

**WASTEWATER SYSTEM CAPITAL IMPROVEMENT PLAN**

**OCTOBER, 2018**



**Northshore Utility District**  
King County, Washington

C1631

**Determination of Nonsignificance (DNS).**

Description of proposal:

***The Northshore Utility District's 2018 Wastewater System Capital Improvement Program (CIP) presents a schedule of wastewater system and facility improvements planned for the period beginning in 2018 and extending through 2037.***

Proponent:

***Northshore Utility District***

Location of proposal, including street address, if any:

***The Northshore Utility District's wastewater service area includes all of the City of Kenmore and portions of the Cities of Kirkland, Bothell, Woodinville, and Lake Forest Park.***

Lead agency: ***Northshore Utility District***

The lead agency for this proposal has determined that it does not have a probable significant adverse impact on the environment. An environmental impact statement (EIS) is not required under RCW 43.21C.030 (2)(c). This decision was made after review of a completed environmental checklist and other information on file with the lead agency. This information is available to the public on request.

This DNS is issued under WAC 197-11-340(2); the lead agency will not act on this proposal for 14 days from the date below. Comments must be submitted by **September 8, 2018.**

Responsible official: ***Dave Kaiser, P.E.***

Position/title: ***Engineering Director***

Phone: ***425-398-4422***

Address: ***6830 NE 185<sup>th</sup> St., Kenmore, WA 98028***

Date. 8/24/18 Signature Dave Kaiser



# Northshore Utility District

**APPROVED**

<b>Subject:</b> 2018 Wastewater System Capital Improvement Plan Update (C1631)		<b>Exhibits:</b>		
<b>Meeting of:</b> October 15, 2018		<ul style="list-style-type: none"> <li>Wastewater System Capital Improvement Plan (CIP) Update</li> <li>Resolution 2018-10-05</li> </ul>		
<b>Originator:</b> Dave Kaiser, P.E.				
<b>Director:</b> <input type="checkbox"/>				
<b>General Manager:</b> <input type="checkbox"/>				
<b>District Counsel:</b> <input type="checkbox"/>				
Original Amount Budgeted	Expenditure To Date	Remaining Budget	Requested Expenditure	Requested Budget Amendment
\$0	\$0	\$0	\$0	\$0

## SUMMARY

The attached Wastewater System Capital Improvement Plan (CIP) is being updated to reflect required improvements that have been identified since the plan was last updated in 2006 and adopted in 2009 with the Wastewater Comprehensive Plan.

These improvements are required to increase capacity resulting from unanticipated development, as well as to replace and rehabilitate aging components of the system. In addition, the District is in the process of updating its connection charges, and the CIP will be used to establish the new rates.

The capital improvements are categorized as either miscellaneous improvements, rehabilitation projects, extensions, or replacement projects. The improvements are summarized as follows:

### 2018 Wastewater System Capital Improvement Plan Project Cost Summary

Time Span	Total Estimated Project Cost
0-5 years	\$16.47M
6-10 years	\$13.26M
<b>10 Years</b>	<b>\$29.73M</b>
10-20 Years	\$16.33M
<b>20 Years</b>	<b>\$46.06M</b>

The estimated average annual cost for the improvements is approximately \$3M per year for the first ten years, and \$1.6M per year for the second ten years.

Staff recommends that the Board of Commissioners adopt the 2018 Wastewater System Capital Improvement Plan Update.

**ACTION REQUESTED**

- |   |  |  |
|---|--|--|
| <input checked="" type="checkbox"/> <b>Adopt Following Resolution</b> | <input type="checkbox"/> <b>Discussion Only</b>    | <input type="checkbox"/> <b>Information Only</b> |
| <input checked="" type="checkbox"/> <b>Pass Following Motion</b>      | <input type="checkbox"/> <b>Direction to Staff</b> | <input type="checkbox"/> <b>Board Request</b>    |

**Motion to:** adopt Resolution 2018–10-05, approving and adopting the 2018 Wastewater System Capital Improvement Plan.



# Northshore Utility District

## Resolution No. 2018-10-05

A RESOLUTION of the Board of Commissioners of Northshore Utility District Adopting the 2018 Wastewater System Capital Improvement Plan (CIP).

