



TECHNICAL MEMORANDUM NO. 5

City of Sandpoint Wastewater Facility Plan

Collection System Capital Improvement Program

March 2007

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1 Capital Improvement Program Organization

The Capital Improvement Program for the collection system has been divided as follows:

General improvements to the existing system:

- Remediate areas with excessive infiltration and inflow problems
- Recurring maintenance areas with root intrusion and structural problems

System Expansion and Capacity Improvements to the existing system:

- Expand the system to serve the expanded future sewer service boundary
- Increase capacity in the existing system to handle flows from an expanded service area

2 General Improvements

The general improvements that will be required in the system were developed through a process that included an I/I analysis (discussed in Technical Memorandum No. 2) to identify areas with high I/I, discussion with collection system maintenance staff, TV inspection logs, and field observation. Using the analysis, the City's collection system was subdivided into prioritized sub-basins, with general improvement projects listed for each.

The improvements that were developed are critical to maintaining the longevity of the system and alleviating system deficiencies. These high priority areas have major recurring maintenance issues and significant I/I sources (see Figure 2-1). Opinions of probable cost for each of the recommended system upgrades are summarized in Table 2-1. To show I/I reduction to date, Figure 2-1 also presents grouting completed over the past few years. A detailed breakdown of the probable costs is provided in Appendix A.

TABLE 2-1
 Opinion of Probable Cost for General Improvements
 March 2007

Project	Capital Cost
Phase I Project - Lower Ella Basin	\$3,166,800
Phase II Project - Upper Ella Basin	\$4,247,500
Phase III Project - First Ave. Basin	\$4,432,100
Phase IV Project - Lincoln Basin	\$832,200
Phase V Project - Boyer Basin	\$2,810,400
TOTAL (all phases)	\$15,489,000

Costs include engineering, mobilization, and contingency. The cost opinions are based on supplier quotations, similar projects, discussions with local contractors, standard construction cost estimating guides, professional judgment, and local experience. The cost opinions are based on current (2006) dollars and should be adjusted for inflation accordingly.

2.1 Phasing and CIP

A potential phasing and implementation plan for these projects is included in Table 2-2. This phasing plan groups the projects into 5-year phases. Projects have been inflated at 3 percent per year until the midpoint of construction for each phase.

TABLE 2-2
 Collection System Phasing Plan
 March 2007

Project	Project Phasing Period				
	2006 to 2011	2011 to 2016	2016 to 2021	2021 to 2026	2022 to 2026
Phase I Project - Lower Ella Basin	\$3,409,700				
Phase II Project - Upper Ella Basin		\$5,301,700			
Phase III Project - First Ave. Basin			\$6,413,200		
Phase IV Project - Lincoln Basin				\$1,396,000	
Phase V Project - Boyer Basin					\$5,465,200

Notes:

- a. Costs do not include financing fees, etc.
- b. Costs include 3 percent interest per year to midpoint of project phase.

2.2 Financing and Potential Cost Savings

Based on the City's current annual collections system budget, adequate funding is unlikely for all of these projects without drawing on other sources such as bonding or applying for additional grant funds. However, the City may be able to reduce project costs by:

- **Pipe Rehabilitation.** Where the main pipe has been adequately sized and is structurally sound, cured-in-place-pipe (CIPP) or trenchless technology projects may be implemented. This has the potential of significantly reducing budgeted costs as compared to typical open-trench construction methods.
- **Use of City Crews.** The City can continue to utilize its maintenance staff to do point repair and open-trench replacement projects on deteriorating system lines.
- **Public Education.** Continued focus on the I/I problem combined with service line inspection requirements may encourage homeowners to replace their own service laterals and/or disconnect inflow sources without financial support from the City.
- **Bonding and Grants.** Revenue bonds and grants will allow larger projects to be constructed ahead of schedule. This will reduce the impact of inflation and allow larger projects to be constructed for less. Furthermore, quicker reductions in I/I will lead to reduced operations and maintenance (O&M) costs at the treatment facility as well as reduce the size of treatment facility to be constructed.
- **I/I Reduction Ordinances.** The City can pursue legislation and help to develop ordinances that will require removal of inflow sources from existing buildings and contributions from

sump pumps/foundation drains. This process likely will require extensive legal work as well as cooperation from City officials and public utilities departments.

3 System Expansion and Capacity Improvements

Several major upgrades to the City's collection system will be required as the collection system expands west of the current City limits. As was discussed in *Technical Memorandum No. 4 - Future Wastewater Collection Facilities and Improvements*, the recommended alignment for the proposed Westside interceptor would replace the lines in the lower end of the Ella Basin Interceptor and re-direct flow from the upper portions of the Lincoln Basin (north of Main Street) into this new "Westside Interceptor" (lower Ella Basin reconstruction). The Westside Interceptor would extend from Main Street north along the Great Northern Railroad on the west side of the railroad tracks and will terminate as a 21-inch pipe at the intersection of Mountain View Road and Great Northern Road. At this point, the lines will branch into smaller lines that will likely be constructed by new development. The alignment for the Westside Interceptor is shown on Figure 3-1.

3.1 Phasing and CIP

Depending on financing options, the City may choose to help fund the initial construction of this interceptor. However, this cost of design and construction ultimately should be borne and paid for by development. Two separate costs were developed for the interceptor. The first assumes the WWTP is to remain at the existing site near the Pend Oreille River, the second that the plant will be relocated to a new location near the intersection of Baldy Road and Great Northern Road (west of the current City limits). These costs include new pressure lines to convey flow from the existing plant to the new site, and new pressure lines to return flow from the new treatment plant site to the existing outfall. Pumping station costs have not been included here but are discussed elsewhere in association with the WWTP costs.

