

## APPENDIX O

# Alternative Sanitary Sewer Alignment Cost Calculations



**HEMLOCK CREEK WATERSHED  
SANITARY SEWER IMPROVEMENTS  
PRELIMINARY OPPC  
MARY & SHADY EASEMENTS**

Ref No.	Description	Quan.	Unit of Measure	Unit Cost	MARY EASEMENT	SHADY EASEMENT	Total Quantity	Total Cost	MARY EASEMENT	SHADY EASEMENT
01010*1	Mobilization	1	LS	\$5,286.71			1.0	\$5,287	\$2,643.36	\$2,643.36
01010*2	Bonds & Insurance	1	LS	\$2,873.74			1.0	\$2,874	\$1,436.87	\$1,436.87
01041*1	Above Ground Video Taping	1	LS	\$905.37			1.0	\$905	\$452.68	\$452.68
01088*1	Maintenance of Traffic	1	LS	\$4,041.83			1.0	\$4,042	\$2,020.91	\$2,020.91
	Silt fence	300	LF	\$1.12	200.0	100.0	300.0	\$336	\$224.00	\$112.00
	Construction Safety Fence	1320	LF	\$1.00	660.0	660.0	1320.0	\$1,320	\$660.00	\$660.00
	Inlet Basin Protection	0	EA	\$50.00	0.0	0.0	0.0	\$0	\$0.00	\$0.00
01091*1	Storm Water Pollution Prevention Plan	1	LS	\$404.18			1.0	\$404	\$202.09	\$202.09
02111*1	Pipe Removed (18" and less)	0	LF	\$21.00	0.0	0.0	0.0	\$0	\$0.00	\$0.00
02111*2	Inlet Basin Removed	0	EA	\$300.00	0.0	0.0	0.0	\$0	\$0.00	\$0.00
02111*3	Yard Drain Removed	0	EA	\$150.00	0.0	0.0	0.0	\$0	\$0.00	\$0.00
	Allowance for Removing, Supporting, or Relocating Electrical Utility Pole	1	LS		0.0	0.0	1.0	\$0	\$0.00	\$0.00
02230*1	Tree Removal - Over 12-inch diameter	55	EA	\$600.00	50.0	5.0	55.0	\$33,000	\$30,000.00	\$3,000.00
02294*1	8" Restrained Jt. DIP Directionally Drilled	370	LF	\$160.00	0.0	370.0	370.0	\$59,200	\$0.00	\$59,200.00
02295*1	8" DIP in 18" Steel Casing	130	LF	\$250.00	130.0	0.0	130.0	\$32,500	\$32,500.00	\$0.00
02505*1	4" Concrete Sidewalk	50	SF	\$5.30	0.0	50.0	50.0	\$265	\$0.00	\$265.00
02516*6	Temporary Pavement	44	SY	\$29.25	22.2	22.2	44.4	\$1,300	\$650.00	\$650.00
02516*7	Subbase Repair (Contingency)	0	CY	\$38.33	0.0	0.0	0.0	\$0	\$0.00	\$0.00
	Curb Drain	40	LF	\$8.35	20.0	20.0	40.0	\$334	\$167.00	\$167.00
	6" PVC, SDR 35, 5'-10' Deep	0	LF	\$59.00	0.0	0.0	0.0	\$0	\$0.00	\$0.00
	6" PVC, SDR 35, 10'-15' Deep	60	LF	\$78.00	40.0	20.0	60.0	\$4,680	\$3,120.00	\$1,560.00
	6" PVC, SDR 26, 10'-15' Deep, Special Backfill Material	0	LF	\$127.00	0.0	0.0	0.0	\$0	\$0.00	\$0.00
	6" PVC, SDR 26, 15'-20' Deep, Special Backfill Material	0	LF	\$164.00	0.0	0.0	0.0	\$0	\$0.00	\$0.00
	8" PVC, SDR 26, 5'-10' Deep	0	LF	\$60.00	0.0	0.0	0.0	\$0	\$0.00	\$0.00
	8" PVC, SDR 26, 10'-15' Deep	370	LF	\$79.00	370.0	0.0	370.0	\$29,230	\$29,230.00	\$0.00
	8" PVC, SDR 26, 15'-20' Deep	0	LF	\$107.00	0.0	0.0	0.0	\$0	\$0.00	\$0.00
	8" PVC, SDR 26, 5'-10' Deep, Special Backfill Material	100	LF	\$90.00	0.0	100.0	100.0	\$9,000	\$0.00	\$9,000.00
	8" PVC, SDR 26, 10'-15' Deep, Special Backfill Material	0	LF	\$127.00	0.0	0.0	0.0	\$0	\$0.00	\$0.00
	8" PVC, SDR 26, 15'-20' Deep, Special Backfill Material	0	LF	\$165.00	0.0	0.0	0.0	\$0	\$0.00	\$0.00
	8" DIP Aerial Sewer	120	LF	\$300.00	120.0	0.0	120.0	\$36,000	\$36,000.00	\$0.00
02730*5	6" Risers	0	LF	\$150.00	0.0	0.0	0.0	\$0	\$0.00	\$0.00
02730*7	Type "A" Manhole 5'-10' Deep	1	EA	\$6,400.00	0.0	1.0	1.0	\$6,400	\$0.00	\$6,400.00
02730*8	Type "A" Manhole 10'-15' Deep	6	EA	\$7,300.00	4.0	2.0	6.0	\$43,800	\$29,200.00	\$14,600.00
02730*9	Type "A" Manhole 15'-20' Deep	0	EA	\$8,200.00	0.0	0.0	0.0	\$0	\$0.00	\$0.00
02730*10	Type "A" Drop Manhole 15'-20' Deep	0	EA	\$8,800.00	0.0	0.0	0.0	\$0	\$0.00	\$0.00
	Connection to Existing Manhole	0	EA	\$1,800.00	0.0	0.0	0.0	\$0	\$0.00	\$0.00
02901*1	Lawn Restoration including Fine Grading, Seeding, and Mulching	1	LS	\$15,479.07			1.0	\$15,479	\$7,739.53	\$7,739.53
SUBTOTAL =								\$286,356	\$176,246	\$110,109
Total LF Mainline Sewer								1,090		
COST/LF								\$263		