### Background

1. The Northshore Utility District is a municipal corporation formed pursuant to Title 57 RCW.
2. The District Board of Commissioners adopted the District's Wastewater System Plan in 2009 and adopted an amendment to the plan in 2016.
3. In 2017, the Board authorized staff to update the Wastewater System Plan Capital Improvement Plan (CIP) in order to address the impacts to the wastewater system due to extensive growth in the District and to support the scheduled update to the charges that the District collects from new connections to the system (connection charges).
4. Staff has updated the Wastewater System CIP to reflect improvements required to increase capacity resulting from unanticipated and extensive redevelopment, as well as to replace and rehabilitate aging components of the system.
5. The District has issued a Determination of Non-Significance concerning the CIP and has otherwise complied with the requirements of the State Environmental Protection Act.

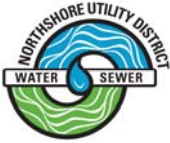
### Action

Now it is resolved that:

1. The CIP is incorporated by reference as if set forth in full.
2. The CIP is approved and adopted effective this date subject to and further conditioned upon its final approval by those agencies granted approving authority by Title 57 RCW.
3. The General Manager of the District is directed to take all necessary action to obtain the required approvals.

ADOPTED BY THE BOARD OF COMMISSIONERS of Northshore Utility District at an open public meeting held October 15, 2018.

  
Commissioner  
Commissioner  
Commissioner  
Commissioner  
Commissioner



## **NORTHSHORE UTILITY DISTRICT**

### **WASTEWATER SYSTEM CAPITAL IMPROVEMENT PLAN**

#### **INTRODUCTION**

This document represents an update to the District's wastewater system Capital Improvement Plan (CIP). The existing CIP was developed in 2006 and incorporated into the District's Wastewater Comprehensive Plan that was approved in 2009.

The proposed improvements in this CIP have been developed and prioritized on the basis of public health concerns, growth and capacity, reliability, and regulatory requirements. Projects have been forecasted over a 20-year planning period (2018 through 2037), with those scheduled for construction shown in a 10-year period (2018 through 2027).

The estimated cost of each project is identified, with a cost base of 2018. The cost estimates are planning level, and are considered total project costs, which includes construction, design, permitting, and construction management.

In the future, other projects may arise that are not identified as part of this CIP. Such projects may be necessary to accommodate improvements proposed by other agencies, or to address unforeseen problems with the District's wastewater system, such as capacity deficiencies or failing infrastructure. The District will maintain the flexibility to reschedule proposed projects, and to either expand or reduce the scope of the CIP as additional information becomes available. Each proposed capital improvement project will be reevaluated when its scheduled completion date approaches in order to confirm scope and need.

#### **PROJECTS COMPLETED SINCE THE 2006 CAPITAL IMPROVEMENT PLAN**

The District has completed the following projects since the last CIP was adopted in 2006. The 2006 CIP identified projects under the following categories:

- Miscellaneous Projects
- Sewer Extensions
- Lift Station Improvements
- Infiltration and Inflow Mitigation
- Sewer Main Replacement

