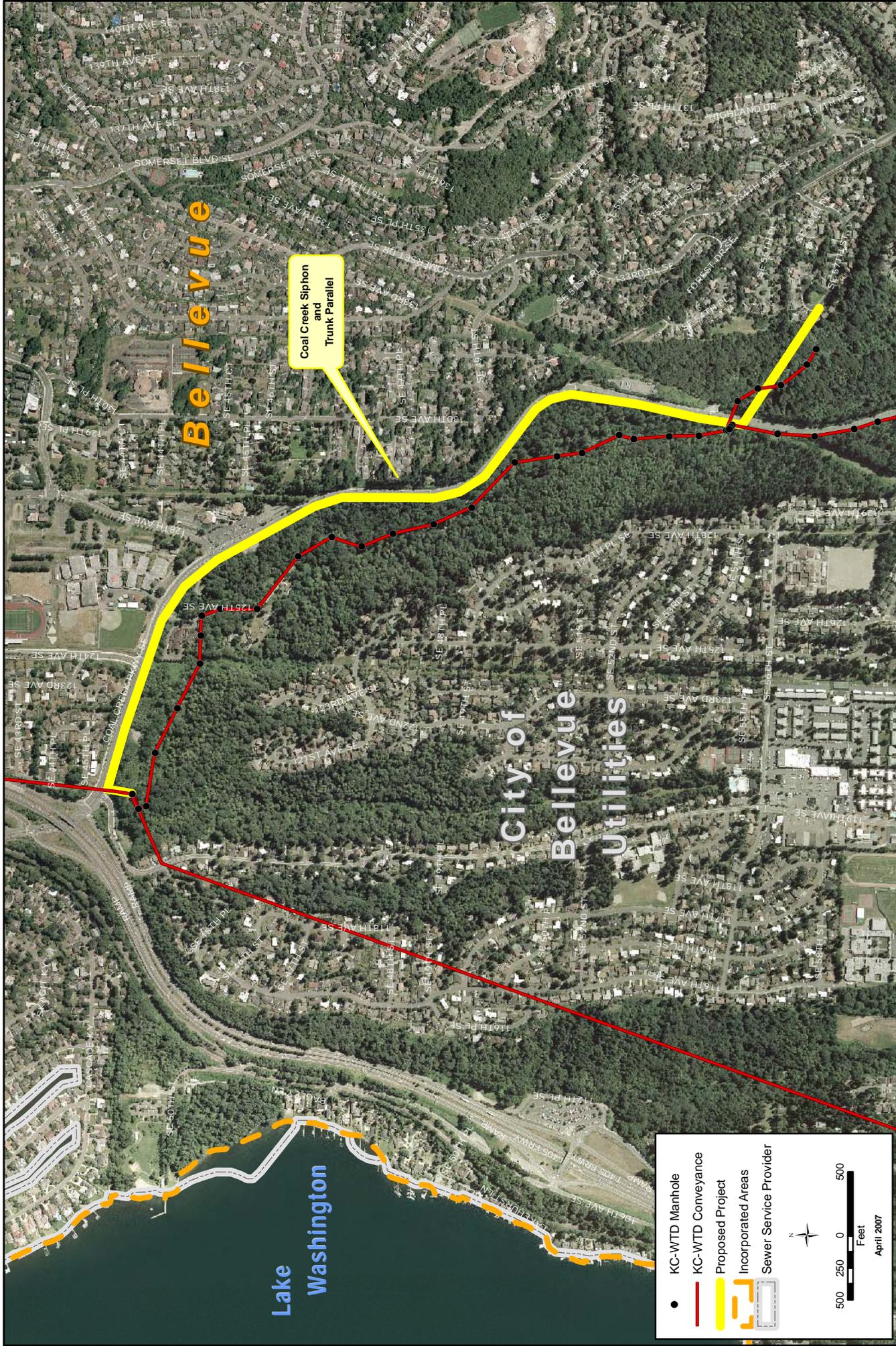
Storage was precluded from evaluation due to the extent of the exceedance in the existing pipe reaches.

***Pipeline Diversion***

No potential diversions were identified.

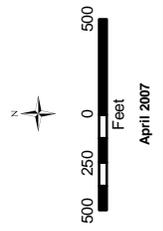
***Pipeline Replacement***

Pipeline replacement was not considered for this project due to the age and expected condition of the existing pipeline at the time of construction.



Coal Creek Siphon and Trunk Parallel

- KC-WTD Manhole
- KC-WTD Conveyance
- Proposed Project
- Incorporated Areas
- Sewer Service Provider



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# Coal Creek Siphon and Trunk Parallel

SE Lake Washington Planning Basin



## South Green River Planning Basin, Kent Planning Zone

**Project Name:**

**Garrison Creek Trunk Parallel**

**Project No.**

46

**Project Location:**

Sewer Agency: City of Kent Public Works

Jurisdiction: City of Kent

Planning Basin: South Green River Planning Basin, Kent Planning Zone

**Project Description:**

The Garrison Creek Trunk Parallel Project parallels 5,100 feet of existing King County pipeline where the available capacity is projected to be exceeded. The project consists of 21 in parallel pipeline and one jack and bore railway crossing. The proposed pipe parallels portions of both ULID #1 - Contract #5 Kent and Garrison Creek Trunk.

**Project Facilities Construction Estimate:**

Name	Facility Description	DIA (in)	Length (ft)	(\$2006) Construction Estimate
RE*GARISN.R18-06(8)	Pipe	21 in.	1,666	\$740,000
RE*ULID 1/5.571(10)	Pipe	21 in.	3,423	\$1,780,000
Railway Crossing at S 222nd St	Jack and Bore	21 in.	100	\$350,000
<b>Total:</b>				<b>\$2,870,000</b>

**Estimated Total Project Cost:**

Present construction cost for this project is estimated to be \$2.9M (in 2006 dollars). To calculate project cost, the construction cost is factored by contingency, sales tax, and allied costs. A project contingency of 40% is recommended because this project was not subjected to a third-party CSI evaluation. Construction contingency, sales tax, and allied costs are assumed to be 10%, 8.8%, and 53.1%, respectively. **The present project cost is estimated to be \$6.1M.**

**Capacity Needs Addressed by the Project:**

ULID #1 - Contract #5 Kent
Garrison Creek Trunk

**Year 20-yr Peak Flow Exceeds Capacity:**

2018

**Upstream Projects Affecting Project:**

none

**Downstream Projects Affected By Project:**

none

**Preliminary Project Alternatives Evaluation:**

***Storage***

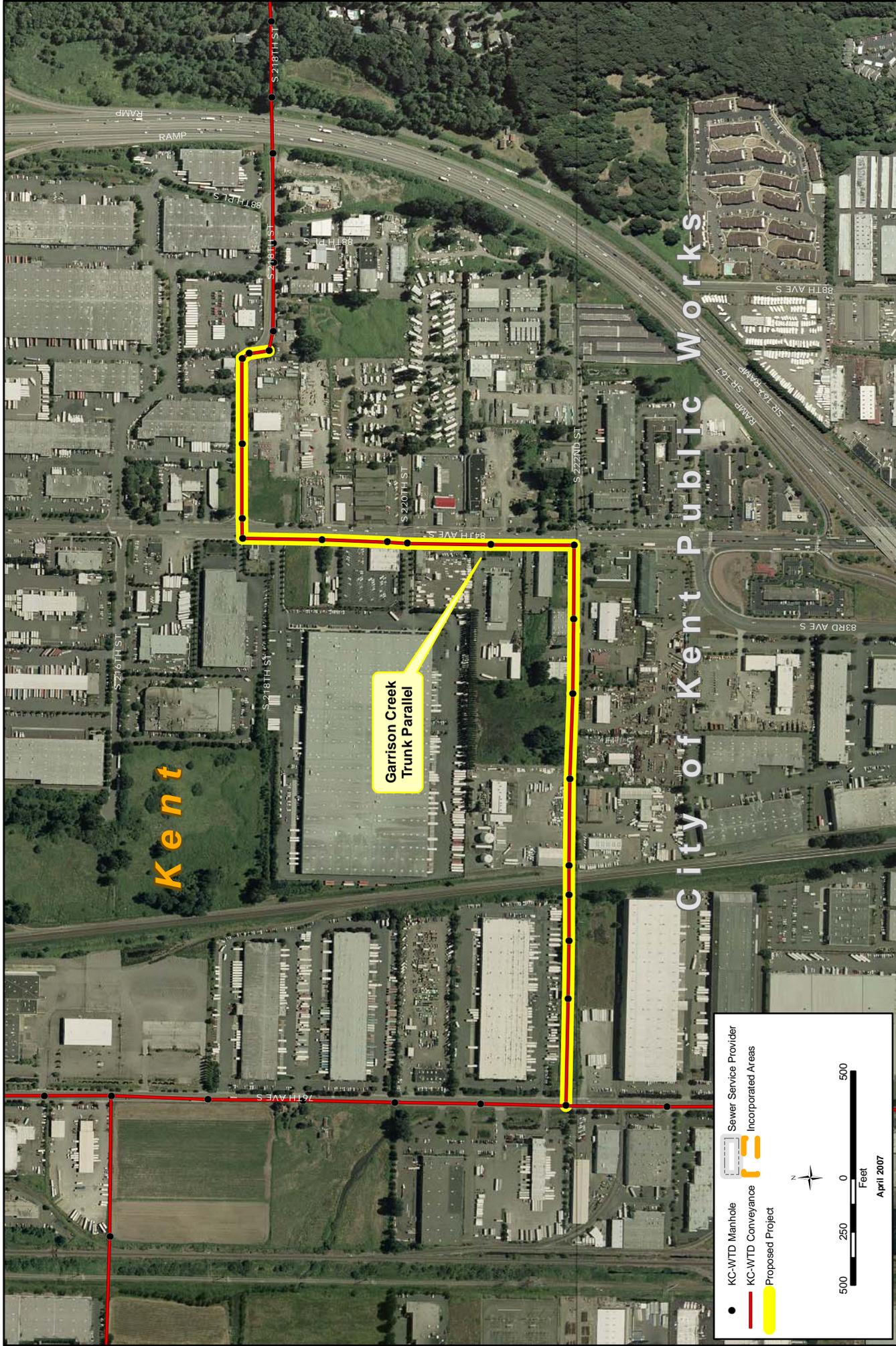
Storage was not evaluated in the planning process but would be considered during the Pre-design process.

***Pipeline Diversion***

A diversion of flows away from the existing Garrison Creek Trunk was proposed during the South Green River CSI Planning Effort. However, it was not recommended in the latest report (250A).

***Pipeline Replacement***

The age and condition of the existing pipeline did not warrant replacement at the time of the latest facility inspections.



Garrison Creek Trunk Parallel

● KC-WTD Manhole  
 — KC-WTD Conveyance Incorporated Areas  
 — Proposed Project

Sewer Service Provider  
 Incorporated Areas  
 Proposed Project

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**Garrison Creek Trunk Parallel**  
 South Green River Kent  
 Planning Basin



**Project Name:**  
**Auburn Interceptor - Section 3 Parallel Pipe Storage**

**Project No.**  
 55

**Project Location:**  
 Sewer Agency: City of Kent Public Works  
 Jurisdiction: City of Kent  
 Planning Basin: South Green River Planning Basin, Kent Planning Zone

**Project Description:**  
 The Auburn - Section 3 Parallel Pipe Storage is a 4.2 million gallon underground storage facility located at the confluence of Auburn Interceptor Section 3 and the South 277<sup>th</sup> Interceptor.

Two 12-ft diameter in-line storage pipes, extending 2,500 ft along 72<sup>nd</sup> Ave South, will limit flow to the remainder of Auburn Interceptor Section 3, as well as Section 2 and Section 1, where the available capacities are projected otherwise to be exceeded. It is assumed that there would be a small pump station at the downstream end of the storage pipes in order to empty the stored flow back to the Auburn Interceptor when the storms subside. This project will eliminate the need to parallel 17,700 feet of the Auburn Interceptor.

