Coastal Water Authority
Luce Bayou Interbasin Transfer Project Update

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In 1967 the Texas Legislature established a new Conservation and Reclamation District with the responsibility to transport and deliver raw surface water from the Trinity River to the Cities of Houston, Deer Park, Baytown and many industries along the Houston ship channel. This district was named the Coastal Industrial Water Authority which was later changed to Coastal Water Authority (CWA). CWA was authorized to acquire all necessary properties and construct the facilities to transport and deliver the water. CWA's first project is today the region's most significant surface water supply. The project, called the Trinity River Conveyance Project, was initiated in the late 1960's and completed in the early 1970's. It consisted of a pump station on the Trinity River in Dayton, Texas, 26 miles of earthen canal, a 2 billion gallon reservoir and second pump station near the Lynchburg ferry. Over the past 50 years this system has been expanded and upgraded to now supply up to 800 Million Gallons per Day (MGD).

While the Trinity River Conveyance Project was under construction, regional planners were also developing a second water supply called the Luce Bayou Diversion Project. The purpose of this project was to provide additional raw surface water to Lake Houston. The project was to consist of a 500 MGD pump station, 3 miles of dual 108-inch diameter pipelines and a few miles of earthen canal to the upper reaches of Luce Bayou which would then convey the water to Lake Houston. From the early 1970's through the early 2000's the project was evaluated many times but never built. Over those years when additional surface water was needed it primarily came by expanding the pump stations on the Trinity River Conveyance System.

With concerns of subsidence due to groundwater use, significant population growth in the region and the planned 400 MGD expansion of the Northeast Water Purification Plant on Lake Houston the Luce Bayou project was again considered and ultimately selected for implementation in the early 2000's. Permitting began in 2005 with development of an Environmental Impact Statement to evaluate alternate routes for the project and the associated impacts to the environment. The permitting process was complete in 2014. The project, now named the Luce Bayou Interbasin Transfer Project, will transfer water from the Trinity River Basin to Lake Houston in the San Jacinto River Basin.
Similar to the Trinity River Conveyance Project, the LBITP is being implemented by CWA who is under contract with the City of Houston to permit, design and construct this 500 million gallon per day (MGD) raw water supply project by June 2019. The primary project elements consist of an intake and pump station on the Trinity River, 3 miles of

dual 96-inch diameter pipelines, 23.5 miles of earthern canal, and an outfall structure located at Luce Bayou and Lake Houston. Secondary project elements consist of a 5.5 mile access road, canal maintenance facility and 138 kV electrical transmission service. Engineering and design work for the primary and secondary projects began in 2014 and was complete in early 2017. Construction work began in 2015 and will be complete by 1st quarter of 2019. A copy of the planned design, procurement and construction schedule is provided as Figure 1. Specifics for each of the projects are provided below along with construction progress photos:

Capers Ridge Access Road

- New 5.5 mile access road through previously forested land to the proposed Capers Ridge Pump Station.
- Clearing and Grubbing: 40 Acres
- 10 miles of road side ditches
- 2,500 tons of lime for subgrade stabilization
- 66,000 tons of crushed rock

138-kV Transmission Line and Substation

- Sam Houston Electric Coop – Service Provider
- Dual services run from Entergy 138-kV Transmission Line
- 9 miles with canal ROW
- Substation constructed adjacent to the Capers Ridge Pump Station

Canal Maintenance Facility

- Facilities to house equipment and personnel used to maintain the 23.5 miles of canal
- Fuel storage and pumps
- Vehicle and equipment maintenance equipment

Capers Ridge Pump Station

- 8 bay side river intake and pump station
- Initially 4 pumps installed capable of 240 MGD
- Ultimately 8 pumps capable of 500 MGD
- 10,000 CY concrete
- Deep cofferdam construction (40 ft)
- Vertical turbine pumps (45,000 GPM)
- Motors – 2,300 HP

Canal System

- 23.5 miles of earthen canal
- 3M cubic yards of soils excavated/compacted
- Slope: 0.015%
- 5 water level control gates
- 22 inverted siphons below drainage features, roads and pipelines
- 11 bridges
- Sedimentation basin and dredge dewatering basins

Dual 96-Inch Diameter Pipelines

- Connect CRPS to the Canal System (3 miles)
- Installed over Capers Ridge (elev 44 to 110ft)
- Pig launching and receiving facilities
- Welded steel piping with cement mortar lining and polyurethane coating