The following cost opinions are based on supplier quotations, similar projects, discussions with local contractors, standard construction cost estimating guides, professional judgment, and local experience. The cost opinions are based on current (2006) dollars and should be adjusted for inflation at the time of construction. An inflation rate of 3 percent is recommended for planning purposes.

An opinion of probable cost for the system upgrades and costs for expansion of the interceptor are summarized in Table 3-1. A detailed breakdown of the probable costs is provided in Appendix B. Costs include engineering, mobilization, and contingency. The system expansion projects have not been prioritized or scheduled as the need for the improvements will be driven primarily by growth as the City limits expand.

TABLE 3-1
 Opinion of Probable Cost for Westside Interceptor Alternatives
 March 2007

Project	Capital Cost (2006 Dollars)
Westside Interceptor (outside current city limits) ^a	\$2,792,300
Westside Interceptor (inside current city limits)	
Alternate A: Existing WWTP site	
<i>Westside Interceptor (Ella Basin reconstruction) flow to existing WWTP site^b</i>	\$8,851,400
Alternate B: New WWTP Site	
<i>Westside Interceptor (Ella Basin reconstruction) flow to new WWTP site</i>	\$4,266,100
<i>Pressure Lines (to and from new WWTP site)</i>	\$7,194,500

a. This project is required regardless of WWTP location.

b. Flow from the north end of the Lincoln Interceptor will be directed to the west in a new gravity line to the new WWTP location. The cost reflects this modification and subsequent smaller pipe size required for the lower Ella Basin reconstruction.

The schedule for each of these projects will be influenced by numerous factors, including:

- The expectation that more easily developed land will be utilized more quickly, with steeper and more rugged ground being developed later
- Growth being contiguous with the expansion of City limits, and projects within the City limits being required sooner than those farther away (However, project development will depend more on available land than location.)
- The possible WWTP relocation and the ultimate location

The City can help minimize impacts by controlling the direction of development. The sewer system should be expanded by limiting the construction of remote, detached portions of the collection system or temporary facilities. Controlled growth and expansion will help ensure that the system is constructed according to the guidelines established in this planning document.

Appendix A

Opinion of Probable Costs for General Improvements

ENGINEERS OPINION OF PROBABLE COST

DATE: 27-Mar-06

PROJECT: City of Sandpoint Collection System Master Plan and CIP
 Prioritized Improvements for I/I Reduction

PROJECT DESCRIPTION: Phase I - Lower Ella Basin

OWNER PROJ NO.: J-U-B PROJ NO.: 20-05-035

ITEM NO.	DESCRIPTION	SCHEDULE OF VALUES			
		QUANTITY	UNIT	UNIT PRICE	TOTAL EST. COST
Lower Ella Basin					
1	Alley between Oak St. and Cedar St.				
2	8" PVC sanitary sewer	1150	LF	\$ 75	\$ 86,250
3	Surface repair -- assumed asphalt	1150	LF	\$ 40	\$ 46,000
4	48" manhole	5	EA	\$ 4,000	\$ 20,000
5	Replace existing services (75 lf each @ \$60/lf)	23	EA	\$ 4,500	\$ 103,500
6	Alley between Oak and Church St.				
11	Services from Division to Ruth (75 lf each @ \$60/lf)	32	EA	\$ 4,500	\$ 144,000
12	Alley between Church and Pine St.		dist		
13	8" PVC sanitary sewer	1200	LF	\$ 75	\$ 90,000
14	Surface repair -- assumed asphalt	1200	LF	\$ 40	\$ 48,000
15	48" manhole	4	EA	\$ 4,000	\$ 16,000
16	Replace existing services (75 lf each @ \$60/lf)	24	EA	\$ 4,500	\$ 108,000
17	Alley between Pine and Lake St.				
18	8" PVC sanitary sewer	1300	LF	\$ 75	\$ 97,500
19	Surface repair -- assumed asphalt	1300	LF	\$ 40	\$ 52,000
20	48" manhole	6	EA	\$ 4,000	\$ 24,000
21	Replace existing services (75 lf each @ \$60/lf)	26	EA	\$ 4,500	\$ 117,000
22	Alley between Lake St. and Superior				
23	8" PVC sanitary sewer	650	LF	\$ 75	\$ 48,750
24	Surface repair -- assumed asphalt	650	LF	\$ 40	\$ 26,000
25	48" manhole	6	EA	\$ 4,000	\$ 24,000
26	Replace existing services (75 lf each @ \$60/lf)	13	EA	\$ 4,500	\$ 58,500
27	Superior				
28	8" PVC sanitary sewer	650	LF	\$ 75	\$ 48,750
29	Surface repair -- assumed asphalt	650	LF	\$ 40	\$ 26,000
30	48" manhole	6	EA	\$ 4,000	\$ 24,000
31	Replace existing services (75 lf each @ \$60/lf)	13	EA	\$ 4,500	\$ 58,500
32	Garden St.				
33	8" PVC sanitary sewer	650	LF	\$ 75	\$ 48,750
34	Surface repair -- assumed asphalt	650	LF	\$ 40	\$ 26,000
35	48" manhole	3	EA	\$ 4,000	\$ 12,000
36	Replace existing services (75 lf each @ \$60/lf)	13	EA	\$ 4,500	\$ 58,500
37	Michigan Ave.				
38	8" PVC sanitary sewer	700	LF	\$ 75	\$ 52,500
39	Surface repair -- assumed asphalt	700	LF	\$ 40	\$ 28,000
40	48" manhole	3	EA	\$ 4,000	\$ 12,000
41	Replace existing services (75 lf each @ \$60/lf)	14	EA	\$ 4,500	\$ 63,000
42	Alley east of Olive (south of Ontario)				
43	8" PVC sanitary sewer	650	LF	\$ 75	\$ 48,750
44	Surface repair -- assumed asphalt	650	LF	\$ 40	\$ 26,000
45	48" manhole	3	EA	\$ 4,000	\$ 12,000
46	Replace existing services (75 lf each @ \$60/lf)	13	EA	\$ 4,500	\$ 58,500

