CITY OF COLUMBIA

PROPOSED
SEWER BALLOT
2013

PROBLEMS

- Aging Infrastructure
- Private Common Collector Sewers
- Inflow and Infiltration

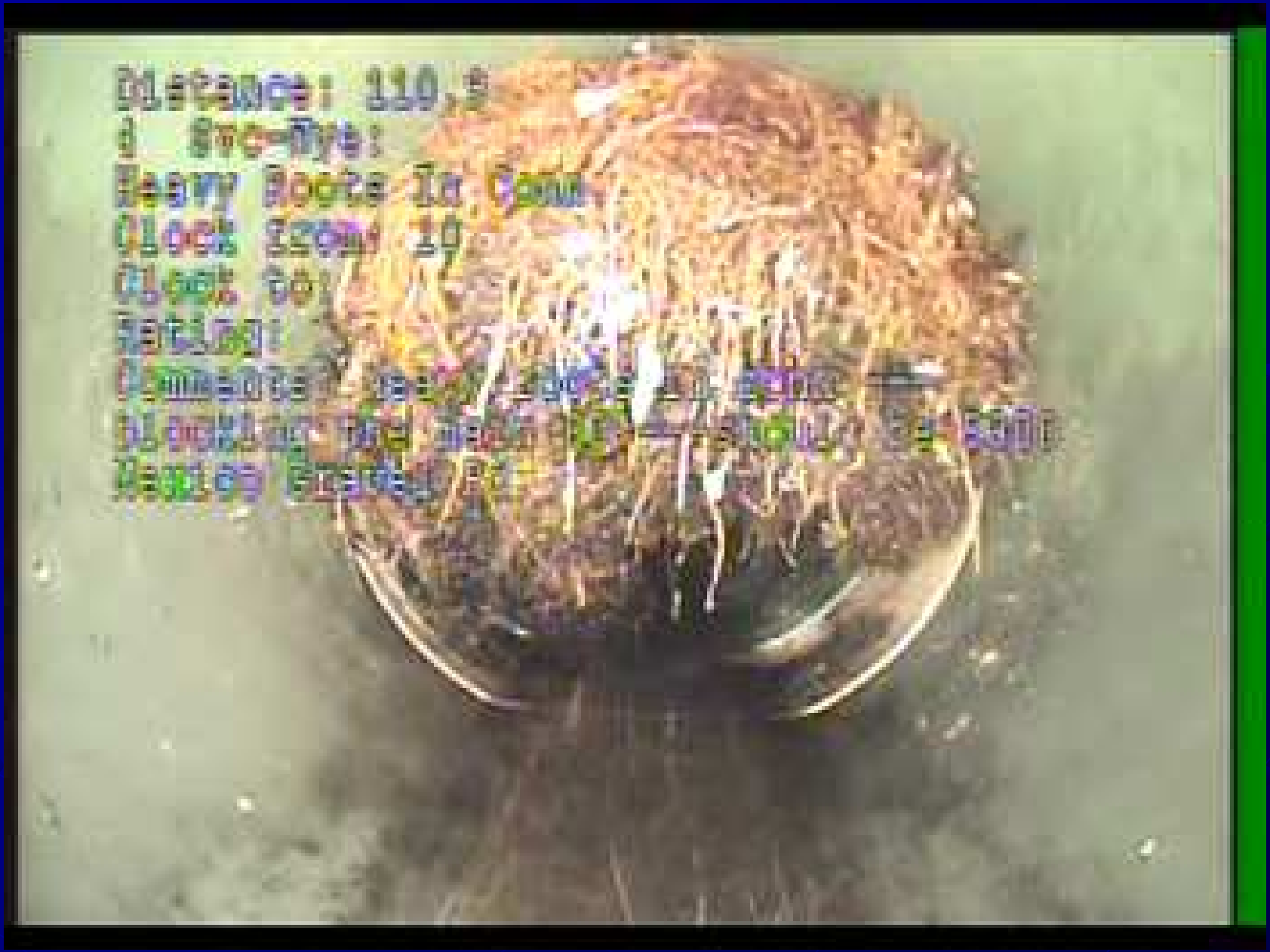
PROBLEM - AGING INFRASTUCTURE and PRIVATE COMMON COLLECTOR SEWERS

- Sanitary Sewer Collection System has:
  - 675 miles of gravity sewer lines
  - 17,717 manholes and cleanouts
  - 25 pump stations
  - 22 miles of force main
- Approximately 30% of the system exceeds 50 years of age with portions exceeding 100 years.
- Over 175 miles of the system has exceeded its expected life.
- Approximately 8 miles of private common collector sewers

