DPU-W

Capital Improvement Program

Overview & Challenges Ahead

Major Business Units

- Drinking Water Supply/Distribution
- Wastewater Collection/Conveyance & Pumping
- Wastewater Treatment (Springbrook Facility)

Regulated by Federal & State Agencies

2020 & 2021 Efforts

- Capital Asset Evaluations
  - Water Distribution & Supply (2020)
  - Springbrook Facilities Plan (2021)

- Rate Study
  - Water Demand
  - Cost of Service
    - Allocation (Water vs Wastewater)
    - Customer Class Equity
  - Rate Design
  - Cash Reserve Targets
  - Capital Spending Needs

Tonight's Area of Emphasis

Capital Improvement Plans Review

- **Wastewater Collections & Pumping**
- Water Distribution & Supply
- Wastewater Treatment

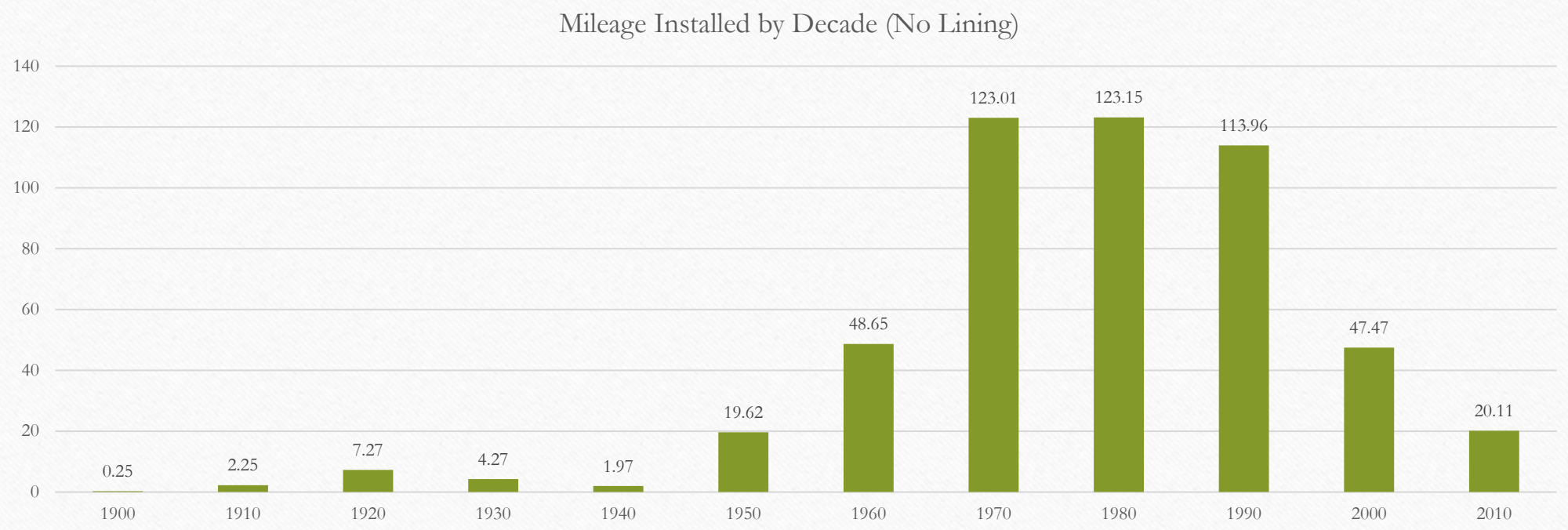
Collection System Capital Improvements

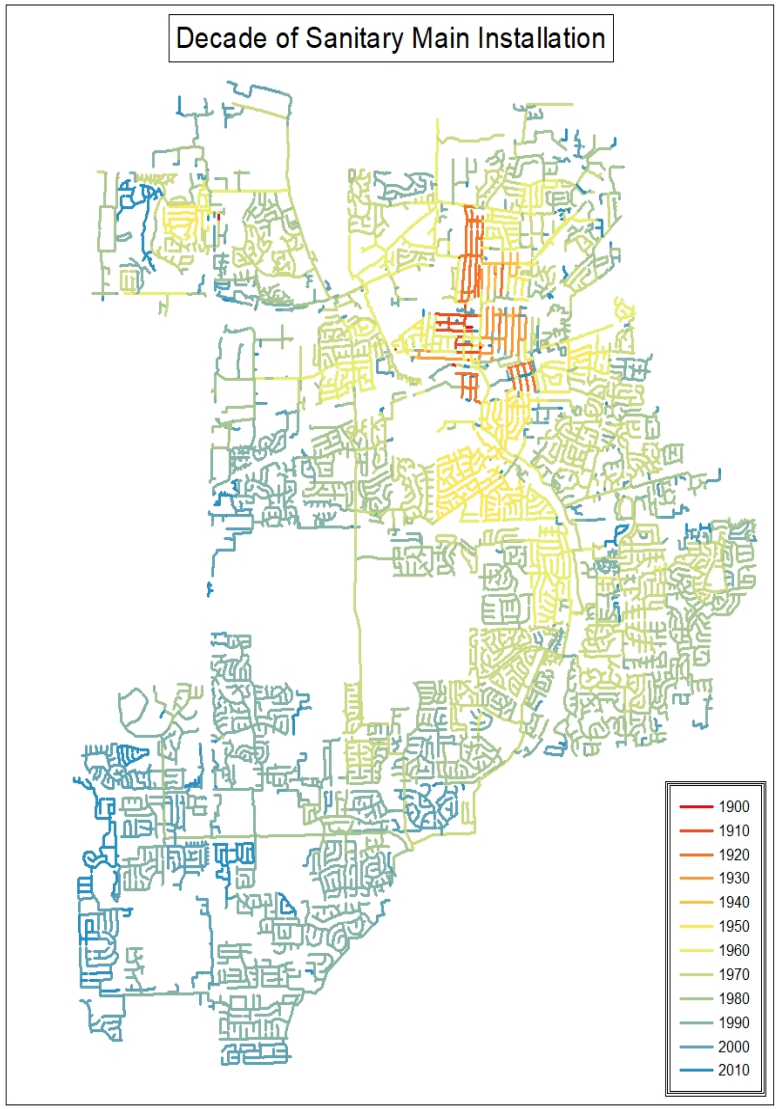
Past, Present & Future

System Profile

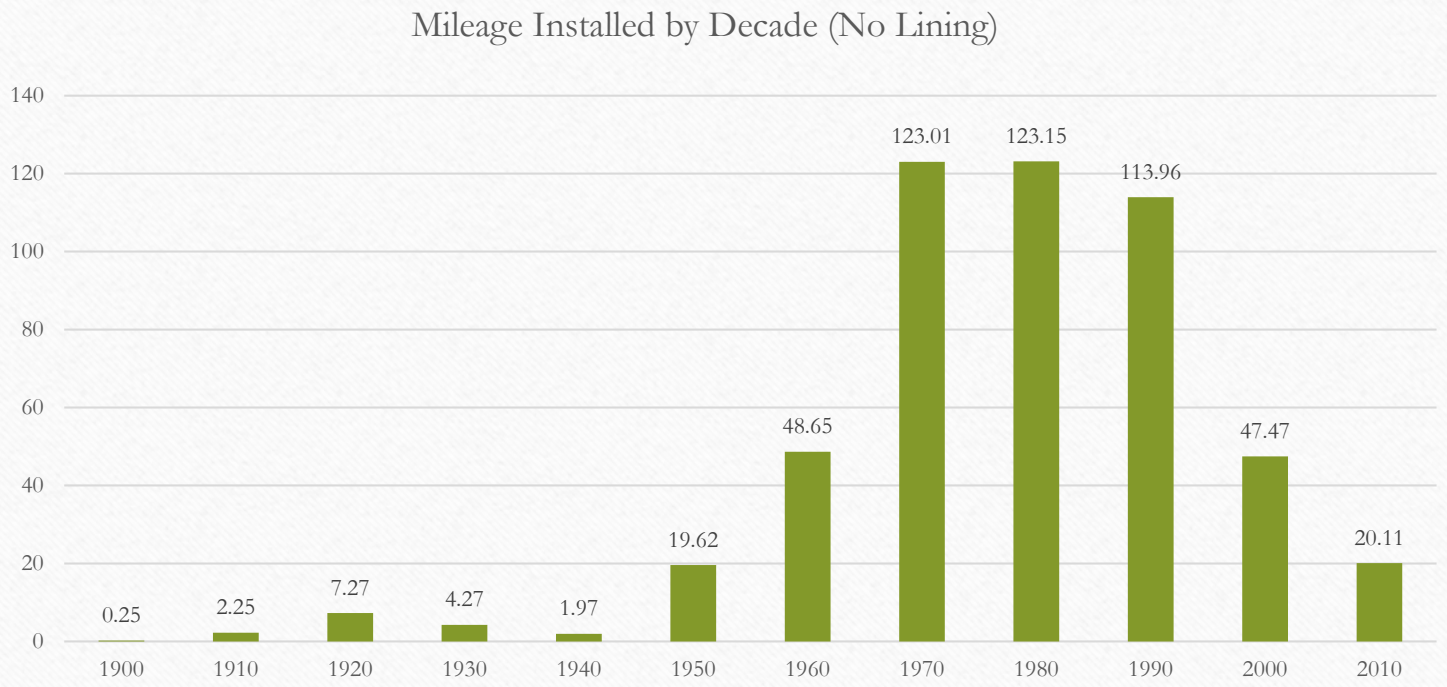
- System Assets:
  - 565 Miles of Sanitary Sewer
  - 14,020 Manholes
  - 40,290 Residential Sewer Laterals
  - 22 Wastewater Pumping Stations
- System Characteristics:
  - Average Daily Flow – 20.22 Million Gallons
  - Average 3 Low Flow Months – 14.66 million Gallons
  - Population Served:
    - Naperville – 149,294
    - Warrenville – 13,260 (9% Total Flow)

