

City of Milwaukee Department of Public Works



2014 Sewer Budget

2014 Sewer Program

Sewer Maintenance Relay

| | |
|---|---------------------|
| Paving Related Projects | \$3,220,000 |
| Non-Paving Related Projects | \$25,480,000 |
| Preliminary Engineering for 2015 Projects | \$1,500,000 |
| Fringe Benefits | \$800,000 |
| <u>Total Sewer Maintenance Relay</u> | <u>\$31,000,000</u> |

Sanitary Pump Rehabilitation Project

| | |
|--|------------------|
| Sanitary Bypass Pump Rehabilitation | \$500,000 |
| Sanitary Bypass & Lift Station Pump Inspection | \$150,000 |
| Fringe Benefits | \$50,000 |
| <u>Total Sanitary Pump Rehabilitation</u> | <u>\$700,000</u> |

I/I Reduction Projects

| | |
|--|--------------------|
| I/I Reduction Projects | \$1,755,000 |
| Noncompliant Metershed Areas | \$3,035,000 |
| Sanitary Manhole Inspection & Rehabilitation | \$1,000,000 |
| Fringe Benefits | \$500,000 |
| Reserves | \$710,000 |
| MMSD Grant | \$1,750,000 |
| <u>Total I/I Reduction Projects</u> | <u>\$8,750,000</u> |

| | |
|------------------------|--------------------|
| Channel Maintenance | <u>\$200,000</u> |
| Water Quality Projects | <u>\$1,000,000</u> |

| | |
|---|---------------------|
| <u>Total 2014 Preliminary Sewer Program</u> | <u>\$41,650,000</u> |
|---|---------------------|

6 Year Capital Improvement Program

| | Relief and Relay | Inflow and Infiltration | Pump Rehabilitation | Water Quality Projects | Channel Maintenance | Total Budget |
|-------|----------------------|-------------------------|---------------------|------------------------|---------------------|--------------|
| Year | (million) | (million) | (million) | (million) | (million) | (million) |
| 2013 | \$30.00 ^Δ | \$9.75 ^{**} | \$0.75 | \$0.50 | \$0.16 | \$41.16 |
| 2014 | \$31.00 ^Δ | \$8.75 ^{**} | \$0.70 | \$1.00 | \$0.20 | \$41.65 |
| 2015 | \$32.00 ^Δ | \$8.75 ^{**} | \$0.70 | \$0.50 | \$0.20 | \$42.15 |
| 2016 | \$33.00 ^Δ | \$8.75 ^{**} | \$0.70 | \$0.50 | \$0.20 | \$43.15 |
| 2017 | \$34.00 ^Δ | \$8.75 ^{**} | \$0.70 | \$0.50 | \$0.20 | \$44.15 |
| 2018 | \$35.00 ^Δ | \$8.75 ^{**} | \$0.70 | \$0.50 | \$0.20 | \$45.15 |
| Total | \$195.00 | \$53.50 | \$4.25 | \$3.50 | \$1.16 | \$257.41 |

** INCLUDES \$1.75M GRANT FROM MMSD

^Δ DOES NOT INCLUDE RESERVES

2013-2018 Relief and Relay

| | R/R Budget (million) |
|-------|-------------------------|
| 2013 | \$30.00 |
| 2014 | \$31.00 |
| 2015 | \$32.00 |
| 2016 | \$33.00 |
| 2017 | \$34.00 |
| 2018 | \$35.00 |
| Total | \$195.00 |



