

Appendix I

CIP Packets

CP.1

Leslie Rd Trunk Replacement

CORE ISSUE

Insufficient Capacity

BACKGROUND

The Leslie Road trunk pipe is a 21-inch sewer pipe that extends 2,000-LF from the top of the Leslie Rd hill near the Canyon Rim neighborhood down to Columbia Park Trail where it connects to a 30-in trunk. The Leslie Rd trunk collects sewer from roughly half of South Richland, thus making it a critical part of the collection system.

At the bottom of the hill is a short section (140 LF) of 18-in pipe where the trunk transitions to 30-inch. During Master Plan flows, the d/D increases to 0.95. As growth and development continues in the South Richland area, the City will monitor this capacity issue and replace the existing trunk pipe as necessary.

RECOMMENDED SOLUTION

Pipe Replacement

> Replace 140 LF of 18-inch gravity trunk pipe from MH 459 to MH 467 with 21-inch pipe.

> Opinion of Probable Cost (December 2015 Dollars)

\$ 329,000

PROJECT TIMING

This project was first identified in the Committed Model scenario as a surcharging issue affecting residential services

With Growth

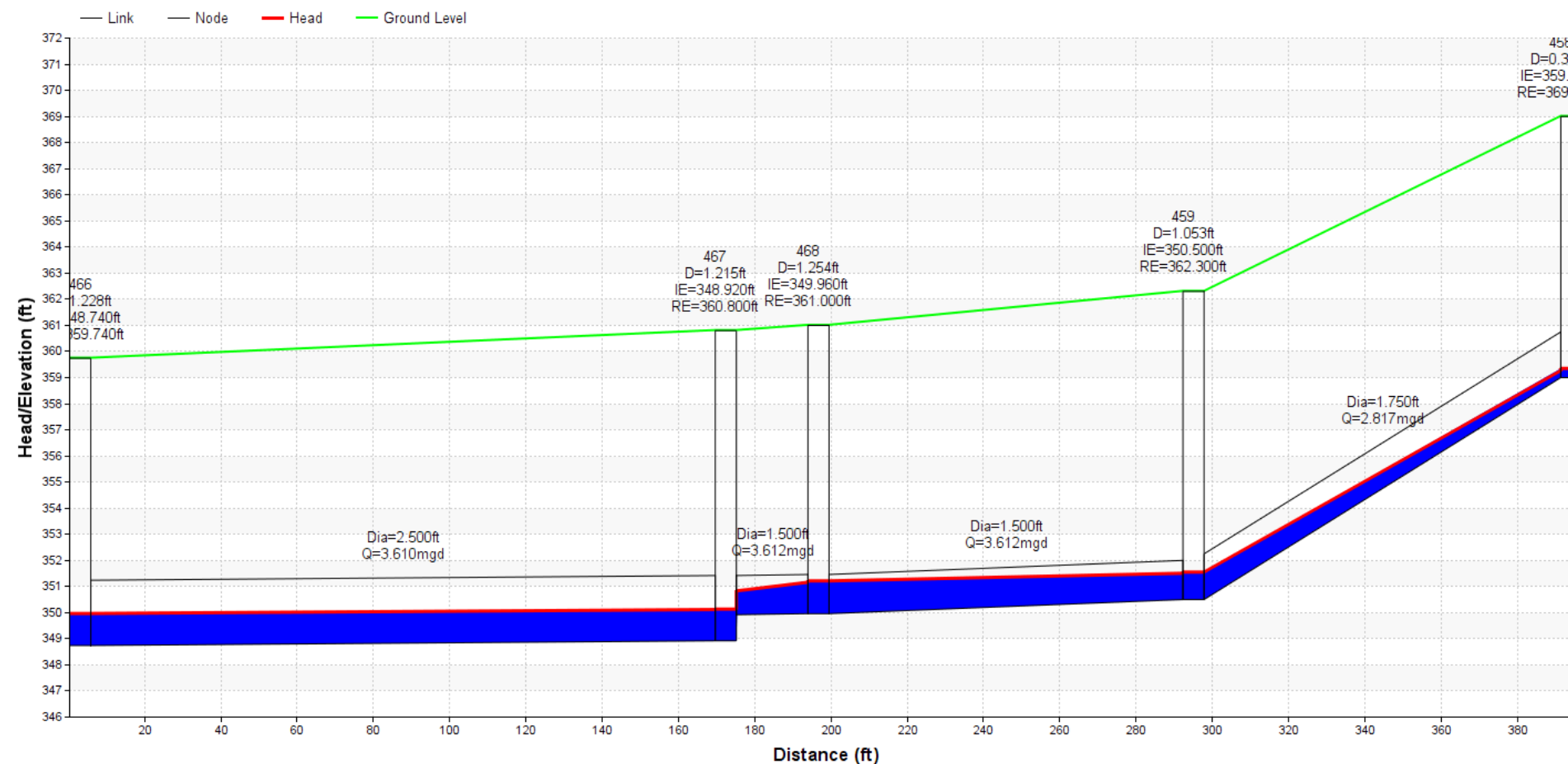
NOTE

A Master Plan is conceptual in nature and intended for planning purposes only. Field verification, survey, utility locates, and investigation of other potential upstream and downstream conflicts should be completed prior to preliminary and final design.

Date: Dec 6, 2015



CP.1 Maximum Water Surface Profile (Master Plan Flows Without Improvement)



CP.2

Keene Rd Collector Replacement

CORE ISSUE

Insufficient Capacity

BACKGROUND

The Keene Road collector pipe is a 12-inch sewer pipe that drains residential developments on either side of Keene Road. Record drawings and previous sewer model data identified a short section (900 LF) of 10-inch pipe near the intersection of Keene Road and Gage Blvd. Master Plan flows identifies minor surcharging of 0.10-ft through this bottleneck.

RECOMMENDED SOLUTION

Pipe Replacement

> Replace 900 LF of 10-inch gravity trunk pipe from MH 5080 to MH 5078 with 12-inch pipe.

