New Orleans - In The Beginning

• Settled by the French in early 1700’s

• Inhabitants struggled with water problems from the beginning.

“... a place of a hundred wretched hovels in a malarious wet thicket of willows and dwarf palmettos, infested by serpents and alligators” Pierre Francois Xavier de Charlevoix (1721)
Advisory Board formed in 1893, issued their Report in 1895

Construction of projects recommended by the Board began in 1896

In 1903, the Drainage Commission was merged with the Sewerage and Water Board

By 1905, almost 40 miles of canals constructed and 6 drainage pumps installed.
Building the System

- By 1915, eleven Baldwin Wood Screw Pumps powered by electric motors had been installed.
- By 1925, pumping capacity increased to 13,000 cfs.
- Death rates due to water borne/mosquito related diseases dropped drastically.
- Property values increased.
- City rapidly expanded northward into the lower lands bordering Lake Pontchartrain.

The incredible success of the drainage system was world renowned.
Modern Day Drainage System
Modern Day Drainage System

- 150 miles of covered canals
- 100 miles of open canals
- 24 major drainage pumping stations
  - 99 Major Drainage Pumps
  - 21 Dry Weather Pumps
  - Total Pumping Capacity >50,000 cfs
- Approx. 50,000 acres drained
Modern Day Drainage System

• Power Plant and Power Distribution System
  • 5 Turbines
  • 5 Frequency Changers

<table>
<thead>
<tr>
<th>UNIT</th>
<th>YEAR</th>
<th>MW</th>
<th>PRESEDITIONAL TERM</th>
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<tr>
<td>TG1</td>
<td>1909</td>
<td>6</td>
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<td>1929</td>
<td>15</td>
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<td>20</td>
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<td>TG5</td>
<td>1958</td>
<td>20</td>
<td>Eisenhower</td>
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25 Hz Power Output in 2012

Everyday operational capacity requires 5MW of power on average
August 5, 2017

9” Rainfall in 3 Hours

• Significant flooding in portions of the City
• Exposed significant weaknesses in the Drainage System
  • Only 1 of 4 25 Hz Turbine Generators in service
  • 18 Drainage Pumps out of service for maintenance issues
• City Declared Emergency
Emergency Initiatives

- Achieve System Stability
  - Repair pumps
  - Address staffing shortages
  - Address Power Shortage
- Maintain Readiness
- Begin Planning Process
Current Status

- **Drainage Pumps**
  - 97 out of 99 Major Drainage Pumps in service
  - 98% of total nameplate capacity

- **Power Generation**
  - All Turbines Operational
  - More than 70 MW of 25 Hz power generation capabilities
Planning For The Future

• Maintain System Stability and Readiness
  • Fill staff vacancies
  • Improve O&M activities

• Develop and Execute Infrastructure Modernization Master Plan

• Identify New Funding Sources