

Appendix G
Cost Estimates

West Pittston Borough Flood Mitigation Feasibility Study Cost Estimate

Date: Updated 10/22/2019

Storm Lee Event Flood Damage Reduction System						BL Project # 2019-4229-001		
Item		Quantity	Unit	Unit Cost	Item Cost	Total Unfactored Cost	Cost with 20% Contingency	Comments
Mobilization/Demobilization		1	LS			\$2,000,000	\$2,000,000	No contingency
General Items		Quantity	Unit	Unit Cost	Item Cost			
Real estate - Land Acquisitions/Easements		40	Each Property	\$8,500.00	\$340,000.00			
Erosion and Sediment Pollution Control		1	LS	\$300,000.00	\$300,000.00			
Project Traffic Control		1	LS	\$150,000.00	\$150,000.00			
Environmental Mitigation		1	LS	\$200,000.00	\$200,000.00			
Induced Flooding Mitigation		1	LS	\$400,000.00	\$400,000.00			
Total General Items						\$1,390,000	\$1,550,000	10% Cont.
Levee System	Height (ft)	Quantity	Unit	Unit Cost	Item Cost			
Closure 1 - Susquehanna Avenue	6	1	LS	\$250,000	\$250,000			
Concrete Capped Sheet Pile Wall 2+75 to Sta 5+00	8	225	LF	\$2,000	\$450,000			Sheet Piling/Concrete Cap Only - Additional Related Earth Levee Slope Work Etc. in Earth Levee Construction Items Below (*)
Earth Levee Sta 4+75 to Sta 36+40	13	3,165	*					(*) - Costs are in Earth Levee Construction Items below
Levee Portal	12	1	LS	\$350,000	\$350,000			Portal Only- No Riversdie or Landside Features
Closure 2 - Water Street Bridge	8	1	LS	\$575,000	\$575,000			
Earth Levee Sta 37+00 to Sta 40+50	13	350	*					(*) - Costs are in Earth Levee Construction Items below
Concrete Capped Sheet Pile Wall 40+50 to Sta 44+20	9	370	LF	\$2,300	\$851,000			Sheet Piling/Concrete Cap Only - Additional Related Earth Levee Slope Work Etc. in Earth Levee Construction Items Below (*)
Closure 3 - Ft. Jenkins Bridge	8	1	LS	\$750,000	\$750,000			
Concrete Capped Sheet Pile Wall	9	1,270	LF	\$2,200	\$2,794,000			Sheet Piling/Concrete Cap Only - Additional Related Earth Levee Slope Work Etc. in Earth Levee Construction Items Below (*)
Earth Levee Sta 57+00 to Sta 70+00	8	1,300	*					(*) - Costs are in Earth Levee Construction Items below
Earth Levee Sta 70+00 to Sta 76+60	5	660	*					(*) - Costs are in Earth Levee Construction Items below
Earth Levee Sta 76+60 to Sta 80+00	4	340	*					(*) - Costs are in Earth Levee Construction Items below
Earth Levee Sta 80+00 to Sta 84+00	3	400	*					(*) - Costs are in Earth Levee Construction Items below
Earth Levee Sta 84+00 to Sta 87+00	1.5	300	*					(*) - Costs are in Earth Levee Construction Items below
Levee Items	Height (ft)	Quantity	Unit	Unit Cost	Item Cost			
Clearing Trees, vegetation - Project		20	Acres	\$8,000.00	\$160,000.00			
Other - Tree removal		30	Each Property	\$1,000.00	\$30,000.00			
12" Grubbing to river toe		20	Acres	\$18,000.00	\$360,000.00			Bank Slope Tree Cutting Stump Removal
Test Pits etc		1	LS	\$125,000	\$125,000			
Staging Area 1 - 6" subbase		1	LS	\$130,000	\$130,000			
Access Ramp		700	LF	\$100	\$70,000			
Toe Drains		10,900	CY	\$50	\$545,000			
Inspection trench		12,500	CY	\$62	\$775,000			
18" Riprap		58,000	SY	\$55	\$3,190,000			
Rirrap Bedding- 6" 2A		58,000	SY	\$12	\$696,000			
Random Fill (On Site soils)		12,000	CY	\$18	\$216,000			
Random Fill (Breaker Rock)		20,000	CY	\$23	\$460,000			
Select Fill (Impervious soil)		275,000	CY	\$27	\$7,425,000			
Select Rock		43500	CY	\$40	\$1,740,000			
6" Topsoil		50,000	SY	\$4	\$200,000			
Total Levee / Flood Wall Cost						\$22,142,000	\$26,570,400	

