

Water/ Sewer Systems Concession Lease

2015 **Annual Report**

May 4, 2016



*Office of Compliance
Department of Public Works
City of Allentown*

(610) 437-7587



Introduction



Wastewater Treatment

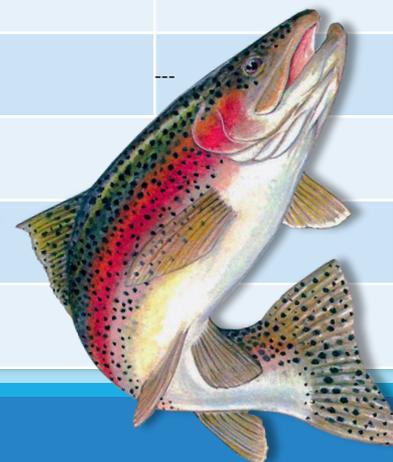
11.1
Billion
gallons of
wastewater
treated in
2015



Wastewater Treatment

Parameter	LCA	Performance Standards	NPDES Discharge Permit Effluent Limitations		
		Monthly Average Effluent Concentration	Monthly Average Effluent Limit	Weekly Average Effluent Limit	Instantaneous (Daily) Maximum Effluent Limit
Carbonaceous Biochemical Oxygen Demand (CBOD ₅)	Met Requirement	≤ 12 mg/L	20 mg/L	30 mg/L	40 mg/L
CBOD5 Percent Removal	Met Requirement	≥ 90 %	≥90 %	---	---
Total Suspended Solids (TSS)	Met Requirement	≤12 mg/L	30 mg/L	45 mg/L	60 mg/L
TSS Percent Removal	Met Requirement	≥90 %	≥90 %	---	---
Ammonia Nitrogen (NH ₃ -N) May 1 to October 31	Met Requirement	≤4.0 mg/L	5 mg/L	---	10 mg/L
Ammonia Nitrogen November 1 to April 30	Met Requirement	≤12.4 mg/L	15 mg/L	---	30 mg/L
Fecal Coliform May 1 to September 31	Met Requirement	200/100 ml geometric mean		---	---
Fecal Coliform October 1 to April 30	Met Requirement	2,000/100 ml geometric mean		---	---
Residual Chlorine	Met Requirement	≤0.5 mg/L		---	---
pH	Met Requirement	6.0 to 9.0 SU		---	---
Dissolved Oxygen	Met Requirement	5.0 mg/L minimum		---	---

**NO
Effluent
Quality
Standards
were
exceeded**



Wastewater Treatment Plant

No Headworks Overflows



Outfall 003

No Odor Complaints



Biosolids



• Deliver to Farm

• Land apply

• Improved Soil Conditions

Wastewater Treatment Plant



pennsylvania
DEPARTMENT OF ENVIRONMENTAL
PROTECTION

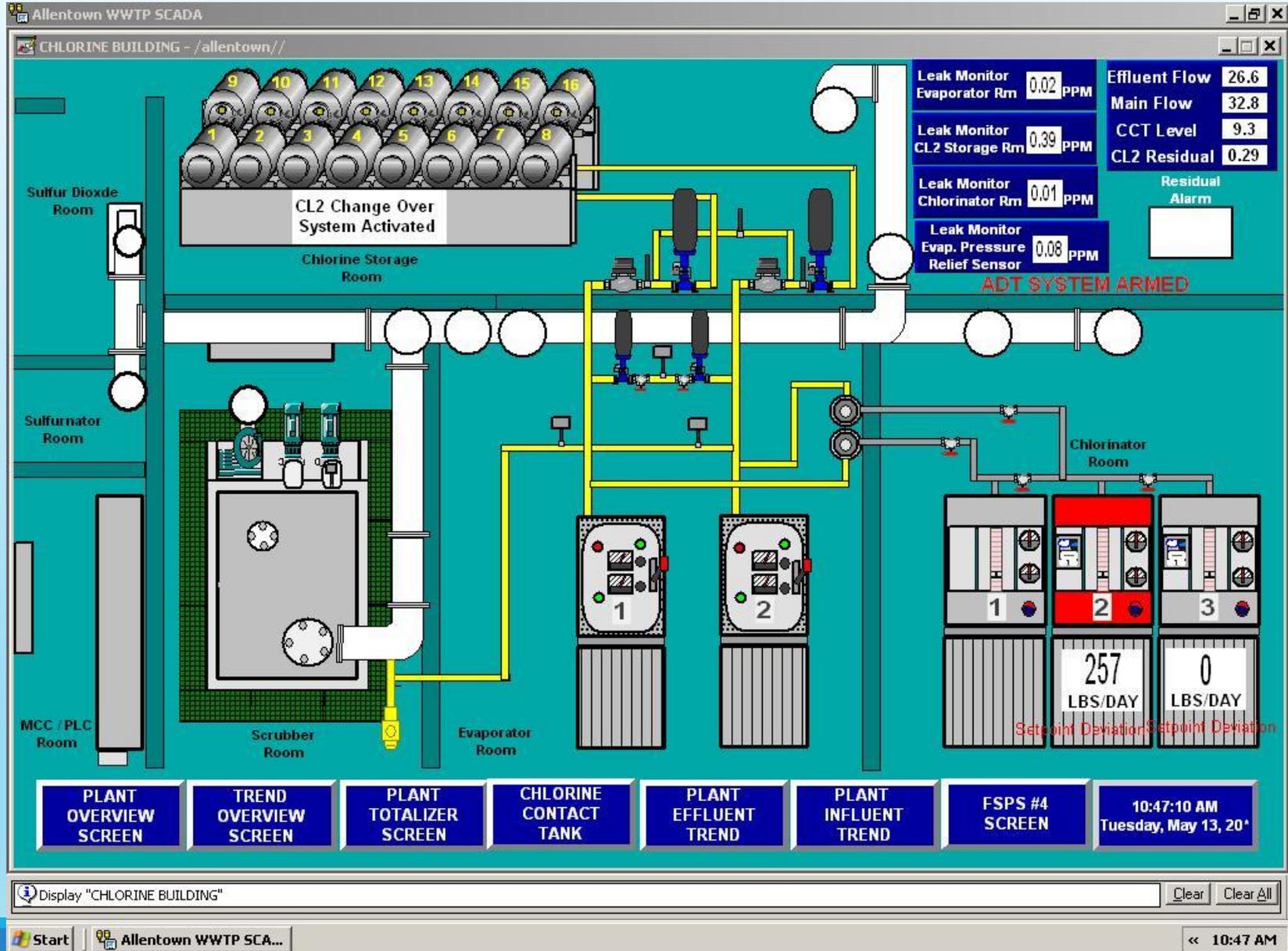
In June
2014,
comments to
the draft NPDES
Permit were
submitted to
PaDEP.
No response
has been given.

