Wastewater CIP Overview

Bob King Johnson, P.E., PMP
Manager, Master Planning
Wastewater CIP Overview

• History of SAWS Sewer System
• Types of Wastewater CIP
• Existing Infrastructure
• Hydraulic Model
• EPA Consent Decree
• Collection CIP example
• Treatment CIP example
San Antonio Sewer System History

1894 collection system

1933: Rilling Road

1987: Dos Rios
Types of Wastewater CIP

Collection

Treatment
Types of Wastewater CIP

Collection

Treatment
Types of Wastewater CIP

Collection

Treatment

Medio Creek

Leon Creek

Dos Rios
Existing Infrastructure

- **Wastewater Collection**
  - 5,560 miles of sewer main
  - 402 miles LD (≥ 24-inch)
  - 5,158 miles SD
  - Includes 940 Miles over EARZ
  - 108,400 manholes
  - 290 siphons
  - 80 miles of force main
  - 154 lift stations

- **Wastewater Treatment**
  - 3 water recycling centers
  - 187 MGD rated treatment capacity
    - Dos Rios – 125 MGD
    - Leon Creek – 46 MGD
    - Medio Creek – 16 MGD
Hydraulic Model

1998 Collection System Model

- First Hydraulic Model
- Only large diameter mains (24”+)
- 4% of total system modeled
- HydroWorks software was used
Hydraulic Model

2017 Collection System Model

• Primarily large diameter mains (12”+)
• Every parcel represented
• Calibrated in 2015
  – 245 flow meters
  – 3 years of data
  – Multiple rain events – varying intensities
• 23% of total system modeled
• InfoWorks ICM software
• Far West, West, Central, South and East)
EPA Consent Decree

- Sanitary Sewer Overflow Reduction Program (SSORP)
  - Tasked with assessing capacity and condition of system
  - Remedial measures plan
  - HDR Engineers
- Extensive flow monitoring and rainfall study
- Calibrated model vetted by SSORP consultant team
- Extensive basin planning studies
- Impact on CIP
  - $1 Billion of pipeline and storage projects
  - Deadline for construction: 2023
  - Extensions for specific projects may be requested
Capital Improvements Advisory Committee

Wastewater Collection CIP Example

A Revised Collection Project included in 2014 Study

- Western Sewershed Project W-6
  - $150+M vs. $84M
  - Environmental concerns
  - Higher cost
    - Longer alignment
    - Tunneling alignment
    - Previous estimate low
Wastewater Treatment CIP Example

New Treatment Project since 2014 Study

- Riling Road Storage
- Storage mitigates impact to WRC
- $170 Million
- 15 MG
- Expansion to 30 MG