Percentage of total cost

**HEMLOCK CREEK WATERSHED  
SANITARY SEWER IMPROVEMENTS  
PRELIMINARY OPPC  
MARY & SHADY EASEMENTS**

Ref No.	Description	Quan.	Unit of Measure	Unit Cost	MARY EASEMENT	SHADY EASEMENT	Total Quantity	Total Cost	MARY EASEMENT	SHADY EASEMENT
01010*1	Mobilization	1	LS	\$5,286.71			1.0	\$5,287	\$2,643.36	\$2,643.36
01010*2	Bonds & Insurance	1	LS	\$2,873.74			1.0	\$2,874	\$1,436.87	\$1,436.87
01041*1	Above Ground Video Taping	1	LS	\$905.37			1.0	\$905	\$452.68	\$452.68
01088*1	Maintenance of Traffic	1	LS	\$4,041.83			1.0	\$4,042	\$2,020.91	\$2,020.91
	Silt fence	500	LF	\$1.12	400.0	100.0	500.0	\$560	\$448.00	\$112.00
	Construction Safety Fence	1520	LF	\$1.00	860.0	660.0	1520.0	\$1,520	\$860.00	\$660.00
	Inlet Basin Protection	0	EA	\$50.00	0.0	0.0	0.0	\$0	\$0.00	\$0.00
01091*1	Storm Water Pollution Prevention Plan	1	LS	\$4,041.83			1.0	\$4,042	\$2,020.91	\$2,020.91
02111*1	Pipe Removed (18" and less)	0	LF	\$21.00	0.0	0.0	0.0	\$0	\$0.00	\$0.00
02111*2	Inlet Basin Removed	0	EA	\$300.00	0.0	0.0	0.0	\$0	\$0.00	\$0.00
02111*3	Yard Drain Removed	0	EA	\$150.00	0.0	0.0	0.0	\$0	\$0.00	\$0.00
	Allowance for Removing, Supporting, or Relocating Electrical Utility Pole	1	LS		0.0	0.0	1.0	\$0	\$0.00	\$0.00
02230*1	Tree Removal - Over 12-inch diameter	105	EA	\$600.00	100.0	5.0	105.0	\$63,000	\$60,000.00	\$3,000.00
02294*1	8" Restrained Jt. DIP Directionally Drilled	370	LF	\$160.00	0.0	370.0	370.0	\$59,200	\$0.00	\$59,200.00
02295*1	8" DIP in 18" Steel Casing	130	LF	\$250.00	130.0	0.0	130.0	\$32,500	\$32,500.00	\$0.00
02505*1	4" Concrete Sidewalk	50	SF	\$5.30	0.0	50.0	50.0	\$265	\$0.00	\$265.00
02516*6	Temporary Pavement	44	SY	\$29.25	22.2	22.2	44.4	\$1,300	\$650.00	\$650.00
02516*7	60" Culvert Incl wing walls	50	LF	\$300.00	50.0	0.0	50.0	\$15,000	\$15,000.00	\$0.00
	Curb Drain	40	LF	\$8.35	20.0	20.0	40.0	\$334	\$167.00	\$167.00