**Project Facilities Construction Estimate:**

Name	Facility Description	DIA (in)	Length (ft)	(\$2006) Construction Estimate
Auburn Section 3 Twin Pipe Storage	Parallel Pipes	144 in.	2,482	\$14,610,000
<b>Total:</b>				<b>\$14,610,000</b>

**Estimated Total Project Cost:**  
 Present construction cost for this project is estimated to be \$14.6M (in 2006 dollars). To calculate project cost, the construction cost is factored by contingency, sales tax, and allied costs. A project contingency of 40% is recommended because this project was not subjected to a third-party CSI evaluation. Construction contingency, sales tax, and allied costs are assumed to be 10%, 8.8%, and 53.1%, respectively. **The present project cost is estimated to be \$31.0M.**

**Capacity Needs Addressed by the Project:**

Auburn Interceptor - Section 3
Auburn Interceptor - Section 1
Auburn Interceptor - Section 2

**Year 20-yr Peak Flow Exceeds Capacity:**  
 2028

**Upstream Projects Affecting Project:**

If storage is constructed in Black Diamond and/or Soos Creek, then the size of the required storage at Auburn3 would be reduced.

**Downstream Projects Affected By Project:**

This project will eliminate the need to parallel 17,700 feet of the Auburn Interceptor, Sections 1, 2, and 3.

**Preliminary Project Alternatives Evaluation:**

***Pipeline Diversion***

No potential conveyance diversion routes were identified.

***Pipeline Parallel***

The comparative costs anticipated with paralleling approximately 17,700 feet of existing King County pipeline precluded this alternative from evaluation. A pipeline paralleling project would further entail four jack and bore crossings for major streets and culverts.

***Pipeline Replacement***

The age and condition of the existing pipeline did not warrant replacement at the time of the latest facility inspections.





**Project Name:**  
**ULID #1 – Contract #4 Trunk Parallel**

**Project No.**  
 58

**Project Location:**  
 Sewer Agency: City of Kent Public Works  
 Jurisdiction: City of Kent  
 Planning Basin: South Green River Planning Basin, Kent Planning Zone

**Project Description:**  
 The ULID #1 – Contract #4 Trunk Parallel Project provides additional capacity to 3,300 feet of existing King County pipeline. The project consists of an 18 inch parallel pipeline and one jack and bore street crossing.

**Project Facilities Construction Estimate:**

Name	Facility Description	DIA (in)	Length (ft)	(\$2006) Construction Estimate
RE*ULID 1/4.S-31(8)	Pipe	18 in.	3,297	\$1,380,000
West James St and 64th Ave S	Jack and Bore	18 in.	150	\$390,000
<b>Total:</b>				<b>\$1,770,000</b>

**Estimated Total Project Cost:**  
 Present construction cost for this project is estimated to be \$1.8M (in 2006 dollars). To calculate project cost, the construction cost is factored by contingency, sales tax, and allied costs. A project contingency of 40% is recommended because this project was not subjected to a third-party CSI evaluation. Construction contingency, sales tax, and allied costs are assumed to be 10%, 8.8%, and 53.1%, respectively. **The present project cost is estimated to be \$3.8M.**

**Capacity Needs Addressed by the Project:**  
 ULID #1 - Contract #4 Kent

**Year 20-yr Peak Flow Exceeds Capacity:**  
 2021

**Upstream Projects Affecting Project:**  
 none

**Downstream Projects Affected By Project:**  
 none

### **Preliminary Project Alternatives Evaluation:**

#### ***Storage***

Storage was not investigated during the planning process but will be considered when the project moves into pre-design.

#### ***Pipeline Diversion***

A flow diversion was proposed in early South Green River CSI Planning studies but was not recommended in the latest report (250A). It will be investigated in pre-design for this project.

#### ***Pipeline Replacement***

The age and condition of the existing pipeline did not warrant replacement at the time of the latest facility inspections.





## South Green River Planning Basin, Auburn Planning Zone

### Project Name:

**Algona Pacific Trunk Parallel - Stage 1**

### Project No.

50

### Project Location:

Sewer Agency: City of Algona Public Works & City of Pacific Public Works

Jurisdiction: Cities of Pacific and Algona

Planning Basin: South Green River Auburn Planning Zone

### Project Description:

The Algona Pacific Trunk Stage 1 Parallel Project provides additional capacity to 5,700 feet of existing King County pipeline. The project consists of a 10 in. parallel force main, a 21 in. parallel pipeline, and a jack and bore street crossing.

This project, along with Algona Pacific Trunk Stage 2, are currently included in the pre-design scope of the Kent-Auburn Conveyance Improvement Project (AKA SW Interceptor project #423582). The projects are considered key elements in the overall management of current and future flows from the south end of the King County Regional Wastewater service area. If the Algona Pacific trunk projects are included in the final design for the Kent Auburn Conveyance Project they will be removed from the planned project list.

### Project Facilities Construction Estimate:

Name	Facility Description	DIA (in)	Length (ft)	(2006) Construction Estimate
RE*ALPAC.238(9)	Pipe	21 in.	2,606	\$1,020,000
1st Ave N and Main St	Jack and Bore	21 in.	60	\$280,000
RE*ALPAC.PS 2(1)FM	Pipe	10 in.	3,070	\$820,000
<b>Total:</b>				<b>\$2,120,000</b>

### Estimated Total Project Cost:

Present construction cost for this project is estimated to be \$2.1M (in 2006 dollars). To calculate project cost, the construction cost is factored by contingency, sales tax, and allied costs. A project contingency of 40% is recommended because this project was not subjected to a third-party CSI evaluation. Construction contingency, sales tax, and allied costs are assumed to be 10%, 8.8%, and 53.1%, respectively. **The present project cost is estimated to be \$4.5M.**

### Capacity Needs Addressed by the Project:

Algona Pacific Trunk

**Year 20-yr Peak Flow Exceeds Capacity:**  
<2000

**Estimated Level Of Service:**  
10 to 20-yr

**Upstream Projects Affecting Project:**  
none

**Downstream Projects Affected By Project:**  
Kent-Auburn Conveyance Improvements (AKA SW Interceptor project # 423582)

**Preliminary Project Alternatives Evaluation:**

***Storage***

Storage was precluded from evaluation due to the limited number of contributing flow basins, and the extent of the exceedance in the existing pipe reaches. A closer look at storage will be conducted during pre-design of the Kent-Auburn Conveyance System Project.

***Pipeline Diversion***

Diversion of flow will be looked at during pre-design of the Kent-Auburn Conveyance System Project.

***Pipeline Replacement***

The age and condition of the existing pipeline did not warrant replacement at the time of the latest facility inspections.



Algona Pacific Trunk Stage 2

Algona Pacific Trunk Stage 1

- KC-WTD Manhole
- Proposed Project
- Other CSI Projects
- KC-WTD Conveyance
- Incorporated Areas
- Sewer Service Provider

400 200 0 400 Feet  
April 2007

# Algona Pacific Trunk Stage 1

South Green River Auburn Planning Basin

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**Project Name:**  
**Algona Pacific Trunk Parallel - Stage 2**

**Project No.**  
 67

**Project Location:**  
 Sewer Agency: City of Algona Public Works  
 Jurisdiction: City of Algona  
 Planning Basin: South Green River Auburn Planning Zone

**Project Description:**  
 The Algona Pacific Trunk Parallel - Stage 2 Project provides additional capacity to 1,700 feet of existing King County pipeline. The project consists of 18 inch gravity pipeline.

This project, along with Algona Pacific Trunk Stage 1, are currently included in the pre-design scope of the Kent-Auburn Conveyance Improvement Project (AKA SW Interceptor project #423582). The projects are considered key elements in the overall management of current and future flows from the south end of the King County Regional Wastewater service area. If the Algona Pacific trunk projects are included in the final design for the Kent Auburn Conveyance Project they will be removed from the planned project list.

**Project Facilities Construction Estimate:**

Name	Facility Description	DIA (in)	Length (ft)	(\$2006) Construction Estimate
RE*ALPAC.256(7)	Pipe	18 in.	1,676	\$640,000
<b>Total:</b>				<b>\$640,000</b>

**Estimated Total Project Cost:**  
 Present construction cost for this project is estimated to be \$0.7M (in 2006 dollars). To calculate project cost, the construction cost is factored by contingency, sales tax, and allied costs. A project contingency of 40% is recommended because this project was not subjected to a third-party CSI evaluation. Construction contingency, sales tax, and allied costs are assumed to be 10%, 8.8%, and 53.1%, respectively. **The present project cost is estimated to be \$1.4M.**

**Capacity Needs Addressed by the Project:**  
 Algona Pacific Trunk

**Year 20-yr Peak Flow Exceeds Capacity:**  
 2027

**Upstream Projects Affecting Project:**  
 None are anticipated. If upstream storage or diversion is selected for the Algona Pacific Trunk Stage 1 parallel, this Stage 2 project would be reduced in size or eliminated.

**Downstream Projects Affected By Project:**

none

**Preliminary Project Alternatives Evaluation:**

***Storage***

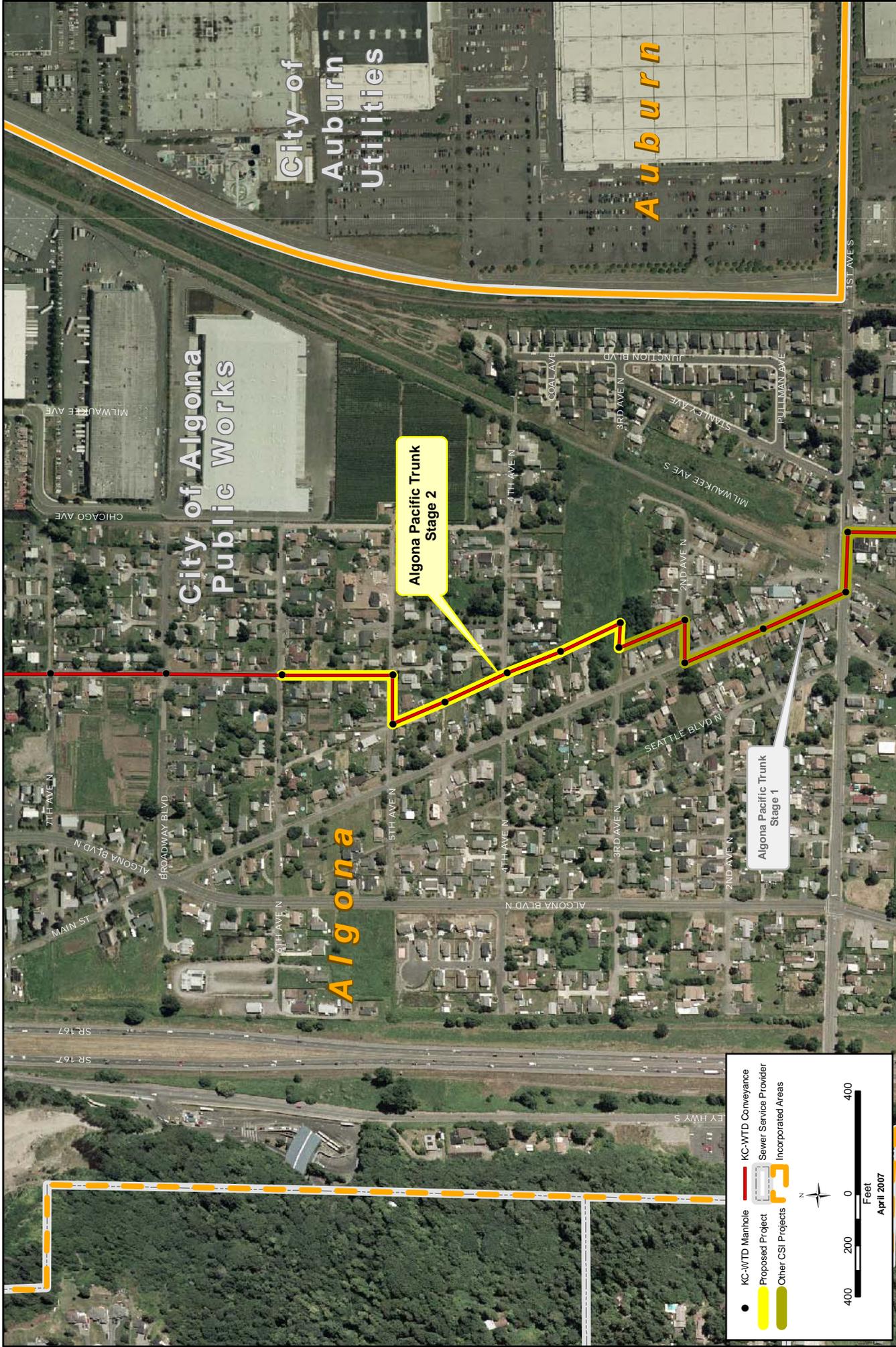
Storage was precluded from evaluation due to the limited number of contributing flow basins, and the extent of the exceedance in the existing pipe reaches. Storage in the area will be considered during pre-design of the Kent-Auburn Conveyance System Project.

