Technical Customer Advisory Committee

AGENDA

Members

Melissa Armijo	Erwin Melis
Janie Chermak	Amy Miller
Deborah Dixon	Ron Schwarzwalder
Robert Fowlie	Paul van Gulick
Tess Houle	

In response to the Governor's declaration of a Public Health Emergency and ban on large public gatherings, the Technical Customer Advisory Committee meeting on Thursday, October 1, will be held via video conference starting at 4:00 PM.

Members of the public have the ability to view the meeting by joining the video conference. To request login information for this meeting, contact Luz del Carmen Carreon at lcarreon@abcwua.org or 505-289-3100. Requests for login must be received before 2pm on Thursday, October 1, 2020. Public Comment must be submitted via email to Luz del Carmen Carreon at lcarreon@abcwua.org before 2pm on Thursday, October 1, 2020.

Thursday, October 1, 2020	4:00 PM	via video conference

1.	Call to Order	4:00-4:05
2.	Approval of Agenda	4:05-4:10
3.	Approval of August 6, 2020 Action Summary	4:10-4:15
4.	Presentation on the Wastewater System	4:15-5:55
5.	Public Comment	5:55-6:00
6.	Adjournment	6:00

NOTICE TO PERSONS WITH DISABILITIES: If you have a disability and require special assistance to participate in this meeting, please contact the Water Utility Authority Office, Suite 5012, Albuquerque/Bernalillo County Government Center, phone 289-3100, as soon as possible prior to the meeting date.

Technical Customer Advisory Committee

ACTION SUMMARY

August 6, 2020

Members Present:
Janie Chermak
Deborah Dixon
Robert Fowlie
Tess Houle
Erwin Melis
Ron Schwarzwalder
Paul van Gulick
Melissa Armijo

Members Excused:
Amy Miller

Water Authority Staff Present:
Elizabeth Anderson, Chief Planning Officer
David Morris, Communications & Public Affairs Manager
Rick Shean, Water Rights Program Manager
Carlos Bustos, Water Conservation Program Manager
Luzdelcarmen Carreon, Executive Service Coordinator

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Item 1 – Call to Order - Note presence of quorum
The meeting was called to order at 4:09 pm by Vice Chair Ron Schwarzwalder.

Item 2 – Approval of Agenda
Deborah Dixon made a motion to approve the agenda. Erwin Melis seconded the motion. The motion passed on an 8-0 vote.

For:	8	Chermak, Dixon, Fowlie, Houle, Melis, Schwarzwalder, van Gulick, & Armijo
Against:	0	
Excused:	1	Miller

Item 3 – Approval of June 11, 2020 Action Summary
Robert Fowlie made a motion to approve the action summary. Janie Chermak seconded the motion. The motion passed on an 8-0 vote.

For:	8	Chermak, Dixon, Fowlie, Houle, Melis, Schwarzwalder, van Gulick, & Armijo
Against:	0	
Abstain:	0	
Excused:	1	Miller

Item 4 – Presentation on the Website Redesign
David Morris gave a presentation on the website redesign. During the presentation a tally was taken on what web design the members preferred. Below are the results:

Ron – Ghost & Interior A
Melissa - Ghost & Interior A
Tess – Ghost & Interior A
Erwin – Ghost & Interior A (the background on ghost is dark, seems like we are underwater)
Paul – Homepage – Ghost
Janie – Interior B
Deborah – Ghost & Interior A
Robert – Ghost & Interior A

Item 5 – Presentation on Status of Rio Grande Flows and Water Authority's San Juan Chama Operations
Rick Shean gave a presentation on the Rio Grande Flows, discussing issues that impact river operations and providing an update on San Juan Chama operations this year.

Item 6 – Presentation on Water Conservation Update
Carlos Bustos gave a presentation on the Water Authority's Water Conservation Program, describing its history, focus and current rebates. In 1994 customers used on average 250 gallons per capita per day (GPCD), which has been reduced by over 50 percent to date. Carlos also provided a brief overview of the Water Authority as a whole.

Item 7 – Public Comment
Public comments received were sent to the TCAC members via email before the meeting.

Item 8 – Adjournment
Vice Chair Ron Schwarzwalder adjourned the meeting at 5:23 PM.

Wastewater System Overview

Mark Holstad, P.E.; Chief Engineer – Field Ops-Collection Section
and
Charlie Leder, P.E; Manager-Plant Operations Division

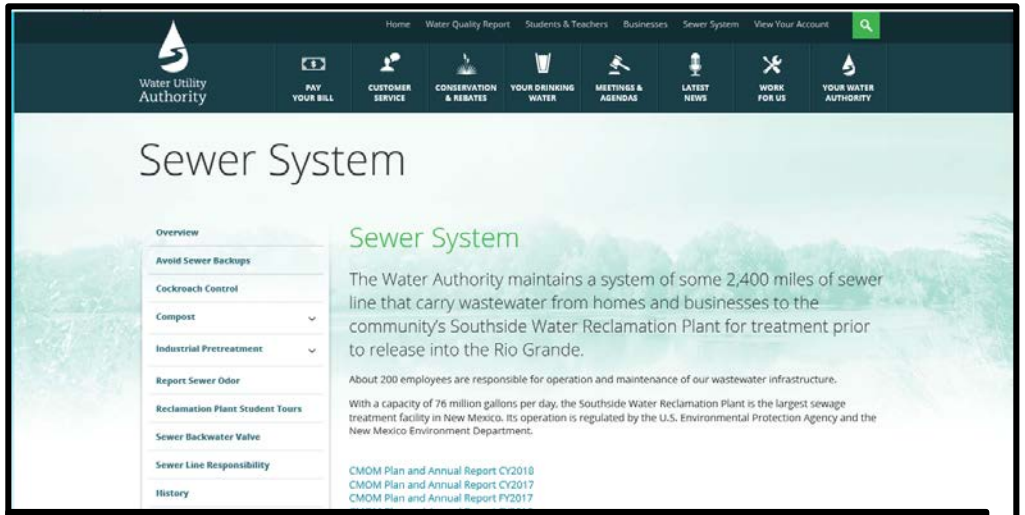
Wastewater System Overview

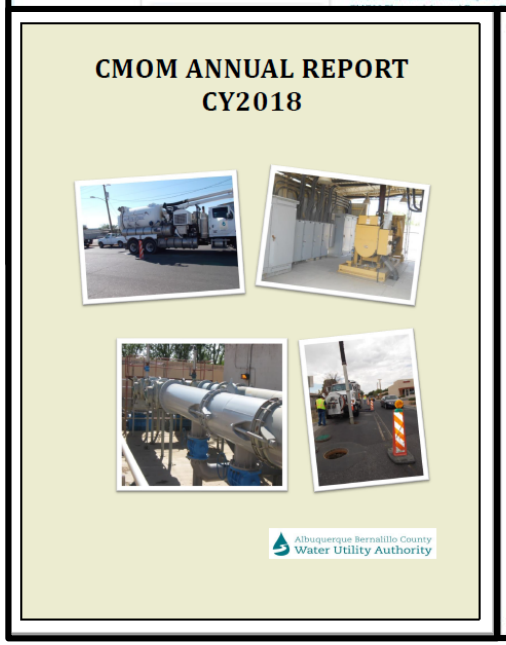
- Collection System
  - Drainage basins & interceptor trunks
  - Lift stations
  - CMOM program and how it reduced spills (SSOs)
  - Odor control program
  - Sewer renovation program
- Treatment Systems at SWRP and at SAF
  - Raw materials and products
  - Treatment system basics
  - Noteworthy features and components

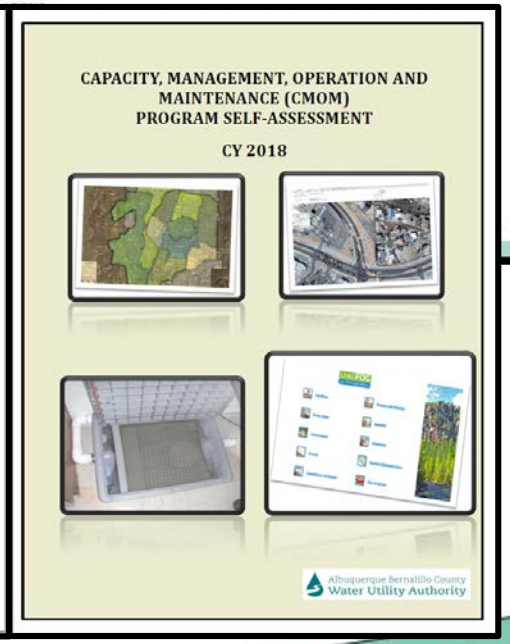
Collection System Overview

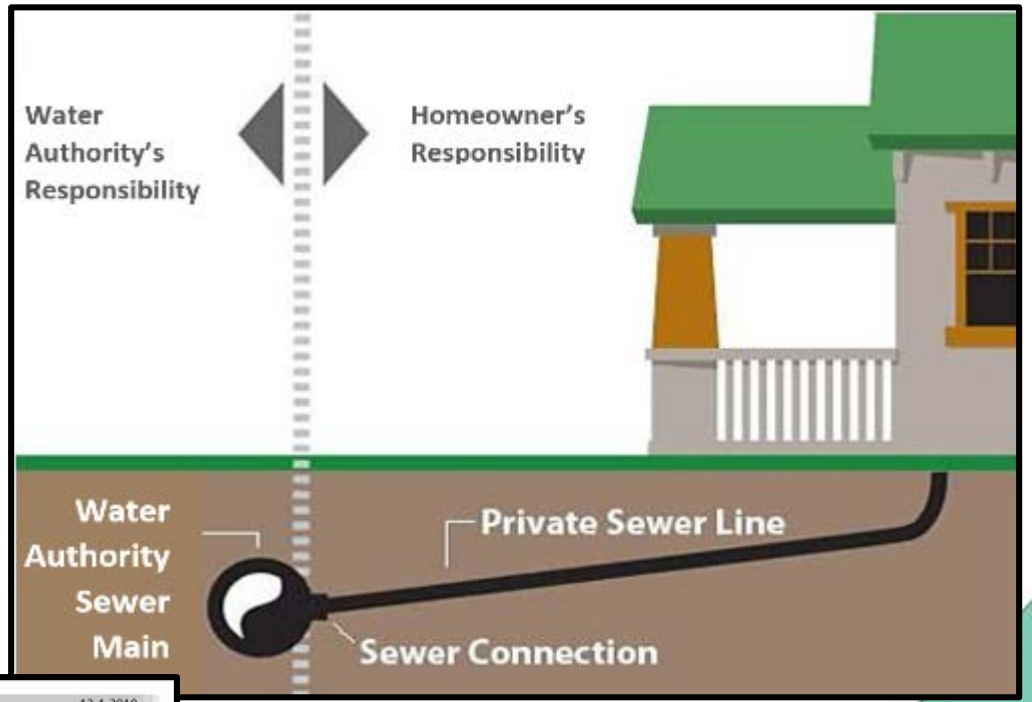
- What It Is
- What Is Different About Our System
- What Are Doing to Monitor Assets and Focus Resources
- What Are You Interested In?

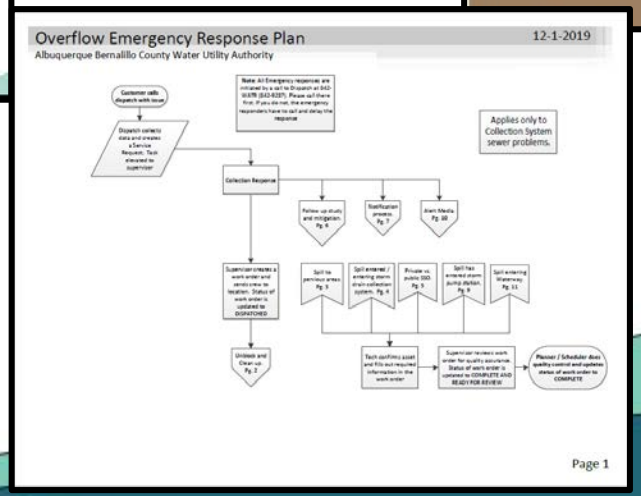
Collection System Overview







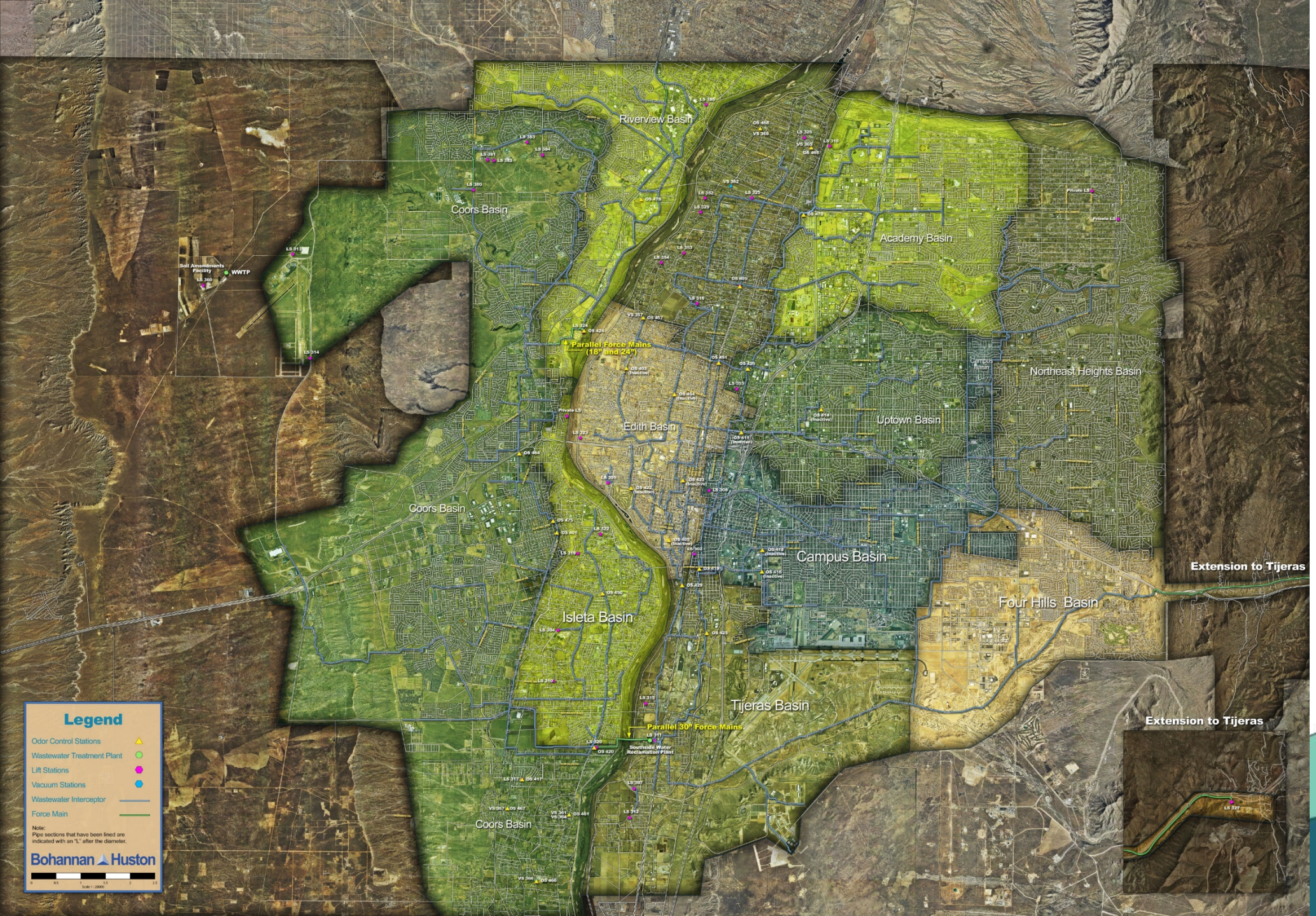




Collection System Overview

2/12/54

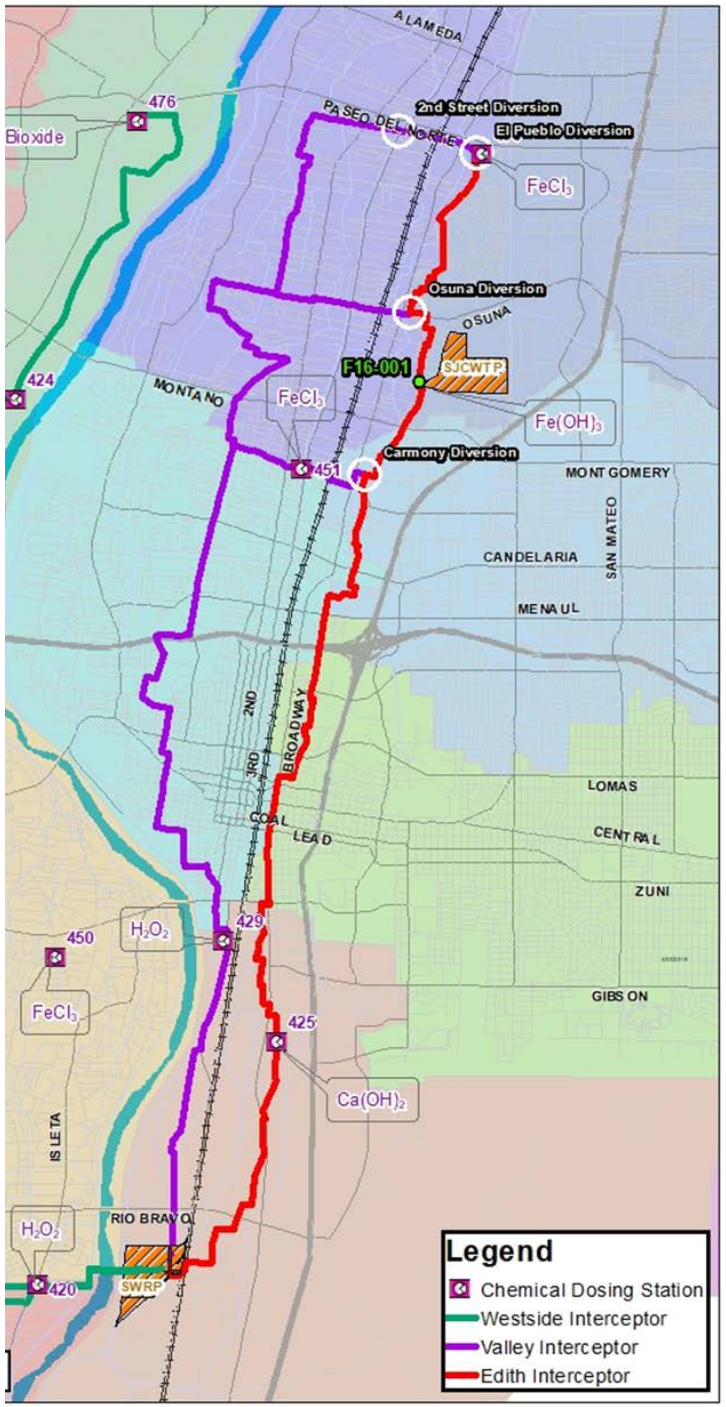
Miller Smith Boot – used to relay 18" line No. from Indian School Rd. to Zickert Rd.

