CACHE • LANDMARK
ENGINEERS • SURVEYORS • PLANNERS

April 9, 2026
Utah Division of Water Quality
195 N 1950 W
Salt Lake City, UT

Subject: North Logan City Sewer Cost Effectiveness Analysis

Dear Beth,

The Utah DWQ requires a Cost Effectiveness Analysis as described in the EPA requirements for facilities planning for federally funded projects (40 CFR 35.2030(b)(3)). These following sections address the Cost Effectiveness Analysis requirements.

1. General Requirements

A cost-effectiveness analysis evaluates the "feasible conventional, innovative and alternative wastewater treatment works, processes and techniques capable of meeting the applicable effluent, water quality and public health requirements over the design life of the facility while recognizing environmental and other non-monetary considerations. The planning period for the cost-effectiveness analysis shall be 20 years. The monetary costs to be considered must include the present worth or equivalent annual value of all capital costs and operation and maintenance costs." Population projections are consistent with the current regional growth forecasts.

For the North Logan project, the following alternatives were evaluated:

1. Tri-City Wastewater Treatment Plant (New Facility near Logan Airport) – determined to be infeasible.
2. Lift Station Upgrade (Shared Smithfield/Hyde Park Lift Station) – rejected because existing lift station and trunk lines cannot accommodate North Logan's flows.
3. New Sewer Trunk Line to Logan City Treatment Plant – selected alternative, as it provides the most cost-effective, sustainable solution while minimizing environmental impacts and supporting planned growth.

2. Evaluation of Alternative Flow Reduction Methods

This is a new sanitary survey trunk line, so the risk of infiltration and leaking should be minimal. The design flow for the trunk line was determined based on historical metered winter culinary water use and metered sewer outflows from North Logan's system. North Logan City's average daily base flows that feed into the trunk line are over the 70 GPCD threshold outlined.

North Logan has existing flow reducing measures. They have completed an I/I study to reduce base flows. The study identified areas where infiltration and inflow occur so they can be fixed. Peak flows will continue to be monitored at key connection points, and the city will continue to implement water conservation programs to help minimize flow.

3. Relationship Between Capacity and Needs

The selected alternative is sized to convey existing flows as well as anticipated flows from future residential and commercial developments at system buildout. Growth projects came from census data, zoning, existing vacant land, and coordination with the city to design based on areas with planned developments. The existing trunk line is approaching capacity and is at risk of sewer overflows during peak flows. The new trunk line provides necessary flow capacity for North Logan. The North Logan trunk line will connect directly to Logan City's wastewater system, which has sufficient capacity to handle North Logan's flows and regional growth projections.

4. Evaluation of Improved Effluent Quality Through O&M

By connecting to the Logan City Treatment Plant, North Logan avoids the need for a new treatment facility and benefits from Logan City's existing operation and maintenance programs. This approach reduces capital costs, simplifies O&M, and ensures compliance with all water quality regulations.

5. Alternative Reuse or Disposal Methods

This requirement is not applicable. Wastewater from North Logan will be treated at the Logan City regional facility using established methods.

6. Revenue-Generating Applications

The sewer system will not include revenue-generating components beyond standard user fees. The fee schedule has been attached to this letter for reference.

7. Opportunities to Reduce Energy Use

The new trunk line is a gravity-fed system, not requiring pumping or additional energy uses on top of existing North Logan Facilities. Therefore, there are not any opportunities to reduce the energy use with this project.

8. Cost Information for Total Capital Costs and O&M

Total capital costs and annual O&M costs for the planned trunkline and tri-city wastewater treatment alternative have been analyzed. No cost estimate is available for the lift station upgrade alternative, since there is not enough capacity to add North Logan's flows and it is not a feasible option to pursue. Monthly costs to residential and industrial users can be found in the attached fee schedule.

The construction of a new gravity sewer trunk line connecting North Logan City to Logan City's wastewater system is the most cost-effective, environmentally sound, and technically feasible alternative. This solution meets DWQ and EPA requirements, supports long-term growth, and minimizes operation and maintenance costs.