***Pipeline Diversion***

No potential conveyance diversions were identified. Diversion of the Pacific Pump Station flows will be considered in the pre-design of the Kent-Auburn Conveyance System Project.

***Pipeline Replacement***

The age and condition of the existing pipeline did not warrant replacement at the time of the latest facility inspections.



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**Algona Pacific Trunk Stage 2**  
 South Green River Auburn  
 Planning Basin

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**Project Name:**  
**Lakeland Hills Pump Station Replacement**

**Project No.**  
 63

**Project Location:**  
 Sewer Agency: City of Auburn Utilities  
 Jurisdiction: City of Auburn  
 Planning Basin: South Green River Auburn Planning Zone

**Project Description:**  
 The Lakeland Hills Pump Station Replacement Project replaces an existing King County pump station where the available pumping capacity is projected to be exceeded.

**Project Facilities Construction Estimate:**

Name	Facility Description	Capacity (mgd)	TDH (ft)	(\$2006) Construction Estimate
Lakeland Hills Pump Station	Pump Station	6.44	70	\$2,850,000
<b>Total:</b>				<b>\$2,850,000</b>

**Estimated Total Project Cost:**  
 Present construction cost for this project was estimated to be \$2.9M. To calculate project cost, the construction cost was factored by contingency, sales tax, and allied costs. A project contingency of 40% was recommended because this project was not subjected to a third-party CSI evaluation. Construction contingency, sales tax, and allied costs are assumed to be 10%, 8.8%, and 53.1%, respectively. **The present project cost is estimated to be \$6.0M.**

**Capacity Needs Addressed by the Project:**  
 Lakeland Hills Pump Station

**Year 20-yr Peak Flow Exceeds Capacity:**  
 2040

**Upstream Projects Affecting Project:**  
 none

**Downstream Projects Affected By Project:**  
 none

**Preliminary Project Alternatives Evaluation:**

**Storage**  
 Storage was not considered as an alternative due to the expected age and condition of the pump station at the time of construction.

***Pump Station Upgrade***

Pump station replacement is recommended instead of an upgrade due to the expected age and condition of the pump station at the time of construction.



City of  
Auburn  
Utilities

Lakeland Hills  
Pump Station  
Replacement

- KC-WTD Manhole
- Proposed Project
- KC-WTD Conveyance
- Sewer Service Provider
- Incorporated Areas

300 150 0 300  
Feet  
April 2007

**Lakeland Hills  
Pump Station Replacement**  
South Green River Auburn  
Planning Basin

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**King County**  
Department of  
Natural Resources and Parks  
**Wastewater Treatment  
Division**



## South Green River Planning Basin, Soos Planning Zone

**Project Name:**

**[CSI] Soos Alternative 3A(3) – PS D w/ Conveyance**

**Project No.**

23

**Project Location:**

Sewer Agency: Soos Creek Water and Sewer District, City of Kent Public Works, City of Auburn Utilities

Jurisdiction: City of Covington, City of Kent, Unincorporated King County

Planning Basin: South Green River Planning Basin, Soos Planning Zone

**Project Description:**

The Soos Alternative 3A(3) – PS D w/ Conveyance project involves siting and constructing a 26 mgd pump station and 4 miles of conveyance pipelines. The conveyance portion consist of 16,000 lineal feet of dual forcemains and 5000 lineal feet of 48" diameter gravity pipe. The system conveys flows from the Covington area to the South 277<sup>th</sup> interceptor. The system was originally slated to be online by 2008.

This and two other Soos Creek projects , PS H and B along with associated conveyance were originally developed during the initial CSI planning Program to serve the Black Diamond, Soos Creek Water and Sewer District, City of Kent, and City of Auburn service areas.

Early in 2005, during the late stages of predesign for Pump station D, the immediate need for the projects was questioned by Soos Creek Water and Sewer District, a local service providers in the project area. A series of meetings with Soos Creek Water and Sewer District representatives in late 2005 led to the development of the Black Diamond Storage Project. The Black Diamond Storage Project delays the need for Pump station D and H until 2015 to 2020. The Black Diamond Storage project is currently in predesign and is scheduled for completion by 2010.

**Project Facilities Construction Estimate:**

Construction cost estimates for this project are from the June 2005 Task 360 Soos Creek Area Pump Station D and Pipeline predesign report Prepared By Tetra Tech/KCM. Details of cost estimates are in the predesign report.

Pump station \$9.4

Conveyance \$21.6M

**Estimated Total Project Cost:**

The total project cost includes allied costs of \$11M for a total project cost of \$42M

**Capacity Needs Addressed by the Project:**

Kent Cascade Interceptor
Black Diamond Trunk

**Year 20-yr Peak Flow Exceeds Capacity:**

2000

**Upstream Projects Affecting Project:**

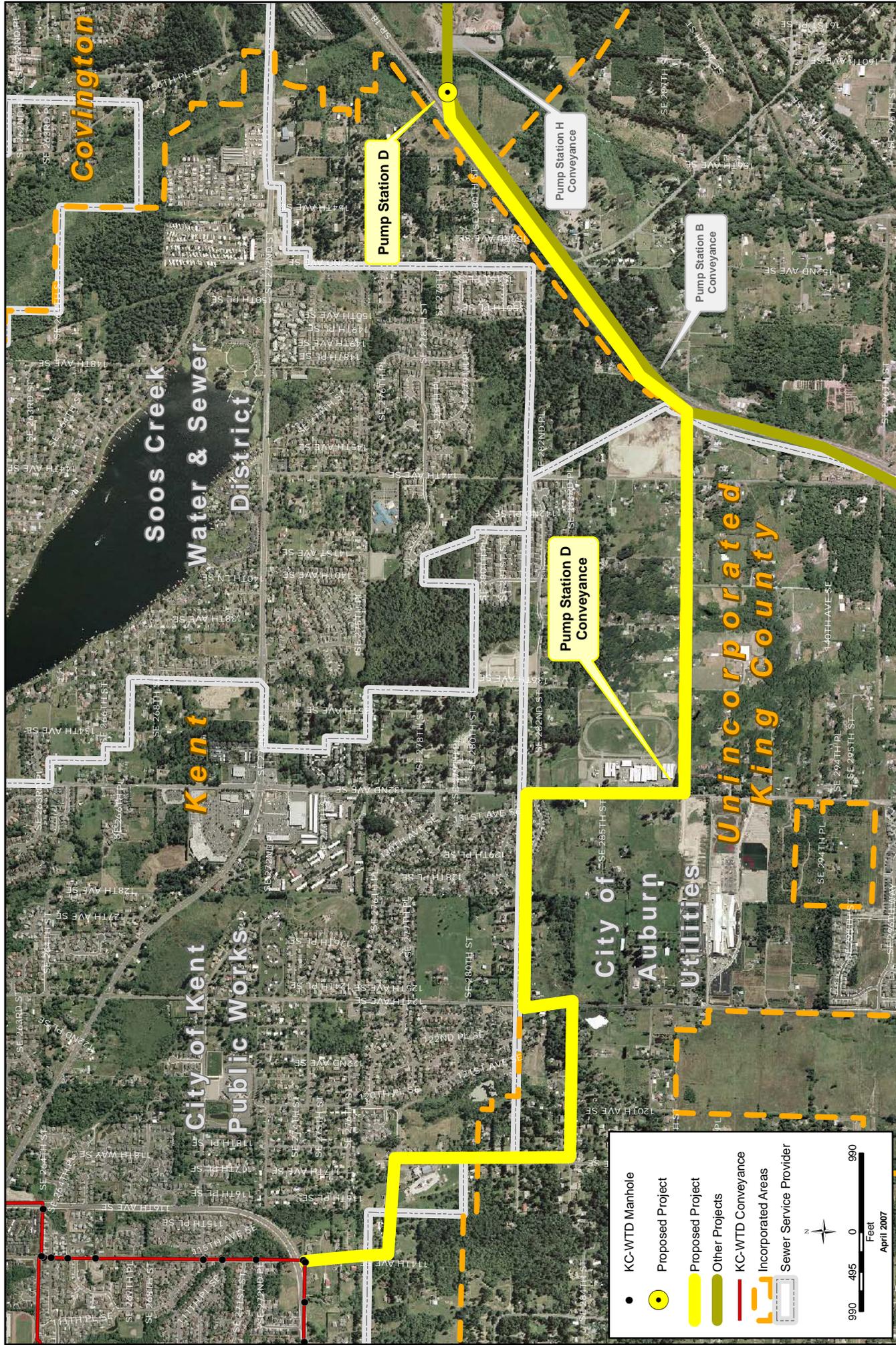
[CSI] Soos Alternative 3A(3) – PS H w/ Conveyance, Black Diamond Storage

**Downstream Projects Affected By Project:**

Kent Auburn Conveyance Improvements

**Preliminary Project Alternatives Evaluation:**

Alternative alignments and analysis are detailed in the previously mentioned predesign report. The alternatives involved investigating multiple pump station sites and pipeline routes.



- KC-WTD Manhole
- Proposed Project
- ▬ Proposed Project
- ▬ Other Projects
- ▬ KC-WTD Conveyance
- ▬ Incorporated Areas
- ▬ Sewer Service Provider

990 495 0 990  
Feet  
April 2007

**Soos Alternative 3A(3)**  
**Pump Station D with Conveyance**

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**King County**  
 Department of  
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**Wastewater Treatment  
 Division**

South Green River Soos  
 Planning Basin



**Project Name:**

**[CSI] Soos Alternative 3A(3) – PS H w/ Conveyance**

**Project No.**

25

**Project Location:**

Sewer Agency: Soos Creek Water and Sewer District, Black Diamond Public Works

Jurisdiction: City of Covington, City Black Diamond, Unincorporated King County

Planning Basin: South Green River Planning Basin, Soos Planning Zone

**Project Description:**

The Soos Alternative 3A(3) – PS H w/ Conveyance project involves siting and constructing a 6 mgd pump station and 7 miles of conveyance pipelines. The conveyance portion consists of 1000 lineal feet of 12” diameter forcemain and 35,000 lineal feet of 18” to 24” diameter gravity pipe. The system delivers flows from the Black Diamond service area to the Soos Alternative 3A(3) – PS D planned to be located in the City of Covington. The system was originally slated to be online by 2010.

This and two other Soos Creek projects , PS D and B along with associated conveyance were originally developed during the initial CSI planning Program to serve the Black Diamond, Soos Creek Water and Sewer District, City of Kent, and City of Auburn service areas.