*Regulatory
Update*

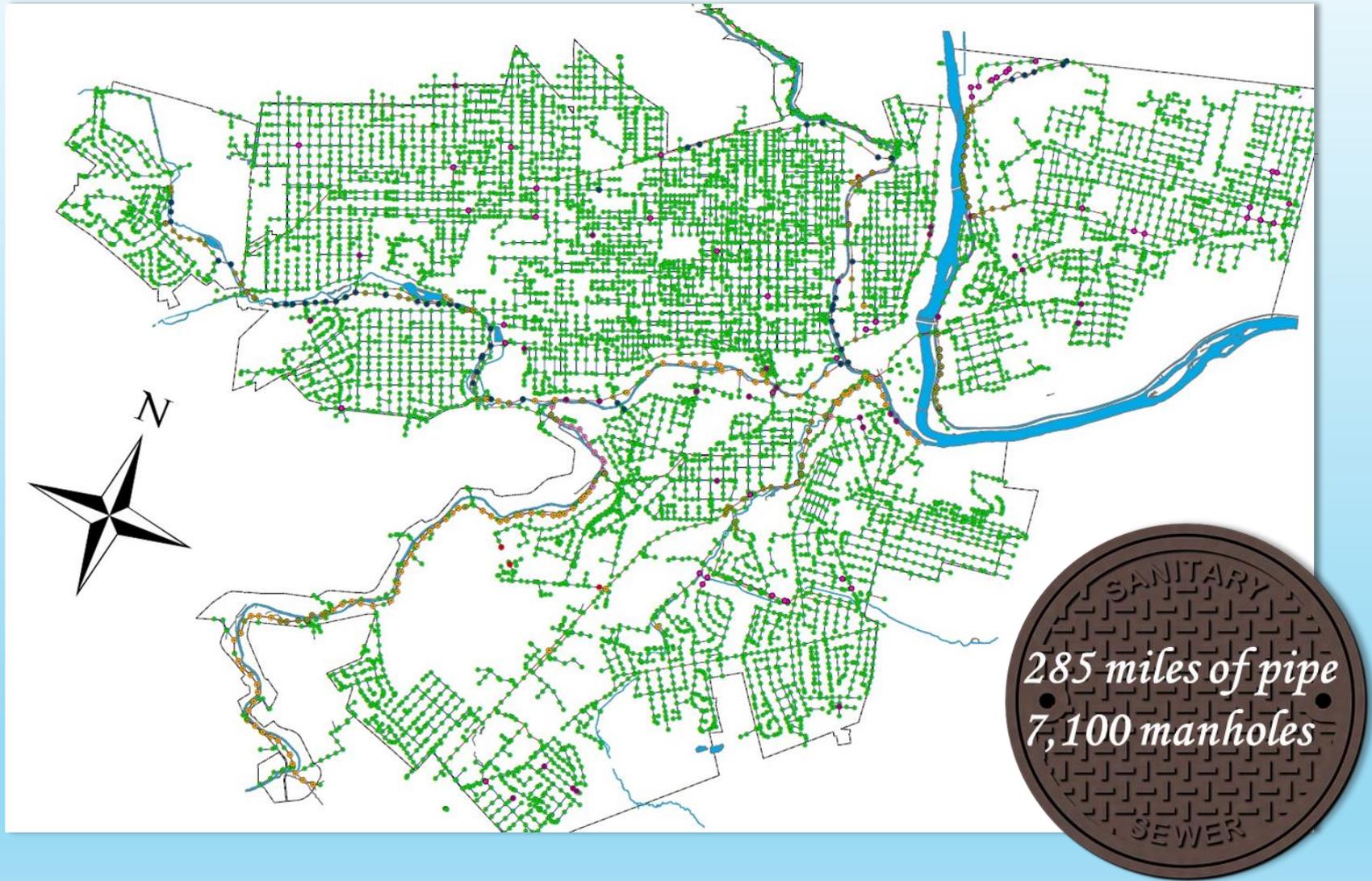
US EPA
conducted a
Clean Air Act
Inspection on
May 5, 2015



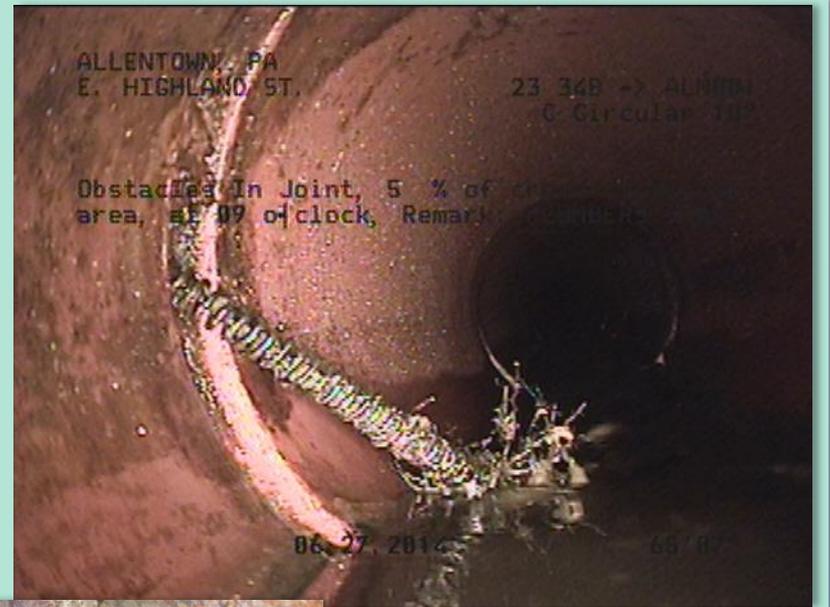
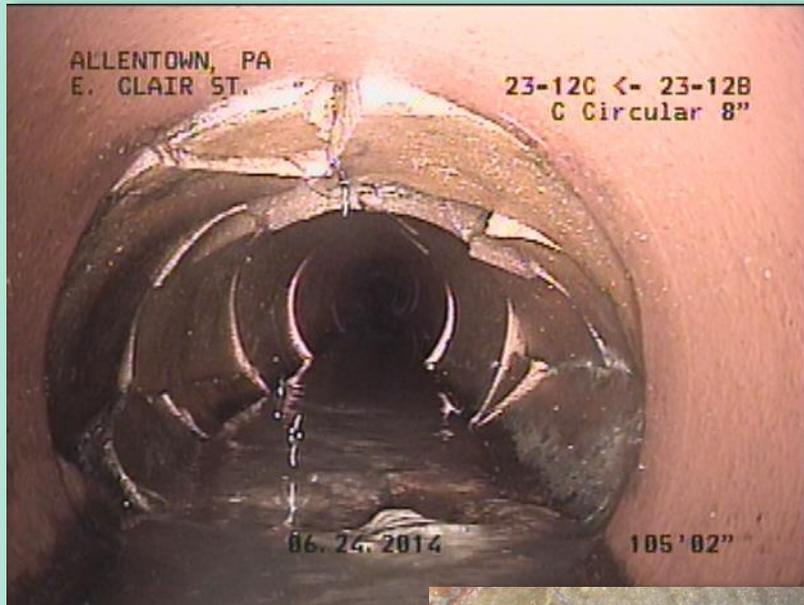
SCADA – Supervisory Control And Data Acquisition