Sanitary Sewer Installed by Decade





Sanitary sewer installed by decade



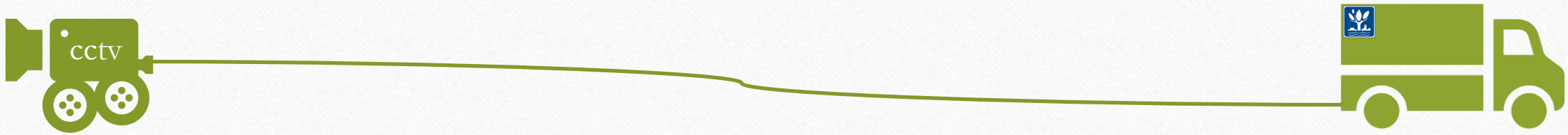
Useful Life of Sanitary Sewer Main Assets

- Different pipe materials have different useful lifespans.
- CIPP lining is used to extend the service life of the original pipe material.

	Useful Life	Mileage in System	Percent of System
ACP	50	0.04	0.01%
Cast Iron	75	0.2	0.04%
Concrete Pipe	75	3.09	0.57%
Ductile	75	21.17	3.89%
Polyethylene	75	0.4	0.07%
PVC	75	232.62	42.80%
Reinforced Concrete	75	15.02	2.76%
Reinforced Plastic	50	8.22	1.51%
Vitrified Clay	50	145.37	26.74%
CIPP	50	117.1	21.54%
Fold in Form	30	0.32	0.06%

Data Driven Asset Planning

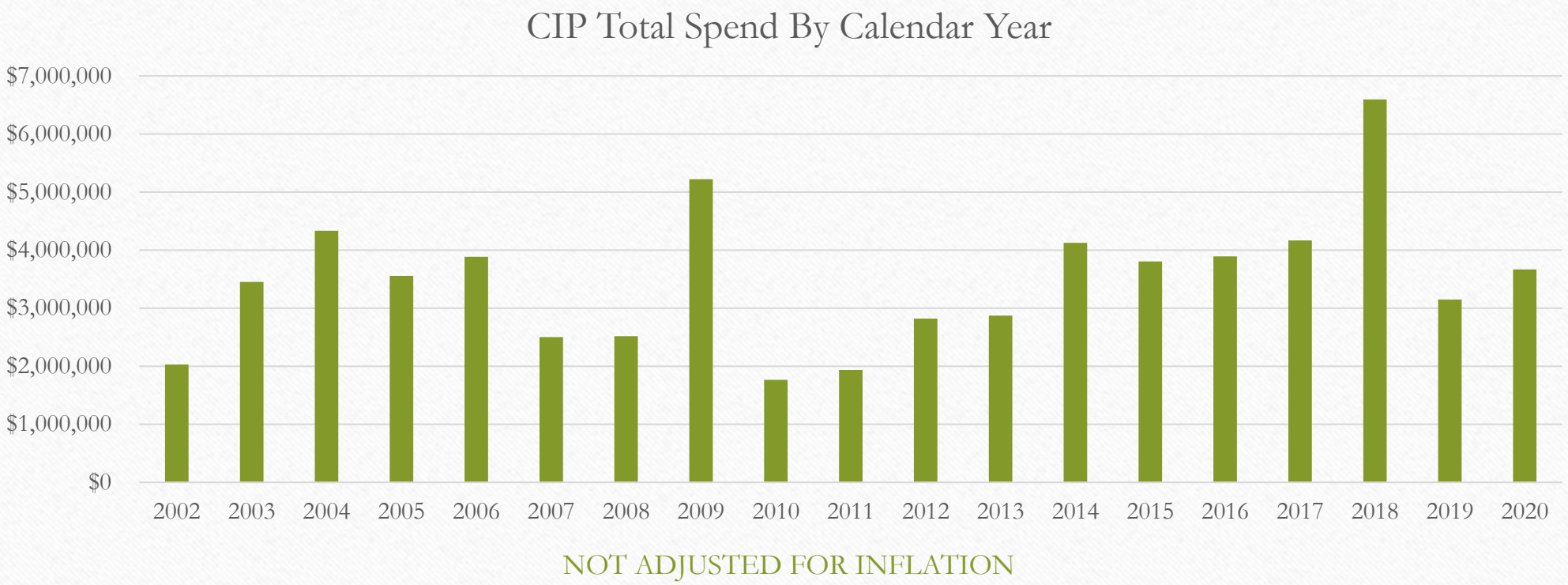
- Risk based approach
  - Probability and Consequence of failure factors
- Assessment techniques (flow monitoring, smoke testing, CCTV inspection)
- Daily maintenance and condition observations of the system (jet flushing, customer service calls, manhole inspection)



