



PUBLIC WORKS ADVISORY BOARD MEETING AGENDA

March 18, 2024

Members may attend in person or by telephone.

David Barazoto • Matt Carpenter • Sam Elliott • Greg Froehlich • Jason Gilmore
• Karen Goldwasser • Eric McLeskey • Jason Robinson • Fariya Sharif

Regular Meeting
3:00 P.M.

Municipal Center I, Heritage Room 300
50 E Civic Center Drive
Gilbert, Arizona

	ADMINISTRATIVE ITEMS	ACTION
1	Call to Order	Administrative
2	Roll Call	Administrative
3	Approve February 12, 2024 minutes	Administrative
	AGENDA ITEMS	
4	Wastewater Deep Dive	Discussion
5	Environmental Compliance Deep Dive	Discussion
	COMMUNICATIONS	
6	Reports from Staff	Report Only
7	Report from Board Members	Report Only
8	Report from Council Liaisons	Report Only
9	Report from Chair	Report Only
10	Future Agenda Items: <ul style="list-style-type: none"> • Streets, Transportation and Capital Improvement Projects Deeper Dive • Transportation Master Plan 	Discussion

	<ul style="list-style-type: none">• Streets Bond• Streets and Traffic Operations Center Tours• Sustainability• Facilities	
	<ul style="list-style-type: none">• CONCLUSION	
11	Adjournment	Discussion; possible action by motion

Public Works

Wastewater Operations

March, 2024

gilbert



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Organizational Chart

Hierarchy of Wastewater Staff and Lines of Service

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Wastewater Lines of Service

Following the flow of water, these are the descriptions of the lines of service in Wastewater

03

Challenges for Gilbert Wastewater

Priorities and concerns for Wastewater Operations



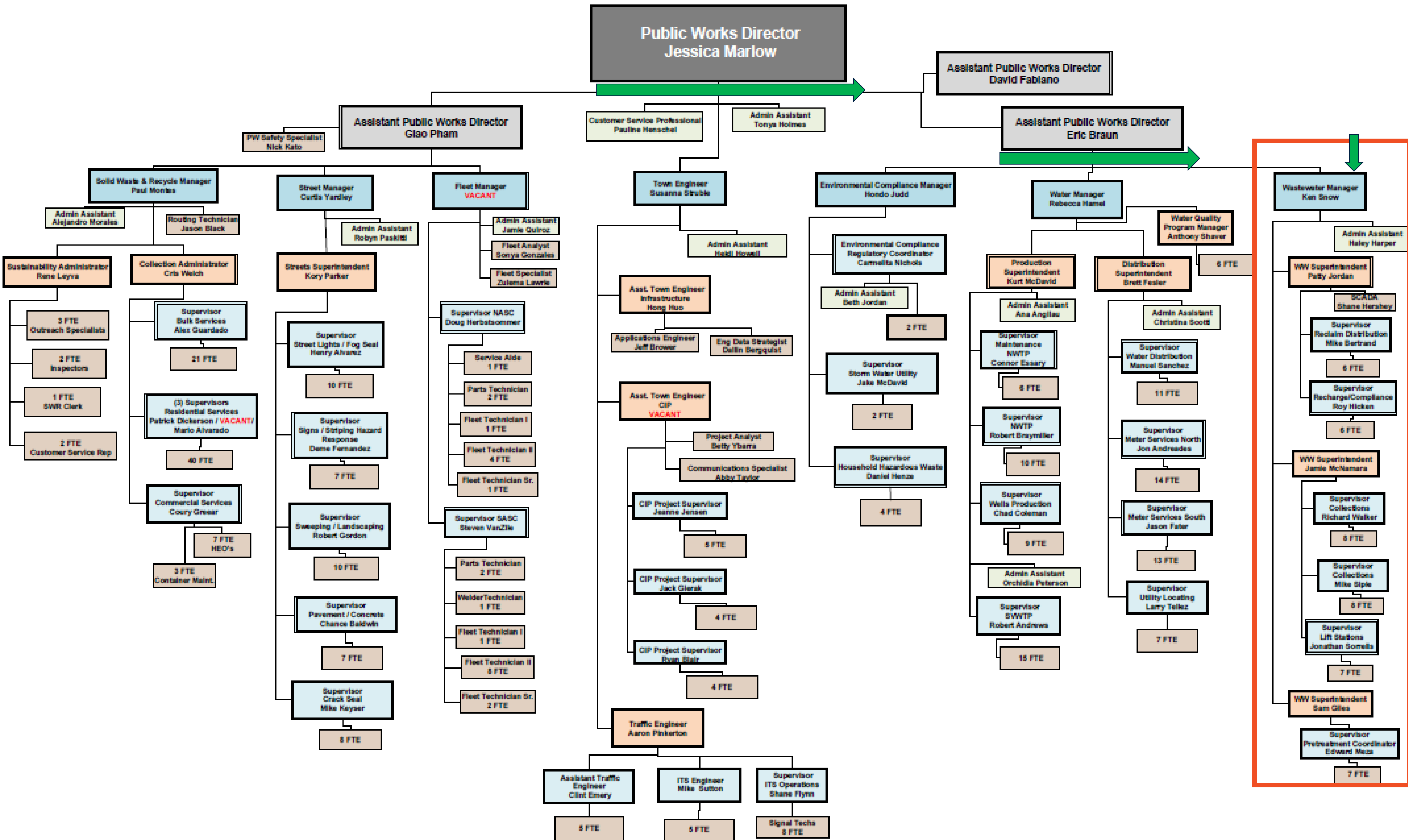


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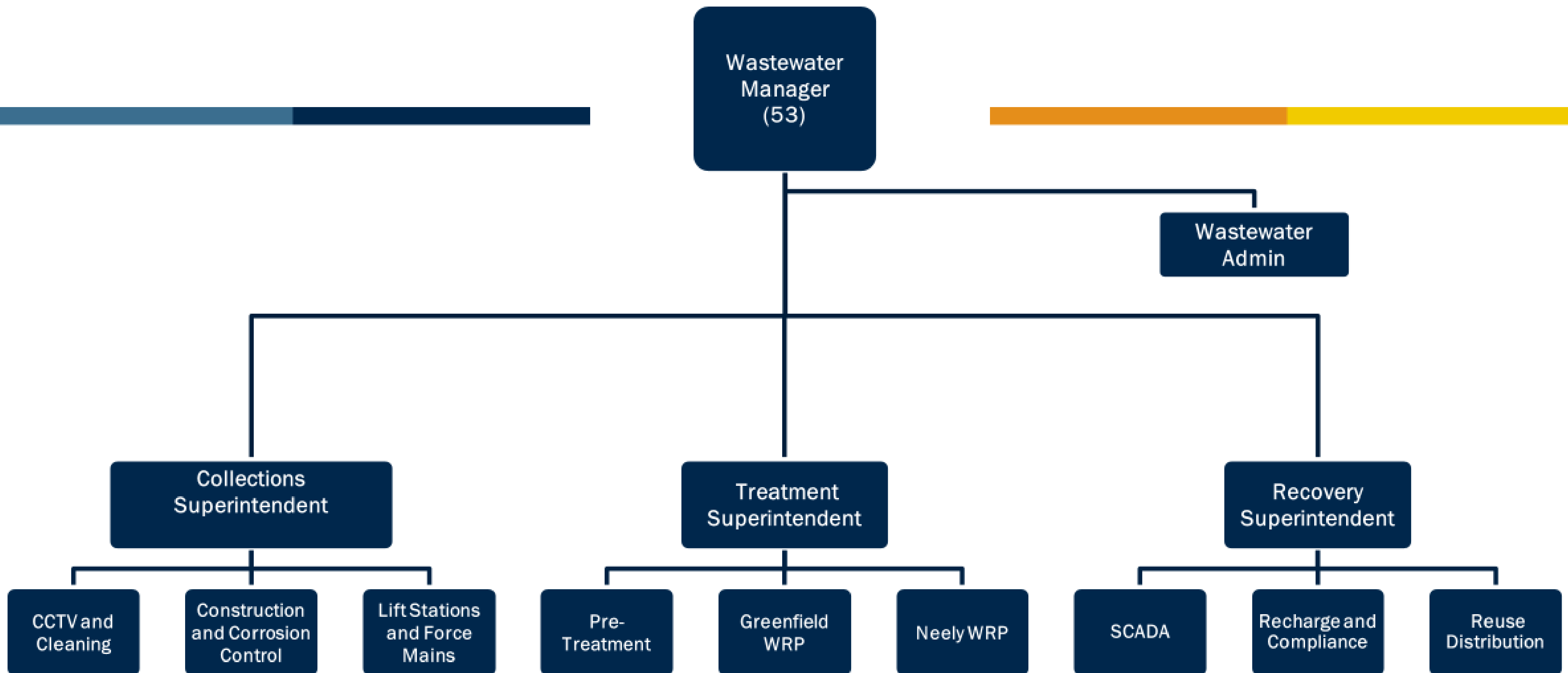
WASTEWATER IN PUBLIC WORKS, ORGANIZATIONAL CHARTS