Sincerely,
Ashley McAllister, E.I.T.
Lance Anderson, P.E.
Cache Landmark Engineering
(435) 713-0099

Attachments:
- Fee Schedule
- Opinion of probable cost
- O&M Costs

RESOLUTION 22-09

A RESOLUTION AMENDING THE MASTER FEE SCHEDULE BY CHANGING THE SEWER USER FEE FOR NORTH LOGAN CITY

WHEREAS, North Logan City has established a master fee schedule to list and regulate the charges for various services within the city; and

WHEREAS, the City Council has determined there is a need to increase the Sewer Fee charged for sewer collection and treatment services; and

NOW, THEREFORE, be it resolved by the City Council of North Logan, Utah, that the Sewer User fees, as listed in the Master Fee Schedule shall be changed as follows (highlighted portion added, crossed through items deleted):

Utility Service Fees	
Sewer User Fees	**The Sewer Fee Per Month Shall be the sum of:** **The Flow Fee:** ~~$3.55~~ $4.00 for each 1,000 gallons of winter usage of water (computed based on the average gallons of water passing the meter for the six months November through April)* **Plus a monthly flat user fee of:** Water Meter size in inches — Monthly flat user fee ¾ or 1 — $39.78 1 ½ — $54.72 2 — $74.61 3 — $149.18 4 — $273.51 6 — $676.26 Facilities with compound water meters shall be charged the sum of the rates corresponding to the several meter sizes in the compound meter. Rate for any other sized water meter~~s are~~ is to be individually determined by the City Council.

This new fee shall be effective the 14th day of April, 2022 and will first be included in the billing for the end of May, 2022 (the billing sent out near the 25th of May, 2022.)

PASSED AND APPROVED by the City Council of North Logan, Utah, this 13th day of April, 2022.

North Logan City Corp.

ATTEST: By:_____
Lyndsay Peterson, Mayor

_____
Scott Bennett, City Recorder

Opinion of Probable Cost --Logan/North Logan Sewer Main Extension

Client: Logan City/ North Logan City
Project: 680-2106 Sewer Main Extension
Date: October 26, 2021

Sewer Main Extension

Item	Quantity	Units	Price	Cost
Bid Schedule I				
Mobilization	1	LS	$ 20,000.00	$ 20,000.00
Traffic Control	1	LS	$ 10,000.00	$ 10,000.00
Survey	1	LS	$ 5,000.00	$ 5,000.00
Implement Erosion and Sediment Control Plan	1	LS	$ 5,000.00	$ 5,000.00
Provide Quality Control Testing	1	LS	$ 5,000.00	$ 5,000.00
Provide Sewer Bypass Pumping	1	LS	$ 100,000.00	$ 100,000.00
Provide Temporary Utilities	1	LS	$ 20,000.00	$ 20,000.00
Pothole Existing Utilities	12	EA	$ 1,500.00	$ 18,000.00
Sawcut Remove Existing Asphalt	12,000	SF	$ 3.00	$ 36,000.00
Remove Existing Manhole	6	EA	$ 2,000.00	$ 12,000.00
10" Sewer Outside Manhole Drop	1	EA	$ 3,000.00	$ 3,000.00
8" Sewer Outside Manhole Drop	1	EA	$ 2,800.00	$ 2,800.00
Reconnect Existing 8" Sewer	1	EA	$ 1,500.00	$ 1,500.00
Sewer Trench Import Backfill	2,552	LF	$ 500.00	$ 1,276,000.00
Install 10" SDR-PVC 35-Import Fill	30	LF	$ 200.00	$ 6,000.00
Install 5' Diameter Manhole	2	EA	$ 2,750.00	$ 5,500.00
Construct 8" of UTBC (Plan Quantity)	26,150	SF	$ 25.00	$ 653,750.00
Construct 4" Recycled Asphalt (Plan Quantity)	325	CY	$ 150.00	$ 48,750.00
Stabilization Trench Foundation	200	LF	$ 60.00	$ 12,000.00
Install Concrete Collar- Sewer Manhole	4	EA	$ 750.00	$ 3,000.00
Strip, Remove, Stockpile and Replace Topsoil 18" Deep	5,900	SF	$ 20.00	$ 118,000.00
Haul Road Construction and Removal	1	LS	$ 30,000.00	$ 30,000.00

TOTAL BID SCHEDULE I:	**$ 2,391,300.00**

Bid Schedule II				
Mobilization	1	LS	$ 20,000.00	$ 20,000.00
Traffic Control	1	LS	$ 2,500.00	$ 2,500.00
Survey	1	LS	$ 5,000.00	$ 5,000.00
Implement Erosion and Sediment Control Plan	1	LS	$ 5,000.00	$ 5,000.00
Provide Quality Control Testing	1	LS	$ 5,000.00	$ 5,000.00
Sewer Trench Import Backfill	847	LF	$ 500.00	$ 423,500.00
Install 10" SDR-PVC 35-Import Fill	20	LF	$ 200.00	$ 4,000.00
Install 5' Diameter Manhole	1	EA	$ 2,750.00	$ 2,750.00
Stabilization Trench Foundation	200	LF	$ 60.00	$ 12,000.00
Strip, Remove, Stockpile and Replace Topsoil 18" Deep	15,000	SF	$ 20.00	$ 300,000.00
Install 48" SaniTite pipe and Import Backfill	382	LF	$ 700.00	$ 267,400.00
Haul Road Construction and Removal	1	LS	$ 30,000.00	$ 30,000.00

