

Executive Committee

April 28, 2020

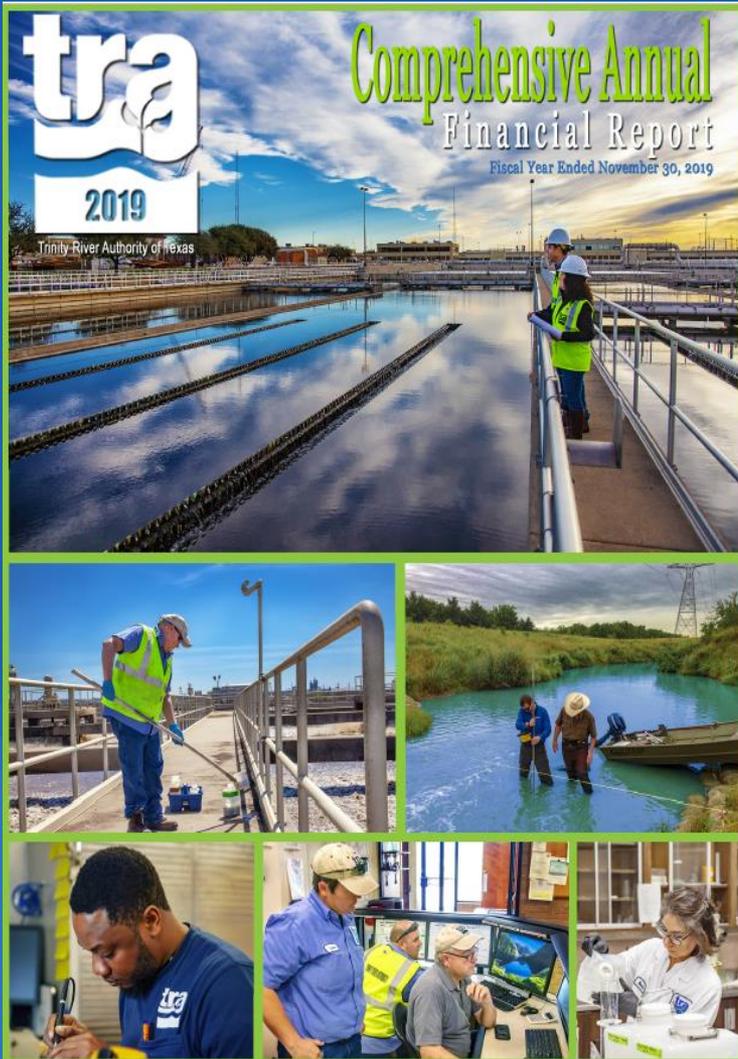


**Item A:
Approval and Filing of
Comprehensive Annual
Financial Report for Fiscal
Year 2019**

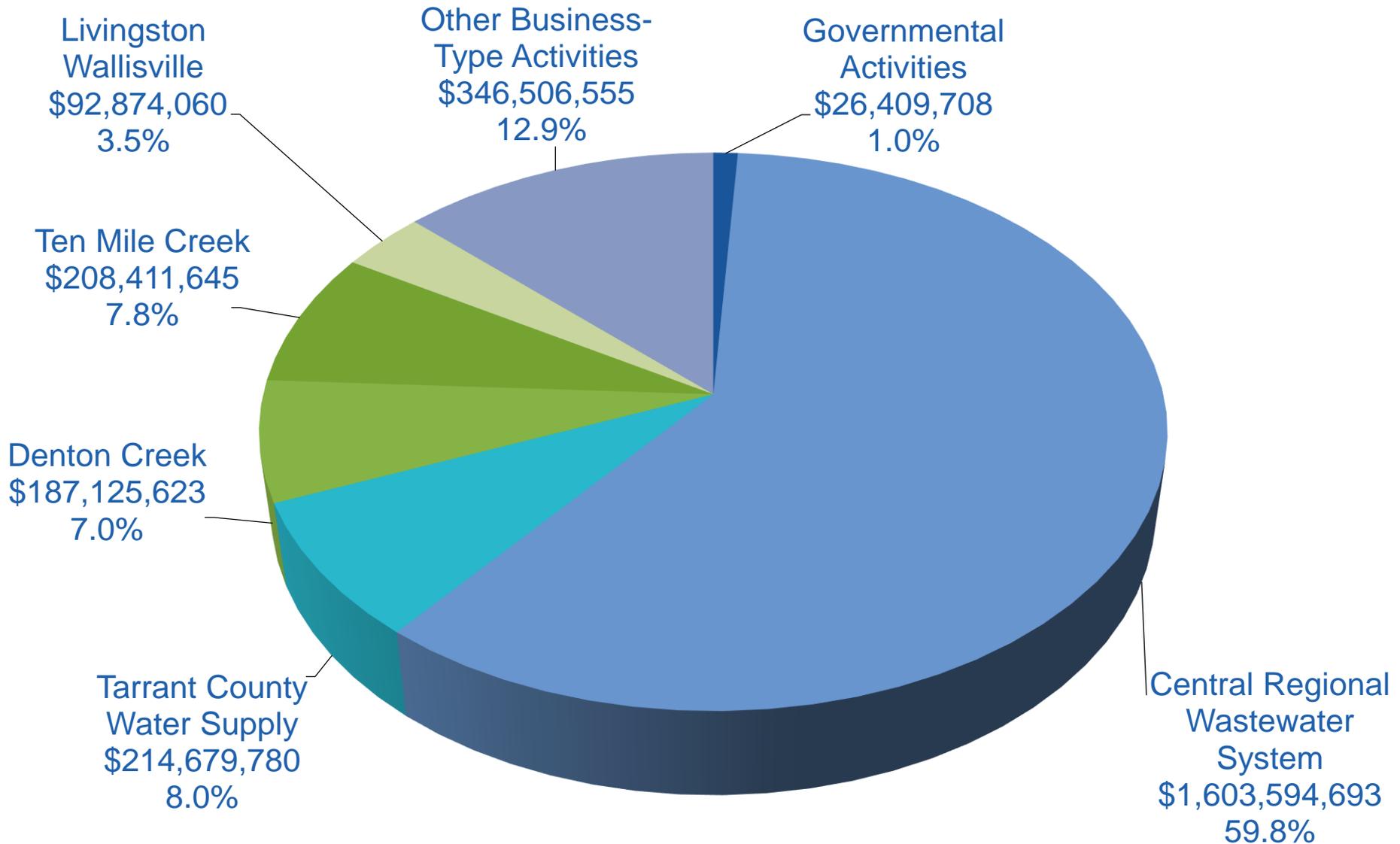


Audit Results

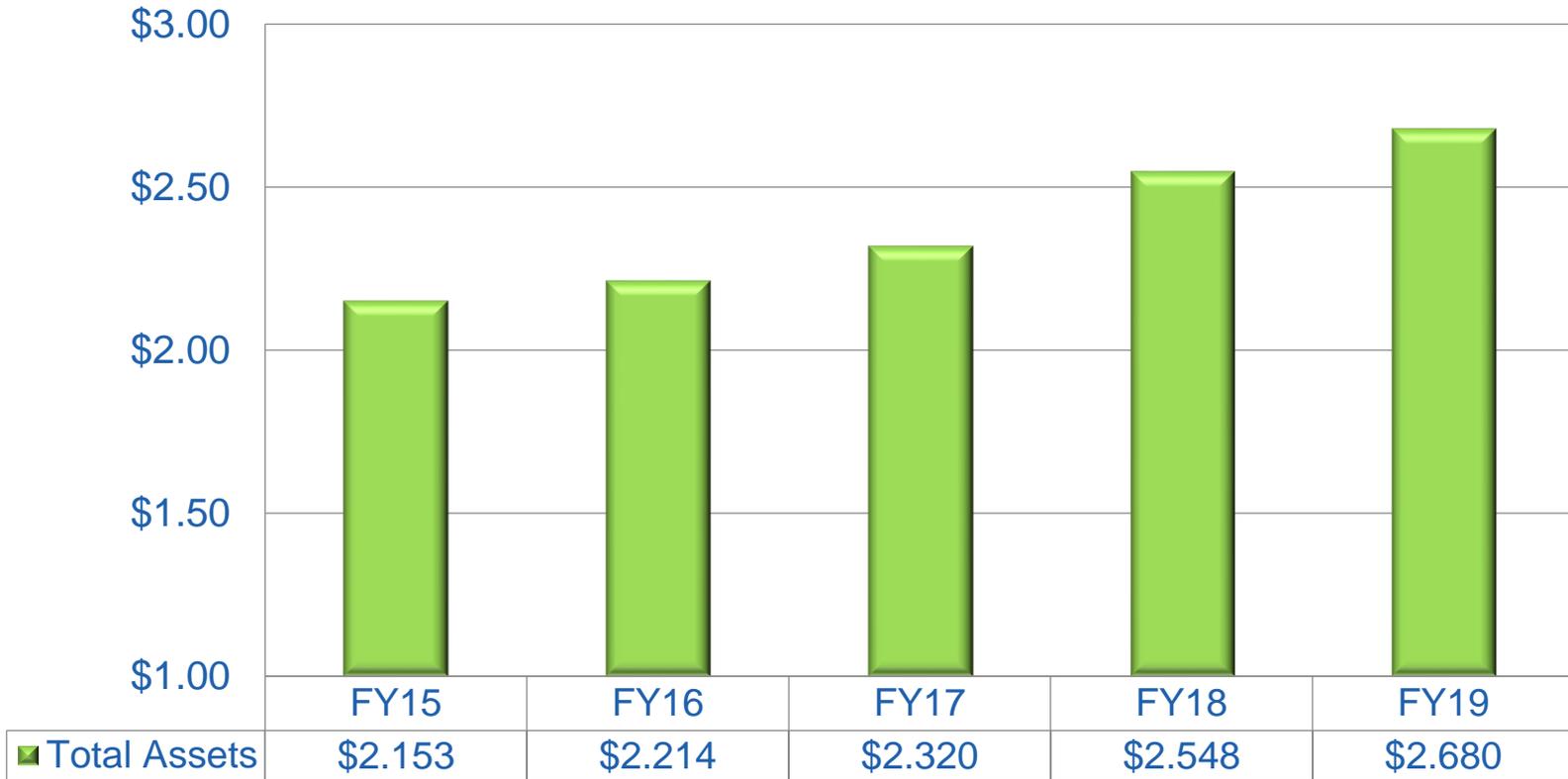
- No audit findings
- No adjusting journal entries
- No material weaknesses identified
- No deficiencies in internal control



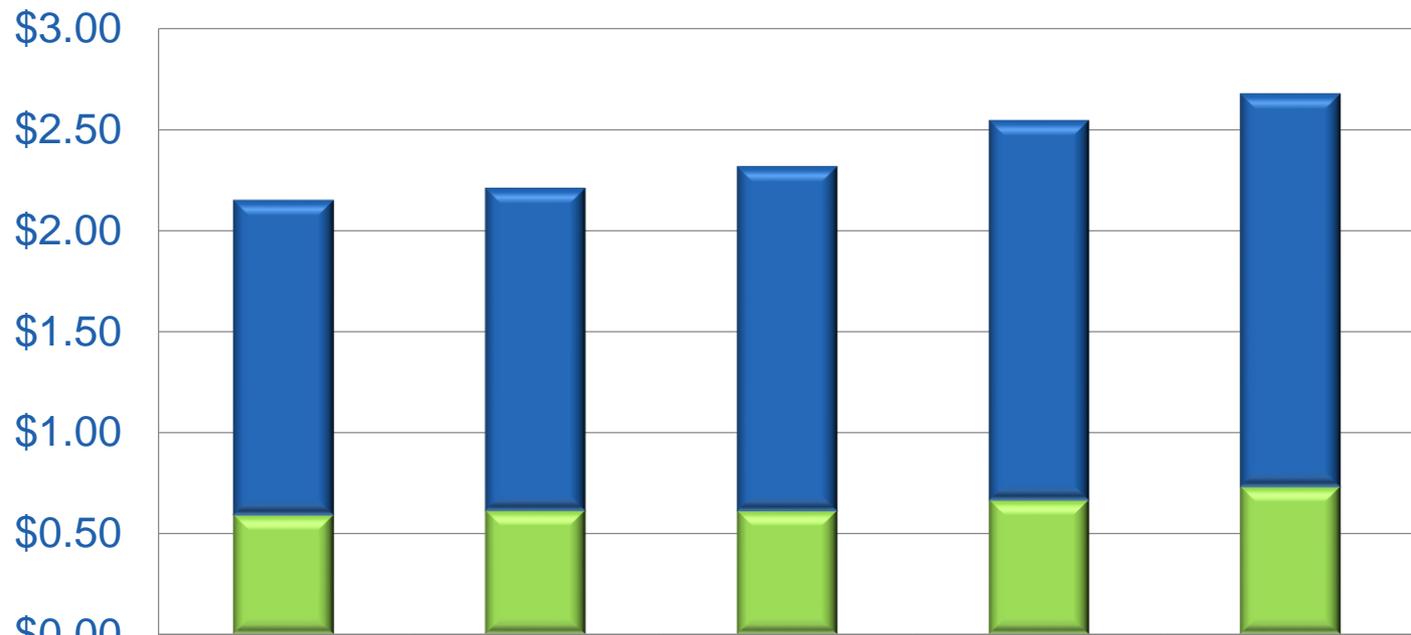
Total Assets - \$2,679,602,064



Total Assets (in Billions)

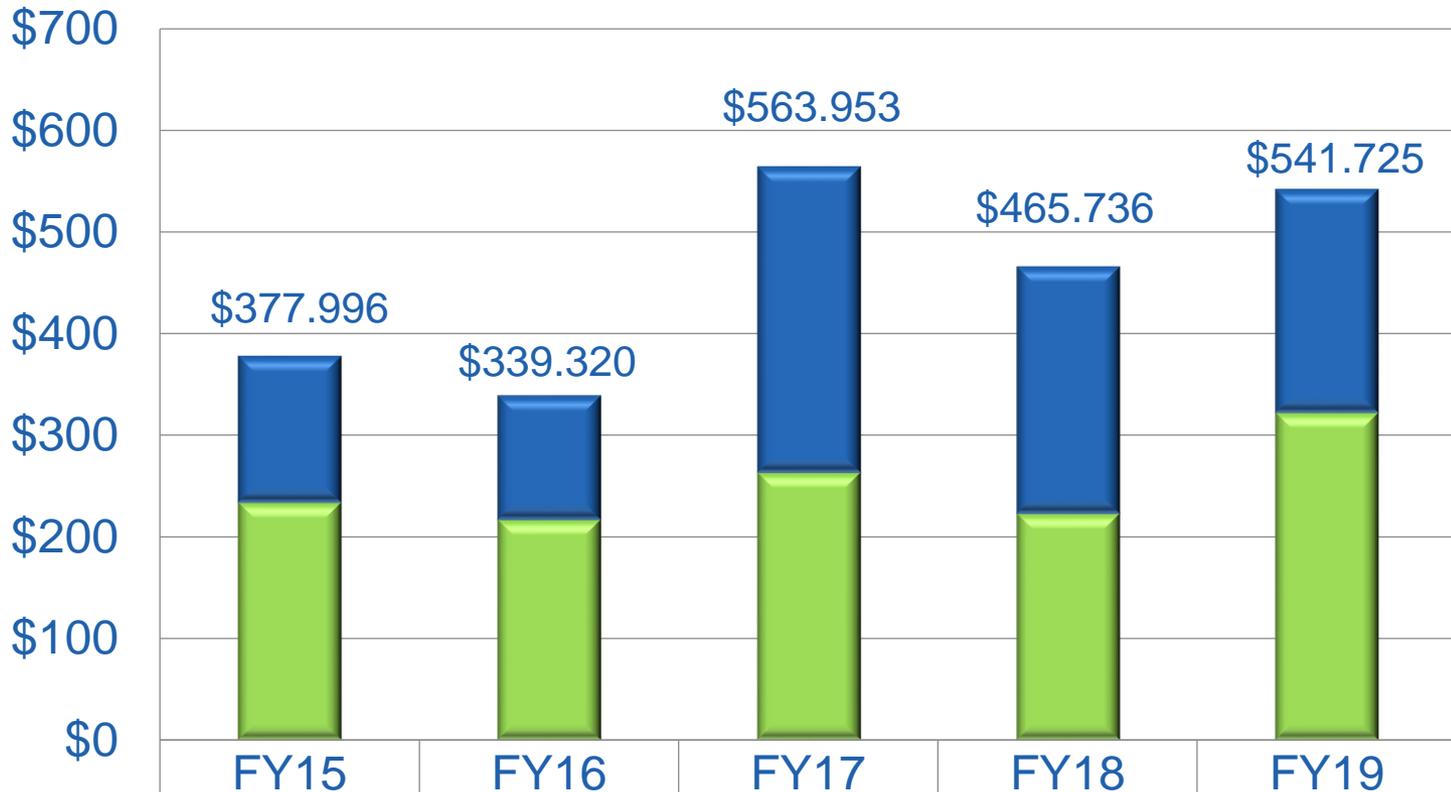


Total Liabilities and Net Position (in Billions)



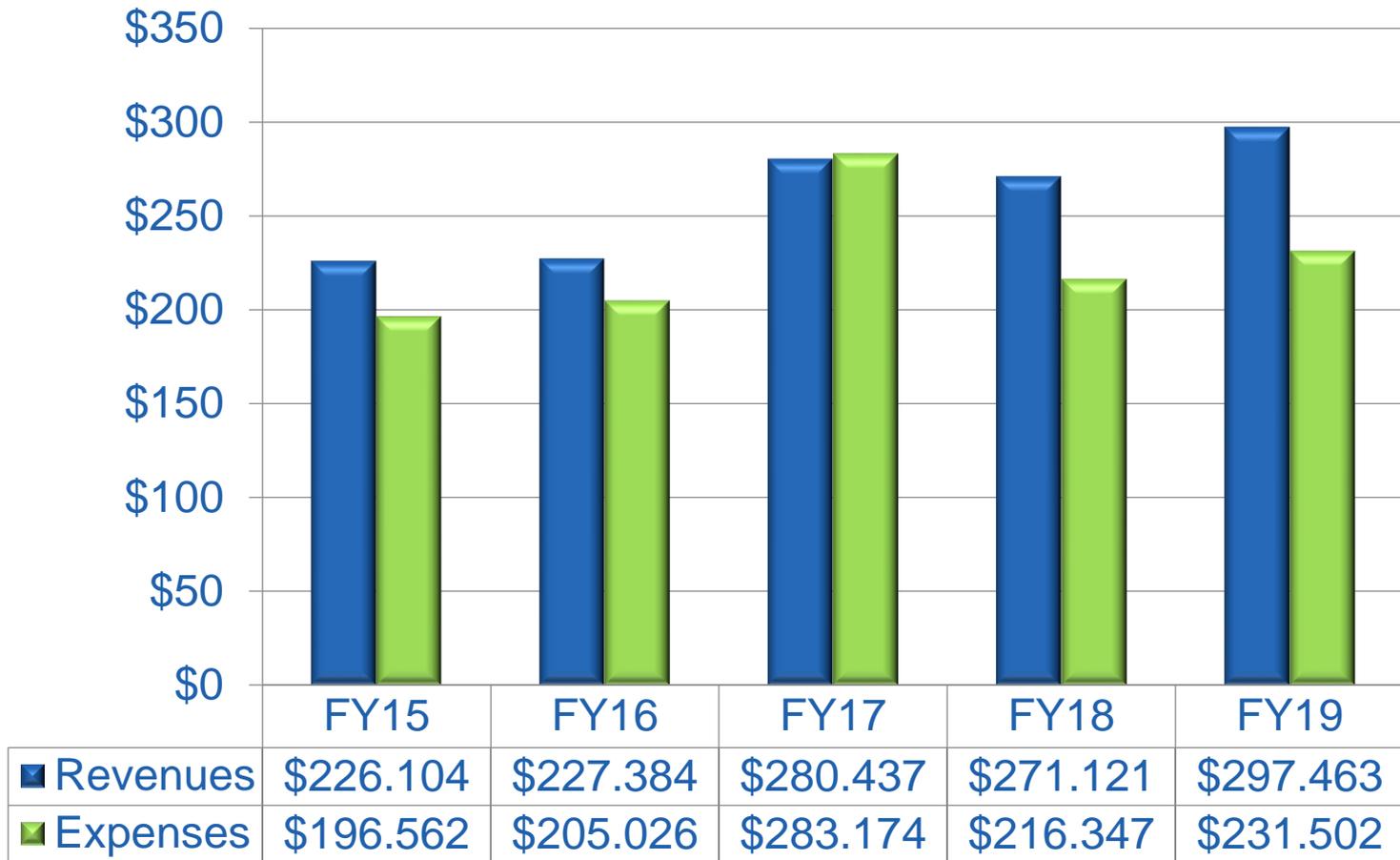
	FY15	FY16	FY17	FY18	FY19
■ Total Liabilities	\$1.560	\$1.599	\$1.707	\$1.881	\$1.947
■ Net Position	\$0.593	\$0.615	\$0.612	\$0.667	\$0.733

Construction Commitments (in Millions)