PUBLIC WORKS ORGANIZATIONAL CHART



Wastewater Division



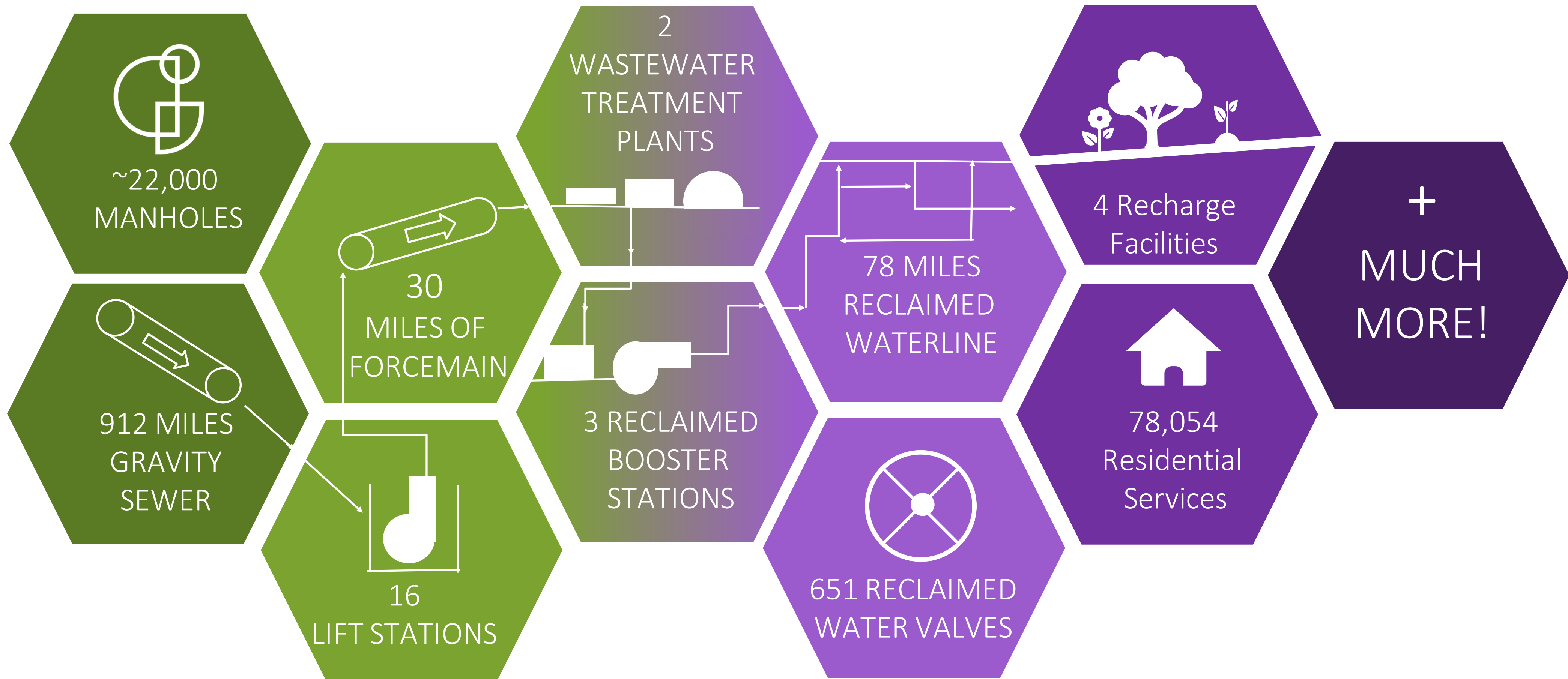


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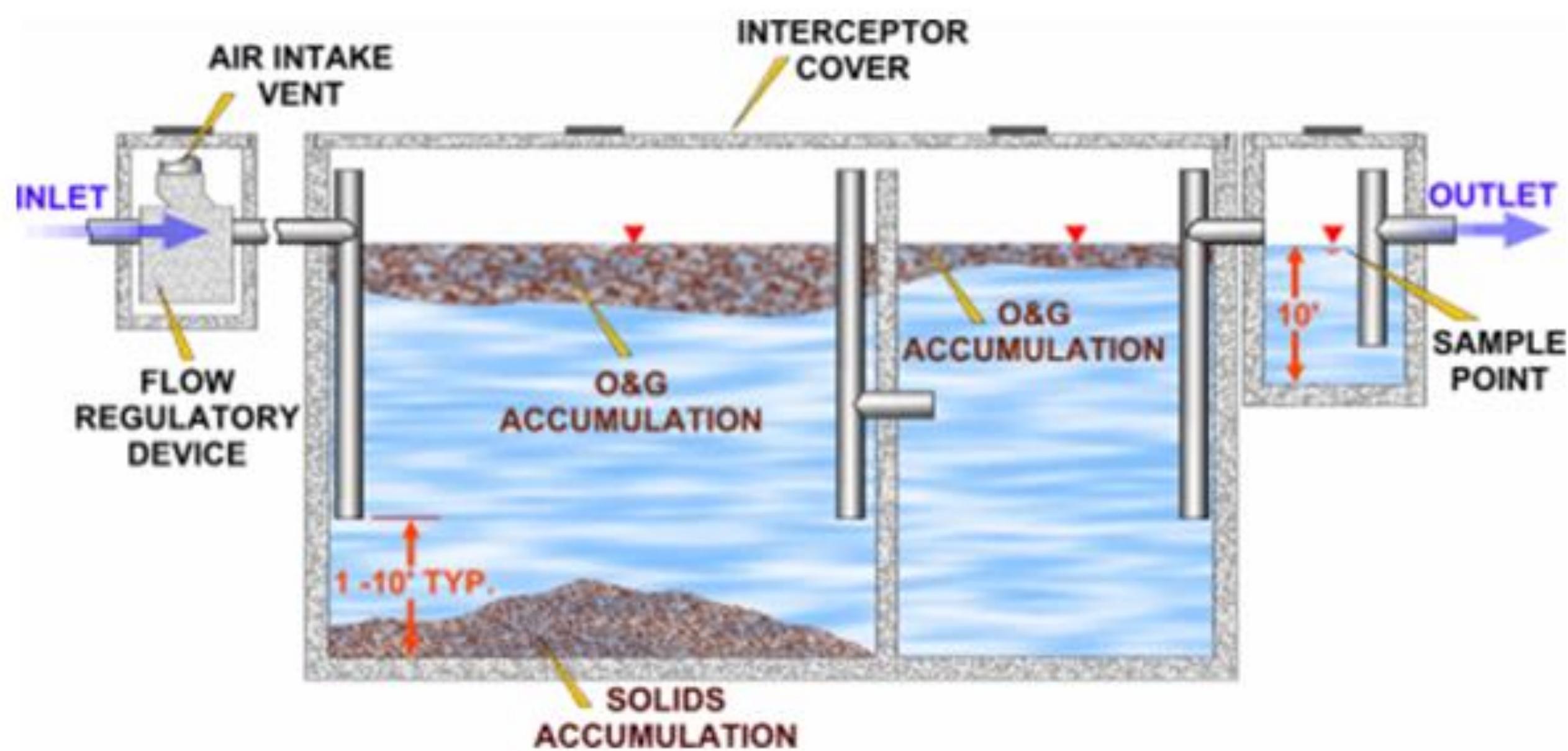
LINES OF SERVICE



Wastewater Facts



\$500 Million dollars in assets
19 Million Gallons Per Day Collected
Treated and Reused or Recharged



Wastewater Quality

- Commercial and Industrial Pretreatment Inspections
- Regulatory education and enforcement of pretreatment requirements.
- Flow investigations.