> Opinion of Probable Cost (December 2015 Dollars)

\$ 271,000

PROJECT TIMING

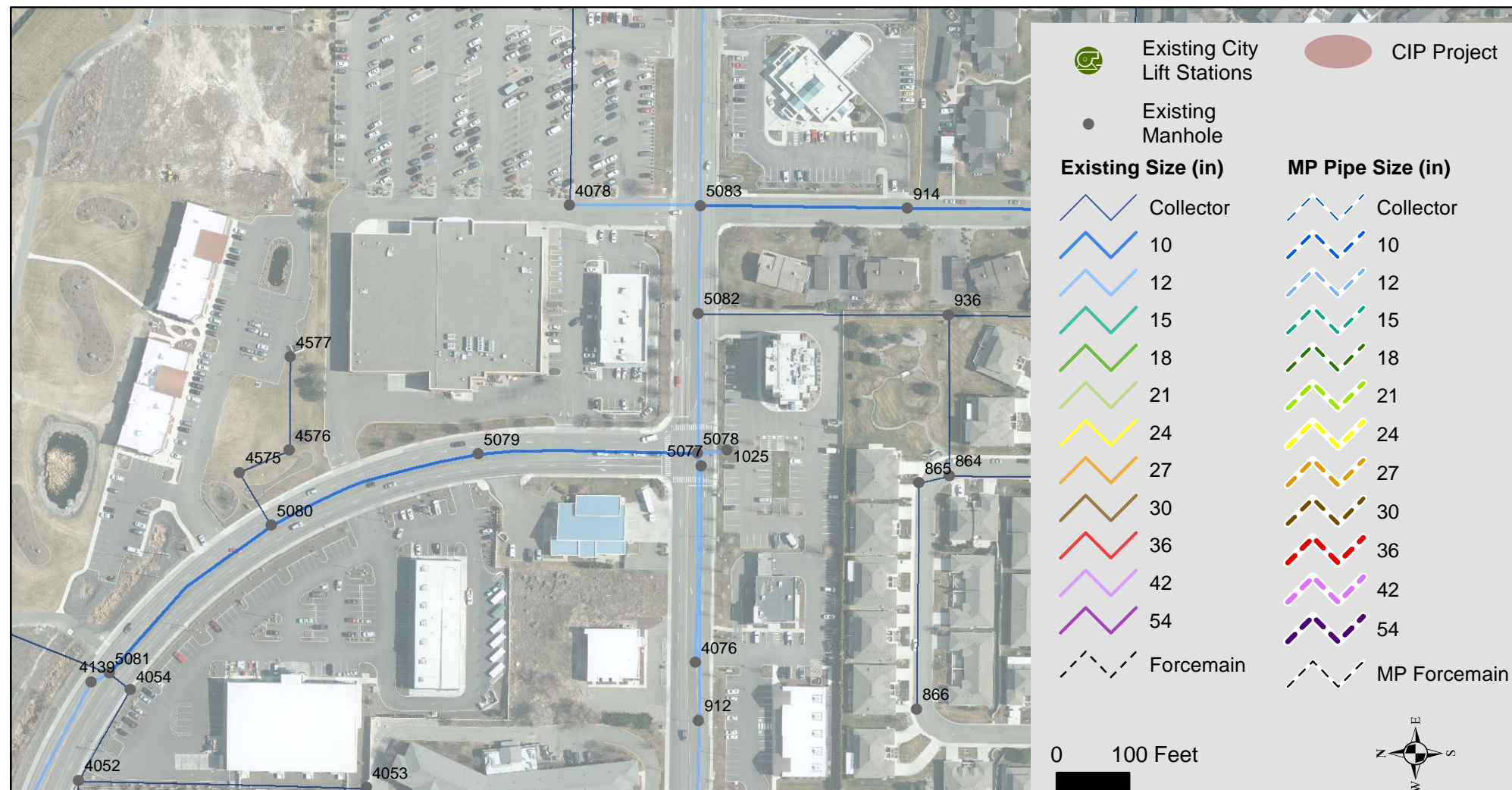
This project was first identified in the Committed Model scenario as a surcharging issue affecting residential services

2021

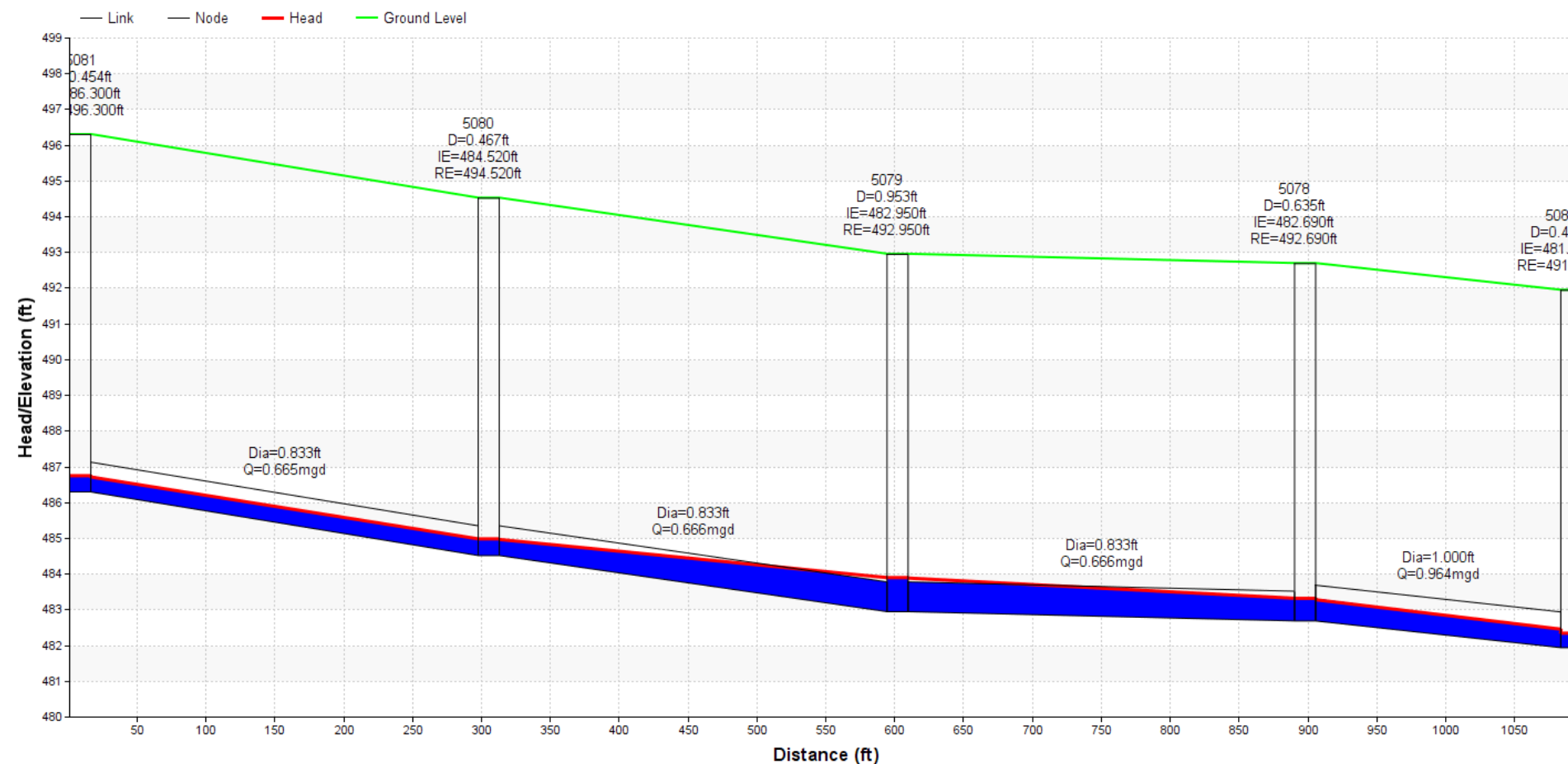
NOTE

A Master Plan is conceptual in nature and intended for planning purposes only. Field verification, survey, utility locates, and investigation of other potential upstream and downstream conflicts should be completed prior to preliminary and final design.