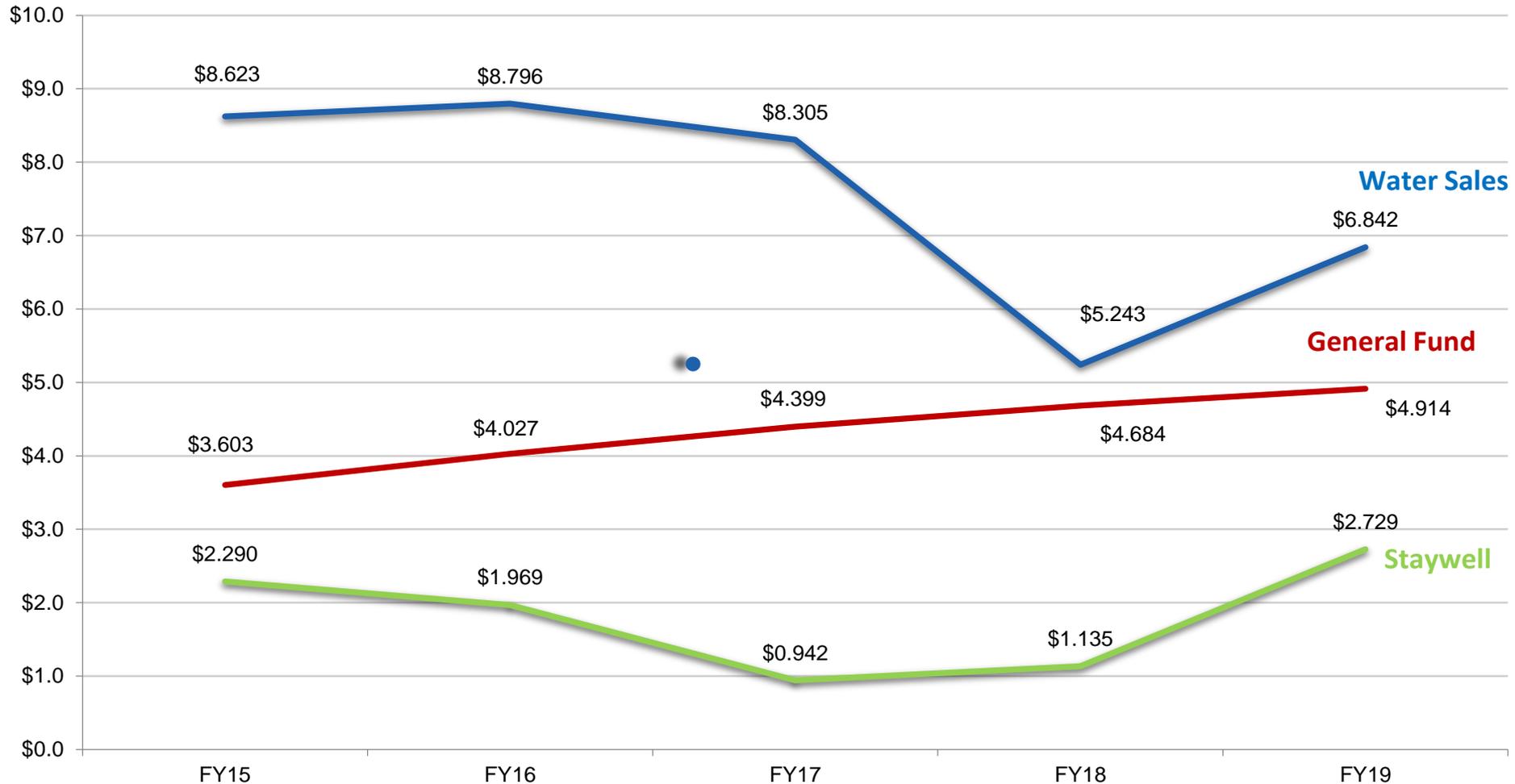


■ Remaining	\$144.485	\$122.611	\$300.991	\$243.130	\$219.958
■ Incurred	\$233.511	\$216.709	\$262.962	\$222.606	\$321.767

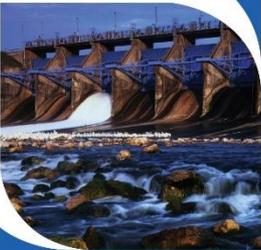
Total Revenues/Expenses (in Millions)



Net Position (in Millions)



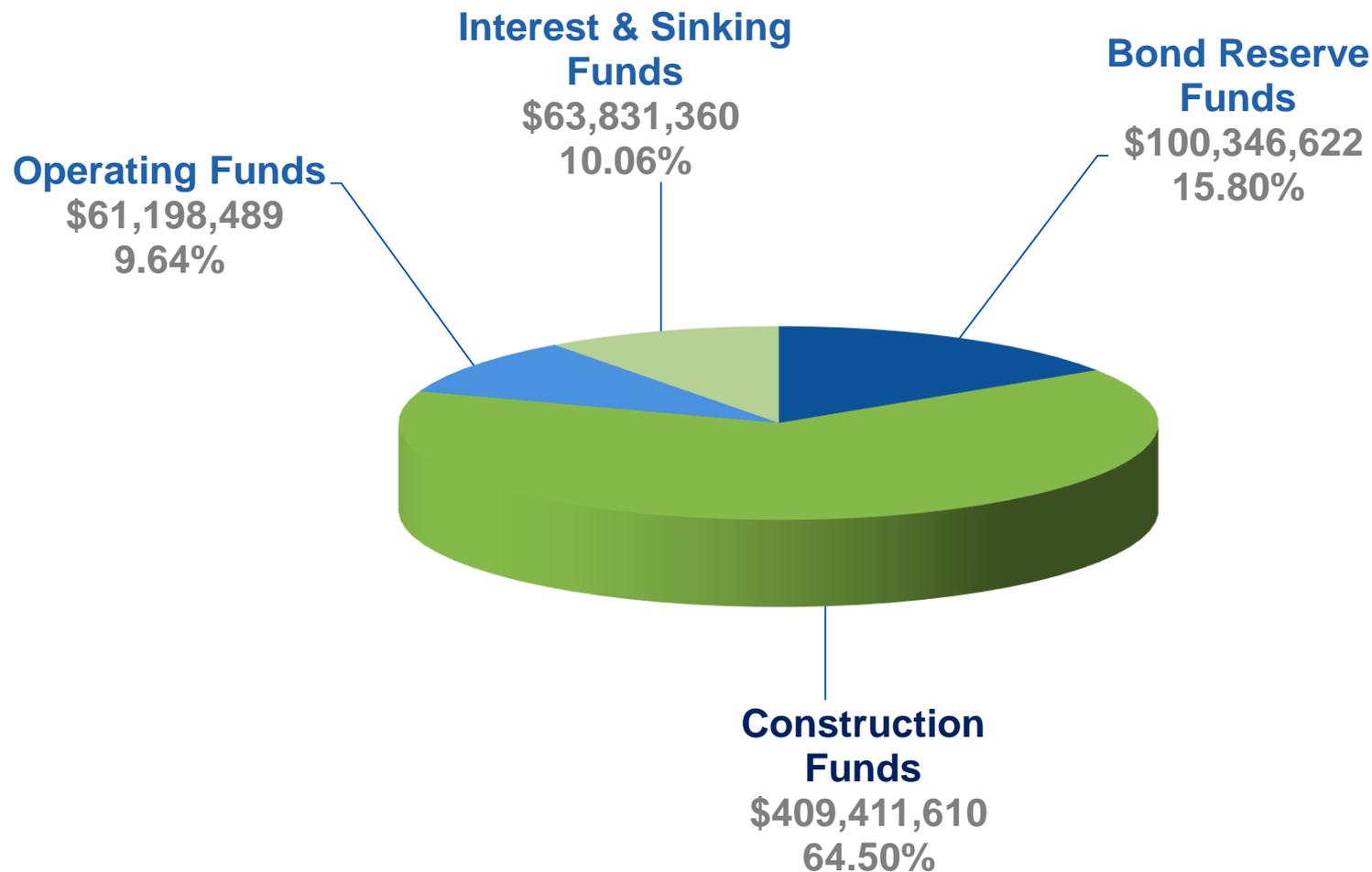
Item B: Investment Officers' Report



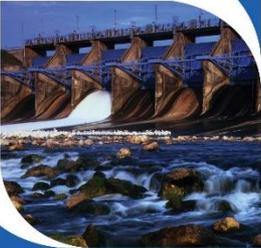
Consolidated Cash and Investments

As of February 29, 2020

\$634,788,081



**Item C:
CRWS — Headworks A Fine
Screen Facility — Contract
Award, Engineering Services
Agreement, and Materials
Testing Services Agreement**



BACKGROUND



- Identified as a project from the 2015 Master Plan
- Objective is to capture and prevent increasing quantities of non-dispersible products from entering the plant
- ESA with Garver (February 2019)
- Screens were pre-purchased (October 2019 Board)



Headworks A Fine Screen Facility



Headworks B

Pump
Station No. 6

Headworks A

Pump Station
No. 6A

Headworks A Fine Screen Facility



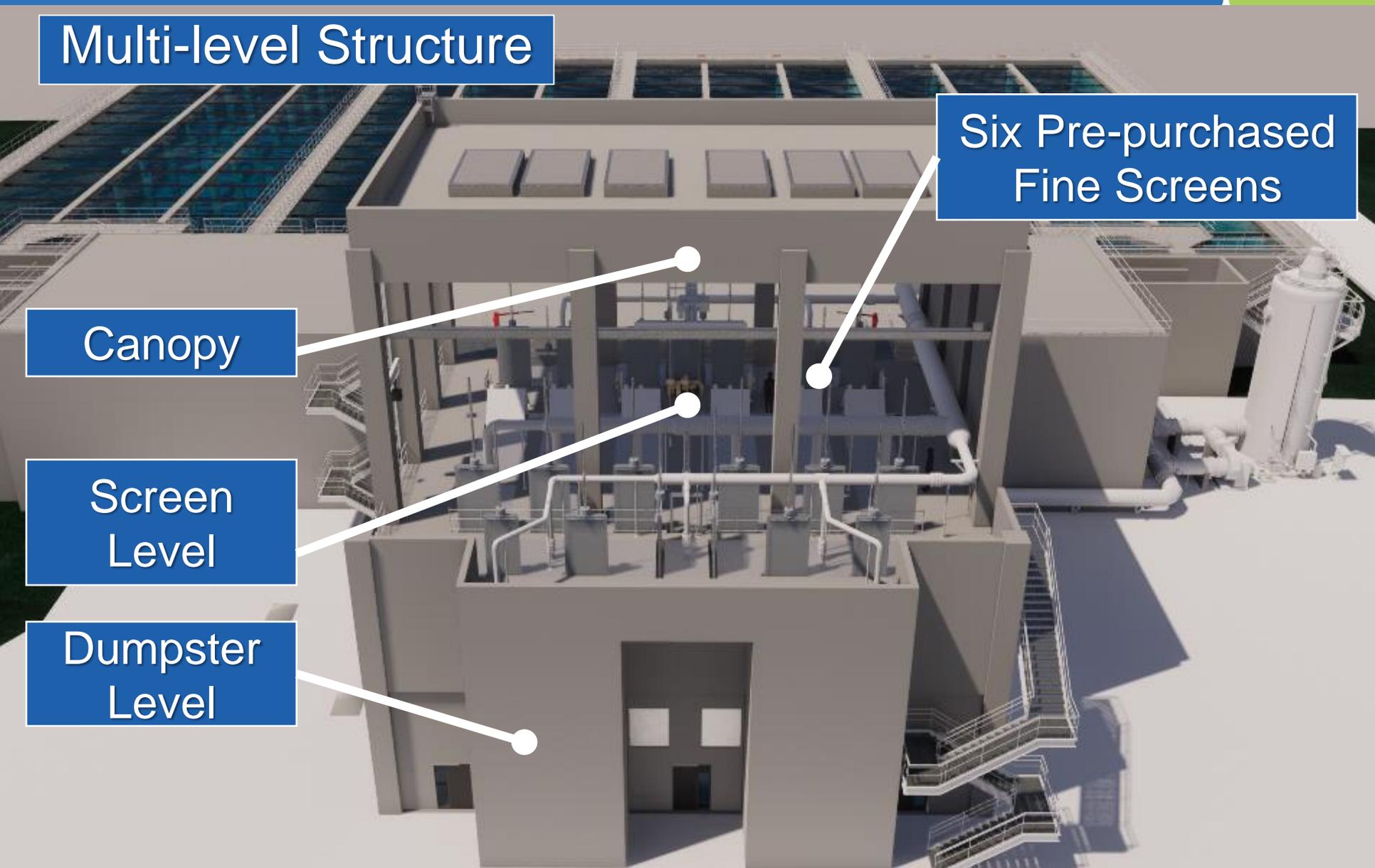
Multi-level Structure

Six Pre-purchased Fine Screens

Canopy

Screen Level

Dumpster Level

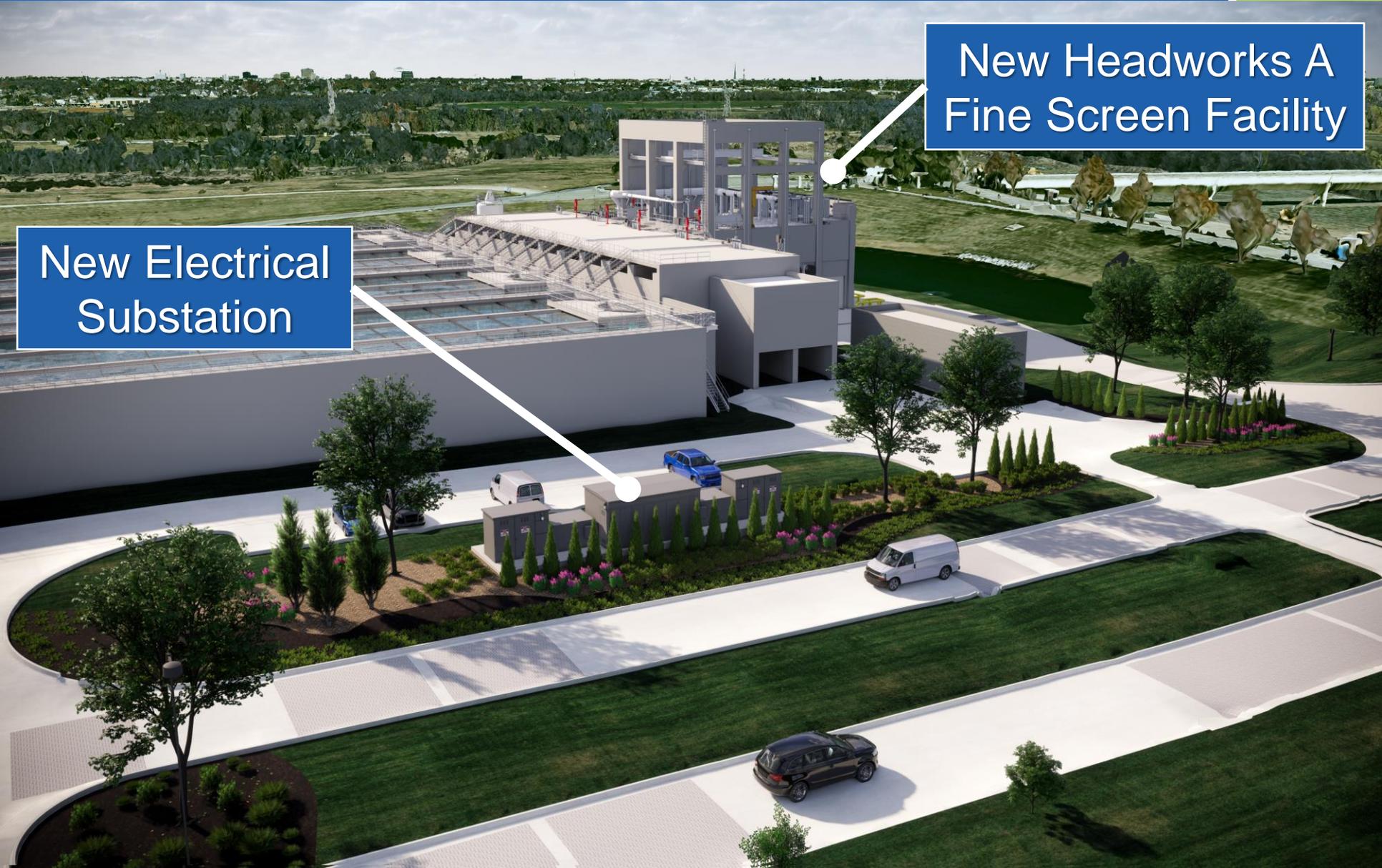


New Electrical Substation



New Headworks A Fine Screen Facility

New Electrical Substation



Bid Results – March 24, 2020

- OPCC = \$30,790,406

Bidders	Total Bid
MWH Constructors	\$26,661,796
Oscar Renda	\$36,951,279
Kiewit Water	\$39,104,031

- Low Bid (-13.4%) under OPCC



Garver – Construction Phase Services

- Meetings/site visits/factory witness testing
- Contractor's payment application reviews
- Review of submittals, schedules, requests for information, contract modification requests, etc.
- Documentation of field changes
- Pipe segmenting
- GIS data assistance
- Record drawings preparation
- Fee: \$1,796,870



Alliance Geotechnical Group Construction Materials Testing Services

- Typical testing:
 - Backfill compaction
 - Material gradation
 - Concrete compression strength
 - International Building Code Special Inspections
- Fee: \$593,406.52

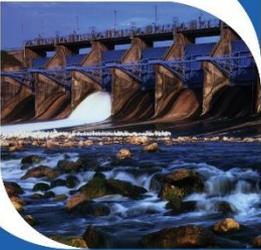


RECOMMENDATION

- Award construction contract to MWH Constructors, Inc., in the amount of \$26,661,796
- Approve contract for professional engineering services related to construction phase services for CRWS Headworks A Fine Screen Facility, to Garver, LLC, in the amount of \$1,716,870
- Approve contract for construction materials testing to Alliance Geotechnical Group, in the amount of \$593,406.52

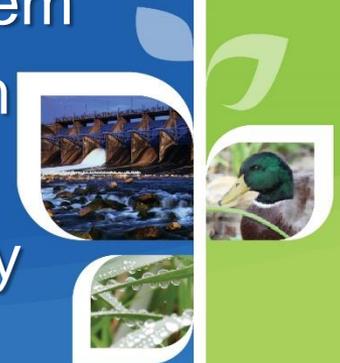


**Item D:
CRWS — Meter Station
Rehabilitation Group 1 — First
Amendment — Engineering
Services Agreement**

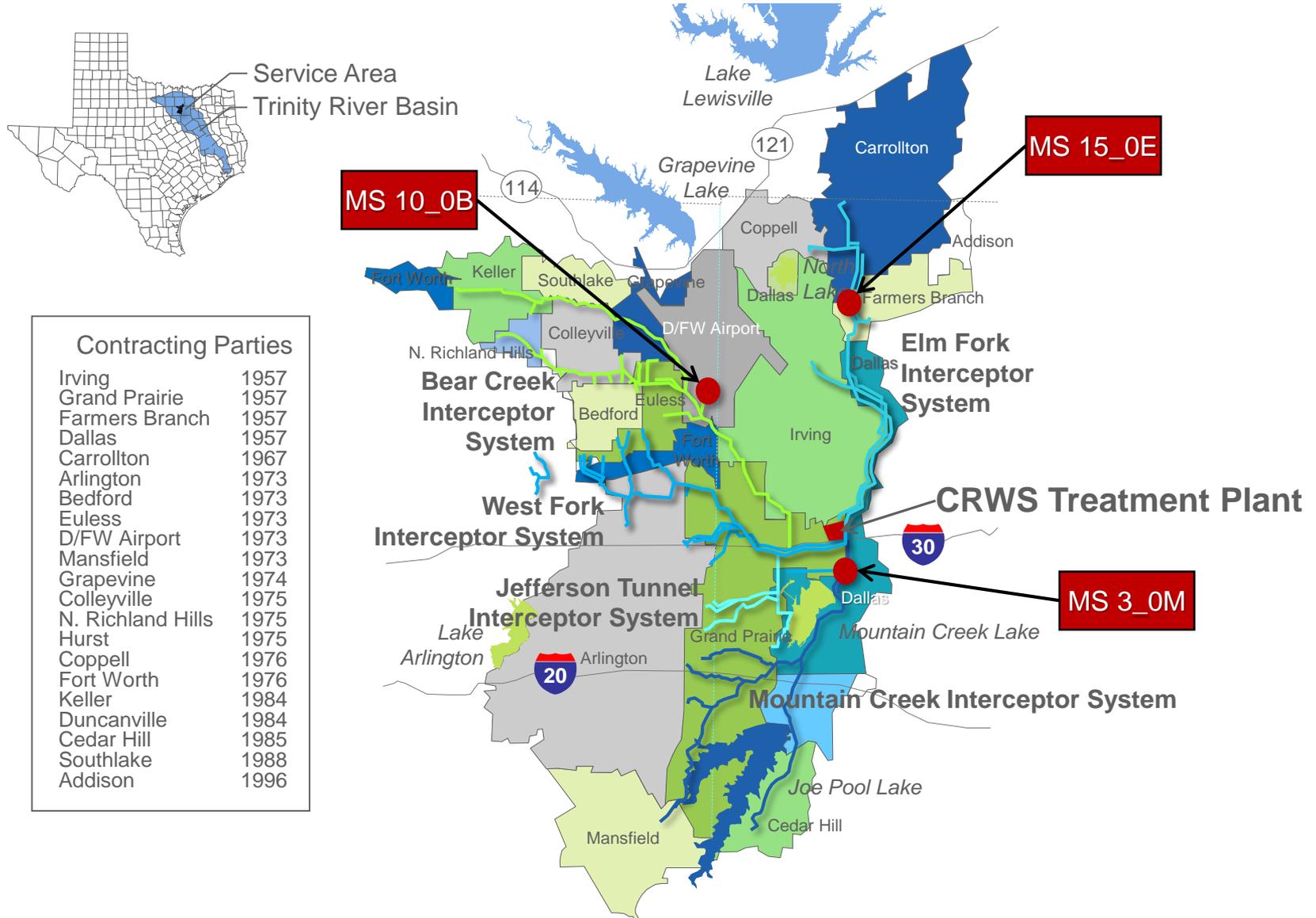


BACKGROUND

- 122 meter stations in the collection system for CRWS to allocate costs to 21 contracting parties
- Eight meter stations identified by TRA which require updated technology
- Three meter stations were identified as the highest priority (Group 1):
 - MS 10_0B in the Bear Creek interceptor system
 - MS 15_0E in the Elm Fork interceptor system
 - MS 3_0M in the Mountain Creek interceptor system including downstream siphon capacity improvements (16MC-SIPH)