TOTAL BID SCHEDULE II:	**$ 1,077,150.00**

Option 1 Perfect Pipe				
Install 48" Perfect Pipe - SCH 1	2,552	LF	$ 300.00	$ 765,600.00
Install 8' Diameter Manhole - SCH 1	6	EA	$ 10,000.00	$ 60,000.00
Install 48" Cap - SCH 1	1	EA	$ 2,000.00	$ 2,000.00
Install 8" FABEKUN Connection - SCH 1	1	EA	$ 750.00	$ 750.00
Install 48" Perfect Pipe - SCH 2	847	LS	$ 300.00	$ 254,100.00
Install 8' Diameter Manhole - SCH 2	1	LF	$ 10,000.00	$ 10,000.00

TOTAL OPTION 1 BID SCHEDULE I:	**$ 828,350.00**
TOTAL OPTION 1 BID SCHEDULE II:	**$ 264,100.00**

Option 2 SaniTite Pipe				
Install 48" SaniTite Pipe - SCH 1	2,552	LF	$ 300.00	$ 765,600.00
Install 10" INSERTA TEE Connection - SCH 1	1	EA	$ 500.00	$ 500.00
Install 8" INSERTA TEE Connection - SCH 1	1	EA	$ 500.00	$ 500.00
Install 8' Diameter Manhole - SCH 1	6	EA	$ 10,000.00	$ 60,000.00
Install 48" Cap - SCH 1	1	EA	$ 300.00	$ 300.00
Install 48" SaniTite Pipe - SCH 2	847	LF	$ 300.00	$ 254,100.00
Install 10" INSERTA TEE Connection - SCH 2	1	EA	$ 500.00	$ 500.00
Install 8' Diameter Manhole - SCH 2	2	EA	$ 10,000.00	$ 20,000.00

TOTAL OPTION 2 BID SCHEDULE I:	**$ 826,900.00**
TOTAL OPTION 2 BID SCHEDULE II:	**$ 274,600.00**

Option 3 - Trenchless Perfect Pipe Bid Schedule I				
Mobilization	1	LS	$ 80,000.00	$ 80,000.00
Traffic Control	1	LS	$ 10,000.00	$ 10,000.00
Survey	1	LS	$ 5,000.00	$ 5,000.00
Implement Erosion and Sediment Control Plan	1	LS	$ 5,000.00	$ 5,000.00
Provide Quality Control Testing	1	LS	$ 5,000.00	$ 5,000.00
Provide Sewer Bypass Pumping	1	LS	$ 100,000.00	$ 100,000.00
Provide Temporary Utilities	1	LS	$ 20,000.00	$ 20,000.00
Pothole Existing Utilities	12	EA	$ 1,500.00	$ 18,000.00
Sawcut Remove Existiing Asphalt	11,156	SF	$ 3.00	$ 33,468.00
Remove Existing Manhole	6	EA	$ 2,000.00	$ 12,000.00
10" Sewer Outside Manhole Drop	1	EA	$ 3,000.00	$ 3,000.00
8" Sewer Outside Manhole Drop	1	EA	$ 2,800.00	$ 2,800.00
Reconnect Existing 8" Sewer	1	EA	$ 1,500.00	$ 1,500.00
Sewer Trench Import Backfill	784	LF	$ 500.00	$ 392,000.00
Install 10" SDR-PVC 35-Import Fill	30	LF	$ 200.00	$ 6,000.00
Install 5' Diameter Manhole	2	EA	$ 2,750.00	$ 5,500.00
Construct 8" of UTBC (Plan Quantity	12,010	SF	$ 25.00	$ 300,250.00
Construct 4" Recycled Asphalt (Plan Quantity)	140	CY	$ 150.00	$ 21,000.00
Stabilization Trench Foundation	200	LF	$ 60.00	$ 12,000.00
Install Concrete Collar- Sewer Manhole	4	EA	$ 750.00	$ 3,000.00
Strip, Remove, Stockpile and Replace Topsoil 18" Deep	1,320	SF	$ 20.00	$ 26,400.00
Haul Road Construction and Removal	1	LS	$ 15,000.00	$ 15,000.00
Install 48" Perfect Pipe - Trenchless Method	2,552	LF	$ 800.00	$ 2,041,600.00
Install 8' Diameter Manhole	6	EA	$ 10,000.00	$ 60,000.00
Install 48" Cap	1	EA	$ 2,000.00	$ 2,000.00
Install 8" FABUKEN Connection	1	EA	$ 750.00	$ 750.00