ENGINEERS OPINION OF PROBABLE COST

DATE: 27-Mar-06

PROJECT: City of Sandpoint Collection System Master Plan and CIP
 Prioritized Improvements for I/I Reduction

PROJECT DESCRIPTION: Phase I - Lower Ella Basin

OWNER PROJ. NO.: J-U-B PROJ. NO.: 20-05-035

ITEM NO.	DESCRIPTION	SCHEDULE OF VALUES			
		QUANTITY	UNIT	UNIT PRICE	TOTAL EST. COST
47	Alley west of Olive (south of Ontario)				
48	8" PVC sanitary sewer	700	LF	\$ 75	\$ 52,500
49	Surface repair -- assumed asphalt	700	LF	\$ 40	\$ 28,000
50	48" manhole	3	EA	\$ 4,000	\$ 12,000
51	Replace existing services (75 lf each @ \$60/lf)	14	EA	\$ 4,500	\$ 63,000
52	Elm St.				
53	8" PVC sanitary sewer	600	LF	\$ 75	\$ 45,000
54	Surface repair -- assumed asphalt	600	LF	\$ 40	\$ 24,000
55	48" manhole	2	EA	\$ 4,000	\$ 8,000
56	Replace existing services (75 lf each @ \$60/lf)	12	EA	\$ 4,500	\$ 54,000
57	Olive Ave. (improvements to coincide with capacity				
58	and system expansion improvements noted elsewhere)				
	SUBTOTAL				\$ 1,999,300
	Mobilization, administration, bonding, etc.			10%	\$ 199,900
	Contingency			20%	\$ 439,800
	Engineering			20%	\$ 527,800
	TOTAL				\$ 3,166,800

ENGINEERS OPINION OF PROBABLE COST

DATE: 23-Mar-06

PROJECT City of Sandpoint Collection System Master Plan and CIP
 Prioritized Improvements for I/I Reduction
 PROJECT DESCRIPTION Phase II Upper Ella Basin

OWNER PROJ. NO.		J-U-B PROJ. NO. 20-05-035			
ITEM NO.	DESCRIPTION	SCHEDULE OF VALUES			
		QUANTITY	UNIT	UNIT PRICE	TOTAL EST. COST
Upper Ella Basin					
1	Upper Ella Ave.				
2	12" PVC sanitary sewer	1050	LF	\$ 100	\$ 105,000
3	Surface repair -- assumed asphalt	1050	LF	\$ 40	\$ 42,000
4	48" manhole	3	EA	\$ 4,000	\$ 12,000
5	Replace existing services (75 lf each @ \$60/lf)	21	EA	\$ 4,500	\$ 94,500
6	Alley between Chestnut and Spruce				
7	8" PVC sanitary sewer	700	LF	\$ 75	\$ 52,500
8	Surface repair -- assumed asphalt	700	LF	\$ 40	\$ 28,000
9	48" manhole	3	EA	\$ 4,000	\$ 12,000
10	Replace existing services (75 lf each @ \$60/lf)	14	EA	\$ 4,500	\$ 63,000
11	Spruce St.				
12	8" PVC sanitary sewer	750	LF	\$ 75	\$ 56,250
13	Surface repair -- assumed asphalt	750	LF	\$ 40	\$ 30,000
14	48" manhole	3	EA	\$ 4,000	\$ 12,000
15	Replace existing services (75 lf each @ \$60/lf)	15	EA	\$ 4,500	\$ 67,500
16	Alley Between Hickory and Larch				
17	8" PVC sanitary sewer	1150	LF	\$ 75	\$ 86,250
18	Surface repair -- assumed asphalt	1150	LF	\$ 40	\$ 46,000
19	48" manhole	4	EA	\$ 4,000	\$ 16,000
20	Replace existing services (75 lf each @ \$60/lf)	23	EA	\$ 4,500	\$ 103,500
21	Larch St.				
22	8" PVC sanitary sewer	700	LF	\$ 75	\$ 52,500
23	Surface repair -- assumed asphalt	700	LF	\$ 40	\$ 28,000
24	48" manhole	6	EA	\$ 4,000	\$ 24,000
25	Replace existing services (75 lf each @ \$60/lf)	14	EA	\$ 4,500	\$ 63,000
26	Washington Ave.				
27	8" PVC sanitary sewer	1000	LF	\$ 75	\$ 75,000
28	Surface repair -- assumed asphalt	1000	LF	\$ 40	\$ 40,000
29	48" manhole	4	EA	\$ 4,000	\$ 16,000
30	Replace existing services (75 lf each @ \$60/lf)	20	EA	\$ 4,500	\$ 90,000
31	Jefferson				
32	8" PVC sanitary sewer	800	LF	\$ 75	\$ 60,000
33	Surface repair -- assumed asphalt	800	LF	\$ 40	\$ 32,000
34	48" manhole	3	EA	\$ 4,000	\$ 12,000
35	Replace existing services (75 lf each @ \$60/lf)	16	EA	\$ 4,500	\$ 72,000
36	Alley south of Poplar				
37	10" PVC sanitary sewer	1150	LF	\$ 85	\$ 97,750
38	Surface repair -- assumed asphalt	1150	LF	\$ 40	\$ 46,000
39	48" manhole	3	EA	\$ 4,000	\$ 12,000
40	Replace existing services (75 lf each @ \$60/lf)	23	EA	\$ 4,500	\$ 103,500
41	Alley north of Cedar St.				
42	8" PVC sanitary sewer	900	LF	\$ 75	\$ 67,500
43	Surface repair -- assumed asphalt	900	LF	\$ 40	\$ 36,000
44	48" manhole	3	EA	\$ 4,000	\$ 12,000
45	Replace existing services (75 lf each @ \$60/lf)	18	EA	\$ 4,500	\$ 81,000
46	Alley Between Ruth and Ella				
47	8" PVC sanitary sewer	600	LF	\$ 75	\$ 45,000
48	Surface repair -- assumed asphalt	600	LF	\$ 40	\$ 24,000
49	48" manhole	2	EA	\$ 4,000	\$ 8,000
50	Replace existing services (75 lf each @ \$60/lf)	12	EA	\$ 4,500	\$ 54,000