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Storm Lee Event Flood Damage Reduction System					BL Project # 2019-4229-001		
Pump Stations (See PS/Sewers/Utilities for Detail)	Quantity	Unit	Unit Cost	Item Cost			
Parke Street Stormwater Pumping Station No. 1							
Related Sewer Work				\$471,235			
Roadway Work				\$272,520			
Pumping Station				\$1,900,000			
Utility Relocations				\$310,000			
Emergency Generator				\$95,000			
Total PS 1				\$ 3,048,755.00			
Luzerne Avenue Combined Sewer Pumping Station No. 2							
Related Sewer Work				\$500,820.00			
Roadway Work				\$237,560.00			
Pumping Station				\$1,545,000.00			
Utility Relocations				\$105,000.00			
Emergency Generator				<u>\$90,000.00</u>			
Total PS 2				\$2,478,380			
Montgomery Avenue Stormwater Pumping Station No. 3							
Related Sewer Work				\$1,115,960.00			
Roadway Work				\$412,920.00			
Pumping Station				\$2,290,000.00			
Utility Relocations				\$25,000.00			
Emergency Generator				<u>\$100,000.00</u>			
Total PS 3				\$3,943,880.00			
Armory Combined Pumping Station No. 4							
Related Sewer Work				\$311,820.00			
Roadway Work				\$174,240.00			
Pumping Station				\$1,430,000.00			
Utility Relocations				\$20,000.00			
Emergency Generator				<u>\$0.00</u>			
Total PS 4				\$1,936,060			
WVSA Relocated Pumping Station No. 5							
Demolish Existing WVSA Station				\$125,000.00			
Related Sewer Work				\$400,000.00			
Roadway Work				\$243,920.00			
Pumping Station				\$940,000.00			
Utility Relocations				\$15,000.00			
Emergency Generator				<u>\$50,000.00</u>			
Total PS 5				\$1,648,920			
TOTAL COST PS#1,2,3,4, & 5					\$13,055,995	\$15,667,194	

West Pittston Borough Flood Mitigation Feasibility Study Cost Estimate

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Storm Lee Event Flood Damage Reduction System

BL Project # 2019-4229-001

Miscellaneous Items		Quantity	Unit	Unit Cost	Item Cost			
PA UBC Foundation Inspections		1	LS	\$25,000.00	\$25,000.00			
Stop Log Containers		3	LS	\$15,000.00	\$45,000.00			
Bollards		18	EA	\$800.00	\$14,400.00			
Survey Monuments		40	EA	\$650.00	\$26,000.00			
Test Pits		15	EA	\$1,500.00	\$22,500.00			
Excess Excavation Disposal Offsite		5000	CY	\$15.00	\$75,000.00			
Other Tree Removal		24	EA	\$1,100.00	\$26,400.00			
Overexcavation / Backfill		900	CY	\$40.00	\$36,000.00			
TOTAL COST Miscellaneous Items						\$270,300	\$324,360	
Total Project Construction Cost - No Contingency						\$38,858,295		
Total Project Construction Cost - 20% Contingency							\$46,111,954	Use For Current 2020 Construction Cost

