Appendix D. Capital Improvement Project Summary Sheets

D.1 – Tide Gate Study

D.2 – Tide Gate Improvements

D.3 – Lower Mill Creek Culvert Replacement

D.4 – Upper Mill Creek Culvert Replacement

D.5 – E St Outfall

D.5 - 2nd St Outfall

This page is intentionally left blank.

D.1 – Tide Gate Study

This page is intentionally left blank.

PROJECT SUMMARY SHEET

CIP PROJECT NUMBER	COSI-SW-2026-001
PROJECT NAME	Mill Creek Tide Gate Study
DATE	3/23/2026
PREPARED BY	Xiating Chen (HDR) Jess Dexheimer (HDR)
CC OR DISTRIBUTION LIST	Click or tap here to enter text.

PROJECT DESCRIPTION

Mill Creek flows to Chehalis River through the City of Cosmopolis, WA via six culverts between C Street and Altenau Street. The water level in Mill Creek is partly controlled by the tide gates located at the confluence of Mill Creek and Chehalis River to the north of Cosmopolis. Persistent flooding has been observed at these culverts.

Model simulation has identified several potential causes of flooding, including undersized culverts and backwatering caused by the tide gates. This simulation showed that a lower water surface elevation (WSE) downstream of the culverts could alleviate inland flooding in the city. The size and operation of the tide gates could potentially reduce the WSE downstream before peak flows in Mill creek and reduce flooding. Furthermore, current staff at the City do not have the institutional knowledge of tide gates operations. As a result, a tide gate study is recommended to survey the existing flow conditions at Mill Creek, and to model and improve future flow conditions to eliminate upstream inland flooding.

See Figure 1 for project vicinity map and Figure 2 for an overview of the existing tide gates.

Figure 1. Tide gate project vicinity map and project overview

Figure 2. Existing Tide Gates

PROJECT COST

The project cost has been estimated from a similarly scoped tide gate study performed by HDR in Grays Harbor County. The cost of conducting this tide gate study will be approximately **$770,000**. This project cost was developed in 2026 dollars, and a 2% inflation was applied for each year until the project's assumed start year of 2028.

See the attached estimate for breakout of costs.

PROBLEM STATEMENT

Tide gates on Mill Creek stay open to a pre-determined elevation during incoming tides, then would automatically close and stay closed during high tides or a flood event. While the upstream communities are protected from compounded flooding during high tides events, the fixed elevation does not allow water to be discharged as quickly as possible from the creek during low tides. This may cause water to backup into Mill Creek's upstream basin, exacerbating flooding in an already under-sized system.

However, the lack of understanding of the existing operation poses a challenge to properly manage creek water level in face of compounded tidal and inland flooding. A tide gate study, including survey and modeling, is needed to understand how the existing operations mitigate stormflow in upstream basins, both during low-tide and high-tide scenarios.

PROJECT GOALS

The project aims to enhance the understanding of existing operating conditions of the Mill Creek tide gates with field reconnaissance and hydrologic and hydraulic models. Potential upgrades and adjustments would be recommended to address the compound flooding issues at Mill Creek.

PROJECT SCOPE

1. Existing data collection and review:
    a. Review reference material, including gate record drawings, tidal and Flood Insurance Study data, and City operations and maintenance (O&M) data
    b. Field Reconnaissance and documentation
    c. Survey existing tide gate and Mill Creek Channel and use Lidar to generate updated and expanded topography.
2. Perform hydrologic & hydraulic modeling on existing and adjusted flow conditions
    a. SWMMM
    b. 2D HEC-RAS
    c. Tidal and sea level rise analysis
3. Alternatives Analysis
    a. Tide gate upgrade or adjustment recommendations
    b. Tide gate upgrade concept development
    c. Three cost estimates
4. Technical Memorandum
    a. Document current gate operation, extent of upstream inundation, and modeling findings

   b. Identify any deficiencies with the current gate and channel conditions
   c. Summarize tide grade upgrade or adjustment recommendations
   d. Include lists of permits needed for the work
5. Design 20%-100%
   a. PS&E (tide gate; fish passage would make it more complex)
   b. H&H modeling update allowance
   c. Permitting Analysis

GEOTECHNICAL

Soils information for the project area was obtained from Natural Resources Conservation Service's (NRCS) online Web Soil Survey. Soils within the project area are primarily Mopang Silty Loam which is described as well or moderately well drained soils that formed in glaciofluvial sediments. A specific project geotechnical investigation is recommended early in the design process.

UTILITIES

No utility conflicts anticipated with this project. Tide gates are located at confluence of Chehalis River and Mill Creek and no known utilities are shown from review of City provided as-builts. Utilities are unlikely to be in this area due to proximity to the coast and main lines being located more inland to service residential and business areas.

ANTICIPATED MAJOR PERMITS

Study includes permit analysis to identify potential permits for the selected tide gate improvements design. These permits may include:

- State Environmental Policy Act (SEPA) review
- Hydraulic Project Approval from Washington Department of Fish and Wildlife
- Shoreline substantial development permit (SSDP)
- U.S. Army Corps of Engineers Section 404 permit (Rivers & Harbors Act) and Section 10 permit (Clean Water Act)
- Other local Grays Harbor County permit

REAL ESTATE AND EASEMENT

No real estate or easements required for tide gate study. Coordinate site visits with the City.

STAKEHOLDERS

STAKEHOLDERS	
NAME	**INTEREST**
Cosmopolis residents along Mill Creek	Reducing flooding risks
Army Corps of Engineers	Evaluating flood plain and dam control
Washington Department of Ecology	Floodplain restoration and stream bank erosion
Washington Department of Fish and Wildlife	Fish and wildlife protection and fish passage
Click or tap here to enter text.	Click or tap here to enter text.
Click or tap here to enter text.	Click or tap here to enter text.

ASSOCIATED PROJECTS

- COSI-SW-2026-002 Mill Creek Tide Gate Improvements
- COSI-SW-2026-003 Lower Mill Creek Altenau St., H St., G St. and F St. Culvert Crossing Replacement
- COSI-SW-2026-004 Upper Mill Creek F St., E St. and C St. Culvert Crossing Replacement
- COSI-SW-2026-005 J St./4th St. Flooding and 2nd St. Outfall Improvements

ASSUMPTIONS, CONSTRAINTS, RISKS

ASSUMPTIONS

- City will provide gate record drawings and O&M data.
- Up to 3 alternatives will be evaluated:
  - Replace tide gates
  - Change tide gate operation
  - Add a pump station
- Cost estimate and scope are based on tide gate replacement, project scope and estimate may change based on chosen alternative.

RISKS AND CONSTRAINTS

Project Management Risk

- Budget constraints or inflexibility from project grant funding.

Project City Team Risk

- Staff turnover may cause schedule delays.

Project Complexity Risk

- QA/QC error or omission could cause potential schedule or cost impacts.

OPPORTUNITIES

N/A

EXCLUSIONS

N/A

Estimate - AACE Class 5					
Agency:	City of Cosmopolis			**Estimator(s):**	Xiating Chen (HDR) Theo Malone (HDR) Cindy Kinzer (HDR)
Project Name:	Mill Creek Tide Gate Study			**Date Prepared:**	3/10/2026
Location:	Upstream of Mill Ck. Chehalis River Confluence			**Version:**	1
Description:	Tide Gate Study with H&H modeling, Survey, Alternatives Analysis to Mitigate inland flooding, and Concept Design for Cost Estimates			**Revision Date:**	N/A
DIRECT: SUBTOTAL COSTS					
Item No.	**Item Description**	**Quantity**	**Units**	**Unit Cost**	**Item Cost**
1	Tide gate study	1	LS	$ 272,000.00	$ 272,000
2	Tide gate preliminary, geotechnical, and design engineering (@ 17% of Tide Gate Improvements direct construction costs)	1	LS	$ 432,540	$ 432,540
					$ -
					$ -
					$ -
				TOTAL DIRECT COSTS	***$ 704,540***
				Contingency (@5%)	$ 35,200
				TOTAL COST (YEAR 2026)	***$ 739,700***
				Inflation to Mid-year Work	$ 29,588
				ADJUSTED TOTAL COST (YEAR 2028)	***$ 769,300***

Estimate Year	**Mid-Construction Year**
2026	2028

Estimate - AACE Class 5					
Agency:	City of Cosmopolis			**Estimator(s):**	Xiating Chen (HDR) Theo Malone (HDR) Cindy Kinzer (HDR)
Project Name:	Mill Creek Tide Gate Study			**Date Prepared:**	3/10/2026
Location:	Upstream of Mill Ck. Chehalis River Confluence			**Version:**	1
Description:	Tide Gate Study with H&H modeling, Survey, Alternatives Analysis to Mitigate inland flooding, and Concept Design			**Revision Date:**	N/A
Task No	**Item Description**	**Quantity**	**Units**	**Task Unit Cost**	**Task Cost**
1	**Task 100 Project Management, Team and Client Coordination**	10%	LS	$ 272,000	$ 27,200
2					
3	**Existing Data Collection & Review**				$ -
4	Review Reference Material and Kickoff Meeting	1	LS	$ 15,000	$ 15,000
5	Field reconnaissance and documentation	1	LS	$ 12,000	$ 12,000
6	Survey Sections in Mill Creek Channel (spots only if needed) and downstream of the Tide Gate to Chehalis River Confluence	1	LS	$ 16,000	$ 16,000
7	Generate topography from LiDAR and survey data	1	LS	$ 7,000	$ 7,000
8					
9	**Hydrologic and Hydraulic Assessment**				
10	SWMM-based modeling	1	LS	$ 30,000	$ 30,000
11	2D HEC-RAS	1	LS	$ 50,000	$ 50,000
12	Tidal and Sea Level Rise analysis	1	LS	$ 10,000	$ 10,000
13					$ -
14	**Alternatives Analysis**				$ -
15	Tide gate upgrade or adjustment recommendations	1	LS	$ 30,000	$ 30,000
16	Tide gate upgrade concept development and figures	1	LS	$ 40,000	$ 40,000
17	Cost Estimates	1	LS	$ 14,000	$ 14,000
18	Technical Memorandum	1	LS	$ 40,000	$ 40,000
19	Relevant permit analysis	1	LS	$ 8,000	$ 8,000
					$ -
					$ -
				SUBTOTAL COSTS IN 2026 DOLLARS	$ 272,000
				SUBTOTAL COSTS	***$ 272,000***

THIS IS A COPY OF COSI-SW-2026-002. CHECK COST ESTIMATE FOR THAT PROJECT FOR UPDATES.

Estimate - AACE Class 5						
Agency:	City of Cosmopolis			**Estimator(s):**	Xiating Chen (HDR) Theo Malone (HDR) Jess Dexheimer (HDR) Cindy Kinzer (HDR)	
Project Name:	Mill Creek Tide Gate Improvements			**Date Prepared:**	3/11/2026	
Location:	Mill Creek Upstream of the Chehalis River Confluence			**Version:**	1	
Description:	Mill Creek Tide Gate Improvements			**Revision Date:**	Date	
DIRECT: SUBTOTAL CONSTRUCTION COSTS						
Item No.	**Item Description**	**Quantity**	**Units**	**Unit Cost**	**Item Cost**	
1	Tide Gate Improvements Upgrade or Replacement Costs	1	LS	$ [illegible]	$	[illegible]
					$	-
					$	-
					$	-
					$	-
					$	-
				Subtotal Construction Cost	***$***	***2,124,000***
				Allowance For Indeterminates (AFI)	$	-
				Permits for Construction	$	-
				ESTIMATED PROBABLE COST OF CONSTRUCTION [illegible]	***$***	***2,124,000***
DIRECT: SUBTOTAL ADDITIONAL CONSTRUCTION COSTS						
				Construction Change Order Allowance	$	212,400
				Material Pricing Uncertainty Allowance	$	-
				Construction Sales Tax	$	207,940
				Outside Agency Construction	$	-
				Subtotal Additional Construction Costs	**$**	**420,340**
				TOTAL DIRECT CONSTRUCTION COSTS	***$***	***2,544,340***
INDIRECT: NON-CONSTRUCTION COSTS						
				Preliminary, Geotechnical, and Design Engineering	*$*	*432,538*
				~~Environmental Planning, Management, Permitting & Licenses, Cultural Resource, and Community Relations~~	Included on COSI-SW-2026-002	
				~~Real Estate, Easements, and ROW Costs~~	Included on COSI-SW-2026-002	
				~~Legal Support~~	Included on COSI-SW-2026-002	
				~~Construction Management~~	Included on COSI-SW-2026-002	
				~~Other~~	Included on COSI-SW-2026-002	
				TOTAL INDIRECT NON-CONSTRUCTION COSTS	***$***	***432,540***

Estimate Year	Mid-Construction Year
2026	2029

ESTIMATE INPUT TABLE			
Input Category	**Inputs**	**Value**	**Comments**
Select Estimate Class	AACE Class 5		
Subtotal Construction Cost		$ 704,540	Calculated on Project Cost Summary sheet
Estimate Year	2026		
Mid-year Construction	2028		
Inflation	2%	4%	Inflation rate applied to Total Project Cost
ADDITIONAL CONSTRUCTION COSTS			
Allowance for Indeterminates (AFI)		0%	
Permits for Construction (e.g. street use, building permits, etc.)		$ -	No construction.
OTHER CAPITAL CHARGES			
Construction Change Order Allowance		10%	
Material Pricing Uncertainty Allowance		0%	No construction.
Construction Sales Tax		8.90%	Look up Value by Agency at: https://dor.wa.gov/sites/default/files/2025-05/LSU_flyer_Q3_25.pdf Aberdeen 9.08% Cosmopolis 8.9%, Hoquiam 8.9%
Sales Tax Rule 171 Credit		$ -	Unless certain, recommend keeping sales tax for Class 5 & Class 4 estimates. Reference from WAC 458-20-171, and its related rules, apply to building, repairing, or improving streets, roads, etc., which are owned by a municipal corporation, or political subdivision of the state, or by the United States, and which are used primarily for foot or vehicular traffic. This includes storm or combined sewer systems within and included as a part of the street or road drainage system and power lines when such are part of the roadway lighting system. For work performed in such cases, the Contractor shall include Washington State Retail Sales Taxes in the various unit bid item prices, or other contract amounts, including those that the Contractor pays on the purchase of the materials, equipment, or supplies used or consumed in doing the work.
Outside Agency Construction		$ -	Provide comment if used. Addresses costs for utility relocation and affiliated coordination.
INDIRECT PROJECT COST AND COMPLEXITY FACTORS			
Real Estate and Right-of-Way Costs		$ -	Includes purchases, permanent and temporary easements.
Outside Agency Coordination (Work in ROW)		$ -	Provide comment if used. Addresses costs for coordination with outside agencies for work in their ROW (e.g. WSDOT, County, other City/agency, etc.) is needed. Note: costs will be combined with Real Estate and ROW costs.
Project Contingency		5%	Override to 5%. There is no construction involved with this work. 15% was used as a scope contingency.
Risk Assessment Contingency	2.33	0%	User input based on Risk Assessment.
Other		$ -	Requires description
	Complexity Input	**Assigned % Total Direct Construction Cost**	**Comments**
Preliminary and Alternative Design Evaluations	N/A	0.0%	
Geotechnical Evaluation and Engineering	N/A	0.0%	
Design Engineering	N/A	0.0%	
Permitting and Licenses	N/A	0.0%	
Environmental Planning and Management	N/A	0.0%	
Cultural Resource	N/A	0.0%	
Community Relations	N/A	0.0%	
Real Estate Support	N/A	0.0%	
Legal Support	N/A	0.0%	
Construction Management	N/A	0.0%	

Date: 3/5/2026
Project: Cosmopolis Mill Creek Mill Gate Study
Prepared By: Xiating Chen (HDR)

Likelihood			
H	3	4	5
M	2	3	4
L	1	2	3
	L	M	H
	Consequence		

Category	Number	Risk, Threat, or Opportunity	Comments	Likelihood	Consequence	Risk Score	Strategy	Risk Plan Proposed Mitigation	Risk Cost Impact ($)	Risk Schedule Cost (Months)	Risk Probability (%)	Additional Contingency Cost ($) - Probability X Impact	Additional Contingency Schedule Cost - Probability X Impact (Months)
Add lines as needed for categories		*List potential risk from drop down menu or manual entry*	*Give specific comments and notes regarding the risk.*	*Use drop down menu*	*Use drop down menu*		*Select from menu*	*Add description for proposed mitigation plan*	*Add potential risk cost*	*Add potential delay from risk*	*Add probability for occurrence*	*Calculated*	*Calculated*
Project Management Risk	1	Budget constraints or inflexibility	Project funding may be from grant sources with limited flexibility for additional modeling scopes.	Med	Med	3	Avoid				20%	$ -	0
						---						$ -	0
						---						$ -	0
						---						$ -	0
Project City Team Risk		Staff turnover	Schedule Delay, Changed Conditions	Med	Low	2	Accept					$ -	0
						---						$ -	0
						---						$ -	0
						---						$ -	0
						---						$ -	0
						---						$ -	0
						---						$ -	0
						---						$ -	0
						---						$ -	0
Project Complexity Risk		QA/QC Error or Omission	Potential schedule and cost impacts.	Low	Med	2	Mitigate	Implement QMP with QC reviews. Build time into the schedule for reviews.			5%	$ -	0
						---						$ -	0
												$ -	0

Project Risk Assessment Score	2.33

When Risk Score is at or exceeds 3.0, a 5% Contingency Factor is added

D.2 – Tide Gate Improvements

This page is intentionally left blank.

PROJECT SUMMARY SHEET

CIP PROJECT NUMBER	COSI-SW-2026-002
PROJECT NAME	Mill Creek Tide Gate Improvements
DATE	3/23/2026
PREPARED BY	Xiating Chen (HDR)
CC OR DISTRIBUTION LIST	Click or tap here to enter text.

PROJECT DESCRIPTION

Mill Creek flows to Chehalis River through the City of Cosmopolis, WA via six culverts between C Street and Altenau Street. The water level in Mill Creek is partly controlled by the tide gates located at the confluence of Mill Creek and Chehalis River to the north of Cosmopolis. Persistent flooding has been observed at these culverts. The Mill Creek tide gate study and design (COSI-SW-2026-001) will be conducted to document existing conditions and simulate mitigation scenarios to eliminate upstream inland flooding. A full design plan, specification and estimates (PS&E) will also be completed as a part of the preceding project.

With the design from the preceding tide gate study, this project will construct new tide gates on Mill Creek. FEMA-required CLOMR and LOMR documents would also be prepared as a part of this project.

See Figure 1 for project vicinity map, and Figure 2 for an overview of the existing tide gates.

Figure 1. Tide Gates Project Vicinity Map and Project Overview

Figure 2. Existing Tide Gates (Downstream side)

PROJECT COST

Without the tide gate study complete, the scope of tide gate improvements is unknown at this time. For the purpose of cost estimating, the most expensive alternative from the Mill Creek Tide Gate Study and Design is presented as the cost of this Project, which assumes that the tide gates will be fully replaced and constructed.

The project cost has been estimated from a similarly scoped tide gate upgrade project performed by HDR in Grays Harbor County. The opinion of probable construction cost (OPCC) of conducting this tide gate improvement project will be around **$4.2 million**. This project cost was developed in 2026 dollars, and a 2% inflation was applied for each year until the project's assumed start year of 2029.

See the attached estimate for breakout of construction costs.

PROBLEM STATEMENT

Tide gates on Mill Creek stay open to a pre-determined elevation during incoming tides, then automatically close and stay closed during high tides or a flood event. While the upstream communities are protected from compound flooding during high tides events, the fixed elevation does not allow water to be discharged as quickly as possible from the creek during low tides. This may have caused water backup into Mill Creek's upstream basin, exacerbating flooding in an already under-sized system.

PROJECT GOALS

From the PS&E developed in the Mill Creek tide gate study (COSI-SW-2026-001), new tide gates will be constructed.

PROJECT SCOPE

1. Tide gate improvements construction
    a. Site preparation
    b. Site demolition
    c. Tide gate installation
    d. Electrical and controls
    e. Site restoration
    f. Other
2. CLOMR/LOMR
    a. CLOMR
    b. LOMR

GEOTECHNICAL

Soils information for the project area was obtained from Natural Resources Conservation Service's (NRCS) online Web Soil Survey. Soils within the project area are primarily Mopang Silty Loam which is described as well or moderately well drained soils that formed in glaciofluvial sediments. A specific project geotechnical investigation is recommended early in the design process.

UTILITIES

No utility conflicts anticipated with this project. Tide gates are located at confluence of Chehalis River and Mill Creek and no known utilities are shown from review of City provided as-builts. Utilities are unlikely to be in this area due to proximity to the coast and main lines being located more inland to service residential and business areas.

ANTICIPATED MAJOR PERMITS

A detailed permit analysis would be prepared for the selected design in the preceding Mill Creek Tide Gate Study and Design project (COSI-SW-2026-001). These permits may include:

- State Environmental Policy Act (SEPA) review
- Hydraulic Project Approval from Washington Department of Fish and Wildlife
- Shoreline substantial development permit (SSDP)
- U.S. Army Corps of Engineers Section 404 permit (Rivers & Harbors Act) and Section 10 permit (Clean Water Act)
- Other local Grays Harbor County permit

REAL ESTATE AND EASEMENT

Tide gate is located on parcel No.035504300000 owned by Weyerhaeuser NR Company and will need to be acquired or easements established for construction.