Sewage Collection System



Sewage Collection System



*CCTV Minimum
linear footage
requirement:
55,000*

*LCA Performance:
141,643
Linear feet televised*

Sewage Collection System

Tree roots
block sewer pipe.
Maintain the lateral
from your home.

Residents
can help
STOP
SSO's



BEFORE



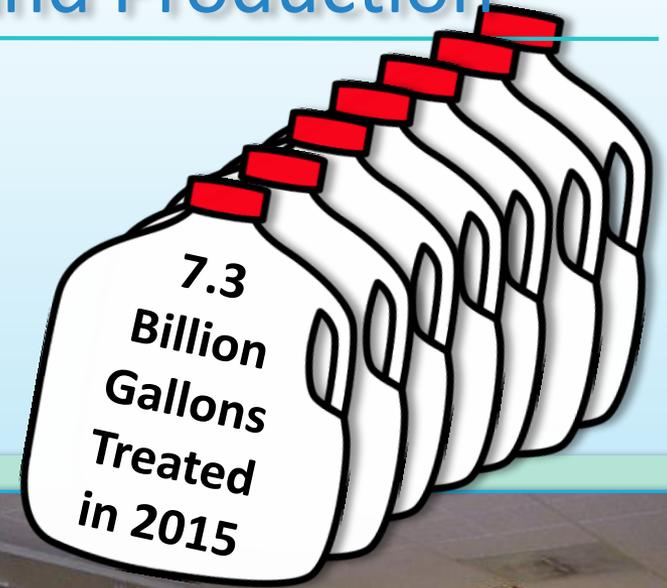
AFTER

Drinking Water Treatment and Production

*Finished Water is produced from 4 sources:
Little Lehigh Creek, Schantz Spring,
Crystal Spring & Lehigh River*



Drinking Water Treatment and Production



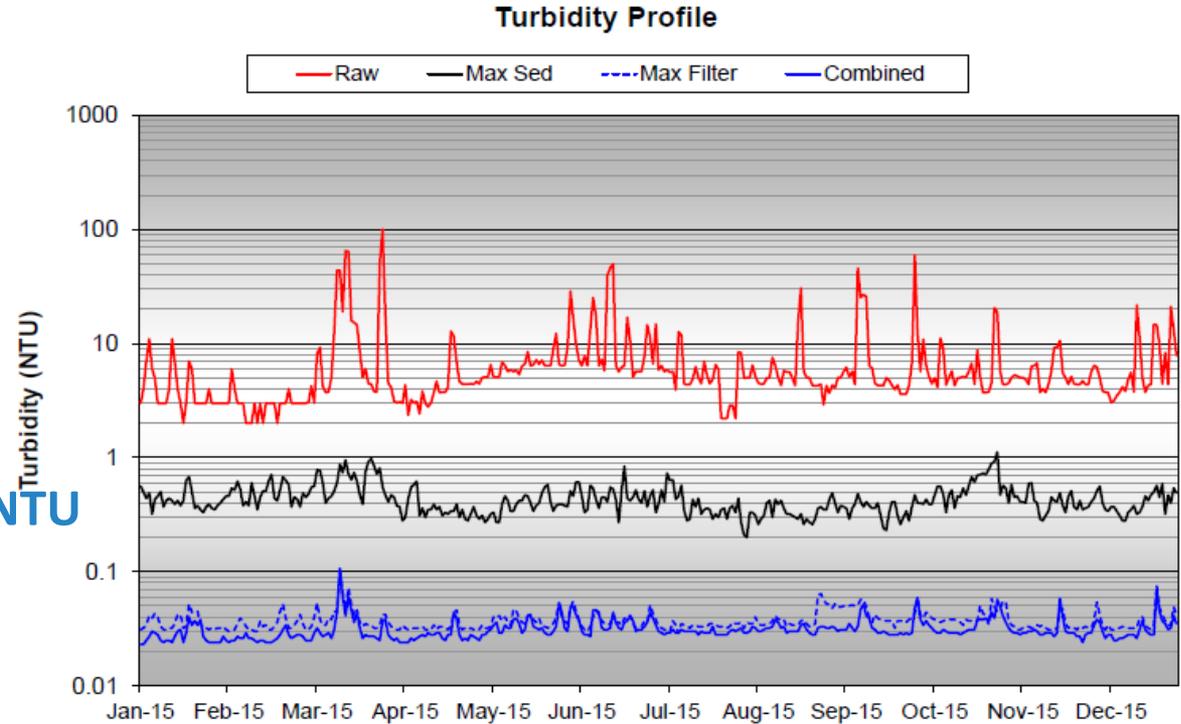
Drinking Water Treatment and Production

Turbidity:

Law = < or = to 0.3 NTU

Partnership = < or = to 0.1 NTU

Allentown = 0.03 NTU



ANNUAL DATA	Avg	Min	Max	RSQ	95%	Opt. Goal	Reg.
	NTU	NTU	NTU		NTU	% Values	% Values
Raw Turbidity	7.6	2.0	100.6	n/a	21.0	n/a	n/a
Max. Settled Turbidity	0.4	0.2	1.1	0.08	0.7	99.7	n/a
Max. Filtered Turbidity	0.04	0.03	0.10	0.08	0.05	100.0	n/a
Combined Filtered Turbidity	0.03	0.02	0.11	0.65	0.04	99.7	100.0

RSQ = Correlation Coefficient for two selected data sets

95% = 95th Percentile value for data set

Opt. Goal = % of values in data set that are less than or equal to the selected optimization turbidity goal

Reg. = % of values in data set that are less than or equal to the regulated turbidity requirement

Partnership for Safe Water



Drinking Water Treatment and Production



Drinking Water Treatment and Production



*Full PaDEP
Inspection of
plant, reservoirs &
pumping stations*

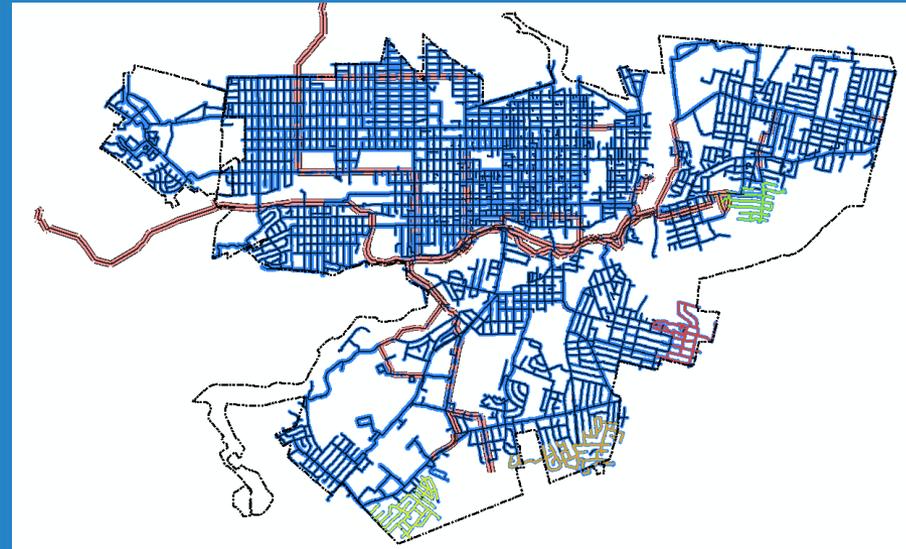
*PaDEP Filter
Plant Performance
Evaluation*