N. 26th St. and W. State St.

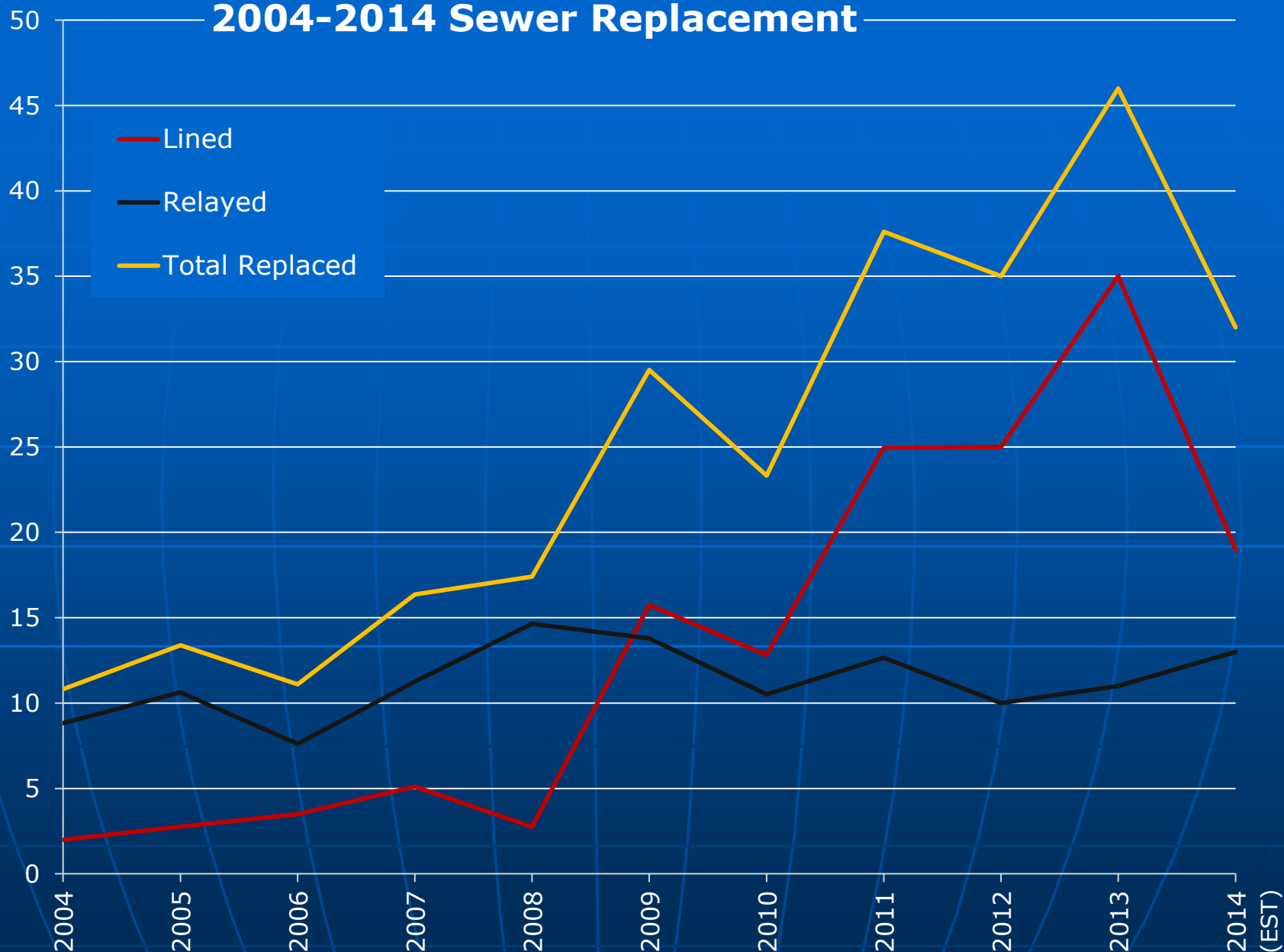
**126-INCH DIAMETER
SLIP LINER PROJECT**

