

I/I Removal Scenario Report

Basin: BEL 031
 Date: 6/22/2008
 Scenario: BEL 031-D
 Scenario Description: 95% Lateral and Side Sewer, excl. PVC pipe

Summary of I/I Removal - Cost Estimates

Rehabilitation Scenario	Description	Quantity	Unit	Unit Cost	Total Cost
	Side Sewer Pipe Bursting (easy)	0	EA	\$ 8,052	\$ -
	Side Sewer Pipe Bursting (medium)	0	EA	\$ 9,047	\$ -
	Side Sewer Pipe Bursting (difficult)	0	EA	\$ 16,445	\$ -
	Lateral/Side Sewer Pipe Bursting (easy)	82	EA	\$ 9,995	\$ 819,590
	Lateral/Side Sewer Pipe Bursting (medium)	25	EA	\$ 11,995	\$ 299,875
	Lateral/Side Sewer Pipe Bursting (difficult)	75	EA	\$ 16,995	\$ 1,274,625
	Direct Disconnects	2	EA	\$ 3,000	\$ 6,000
	Subtotal				\$ 2,400,090
	Sales Tax 9.0%				\$ 216,008
	Construction Subtotal				\$ 2,616,098
	Allied Cost 53.0%				\$ 1,386,532
	Project Cost				\$ 4,002,630
	Contingency 30.0%				\$ 1,200,789
	Total Estimated Project Cost (2007 Dollars)				\$ 5,203,000

Summary of I/I Removal - I/I Reduction

Basin Characteristics	Description	Source	Quantity	Units		
	General					
	Projected 20-year I/I	King County	1.31	MGD		1
	Assumed inflow estimate	Estimated	0.063	MGD		2
	Remaining Basin I/I, (I/I minus inflow)		1.25	MGD		3
	Acres	King County	81.7	ac		4
	I/I per acre		15,269	gpad		5
	Number of properties		213			6
	Total Quantities in Basin					
	Total length of mainlines	CCTV Inspection	14,475	LF		8
	Total number of laterals	Assume one lateral per property.	213			9
	Total number of side sewers	Assume one side sewer per lateral.	213			10
	Total number of lateral/side sewers	Assume one side sewer per lateral.	213			11
	Total number of manholes	GIS	94			12
	Total number of direct disconnects	Smoke test results	2			13

Total Quantities in Basin - Rehabilitated

Total number of side sewers - rehabilitated		0			17
Total number of lateral/side sewers - rehabilitated		182			18
Total number of performed disconnects		2			20
Percent Rehabilitated in Basin					
Side sewers rehabilitated		0%			24
Lateral/side sewers rehabilitated		85%			25
Performed disconnects		100%			27

I/I Allocation in Basin (Private Properties)

Percentage of private properties in basin over which I/I (I/I minus inflow) is to be apportioned	Assumed.	90%			29
I/I allocation per property (no degradation)		4.5	gpm		30
Number of properties to be rehabilitated		182			31
Private property estimated I/I reduction assuming 60% reduction (no degradation)		0.71	MGD		32
Private property estimated I/I reduction assuming 75% reduction (no degradation)		0.89	MGD		33
I/I Removal in Basin					
I/I removal due to performed disconnects (100% reduction assumed)		0.06	MGD		35
I/I removal due to private property rehabilitations (60% I/I reduction assumed per fixed property)		0.71	MGD		36
I/I removal due to private property rehabilitations (75% reduction assumed per fixed property)		0.89	MGD		37
Summary: I/I Removal (60% I/I Reduction Assumed for Private Properties; No Degradation)					
Total I/I Removal		0.77	MGD		39
Minimum Remaining I/I		0.5	MGD		40
Minimum Remaining I/I		6,571	gpad		41
Summary: I/I Removal (75% I/I Reduction Assumed for Private Properties; No Degradation)					
Total I/I Removal		0.95	MGD		43
Minimum Remaining I/I		0.4	MGD		44
Minimum Remaining I/I		4,397	gpad		45