Date: Dec 6, 2015



CP.2 - Maximum Water Surface Profile (Master Plan Flows Without Improvement)



CP.3

Upper North Interceptor Improvements

CORE ISSUE

Insufficient Capacity

BACKGROUND

The Upper North Interceptor....

RECOMMENDED SOLUTION

Pipe Replacement

> Replace 800 LF of 8-inch gravity collector pipe from MH 958 to MH 150 with 12-inch pipe.

> Opinion of Probable Cost (December 2015 Dollars)

\$ 1,677,000

PROJECT TIMING

This project was first identified in the Committed Model scenario as a surcharging issue affecting residential services

0 - 10 years

NOTE

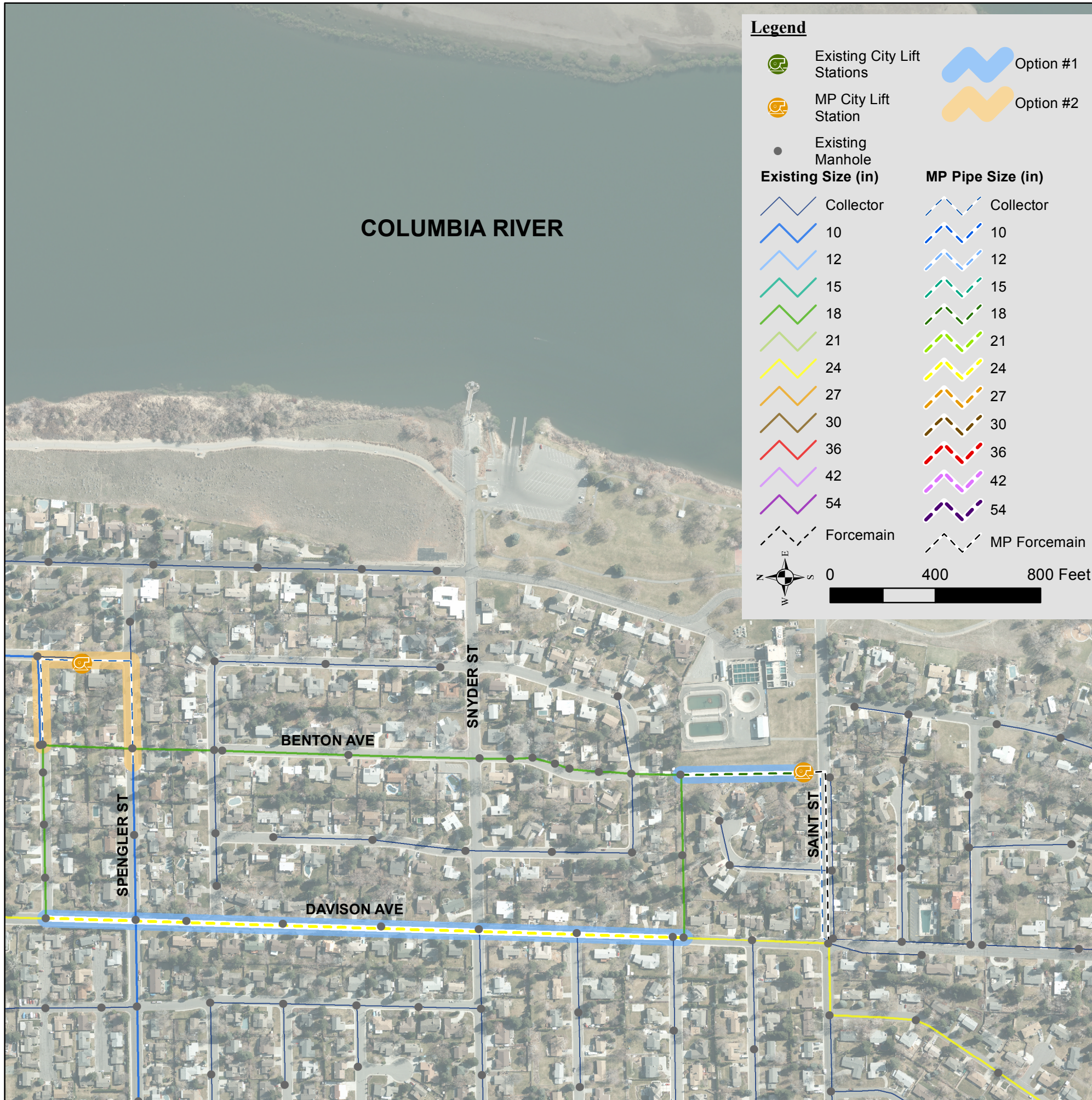
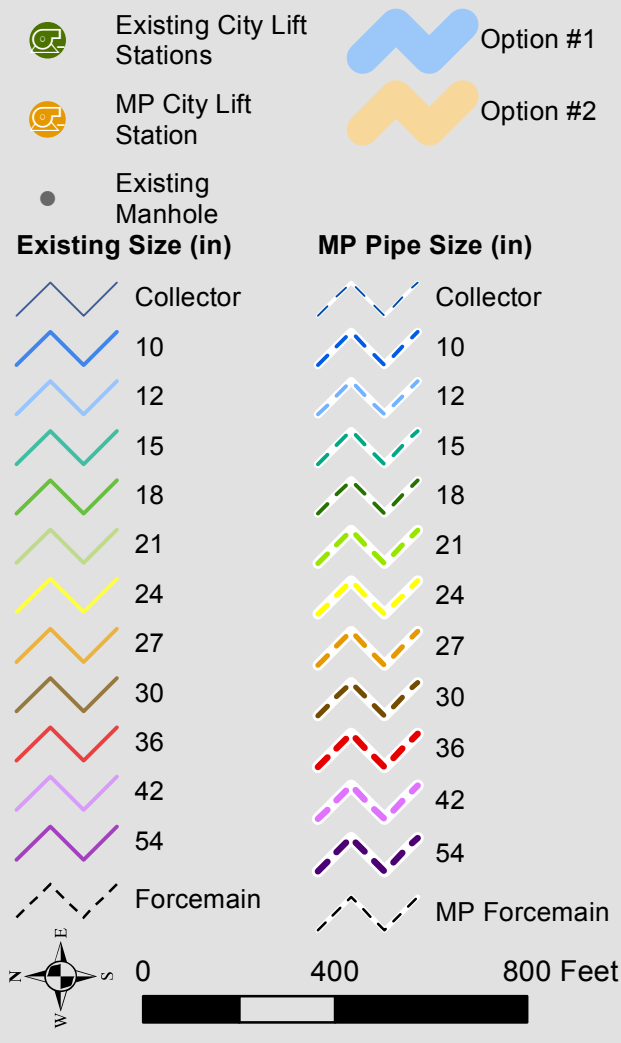
A Master Plan is conceptual in nature and intended for planning purposes only. Field verification, survey, utility locates, and investigation of other potential upstream and downstream conflicts should be completed prior to preliminary and final design.