City of Milwaukee, Environmental Engineering

2004-2014 Sewer Replacement

Miles

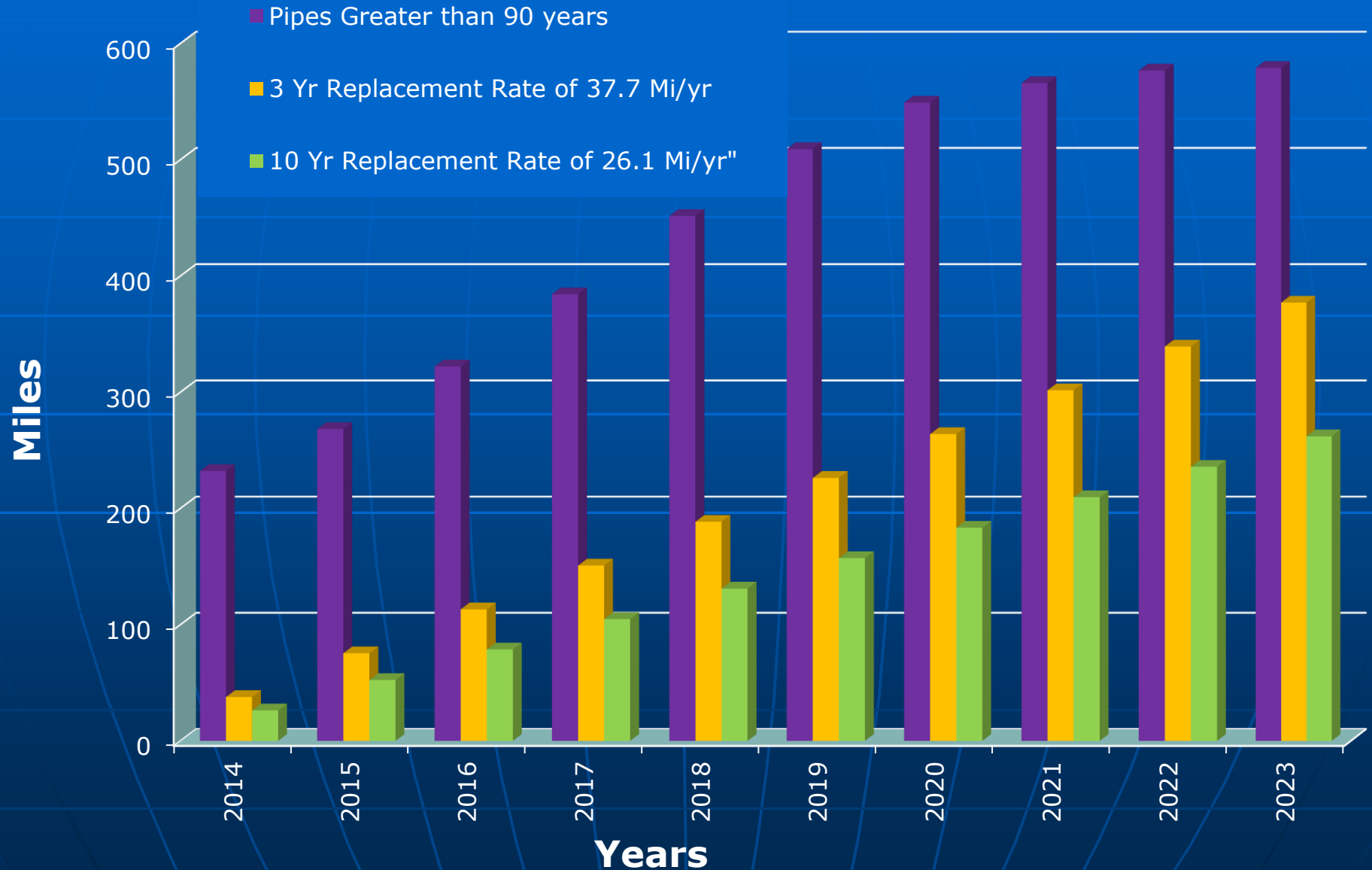
Lined
Relayed
Total Replaced



Age of Sewers

| Type of Sewer | < 50 Years | 51 to 90 years | > 90 Years | Total |
|---------------|---------------|----------------|---------------|---------|
| | (miles) | (miles) | (miles) | (miles) |
| Combined | 270 | 111.3 | 168.7 | 550 |
| Sanitary | 354.3 | 568.2 | 20.9 | 943.4 |
| Storm | 280.1 | 663.2 | 20.6 | 963.9 |
| Total | 904.4 | 1,342.7 | 210.2 | 2,457.3 |

Future Sewer Lengths needed to be rehabilitated that are greater than 90-Years Old 2014-2023

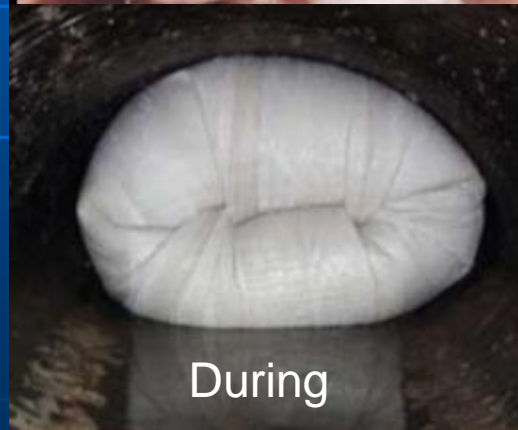


Sewer Replacement Information

- 210 miles of sewers that are greater than 90-years old
- With 2,457 miles of sewer in the City and an annual replacement rate of 26.1 miles our current sewer replacement rate is once every 94 years
- With 2,457 miles of sewer in the City and a useful sewer life cycle of 90 years the replacement rate needed to meet the 90 year useful life cycle is 27.3 miles annually

2013-2018 Inflow and Infiltration (I/I)

| | I/I Budget (million) |
|-------|-------------------------|
| 2013 | \$9.75 |
| 2014 | \$8.75 |
| 2015 | \$8.75 |
| 2016 | \$8.75 |
| 2017 | \$8.75 |
| 2018 | \$8.75 |
| Total | \$53.5 |