STAKEHOLDERS

STAKEHOLDERS	
NAME	**INTEREST**
Cosmopolis residents along Mill Creek	Reducing flooding risks
Army Corps of Engineers	Evaluating flood plain and dam control
Washington Department of Ecology	Floodplain restoration and stream bank erosion
Washington Department of Fish and Wildlife	Fish and wildlife protection
Weyerhaeuser NR Company	Owns property tide gates are located on
Click or tap here to enter text.	Click or tap here to enter text.
Click or tap here to enter text.	Click or tap here to enter text.

ASSOCIATED PROJECTS

- COSI-SW-2026-001 Mill Creek Tide Gate Study and Design
- COSI-SW-2026-003 Lower Mill Creek Alenau St., H St., G St. and F St. Culvert Crossing Replacement
- COSI-SW-2026-004 Upper Mill Creek F St., E St.and C St. Culvert Crossing Replacement
- COSI-SW-2026-005 J St./4th St. Flooding and 2nd St. Outfall Improvements

ASSUMPTIONS, CONSTRAINTS, RISKS

ASSUMPTIONS

- Cost estimate and scope are based on tide gate replacement, project scope and estimate may change based on Mill Creek Tide Gate Study and Design project.

RISKS AND CONSTRAINTS

Project Management Risk

- Project schedule constraints or timing of project execution may impact bottom line costs (i.e., fish window, etc.)
- Cultural resources may be encountered
- Multiple agency coordination could impact project schedule and cost
- Budget constraints or inflexibility due to grant funding.

Project City Team Risk

- Staff turnover could impact project schedule.

Project Complexity Risk

- QA/QC error or omission
- Regulatory changes, new regulations, and/or requirements
- Permitting challenges

OPPORTUNITIES

N/A

EXCLUSIONS

N/A

Estimate - AACE Class 5					
Agency:	City of Cosmopolis			**Estimator(s):**	Xiating Chen (HDR) Theo Malone (HDR) Jess Dexheimer (HDR) Cindy Kinzer (HDR)
Project Name:	Mill Creek Tide Gate Improvements			**Date Prepared:**	3/11/2026
Location:	Mill Creek Upstream of the Chehalis River Confluence			**Version:**	1
Description:	Mill Creek Tide Gate Improvements			**Revision Date:**	N/A
DIRECT: SUBTOTAL CONSTRUCTION COSTS					
Item No.	**Item Description**	**Quantity**	**Units**	**Unit Cost**	**Item Cost**
1	Tide Gate Improvements Cost	1	LS	$ 2,124,000.00	$ 2,124,000
					$ -
					$ -
					$ -
					$ -
					$ -
				Subtotal Construction Cost	***$ 2,124,000***
				Allowance For Indeterminates (AFI)	$ -
				Permits for Construction	$ -
				ESTIMATED PROBABLE COST OF CONSTRUCTION BID	***$ 2,124,000***
DIRECT: SUBTOTAL ADDITIONAL CONSTRUCTION COSTS					
				Construction Change Order Allowance	$ 212,400
				Material Pricing Uncertainty Allowance	$ -
				Construction Sales Tax	$ 207,940
				Outside Agency Construction	$ -
				Subtotal Additional Construction Costs	**$ 420,340**
				TOTAL DIRECT CONSTRUCTION COSTS	***$ 2,544,340***
INDIRECT: NON-CONSTRUCTION COSTS					
				Preliminary, Geotechnical, and Design Engineering	Included on COSI-SW-2026-001
				Environmental Planning, Management, Permitting & Licenses, Cultural Resource, and Community Relations	$ 228,991
				Real Estate, Easements, and ROW Costs	$ -
				Legal Support	$ 1,272
				Construction Management	$ 203,547
				Other	$ 50,000
				TOTAL INDIRECT NON-CONSTRUCTION COSTS	***$ 483,810***
				Contingency (Includes Risk Assessment Contingency)	$ 908,400
				TOTAL PROJECT COST (YEAR 2026)	***$ 3,936,600***
				Inflation to Mid-year Construction	$ 236,196
				ADJUSTED TOTAL PROJECT COST (YEAR 2029)	***$ 4,172,800***

Estimate Year	Mid-Construction Year
2026	2029

Estimate - AACE Class 5			
Agency:	City of Cosmopolis	**Estimator(s):**	Xiating Chen (HDR) Theo Malone (HDR) Jess Dexheimer (HDR) Cindy Kinzer (HDR)
Project Name:	Mill Creek Tide Gate Improvements	**Date Prepared:**	3/11/2026
Location:	Mill Creek Upstream of the Chehalis River Confluence	**Version:**	1
Description:	Mill Creek Tide Gate Improvements	**Revision Date:**	N/A

Item No.	Item Description	Quantity	Units	Unit Cost	Item Cost
	Site Preparation				$ -
	Construction Survey and Staking Allowance	1	LS	$ 10,000	$ 10,000
	In-Water Work Isolation and Stream Bypass Allowance	1	LS	$ 580,000	$ 580,000
	Fish Passage/Protection Measures Allowance	1	LS	$ 100,000	$ 100,000
					$ -
	Site Demolition				$ -
	Demolition Existing Tide Gate Allowance	2	EA	$ 100,000	$ 200,000
	Remove Existing Riprap	444	CY	$ 50	$ 22,222
	Clearing and Grubbing	667	SY	$ 16	$ 10,667
					$ -
	Tide Gate Installation				$ -
	Structure Width	20	FT		$ -
	Structure Length	70	FT		$ -
	Excavation including haul	311	CY	$ 67	$ 20,844
	Aggregate base	18	CY	$ 45	$ 800
	Woven geotextile	160	SY	$ 10	$ 1,600
	Structural concrete box culvert incl. windwalls	1	LS	$ 130,000	$ 130,000
	Adjustable tidal gates incl. controls	1	LS	$ 500,000	$ 500,000
	Structure backfill	100	CY	$ 55	$ 5,500
	Class 200 riprap	200	CY	$ 140	$ 28,000
	Electrical and Controls	1	LS	$ 200,000	$ 200,000
	Electrical Service Distribution Allowance				$ -
	Distribution Panel and Connections				$ -
	Instrumentation and Controls				$ -
					$ -
	Site Restoration				$ -
	Site Cleanup	1	LS	$ 15,000	$ 15,000
	Planting and Seeding	667	SY	$ 30	$ 20,000
					$ -
	TESC Allowance (@ 4%)	4%	LS	$ 1,844,633	$ 73,785
					$ -
					$ -
				Cost Subtotal	$ 1,918,419
	DIRECT: CONSTRUCTION COST MARK-UPS				
		General Conditions	0%	1	$ -
		Mobilization/Demobilization	8%	1.08	$ 153,473
		Overhead & Profit (OHP)	0%	1	$ -
		Insurance	1.5%	1.015	$ 31,078
		Bonding	1.0%	1.01	$ 21,030
				SUBTOTAL CONSTRUCTION COSTS WITH MARKUPS IN 2026 DOLLARS	$ 2,124,000
		Escalation Multiplier from ENR-CCI	0%	0.0000	$ -
				SUBTOTAL CONSTRUCITON COSTS IN 2026 DOLLARS	$ 2,124,000
				SUBTOTAL CONSTRUCTION COSTS	***$ 2,124,000***

ESTIMATE INPUT TABLE			
Input Category	**Inputs**	**Value**	**Comments**
Select Estimate Class	AACE Class 5		
Subtotal Construction Cost		$ 2,124,000	Calculated on Project Cost Summary sheet
Estimate Year	2026		
Mid-year Construction	2029		
Inflation	2%	6%	Inflation rate applied to Total Project Cost
ADDITIONAL CONSTRUCTION COSTS			
Allowance for Indeterminates (AFI)		0%	Provide a comment if default values are not used
Permits for Construction (e.g. street use, building permits, etc.)		$ -	Incorporated in indirect project costs
OTHER CAPITAL CHARGES			
Construction Change Order Allowance		10%	
Material Pricing Uncertainty Allowance		0%	
Construction Sales Tax		8.90%	Look up Value by Agency at: https://dor.wa.gov/sites/default/files/2025-05/LSU_flyer_Q3_25.pdf Aberdeen 9.08% Cosmopolis 8.9%, Hoquiam 8.9%
Sales Tax Rule 171 Credit		$ -	Unless certain, recommend keeping sales tax for Class 5 & Class 4 estimates. Reference from WAC 458-20-171, and its related rules, apply to building, repairing, or improving streets, roads, etc., which are owned by a municipal corporation, political subdivision of the state, or by the United States, and which are used primarily for foot or vehicular traffic. This includes storm or combined sewer systems within and included as a part of the street or road drainage system and power lines when such are part of the roadway lighting system. For work performed in such cases, the Contractor shall include Washington State Retail Sales Taxes in the various unit bid item prices, or other contract amounts, including those that the Contractor pays on the purchase of the materials, equipment, or supplies used or consumed in doing the work.
Outside Agency Construction		$ -	Provide comment if used. Addresses costs for utility relocation and affiliated coordination.
INDIRECT PROJECT COST AND COMPLEXITY FACTORS			
Real Estate and Right-of-Way Costs		$ -	Includes purchases, permanent and temporary easements
Outside Agency Coordination (Work in ROW)		$ -	Provide comment if used. Addresses costs for coordination with outside agencies for work in their ROW (e.g. WSDOT, County, other City/agency, etc.) is needed. Note: costs will be combined with Real Estate and ROW costs.
Project Contingency		30%	Requires comment if default values are not used
Risk Assessment Contingency	2.75	0%	User input based on Risk Assessment
Other		$ 50,000	Requires CLOMR/LOMR from Army Corp
	Complexity Input	**Assigned % Total Direct Construction Cost**	**Comments**
Preliminary and Alternative Design Evaluations	Routine	4.0%	
Geotechnical Evaluation and Engineering	Routine	3.0%	
Design Engineering	Routine	10.0%	
Permitting and Licenses	High	3.0%	May need to coordinate with Ecology, Army Corp, WDFW
Environmental Planning and Management	Moderate	5.0%	Work in Mill Ck. stream channel (salmon bearing) and associated permitting
Cultural Resource	Routine	0.8%	Per DAHP WISSARD there is a high probability of encountering cultural resources. However, set to routine since work wi within the existing tide gate footprint.
Community Relations	Low	0.2%	
Real Estate Support	N/A	0.0%	Easements not anticipated on this project
Legal Support	Low	0.1%	
Construction Management	Routine	8.0%	

Date:
Project:
Prepared By:

Likelihood			
H	3	4	5
M	2	3	4
L	1	2	3
	L	M	H
	Consequence		

Category	Number	Risk, Threat, or Opportunity	Comments	Likelihood	Consequence	Risk Score	Strategy	Risk Plan Proposed Mitigation
Add lines as needed for categories		*List potential risk from drop down menu or manual entry*	*Give specific comments and notes regarding the risk.*	*Use drop down menu*	*Use drop down menu*		*Select from menu*	*Add description for proposed mitigation plan*
Project Management Risk	1	Project schedule constraints or timing of project execution may impact bottom line costs (i.e. fish window, etc.)	Mill Creek is salmon bearing. Set project schedule so outfall construction occurs within the fish window.	Med	Med	3	Mitigate	Consider a design that keeps the existing storm line in service for as long as possible and install new storm pipe as separate dry pipe line, if feasible. This may reduce TESC costs and minimize construction constraints.
		Cultural resources may be encountered	Cosmopolis is in an area listed as high probability for encountering cultural resources on DAHP WISSARD	Med	Med	3	Mitigate	Obtain a cultural resource assessment near and at the outfall area during design. Consider setting new pipe alignment within the existing roadway to reduce the likelihood of encountering cultural resources during construction stage.
		Multiple agency coordination could impact project schedule and cost	Work on the tide gate will require Ecology, WDFW, USACE, and potentially Tribal, coordination.	High	Low	3	Mitigate	Identify agencies involved and initiate the permitting process early in design development. Set project design schedule to accommodate coordination and permitting in advance. Additional cost for coordination was added to the indirect input values.
		Budget constraints or inflexibility	Project funding may be from grant sources with limited flexibility for design and construction changes.	Med	High	4	Avoid	

Project City Team Risk		Staff turnover	Schedule Delay, Changed Conditions	Med	Low	2	Accept	

Project Complexity Risk		QA/QC Error or Omission	Potential schedule and cost impacts.	Low	Med	2	Mitigate	Implement QMP with QC reviews. Build time into the schedule for reviews.
		Regulatory changes, new regulations, and/or requirements	There may be storm or 404 permitting changes and new regulations implemented for work at Mill Creek.	Low	Med	2	Mitigate	Initiate the permitting process early in design development.
		Permitting challenges	Work on the Mill Creek will require Ecology, WDFW, USACE, and potentially Tribal, coordination.	High	Low	3	Accept	Initiate permitting process early in the design phase to identify potential requirements.

Project Risk Assessment Score	**2.75**	**When Risk Score is at or exceeds 3.0, a 5% Contingency Factor is adde**

D.3 – Lower Mill Creek Culvert Replacement

PROJECT SUMMARY SHEET

CIP PROJECT NUMBER	COSI-SW-2026-003
PROJECT NAME	Lower Mill Creek Culvert Replacements
DATE	3/23/2026
PREPARED BY	Xiating Chen (HDR)
CC OR DISTRIBUTION LIST	Click or tap here to enter text.

PROJECT DESCRIPTION

Mill Creek flows to Chehalis River through the City of Cosmopolis, WA via six culverts between C Street and Altenau Street. The water level in Mill Creek is partly controlled by the tide gates at the confluence of Mill Creek and the Chehalis River to the north of Cosmopolis. Persistent flooding has been observed at these culverts.

This project will provide design plans, specifications, and estimates (PS&E) for replacement of three of the downstream culverts including G St, H St, and Altenau St culverts.

See Figure 1 for project vicinity map.

Figure 1. Tide Gates Project Vicinity Map and Project Overview

PROJECT COST

The opinion of probable construction cost (OPCC) of replacing the three culverts will be approximately **$9 million**. This project cost was developed in 2026 dollars, with a 2% inflation applied for each year until the project's assumed start year of 2030.

See the attached estimate for breakdown of costs.

PROBLEM STATEMENT

Mill Creek culverts are undersized and contribute to persistent flooding of the residential areas surrounding Mill Creek. All six culverts along Mill Creek are undersized, the culvert crossings will be replaced downstream first and proceed upstream. This will reduce the likelihood that replacement may increase flooding due to backwater from a downstream culvert constriction.

PROJECT GOALS

Replace G Street, H Street, and Altenau Street culverts with three-sided box culverts that improve hydraulic efficiency and fish passage.

PROJECT SCOPE

1. Design 20%-100%
   a. PS&E (3 culverts)
   b. H&H modeling update allowance
   c. Permitting Analysis
2. Culvert construction costs
3. Design Report
   a. Design documentation
   b. H&H modeling results
   c. Geotechnical services
   d. Permitting summary
   e. O&M recommendations

GEOTECHNICAL

Soils information for the project area was obtained from Natural Resources Conservation Service's (NRCS) online Web Soil Survey. Soils within the Mill Creek culvert crossing area are primarily Mopang Silty Loam, which is described as deep to cemented till soils, well or moderately well drained soils that formed in glaciofluvial sediments. While soils within the area have the potential to be well drained, due to the proximity to Mill Creek, the estimates prepared for this report assume that soils will be saturated and unsuitable for re-use. A specific project geotechnical investigation is recommended early in the design process.

UTILITIES

Water, sewer, overhead power and communication lines are within the project area according to City as-built information. Water mains and overhead utilities are anticipated to be relocated for all three culvert replacements. H St culvert replacement is located near a sewer lift pump station and relocation may be required. Survey is needed to confirm location and determine depth and size of utilities.

ANTICIPATED MAJOR PERMITS

State Environmental Policy Act (SEPA) review
Hydraulic Project Approval from Washington Department of Fish and Wildlife
Shoreline substantial development permit (SSDP)
U.S. Army Corps of Engineers Section 404 permit (Rivers & Harbors Act) and Section 10 permit (Clean Water Act)
Other local Grays Harbor County permits

REAL ESTATE AND EASEMENT

Culverts are located within City ROW but construction work may encroach into neighboring residential parcels that will require temporary construction easements.

STAKEHOLDERS

STAKEHOLDERS	
NAME	**INTEREST**
Cosmopolis residents along Mill Creek	Reducing flooding risks, traffic impacts, construction duration, noise, dust, access to private property.
Army Corps of Engineers	Evaluating flood plain and dam control
Washington Department of Ecology	Floodplain restoration and stream bank erosion
Washington Department of Fish and Wildlife	Fish passage and wildlife protection
City of Cosmopolis O&M	Access and maintenance of facilities
Utility customers	Service interruptions
Click or tap here to enter text.	Click or tap here to enter text.
Click or tap here to enter text.	Click or tap here to enter text.

ASSOCIATED PROJECTS

- COSI-SW-2026-002 Mill Creek Tide Gate Improvements
- COSI-SW-2026-004 Upper Mill Creek F St., E St.and C St. Culvert Crossing Replacement
- COSI-SW-2026-005 J St./4th St. Flooding and 2nd St. Outfall Improvements

ASSUMPTIONS, CONSTRAINTS, RISKS

ASSUMPTIONS

- No contaminated soils handling or disposal needed.
- Soils will be unsuitable for reuse.
- 20 feet of upstream and downstream of culverts will require channel improvements.
- Work will be sequenced to minimize process, service, and community interruptions.
- There will be utility relocations for water, sewer, storm, overhead power, and overhead communications. Extent of work is unknown at this time.

- Project construction will be seasonally restricted due to presence of fish in the stream.

RISKS AND CONSTRAINTS

Project Management Risk

- Project schedule constraints or timing of project execution may impact bottom line costs (i.e., fish window, etc.)
- Cultural resources may be encountered
- Multiple agency coordination could impact project schedule and cost
- Budget constraints or inflexibility due to grant funding.

Project City Team Risk

- Staff turnover could impact project schedule.

