

Wastewater Rates
and Charges
Citizens
Advisory
Committee



Meeting 2

August 16, 2018

Why are we here?



Larry Brown, Chair
Board of Trustees

Why are we here?

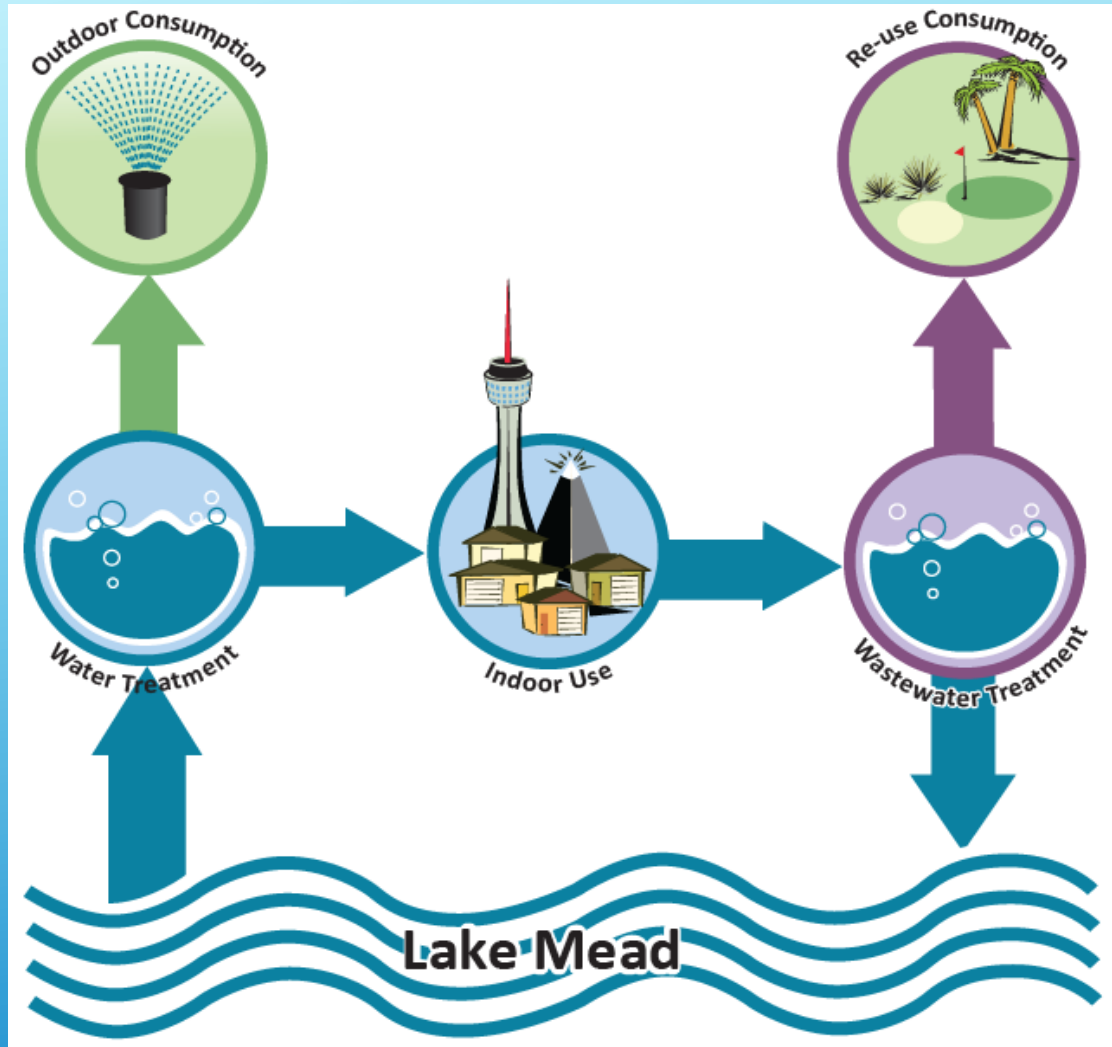


To Learn
To Discuss
To Recommend

Meeting 1 Review

- **District Overview**
 - **What We Do: Collect and Treat Wastewater and Return Clean Water Back to Environment**
 - **Lots of Science**
 - **Highly Regulated**
 - **Return Flow Credits**
- 
- A blue-tinted background image featuring a laboratory flask containing liquid, with a fish swimming in the foreground.

RETURN FLOW CREDITS

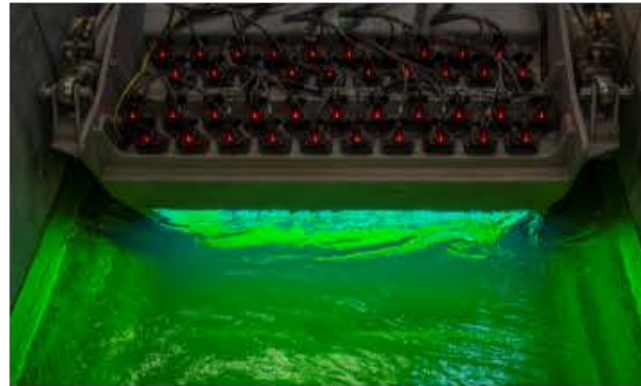


Return flow credits help extend Colorado River resources.

More than 99% of water used indoors is captured, treated and reused.