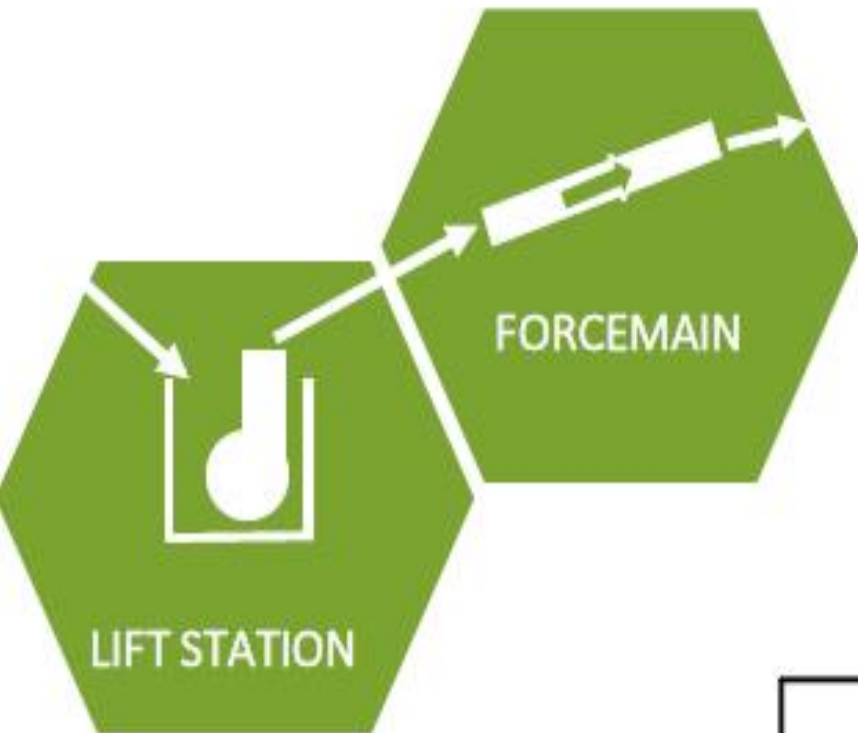


Wastewater Collections – Gravity

- Cleaning Pipelines
- Inspecting Pipelines and Manholes

Wastewater Collections – Lift Stations

Pumping sanitary sewer flows to higher elevations



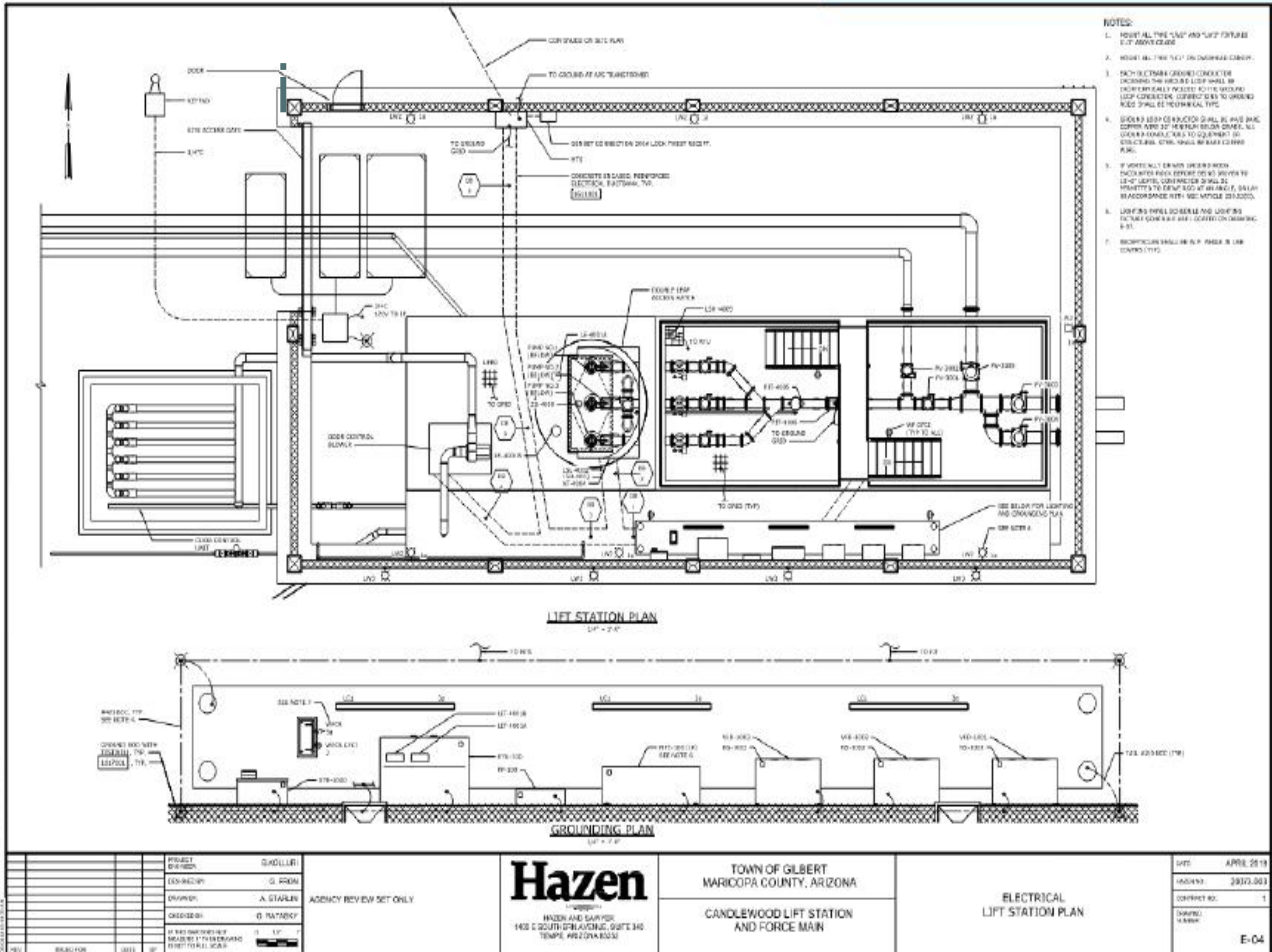
Candlewood Lift Station

Reconstructed in 2020

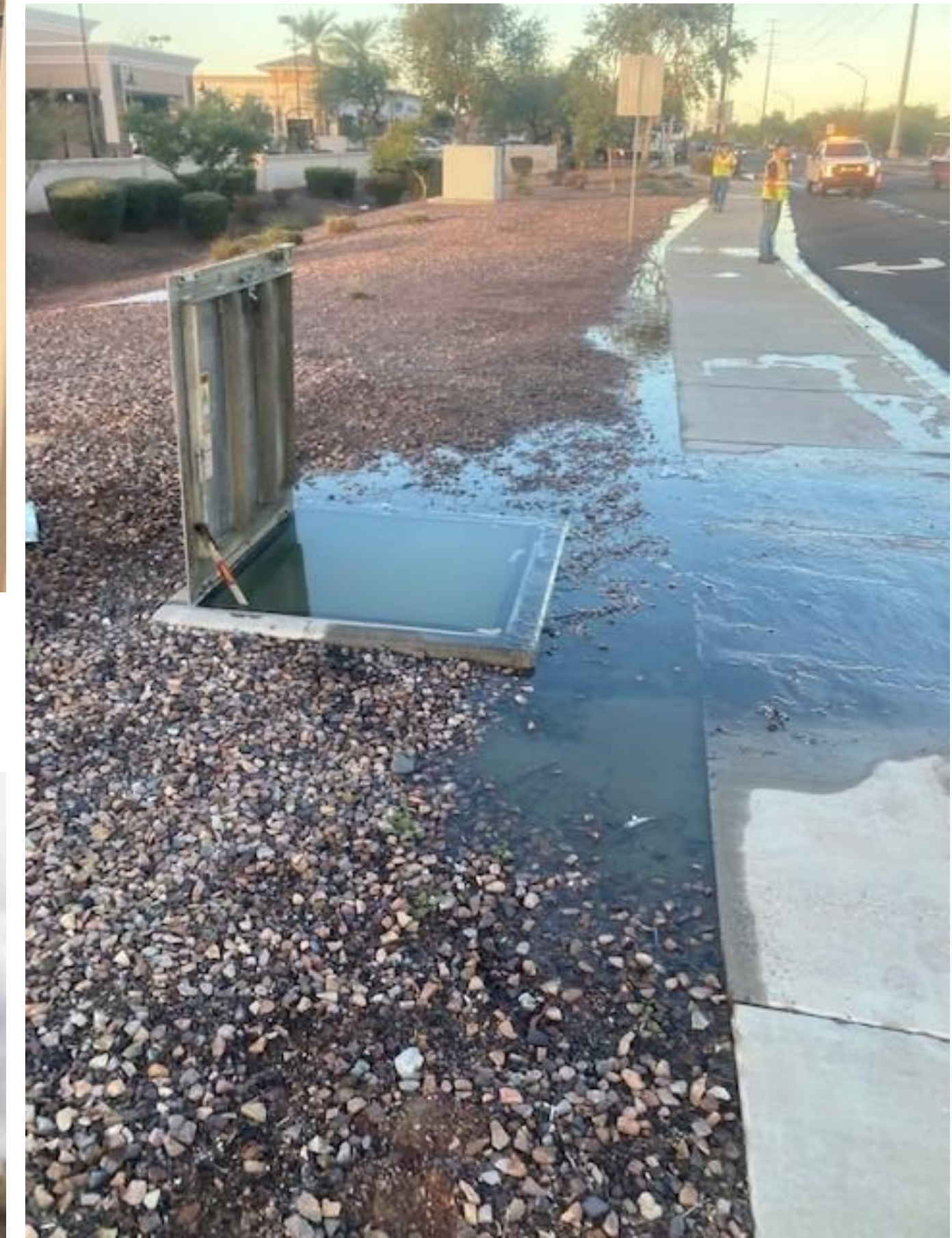
About 0.30 MGD

Biofilter Odor Control

Bidirectional Force main



Wastewater Collections – Corrosion Control and Construction



Neely Wastewater Reclamation Plant

Contract Operated by Inframark
Treatment Capacity = 11 MGD
9.97 MGD (FY22 Average)
2 MW Solar Power System
Generates 40% of Neely Plant's Power

Class A+ Reclaimed Water



Greenfield Water Reclamation Plant

Regional Treatment Plant Serving Gilbert, Mesa, and Queen Creek

- Treatment Capacity = 32 MGD (12 MGD for Gilbert, 16 for Mesa, 4 for QC)
- 9.75 MGD (Gilbert's FY23 Average)
- Expected expansion in approximately FY 27



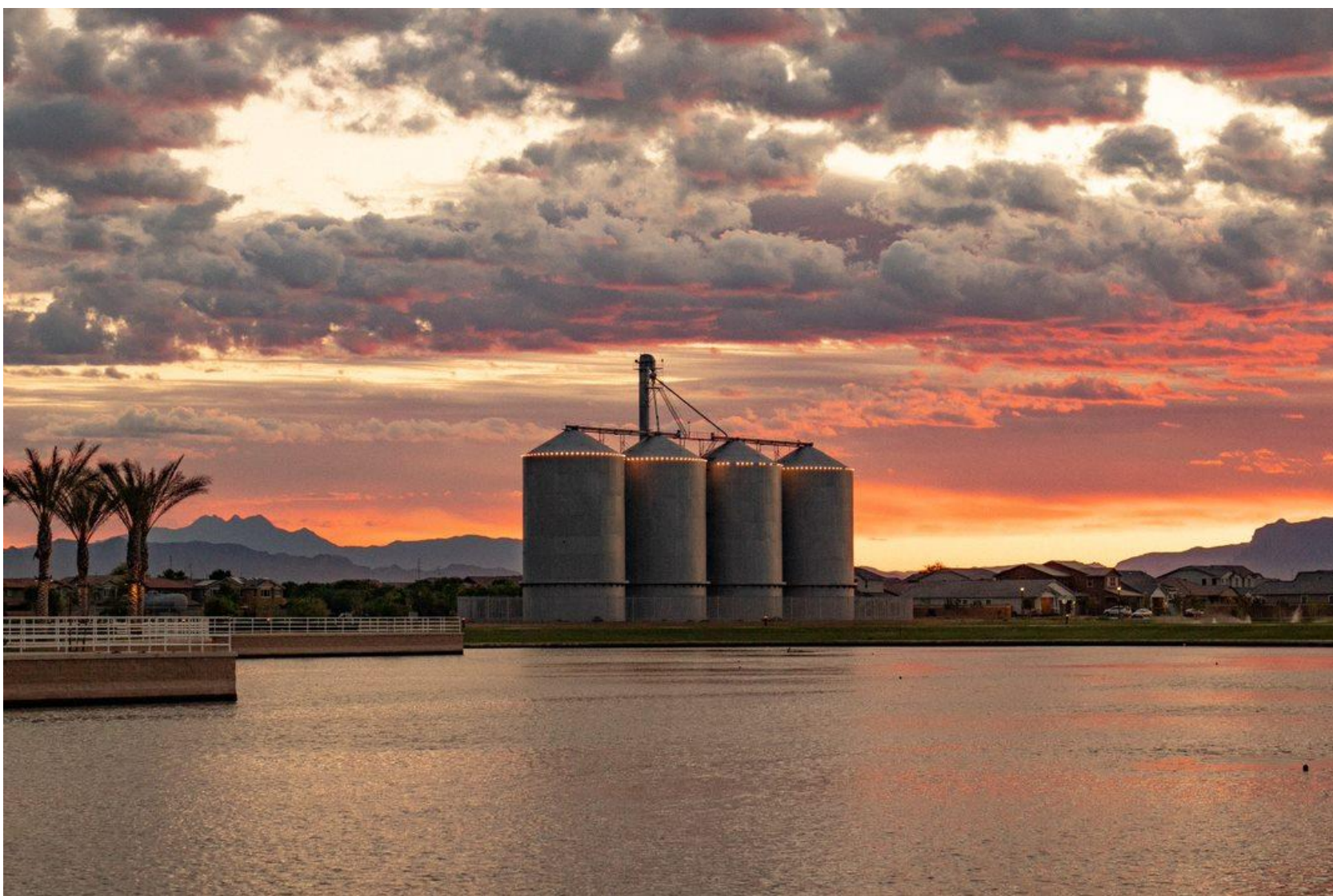


Wastewater Reuse: Reclaimed Water

Recharged 3.61 Billion Gallons (FY22)

Direct Reuse

- 55 Direct Reuse Customers
- 2.243 Billion Gallons Reused
- 78 Miles of Reclaimed Water Pipelines
- 3 Reservoirs / Booster Stations



Golf Courses

Gilbert has four golf courses that use reclaimed water for their turf and water features.

HOA's

Many of Gilbert's subdivisions use Reuse water for their turf areas to conserve drinking water.

Schools

(Ball Fields/Landscaping)

Four schools use Reuse water for their turf areas.



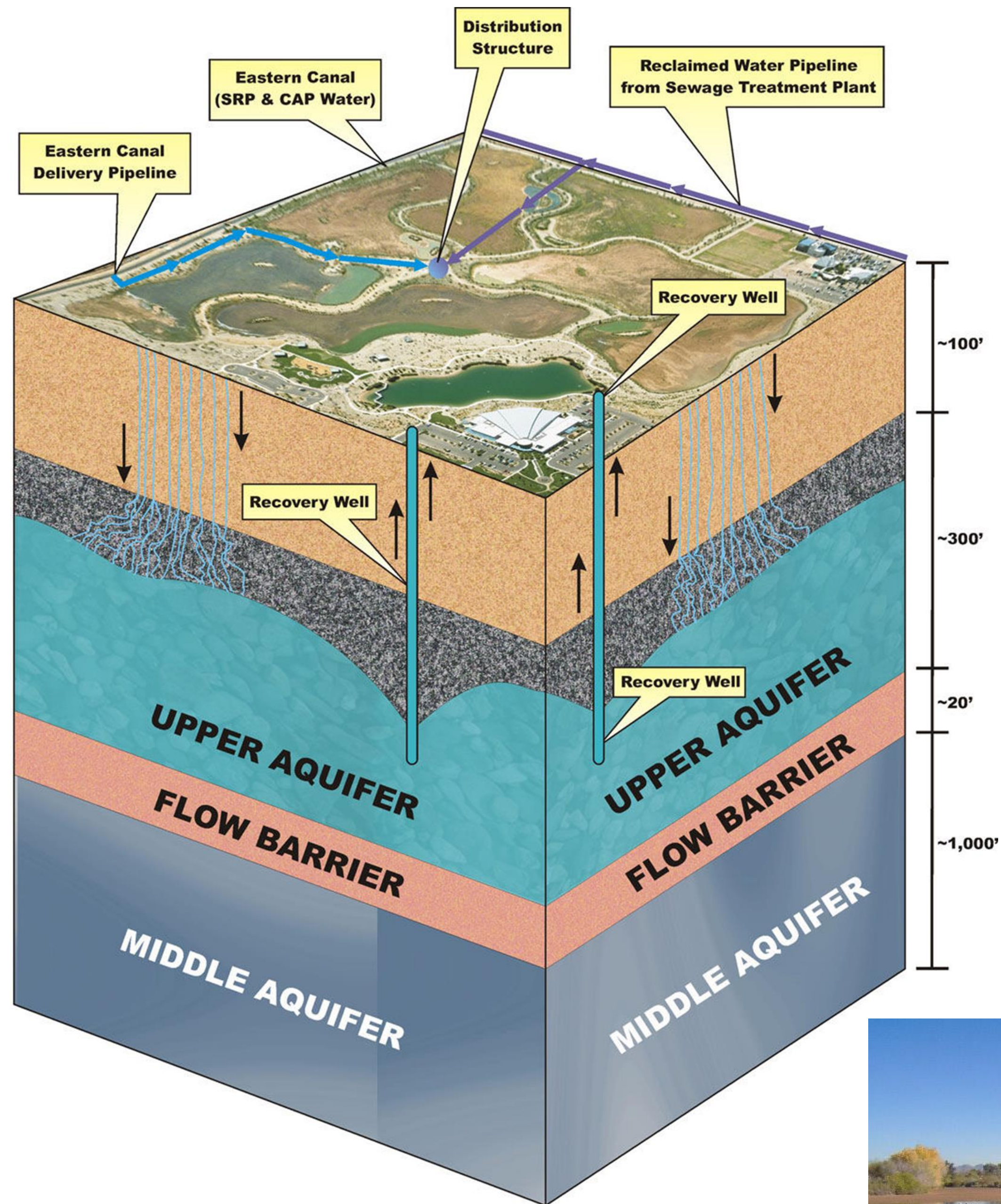
Recovered Water Lakes

There are three water-ski lake HOA's and two golf courses that use recovered water. Several other large facilities use the recovered water wells as a supplemental source to the reclaimed water.