Central Regional Wastewater System



Contracting Parties	
Irving	1957
Grand Prairie	1957
Farmers Branch	1957
Dallas	1957
Carrollton	1967
Arlington	1973
Bedford	1973
Euless	1973
D/FW Airport	1973
Mansfield	1973
Grapevine	1974
Colleyville	1975
N. Richland Hills	1975
Hurst	1975
Coppell	1976
Fort Worth	1976
Keller	1984
Duncanville	1984
Cedar Hill	1985
Southlake	1988
Addison	1996

BACKGROUND

- Engineering Services Agreement awarded to Kimley-Horn and Associates, Inc., (2019) to complete preliminary and final design for Meter Station Rehabilitation Group 1
- During preliminary design, new information was provided for the proposed meter technology by the manufacturer
 - Kimley-Horn recommended the use of a more suitable technology
 - Eliminated the use of existing meter vault
 - Existing location would be impacted by hydraulic conditions caused by Mountain Creek siphon



BACKGROUND

- Adjoining project: Mountain Creek Interceptor Segment (30MC-1) – Carollo Engineers, Inc.
- TRA recommending that 550 linear feet (LF) of 90” interceptor be moved from 30MC-1 project to MS3_0M
 - Allows Kimley-Horn to provide optimum hydraulic conditions necessary for alternative metering technologies
 - Avoids impact of nearby Oncor utility
 - Optimizes the design of the meter station and inverted siphon
 - Allows Kimley-Horn greater flexibility in designing the connection to Carollo’s project





30MC-1
(Carollo)

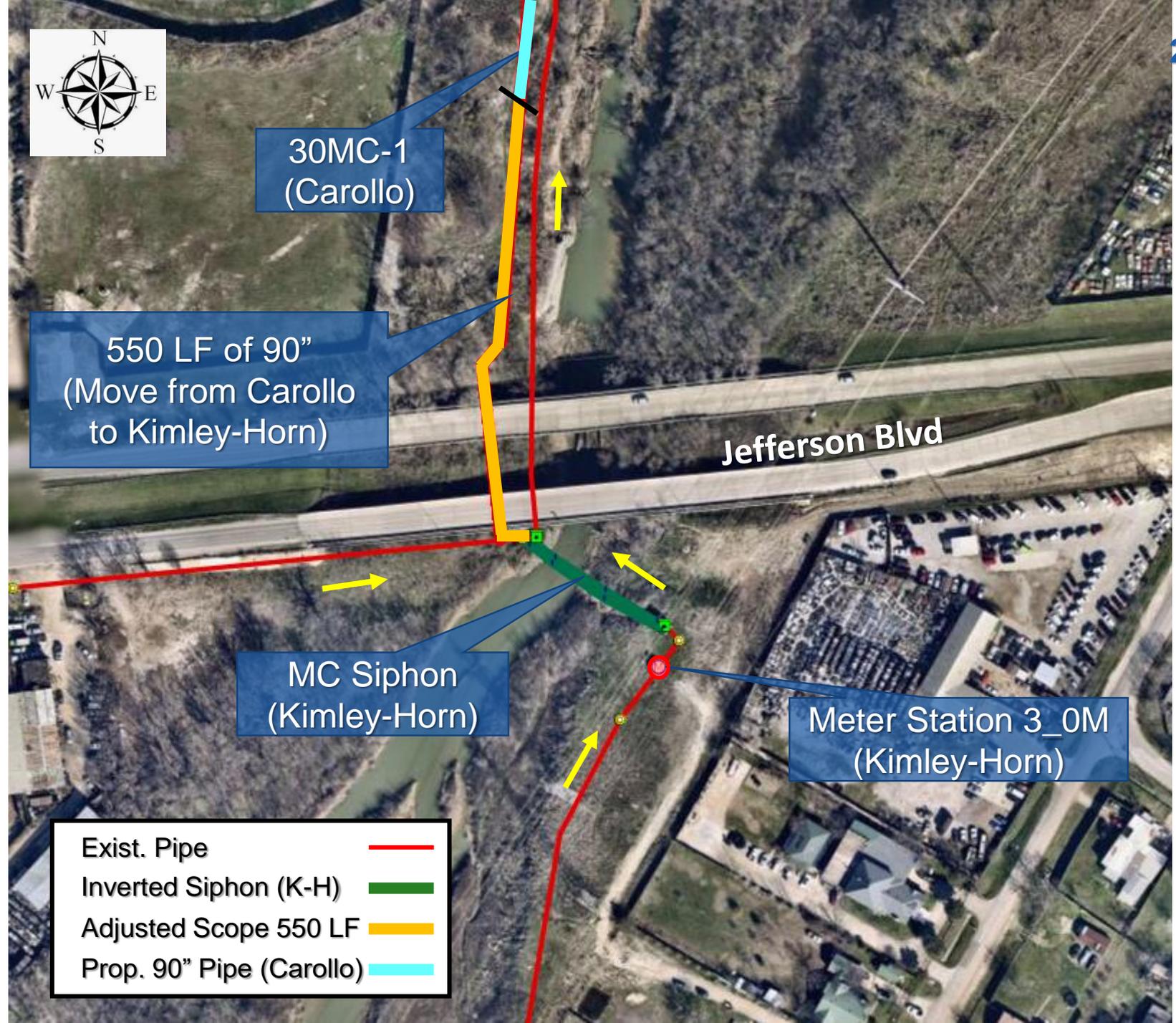
550 LF of 90"
(Move from Carollo to Kimley-Horn)

Jefferson Blvd

MC Siphon
(Kimley-Horn)

Meter Station 3_0M
(Kimley-Horn)

Exist. Pipe	—
Inverted Siphon (K-H)	—
Adjusted Scope 550 LF	—
Prop. 90" Pipe (Carollo)	—



Proposed "Scope of Work"

- Project Management
- Additional progress meetings and site visits
- QA/QC meetings and workshops
- Meter Station Evaluation and Preliminary Design Report
- Evaluate alternate meter station locations
- Additional Topographic Survey
- Additional Geotechnical Investigation
- Design of 90" Interceptor (550 LF)
- Construction Advertisement:
 - MS 3_0M and 30MC-1 extension
 - MS10_0B and MS15_0E
- Fee: \$265,100.00



RECOMMENDATION

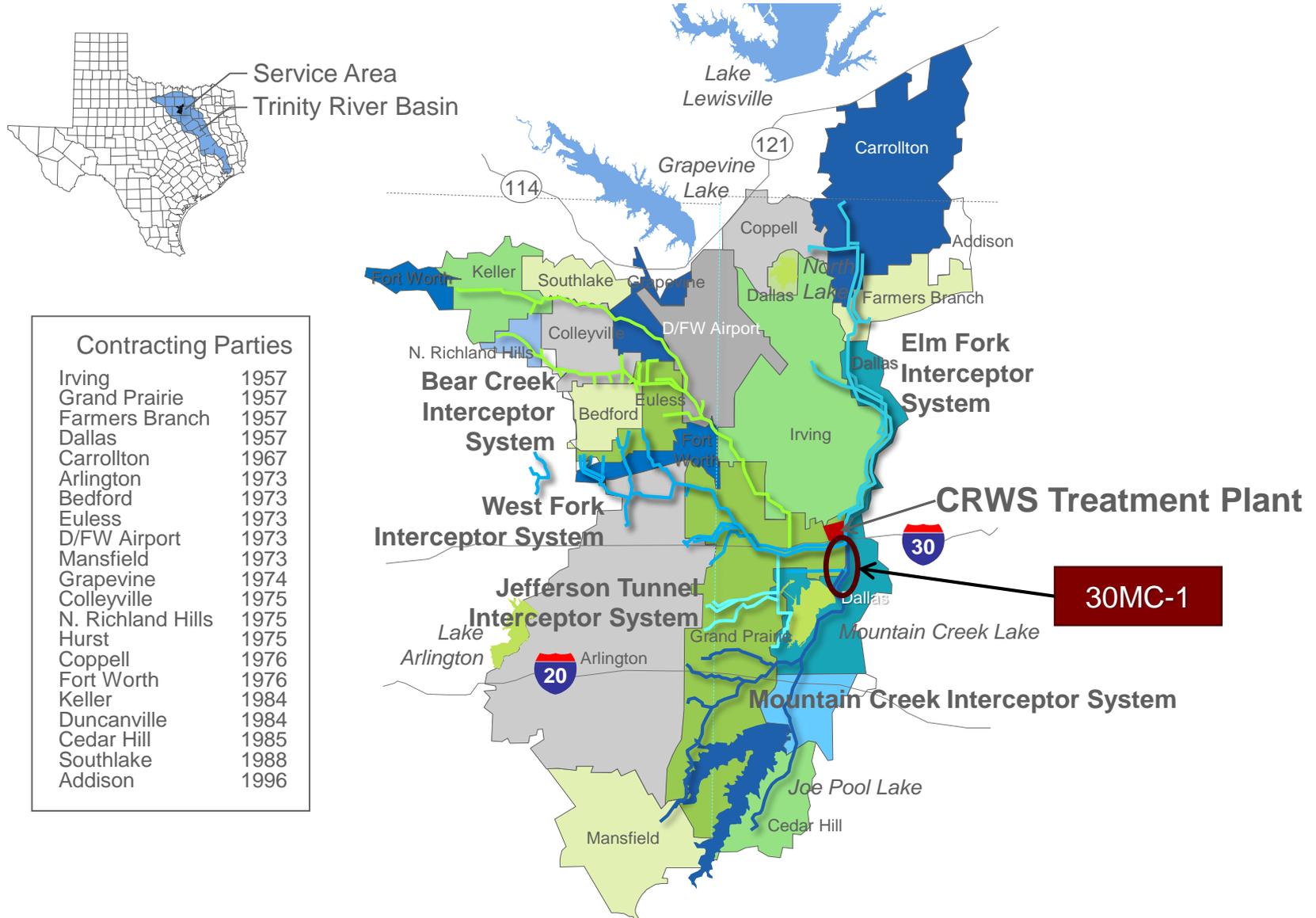
- Award first amendment to Engineering Services Agreement with Kimley-Horn and Associates, Inc., for professional engineering services for Meter Station Rehabilitation Group 1, in the amount of \$265,100



**Item E:
CRWS — Mountain Creek
Interceptor, Segment 30MC-1 —
Second Amendment —
Engineering Services
Agreement**



Central Regional Wastewater System

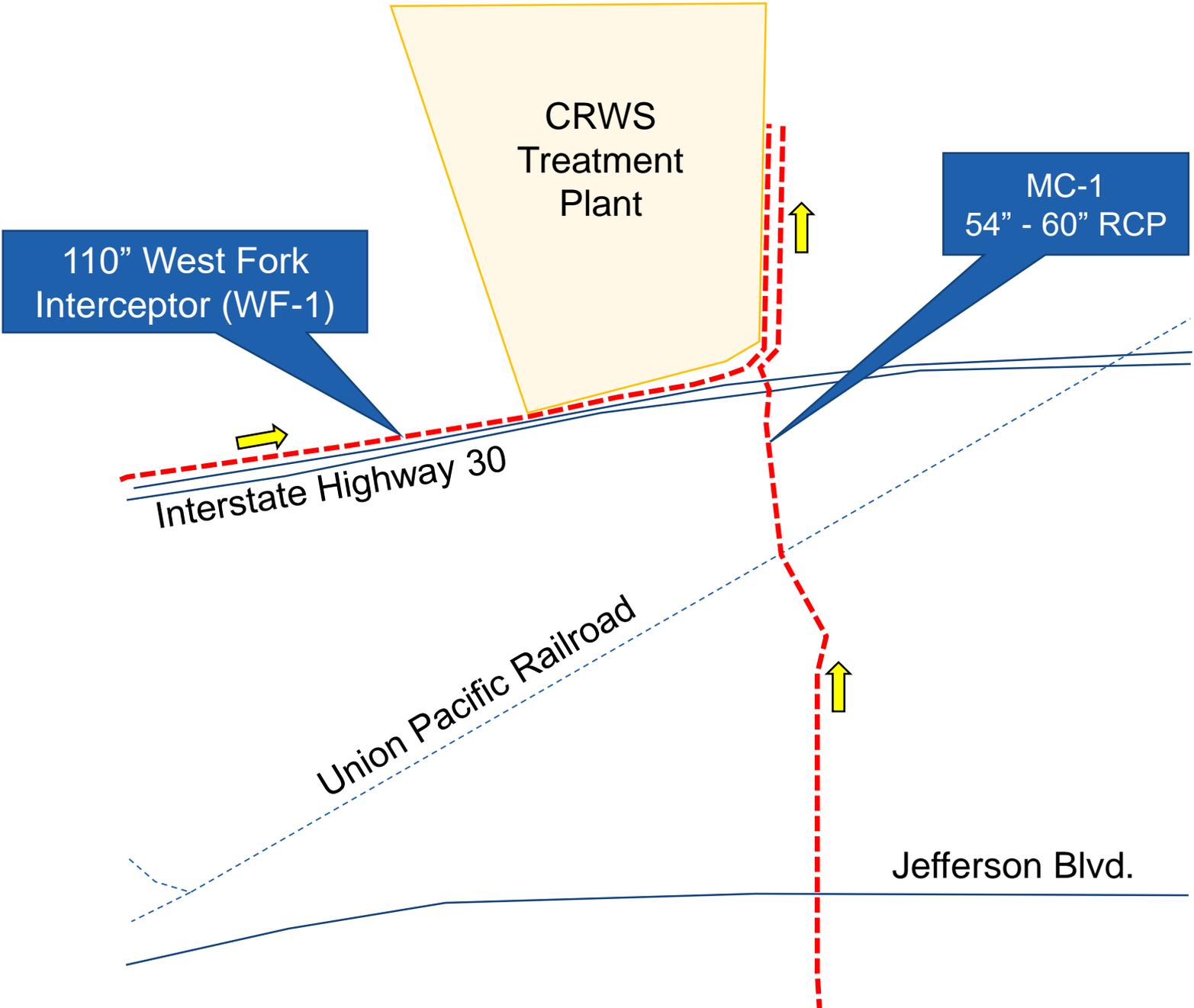


BACKGROUND

- Central Regional Wastewater System (CRWS) provides wastewater services to 20 cities in the DFW metroplex and DFW Airport
- Mountain Creek Interceptor System (MCIS) is one of five major interceptor system in CRWS
 - Serves Grand Prairie, Dallas, Duncanville, Cedar Hill, Arlington, and Mansfield
 - Comprised of 47 miles of pipeline ranging in size from 8" - 96" diameter
 - Segment MC-1 constructed in 1958
 - Routed from CRWS to east side of Mountain Creek Lake
 - Comprised of 17,000 linear feet (LF) of 36" to 60" unreinforced and unlined concrete pipe



1958: Original MC-1 (54- to 60-inch RCP)



BACKGROUND

- Beginning in 1992 and in response to growth in the service area, MCIS has been the subject of numerous Infiltration/Inflow (I/I) studies. Identified improvements have included:
 - Rehabilitation of MC-1
 - Replacement of MC-1
 - Parallel Relief of MC-1
- In 1997, 30MC-1 (78" reinforced concrete pipe (RCP)) was constructed:
 - Provides parallel relief to MC-1
 - Routed from Jefferson Blvd. to CRWS along Mountain Creek, and connects to 110" West Fork Interceptor (WF-1)
 - Replaced a 54" portion of MC-1 that was taken out of service (IH-30 to Jefferson Blvd.)



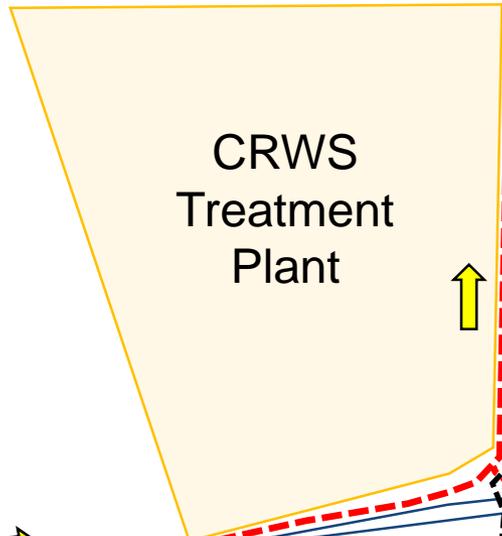
1997: 30MC-1 (78-inch RCP)



110" West Fork Interceptor (WF-1)



Interstate Highway 30



CRWS Treatment Plant



30MC-1
78" RCP

Union Pacific Railroad

54" MC-1
(abandoned)

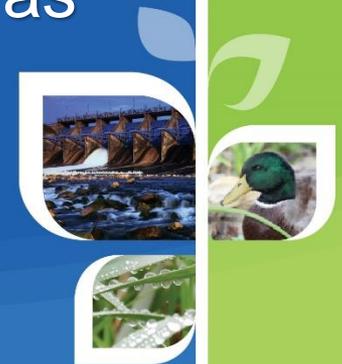


Jefferson Blvd.



BACKGROUND

- In 2011, the I/I study recommended an 84" parallel relief interceptor from the 110" West Fork Interceptor (WF-1) to Jefferson Blvd. This pipeline would replace the 78" (unlined RCP) that was constructed in 1997
- April 2013, ESA was approved with Carollo Engineers, Inc., for the design of the 84" relief interceptor. Pipe to be located in same trench as abandoned 54"



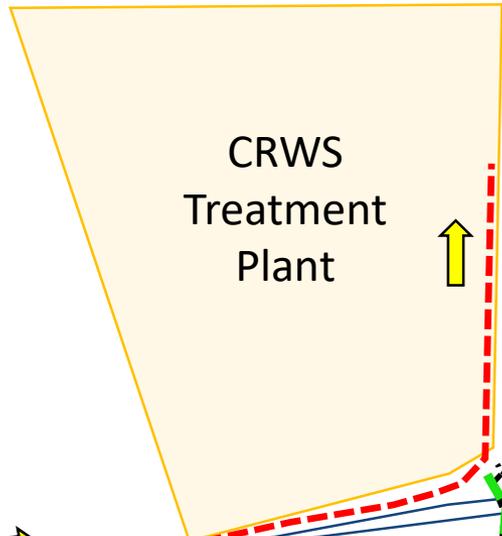
2013 Design: Proposed 30MC-1 (84-inch FRP)



110" West Fork Interceptor (WF-1)



Interstate Highway 30



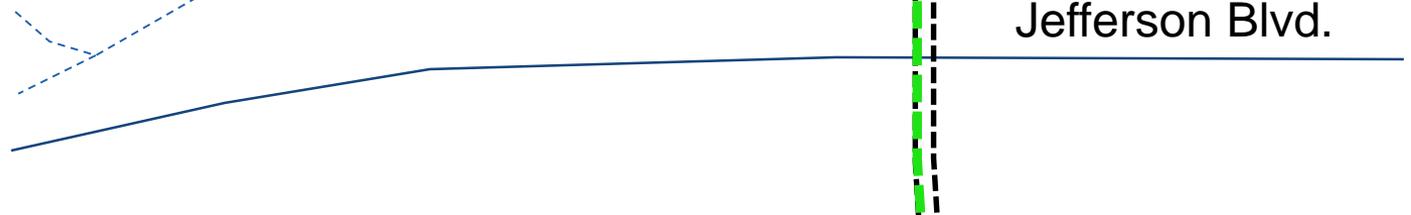
78" 30MC-1 (to be abandoned)

Union Pacific Railroad

84" Relief in same Location as MC-1



Jefferson Blvd.



BACKGROUND

- Subsequent analysis by TRA recommended restoring the 54" that was taken out of service in 1992, to provide needed capacity for MCIS flows to CRWS. Proposed 84" to be relocated within the existing easement.
- In 2014, decision by TRA to construct secondary feed to CRWS and rehabilitate Junction Box 1C on CRWS site.
 - ESA approved with HDR Engineering, Inc.