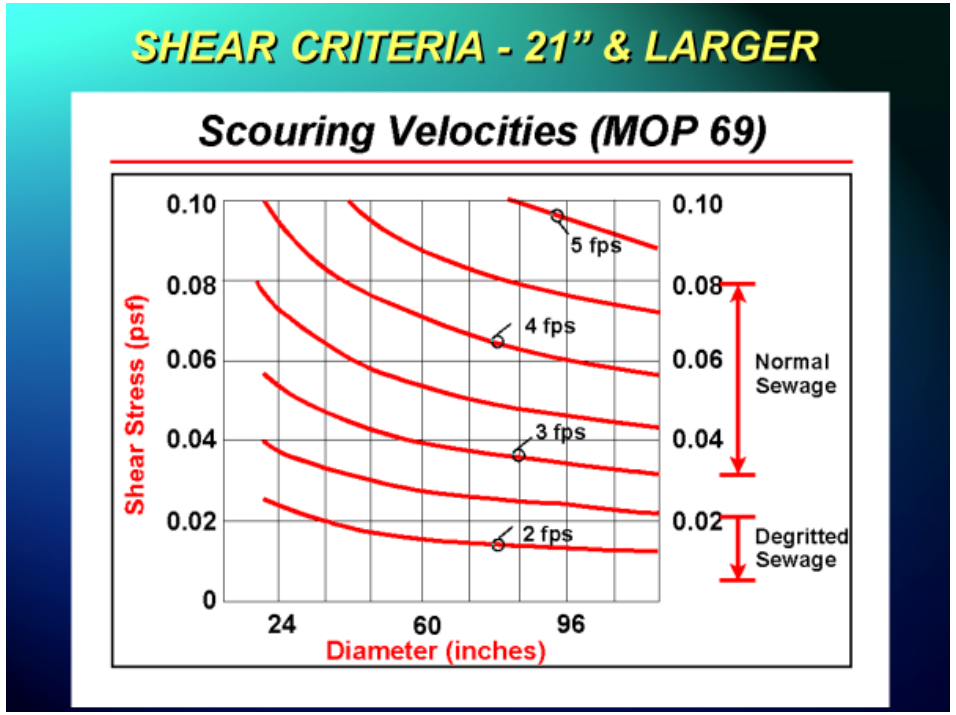


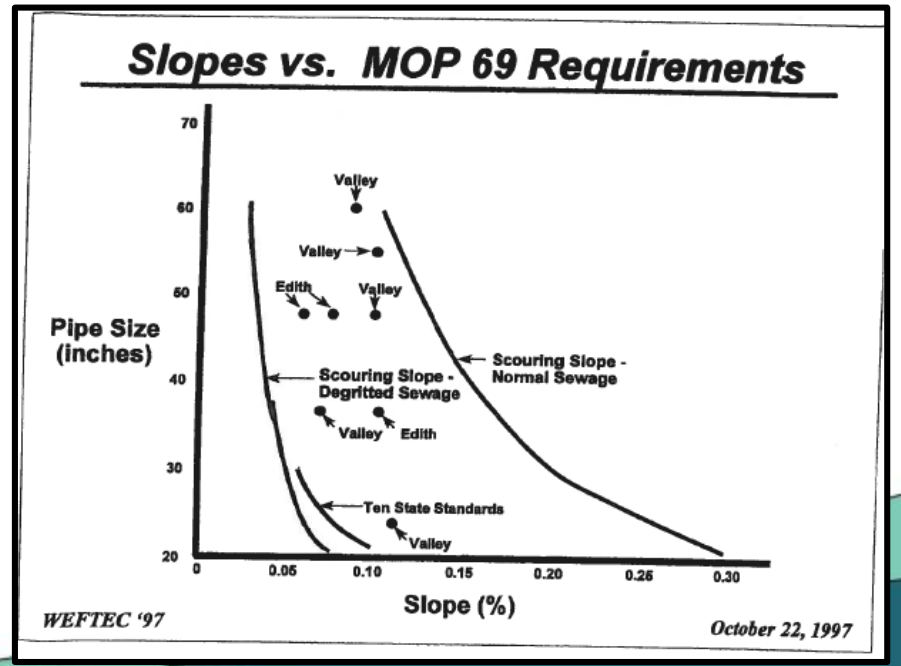
Service Area and Basins

~2,400 miles pipe
~50,000 manholes
199 mi^2 + Satellites
~51 lift & vacuum

WATER AUTHORITY







Unusual – Diversions & Grit Removal

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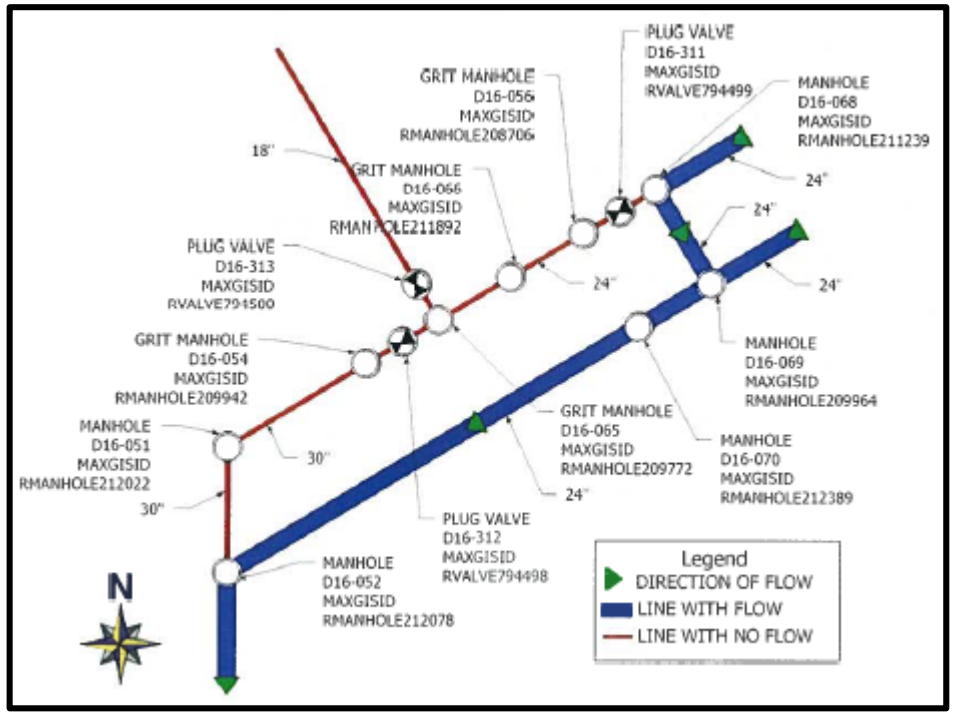
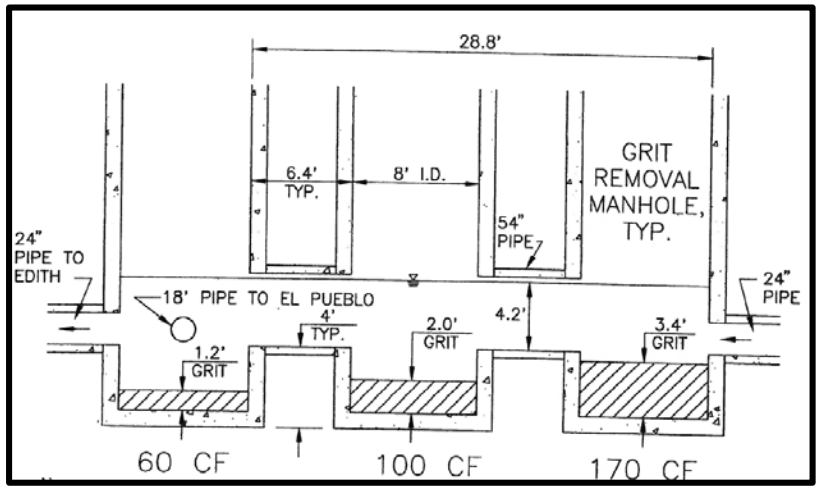
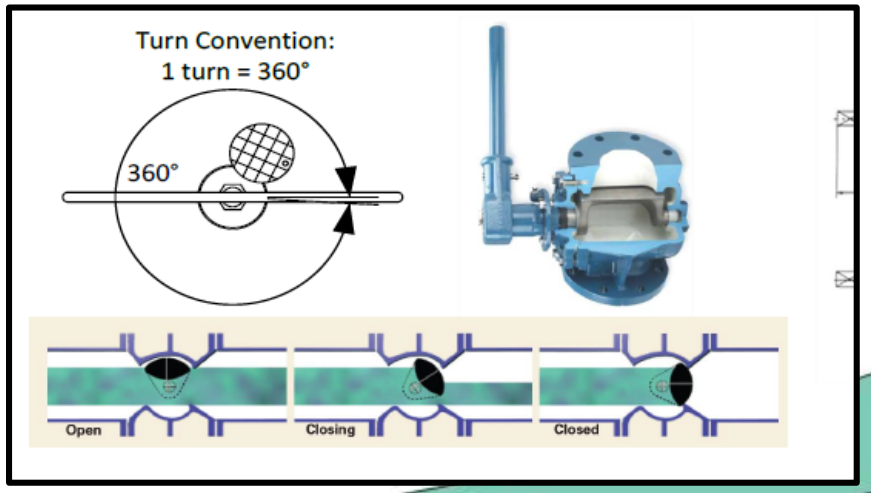
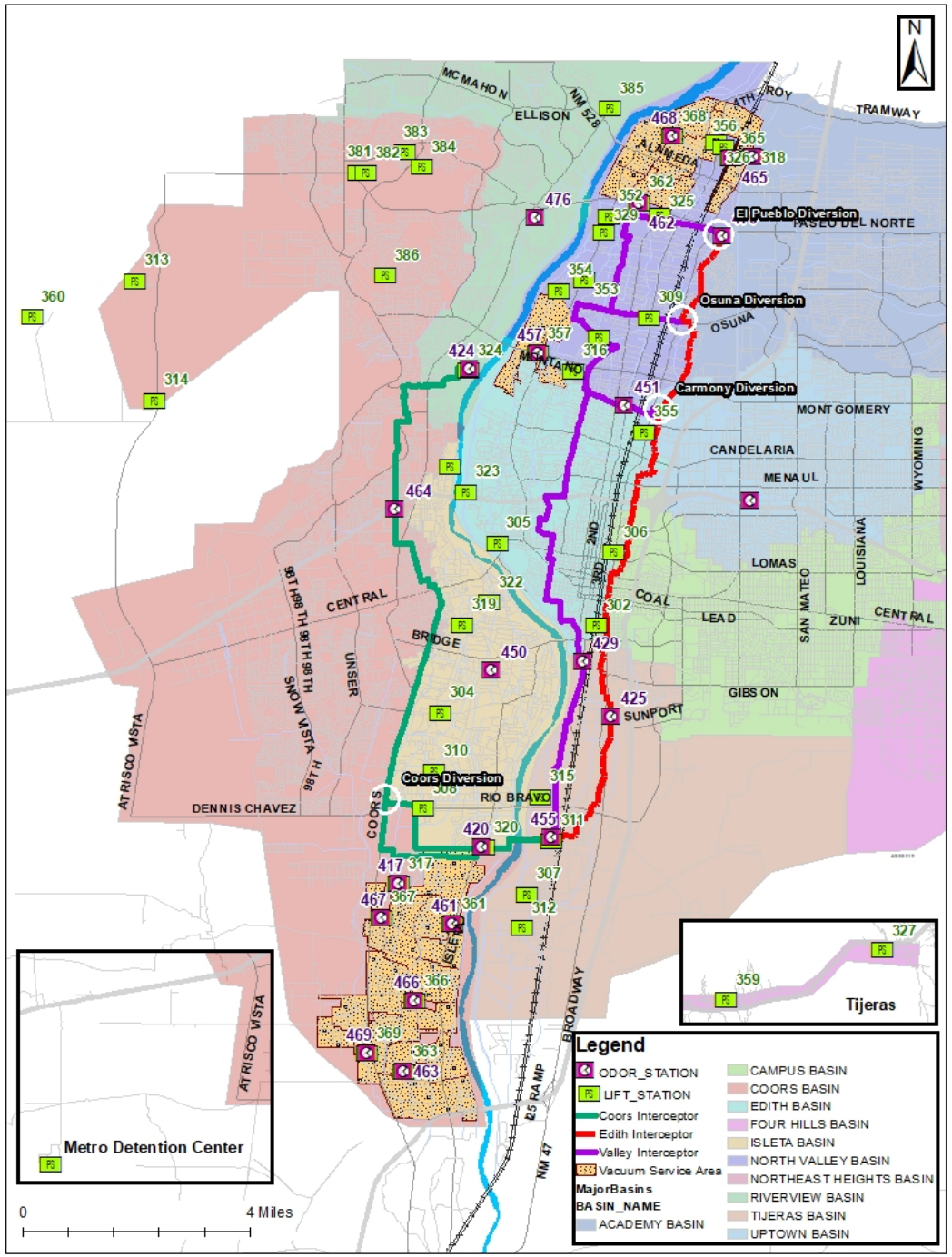


	Average $/hr	Average $/Ton
Grit Chamber	$ 127	$ 188
Bucket Machines	$ 124	$ 633
Vactor In-Line	$ 92	$ 677