ENGINEERS OPINION OF PROBABLE COST

DATE: 23-Mar-06

PROJECT City of Sandpoint Collection System Master Plan and CIP
 PROJECT DESCRIPTION Prioritized Improvements for I/I Reduction
 Phase II Upper Ella Basin

OWNER PROJ. NO. J-U-B PROJ. NO. 20-05-035

ITEM NO.	DESCRIPTION	SCHEDULE OF VALUES			
		QUANTITY	UNIT	UNIT PRICE	TOTAL EST. COST
51	Ruth				
52	8" PVC sanitary sewer	700	LF	\$ 75	\$ 52,500
53	Surface repair -- assumed asphalt	700	LF	\$ 40	\$ 28,000
54	48" manhole	3	EA	\$ 4,000	\$ 12,000
55	Replace existing services (75 lf each @ \$60/lf)	14	EA	\$ 4,500	\$ 63,000
56	Florence Ave.				
57	8" PVC sanitary sewer	700	LF	\$ 75	\$ 52,500
58	Surface repair -- assumed asphalt	700	LF	\$ 40	\$ 28,000
59	48" manhole	3	EA	\$ 4,000	\$ 12,000
60	Replace existing services (75 lf each @ \$60/lf)	14	EA	\$ 4,500	\$ 63,000
61	Forest Ave.				
62	8" PVC sanitary sewer	1000	LF	\$ 75	\$ 75,000
63	Surface repair -- assumed asphalt	1000	LF	\$ 40	\$ 40,000
64	48" manhole	4	EA	\$ 4,000	\$ 16,000
65	Replace existing services (75 lf each @ \$60/lf)	20	EA	\$ 4,500	\$ 90,000
66	Division				
67	8" PVC sanitary sewer	350	LF	\$ 75	\$ 26,250
68	Surface repair -- assumed asphalt	350	LF	\$ 75	\$ 26,250
69	48" manhole	2	EA	\$ 4,000	\$ 8,000
70	Replace existing services (75 lf each @ \$60/lf)	7	EA	\$ 4,500	\$ 31,500
71	Alder Ave.				
72	8" PVC sanitary sewer	350	LF	\$ 75	\$ 26,250
73	Surface repair -- assumed asphalt	350	LF	\$ 40	\$ 14,000
74	48" manhole	2	EA	\$ 4,000	\$ 8,000
75	Replace existing services (75 lf each @ \$60/lf)	7	EA	\$ 4,500	\$ 31,500
	SUBTOTAL				\$ 2,681,500
	Mobilization, administration, bonding, etc.			10%	\$ 268,200
	Contingency			20%	\$ 589,900
	Engineering			20%	\$ 707,900
	TOTAL				\$ 4,247,500