Devine Court

Broken main at lateral connection

Manhole in Need of Rehabilitation



Wyatt Lane

Roots in main line protruding from lateral connection

Wyatt Lane

Roots in lateral connection after main has been cleaned.

BEFORE

AFTER

Solution to Aging Infrastructure

- Continue sewer main and manhole rehabilitation and/or replacement program
  - Bond issue would fund a 5 year program to rehabilitate sewer mains and manholes that are in structurally poor condition.

AGING INFRASTRUCTURE

Before

After

Solution to Private Common Collector Sewers

- Bonds will finance a 5 year continuation of the Private Common Collector Elimination program to replace PCC with new public sewers.

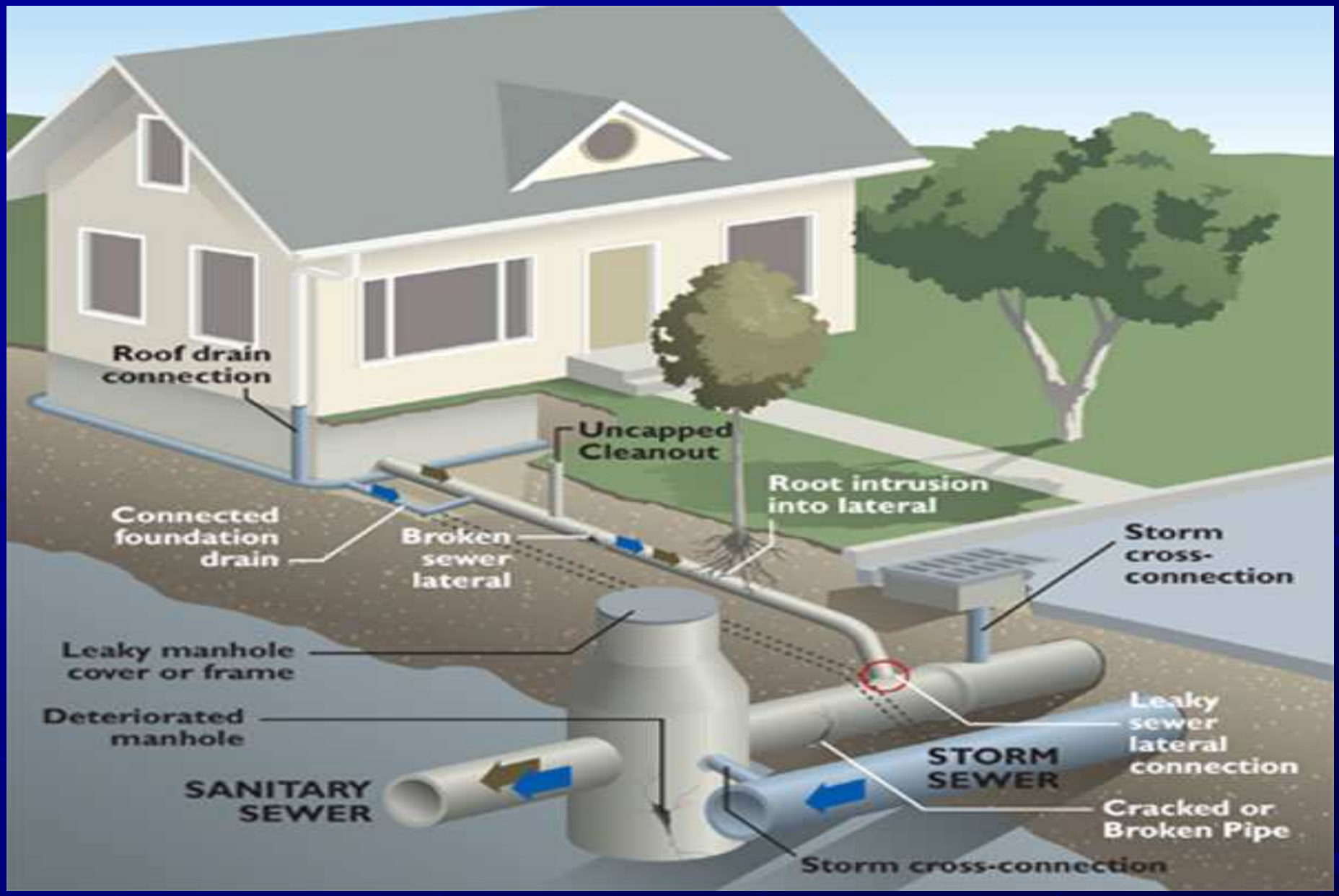
Stewart & Medavista
Thilly & Lathrop
Wilson & High
Maplewood
Wilson & Ross
Calvert Drive