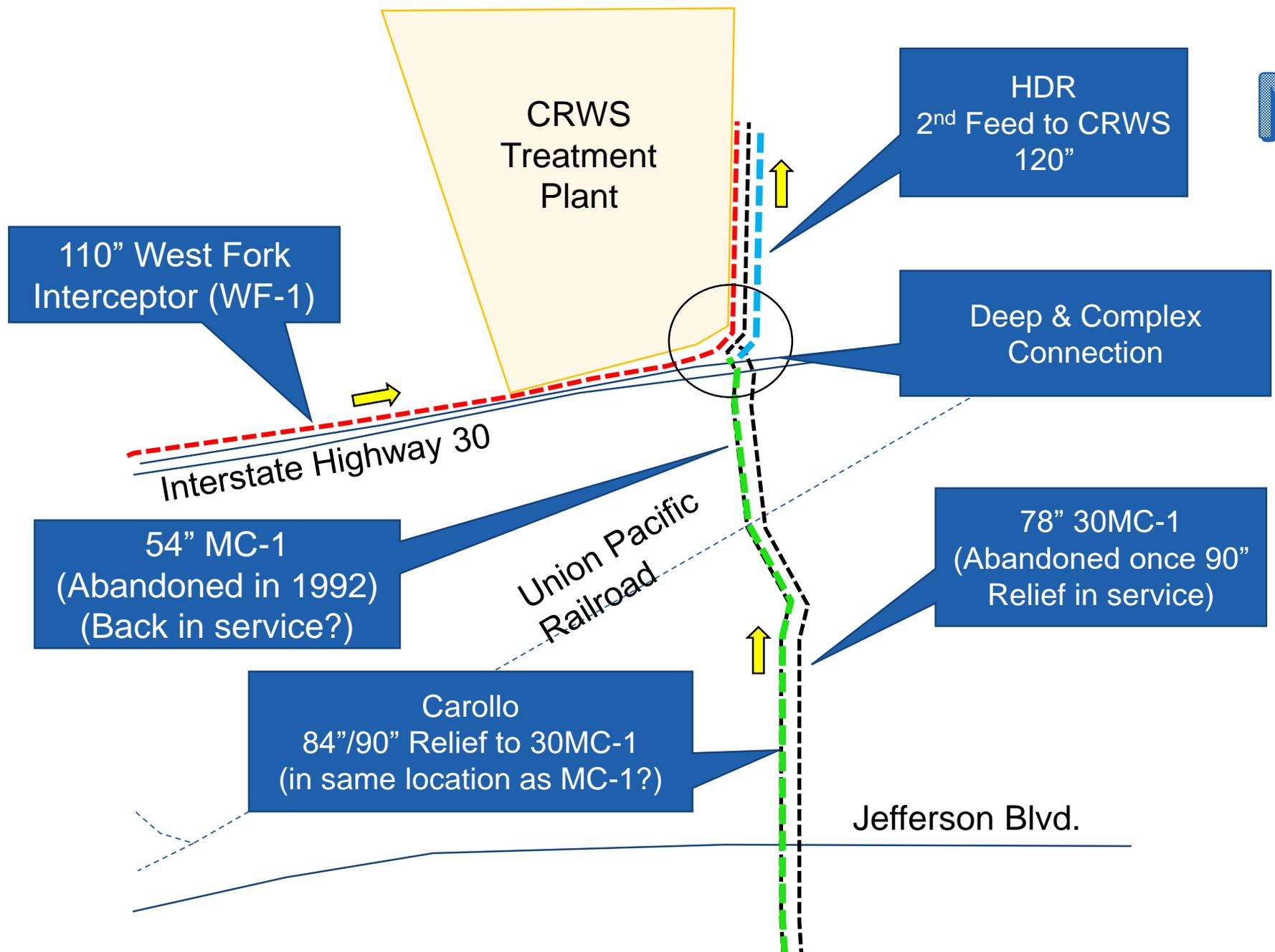
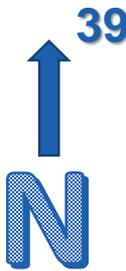


BACKGROUND

- December 2019, latest I/I study and internal analysis by TRA recommended a 90" pipeline to convey projected 2060 flows. Proposed 84" would be upsized.
- It was also determined that connecting the proposed 90" to the 110" WF-1, as well as connecting the proposed 120" CRWS secondary feed to the proposed 90", was becoming overly complicated due to the amount of flow in the WF-1 line as well as the MCIS interceptor (existing 78"). The potential depth of the excavation (30 feet +) was also a concern.



2014 Design: Proposed 30MC-1 (84-inch FRP)



BACKGROUND

- It was subsequently decided to connect the proposed 90" directly to the 120" secondary feed which then connects to Junction Box 1C on the CRWS site. This would avoid a large complex structure at the terminus of 30MC-1 at I-30.
- Upstream and adjacent to 30MC-1, Meter Station 3_0M is being replaced as part of the Meter Station Group 1 project with Kimley-Horn.





CRWS
Treatment
Plant

HDR
2nd Feed to
CRWS

41
Bishop
Flies

Interstate Highway 30

UPRR

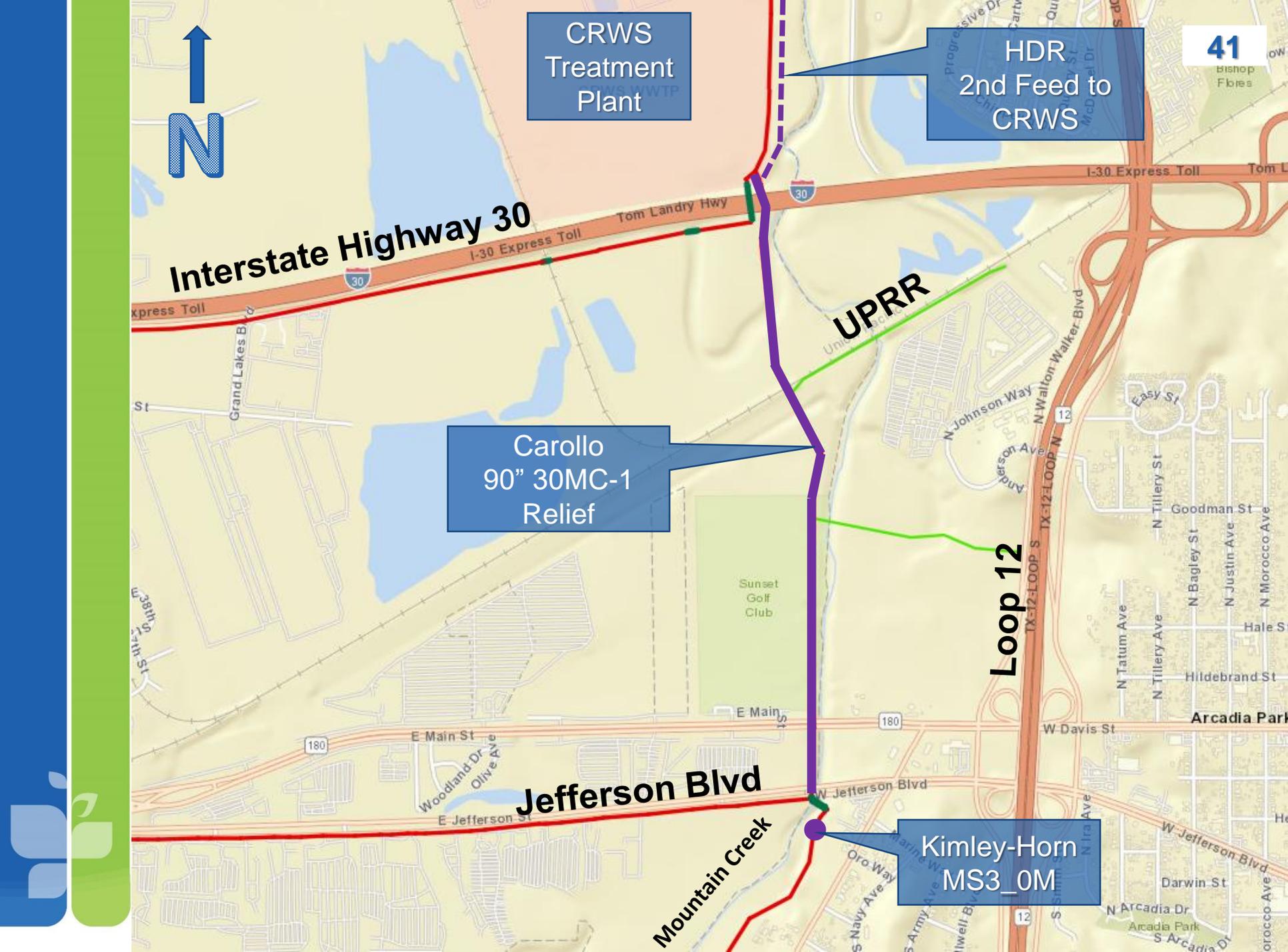
Carollo
90" 30MC-1
Relief

Loop 12

Jefferson Blvd

Kimley-Horn
MS3_0M

Mountain Creek





Carollo
(30MC-1)

550 LF of 90"
(Move from Carollo
to Kimley-Horn)

Jefferson Blvd

Kimley-Horn
(MC Siphon)

Kimley-Horn
(MS 3_0M)

Exist. Pipe	
Inverted Siphon (K-H)	
Adjusted Scope 550 LF	
Prop. 90" Pipe (Carollo)	



Proposed Amendment

- Amend 30MC-1 final design ESA with Carollo:
 - Remove downstream connection. Will be done by HDR. Amendment with HDR to Board in June.
 - Remove upstream connection. Will be done by Kimley-Horn as part of Meter Station rehabilitation project. Amendment with Kimley-Horn to be presented to Board in April.
 - Prepare bid documents for “stand-alone” project consisting of 90” from Jefferson Blvd. to CRWS site (IH-30).



Proposed “Scope of Work” - Carollo

- Project Management and Quality Assurance (QA)
 - Additional progress and QA/QC meetings
 - 100% deliverable workshop
- Adjust upstream and downstream connection points.
- Update plans and specifications for “bid ready” documents for “stand alone” project.
- Fee: \$100,000



RECOMMENDATION

- Award second amendment to engineering services agreement with Carollo Engineers, Inc., for final design engineering services for Mountain Creek Relief Interceptor, Segment 30MC-1, in the amount of \$100,000



**Item F:
CRWS — Solids Management
Improvements Phase III-B —
Change Order No. 107 —
Weather Delay Administration —
January 2020**



BACKGROUND

- Change order No. 55 (approved April 22, 2019) authorized \$16,000 (overhead) per day for weather delays which impact the project's "Critical Path."
- January 2020 experienced five (5) days of rain which caused delays in "Critical Path."
- "Change order No. 107" Amount: \$80,000

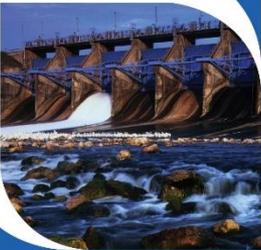


RECOMMENDATION

- Approve “Change Order No. 107” with MWH Constructors, Inc. in the amount of \$80,000.



**Item G:
CRWS — Solids Management
Improvements Phase III-B —
Change Order No. 109 —
Dry Polymer Re-Sequencing**



CRWS Treatment Plant Solids Management Improvements



Dry Polymer Room

Dry Polymer Area



Before Pump Removal



Dry Polymer Feeder

After Pump Removal



BACKGROUND

- Polymer is added to sludge to improve the efficiency of the belt filter presses.
- New dry polymer feeders are to be located in the same space as the current pumps for the frame presses.
- Four existing sludge pumps will be removed after Phase III-B (Thermal Hydrolysis Process) is operational.

BACKGROUND

- Four new dry polymer feeders are currently being installed. Three are required to make Phase III-B (Thermal Hydrolysis Process) operational.
- Sequencing of the required work was not properly addressed in plans:
 - All existing and future sludge pumps and polymer feeders must remain in service during transition to accommodate ongoing sludge production.
 - Available space within the Solids Pump Station is limited and restricts the contractor's activities.

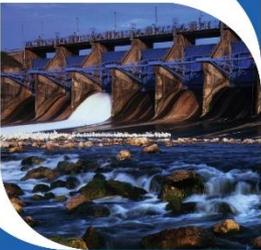
BACKGROUND

- Discussions arose during performance of the work as to the proper sequencing to achieve the necessary objective to keep all systems operational during demolition and installation activities.
- Upon completion of internal discussions, CDM prepared an “Operational Sequencing Memorandum” to address the path forward.
- Cost: \$90,508

RECOMMENDATION

- Approve “Change Order No. 109” with MWH Constructors, Inc. in the amount of \$90,508 for work associated with the Dry Polymer Feed System at the Central Regional Wastewater System facility.

**Item H:
CRWS — Solids Management
Improvements Phase III-B —
Change Order No. 111 —
Weather Delay Administration —
February 2020**



BACKGROUND

- Change Order No. 55 (approved April 22, 2019) authorized \$16,000 per day (overhead) for weather delays which impact the project's "Critical Path."
- February 2020 experienced four (4) days of rain which caused delay in the "Critical Path."
- "Change Order" Amount: \$64,000



RECOMMENDATION

- Approve “Change Order No. 111” with MWH Constructors, Inc. in the amount of \$64,000.



**Item I:
CRWS — Dewatering Services
Agreement — Renda
Environmental, Inc.**



Two-year Dewatering Services Agreement with Renda Environmental, Inc.

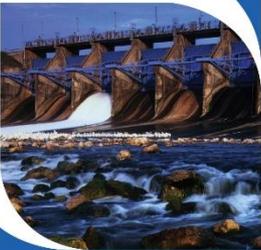


Two-year Dewatering Services Agreement with Renda Environmental, Inc.

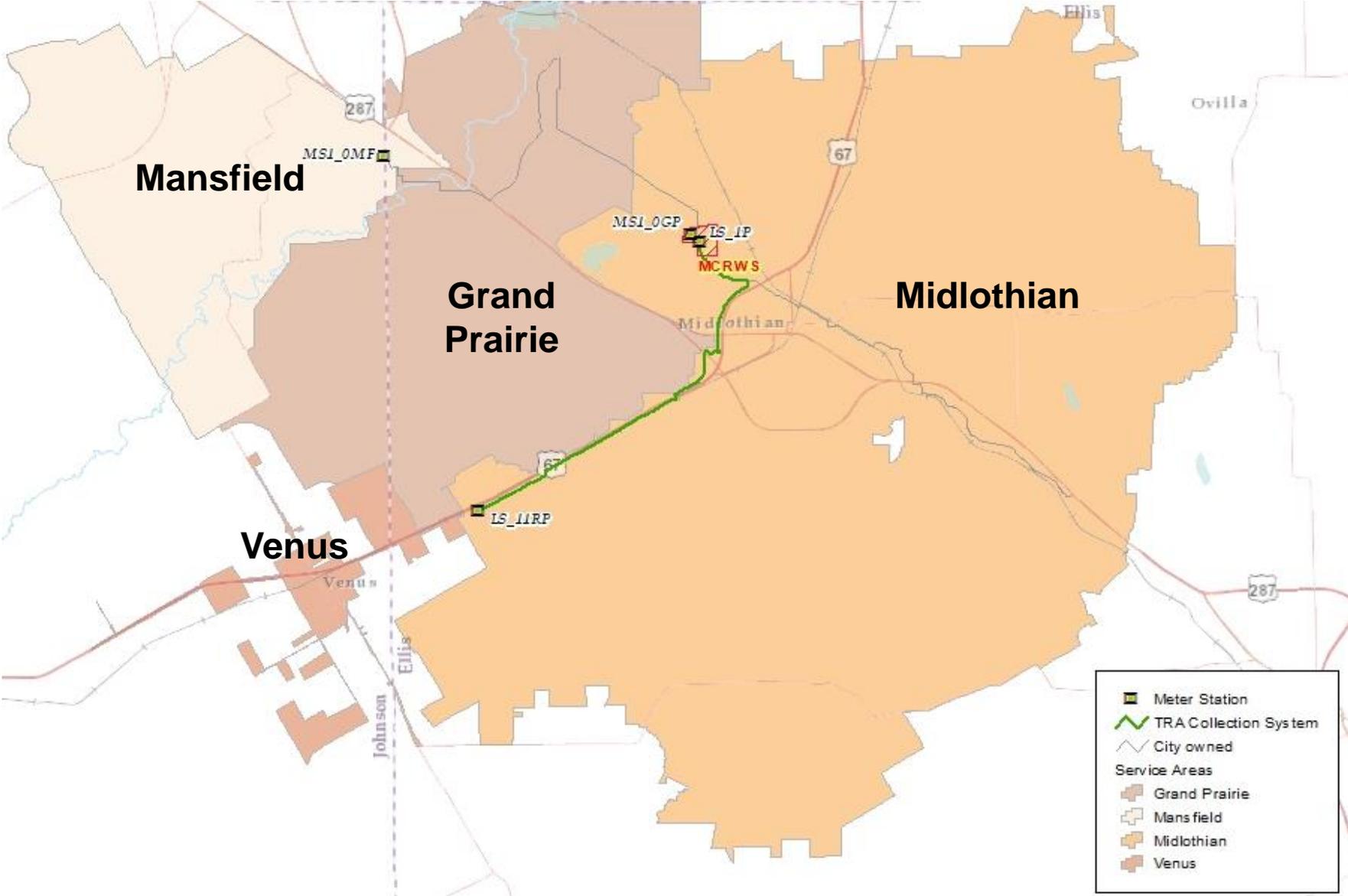
- Renda shall supply personnel and equipment at a fixed cost of \$42,900 per month.
- Renda shall dewater the biosolids at a fixed cost of \$50.00 per wet ton.
- Services will be provided up to
- 24 hours per day, 7 days a week.



**Item J:
MCRWS — Peak Flow Storage
— Contract Award, Engineering
Services Agreement, Materials
Testing Services Agreement,
and Interlocal Agreement**



MCRWS System Map



BACKGROUND

- MCRWS serves Grand Prairie, Mansfield, Midlothian, and Venus.
- Plant has a permitted annual Average Daily Flow of 3.0 million gallons per day (MGD) and permitted 2-hour peak of 9.0 MGD.
- Master Plan initiated October 2018 (Garver, LLC).
- Peak Flow Storage Basin and expansion to 4.5 MGD identified.



BACKGROUND

- Texas Commission on Environmental Quality (TCEQ) requires expansion engineering at 75% of permitted annual ADF for 3 consecutive months.
- TCEQ requires construction to begin at 90% of permitted annual ADF for 3 consecutive months.
- September – December 2018: Plant exceeded 75% percent of its permitted annual ADF.
- Garver authorized April 2019 for design of basin.