ENGINEERS OPINION OF PROBABLE COST

DATE: 23-Mar-06

PROJECT: City of Sandpoint Collection System Master Plan and CIP

Prioritized Improvements for I/I Reduction

PROJECT DESCRIPTION: Phase III - First Avenue Basin

OWNER PROJ. NO.: I-U-B PROJ. NO.: 20-05-035

ITEM NO.	DESCRIPTION	SCHEDULE OF VALUES			
		QUANTITY	UNIT	UNIT PRICE	TOTAL EST. COST
First Avenue					
1	Alley between St. Claire and Euclid				
7	8" PVC sanitary sewer	700	LF	\$ 75	\$ 52,500
8	Surface repair -- assumed asphalt	700	LF	\$ 40	\$ 28,000
9	48" manhole	3	EA	\$ 4,000	\$ 12,000
10	Replace existing services (75 lf each @ \$60/lf)	14	EA	\$ 4,500	\$ 63,000
St. Claire Ave					
12	8" PVC sanitary sewer	1150	LF	\$ 75	\$ 86,250
13	Surface repair -- assumed asphalt	1150	LF	\$ 40	\$ 46,000
14	48" manhole	4	EA	\$ 4,000	\$ 16,000
15	Replace existing services (75 lf each @ \$60/lf)	23	EA	\$ 4,500	\$ 103,500
Third Ave.					
17	8" PVC sanitary sewer	1650	LF	\$ 75	\$ 123,750
18	Surface repair -- assumed asphalt	1650	LF	\$ 40	\$ 66,000
19	48" manhole	6	EA	\$ 4,000	\$ 24,000
20	Replace existing services (75 lf each @ \$60/lf)	33	EA	\$ 4,500	\$ 148,500
Oak St.					
27	8" PVC sanitary sewer	800	LF	\$ 75	\$ 60,000
28	Surface repair -- assumed asphalt	800	LF	\$ 40	\$ 32,000
29	48" manhole	3	EA	\$ 4,000	\$ 12,000
30	Replace existing services (75 lf each @ \$60/lf)	16	EA	\$ 4,500	\$ 72,000
Church St.					
32	8" PVC sanitary sewer	1750	LF	\$ 75	\$ 131,250
33	Surface repair -- assumed asphalt	1750	LF	\$ 40	\$ 70,000
34	48" manhole	6	EA	\$ 4,000	\$ 24,000
35	Replace existing services (75 lf each @ \$60/lf)	35	EA	\$ 4,500	\$ 157,500
Pine St.					
37	8" PVC sanitary sewer	2150	LF	\$ 75	\$ 161,250
38	Surface repair -- assumed asphalt	2150	LF	\$ 40	\$ 86,000
39	48" manhole	7	EA	\$ 4,000	\$ 28,000
40	Replace existing services (75 lf each @ \$60/lf)	43	EA	\$ 4,500	\$ 193,500
Lake St.					
42	8" PVC sanitary sewer	350	LF	\$ 75	\$ 26,250
43	Surface repair -- assumed asphalt	350	LF	\$ 40	\$ 14,000
44	48" manhole	2	EA	\$ 4,000	\$ 8,000
45	Replace existing services (75 lf each @ \$60/lf)	7	EA	\$ 4,500	\$ 31,500
Superior St.					
47	8" PVC sanitary sewer	350	LF	\$ 75	\$ 26,250
48	Surface repair -- assumed asphalt	350	LF	\$ 40	\$ 14,000
49	48" manhole	2	EA	\$ 4,000	\$ 8,000
50	Replace existing services (75 lf each @ \$60/lf)	7	EA	\$ 4,500	\$ 31,500
Euclid Ave					
52	8" PVC sanitary sewer	950	LF	\$ 75	\$ 71,250
53	Surface repair -- assumed asphalt	950	LF	\$ 40	\$ 38,000
54	48" manhole	4	EA	\$ 4,000	\$ 16,000
55	Replace existing services (75 lf each @ \$60/lf)	19	EA	\$ 4,500	\$ 85,500
Second Ave.					
57	8" PVC sanitary sewer	1350	LF	\$ 75	\$ 101,250
58	Surface repair -- assumed asphalt	1350	LF	\$ 40	\$ 54,000
59	48" manhole	5	EA	\$ 4,000	\$ 20,000
60	Replace existing services (75 lf each @ \$60/lf)	27	EA	\$ 4,500	\$ 121,500

ENGINEERS OPINION OF PROBABLE COST

DATE: 23-Mar-06

PROJECT: City of Sandpoint Collection System Master Plan and CIP
 Prioritized Improvements for I/I Reduction

PROJECT DESCRIPTION: Phase III - First Avenue Basin

OWNER PROJ. NO.:

J-U-B PROJ. NO.: 20-05-035

ITEM NO.	DESCRIPTION	SCHEDULE OF VALUES			
		QUANTITY	UNIT	UNIT PRICE	TOTAL EST. COST
61	Huron				
62	15" PVC sanitary sewer	500	LF	\$ 125	\$ 62,500
63	Surface repair -- assumed asphalt	500	LF	\$ 40	\$ 20,000
64	48" manhole	2	EA	\$ 4,000	\$ 8,000
65	Replace existing services (75 lf each @ \$60/lf)	10	EA	\$ 4,500	\$ 45,000
66	Lakeview				
67	15" PVC sanitary sewer	700	LF	\$ 125	\$ 87,500
68	Surface repair -- assumed asphalt	700	LF	\$ 40	\$ 28,000
69	48" manhole	5	EA	\$ 4,000	\$ 20,000
70	Replace existing services (75 lf each @ \$60/lf)	14	EA	\$ 4,500	\$ 63,000
	SUBTOTAL				\$ 2,798,000
	Mobilization, administration, bonding, etc.			10%	\$ 279,800
	Contingency			20%	\$ 615,600
	Engineering			20%	\$ 738,700
	TOTAL				\$ 4,432,100

ENGINEERS OPINION OF PROBABLE COST

DATE: 23-Mar-06

PROJECT: City of Sandpoint Collection System Master Plan and CIP
 Prioritized Improvements for I/I Reduction

