



# Overview of Construction Management

Engineering and Operations Committee

Item 6e

January 10, 2022

# Construction Management

- Five teams
- Diverse staff of fifty inspectors and engineers



Weymouth - ORP



Team Managers



Northwest Pipe Co. – Casa Loma Siphon



Iron Mountain – Reservoir Liner



# Construction Management Involved in All Project Phases

- Planning & Design
  - Constructability review
- Advertisement & Contract Award
  - Pre-bid conference
  - Pre-construction meeting
- Construction
  - On-site contract administration
  - On-site inspection & testing
  - Off-site fabrication inspection
- Warranty & Legal Support



Second Lower Feeder – PCCP Rehabilitation

# What We Work To Avoid



Northwest Pipe Co. – Pipe Fabrication



# Goals for Projects

- No accidents or injuries
- Work meets specifications
- Complete on time & within budgets
- Minimize impacts to operations



# Project Partnering

- Drive a project-first mentality
- Approach challenges as a team
- Resolve problems at the lowest level



Greg Ave. PCS – Pump Modification & New Control Building



# Project Teams

- Resident
- Assistant Resident
- Field Office Engineers
- Construction Inspectors
- Fabrication Inspectors
- Materials Testing Technicians
- Multiple career paths



Allen-McColloch Pipeline – PCCP 2021 Urgent Relining

# Construction Inspection

- Continuous & hold point
- Documentation
  - Work & issues
- Track extra and disputed work
- Work coordination

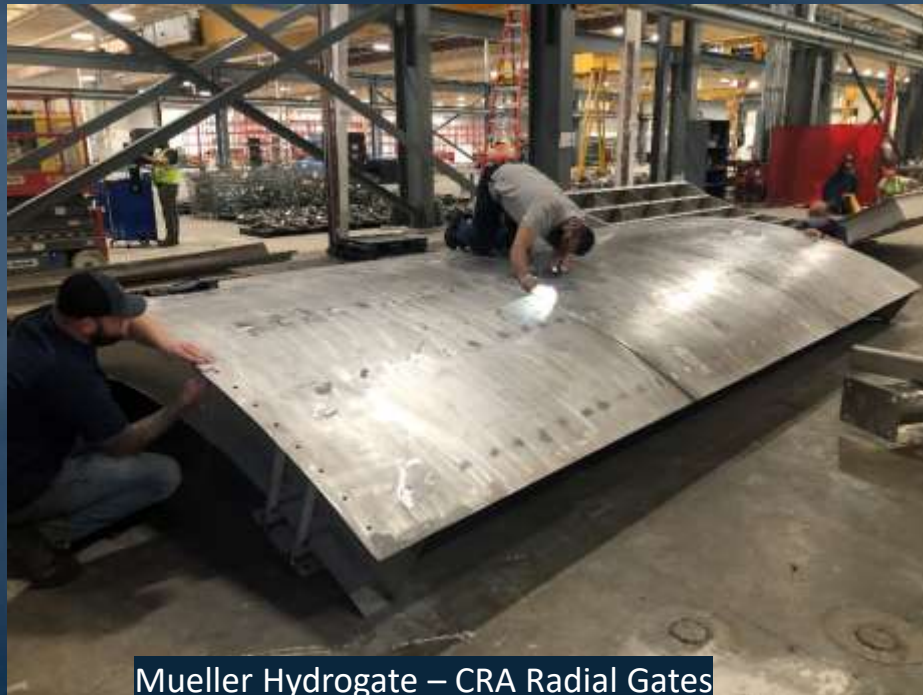


Diemer - ORP



# Fabrication Inspection

- Fabrication of MFE & CFE
  - Mechanical & electrical equipment
  - Pipe, tanks & structural steel
- In-shop & virtual



Mueller Hydrogate – CRA Radial Gates



Rite Pro Co. – CRA Pumping Plant Sump Replacement

# Implementation of Technology in Field

- Assessed technology options
  - Software & hardware
- Piloted mobile device technologies
- Deployed Bluebeam & iPads
- Benefits
  - Access documents & reports
  - Collaborate with design teams and users



MWD HQ – Building Improvements



# Project Performance

- Construction management budget
  - Inspection & owner costs
  - Construction costs
- Performance metrics
  - Inspection cost as a percentage of total construction cost
    - 9% - 12% for construction cost > \$3,000,000
    - 9% - 15% for construction cost  $\leq$  \$3,000,000
- Change order
  - Tracked on every project
  - Current rolling annual average is 1.55%

# Project Benefits

- Improved design & constructability
- Reduced cost of contracts and extra work
- Higher quality, functionality, and longevity



Diemer – West Basin & Filter Building Rehabilitation