Early in 2005, during the late stages of predesign for Pump station D, the immediate need for the projects was questioned by Soos Creek Water and Sewer District, a local service provider in the project area. A series of meetings with Soos Creek Water and Sewer District and King County WTD representatives in late 2005 led to the development of the Black Diamond Storage Project. The Black Diamond Storage Project delays the need for Pump station D and H until 2015 to 2020. The Black Diamond Storage project is currently in predesign and is scheduled for completion by 2010.

**Project Facilities Construction Estimate:**

Construction cost estimates for this project were prepared by the Soos Creek project team in preparation for acquisition of consultant services and the Major Capital Projects Budget.

Pump station \$4M

Conveyance \$29M

**Estimated Total Project Cost:**

The total project cost includes allied costs of \$14M for a total project cost of \$47M

**Capacity Needs Addressed by the Project:**

Black Diamond Pump Station / Black  
Diamond Trunk

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**Year 20-yr Peak Flow Exceeds Capacity:**  
<2000

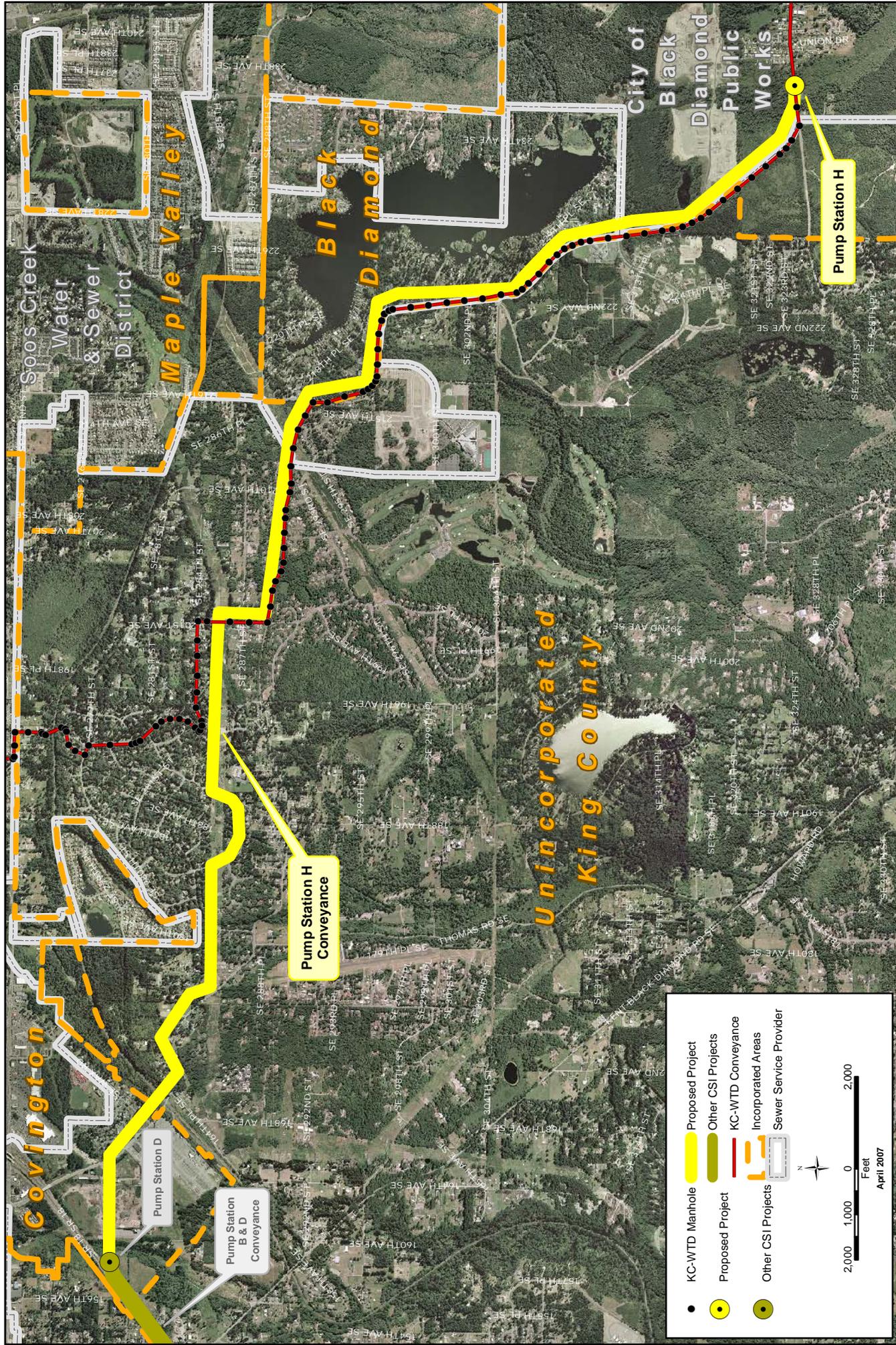
**Estimated Level Of Service:**  
2 to 5-yr

**Upstream Projects Affecting Project:**  
Black Diamond Storage

**Downstream Projects Affected By Project:**  
[CSI] Soos Alternative 3A(3) – PS D w/ Conveyance, Kent Auburn Conveyance Improvements

**Preliminary Project Alternatives Evaluation:**

Route alternatives for the pipeline alignment were investigated as part of the initial CSI planning



**Soos Alternative 3A(3)  
Pump Station H with Conveyance**  
South Green River Soos  
Planning Basin

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**Project Name:**

**[CSI] Soos Alternative 3A(3) – PS B w/ Conveyance**

**Project No.**

43

**Project Location:**

Sewer Agency: Soos Creek Water and Sewer District, City of Auburn Utilities

Jurisdiction: City of Covington, Unincorporated King County (Auburn PAA)

Planning Basin: South Green River Planning Basin, Soos Planning Zone

**Project Description:**

The Soos Alternative 3A(3) – PS B w/ Conveyance project involves siting and constructing a 1.6 mgd pump station and 2 miles of conveyance pipelines. The conveyance portion consists of 5,500 lineal feet of 12" diameter forcemain and 4,500 lineal feet of 12" to 18" diameter gravity pipe. The system delivers flows from a currently unsewered portion of unincorporated King County to the Soos Alternative 3A(3) – PS D planned to be located in the City of Covington. The system was originally slated to be online by 2015.

This and two other Soos Creek projects , PS D and H along with associated conveyance were originally developed during the initial CSI planning Program to serve the Black Diamond, Soos Creek Water and Sewer District, City of Kent, and City of Auburn service areas.

Early in 2005, during the late stages of predesign for Pump station D, the immediate need for the projects was questioned by Soos Creek Water and Sewer District, a local service provider in the project area. A series of meetings with Soos Creek Water and Sewer District and King County WTD representatives in late 2005 led to the development of the Black Diamond Storage Project. The Black Diamond Storage Project delays the need for Pump station D and H until 2015 to 2020. The Black Diamond Storage project is currently in predesign and is scheduled for completion by 2010.

**Project Facilities Construction Estimate:**

Construction cost estimates for the facilities are based on information from the Initial CSI planning done for the South Green River Planning Basin.

Pump station \$3M

Conveyance \$2.5M

**Estimated Total Project Cost:**

The total project cost includes allied costs of \$2.4M for a total project cost of \$7.9M

**Capacity Needs Addressed by the Project:**

N/A (*the area is unsewered and currently not served by King County WTD facilities*)

**Year 20-yr Peak Flow Exceeds Capacity:**

N/A

**Upstream Projects Affecting Project:**

None

**Downstream Projects Affected By Project:**

[CSI] Soos Alternative 3A(3) – PS D w/ Conveyance, Kent Auburn Conveyance Improvements

**Preliminary Project Alternatives Evaluation:**

Route alternatives for the pipeline alignment were investigated as part of the initial CSI planning





## South Lake Sammamish Planning Basin

### Project Name:

**[CSI] Sammamish Plateau Diversion**

### Project No.

36

### Project Location:

Sewer Agency: Sammamish Plateau Water and Sewer District, NE Sammamish Sewer and Water District, & City of Redmond Public Works

Jurisdiction: City of Sammamish & City of Redmond

Planning Basin: South Lake Sammamish

### Project Description:

The Sammamish Plateau Diversion is a 24 in. pipeline extending 18,500 feet along East Lake Sammamish Parkway NE or the East lake Sammamish Trail from Inglewood Hills Road to the upstream end of the Northeast Lake Sammamish Interceptor. The project includes 12 jack and bore culvert crossings.

The Sammamish Plateau Diversion Project, along with the Sammamish Plateau Storage Project, will accommodate anticipated growth in the Sammamish Plateau.

### Project Facilities Construction Estimate:

Name	Facility Description	DIA (in)	Length (ft)	(\$2006) Construction Estimate
Sammamish Diversion	Pipe	24 in.	18,500	\$9,120,000
Culvert 01	Jack and Bore	24 in.	25	\$260,000
Culvert 02	Jack and Bore	24 in.	25	\$260,000
Culvert 03	Jack and Bore	24 in.	25	\$260,000
Culvert 04	Jack and Bore	24 in.	25	\$260,000
Culvert 05	Jack and Bore	24 in.	25	\$260,000
Culvert 06	Jack and Bore	24 in.	25	\$260,000
Culvert 07	Jack and Bore	24 in.	25	\$260,000
Culvert 08	Jack and Bore	24 in.	25	\$260,000
Culvert 09	Jack and Bore	24 in.	25	\$260,000
Culvert 10	Jack and Bore	24 in.	25	\$260,000
Culvert 11	Jack and Bore	24 in.	25	\$260,000
Culvert 12	Jack and Bore	24 in.	25	\$260,000
<b>Total:</b>				<b>\$12,240,000</b>

### Estimated Total Project Cost:

Present construction cost for this project was estimated to be \$12.3M. To calculate project cost, the construction cost was factored by contingency, sales tax, and allied costs. A project contingency of 30% was recommended because this project was subjected to a third-party CSI evaluation. Construction contingency, sales tax, and allied costs are assumed to be 10%, 8.8%, and 53.1%, respectively. **The present project cost is estimated to be \$24.8M.**

**Capacity Needs Addressed by the Project**

Vasa Park Force Mains/Sunset-Heathfield Pump Stations (primary need)
Eastgate Trunk
Lake Hills Interceptor
Issaquah Interceptor - Section 1
Issaquah Interceptor - Section 2
Eastside Interceptor - Section 1
Eastside Interceptor - Section 3

The Sammamish Plateau Diversion addresses multiple capacity needs by diverting flows out of the South Sammamish Planning Basin.