Cliff Drive
Spring Valley Road
Bingham & West Ridgely
Ridgemont
Westwood

PROBLEM – INFLOW AND INFILTRATION

Also known as I&I, this is term that describes the entry of ground water and storm water into the sanitary sewer collection system.

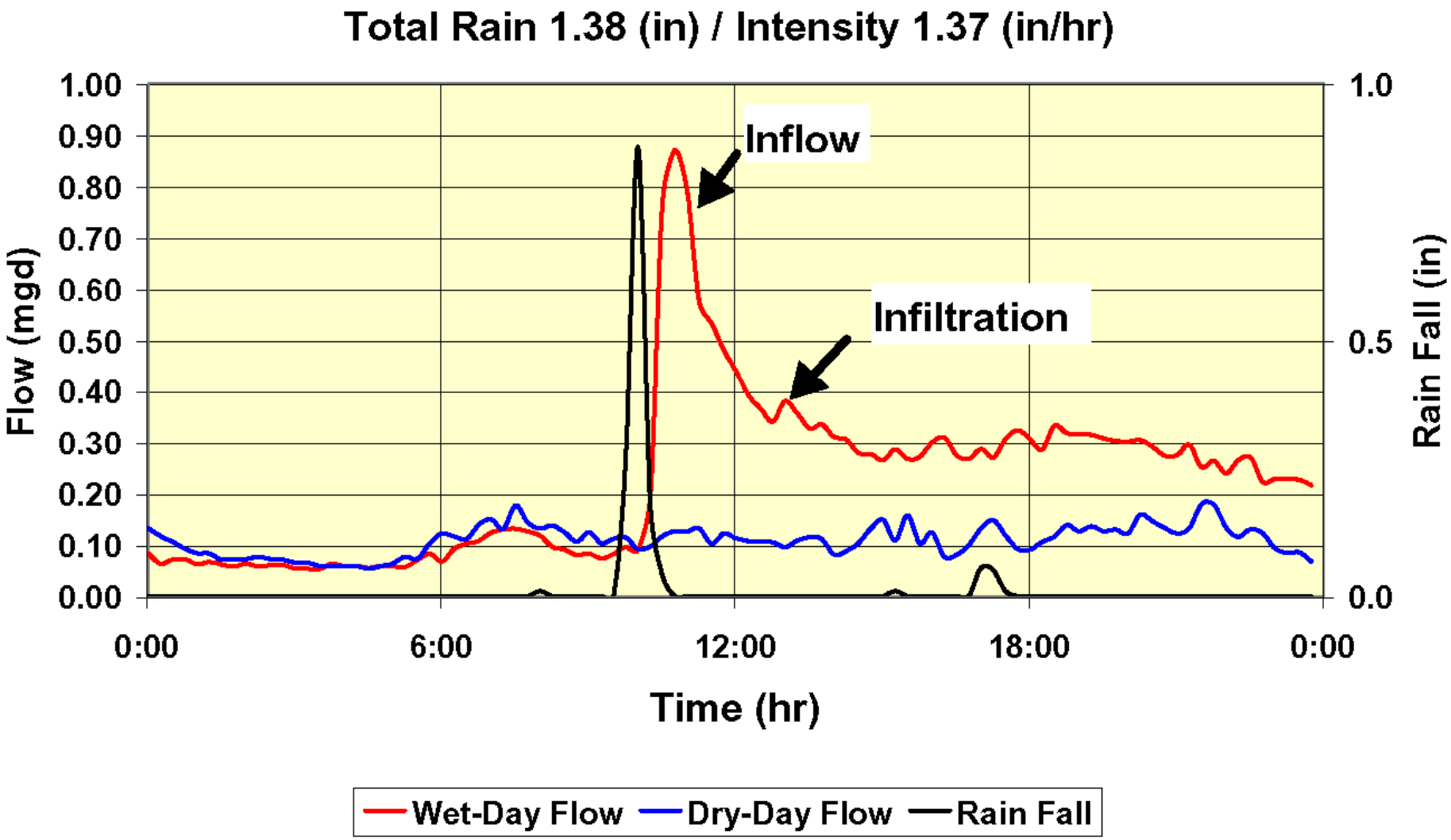
I&I SOURCES

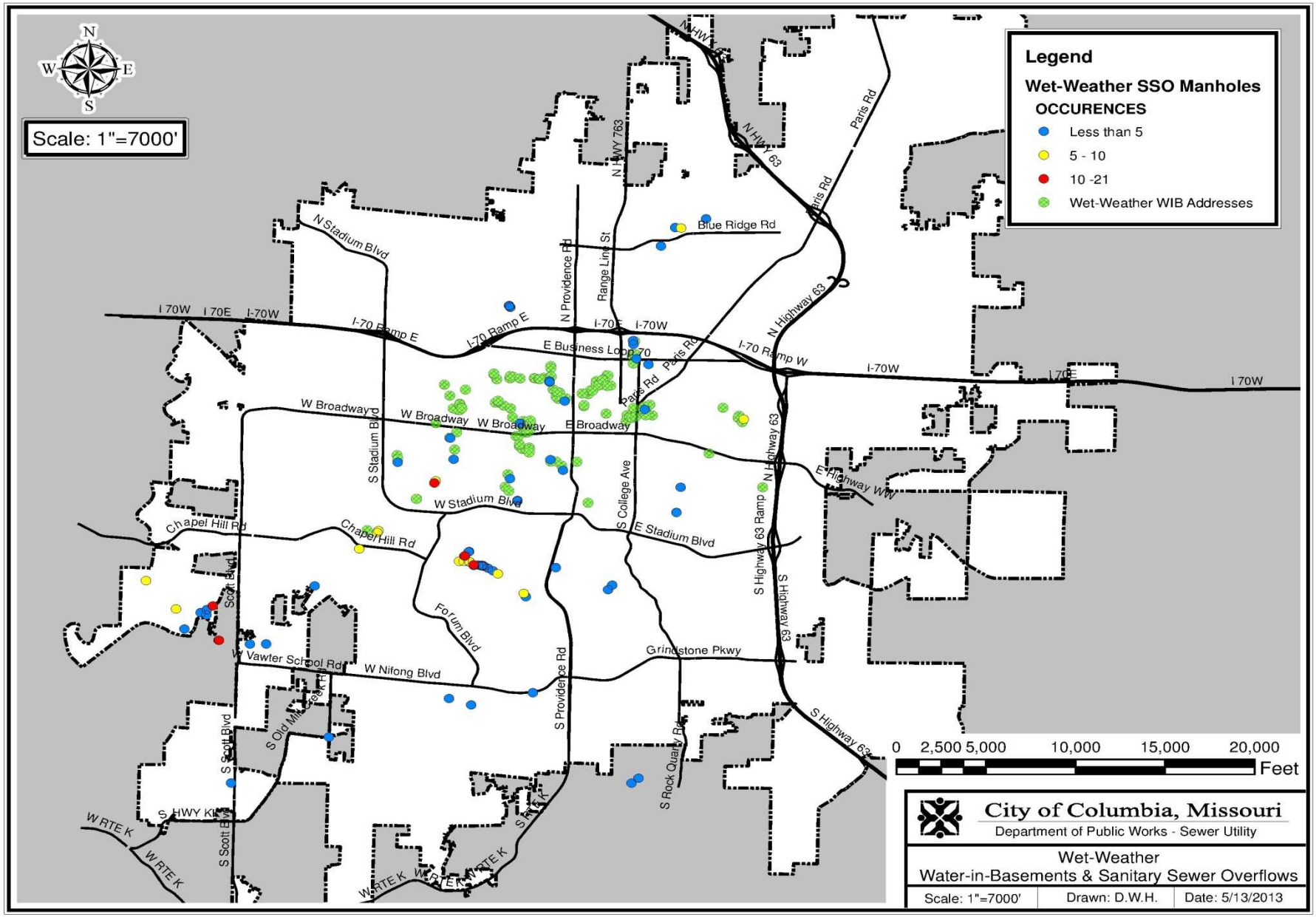

Roof drain connection
Uncapped Cleanout
Root intrusion into lateral
Connected foundation drain
Broken sewer lateral
Storm cross-connection
Leaky manhole cover or frame
Deteriorated manhole
Leaky sewer lateral connection
STORM SEWER
SANITARY SEWER
Cracked or Broken Pipe