	6" PVC, SDR 35, 5'-10' Deep	0	LF	\$59.00	0.0	0.0	0.0	\$0	\$0.00	\$0.00
	6" PVC, SDR 35, 10'-15' Deep	60	LF	\$78.00	40.0	20.0	60.0	\$4,680	\$3,120.00	\$1,560.00
	6" PVC, SDR 26, 10'-15' Deep, Special Backfill Material	0	LF	\$127.00	0.0	0.0	0.0	\$0	\$0.00	\$0.00
	6" PVC, SDR 26, 15'-20' Deep, Special Backfill Material	0	LF	\$164.00	0.0	0.0	0.0	\$0	\$0.00	\$0.00
	8" PVC, SDR 26, 5'-10' Deep	0	LF	\$60.00	0.0	0.0	0.0	\$0	\$0.00	\$0.00
	8" PVC, SDR 26, 10'-15' Deep	370	LF	\$79.00	370.0	0.0	370.0	\$29,230	\$29,230.00	\$0.00
	8" PVC, SDR 26, 15'-20' Deep	0	LF	\$107.00	0.0	0.0	0.0	\$0	\$0.00	\$0.00
	8" PVC, SDR 26, 5'-10' Deep, Special Backfill Material	100	LF	\$90.00	0.0	100.0	100.0	\$9,000	\$0.00	\$9,000.00
	8" PVC, SDR 26, 10'-15' Deep, Special Backfill Material	0	LF	\$127.00	0.0	0.0	0.0	\$0	\$0.00	\$0.00
	8" PVC, SDR 26, 15'-20' Deep, Special Backfill Material	0	LF	\$165.00	0.0	0.0	0.0	\$0	\$0.00	\$0.00
	8" DIP Pipe in Embankment	120	LF	\$30.00	120.0	0.0	120.0	\$3,600	\$3,600.00	\$0.00
	Embankment	741	CY	\$20.00	741	0.0	740.7	\$14,815	\$14,814.81	\$0.00
02730*5	6" Risers	0	LF	\$150.00	0.0	0.0	0.0	\$0	\$0.00	\$0.00
02730*7	Type "A" Manhole 5'-10' Deep	1	EA	\$6,400.00	0.0	1.0	1.0	\$6,400	\$0.00	\$6,400.00
02730*8	Type "A" Manhole 10'-15' Deep	6	EA	\$7,300.00	4.0	2.0	6.0	\$43,800	\$29,200.00	\$14,600.00
02730*9	Type "A" Manhole 15'-20' Deep	0	EA	\$8,200.00	0.0	0.0	0.0	\$0	\$0.00	\$0.00
02730*10	Type "A" Drop Manhole 15'-20' Deep	0	EA	\$8,800.00	0.0	0.0	0.0	\$0	\$0.00	\$0.00
	Connection to Existing Manhole	0	EA	\$1,800.00	0.0	0.0	0.0	\$0	\$0.00	\$0.00
02901*1	Lawn Restoration including Fine Grading, Seeding, and Mulching	1	LS	\$15,479.07			1.0	\$15,479	\$7,739.53	\$7,739.53
SUBTOTAL =								\$317,832	\$205,904	\$111,928
Total LF Mainline Sewer								1,090		
COST/LF								\$292		

