

# City of Milwaukee Department of Public Works



## Sewer Maintenance Fund

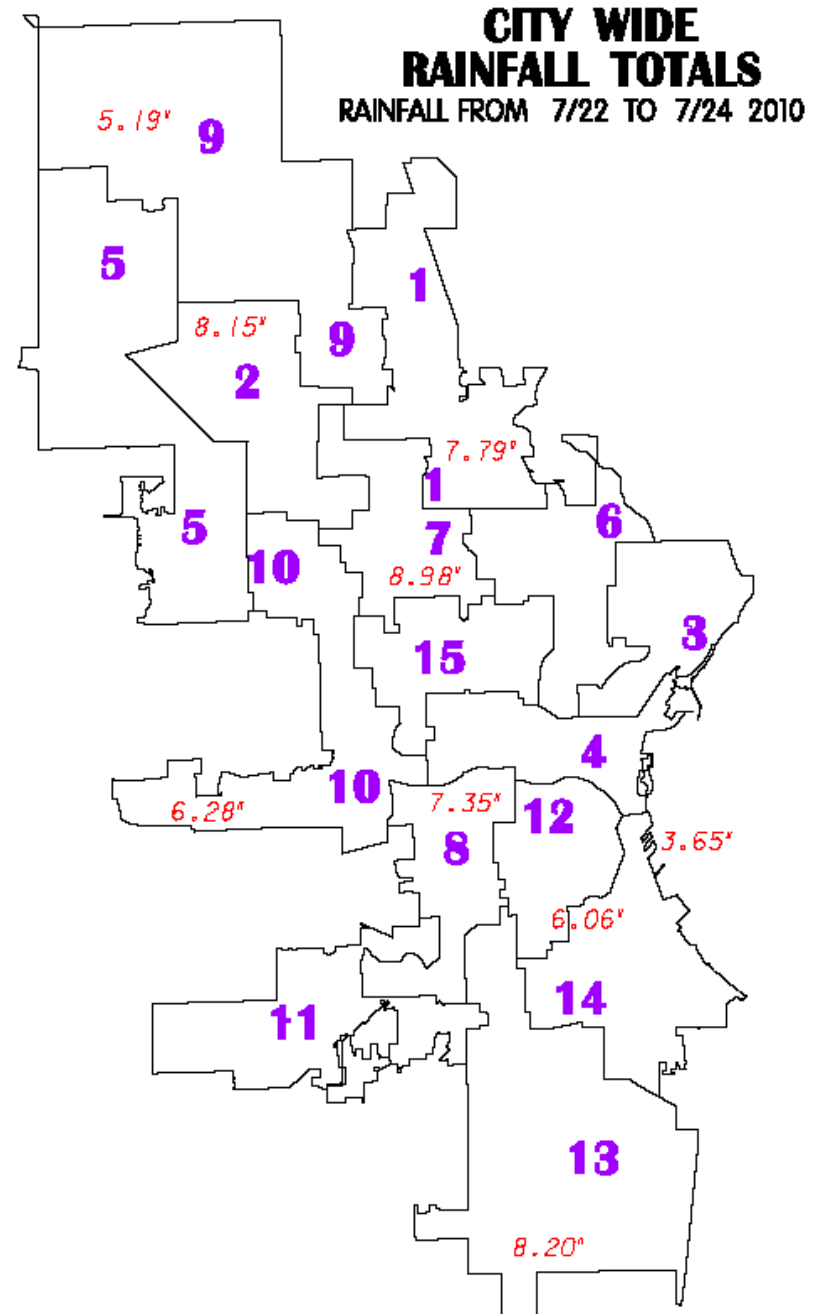
# Sewer Maintenance Flooding Responsibilities

## City Wide Backwaters

10,703 Backwater  
Complaints

By Aldermanic District:

1 <sup>st</sup>	1,859
2 <sup>nd</sup>	1,884
3 <sup>rd</sup>	287
4 <sup>th</sup>	125
5 <sup>th</sup>	1,075
6 <sup>th</sup>	786
7 <sup>th</sup>	2,158
8 <sup>th</sup>	63
9 <sup>th</sup>	669
10 <sup>th</sup>	740
11 <sup>th</sup>	44
12 <sup>th</sup>	63
13 <sup>th</sup>	256
14 <sup>th</sup>	65
15 <sup>th</sup>	629

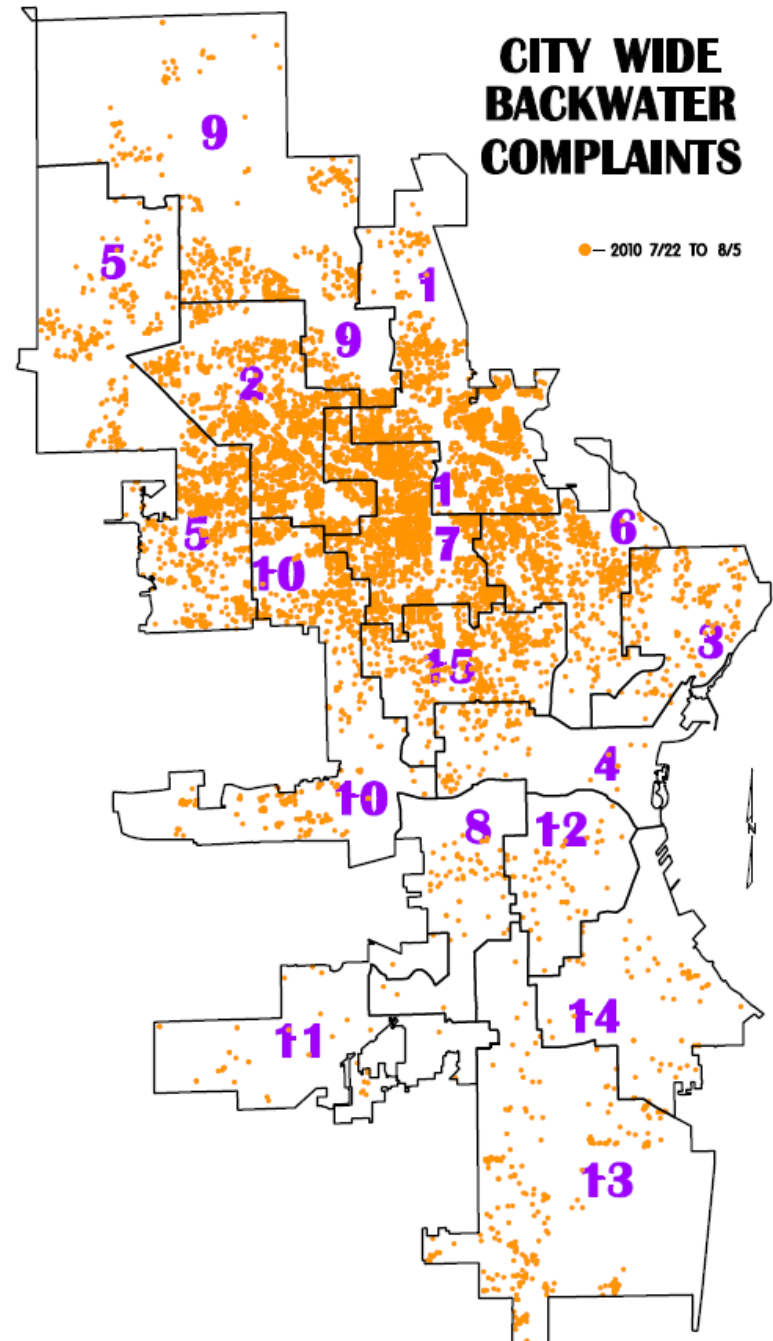


# Sewer Maintenance Flooding Responsibilities

## City Wide

## Backwaters Response

10,703 interviews  
conducted by DPW Staff



# 2010 Oakland and North Sinkhole



**\$2.2 Million Cost**

# 2010 Sewer Projects in Response to flooding

Project	Type	Cost
W. Bluemound Rd. – N. 79 <sup>th</sup> St to W. Bluemound Rd.	Relay and Tunneling	\$4,700,000
N. 26 <sup>th</sup> St at W. Vine St.	Sewer Re-Routing	\$700,000
Temporary Pumps Installed throughout the City	Pumping	\$120,000

