

Kellway Lift Station Assessment And Capital Improvement Program Report

August 22, 2017

The logo for Addison, featuring the word "ADDISON" in a bold, blue, sans-serif font inside a white circle. The circle is set against a blue background that has a white diagonal line running from the top-left to the bottom-right.

Background

A small version of the Addison logo, consisting of the word "ADDISON" in blue text inside a white circle, which is itself on a blue background with a white diagonal line.

- Kellway Lift Station was built in 1998
- Moves wastewater from northern portion of Addison into the sewer tunnel system that runs to the Trinity River Authority treatment plant in Dallas
- Sanitary sewer system typically runs by gravity flow but if not possible, a lift station is installed
- Provides pumping to move sewage from lower elevation to a higher elevation

Location

ADDISON



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Goals of the Assessment

ADDISON

1. Inventory and condition assessment
 - Asset inventory based on as-built drawings and site visits
 - Three categories of assets - structural, process and mechanical, and electrical
2. Process control assessment and recommendations
 - Review existing Supervisory Control and Data Acquisition System (SCADA) and provide improvement recommendations
 - Review existing pumping parameters
 - Review regulatory requirements
 - Develop process improvement recommendations
3. Capital Improvement Program development and recommendations
 - Prioritized based on "Risk Assessment"

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Kellway Lift Station Assessment



- Assessment was conducted by Garver
- Six major components:
 1. Condition assessment and Business Risk Exposure
 2. SCADA Improvements
 3. Capacity and Process Control Optimization
 4. Regulatory Assessment
 5. Recommendations and Costs
 6. Capital Improvement Plan

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Kellway Lift Station Project Groups



Six project groups identified

1. Electrical Improvement Projects
 - Replacement of old, out of code electrical equipment
2. Lift Station Bypass Pumping Project
 - Installation of a permanent sewer bypass system
3. Lift Station Pump Improvements
 - Replacement of existing pumps and installation of third pump

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Kellway Lift Station Project Groups (cont)



4. Regulatory Upgrades
 - Additional monitoring and alarming improvements
 - Ventilation system improvements
5. Communication Upgrades
 - Improvements to communication system along with redundancy
6. Control System Improvements
 - Provide additional control and protection for the pumps and motors

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Assessment Results



Kellway Lift Station CIP					
Project Name	FY18	FY19	FY20	FY21	FY22
Power Distribution Improvements					
<i>Replace Automatic Transfer Switch</i>	\$ 57,750.00				
<i>Replace Switchboard MSB</i>	\$ 68,250.00				
<i>Replace Main Circuit Breaker with Wiring and Conduit</i>	\$ 130,200.00				
Replace MSB-3 (F-1 Exhaust Fan Control Panel 7.5 HP)	\$ 11,550.00				
Arc Flash Hazard Assessment - Engineering	\$ 13,650.00				
Installation of Permanent Bypass Pumping System		\$ 556,600.00			
Installation of Dewatering Container Filter	\$ 68,200.00				
Replace Pump #1			\$ 74,750.00		
Replace Pump #2			\$ 74,750.00		
Install Pump #3			\$ 74,750.00		
Ventilation Improvements				\$ 40,800.00	
Alarming Improvements				\$ 93,600.00	
Motor Protective Relays				\$ 48,000.00	
Installation of Variable Frequency Drives					\$ 385,000.00
Control System (SCADA) Improvements					\$ 146,250.00
Total	\$ 349,600.00	\$ 556,600.00	\$ 224,250.00	\$ 182,400.00	\$ 531,250.00
				5 Year Total	\$ 1,844,100.00

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Next Steps

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- FY2018 projects are funded and subject to Council adoption of the annual budget
- Design and construction contracts will be brought to Council for consideration
- Assessment will be updated on a regular basis

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Questions

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