**Year 20-yr peak flow exceeds Capacity:**

<2000 (Vasa Park Force Mains/Sunset-Heathfield Pump Stations)

**Upstream Projects Affecting Project:**

none

**Downstream Projects Affected By Project:**

This diversion aids in eliminating the need to parallel the Eastgate Trunk and Lake Hills Interceptor in Bellevue and reduces flows to the ESI Sections 1 and 3 in Renton. Excess capacity exists downstream of the new diversion pipe to convey the flows to the Brightwater Treatment Facility

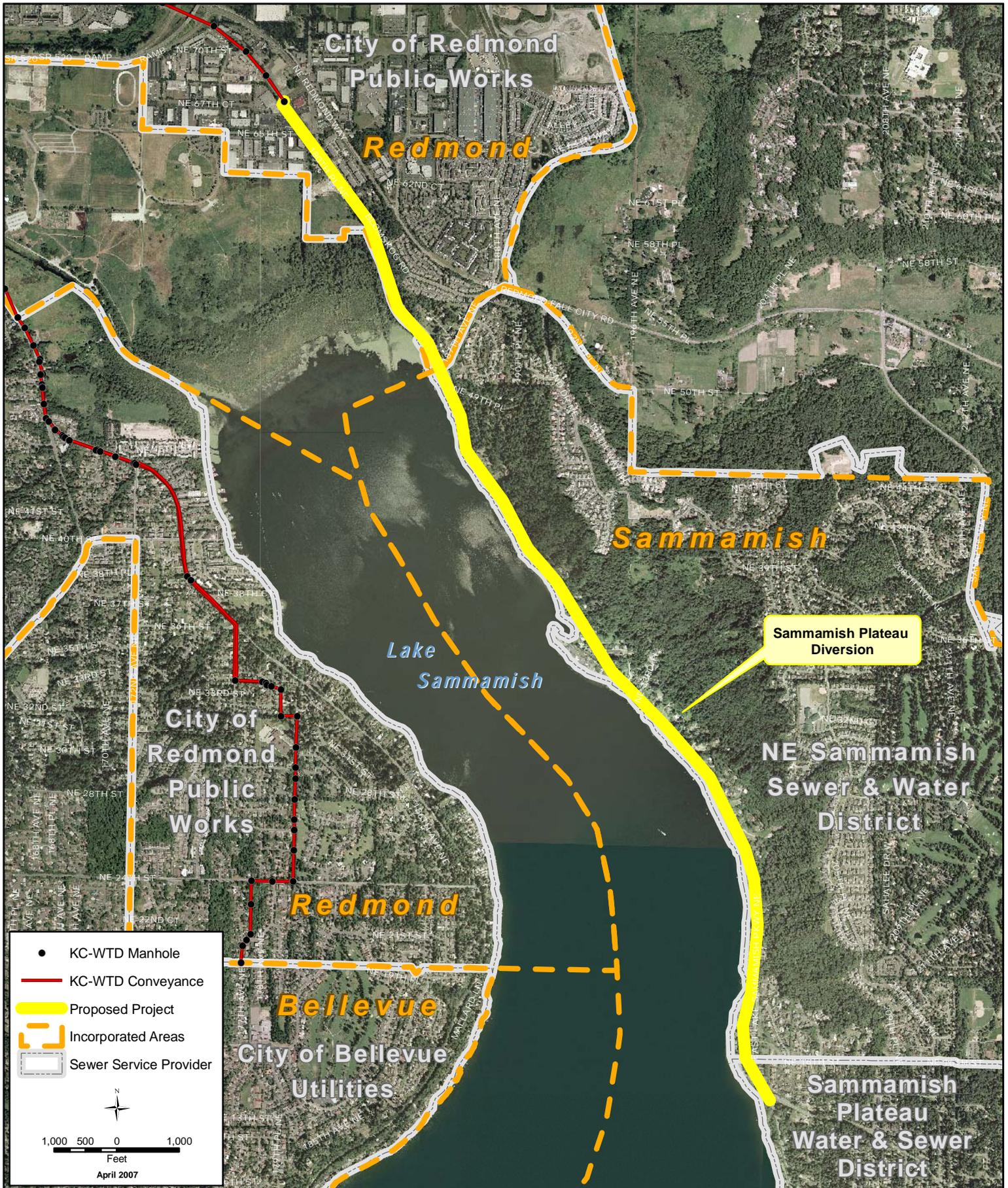
**Preliminary Project Alternatives Evaluation:**

Because this project was previously subjected to a third-party CSI evaluation, no further alternatives were investigated.

**Note:**

The Sammamish Plateau Diversion project is one of a suite of projects developed during the CSI initial Basin Planning 1999-2003 and summarized in the Task 260 South Sammamish Basin Task Summary. ([ftp://dnr.metrokc.gov/wtd/csi/csi-docs/LkSamm\\_S/Task260.pdf](ftp://dnr.metrokc.gov/wtd/csi/csi-docs/LkSamm_S/Task260.pdf)) The suite of projects were refined during the current CSI program update using updated monitoring, modeling, sewer population growth, and project cost information. The current suite of projects is listed in the table below.

<b><i>South Sammamish Planning Basin Projects</i></b>
Eastgate Parallel Pipe Storage
Heathfield/Sunset Pump Station Replacement and Force Main Upgrade
Issaquah Creek Highlands Storage
[CSI] Issaquah Storage
[CSI] Sammamish Plateau Diversion
[CSI] Sammamish Plateau Storage





**Project Name:**

**Heathfield/Sunset Pump Station Replacement and Force Main Upgrade**

**Project No.**

40

**Project Location:**

Sewer Agency: City of Bellevue Utilities

Jurisdiction: City of Bellevue

Planning Basin: South Lake Sammamish

**Project Description:**

The Heathfield/Sunset Pump Station and Force Main Upgrade Project replaces two existing King County pump stations with two 27 mgd pump stations. The project also parallels 5,000 feet of existing King County force main with a third 20 inch barrel. This parallel will require two microtunneled stream crossings, and two jack and bore culvert and road crossings.

**Project Facilities Construction Estimate:**

Name	Facility Description	Capacity (mgd)	TDH (ft)	(\$2006) Construction Estimate
Heathfield Pump Station	Pump Station	26.6	145	\$10,134,000
Sunset Pump Station	Pump Station	26.6	150	\$10,253,000
<b>Subtotal:</b>				<b>\$20,387,000</b>
Name	Facility Description	DIA (in)	Length (ft)	(\$2006) Construction Estimate
RE*ISSAQ1.HEATHFIEL(1)FM	Pipe	24 in.	1,668	\$658,000
SE 35th PI and SE Eastgate Way	Jack and Bore	24 in.	60	\$276,000
Vasa Creek	Microtunnel	24 in.	100	\$599,000
RE*ISSAQ1.SUNSET(1)FM	Pipe	24 in.	3,333	\$1,269,000
Culvert 1	Jack and Bore	24 in.	25	\$261,000
Vasa Creek	Microtunnel	24 in.	100	\$599,000
<b>Subtotal:</b>				<b>\$3,662,000</b>
<b>Total:</b>				<b>\$24,049,000</b>

**Estimated Total Project Cost:**

Present construction cost for this project was estimated to be \$24.1M. To calculate project cost, the construction cost was factored by contingency, sales tax, and allied costs. A project contingency of 40% was recommended because this project was not subjected to a third-party CSI evaluation. Construction contingency, sales tax, and allied costs are assumed to be 10%, 8.8%, and 53.1%, respectively. **The present project cost was estimated to be \$51.0M.**

**Capacity Needs Addressed by the Project:**

Vasa Park Force Mains/Sunset-Heathfield Pump Stations

**Year 20-yr Peak Flow exceeds capacity:**

<2000

**Estimated Level of Service in 2000**

5 to 10 yr

**Upstream Projects Affecting Project:**

Flow reduction resulting from Issaquah Creek Highlands Storage, Issaquah Storage, Sammamish Plateau Storage, and the Sammamish Plateau Diversion will mitigate the extent of the required upgrade for this project.

**Downstream Projects Affected By Project:**

none

**Preliminary Project Alternatives Evaluation:**

***Storage***

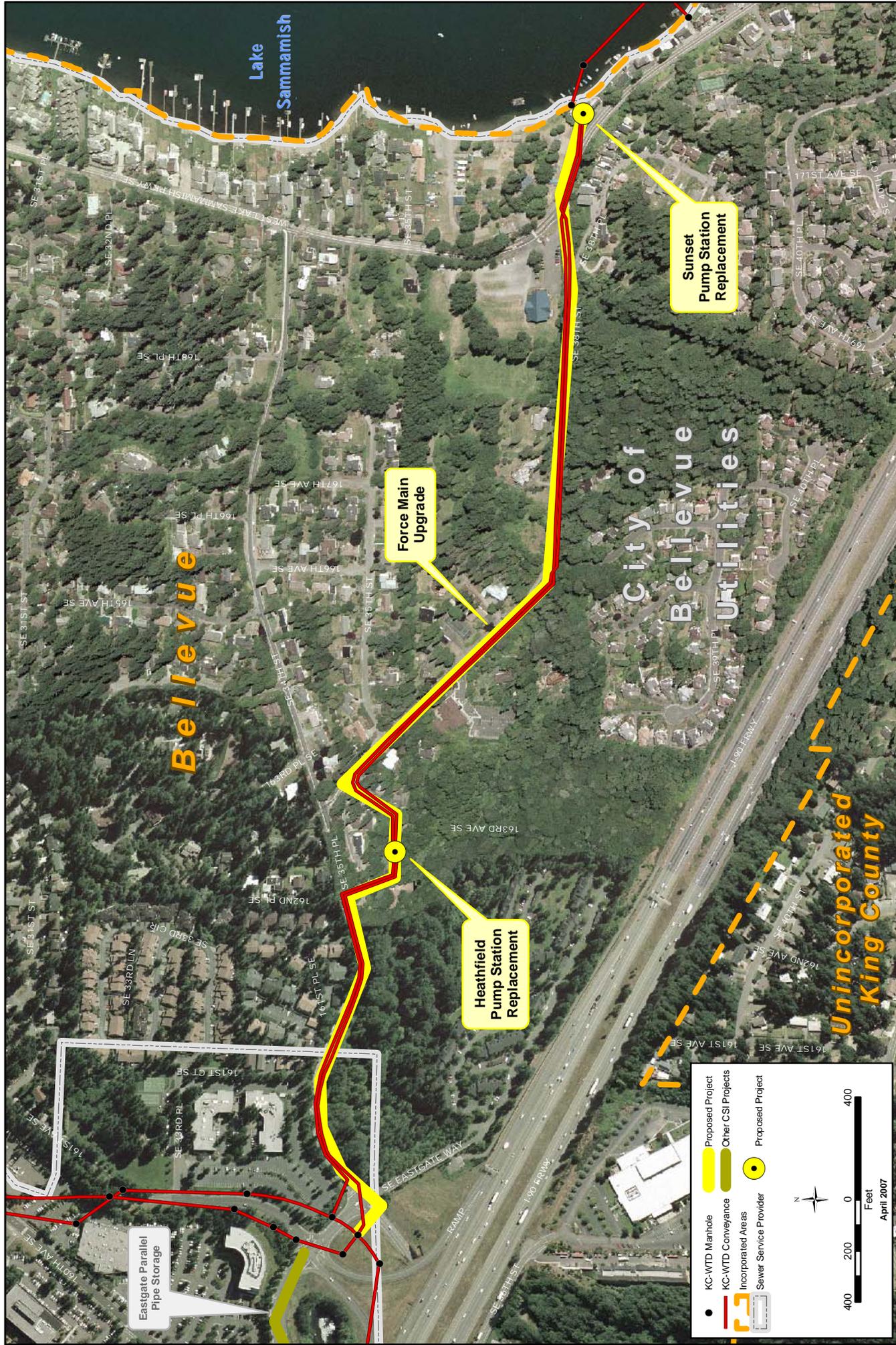
Potential flow reduction using storage is planned to be provided by upstream storage projects.

***Pipeline Diversion***

The Sammamish Plateau Diversion will remove some of the projected peak flow from this basin, reducing the size of pump station upgrade required.

***Pipeline Replacement***

The age and condition of the existing force-mains do not warrant replacement at the time of the latest facility inspections. Subsequent inspection of the existing force-mains may reveal conditions that warrant replacement.