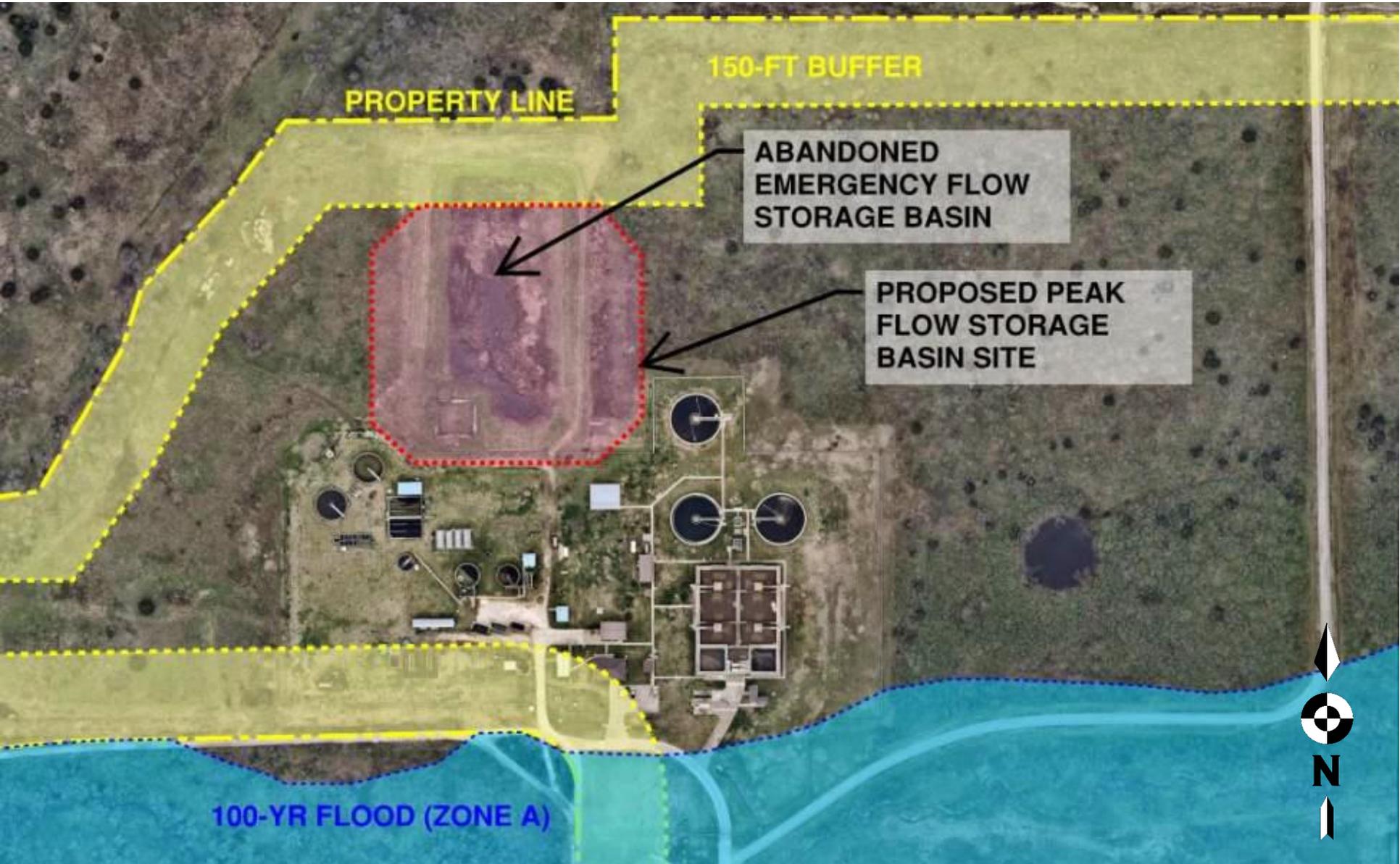


BACKGROUND

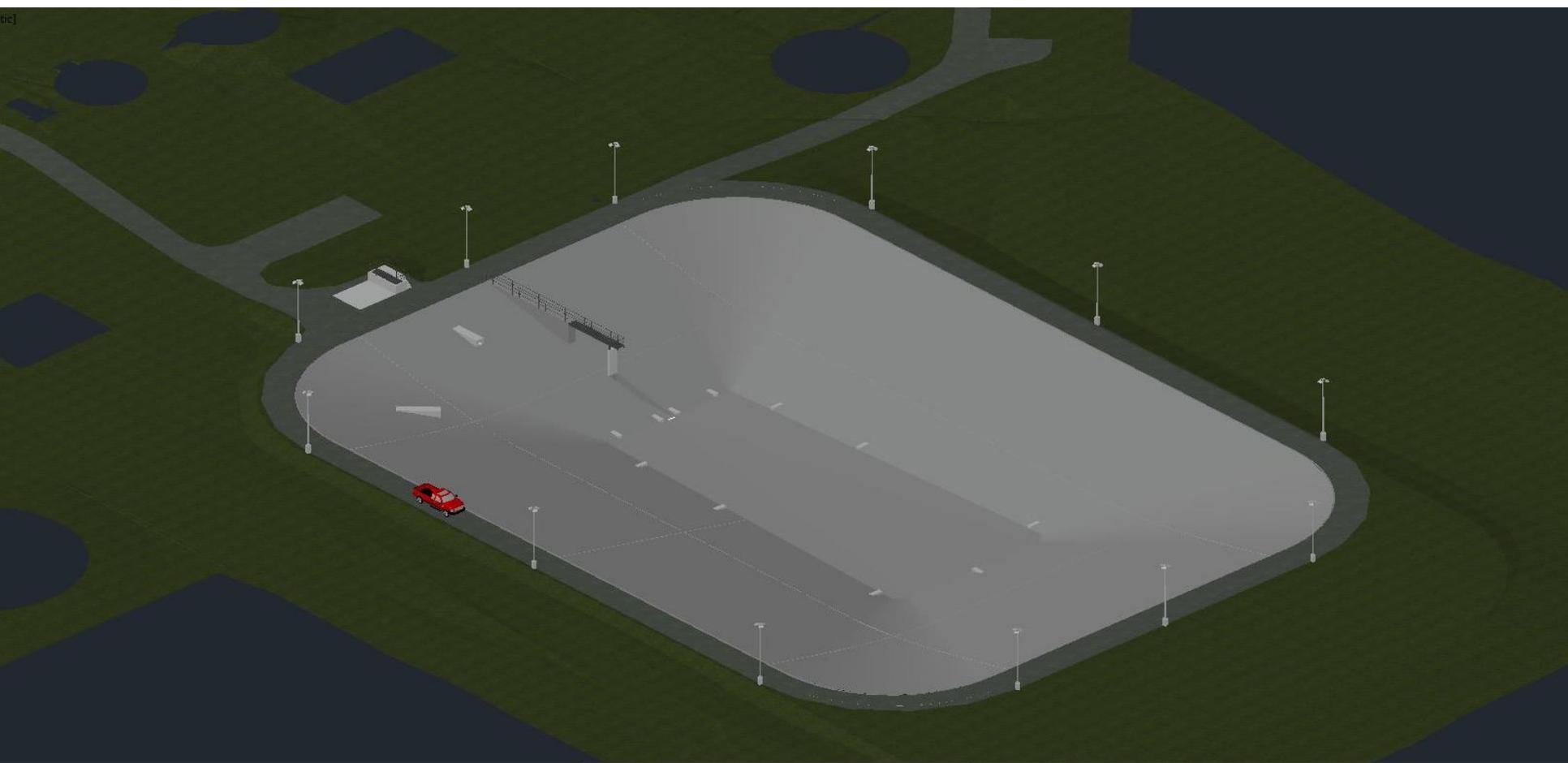
- Peak Flow Storage Basin to be in place by December 2021. Will provide relief to the plant during rain events, ahead of planned expansions:
 - Garver finishing Preliminary Design for expansion to 4.5 MGD. Anticipated to be in place by end of 2022.
 - Garver working on design of expansion to from 4.5 MGD to either 6.0 MGD or 9.0 MGD.
 - Expansion beyond 4.5 MGD must be in place by end of 2024.



Mountain Creek Regional Wastewater System Treatment Plant



Peak Flow Storage Basin (Capacity = 7.0 MG)



Bid Results – March 12, 2020

- OPCC = \$9,153,000

Bidders	Total Bid
Crescent Constructors, Inc.	\$5,433,000*
Heritage Constructors, Inc.	\$7,555,638
Thalle Construction Co., Inc.	\$7,615,700
Associated Construction Partners, Ltd	\$7,740,100
Gracon Construction, Inc.	\$7,848,600
Felix Construction Company	\$7,914,000

*Bid withdrawn due to bidder error

- Low Bid (-21%) under OPCC



Garver – Construction Phase Services

- Meetings/site visits/factory witness testing
- Review of payment applications, schedule, submittals, Requests for Information, Contract Modification Requests, etc.
- Documentation of field changes
- Pipe segmenting
- GIS data assistance
- Record Drawings
- Sequencing Batch Reactor (SBR) testing of industrial flow to determine impact to treatment process.
- Fee: \$779,129



Professional Services, Inc. Construction Materials Testing Services

- Typical testing:
 - Backfill compaction
 - Material gradation
 - Concrete compression strength
- Fee: \$180,000



City of Midlothian – Interlocal Agreement

- Two phases of SBR testing of industrial flow to quantify any impact to the plant's treatment process:
 - Phase 1 Testing Reimbursement: \$52,022
 - Phase 2 Testing Reimbursement: \$34,327

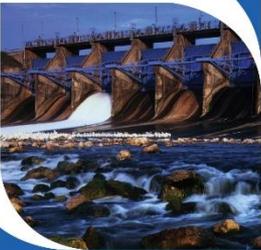


RECOMMENDATION

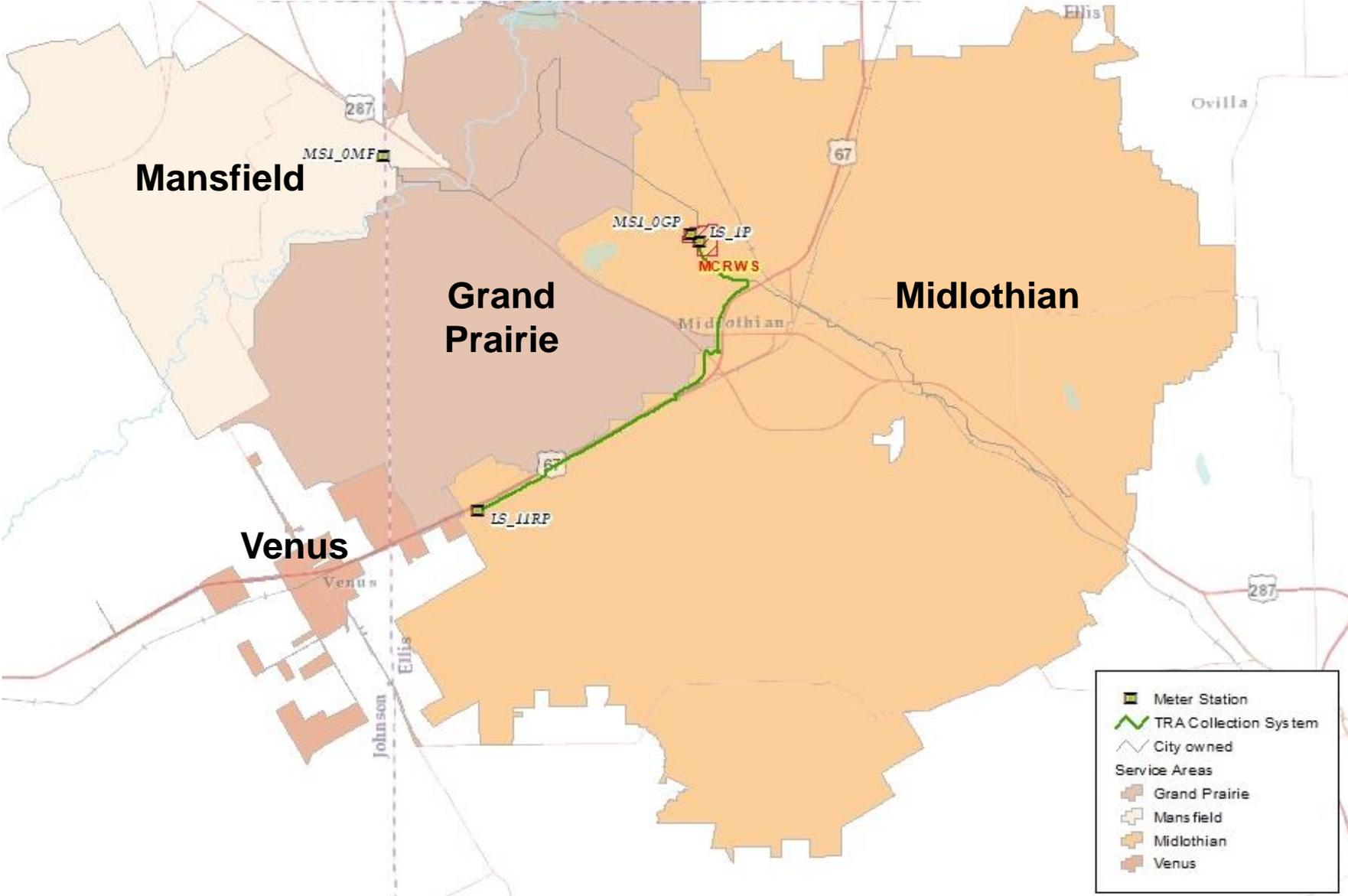
- Award construction contract to Heritage Constructors, Inc., in the amount of \$7,555,638.
- Approve contract for professional engineering services related to Construction Phase Services for MCRWS Peak Flow Storage to Garver, LLC, in the amount of \$779,129.
- Approve contract for construction materials testing to Professional Service Industries, Inc., in the amount of \$180,000.
- Authorize the General Manager to execute the Interlocal Agreement between the Authority and the City of Midlothian for industrial user testing reimbursement up to an amount of \$86,349.



**Item K:
MCRWS — Plant Expansion from
3.0 MGD TO 9.0 MGD —
Engineering Services Agreement**



MCRWS System Map



Mountain Creek Regional Wastewater System Treatment Plant



BACKGROUND

- MCRWS serves Grand Prairie, Mansfield, Midlothian, and Venus.
- Plant has a permitted annual Average Daily Flow of 3.0 million gallons per day (MGD) and permitted 2-hour peak of 9.0 MGD.
- ESA with Garver, LLC (October 2018):
 - Master Plan
 - Design of Peak Flow Storage Basin
 - Preliminary Design Report for expansion to 4.5 MGD



BACKGROUND

- Texas Commission on Environmental Quality (TCEQ) requires expansion engineering at 75% of permitted annual Average Daily Flow (ADF) for 3 consecutive months.
- TCEQ requires construction to begin at 90% of permitted annual ADF for 3 consecutive months.
- September – December 2018: Plant exceeded 75% percent of its permitted annual ADF.



BACKGROUND

- Based on population and flow projections, expansion to 4.5 MGD must be in place by end of 2022.
- Expansion to either 6.0 MGD or 9.0 MGD must be in place by end of 2024.

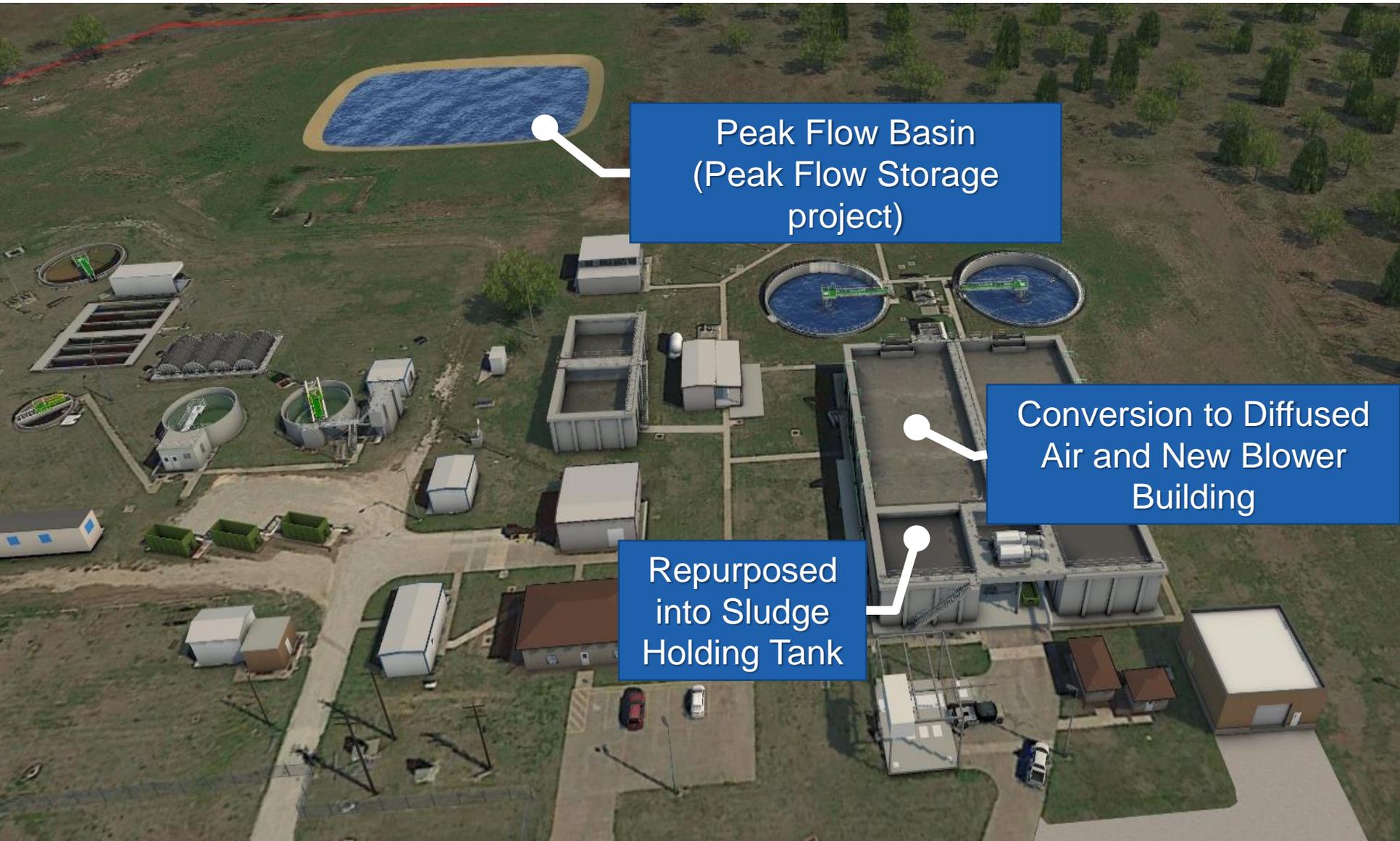


EXPANSION DETAILS

- 4.5 MGD (Preliminary OPCC = \$ 14.7 million):
 - Improvements to existing aeration basins by converting from mechanical aeration to diffused air with an associated new blower facility
 - Repurpose existing tanks into sludge holding tanks
- 6.0 MGD (Preliminary OPCC = \$ 25.7 million):
 - New influent pump station
 - New headworks facility, which includes fine screens and grit removal
 - New return activated sludge/waste activated sludge pump station
 - Additional filter
 - New ultra-violet disinfection structure
- 9.0 MGD (Preliminary OPCC = \$ 28.3 million):
 - New aeration basin and blowers
 - New secondary clarifier
 - New thickener
 - New filtration basin



Expansion from 3.0 MGD to 4.5 MGD

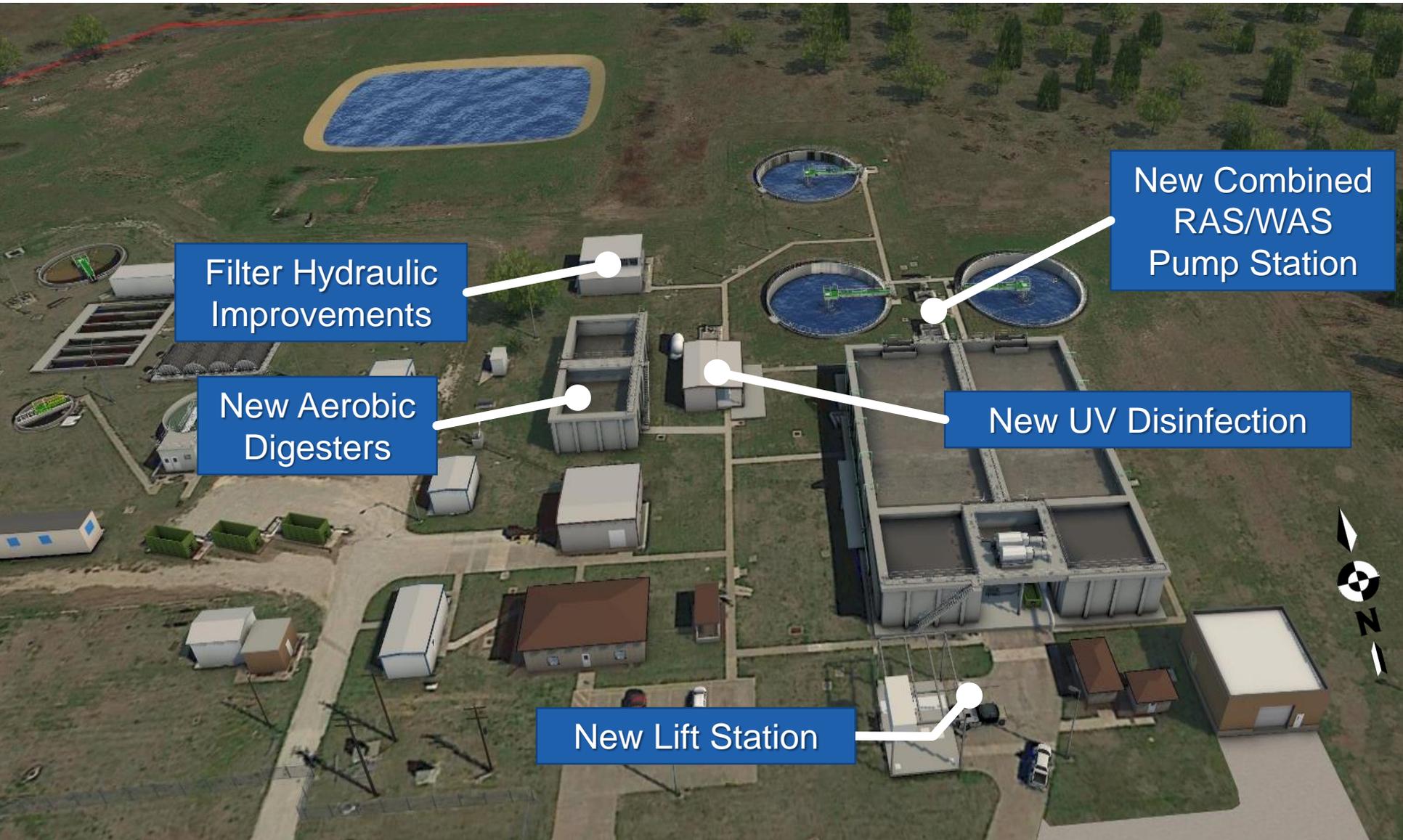


Peak Flow Basin
(Peak Flow Storage
project)