Storm cross-connection

WHY IS THIS A PROBLEM

- WWTP does not have the capacity to treat the volume of wastewater being conveyed to it.
- Results in Sanitary Sewer Overflows and Backups into Buildings
  - 308 SSOs since October 1, 2008
  - 71 reported backups since October 1, 2008
- Violates Federal and State Clean Water Laws
- Public Health Issue
- Provides poor service to the sewer customers and the community as a whole.

Dry Flow vs. Wet Flow




Legend
Wet-Weather SSO Manholes
OCCURENCES
Less than 5
5 - 10
10 -21
Wet-Weather WIB Addresses
Scale: 1"=7000'
N
S
E
W
0 2,500 5,000 10,000 15,000 20,000
Feet
City of Columbia, Missouri
Department of Public Works - Sewer Utility
Wet-Weather
Water-in-Basements & Sanitary Sewer Overflows
Scale: 1"=7000'
Drawn: D.W.H.
Date: 5/13/2013
N Stadium Blvd
Blue Ridge Rd
N Providence Rd
Range Line St
N HWY 763
N HWY 63
Paris Rd
N Highway 63
I 70W
I 70E
I-70 Ramp E
I-70 Ramp W
E Business Loop 70
W Broadway
E Broadway
S Stadium Blvd
W Stadium Blvd
E Stadium Blvd
S College Ave
Chapel Hill Rd
Scott Blvd
Forum Blvd
W Vawter School Rd
W Nifong Blvd
Grindstone Pkwy
S Providence Rd
S Highway 63
S Highway 63 Ramp
E Highway WW
S Old Mill Creek Rd
S Rock Quarry Rd
S HWY KK
W RTE K
S RTE K