Drinking Water Distribution System



325 Miles of Pipe



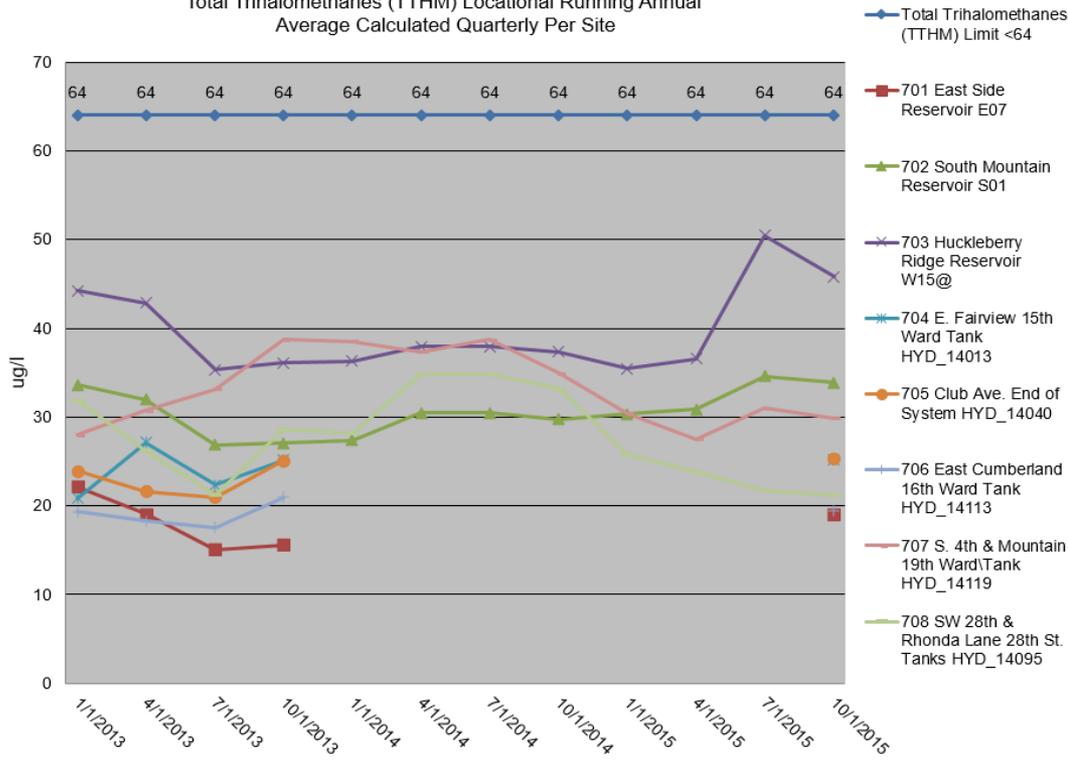
33,400 Service connections



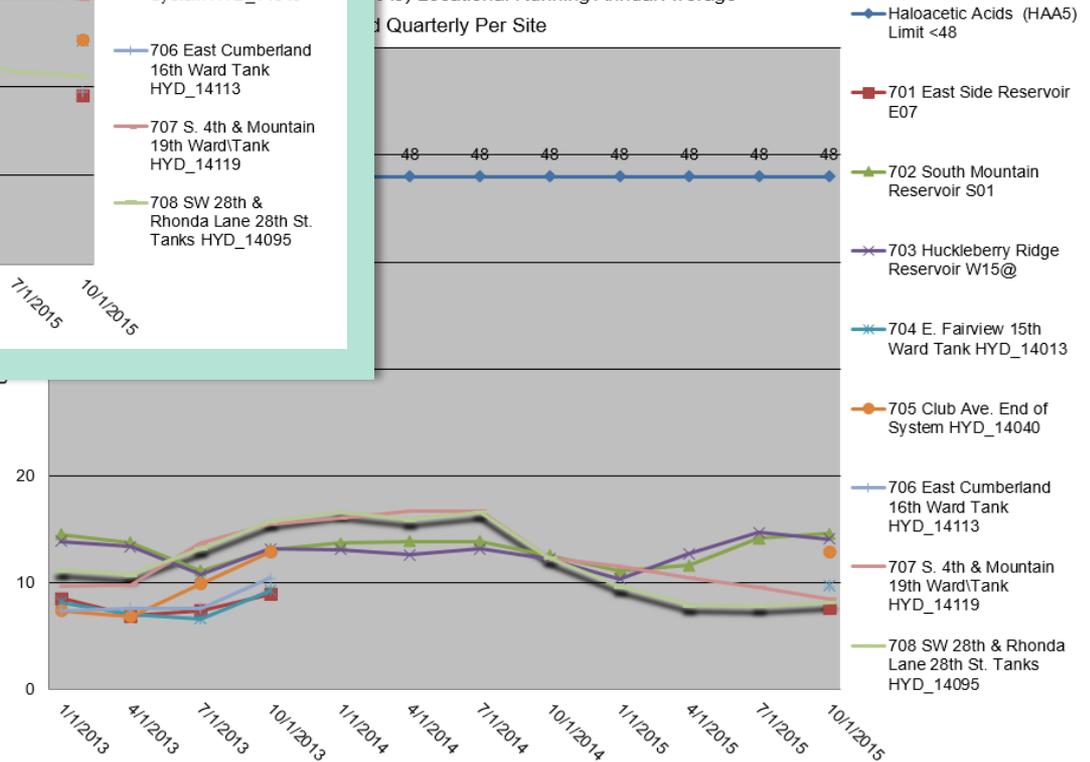
8060 Valves

Disinfectant Byproducts

Total Trihalomethanes (TTHM) Locational Running Annual Average Calculated Quarterly Per Site



Haloacetic Acids (HAA5) Locational Running Annual Average Calculated Quarterly Per Site



