

### INTEGRATED PIPELINE PROJECT

### MONTHLY EXECUTIVE SUMMARY

March 2018



### IPL PROGRAM MANAGEMENT

Tarrant Regional Water District 804 East Northside Drive Fort Worth, TX 76102 817.720.4469 p 817.720.4397 f

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@IPL\_Project

TARRANT REGIONAL WATER DISTRICT (TRWD) and the CITY OF DALLAS

water utilities (Dwu) have partnered to finance, plan, design, construct and operate the Integrated Pipeline (IPL) Project. The IPL Project is an integrated water delivery transmission system connecting Lake Palestine to Lake Benbrook with connections to Cedar Creek and Richland-Chambers Reservoirs integrating TRWD's existing pipelines and creating flexibility in delivery as well as quick response to fluctuating customer water demands. The IPL Project consists of 150 miles of pipeline, three new lake pump stations, and three new booster pump stations delivering a required capacity of 350 million gallons per day (MGD) of raw water to North Central Texas. TRWD and DWU currently serve over 4.1 million residents and the IPL will allow these agencies to continue supporting regional community and economic growth.

## PROGRAM SUPPORT SERVICES

as of 03.31.18

CONTRACT DESIGN AND CONSTRUCTION	DESCRIPTION	BUDGET	CONTRACTS ISSUED	TOTAL INVOICED
PROGRAM WIDE PROFESSIONAL SERV	ICES	\$133,062,000	\$88,965,790	\$84,747,450
Program Management	Overall program management services for implementation of the IPL Project. (Extension of TRWD staff)	\$45,000,000	\$35,124,711	\$35,124,711
Conceptual Design / Environmental / Permitting	Operations plan & Prepare 404 permit application, Envision Application Completion	\$13,551,000	\$13,472,389	\$13,227,090
Value Engineering	Expert review of design	\$640,000	\$472,248	\$472,248
Surveying and Mapping	Control, property survey, legal descriptions, and Provide SUE Level A Survey, GIS	\$14,600,000	\$11,854,388	\$10,526,607
Geotechnical	Initial Characterization of entire IPL Project	\$12,037,000	\$12,336,425	\$12,191,092
Corrosion Engineering Services	Engineering Corrosion Control	\$3,891,000	\$5,326,362	\$4,178,425
Land, Easement Acquisition, & Support	Right of Entry and Land Acquisition Support Services	\$33,993,000	\$3,464,526	\$3,424,068
Studies		\$3,500,000	\$3,883,743	\$3,587,584
SCADA System	Engineering of SCADA system	\$640,000	\$1,508,213	\$547,016
Microwave System	Engineering of Communications System	\$5,210,000	\$1,522,785	\$1,468,609
DESIGN		\$152,837,000	\$133,181,683	\$117,787,778
Completed		\$101,901,000	\$97,470,103	\$96,083,192
Active		\$24,158,000	\$35,173,164	\$21,704,586
CH2M Hill	Project Operational Information and Operations Manual		\$6,308,293	\$2,994,687
CH2M Hill	Final Conformance of Design of JCC1	\$728,000	\$2,861,718	\$1,924,723
MWH	Final Conformance of Design of Section 9/10/11	\$506,000	\$812,562	\$535,922
Black & Veatch	Final Design of Section 12/13/14 - 28.1 miles of 84 - inch and 108 - inch pipeline	\$11,292,000	\$9,712,410	\$9,680,582
Parsons	Final Conformance of Design of Sections 17/18/Tunnel	\$832,000	\$579,379	\$681,545
Brown & Gay	Final Design of Section 19-1	\$5,770,000	\$7,003,722	\$1,881,534
HDR	Final Design of Section 19-2	\$5,030,000	\$6,989,876	\$3,163,053
Burns & McDonnell Trans. Mgmt.	Development of Transportation Management Plan		\$905,203	\$842,540
Remaining		\$26,778,000	\$538,417	
CONSTRUCTION ADMINISTRATION		\$48,877,000	\$18,550,960	\$11,888,060
CONSTRUCTION / OWNER FURNISHED	EQUIPMENT	\$1,729,540,000	\$640,249,136	\$539,108,983
Completed		\$26,677,000	\$20,593,942	\$20,377,238
Active		\$811,918,000	\$619,655,194	\$518,731,745
Pipeline Section 15-1		\$115,112,000	\$94,701,185	\$93,461,134
Garney Construction	Construction of Section 15-1	\$115,112,000	\$94,701,185	\$93,461,134
JB3		\$83,013,000	\$75,417,047	\$62,465,540
MWH Constructors	Construction of JB3 Pump Station	\$51,473,000	\$57,675,894	\$49,591,316
Oncor Electric	Installation of JB3 Substation Transmission Lines	\$1,066,000	\$957,119	\$923,119
Isolux Corsan	Construction of JB3 Substation	\$7,400,000	\$4,864,888	\$4,864,888
R E Monks	Construction of JB3R Restoration	\$0	\$633,263	\$633,263
Pentair Flow Technologies	Construction of JB3 Pumps, Motors, Drives	\$23,074,000	\$11,285,883	\$6,452,954
Pipeline Section 12/13/MBR/JB4 Bypass	Construction of the constr	\$167,992,000	\$154,229,116	\$150,445,112
Thalle Midlothian	Construction of Sections 12/13/MBR/JB4 Bypass	\$146,310,000	\$143,490,122	\$140,338,836
BAR Constructors	Construction of Sections 12/13/Mbit/354 Gypass  Construction of Richland-Chambers/Cedar Creek Interconnection Facility	\$21,682,000	\$10,614,764	\$9,982,046
Hilco Electric	Relocation of Electrical Service Lines		\$0	\$0
Hilco Electric	MBR Radio Tower Power		\$33,312	\$33,312
Oncor Electric	Provide Power to IPL 2X12		\$90,918	\$90,918