SSO = Sanitary Sewer Overflow

308 SSOs due to wet weather from October 1, 2008 to May 15, 2013

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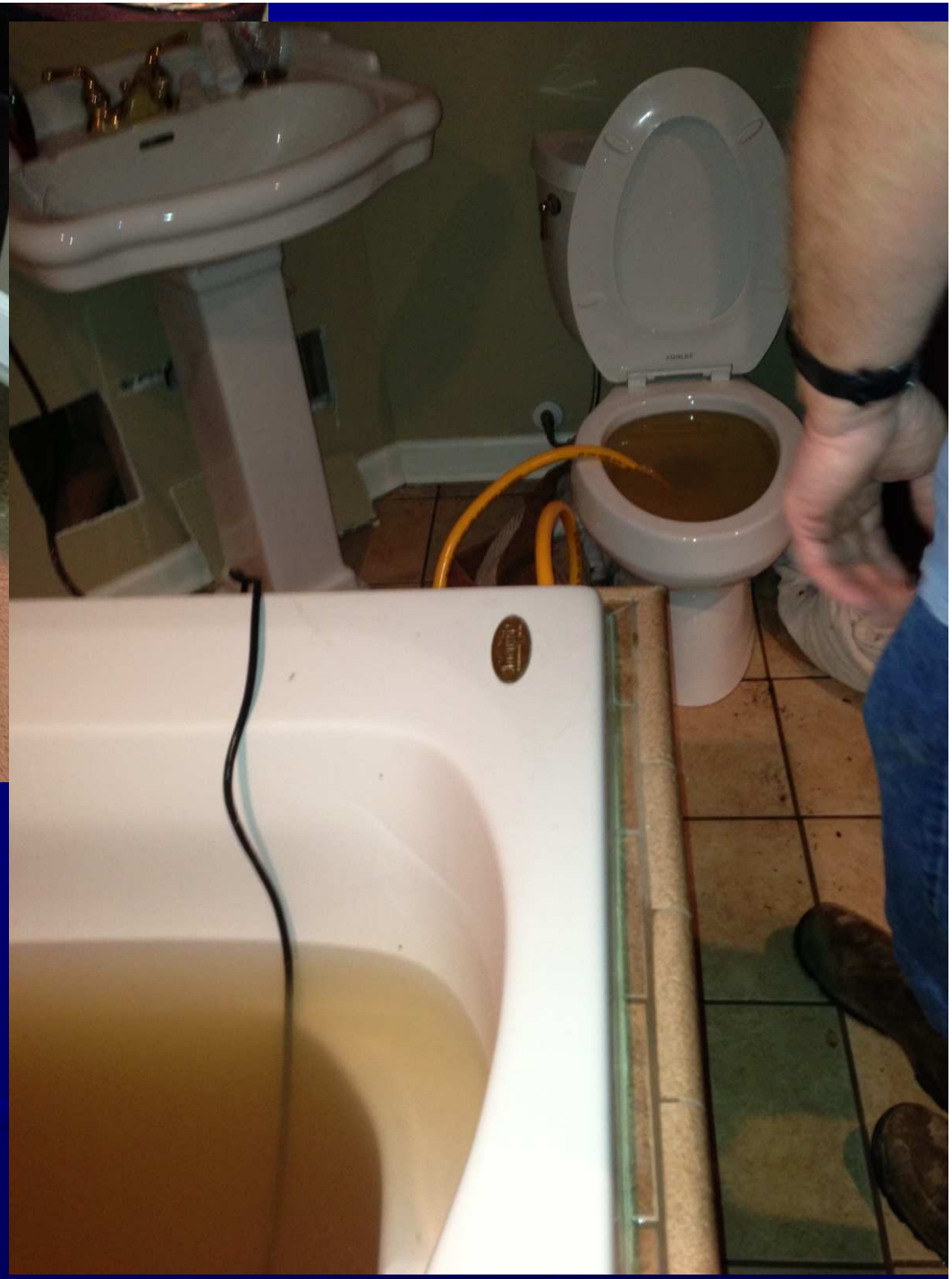