Project Complexity Risk

- QA/QC error or omission
- Regulatory changes, new regulations, and/or requirements
- Permitting challenges

OPPORTUNITIES

N/A

EXCLUSIONS

N/A

Estimate - AACE Class 5					
Agency:	City of Cosmopolis			**Estimator(s):**	Xiating Chen (HDR) Jess Dexheimer (HDR) Cindy Kinzer (HDR)
Project Name:	Lower Mill Creek Culvert Replacements			**Date Prepared:**	3/13/2026
Location:	Mill Creek from G Street to Altenau Street			**Version:**	1
Description:	Lower Mill Creek Culvert Replacements			**Revision Date:**	N/A
DIRECT: SUBTOTAL CONSTRUCTION COSTS					
Item No.	**Item Description**	**Quantity**	**Units**	**Unit Cost**	**Item Cost**
1	G Street Culvert Replacement	1	LS	$ 1,405,400	$ 1,405,400
2	H Street Culvert Replacement	1	LS	$ 1,281,600	$ 1,281,600
3	Altenau Street Culvert Replacement	1	LS	$ 1,367,000	$ 1,367,000
					$ -
					$ -
					$ -
					$ -
				Subtotal Construction Cost	***$ 4,054,000***
				Allowance For Indeterminates (AFI)	$ -
				Permits for Construction	$ -
				ESTIMATED PROBABLE COST OF CONSTRUCTION BID	***$ 4,054,000***
DIRECT: SUBTOTAL ADDITIONAL CONSTRUCTION COSTS					
				Construction Change Order Allowance	$ 405,400
				Material Pricing Uncertainty Allowance	$ -
				Construction Sales Tax	$ 396,887
				Outside Agency Construction	$ 5,000
				Subtotal Additional Construction Costs	**$ 807,287**
				TOTAL DIRECT CONSTRUCTION COSTS	***$ 4,861,290***
INDIRECT: NON-CONSTRUCTION COSTS					
				Preliminary, Geotechnical, and Design Engineering	$ 729,194
				Environmental Planning, Management, Permitting & Licenses, Cultural Resource, and Community Relations	$ 408,348
				Real Estate, Easements, and ROW Costs	$ 18,884
				Legal Support	$ 2,431
				Construction Management	$ 388,903
				Other	$ -
				TOTAL INDIRECT NON-CONSTRUCTION COSTS	***$ 1,547,760***
				Contingency (Includes Risk Assessment Contingency)	$ 1,922,700
				TOTAL PROJECT COST (YEAR 2026)	***$ 8,331,800***
				Inflation to Mid-year Construction	$ 666,544
				ADJUSTED TOTAL PROJECT COST (YEAR 2030)	***$ 8,998,300***

Estimate Year	**Mid-Construction Year**
2026	2030

Estimate - AACE Class 5					
Agency:	City of Cosmopolis			**Estimator(s):**	Xiating Chen (HDR) Jess Dexheimer (HDR) Cindy Kinzer (HDR)
Project Name:	Lower Mill Creek Culvert Replacements			**Date Prepared:**	3/13/2026
Location:	Mill Creek from G Street to Altenau Street			**Version:**	1
Description:	G Street Culvert Replacement			**Revision Date:**	N/A
Item No.	**Item Description**	**Quantity**	**Units**	**Unit Cost**	**Item Cost**
					$ -
1	**Demolition & Removal**				$ -
2	Remove existing pipe culvert	192	LF	$ 65	$ 12,480
3	Remove Structure and Obstruction Allowance	1	LS	$ 10,000	$ 10,000
4	Remove existing asphalt pavement	113	SY	$ 28	$ 3,173
5	Remove existing curb and gutter	68	LF	$ 15	$ 1,020
6	Remove cement concrete sidewalk	38	SY	$ 28	$ 1,058
7	Clearing and grubbing	400	SF	$ 10	$ 4,000
8	EX Headwall Demo				$ -
9					$ -
10	**Excavation & Shoring**				$ -
11	*Roadway existing elevation*	16.5	FT		$ -
12	*Culvert existing IE*	9.3	FT		$ -
13	*Excavation work area on each side*	5	FT		$ -
14	*Excavation length*	106	FT		$ -
15	*Excavation width*	34	FT		$ -
16	*Excavation depth*	8	FT		$ -
17	Structure excavation, incl haul & disposal	952	CY	$ 67	$ 63,801
18	Structural Backfill	836	CY	$ 68	$ 56,840
19	Temporary Shoring	1,734	SF	$ 120	$ 208,099
20					$ -
21	**Dewatering & Stream Bypass**				$ -
22	Temporary Stream Bypass Allowance	1	LS	$ 75,000	$ 75,000
23	Dewatering Allowance	1	LS	$ 50,000	$ 50,000
24					$ -
25	**Culvert Replacement & Stream Restoration**				$ -
26	*Interior width*	10	FT		$ -
27	*Interior height*	5	FT		$ -
28	*Length*	96	FT		$ -
29	*Wall thickness*	1	FT		$ -
30	*Footing length*	6	FT		$ -
31	*Length of Stream improvements (20' upstream & 20' downstream)*	20	FT		$ -
32	*Stream width Avg.*	20	FT		$ -
33	Precast 3-sided concrete box culvert, incl. wingwalls	96	LF	$ 3,400	$ 326,400
34	Culvert Headwall, 2' H	1	CY	$ 1,400	$ 1,037
35	Culvert Footings. 6' W	96	LF	$ 1,500	$ 144,000
36	Crushed aggregate base	43	CY	$ 98	$ 4,181
37	Streambed cobbles & sediment	265	TON	$ 110	$ 29,172
38	Stream Restoration & bank stabilization	3,400	SF	$ 45	$ 153,000
39	Landscape & Restoration Allowance	1	LS	$ 10,000	$ 10,000
40					$ -
41	**Utility Relocations**				$ -
42	Water main relocation	30	LF	$ 275	$ 8,250
43	Overhead power & Comm relocation	1	LS	$ 10,000	$ 10,000
44	Uknown Utility Relocations Allowance	1	LS	$ 10,000	$ 10,000
45					$ -
46	**Roadway Restoration**				$ -
47	*Length of roadway improvements*	34	FT		$ -
48	*Roadway width*	30	FT		$ -
49	*Base Thickness*	0.5	FT		$ -
50	*HMA Thickness*	0.2	FT		$ -
51	*Planter Strip Width*	6.0	FT		$ -
52	Crushed Aggregate Base	35	TN	$ 95	$ 3,320
53	Roadway Restoration HMA	15	TN	$ 310	$ 4,802
54	Sidewalk Restoration, 5' wide	38	SY	$ 110	$ 4,156
55	Curb and Gutter	68	LF	$ 72	$ 4,896
56	Handrails	40	LF	$ 320	$ 12,800
57	Landscaping	45	SY	$ 68	$ 3,083
58					$ -
59	**Traffic Control, TESC, Misc.**				$ -
60	Traffic Control	1	LS	$ 6,000	$ 6,000
61	TESC @ 4% of Construction	4%	LS	$ 1,220,567	$ 48,823
					$ -
					$ -
				Cost Subtotal	$ 1,269,389
DIRECT: CONSTRUCTION COST MARK-UPS					
		General Conditions	0%	1	$ -
		Mobilization/Demobilization	8%	1.08	$ 101,551
		Overhead & Profit (OHP)	0%	1	$ -
		Insurance	1.5%	1.015	$ 20,564
		Bonding	1.0%	1.01	$ 13,915
				SUBTOTAL CONSTRUCTION COSTS WITH MARKUPS IN 2026 DOLLARS	$ 1,405,420
		Escalation Multiplier from ENR-CCI	0%	1.0000	$ -
				SUBTOTAL CONSTRUCITON COSTS IN 2026 DOLLARS	$ 1,405,420
				SUBTOTAL CONSTRUCTION COSTS	***$ 1,405,400***

Estimate - AACE Class 5

Agency:	City of Cosmopolis	**Estimator(s):**	Xiating Chen (HDR) Jess Dexheimer (HDR) Cindy Kinzer (HDR)
Project Name:	Lower Mill Creek Culvert Replacements	**Date Prepared:**	3/13/2026
Location:	Mill Creek from G Street to Altenau Street	**Version:**	1
Description:	H Street Culvert Replacement	**Revision Date:**	N/A

Item No.	Item Description	Quantity	Units	Unit Cost	Item Cost
					$ -
1	**Demolition & Removal**				$ -
2	Remove existing pipe culvert	162	LF	$ 65	$ 10,530
3	Remove Structure and Obstruction Allowance	1	LS	$ 10,000	$ 10,000
4	Remove existing asphalt pavement	113	SY	$ 28	$ 3,173
5	Remove existing curb and gutter	68	LF	$ 15	$ 1,020
6	Remove cement concrete sidewalk & driveway	121	SY	$ 28	$ 3,391
7	Clearing and grubbing	400	SF	$ 10	$ 4,000
8					$ -
9	**Excavation & Shoring**				$ -
10	*Roadway existing elevation*	13.8	FT		$ -
11	*Culvert existing IE*	6.5	FT		$ -
12	*Excavation work area on each side*	5	FT		$ -
13	*Excavation length*	91	FT		$ -
14	*Excavation width*	34	FT		$ -
15	*Excavation depth*	8	FT		$ -
16	Structure excavation, incl haul & disposal	834	CY	$ 67	$ 55,908
17	Structural Backfill	736	CY	$ 68	$ 50,066
18	Temporary Shoring	1,512	SF	$ 120	$ 181,490
19					$ -
20	**Dewatering & Stream Bypass**				$ -
21	Temporary Stream Bypass Allowance	1	LS	$ 75,000	$ 75,000
22	Dewatering Allowance	1	LS	$ 50,000	$ 50,000
23					$ -
24	**Culvert Replacement & Stream Restoration**				$ -
25	*Interior width*	10	FT		$ -
26	*Interior height*	5	FT		$ -
27	*Length*	81	FT		$ -
28	*Wall thickness*	1	FT		$ -
29	*Footing length*	6	FT		$ -
30	*Length of Stream improvements (20' upstream & 20' downstream)*	20	FT		$ -
31	*Stream width Avg.*	20	FT		$ -
32	Precast 3-sided concrete box culvert, incl. wingwalls	81	LF	$ 3,400	$ 275,400
33	Culvert Headwall, 2' H	1	CY	$ 1,400	$ 1,037
34	Culvert Footings. 6' W	81	LF	$ 1,500	$ 121,500
35	Crushed aggregate base	36	CY	$ 98	$ 3,528
36	Streambed cobbles & sediment	236	TON	$ 110	$ 25,955
37	Stream Restoration & bank stabilization	3,025	SF	$ 45	$ 136,125
38	Landscape & Restoration Allowance	1	LS	$ 10,000	$ 10,000
39					$ -
40	**Utility Relocations**				$ -
41	Water main relocation	30	LF	$ 275	$ 8,250
42	Overhead power & Comm relocation	1	LS	$ 10,000	$ 10,000
43	Uknown Utility Relocations Allowance	1	LS	$ 10,000	$ 10,000
44	Sewer Relocation Allowance	1	LS	$ 10,000	$ 10,000
45					$ -
46	**Roadway Restoration**				$ -
47	*Length of roadway improvements*	34	FT		$ -
48	*Roadway width*	30	FT		$ -
49	*Base Thickness*	0.5	FT		$ -
50	*HMA Thickness*	0.2	FT		$ -
51	*Planter Strip Width*	6.0	FT		$ -
52	Crushed Aggregate Base	35	TN	$ 95	$ 3,320
53	Roadway Restoration HMA	15	TN	$ 310	$ 4,802
54	Sidewalk & Driveway Restoration, 5' wide sidewalk	121	SY	$ 110	$ 13,322
55	Remove & replace brick	338	SF	$ 25	$ 8,450
56	Curb and Gutter	68	LF	$ 72	$ 4,896
57	Handrails	40	LF	$ 320	$ 12,800
58	Landscaping	45	SY	$ 68	$ 3,083
59					$ -
61	**Traffic Control, TESC, Misc.**				$ -
62	Traffic Control	1	LS	$ 6,000	$ 6,000
63	TESC @ 4% of Construction	4%	LS	$ 1,113,046	$ 44,522
					$ -
					$ -
				Cost Subtotal	$ 1,157,568

DIRECT: CONSTRUCTION COST MARK-UPS

General Conditions	0%	1	$ -
Mobilization/Demobilization	8%	1.08	$ 92,605
Overhead & Profit (OHP)	0%	1	$ -
Insurance	1.5%	1.015	$ 18,753
Bonding	1.0%	1.01	$ 12,689
SUBTOTAL CONSTRUCTION COSTS WITH MARKUPS IN 2026 DOLLARS			$ 1,281,615
Escalation Multiplier from ENR-CCI	0%	1.0000	$ -
SUBTOTAL CONSTRUCITON COSTS IN 2026 DOLLARS			$ 1,281,615
SUBTOTAL CONSTRUCTION COSTS			***$ 1,281,600***

Estimate - AACE Class 5					
Agency:	City of Cosmopolis			Estimator(s):	Xiating Chen (HDR) Jess Dexheimer (HDR) Cindy Kinzer (HDR)
Project Name:	Lower Mill Creek Culvert Replacements			Date Prepared:	3/13/2026
Location:	Mill Creek from G Street to Altenau Street			Version:	1
Description:	Altenau Street Culvert Replacement			Revision Date:	N/A
Item No.	**Item Description**	**Quantity**	**Units**	**Unit Cost**	**Item Cost**
					$ -
1	**Demolition & Removal**				$ -
2	Remove existing pipe culvert	190	LF	$ 65	$ 12,350
3	Remove Structure and Obstruction Allowance	1	LS	$ 10,000	$ 10,000
4	Remove existing asphalt pavement	120	SY	$ 28	$ 3,360
5	Remove existing curb and gutter	72	LF	$ 15	$ 1,080
6	Remove cement concrete sidewalk	40	SY	$ 28	$ 1,120
7	Clearing and grubbing	400	SF	$ 10	$ 4,000
8					$ -
9	**Excavation & Shoring**				$ -
10	*Roadway existing elevation*	13	FT		$ -
11	*Culvert existing IE*	6.7	FT		$ -
12	*Excavation work area on each side*	5	FT		$ -
13	*Excavation length*	105	FT		$ -
14	*Excavation width*	36	FT		$ -
15	*Excavation depth*	7	FT		$ -
16	Structure excavation, incl haul & disposal	884	CY	$ 67	$ 59,216
17	Structural Backfill	726	CY	$ 68	$ 49,398
18	Temporary Shoring	1,533	SF	$ 120	$ 183,960
19					$ -
20	**Dewatering & Stream Bypass**				$ -
21	Temporary Stream Bypass Allowance	1	LS	$ 75,000	$ 75,000
22	Dewatering Allowance	1	LS	$ 50,000	$ 50,000
23					$ -
24	**Culvert Replacement & Stream Restoration**				$ -
25	*Culvert Interior width*	12	FT		$ -
26	*Culvert Interior height*	5	FT		$ -
27	*Culvert Length*	95	FT		$ -
28	*Wall thickness*	1	FT		$ -
29	*Footing length*	6	FT		$ -
30	*Length of Stream improvements (20' upstream & 20' downstream)*	20	FT		$ -
31	*Stream width Avg.*	20	FT		$ -
32	Precast 3-sided concrete box culvert, incl. wingwalls	95	LF	$ 3,400	$ 323,000
33	Culvert Headwall, 2' H	1	CY	$ 1,400	$ 1,244
34	Culvert Footings. 6' W	95	LF	$ 1,500	$ 142,500
35	Crushed aggregate base	42	CY	$ 98	$ 4,138
36	Streambed cobbles & sediment	263	TON	$ 110	$ 28,958
37	Stream Restoration & bank stabilization	3,375	SF	$ 45	$ 151,875
38	Landscape & Restoration Allowance	1	LS	$ 8,000	$ 8,000
39					$ -
40	**Utility Relocations**				$ -
41	Water main relocation	60	LF	$ 275	$ 16,500
42	Utility Pole & associated OHP relocation	1	LS	$ 10,000	$ 10,000
43	Uknown Utility Relocations Allowance	1	LS	$ 10,000	$ 10,000
44					$ -
45	**Roadway Restoration**				$ -
46	*Length of roadway improvements*	36	FT		$ -
47	*Roadway width*	30	FT		$ -
48	*Base Thickness*	0.5	FT		$ -
49	*HMA Thickness*	0.2	FT		$ -
50	*Planter Strip Width*	6.0	FT		$ -
51	Crushed Aggregate Base	37	TN	$ 95	$ 3,515
52	Roadway Restoration HMA	16	TN	$ 310	$ 5,084
53	Sidewalk Restoration, 5' wide	40	SY	$ 110	$ 4,400
54	Curb and Gutter	72	LF	$ 72	$ 5,184
55	Handrails	44	LF	$ 320	$ 14,080
56	Landscaping	48	SY	$ 68	$ 3,264
57					$ -
58	**Traffic Control, TESC, Misc.**				$ -
59	Traffic Control	1	LS	$ 6,000	$ 6,000
60	TESC @ 4% of Construction	4%	LS	$ 1,187,226	$ 47,489
					$ -
					$ -
				Cost Subtotal	$ 1,234,715
	DIRECT: CONSTRUCTION COST MARK-UPS				
		General Conditions	0%	1	$ -
		Mobilization/Demobilization	8%	1.08	$ 98,777
		Overhead & Profit (OHP)	0%	1	$ -
		Insurance	1.5%	1.015	$ 20,002
		Bonding	1.0%	1.01	$ 13,535
	SUBTOTAL CONSTRUCTION COSTS WITH MARKUPS IN 2026 DOLLARS				$ 1,367,030
		Escalation Multiplier from ENR-CCI	0%	1.0000	$ -
	SUBTOTAL CONSTRUCITON COSTS IN 2026 DOLLARS				$ 1,367,030
	SUBTOTAL CONSTRUCTION COSTS				***$ 1,367,000***

ESTIMATE INPUT TABLE			
Input Category	**Inputs**	**Value**	**Comments**
Select Estimate Class	AACE Class 5		
Subtotal Construction Cost		$ 4,054,000	Calculated on Project Cost Summary sheet
Estimate Year	2026		
Mid-year Construction	2030		
Inflation	2%	8%	Inflation rate applied to Total Project Cost
ADDITIONAL CONSTRUCTION COSTS			
Allowance for Indeterminates (AFI)		0%	
Permits for Construction (e.g. street use, building permits, etc.)		$ -	User input based on calculations.
OTHER CAPITAL CHARGES			
Construction Change Order Allowance		10%	
Material Pricing Uncertainty Allowance		0%	Provide comment if used.
Construction Sales Tax		8.90%	Look up Value by Agency at: https://dor.wa.gov/sites/default/files/2025-05/LSU_flyer_Q3_25.pdf Aberdeen 9.08% Cosmopolis 8.9%, Hoquiam 8.9%
Sales Tax Rule 171 Credit		$ -	Unless certain, recommend keeping sales tax for Class 5 & Class 4 estimates. Reference from WAC 458-20-171, and its related rules, apply to building, repairing, or improving streets, roads, etc., which are owned by a municipal corporation, or political subdivision of the state, or by the United States, and which are used primarily for foot or vehicular traffic. This includes storm or combined sewer systems within and included as a part of the street or road drainage system and power lines when such are part of the roadway lighting system. For work performed in such cases, the Contractor shall include Washington State Retail Sales Taxes in the various unit bid item prices, or other contract amounts, including those that the Contractor pays on the purchase of the materials, equipment, or supplies used or consumed in doing the work.
Outside Agency Construction		$ 5,000	Utility locations are unknown at this time. An allowance is provided to address potential relocations required.
INDIRECT PROJECT COST AND COMPLEXITY FACTORS			
Real Estate and Right-of-Way Costs		$ 4,300.00	
Outside Agency Coordination (Work in ROW)		$ -	WSDOT Coordination may be required due to proximity to Hwy. Provide comment if used. Addresses costs for coordination with outside agencies for work in their ROW (e.g. WSDOT, County, other City/agency, etc.) is needed. Note: costs will be combined with Real Estate and ROW costs.
Project Contingency		30%	Requires comment if default values are not used
Risk Assessment Contingency	2.50	0%	User input based on Risk Assessment
Other			Requires description
	Complexity Input	**Assigned % Total Direct Construction Cost**	**Comments**
Preliminary and Alternative Design Evaluations	N/A	0.0%	
Geotechnical Evaluation and Engineering	Routine	3.0%	
Design Engineering	Moderate	12.0%	Flow within Mill Creek channel is unknown, flow monitoring recommended during design phase to inform preliminary design.
Permitting and Licenses	High	2.0%	In-water work requires more permitting and environmental planning
Environmental Planning and Management	Moderate	5.0%	In-water work requires more permitting and environmental planning
Cultural Resource	Moderate	1.0%	Cosmopolis is within a high probability area for encountering cultural resources.
Community Relations	Routine	0.4%	
Real Estate Support	Low	0.3%	
Legal Support	Low	0.1%	
Construction Management	Routine	8.0%	

Date:
Project:
Prepared By:

Likelihood			
H	3	4	5
M	2	3	4
L	1	2	3
	L	M	H
	Consequence		

Category	Number	Risk, Threat, or Opportunity	Comments	Likelihood	Consequence	Risk Score	Strategy	Risk Plan Proposed Mitigation	Risk Cost Impact ($)	Risk Schedule Cost (Months)	Risk Probability (%)	Additional Contingency Cost ($) - Probability X Impact	Additional Contingency Schedule Cost - Probability X Impact (Months)
Add lines as needed for categories		*List potential risk from drop down menu or manual entry*	*Give specific comments and notes regarding the risk.*	*Use drop down menu*	*Use drop down menu*		*Select from menu*	*Add description for proposed mitigation plan*	*Add potential risk cost*	*Add potential delay from risk*	*Add probability for occurrence*	*Calculated*	*Calculated*
Project Management Risk	1	Cultural resources may be encountered	Cosmopolis is in an area listed as high probability for encountering cultural resources on DAHP WISSARD	Med	Med	3	Mitigate	Obtain a cultural resource assessment near culvert crossings during design.	$ -	0.5	20%	$ -	0.1
		Multiple agency coordination could impact project schedule and cost	Work within Mill Creek will require Ecology, WDFW, USACE, and potentially Tribal, coordination.	Med	Med	3	Mitigate	Identify agencies involved and initiate the permitting process early in design development. Set project design schedule to accommodate coordination and permitting in advance. Additional cost for coordination was added to the indirect input values.		8	100%	$ -	8
		Project schedule constraints or timing of project execution may impact bottom line costs (i.e. fish window, etc.)	Mill Creek is salmon bearing. Set project schedule so outfall construction occurs within the fish window.	Low	Med	2	Mitigate	Consider phasing construction so there is enough time within the fish window to complete construction without rushing.				$ -	0
		Budget constraints or inflexibility	Project funding may be from grant sources with limited flexibility for design and construction changes.	Med	Med	3	Avoid	Design to evaluate costs and define costs in advance to minimize risk of added costs after funding has been procured.				$ -	0
Project City Team Risk						---						$ -	0
		Limited available staff and staff workload	Schedule Delay, Changed Conditions	Med	Low	2	Accept					$ -	0
						---						$ -	0
						---						$ -	0
						---						$ -	0
						---						$ -	0
						---						$ -	0
						---						$ -	0
						---						$ -	0
Project Complexity Risk		QA/QC Error or Omission	Potential schedule and cost impacts.	Low	Low	1	Mitigate	Implement QMP with QC reviews. Build time into the schedule for reviews.				$ -	0
						---						$ -	0
		Permitting challenges	Work within Mill Creek will require Ecology, WDFW, USACE, and potentially Tribal, coordination.	Med	Med	3	Accept	Initiate permitting process early in the design phase to identify potential requirements.				$ -	0
		Unknown or changing site conditions	Unknown geotechnical and soil conditions may affect culvert design and construction	Med	Med	3	Mitigate	Get geotechnical borings at each of the culvert sites early in the design process.					