Wastewater Rates and Charges CAC

TODAY'S
MEETING

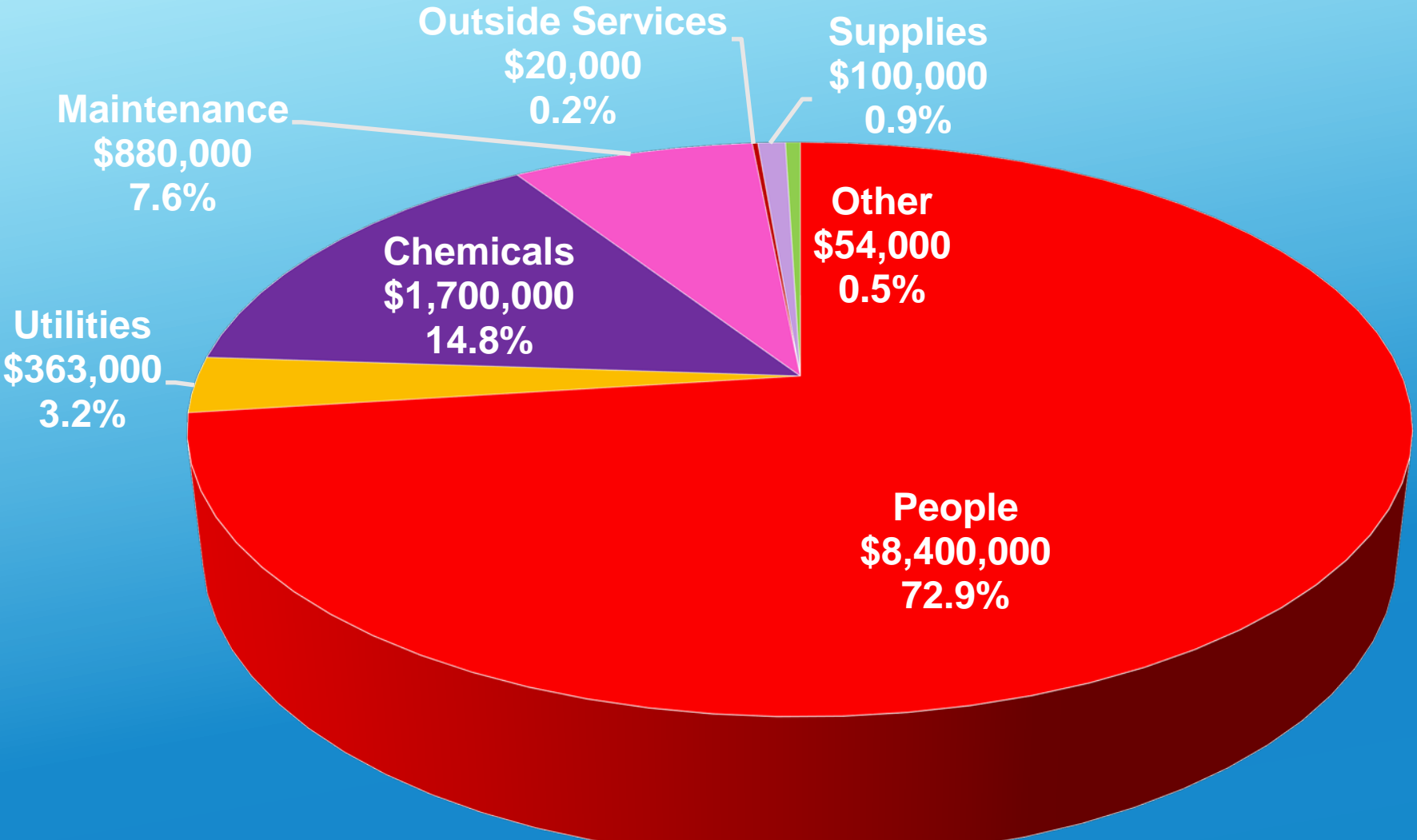


**Operations, Maintenance, Replacement
Rate Structure
Reserve Policy**

Operations, Maintenance, Replacement



Collection System Services O&M Budget



COLLECTION SYSTEM PEOPLE

- 79 Employees
- 76 Employees in Field
- \$8.4M



COLLECTION SYSTEM VEHICLES/EQUIPMENT

www.PainInTheDrain.com

- 103 Vehicles
- \$8.1M
- 415,000 miles/year





COLLECTION SYSTEM
ODOR/CORROSION CONTROL

\$1.7M

Electrical Costs Lift Stations and Odor and Corrosion Control

\$210K Annual





COLLECTION SYSTEM TECHNOLOGY

- **Computerized Maintenance Management Systems**
- **GIS Mapping**
- **Mobile Data Units**
- **SCADA System**