Distribution System:

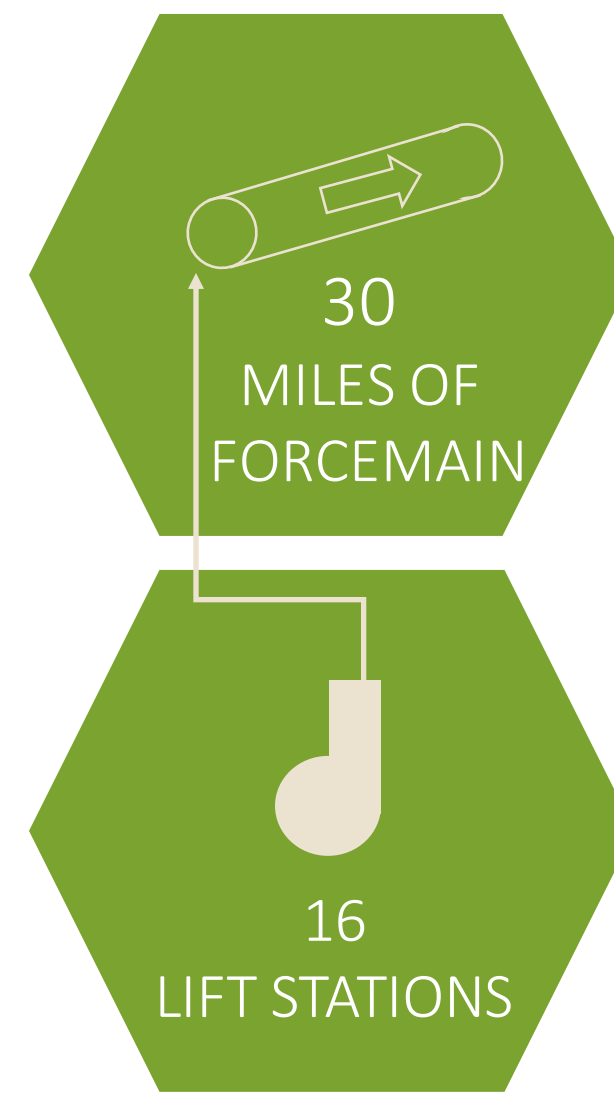
The Reuse Distribution System delivers Class A+ reclaimed water throughout Gilbert in pressurized purple pipelines. This is also how the reclaimed water is delivered to three of the Recharge facilities.

Wastewater – Reclaimed Recharge

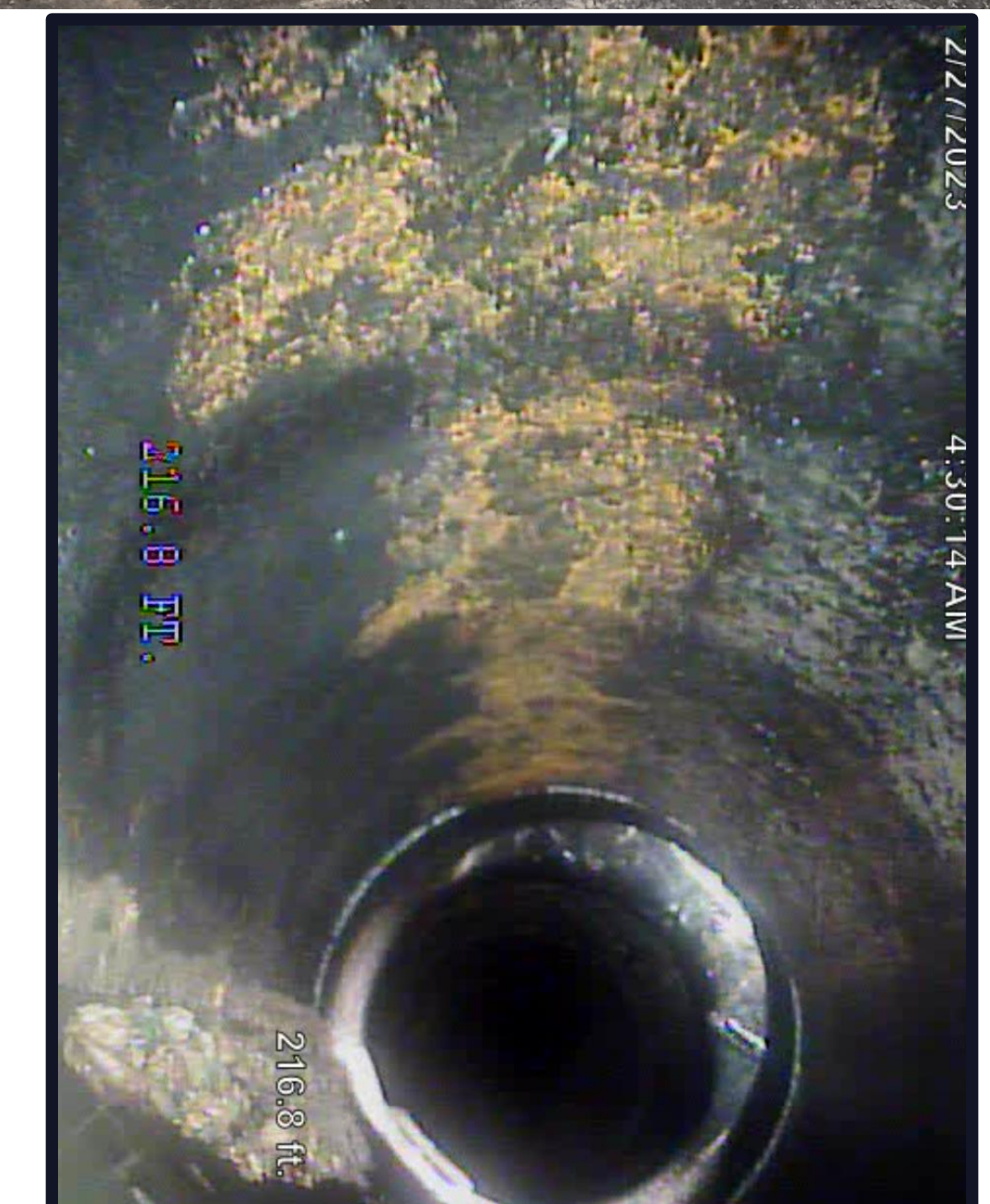
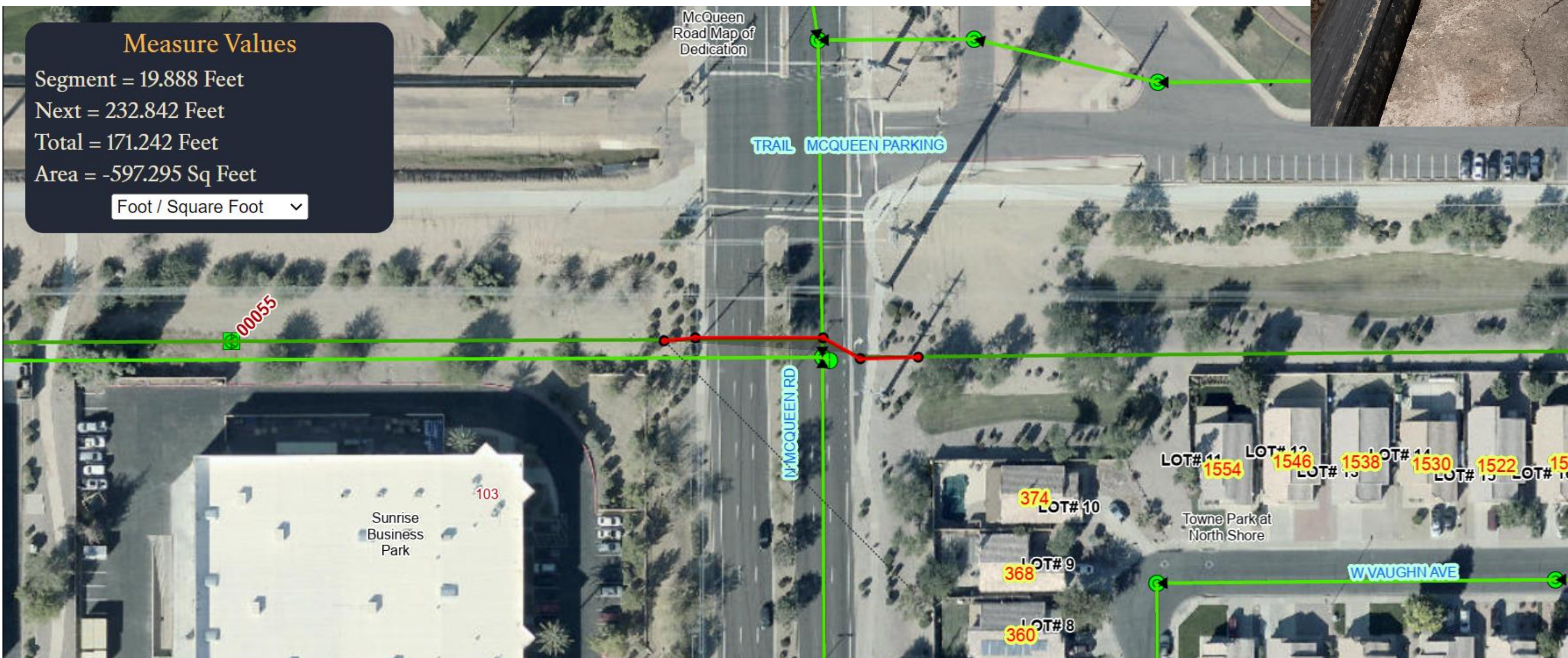




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**CHALLENGES FOR
GILBERT
WASTEWATER**