Conversion to Diffused
Air and New Blower
Building

Repurposed
into Sludge
Holding Tank

Expansion from 4.5 MGD to 6.0 MGD



Filter Hydraulic Improvements

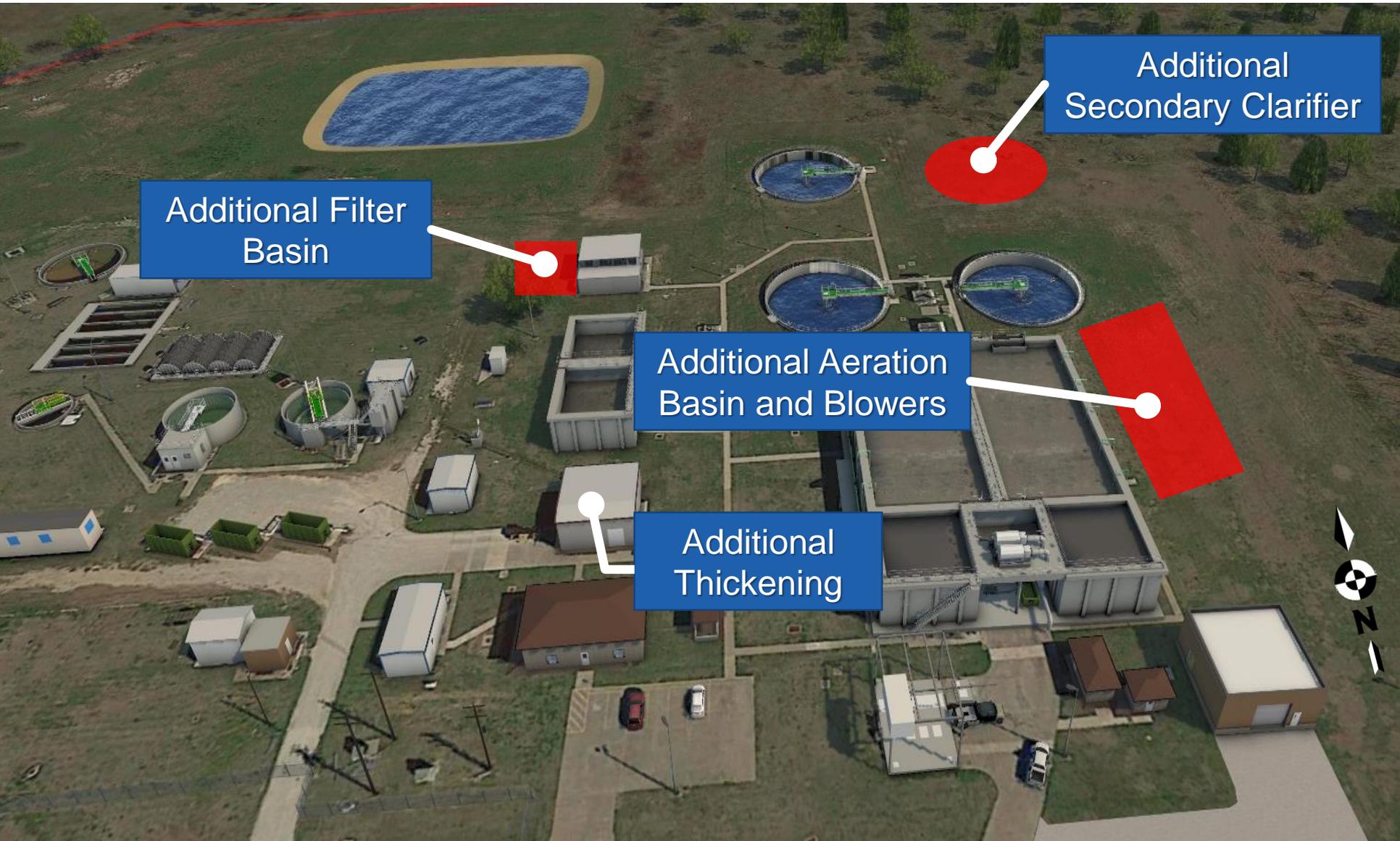
New Aerobic Digesters

New Lift Station

New UV Disinfection

New Combined RAS/WAS Pump Station

Expansion from 6.0 MGD to 9.0 MGD



Additional Filter Basin

Additional Secondary Clarifier

Additional Aeration Basin and Blowers

Additional Thickening



Proposed “Scope of Work” – Garver

- Project management – QA/QC
- Geotechnical
- Design for 4.5 MGD expansion
(90 and 100 percent deliverables)
- Design for 6.0 MGD expansion
(50, 75, and 100 percent deliverables)
- Design for 9.0 MGD expansion
(50, 75, and 100 percent deliverables)
- Operations impact plan
- Construction advertisement
- Fee: \$12,812,805



RECOMMENDATION

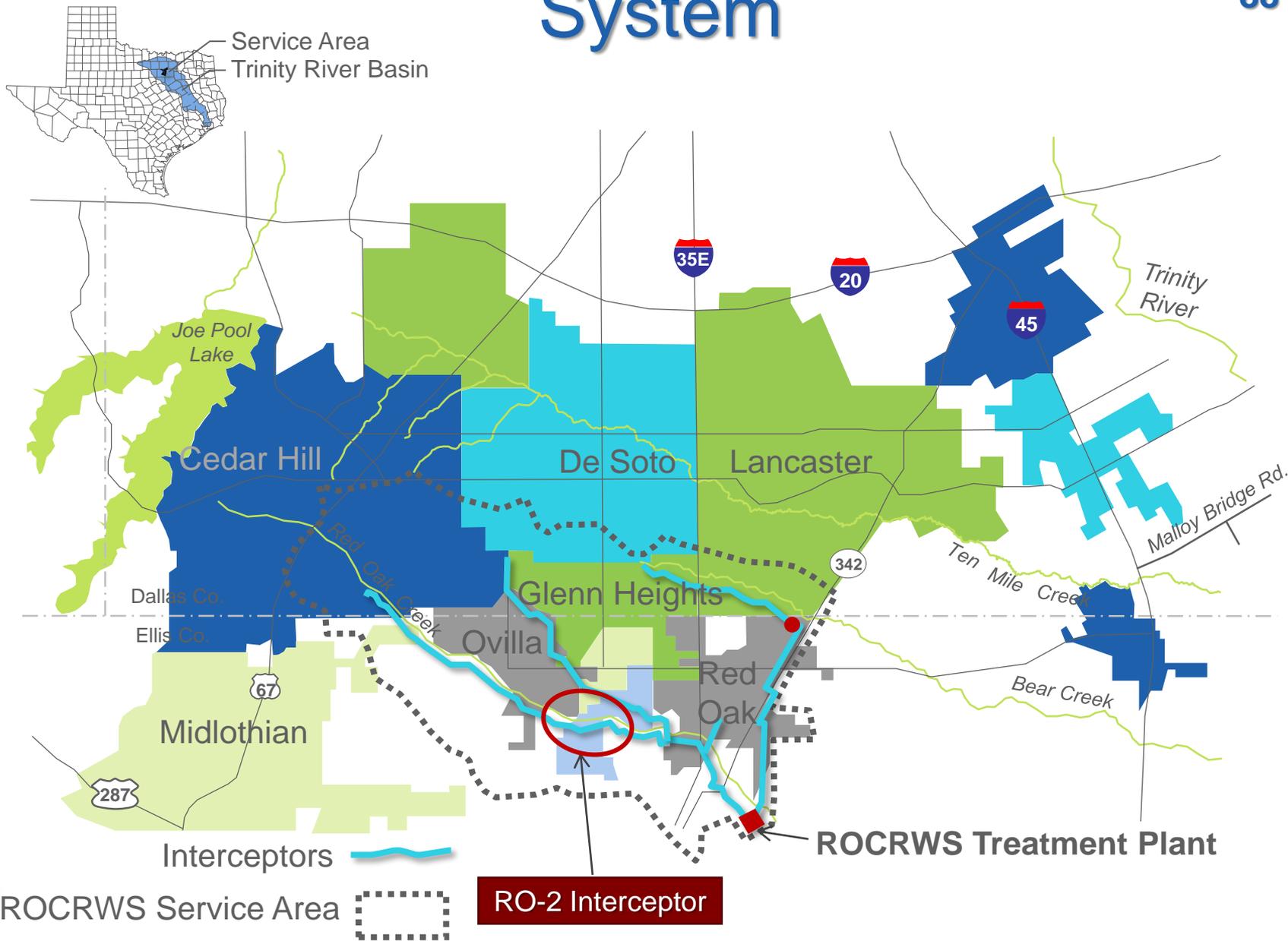
- Award contract to Garver, LLC in the amount of \$12,812,805 for professional engineering services related to the expansion of the Mountain Creek Wastewater Treatment Plant from 3.0 MGD to 9.0 MGD.



**Item L:
ROCRWS— Red Oak Creek Relief
Interceptor Segment
RO-2 — Contract Award,
Engineering Services Agreement,
and Materials Testing Services
Agreement**

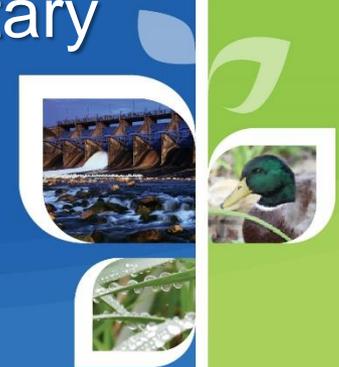


Red Oak Creek Regional Wastewater System

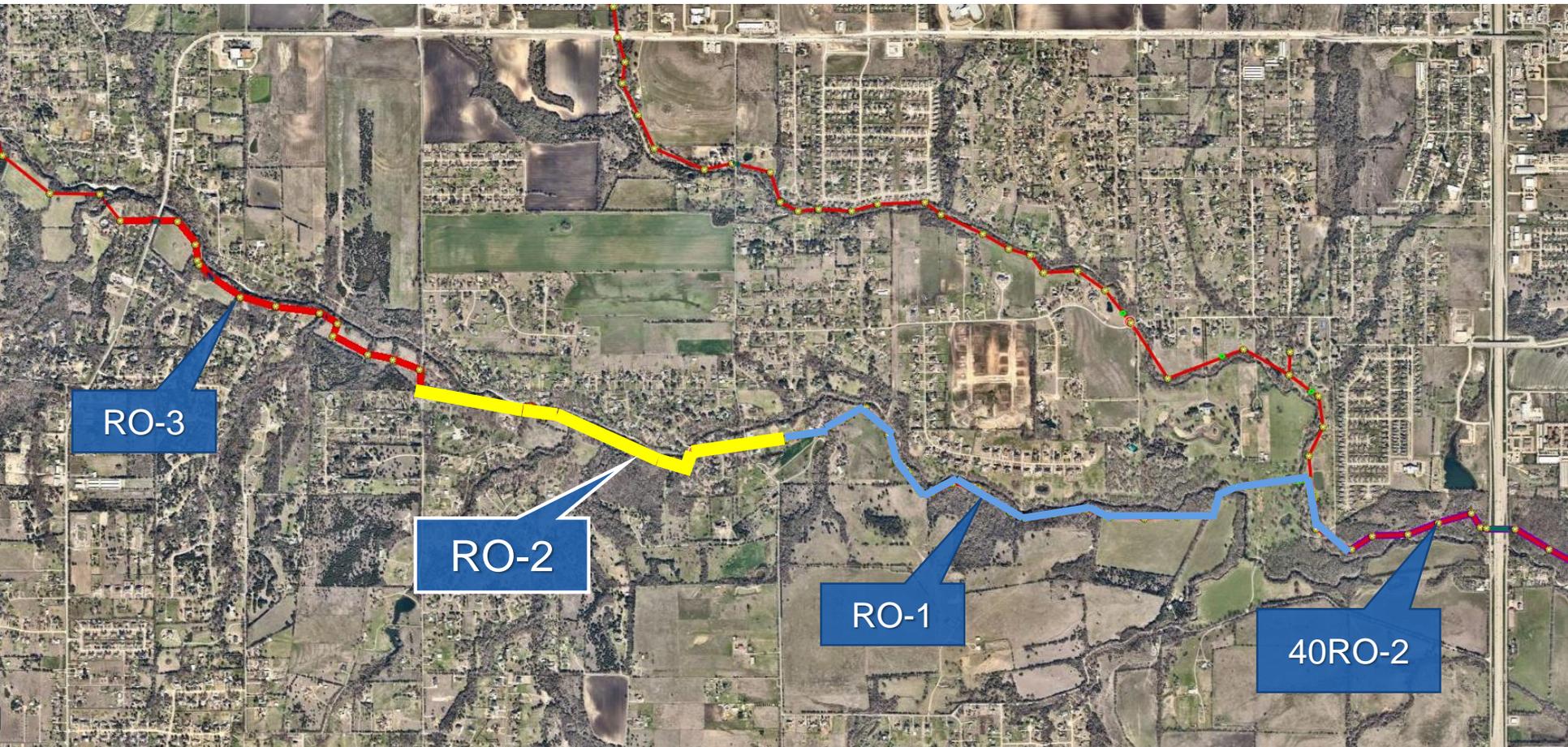


BACKGROUND

- Identified in the 2009 ROCRWS Infiltration and Inflow Assessment for capacity improvements.
- Red Oak Creek Interceptor is one of three major interceptors in ROCRWS that serves the cities of Cedar Hill, DeSoto, Glenn Heights, Lancaster, Ovilla, and Red Oak.
- RO-2 segment will provide relief to an existing 18” reinforced concrete pipe (RCP) installed in 1987.
- RO-2 is a commitment in the ROCRWS Sanitary Sewer Overflow Initiative with the Texas Commission on Environmental Quality.
- Preliminary and final design performed by BW2 Engineers, Inc.



RO-2 Relief Interceptor

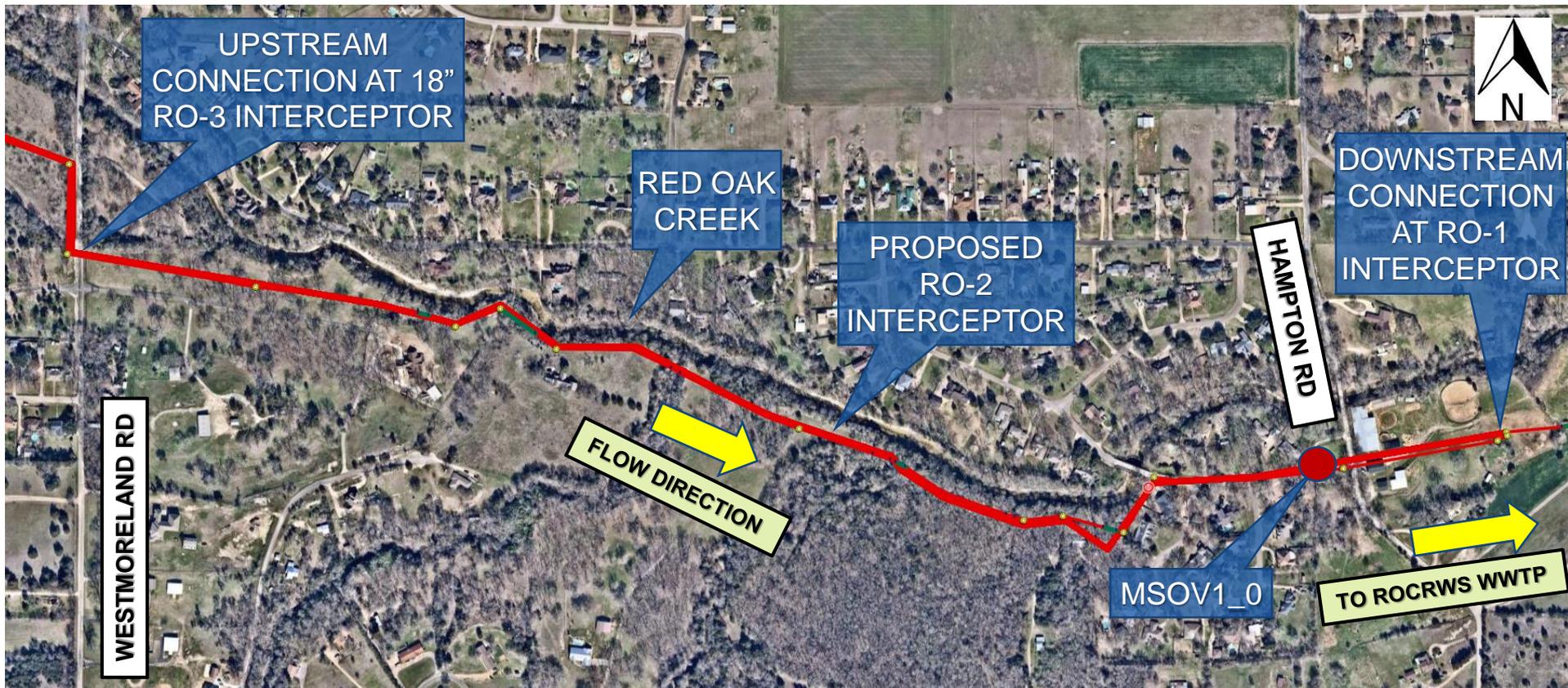


“SCOPE OF WORK”

- Project consists of 5,869 LF of 27”, 30” & 36” gravity PVC interceptor
 - 1,680 LF of trenchless construction
 - Remove existing 18” RCP interceptor & manholes from service; demolish existing meter station
 - Proposed RO-2 interceptor alignment is generally located 15’ from existing 18” interceptor to reduce additional easement acquisition costs
- New Parshall Flume meter station
 - Measures flows for Ovilla
 - Replaces existing undersized meter station
 - Relocated for improved operations access
- Connections to existing interceptor at upstream and downstream locations
 - Minimal bypass pumping; construction generally “in the dry”



RO-2 Project Overview



Bid Results – March 18, 2020

- Engineer's OPCC: \$5.7M

Bidders	Total Bid
Flow-Line Construction	\$5,669,672
S.J. Louis Construction of Texas	\$5,891,748
Belt Construction	\$5,986,818
Mountain Cascade of Texas	\$5,933,126
Thalle Construction	\$6,994,121

- Bid amount = OPCC



BW2 - Construction Phase Services

- Meetings/site visits/factory witness testing
- Review of pay applications, submittals, Requests for Information, schedule, Field Orders, Contract Modification Requests, etc.
- Documentation of field changes
- GIS data assistance
- Record drawings preparation
- Fee: \$226,780



D&S Engineering Labs, LLC

Construction Materials Testing Services

- Typical testing:
 - Backfill compaction
 - Material gradation
 - Concrete cylinder compression strength testing
- Fee: \$100,000



RECOMMENDATIONS

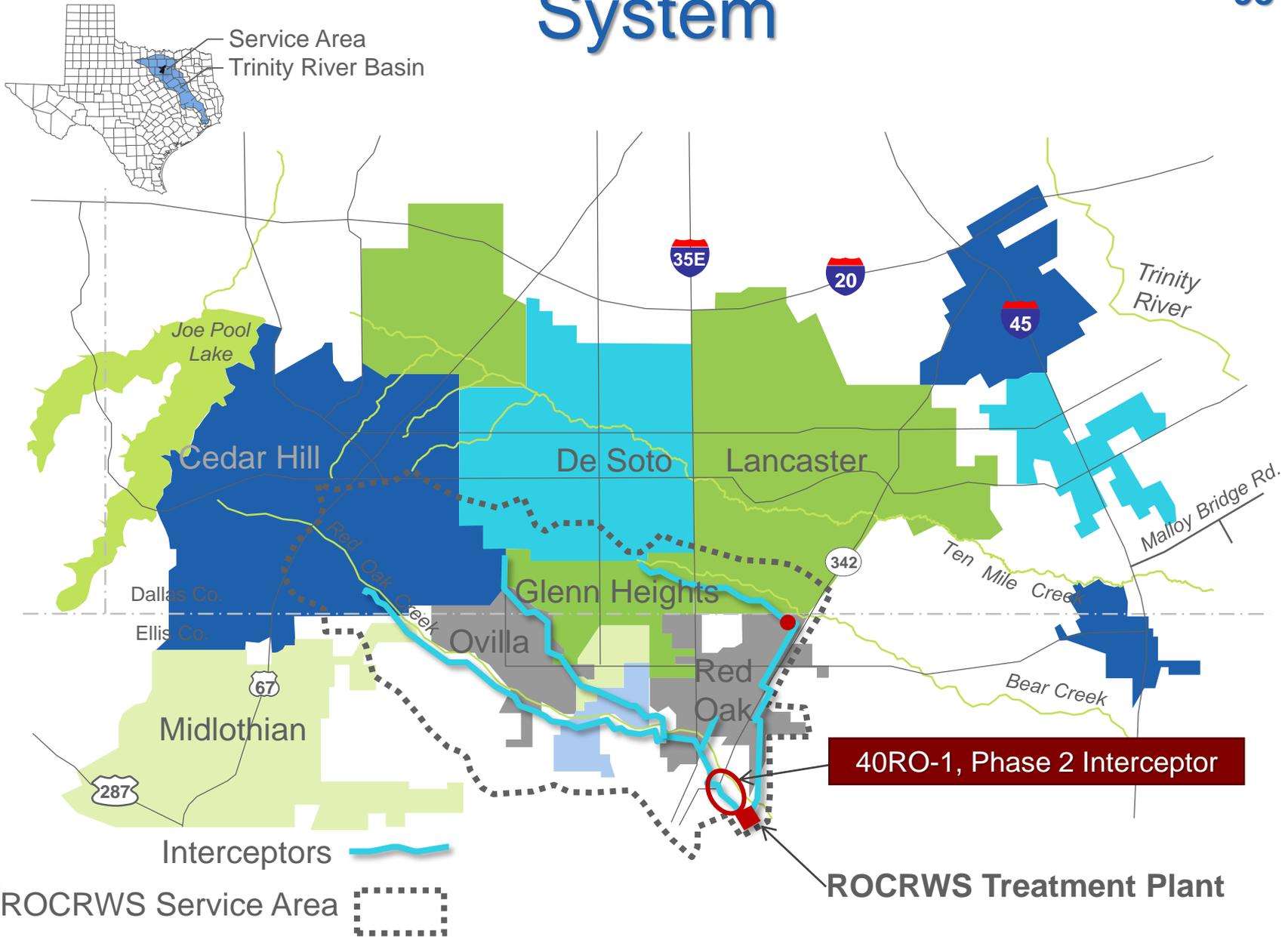
- Award construction contract to Flow-Line Construction for the RO-2 project in the amount of \$5,669,672
- Approve Engineering Services Agreement with BW2 Engineers, Inc., for construction administration services for RO-2 project in the amount of \$226,780
- Approve Materials Testing Services Agreement with D&S Engineering Labs, LLC, in the amount of \$100,000



**Item M:
ROCRWS — Red Oak Creek Relief
Interceptor Rehabilitation, Segment
40RO-1, Phase 2 — Second
Amendment — Engineering
Services Agreement**



Red Oak Creek Regional Wastewater System



BACKGROUND

- ROCRWS serves the cities of Cedar Hill, DeSoto, Glenn Heights, Lancaster, Ovilla and Red Oak.
- 40RO-1 is located in the City of Red Oak
 - Identified in 2009 ROCRWS Infiltration & Inflow Assessment as relief interceptor.
 - Primarily a capacity-driven project.
 - Preliminary Design Report (PDR) noted critical segments in poor condition.
 - Replaces existing 27" unlined reinforced concrete pipe in service since 1991.
 - Includes 6,760 linear feet (LF) of 48" pipe.
 - Includes new meter station (MSRO2_0) to measure flows for City of Red Oak.