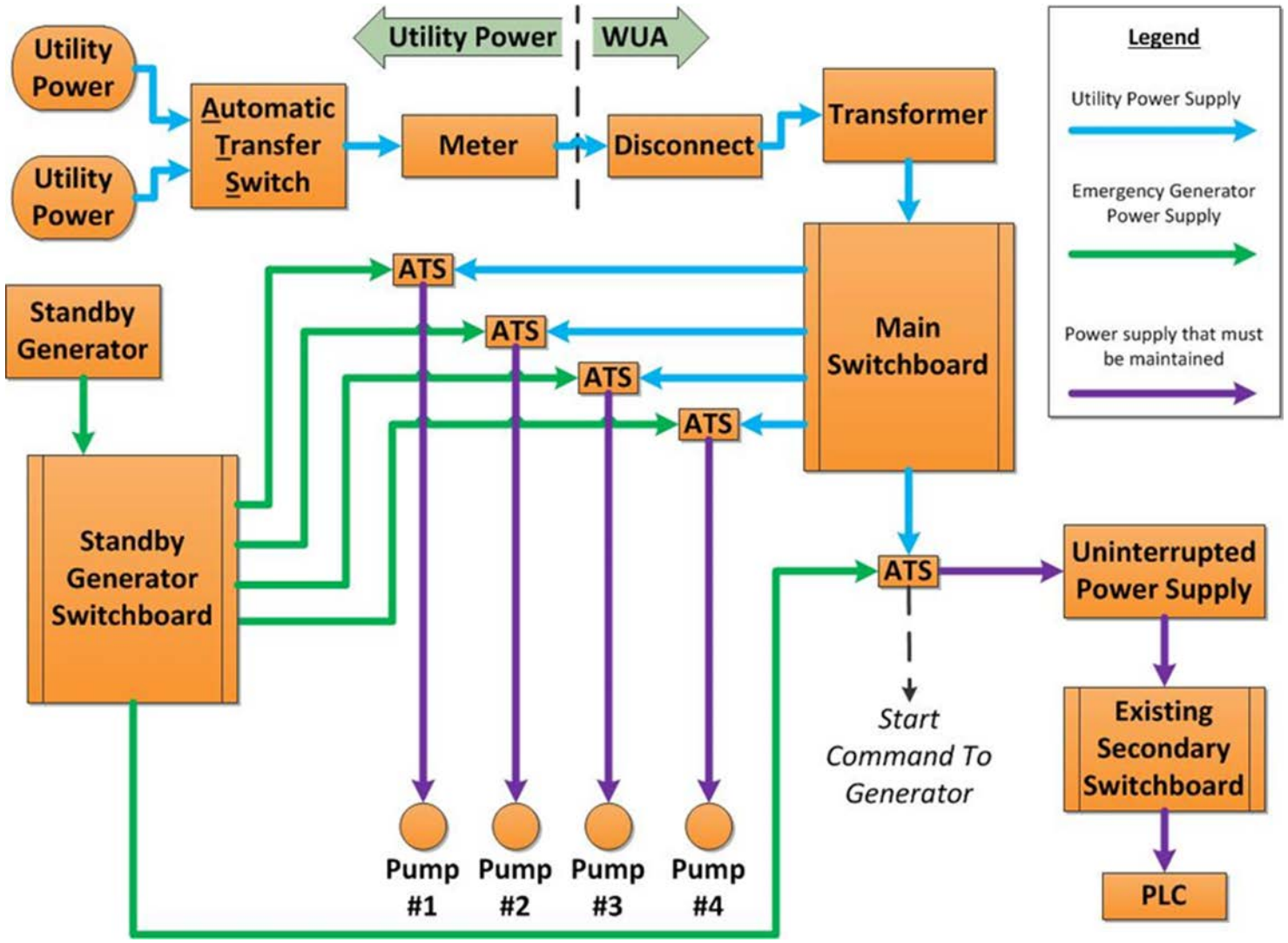




Lift & Vacuum Stations



Unusual – Get Dependable or Get Wet



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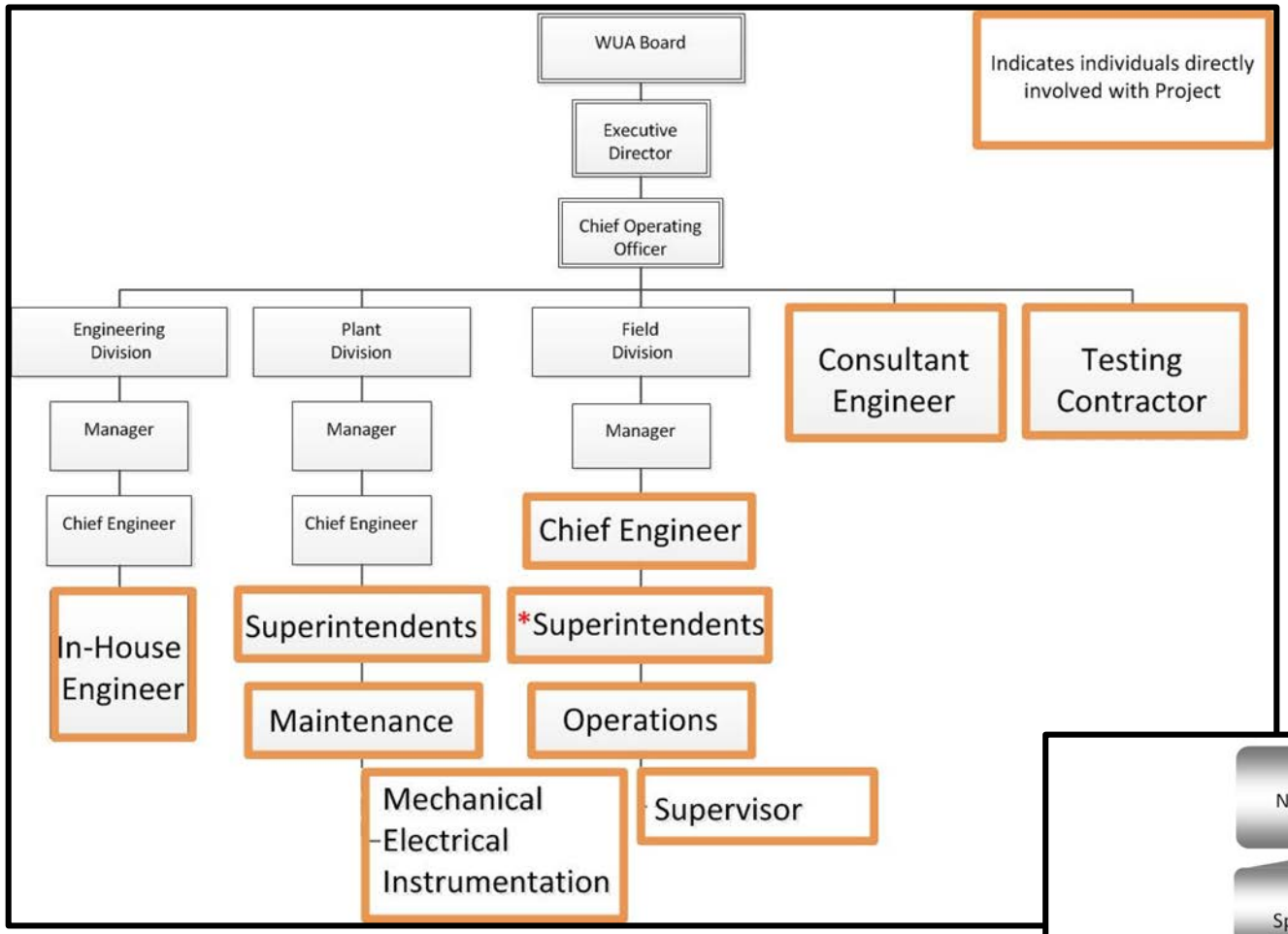
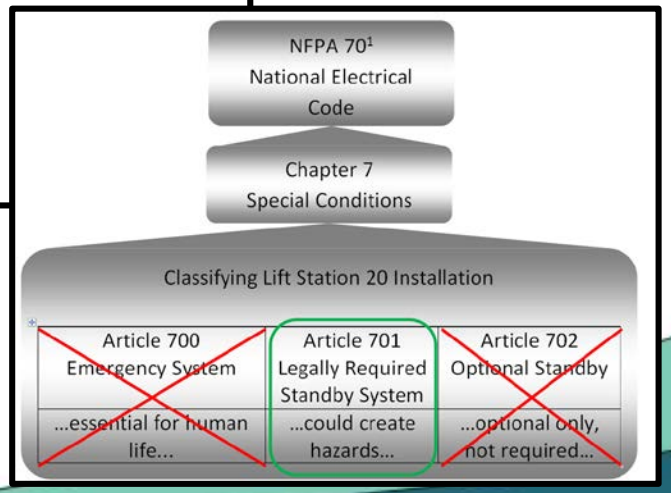
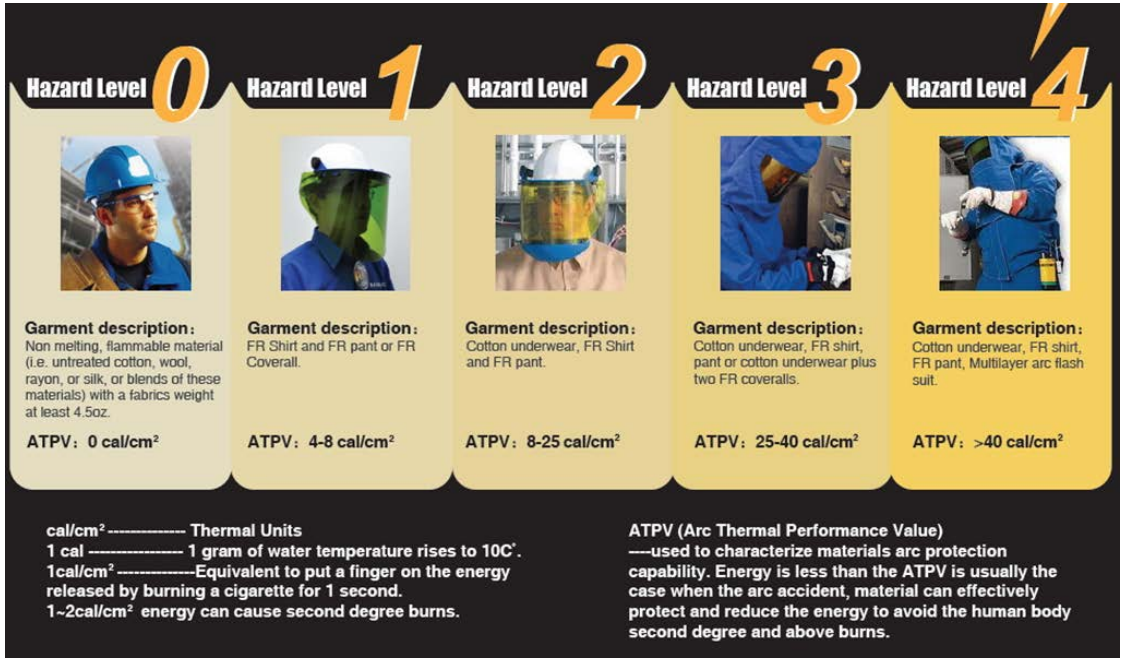
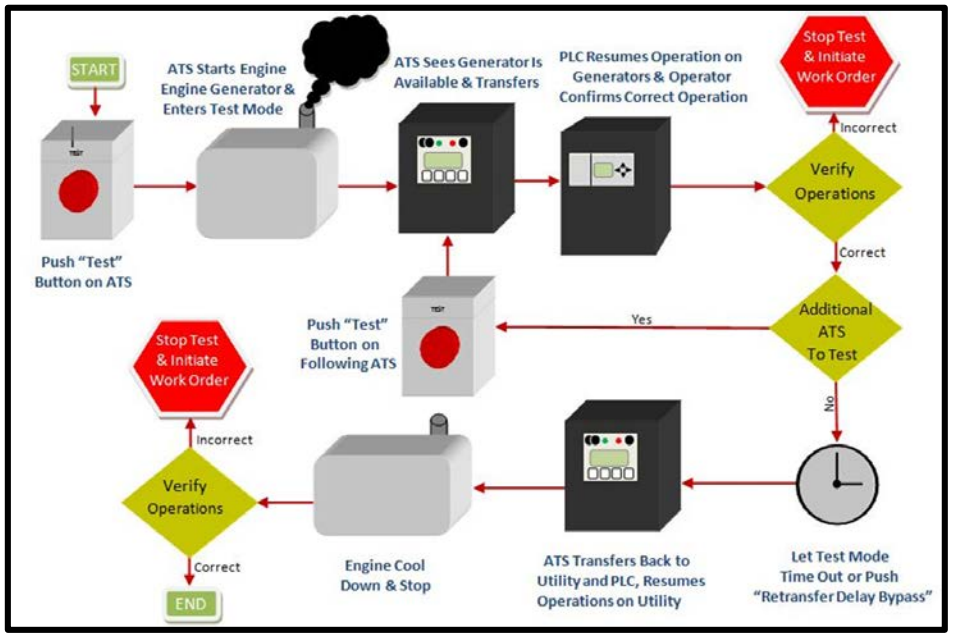




Unusual – Get Dependable or Get Wet





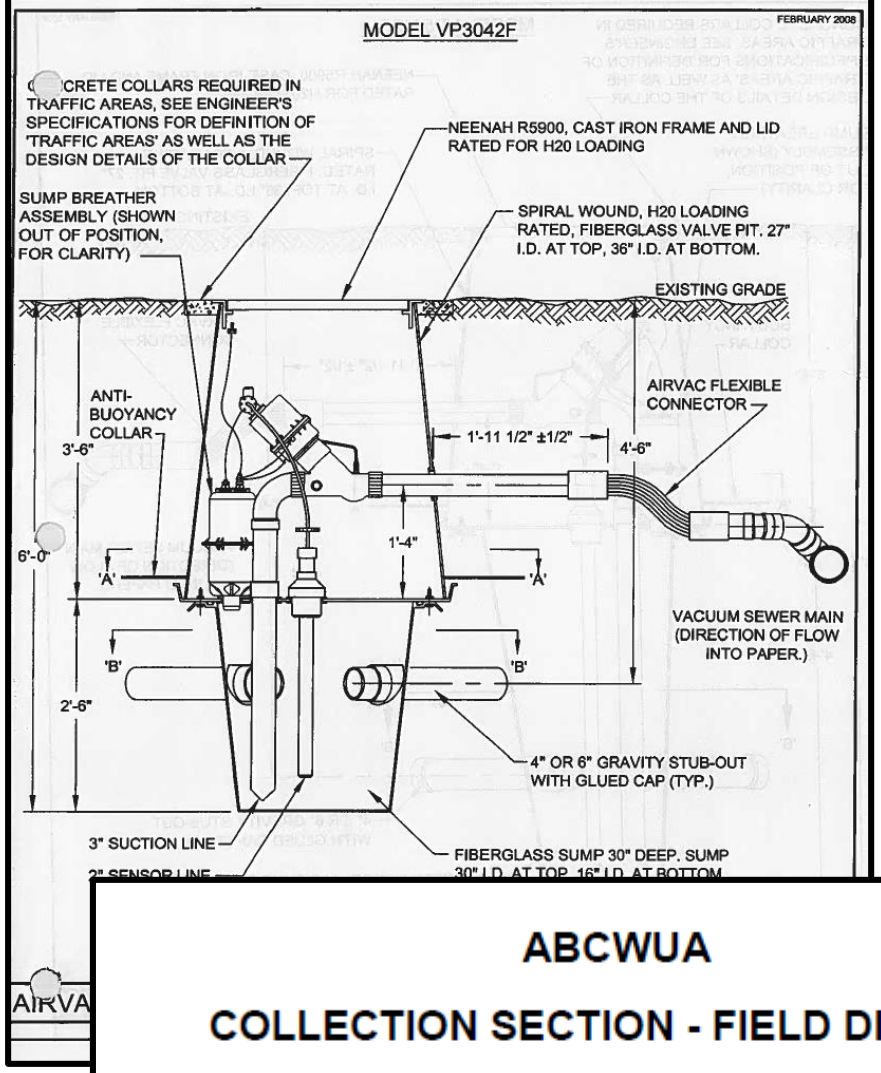
Unusual – Get Dependable or Get Wet

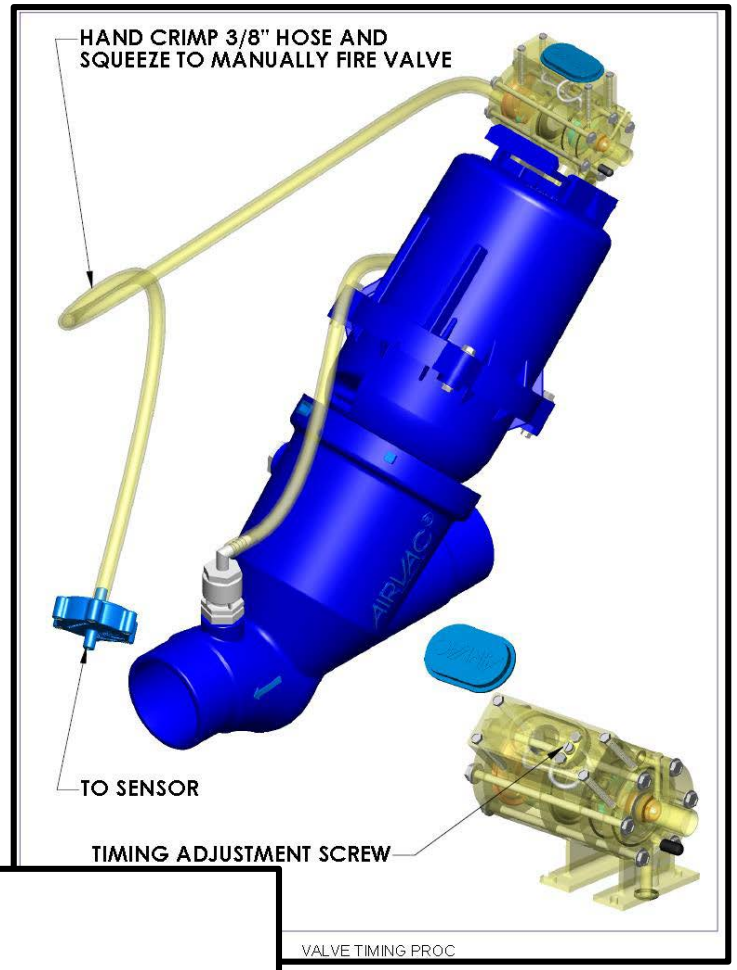
WATER AUTHORITY

Unusual – Get Dependable or Get Wet

WATER AUTHORITY

Unusual – Vacuum Systems





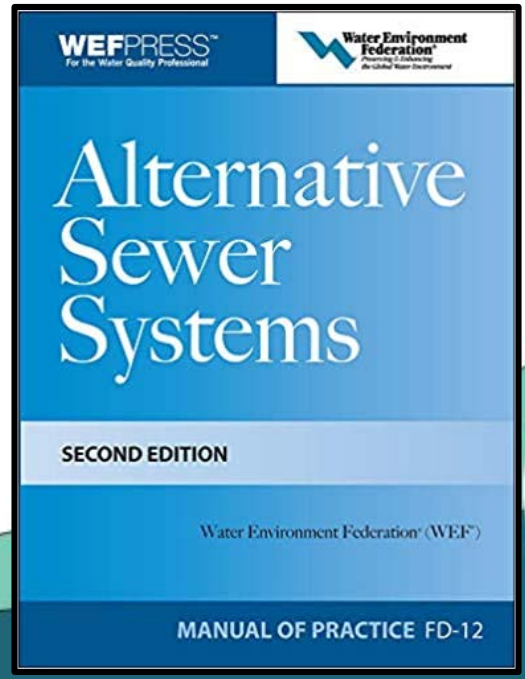
ABCWUA

COLLECTION SECTION - FIELD DIVISION

WWW III JOURNEYMAN TRAINING PROGRAM

STANDARD OPERATING JOB PROCEDURE

VACUUM STATION 63 OPERATION, MAINTENANCE, & RESTORATION



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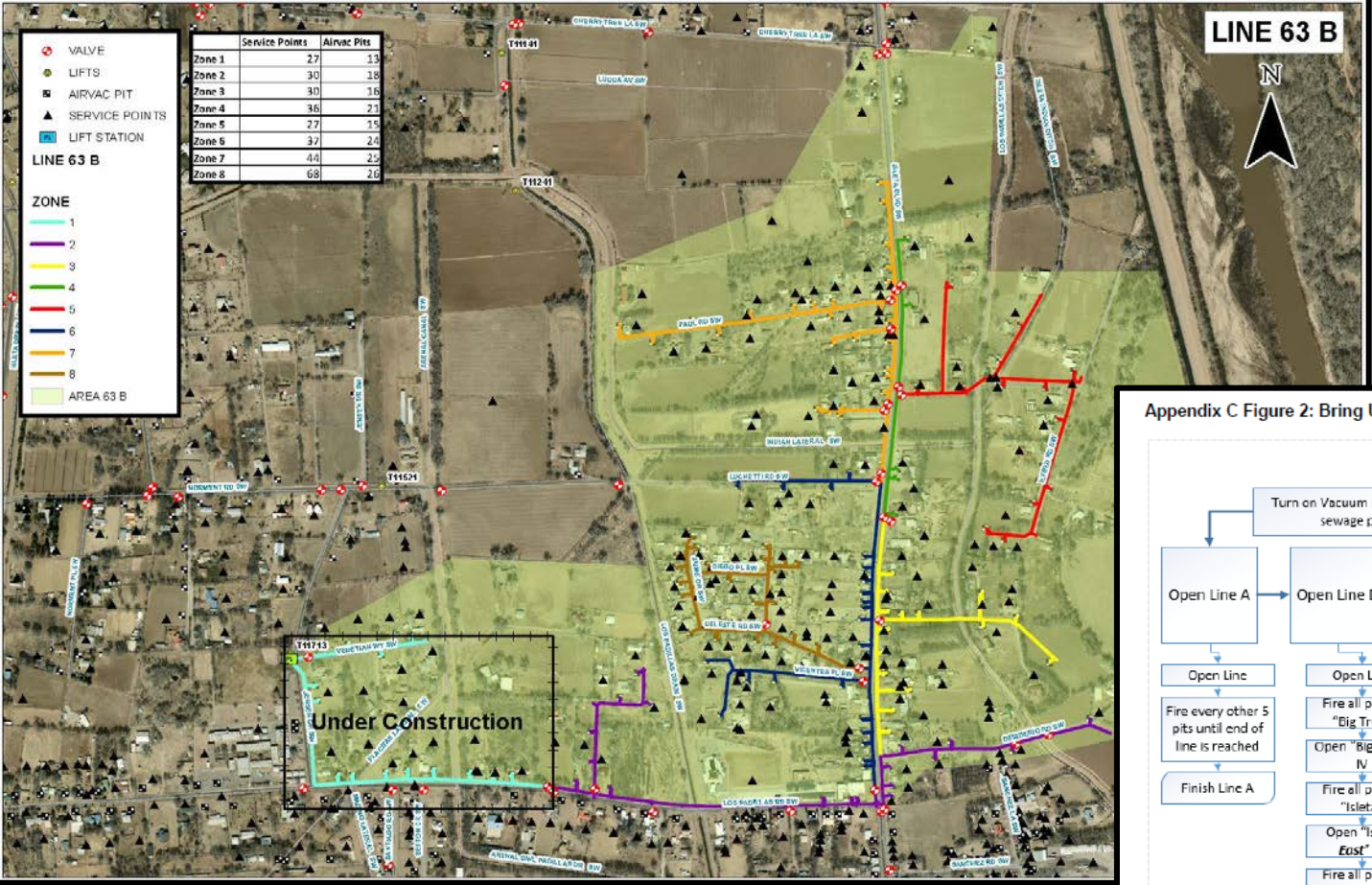


Unusual – Vacuum Systems

Summary Tables:

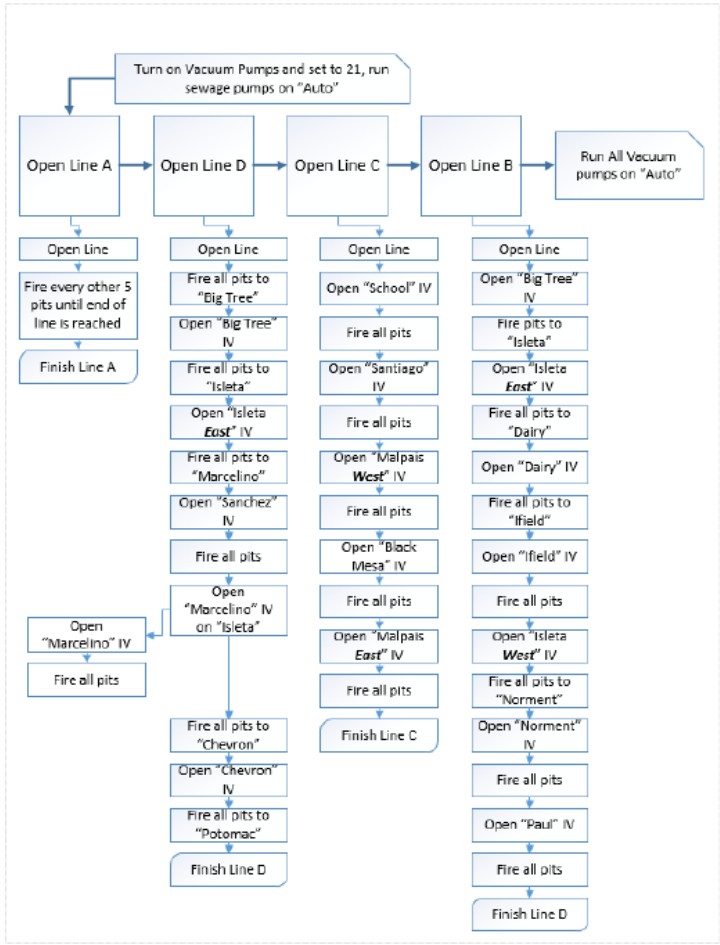
- **Totals:**

Total	Services	Pits
A	88	40
B	299	158
C	196	113
D	380	176
VS63	963	487

- **Remaining Clients:**

		Services		Pits	
Line	Zone	In Zone	Remaining	In Zone	Remaining
A	1	88	88	40	40
	Total	**88**		**40**	
B	1	27	299	13	158
	2	30	272	18	145
	3	30	242	16	127
	4	36	212	21	111
	5	27	176	15	90
	6	37	149	24	75
	7	44	112	25	51
	8	68	68	26	26
	Total	**299**		**158**	
C	1	49	196	25	113
	2	34	147	19	88
	3	48	113	24	69
	4	26	65	22	45
	5	39	39	23	23
	Total	**196**		**113**	
D	1	67	380	25	176
	2	90	313	36	151
	3	63	223	31	115
	4	59	160	24	84
	5	31	101	19	60
	6	35	70	21	41
	7	35	35	20	20
	Total	**380**		**176**	