GIS Mapping



COLLECTION SYSTEM CONDITION ASSESMENT

- Asset Management
- Reliability Centered Maintenance



COLLECTION SYSTEM

Capacity

- Convey Wastewater
- Convey Air



Collection System Condition Assessment

- Flow Monitoring
- Hydraulic Model
- Video Inspection

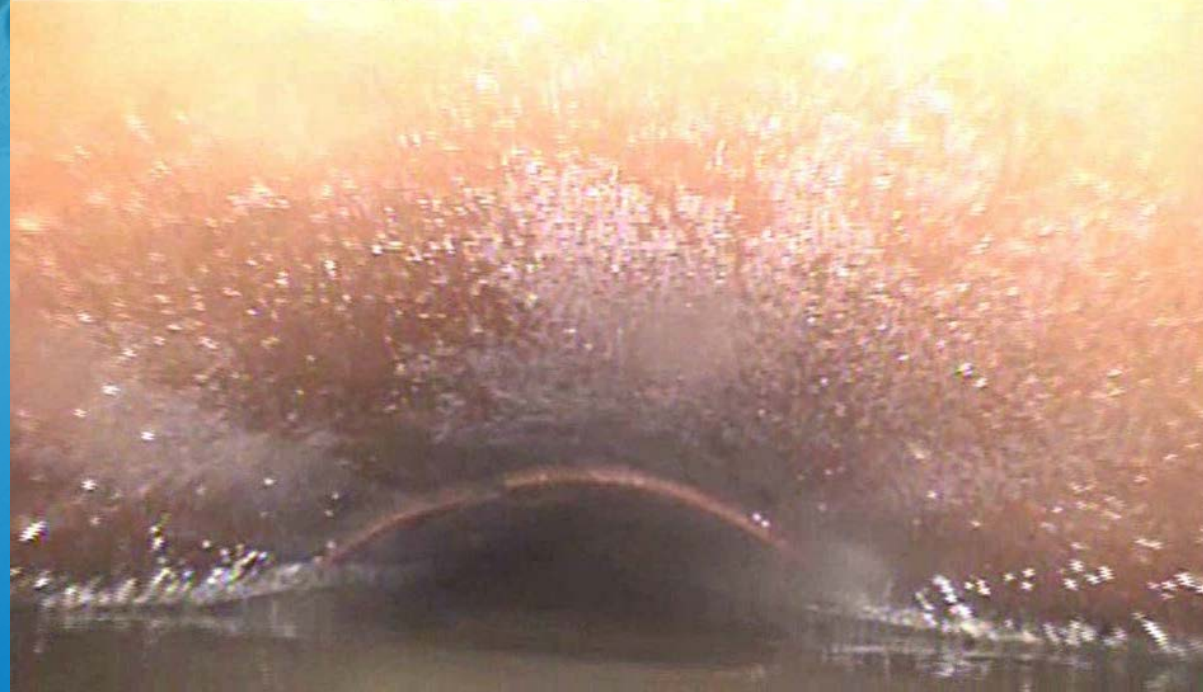