Project Risk Assessment Score	2.50	When Risk Score is at or exceeds 3.0, a 5% Contingency Factor is added

Input tables

Risk, Threats, or Opportunities	**Likelihood**	**Consequence**	**Action**
<Type in or select from the list>	Low	Low	Accept
Limited available staff and staff workload	Med	Med	Mitigate
Health and safety accident concerns	High	High	Transfer
Traffic impacts and delays			Avoid
Multiple agency coordination could impact project schedule and cost			
Legal or regulatory special risk & challenges			
Regulatory changes, new regulations, and/or requirements			
Permitting challenges			
Sensitive Location (Park, near public schools, proximity to downtown or business areas, etc.)			
Project schedule constraints or timing of project execution may impact bottom line costs (i.e. fish window, etc.)			
Objections or opposition to the project			
Cultural resources may be encountered			
Unknown geotechnical and subsurface conditions (e.g.. groundwater)			
Contaminated soils and environmental considerations			
Objectives and/or requirements are unclear			
Additional scope changes may affect cost and schedule			
Unknown or changing site conditions			
Unknown utilities and conflicts may affect project scope and cost			
Site real estate or right-of-way procurement difficulties			
Weather conditions may negatively impact project schedule and cost			
Affects customer utility services or requires service outages			
Supply chain shortages and/or material cost increases			
Complex project and constructability issues may result in major design or construction changes			
QA/QC Error or Omission			
Budget constraints or inflexibility			
Staff Turnover			
There is an opportunity for enhanced engineering development and value engineering alternatives to reduce estimated costs.			

Association for the Advancement of Cost Engineering (AACE) International

AACE Estimate Class	Class Number	Construction Pricing Uncertainty Allowance	AFI[1]	CO[2]	Project Contingency	Expected Accuracy Range: Low	Expected Accuracy Range: High	Design Phase	Level of Definition
5	AACE Class 5	5%	0%	10%	30%	-50%	100%	Planning	0% to 2%
4	AACE Class 4	3%	0%	10%	25%	-30%	50%	Pre-design	1% to 30%
3	AACE Class 3	2%	15%	10%	15%	-20%	30%	30% - 60% Design	30% to 60%
2	AACE Class 2	1%	10%	10%	10%	-20%	20%	90% Design	60% to 95%
1	AACE Class 1	0%	0%	10%	5%	-10%	15%	Final Design	95% to 100%

1. Allowance for Indeterminates (AFI) is an estimated cost to address unknows that cannot be accurately quantified during the design phases. Recommended values per City of Bellevue Cost Estimating Guidelines. AFI typically not added in early project stages. The stages have a contingency amount for project costs.

2. CO assigned value of 10% typical industry standard.

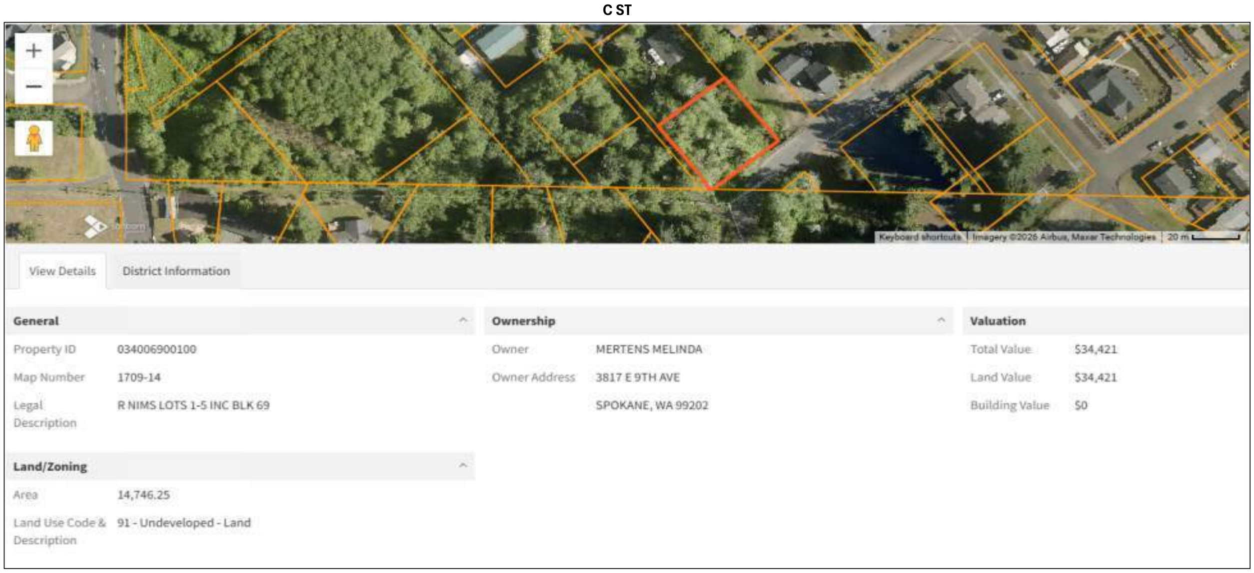
Project Complexity	Preliminary and Alternate Evaluations	Geotechnical Evaluation and Engineering	Design Engineering	Permitting and Licenses	Environmental Planning and Management	Cultural Resource	Community Relations	Real Estate Support	Legal Support	Construction Management
N/A	0%	0%	0%	0.0%	0%	0.0%	0.0%	0.0%	0.00%	0%
Low	3%	2%	6%	0.3%	3%	0.5%	0.2%	0.3%	0.05%	5%
Routine	4%	3%	10%	0.5%	4%	0.8%	0.4%	0.5%	0.10%	8%
Moderate	5%	4%	12%	1.0%	5%	1.0%	0.5%	0.8%	0.15%	10%
High	6%	5%	15%	2.0%	6%	2.0%	1.0%	1.5%	0.20%	12%

Alternative A
Real estate costs estimated using Land value from Grays Harbor County Property assessor

Item	Type	Parcel #	Area Needed (sq-ft)	Cost $/sf	TCE $/sf	PE $/sf	Total Cost
G St Culvert	TCE	34006200100 34006300800 34006201800 34006301101	1000	$ 4.08	$ 2	$ 4	$ 1,633
H St Culvert	TCE	34006100102 34006100101 34006200802 34006200801	1000	$ 3.91	$ 2	$ 4	$ 1,566
Altenau St Culvert	TCE	417091541002 34006100402	1100	$ 2.57	$ 1	$ 2	$ 1,130
		Total Area:	3100			Total	$ 4,300

Culvert Cros Parcel #		Area	Total Value	$/sf	Land value	$/sf	Average $/sf
E st	34007000900	6766	$ 94,467.00	$ 13.96	$ 33,787.00	$ 4.99	
	34007001101	8393	$ 384,559.00	$ 45.82	$ 35,135.00	$ 4.19	
	34007101800	8674	$ 317,466.00	$ 36.60	$ 35,135.00	$ 4.05	
	34007100100	11490	$ 435,216.00	$ 37.88	$ 37,831.00	$ 3.29	$ 4.13
F St	34006300100	10033.5	$ 223,131.00	$ 22.24	$ 35,809.00	$ 3.57	
	34006301700	11295	$ 215,429.00	$ 19.07	$ 37,831.00	$ 3.35	
	34006400900	7842	$ 155,014.00	$ 19.77	$ 34,349.00	$ 4.38	
	34006401100	11080	$ 309,626.00	$ 27.94	$ 37,831.00	$ 3.41	$ 3.68
G St	34006200100	13231	$ 226,192.00	$ 17.10	$ 38,729.00	$ 2.93	
	34006201800	8512	$ 258,627.00	$ 30.38	$ 35,135.00	$ 4.13	
	34006301101	2558	$ 141,007.00	$ 55.12	$ 13,824.00	$ 5.40	
	34006300800	9162	$ 299,426.00	$ 32.68	$ 35,470.00	$ 3.87	$ 4.08
H St	34006100102	6829	$ 150,406.00	$ 22.02	$ 22,423.00	$ 3.28	
	34006100101	4252	$ 11,345.00	$ 2.67	$ 11,345.00	$ 2.67	
	34006200802	4711	$ 383,879.00	$ 81.49	$ 27,072.00	$ 5.75	
	34006200801	5941	$ 214,352.00	$ 36.08	$ 23,520.00	$ 3.96	$ 3.91
Altenau St	417091541002	45166	$ 426,411.00	$ 9.44	$ 79,320.00	$ 1.76	
	34006100402	9994	$ 234,828.00	$ 23.50	$ 33,787.00	$ 3.38	$ 2.57

C ST



E ST

View Details | District Information | Print

General

Property ID	034007000900
Map Number	1709-14
Address	601 E ST
Legal Description	R NIMS NWLY 1/2 OF LOT 8; LOTS 9 & 10 BLK 70

Land/Zoning

Area	6,766.34
Land Use Code & Description	11 - Residential - Single Family

Ownership

Owner	JENSEN JENNIFER
Owner Address	PO BOX 5121
	EUREKA, CA 95502

Valuation

Total Value	$94,467
Land Value	$33,787
Building Value	$60,680

View Details | District Information | Print

General

Property ID	034007001101
Map Number	1709-14
Address	615 E ST
Legal Description	R NIMS NELY 1/2 OF LOTS 11-16 INC BLK 70

Land/Zoning

Area	8,393.99
Land Use Code & Description	11 - Residential - Single Family

Ownership

Owner	CARLSON BRIAN & AMBER
Owner Address	PO BOX 851
	COSMOPOLIS, WA 98537

Valuation

Total Value	$384,559
Land Value	$35,135
Building Value	$349,424

View Details | District Information | Print

General

Property ID	034007101800
Map Number	1709-14
Address	616 E ST
Legal Description	R NIMS LOTS 18-20 INC BLK 71

Land/Zoning

Area	8,674.51
Land Use Code & Description	11 - Residential - Single Family

Ownership

Owner	MCGIVERON ROBERT J III & NICOLE
Owner Address	PO BOX 739
	COSMOPOLIS, WA 98537

Valuation

Total Value	$317,466
Land Value	$35,135
Building Value	$282,331

View Details | District Information | Print

General

Property ID	034007100100
Map Number	1709-14
Address	602 E ST
Legal Description	R NIMS LOTS 1-4 INC BLK 71

Land/Zoning

Area	11,490.33
Land Use Code & Description	11 - Residential - Single Family

Ownership

Owner	SMITH ROBERT L & KARLA K
Owner Address	PO BOX 556
	COSMOPOLIS, WA 98537

Valuation

Total Value	$435,216
Land Value	$37,831
Building Value	$397,385

F St

View Details | District Information | Print

General

Property ID	034006300100
Map Number	1709-14
Address	504 F ST
Legal Description	R NIMS LOTS 1-3 INC TGW 10' VAC 5TH ST ADJ BLK 63

Land/Zoning

Area	10,033.50
Land Use Code & Description	11 - Residential - Single Family

Ownership

Owner	PARBON JOANN B
Owner Address	PO BOX 516
	COSMOPOLIS, WA 98537

Valuation

Total Value	$223,131
Land Value	$35,809
Building Value	$187,322

This page is intentionally left blank.

This page is intentionally left blank.

D.4 – Upper Mill Creek Culvert Replacement

This page is intentionally left blank.

PROJECT SUMMARY SHEET

CIP PROJECT NUMBER	COSI-SW-2026-004
PROJECT NAME	Upper Mill Creek Culvert Replacements
DATE	3/23/2026
PREPARED BY	Xiating Chen (HDR)
CC OR DISTRIBUTION LIST	Click or tap here to enter text.

PROJECT DESCRIPTION

Mill Creek flows to Chehalis River through the City of Cosmopolis, WA via six culverts between C Street and Altenau Street. The water level in Mill Creek is partly controlled by the tide gates at the confluence of Mill Creek and the Chehalis River to the north of Cosmopolis. Persistent flooding has been observed at these culverts.

This project will provide design plans, specifications, and estimates (PS&E) for replacement of three of the downstream culverts including C Street, E Street, and F Street culverts.

See Figure 1 for project vicinity map.

Figure 1. Tide Gates Project Vicinity Map and Project Overview

PROJECT COST

The opinion of probable construction cost (OPCC) of replacing the three culverts will be approximately **$8.7 million**. This project cost was developed in 2026 dollars, with a 2% inflation applied for each year until the project's assumed start year of 2030.

See the attached estimate for breakout of costs.

PROBLEM STATEMENT

Mill Creek culverts are undersized and contribute to persistent flooding of the residential areas surrounding Mill Creek. All six culverts along Mill Creek are undersized, the culvert crossings will be replaced downstream first and proceed upstream. This will reduce the likelihood that replacement may increase flooding due to backwater from a downstream culvert constriction.

PROJECT GOALS

Replace C Street, E Street, and F Street culverts with three-sided box culverts that improve hydraulic efficiency and fish passage.

PROJECT SCOPE

1. Design 20%-100%
    a. PS&E (3 culverts)
    b. H&H modeling update allowance
    c. Permitting Analysis
2. Culvert construction costs
3. Design Report
    a. Design documentation
    b. H&H modeling results
    c. Geotechnical services
    d. Permitting summary
    e. O&M recommendations

GEOTECHNICAL

Soils information for the project area was obtained from Natural Resources Conservation Service's (NRCS) online Web Soil Survey. Soils within the Mill Creek culvert crossing area are primarily Mopang Silty Loam, which is described as deep to cemented till soils, well or moderately well drained soils that formed in glaciofluvial sediments. While soils within the area have the potential to be well drained, due to the proximity to Mill Creek, the estimates prepared for this report assume that soils will be saturated and unsuitable for reuse. A specific project geotechnical investigation is recommended early in the design process.

UTILITIES

Water, sewer, overhead power and communication lines are within the project area according to City as-built information. Water mains and overhead utilities are anticipated to be relocated for all three culvert replacements. Survey is needed to confirm location and determine depth and size of utilities.

ANTICIPATED MAJOR PERMITS

State Environmental Policy Act (SEPA) review
Hydraulic Project Approval from Washington Department of Fish and Wildlife
Shoreline substantial development permit (SSDP)
U.S. Army Corps of Engineers Section 404 permit (Rivers & Harbors Act) and Section 10 permit (Clean Water Act)
Other local Grays Harbor County permits

REAL ESTATE AND EASEMENT

Culverts are located within City ROW but construction work may encroach into neighboring residential parcels that will require temporary construction easements.

STAKEHOLDERS

STAKEHOLDERS	
NAME	INTEREST
Cosmopolis residents along Mill Creek	Reducing flooding risks, traffic impacts, construction duration, noise, dust, access to private property.
Army Corps of Engineers	Evaluating flood plain and dam control
Washington Department of Ecology	Floodplain restoration and stream bank erosion
Washington Department of Fish and Wildlife	Fish passage and wildlife protection
City of Cosmopolis O&M	Access and maintenance of facilities
Utility customers	Service interruptions
Click or tap here to enter text.	Click or tap here to enter text.
Click or tap here to enter text.	Click or tap here to enter text.

ASSOCIATED PROJECTS

- COSI-SW-2026-002 Mill Creek Tide Gate Improvements
- COSI-SW-2026-003 Mill Creek Altenau St., H St., & G St. Culvert Crossing Replacement
- COSI-SW-2026-005 J St./4th St. Flooding and 2nd St. Outfall Improvements

ASSUMPTIONS, CONSTRAINTS, RISKS

ASSUMPTIONS

- No contaminated soils handling or disposal needed.
- Soils will be unsuitable for reuse.
- 20 feet of upstream and downstream of culverts will require channel improvements.
- Work will be sequenced to minimize process, service, and community interruptions.
- There will be utility relocations for water, sewer, storm, overhead power, and overhead communications. Extent of work is unknown at this time.
- Project construction will be seasonally restricted due to presence of fish in the stream.

RISKS AND CONSTRAINTS

Project Management Risk

- Project schedule constraints or timing of project execution may impact bottom line costs (i.e., fish window, etc.)
- Cultural resources may be encountered
- Multiple agency coordination could impact project schedule and cost
- Budget constraints or inflexibility due to grant funding.

Project City Team Risk

- Staff turnover could impact project schedule.

Project Complexity Risk

- QA/QC error or omission
- Regulatory changes, new regulations, and/or requirements
- Permitting challenges

OPPORTUNITIES

N/A

EXCLUSIONS

N/A

Estimate - AACE Class 5					
Agency:	City of Cosmopolis			**Estimator(s):**	Xiating Chen (HDR) Jess Dexheimer (HDR) Cindy Kinzer (HDR)
Project Name:	Upper Mill Creek Culvert Replacements			**Date Prepared:**	3/13/2026
Location:	Mill Creek from G Street to Altenau Street			**Version:**	1
Description:	Upper Mill Creek Culvert Replacements			**Revision Date:**	N/A
DIRECT: SUBTOTAL CONSTRUCTION COSTS					
Item No.	**Item Description**	**Quantity**	**Units**	**Unit Cost**	**Item Cost**
1	C St Culvert Replacement	1	LS	$ 879,800	$ 879,800
2	E Street Culvert Replacement	1	LS	$ 1,075,400	$ 1,075,400
3	F Street Culvert Replacement	1	LS	$ 1,624,300	$ 1,624,300
					$ -
					$ -
					$ -
				Subtotal Construction Cost	***$ 3,579,500***
				Allowance For Indeterminates (AFI)	$ -
				Permits for Construction	$ -
				ESTIMATED PROBABLE COST OF CONSTRUCTION BID	***$ 3,579,500***
DIRECT: SUBTOTAL ADDITIONAL CONSTRUCTION COSTS					
				Construction Change Order Allowance	$ 357,950
				Material Pricing Uncertainty Allowance	$ -
				Construction Sales Tax	$ 350,433
				Outside Agency Construction	$ 5,000
				Subtotal Additional Construction Costs	**$ 713,383**
				TOTAL DIRECT CONSTRUCTION COSTS	***$ 4,292,880***
INDIRECT: NON-CONSTRUCTION COSTS					
				Preliminary, Geotechnical, and Design Engineering	$ 643,932
				Environmental Planning, Management, Permitting & Licenses, Cultural Resource, and Community Relations	$ 360,602
				Real Estate, Easements, and ROW Costs	$ 16,479
				Legal Support	$ 2,146
				Construction Management	$ 343,430
				Other	$ -
				TOTAL INDIRECT NON-CONSTRUCTION COSTS	***$ 1,366,590***
				Contingency (Includes Risk Assessment Contingency)	$ 1,697,800
				TOTAL PROJECT COST (YEAR 2026)	***$ 7,357,300***
				Inflation to Mid-year Construction	$ 1,324,314
				ADJUSTED TOTAL PROJECT COST (YEAR 2035)	***$ 8,681,600***

Estimate Year	Mid-Construction Year
2026	2035

Estimate - AACE Class 5

Agency:	City of Cosmopolis	**Estimator(s):**	Cindy Kinzer Jess Dexheimer
Project Name:	Upper Mill Creek Culvert Replacements	**Date Prepared:**	3/12/2026
Location:	Mill Creek from G Street to Altenau Street	**Version:**	1
Description:	C Street Culvert Replacement	**Revision Date:**	N/A

Item No.	Item Description	Quantity	Units	Unit Cost	Item Cost
					$ -
1	**Demolition & Removal**				$ -
2	Remove existing pipe culverts	90	LF	$ 65	$ 5,850
3	Remove Structure and Obstruction Allowance	1	LS	$ 10,000	$ 10,000
4	Remove existing asphalt pavement	160	SY	$ 28	$ 4,480
5	Remove existing curb and gutter	96	LF	$ 15	$ 1,440
6	Remove cement concrete sidewalk	27	SY	$ 28	$ 747
7	Clearing and grubbing	400	SF	$ 10	$ 4,000
8					$ -
9	**Excavation & Shoring**				$ -
10	*Roadway existing elevation*	27	FT		$ -
11	*Culvert existing IE*	14.8	FT		$ -
12	*Excavation work area on each side*	5	FT		$ -
13	*Excavation length*	45	FT		$ -
14	*Excavation width*	28	FT		$ -
15	*Excavation depth*	13	FT		$ -
16	Structure excavation, incl haul & disposal	550	CY	$ 67	$ 36,840
17	Structural Backfill	492	CY	$ 68	$ 33,438
18	Temporary Shoring	1,141	SF	$ 120	$ 136,944
19					$ -
20	**Dewatering & Stream Bypass**				$ -
21	Temporary Stream Bypass Allowance	1	LS	$ 75,000	$ 75,000
22	Dewatering Allowance	1	LS	$ 50,000	$ 50,000
23					$ -
24	**Culvert Replacement & Stream Restoration**				$ -
25	*Culvert Interior width*	10	FT		$ -
26	*Culvert Interior height*	4	FT		$ -
27	*Culvert Length*	45	FT		$ -
28	*Wall thickness*	1	FT		$ -
29	*Footing length*	3	FT		$ -
30	*Length of Stream improvements (20' upstream & 20' downstream)*	20	FT		$ -
31	*Stream width Avg.*	20	FT		$ -
32	Precast 3-sided concrete box culvert, incl. wingwalls	45	LF	$ 3,400	$ 153,000
33	Culvert Headwall, 2' H	1	CY	$ 1,400	$ 1,037
34	Culvert Footings. 6' W	45	LF	$ 1,500	$ 67,500
35	Crushed aggregate base	10	CY	$ 98	$ 980
36	Streambed cobbles & sediment	166	TON	$ 110	$ 18,233
37	Stream Restoration & bank stabilization	2,125	SF	$ 45	$ 95,625
38	Landscape & Restoration Allowance	1	LS	$ 5,000	$ 5,000
39					$ -
40	**Utility Relocations**				$ -
41	Water main relocation	30	LF	$ 275	$ 8,250
42	Uknown Utility Relocations Allowance	1	LS	$ 10,000	$ 10,000
43					$ -
44	**Roadway Restoration**				$ -
45	*Length of roadway improvements*	48	FT		$ -
46	*Roadway width*	30	FT		$ -
47	*Base Thickness*	0.5	FT		$ -
48	*HMA Thickness*	0.2	FT		$ -
49	*Planter Strip Width*	6.0	FT		$ -
50	Crushed Aggregate Base	49	TN	$ 95	$ 4,687
51	Roadway Restoration HMA	22	TN	$ 310	$ 6,779
52	Sidewalk Restoration, 5' wide	27	SY	$ 110	$ 2,933
53	Curb and Gutter	96	LF	$ 72	$ 6,912
54	Handrails	44	LF	$ 320	$ 14,080
55	Roadside Restoration Allowance	64	SY	$ 68	$ 4,352
56					$ -
57	**Traffic Control, TESC, Misc.**				$ -
58	Traffic Control	1	LS	$ 6,000	$ 6,000
59	TESC @ 4% of Construction	4%	LS	$ 764,105	$ 30,564
					$ -
					$ -
				Cost Subtotal	$ 794,670