Appendix C Figure 2: Bring Up Procedure



Unusual – Vortex Manholes

2018

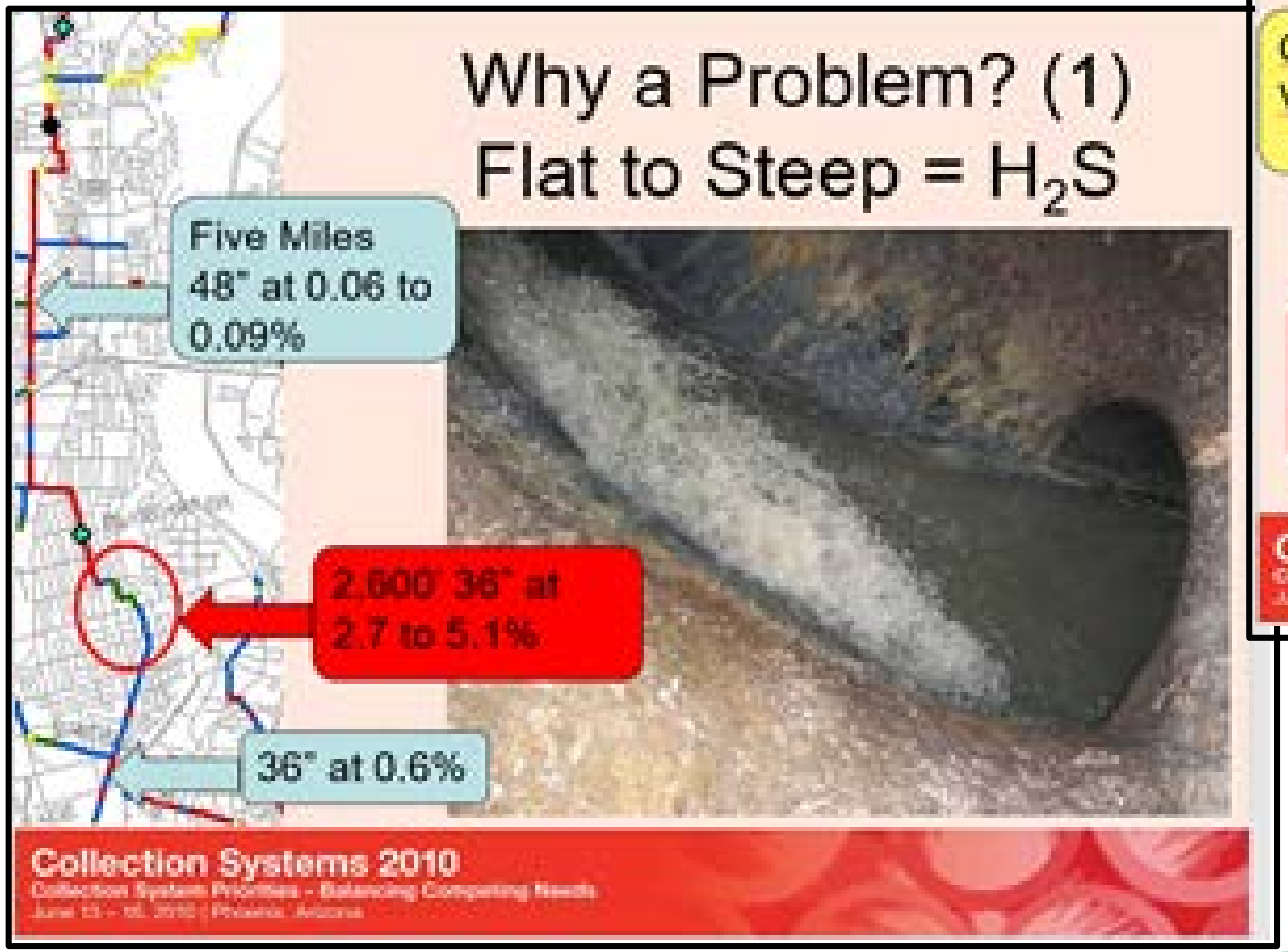
5 vortex manholes

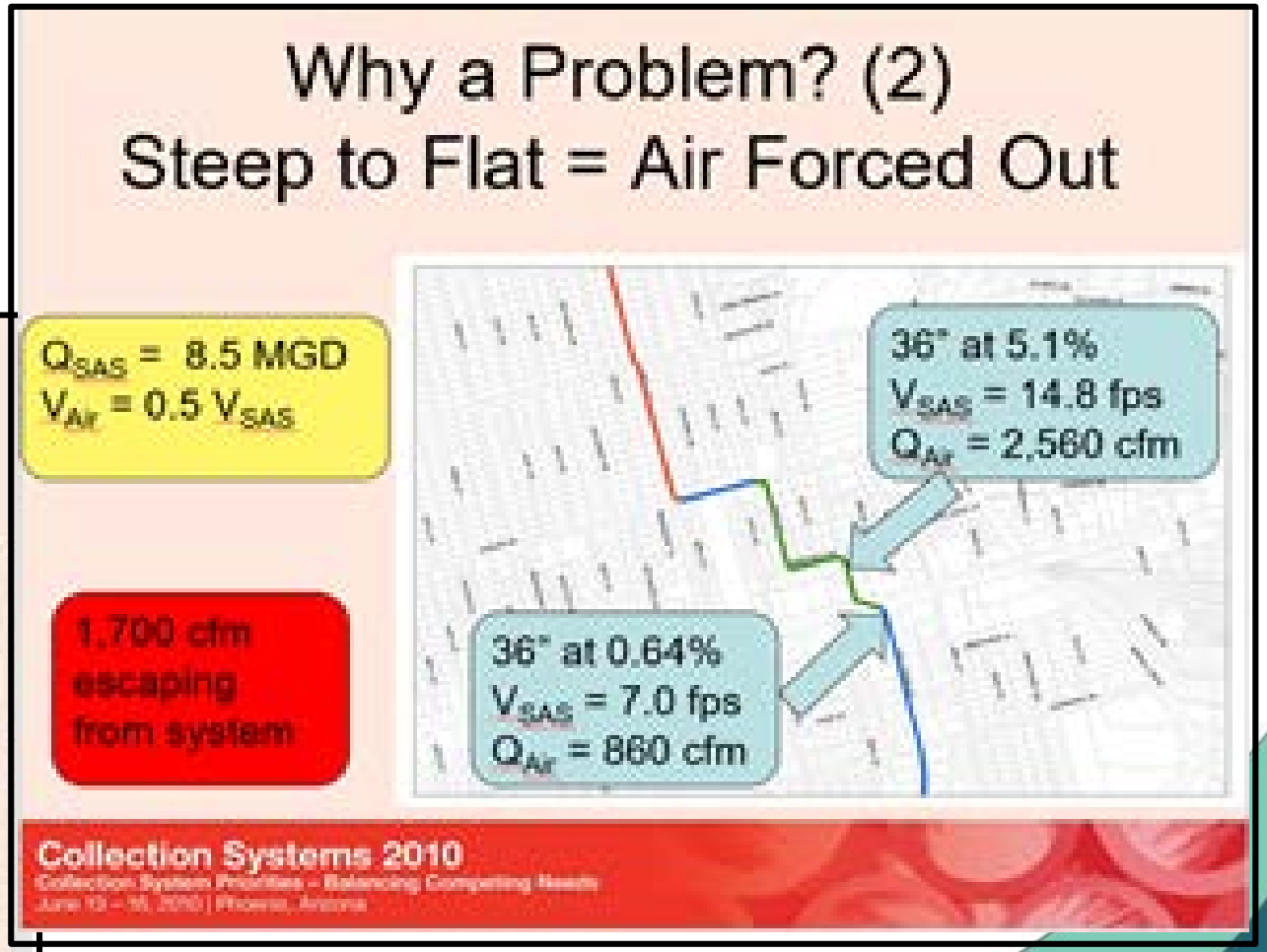
22.7 mgd design peak flow

Severe, high profile odor problem

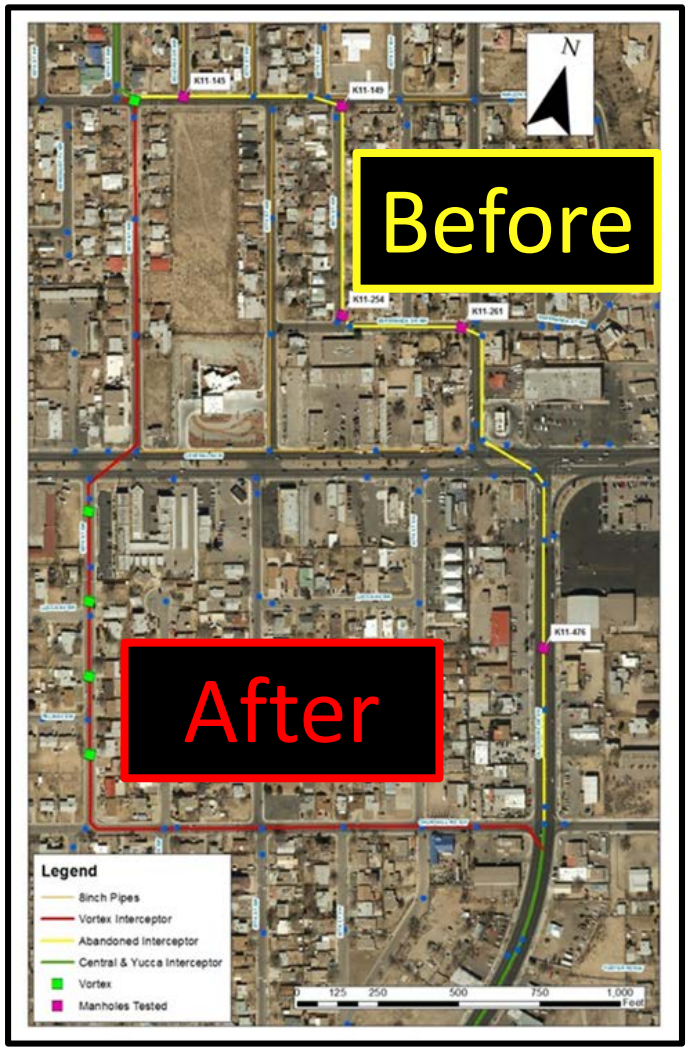
Immediate Success

Unusual – Vortex Manholes

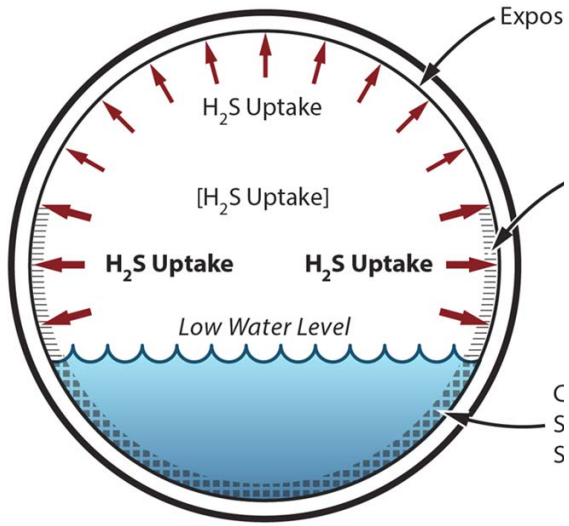


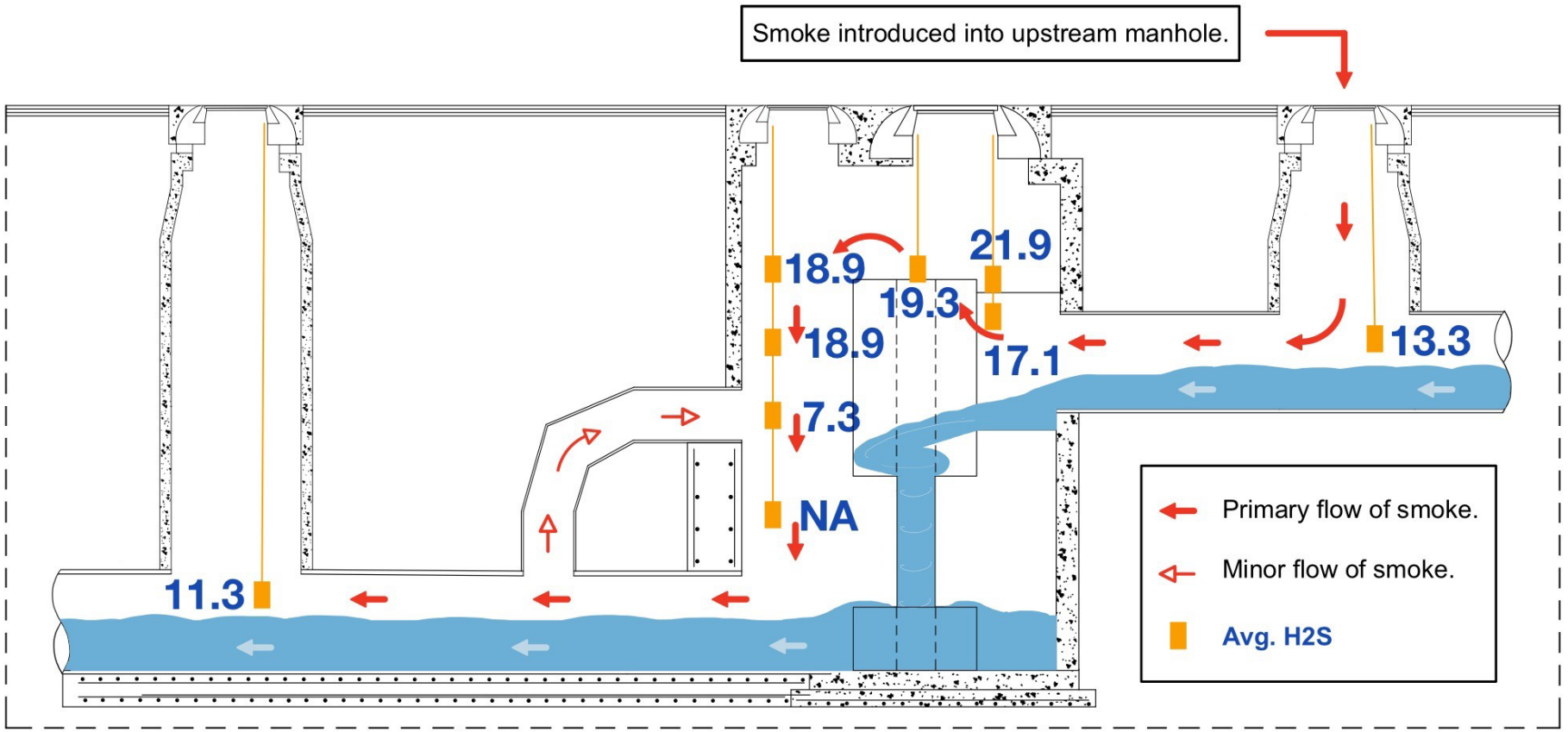


Yucca Central Solution

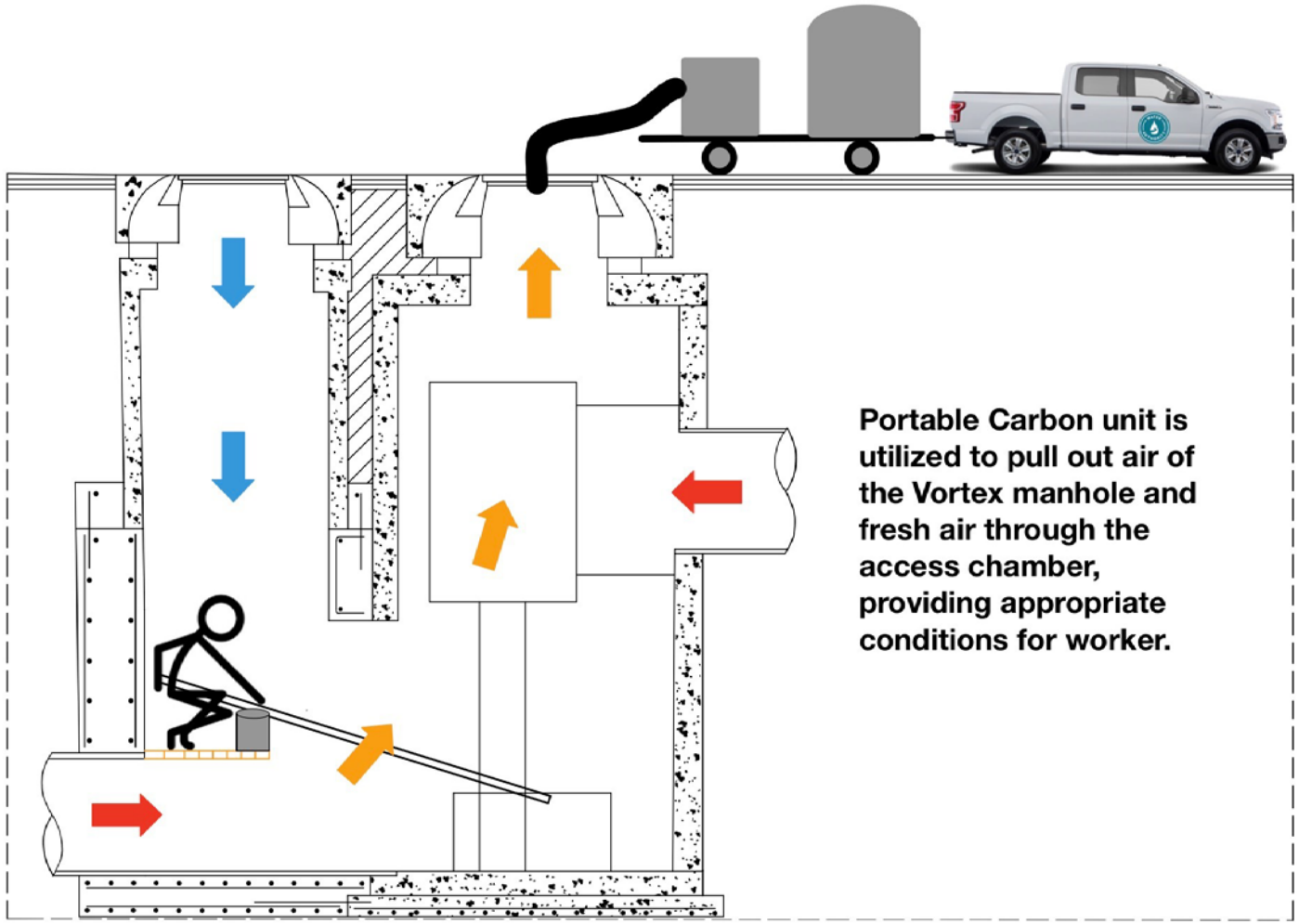


H2S Uptake by Biofilm



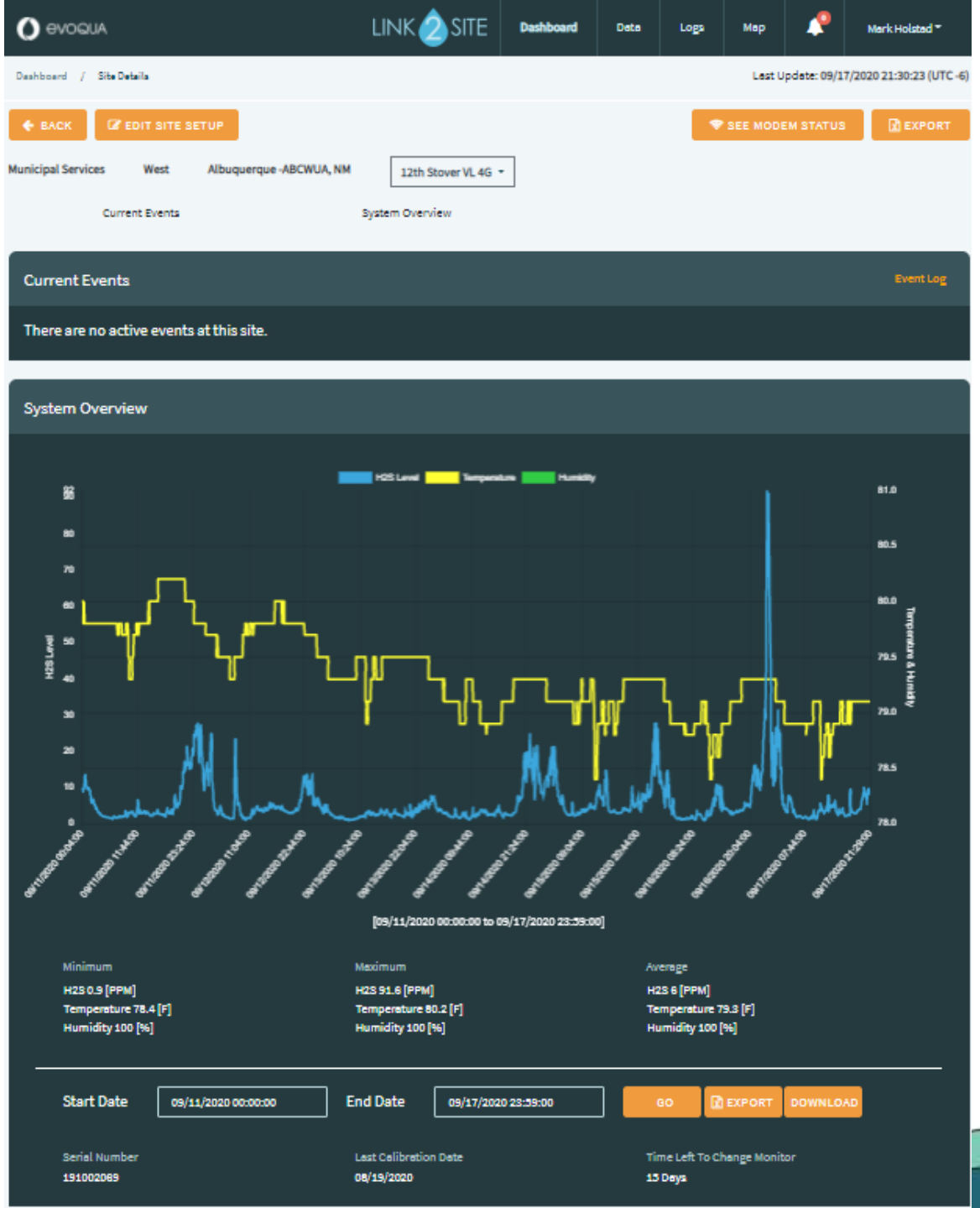