## PROGRAM SUPPORT SERVICES

as of 03.31.18

CONTRACT DESIGN AND CONSTRUCTION	DESCRIPTION	BUDGET	CONTRACTS ISSUED	TOTAL INVOICED
Pipeline Section 15-2		\$97,217,000	\$53,372,614	\$50,373,590
BAR Constructors	Construction of Section 15-2	\$97,217,000	\$53,372,614	\$50,373,590
Pipeline Section 14		\$107,113,000	\$48,389,855	\$45,962,428
Garney Construction	Construction of Section 14	\$107,113,000	\$48,339,855	\$45,912,428
Magellan	Captioned Crossing Inspection Section 14	\$0	\$50,000	\$50,000
Pipeline Section 17		\$109,944,000	\$78,723,874	\$49,061,698
IPL Partners	Construction of Section 17 Tunnel	\$12,252,000	\$33,087,198	\$18,419,727
Thalle Midlothian	Construction of Sections 17/18/JB2 Bypass	\$97,692,000	\$45,636,677	\$30,641,971
JCC1		\$42,682,000	\$43,394,113	\$12,948,110
BAR Constructors	Construction of JCC1 Intake	\$21,564,000	\$19,942,714	\$11,905,588
Ebara	Construction of JCC1 Pumps, Motors, Drives	\$17,775,000	\$12,694,890	\$603,745
Lambda Construction	High Voltage		\$5,485,575	\$438,777
Oncor Electric	Construction of JCC1 HV Transmission Lines	\$3,343,000	\$5,270,933	\$0
Pipeline Section 10/11		\$73,679,000	\$57,121,096	\$42,961,736
IPL Partners	Construction of Section 10/11	\$72,362,000	\$43,416,722	\$39,144,076
Oncor Electric	Construction of KBR S1X10 HV Transmission Lines		\$17,452	\$17,452
BAR Constructors	Construction of KBR S1X10	\$1,317,000	\$13,686,921	\$3,800,208
Valve Packages		\$15,166,000	\$14,306,294	\$11,052,398
Garney Construction	Valve Package 1 - Section 15-1 Butterfly Valves	\$518,000	\$0	\$0
Rodney Hunt	Valve Package 2 - Section 15-1 Interconnection Facility Valves	\$474,000	\$733,206	\$733,206
Blackhall Engineering	Valve Package 3 - JB3, Section 15-2, MBR Yard Gate Valves	\$5,500,000	\$6,278,388	\$5,801,627
Crispin Valves	Valve Package 4 - Section 12 RC/CC Interconnection, JB4 Bypass, MBR Yard Butterfly Valves	\$3,999,000	\$2,269,140	\$1,970,902
Crispin Valves	Valve Package 5 - JB3 Butterfly Valves	\$1,249,000	\$1,249,222	\$1,039,098
Ross Valves	Valve Package 6 - Section 12 RC/CC Interconnection Multi-Orifice Valves	\$715,000	\$526,340	\$352,005
Crispin Valves	Valve Package 8 - Section 10 & 11 Bypass Butterfly Valves	\$1,391,000	\$1,461,040	\$416,376
Blackhall Engineering	Valve Package 11 - JCC1 Gate Valve	\$1,320,000	\$1,788,958	\$739,183
Remaining		\$890,945,000		
CONSTRUCTION MANAGEMENT		\$65,170,000	\$45,397,801	\$33,640,966