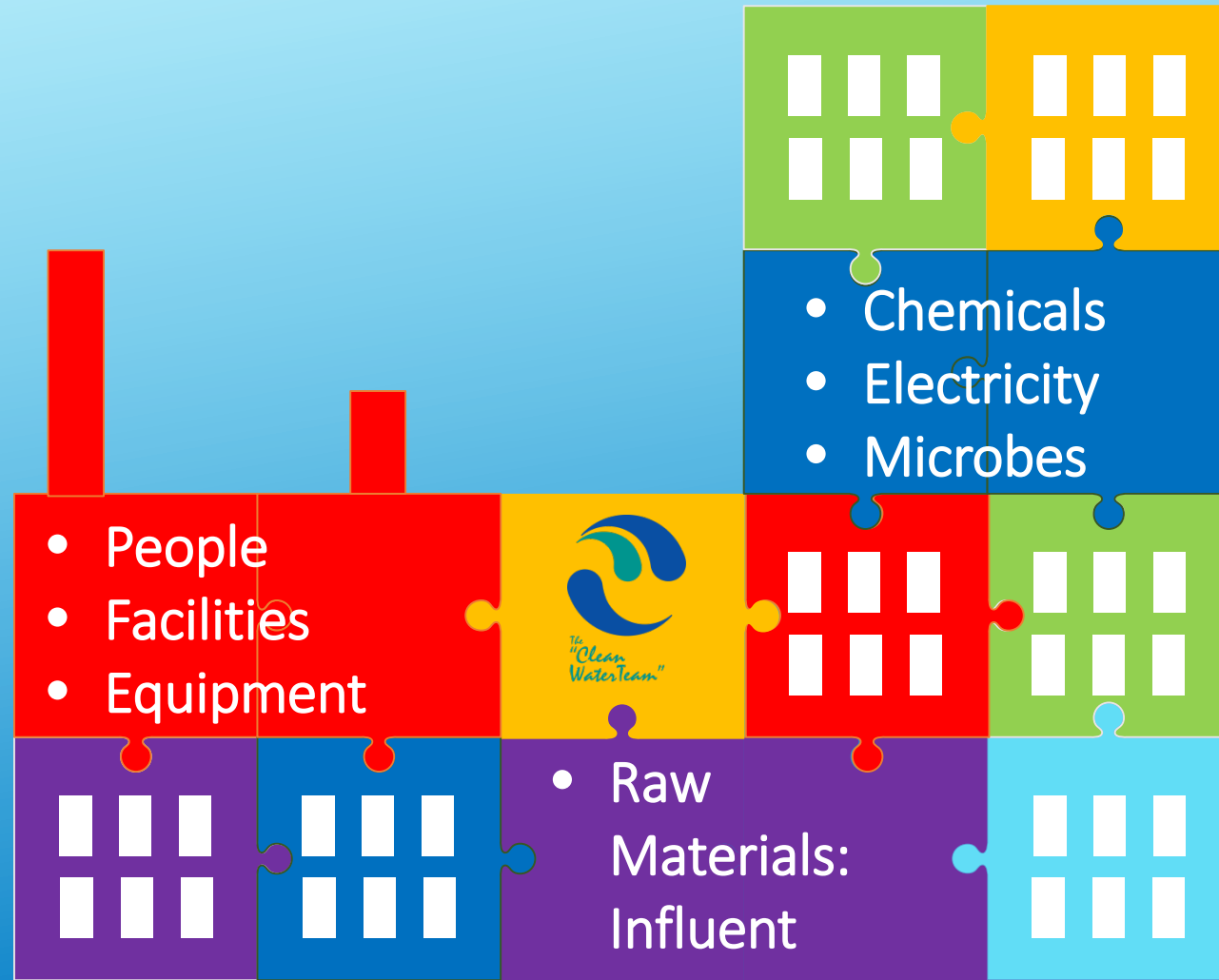
Assessment: In-house Repair



Assessment: Capital Project

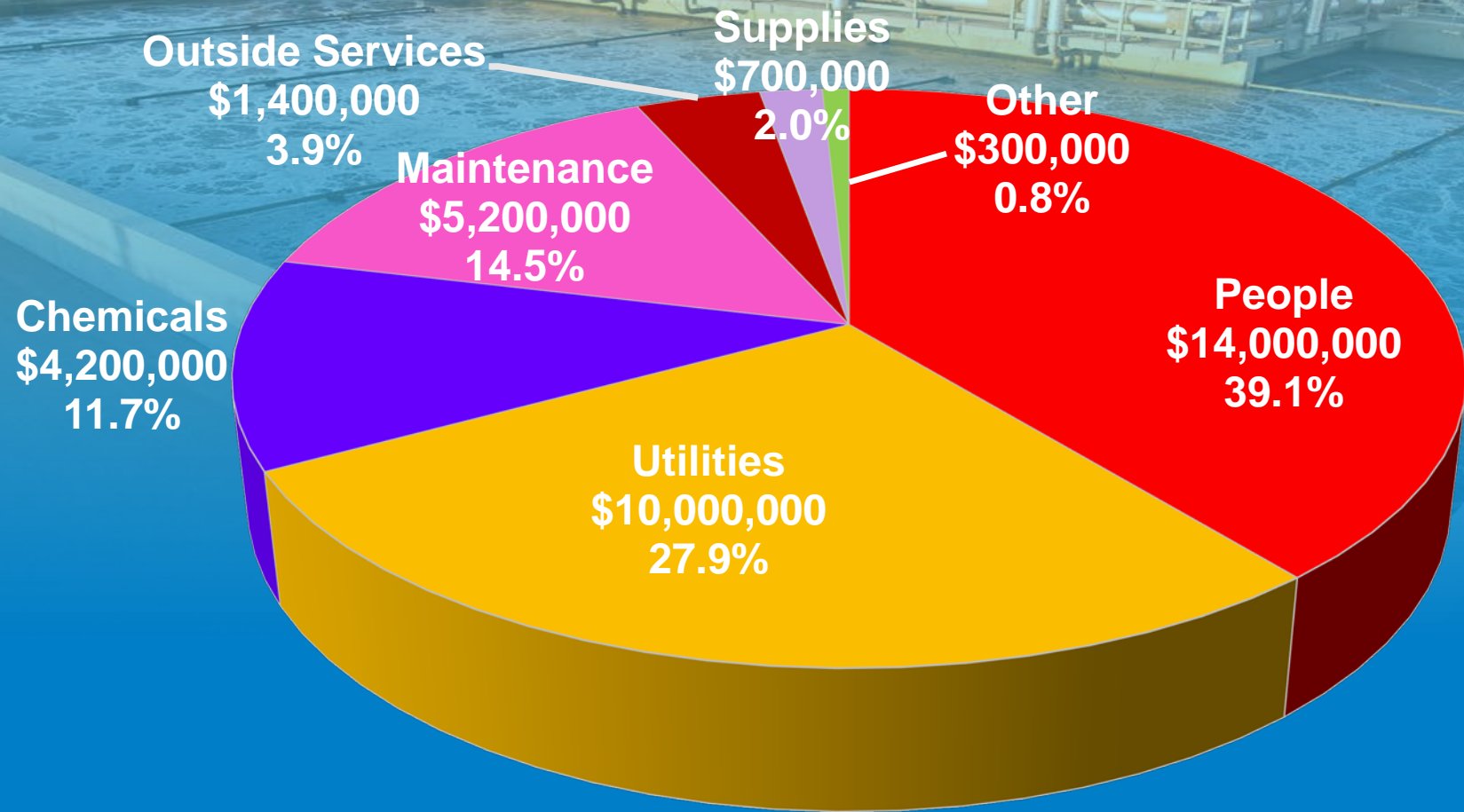
4/20/2018 Direction: D 8:14:11 AM
13.0 ft. 0.67 degree
Pipe segment ref.: Sewer Main 'CIADI6'
Upstream MH No: AMH 'CIA'
Downstream MH No: AMH 'DI6'