**Projects Completed Since 2006**

Project	Year	Construction Cost
<b>Miscellaneous Projects</b>		
Building B Addition, Decant Facility & Material Storage	2012	\$1,759,000
Secondary Emergency Operations Center	2012	\$1,394,000
Building A HVAC Rehabilitation	2010	\$392,000
Denny Park Improvements (LS No. 10 Elimination)	2012	\$76,000
Denny Park Parking Improvements (LS No. 10 Elimination)	2013	\$189,000
Headquarters Parking Lot Slurry Seal	2014	\$36,000
Headquarters Buildings A & B Recoating	2015	\$158,000
<b>Subtotal</b>		<b>\$4,004,000</b>
<b>Sewer Extensions</b>		
126/80, 203/88, 128/84, 124/86, 178/92 & 205/61 Extensions	2006	\$1,009,000
ULID 115 Sewer Extension	2006	\$656,000
118/72, Tolt/91, 186/80 & 68/HPD Extensions	2007	\$427,000
143/92 Sewer Trench Repair	2007	\$86,000
134/108 Sewer Extension	2008	\$654,000
147/Simonds Extension	2008	\$101,000
121/72, 145/121 & 175/89 Extensions	2009	\$332,000
204/80 & 177/86 Extensions	2009	\$335,000
155/79 Extension	2010	\$460,000
193/49 Extension	2010	\$81,000
160/112 Extension	2011	\$474,000
117/84, 156/74 & 159/82 Extensions	2011	\$445,000
114/79 Extension	2011	\$16,000
131/84 Extension	2011	\$32,000
129/68 Extension	2011	\$36,000
149/72 Extension	2012	\$111,000
124/116, 201/47 & 110/85 Extension	2013	\$652,000
124/68 Extension	2013	\$304,000
133/88 Extension	2013	\$323,000
133/88 Extension, Phase II	2014	\$409,000
163/90 Extension	2016	\$359,000
120/89 Extension	2016	\$803,000
125/HPD Extension	2017	\$280,000
Chik-Fil-A Extension	2017	\$162,000
The Village at Totem Lake Extension	2017	\$925,000
<b>Subtotal</b>		<b>\$9,472,000</b>



**Projects Completed Since 2006 (Cont.)**

Project	Year	Construction Cost
<b>Lift Station Improvements</b>		
Lift Station No. 19 Upgrades	2007	\$71,000
Lift Station No. 14 Replacement	2008	\$1,274,000
Lift Station No. 1, 2, 4 & 17-18 Emergency Power Generators	2008	\$375,000
Lift Station No. 10 Elimination	2011	\$3,018,000
Lift Station No. 3, 15 & 19 Improvements	2017	\$763,000
<b>Subtotal</b>		<b>\$5,501,000</b>
<b>Infiltration &amp; Inflow Mitigation</b>		
Cured-in-Place Sewer Pipe Rehabilitation	2006	\$126,000
Cured-in-Place Sewer Pipe Rehabilitation	2008	\$48,000
Cured-in-Place Sewer Pipe Rehabilitation	2009	\$117,000
Cured-in-Place Sewer Pipe Rehabilitation	2010	\$329,000
ULID 1 Side Sewer Rehabilitation	2012	\$487,000
Cured-in-Place Sewer Pipe Rehabilitation	2014	\$1,430,000
Cured-in-Place Sewer Pipe Rehabilitation	2016	\$1,474,000
<b>Subtotal</b>		<b>\$4,011,000</b>
<b>Sewer Main Replacement</b>		
Lift Station No. 14 Force Main Replacement	2007	\$199,000
14423 124 <sup>th</sup> Ave NE MH Replacement	2010	\$17,000
114/79 Sewer Trench Failure Repair	2012	\$133,000
180/72 Sewer Main Replacement	2012	\$53,000
SR522 Sewer System Improvements	2014	\$183,000
Totem Lake Taco Time Sewer Main Replacement	2014	\$134,000
Lift Station No.3 Force Main Replacement	2016	\$166,000
<b>Subtotal</b>		<b>\$885,000</b>
<b>Total, Construction</b>		<b>\$23,873,000</b>
20% Allied Costs (Estimated)		\$4,774,600
<b>Grand Total</b>		<b>\$28,647,600</b>

## **CAPITAL IMPROVEMENT PLAN**

The District's proposed CIP is segregated into the following categories:

- Miscellaneous (M)
- Maintenance and Operations (MO)
- Gravity Sewer Rehabilitation (RH)
- Sewage Lift Station Projects (SL)
- Gravity Sewer Main Replacement (R)
- Totem Lake Regional Improvements (TL)

Each of these categories is further divided into a detailed list of projects presented chronologically over the 20-year planning period. Definitions for each category are as follows:

### **MISCELLANEOUS (M)**

The District has identified a number of miscellaneous or general projects that will be fully or partially funded by the wastewater utility. These projects include planning documents, infiltration and inflow (I/I) studies, and improvements to facilities.