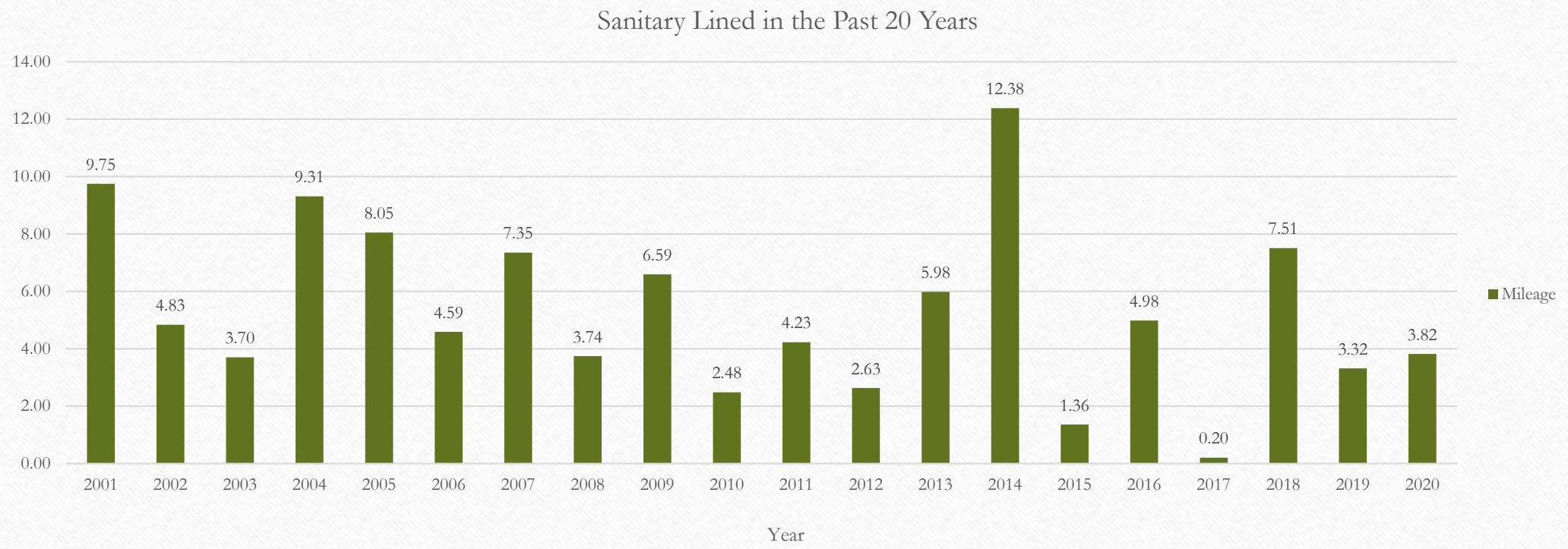
Primary Goals of the Capital Program

- Maintain system assets in good working condition and achieve regulatory compliance.
- Reduce flows to the treatment plant.
- Reduce Inflow and Infiltration (I&I) of groundwater & rainwater into system
- Reduce/eliminate sanitary sewer overflows (SSOs).
  - Basement back-ups, manhole surcharges, etc.
- Reduce service calls from customers.

