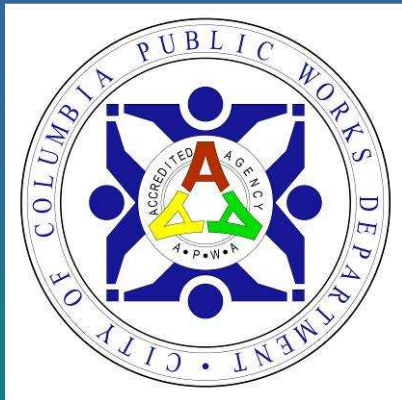


Stormwater Utility

City of Columbia
Public Works Department

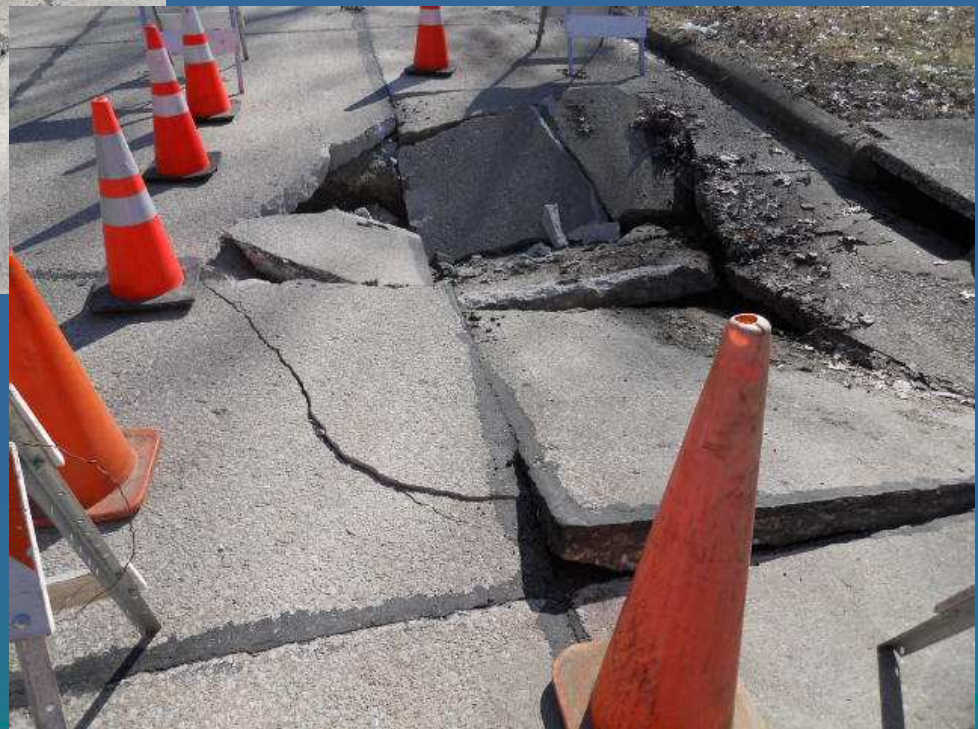


The Problems

- Failing infrastructure
 - Rusted out metal pipe
 - Severe erosion threatening streets and utilities
- Flooding Streets and Homes
- Water quality
 - Water quality issues concern citizens regardless of regulations
- Regulations
 - More and more stringent control of stormwater quality is required by state and federal regulations

Failing Infrastructure

- 200+ miles of storm drainage pipes
- 10 miles storm drainage boxes
 - Corrugated Metal Pipe (CMP) has 40 year life span
 - Majority of pipe is CMP installed in 1960's.
- 10,000+ curb inlets, junction boxes, catch basins
 - Brick construction is failing
 - Those around failing pipes are also failing
- Many drainage structures are more than 80 years old - past their service lives AND undersized
- 20 major storm system failures since Oct 1, 2012
 - Repairs need to happen this year
 - Utility funds a single crew for repairs AND maintenance



Bourn Avenue



Bourn Avenue
Expedited Repair

1960's vintage stormwater systems are beginning to fail

Sinkhole from corrugated metal pipe failure in July 2010



Person for scale

Sinkhole was 15 feet deep and next to a building.