TOTAL OPTION 3 BID SCHEDULE I:	**$ 3,181,268.00**

Option 3 - Trenchless Perfect Pipe Bid Schedule II				
Mobilization	1	LS	$ 80,000.00	$ 80,000.00
Traffic Control	1	LS	$ 10,000.00	$ 10,000.00
Survey	1	LS	$ 5,000.00	$ 5,000.00
Implement Erosion and Sediment Control Plan	1	LS	$ 5,000.00	$ 5,000.00
Provide Quality Control Testing	1	LS	$ 5,000.00	$ 5,000.00
Sewer Trench Import Backfill	61	LF	$ 500.00	$ 30,500.00
Install 48" Perfect Pipe using Trenchless Method	847	LF	$ 750.00	$ 635,250.00
Install 10" SDR PVC 35- Import Backfill	20	LF	$ 200.00	
Install 5' Diameter Manhole	1	EA	$ 2,750.00	$ 2,750.00
Strip, Remove, Stockpile and Replace Topsoil 18" Deep	7,584	SF	$ 20.00	$ 151,680.00
Install 48" SaniTite pipe and Import Backfill	382	LF	$ 700.00	$ 267,400.00
Haul Road Construction and Removal	1	LS	$ 15,000.00	$ 15,000.00
Install 8' Diameter Manhole	2	EA	$ 10,000.00	$ 20,000.00

TOTAL OPTION 3 BID SCHEDULE II:	**$ 1,227,580.00**

OTAL BID SCHEDULE I AND OPTION 1:	$	3,219,650.00
OTAL BID SCHEDULE II AND OPTION 1:	$	1,341,250.00

OTAL BID SCHEDULE I AND OPTION 2:	$	3,218,200.00
OTAL BID SCHEDULE II AND OPTION 2:	$	1,351,750.00

TOTAL OPTION 3 BID SCHEDULE I:	$	3,181,268.00
TOTAL OPTION 3 BID SCHEDULE II:	$	1,227,580.00

Tri City Area Treatment Facility (Smithfield, Hyde park, North Logan)

Estimated Scenario

Estimated Current Population:		28721	(Smithfield, Hyde Park & North Logan)	
Capita Per ERU:		2.7		
Estimated ERU's:		10637		
Max Month Flow per Capita:		106		
Estimated Current Flows		3.04	mgd	
Projected 2040 Population:		42500		
Proposed 2040 WRF Capacity:		4.5	mgd (max month)	
Cost Per Gallon:		**8**	$/gallon	
Construction Cost:	$	36,040,000		
Collection Improvements:	$	6,850,000	(from Sunrise Report inflated at 3% per year)	
Total Capital Cost:	$	42,890,000		
Bond Interest:		2.5%		
Term:		20	years	
Annual Bond Payment:		$2,751,270		
		85%	collected from user fees	Impact Fees
User Fee Annual Payment:	$	2,338,580		$412,691
Annual Operational Cost:	**$**	**1,750,000**		200
Administration & Misc. Costs	$	613,287	15%	$2,063.45
Total Annual User Fee Cost:	$	4,701,867		
Existing ERU Annual Payment:	$	442		
High Level ERU Monthly Treatment Payment Estimate:	$	36.83	monthly (plus collection and other fees)	

Best Case Scenario

		68%	collected from user fees	
User Fee Annual Payment:	$	1,870,864		
Annual Operational Cost:	$	1,750,000		
Administration & Misc. Costs	$	724,173	20%	
Total Annual User Fee Cost:	$	4,345,037		
Existing ERU Annual Payment:	$	408		
High Level ERU Monthly Treatment Payment Estimate:	$	34.04	monthly	(plus collection and other fees)

Worst Case Scenario

		100%	collected from user fees	
User Fee Annual Payment:	$	2,751,270		
Annual Operational Cost:	$	1,750,000		
Administration & Misc. Costs	$	900,254	20%	
Total Annual User Fee Cost:	$	5,401,524		
Existing ERU Annual Payment:	$	508		
High Level ERU Monthly Treatment Payment Estimate:	$	42.32	monthly	(plus collection and other fees)

68%

	Collection Improve
2014	$ 5,730,000
2015	$ 5,901,900
2016	$ 6,078,957
2017	$ 6,261,326
2018	$ 6,449,165
2019	$ 6,642,640
2020	$ 6,841,920

Quick Look

Estimated	$	36.83	monthly	(plus collection and other fees)
Best	$	34.04	monthly	(plus collection and other fees)
Worst	$	42.32	monthly	(plus collection and other fees)

Sunrise 2014 Study for new WRF in NL

	2014		2020 @ 3%/yr	
	Low	High	Low	High
Smithfield	27.18	28.51	32.45	34.04
Hyde Park	26.94	28.27	32.17	33.76
North Logan	24.84	26.17	29.66	31.25