Sewer Study Proposal Fee Overview

Modeling	**EP Ferris**	**Arcadis**	**Burgess & Niple**
Review and Update Sanitary Model	$178,000	$189,810	$67,031
Create Storm Sewer Model	$75,000	$33,727	$258,462
Calibrate Models			
Sanitary Sewer		$73,184	$23,963
Storm Sewer		$33,973	$66,794
Model Sources of I/I (In Lieu of Field Work)			
Public Source	$24,000	$9,686	
Private Source	$24,000		
Subtotal - Model Updates and Calibration	**$301,000**	**$340,380**	**$416,250**

Subtotal - Assist with Public Surveys	**$3,000**	**$26,757**	**$61,060**

Field Work			
Flow Monitoring	$175,000	$121,962	$135,421
Investigate Sources of I/I			
Public Source		$157,849	$92,589
Private Source			$154,860
Smoke Testing			$100,248
Subtotal - Field Work	**$175,000**	**$279,811**	**$483,118**

Plan Development and Admin			
Develop System Goals and Budget	$7,000	$9,880	$40,381
Develop 10 year plan for I/I- Public Source	$6,000	$127,463	$62,000
Develop 10 year plan for I/I- Private Source	$6,000		$77,000
Develop 10 year CMOM Plan	$20,000	$67,891	$36,289
Project Management		$21,548	
Subtotal - Plan Development and Admin	**$39,000**	**$226,782**	**$215,670**

Total	**$518,000**	**$873,730**	**$1,176,098**

I/I: Inflow and infiltration: Unwanted ground and storm water in sanitary sewer system

Sewer Study Proposal Fees - Phased Comparison

Modeling	EP Ferris	Arcadis	Burgess & Niple Phase I (2025)	Burgess & Niple Phase II (2026)
Review and Update Sanitary Model	$178,000	$189,810	$67,031	
Create Storm Sewer Model	$75,000	$33,727	$145,731	$112,731
Calibrate Models				
Sanitary Sewer		$73,184	$23,963	
Storm Sewer		$33,973	$66,794	
Model Sources of I/I (In Lieu of Field Work)				
Public Source	$24,000	$9,686		
Private Source	$24,000			
Subtotal - Model Updates and Calibration	**$301,000**	**$340,380**	**$303,519**	**$112,731**

Subtotal - Assist with Public Surveys	**$3,000**	**$26,757**	**$61,060**	

Field Work				
Flow Monitoring	$175,000	$121,962	$135,421	
Investigate Sources of I/I				
Public Source		$157,849		$92,589
Private Source				$154,860
Smoke Testing				$100,248
Subtotal - Field Work	**$175,000**	**$279,811**	**$135,421**	**$347,697**

Plan Development and Admin				
Develop System Goals and Budget	$7,000	$9,880		$40,381
Develop 10 year plan for I/I- Public Source	$6,000	$127,463		$62,000
Develop 10 year plan for I/I- Private Source	$6,000			$77,000
Develop 10 year CMOM Plan	$20,000	$67,891		$36,289
Project Management		$21,548		
Subtotal - Plan Development and Admin	**$39,000**	**$226,782**		**$215,670**

Totals (Phased)	**$518,000**	**$873,730**	**$500,000**	**$676,098**

Note: Actual breakdown of modeling versus calibration may vary for the Burgess and Niple proposal; Overall modeling scope will be adjusted to fit with $500,000 2025 project budget

I/I: Inflow and infiltration: Unwanted ground and storm water in sanitary sewer system

Modeling Comparison

Modeling	EP Ferris	Arcadis	Burgess & Niple
Review and Update Sanitary Model	☑	☑	☑
Review and Update Cost	$178,000	$189,810	$67,031
Create Storm Sewer Model	$75,000	$33,727	$258,462
Digitizing Sewer Structures	☐	☑	☑
(Quantity)		500 sewer structures	2,500 sewer structures
Surveying Sewer Structures	☐	☑	☑
(Quantity)		50 manholes	2,500 sewer structures
Create Storm Sewer GIS Atlas	☑	☐	☑
Calibrate Models	☑	☑	☑
Sanitary Sewer	$0	$73,184	$23,963
Storm Sewer	$0	$33,973	$66,794
Model Sources of I/I (In Lieu of Field Work)	☑	☑	☐
Public Source	$24,000	$9,686	$0
Private Source	$24,000	$0	$0
Subtotal - Model Updates and Calibration	**$301,000**	**$340,380**	**$416,250**