### **MAINTENANCE AND OPERATIONS (MO)**

Maintenance and Operations projects include the purchase and replacement of significant equipment necessary for the maintenance of the collection system, such as hydro-excavating trucks and video inspection equipment.

### **GRAVITY SEWER REHABILITATION (RH)**

The District has developed a gravity sewer rehabilitation program intended to extend the life of the system and enhance performance. A significant portion of this program includes pipe rehabilitation through the process of installing cured-in-place pipe (CIPP) within the existing sewer mains, typically cement concrete mains. This process not only extends the life of existing cement concrete sewer pipe, it also reduces infiltration and inflow into the system, and improves flow characteristics. For these reasons, the CIPP is a cost-effective solution to adding capacity to the system. The District will also rehabilitate sewer manholes to extend their useful life. The rehabilitation typically includes the application of interior coatings, such as epoxy and cementitious mortar lining, as well as frame and cover replacement.

### **SEWAGE LIFT STATION PROJECTS (SL)**

Sewage lift station projects include the rehabilitation or replacement of lift stations, including upgrades to increase capacity, replacement of pumps, generators, and electrical equipment, and the rehabilitation of structures.

## **GRAVITY SEWER MAIN REPLACEMENT (R)**

Gravity sewer replacement projects are necessary if the pipe cannot be rehabilitated through CIPP, if capacity is inadequate, or if relocation of the sewer main is required due to conflicts with other agency projects.

## **TOTEM LAKE REGIONAL IMPROVEMENTS (TL)**

The Totem Lake Regional Improvements are projects that serve the Totem Lake area. These projects are funded through a local capacity expansion connection charge that the District is collecting specifically to serve growth in the Totem Lake area. While these projects are being funded by connection charges collected from development, the District will be responsible for the design and construction of the projects.