# Heathfield/Sunset Pump Station Replacement and Force Main Upgrade

South Lake Sammamish Planning Basin

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File Name: Q:\WTPD\Projects\CSL\_Project\Projects\201609\Report\Projects\Proposed\Projects\Heathfield\_Sunset\_ps\_replc\_FMUpgrade.mxd -peter keum sc

	KC-WTD Manhole		Proposed Project
	KC-WTD Conveyance		Other CSI Projects
	Incorporated Areas		Proposed Project
	Sewer Service Provider		

400 200 0 400 Feet  
April 2007

**King County**  
Department of  
Natural Resources and Parks  
**Wastewater Treatment  
Division**



**Project Name:**  
**Eastgate Parallel Pipe Storage**

**Project No.**  
 41

**Project Location:**  
 Sewer Agency: City of Bellevue Utilities  
 Jurisdiction: City of Bellevue  
 Planning Basin: South Lake Sammamish

**Project Description:**  
 The Eastgate Parallel Pipe Storage and Trunk Project is a 3.6 million gallon inline storage pipeline located along SE Eastgate Way in Bellevue. The project consists of two 12-foot diameter inline storage pipes extending 2,120 feet in parallel, and a jack and bore street crossing. These storage pipes operate in tandem with the Issaquah and Sammamish Plateau Storage Pipes to limit flow to the downstream capacity in the Eastgate Trunk where the available capacity is otherwise projected to be exceeded.

**Project Facilities Construction Estimate:**

Name	Facility Description	DIA (in)	Length (ft)	(\$2006) Construction Estimate
Eastgate Twin Pipe Storage	Parallel Pipes	144 in.	2,119	\$13,660,000
SE Eastgate Way and 161st Ave SE	Jack and Bore	36 in.	100	\$440,000
<b>Total:</b>				<b>\$14,100,000</b>

**Estimated Total Project Cost:**  
 Present construction cost for this project was estimated to be \$14.1M. To calculate project cost, the construction cost was factored by contingency, sales tax, and allied costs. A project contingency of 40% was recommended because this project was not subjected to a third-party CSI evaluation. Construction contingency, sales tax, and allied costs are assumed to be 10%, 8.8%, and 53.1%, respectively. **The present project cost is estimated to be \$29.9M.**

**Capacity Needs Addressed by the Project:**

Eastgate Trunk
Lake Hills Interceptor
Eastside Interceptor - Section 1
Eastside Interceptor - Section 3

**Year 20-yr Peak Flow Exceeds Capacity:**  
 <2000

**Estimated Level Of Service:**  
 5 to 10 yr.

**Upstream Projects Affecting Project:**

This project works in tandem with the Issaquah Storage, Sammamish Plateau Diversion, Sammamish Plateau Storage, and Issaquah Creek Highlands Storage, which are all also upstream of the Eastgate Trunk.

There is a potential initial I/I reduction project upstream of the Eastgate Parallel Pipe Storage. SSES for 4 potential projects is scheduled for 2007. Based on the SSES results 1 to 3 of the potential project areas will be identified for I/I reduction work in the service area. Depending upon the effectiveness of the I/I reduction, there is a possibility of reducing, delaying, or eliminating the need for downstream capital conveyance projects. As the initial I/I reduction project work continues the results will be integrated into the scope and prioritization of capital conveyance projects.

**Downstream Projects Affected By Project:**

Flow reduction at the Eastgate Storage Project will help limit flow to the existing capacity in Eastgate Trunk, the Lake Hills Interceptor, and the Eastside Interceptor Sections 1 and 3.

**Preliminary Project Alternatives Evaluation:**

***Pipeline Diversion***

Diversion to the ESI was investigated in Previous CSI work and determined to be more expensive than storage options.

***Pipeline Replacement***

The age and condition of the existing pipeline did not warrant replacement at the time of the latest facility inspections. There is a high priority hydrogen sulfide corrosion site downstream on the Eastgate trunk between MH RE\*EGATE R11-60 and MH RE\*EGATE R11-50.

**Note:**

The Eastgate Parallel Pipe Storage project is one of a suite of projects developed during the CSI initial Basin Planning 1999-2003 and summarized in the Task 260 South Sammamish Basin Task Summary. ([ftp://dnr.metrokc.gov/wtd/csi/csi-docs/LkSamm\\_S/Task260.pdf](ftp://dnr.metrokc.gov/wtd/csi/csi-docs/LkSamm_S/Task260.pdf)) The suite of projects were refined during the current CSI program update using updated monitoring, modeling, sewer population growth, and project cost information. The current suite of projects is listed in the table below.

<b><i>South Sammamish Planning Basin Projects</i></b>
Eastgate Parallel Pipe Storage
Heathfield/Sunset Pump Station Replacement and Force Main Upgrade
Issaquah Creek Highlands Storage
[CSI] Issaquah Storage
[CSI] Sammamish Plateau Diversion
[CSI] Sammamish Plateau Storage





**Project Name:**  
**[CSI] Issaquah Storage**

**Project No.**  
 51

**Project Location:**  
 Sewer Agency: City of Issaquah Public Works  
 Jurisdiction: City of Issaquah  
 Planning Basin: South Lake Sammamish

**Note:**  
 The Issaquah Storage project is one of a suite of projects developed during the CSI initial Basin Planning 1999-2003 and summarized in the Task 260 South Sammamish Basin Task Summary. ([http://dnr.metrokc.gov/wtd/csi/csi-docs/LkSamm\\_S/Task260.pdf](http://dnr.metrokc.gov/wtd/csi/csi-docs/LkSamm_S/Task260.pdf))  
 The suite of projects were refined during the current CSI program update using updated monitoring, modeling, sewer population growth, and project cost information. The current suite of projects is listed in the table below.

<b>South Sammamish Planning Basin Projects</b>
Eastgate Parallel Pipe Storage
Heathfield/Sunset Pump Station Replacement and Force Main Upgrade
Issaquah Creek Highlands Storage
[CSI] Issaquah Storage
[CSI] Sammamish Plateau Diversion
[CSI] Sammamish Plateau Storage

**Project Description:**  
 The Issaquah Storage Project is a 3.2 million gallon underground storage facility located near the entrance to Lake Sammamish State Park.

The project consists of two 12-foot diameter storage pipes extending 1,900 feet in parallel. These storage pipes will work together with the Sammamish Plateau storage and the Issaquah Creek Highlands Storage to limit downstream flows to the capacity of the Issaquah Interceptor Section 1 (i.e. the Lake Sammamish lakeline), where the available capacity is otherwise projected to be exceeded. This storage further operates in coordination with Eastgate Storage to maintain capacity in the Eastgate Trunk.

**Project Facilities Construction Estimate:**

<b>Name</b>	<b>Facility Description</b>	<b>DIA (in)</b>	<b>Length (ft)</b>	<b>(\$2006) Construction Estimate</b>
Issaquah Twin Pipe Storage	Parallel Pipes	144 in.	1,871	\$11,320,000
<b>Total:</b>				<b>\$11,320,000</b>

**Estimated Total Project Cost:**

Present construction cost for this project was estimated to be \$11.3M. To calculate project cost, the construction cost was factored by contingency, sales tax, and allied costs. A project contingency of 30% was recommended because this project was subjected to a third-party CSI evaluation. Construction contingency, sales tax, and allied costs are assumed to be 10%, 8.8%, and 53.1%, respectively. **The present project cost is estimated to be \$22.9M.**

**Capacity Needs Addressed by the Project:**

Eastgate Trunk
Lake Hills Interceptor
Issaquah Interceptor – Section 1
Issaquah Interceptor - Section 2
Sunset/Heathfield Pump station -Vasa Park Force Mains
Eastside Interceptor - Section 1
Eastside Interceptor - Section 3

**Year 20-yr Peak Flow Exceeds Capacity:**

<2000

**Estimated Level Of Service:**

5 to 10-yr

**Upstream Projects Affecting Project:**

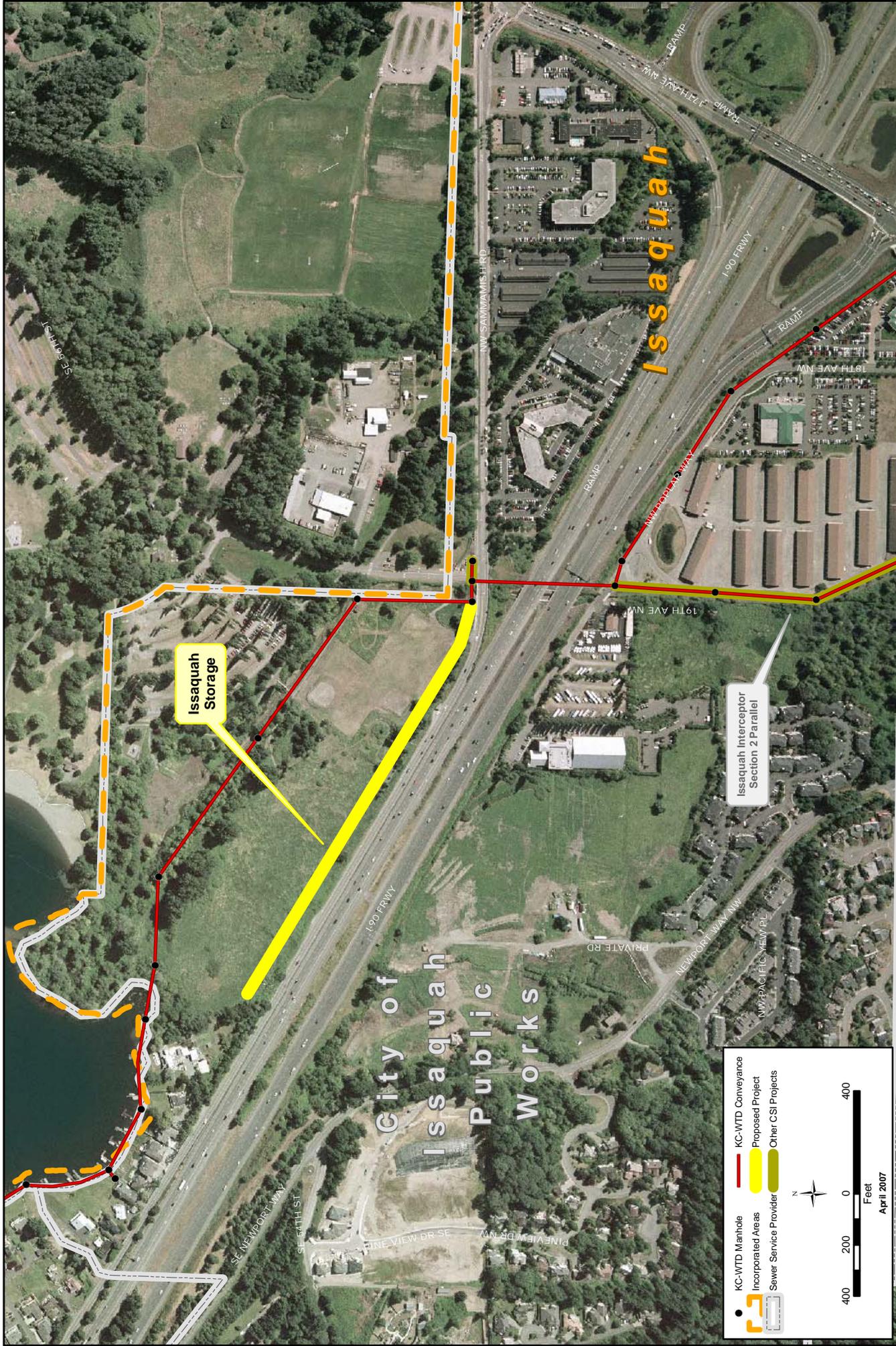
There is a potential initial I/I reduction project upstream of the Issaquah Storage project. SSES for 4 potential projects is scheduled for 2007. Based on the SSES results 1 to 3 of the potential projects will be identified for I/I reduction work in the service area. Depending upon the effectiveness of the I/I reduction, there is a possibility of reducing, delaying, or eliminating the need for downstream capital conveyance projects. As the initial I/I reduction project work continues the results will be integrated into the scope and prioritization of capital conveyance projects.

**Downstream Projects Affected By Project:**

Peak flows reduced by the Issaquah Storage Project will help eliminate the need to parallel the Eastgate Trunk and the Lake Hills Interceptor. It will also limit the upgrade needed for the Heathfield/Sunset Pump Stations and Force Mains. Flow reduction at the Issaquah Storage Project will also help limit peak flows to the available capacity in the Eastside Interceptor Sections 1 and 3.

