

Water Quality Projects Update



Council Presentation
November 15, 2016



Water Quality Progress

- **Objective:** Improve and stabilize water quality in the City's water distribution system
 - **Action:** City has implemented actions to address the following areas using a holistic approach:
 - Source
 - Treatment
 - Distribution System
 - **Status:**
 - Significant improvements in the stability/consistency of water quality have been achieved
 - Longer-term CIP projects are currently underway to continue to improve overall water treatment and distribution.
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Source Actions



ACTIONS TAKEN

- 1 Addl. Raw Water Sampling
- 2 Weather/Seasonal Monitoring
- 3 Bromide Evaluation

CURRENT AND FUTURE ACTIONS

- 4 Solids Management (E13052/E16308)
- 5 Alkalinity and pH Evaluation
- 6 Pre-Sedimentation Evaluation
- 7 Raw Water Analyzers
- 8 Nueces River Pump Station Improvements



Treatment Actions



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|-----------------------------|---|
| 1 Chemical Dosing Locations | 8 Chlorine Dioxide System |
| 2 Analyzer Replacement | 9 Coagulant Evaluation |
| 3 Mixing Enhancements | 10 Chlorine System Improvements |
| 4 Flow Pacing | 11 Solids Removal |
| 5 Filter Flow Improvements | 12 Pilot Plant System and Testing |
| 6 Process Target Changes | 13 Raw Water and Chem Feed Improvements (E12211/8643) |
| 7 Training and Procedures | |



Distribution System Actions

ACTIONS TAKEN:

- Cleaned all storage tanks
- Evaluated and automated chlorine booster stations
- Updated Nitrification Action Plan
- Evaluated and changed current Conversion Procedures
- Modified distribution system operations

FUTURE ACTIONS:

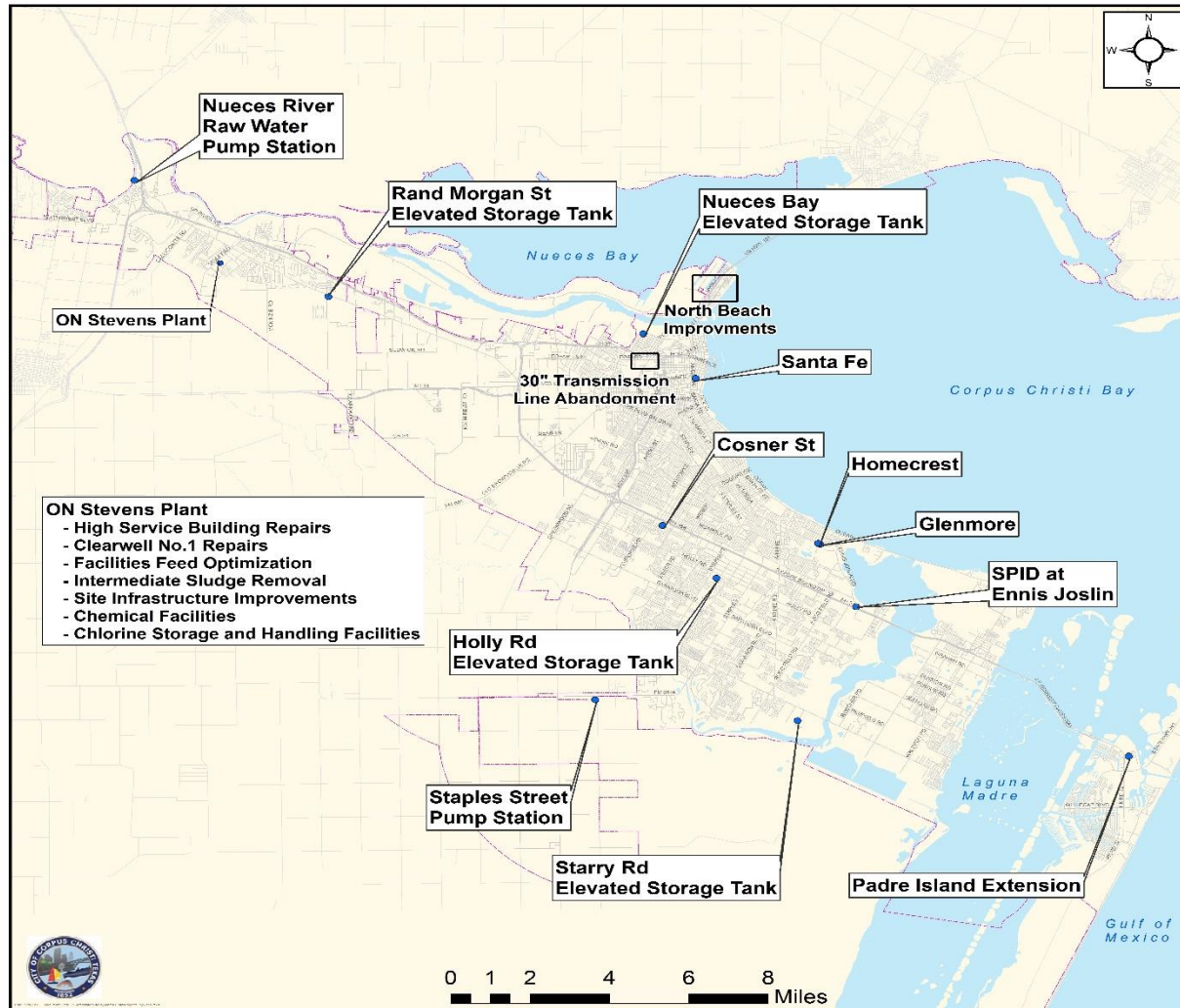
- Back-up power for Navigation and Staples Pump Stations
- Additional pumps at Staples Pump Station
- New analyzers at Staples and Sand Dollar Pump Stations

IN PROGRESS:

- Tank sampling and inspections
- Navigation Pump Station Monochlor Tank Shark Pilot study
- Tank mixing systems



Current Capital Improvement Plan





Current Capital Improvement Plan (CIP)

Project Name	Cost (\$M)	Start	Completion
Nueces River Raw Water Pump Station	16.8	Sep 2014	Jul 2018
ON Stevens Chlorine Storage and Handling Facilities Improvements	9.0	Mar 2017	Feb 2019
ON Stevens Chemical Facilities (Alum, Polymer and LAS) Replacement	16.7	May 2016	Jan 2020
ONSWTP Raw Water Influent Improvements	25.0	May 2016	Jan 2020
ONSWTP Interim Sludge Management Improvements	6.5	May 2016	Sep 2017
ONSWTP Fluoride Feed System Improvement	1.1	Oct 2015	Jul 2017
Alternative Capacity Power Generation (ACR Phase 1)	1.2	May 2015	Sep 2017
Staples Street Pump Stations Phase 2 - Third and Forth Pumps	3.3	May 2015	Jun 2017
Elevated Water Storage Tanks (ACR Implementation Phase 2)	12.5	Jun 2014	Feb 2018
Elevated Water Storage Tanks (ACR Implementation Phase 3)	18.0	Oct 2016	Nov 2020



Source



Treatment



Distribution System



Summary of Current Status

- City has implemented source, treatment, and distribution system actions to address water quality concerns.
- City has seen significant improvements in the stability of water quality throughout the distribution system as a result of these actions.
- City has several long-term projects that are currently underway to modernize the water treatment plant and distribution system.