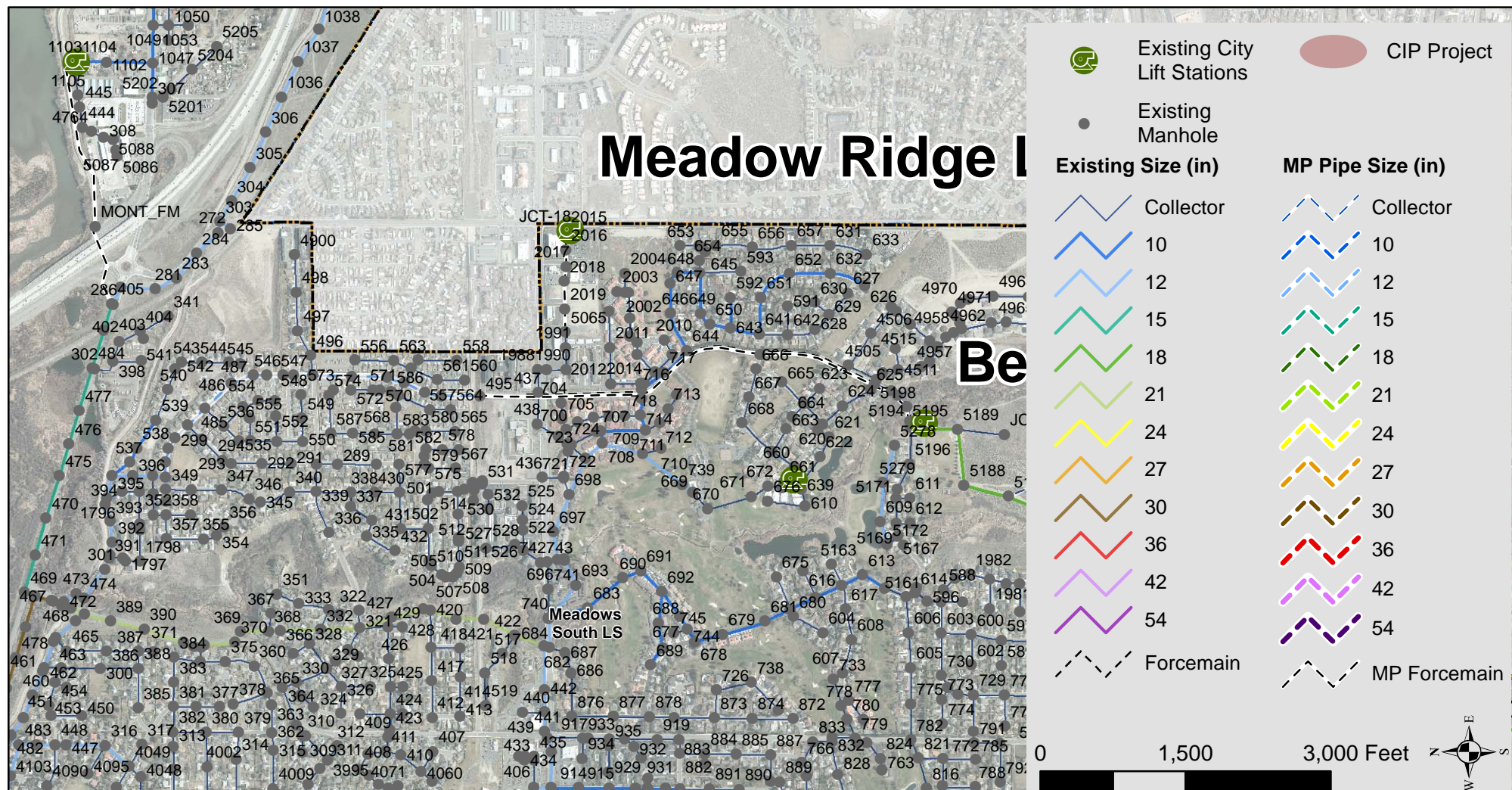
Date: Dec 4, 2015



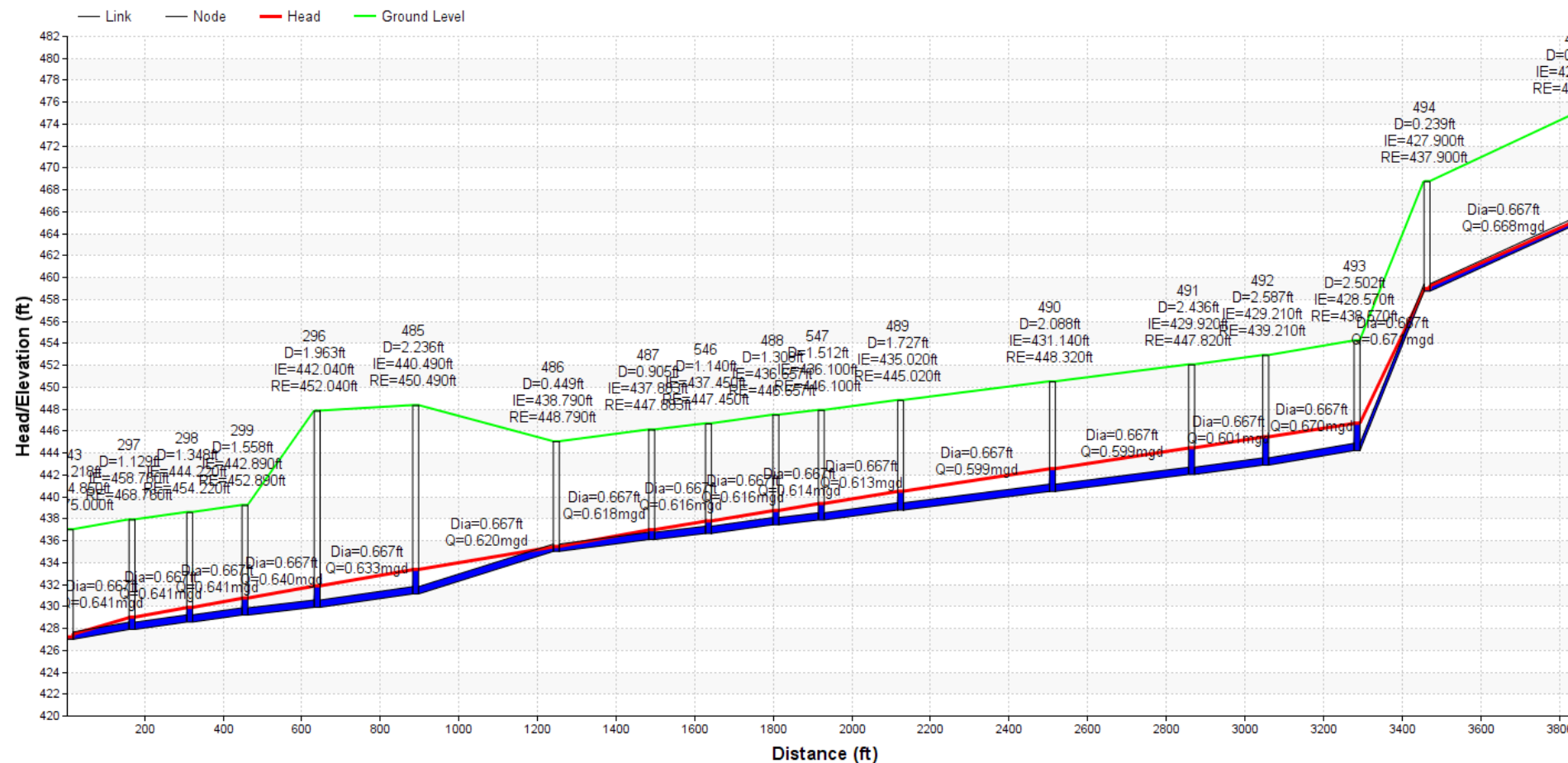
J-U-B ENGINEERS, INC.