Drinking Water Distribution System

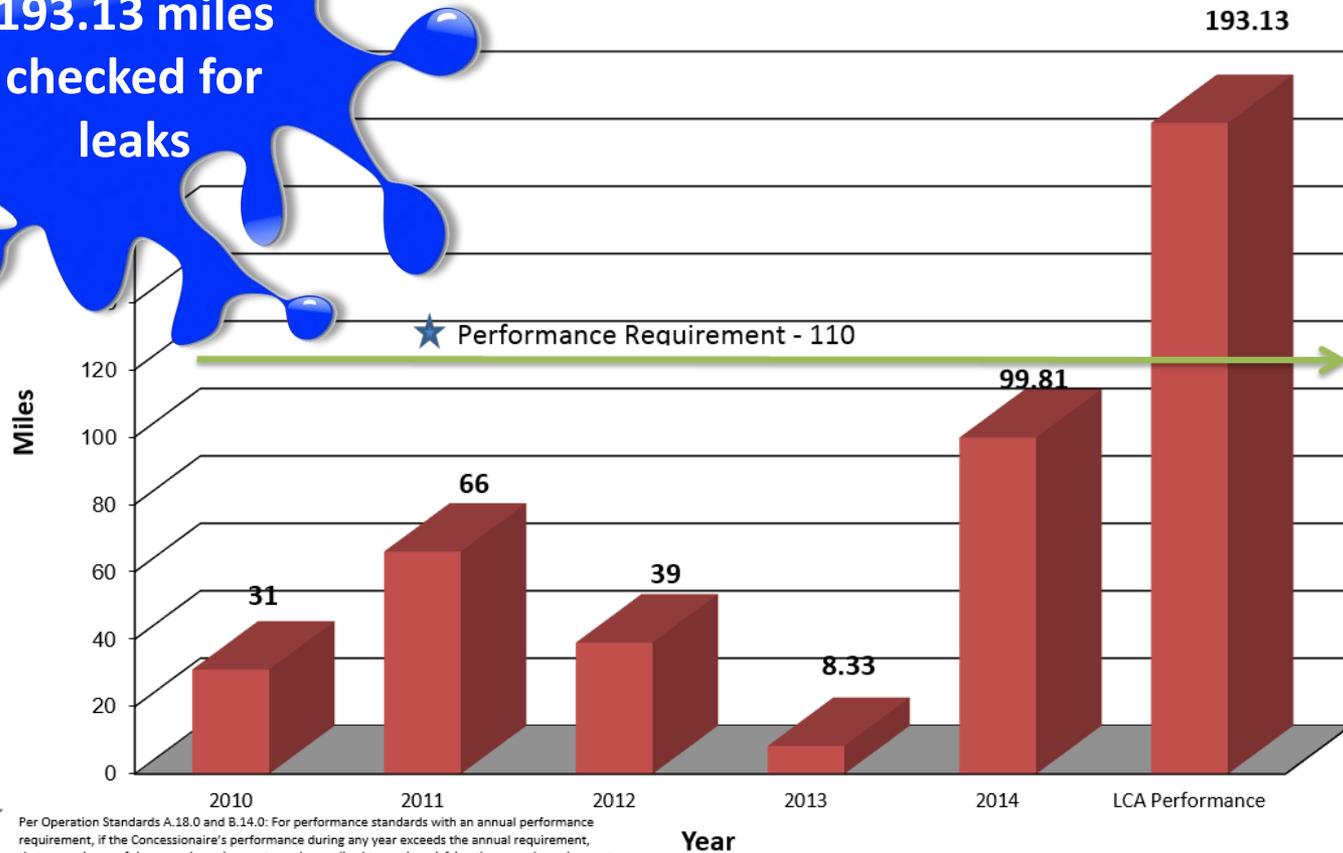


Drinking Water Distribution System

Metrics Update

193.13 miles
checked for
leaks

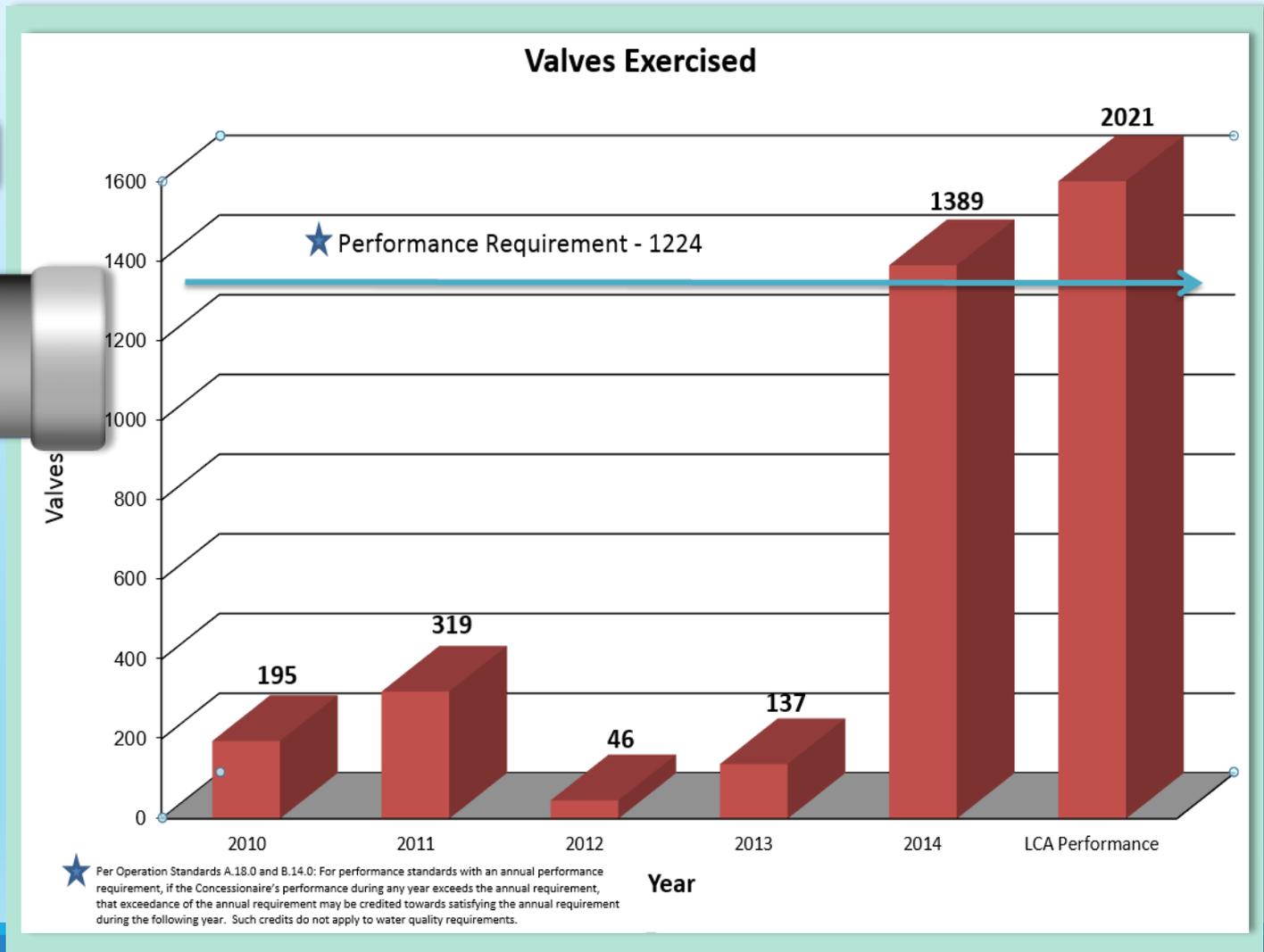
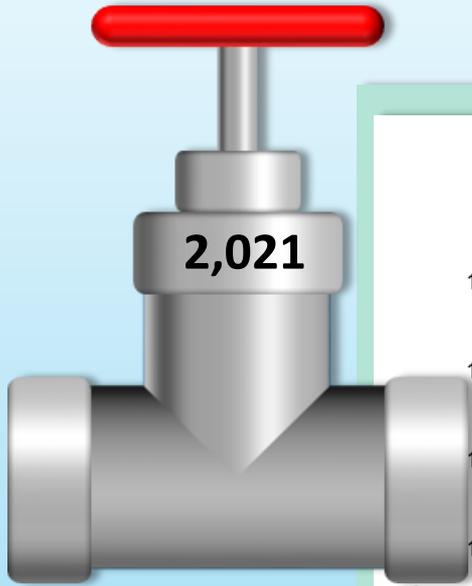
Miles Leak Surveyed



Per Operation Standards A.18.0 and B.14.0: For performance standards with an annual performance requirement, if the Concessionaire's performance during any year exceeds the annual requirement, that exceedance of the annual requirement may be credited towards satisfying the annual requirement during the following year. Such credits do not apply to water quality requirements.