**\* Future 2011 Sewer Projects**

# 2010 Sewer Projects



- Lateral and mainline lining in: Area Bounded by: W. Silver Spring Dr to Lincoln Creek from N. 27<sup>th</sup> St to N. 41<sup>st</sup> St, \$2.4 Million Cost
- Sewer Relay in N. 27<sup>th</sup> St from W. St. Paul Ave to W. State St, \$1.5 Million Cost
- A total of 10 miles of sewer was relayed and 13 miles of sewer cured-in-place lined in 2010

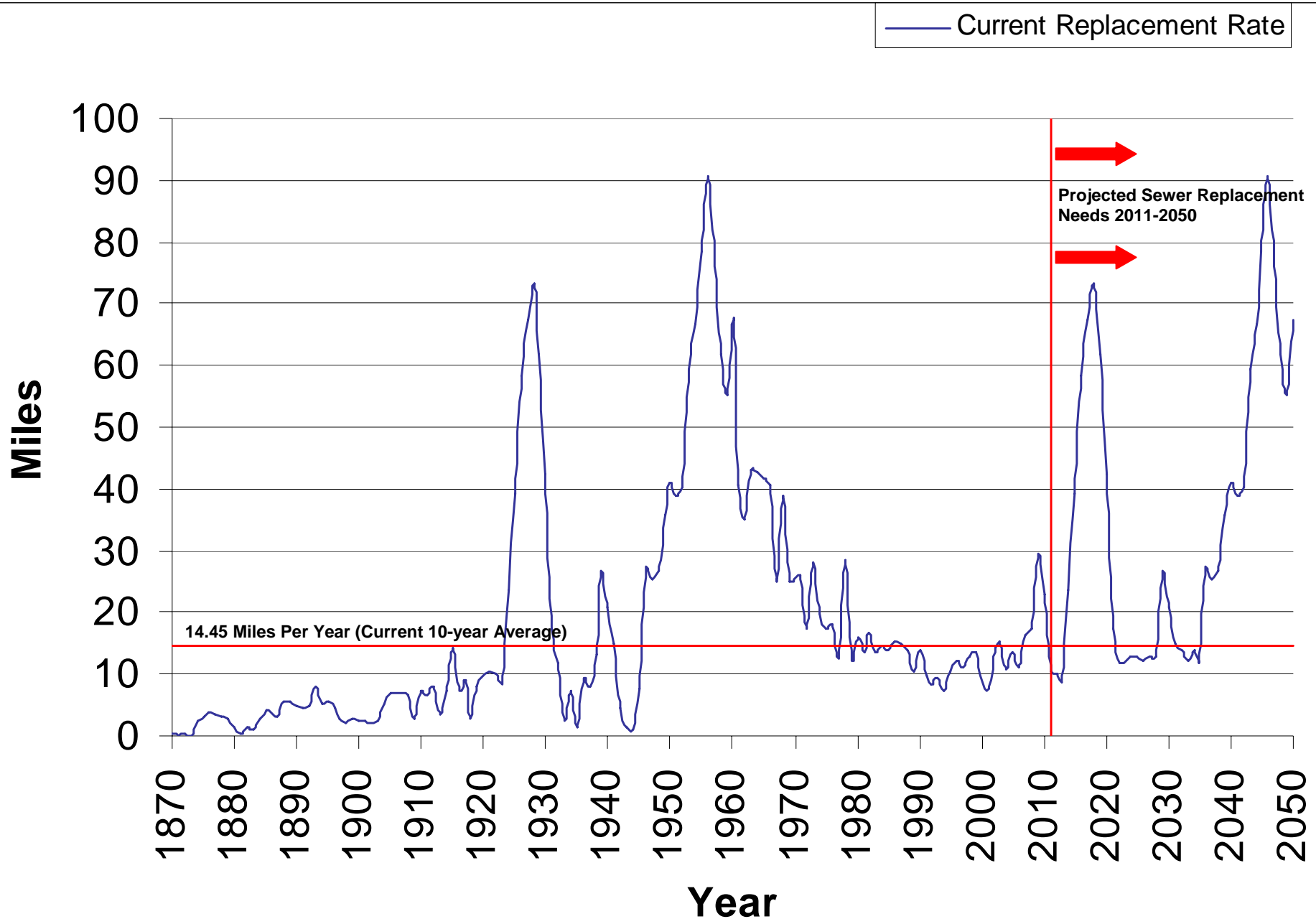
# Hartung Quarry Detention Pond Project

- Constructed in 2010 to remove total suspended solids (TSS)
- Total Cost \$700,000



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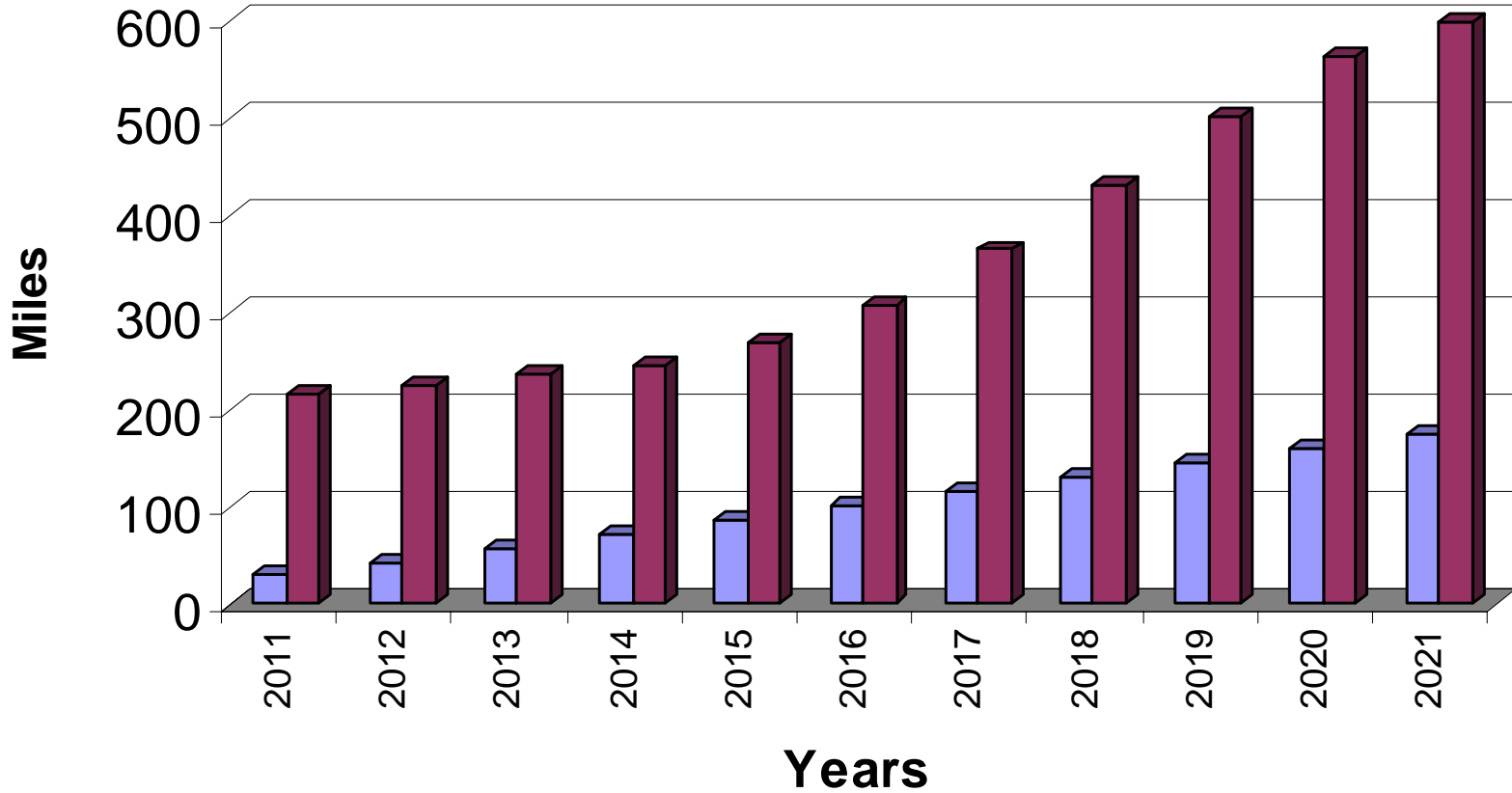
# Total Miles of Sewers Installed Per Year