West Pittston Levee Study Interior Drainage Improvement

Cost Estimate September 26, 2019		Estimate : Reilly Associates & Borton-Lawson			BLE Project # 2019-4229-001		
Parke Street Stormwater Pump Station #1							
Description	Quan.	Units	Price	Total			
15" Elm to Ann St.	400	LF	\$ 80	\$ 32,000			
36" Ann St. to Parke St.	1,090	LF	\$ 125	\$ 136,250	sewer length		8,856
18" Saxe St. to Parke St.	620	LF	\$ 110	\$ 68,200			
15" Linden St. to Euster Ct.	315	LF	\$ 80	\$ 25,200	road SY		22,255
Std. Storm Inlets	10	EA	\$ 5,000	\$ 50,625			
Spec. Storm Inlets	7	EA	\$ 8,000	\$ 56,000			
15 " Cross Pipes	162	LF	\$ 80	\$ 12,960			
48" Gravity Outlet to River	220	LF	\$ 250	\$ 55,000			
Relocate 8" Gas Line	2,100	LF	\$ 50	\$ 105,000			
Replace Curb	2,100	LF	\$ 32	\$ 67,200			
Road pavement replacement and resurfacing (full width)	5,133	SY	\$ 40	\$ 205,320			
Headwalls and Flap Gate	1	EA	\$ 35,000	\$ 35,000			
Sluice Gate and Structure	1	EA	\$ 45,000	\$ 45,000		Related Sewer	\$ 471,235
Storm Pump Station (40,000 GPM)						Roadway Work	\$ 272,520
Sheeting/shoring and excavation	1	LS	\$ 235,000	\$ 235,000		Pumping Station	\$ 1,900,000
Reinforced concrete wet well	1	LS	\$ 650,000	\$ 650,000		Utility Relocations	\$ 310,000
Building	1,500	SF	\$ 200	\$ 300,000		Emergency Gen	\$ 95,000
3 Pumps, 13,500 gpm @50 ft., 280 HP.	3	EA	\$ 140,000	\$ 420,000		Total	\$ 3,048,755
Electrical and Controls	1	LS	\$ 200,000	\$ 200,000			
Electrical Service Upgrade	1	LS	\$ 50,000	\$ 50,000			
Emergency Generator	1	LS	\$ 95,000	\$ 95,000			
24" Water Main Encasement at Levee	200	LF	\$ 250	\$ 50,000			
Misc. Utility Reloc	1	LS	\$ 25,000	\$ 155,000			
Parke Street Stormwater Pump Station				\$ 3,048,755			
Luzerne Ave Combined Sewer Pump Station #2							
Description	Quan.	Units	Price	Total			
36" Upgrade WWSA Line Linden to Luzerne	1,850	LF	\$ 125	\$ 231,250			
Storm Inlets	9	EA	\$ 5,000	\$ 46,250			
18 " Cross Pipes	148	LF	\$ 90	\$ 13,320	Related Sewer		\$ 500,820
36" Gravity Outlet to River	400	LF	\$ 250	\$ 100,000	Roadway Work		\$ 237,560
Relocate 8" Gas Line	1,600	LF	\$ 50	\$ 80,000	Pumping Station		\$ 1,545,000
Replace Curb	1,000	LF	\$ 32	\$ 32,000	Utility Relocations		\$ 105,000
Road pavement replacement and resurfacing (full width)	5,139	SY	\$ 40	\$ 205,560	Emergency Gen		\$ 90,000
Headwalls and Flap Gate	1	EA	\$ 35,000	\$ 35,000	Total		\$ 2,478,380
New Diversion Structure	1	EA	\$ 75,000	\$ 75,000			
Sluice Gate and Structure	1	EA	\$ 45,000	\$ 45,000			
Combined Pump Station (15,000 GPM)							
Sheeting/shoring and excavation	1	LS	\$ 200,000	\$ 200,000			
Reinforced concrete wet well	1	LS	\$ 590,000	\$ 590,000			
Building	1,200	SF	\$ 200	\$ 240,000			
3 Pumps, 5,000 gpm @60 ft., 130 HP.	3	EA	\$ 100,000	\$ 300,000			
Electrical and Controls	1	LS	\$ 130,000	\$ 130,000			
Electrical Service Upgrade	1	LS	\$ 40,000	\$ 40,000			
Emergency Generator	1	LS	\$ 90,000	\$ 90,000			
Water/Gas conflict reloc.	1	LS	\$ 25,000	\$ 25,000			
Luzerne Ave Combined Sewer Pump Station				\$ 2,478,380			

Montgomery Ave. Stormwater Pump Station					#3		
Description	Quan.	Units	Price	Total			
36" Exeter To Luzerne Ave..	700	LF	\$ 140	\$ 98,000			
54" Luzerne Ave. to Delaware Ave.	1,170	LF	\$ 260	\$ 304,200			
60" Philadelphia Ave. to Mont. Ave.	700	LF	\$ 325	\$ 227,500	Related Sewer	\$	1,115,960
18" Armory to Phil. Ave.	500	LF	\$ 125	\$ 62,500	Roadway Work	\$	412,920
Std. Storm Inlets	4	EA	\$ 5,000	\$ 20,000	Pumping Station	\$	2,290,000
Spec. Storm Inlets	11	EA	\$ 8,000	\$ 88,000	Utility Relocations	\$	25,000
18 " Cross Pipes	64	LF	\$ 90	\$ 5,760	Emergency Gen	\$	100,000
60" Gravity Outlet to River	300	LF	\$ 350	\$ 105,000	Total	\$	3,943,880
Replace Curb	2,370	LF	\$ 32	\$ 75,840			
Road pavement replacement and resurfacing (full width	8,427	SY	\$ 40	\$ 337,080			
Headwalls and Flap Gate/Energy Dissipator	1	EA	\$ 125,000	\$ 125,000			
Sluice Gate and Structure	1	EA	\$ 100,000	\$ 100,000			
Storm Pump Station (100,000 GPM)							
Sheeting/shoring and excavation	1	LS	\$ 250,000	\$ 250,000			
Reinforced concrete wet well	1	LS	\$ 650,000	\$ 650,000			
Building	2,500	SF	\$ 200	\$ 500,000			
3 Pumps, 35,000 gpm @60 ft., 510 HP.	3	EA	\$ 170,000	\$ 510,000			
Electrical and Controls	1	LS	\$ 230,000	\$ 230,000			
Electrical Service Upgrade	1	LS	\$ 50,000	\$ 50,000			
Emergency Generator	1	LS	\$ 100,000	\$ 100,000			
24" Force Sewer Main Encasement at Levee	200	LF	\$ 400	\$ 80,000			
Water/Gas conflict reloc.	1	LS	\$ 25,000	\$ 25,000			
Montgomery Ave. Stormwater Pump Station				\$ 3,943,880			
Armory Combined Sewer Pump Station					#4		
Description	Quan.	Units	Price	Total			
36" Piping in Area of Pump Station	600	LF	\$ 125	\$ 75,000			
Storm Inlets	3	EA	\$ 5,000	\$ 15,000	Related Sewer	\$	311,820
18 " Cross Pipes	48	LF	\$ 90	\$ 4,320	Roadway Work	\$	174,240
36" Gravity Outlet to River	250	LF	\$ 250	\$ 62,500	Pumping Station	\$	1,430,000
Replace 18" Sanitary Main, Atlantic Ave to Pump Station	600	LF	\$ 175	\$ 105,000	Utility Relocations	\$	20,000
Sanitary Manholes	3	EA	\$ 5,000	\$ 15,000	Emergency Gen	\$	25,000
Replace Curb	1,000	LF	\$ 32	\$ 32,000	Total	\$	1,961,060
Road pavement replacement and resurfacing (full width	3,556	SY	\$ 40	\$ 142,240			
Headwalls and Flap Gate	1	EA	\$ 35,000	\$ 35,000			
Sluice Gate and Structure	1	EA	\$ 45,000	\$ 45,000			
New Diversion Structure	1	EA	\$ 50,000	\$ 50,000			