Reclaimed Water Factory and Costs

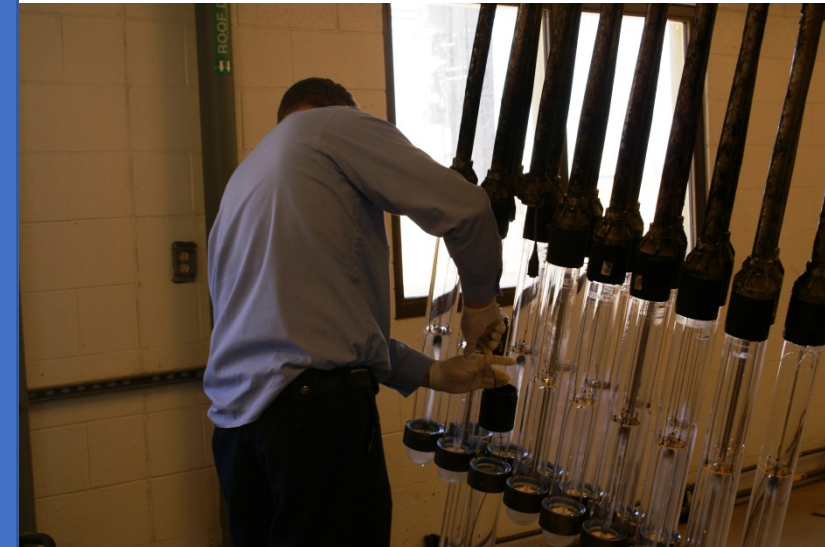
Operations and Maintenance O&M Budget



Operations & Maintenance



- Asset Management
- Reliability Centered Maintenance



Asset Management

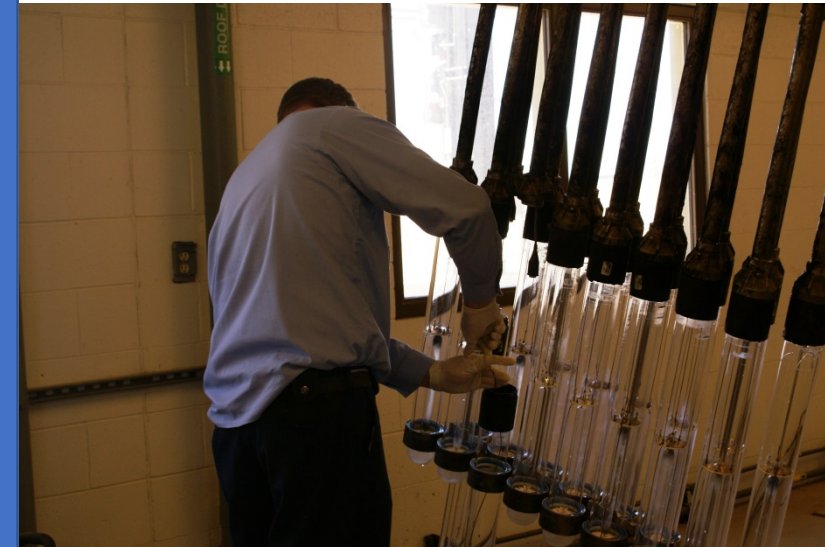
- Asset Strategic Planning
- Asset Databases
- Asset Life Cycle Management
- Decision Making
- Performance Indicators



Reliability Centered Maintenance



- Reliability Centered Design
- Asset Condition Analysis
- Preventative/Predictive Maintenance
- Criticality Analysis
- Root Cause Analysis





Rehab and Replacement Projects



Capacity

	2012 (mgd)	2017 (mgd)	Current Capacity (mgd)
Flamingo Water Resource Center	94	105	126
Laughlin Water Resource Center	1.9	2.1	8.0
Desert Breeze Water Resource Center	2.9	2.5	4.9
Moapa Valley Treatment Facility	0.15	0.16	0.75
Indian Springs Treatment Facility	0.07	0.10	0.50
Searchlight Ponds	0.05	0.04	0.09
Blue Diamond Ponds	0.013	0.011	0.044



CAPITAL IMPROVEMENT PROGRAM



Capital Improvement Program

An aerial photograph of a large-scale construction site. The foreground and middle ground are dominated by a grid of concrete foundations and rebar structures, likely for a multi-story building. Several workers in safety gear are visible on the site. In the background, there are various pieces of construction equipment, including a yellow crane, a white pickup truck, and a red tractor. The site is surrounded by a residential area with houses and a parking lot.