Spring Valley Road

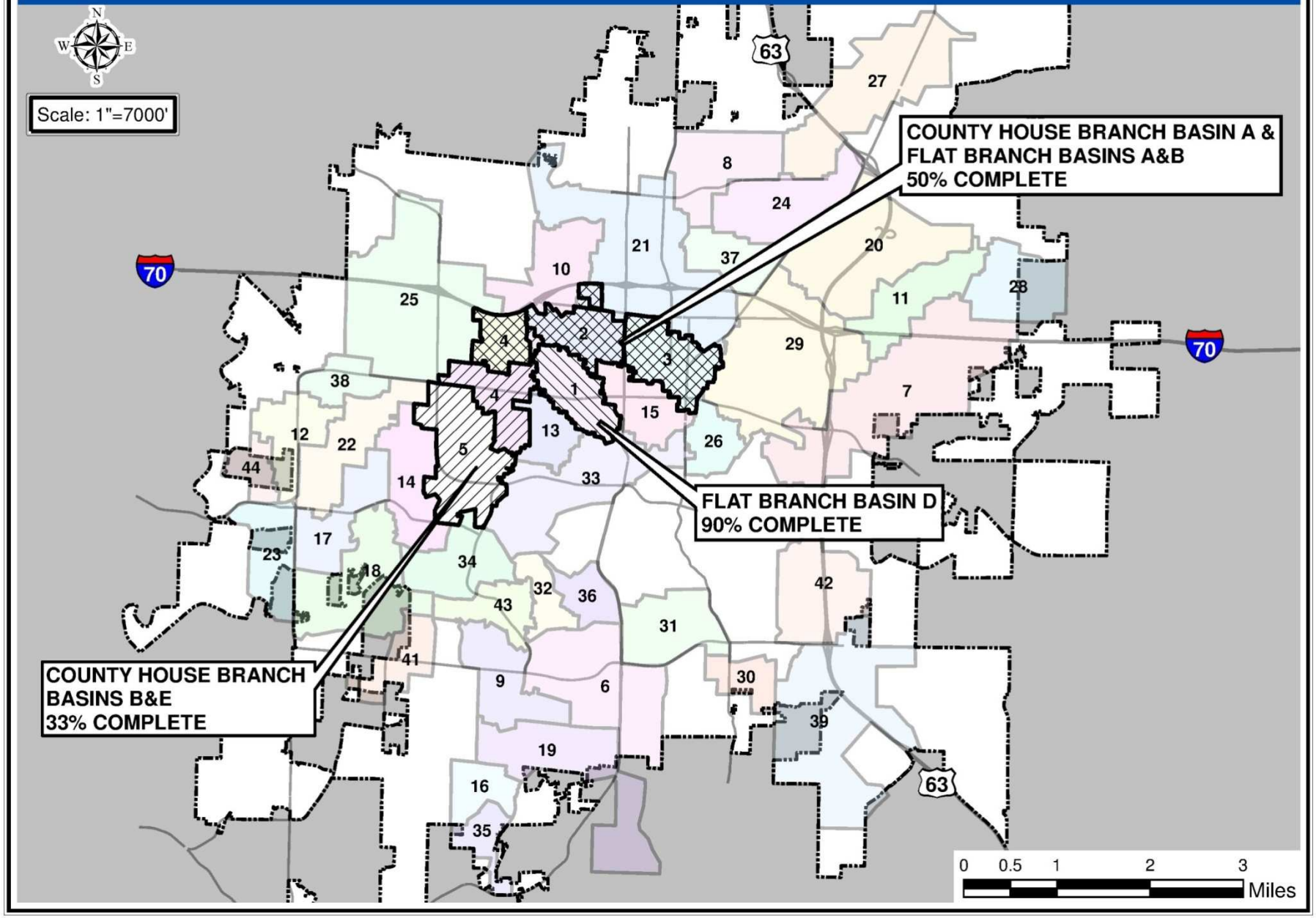
Sewer backup in basement Spring 2013.

71 reported sewer backups into buildings due to wet weather events from October 1, 2008 to May 15, 2013.

Solution to Inflow and Infiltration

- Bonds will finance a 5 year program to reduce inflow and infiltration into the sanitary sewer collection.
- Achieved by performing work in individual sewer basins. Work includes
  - Identification of I&I sources, both public and private.
  - Elimination of illegal connections, downspouts, sump pumps, area drains, etc.
  - Rehabilitation of sewer lines and manholes in each basin.
  - Monitoring to determine effectiveness of the program

I&I REDUCTION BASINS



Goals of Inflow and Infiltration Reduction

- Reduce the peak flow in each individual sewer basin to a level that eliminates all sanitary sewer overflows and backups into buildings in the individual basins.
- Reduce peak flow to the WWTP to eliminate overflows near the WWTP
- Worth noting that it may be necessary for the City to reevaluate service lateral responsibilities to achieve these goals. To be determined as monitoring is completed.