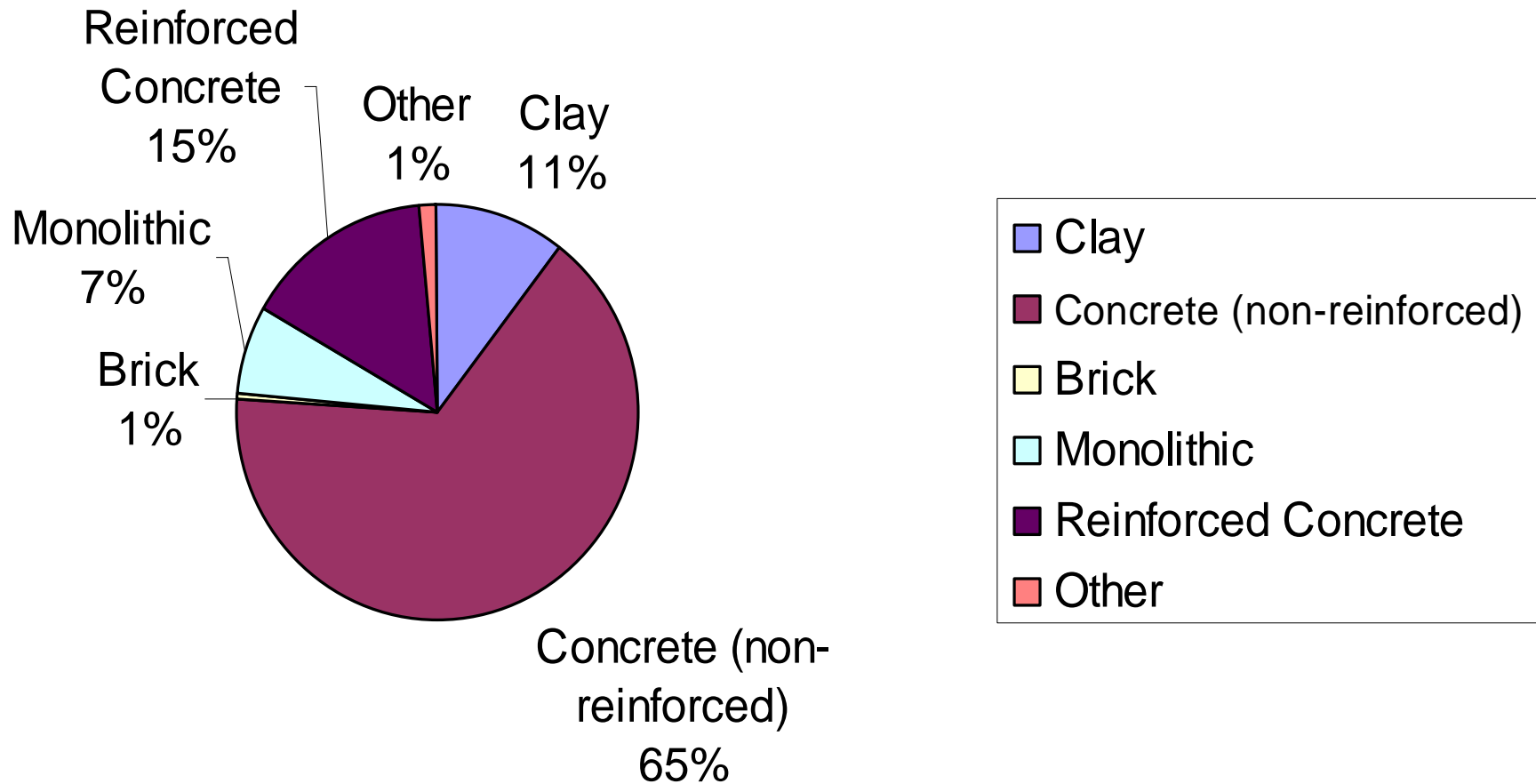


# Future Sewer Lengths Greater than 90-Years Old 2011-2021

- Current Replacement Rate of 14.45 Miles Per year
- Remaining sewers to be replaced that are over 90-years old in the next 10-years



# Pipe Materials Used in Sewer Construction from 1920-1935



\*Non-Reinforced Concrete Pipe has shown to decay at a much faster rate than other materials

# Sewer Replacement Information

- Over the past 10 years the average annual rate of replacement is 14.45 miles
- With 2,446 miles of sewers the current rate of replacement is 169 years ( $2,446 / 14.45$ )
- With a 90 year life expectancy 27 miles of sewer need to be replaced per year to meet the current life expectancy ( $2,446 / 90$ )

## Replacement Costs

- Assuming \$225 per foot replacement cost, \$31 million is needed annually to meet the current life expectancy

# 2011 PRELIMINARY SEWER PROGRAM

Summation of Sewer Projects Programmed for 2011

Program Cost

## Sewer Maintenance Relay

I.	Paving Related Projects	\$6,535,000
II.	Non-Paving Related Projects	\$16,265,000