Past Investment in the Collection System

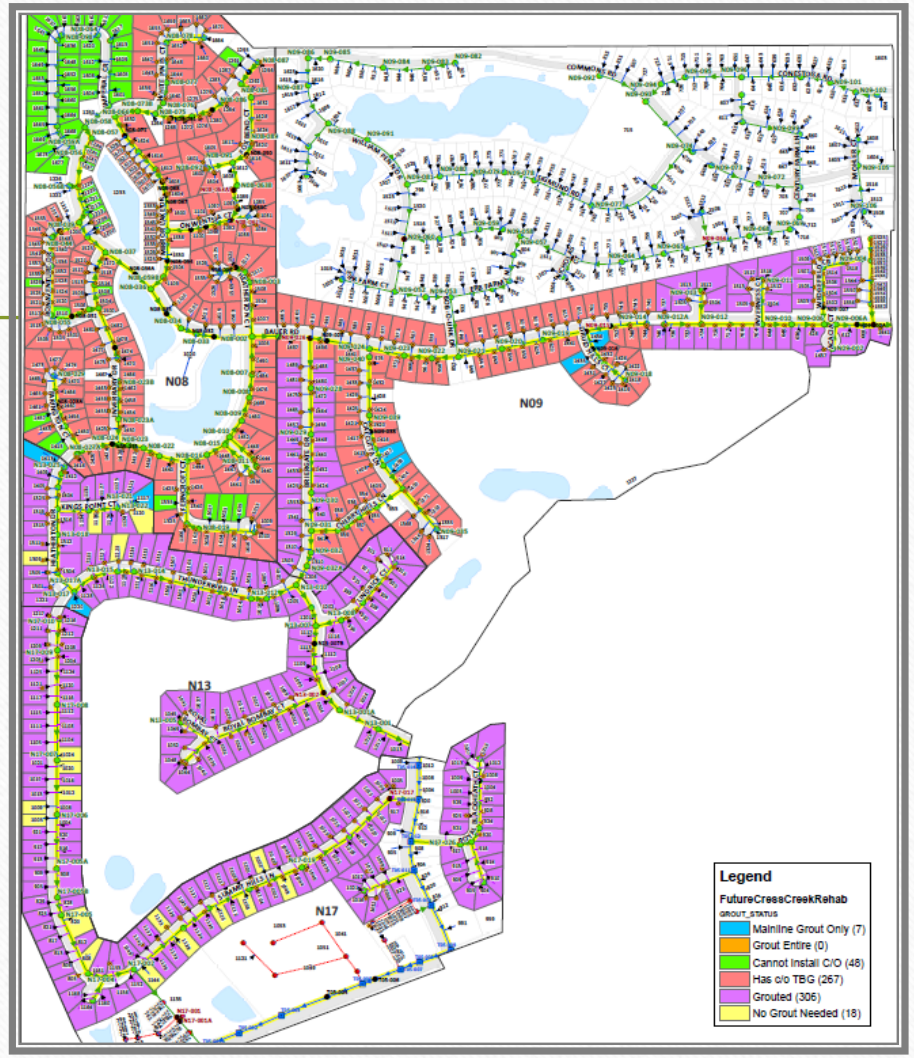


Sewer Lining Program

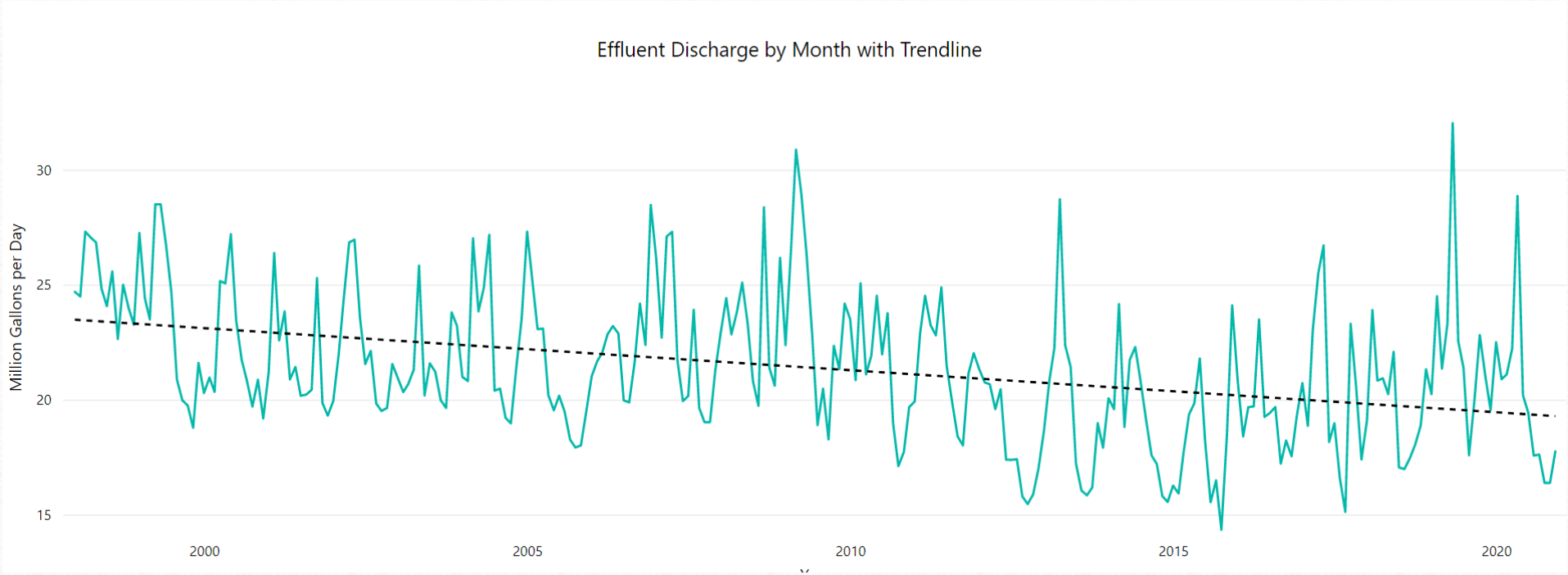


I&I Program
(Whole Basin Strategy)
Cress Creek Example

- Sanitary sewer lining
- Manhole rehab
  - Manhole replacement
  - Manhole lining
  - Upper structure lining
- Lateral rehab
  - Grouting
  - Lateral lining