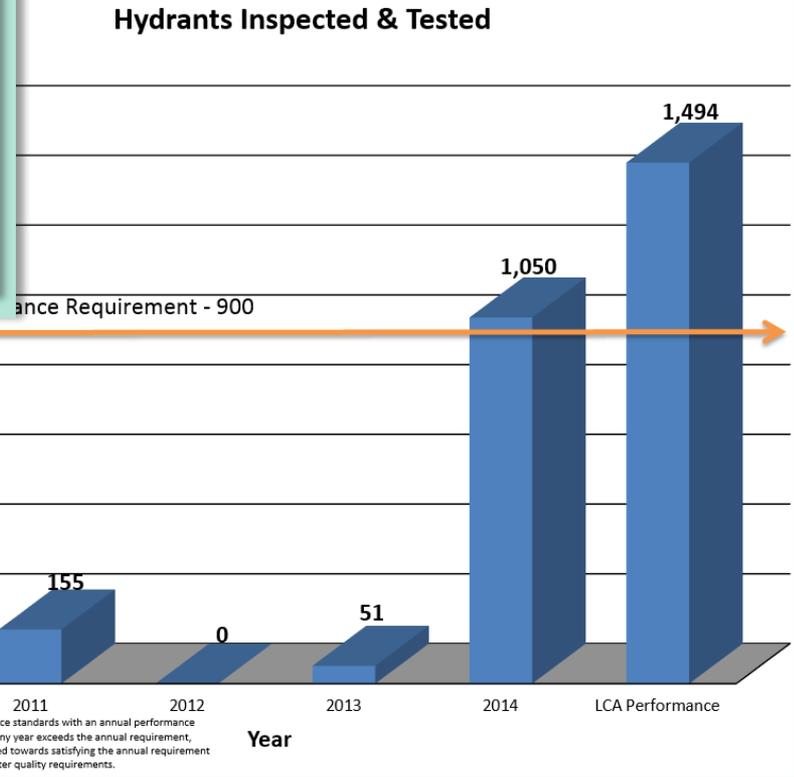
Drinking Water Distribution System

Metrics Update



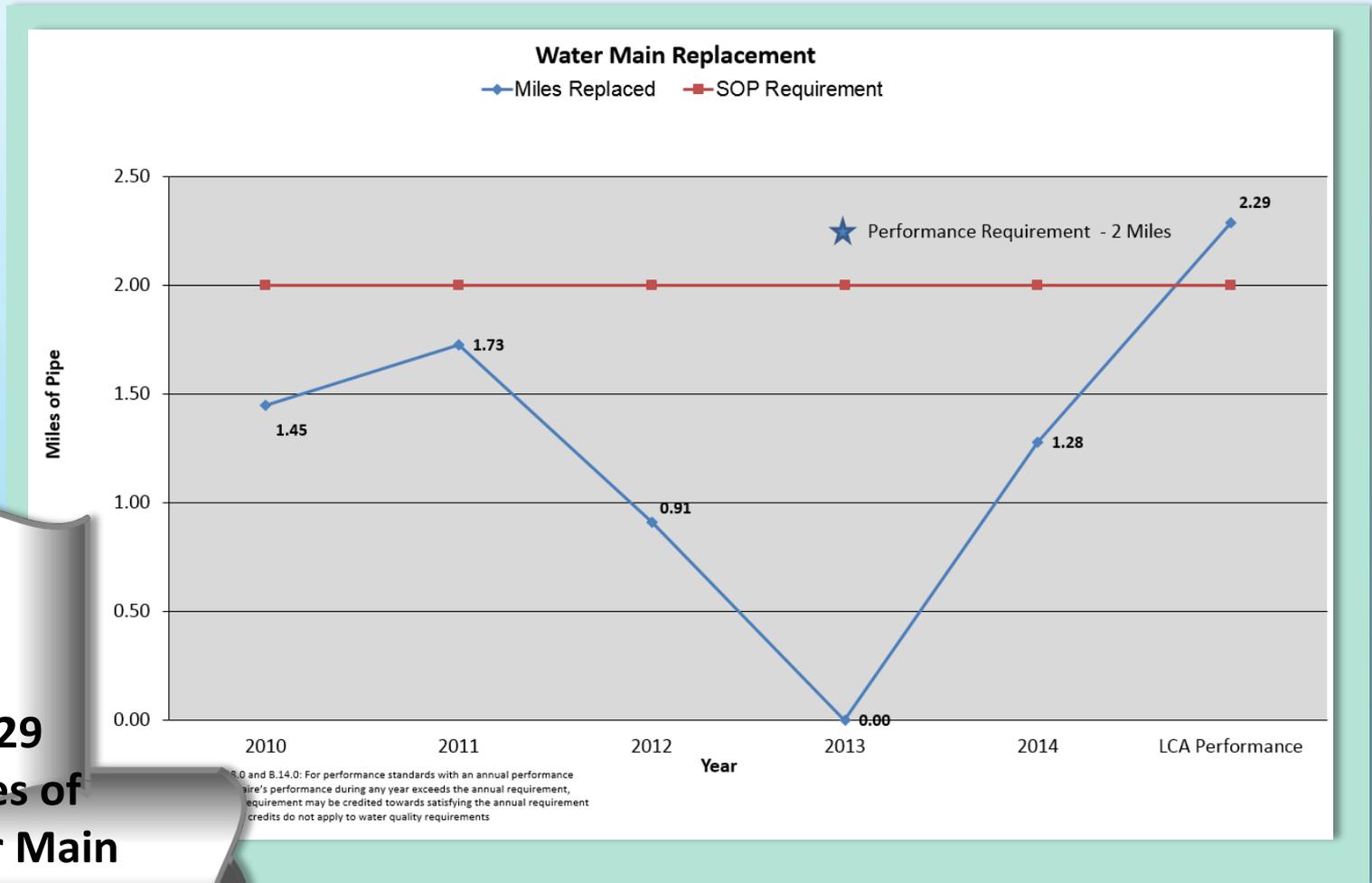
Drinking Water Distribution System

Metrics Update



Drinking Water Distribution System

Metrics Update



2.29

**Miles of
Water Main
replaced**

Drinking Water Distribution System

Before



After

Drinking Water Distribution System



Before



After

Customer Service

Customer Service Center & Drop Box



Customer Service



*29,074 calls
received in 2015*

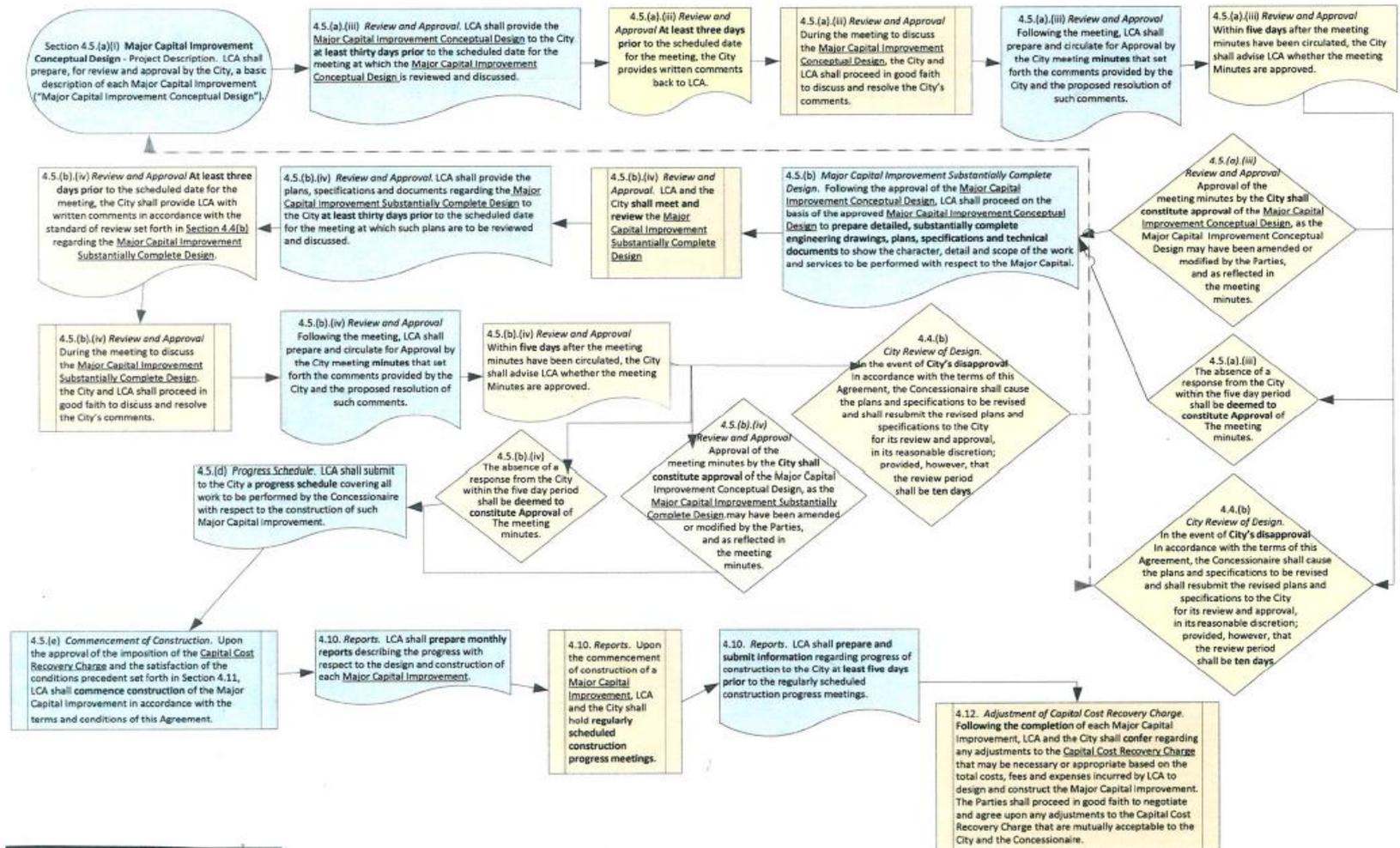


*22,600 (78%)
Billing Questions or
Credit Card Payments*



Completed Major Capital Improvement Projects

Draft Major Capital Improvement *Per-Project* Implementation Work Flow



LEGEND		
COA	LCA	JOINT
Document	Decision Making	Sub-Process

Water Main Replacement



Cycle I - 2014

Belt Filter Press Rebuilds & Replacement



Administrative Orders



**Borough of Alburtis
Borough of Emmaus
Borough of Macungie
City of Allentown
Coplay-Whitehall Sewer Authority
Hanover Township
Lehigh County Authority (LCA)
Lower Macungie Township
Lowhill Township
Salisbury Township
South Whitehall Township
Upper Macungie Township
Upper Milford Township