**Northshore Utility District  
Wastewater System Capital Improvement Plan**

October 15, 2018

Project Description		0 to 2 year		3 to 5 years			6 to 10 years				
		2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
<b>Miscellaneous</b>											
M-1	CIP Update - Flow Monitoring & Modeling	\$ 75,000	\$ 25,000								
M-2	Sewer System Flow Monitoring	\$ 20,000	\$ 20,000	\$ 20,000	\$ 20,000	\$ 20,000					
M-3	Sewer System Improvements - Other Jurisdictions	\$ 750,000	\$ 750,000	\$ 750,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 250,000	\$ 200,000	\$ 200,000	\$ 200,000
M-4	Sewer Plan Update & Asset Management Plan			\$ 50,000	\$ 50,000						
M-5	Asset Management Plan			\$ 50,000	\$ 50,000						
M-6	Easement Management		\$ 25,000		\$ 25,000		\$ 25,000		\$ 25,000		\$ 25,000
M-7	Totem Lake North Capacity Improvements						\$ 1,000,000	\$ 500,000	\$ 500,000		
M-8	Juanita Dr NE Capacity Improvements					\$ 500,000	\$ 500,000	\$ 500,000			
M-9	Miscellaneous Capacity Improvements										
M-10	Building B Addition Jib Crane		\$ 150,000								
M-11	Headquarters Roof Repairs			\$ 500,000							
<b>Subtotal - Miscellaneous</b>		<b>\$ 845,000</b>	<b>\$ 970,000</b>	<b>\$ 1,370,000</b>	<b>\$ 345,000</b>	<b>\$ 720,000</b>	<b>\$ 1,725,000</b>	<b>\$ 1,250,000</b>	<b>\$ 725,000</b>	<b>\$ 200,000</b>	<b>\$ 225,000</b>
<b>Maintenance &amp; Operations</b>											
MO-1	Hydro-Excavator		\$ 600,000								
MO-2	Video Inspection Equipment Replacement		\$ 100,000								
MO-3	Equipment Trailer		\$ 8,000								
MO-4	Front-End Loader		\$ 160,000								
MO-5	Vactor Truck						\$ 700,000				
MO-6	Flush Truck								\$ 300,000		
<b>Subtotal - Maintenance &amp; Operations</b>		<b>\$ -</b>	<b>\$ 868,000</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 700,000</b>	<b>\$ -</b>	<b>\$ 300,000</b>	<b>\$ -</b>	<b>\$ -</b>
<b>Gravity Sewer Rehabilitation</b>											
RH-1	Bi-Annual Sewer Main Cured-In-Place Pipe Program	\$ 1,500,000	\$ 500,000		\$ 1,500,000		\$ 1,500,000		\$ 1,500,000		\$ 1,500,000
RH-2	Totem Lake Trunk Sewer Main Cured-in-Place Pipe	\$ 500,000	\$ 500,000								
RH-3	Slough/68 City Bridge - Sewer System CIPP		\$ 500,000								
RH-4	Manhole Rehabilitation			\$ 100,000		\$ 100,000		\$ 100,000		\$ 100,000	
RH-5	ULID 66 Sewer Main Re-anchoring				\$ 200,000						
RH-6	100th Ave NE Improvements (Kirkland)	\$ 500,000									
<b>Subtotal - Rehabilitation</b>		<b>\$ 2,500,000</b>	<b>\$ 1,500,000</b>	<b>\$ 100,000</b>	<b>\$ 1,700,000</b>	<b>\$ 100,000</b>	<b>\$ 1,500,000</b>	<b>\$ 100,000</b>	<b>\$ 1,500,000</b>	<b>\$ 100,000</b>	<b>\$ 1,500,000</b>
<b>Sewage Lift Station Projects</b>											
SL-1	Sewage Lift Station No. 4 Rehabilitation										
SL-2	Sewage Lift Station No. 17 Rehabilitation										
SL-3	Sewage Lift Station No. 18 Rehabilitation										
SL-4	LS No. 19 - Generator	\$ 71,387									
SL-5	LS No. 3 - Rehabilitation	\$ 475,288									
SL-6	LS No. 15 - Rehabilitation	\$ 575,030									
SL-7	LS No. 21 - Participation	\$ 185,000									
<b>Subtotal - Lift Stations</b>		<b>\$ 1,306,705</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
<b>Gravity Sewer Main Replacement</b>											
R-1	Slough/68 City Bridge - Sewer Main Replacement		\$ 450,000								
R-2	NE 137th PI/Juanita Box Culvert	\$ 150,000									
R-3	175/68 Sewer Main Replacement		\$ 250,000								
R-4	SR 522 Stage 3 (City of Bothell) Sewer Main Replacement			\$ 1,000,000							
R-5	124/124 Sewer Main Replacement							\$ 500,000			
<b>Subtotal - Main Replacement</b>		<b>\$ 150,000</b>	<b>\$ 700,000</b>	<b>\$ 1,000,000</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 500,000</b>	<b>\$ -</b>	<b>\$ -</b>