DIRECT: CONSTRUCTION COST MARK-UPS

General Conditions	0%	1	$ -
Mobilization/Demobilization	8%	1.08	$ 63,574
Overhead & Profit (OHP)	0%	1	$ -
Insurance	1.5%	1.015	$ 12,874
Bonding	1.0%	1.01	$ 8,711
SUBTOTAL CONSTRUCTION COSTS WITH MARKUPS IN 2026 DOLLARS			$ 879,828
Escalation Multiplier from ENR-CCI	0%	1.0000	$ -
SUBTOTAL CONSTRUCITON COSTS IN 2026 DOLLARS			$ 879,828
SUBTOTAL CONSTRUCTION COSTS			***$ 879,800***

Estimate - AACE Class 5			
Agency:	City of Cosmopolis	**Estimator(s):**	Cindy Kinzer Jess Dexheimer
Project Name:	Upper Mill Creek Culvert Replacements	**Date Prepared:**	3/12/2026
Location:	Mill Creek from G Street to Altenau Street	**Version:**	1
Description:	E Street Culvert Replacement	**Revision Date:**	N/A

Item No.	Item Description	Quantity	Units	Unit Cost	Item Cost
					$ -
1	**Demolition & Removal**				$ -
2	Remove existing pipe culvert	134	LF	$ 65	$ 8,710
3	Remove Structure and Obstruction Allowance	1	LS	$ 10,000	$ 10,000
4	Remove existing asphalt pavement	113	SY	$ 28	$ 3,173
5	Remove existing curb and gutter	68	LF	$ 15	$ 1,020
6	Remove cement concrete sidewalk	38	SY	$ 28	$ 1,058
7	Clearing and grubbing	400	SF	$ 10	$ 4,000
8					$ -
9	**Excavation & Shoring**				$ -
10	*Roadway existing elevation*	19.5	FT		$ -
11	*Culvert existing IE*	12.8	FT		$ -
12	*Excavation work area on each side*	5	FT		$ -
13	*Excavation length*	77	FT		$ -
14	*Excavation width*	34	FT		$ -
15	*Excavation depth*	8	FT		$ -
16	Structure excavation, incl haul & disposal	648	CY	$ 67	$ 43,429
17	Structural Backfill	567	CY	$ 68	$ 38,555
18	Temporary Shoring	1,184	SF	$ 120	$ 142,111
19					$ -
20	**Dewatering & Stream Bypass**				$ -
21	Temporary Stream Bypass Allowance	1	LS	$ 75,000	$ 75,000
22	Dewatering Allowance	1	LS	$ 50,000	$ 50,000
23					$ -
24	**Culvert Replacement & Stream Restoration**				$ -
25	*Interior width*	10	FT		$ -
26	*Interior height*	5	FT		$ -
27	*Length*	67	FT		$ -
28	*Wall thickness*	1	FT		$ -
29	*Footing length*	6	FT		$ -
30	*Length of Stream improvements (20' upstream & 20' downstream)*	20	FT		$ -
31	*Stream width Avg.*	20	FT		$ -
32	Precast 3-sided concrete box culvert, incl. wingwalls	67	LF	$ 3,400	$ 227,800
33	Culvert Headwall, 2' H	1	CY	$ 1,400	$ 1,037
34	Culvert Footings. 6' W	67	LF	$ 1,500	$ 100,500
35	Crushed aggregate base	30	CY	$ 98	$ 2,918
36	Streambed cobbles & sediment	209	TON	$ 110	$ 22,952
37	Stream Restoration & bank stabilization	2,675	SF	$ 45	$ 120,375
38	Landscape & Restoration Allowance	1	LS	$ 5,000	$ 5,000
39					$ -
40	**Utility Relocations**				$ -
41	Water main relocation	30	LF	$ 275	$ 8,250
42	Utility Pole & associated OHP relocation	1	LS	$ 10,000	$ 10,000
43	Uknown Utility Relocations Allowance	1	LS	$ 10,000	$ 10,000
44					$ -
45	**Roadway Restoration**				$ -
46	*Length of roadway improvements*	34	FT		$ -
47	*Roadway width*	30	FT		$ -
48	*Base Thickness*	0.5	FT		$ -
49	*HMA Thickness*	0.2	FT		$ -
50	*Planter Strip Width*	6.0	FT		$ -
51	Crushed Aggregate Base	35	TN	$ 95	$ 3,320
52	Roadway Restoration HMA	15	TN	$ 310	$ 4,802
53	Sidewalk Restoration, 5' wide	38	SY	$ 110	$ 4,156
54	Curb and Gutter	68	LF	$ 72	$ 4,896
55	Handrails	40	LF	$ 320	$ 12,800
56	Landscaping	45	SY	$ 68	$ 3,083
57					$ -
58	**Traffic Control, TESC, Misc.**				$ -
59	Traffic Control	1	LS	$ 15,000	$ 15,000
60	TESC @ 4% of Construction	4%	LS	$ 933,943	$ 37,358
					$ -
					$ -
				Cost Subtotal	$ 971,301
	DIRECT: CONSTRUCTION COST MARK-UPS				
	General Conditions		0%	1	$ -
	Mobilization/Demobilization		8%	1.08	$ 77,704
	Overhead & Profit (OHP)		0%	1	$ -
	Insurance		1.5%	1.015	$ 15,735
	Bonding		1.0%	1.01	$ 10,647
	SUBTOTAL CONSTRUCTION COSTS WITH MARKUPS IN 2026 DOLLARS				$ 1,075,388
	Escalation Multiplier from ENR-CCI		0%	1.0000	$ -
	SUBTOTAL CONSTRUCITON COSTS IN 2026 DOLLARS				$ 1,075,388
	SUBTOTAL CONSTRUCTION COSTS				***$ 1,075,400***

Estimate - AACE Class 5					
Agency:	City of Cosmopolis			**Estimator(s):**	Cindy Kinzer Jess Dexheimer
Project Name:	Upper Mill Creek Culvert Replacements			**Date Prepared:**	3/12/2026
Location:	Mill Creek from G Street to Altenau Street			**Version:**	1
Description:	F Street Culvert Replacement			**Revision Date:**	N/A

Item No.	Item Description	Quantity	Units	Unit Cost	Item Cost
					$ -
1	**Demolition & Removal**				$ -
2	Remove existing pipe culvert	482	LF	$ 65	$ 31,330
3	Remove Structure and Obstruction Allowance	1	LS	$ 10,000	$ 10,000
4	Remove existing asphalt pavement	113	SY	$ 28	$ 3,173
5	Remove existing curb and gutter	68	LF	$ 15	$ 1,020
6	Remove cement concrete sidewalk	38	SY	$ 28	$ 1,058
7	Clearing and grubbing	400	SF	$ 10	$ 4,000
8					$ -
9	**Excavation & Shoring**				$ -
10	*Roadway existing elevation*	17.0	FT		$ -
11	*Culvert existing IE*	10.3	FT		$ -
12	*Excavation work area on each side*	5	FT		$ -
13	*Excavation length*	128	FT		$ -
14	*Excavation width*	34	FT		$ -
15	*Excavation depth*	8	FT		$ -
16	Structure excavation, incl haul & disposal	972	CY	$ 67	$ 65,151
17	Structural Backfill	915	CY	$ 68	$ 62,232
18	Temporary Shoring	1,953	SF	$ 120	$ 234,394
19					$ -
20	**Dewatering & Stream Bypass**				$ -
21	Temporary Stream Bypass Allowance	1	LS	$ 75,000	$ 75,000
22	Dewatering Allowance	1	LS	$ 50,000	$ 50,000
23					$ -
24	**Culvert Replacement & Stream Restoration**				$ -
25	*Interior width*	10	FT		$ -
26	*Interior height*	5	FT		$ -
27	*Length*	118	FT		$ -
28	*Wall thickness*	1	FT		$ -
29	*Footing length*	6	FT		$ -
30	*Length of Stream improvements (20' upstream & 20' downstream)*	20	FT		$ -
31	*Stream width Avg.*	20	FT		$ -
32	Precast 3-sided concrete box culvert, incl. wingwalls	118	LF	$ 3,400	$ 401,200
33	Culvert Headwall, 2' H	1	CY	$ 1,400	$ 1,037
34	Culvert Footings. 6' W	118	LF	$ 1,500	$ 177,000
35	Crushed aggregate base	52	CY	$ 98	$ 5,140
36	Streambed cobbles & sediment	308	TON	$ 110	$ 33,891
37	Stream Restoration & bank stabilization	3,950	SF	$ 45	$ 177,750
38	Landscape & Restoration Allowance	1	LS	$ 10,000	$ 10,000
39					$ -
40	**Utility Relocations**				$ -
41	Water main relocation	30	LF	$ 275	$ 8,250
42	Utility Pole & associated OHP relocation	1	LS	$ 10,000	$ 10,000
43	Uknown Utility Relocations Allowance	1	LS	$ 10,000	$ 10,000
44					$ -
45	**Roadway Restoration**				$ -
46	*Length of roadway improvements*	34	FT		$ -
47	*Roadway width*	30	FT		$ -
48	*Base Thickness*	0.5	FT		$ -
49	*HMA Thickness*	0.2	FT		$ -
50	*Planter Strip Width*	6.0	FT		$ -
51	Crushed Aggregate Base	35	TN	$ 95	$ 3,320
52	Roadway Restoration HMA	15	TN	$ 310	$ 4,802
53	Sidewalk Restoration, 5' wide	38	SY	$ 110	$ 4,156
54	Curb and Gutter	68	LF	$ 72	$ 4,896
55	Handrails	40	LF	$ 320	$ 12,800
56	Landscaping	45	SY	$ 68	$ 3,083
57					$ -
58	**Traffic Control, TESC, Misc.**				$ -
59	Traffic Control	1	LS	$ 6,000	$ 6,000
60	TESC @ 4% of Construction	4%	LS	$ 1,410,681	$ 56,427
					$ -
					$ -
				Cost Subtotal	$ 1,467,108

DIRECT: CONSTRUCTION COST MARK-UPS			
General Conditions	0%	1	$ -
Mobilization/Demobilization	8%	1.08	$ 117,369
Overhead & Profit (OHP)	0%	1	$ -
Insurance	1.5%	1.015	$ 23,767
Bonding	1.0%	1.01	$ 16,082
SUBTOTAL CONSTRUCTION COSTS WITH MARKUPS IN 2026 DOLLARS			$ 1,624,327
Escalation Multiplier from ENR-CCI	0%	1.0000	$ -
SUBTOTAL CONSTRUCITON COSTS IN 2026 DOLLARS			$ 1,624,327
SUBTOTAL CONSTRUCTION COSTS			***$ 1,624,300***

ESTIMATE INPUT TABLE			
Input Category	**Inputs**	**Value**	**Comments**
Select Estimate Class	AACE Class 5		
Subtotal Construction Cost		$ 3,579,500	Calculated on Project Cost Summary sheet
Estimate Year	2026		
Mid-year Construction	2035		
Inflation	2%	18%	Inflation rate applied to Total Project Cost
ADDITIONAL CONSTRUCTION COSTS			
Allowance for Indeterminates (AFI)		0%	
Permits for Construction (e.g. street use, building permits, etc.)		$ -	User input based on calculations.
OTHER CAPITAL CHARGES			
Construction Change Order Allowance		10%	
Material Pricing Uncertainty Allowance		0%	Provide comment if used.
Construction Sales Tax		8.90%	Look up Value by Agency at: https://dor.wa.gov/sites/default/files/2025-05/LSU_flyer_Q3_25.pdf Aberdeen 9.08% Cosmopolis 8.9%, Hoquiam 8.9%
Sales Tax Rule 171 Credit		$ -	Unless certain, recommend keeping sales tax for Class 5 & Class 4 estimates. Referece from WAC 458-20-171, and its related rules, apply to building, repairing, or improving streets, roads, etc., which are owned by a municipal corporation, or political subdivision of the state, or by the United States, and which are used primarily for foot or vehicular traffic. This includes storm or combined sewer systems within and included as a part of the street or road drainage system and power lines when such are part of the roadway lighting system. For work performed in such cases, the Contractor shall include Washington State Retail Sales Taxes in the various unit bid item prices, or other contract amounts, including those that the Contractor pays on the purchase of the materials, equipment, or supplies used or consumed in doing the work.
Outside Agency Construction		$ 5,000	Utilitiy locations are unknown at this time. An allowance is provided to address potential relocations required.
INDIRECT PROJECT COST AND COMPLEXITY FACTORS			
Real Estate and Right-of-Way Costs		$ 3,600.00	
Outside Agency Coordination (Work in ROW)		$ -	WSDOT Coordination may be required due to proximity to Hwy. Provide comment if used. Addresses costs for coordination with outside agencies for work in their ROW (e.g. WSDOT, County, other City/agency, etc.) is needed. Note: costs will be combined with Real Estate and ROW costs.
Project Contingency		30%	Requires comment if default values are not used
Risk Assessment Contingency	2.50	0%	User input based on Risk Assessment
Other			Requires description
	Complexity Input	**Assigned % Total Direct Construction Cost**	**Comments**
Preliminary and Alternative Design Evaluations	N/A	0.0%	Completed as part of MOIP
Geotechnical Evaluation and Engineering	Routine	3.0%	
Design Engineering	Moderate	12.0%	
Permitting and Licences	High	2.0%	In-water work requires more permitting and environmental planning
Environmental Planning and Management	Moderate	5.0%	In-water work requires more permitting and environmental planning
Cultural Resource	Moderate	1.0%	Cosmopolis is within a high probability area for encountering cultural resources.
Community Relations	Routine	0.4%	
Real Estate Support	Low	0.3%	Majority of project will be located within City ROW
Legal Support	Low	0.1%	
Construction Management	Routine	8.0%	

Date:
Project:
Prepared By:

Likelihood				
	H	3	4	5
	M	2	3	4
	L	1	2	3
		L	M	H
		Consequence		

Category	Number	Risk, Threat, or Opportunity	Comments	Likelihood	Consequence	Risk Score	Strategy	Risk Plan Proposed Mitigation	Risk Cost Impact ($)	Risk Schedule Cost (Months)	Risk Probability (%)	Additional Contingency Cost ($) - Probability X Impact	Additional Contingency Schedule Cost - Probability X Impact (Months)
Add lines as needed for categories		*List potential risk from drop down menu or manual entry*	*Give specific comments and notes regarding the risk.*	*Use drop down menu*	*Use drop down menu*		*Select from menu*	*Add description for proposed mitigation plan*	*Add potential risk cost*	*Add potential delay from risk*	*Add probability for occurrence*	*Calculated*	*Calculated*
	1	Cultural resources may be encountered	Cosmopolis is in an area listed as high probability for encountering cultural resources on DAHP WISSARD	Med	Med	3	Mitigate	Obtain a cultural resource assessment near culvert crossings during design.	$ -	0.5	20%	$ -	0.1
		Multiple agency coordination could impact project schedule and cost	Work within Mill Creek will require Ecology, WDFW, USACE, and potentially Tribal, coordination.	Med	Med	3	Mitigate	Identify agencies involved and initiate the permitting process early in design development. Set project design schedule to accommodate coordination and permitting in advance. Additional cost for coordination was added to the indirect input values.		8	100%	$ -	8
		Project schedule constraints or timing of project execution may impact bottom line costs (i.e. fish window, etc.)	Mill Creek is salmon bearing. Set project schedule so outfall construction occurs within the fish window.	Low	Med	2	Mitigate	Consider phasing construction so there is enough time within the fish window to complete construction without rushing.				$ -	0
		Budget constraints or inflexibility	Project funding may be from grant sources with limited flexibility for design and construction changes.	Med	Med	3	Avoid	Design to evaluate costs and define costs in advance to minimize risk of added costs after funding has been procured.				$ -	0
Project City Team Risk						---						$ -	0
		Limited available staff and staff workload	Schedule Delay, Changed Conditions	Med	Low	2	Accept					$ -	0
						---						$ -	0
						---						$ -	0
						---						$ -	0
						---						$ -	0
						---						$ -	0
						---						$ -	0
						---						$ -	0
Project Complexity Risk		QA/QC Error or Omission	Potential schedule and cost impacts.	Low	Low	1	Mitigate	Implement QMP with QC reviews. Build time into the schedule for reviews.				$ -	0
						---						$ -	0
		Permitting challenges	Work within Mill Creek will require Ecology, WDFW, USACE, and potentially Tribal, coordination.	Med	Med	3	Accept	Initiate permitting process early in the design phase to identify potential requirements.				$ -	0
		Unknown or changing site conditions	Unknown geotechnical and soil conditions may affect culvert design and construction	Med	Med	3	Mitigate	Get geotechnical borings at each of the culvert sites early in the design process.					

Project Risk Assessment Score	2.50	When Risk Score is at or exceeds 3.0, a 5% Contingency Factor is added

Input tables

Risk, Threats, or Opporunities	**Likelyhood**	**Consequence**	**Action**
<Type in or select from the list>	Low	Low	Accept
Limited available staff and staff workload	Med	Med	Mitigate
Health and safety accident concerns	High	High	Transfer
Traffic impacts and delays			Avoid
Multiple agency coordination could impact project schedule and cost			
Legal or regulatory special risk & challenges			
Regulatory changes, new regulations, and/or requirements			
Permitting challenges			
Sensitive Location (Park, near public schools, proximity to downtown or business areas, etc.)			
Project schedule constraints or timing of project execution may impact bottom line costs (i.e. fish window, etc.)			
Objections or opposition to the project			
Cultural resources may be encountered			
Unknown geotechnical and subsurface conditions (e'g. groundwater)			
Contaminated soils and environmental considerations			
Objectives and/or requirements are unclear			
Additiional scope changes may affect cost and schedule			
Unknown or changing site conditions			
Unknown utilities and conflicts may affect project scope and cost			
Site real estate or right-of-way procurement difficulties			
Weather conditions may negatively impact project schedule and cost			
Affects customer utility services or requires service outages			
Supply chain shortages and/or material cost increases			
Complex project and constructitility issues may result in major design or construction changes			
QA/QC Error or Omission			
Budget constraints or inflexibility			
Staff Turnover			
There is an opportunity for enhanced engineerind development and value engineering alternatives to reduce estimated costs.			