Legend





CP.4 - Maximum Water Surface Profile (Master Plan Flows Without Improvement)



CP.4 Bellerive LS Pump Upgrade & Downstream Improvements

CORE ISSUE **Insufficient Capacity**

BACKGROUND
 Master Plan buildout of the Bellerive LS drainage basin will increase sewer flows to the LS. Peak flows will increase to roughly 500 gpm; however existing LS pumps only have a capacity of 260 gpm - therefore additional capacity will be required ahead of the buildout of the drainage basin area.

Downstream of the forcemain discharge manhole is 3,400-LF of existing 8-inch gravity collection pipe before connecting to 12-inch pipe. Committed and Master Plan results identify surcharging of up to 2-ft in the 8-inch piping once the Bellerive LS pumps are replaced.

RECOMMENDED SOLUTION

LS Pump Upgrade and Improvements
 > Replace existing 260 gpm pumps with 600 gpm pumps
 > Upgrade pump motor controllers and related electrical

Downstream Gravity Collection Pipe Improvements
 > Replace 3,500 LF 8-in pipe with 12-in pipe

> Opinion of Probable Cost (December 2015 Dollars) **\$ 1,337,000**

PROJECT TIMING

This project was first identified in the Committed Model scenario as a surcharging issue affecting residential services

2024



ENGINEER'S OPINION OF PROBABLE COST

2810 W. Clearwater Ave. Suite 201, Kennewick, WA 99336

PROJECT: City of Richland
2015 General Sewer Plan Update **DATE:** 11-Dec-15

DESCRIPTION: Leslie Rd Trunk Replacement
CIP PROJECT #: CP.1

J-U-B PROJ. NO.: 30-14-022

ITEM No.	DESCRIPTION	SCHEDULE OF VALUES			TOTAL COST
		QTY	UNIT	UNIT PRICE	
1.00	Mobilization			8.0%	\$ 12,000
2.00	Construction Traffic Control			20.0%	\$ 30,000
3.00	Gravity Sewer Pipe				
3.01	8" PVC Gravity Sewer Pipe		LF	\$ 16	\$ -
3.02	10" PVC Gravity Sewer Pipe		LF	\$ 18	\$ -
3.03	12" PVC Gravity Sewer Pipe		LF	\$ 20	\$ -
3.04	15" PVC Gravity Sewer Pipe		LF	\$ 30	\$ -
3.05	18" PVC Gravity Sewer Pipe		LF	\$ 40	\$ -
3.06	21" PVC Gravity Sewer Pipe	140	LF	\$ 50	\$ 7,000
3.07	24" PVC Gravity Sewer Pipe		LF	\$ 65	\$ -
3.08	30" PVC Gravity Sewer Pipe		LF	\$ 80	\$ -
3.09	36" PVC Gravity Sewer Pipe		LF	\$ 110	\$ -
3.10	Import Bedding and Foundation Material	140	LF	\$ 15	\$ 2,100
4.00	Gravity Trench Excav./Backfill				
4.01	4-10 ft.		LF	\$ 20	\$ -
4.02	4-10 ft. Alley		LF	\$ 25	\$ -
4.03	10-16 ft.	140	LF	\$ 30	\$ 4,200
4.04	10-16 ft. Alley		LF	\$ 40	\$ -
4.05	16-20 ft.		LF	\$ 50	\$ -
4.06	16-20 ft. Alley		LF	\$ 60	\$ -
4.07	20-24 ft.		LF	\$ 70	\$ -
4.08	24-28 ft.		LF	\$ 100	\$ -
4.09	28-30 ft.		LF	\$ 150	\$ -
4.10	Import Backfill and Foundation Material		CY	\$ 25	\$ -
5.00	Surface Repair				
5.01	Natural Ground		LF	\$ 20	\$ -
5.02	Gravel Roadway		LF	\$ 25	\$ -
5.03	Asphalt - Trench Patch width per City Standards (Required for 4-16' Depth Sewer)	140	LF	\$ 35	\$ 4,900
5.04	Asphalt - ½ Street width per City Standards (Required for 16-20' Depth Sewer)		LF	\$ 50	\$ -
5.05	Asphalt - Full Street width per City Standards (Required for 20-30' Depth Sewer)		LF	\$ 80	\$ -
6.00	Manholes				
6.01	48" Manholes, 4-10 ft.		EA	\$ 3,500	\$ -
6.02	48" Manholes, 10-16 ft.		EA	\$ 4,000	\$ -
6.03	48" Manholes, 16-20 ft.		EA	\$ 5,500	\$ -
6.04	60" Manholes, 7-16 ft.		EA	\$ 7,500	\$ -
6.05	60" Manholes, 16-24 ft.		EA	\$ 15,000	\$ -
6.06	60" Manholes, 24-30 ft.		EA	\$ 18,000	\$ -
7.00	Project Specific Considerations				
7.01	72" Manholes, 10-16 ft.	1	LS	\$ 10,000	\$ 10,000
7.02	Rechannel/RegROUT MH & Piping	1	LS	\$ 20,000	\$ 20,000
7.03	Dewatering	1	LS	\$ 50,000	\$ 50,000
8.00	Miscellaneous Other				
8.01	Bypass Pumping	1	LS	\$ 50,000	\$ 50,000
8.02	Bonding / Admin			2.5%	\$ 4,000
ESTIMATED CONSTRUCTION SUBTOTAL					\$ 194,000
Contingency ¹					\$ 49,000
Planning, Engineering, & Administrative Costs ²					\$ 61,000
Washington State Sales Tax					\$ 26,000
TOTAL PROBABLE COST IN 2015 DOLLARS³					\$ 330,000