Combined Pump Station (15,000 GPM)								
Sheeting/shoring and excavation	1	LS	\$ 175,000	\$ 175,000				
Reinforced concrete wet well	1	LS	\$ 500,000	\$ 500,000				
Building	1,000	SF	\$ 200	\$ 200,000				
3 Pumps, 5,000 gpm @60 ft., 510 HP.	3	EA	\$ 100,000	\$ 300,000				
Electrical and Controls	1	LS	\$ 135,000	\$ 135,000				
Electrical Service Upgrade	1	LS	\$ 25,000	\$ 25,000				
Emergency Generator	1	LS	\$ 25,000	\$ 25,000				
Water/Gas conflict reloc.	1	LS	\$ 20,000	\$ 20,000				
Baltimore Combined Sewer Overflow Pump St.				\$ 1,961,060				
WVSA Sanitary Pump Station Relocation (Co-Located with Balt. Ave. Combined Station on #5								
Description	Quan.	Units	Price	Total				
Repiping of Inflow Lines	300	LF	\$ 250	\$ 75,000	Related Sewer		\$ 400,000	
Repiping of Force Main	300	LF	\$ 250	\$ 75,000	Roadway Work		\$ 243,920	
Repiping of Force Main downstream of station	1,000	LF	\$ 250	\$ 250,000	Pumping Station		\$ 940,000	
Replace Curb	1,400	LF	\$ 32	\$ 44,800	Utility Relocations		\$ 15,000	
Road pavement replacement and resurfacing (full width	4,978	SY	\$ 40	\$ 199,120	Emergency Gen		\$ 50,000	
Sanitary Pump Station (3,500 GPM)	1	LS			Total		\$ 1,648,920	
Sheeting/shoring and excavation	1	LS	\$ 60,000	\$ 60,000				
Reinforced concrete wet well	1	LS	\$ 350,000	\$ 350,000				
Building	1,000	SF	\$ 200	\$ 200,000				
2 Pumps, 1,750 gpm @100 ft., 510 HP.	2	EA	\$ 85,000	\$ 170,000				
Electrical and Controls	1	LS	\$ 140,000	\$ 140,000				
Electrical Service Upgrade	1	LS	\$ 20,000	\$ 20,000				
Emergency Generator	1	LS	\$ 50,000	\$ 50,000				
Water/Gas conflict reloc.	1	LS	\$ 15,000	\$ 15,000				
WVSA Sanitary Pump Station Relocation				\$ 1,648,920				
Total Pump Stations, Piping and Utility Relocations				\$ 13,080,995				
Contingencies (12%)				\$ 1,569,719				
				\$ 14,650,714				

West Pittston Flood Damage Reduction Feasibility Study

Cost Basis - (2020)

Levees / Floodwalls	\$26,570,400
Sewers / Utilities	\$3,600,000
Pumping Stations	\$10,300,000
Roadway reconstruction	\$1,500,000
Miscellaneous (Traffic Control, Pollution Controls, Mobilization, Land Acquisition, Etc.)	\$4,140,000
Total Construction Cost	\$46,110,400
Legal/Bidding Costs	\$225,000
Environmental Permitting	\$250,000
Survey/Design Costs	\$3,400,000
Construction Management	<u>\$550,000</u>
Total Project Cost	\$50,535,400

Estimate includes 20 % Contingency

Updated Base Flood System Costs - \$ 2.5 Million Lower