PROJECT DESCRIPTION: Phase IV - Lincoln Basin

OWNER PROJ. NO.: J-U-B PROJ. NO.: 20-05-035

ITEM NO.	DESCRIPTION	SCHEDULE OF VALUES			
		QUANTITY	UNIT	UNIT PRICE	TOTAL EST. COST
Lincoln Basin					
1	Manhole Point Repairs				
2	18" PVC sanitary sewer (15 LF EACH @ 175\$/LF)	1	EA	\$ 2,625	\$ 2,625
3	Surface repair – assumed asphalt	25	LF	\$ 40	\$ 1,000
4	60" manhole	1	EA	\$ 5,500	\$ 5,500
5	Subtotal Cost per point repair				\$ 9,100
6					
7	POINT REPAIRS	35	EA	\$ 9,100	\$ 318,500
	SUBTOTAL				\$ 318,500
	Mobilization, administration, bonding, etc.			10%	\$ 31,900
	Contingency			20%	\$ 70,100
	Engineering			20%	\$ 84,100
	TOTAL				\$ 832,200

ENGINEERS OPINION OF PROBABLE COST

DATE: 23-Mar-06

PROJECT: City of Sandpoint Collection System Master Plan and CIP
 Prioritized Improvements for I/I Reduction

PROJECT DESCRIPTION: Phase V - Boyer Basin

OWNER PROJ. NO.: J-U-B PROJ. NO.: 20-05-035

ITEM NO.	DESCRIPTION	SCHEDULE OF VALUES			
		QUANTITY	UNIT	UNIT PRICE	TOTAL EST. COST
Boyer Basin					
1	South Ella Ave.				
2	8" PVC sanitary sewer	1250	LF	\$ 75	\$ 93,750
3	Surface repair -- assumed asphalt	1250	LF	\$ 40	\$ 50,000
4	48" manhole	5	EA	\$ 4,000	\$ 20,000
5	Replace existing services (75 lf each @ \$60/lf)	25	EA	\$ 4,500	\$ 112,500
6	Marion Ave..				
7	8" PVC sanitary sewer	1350	LF	\$ 75	\$ 101,250
8	Surface repair -- assumed asphalt	1350	LF	\$ 40	\$ 54,000
9	48" manhole	5	EA	\$ 4,000	\$ 20,000
10	Replace existing services (75 lf each @ \$60/lf)	27	EA	\$ 4,500	\$ 121,500
11	Florence Ave.				
12	8" PVC sanitary sewer	1900	LF	\$ 75	\$ 142,500
13	Surface repair -- assumed asphalt	1900	LF	\$ 40	\$ 76,000
14	48" manhole	6	EA	\$ 4,000	\$ 24,000
15	Replace existing services (75 lf each @ \$60/lf)	38	EA	\$ 4,500	\$ 171,000
16	Lavina Ave.				
17	8" PVC sanitary sewer	1450	LF	\$ 75	\$ 108,750
18	Surface repair -- assumed asphalt	1450	LF	\$ 40	\$ 58,000
19	48" manhole	5	EA	\$ 4,000	\$ 20,000
20	Replace existing services (75 lf each @ \$60/lf)	29	EA	\$ 4,500	\$ 130,500
16	Alley between Cedar and Oak				
17	8" PVC sanitary sewer	700	LF	\$ 200	\$ 140,000
18	Surface repair -- assumed asphalt	700	LF	\$ 40	\$ 28,000
19	48" manhole	3	EA	\$ 4,000	\$ 12,000
20	Replace existing services (75 lf each @ \$60/lf)	14	EA	\$ 4,500	\$ 63,000
16	Alley between Oak and Church				
17	8" PVC sanitary sewer	600	LF	\$ -	\$ -
18	Surface repair -- assumed asphalt	600	LF	\$ 40	\$ 24,000
19	48" manhole	3	EA	\$ 4,000	\$ 12,000
20	Replace existing services (75 lf each @ \$60/lf)	12	EA	\$ 4,500	\$ 54,000
21	Lower Boyer Ave.				
22	24" PVC sanitary sewer	350	LF	\$ 200	\$ 70,000
23	Replace existing services (75 lf each @ \$60/lf)	15	EA	\$ 4,500	\$ 67,500
	SUBTOTAL				\$ 1,774,300
	Mobilization, administration, bonding, etc.			10%	\$ 177,400
	Contingency			20%	\$ 390,300
	Engineering			20%	\$ 468,400
	TOTAL				\$ 2,810,400

Appendix B

Opinion of Probable Costs for Westside Interceptor Alternatives

ENGINEERS OPINION OF PROBABLE COST

DATE: 23-Mar-06

PROJECT: City of Sandpoint Collection System Master Plan and CIP

PROJECT DESCRIPTION: Westside Interceptor - Assuming WWTP at New Location, west of GN Railroad