Total Hours Estimate	**1,565 hours**	**1,444 hours**	**2,892 hours**

Modeling Notes	Modeling based on predominantly on prior data and additional flow monitoring	Includes digitalization of 500 manholes and 50 manhole surveys; Modeling is a desktop exercise only	Includes survey and inspection of 2,500+/- sewer structures, in addition to PSCWMM modeling; Field work is done in lieu of modeling for I/I source identification

Field Work Comparison

Item	EP Ferris	Arcadis	Burgess & Niple
Flow Monitoring	☑	☑	☑
Flow Monitoring Cost	**$175,000**	**$121,962**	**$135,421**
Locations	*10 locations*	*10 locations*	*10 locations*
Length of Study	*6 months ($29,167 per month)*	*3 months ($40,654 per month)*	*4 months ($33,855 per month)*
Total Hours Estimate	**Not estimated**	**44 hours; Consultant hours seperate**	**615 hours**

Investigate I/I Public Sources			
Public Source Cost	**$0**	**$157,849**	**$192,589**
Manage Resident Outreach/Notifications	☐	☐	☑
General Field Investigations	☐	☑	☑
CCTV	☐	☑	☑
Dye Testing Rainfall Simulation	☐	☐	☑
Smoke Testing	☐	☐	☑
Total Hours Estimate	**Not in scope**	**Not estimated**	**662 hours**
Investigate I/I Private Sources			
Private Source Cost	**$0**	**$0**	**$154,860**
Manage Resident Outreach/Notifications	☐	☐	☑
Individual Home Walkabouts	☐	☐	☑
Lateral CCTV	☐	☐	☑
DyeTesting (Downspouts and Yard Drains)	☐	☐	☑
Foundation Flooding	☐	☐	☑
Total Hours Estimate	**Not in scope**	**Not in scope**	**400-500 hours (Calc for reduced scope)**

Subtotal - Field Work	**$175,000**	**$279,811**	**$482,870**

I/I Source Investigation Notes	EP Ferris does not recommend a comprehensive public and private I/I study at this time. Instead they recommend targeted I/I investigations (in a later phase) guided by flow monitoring results. More in depth I/I investigations would be recommended as part of the CMOM.	**Public Source Investigation** cost ($157,849) includes five days of field surveys and investigations, and 10 days of sanitary SSES inspections, and five days of condition assessments (20 work days total); Actual fee to vary based on data review and determinations of areas to be field investigated. More in depth I/I investigations, including smoke and dye testing, would be recommended as part of a future phase or CMOM.	**Public Source Investigation cost** includes smoke and dye testing (excluded from other studies). **Private Source Investigation** is proposed as a validation source to extrapolate results of hydraulic modeling. Actual high level investigation would be limited to approximately 500 homes, with 30 properties engaged in more in-depth analysis, determined by modeling, response to questionnaires, and other maintenance records (eg flood in basement reports).

Public Surveying Comparison

Item	EP Ferris	Arcadis	Burgess & Niple
Total Public Surveying Cost	**$3,000**	**$26,757**	**$61,060**
Draft Questionnaire	☑	☑	☑
Questionnaire Distribution			
Windshield Questionnaire	☐	☑	☑
Mailing, with Two Follow Ups	☐	☐	☑
Public Meeting Presentations		☑	☑
Tabulate Questionnaire Results	☐	☑	☑
Enter Questionnaire Results into GIS	☐	☐	☑

Total Hours Estimate	**Not estimated**	**24 hours**	**230 hours**

Improvement Plan Development Comparison

Plan Development and Admin	EP Ferris	Arcadis	Burgess & Niple
Develop System Goals and Budget	$7,000	$9,880	$40,381
Develop 10 year plan for I/I- Public Source	$6,000	$127,463	$62,000
Develop 10 year plan for I/I- Private Source	$6,000		$77,000
Develop 10 year CMOM Plan	$20,000	$67,891	$36,289
Project Management		$21,548	
Final Report	☑	☑	☑
Implementation Schedule	☑	☑	☑
Budget Estimates	☑	☑	☑
Sewer Criticality and Consequence of Failure Analysis	☐	☐	☑
Project Fact Sheets	☐	☑	☑
Subtotal Plan Development and Admin	**$39,000**	**$226,782**	**$215,670**

Total Hours Estimate	**255 hours**	**897 hours**	**1,176 hours**

Plan Development Notes	Relies heavily on collaboration with City engineers to develop plan components		

CMOM: Capacity, Management, Operations, and Maintenance