Sustainable Cleaning



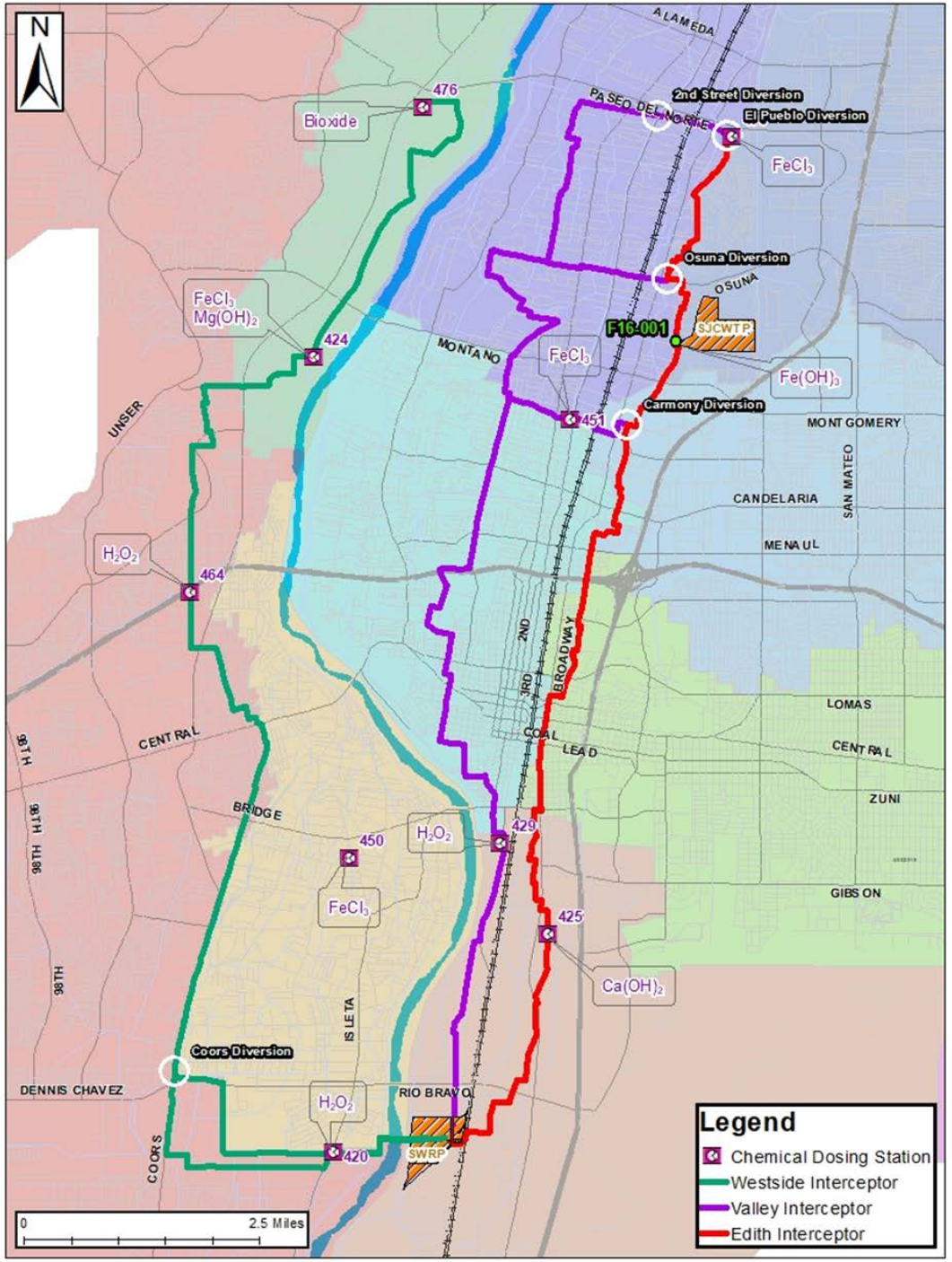
Portable Carbon unit is utilized to pull out air of the Vortex manhole and fresh air through the access chamber, providing appropriate conditions for worker.

Before & After – From the New Vault



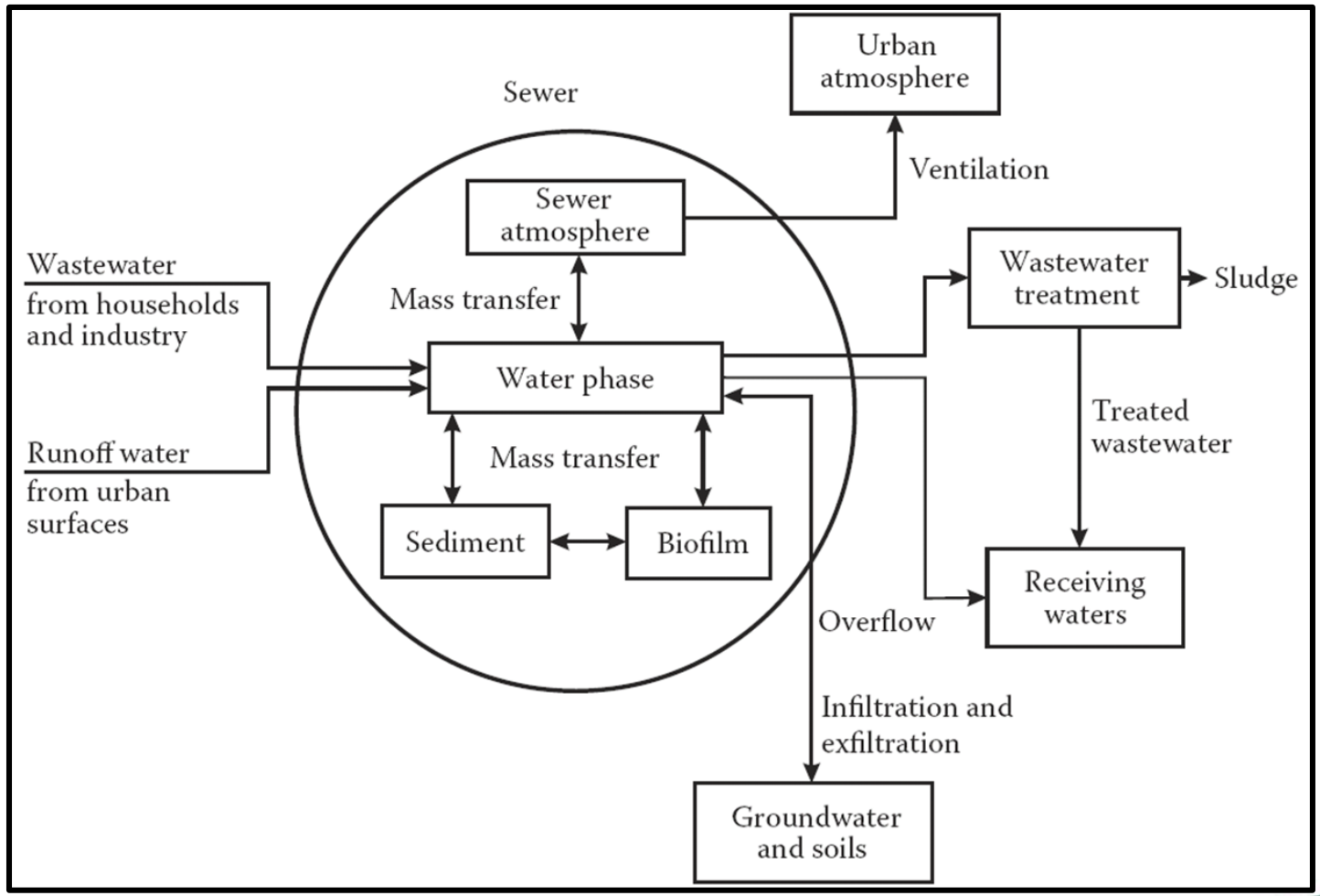
Unusual – Internet Monitoring

WATER AUTHORITY

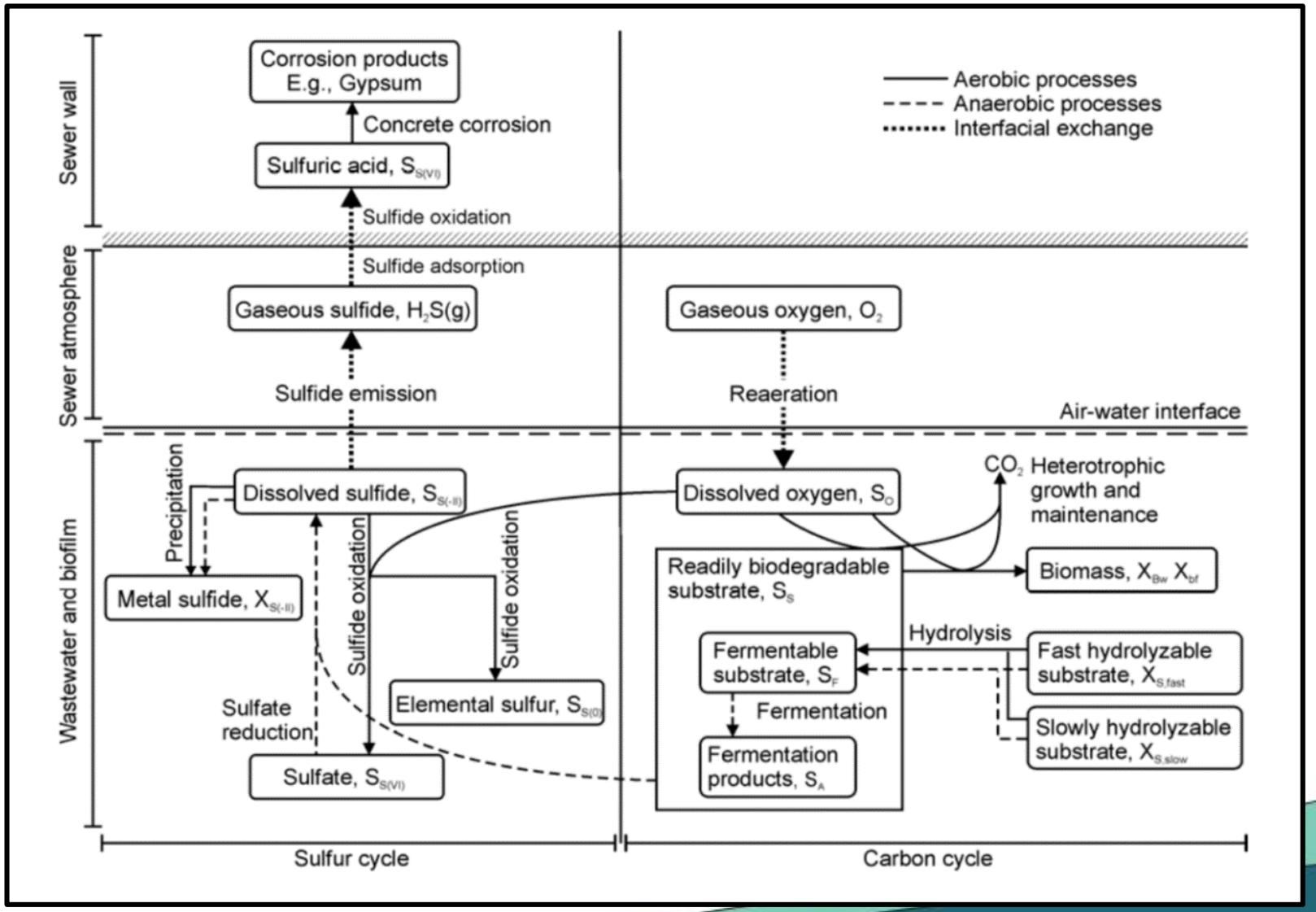


Chemical Odor / Corrosion Control / Benefit SWRP

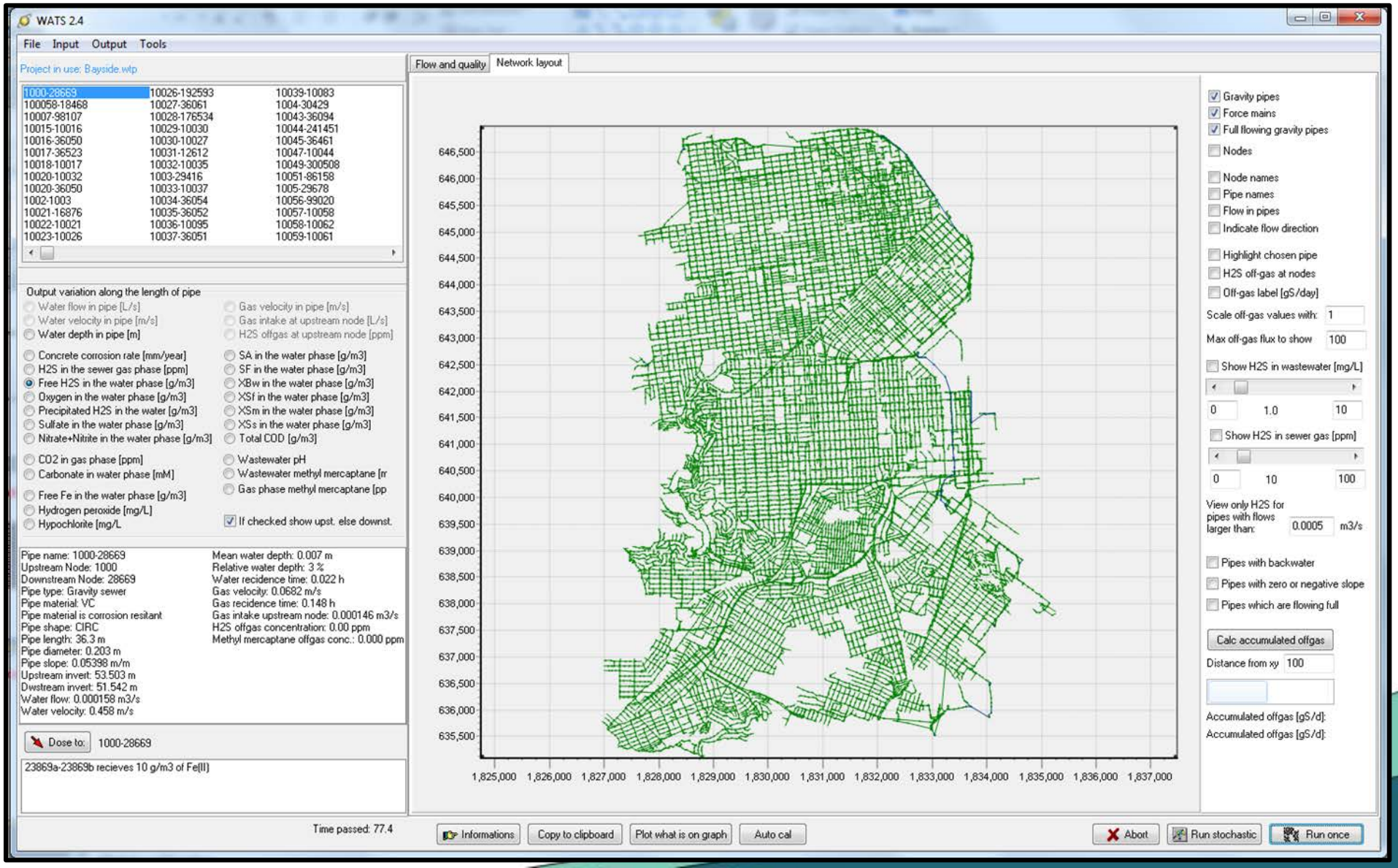
Wastewater Aerobic/Anaerobic Transformation in Sewers - WATS