Islands Force Main Failure February 2023

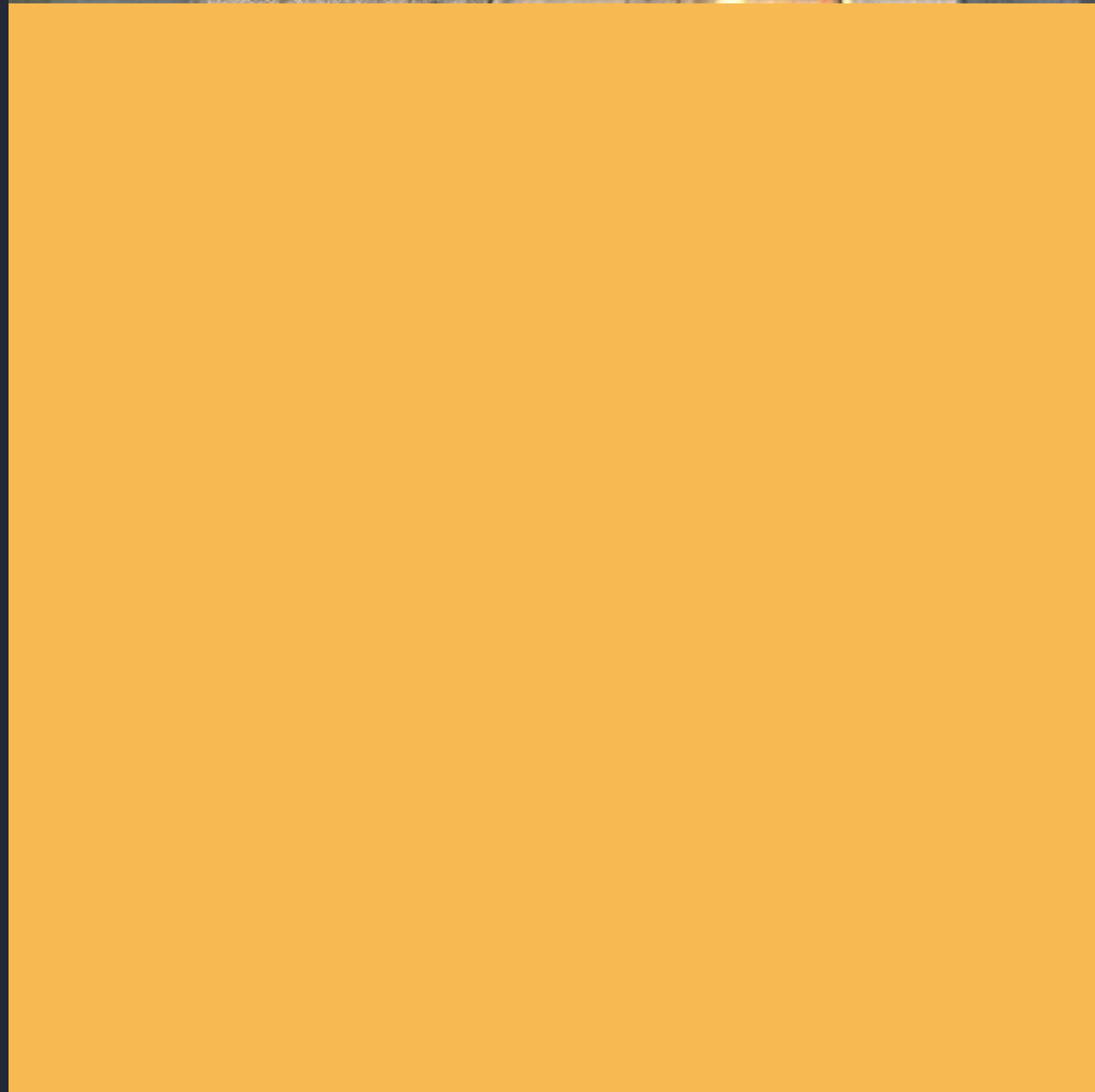




Pipe Age and Corrosion

Steel Pipe section – Reclaimed Line

Air Release Valve broken on Force Main



Repair & Cleanup Efforts, Odor complaints



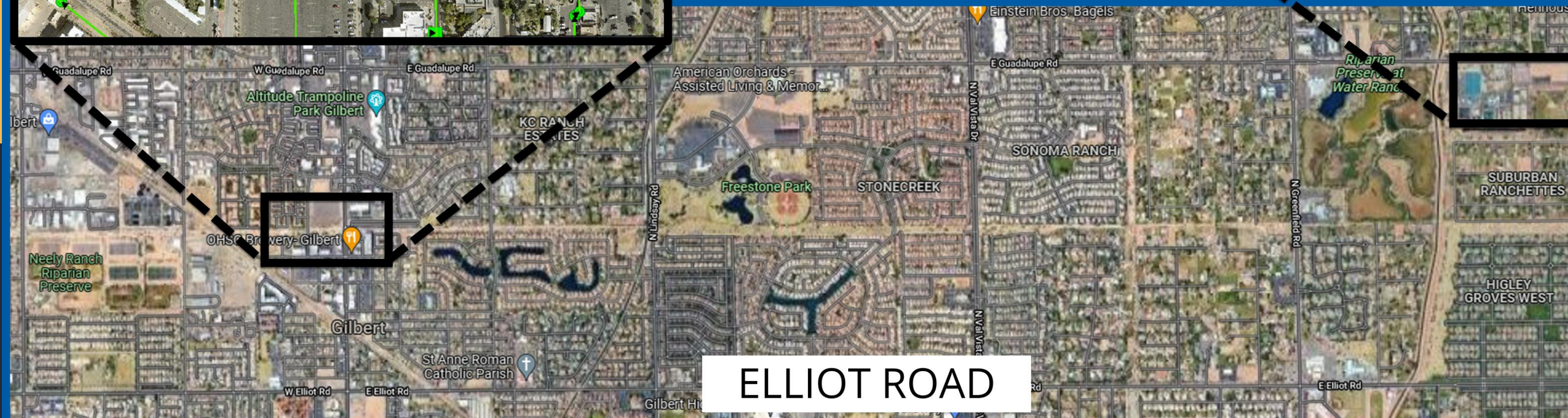
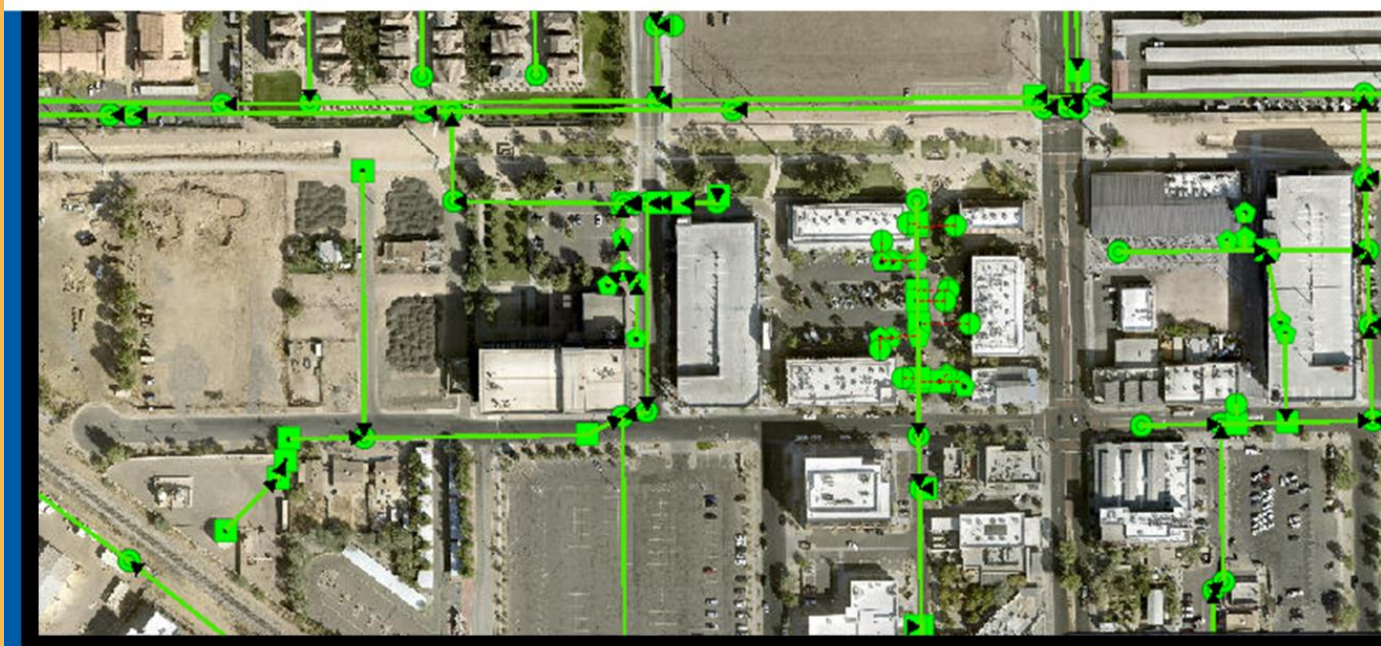
WASTEWATER IMPROVEMENTS

Odor Control – Western Canal at Guadalupe

Project #: WW1170

Project Description:

This project will design and construct an odor and corrosion control chemical injection station serving the 36" sanitary sewer pipeline that parallels the Western Canal. The station will include a secured eight foot block wall, a concrete chemical containment area with protective linings, chemical storage tanks, mixers, injection pumps, electrical controls, SCADA monitoring system, and appurtenances.





Recharge
Facilities

Riparian Preserve at Water Ranch

- Groundwater Recharge Facility.
- Constructed in 1997
- 8 MGD permit limit.
- CIP to automate and expand distribution structure.
- Gilbert's favorite amenity is a wastewater facility
- Recharge surface water from the Eastern canal



WASTEWATER IMPROVEMENTS

Riparian Preserve Distribution Structure Exp

Project #: WW0960

Project Description:

Per the 2012 Integrated Water Resources Master Plan recommendations, this project will install a pipe parallel to the existing 10" pipe into the Recharge Facility; expand the distribution box to accommodate the increased flow from 4 MGD to 8 MGD and eliminates 18" pipe to basins three and four. This project also includes retro-fitting the manual gate valves to be motorized and SCADA controlled at the Riparian Preserve at Water Ranch. Project will evaluate inlet design for alternative surface water recharge alternatives.

WW APPRENTICESHIP TO HIRE

CAREER AND TECHNICAL EDUCATION VOL. 23, NO. 3

Apprenticeships on the Rise

A burgeoning alternative challenges the college-for-all mentality



Patrick O'Donnell

FORBES > MONEY > RETIREMENT

Amid Strong Labor Market, State And Local Governments Struggle To Hire

Christian Weller Senior Contributor @

Professor, Public Policy, University of Massachusetts Boston

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Feb 9, 2023, 06:00am EST

southerncitymagazine.org/cities-towns-grapple-with-labor-shortage-public-works-utilities-among-the-hard-to-fill/

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NCLM Southern City News Center HOME EVENTS COLUMNS UPDATES ARTICLES TALK OF OUR TOWN

Home > Articles > Cities, Towns Grapple with Labor Shortage: Public Works, Utilities Among the Hard-to-Fill

Articles

Cities, Towns Grapple with Labor Shortage: Public Works, Utilities Among the Hard-to-Fill

April 5, 2022



It seems inconsistent: pandemic-related, record-level job losses while employers report their own hardships in finding workers. But that's the nature of what analysts have called one of the strangest labor shortages in memory. Nationally, employers have reported too-tight talent pools or general hard times retaining staff. While much of the labor-shortage news spotlight is usually either

broad-talking or sector-specific, municipalities far and wide indeed have felt the effect.

Thank you, any questions?



2024

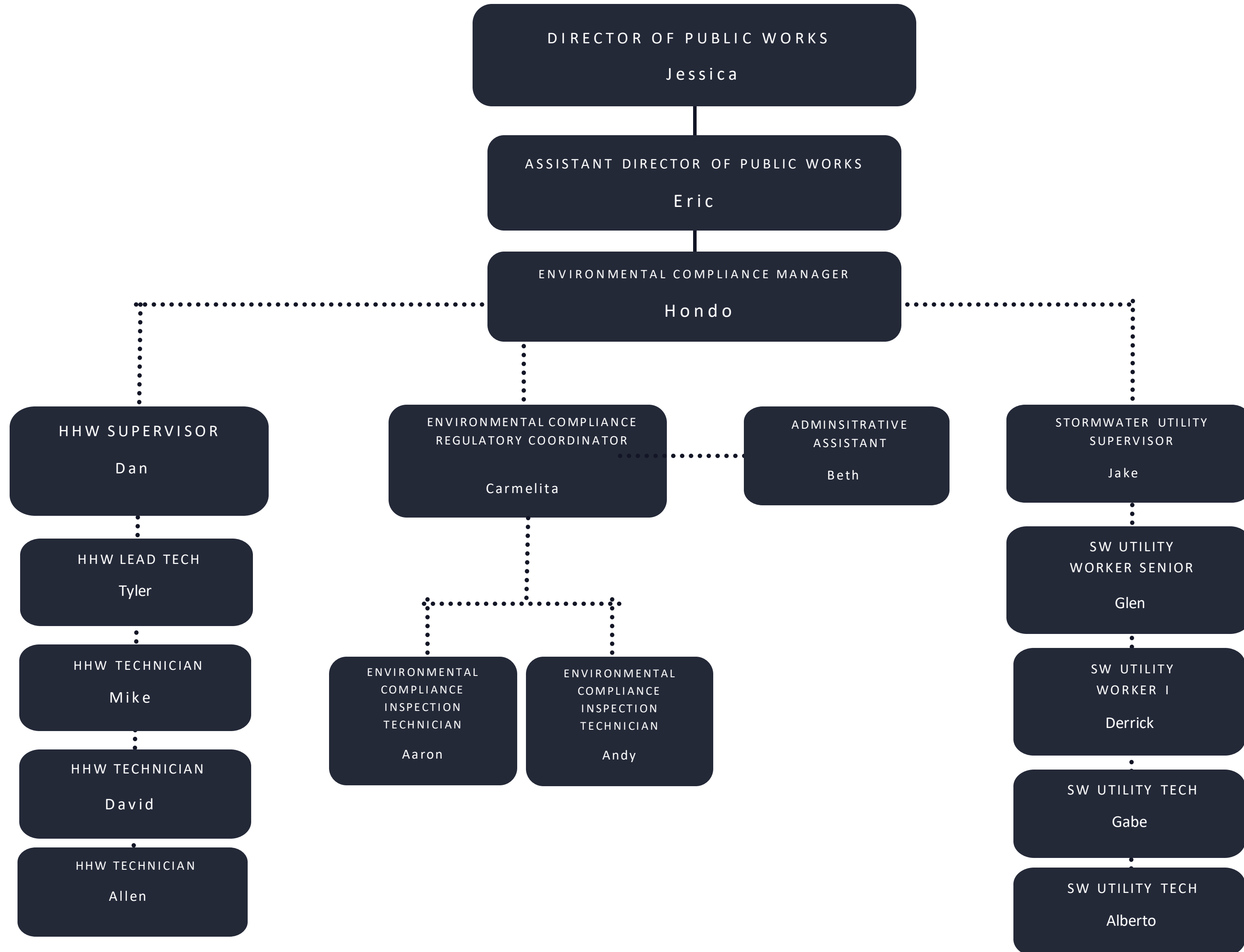


Shaping a new
tomorrow, today.