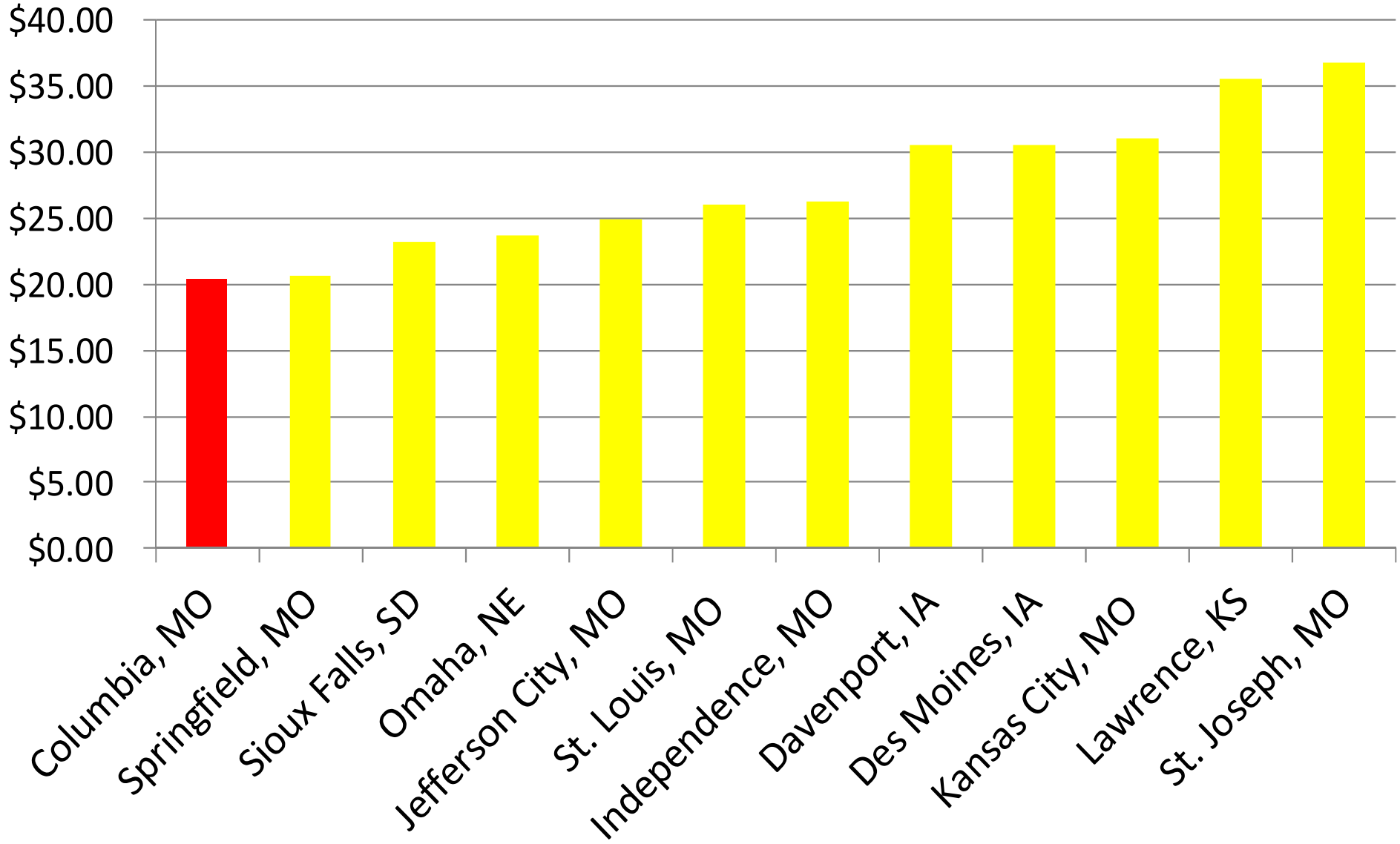
2013 Proposed Bond Issue

Inflow and Infiltration Reduction	**$16.0 Million**
Sewer Main & Manhole Rehab	**$3.5 Million**
Private Common Collector Elimination	**$3.9 Million**
WWTP Digester Improvements	**$4.1 Million**
Bond Financing Cost	**$0.5 Million**
Total	**$28 Million**

Columbia User Rate Increases

	Avg Monthly Residential Charge	Avg Monthly Increase
FY2013 (current)	$24.20	
FY2014	$26.14	$1.94
FY2015	$27.70	$1.56
FY2016	$27.70	$0.00
FY2017	$29.09	$1.39
FY2018	$29.09	$0.00

2012 Sanitary Sewer Monthly Residential User Rates



QUESTIONS?