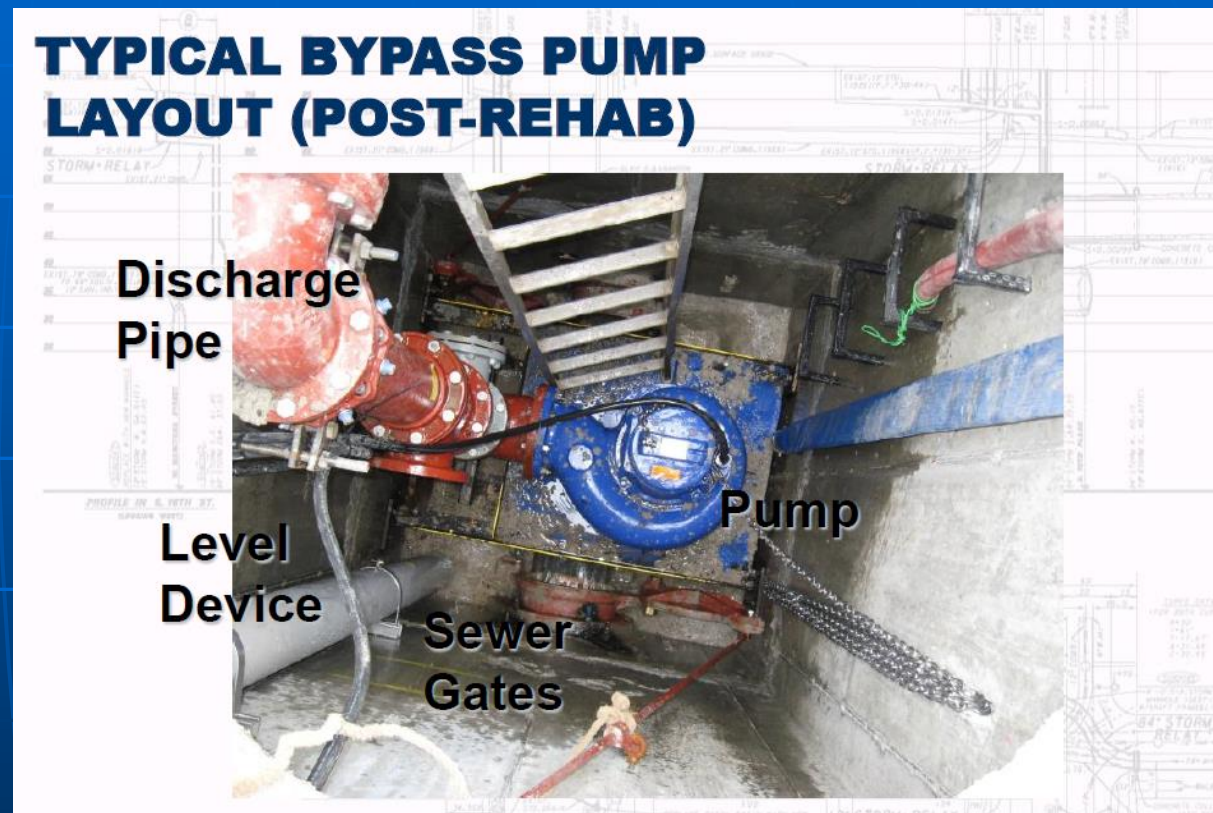


Purpose of Inflow and Infiltration (I/I) Projects

- To address higher flows in MMSD's non-compliant metersheds
- To reduce basement backups, remove unwanted clear rain water from sanitary sewers
- To reduce Sanitary Sewer Overflows (SSO)

2013-2018 Pump Rehabilitation

| | Pump Rehab (million) |
|-------|-------------------------|
| 2013 | \$0.75 |
| 2014 | \$0.70 |
| 2015 | \$0.70 |
| 2016 | \$0.70 |
| 2017 | \$0.70 |
| 2018 | \$0.70 |
| Total | \$4.25 |



Purpose of Pump Rehabilitation

- Flow is pumped from the sanitary sewer to a higher level sanitary sewer or a storm sewer to prevent basement backups.
- Rebuild existing pump sites, including new pump and components
- Maintain SCADA telemetry system
- Perform monthly pump checks and “load” tests at all sites

2013-2018 Water Quality Projects

| | Water Quality Projects (million) |
|-------|-------------------------------------|
| 2013 | \$ 0.50 |
| 2014 | \$ 1.00 |
| 2015 | \$ 0.50 |
| 2016 | \$ 0.50 |
| 2017 | \$ 0.50 |
| 2018 | \$0.50 |
| Total | \$3.50 |



West Grange Avenue Green Street Project

Purpose of Water Quality Projects

- Reduce Stormwater Peak Flows
- Improve Water Quality of Rivers and Lakes
- Improve Urban Aesthetics

Stormwater Studies

30th St. Corridor Regional Stormwater Study

- MMSD led study

Dineen Park Flooding Study

- MMSD, City of Milwaukee, Milwaukee County joint study
- Looking at green infrastructure opportunities in addition to traditional grey infrastructure

2013-2018 Channel Maintenance

| | Channel Maintenance (million) |
|-------|-------------------------------------|
| 2013 | \$0.16 |
| 2014 | \$0.20 |
| 2015 | \$0.20 |
| 2016 | \$0.20 |
| 2017 | \$0.20 |
| 2018 | \$0.20 |
| Total | \$1.16 |



Purpose of Channel Maintenance

- Remove large debris from channels and culverts to maintain proper drainage
- Clean sediments from channels
- Bank stabilization and outfall protection