Percentage of total cost

**HEMLOCK CREEK WATERSHED  
SANITARY SEWER IMPROVEMENTS  
PRELIMINARY OPPC  
MASTER PLAN EASEMENTS**

					Total Quantity	Total Cost
Ref No.	Description	Quan.	Unit of Measure	Unit Cost		
01010*1	Mobilization	1.0	LS	\$7,241.34	1	\$7,241
01010*2	Bonds & Insurance	1.0	LS	\$3,936.23	1	\$3,936
01041*1	Above Ground Video Taping	1.0	LS	\$1,240.11	1	\$1,240
01088*1	Maintenance of Traffic	1.0	LS	\$5,536.19	1	\$5,536
	Silt fence	2,986.0	LF	\$1.12	2,986	\$3,344
	Construction Safety Fence	2,986.0	LF	\$1.00	2,986	\$2,986
	Inlet Basin Protection	-	EA	\$50.00	-	\$0
01091*1	Storm Water Pollution Prevention Plan	1.0	LS	\$22,144.76	1	\$22,145
02111*1	Pipe Removed (18" and less)	-	LF	\$21.00	-	\$0
02111*2	Inlet Basin Removed	-	EA	\$300.00	-	\$0
02111*3	Yard Drain Removed	-	EA	\$150.00	-	\$0
	Allowance for Removing, Supporting, or Relocating Electrical Utility Pole	-	LS		-	\$0
02230*1	Tree Removal - Over 12-inch diameter	3.0	AC	\$30,000.00	3	\$90,000
02294*1	8" Restrained Jt. DIP Directionally Drilled	499.0	LF	\$160.00	499	\$79,840
02295*1	8" DIP in 18" Steel Casing	-	LF	\$250.00	-	\$0
02505*1	4" Concrete Sidewalk	-	SF	\$5.30	-	\$0
02516*6	Access Road Construction incl excavation/embankment	1,295.0	LF	\$300.00	1,295	\$388,500
02516*7	Subbase Repair (Contingency)	-	CY	\$38.33	-	\$0
	Curb Drain	-	LF	\$8.35	-	\$0
	6" PVC, SDR 35, 5'-10' Deep	-	LF	\$59.00	-	\$0
	6" PVC, SDR 35, 10'-15' Deep	-	LF	\$78.00	-	\$0
	6" PVC, SDR 26, 10'-15' Deep, Special Backfill Material	-	LF	\$127.00	-	\$0
	6" PVC, SDR 26, 15'-20' Deep, Special Backfill Material	-	LF	\$164.00	-	\$0
	8" PVC, SDR 26, 5'-10' Deep	994.0	LF	\$60.00	994	\$59,640
	8" PVC, SDR 26, 10'-15' Deep	-	LF	\$79.00	-	\$0
	8" PVC, SDR 26, 15'-20' Deep	-	LF	\$107.00	-	\$0
	8" PVC, SDR 26, 5'-10' Deep, Special Backfill Material	-	LF	\$90.00	-	\$0
	8" PVC, SDR 26, 10'-15' Deep, Special Backfill Material	-	LF	\$127.00	-	\$0
	8" PVC, SDR 26, 15'-20' Deep, Special Backfill Material	-	LF	\$165.00	-	\$0
	8" DIP Aerial Sewer	-	LF	\$500.00	-	\$0
02730*5	6" Risers	-	LF	\$150.00	-	\$0
02730*7	Type "A" Manhole 5'-10' Deep	10.0	EA	\$6,400.00	10	\$64,000
02730*8	Type "A" Manhole 10'-15' Deep	-	EA	\$7,300.00	-	\$0
02730*9	Type "A" Manhole 15'-20' Deep	-	EA	\$8,200.00	-	\$0
02730*10	Type "A" Drop Manhole 15'-20' Deep	-	EA	\$8,800.00	-	\$0
	Connection to Existing Manhole	1.0	EA	\$1,800.00	1	\$1,800
02901*1	Lawn Restoration including Fine Grading, Seeding, and Mulching	1.0	LS	\$21,202.06	1	\$21,202

SUBTOTAL = \$751,411  
Total LF Mainline Sewer 1,493  
COST/LF \$503

 Percentage of total cost