Weisenberg Township**

Administrative Orders

- **CWA-03-2007-0332DN**
- **CWA-03-2009-0313DN**

Administrative Orders

Examples of Sources of ...



Infiltration:

Rain or groundwater entering joint, broken sewer main or private lateral



Administrative Order: 2015 Projects

Sanitary Sewer Manhole Linings



Before

After



Administrative Order: 2015 Projects

Sanitary Sewer Manhole Collars & Water Tight Covers

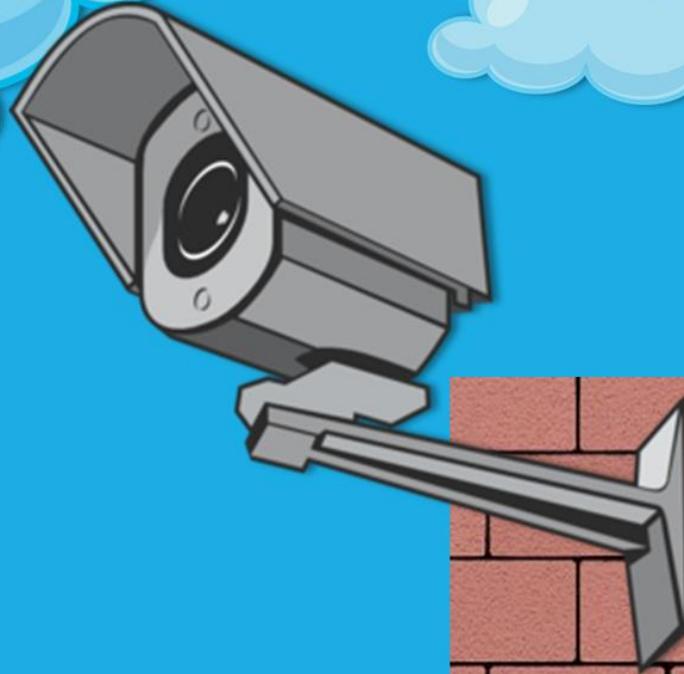


*70 manhole structures
were reinforced with collars
&/or bolt down frames.*



Security

*NO
security breaches
occurred*



N
ON

Notices of Violation



Awards



Directors Award

In recognition for your commitment
to superior water quality.

*The Partnership for Safe Water is sponsored by the American Water Works Association,
Association of Metropolitan Water Agencies, Association of State Drinking Water Administrators,
United States Environmental Protection Agency, National Association of Water Companies,
and the Water Research Foundation.*

The Water Filtration Plant received the Partnership for Safe Water's Directors Award for 2015.

QUESTIONS



Please ask during Public Comment Period

or

Call us at 610-437-7587

THANK YOU !