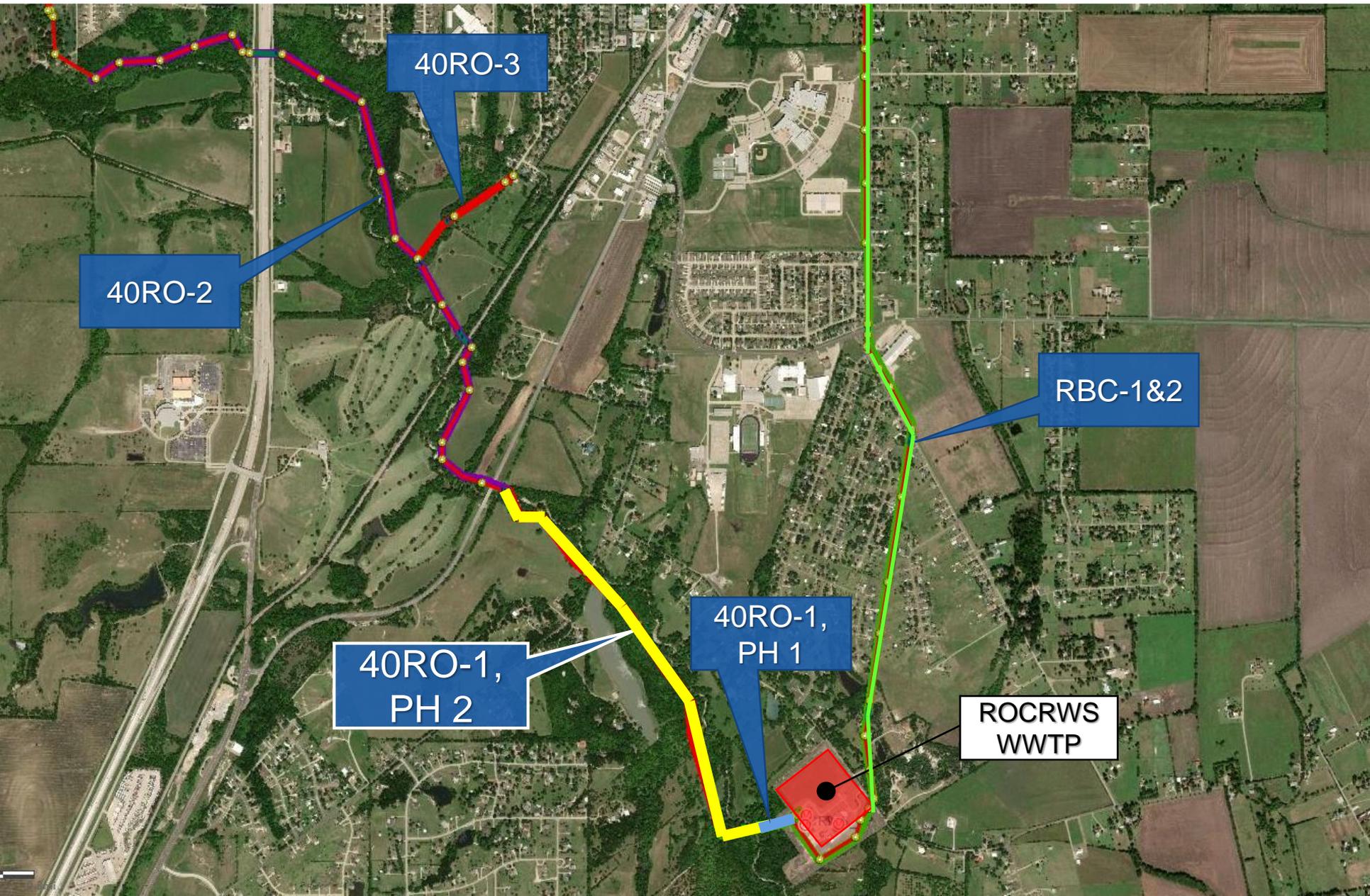


BACKGROUND

- 2014: ESA with CH2M-Hill Engineers for Preliminary Design services related to 40RO-1, 40RO-2, and 40RO-3.
- December 2015: Board approved final design ESA with CH2M Hill Engineers, Inc. for 40RO-1.
- February 2018: First Amendment to ESA approved to split project into two construction phases:
 - Phase 1: 710 LF of 27" from treatment plant to Red Oak Creek. Combined with RBC-1 & 2. Under construction. 85% complete.
 - Phase 2: Includes remaining 6,070 LF of pipeline and Meter Station MSRO2_0.
- Second Amendment needed to complete final design of the Meter Station and changes to siphon crossing.



40RO-1 Relief Interceptor



40RO-3

40RO-2

40RO-1,
PH 2

40RO-1,
PH 1

RBC-1&2

ROCRWS
WWTP

“Scope of Services”: CH2M-Hill

- Revised Meter Station MSRO2_0 Design:
 - Reduced construction and operational costs.
 - Utilizes a shallower vault.
 - Improved access for operation and maintenance.
 - Reduced inverted siphon pipe lengths.
 - Less excavation.
 - Estimated savings = \$400,000
- Design will accommodate flows up to 2060



RECOMMENDATION

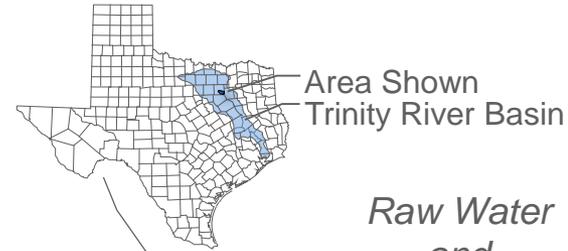
- Award second amendment to engineering services agreement with CH2M Hill Engineers, Inc., for final design engineering services Red Oak Creek Interceptor Rehabilitation, Segment 40RO-1 Phase 2, in the amount of \$89,946.



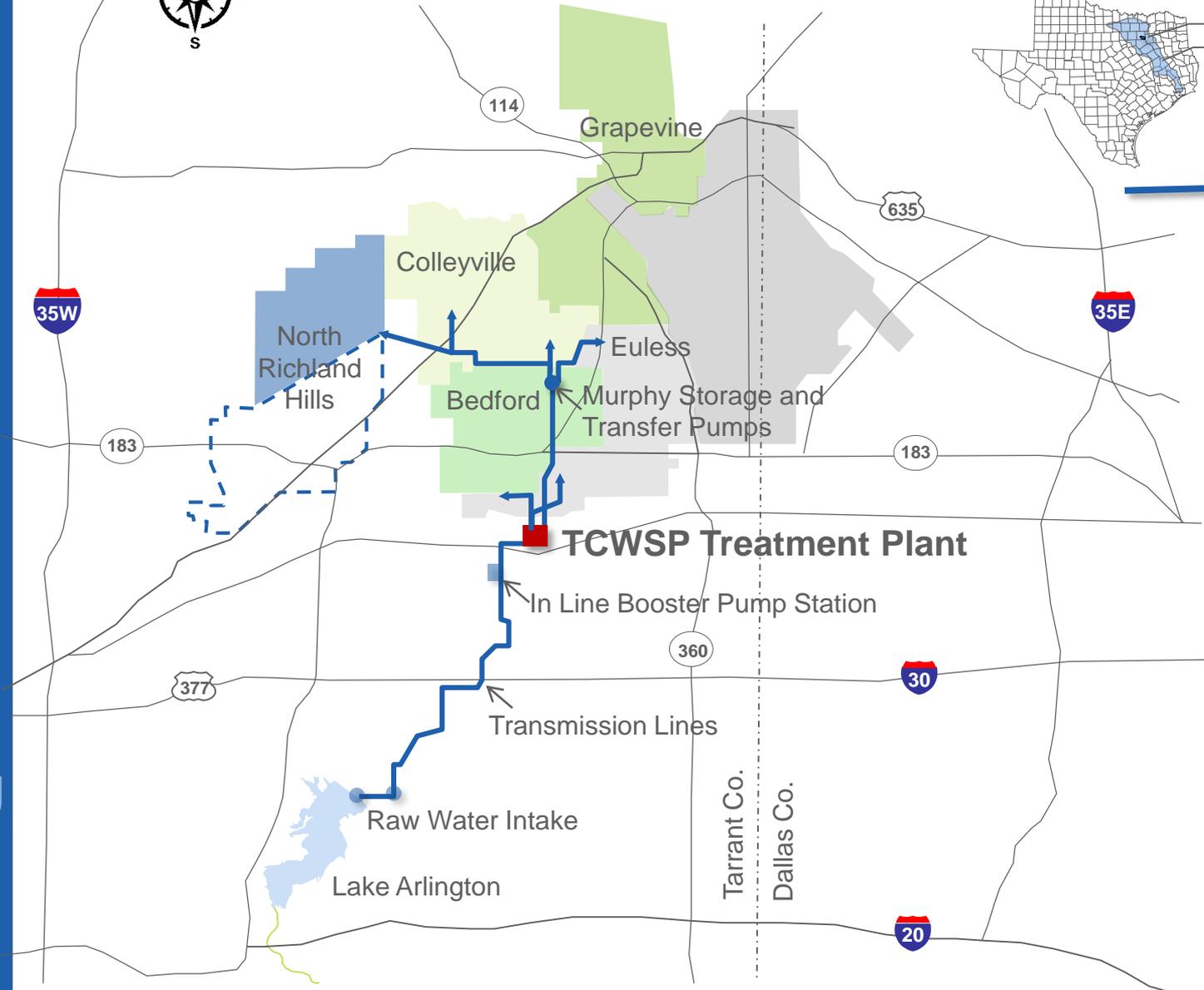
**Item N:
TCWSP — Lake Arlington Raw
Water Pump Station Shared
Operations Improvements —
Interlocal Agreement with the City
of Arlington for Construction
Services Cost Sharing**



Tarrant County Water Supply Project 105



*Raw Water
and
Distribution
System*

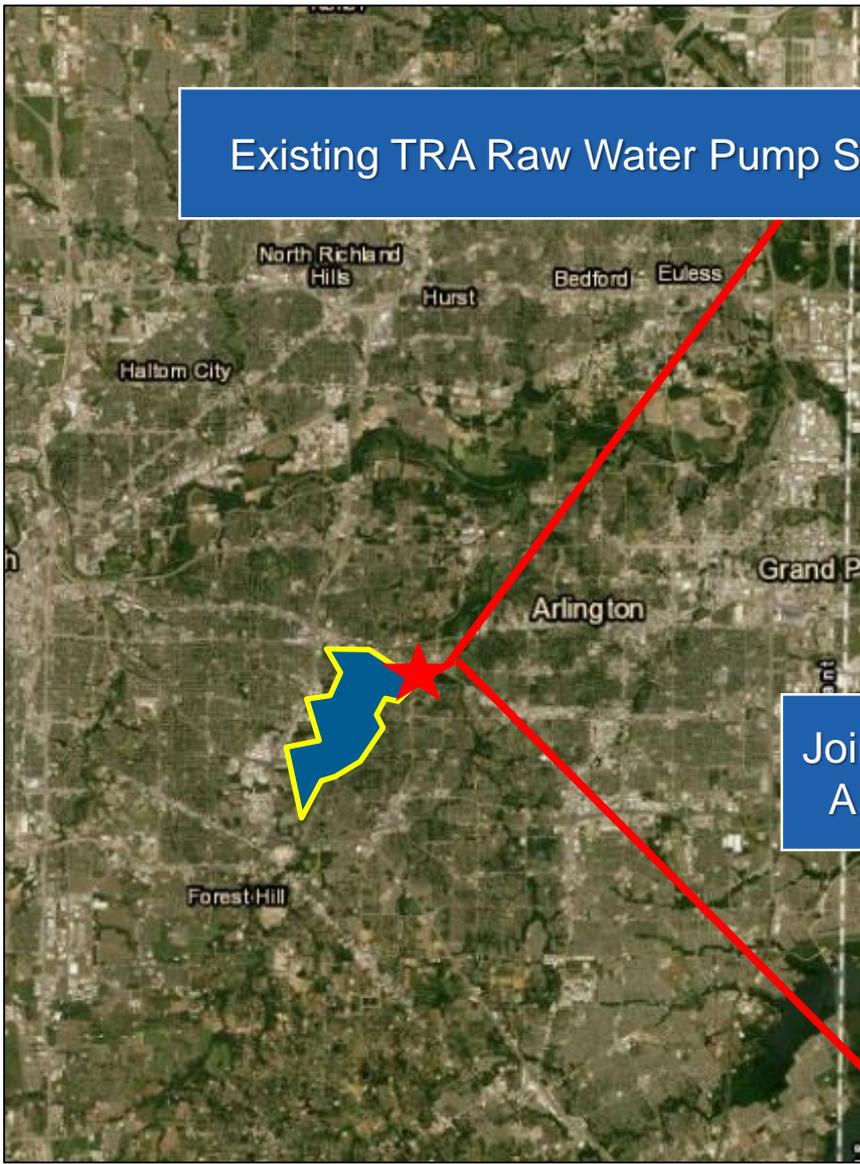


BACKGROUND

- TCWSP treats raw water and distributes water to Bedford, Colleyville, Euless, Grapevine, and North Richland Hills.
- TCWSP's pump station (built in 1956) is adjacent to Lake Arlington and is operated by TRA.
- Arlington's pump station (built in 1975) is located near TRA's pump station.
- The 2015 TCWSP Master Plan evaluated options for TRA's pump station:
 - Rehabilitation of existing pump station
 - New pump station
 - Joint-Use pump station (TRA & Arlington)



Lake Arlington Raw Water Pump Stations



Existing TRA Raw Water Pump Station



Joint Use TRA and City of Arlington Pump Station

BACKGROUND

- The most economical option for TRA is to share the pump station with Arlington.
- Arlington's newer and larger facility has the available pump space to accommodate raw water supply needs of both TRA and Arlington.
- TRA and Arlington entered into an Interlocal Agreement (ILA) in August 2018 to begin the final design improvements for the joint-use pump station.
- Arlington managed the design contract with Freese & Nichols (FNI). TRA shared in the costs (48% Arlington and 52% TRA)



Pump Station Improvements

- Pumps:
 - Three dedicated pumps for each Owner
 - Arlington: Firm Fixed Capacity = 80 MGD
 - TRA: Firm Fixed Capacity = 97 MGD
 - Shared Discharge Header
- Electrical:
 - Variable Frequency Drives (VFDs)
 - New Switchgear
 - New Transformers
 - Electrical Building Extension
 - Supervisory Control and Data Acquisition (SCADA)
- Yard Piping



Proposed Pump Station Improvements



Bid Results

- OPCC = \$19,800,000

Bidders	Total Bid
Archer Western Construction, LLC	\$20,716,377
Eagle Contracting, LP	\$20,880,777
PLW Waterworks, LLC	\$22,100,637

- Low bid (+4.6%)
- TRA met with Arlington and FNI and selected Archer Western Construction, LLC, for the construction of the improvements.



Engineering and Construction Management

- Arlington will be managing the engineering construction support, construction management and inspection for the duration of the project:

Consultant	Service	Amount
Freese & Nichols	Engineering Construction Support	\$640,161
Arcadis	Construction Management and Inspection	\$938,722

- TRA inspection staff will be notified as needed when construction pertains to TRA's assets.
- Arcadis under contract with Arlington for inspection services.



Interlocal Agreement

- Total Construction Phase Services (includes bid amount & professional engineering services provided by FNI and Arcadis): \$22,295,260
- Costs to be shared as follows:
 - TRA – 55%
 - Arlington – 45%
- Funding for the TRA's capital cost will be paid through TCWSP 2018 Bonds.
- Funding for the common capital shared between Arlington and TRA will be paid over 20 years through the TCWSP operation and maintenance budgets.



RECOMMENDATION

- Authorize the General Manager to execute the Interlocal Agreement between the Authority and the City of Arlington in the amount of \$22,295,260 for the Construction Phase Services associated with the Lake Arlington Joint Use Raw Water Pump Station for TCWSP.