- **What Is It?**

- Long Range Plan (15 years)
- Capital Projects & Equipment
- Planning Schedules

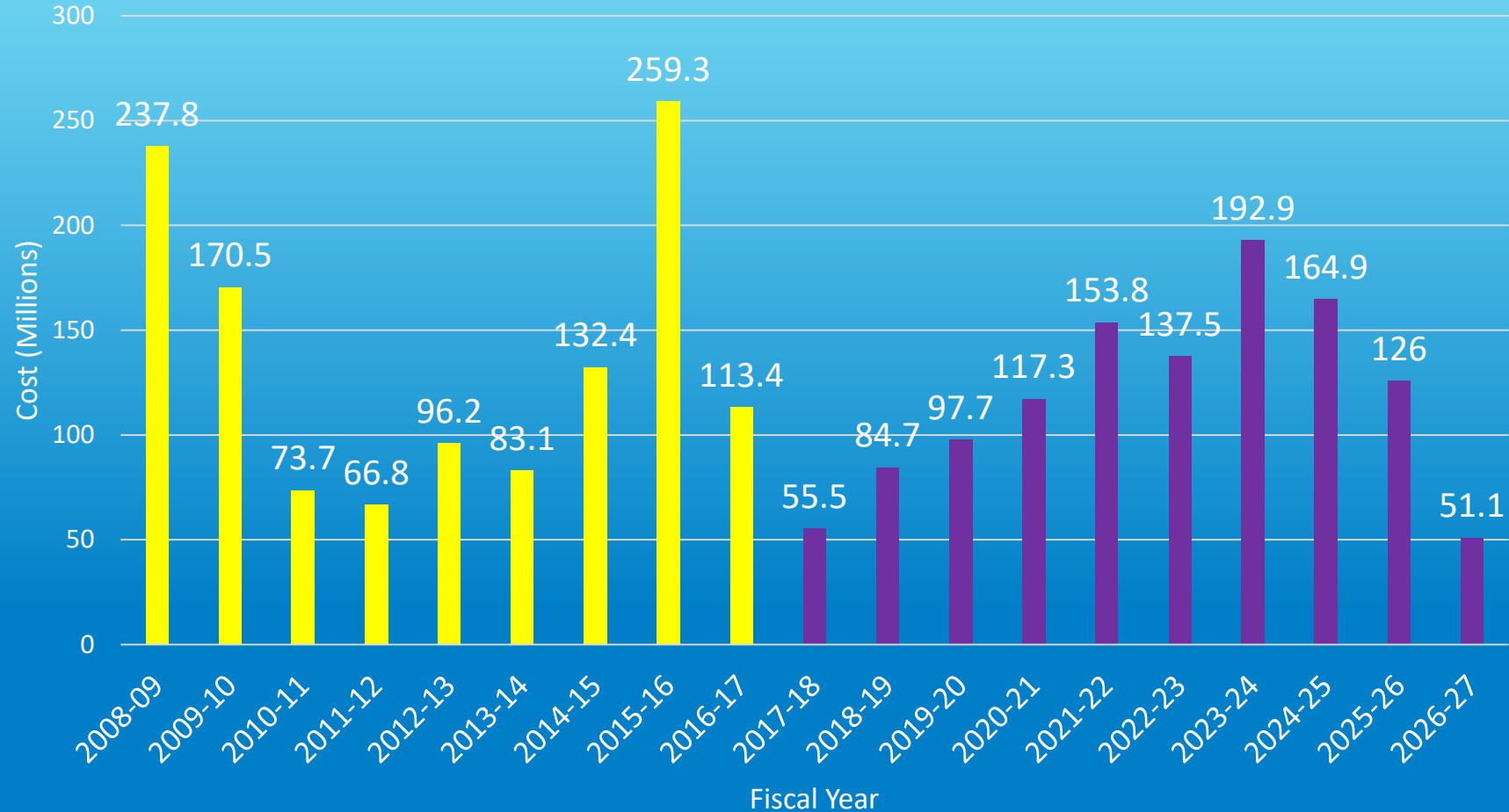


Capital Improvement Program

Major Goals

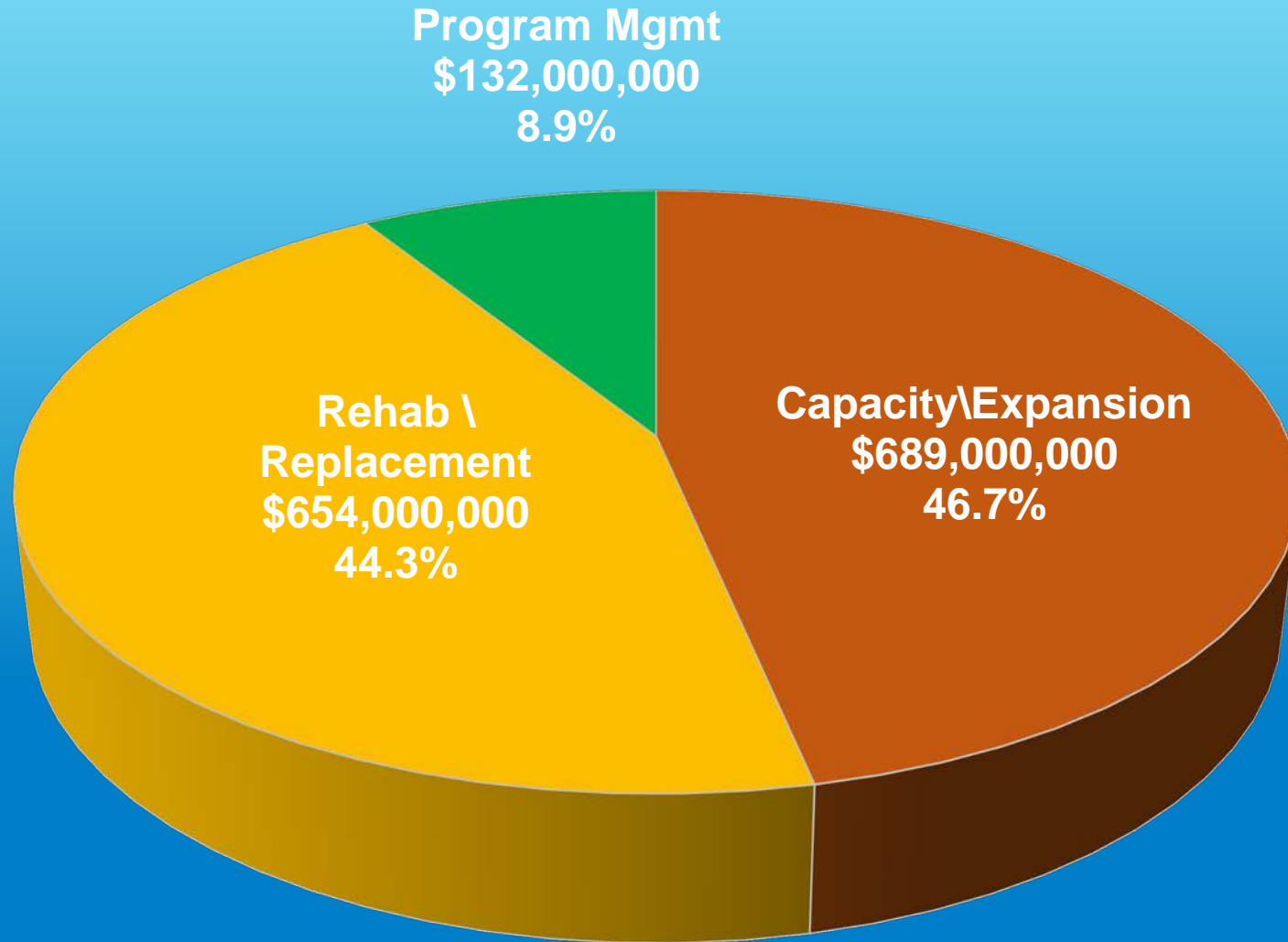
- **Enhance Collection & Treatment Reliability**
- **Phased Implementation**
 - Incremental Expansion over Planning Period
 - Minimize Plant Disruptions
- **Project Timing to Minimize Fiscal and Administrative Impacts**
- **Flexibility to Accommodate Change**
 - Changing Regulations
 - New Treatment Technologies
 - Urgent Repairs