OWNER PROJ. NO.: J-U-B PROJ. NO.: 20-05-035

ITEM NO.	DESCRIPTION	SCHEDULE OF VALUES			
		QUANTITY	UNIT	UNIT PRICE	TOTAL EST. COST
West Side Interceptor - Lines within Existing City Limits					
1	Olive Ave. from Ontario St. to Superior St.				
2	21" sanitary sewer (<10' deep)	1900	LF	\$ 165	\$ 313,500
3	Surface repair -- assumed asphalt	1900	LF	\$ 40	\$ 76,000
4	60" manhole	6	EA	\$ 5,500	\$ 33,000
5	Replace existing services (75 lf each @ \$60/lf)	38	EA	\$ 4,500	\$ 171,000
6	Directional Bore Under Railroad (30" Dia. Case)	100	LF	\$ 500	\$ 50,000
7	Bore and Receiving Pits at Each End	1	LS	\$ 20,000	\$ 20,000
8	Mobilization for Boring/Microtunneling eqpt.	1	LS	\$ 10,000	\$ 10,000
9	Olive Ave. from Superior St. Pine, Pine to Ella, Ella to Main St.				
10	21" sanitary sewer (<10' deep)	2750	LF	\$ 165	\$ 453,750
11	Surface repair -- assumed asphalt	2750	LF	\$ 40	\$ 110,000
12	60" manhole	9	EA	\$ 5,500	\$ 49,500
13	Replace existing services (75 lf each @ \$60/lf)	55	EA	\$ 4,500	\$ 247,500
14	Main St. from Ella to Division St.				
15	12" sanitary sewer (<10' deep)	1350	LF	\$ 90	\$ 121,500
16	Surface repair -- assumed asphalt	1350	LF	\$ 40	\$ 54,000
17	60" manhole	5	EA	\$ 5,500	\$ 27,500
18	Replace existing services (75 lf each @ \$60/lf)	27	EA	\$ 4,500	\$ 121,500
19	Main St. from Division St. to GN Railroad (west side of tracks)				
20	Tie in an re-route upper end of Lincoln Basin into new line draining to west to new WWTP	1	LS	\$ 20,000	\$ 20,000
21	21" sanitary sewer (<10' deep) draining to west	2500	LF	\$ 165	\$ 412,500
22	Surface repair -- assumed asphalt	2500	LF	\$ 40	\$ 100,000
23	48" manhole	8	EA	\$ 4,000	\$ 32,000
24	Replace existing services (75 lf each @ \$60/lf)	20	EA	\$ 4,500	\$ 90,000
25	Directional Bore Under Railroad (24" Dia. Case)	250	LF	\$ 600	\$ 150,000
35	Bore and Receiving Pits at Each End	1	LS	\$ 20,000	\$ 20,000
36	Mobilization for Boring/Microtunneling eqpt.	1	LS	\$ 10,000	\$ 10,000
37					
26					
	SUBTOTAL				\$ 2,693,300
	Mobilization, administration, bonding, etc.			10%	\$ 269,300
	Contingency			20%	\$ 592,500
	Engineering			20%	\$ 711,000
	TOTAL				\$ 4,266,100

ENGINEERS OPINION OF PROBABLE COST

DATE: 23-Mar-06

PROJECT: City of Sandpoint Collection System Master Plan and CIP

PROJECT DESCRIPTION: Westside Interceptor - Assuming WWTP at New Location, west of GN Railroad

OWNER PROJ. NO.: J-U-B PROJ. NO. 20-05-035

ITEM NO.	DESCRIPTION	SCHEDULE OF VALUES			
		QUANTITY	UNIT	UNIT PRICE	TOTAL EST. COST
Forcemain and Pressure Lines (to and from new WWTP)					
Parallel 15" and 15" Pressure Lines From Ex. WWTP to New Site west of GN Railroad)					
1	12" C905 Pressure Line (assumed common trench)	11500	LF	\$ 75	\$ 862,500
2	15" C905 Pressure Line (assumed common trench)	11500	LF	\$ 75	\$ 862,500
3	Pigging Port	2	EA	\$ 20,000	\$ 40,000
4	Isolation Valves for Pressure Testing	10	EA	\$ 2,500	\$ 25,000
5	Directional Bore Under Railroad (18" Dia. Case)	350	LF	\$ 450	\$ 157,500
5	Directional Bore Under Railroad (18" Dia. Case)	350	LF	\$ 451	\$ 157,850
6	Bore and Receiving Pits at Each End	1	LS	\$ 20,000	\$ 20,000
7	Mobilization for Boring/Microtunneling eqpt.	1	LS	\$ 10,000	\$ 10,000
Parallel 24" and 15" Outfall Pressure Line From New WWTP to Existing Outfall					
11	24" C905 Pressure Line (assumed common trench)	12000	LF	\$ 150	\$ 1,800,000
12	15" C905 Pressure Line (assumed common trench)	12000	LF	\$ 75	\$ 900,000
10	Pigging Port	2	EA	\$ 20,000	\$ 40,000
11	Isolation Valves for Pressure Testing	10	EA	\$ 2,500	\$ 25,000
12	Tie-in to existing outfall	1	LS	\$ 10,000	\$ 10,000
12	Directional Bore Under Railroad (18" Dia. Case)	350	LF	\$ 450	\$ 157,500
13	Directional Bore Under Railroad (30" Dia. Case)	350	LF	\$ 600	\$ 210,000
14	Bore and Receiving Pits at Each End	1	LS	\$ 20,000	\$ 20,000
15	Mobilization for Boring/Microtunneling eqpt.	1	LS	\$ 10,000	\$ 10,000
	SUBTOTAL				\$ 5,307,900
	Mobilization, administration, bonding, etc.			10%	\$ 530,800
	Contingency			20%	\$ 592,500
	Engineering			20%	\$ 763,300
	TOTAL				\$ 7,194,500

ENGINEERS OPINION OF PROBABLE COST

DATE: 23-Mar-06

PROJECT: City of Sandpoint Collection System Master Plan and CIP

PROJECT DESCRIPTION: Westside Interceptor - Assuming WWTP at Existing Location

OWNER PROJ NO.:

J-U-B PROJ. NO.:

20-05-035

ITEM NO.	DESCRIPTION	SCHEDULE OF VALUES			
		QUANTITY	UNIT	UNIT PRICE	TOTAL EST. COST
West Side Interceptor - Lines within Existing City Limits					
1	WWTP to South Olive St.				
2	36" sanitary sewer (<10' deep)	950	LF	\$ 325	\$ 308,750
3	Surface repair -- assumed asphalt	950	LF	\$ 40	\$ 38,000
4	72" manhole	4	EA	\$ 7,500	\$ 30,000
5	Olive Ave. from Birch St. to Ontario St.				
6	36" sanitary sewer (<10' deep)	750	LF	\$ 325	\$ 243,750
7	Surface repair -- assumed asphalt	750	LF	\$ 40	\$ 30,000
8	72" manhole	3	EA	\$ 7,500	\$ 22,500
9	Replace existing services (75 lf each @ \$60/lf)	15	EA	\$ 7,500	\$ 112,500
10	Olive Ave. from Ontario St. to Superior St.				
11	36" sanitary sewer (<10' deep)	1900	LF	\$ 325	\$ 617,500
12	Surface repair -- assumed asphalt	1900	LF	\$ 40	\$ 76,000
13	72" manhole	6	EA	\$ 7,500	\$ 45,000
14	Replace existing services (75 lf each @ \$60/lf)	38	EA	\$ 7,500	\$ 285,000
15	Directional Bore Under Railroad (48" Dia. Case)	100	LF	\$ 800	\$ 80,000
16	Bore and Receiving Pits at Each End	1	LS	\$ 20,000	\$ 20,000
17	Mobilization for Boring/Microtunneling eqpt.	1	LS	\$ 10,000	\$ 10,000
18	Olive Ave. from Superior St. Pine, Pine to Ella, Ella to Main St.				
19	36" sanitary sewer (<10' deep)	2750	LF	\$ 325	\$ 893,750
20	Surface repair -- assumed asphalt	2750	LF	\$ 40	\$ 110,000
21	72" manhole	9	EA	\$ 7,500	\$ 67,500
22	Replace existing services (75 lf each @ \$60/lf)	55	EA	\$ 10,000	\$ 550,000
23	Main St. to Division St.				
24	36" sanitary sewer (<10' deep)	1350	LF	\$ 325	\$ 438,750
25	Surface repair -- assumed asphalt	1350	LF	\$ 40	\$ 54,000
26	72" manhole	5	EA	\$ 7,500	\$ 37,500
27	Replace existing services (75 lf each @ \$60/lf)	27	EA	\$ 10,000	\$ 270,000
28	Tie in an re-route upper end of Lincoln Basin into new Westside Interceptor	1	LS	\$ 20,000	\$ 20,000
29					
30	Main St. from Division St. to GN Railroad (west side of tracks)				
31	30" sanitary sewer (<10' deep)	2500	LF	\$ 265	\$ 662,500
32	Surface repair -- assumed asphalt	2500	LF	\$ 40	\$ 100,000
33	72" manhole	8	EA	\$ 7,500	\$ 60,000
34	Replace existing services (75 lf each @ \$60/lf)	20	EA	\$ 10,000	\$ 200,000
35	Directional Bore Under Railroad (42" Dia. Case)	250	LF	\$ 700	\$ 175,000
36	Bore and Receiving Pits at Each End	1	LS	\$ 20,000	\$ 20,000
37	Mobilization for Boring/Microtunneling eqpt.	1	LS	\$ 10,000	\$ 10,000
	SUBTOTAL				\$ 5,588,000
	Mobilization, administration, bonding, etc.			10%	\$ 558,800
	Contingency			20%	\$ 1,229,400
	Engineering			20%	\$ 1,475,200
	TOTAL				\$ 8,851,400

ENGINEERS OPINION OF PROBABLE COST

DATE: 23-Mar-06

PROJECT: City of Sandpoint Collection System Master Plan and CIP

PROJECT DESCRIPTION: Westside Interceptor - Assuming WWTP at Existing Location or new Location

OWNER PROJ. NO.: J-U-B PROJ. NO.: 20-05-035

ITEM NO.	DESCRIPTION	SCHEDULE OF VALUES			
		QUANTITY	UNIT	UNIT PRICE	TOTAL EST. COST
West Side Interceptor - Lines within Existing City Limits					
1	From GN RR Crossing, north to Gooby Rd.				
2	24" sanitary sewer (<10' deep)	5500	LF	\$ 175	\$ 962,500
3	Surface repair -- assumed majority is gravel	5400	LF	\$ 20	\$ 108,000
	Surface repair -- asphalt	100	LF	\$ 40	\$ 4,000
4	60" manhole	16	EA	\$ 6,000	\$ 96,000
5	Gooby Road, north to Mtn View Road				
6	21" sanitary sewer (<10' deep)	2750	LF	\$ 175	\$ 481,250
7	Surface repair -- assumed majority is gravel	2650	LF	\$ 20	\$ 53,000
8	Surface repair -- asphalt	100	LF	\$ 40	\$ 4,000
9	60" manhole	9	EA	\$ 6,000	\$ 54,000
10					
	SUBTOTAL				\$ 1,762,800
	Mobilization, administration, bonding, etc.			10%	\$ 176,300
	Contingency			20%	\$ 387,800
	Engineering			20%	\$ 465,400
	TOTAL				\$ 2,792,300