ENGINEER'S OPINION OF PROBABLE COST

2810 W. Clearwater Ave. Suite 201, Kennewick, WA 99336

PROJECT: City of Richland
2015 General Sewer Plan Update **DATE:** 11-Dec-15

DESCRIPTION: Keene Rd Collector Replacement
CIP PROJECT #: CP.2

J-U-B PROJ. NO.: 30-14-022

ITEM No.	DESCRIPTION	SCHEDULE OF VALUES			
		QTY	UNIT	UNIT PRICE	TOTAL COST
1.00	Mobilization			8.0%	\$ 10,000
2.00	Construction Traffic Control			20.0%	\$ 25,000
3.00	Gravity Sewer Pipe				
3.01	8" PVC Gravity Sewer Pipe		LF	\$ 16	\$ -
3.02	10" PVC Gravity Sewer Pipe		LF	\$ 18	\$ -
3.03	12" PVC Gravity Sewer Pipe	900	LF	\$ 20	\$ 18,000
3.04	15" PVC Gravity Sewer Pipe		LF	\$ 30	\$ -
3.05	18" PVC Gravity Sewer Pipe		LF	\$ 40	\$ -
3.06	21" PVC Gravity Sewer Pipe		LF	\$ 50	\$ -
3.07	24" PVC Gravity Sewer Pipe		LF	\$ 65	\$ -
3.08	30" PVC Gravity Sewer Pipe		LF	\$ 80	\$ -
3.09	36" PVC Gravity Sewer Pipe		LF	\$ 110	\$ -
3.10	Import Bedding and Foundation Material	900	LF	\$ 15	\$ 13,500
4.00	Gravity Trench Excav./Backfill				
4.01	4-10 ft.		LF	\$ 20	\$ -
4.02	4-10 ft. Alley		LF	\$ 25	\$ -
4.03	10-16 ft.	900	LF	\$ 30	\$ 27,000
4.04	10-16 ft. Alley		LF	\$ 40	\$ -
4.05	16-20 ft.		LF	\$ 50	\$ -
4.06	16-20 ft. Alley		LF	\$ 60	\$ -
4.07	20-24 ft.		LF	\$ 70	\$ -
4.08	24-28 ft.		LF	\$ 100	\$ -
4.09	28-30 ft.		LF	\$ 150	\$ -
4.10	Import Backfill and Foundation Material		CY	\$ 25	\$ -
5.00	Surface Repair				
5.01	Natural Ground		LF	\$ 20	\$ -
5.02	Gravel Roadway		LF	\$ 25	\$ -
5.03	Asphalt - Trench Patch width per City Standards (Required for 4-16' Depth Sewer)	900	LF	\$ 35	\$ 31,500
5.04	Asphalt - ½ Street width per City Standards (Required for 16-20' Depth Sewer)		LF	\$ 50	\$ -
5.05	Asphalt - Full Street width per City Standards (Required for 20-30' Depth Sewer)		LF	\$ 80	\$ -
6.00	Manholes				
6.01	48" Manholes, 4-10 ft.		EA	\$ 3,500	\$ -
6.02	48" Manholes, 10-16 ft.	3	EA	\$ 4,000	\$ 12,000
6.03	48" Manholes, 16-20 ft.		EA	\$ 5,500	\$ -
6.04	60" Manholes, 7-16 ft.		EA	\$ 7,500	\$ -
6.05	60" Manholes, 16-24 ft.		EA	\$ 15,000	\$ -
6.06	60" Manholes, 24-30 ft.		EA	\$ 18,000	\$ -
7.00	Project Specific Considerations				
7.01	72" Manholes, 10-16 ft.		EA	\$ 10,000	\$ -
7.02	96" Manhole connecting large diam. pipes		EA	\$ 24,000	\$ -
8.00	Miscellaneous Other				
8.01	Bypass Pumping			20.0%	\$ 20,000
8.02	Bonding / Admin			2.5%	\$ 3,000
ESTIMATED CONSTRUCTION SUBTOTAL					\$ 160,000
Contingency ¹					\$ 40,000
Planning, Engineering, & Administrative Costs ²					\$ 50,000
Washington State Sales Tax					\$ 22,000
TOTAL PROBABLE COST IN 2015 DOLLARS ³					\$ 272,000



ENGINEER'S OPINION OF PROBABLE COST

2810 W. Clearwater Ave. Suite 201, Kennewick, WA 99336

PROJECT: City of Richland
2015 General Sewer Plan Update **DATE:** 11-Dec-15

DESCRIPTION: UNI Imprv - Option #1: New LS @ Saint & WTP, drainage basin is Saint & Indian Ct's & area E
of Davison
CIP PROJECT #: CP.3

J-U-B PROJ. NO.: 30-14-022

ITEM No.	DESCRIPTION	SCHEDULE OF VALUES			
		QTY	UNIT	UNIT PRICE	TOTAL COST
1.00	Mobilization	1	LS	8.0%	\$ 34,000
2.00	Construction Traffic Control	1	LS	5.0%	\$ 21,000
3.00	OffSite Work-Saint St	1	LS	\$ 90,236	\$ 90,236
4.00	OffSite Work-UNI Connection	1	LS	\$ 54,350	\$ 54,350
5.00	COR Standard Lift Station & Forcemain	1	LS	\$ 252,900	\$ 252,900
6.00	Bypass Pumping (10%)	1	LS	\$ 25,290	\$ 25,290
7.00					
8.00					
9.00					
10.00					
11.00					
ESTIMATED CONSTRUCTION SUBTOTAL					\$ 478,000
<i>Contingency ¹</i>					<i>\$ 120,000</i>
<i>Planning, Engineering, & Administrative Costs ²</i>					<i>\$ 150,000</i>
<i>Washington State Sales Tax</i>					<i>\$ 64,000</i>
TOTAL PROBABLE COST IN 2015 DOLLARS ³					\$ 812,000



ENGINEER'S OPINION OF PROBABLE COST

2810 W. Clearwater Ave. Suite 201, Kennewick, WA 99336

PROJECT: City of Richland
2015 General Sewer Plan Update **DATE:** 11-Dec-15

DESCRIPTION: UNI Imprv - Option #1: UNI Interceptor Connection along Davison, 2,400 LF of 24" pipe
(MacArthur to Shaw)
CIP PROJECT #: CP-3