☑ Results: Reduce Flow to Springbrook



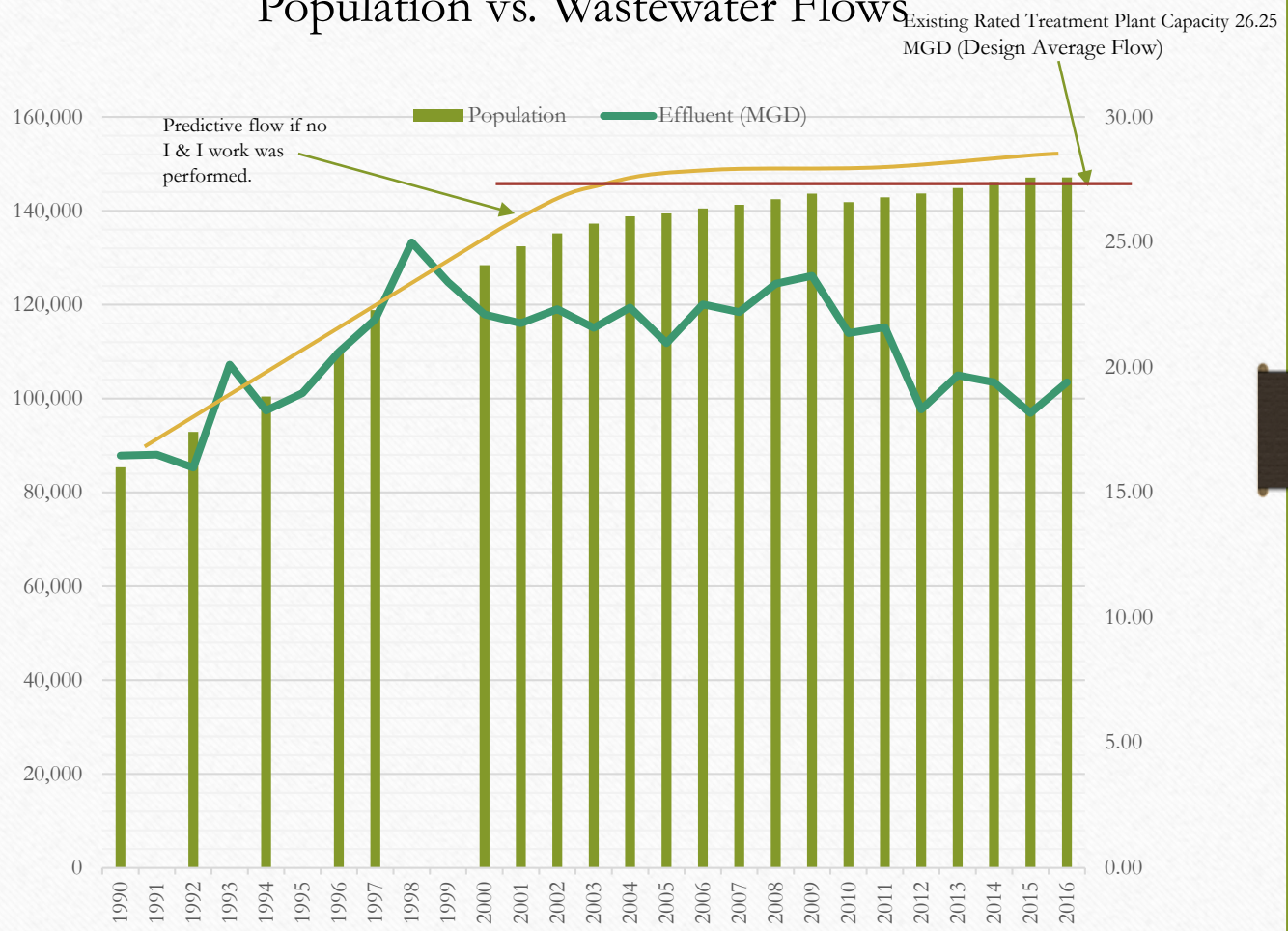
Results: Reduce I&I

Cured in Place Manhole (CIPMH)