**Northshore Utility District  
Wastewater System Capital Improvement Plan**

October 15, 2018

<b>Totem Lake Regional Improvements</b>											
TL-1	The Village - 120th Ave NE Sewer Main Bypass	\$ 1,200,000									
TL-2	Totem Lake Trunk Capacity Improvements - Phase 1					\$ 1,966,667					
TL-3	Totem Lake Trunk Capacity Improvements - Phase 2								\$ 1,966,667		
TL-4	Totem Lake Trunk Capacity Improvements - Phase 3										\$ 1,966,666
<b>Subtotal - Totem Lake Regional Improvements</b>		<b>\$ 1,200,000</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 1,966,667</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 1,966,667</b>	<b>\$ -</b>	<b>\$ 1,966,666</b>
<b>Yearly Totals</b>		<b>\$ 6,001,705</b>	<b>\$ 3,170,000</b>	<b>\$ 2,470,000</b>	<b>\$ 2,045,000</b>	<b>\$ 2,786,667</b>	<b>\$ 3,225,000</b>	<b>\$ 1,350,000</b>	<b>\$ 4,691,667</b>	<b>\$ 300,000</b>	<b>\$ 3,691,666</b>
<b>10-year Total, 2018-2027</b>		<b>\$ 29,731,705</b>									

**Northshore Utility District  
Wastewater System Capital Improvement Plan**

October 15, 2018

Project Description		11 to 20 Years									
		2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
<b>Miscellaneous</b>											
M-3	Sewer System Improvements - Other Jurisdictions	\$ 200,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 500,000	\$ 200,000	\$ 500,000	\$ 200,000	\$ 500,000	\$ 200,000
M-4	Sewer Plan Update									\$ 100,000	
M-6	Easement Management		\$ 25,000		\$ 25,000		\$ 25,000		\$ 25,000		\$ 25,000
M-9	Miscellaneous Capacity Improvements		\$ 750,000		\$ 750,000		\$ 750,000		\$ 750,000		\$ 750,000
<b>Subtotal - Miscellaneous</b>		<b>\$ 200,000</b>	<b>\$ 975,000</b>	<b>\$ 200,000</b>	<b>\$ 975,000</b>	<b>\$ 500,000</b>	<b>\$ 975,000</b>	<b>\$ 500,000</b>	<b>\$ 975,000</b>	<b>\$ 600,000</b>	<b>\$ 975,000</b>
<b>Rehabilitation Projects</b>											
RH-1	Bi-Annual Sewer Main Cured-In-Place Pipe Program		\$ 1,500,000		\$ 1,500,000		\$ 1,500,000		\$ 1,500,000		\$ 1,500,000
RH-4	Manhole Rehabilitation	\$ 100,000		\$ 100,000		\$ 100,000		\$ 100,000		\$ 100,000	
<b>Subtotal - Rehabilitation</b>		<b>\$ 100,000</b>	<b>\$ 1,500,000</b>	<b>\$ 100,000</b>	<b>\$ 1,500,000</b>	<b>\$ 100,000</b>	<b>\$ 1,500,000</b>	<b>\$ 100,000</b>	<b>\$ 1,500,000</b>	<b>\$ 100,000</b>	<b>\$ 1,500,000</b>
<b>Sewage Lift Station Rehabilitation</b>											
SL-1	Sewage Lift Station No. 4 Rehabilitation	\$ 750,000									
SL-2	Sewage Lift Station No. 17 Rehabilitation	\$ 350,000									
SL-3	Sewage Lift Station No. 18 Rehabilitation	\$ 350,000									
<b>Subtotal - Lift Station Rehabilitation</b>		<b>\$ 1,450,000</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
<b>Yearly Totals</b>		<b>\$ 1,750,000</b>	<b>\$ 2,475,000</b>	<b>\$ 300,000</b>	<b>\$ 2,475,000</b>	<b>\$ 600,000</b>	<b>\$ 2,475,000</b>	<b>\$ 600,000</b>	<b>\$ 2,475,000</b>	<b>\$ 700,000</b>	<b>\$ 2,475,000</b>
<b>10-year Total, 2028-2037</b>		<b>\$ 16,325,000</b>									
<b>10-year Total, 2018-2027</b>		<b>\$ 29,731,705</b>									
<b>20-year Total, 2018-2037</b>		<b>\$ 46,056,705</b>									