Environmental Compliance Division: Program

ENVIRONMENTAL COMPLIANCE DIVISION

ORGANIZATIONAL CHART



Division Duties



- Environmental Permitting, Compliance, and Enforcement
 - Stormwater
 - Air quality
- Residential and Town Generated Hazardous Waste

Environmental Permitting and Compliance

- Right of Way Permits
- Stormwater Quality Permits
 - MS4
 - MSGP
 - SPCC
 - APP
- Air Quality Permits
 - General
 - Dust Control
 - Non-Title V
 - Block Permit



Stormwater Regulatory Requirements

- Environmental Protection Agency – Clean Water Act
- Arizona Department of Environmental Quality – Water Quality Division
 - Town of Gilbert Code – Section 30-51

Arizona Pollutant Discharge Elimination System: General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems to Water of the U.S. (AZPDES, NPDES)

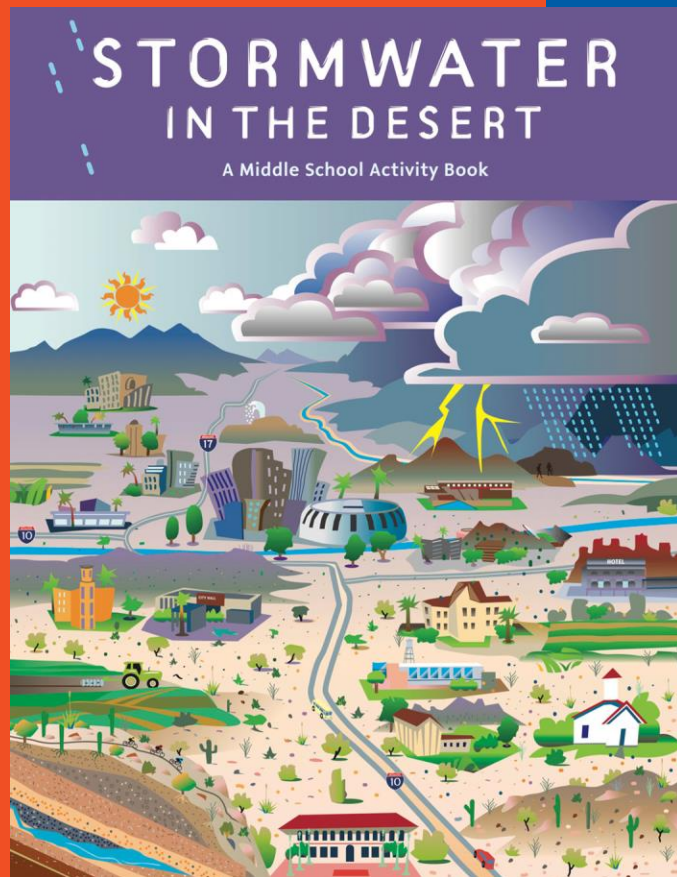


6 Control Measures for our MS4 Permit

1. Public Education and outreach
2. Public Involvement and Participation
3. Illicit Discharge Detection and Elimination Program (IDDE)
4. Construction Activity Stormwater Runoff Control
5. Post-Construction Stormwater Management in New Development and Redevelopment
6. Pollution Prevention and Good Housekeeping for Municipal Operations

Education, Outreach, Involvement, and Participation

- AZ STORM – Regional Outreach Platform
- Green Gilbert Business Partnership
 - Parks and Recreation events
- Education with Boys and Girls Club



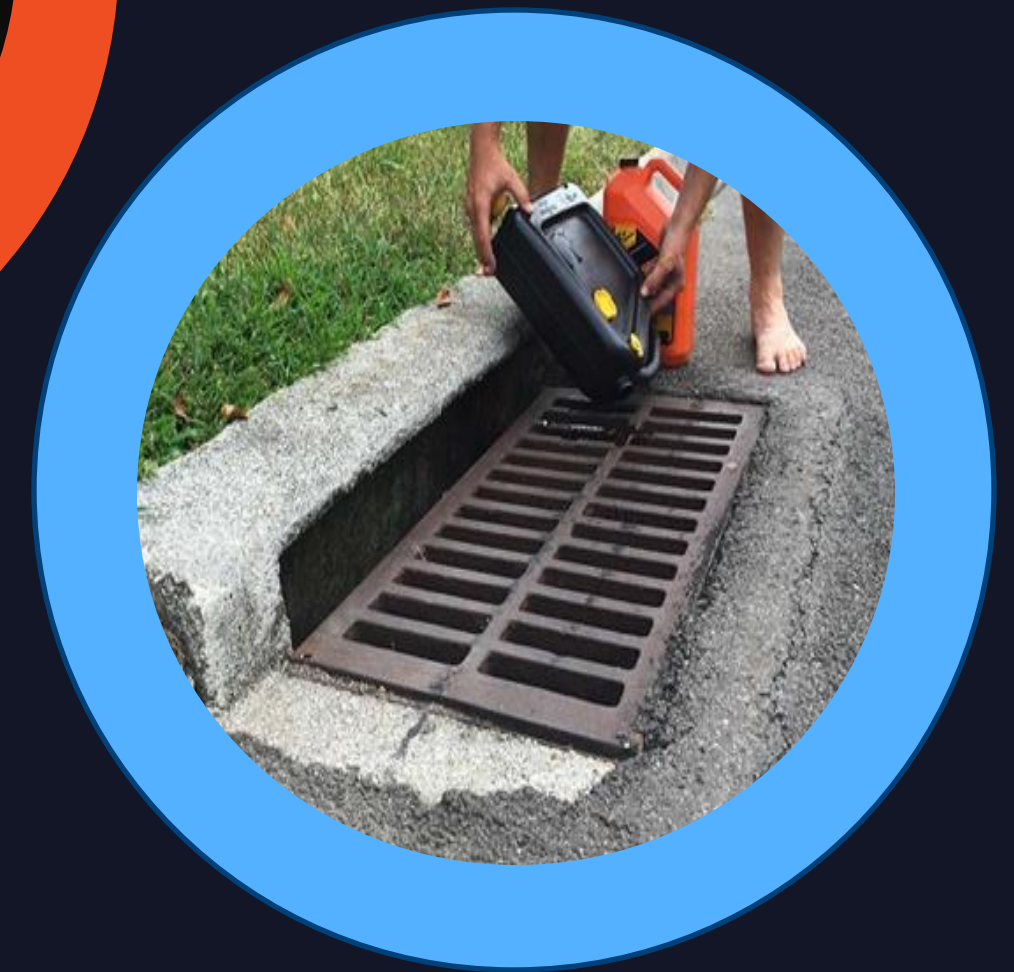
Community Participation

- Public Events
- Guest Lecture Series
- Outreach to school groups
- HOA Presentations
- Earth Day Community Service Events



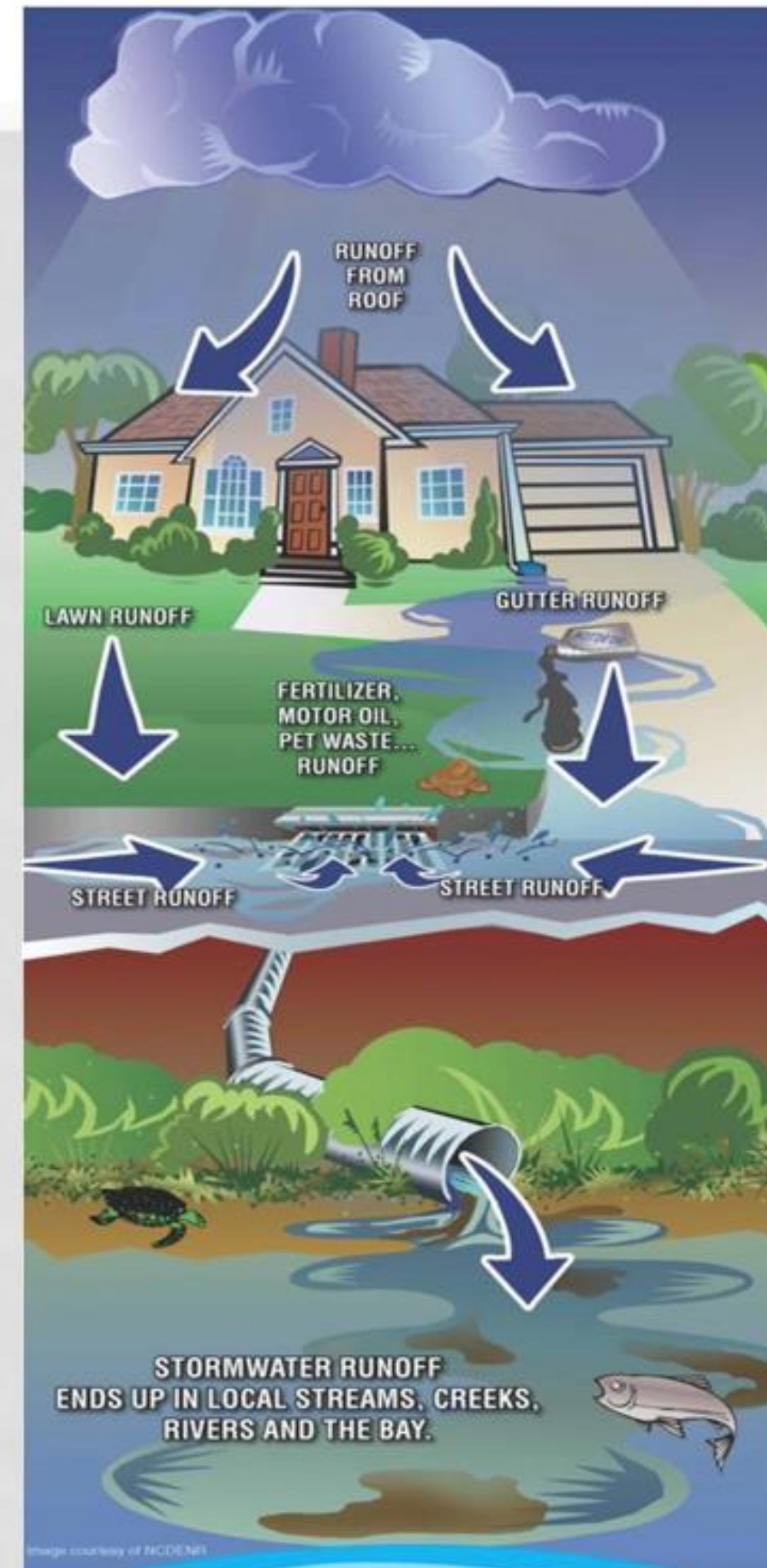
ILLICIT DISCHARGE DETECTION & ELIMINATION PROGRAM

- A comprehensive plan
- Educational programs
- Training
- Regular monitoring
- Protocols for responding
- Documentation
- A commitment to continual improvement
- These requirements are aimed at preventing pollution



COMMON POLLUTANTS

- Oil, grease, metals, and coolants from vehicles
- Fertilizers, pesticides, and other chemicals from farms, gardens, and homes
- Bacteria from pet wastes and failing septic systems
- Sediment from construction sites
- Detergents from car and equipment washing
- Accidental spills, leaky storage containers, and whatever else ends up on the ground