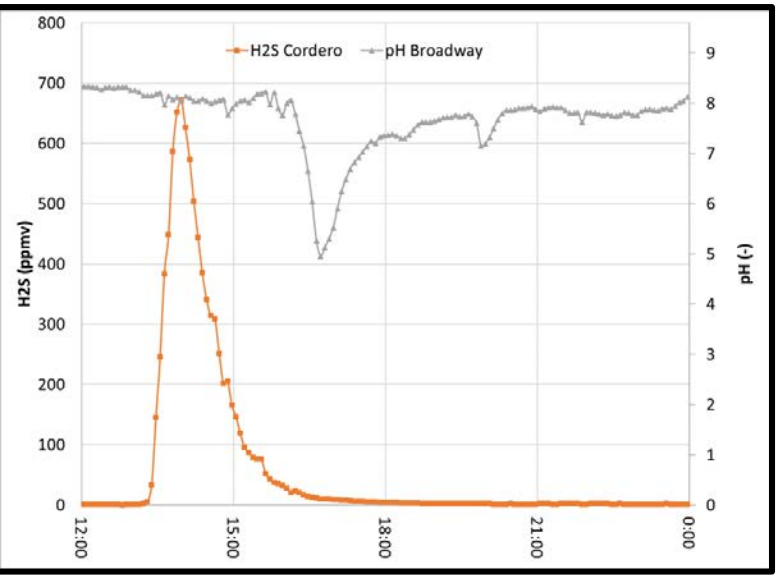


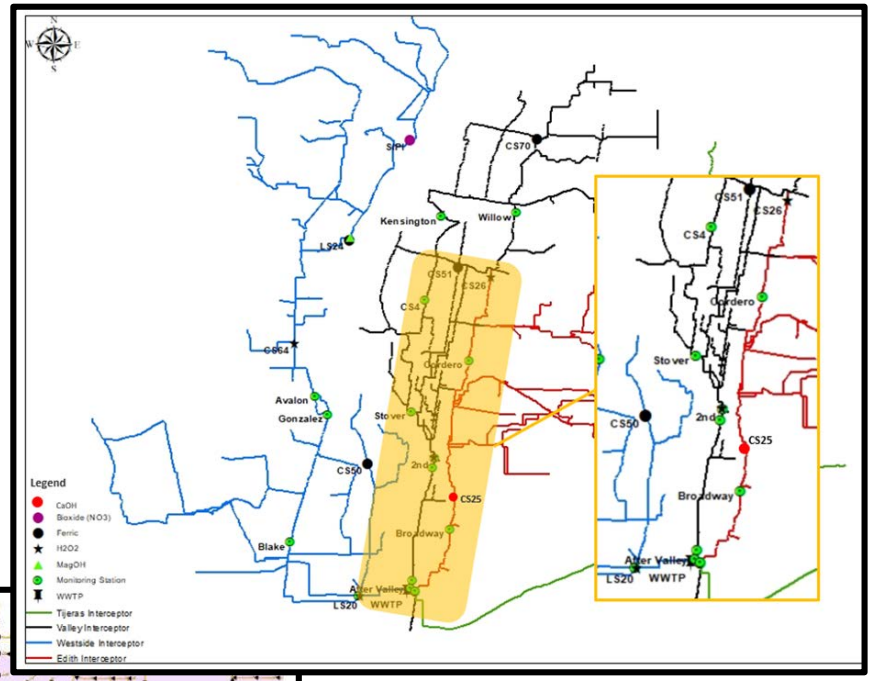
Wastewater Aerobic/Anaerobic Transformation in Sewers - WATS



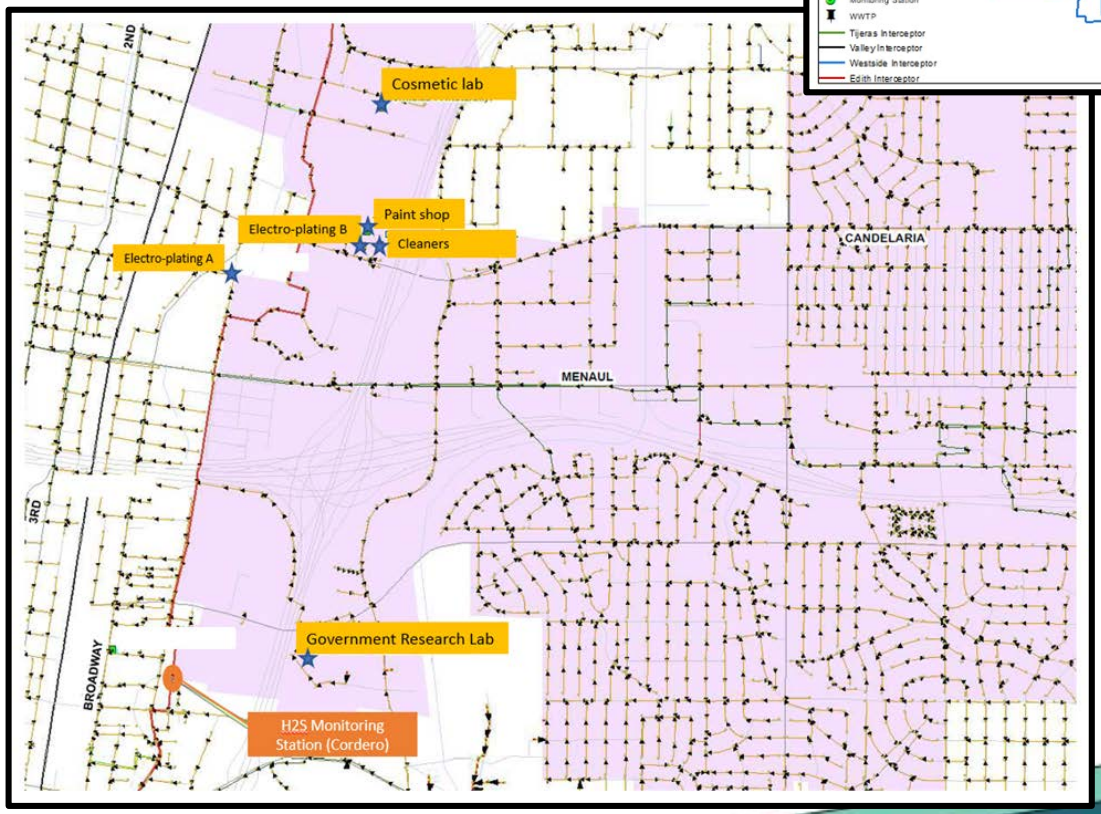
Wastewater Aerobic/Anaerobic Transformation in Sewers - WATS