J-U-B PROJ. NO.: 30-14-022

ITEM No.	DESCRIPTION	SCHEDULE OF VALUES			
		QTY	UNIT	UNIT PRICE	TOTAL COST
1.00	Mobilization			8.0%	\$ 36,000
2.00	Construction Traffic Control			5.0%	\$ 23,000
3.00	Gravity Sewer Pipe				
3.01	8" PVC Gravity Sewer Pipe		LF	\$ 16	\$ -
3.02	10" PVC Gravity Sewer Pipe		LF	\$ 18	\$ -
3.03	12" PVC Gravity Sewer Pipe		LF	\$ 20	\$ -
3.04	15" PVC Gravity Sewer Pipe		LF	\$ 30	\$ -
3.05	18" PVC Gravity Sewer Pipe		LF	\$ 40	\$ -
3.06	21" PVC Gravity Sewer Pipe		LF	\$ 50	\$ -
3.07	24" PVC Gravity Sewer Pipe	2,450	LF	\$ 65	\$ 159,250
3.08	30" PVC Gravity Sewer Pipe		LF	\$ 80	\$ -
3.09	36" PVC Gravity Sewer Pipe		LF	\$ 110	\$ -
3.10	Import Bedding and Foundation Material	2,450	LF	\$ 15	\$ 36,750
4.00	Gravity Trench Excav./Backfill				
4.01	4-10 ft.		LF	\$ 20	\$ -
4.02	4-10 ft. Alley		LF	\$ 25	\$ -
4.03	10-16 ft.	2,450	LF	\$ 30	\$ 73,500
4.04	10-16 ft. Alley		LF	\$ 40	\$ -
4.05	16-20 ft.		LF	\$ 50	\$ -
4.06	16-20 ft. Alley		LF	\$ 60	\$ -
4.07	20-24 ft.		LF	\$ 70	\$ -
4.08	24-28 ft.		LF	\$ 100	\$ -
4.09	28-30 ft.		LF	\$ 150	\$ -
4.10	Import Backfill and Foundation Material		CY	\$ 25	\$ -
5.00	Surface Repair				
5.01	Natural Ground		LF	\$ 20	\$ -
5.02	Gravel Roadway		LF	\$ 25	\$ -
5.03	Asphalt - Trench Patch width per City Standards (Required for 4-16' Depth Sewer)		LF	\$ 35	\$ -
5.04	Asphalt - 1/2 Street width per City Standards (Required for 16-20' Depth Sewer)	2,450	LF	\$ 50	\$ 122,500
5.05	Asphalt - Full Street width per City Standards (Required for 20-30' Depth Sewer)		LF	\$ 80	\$ -
6.00	Manholes				
6.01	48" Manholes, 4-10 ft.		EA	\$ 3,500	\$ -
6.02	48" Manholes, 10-16 ft.	9	EA	\$ 4,000	\$ 36,000
6.03	48" Manholes, 16-20 ft.		EA	\$ 5,500	\$ -
6.04	60" Manholes, 7-16 ft.		EA	\$ 7,500	\$ -
6.05	60" Manholes, 16-24 ft.		EA	\$ 15,000	\$ -
6.06	60" Manholes, 24-30 ft.		EA	\$ 18,000	\$ -
7.00	Project Specific Considerations				
7.01	Connect to Existing Sewer Manhole	2	EA	\$ 1,000.00	\$ 2,000
7.02	Connect Existing Collector Sewer to Interceptor	2	EA	\$ 1,000.00	\$ 2,000
7.03					
8.00	Miscellaneous Other				
8.01	Bypass Pumping			5.0%	\$ 22,000
8.03					\$ -
ESTIMATED CONSTRUCTION SUBTOTAL					\$ 513,000
<i>Contingency ¹</i>					<i>\$ 128,000</i>
<i>Planning, Engineering, & Administrative Costs ²</i>					<i>\$ 160,000</i>
<i>Washington State Sales Tax</i>					<i>\$ 69,000</i>
TOTAL PROBABLE COST IN 2015 DOLLARS³					\$ 870,000



ENGINEER'S OPINION OF PROBABLE COST

2810 W. Clearwater Ave. Suite 201, Kennewick, WA 99336

PROJECT: City of Richland
2015 General Sewer Plan Update **DATE:** 11-Dec-15

DESCRIPTION: UNI Imprv - Option #2: New LS @ Saint & WTP, drainage basin is Saint & Indian Ct's

CIP PROJECT #: CP.3

J-U-B PROJ. NO.: 30-14-022

ITEM No.	DESCRIPTION	SCHEDULE OF VALUES			
		QTY	UNIT	UNIT PRICE	TOTAL COST
1.00	Mobilization	1	LS	8.0%	\$ 29,000
2.00	Construction Traffic Control	1	LS	5.0%	\$ 18,000
3.00	OffSite Work-Saint St	1	LS	\$ 90,236	\$ 90,236
4.00	COR Standard Lift Station & Forcemain	1	LS	\$ 252,900	\$ 252,900
5.00	Bypass Pumping (10%)	1	LS	\$ 25,290	\$ 25,290
6.00					
7.00					
8.00					
9.00					
10.00					
11.00					
ESTIMATED CONSTRUCTION SUBTOTAL					\$ 415,000
<i>Contingency ¹</i>					<i>\$ 104,000</i>
<i>Planning, Engineering, & Administrative Costs ²</i>					<i>\$ 130,000</i>
<i>Washington State Sales Tax</i>					<i>\$ 56,000</i>
TOTAL PROBABLE COST IN 2015 DOLLARS³					\$ 705,000



ENGINEER'S OPINION OF PROBABLE COST

2810 W. Clearwater Ave. Suite 201, Kennewick, WA 99336

PROJECT: City of Richland
2015 General Sewer Plan Update **DATE:** 11-Dec-15

DESCRIPTION: UNI Imprv - Option #2: Small LS at MacArthur & Alexander, drainage basin is neighborhood along Spengler & Alexander (15 homes)
CIP PROJECT #: CP-3