Completed		\$15,777,000	\$15,687,599	\$16,698,879
Active		\$17,665,000	\$29,710,201	\$16,942,087
Remaining		\$31,728,000		
CONSTRUCTION MATERIALS TESTING		\$17,296,000	\$12,013,590	\$6,908,878
Completed		\$203,000	\$225,133	\$225,132
Active		\$7,791,000	\$11,788,457	\$6,683,746
Remaining		\$9,302,000		
ROCIP		\$2,575,000	\$23,351,087	\$19,700,558
LAND COST		\$107,384,000	\$64,199,469	\$64,199,469
PROGRAM LEVEL CONTINGENCY		\$83,178,000		
MISCELLANEOUS		\$2,000,000	\$2,253,758	\$2,253,758
GRAND TOTAL		\$2,341,919,000	\$1,028,163,275	\$880,235,901
REMAINING BOND FUNDS				\$369,764,099

Note: Total Bonds issued to date \$1,250,000,000

### **ACCOMPLISHMENTS**

through 04.30.18

PL15-1 (Pipeline Section 15-1 including the S5X15 Richland-Chambers Pipeline Interconnect Facility)

- Completed all work on ROW restoration.
- Completed final punch list items
- Certificate of Final Completion, Final Change Order and final payment are all on the May Board agenda.

JB3RR (Pump Suction Reservoir Grading and Grassing Project)

No additional work this month

PL12, 13, MBR (Pipeline Sections 12 and 13 combined with the Midlothian Balancing Reservoir)

- Installing chip seal on flexbase roads at MBR and along ROW entries and performing cleanup of ROW.
- · Continue fence installation at the MBR
- Completed electrical panel installation at vaults and continue electrical panel installation at control building.
- · Continued pulling conductors on site

JB3 (250mgd Pump Station expandable to 350mgd)

- · Performed bump rotation tests on all 5 motors.
- Started painting pump station piping.
- Continued controls testing JB3 PLC to PCV PLC and VFD PLC.
- Completed installation of YP-3 to connect reservoir 2 outlet.
- · Continued installation of Roadway A.
- Continued installation of perimeter fence.

PL15-2 (Pipeline Section15-2 that feeds the JB3 Reservoir)

- Completed installation of Cable Mat and ROW fences and gates.
- · Completed permanent asphalt access drives.
- Completed electrical installation at the gate valve vault site.
- Completed replacing reference electrodes for cathodic protection system.
- Ready for commissioning of 108" Gate Valve.

**S2X12** (Interconnection Facility of IPL Phase 1 to existing Cedar Creek and Richland Chambers Pipelines)

- Completing correction of punch list items is in progress.
- · Completing sprinkler and landscaping installation.
- Installed platform stairs to interior piping and valves.