III.	Preliminary Engineering for 2012 Projects	\$400,000
IV.	Fringe Benefits	\$800,000
	<b>Total Sewer Maintenance Relay</b>	<b>\$24,000,000</b>

## BMP for TSS Reduction (NR151)

I.	TSS Removal	\$495,000
II.	Fringe Benefits	\$5,000
	<b>BMP for Storm water Quality</b>	<b>\$500,000</b>

## Sanitary Pump Rehabilitation Project

I.	Sanitary Bypass Pump Rehabilitation	\$750,000
II.	Sanitary Bypass Pump Inspection	\$200,000
III.	Fringe Benefits	\$50,000
	<b>Sanitary Pump Rehabilitator</b>	<b>\$1,000,000</b>

## I/I Reduction Projects

I.	I/I Reduction Projects	\$10,633,000
II.	Fringe Benefits	\$500,000
III.	MMSD Grants And Aid*	\$2,800,000
IV.	Assessable Private Property Work	\$400,000
	<b>Total I/I Reduction Projects</b>	<b>\$14,333,000</b>

**Total 2011 Preliminary Sewer Program**

**\$39,833,000**

# 2011 Inflow and Infiltration (I/I) Program

\* These projects help to reduce basement backups to residents

- \$11.0 Million for lateral Inspection, Lateral Rehabilitation, and Foundation Drain Disconnection
- \$3.0 Million for Manhole Rehabilitation

Total = \$14.0 Million



Questions???