Association for the Advancement of Cost Engineering (AACE) International

AACE Estimate Class	Class Number	Construction Pricing Uncertainty Allowance	AFI[1]	CO[2]	Project Contingency	Expected Accuracy Range		Design Phase	Level of Definition
						Low	High		
5	AACE Class 5	5%	0%	10%	30%	-50%	100%	Planning	0% to 2%
4	AACE Class 4	3%	0%	10%	25%	-30%	50%	Pre-design	1% to 30%
3	AACE Class 3	2%	15%	10%	15%	-20%	30%	30% - 60% Design	30% to 60%
2	AACE Class 2	1%	10%	10%	10%	-20%	20%	90% Design	60% to 95%
1	AACE Class 1	0%	0%	10%	5%	-10%	15%	Final Design	95% to 100%

2. CO assigned value of 10% typical industry standard.

Project Complexity	Preliminary and Alternate Evaluations	Geotechnical Evaluation and Engineering	Design Engineering	Permitting and Licenses	Environmental Planning and Management	Cultural Resource	Community Relations	Real Estate Support	Legal Support	Construction Management
N/A	0%	0%	0%	0.0%	0%	0.0%	0.0%	0.0%	0.00%	0%
Low	3%	2%	6%	0.3%	3%	0.5%	0.2%	0.3%	0.05%	5%
Routine	4%	3%	10%	0.5%	4%	0.8%	0.4%	0.5%	0.10%	8%
Moderate	5%	4%	12%	1.0%	5%	1.0%	0.5%	0.8%	0.15%	10%
High	6%	5%	15%	2.0%	6%	2.0%	1.0%	1.5%	0.20%	12%

Alternative A
Real estate costs estimated using Land value from Grays Harbor County Property assessor

Item	Type	Parcel #	Area Needed (sq-ft)	Cost $/sf	TCE $/sf	PE $/sf	Total Cost
C St Culvert	TCE	34006900100	500	$ 2.33	$ 1	$ 2	$ 467
E St Culvert	TCE	34007000900 34007001101 34007101800 34007100100	1000	$ 4.13	$ 2	$ 4	$ 1,652
F St Culvert	TCE	034006300100 034006301700 034006400900 034006401100	1000	$ 3.68	$ 1	$ 3	$ 1,471
		Total Area:	2500			Total	$ 3,600

Culvert Cro	Parcel #	Area	Total Value	$/sf	Land value	$/sf	Average $/sf
E st	34007000900	6766	$ 94,467.00	$ 13.96	$ 33,787.00	$ 4.99	
	34007001101	8393	$ 384,559.00	$ 45.82	$ 35,135.00	$ 4.19	
	34007101800	8674	$ 317,466.00	$ 36.60	$ 35,135.00	$ 4.05	
	34007100100	11490	$ 435,216.00	$ 37.88	$ 37,831.00	$ 3.29	$ 4.13
F St	34006300100	10033.5	$ 223,131.00	$ 22.24	$ 35,809.00	$ 3.57	
	34006301700	11295	$ 215,429.00	$ 19.07	$ 37,831.00	$ 3.35	
	34006400900	7842	$ 155,014.00	$ 19.77	$ 34,349.00	$ 4.38	
	34006401100	11080	$ 309,626.00	$ 27.94	$ 37,831.00	$ 3.41	$ 3.68
G St	34006200100	13231	$ 226,192.00	$ 17.10	$ 38,729.00	$ 2.93	
	34006201800	8512	$ 258,627.00	$ 30.38	$ 35,135.00	$ 4.13	
	34006301101	2558	$ 141,007.00	$ 55.12	$ 13,824.00	$ 5.40	
	34006300800	9162	$ 299,426.00	$ 32.68	$ 35,470.00	$ 3.87	$ 4.08
H St	34006100102	6829	$ 150,406.00	$ 22.02	$ 22,423.00	$ 3.28	
	34006100101	4252	$ 11,345.00	$ 2.67	$ 11,345.00	$ 2.67	
	34006200802	4711	$ 383,879.00	$ 81.49	$ 27,072.00	$ 5.75	
	34006200801	5941	$ 214,352.00	$ 36.08	$ 23,520.00	$ 3.96	$ 3.91
Altenau St	417091541002	45166	$ 426,411.00	$ 9.44	$ 79,320.00	$ 1.76	
	34006100402	9994	$ 234,828.00	$ 23.50	$ 33,787.00	$ 3.38	$ 2.57

C ST

View Details | District Information

General

Property ID	034006900100
Map Number	1709-14
Legal Description	R NIMS LOTS 1-5 INC BLK 69

Ownership

Owner	MERTENS MELINDA
Owner Address	3817 E 9TH AVE SPOKANE, WA 99202

Valuation

Total Value	$34,421
Land Value	$34,421
Building Value	$0

Land/Zoning

Area	14,746.25
Land Use Code & Description	91 - Undeveloped - Land

E ST

View Details | District Information | Print

General

Property ID	034007000900
Map Number	1709-14
Address	601 E ST
Legal Description	R NIMS NWLY 1/2 OF LOT 8; LOTS 9 & 10 BLK 70

Ownership

Owner	JENSEN JENNIFER
Owner Address	PO BOX 5121 EUREKA, CA 95502

Valuation

Total Value	$94,467
Land Value	$33,787
Building Value	$60,680

Land/Zoning

Area	6,766.34
Land Use Code & Description	11 - Residential - Single Family

View Details | District Information | Print

General

Property ID	034007001101
Map Number	1709-14
Address	615 E ST
Legal Description	R NIMS NELY 1/2 OF LOTS 11-16 INC BLK 70

Ownership

Owner	CARLSON BRIAN & AMBER
Owner Address	PO BOX 851 COSMOPOLIS, WA 98537

Valuation

Total Value	$384,559
Land Value	$35,135
Building Value	$349,424

Land/Zoning

Area	8,393.99
Land Use Code & Description	11 - Residential - Single Family

View Details | District Information | Print

General

Property ID	034007101800
Map Number	1709-14
Address	616 E ST
Legal Description	R NIMS LOTS 18-20 INC BLK 71

Ownership

Owner	MCGIVERON ROBERT J III & NICOLE
Owner Address	PO BOX 739 COSMOPOLIS, WA 98537

Valuation

Total Value	$317,466
Land Value	$35,135
Building Value	$282,331

Land/Zoning

Area	8,674.51
Land Use Code & Description	11 - Residential - Single Family

View Details | District Information | Print

General

Property ID	034007100100
Map Number	1709-14
Address	602 E ST
Legal Description	R NIMS LOTS 1-4 INC BLK 71

Land/Zoning

Area	11,490.33
Land Use Code & Description	11 - Residential - Single Family

Ownership

Owner	SMITH ROBERT L & KARLA K
Owner Address	PO BOX 556
	COSMOPOLIS, WA 98537

Valuation

Total Value	$435,216
Land Value	$37,831
Building Value	$397,385

F St

View Details | District Information | Print

General

Property ID	034006300100
Map Number	1709-14
Address	504 F ST
Legal Description	R NIMS LOTS 1-3 INC TGW 10' VAC 5TH ST ADJ BLK 63

Land/Zoning

Area	10,033.50
Land Use Code & Description	11 - Residential - Single Family

Ownership

Owner	PARBON JOANN B
Owner Address	PO BOX 516
	COSMOPOLIS, WA 98537

Valuation

Total Value	$223,131
Land Value	$35,809
Building Value	$187,322

This page is intentionally left blank.

D.5 – E St Outfall

PROJECT SUMMARY SHEET

CIP PROJECT NUMBER	COSI-SW-2026-005
PROJECT NAME	F St. NE of 1st St. Flooding & E St. Outfall Improvements
DATE	3/23/2026
PREPARED BY	Xiating Chen (HDR)
CC OR DISTRIBUTION LIST	Click or tap here to enter text.

PROJECT DESCRIPTION

Persistent flooding is observed in the parking lot in 1025 1st St, Cosmopolis, WA 98537, near the E Street Outfall pipe. Several defects have been observed in stormwater pipes and maintenance holes immediately upstream of the outfall pipe.

This project includes replacing a collapsed stormwater pipe and wye connection where F street drainage pipes connect to the E Street Outfall pipe. To further reduce flooding in the area, the E Street Outfall pipe and several pipes upstream of the outfall will be upsized, and a maintenance hole will be replaced to increase inlet efficiency.

See Figure 1 for project location and existing stormwater pipes. See Figure 2 for example of flooding occurring in the parking lot.

Figure 1. E Street Outfall Upsize and Rehabilitation Overview

Figure 2. Flooding behind Mini Mart

PROJECT COST

The opinion of probable construction cost (OPCC) for the project is approximately **$2 million.** This project cost was developed in 2026 dollars, with a 2% inflation applied for each year until the project's assumed start year of 2036.

See the attached estimate for breakout of costs.

PROBLEM STATEMENT

Persistent flooding is observed in the back parking lot of the Chevron gas station, located at 1025 1st St, Cosmopolis, WA 98537, near the E Street Outfall pipe. Video inspections have identified sag in the most upstream pipe reach and a collapse in the second pipe reach connecting from the parking lot catch basin to the E Street junction. These structural defects have contributed to standing water in the catch basin receiving flow from F Street.

This project includes replacing the pipes and the F Street catch basin in the parking lot. In order to further reduce flooding in the area, the E Street Outfall pipe will be upsized to a 36" RCP and the two pipe segments on E Street directly upstream of the outfall pipe will be upsized to 30" RCP.

PROJECT GOALS

The project aims to eliminate flooding in the parking area and improve hydraulic efficiency of the connection to the outfall.

PROJECT SCOPE

- Replace 975 LF of storm sewer pipes with (1) 490 LF of 12" pipe under parking lot, (2) 295 LF of 36" E Street Outfall, (3) 190 LF of 30" RCP on E Street.
- Replace the F Street catch basin in gas station parking lot with a Type 2 catch basin, typical of WSDOT details.
- Getting permanent easement for the outfall and storm lines that are on the Cosmo specialty fibers property.

GEOTECHNICAL

According to NRCS Soil Survey, the predominant soil type is moderately well drained sandy loam. The general slope of the project area is between 0 to 2 percent. Given the shallow excavation depth, a trench box shoring system with 2:1 slope would be sufficient for this project.

The soil is expected to be unsuitable for reuse. A desktop analysis conducted in February 2026 identified nearby contaminated sites (Chevron parking lot and Cosmo Specialty Fibers). Further soil testing is recommended.

UTILITIES

As-builts provided by the City were reviewed for potential utility conflicts within the project area. Sewer, water, and power relocations are anticipated as part of the project. A water main along E St and power poles and overhead utility relocation between F St and E St. The City believes there is a large sludge line running along the Chehalis River that crosses the Cosmo outfall storm drain. Utility poles and overhead power lines are located within the project area, and underground power lines may be present.

ANTICIPATED MAJOR PERMITS

State Environmental Policy Act (SEPA) review
Hydraulic Project Approval from Washington Department of Fish and Wildlife
Shoreline substantial development permit (SSDP)
U.S. Army Corps of Engineers Section 404 permit (Rivers & Harbors Act) and Section 10 permit (Clean Water Act)
Other local Grays Harbor County permits

REAL ESTATE AND EASEMENT

Construction will occur within City ROW, Parcel No. 417091431002 owned by GMNGI LLC and Parcel No. 417091431003 owned by Cosmo Specialty Fibers inc. Temporary construction easements should be acquired for work on parcels and a permanent easement is recommended for the outfall. The majority of project area is owned by Cosmo Specialty fibers, which has been difficult to contact in the past. Coordination for these easements should start early in the design process.

STAKEHOLDERS

STAKEHOLDERS	
NAME	**INTEREST**
Business owners	Construction on their property, noise, dust and reduced parking area. Reduced flooding when project is complete.
Cosmo Specialty Fibers	Outfall is located on Cosmo Property
City of Cosmopolis O&M	Less O&M burden on the city
Washington Department of Ecology	New outfall construction environmental regulations
Utility customers	Service interruptions
Click or tap here to enter text.	Click or tap here to enter text.
Click or tap here to enter text.	Click or tap here to enter text.

ASSOCIATED PROJECTS

None.

ASSUMPTIONS, CONSTRAINTS, RISKS

ASSUMPTIONS

- Minimal utility conflicts/relocations
- No wetlands within project area
- Next to but not impacted by flood hazard area
- Adjacent to “high intensity” environmental shoreline designation
- Shallow excavation expected, 2:1 slope

RISKS AND CONSTRAINTS

Project Management Risk

- Access/easement to work on Cosmo Specialty Fibers property
- Risk of contaminated soil
- Cultural resources may be encountered
- Multiple agency coordination could impact project schedule and cost
- Budget constraints or inflexibility due to grant funding.

Project City Risk

- Staff turnover could impact schedule

Project Complexity Risk

- QA/QC error or omission
- Regulatory changes, new regulations, and/or requirements
- Permitting challenges

OPPORTUNITIES

Community Park along shoreline if property from Cosmo Specialty Fibers is acquired.

EXCLUSIONS

N/A

Estimate - AACE Class 5					
Agency:	City of Cosmopolis			Estimator(s):	Xiating Chen (HDR) Jess Dexheimer (HDR) Cindy Kinzer (HDR)
Project Name:	F Street/1st Street Flooding and E Street Outfall Improvements			Date Prepared:	3/10/2026
Location:	Northeast of F Street/1st Street to the E Street Outfall			Version:	1
Description:	F Street/1st Street Flooding and E Street Outfall Improvements			Revision Date:	N/A
DIRECT: SUBTOTAL CONSTRUCTION COSTS					
Item No.	**Item Description**	**Quantity**	**Units**	**Unit Cost**	**Item Cost**
	North of 1st Street Parking Lot Improvements	1	LS	$ 218,000	$ 218,000
	E St. and 1st St. Improvements	1	LS	$ 190,500	$ 190,500
	E St. Outfall Improvements	1	LS	$ 364,700	$ 364,700
					$ -
					$ -
					$ -
					$ -
				Subtotal Construction Cost	***$ 773,200***
				Allowance For Indeterminates (AFI)	$ -
				Permits for Construction	$ -
				ESTIMATED PROBABLE COST OF CONSTRUCTION BID	***$ 773,200***
DIRECT: SUBTOTAL ADDITIONAL CONSTRUCTION COSTS					
				Construction Change Order Allowance	$ 77,320
				Material Pricing Uncertainty Allowance	$ -
				Construction Sales Tax	$ 75,696
				Outside Agency Construction	$ -
				Subtotal Additional Construction Costs	**$ 153,016**
				TOTAL DIRECT CONSTRUCTION COSTS	***$ 926,220***
INDIRECT: NON-CONSTRUCTION COSTS					
				Preliminary, Geotechnical, and Design Engineering	$ 129,671
				Environmental Planning, Management, Permitting & Licenses, Cultural Resource, and Community Relations	$ 75,950
				Real Estate, Easements, and ROW Costs	$ 4,631
				Legal Support	$ 926
				Construction Management	$ 74,098
				Other	$ -
				TOTAL INDIRECT NON-CONSTRUCTION COSTS	***$ 285,280***
				Contingency (Includes Risk Assessment Contingency)	$ 363,500
				TOTAL PROJECT COST (YEAR 2026)	***$ 1,575,000***
				Inflation to Mid-year Construction	$ 409,500
				ADJUSTED TOTAL PROJECT COST (YEAR 2038)	***$ 1,984,500***

Estimate Year	Mid-Construction Year
2026	2038

Estimate - AACE Class 5					
Agency:	City of Cosmopolis			**Estimator(s):**	Xiating Chen (HDR) Jess Dexheimer (HDR) Cindy Kinzer (HDR)
Project Name:	F Street/1st Street Flooding and E Street Outfall Improvements			**Date Prepared:**	3/10/2026
Location:	Northeast of F Street/1st Street to the E Street Outfall			**Version:**	1
Description:	North of 1st St. Parking Lot to F St.			**Revision Date:**	N/A
Item No.	**Item Description**	**Quantity**	**Units**	**Unit Cost**	**Item Cost**
	Conveyance Pipe & Structures - Open Cut				$ -
	8" Diam. pipe	195	LF	$ 110	$ 21,450
	Catch Basin in parking lot	1	EA	$ 6,000	$ 6,000
	12" Diam. pipe	295	LF	$ 180	$ 53,100
	MH Allowance	1	EA	$ 15,000	$ 15,000
	Catch Basin & Connection Allowance (F St.)	1	EA	$ 8,000	$ 8,000
					$ -
	Trench Excavation and Backfill				$ -
	Pipe Diameter (Ft)	1	FT		$ -
	*Trench Excavation Width (1.5*ID+(1.5+Shoring Width))*	4.0	LF		$ -
	Trench Depth (average)	4.0	FT		$ -
	Groundwater Depth	6.0	FT		$ -
	Contaminated Soil Depth	2	FT		$ -
	Shoring Width	0.5	FT		$ -
	Trench Excavation, Incl. Haul	175	CY	$ 55	$ 9,615
	Contaminated Soils Disposal (Handling & Disposal Fees - No Haul)	145	CY	$ 165	$ 23,956
	Contaminated Lab Testing Samples	1	EA	$ 1,500	$ 1,500
	Imported Backfill	166	CY	$ 47	$ 7,813
	Trench Safety System (≤10 feet)	490	LF	$ 15	$ 7,350
	Trench Safety System (>10 feet)	0	LF	$ 30	$ -
	Trench Dewatering System (+8' to 15' Deep Trench)	0	LF	$ 60	$ -
	Trench Dewatering System Incl. Wellpoints (+15' to 24' Deep Trench)	0	LF	$ 260	$ -
	Trench Dewatering System Incl. Deep Well (+24' Deep Trench)	0	LF	$ 930	$ -
					$ -
	Utility Relocations				$ -
	Adjacent Utility Support	1	LS	$ 2,000	$ 2,000
					$ -
	Demolition and Removals				$ -
	Remove Existing Asphalt Pavement	173	SY	$ 28	$ 4,853
	Remove and Replace Tree	1	EA	$ 1,500	$ 1,500
					$ -
	Road Restoration				$ -
	Pavement Removal Outside of Trench Exc. Width	2	FT		$ -
	Road Restoration Width	8.0	FT		$ -
	Base Thickness	0.5	FT		$ -
	HMA Thickness	0.5	FT		$ -
	Pavement (Parking Lot + F St)	195.0	FT		$ -
	Gravel Road Length	295.0	FT		$ -
	Crushed Aggregate Base (Includes gravel road)	134	TN	$ 95	$ 12,758
	Parking lot Restoration HMA	59	TN	$ 230	$ 13,621
	Sidewalk Restoration	0	SY	$ 110	$ -
	Upgrade Pedestrian Crossings to ADA	0	EA	$ 9,675	$ -
					$ -
	Traffic Control, TESC, Misc.				$ -
	Traffic Control	1.0	LS	$ 1,000	$ 1,000
	TESC @ 2% of Construction	2%	LS	$ 189,516	$ 3,790
					$ -
				Cost Subtotal	$ 193,306
	DIRECT: CONSTRUCTION COST MARK-UPS				
	General Conditions	0%		1	$ -
	Mobilization/Demobilization	10%		1.1	$ 19,331
	Overhead & Profit (OHP)	0%		1	$ -
	Insurance	1.5%		1.015	$ 3,190
	Bonding	1.0%		1.01	$ 2,158
	SUBTOTAL CONSTRUCTION COSTS WITH MARKUPS IN 2026 DOLLARS				$ 217,985
	Escalation Multiplier from ENR-CCI	0%		0.0000	$ -
	SUBTOTAL CONSTRUCTION COSTS IN 2026 DOLLARS				$ 217,985
	SUBTOTAL CONSTRUCTION COSTS				***$ 218,000***

Base Year	Estimate Year
2026	2026

Estimate - AACE Class 5					
Agency:	City of Cosmopolis			Estimator(s):	Xiating Chen (HDR) Jess Dexheimer (HDR) Cindy Kinzer (HDR)
Project Name:	F Street/1st Street Flooding and E Street Outfall Improvements			Date Prepared:	3/10/2026
Location:	Northeast of F Street/1st Street to the E Street Outfall			Version:	1
Description:	E St. to 1st St. Improvements			Revision Date:	N/A
Item No.	**Item Description**	**Quantity**	**Units**	**Unit Cost**	**Item Cost**
	Conveyance Pipe & Structures - Open Cut				$ -
	30" Diam. pipe	190	LF	$ 280	$ 53,200
	MH Allowance	2	EA	$ 10,100	$ 20,200
	Catch Basin & Connection Allowance	1	LS	$ 8,000	$ 8,000
					$ -
	Trench Excavation and Backfill				$ -
	Pipe Diameter (Ft)	3	FT		$ -
	*Trench Excavation Width (1.5*ID+(1.5+Shoring Width),*	6.3	LF		$ -
	Trench Depth (average)	8.0	FT		$ -
	Groundwater Depth	8.0	FT		$ -
	Shoring Width	1	FT		$ -
	Contaminated Soil Depth	0	FT		$ -
	Trench Excavation, Incl. Haul	352	CY	$ 55	$ 19,352
	Contaminated Soils Disposal (Handling & Disposal Fees - No Haul)	0	CY	$ 165	$ -
	Contaminates Lab Testing Samples	-	EA	$ 1,500	$ -
	Imported Backfill	317	CY	$ 47	$ 14,914
	Trench Safety System (≤10 feet)	190	LF	$ 15	$ 2,850
	Trench Safety System (>10 feet)	0	LF	$ 30	$ -
	Trench Dewatering System (8' to 15' Deep Trench)	0	LF	$ 60	$ -
	Trench Dewatering System Incl. Wellpoints (+15' to 24' Deep Trench)	0	LF	$ 260	$ -
	Trench Dewatering System Incl. Deep Well (+24' Deep Trench)	0	LF	$ 930	$ -
					$ -
	Utility Relocations				$ -
	Unknown Utility Relocation Allowance	1	LS	$ 10,000	$ 10,000
	Water - N/A				$ -
	Storm Drain - N/A				$ -
					$ -
	Demolition and Removals				$ -
	Remove Existing Asphalt Pavement	259	SY	$ 28	$ 7,241
					$ -
	Road Restoration				$ -
	Pavement Removal Outside of Trench Exc. Width	3	FT		$ -
	Road Restoration Width	12.3	FT		$ -
	Base Thickness	0.5	FT		$ -
	HMA Thickness	0.5	FT		$ -
	Crushed Aggregate Base	80	TN	$ 95	$ 7,575
	Parking lot Restoration HMA	88	TN	$ 230	$ 20,323
					$ -
	Traffic Control, TESC, Misc.				$ -
	Traffic Control	1.0	LS	$ 2,000	$ 2,000
	TESC @ 2% of Construction	2%	LS	$ 165,654	$ 3,313
					$ -
				Cost Subtotal	$ 168,967
	DIRECT: CONSTRUCTION COST MARK-UPS				
		General Conditions	0%	1	$ -
		Mobilization/Demobilization	10%	1.1	$ 16,897
		Overhead & Profit (OHP)	0%	1	$ -
		Insurance	1.5%	1.015	$ 2,788
		Bonding	1.0%	1.01	$ 1,887
				SUBTOTAL CONSTRUCTION COSTS WITH MARKUPS IN 2026 DOLLARS	$ 190,538
		Escalation Multiplier from ENR-CCI		0.0000	$ -
				SUBTOTAL CONSTRUCTION COSTS IN 2026 DOLLARS	$ 190,538
				SUBTOTAL CONSTRUCTION COSTS	***$ 190,500***