Capital Improvement Program Historic and 10-year Projection



Capital Improvement Program

15-year Projection: \$1.5B



Capital Improvement Program

Plan Beginning FY 2017-18

	5-Year CIP Total	10-Year CIP Total	15-Year CIP Total
Capacity/Expansion	\$184 M	\$640 M	\$689 M
Rehabilitation/ Replacement	\$288 M	\$459 M	\$654 M
Capital Staffing/Program Management	\$37 M	\$82 M	\$132 M
TOTAL	\$509 M	\$1.2 B	\$1.5 B



Capital Improvement Program

Types of Projects

- Collection System
 - Capacity
 - Rehabilitation
- Treatment Facilities
 - Capacity
 - Rehabilitation
- Support Facilities
- Engineering and Construction Support Services



Pipeline Installation and Rehab

Pipeline Size	Cost per Mile Traditional Install	Cost per Mile Trenchless Install
12-inch diameter	\$3,180,000	\$2,385,000
24-inch diameter	\$5,565,000	\$3,975,000
48-inch diameter	\$9,540,000	\$6,890,000





Capital Improvement Program Collection System Capacity Projects

- 19 Projects
- **\$149.2M Over 15 Years**
- 27 Miles Of 10” - 48” Diameter Pipe
- \$2.5M/Year Additional Capacity Pipeline
 - Hydraulic Modeling
 - Flow Monitoring



Capital Improvement Program Collection System Rehabilitation/Replacement Projects

- 25 Projects
- **\$336.5M Over 15 Years**
- 45 Miles Pipeline Replaced
- 12 Miles Pipeline Lined In Place
- 5 Lift Stations
- \$2.5 M/Year Rehabilitate/Replace Additional Pipeline
 - Condition Assessment

A photograph of a construction site for pipeline oversized. A long, narrow trench has been dug into the ground, and a large blue pipe is being laid along its length. The pipe is supported by a metal rebar cage. In the background, a worker in a high-visibility vest is visible. To the left, there are orange traffic barrels and a white bucket. To the right, there is a white bucket and a piece of equipment. The ground is dark and appears to be asphalt or concrete. The overall scene is a busy construction site.


Capital Improvement Program Pipeline Oversizing

- **\$27.5M over 15 years**
- **Development Partnerships**
 - **Projected Land Use**
 - **Hydraulic Modeling**



Capital Improvement Program Treatment Facility Expansion Projects

- 14 Projects
- **\$505M Over 15 Years**
- Master Plan Study For Expansions
 - FWRC
 - 150 Mgd (2027)
 - 180 Mgd (2053)
- 4 Major Expansion Projects
 - \$440M By 2027



Capital Improvement Program Treatment Facility Rehabilitation/Replacement Projects

- 31 Projects
- \$203.5M Over 15 Years
- Facility and Electrical Infrastructure Improvements
- \$1M/Year Additional Rehabilitation Projects
 - Life Cycle Analysis
 - Condition Assessment

An aerial photograph of a large-scale construction site. The ground is covered with a grid of rebar for a concrete slab. Numerous concrete pillars are visible, some with rebar protruding from the top. A yellow crane is positioned on the right side of the site. In the background, there are residential buildings and a parking lot with several vehicles. The overall scene is a busy construction site.

Capital Improvement Program

Support Facilities Projects

- **\$67.6M Over 15 Years**
- **Green Energy Projects**
- **Reclaimed Water Facility Improvements**
- **Rapid Response Services**
- **Fleet Maintenance Facility Improvements**
- **Site Roadway And Drainage Improvements**

An aerial photograph of a large-scale construction site. The ground is mostly dirt and sand, with numerous rebar structures and concrete foundations laid out in a grid pattern. A yellow crane is visible on the right side of the site. In the background, there are residential houses and a parking lot with several vehicles. The entire image has a blue tint.