J-U-B PROJ. NO.: 30-14-022

ITEM No.	DESCRIPTION	SCHEDULE OF VALUES			
		QTY	UNIT	UNIT PRICE	TOTAL COST
1.00	Mobilization			8.0%	\$ 22,000
2.00	Construction Traffic Control			2.5%	\$ 7,000
3.00	Gravity Sewer Pipe				
3.01	8" PVC Gravity Sewer Pipe	1,000	LF	\$ 16	\$ 16,000
3.02	10" PVC Gravity Sewer Pipe		LF	\$ 18	\$ -
3.03	12" PVC Gravity Sewer Pipe		LF	\$ 20	\$ -
3.04	15" PVC Gravity Sewer Pipe		LF	\$ 30	\$ -
3.05	18" PVC Gravity Sewer Pipe		LF	\$ 40	\$ -
3.06	21" PVC Gravity Sewer Pipe		LF	\$ 50	\$ -
3.07	24" PVC Gravity Sewer Pipe		LF	\$ 65	\$ -
3.08	30" PVC Gravity Sewer Pipe		LF	\$ 80	\$ -
3.09	36" PVC Gravity Sewer Pipe		LF	\$ 110	\$ -
3.10	Import Bedding and Foundation Material	1,000	LF	\$ 15	\$ 15,000
4.00	Gravity Trench Excav./Backfill				
4.01	4-10 ft.		LF	\$ 20	\$ -
4.02	4-10 ft. Alley		LF	\$ 25	\$ -
4.03	10-16 ft.	1,000	LF	\$ 30	\$ 30,000
4.04	10-16 ft. Alley		LF	\$ 40	\$ -
4.05	16-20 ft.		LF	\$ 50	\$ -
4.06	16-20 ft. Alley		LF	\$ 60	\$ -
4.07	20-25 ft.		LF	\$ 70	\$ -
4.08	25-28 ft.		LF	\$ 100	\$ -
4.09	28-30 ft.		LF	\$ 150	\$ -
4.10	Import Backfill and Foundation Material		CY	\$ 25	\$ -
5.00	Surface Repair				
5.01	Natural Ground		LF	\$ 20	\$ -
5.02	Gravel Roadway		LF	\$ 25	\$ -
5.03	Asphalt - Trench Patch width per City Standards (Required for 4-16' Depth Sewer)	1,000	LF	\$ 35	\$ 35,000
5.04	Asphalt - ½ Street width per City Standards (Required for 16-20' Depth Sewer)		LF	\$ 50	\$ -
5.05	Asphalt - Full Street width per City Standards (Required for 20-30' Depth Sewer)		LF	\$ 80	\$ -
6.00	Manholes				
6.01	48" Manholes, 4-10 ft.	7	EA	\$ 3,500	\$ 24,500
6.02	48" Manholes, 10-16 ft.		EA	\$ 4,000	\$ -
6.03	48" Manholes, 16-20 ft.		EA	\$ 5,500	\$ -
6.04	60" Manholes, 7-16 ft.		EA	\$ 7,500	\$ -
6.05	60" Manholes, 16-24 ft.		EA	\$ 15,000	\$ -
6.06	60" Manholes, 24-30 ft.		EA	\$ 18,000	\$ -
7.00	Project Specific Considerations				
7.01	Reconnect Existing Sewer Services	15	EA	\$ 1,000.00	\$ 15,000
7.02	Connect to Existing Sewer Manhole	2	EA	\$ 1,000.00	\$ 2,000
7.03	Lift Station - Small Footprint	1	LS	\$ 125,000.00	\$ 125,000
7.04					
8.00	Miscellaneous Other				
8.01	Bypass Pumping			2.5%	\$ 7,000
8.02					
ESTIMATED CONSTRUCTION SUBTOTAL					\$ 299,000
Contingency ¹					\$ 75,000
Planning, Engineering, & Administrative Costs ²					\$ 94,000
Washington State Sales Tax					\$ 40,000
TOTAL PROBABLE COST IN 2015 DOLLARS ³					\$ 508,000



ENGINEER'S OPINION OF PROBABLE COST

2810 W. Clearwater Ave. Suite 201, Kennewick, WA 99336

PROJECT:	City of Richland 2015 General Sewer Plan Update	DATE:	11-Dec-15
DESCRIPTION:	Bellerive LS Pump Upgrade & Downstream Improvements		
ITEM:	CP.4		

J-U-B PROJ. NO.: 30-14-022

ITEM No.	DESCRIPTION	SCHEDULE OF VALUES			
		QTY	UNIT	UNIT PRICE	TOTAL COST
1.00	Mobilization			8.0%	\$ 53,000
2.00	Construction Traffic Control			10.0%	\$ 67,000
3.00	Gravity Sewer Pipe				
3.01	8" PVC Gravity Sewer Pipe		LF	\$ 16	\$ -
3.02	10" PVC Gravity Sewer Pipe		LF	\$ 18	\$ -
3.03	12" PVC Gravity Sewer Pipe	3,500	LF	\$ 20	\$ 70,000
3.04	15" PVC Gravity Sewer Pipe		LF	\$ 30	\$ -
3.05	18" PVC Gravity Sewer Pipe		LF	\$ 40	\$ -
3.06	21" PVC Gravity Sewer Pipe		LF	\$ 50	\$ -
3.07	24" PVC Gravity Sewer Pipe		LF	\$ 65	\$ -
3.08	30" PVC Gravity Sewer Pipe		LF	\$ 80	\$ -
3.09	36" PVC Gravity Sewer Pipe		LF	\$ 110	\$ -
3.10	Bedding and Foundation Material	3,500	LF	\$ 15	\$ 52,500
4.00	Gravity Trench Excav./Backfill				
4.01	4-10 ft.		LF	\$ 20	\$ -
4.02	4-10 ft. Alley		LF	\$ 25	\$ -
4.03	10-16 ft.	3,500	LF	\$ 30	\$ 105,000
4.04	10-16 ft. Alley		LF	\$ 40	\$ -
4.05	16-20 ft.		LF	\$ 50	\$ -
4.06	16-20 ft. Alley		LF	\$ 60	\$ -
4.07	20-24 ft.		LF	\$ 70	\$ -
4.08	24-28 ft.		LF	\$ 100	\$ -
4.09	28-30 ft.		LF	\$ 150	\$ -
4.10	Import Backfill and Foundation Material		CY	\$ 25	\$ -
5.00	Surface Repair				
5.01	Natural Ground		LF	\$ 20	\$ -
5.02	Gravel Roadway		LF	\$ 25	\$ -
5.03	Asphalt - Trench Patch width per City Standards (Required for 4-16' Depth Sewer)	3,500	LF	\$ 35	\$ 122,500
5.04	Asphalt - 1/2 Street width per City Standards (Required for 16-20' Depth Sewer)		LF	\$ 50	\$ -
5.05	Asphalt - Full Street width per City Standards (Required for 20-30' Depth Sewer)		LF	\$ 80	\$ -
6.00	Manholes				
6.01	48" Manholes, 4-10 ft.	10	EA	\$ 3,500	\$ 35,000
6.02	48" Manholes, 10-16 ft.	2	EA	\$ 4,000	\$ 8,000
6.03	48" Manholes, 16-20 ft.		EA	\$ 5,500	\$ -
6.04	60" Manholes, 7-16 ft.		EA	\$ 7,500	\$ -
6.05	60" Manholes, 16-24 ft.		EA	\$ 15,000	\$ -
6.06	60" Manholes, 24-30 ft.		EA	\$ 18,000	\$ -
7.00	Project Specific Considerations				
7.01	LS Pump Replacement & Electrical Upgrades	1	LS	\$ 200,000	\$ 200,000
8.00	Miscellaneous Other				
8.01	Bypass Pumping			10.0%	\$ 59,000
8.02	Bonding / Admin			2.5%	\$ 16,000
ESTIMATED CONSTRUCTION SUBTOTAL					\$ 788,000
<i>Contingency</i> ¹					\$ 197,000
<i>Planning, Engineering, & Administrative Costs</i> ²					\$ 246,000
<i>Washington State Sales Tax</i>					\$ 106,000
TOTAL PROBABLE COST IN 2015 DOLLARS³					\$ 1,337,000