Base Year	Estimate Year
2026	2026

Estimate - AACE Class 5					
Agency:	City of Cosmopolis			Estimator(s):	Xiating Chen (HDR) Jess Dexheimer (HDR) Cindy Kinzer (HDR)
Project Name:	F Street/1st Street Flooding and E Street Outfall Improvements			Date Prepared:	3/10/2026
Location:	Northeast of F Street/1st Street to the E Street Outfall			Version:	1
Description:	E St. to Outfall Improvements			Revision Date:	N/A
Item No.	**Item Description**	**Quantity**	**Units**	**Unit Cost**	**Item Cost**
	Conveyance Pipe & Structures - Open Cut				$ -
	36" Diam. pipe	295	LF	$ 320	$ 94,400
	MH Allowance	1	EA	$ 21,000	$ 21,000
	Outfall Headwall, Bank Restoration and Stabilization Allowance	1	LS	$ 70,000	$ 70,000
	Catch Basin & Connection Allowance	1	LS	$ 8,000	$ 8,000
	Remove existing pipe > 12 in. to 30 in.	295	LF	$ 36	$ 10,620
					$ -
	Trench Excavation and Backfill				$ -
	Pipe Diameter (Ft)	3	FT		$ -
	*Trench Excavation Width (1.5*ID+(1.5+Shoring Width))*	7.0	LF		$ -
	Trench Depth (average)	8.0	FT		$ -
	Groundwater Depth	4.0	FT		$ -
	Contaminated Soil Depth	0	FT		$ -
	Shoring Width	0.5	FT		$ -
	Trench Excavation, Incl. Haul	612	CY	$ 55	$ 33,652
	Contaminated Soils Disposal (Handling & Disposal Fees - No Haul)	0	CY	$ 165	$ -
	Contaminates Lab Testing Samples	-	EA	$ 1,500	$ -
	Imported Backfill	535	CY	$ 47	$ 25,127
	Trench Safety System (<u><</u>10 feet)	295	LF	$ 15	$ 4,425
	Trench Safety System (>10 feet)	0	LF	$ 30	$ -
	Trench Dewatering System (GWT to 15' Deep Trench)	295	LF	$ 60	$ 17,700
	Trench Dewatering System Incl. Wellpoints (+15' to 24' Deep Trench)	0	LF	$ 260	$ -
	Trench Dewatering System Incl. Deep Well (+24' Deep Trench)	0	LF	$ 930	$ -
					$ -
	Utility Relocations				$ -
	Adjacent Utility Support	1	LS	$ 1,000	$ 1,000
	Water - N/A				$ -
	Storm Drain - N/A				$ -
					$ -
	Demolition and Removals				$ -
	Remove Existing Asphalt Pavement	426	SY	$ 28	$ 11,931
	Remove and Replace Tree	2	EA	$ 1,500	$ 3,000
	Clearing, Grubbing, and Seeded Restoration	397	SY	$ 28	$ 11,122
					$ -
	Road Restoration				$ -
	Pavement Trench Length	20	FT		$ -
	Pavement Removal Outside of Trench Exc. Width	3	FT		$ -
	Road Restoration Width	13.0	FT		$ -
	Base Thickness	0.5	FT		$ -
	HMA Thickness	0.5	FT		$ -
	Crushed Aggregate Base	9	TN	$ 95	$ 846
	Road Restoration HMA	10	TN	$ 230	$ 2,270
					$ -
	Traffic Control, TESC, Misc.				$ -
	Traffic Control	1.0	LS	$ 2,000	$ 2,000
	TESC @ 2% of Construction	2%	LS	$ 317,094	$ 6,342
					$ -
				Cost Subtotal	$ 323,436
	DIRECT: CONSTRUCTION COST MARK-UPS				
	General Conditions		0%	1	$ -
	Mobilization/Demobilization		10%	1.1	$ 32,344
	Overhead & Profit (OHP)		0%	1	$ -
	Insurance		1.5%	1.015	$ 5,337
	Bonding		1.0%	1.01	$ 3,611
	SUBTOTAL CONSTRUCTION COSTS WITH MARKUPS IN 2026 DOLLARS				$ 364,727
	Escalation Multiplier from ENR-CCI		0%	0.0000	$ -
	SUBTOTAL CONSTRUCTION COSTS IN 2026 DOLLARS				$ 364,727
	SUBTOTAL CONSTRUCTION COSTS				***$ 364,700***

Base Year	Estimate Year
2026	2026

ESTIMATE INPUT TABLE			
Input Category	**Inputs**	**Value**	**Comments**
Select Estimate Class	AACE Class 5		
Subtotal Construction Cost		$ 773,200	Calculated on Project Cost Summary sheet
Estimate Year	2026		
Mid-year Construction	2039		
Inflation	2%	26%	Inflation rate applied to Total Project Cost
ADDITIONAL CONSTRUCTION COSTS			
Allowance for Indeterminates (AFI)		0%	
Permits for Construction (e.g. street use, building permits, etc.)		$ -	User input based on calculations.
OTHER CAPITAL CHARGES			
Construction Change Order Allowance		10%	
Material Pricing Uncertainty Allowance		0%	Provide comment if used.
Construction Sales Tax		8.90%	Look up Value by Agency at: https://dor.wa.gov/sites/default/files/2025-05/LSU_flyer_Q3_25.pdf Aberdeen 9.08% Cosmopolis 8.9%, Hoquiam 8.9%
Sales Tax Rule 171 Credit		$ -	Unless certain, recommend keeping sales tax for Class 5 & Class 4 estimates. Reference from WAC 458-20-171, and its related rules, apply to building, repairing, or improving streets, roads, etc., which are owned by a municipal corporation, or political subdivision of the state, or by the United States, and which are used primarily for foot or vehicular traffic. This includes storm or combined sewer systems within and included as a part of the street or road drainage system and power lines when such are part of the roadway lighting system. For work performed in such cases, the Contractor shall include Washington State Retail Sales Taxes in the various unit bid item prices, or other contract amounts, including those that the Contractor pays on the purchase of the materials, equipment, or supplies used or consumed in doing the work.
Outside Agency Construction		$ -	Utility locations are unknown at this time. This allowance for utility relocation has been covered in the individual cost estimate tab.
INDIRECT PROJECT COST AND COMPLEXITY FACTORS			
Real Estate and Right-of-Way Costs		$ -	
Outside Agency Coordination (Work in ROW)		$ -	WSDOT Coordination may be required due to proximity to Hwy. Provide comment if used. Addresses costs for coordination with outside agencies for work in their ROW (e.g. WSDOT, County, other City/agency, etc.) is needed. Note: costs will be combined with Real Estate and ROW costs.
Project Contingency		30%	Requires comment if default values are not used
Risk Assessment Contingency	2.75	0%	User input based on Risk Assessment.
Other			Requires description
	Complexity Input	**Assigned % Total Direct Construction Cost**	**Comments**
Preliminary and Alternative Design Evaluations	N/A	0.0%	
Geotechnical Evaluation and Engineering	Moderate	4.0%	Saturated soils with high groundwater, potential contamination due to proximity to ECY registered site and crossing railroad.
Design Engineering	Routine	10.0%	Includes outfall replacement and potential for unknown connections.
Permitting and Licenses	High	2.0%	Elevated due to proximity to Mill Creek with shorelines requirement.
Environmental Planning and Management	Moderate	5.0%	Potential contaminated soils near J Steet and 1st Street
Cultural Resource	Moderate	1.0%	Per DAHP WISSARD there is a high probability of encountering cultural resources.
Community Relations	Low	0.2%	Low impact to general community.
Real Estate Support	Routine	0.5%	The project piping is located on private property owned by Cosmo Specialty Fiber and in the gas station parking lot. Permanent and temporary construction easements will be needed.
Legal Support	Routine	0.1%	Legal support may be needed due to work on private property owned by Cosmo Specialty Fiber and in the gas station parking lot.
Construction Management	Routine	8.0%	

Date: 3/9/2026

Project: F Street/1st Street Flooding and E Street Outfall Improvements

Prepared By: Xiating Chen

Likelihood			
H	3	4	5
M	2	3	4
L	1	2	3
	L	M	H
	Consequence		

Category	Number	Risk, Threat, or Opportunity	Comments	Likelihood	Consequence	Risk Score	Strategy	Risk Plan Proposed Mitigation
Add lines as needed for categories		*List potential risk from drop down menu or manual entry*	*Give specific comments and notes regarding the risk.*	*Use drop down menu*	*Use drop down menu*		*Select from menu*	*Add description for proposed mitigation plan*
Project Management Risk	1	Cultural resources may be encountered	Cosmopolis is in an area listed as high probability for encountering cultural resources on DAHP WISSARD	Med	Med	3	Mitigate	Obtain a cultural resource assessment near and at the outfall area during design. Consider setting new pipe alignment within the existing roadway to reduce the likelihood of encountering cultural resources during construction stage.
		Multiple agency coordination could impact project schedule and cost	Work on the outfall will require Ecology, WDFW, USACE, and potentially Tribal, coordination.	High	Low	3	Mitigate	Identify agencies involved and initiate the permitting process early in design development. Set project design schedule to accommodate coordination and permitting in advance. Additional cost for coordination was added to the indirect input values.
		Project schedule constraints or timing of project execution may impact bottom line costs (i.e. fish window, etc.)	Mill Creek is salmon bearing. Set project schedule so outfall construction occurs within the fish window.	Med	Med	3	Mitigate	Consider a design that keeps the existing storm line in service for as long as possible and install new storm pipe as separate dry pipe line, if feasible. This may reduce TESC costs and minimize construction constraints.
		Budget constraints or inflexibility	Project funding may be from grant sources with limited flexibility for design and construction changes.	Med	High	4	Avoid	Design to evaluate costs and define costs in advance to minimize risk of added costs after funding has been procured.
Project City Team Risk		Staff Turnover	Schedule Delay, Changed Conditions	Med	Low	2	Accept	

Project Complexity Risk		QA/QC Error or Omission	Potential schedule and cost impacts.	Low	Med	2	Mitigate	Implement QMP with QC reviews. Build time into the schedule for reviews.
		Regulatory changes, new regulations, and/or requirements	There may be storm or 404 permitting changes and new regulations implemented for work at the outfall.			---	Mitigate	Initiate the permitting process early in design development.
		Permitting challenges	Work on the outfall will require Ecology, WDFW, USACE, and potentially Tribal, coordination.	High	Low	3	Accept	Initiate permitting process early in the design phase to identify potential requirements.
		Contaminated soils and environmental considerations	County property at NW corner of J St/4th St. intersection is a registered site with ECY.	Low	Med	2	Mitigate	Review ECY documentation on County property and recommend geotechnical testing in pipe alignment at this intersection in advance of construction. Costs were added to the geotechnical input and an allowance was added to the estimate to address potential contamination.

Project Risk Assessment Score	2.75	**When Risk Score is at or exceeds 3.0, a 5% Contingency Factor is added**

Input tables used for drop down columns on the risk register

Risk, Threats, or Opportunities	Likelihood	Consequence	Action
<Type in or select from the list>	Low	Low	Accept
Limited available staff and staff workload	Med	Med	Mitigate
Health and safety accident concerns	High	High	Transfer
Traffic impacts and delays			Avoid
Multiple agency coordination could impact project schedule and cost			
Legal or regulatory special risk & challenges			
Regulatory changes, new regulations, and/or requirements			
Permitting challenges			
Sensitive Location (Park, near public schools, proximity to downtown or business areas, etc.)			
Project schedule constraints or timing of project execution may impact bottom line costs (i.e. fish window, etc.)			
Objections or opposition to the project			
Cultural resources may be encountered			
Unknown geotechnical and subsurface conditions (e.g.. groundwater)			
Contaminated soils and environmental considerations			
Objectives and/or requirements are unclear			
Additional scope changes may affect cost and schedule			
Unknown or changing site conditions			
Unknown utilities and conflicts may affect project scope and cost			
Site real estate or right-of-way procurement difficulties			
Weather conditions may negatively impact project schedule and cost			
Affects customer utility services or requires service outages			
Supply chain shortages and/or material cost increases			
Complex project and constructability issues may result in major design or construction changes			
QA/QC Error or Omission			
Budget constraints or inflexibility			
Staff Turnover			
There is an opportunity for enhanced engineering development and value engineering alternatives to reduce estimated costs.			

Association for the Advancement of Cost Engineering (AACE) International

AACE Estimate Class	Class Number	Construction Pricing Uncertainty Allowance	AFI[1]	CO[2]	Project Contingency	Expected Accuracy Range Low	Expected Accuracy Range High	Design Phase	Level of Definition
5	AACE Class 5	5%	0%	10%	30%	-50%	100%	Planning	0% to 2%
4	AACE Class 4	3%	0%	10%	25%	-30%	50%	Pre-design	1% to 30%
3	AACE Class 3	2%	15%	10%	15%	-20%	30%	30% - 60% Design	30% to 60%
2	AACE Class 2	1%	10%	10%	10%	-20%	20%	90% Design	60% to 95%
1	AACE Class 1	0%	0%	10%	5%	-10%	15%	Final Design	95% to 100%

1. Allowance for Indeterminates (AFI) is an estimated cost to address unknows that cannot be accurately quantified during the design phases. Recommended values per City of Bellevue Cost Estimating Guidelines. AFI typically not added in early project stages. The stages have a contingency amount for project costs.

2. CO assigned value of 10% typical industry standard.

Project Complexity	Preliminary and Alternate Evaluations	Geotechnical Evaluation and Engineering	Design Engineering	Permitting and Licenses	Environmental Planning and Management	Cultural Resource	Community Relations	Real Estate Support	Legal Support	Construction Management
N/A	0%	0%	0%	0.0%	0%	0.0%	0.0%	0.0%	0.00%	0%
Low	3%	2%	6%	0.3%	3%	0.5%	0.2%	0.3%	0.05%	5%
Routine	4%	3%	10%	0.5%	4%	0.8%	0.4%	0.5%	0.10%	8%
Moderate	5%	4%	12%	1.0%	5%	1.0%	0.5%	0.8%	0.15%	10%
High	6%	5%	15%	2.0%	6%	2.0%	1.0%	1.5%	0.20%	12%

D.6 – 2nd St Outfall

This page is intentionally left blank.

PROJECT SUMMARY SHEET

CIP PROJECT NUMBER	COSI-SW-2026-006
PROJECT NAME	J St. at 4th St. Flooding & 2nd St. Outfall Improvements
DATE	3/23/2026
PREPARED BY	Xiating Chen (HDR)
CC OR DISTRIBUTION LIST	Click or tap here to enter text.

PROJECT DESCRIPTION

Persistent flooding is observed at the intersection of J Street and 4th Street. This may be caused by undersized pipes and backwatered condition at the 2nd Street outfall, where the outfall discharge elevation is controlled by the tide gate to Chehalis River. Preliminary hydraulic modeling analysis observed capacity constraints in upstream 2nd Street basin when the tide gate is staged at 6 feet.

A tide gate study is needed to determine 2nd Street basin's sensitivity to tide gate elevation.

See Figure 1 for project location and existing stormwater pipes. See Figure 2 for example of flooding in the streets at 4th and I Street.

Figure 1. 2nd Street Outfall Basin and Facility Map

Figure 2. Flooding at 4th and I St Intersection

PROJECT COST

The opinion of probable construction cost (OPCC) for the project is approximately **$3.4 million.** This project cost was developed in 2026 dollars, with a 2% inflation applied for each year until the project's assumed start year of 2036.

See the attached estimate for breakout of costs.

PROBLEM STATEMENT

Persistent flooding is observed at a sag point at the intersection of J Street and 2nd Street in Cosmopolis, WA. The flooding could be contributed by a combination of undersized pipes and backwatered condition due to tidal gate. There are no known structural defects to the existing system.

This project includes replacing and upsizing pipes along J Street, from the 2nd Street outfall up to 4th Street. In order to further reduce flooding at the sag on 4th and J Streets, a new inlet catch basin would be added to improve drainage efficiency.

Related to this capital improvement project, a separate tide gate study is recommended to evaluate the 2nd Street system's sensitivity to tidal gate stage level. A preliminary modeling analysis has shown relief in the conveyance system when the downstream water surface elevation is lowered from 6 feet to 4 feet.

PROJECT GOALS

The project aims to eliminate flooding at the intersection of 4th and J Streets.

PROJECT SCOPE

1. Upsize 503 LF of 30-inch pipe from 2nd St and J St to outfall.
2. Upsize 671 LF of 18-pipe on J St from 2nd St to 4th St.
3. Add catch basin at the intersection of J St and 4th St.

GEOTECHNICAL

According to NRCS Soil Survey, the predominant soil type is moderately well drained sandy loam. The general slope of the project area is between 0 to 2 percent. Given the shallow excavation depth, a trench box shoring system with 2:1 slope would be sufficient for this project.

The soil is expected to be unsuitable for reuse.

UTILITIES

As-builts provided by the City were reviewed for potential utility conflicts within the project area. Water main as-builts showed 980 LF of 8-inch water mainlines run parallel to the stormwater pipes along J St. Although these 8-inch mains do not cross stormwater pipes, the 6-inch service lines and valves at the crossings between J Street and 2nd, 3rd and 4th Streets need to be replaced. Sewer as-builts indicate pipe crossing at the intersection of J Street and 3rd and 4th Streets.

Utility poles and overhead power lines are located within the project area, and underground power lines may be present.

ANTICIPATED MAJOR PERMITS

State Environmental Policy Act (SEPA) review
Hydraulic Project Approval from Washington Department of Fish and Wildlife
Shoreline substantial development permit (SSDP)
U.S. Army Corps of Engineers Section 404 permit (Rivers & Harbors Act) and Section 10 permit (Clean Water Act)
Other local Grays Harbor County permits

REAL ESTATE AND EASEMENT

Construction will occur largely within City ROW along J St and 2nd St. The outfall pipe will require construction on Parcel No. 417091423004 owned by the Cosmopolis Lion Club.

STAKEHOLDERS

STAKEHOLDERS	
NAME	**INTEREST**
Cosmopolis residents	Construction noise, dust, and traffic interupptions. Reduced flooding when project is complete.
Cosmopolis Lions Club	Outfall is located on Cosmopolis Lions Club Property
City of Cosmopolis O&M	Less O&M burden on the city
Washington Department of Ecology	New outfall construction environmental regulations
Utility customers	Service interruptions
Click or tap here to enter text.	Click or tap here to enter text.
Click or tap here to enter text.	Click or tap here to enter text.

ASSOCIATED PROJECTS

COSI-SW-2026-001 Mill Creek Tide Gate Study

COSI-SW-2026-002 Mill Creek Tide Gate Improvements

ASSUMPTIONS, CONSTRAINTS, RISKS

ASSUMPTIONS

- No wetlands within project area
- Next to but not impacted by flood hazard area
- Adjacent to “high intensity” environmental shoreline designation
- No contaminated soils handling or disposal

RISKS AND CONSTRAINTS

Project Management Risk

- Access/easement to work on Cosmo Specialty Fibers property
- Cultural resources may be encountered
- Multiple agency coordination could impact project schedule and cost
- Budget constraints or inflexibility due to grant funding.