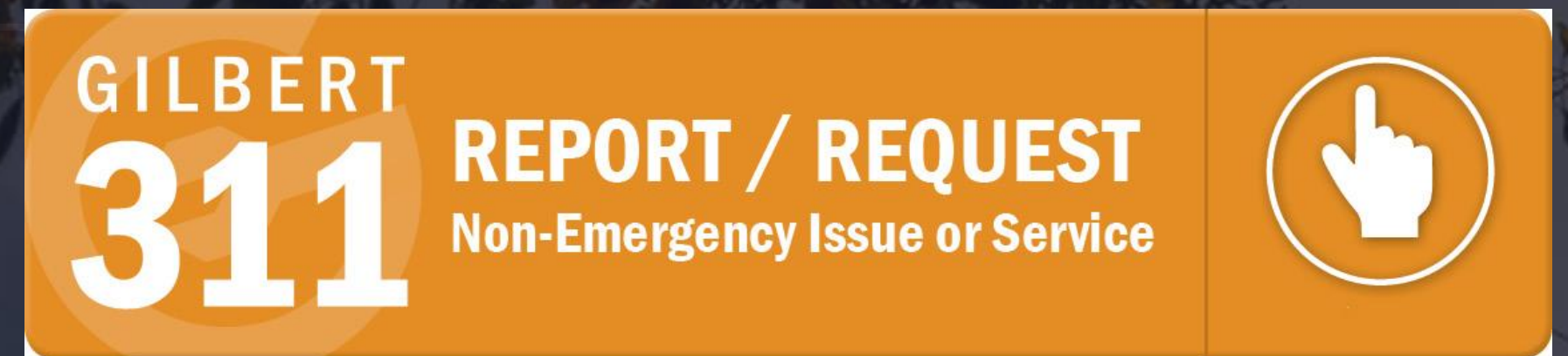
Pool Concrete IDDE



Reporting Methods

- Gilbert 311
 - Online or phone app
 - Website
 - Call customer service

- Town Employees
 - Any town employee commuting



Construction and Post-Construction Stormwater Management

- Construction Activity and Stormwater Runoff Control
- Stormwater Pollution Prevention Plan (SWPPP)
- Inspections and monitoring of all construction activity
- Public Infrastructure
 - 446,500 ft of town owned stormwater pipes diameters range from 8" to 120" inches
 - 10,757 stormwater structures
 - Queen Creek and Sonoqui washes
 - Riggs road and Chandler Heights stormwater channels
 - Routine maintenance, repair and replacement of failing infrastructure
- Private Infrastructure
 - Infrastructure Assessments
 - Communication with Private System Owners
 - Online HOA Resource Center
 - HOA SWPPPs



Stormwater Conveyance Structures

6 primary components of stormwater infrastructure:

Scupper



Street-level inlet for storm water from roads, typically seen on curbs

Catch Basin



Street-level inlet for storm water usually found in wider impervious surfaces such as parking lots, service yards, etc.

Manhole



Access point for maintenance, cleaning, servicing, etc. Typically located at underground storm water junction points.

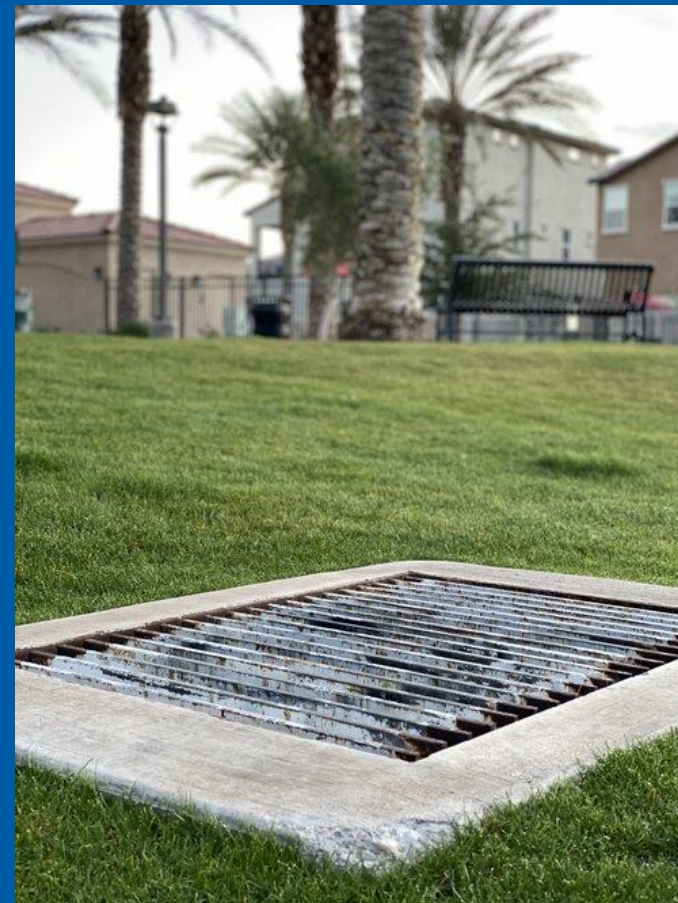
Stormwater Conveyance Structures

Headwall



Outfall point for stormwater from a scupper/catch basin into a retention area

Bubbler Box



“Upwelling” outfall point for stormwater, ideal for prevention of erosion along banks of retention area. Also traps any unwanted sediment.

Drywell



Final point for storm water “flow” that allows water to percolate back into the ground. All other infrastructure is meant to carry storm water to a drywell and prevent anything other than rain from getting into it

Impacted Storm Infrastructure



Cleaning

Scupper Recovery

Before



After



Headwall Cleanout

Before



After



Cleaning: Before and After

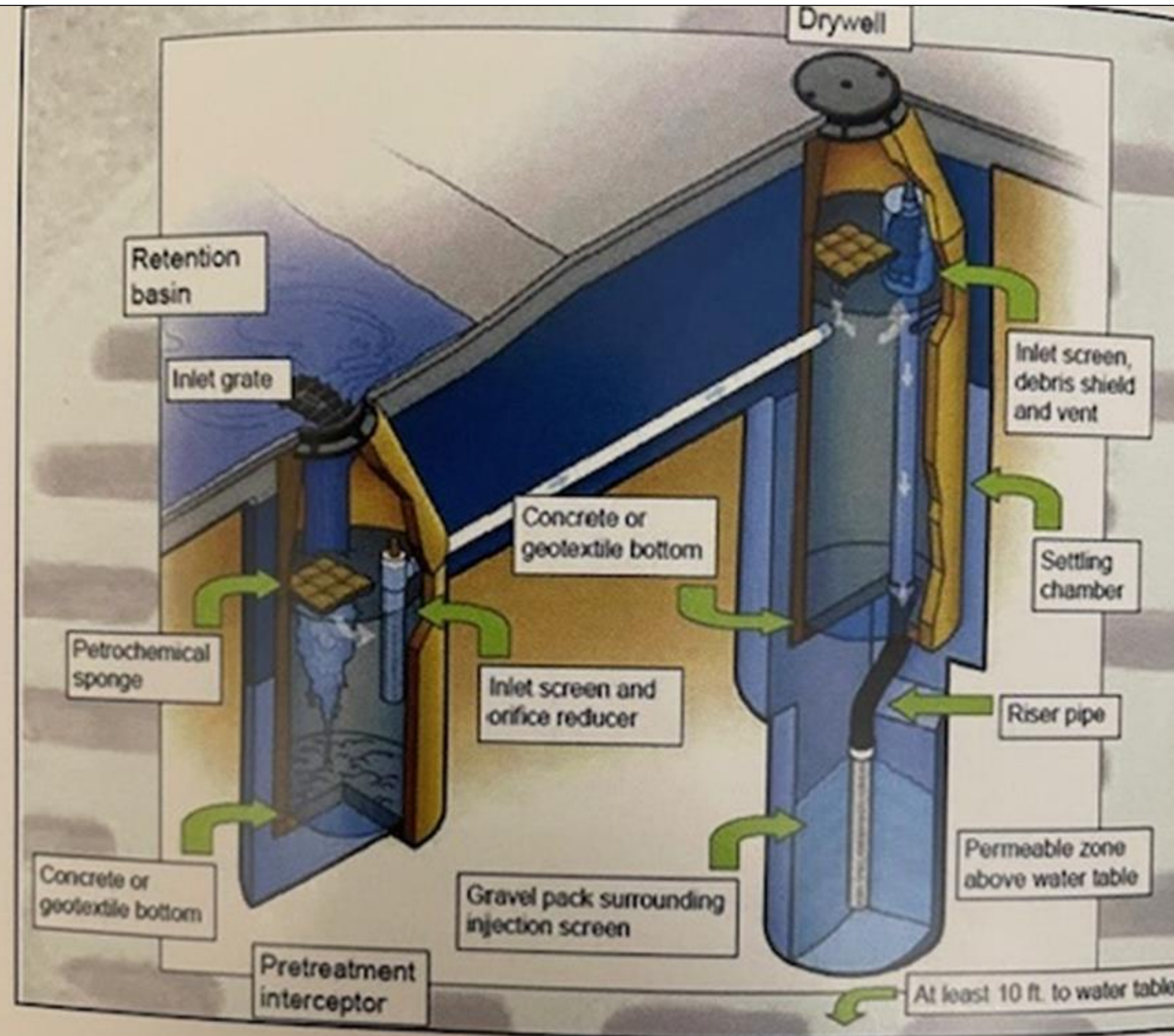


Consequences of Poor Stormwater Infrastructure Maintenance



This type of flooding can cause dangerous driving conditions, property damage, erosion, and the spread of pollutants such as oil and chemicals, into our surface water and drywells leading to our groundwater table. This leads to more intensive and expensive cleanup and repairs.

Dual Chamber Drywell



What is a drywell?

Drywells

Before



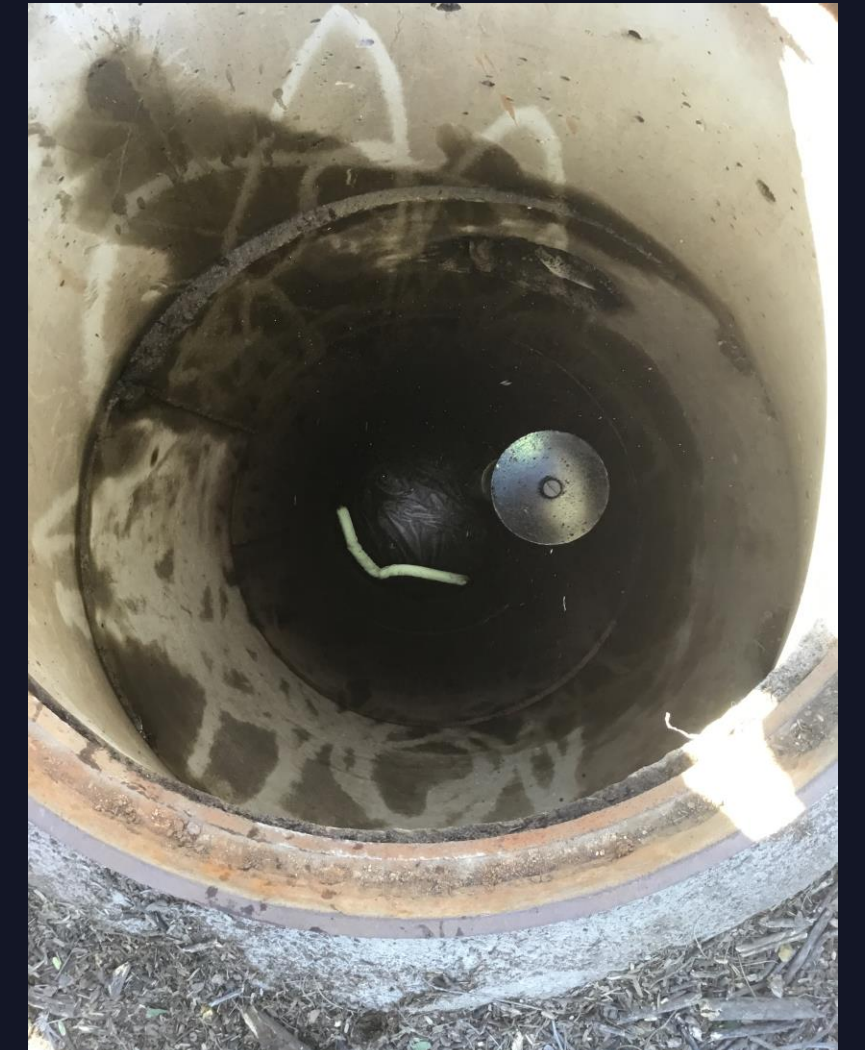
After



Before



After



Pump Stations

The Town of Gilbert has four stormwater pumping stations:

- Crossroads
- Freestone
- Vaughn
- Village II



Photo 57 – Crossroads Pump Station Aerial



Photo 58 – Crossroads Submersible Pumps

We just received grant funding for Crossroads rehabilitation.