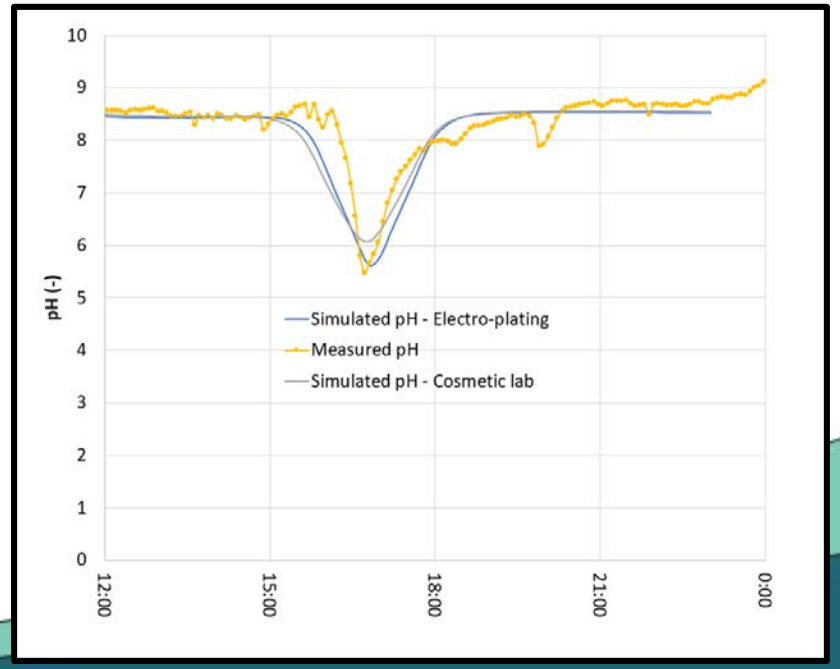




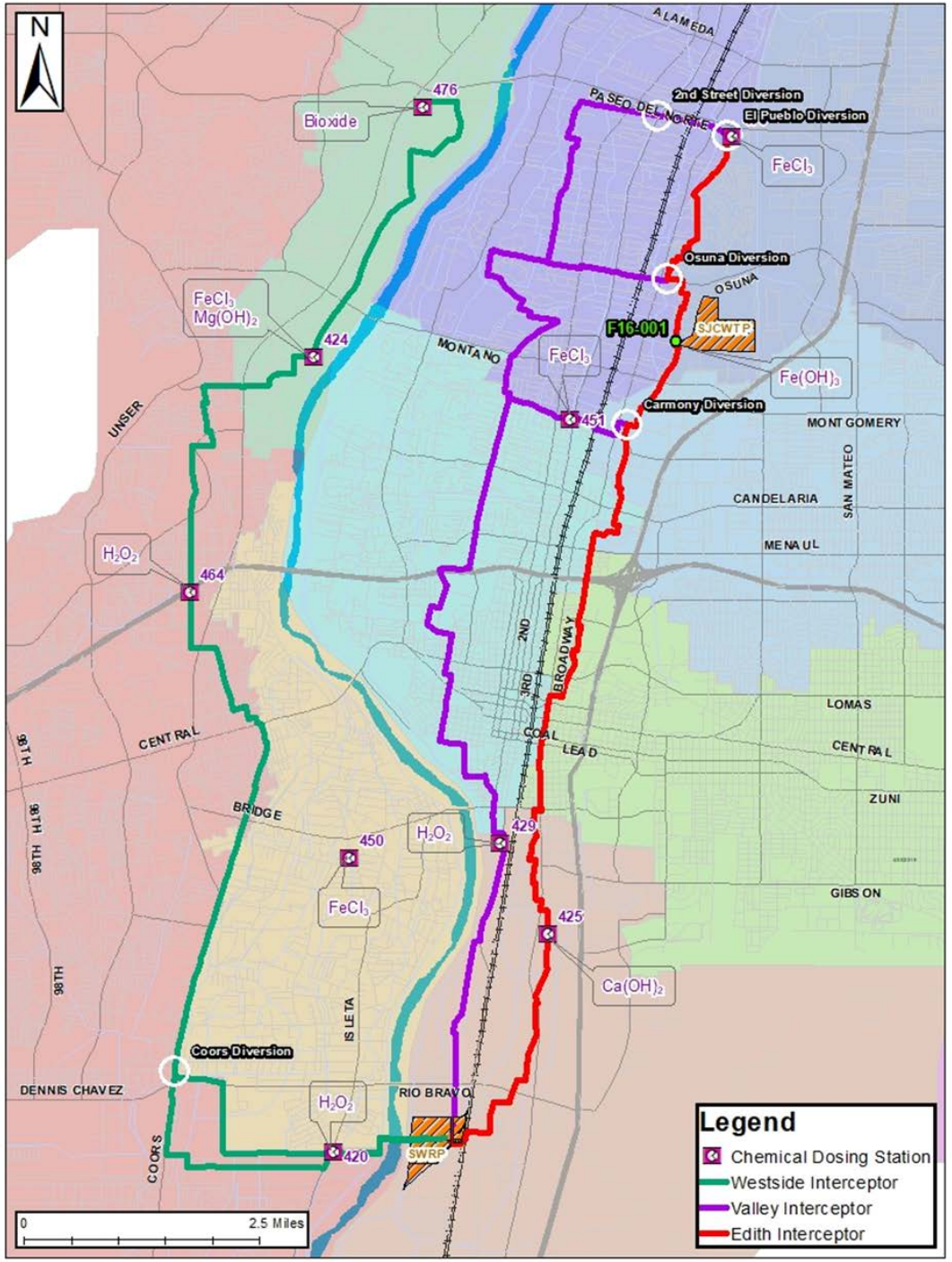


Chemical Optimization / Catching Industrial Violators





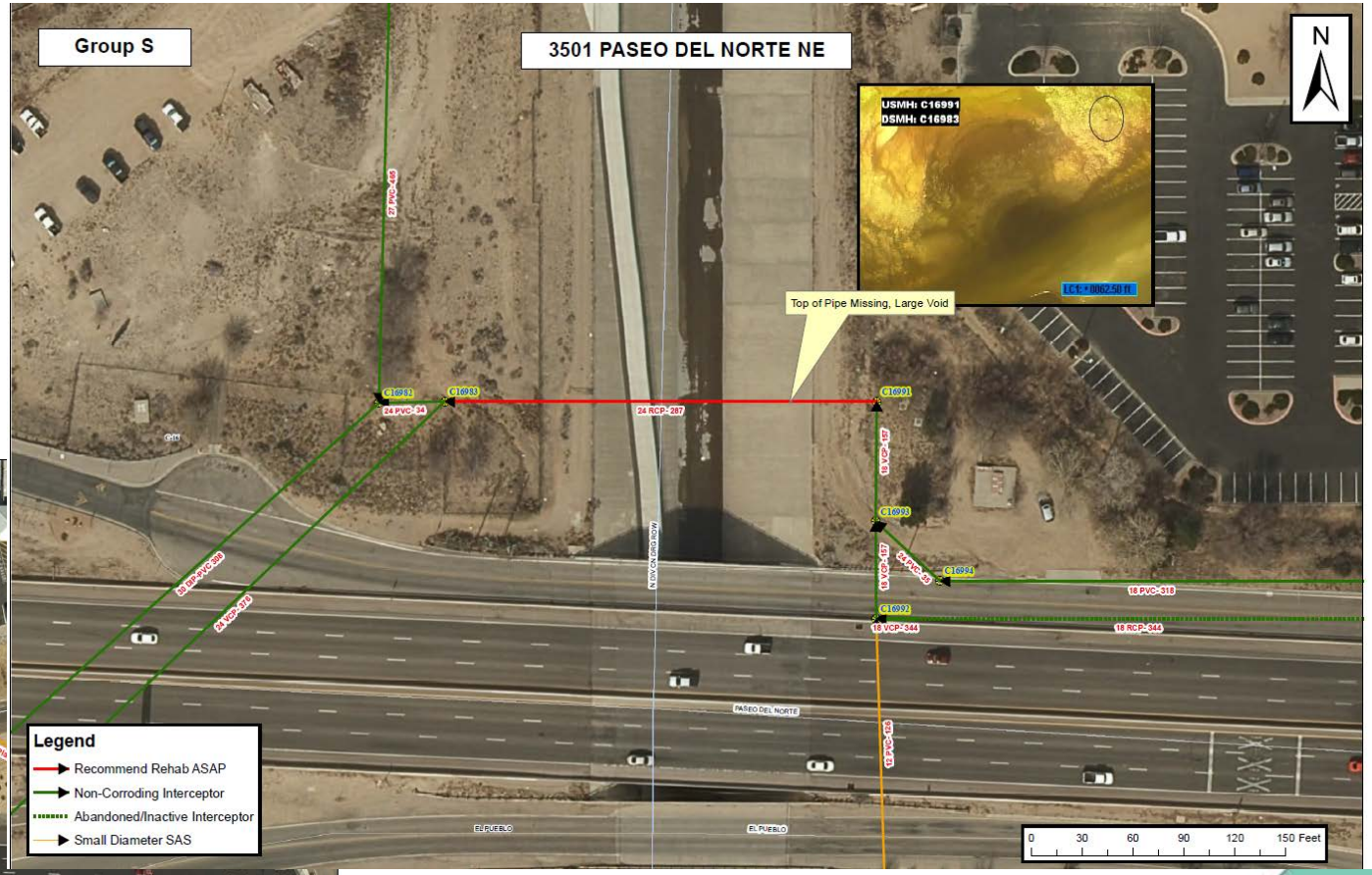
WATER AUTHORITY



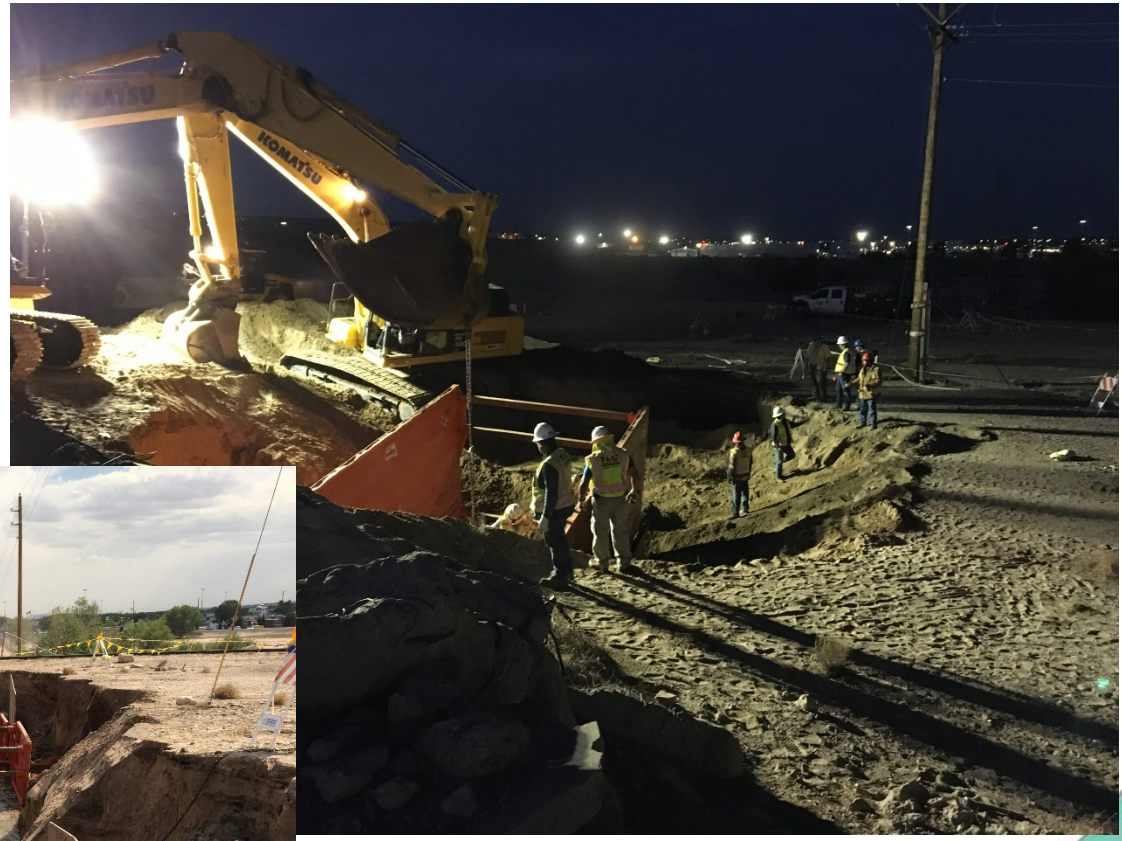
SJCWTP Residual Iron

WATER AUTHORITY

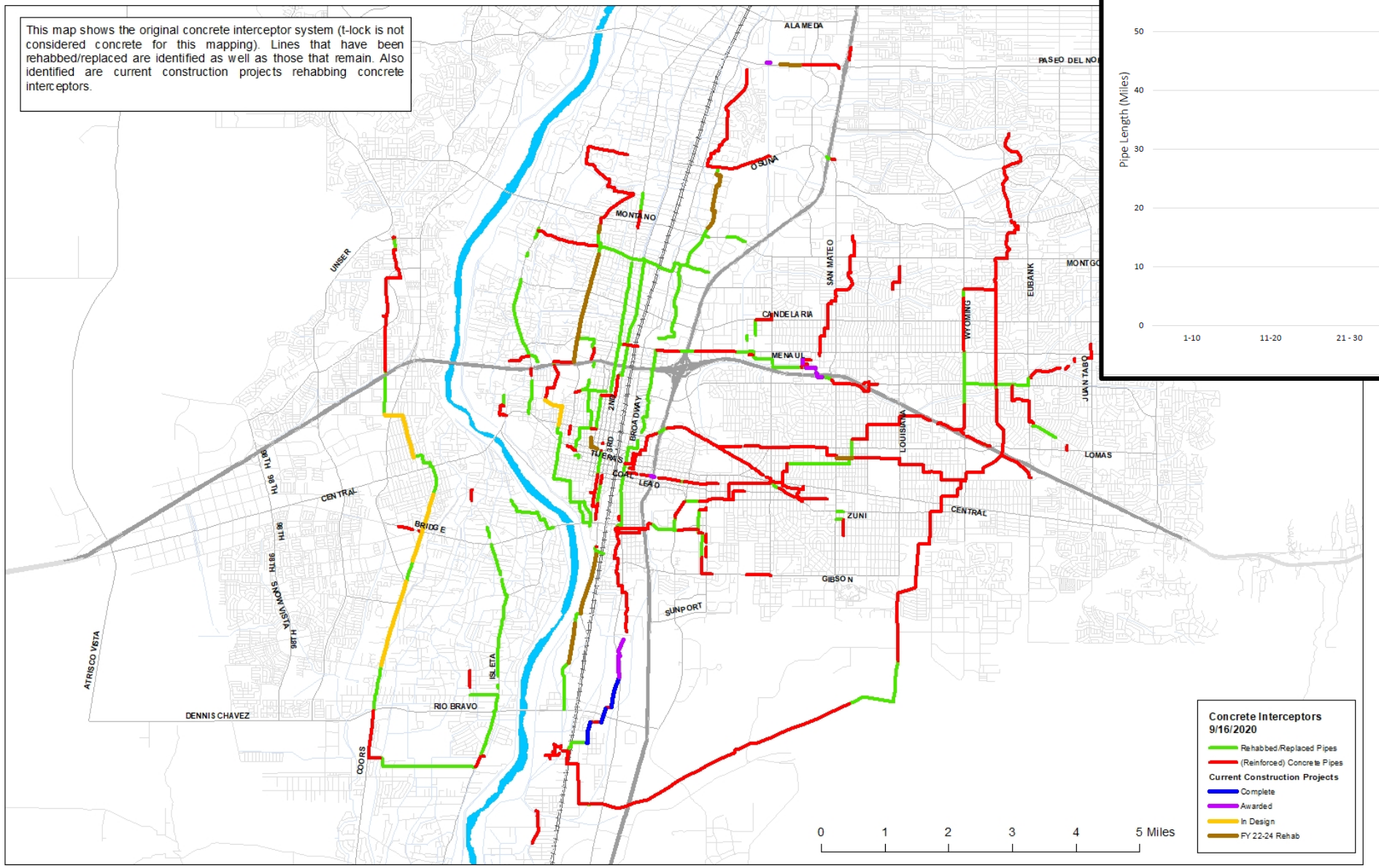
Interceptor Rehab

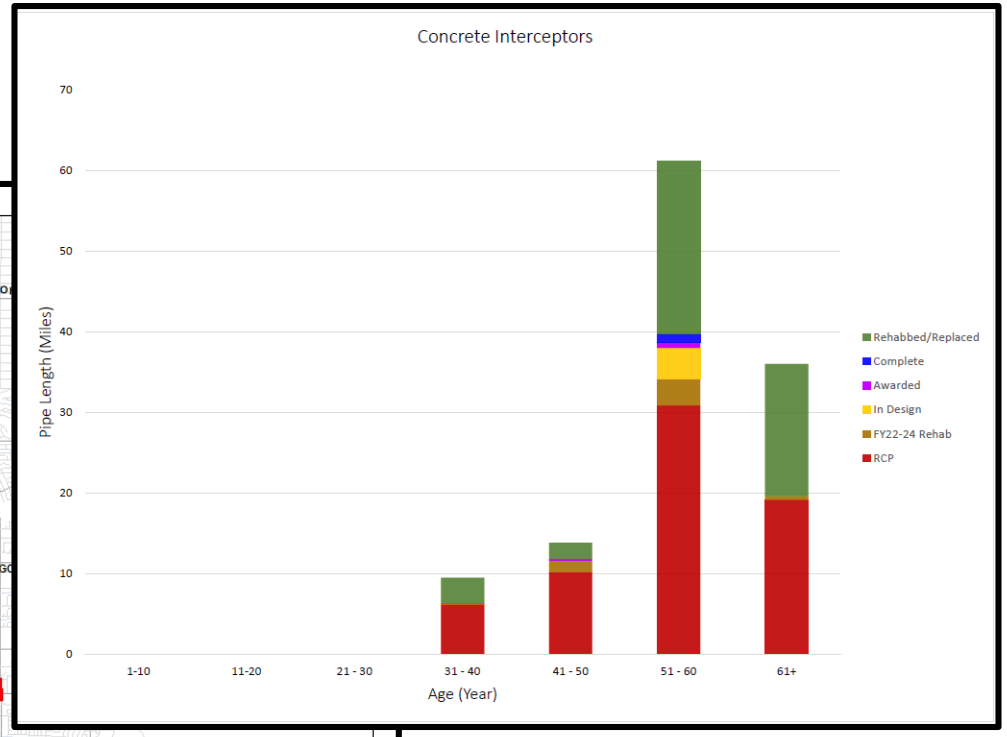


How Bad It Can Get?



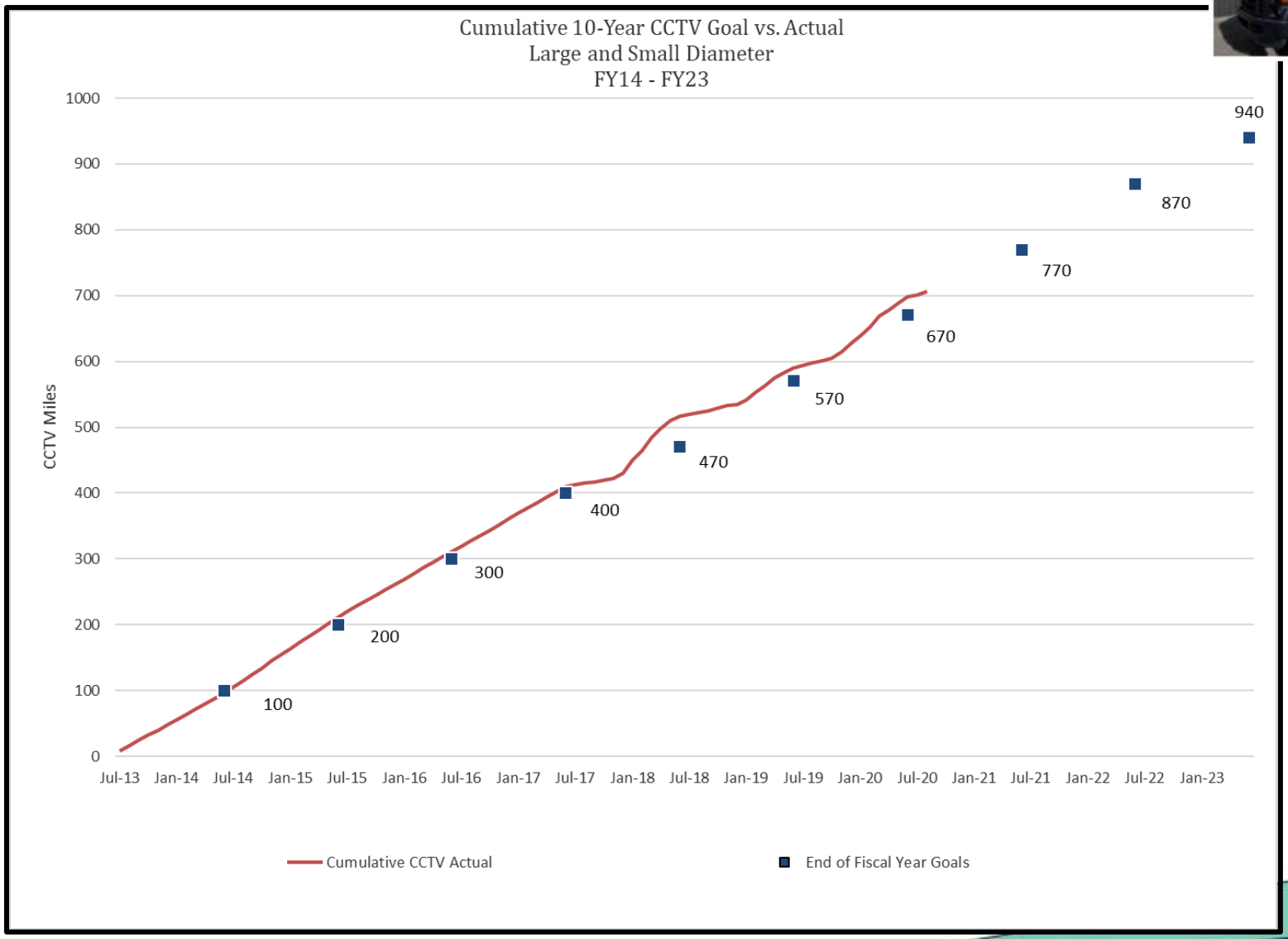
Interceptor Rehab

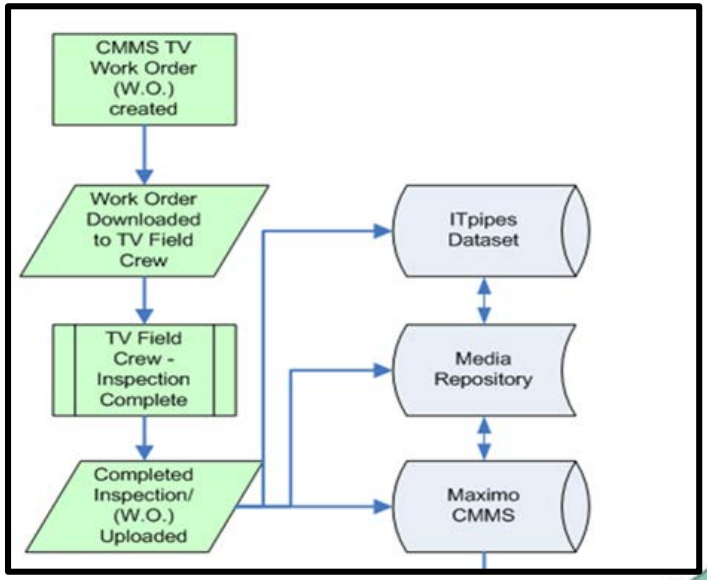




CCTV

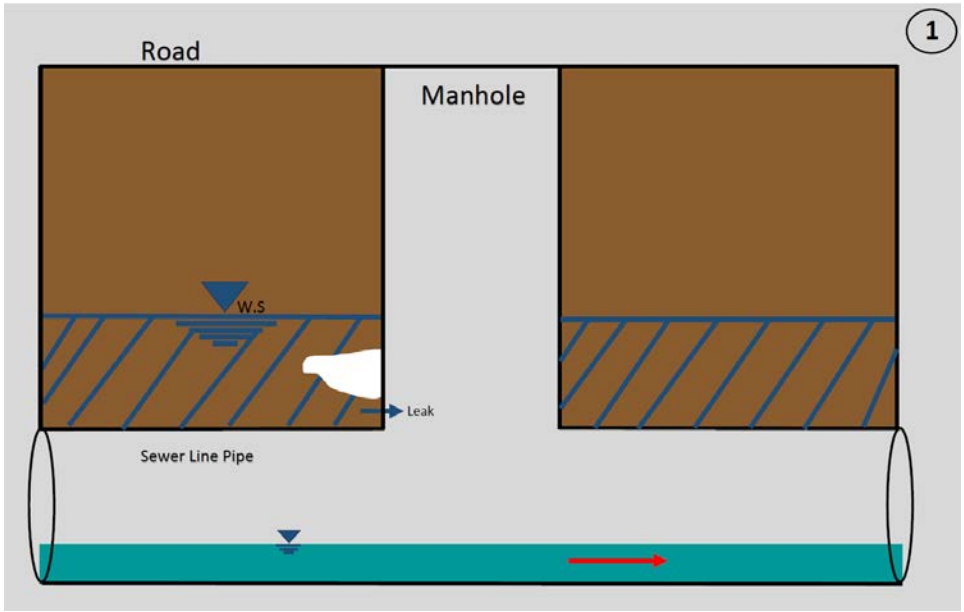



Cumulative 10-Year CCTV Goal vs. Actual
Large and Small Diameter
FY14 - FY23
CCTV Miles
1000
900
800
700
600
500
400
300
200
100
0
Jul-13
Jan-14
Jul-14
Jan-15
Jul-15
Jan-16
Jul-16
Jan-17
Jul-17
Jan-18
Jul-18
Jan-19
Jul-19
Jan-20
Jul-20
Jan-21
Jul-21
Jan-22
Jul-22
Jan-23
100
200
300
400
470
570
670
770
870
940
Cumulative CCTV Actual
End of Fiscal Year Goals

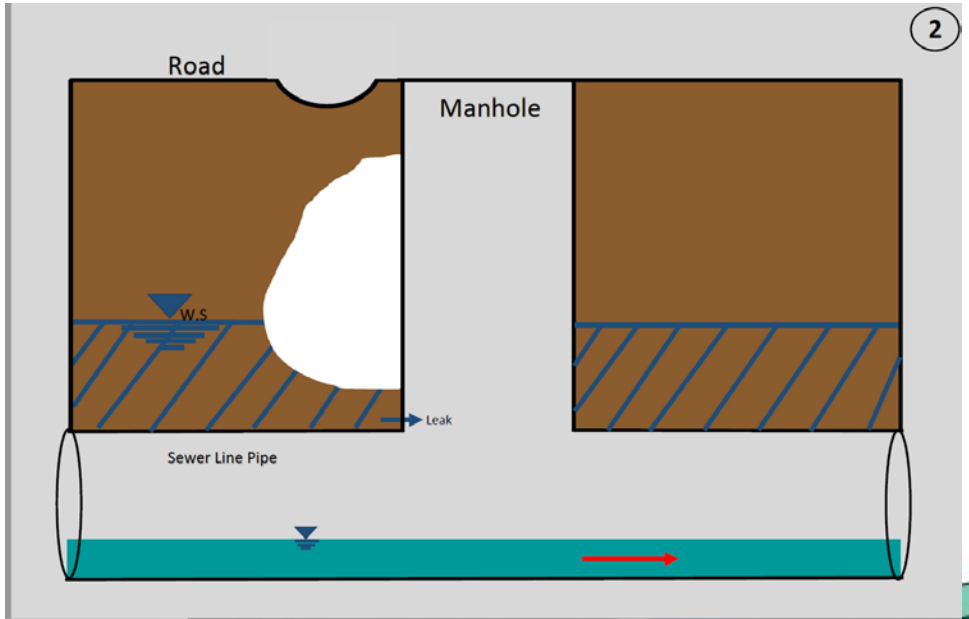

CMMS TV Work Order (W.O.) created
Work Order Downloaded to TV Field Crew
TV Field Crew - Inspection Complete
Completed Inspection/ (W.O.) Uploaded
ITpipes Dataset
Media Repository
Maximo CMMS

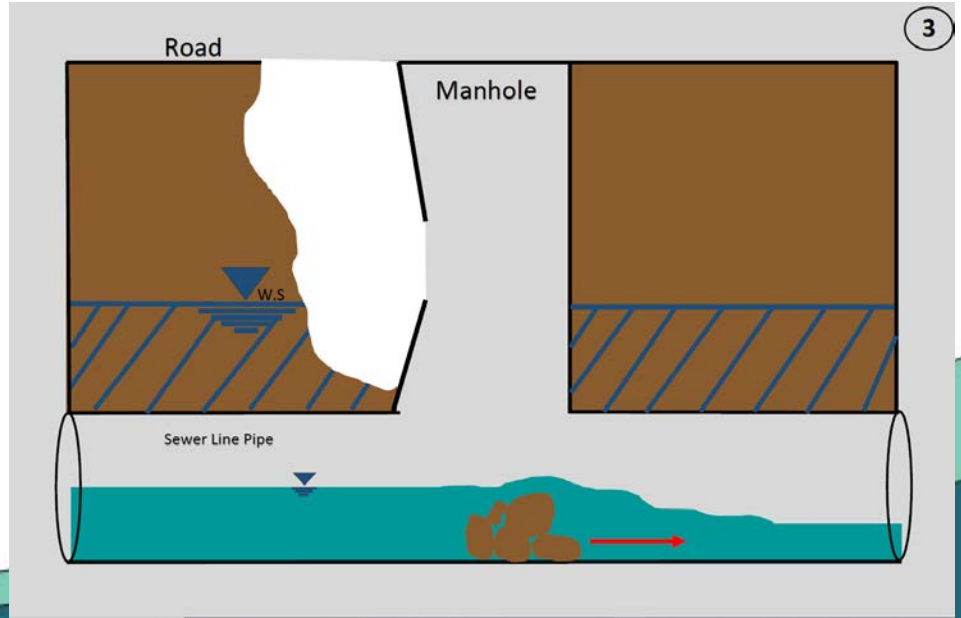
Manhole Issues

Manhole Issues



These panels describe the observations by Superintendent Carlos Romero for the Southern Ave. MH L14313 collapsed on April 2016.

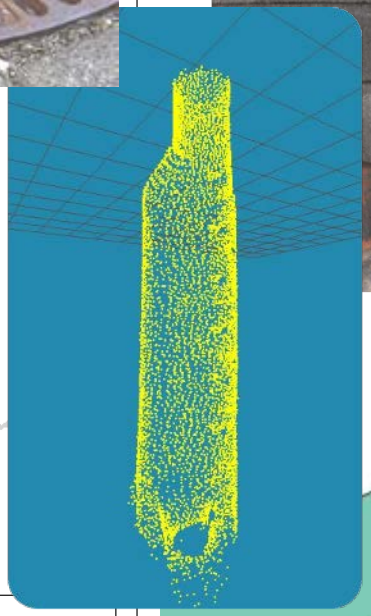




Manhole Inspection

Panoramo SI – 3D Digital Scanner

Manhole Inspections
This map identifies manholes that have been inspected and are upcoming. These manholes have been identified to cause problems on large diameter sewer lines.