Project City Risk

- Staff turnover could impact schedule

Project Complexity Risk

- QA/QC error or omission
- Regulatory changes, new regulations, and/or requirements
- Permitting challenges

OPPORTUNITIES

N/A

EXCLUSIONS

N/A

Estimate - AACE Class 5					
Agency:	City of Cosmopolis			**Estimator(s):**	Xiating Chen (HDR) Jess Dexheimer (HDR) Cindy Kinzer (HDR)
Project Name:	J St. at 4th St. Flooding & 2nd St. Outfall Improvements			**Date Prepared:**	3/10/2026
Location:	Southwest of J Street and 1th Street to the 2nd Street Outfall			**Version:**	1
Description:	J St. at 4th St. Flooding & 2nd St. Outfall Improvements			**Revision Date:**	N/A
DIRECT: SUBTOTAL CONSTRUCTION COSTS					
Item No.	**Item Description**	**Quantity**	**Units**	**Unit Cost**	**Item Cost**
1	J St. to 2nd St. Conveyance and Outfall Improvements	1	LS	$ 744,200	$ 744,200
2	J Street and 1st St. Improvements	1	LS	$ 596,200	$ 596,200
					$ -
					$ -
					$ -
					$ -
					$ -
Subtotal Construction Cost					***$ 1,340,400***
Allowance For Indeterminates (AFI)					$ -
Permits for Construction					$ -
ESTIMATED PROBABLE COST OF CONSTRUCTION BID					***$ 1,340,400***
DIRECT: SUBTOTAL ADDITIONAL CONSTRUCTION COSTS					
Construction Change Order Allowance					$ 134,040
Material Pricing Uncertainty Allowance					$ -
Construction Sales Tax					$ 131,225
Outside Agency Construction					$ 5,000
Subtotal Additional Construction Costs					**$ 270,265**
TOTAL DIRECT CONSTRUCTION COSTS					***$ 1,610,670***
INDIRECT: NON-CONSTRUCTION COSTS					
Preliminary, Geotechnical, and Design Engineering					$ 225,494
Environmental Planning, Management, Permitting & Licenses, Cultural Resource, and Community Relations					$ 115,968
Real Estate, Easements, and ROW Costs					$ -
Legal Support					$ -
Construction Management					$ 128,854
Other					$ -
TOTAL INDIRECT NON-CONSTRUCTION COSTS					***$ 470,320***
Contingency (Includes Risk Assessment Contingency)					$ 624,300
TOTAL PROJECT COST (YEAR 2026)					***$ 2,705,300***
Inflation to Mid-year Construction					$ 703,378
ADJUSTED TOTAL PROJECT COST (YEAR 2040)					***$ 3,408,700***

Estimate Year	**Mid-Construction Year**
2026	2040

Estimate - AACE Class 5					
Agency:	City of Cosmopolis			**Estimator(s):**	Xiating Chen (HDR) Jess Dexheimer (HDR) Cindy Kinzer (HDR)
Project Name:	J St. at 4th St. Flooding & 2nd St. Outfall Improvements			**Date Prepared:**	3/10/2026
Location:	Southwest of J Street and 1th Street to the 2nd Street Outfall			**Version:**	1
Description:	J Street to 2nd St. Outfall			**Revision Date:**	N/A
Item No.	**Item Description**	**Quantity**	**Units**	**Unit Cost**	**Item Cost**
1	**Conveyance Pipe & Structures - Open Cut**				$ -
	30" Diam. pipe	505	LF	$ 280	$ 141,400
	MH Allowance	4	EA	$ 21,000	$ 84,000
	Outfall Headwall, Bank Restoration and Stabilization Allowance	1	LS	$ 70,000	$ 70,000
	Catch Basin & Connection Allowance	1	LS	$ 12,000	$ 12,000
	Plug and abandon Existing Storm Main Allowance	300	LF	$ 40	$ 12,000
	Remove Existing Pipe >12 In. to 30 In.	205	LF	$ 70	$ 14,350
	Reconnect Existing Catch basins to new main	10	EA	$ 8,000	$ 80,000
					$ -
	Trench Excavation and Backfill				$ -
	Pipe Diameter (Ft)	2.5	FT		$ -
	*Trench Excavation Width (1.5*ID+(1.5+Shoring Width))*	6.3	LF		$ -
	Trench Depth (average)	8.0	FT		$ -
	Groundwater Depth	4.0	FT		$ -
	Contaminated Soil Depth	0.0	FT		$ -
	Shoring Width	0.5	FT		$ -
	Trench Excavation, Incl. Haul	935	CY	$ 55	$ 51,435
	Contaminated Soils Disposal (Handling & Disposal Fees - No Haul)	0	CY	$ 165	$ -
	Contaminates Lab Testing Samples	-	EA	$ 1,500	$ -
	Imported Backfill, Incl. Haul	843	CY	$ 47	$ 39,639
	Trench Safety System (≤10 feet)	505	LF	$ 20	$ 10,100
	Trench Safety System (>10 feet)	0	LF	$ 60	$ -
	Trench Dewatering System (GWT to 15' Deep Trench)	505	LF	$ 60	$ 30,300
	Trench Dewatering System Incl. Wellpoints (+15' to 24' Deep Trench)	0	LF	$ 260	$ -
	Trench Dewatering System Incl. Deep Well (+24' Deep Trench)	0	LF	$ 930	$ -
					$ -
	Utility Relocations				$ -
	Adjacent Utility Support	1	LS	$ 2,000	$ 2,000
	Unknown Utility Relocation Allowance	1	LS	$ 20,000	$ 20,000
					$ -
	Demolition and Removals				$ -
	Remove Existing Asphalt Pavement	321	SY	$ 28	$ 8,983
	Remove Cement Concrete Sidewalk and Driveway	194	SY	$ 28	$ 5,444
	Remove and Replace Tree	0	EA	$ 950	$ -
					$ -
	Road Restoration				$ -
	Pavement Trench Length	350	LF		$ -
	Pavement Removal Outside of Trench Exc. Width	1	FT		$ -
	Road Restoration Width	8.3	FT		$ -
	Base Thickness	0.5	FT		$ -
	HMA Thickness	0.5	FT		$ -
	Crushed Aggregate Base	99	TN	$ 95	$ 9,398
	Parking lot Restoration HMA	110	TN	$ 230	$ 25,212
	Sidewalk Restoration, 5' wide	194	SY	$ 110	$ 21,389
	Upgrade Pedestrian Crossings to ADA	2	EA	$ 9,675	$ 19,350
					$ -
	Traffic Control, TESC, Misc.				$ -
	Traffic Control	1.0	LS	$ 2,000	$ 2,000
	TESC @ 2% of Construction	2%	LS	$ 659,000	$ 13,180
					$ -
				Cost Subtotal	$ 672,180
	DIRECT: CONSTRUCTION COST MARK-UPS				
		General Conditions	0%	1	$ -
		Mobilization/Demobilization	8%	1.08	$ 53,774
		Overhead & Profit (OHP)	0%	1	$ -
		Insurance	1.5%	1.015	$ 10,889
		Bonding	1.0%	1.01	$ 7,368
				SUBTOTAL CONSTRUCTION COSTS WITH MARKUPS IN 2026 DOLLARS	$ 744,212
		Escalation Multiplier from ENR-CCI	0%	0.0000	$ -
				SUBTOTAL CONSTRUCITON COSTS IN 2026 DOLLARS	$ 744,212
				SUBTOTAL CONSTRUCTION COSTS	***$ 744,200***

Estimate - AACE Class 5			
Agency:	City of Cosmopolis	Estimator(s):	Xiating Chen (HDR) Jess Dexheimer (HDR) Cindy Kinzer (HDR)
Project Name:	J St. at 4th St. Flooding & 2nd St. Outfall Improvements	Date Prepared:	3/10/2026
Location:	Southwest of J Street and 1th Street to the 2nd Street Outfall	Version:	1
Description:	J Street to 2nd St. Outfall	Revision Date:	N/A

Item No.	Item Description	Quantity	Units	Unit Cost	Item Cost
1	**Conveyance Pipe & Structures - Open Cut**				$ -
	18" Diam. pipe	675	LF	$ 180	$ 121,500
	MH Allowance	4	EA	$ 9,500	$ 38,000
	Catch Basin & Connection Allowance	1	LS	$ 12,000	$ 12,000
	Plug and abandon Existing Storm Main Allowance	675	LF	$ 40	$ 27,000
	Reconnect Existing Catch basins to new main	6	EA	$ 8,000	$ 48,000
					$ -
	Trench Excavation and Backfill				$ -
	Pipe Diameter (Ft)	2	FT		$ -
	*Trench Excavation Width (1.5*ID+(1.5+Shoring Width))*	5.8	LF		$ -
	Trench Depth (average)	7.9	FT		$ -
	Groundwater Depth	8.0	FT		$ -
	Contaminated Soil Depth	5	FT		$ -
	Shoring Width	1	FT		$ -
	Trench Excavation, Incl. Haul	1,136	CY	$ 55	$ 62,459
	Contaminated Soils Disposal (Handling & Disposal Fees - No Haul)	106	CY	$ 165	$ 17,569
	Contaminates Lab Testing Samples	1	EA	$ 1,500	$ 1,500
	Imported Backfill	1,091	CY	$ 47	$ 51,298
	Trench Safety System (<10 feet)	675	LF	$ 20	$ 13,500
	Trench Safety System (>10 feet)	0	LF	$ 60	$ -
	Trench Dewatering System (GWT to 15' Deep Trench)	0	LF	$ 60	$ -
	Trench Dewatering System Incl. Wellpoints (+15' to 24' Deep Trench)	0	LF	$ 260	$ -
	Trench Dewatering System Incl. Deep Well (+24' Deep Trench)	0	LF	$ 930	$ -
					$ -
	Utility Relocations				$ -
	Adjacent Utility Support	1	LS	$ 2,000	$ 2,000
	Unknown Utility Relocation Allowance	1	LS	$ 10,000	$ 10,000
					$ -
	Demolition and Removals				$ -
	Remove Existing Asphalt Pavement	172	SY	$ 28	$ 4,822
	Remove Cement Concrete Sidewalk and Driveway	383	SY	$ 28	$ 10,733
	Remove and Replace Tree	0	EA	$ 950	$ -
					$ -
	Road Restoration/Improvements				$ -
	Pavement Trench Length	675	LF		$ -
	Pavement Removal Outside of Trench Exc. Width	1	FT		$ -
	Road Restoration Width	7.8	FT		$ -
	Base Thickness	0.5	FT		$ -
	HMA Thickness	0.5	FT		$ -
	Crushed Aggregate Base	179	TN	$ 95	$ 17,026
	Parking lot Restoration HMA	0	TN	$ 230	$ -
	Sidewalk, 5' wide	383	SY	$ 110	$ 42,167
	Upgrade Pedestrian Crossings to ADA	5	EA	$ 9,675	$ 48,375
					$ -
	Traffic Control, TESC, Misc.				$ -
	Traffic Control	0.0	LS	$ 6,000	$ -
	TESC @ 2% of Construction	2%	LS	$ 527,950	$ 10,559
					$ -
				Cost Subtotal	$ 538,509
	DIRECT: CONSTRUCTION COST MARK-UPS				
		General Conditions	0%	1	$ -
		Mobilization/Demobilization	8%	1.08	$ 43,081
		Overhead & Profit (OHP)	0%	1	$ -
		Insurance	1.5%	1.015	$ 8,724
		Bonding	1.0%	1.01	$ 5,903
				SUBTOTAL CONSTRUCTION COSTS WITH MARKUPS IN 2026 DOLLARS	$ 596,216
		Escalation Multiplier from ENR-CCI	0%	0.0000	$ -
				SUBTOTAL CONSTRUCITON COSTS IN 2026 DOLLARS	$ 596,216
				SUBTOTAL CONSTRUCTION COSTS	***$ 596,200***

ESTIMATE INPUT TABLE			
Input Category	**Inputs**	**Value**	**Comments**
Select Estimate Class	AACE Class 5		
Subtotal Construction Cost		$ 1,340,400	Calculated on Project Cost Summary sheet
Estimate Year	2026		
Mid-year Construction	2039		
Inflation	2%	26%	Inflation rate applied to Total Project Cost
ADDITIONAL CONSTRUCTION COSTS			
Allowance for Indeterminates (AFI)		0%	
Permits for Construction (e.g. street use, building permits, etc.)		$ -	User input based on calculations.
OTHER CAPITAL CHARGES			
Construction Change Order Allowance		10%	
Material Pricing Uncertainty Allowance		0%	Provide comment if used.
Construction Sales Tax		8.90%	Look up Value by Agency at: https://dor.wa.gov/sites/default/files/2025-05/LSU_flyer_Q3_25.pdf Aberdeen 9.08% Cosmopolis 8.9%, Hoquiam 8.9%
Sales Tax Rule 171 Credit		$ -	Unless certain, recommend keeping sales tax for Class 5 & Class 4 estimates. Referece from WAC 458-20-171, and its related rules, apply to building, repairing, or improving streets, roads, etc., which are owned by a municipal corporation, or political subdivision of the state, or by the United States, and which are used primarily for foot or vehicular traffic. This includes storm or combined sewer systems within and included as a part of the street or road drainage system and power lines when such are part of the roadway lighting system. For work performed in such cases, the Contractor shall include Washington State Retail Sales Taxes in the various unit bid item prices, or other contract amounts, including those that the Contractor pays on the purchase of the materials, equipment, or supplies used or consumed in doing the work.
Outside Agency Construction		$ 5,000	Utilitiy locations are unknown at this time. An allowance is provided to address potential relocations required.
INDIRECT PROJECT COST AND COMPLEXITY FACTORS			
Real Estate and Right-of-Way Costs		$ -	
Outside Agency Coordination (Work in ROW)		$ -	WSDOT Coordination may be required due to proximity to Hwy. Provide comment if used. Addresses costs for coordination with outside agencies for work in their ROW (e.g. WSDOT, County, other City/agency, etc.) is needed. Note: costs will be combined with Real Estate and ROW costs.
Project Contingency		30%	Requires comment if default values are not used
Risk Assessment Contingency	2.75	0%	User input based on Risk Assessment
Other			Requires description
	Complexity Input	**Assigned % Total Direct Construction Cost**	**Comments**
Preliminary and Alternative Design Evaluations	N/A	0.0%	
Geotechnical Evaluation and Engineering	Moderate	4.0%	Saturated soils with high groundwater, potential contaimination due to proximity to ECY registered site and crossing railroad.
Design Engineering	Routine	10.0%	Includes outfall replacement and potential for unknown connections
Permitting and Licences	Moderate	1.0%	Elevated due to proximity to Mill Creek with shorelines requirement.
Environmental Planning and Management	Moderate	5.0%	Potential contaminated soils near J Steet and 1st Street
Cultural Resource	Moderate	1.0%	Per DAHP WISSARD there is a high probability of encountering cultural resources.
Community Relations	Low	0.2%	Low impact to general community.
Real Estate Support	N/A	0.0%	The project piping is located on private property owend by Cosmo Specialty Fiber. Permanent and temporary construction easements will be needed.
Legal Support	N/A	0.0%	
Construction Management	Routine	8.0%	

Date:
Project:
Prepared By:

Likelihood			
H	3	4	5
M	2	3	4
L	1	2	3
	L	M	H
	Consequence		

Category	Number	Risk, Threat, or Opportunity	Comments	Likelyhood	Consequence	Risk Score	Strategy	Risk Plan Proposed Mitigation	Risk Cost Impact ($)	Risk Schedule Cost (Months)	Risk Probability (%)	Additional Contingency Cost ($) - Probability X Impact	Additional Contingency Schedule Cost - Probability X Impact (Months)
Add lines as needed for categories		*List potential risk from drop down menu or manual entry*	*Give specific comments and notes regarding the risk.*	*Use drop down menu*	*Use drop down menu*		*Select from menu*	*Add description for proposed mitigation plan*	*Add potential risk cost*	*Add potential delay from risk*	*Add probability for occurance*	*Calculated*	*Calculated*
Project Management Risk	1	Cultural resources may be encountered	Cosmopolis is in an area listed as high probability for encountering cultural resources on DAHP WISSARD	Med	Med	3	Mitigate	Obtain a cultural resource assessment near and at the outfall area during design. Consider setting new pipe alignment within the existing roadway to reduce the likelihood of encountering cultural resources during construction stage.	$ -	0.5	20%	$ -	0.1
		Multiple agency coordination could impact project schedule and cost	Work on the outfall will require Ecology, WDFW, USACE, and potentially Tribal, coordination.	High	Low	3	Mitigate	Identify agencies involved and initiate the permitting process early in design development. Set project design shedule to accommodate coordination and permitting in advance. Additional cost for coordination was added to the indirect input values.		8	100%	$ -	8
		Project schedule constraints or timing of project execution may impact bottom line costs (i.e. fish window, etc.)	Mill Creek is salmon bearing. Set project schedule so outfall construction occurs within the fish window.	Med	Med	3	Mitigate	Consider a design that keeps the existing storm line in service for as long as possible and install new storm pipe as separate dry pipe line, if feasible. This may reduce TESC costs and minimize construction constraints.				$ -	0
		Budget constraints or inflexibility	Project funding may be from grant sources with limited flexibility for design and construction changes.	Med	High	4	Avoid	Design to evaluate costs and define costs in advance to minimize risk of added costs after funding has been procured.				$ -	0
Project City Team Risk		Staff Turnover	Schedule Delay, Changed Conditions	Med	Low	2	Accept					$ -	0
						---						$ -	0
						---						$ -	0
						---						$ -	0
						---						$ -	0
						---						$ -	0
						---						$ -	0
						---						$ -	0
						---						$ -	0
Project Complexity Risk		QA/QC Error or Omission	Potential schedule and cost impacts.	Low	Med	2	Mitigate	Implement QMP with QC reviews. Build time into the schedule for reviews.				$ -	0
		Regulatory changes, new regulations, and/or requirements	There may be storm or 404 permitting changes and new regulations implemented for work at the outfall.			---	Mitigate	Initiate the permitting process early in design development.				$ -	0
		Permitting challenges	Work on the outfall will require Ecology, WDFW, USACE, and potentially Tribal, coordination.	High	Low	3	Accept	Initiate permitting process early in the design phase to identify potential requirements.				$ -	0
		Contaminated soils and environmental considerations	County property at NW corner of J St/4th St. interseciton is a registered site with ECY.	Low	Med	2	Mitigate	Review ECY documentation on County property and recommend geotechnical testing in pipe alignment at this intersection in advance of construction. Costs were added to the geotechnical input and an allowance was added to the estimate to address potential contamination.					

Project Risk Assessment Score	2.75	**When Risk Score is at or exceeds 3.0, a 5% Contingency Factor is added**

Input tables

Risk, Threats, or Opporunities	**Likelyhood**	**Consequence**	**Action**
<Type in or select from the list>	Low	Low	Accept
Limited available staff and staff workload	Med	Med	Mitigate
Health and safety accident concerns	High	High	Transfer
Traffic impacts and delays			Avoid
Multiple agency coordination could impact project schedule and cost			
Legal or regulatory special risk & challenges			
Regulatory changes, new regulations, and/or requirements			
Permitting challenges			
Sensitive Location (Park, near public schools, proximity to downtown or business areas, etc.)			
Project schedule constraints or timing of project execution may impact bottom line costs (i.e. fish window, etc.)			
Objections or opposition to the project			
Cultural resources may be encountered			
Unknown geotechnical and subsurface conditions (e'g. groundwater)			
Contaminated soils and environmental considerations			
Objectives and/or requirements are unclear			
Additiional scope changes may affect cost and schedule			
Unknown or changing site conditions			
Unknown utilities and conflicts may affect project scope and cost			
Site real estate or right-of-way procurement difficulties			
Weather conditions may negatively impact project schedule and cost			
Affects customer utility services or requires service outages			
Supply chain shortages and/or material cost increases			
Complex project and constructitility issues may result in major design or construction changes			
QA/QC Error or Omission			
Budget constraints or inflexibility			
Staff Turnover			
There is an opportunity for enhanced engineerind development and value engineering alternatives to reduce estimated costs.			

Association for the Advancement of Cost Engineering (AACE) International

AACE Estimate Class	Class Number	Construction Pricing Uncertainty Allowance	AFI[1]	CO[2]	Project Contingency	Expected Accuracy Range: Low	Expected Accuracy Range: High	Design Phase	Level of Definition
5	AACE Class 5	5%	0%	10%	30%	-50%	100%	Planning	0% to 2%
4	AACE Class 4	3%	0%	10%	25%	-30%	50%	Pre-design	1% to 30%
3	AACE Class 3	2%	15%	10%	15%	-20%	30%	30% - 60% Design	30% to 60%
2	AACE Class 2	1%	10%	10%	10%	-20%	20%	90% Design	60% to 95%
1	AACE Class 1	0%	0%	10%	5%	-10%	15%	Final Design	95% to 100%

1. Allowance for Indeterminates (AFI) is an estimated cost to address unknows that cannot be accurately quantified during the design phases. Recommended values per City of Bellevue Cost Estimating Guidelines. AFI typically not added in early project stages. The stages have a contingency amount for project costs.
2. CO assigned value of 10% typical industry standard.

Project Complexity	Preliminary and Alternate Evaluations	Geotechnical Evaluation and Engineering	Design Engineering	Permitting and Licenses	Environmental Planning and Management	Cultural Resource	Community Relations	Real Estate Support	Legal Support	Construction Management
N/A	0%	0%	0%	0.0%	0%	0.0%	0.0%	0.0%	0.00%	0%
Low	3%	2%	6%	0.3%	3%	0.5%	0.2%	0.3%	0.05%	5%
Routine	4%	3%	10%	0.5%	4%	0.8%	0.4%	0.5%	0.10%	8%
Moderate	5%	4%	12%	1.0%	5%	1.0%	0.5%	0.8%	0.15%	10%
High	6%	5%	15%	2.0%	6%	2.0%	1.0%	1.5%	0.20%	12%

This page is intentionally left blank.