Capital Improvement Program

Engineering and Construction Support Services

- **\$26.4M Over 15 Years**
- **Geotechnical Services**
- **Professional Survey Services**
- **Subsurface Investigation Services**
- **QA/QC Testing and Inspection Services**
- **Professional Scheduling Services**
- **Professional Engineering Support Services**



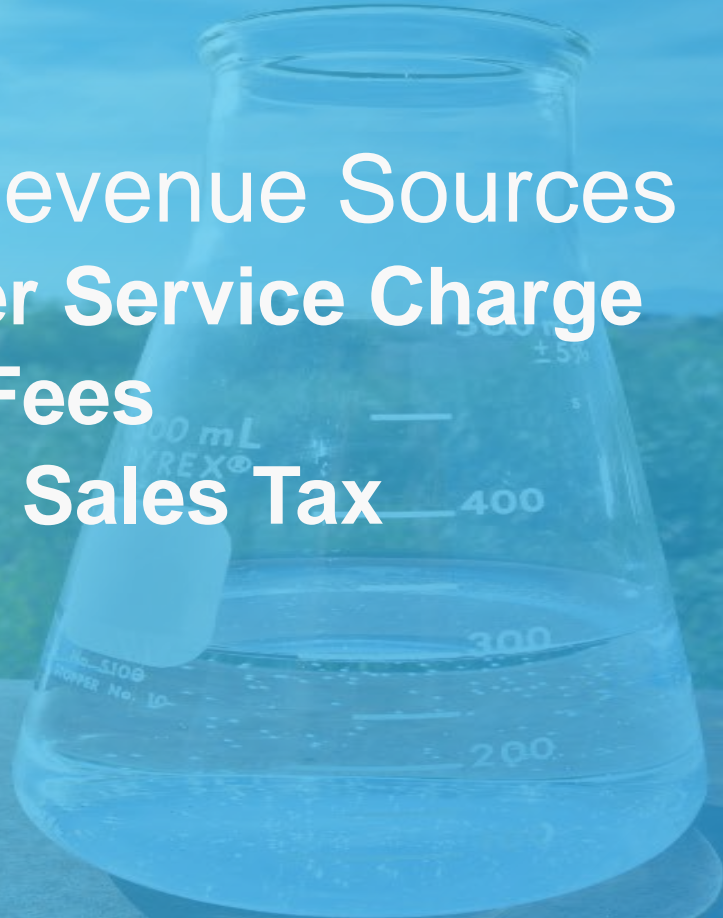
RATE STRUCTURE

What The Heck Is An ERU?

RATE STRUCTURE

Three Primary Revenue Sources

- **Annual Sewer Service Charge**
- **Connection Fees**
- **Quarter Cent Sales Tax**



ANNUAL SEWER SERVICE CHARGE



- Covers O&M
- Covers Debt Service

CONNECTION FEE



- One-time, Upfront Payment
- Capacity In Pipes And Plant
- Equity

ELEMENTS OF CONNECTION FEE CALCULATION

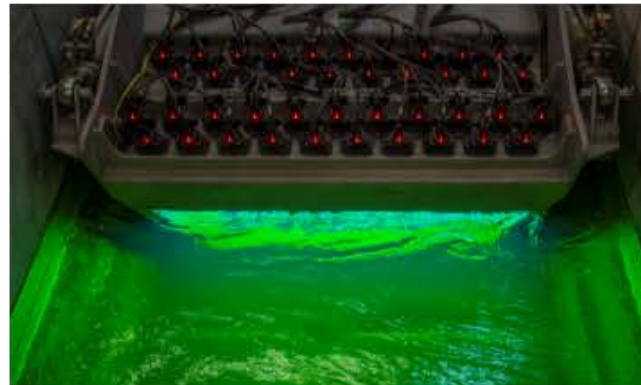


RESERVE POLICY



RESTRICTED RESERVES:	Current	New Reference	Over / (under) Target
Bond Reserve	\$35.1M	\$32.5M	\$2.6M
RESTRICTED RESERVES SUBTOTAL	\$35.1M	\$32.5M	\$2.6M
UNRESTRICTED RESERVES:			
O&M Reserve	\$17.5M	\$26.0M	(\$8.5M)
Capital R&R Reserve	\$50.0M	\$50.0M	0
Capital Expansion Reserve	\$22.1M	\$25.0M	(\$2.9M)
Budget Stabilization & Natural Disaster	\$3.5M	\$7.75M	(\$4.25M)
Other Post Employment Benefits (OPEB)	\$11.3M	\$21.5M	(\$10.2M)
Worker's Comp	\$634,000	\$634,000	0
UNRESTRICTED RESERVES SUBTOTAL	\$105.03M	\$130.88M	(\$25.85M)
TOTALS	\$140.13M	\$163.38M	(\$23.25M)

MEETING WRAP UP



Contact Julie Chadburn to schedule your tour!

Next Meeting:

September 20 at 11:30 AM
at the Las Vegas Metro
Chamber of Commerce
Conference Room
575 Symphony Park
Avenue
Suite 100



- **Backbone**
- **Revenue and Expenses**
- **O&M**

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