The purpose of a stormwater pump station is to mitigate flooding by pumping excess rainwater or stormwater from low-lying areas or drainage systems to higher grounds or a designated discharge point, thus preventing damage to properties and infrastructure.

Good Construction Practices



Catch basin is thoroughly protected from unwanted sediment entering infrastructure



Scupper is protected from construction debris entering retention area



Secondary retention in place for paints, chemicals, cement mixing, etc.

Poor Construction Practices



Drywell is unprotected from sediment and other construction debris



Construction sediment and debris not properly contained



No barrier to prevent sediment runoff into streets

Pollution Prevention and Good Housekeeping for Municipal Operations

**Quarterly
Facility
Inspections**






**Customized
Facility
SWPPPs**

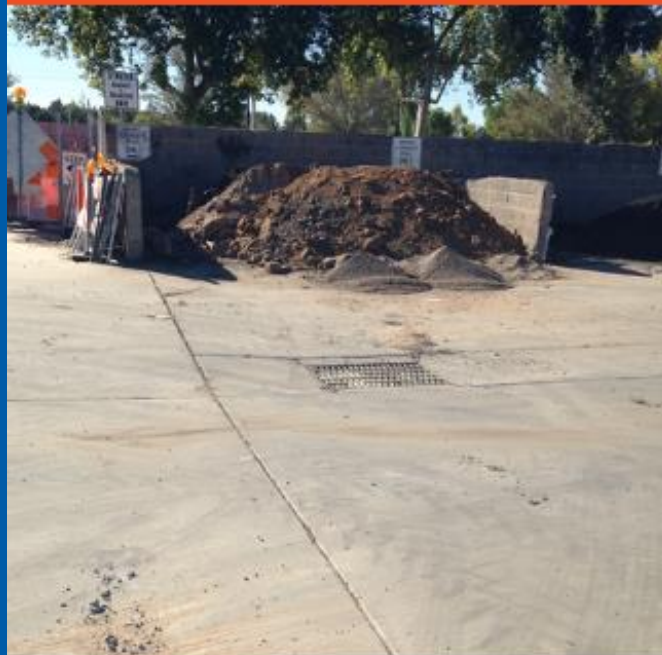


**Site Specific
Stormwater Pollution
Prevention Plans for
Town of Gilbert Facilities**

The following documents will overview the procedures and practices implemented to minimize potential negative impacts of Town operations on the storm drain system.

	Green heading indicates there is little to no potential for stormwater pollution at this facility due to limited infrastructure or limited use of hazardous material.
	Yellow heading indicates a moderate potential for stormwater pollution due to a combination of materials used or stored on site, and stormwater infrastructure.
	Red heading indicates a high potential for stormwater pollution due to operations performed and stormwater infrastructure present.

**Biannual
Yard
Cleanups**



**Annual
Training for
Town
Employees**



We are in the process of creating a Stormwater Master Plan

To provide Gilbert with a comprehensive framework for managing stormwater within our community.

- Key objectives of our plan include:

1. Assessing flood risks and developing strategies

2. Identifying sources of pollution in stormwater runoff

3. Planning for the design, construction, and maintenance of stormwater infrastructure.

4. Ensuring compliance with federal, state, and local regulations related to stormwater management.

5. Providing a roadmap for long-term stormwater management goals

Air Quality Regulation and Education



Clean Air Act (EPA)

Arizona Department of Environmental Quality (ADEQ)
– Air Quality Division

Maricopa County Air Quality Department

Town of Gilbert Municipal Code Sec. 30-61.
Article IV. - Air Quality Standards



General Permit

Generators
Boilers



Non-Title V

Gas Storage Tanks at Municipal Facilities



Dust Control

Block Permit – Town Maintained Lots and Dirt Roads
Rule 310 – Construction PM 10

Community Resources

- [Gilbert Environmental Compliance Air Quality Webpage](#)
 - Pollutants to watch for
 - Dust Brochure
 - Text/email alerts for High Pollution Advisory Days



The purpose of the Household Hazardous Waste Facility



- To provide a safe and responsible means for residents to dispose of household items that are potentially harmful to human health and the environment if not handled properly.
- To help prevent pollution of soil, water, and air, and reduce the risk of accidents and health hazards associated with improper disposal methods.
- Provide educational programs and resources to inform residents about the importance of proper disposal practices.



Household Hazardous Waste Collection Facility

2224 E Queen Creek Rd
Gilbert, AZ 85297

Hours:

Wednesday & Friday

7 a.m. – 2:30 p.m.

Saturday

7 a.m. – 2:30 p.m.



Background

- Opened in 2007
- 4000 sq ft facility



Staff

- 1 Supervisor
- 1 Lead Technician
- 3 Technician



Permitting & Compliance



- US Environmental Protection Agency (EPA)
 - Resource Conservation and Recovery Act (RCRA)
- Clean Air Act (Section 112)
- Toxic Substances Control Act (TSCA)
- Hazardous Waste Operations and Emergency Response (HAZWOPER)





HHW Duties and Responsibilities

Safety

- Proper PPE for handling all materials
- Proper Ventilation
- Eyewash/shower stations
- MSA Detectors
- Smoke and Heat detectors

Sorting

- Items are all weighed then sorted by waste determination
- Items then go to the specific station for processing and bulking

Bulking

- Like products get placed into a drum container in their original packaging
 - Corrosives (Both acidic and basic)
 - Pesticides
 - Weed Killers
 - Oxidizers

Labeling

- Safe Handling Labeling
- Flammable Materials
- Corrosive Chemicals
- Warning Labels



Recycling/Processing examples

Latex Paint

- Undergoes quality control check
- Good quality paint is poured into one of two drums
 - Gray paint drum
 - Tan paint drum
- When either drum is full, paint is mixed, then screened, and poured into 5-gallon buckets
 - Paint is free to everyone
 - Paint is also donated to schools and other non-profits

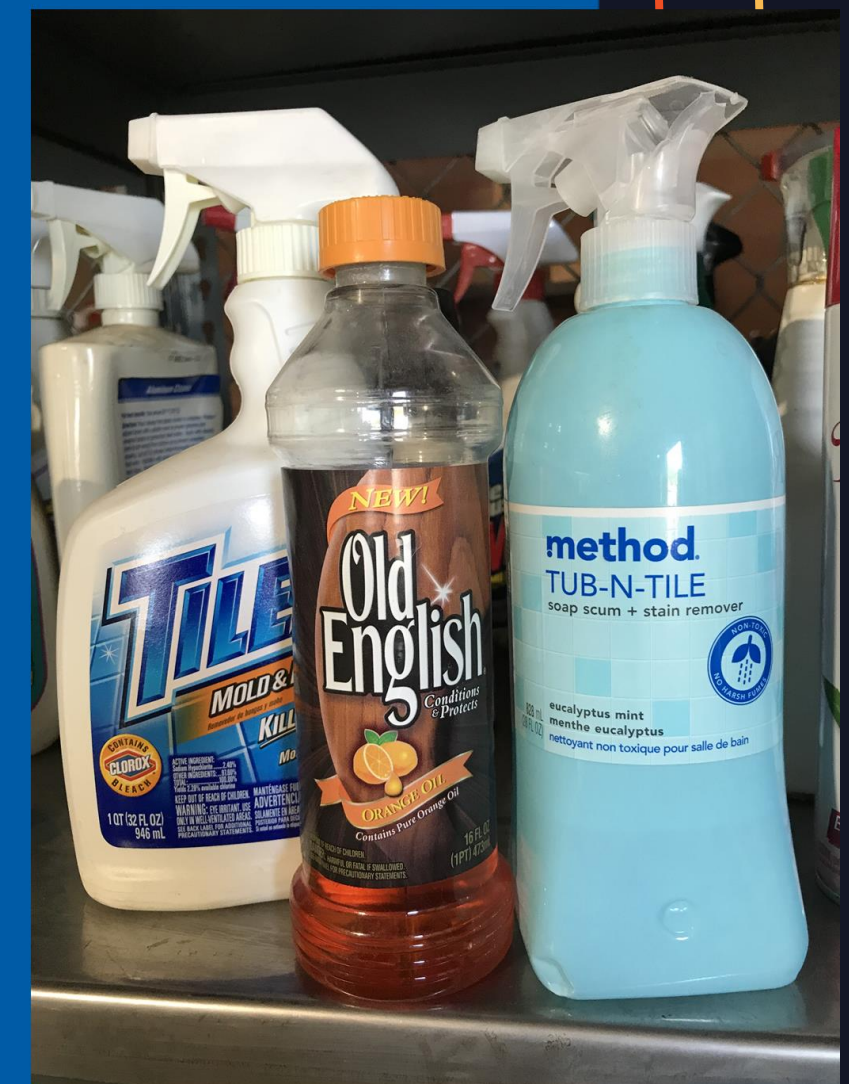
Weed Killer/ Bug sprays

- Weed killer and bug sprays are sorted and classified
- Original container is bulked into steel drums
- A licensed disposal company picks up the drums and properly disposes of the waste



Swap Shop

- The swap shop is for materials brought in by residents that are still suitable for reuse
 - Cleaning products, vehicle oil/fluids, pesticide, weed killer, various paints, adhesives etc.
- A waiver is signed by the resident for all products that are taken out of the Swap Shop
- Items are weighed in and out of the swap shop for tracking purpose



Acceptable and non-acceptable items

gilbert



Acceptable Items

- All types of batteries
- Automobile tires without rims (5 tire limit per year)
- Automotive fuels and fluids*
- Camping cylinders (limit 20)
- Cooking oil*
- E-Waste: TVs (Flat Screen Only), Laptops, computer cell phones, and printers
- Fire extinguishers
- Fluorescent light bulbs (CFL's, HID, Neon)
- Herbicides and pesticides*
- Household cleaners*
- Paints and stains-latex and oil based*
- Pool chemicals
- Propane tanks (standard bbq size)
- Scrap metal
- Smoke detectors/thermostats
- Very small appliances (without Freon)

**There is a limit of 10 gallons of any single liquid type per day. Oil/gas/coolant containers returned upon request.*



Items NOT Accepted

- Business/commercial hazardous waste of any kind
- Large appliances: contact customer service at (480) 503-6400 for White Goods pickup
- Small appliances: place in trash bin
- Electronics: CRT TVs, microwaves, and vacuums. Place out with your bulk trash.
- Automobile tires with rims
- Explosives and ammunition
- [Medical sharps](#)
- [Prescription drugs](#)**
- Trash/Recycle (Black or Blue can items)
- Radioactive material
- 55 gallon drums of material

No containers over 5 gallons will be accepted.

** *Gilbert offers 24 hour prescription drug drop-off boxes at these [Gilbert Police Department locations](#).*

HHW Milestones

Since 2007 through 2022:

- The HHW facility has taken in more than 7,027,406 lbs. of household hazardous waste
- The facility has been visited over 117,558 times from residents needing to properly dispose of hazardous materials
- The team members have been able to recycle over 84,545 gallons of latex back to gilbert residents, schools, non-profit organizations, and the Town itself.





Internal Hazardous Waste Management

Regulatory Compliance

- Emergency Planning and Community Right to Know Act (EPCRA, 1986)
 - Tier II Reporting

Outreach and Compliance Assistance

- Inspections
- Interdepartmental Coordination of hazardous materials management

Examples of internal hazardous materials

Cleaning chemicals (e.g., solvents, degreasers)

Paints and coatings (e.g., lead-based paints, aerosol paints)

Fluorescent light bulbs and other lighting fixtures containing mercury

Batteries (e.g., lead-acid batteries, lithium-ion batteries)

Electronic waste (e-waste) such as computers, monitors, and printers

Oil, brake fluid, coolant and hydraulic fluid

Pesticides and herbicides

Thank you!