PL14 (Pipeline Section 14 that delivers water from JB3 Pump Station to MBR)

- Continue to clean up ROW, install fences and gates and cable mats and begin seeding and sprigging.
- Continue installing CP test stations.
- Continued installing permanent access drives.

PL17TUN (Trinity River Tunnel on Pipeline Section 17)

- Installed 2400' of 108" pipe at Henderson county open cut.
- IPL Partners preparing engineered tunnel plan for OPT. Cellular grout completed in east and west bound tunnels.

JCC1IN (Intake Structure and Wet Well for JCC1 Pump Station at Cedar Creek)

- Installing beam forms, rebar, pipe sleeves, anchor bolts and rebar dowels for the top deck
- · Completed concrete for the third level of slabs on the north and south wingwall
- Installing backfill in front of the wingwalls in preparation for geotextile fabric and rock riprap installation

JCC1HV (High Voltage Substation for the JCC1 Pump Station at Cedar Creek)

- Placed concrete for the gas circuit breaker, control house and two transformer
- Continued backfilling around piers for foundation concrete.

PL10, 11 (Pipeline Sections 10 and 11 from the JB4 Pump Station to the KBR Pressure Reduction Facility)

- Completed installation of remaining 84" pipe, BFV, and MIJ at JB4
- Installing cable mats at creek crossings.
- Completed the installation of all gates and fences.
- Installing anode beds.
- Continue spreading topsoil.

PL17-18 (Pipeline Sections 17 and 18 from east end of PL15-1 to JCC1 Pump

- Installed 7500' of 108" pipe.
- Installing anodes on Henderson County portion of the project.
- Removing spoil dirt and replacing topsoil on ROW.

KBRPRS / S1X10 (Pressure Reduction Station at Kennedale Balancing Reservoir connecting Pipeline Section 10)

- Placed and welded all 84" pipe for the YP1 line.
- Excavated, placed foundation slab, and walls for flowmeter vaults.

OFE03 (Owner-Furnished 108" Gate Valves)

GV#5 continues being factory tested.

OFE04/05 (Owner-Furnished 54", 60" and 108" Butterfly Valves)

· All valves have been delivered.

OFE06 (Owner-Furnished Multi-Orifice Valves for S2X12)

Valves delivered and installed, awaiting facility start-up.

OFE07 (Owner-Furnished pumps, motors and variable frequency drives for JB3)

• Pentair and Siemens Field Service Technicians continue on-site installation

OFE08 (Owner-Furnished 66", 84" and 108" Butterfly Valves)

• OPT reps observed factory testing of 66: BFVs for S1X10.

OFE09 (Owner Furnished pumps, motors and variable frequency drives for

• OPT reps were in Viet Nam for factory witness testing of pump castings.

OFE11 (Owner-Furnished 108" Gate Valve) · Approved submittals received from Blackhall.

PL1718 PD Installing heat-shrink joint wrapper on 108-inch pipe



PL1011 Installing cable mat low water crossing

## **SURVEYS** 10 Remaining 507 Received 507 Ordered

**ACTIVITY STATUS** 

7

Remaining

511

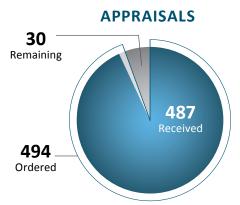
Ordered

**TITLE COMMITMENTS** 

510

Received

through 04.30.18





Total Parent Parcels: 517

## PROJECT SCHEDULE

PROJECT COMPONENTS		2014			2015			2016			2017				2018					
		Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
SECTION 15-1 CONSTRUCTION																				
SECTIONS 12, 13, MBR CONSTRUCTION											_									
JB3 CONSTRUCTION																				
SECTION 15-2 CONSTRUCTION															_					
SECTION 14 CONSTRUCTION															_					
S2X12 (INTERCONNECTION FACILITY) CONSTRUCTION															_					
SECTION 17 TUNNEL CONSTRUCTION															_					
JCC1 PUMP STATION INTAKE, WET WELL CONSTRUCTION																				
SECTION 10, 11 CONSTRUCTION																				
SECTION 17, 18 CONSTRUCTION																				
KBRPRS/S1X10 (PRESSURE REDUCTION STA.) CONSTRUCTION																				