**Preliminary Project Alternatives Evaluation:**

Because this project was previously subjected to a third-party CSI evaluation, no further alternatives were investigated.



City of  
Issaquah  
Public Works

Issaquah

Issaquah Storage

Issaquah Interceptor  
Section 2 Parallel

	KC-WTD Manhole		KC-WTD Conveyance
	Incorporated Areas		Proposed Project
	Sewer Service Provider		Other CSI Projects

400 200 0 400 Feet  
April 2007

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**Issaquah Storage**  
South Lake Sammamish  
Planning Basin

**King County**  
Department of  
Natural Resources and Parks  
Wastewater Treatment  
Division



**Project Name:**  
**[CSI] Sammamish Plateau Storage**

**Project No.**  
 52

**Project Location:**  
 Sewer Agency: Sammamish Plateau Water and Sewer District  
 Jurisdiction: City of Issaquah/City of Sammamish  
 Planning Basin: South Lake Sammamish

**Project Description:**  
 The Sammamish Plateau Storage Project is a 3.3 Million Gallon underground storage facility tunneled into a hillside near the intersection of East Lake Sammamish Parkway SE and SE 43<sup>rd</sup> Way in Sammamish.

This 12-foot diameter in-line storage tunnel, along with the Sammamish Plateau Diversion Project, will accommodate anticipated growth in the Sammamish Plateau.

**Project Facilities Construction Estimate:**

Name	Facility Description	DIA (ft)	Length (ft)	(\$2006) Construction Estimate
Sammamish Plateau Tunnel Storage	Tunnel	12	3,881	\$16,460,000
<b>Total:</b>				<b>\$16,460,000</b>

**Estimated Total Project Cost:**  
 Present construction cost for this project was estimated to be \$16.5M. To calculate project cost, the construction cost was factored by contingency, sales tax, and allied costs. A project contingency of 30% was recommended because this project was subjected to a third-party CSI evaluation. Construction contingency, sales tax, and allied costs are assumed to be 10%, 8.8%, and 53.1%, respectively. **The present project cost is estimated to be \$33.2M.**

**Capacity needs Addressed by the project**

Vasa Park Force Mains/Sunset -Heathfield Pump Stations
Eastgate Trunk
Lake Hills Interceptor
Issaquah Interceptor - Section 1
Issaquah Interceptor - Section 2
Eastside Interceptor - Section 1
Eastside Interceptor - Section 3

**Year 20-yr Peak Exceeds Capacity:**  
 <2000

**Estimated level of Service:**

5 to 10-yr

**Upstream Projects Affecting Project:**

none

**Downstream Projects Affected By Project:**

Peak flows reduced by the Sammamish Plateau Storage Project will work in tandem with Issaquah Storage to eliminate the need to parallel the Issaquah Interceptor, Section 1 (in Lake Sammamish) and to limit the size of the Heathfield/Sunset Pump Station and Force Main Upgrade. The project also works with the Eastgate Storage to eliminate the need to parallel the Eastgate Trunk and Lake Hills Interceptor. Finally, flow reduction at the Sammamish Plateau Storage Project will also help limit peak flow to the existing capacity in Eastside Interceptor Sections 1 and 3 in conjunction with the conveyance revisions for the proposed Brightwater Sewage Treatment plant and other proposed regional storages.

**Preliminary Project Alternatives Evaluation:**

Because this project was previously subjected to a third-party CSI evaluation, no further alternatives were investigated. Caisson construction of vertical storage at the site of the existing control structure will be considered in pre-design. The tunnel storage was selected in this phase due to the lower construction cost in Tabula than for "Box Storage".

**Note:**

The Sammamish Plateau Storage project is one of a suite of projects developed during the CSI initial Basin Planning 1999-2003 and summarized in the Task 260 South Sammamish Basin Task Summary. ([ftp://dnr.metrokc.gov/wtd/csi/csi-docs/LkSamm\\_S/Task260.pdf](ftp://dnr.metrokc.gov/wtd/csi/csi-docs/LkSamm_S/Task260.pdf)) The suite of projects were refined during the current CSI program update using updated monitoring, modeling, sewer population growth, and project cost information. The current suite of projects is listed in the table below.

<b><i>South Sammamish Planning Basin Projects</i></b>
Eastgate Parallel Pipe Storage
Heathfield/Sunset Pump Station Replacement and Force Main Upgrade
Issaquah Creek Highlands Storage
[CSI] Issaquah Storage
[CSI] Sammamish Plateau Diversion
[CSI] Sammamish Plateau Storage



*Sammamish*

*Issaquah*

Sammamish Plateau Storage

Sammamish Plateau Water & Sewer District

Proposed Project
   
 Incorporated Areas
   
 Sewer Service Provider

Feet
   
 April 2007

**Sammamish Plateau Storage**  
 South Lake Sammamish Planning Basin

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**King County**
  
 Department of
   
 Natural Resources and Parks
   
**Wastewater Treatment Division**



**Project Name:**  
**Issaquah Creek Highlands Storage**

**Project No.**  
 53

**Project Location:**  
 Sewer Agency: City of Issaquah Public Works  
 Jurisdiction: City of Issaquah  
 Planning Basin: South Lake Sammamish

**Note:** The Issaquah Creek Highlands Storage project is one of a suite of projects developed during the CSI initial Basin Planning 1999-2003 and summarized in the Task 260 South Sammamish Basin Task Summary. ([ftp://dnr.metrokc.gov/wtd/csi/csi-docs/LkSamm\\_S/Task260.pdf](ftp://dnr.metrokc.gov/wtd/csi/csi-docs/LkSamm_S/Task260.pdf)) The suite of projects were refined during the current CSI program update using updated monitoring, modeling, sewer population growth, and project cost information. The current suite of projects is listed in the table below.

<b>South Sammamish Planning Basin Projects</b>
Eastgate Parallel Pipe Storage
Heathfield/Sunset Pump Station Replacement and Force Main Upgrade
Issaquah Creek Highlands Storage
[CSI] Issaquah Storage
[CSI] Sammamish Plateau Diversion
[CSI] Sammamish Plateau Storage

**Project Description:**  
 The Issaquah Creek Highlands Storage Project is a 0.2 Million Gallon storage facility that will maintain downstream capacity in the Issaquah Creek Interceptor, where the available capacity is projected to be exceeded. Located near the intersection of NW Holly St. and Front St. North in Issaquah, the project consists of 792 feet of 6.5-foot diameter inline storage pipe, including an effluent pump station and odor controls, and a jack and bore street crossing.

The location of the project was proposed based on feedback from the local agency. Additional sites may be considered during pre-design.

**Project Facilities Construction Estimate:**

<b>Name</b>	<b>Facility Description</b>	<b>DIA (in)</b>	<b>Length (ft)</b>	<b>(\$2006) Construction Estimate</b>
Issaquah Creek Pipe Storage	Pipe	144 in.	232	\$1,140,000
<b>Total:</b>				<b>\$1,140,000</b>

**Estimated Total Project Cost:**  
 Present construction cost for this project was estimated to be \$1.9M. To calculate project cost, the construction cost was factored by contingency, sales tax, and allied costs. A project contingency of 40% was recommended because this project was not

subjected to a third-party CSI evaluation. Construction contingency, sales tax, and allied costs are assumed to be 10%, 8.8%, and 53.1%, respectively. **The present project cost is estimated to be \$4.0M.**

**Capacity Needs Addressed by the Project:**

Issaquah Creek Interceptor (primary need)
Eastgate Trunk
Lake Hills Interceptor
Issaquah Interceptor - Section 1
Issaquah Interceptor - Section 2
Vasa Park Force Mains/Heathfield/Sunset PS
Eastside Interceptor - Section 1
Eastside Interceptor - Section 3

**Year 20-yr Peak Flow Exceeds Capacity:**

2009

**Estimated Level Of Service:**

~20-yr

**Upstream Projects Affecting Project:**

none

**Downstream Projects Affected By Project:**

Peak flows reduced by the Issaquah Creek Pipe Storage will mitigate Issaquah Storage and Eastgate Storage, as well as the Heathfield/Sunset Pump Station and Force Main Upgrade. Flow reduction at the Issaquah Creek Pipe Storage will also help maintain capacity in Eastside Interceptor Sections 1 and 3 in conjunction with the conveyance revisions for the proposed Brightwater Sewage Treatment plant and other proposed regional storages.

**Preliminary Project Alternatives Evaluation:**

***Pipeline Diversion***

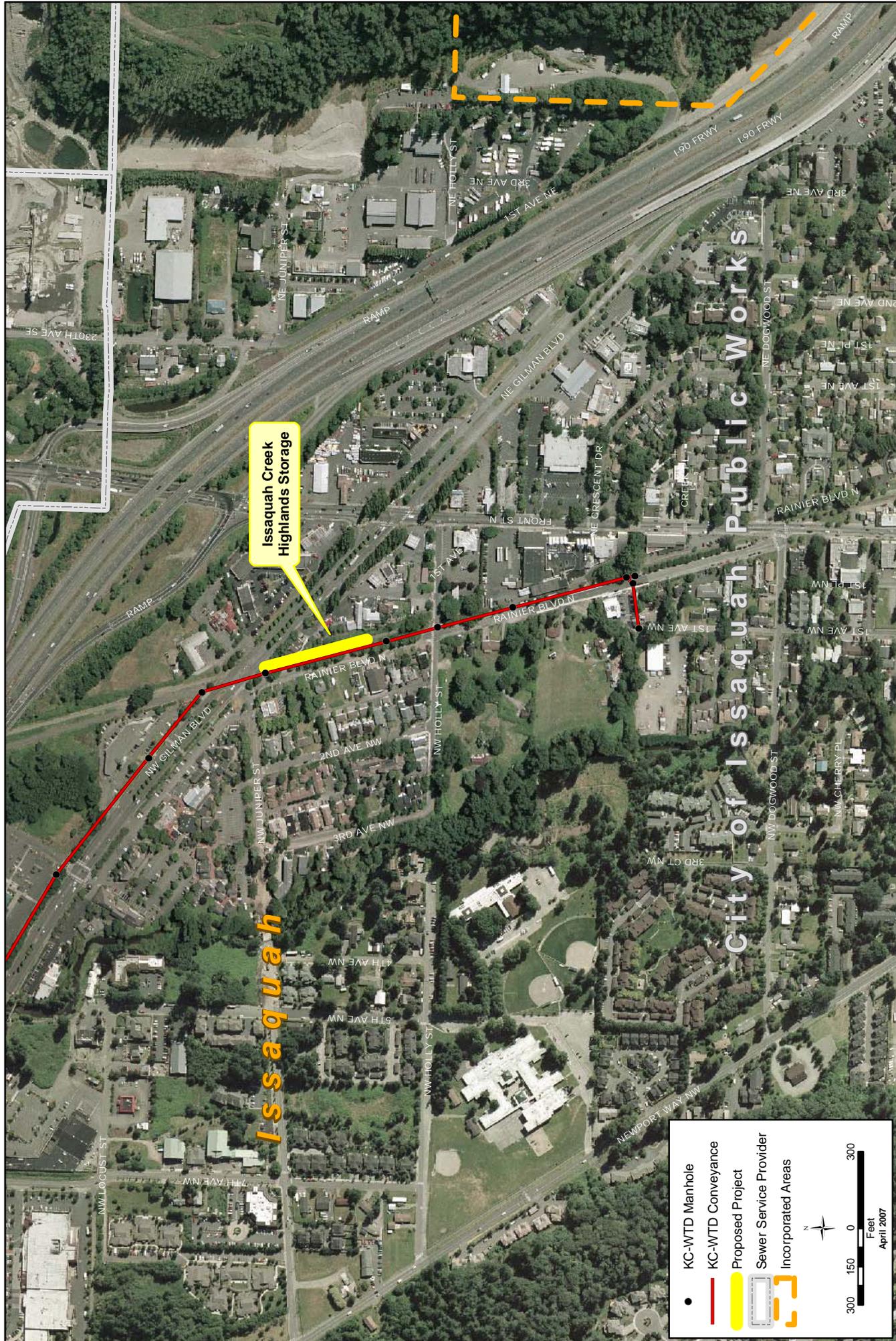
Diversion to the recently constructed SE Lake Sammamish Interceptor was considered during previous CSI evaluations. The proposed planning level storage option is estimated to be a lower cost alternative.