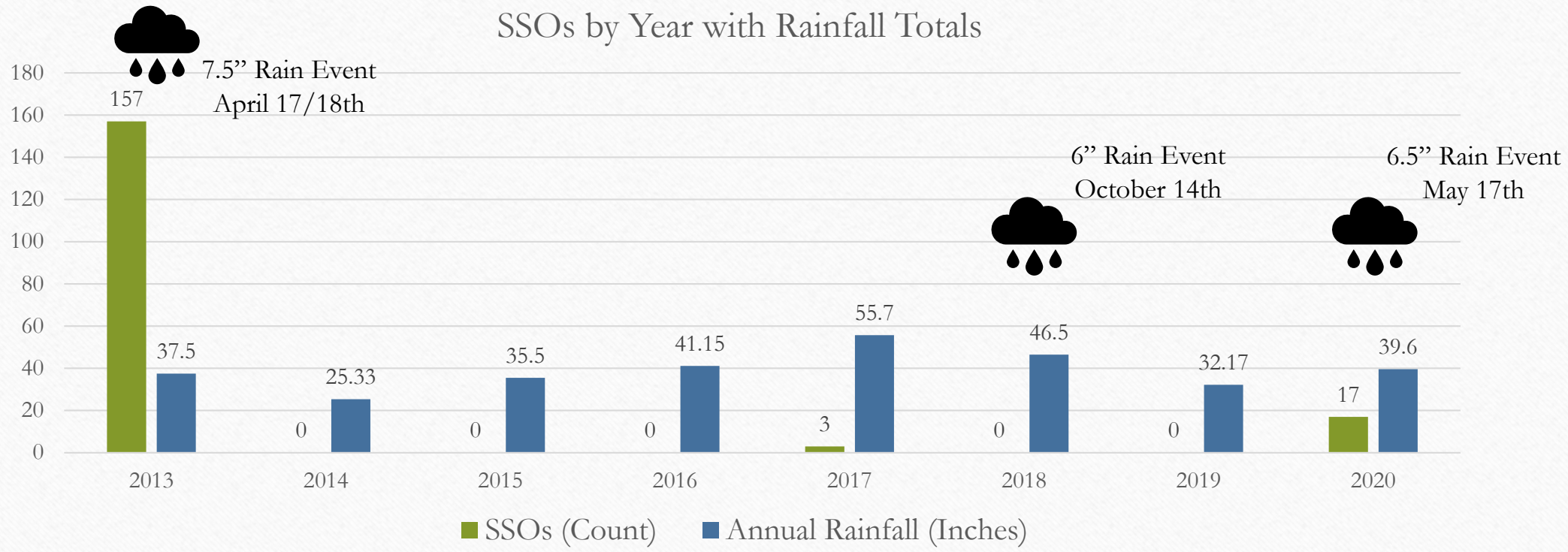
Before

After

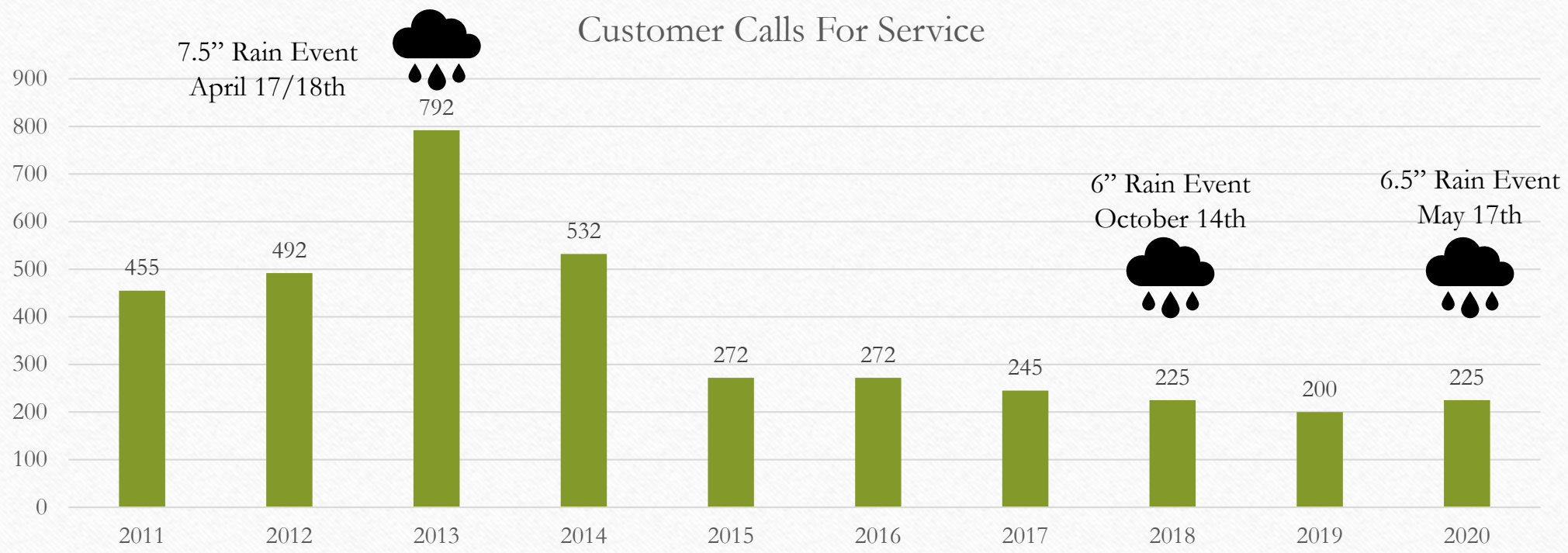
Population vs. Wastewater Flows



☑ Results: SSOs Reductions

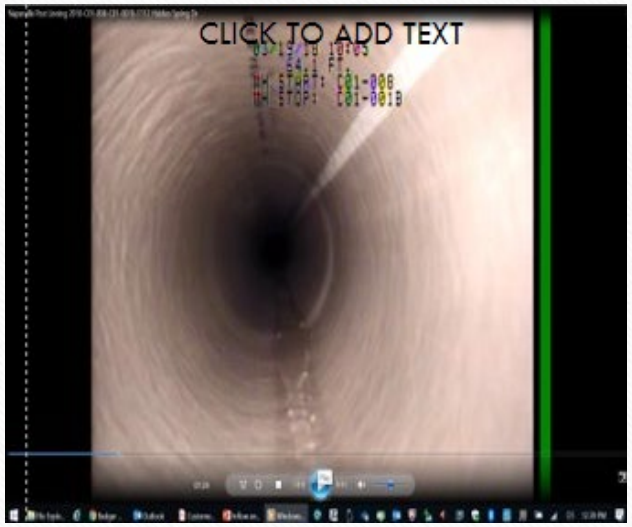


☑ Results: Service Call Reductions



10-year Wastewater Collection System CIP

City of Naperville 10-Year Wastewater Collection System Rehabilitation Plan	
Year	**Estimated Total Yearly Cost**
2019 (Actual)	$4,093,789.00
2020 (Actual)	$4,892,000.00
2021	$4,708,000.00
2022	$4,553,000.00
2023	$4,538,000.00
2024	$4,538,000.00
2025	$4,813,000.00
2026	$5,813,000.00
2027	$4,813,000.00
2028	$4,813,000.00



Submitted to IEPA Annually

Continued investment is essential.

- Maintain regulatory compliance (NPDES Permit)
- Ensure efficient system performance and operations
- Provide excellent customer service
- Provide exceptional value to our customers
- Ensure sustainable asset management

Next Steps

- Review Water Distribution/Supply Asset Evaluation & Capital Needs
- Review Wastewater Treatment (Springbrook) Asset Evaluation & Capital Needs
- Review Water Rate Study Assumptions

Questions?