## M/WBE PARTICIPATION

as of 03.31.18

M/WBE | HUB

CONTRACT

**TOTAL PROJECT** 

Magellan

BAR Constructors

Oncor Electric

Ebara

## M/WBE PARTICIPATION

as of 03.31.18

CONTRACT DESIGN	M/WBE & HUB SUB-	CONTRACT COMMITM		M/WBE   H INVOICED 1		TOTAL PROJECT COMPLETED TO DATE		
AND CONSTRUCTION	CONTRACTORS	\$	%	\$	% (PER COMMITMENT)	\$	%	
Hilco Electric		\$0	0%	\$0	0%	\$0	0%	
Hilco Electric		\$0	0%	\$0	0%	\$33,312	100%	
Oncor Electric		\$0	0%	\$0	0%	\$90,918	100%	

\$0

\$1,011,840

\$0

0%

6%

0%

0%

MWBE %

\$0

\$10,990,025

\$0

0%

1086%

0%

96%

\$50,000

\$11,905,588

\$603,745

100%

60%

0%

\$17,452 100%

Pipeline Section 15-2		\$4,151,840		\$20,611,332		\$50,373,590	94%
BAR Constructors	Ricochet, Fraire's, DFW Aggregates, Brock, Tidy Toilets, KDAT, Juan Cantu, Buyer's, RAM, Rangel, LKT, Greenscaping, Environmental Safety	\$4,151,840	15%	\$20,611,332	496%	\$50,373,590	94%
Pipeline Section 14		\$6,083,928	22%	\$6,898,352	113%	\$45,962,428	
Garney Construction	AEA, Gorrondona, JC Welding, LKT, Statewide, Bowdens	\$6,083,928	28%	\$6,898,352	113%	\$45,912,428	95%

LKT, Industry Junction, Eagle Aggregate, Suncoast Res, ATS Drilling, RECS, ANA, IPL Partners \$6,642,235 24% \$1,665,495 25% \$18,419,727 56% Alliance,Ram, JC Welding, Luis Moreno Fleet Lube, Rambo Controls, AE Trucking, MKI Thalle Midlothian \$5,398,376 25% \$845,237 \$30,641,971 67% Construction, Stome Water Management, Industy Junction, Ortega Land Clearing Industry Junction, K&A Steel, Ricochet Fuel,

Captioned Crossing Inspection Section 14

Ricochet Fuel, Tidy Toilets, Buzz Custom

Alliance, Ram, JC Welding, Luis Moreno

\$229,526 Lambda Construction High Voltage \$2,002,235 37% \$438,777 11% Oncor Electric \$0 0% \$0 \$0 LKT, Industry Junction, Eagle Aggregate, Suncoast Res, ATS Drilling, RECS, ANA, IPL Partners \$5,708,755 24% \$2,679,320 47% \$39,144,076

Industry Junction, VSG Trucking, Ricochet, MMG Disposal, Garland HVAC, CMC Rebar, **BAR Constructors** \$1,425,136 \$3,800,208 267% \$3,800,208 11% Buzz Custum Fence, K&A Steel, Rangle Land Surveying

CONSTRUCTION MANAGEMENT \$18,613,185 \$13,686,311 \$33,640,966 41% 74% CONSTRUCTION MATERIALS TESTING \$7,226,826 60% \$3,533,154 \$6,908,878 49%

\$308,121 \$19,700,558 TOTAL \$170,158,853 25% \$163,268,444 96% \$813,782,674 LAND COST \$64,199,469 \$61,892

**GRAND TOTAL** \$170,158,853 25%\* \$163,330,336 \* Denotes participation percentage excluding cost of pipe and owner irand Total Invoiced