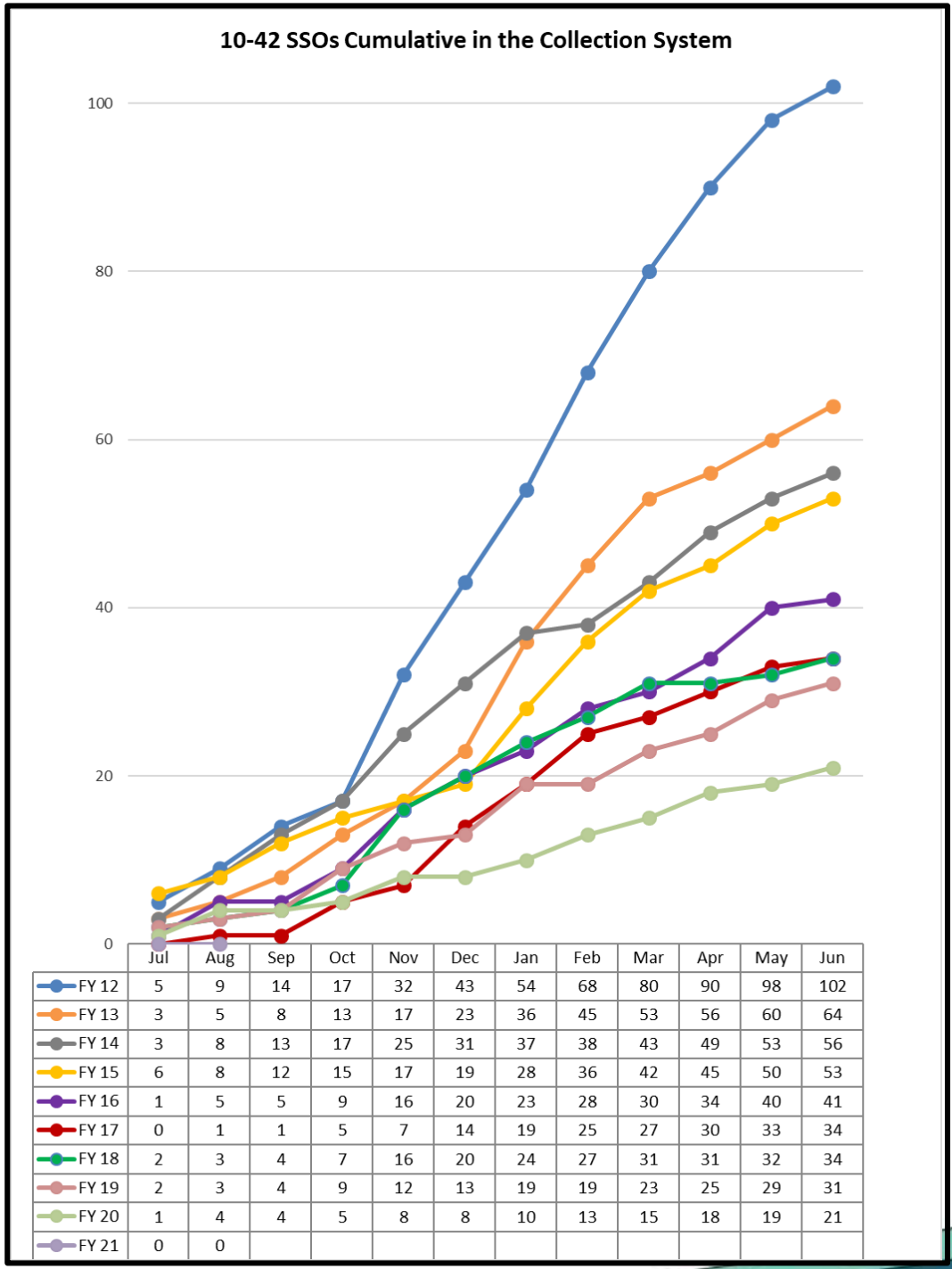


Manhole Inspections
9/18/20

- Completed Manhole Inspections in FY20
- Upcoming Manhole Inspections in FY21-22

0 1 2 3 4 5 Miles

CMOM (Capacity, Management, Operation & Maintenance)



	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
FY 12	5	9	14	17	32	43	54	68	80	90	98	102
FY 13	3	5	8	13	17	23	36	45	53	56	60	64
FY 14	3	8	13	17	25	31	37	38	43	49	53	56
FY 15	6	8	12	15	17	19	28	36	42	45	50	53
FY 16	1	5	5	9	16	20	23	28	30	34	40	41
FY 17	0	1	1	5	7	14	19	25	27	30	33	34
FY 18	2	3	4	7	16	20	24	27	31	31	32	34
FY 19	2	3	4	9	12	13	19	19	23	25	29	31
FY 20	1	4	4	5	8	8	10	13	15	18	19	21
FY 21	0	0										

Thanks

Ole Bredeson
My Great-Grandfather
First Generation American
Lake Mills, Iowa

Mark Holstad, PE
Chief Engineer
Collection Section Manager
mholstad@abcwua.org

BREAK
&
WATER QUALITY ACTIVITY

Southside Water Reclamation Plant: *Your community facility for water and resource recycling*

Items we'll cover today:

- What we do at SWRP
- How we do it or…background on our treatment facility
- "Green things" we now do and are planning
- Current state of our assets and plans for renovation i.e., the "RAMP"

What we do at SWRP

- Largest water reclamation facility in NM (> 5x bigger than next largest facility)
- Transform wastewater collected in service area into effluent that can be safely returned to the environment or re-used
- Process waste solids generated by treatment into stable bio-solids for recycling to land
  - Solids processing generates methane-rich gas used for fuel

SWRP raw material & products

Raw Material

Clean effluent

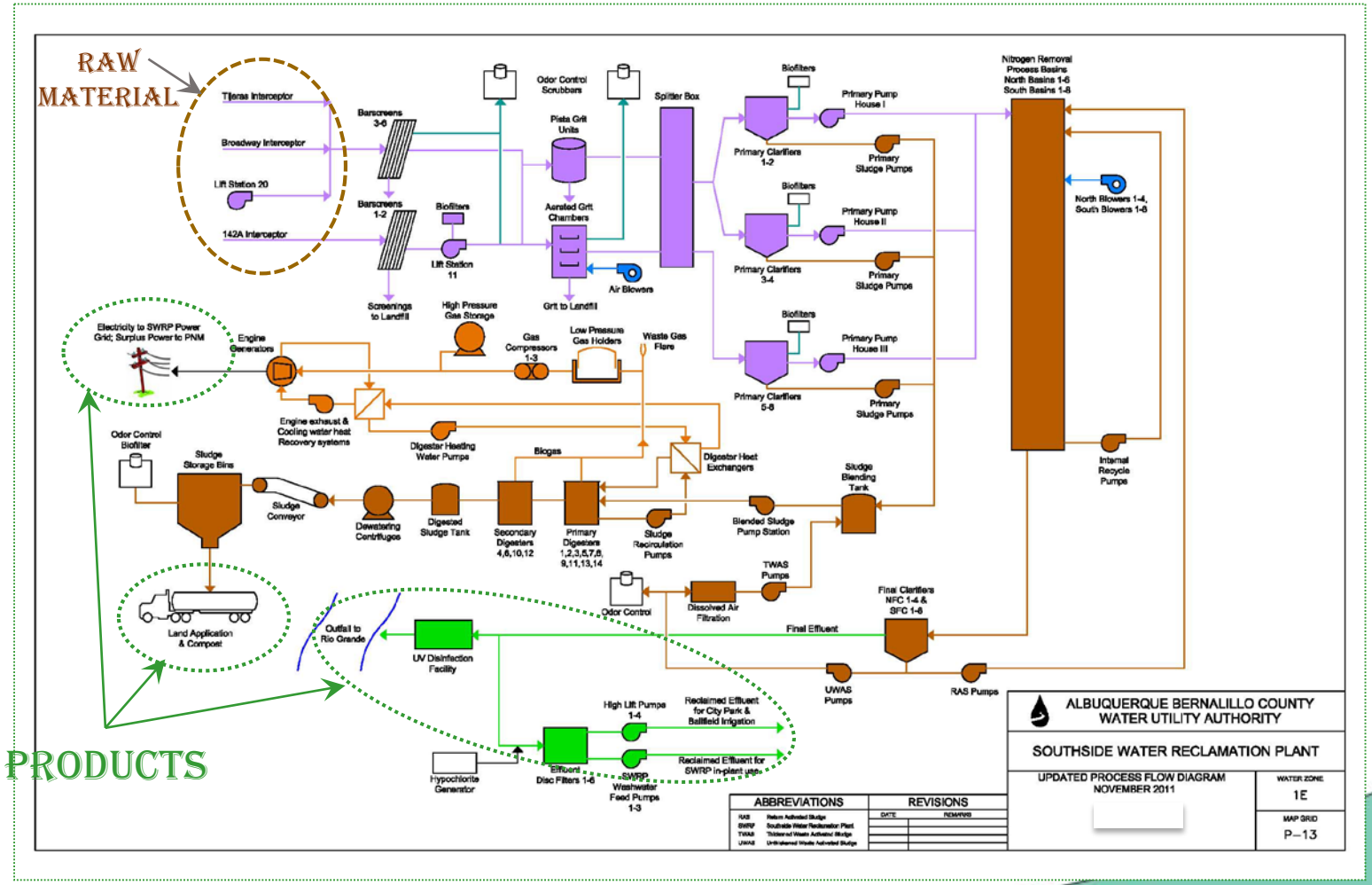
Power from bio-gas

Compost & bio-solids

SWRP quick facts

- *At this site since 1962*
- 76 MGD flow (peak month) from service area
- 14 liquid stream processes & 7 solid stream/power generation processes
- 5.6 MW Combined Heat & Power cogeneration system

SWRP process overview



"Green Things" that we do each day

- Convert ≈ 50 Million Gallons (153 acre feet) of raw sewage into clean effluent for discharge
- Re-claim 1.5 MG of effluent for industrial / irrigation use at SWRP and 2 MG of effluent for off-site park & landscape irrigation
- Process 31.2 dry tons per day of waste solids from treatment process into stable bio-solids for
  - Compost used on parks, ballfields, & gardens
  - Also recycles horse bedding, yard waste, & SJCWTP iron sludge

1ST step in treatment: The Headworks

- Remove grit and coarse debris from raw wastewater that could wear out / damage equipment or fill up treatment tanks

2nd step in treatment: Primary Clarifiers

- Remove stuff by simple gravity settling for ≈ 2-1/2 hours
- Send settled sludge to anaerobic digesters

3rd step in treatment: Nitrogen Removal Process

- Use microorganisms to remove organic material and ammonia in an oxygen-rich environment (mostly)

+

=

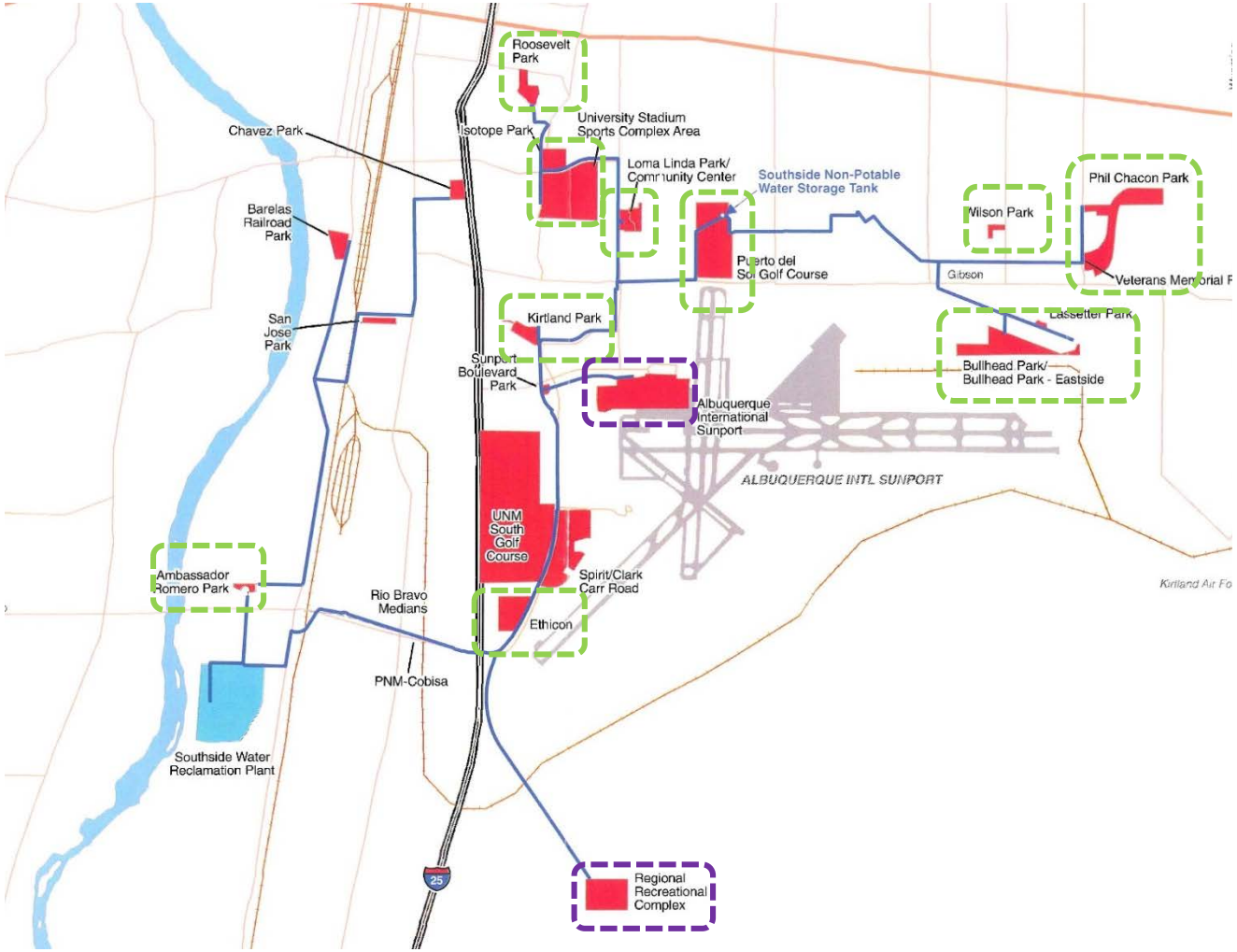
4th step in treatment: Final Clarification

- Use gravity settling to collect microorganisms and return them to Nitrogen Removal Process
- Waste some of the microorganisms, thicken, and then anaerobic digestion

"Clean effluent for river discharge or re-use"; How "clean" is clean?

- Standard for "clean" set by EPA, State, & Pueblo of Isleta; River water used for livestock watering, warm water fishery, irrigation, public water supply, wildlife habitat, and primary contact
- For discharge to river, "**clean**" means:
  - Ammonia < 1.5 mg/L
  - Total Nitrogen < 15 mg/L
  - E.coli < 88 colonies / 100 ml
  - Total Suspended Solids < 30 mg/L
  - Dissolved oxygen > 5 mg/L
  - Mercury < 0.012 µg/L (got tooth fillings? Don't breathe on the sample!)
- For landscape / park irrigation, "**clean**" means:
  - Turbidity < 3 NTU
  - E.coli < 15 colonies / 100 ml
  - Chlorine residual
  - Get there by filtering

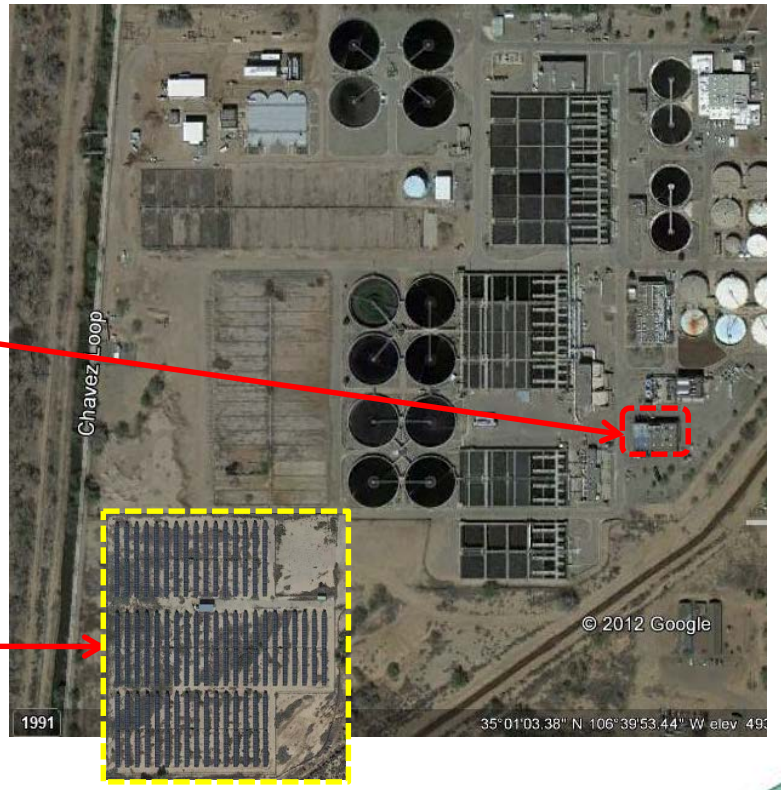
Re-claim 2 MGD of effluent for off-site park & landscape irrigation



Other "Green Things" that we do at SWRP

- Produce 500,000 scf per day of methane-rich bio-gas (from anaerobic digestion)
- Convert bio-gas into 2.2 MW of power and hot water for heating
  - SWRP is 23% energy self-sufficient
  - Recovered hot water used to heat sludge digesters and buildings
- Produce 1 MW of power from solar array *(when sun shines)*

- UV light for effluent disinfection



Available assets for SWRP mission

- > $800,000,000 cumulative investment to date
- Assets work in an environment that is “harsh”
  - Corrosive fumes, fluids, and gases
  - Abrasive grit that accelerates equipment wear
- Approach from 1998 – 2009 for asset renewal
  - $$ very scarce while building SJCWTP project
  - Plug “biggest holes in the dike” to prolong facility life

Asset Management – *the path forward for all Water Authority CIP Investments*

- **Define current state of assets;** *Where, what condition, remaining useful life, economic value*
- **Set required Level of Service (LOS);** *consider actual performance vs demands of stakeholders and regulators*
- **Identify assets critical to sustained performance**
  - Failure modes & likelihood of failure
  - Cost to repair
  - Consequences of failure; social, environmental, economic
- **Establish best life cycle cost CIP and O&M strategies;** *"Run to failure" may be the right approach for some assets*
- **Develop long-term funding strategy**

The RAMP – *a special tactical plan for SWRP assets*

- RAMP = Reclamation Asset Management Plan
- **Began with in-house asset inventory**
- **Examined probability of asset failure;** *age, condition, repair history*
- Consequences of failure
  - Social ranking = health/safety, Board policy, public image
  - Economic ranking = LOS, damage, high O&M
  - Environmental = regulatory compliance, eco-system, aesthetics
- Do the assets give us the capacity to treat a maximum month flow of 76 MGD??

According to the RAMP, the most urgent CIP needs at SWRP are/were:

1. Bar screening & grit removal ☑
2. Sludge dewatering & support facilities ☑
3. Sludge digestion capacity ?
4. Process aeration
   - *Blower supply capacity; interim* ☑
   - *Air distribution system improvements* ☑
   - *Blower supply capacity; long term* ?
5. Power distribution system upgrades for safety & reliability

"Green Things" planned for RAMP projects

- Optimize energy use in process aeration
  - Fix leaky piping & diffusers ("low hanging fruit") ☑
  - Re-configure diffuser layout for optimal process results ☑
- All HVAC for new SWRP bldgs to meet State energy code ☑
- LED lighting in new facilities ☑
- Grants being pursued for 1 MW of more solar power capacity
- Engine exhaust treatment systems for cogeneration facilities
  - Will no longer need a federal CAA permit to operate cogen system!!
  - Major cuts in CO, NOx, and HAP emissions!
    - 231 tons per year of CO
    - 89 tons per year of NOx
    - 16 tons per year of HAPs

QUESTIONS?