**Item O:
Joe Pool Lake Watershed
Protection Plan, Phase II —
Watershed Modeling
Subcontract Award**



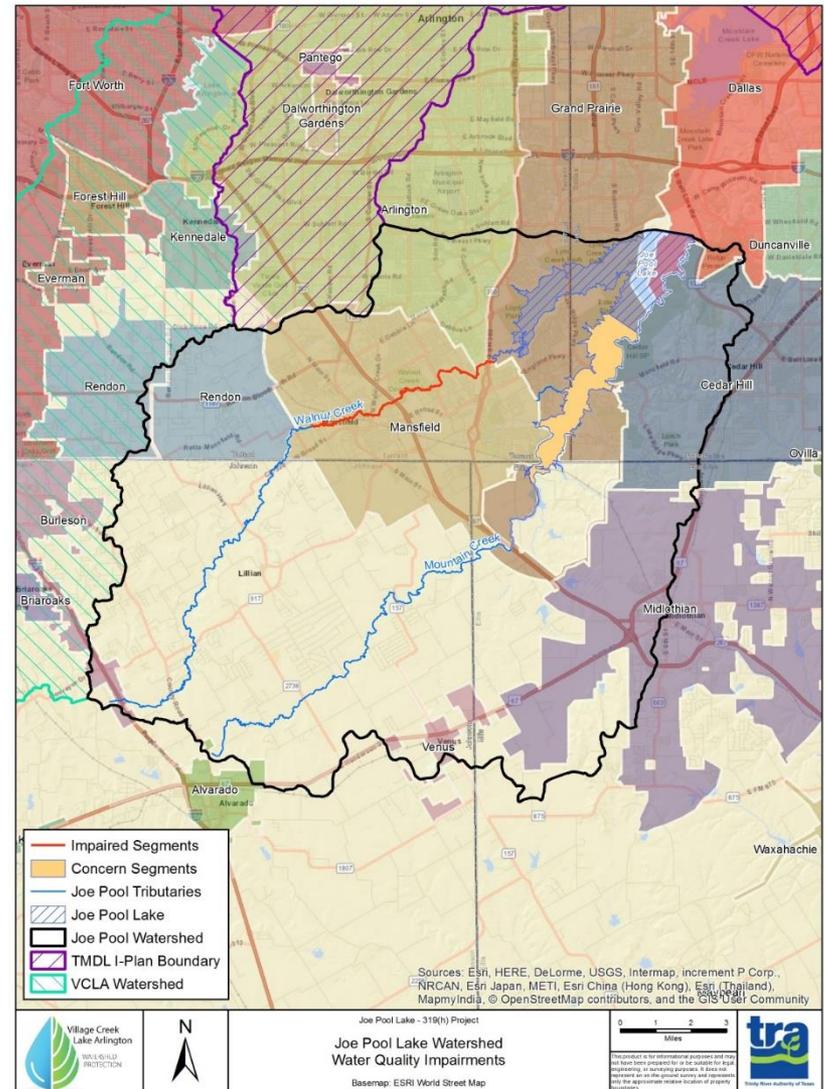
Joe Pool Lake

- Built in 1985
- Normal pool: 7,470 ac
- Storage: 176,900 af
- Local sponsor: TRA
- TRA water rights: 17,000 af



JPL Watershed Protection Plan (WPP)

- Joe Pool Lake WPP
 - Protect water quality
 - Address bacteria listing
 - Local partners
 - Grand Prairie
 - Cedar Hill
 - Mansfield
 - Midlothian
 - TRA
- Phase I (75% complete)
 - Data collection
 - Watershed characterization
 - Stakeholder development



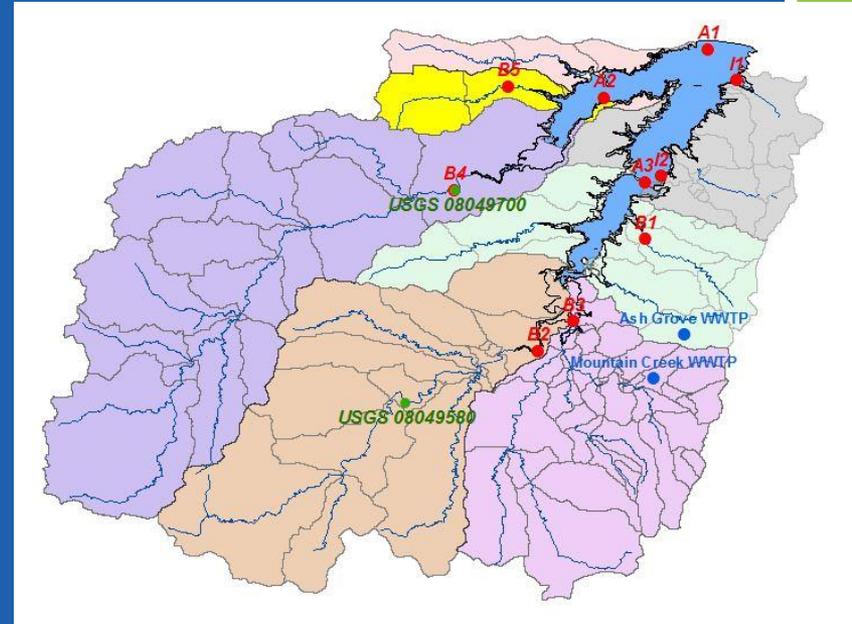
JPL Watershed Protection Plan (WPP)

- Phase II
 - Board approved October 2019
 - WQ data analysis
 - Watershed modeling
Source identification
 - Watershed Protection Plan
Development



Watershed Modeling Needs

- Subwatershed based
- User defined inputs
- Pollutant source identification
- Determine pollutant reduction targets



Soil and Water Assessment Tool



120

DOWNLOAD SWAT 2012

SWAT Executables	rev. 670
ArcSWAT Interface	v. 10.22
QSWAT Interface	v. 1.9
SWAT-CUP	v. 5.2.1.1

LEARN

- [Find a workshop](#)
- [Watch instructional videos](#)
- [Browse the documentation](#)
- [Join our user groups](#)

SWAT+

Introducing SWAT+, a completely revised version of the SWAT model. SWAT+ provides a more flexible spatial representation of interactions and processes within a watershed.

[Download SWAT+](#)
Updated 4 Dec 2019



2020 SWAT Conferences

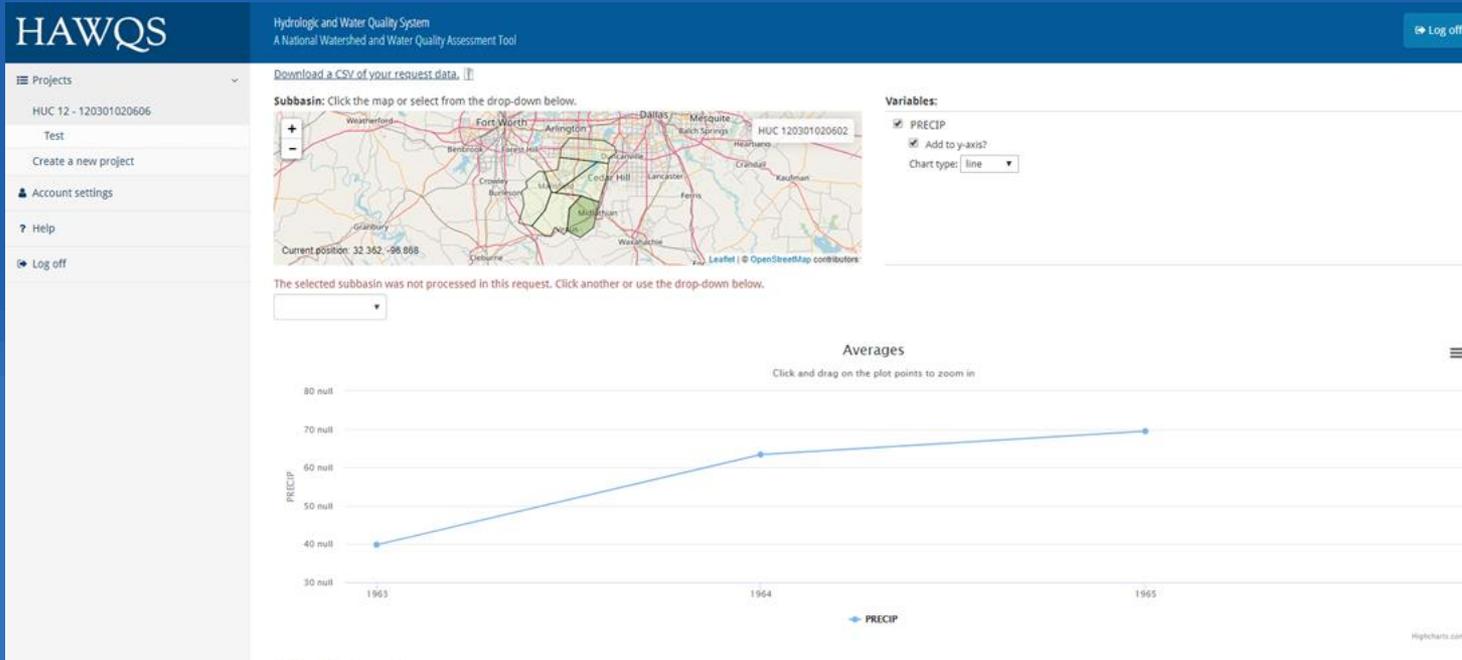
POSTPONED / Murcia, Spain

Sept. 26-30 / Bahir Dar, Ethiopia

Oct. 12-16 / Jeju, South Korea

HAWQS

- Hosted online at TAMU
- Interactive
- Watershed based
- Scenario and BMP testing



Hydrologic and Water Quality System

- Requires calibration and validation
- Will use data from Phase I
- Over 30 user input files, examples:
 - Precipitation
 - Soil Type
 - Land Use
 - Slope
 - Nutrient Loads
- Output can be used by the existing CE-QUAL-W2 water quality model of Joe Pool Lake

HAWQS

Hydrologic and Water Quality System
A National Watershed and Water Quality Assessment Tool

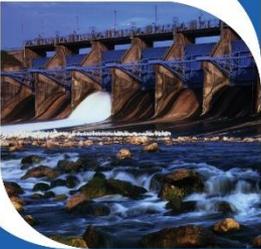


Interlocal Agreement

- An Interlocal Agreement has been negotiated with Texas A&M Agrilife Research in an amount not to exceed \$90,000
- Costs will be reimbursed through the TCEQ 319 Watershed Protection Plan Grant



**Item P:
Middle Trinity Basin Flood
Mitigation — Authorization for
Funding Application and Contract
Execution — Resolution No.
R-1547**



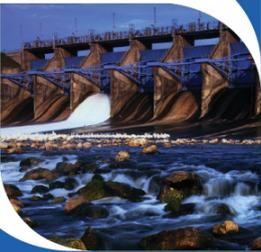
Summary Reports for Items Q-T:

**Q: Trinity River Authority Debt —
Summary Report of April
2020 Capital Contracts**

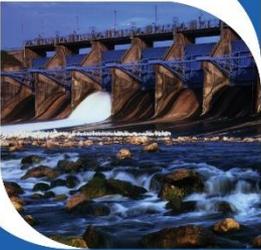
**R: General Manager-Approved
Agreements**

S: Change Orders

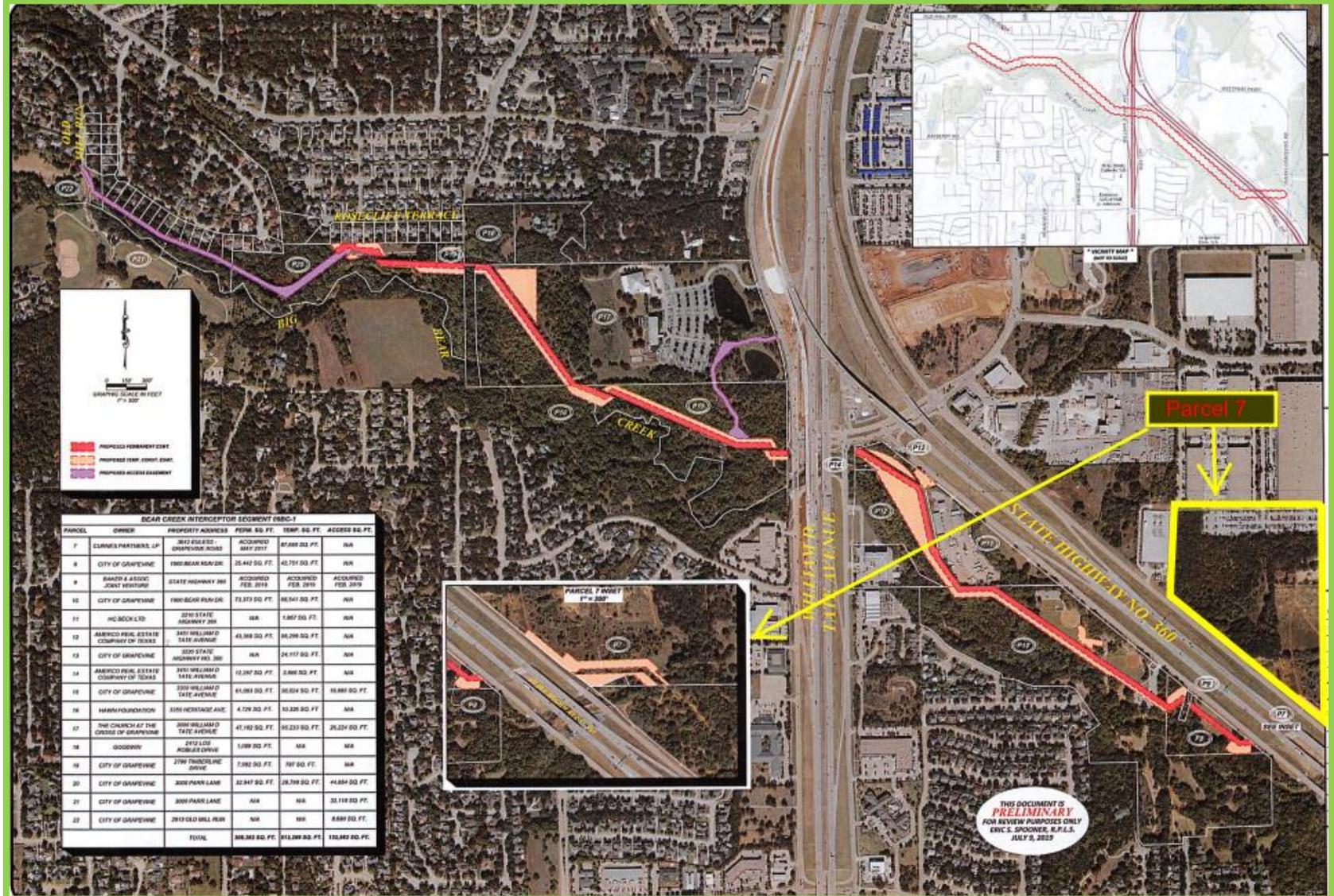
**T: General Manager-Approved
Pipeline Emergency Repairs
— Emergency Pipeline Repair
Contract**



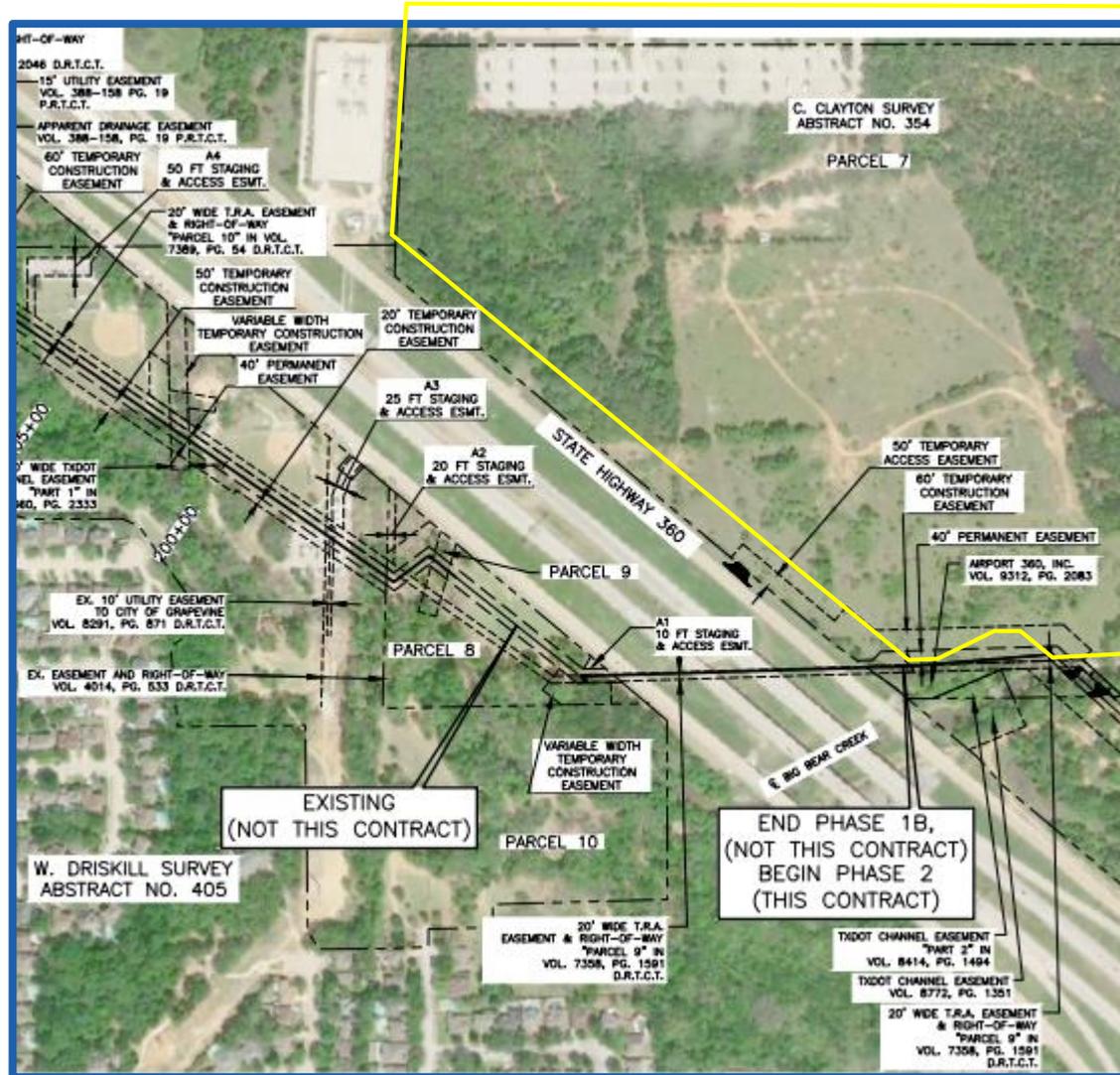
**Item U:
CRWS — Bear Creek Interceptor
Segment 09BC-1 (Phase 2)
Project — Right-of-Way
Acquisition**



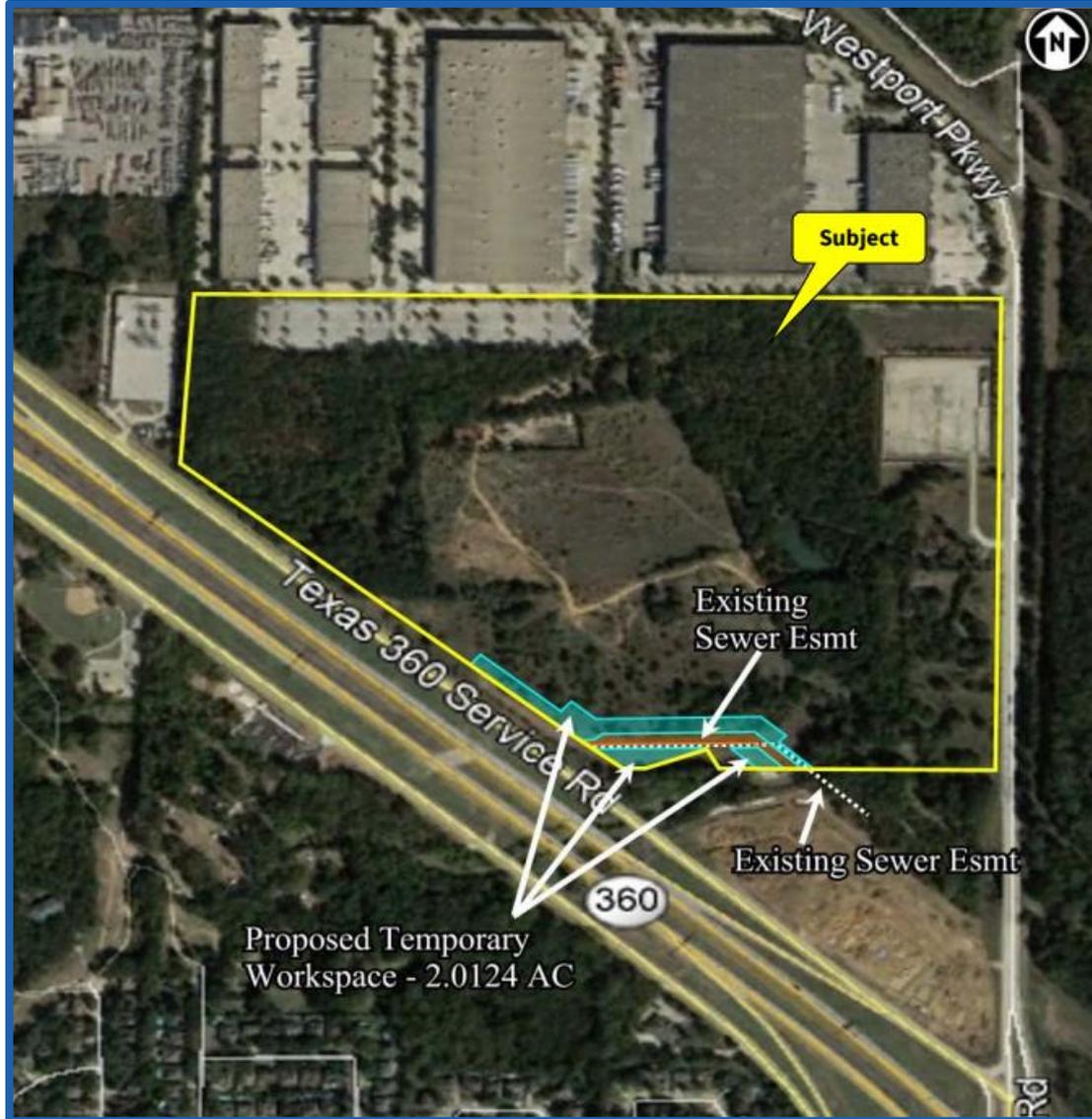
Project Aerial View – Parcel 7



Right-of-Way Strip Map – Parcel 7



CRWS Bear Creek Interceptor Segment 09BC-1 Right-of Way Acquisition Parcel # 7– Curnes Partners, LP

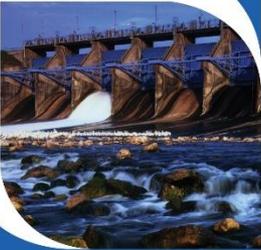


Parcel 7: Curnes Partners, LP

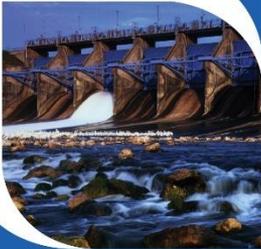
- TCE = 87,660 ft²
- Negotiating Range: \$87,660 to \$110,000
- Fee value is \$5.00 per ft²
- TCE appraised @ 20% of fee value per year



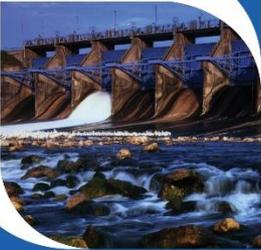
Item V: Condemnation Status Report



**Item W:
Selected Matters Pending before
The Texas Commission on
Environmental Quality — Status
Report**



**Item X:
Northern Region Projects —
Bids for Equipment, Supplies,
Spare Parts and Services**



Executive Committee

April 28, 2020