CONTRACT DESIGN M/WBE & HUB SUB- AND CONSTRUCTION CONTRACTORS		COMMITMI	ENT	INVOICED T		COMPLETED TO DATE		
AND CONSTRUCTION	CONTRACTORS	\$	%	\$	% (PER COMMITMENT)	\$	%	
PROGRAM WIDE PROFESSIONAL S	SERVICES	\$20,178,105	23%	\$19,673,721	98%	\$84,747,450	95%	
Program Management		\$6,636,687	19%	\$6,636,687	100%	\$35,124,711	100%	
Conceptual Design / Environmental	/ Permitting	\$2,700,278	20%	\$2,826,430	105%	\$13,227,090	98%	
Value Engineering		\$23,178	5%	\$23,178	100%	\$472,248	1009	
Surveying and Mapping		\$3,939,403	33%	\$3,831,616	97%	\$10,526,607	89%	
Geotechnical		\$3,638,078	29%	\$3,545,033	97%	\$12,191,092	999	
Corrosion Engineering Services		\$1,053,764	20%	\$761,434	72%	\$4,178,425	789	
Land, Easement Acquisition, & Supp	port	\$1,294,837	37%	\$1,524,768	118%	\$3,424,068	999	
Studies		\$41,717	1%	\$41,717	100%	\$3,587,584	929	
SCADA System		\$384,444	25%	\$33,205	9%	\$547,016	369	
Microwave System		\$465,719	31%	\$449,653	97%	\$1,468,609	96%	
DESIGN		\$34,772,306	26%	\$31,517,657	91%	\$117,787,778	88%	
Completed		\$26,558,396	27%	\$26,319,923	99%	\$96,083,192	99%	
		\$8,213,910	23%	\$5,197,734	63%	\$21,704,586	62%	
CH2M Hill (Ops Manual)	NDM	\$1,034,447	16%	\$490,239	47%	\$2,994,687	47%	
CH2M Hill (JCC1)	JQ, Gupta, APM, HVJ, XENCO	\$721,484	25%	\$642,459	89%	\$1,924,723	67%	
MWH	Garzabury, Kevin Sloan	\$226,705	28%	\$136,372	60%	\$535,921	66%	
Black & Veatch	BDS, CAS, JQ, TME	\$2,425,530	25%	\$2,583,711	107%	\$9,680,582	100%	
Parsons	Criado, EPB, HVJ	\$144,845	25%	\$112,357	78%	\$681,545	118%	
Brown & Gay	AZB, TME, Lamb-Star, NDM	\$1,750,930	25%	\$477,623	27%	\$1,881,534	27%	
HDR	AZB, Daltech, Word Wizards, Gupta	\$1,747,469	25%	\$639,501	37%	\$3,163,053	45%	
Burns & McDonnell Trans. Mgmt.	Lamb-Star Engineering	\$162,500	18%	\$115,472	71%	\$842,540	93%	
Remaining		\$0	0%	\$0	0	\$0	0%	
CONSTRUCTION ADMINISTRATION	N	\$4,533,900	24%	\$2,706,903	60%	\$11,888,060	64%	
CONSTRUCTION / OWNER FURNIS	HED EQUIPMENT	\$83,335,225	13%	\$91,842,578	110%	\$539,108,983	84%	
Completed		\$4,217,818	21%	\$4,091,050	97%	\$20,377,238	99%	
Active		\$79,117,407	23%	\$87,751,528	111%	\$518,731,745	84%	
Pipeline Section 15-1		\$9,418,137	28%	\$6,649,736	71%	\$93,461,134	99%	
Garney Construction	Danridge, SYB, Ricochet, Glenko, Carrasco, Cowboy, Gorrondona, Custom Fence, LKT, Astro Johnny, Pam, Father & Son, Bowden's Erosion	\$9,418,137	28%	\$6,649,736	71%	\$93,461,134	99%	
JB3		\$15,184,570	26%	\$11,340,329	75%	\$62,465,540	83%	
MWH Constructors	Statewide, Cowboy, TX Enviro, Champion, Ram Tool, Rent-a-Fence, Soto Steel, A-Star, Ike, Greystone, LKT, Accurate, Green Scaping	\$13,734,650	27%	\$9,890,409	72%	\$49,591,316	86%	
Oncor Electric		\$1,449,920	3%	\$1,449,920	100%	\$4,864,888	89	
Isolux Corsan	Dyna Grid	\$0	0%	\$0	0%	\$923,119	96%	
RE Monks		\$0	0%	\$0	0%	\$633,263	13%	
Pentair Flow Technologies		\$0	0%	\$0	0%	\$6,452,954	579	
Pipeline Section 12/13/MBR/JB4 By	pass	\$22,090,354	24%	\$22,041,970	100%	\$150,445,112	98%	
Thalle Midlothian	LKT, Statewide, Granados, Desert Steel, ETTL, Glenko, A.N.A., Edwards, Buzz, Bradley- Douglas, Pinnacle	\$21,242,305	27%	\$16,416,932	77%	\$140,338,836	98%	
BAR Constructors	Fraire's, DFW Aggregates, Ricochet, MMG, LKT, Brock, Garland Heating & Air, Texas Metal, Buzz, Rangel	\$848,049	8%	\$5,625,038	663%	\$9,982,046	94%	