***Pipeline Parallel***

The comparative costs anticipated with paralleling approximately 7,500 feet of existing King County pipeline precluded this alternative from evaluation. A pipeline paralleling project would further entail microtunnel crossing for the Issaquah Creek, as well as jack and bore crossings for major streets and culverts.

***Pipeline Replacement***

The age and condition of the existing pipeline did not warrant replacement at the time of the latest facility inspections.



Issaquah Creek  
Highlands Storage

Issaquah

City of Issaquah Public Works

- KC-WTD Manhole
- KC-WTD Conveyance
- Proposed Project
- Sewer Service Provider
- Incorporated Areas

300 150 0 300 Feet  
April 2007

**King County**  
Department of  
Natural Resources and Parks  
**Wastewater Treatment  
Division**

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**Issaquah Creek Highlands Storage**  
South Lake Sammamish  
Planning Basin



**Project Name:**  
**Issaquah Interceptor Section 2 Parallel**

**Project No.**  
 59

**Project Location:**  
 Sewer Agency: City of Issaquah Public Works  
 Jurisdiction: City of Issaquah  
 Planning Basin: South Lake Sammamish

**Project Description:**  
 The Issaquah Interceptor Section 2 Project provides additional capacity to 1,300 feet of existing King County pipeline. The project consists of 18 in parallel pipeline.

**Project Facilities Construction Estimate:**

Name	Facility Description	DIA (in)	Length (ft)	(\$2006) Construction Estimate
RE*ISSAQ2.R17-40(3)	Pipe	18 in.	1,265	\$1,300,000
<b>Total:</b>				<b>\$1,300,000</b>

**Estimated Total Project Cost:**  
 Present construction cost for this project was estimated to be \$1.3M. To calculate project cost, the construction cost was factored by contingency, sales tax, and allied costs. A project contingency of 40% was recommended because this project was not subjected to a third-party CSI evaluation. Construction contingency, sales tax, and allied costs are assumed to be 10%, 8.8%, and 53.1%, respectively. **The present project cost is estimated to be \$2.8M.**

**Capacity Needs Addressed by the Project:**  
 Issaquah Interceptor - Section 2

**Year 20-yr Peak Flow Exceeds Capacity:**  
 2011

**Upstream Projects Affecting Project:**  
 There is a potential initial I/I reduction project upstream of the Issaquah Interceptor Section 2 Parallel project. Sewer System Evaluation Surveys (SSES) for 4 potential projects is scheduled for 2007-8. Based on the SSES results, 2 to 3 of the potential projects will be identified for I/I reduction work in the service area. These projects will be constructed in 2010 and flow monitoring will be conducted the following wet season in 2010/2011 to measure the amount of I/I reduction achieved. Depending upon the effectiveness of the I/I reduction, there is a possibility of reducing, delaying, or eliminating the need for downstream capital conveyance projects. As the initial I/I reduction project work continues the results will be integrated into the scope and prioritization of capital conveyance projects.

**Downstream Projects Affected By Project:**

None identified

**Preliminary Project Alternatives Evaluation:**

***Storage***

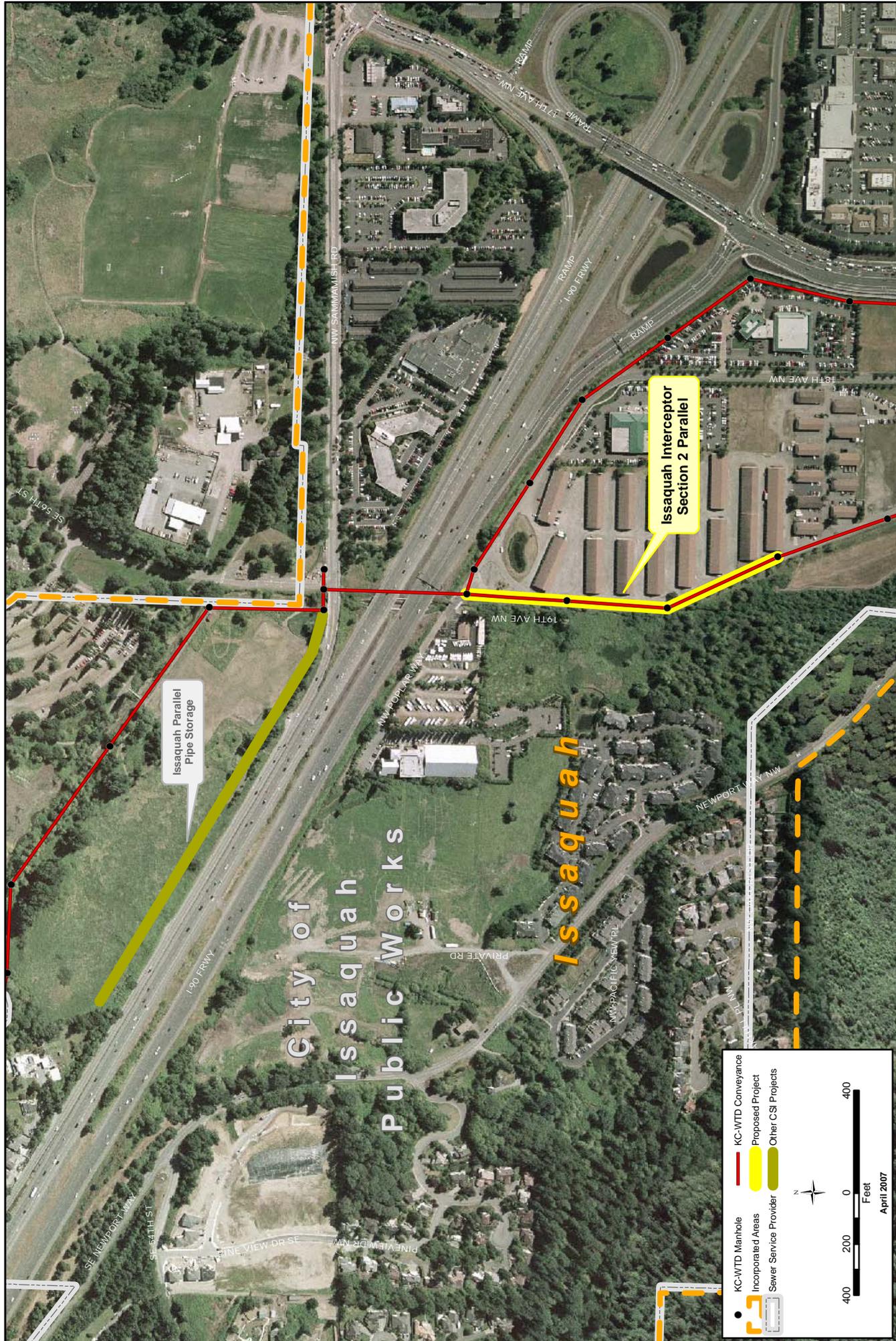
Storage was precluded from evaluation due to the limited number of contributing flow basins, the limited length of the required parallel pipe, and the extent of the exceedance in the existing pipe reaches.

***Pipeline Diversion***

No potential conveyance diversions were identified.

***Pipeline Replacement***

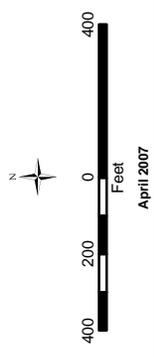
The age and condition of the existing pipeline did not warrant replacement at the time of the latest facility inspections.



Issaquah Parallel Pipe Storage

Issaquah Interceptor Section 2 Parallel

-  KC-WTD Manhole
-  Incorporated Areas
-  Sewer Service Provider
-  KC-WTD Conveyance
-  Proposed Project
-  Other CSI Projects



# Issaquah Interceptor Section 2 Parallel

South Lake Sammamish  
Planning Basin

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## South Lake Washington Planning Basin

**Project Name:**  
**Bryn Mawr Storage**

**Project No.**  
 33

**Project Location:**  
 Sewer Agency: Skyway Water and Sewer District  
 Jurisdiction: Unincorporated King County (presently), City of Renton PAA  
 Planning Basin: South Lake Washington Planning Basin

**Project Description:**  
 The Bryn Mawr Storage Project is a 0.33 million gallon underground, off-line storage facility located northwest of the Renton Airport in Skyway. The project consists of a 12 foot diameter storage pipe with a small pump station to pump the stored flow out after a peak flow event, as well as odor control. Preliminary waterfront property acquisition costs have been included in the construction estimate.

This storage will limit downstream flow to the existing capacity of the Bryn Mawr Trunk, where the available capacity was projected to be exceeded. Flow reduction at Bryn Mawr Storage will also help maintain available capacity in Eastside Interceptor Section 1.

**Project Facilities Construction Estimate:**

Name	Facility Description	DIA (in)	Length (ft)	(\$2006) Construction Estimate
Bryn Mawr Pipe Storage	Pipe	144 in.	384	\$4,110,000
<b>Total:</b>				<b>\$4,110,000</b>

**Estimated Total Project Cost:**  
 Present construction cost for this project was estimated to be \$4.1M. To calculate project cost, the construction cost was factored by contingency, sales tax, and allied costs. A project contingency of 40% was recommended because this project was not subjected to a third-party CSI evaluation. Construction contingency, sales tax, and allied costs are assumed to be 10%, 8.8%, and 53.1%, respectively. The present project cost was estimated to be \$8.7M.

**Capacity Needs Addressed by the Project:**

Bryn Mawr Trunk
Eastside Interceptor - Section 1

**Year 20-yr Peak Flow Exceeds Capacity:**  
 2005

**Estimated Level Of Service:**

~20 yr

**Upstream Projects Affecting Project:**

There is a potential initial I/I reduction project upstream of the Bryn Mawr Storage project. Sewer System Evaluation Surveys (SSES) for 4 potential projects is scheduled for 2007-8. Based on the SSES results, 2 to 3 of the potential projects will be identified for I/I reduction work in the service area. These projects will be constructed in 2010 and flow monitoring will be conducted the following wet season in 2010/2011 to measure the amount of I/I reduction achieved. Depending upon the effectiveness of the I/I reduction, there is a possibility of reducing, delaying, or eliminating the need for downstream capital conveyance projects. As the initial I/I reduction project work continues the results will be integrated into the scope and prioritization of capital conveyance projects.

**Downstream Projects Affected By Project:**

This project alleviates the need to provide a parallel pipe along the Bryn Mawr Trunk. ESI Section 1 will not need additional capacity, in part due to this project.

**Preliminary Project Alternatives Evaluation:**

Because Bryn Mawr Storage provides a necessary component of the flow reduction required to maintain capacity in the downstream Eastside Interceptor Section 1, no further project alternatives (i.e. pipeline diversions, parallels, or replacements) were investigated.

# Lake Washington



**Bryn Mawr Storage**

**Skyway Water & Sewer District**

**Unincorporated King County**

**City of Renton Public Works**

- KC-WTD Manhole
- KC-WTD Conveyance
- ▭ Proposed Project
- ▭ Sewer Service Provider
- ▭ Incorporated Areas

300 150 0 300  
Feet  
April 2007

**King County**  
Department of  
Natural Resources and Parks  
**Wastewater Treatment  
Division**

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**Bryn Mawr Storage**  
South Lake Washington  
Planning Basin