furnished equipment.

INTEGRATED PIPELINE • EXECUTIVE SUMMARY

\$880,235,901

86%

26.57%

\$880,235,90

# **PROJECT COMPONENTS**

PIPELINE SEGMENTS	CORE PROJECT	DESCRIPTION
Section 9		KBR Turn-Out Tee to existing Benbrook Connection Pipeline (10.6 mi. 84" dia. Pipe + 5 mi. 120" Tunnel)
Section 10	•	KBR Turn-Out Tee to KBR (2.4 mi. 84" dia. Pipe)
Section 11	•	JB4 to KBR Turn-Out Tee (10 mi. 84" dia. Pipe)
Section 12	•	JB4 to existing CC and RC Pipelines (2.2 mi. 108" dia. Pipe)
Section 13	•	MBR2 (Midlothian Balancing Reservoir) to JB4 (11 mi. 108" dia. Pipe)
Section 14	•	JB3 to MBR2 (Midlothian Balancing Reservoir) (14.9 mi. 108" dia. Pipe)
Section 15	•	JB2 to JB3 (28.5 mi 108" dia. Pipe)
Section 16		JRC1 (Joint Richland Chambers Lake Pump Station) to JB2 (12.3 mi. 96" dia. Pipe)
Section 17	•	Cedar Creek Connection to JB2 (11.2 mi. 108" dia. Pipe)
Section 18	•	JCC1 (Joint Cedar Creek Lake Pump Station) to Cedar Creek Connection (0.2 mi. 108" dia. Pipe)
Section 19		LP1 (Lake Palestine Pump Station) to Cedar Creek Connection (42.3 mi. 84" dia. Pipe)

PUMP STATIONS	CORE PROJECT	DESCRIPTION
Palestine Pump Station		150 mgd with new intake
Cedar Creek Pump Station	•	277 mgd with new intake
Richland Chambers Pump Station		250 mgd Ultimate Design Capacity
Booster Pump Stations		Two @ 347 mgd and one @ 197 mgd (♦ one 347 mgd station - JB3)

SUPPORT FACILITIES	CORE PROJECT	DESCRIPTION
Reservoirs	•	Three reservoirs (80 – 400 mgd) - two for booster pump stations and one for balancing. Two of the reservoirs are core projects – JB3R and MBR
Deep Tunnels		5 mi of 10' dia. tunnel @ Crowley (included in length of Section 9)
Substations & High Voltage Transmission Lines		Six substations and 4 mi. of high voltage transmission lines ( two substations)
Microwave Communications and SCADA System	•	Provides remote operations capability and system monitoring