Business Loop E – Big O Tire
EMERGENCY repair = big \$\$



Worley & Stadium – old WalMart site
Sinkhole due to storm pipe failure



Failed pipe from WalMart site downstream!



Hitt & Elm
Chronic sinkhole due to failing storm pipe – still in service



Jenni Lane
Sinkhole due to failing storm pipe – still in service

Out of sight out of mind



Hole in bottom of pipe from rust



Chateau Road – still in service
Photo taken May 2013



Boyd Lane still in service

Rollins Road just east of Stadium



Note water running out through holes in bottom of pipe.

Still in service

Downstream end of Quail Drive



Water pouring through holes rusted in bottom of pipe

Erosion extends far upstream under pipe.

Still in service



Bray Avenue still in service



Middlebush
Still in service



Sinclair Road
Replaced in 2010



Worley Street at Health Department
Failing inlet box – still in service

Garth Avenue near Sexton Road

Steel, which holds
concrete together
is badly rusted.



Still in service

Photo taken 10 years ago.

Inside Top of Rectangular “Pipe” near Broadway and Providence

**Steel bars, which
hold the concrete
together, are rusting**

Still in service





E Walnut at Ann Street

Bottom gone, cracked walls, brick columns holding up roof under E Walnut
Replaced in 2011





5th & Locust

Utility conduits through storm
Box still in service





Old Nifong
Failed pipe causing flooding



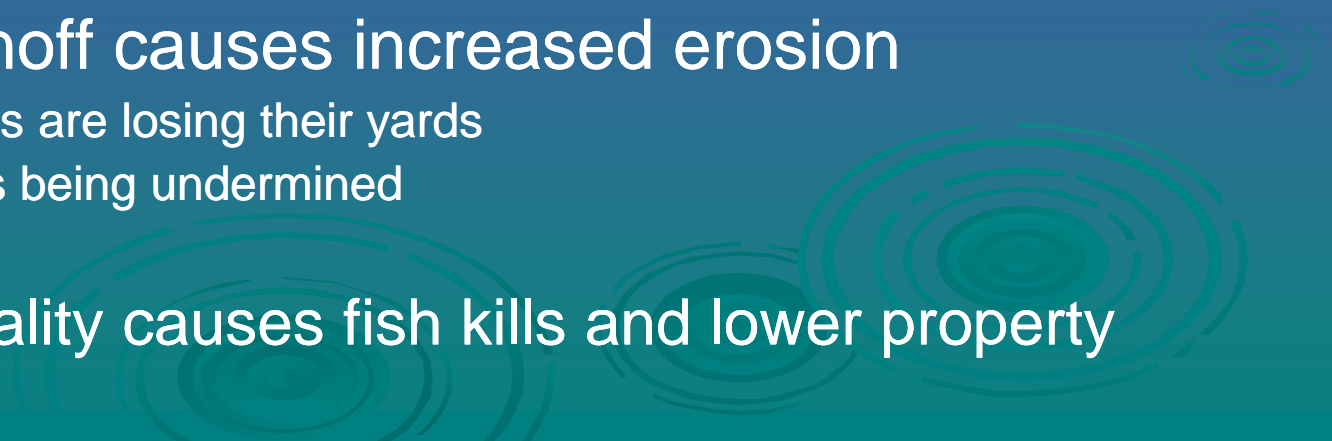
Old Nifong
Replacing pipe April 2013

Solution to Failing Infrastructure

- Provide funding to replace failing pipes and inlets before they become an emergency.



Flooding Streets and Homes and Water Quality

- Increased impervious surfaces increases stormwater runoff
 - Older structures are not sized per today's standards and cause street and house flooding
 - Street flooding damages the roadway and creates hazardous situations
 - Increased runoff causes increased erosion
 - Property owners are losing their yards
 - Infrastructure is being undermined
 - Poor water quality causes fish kills and lower property values
- 



Scott Boulevard at MKT Trail



Rolling Hills Road
Street damage after flooding



University Park Subdivision

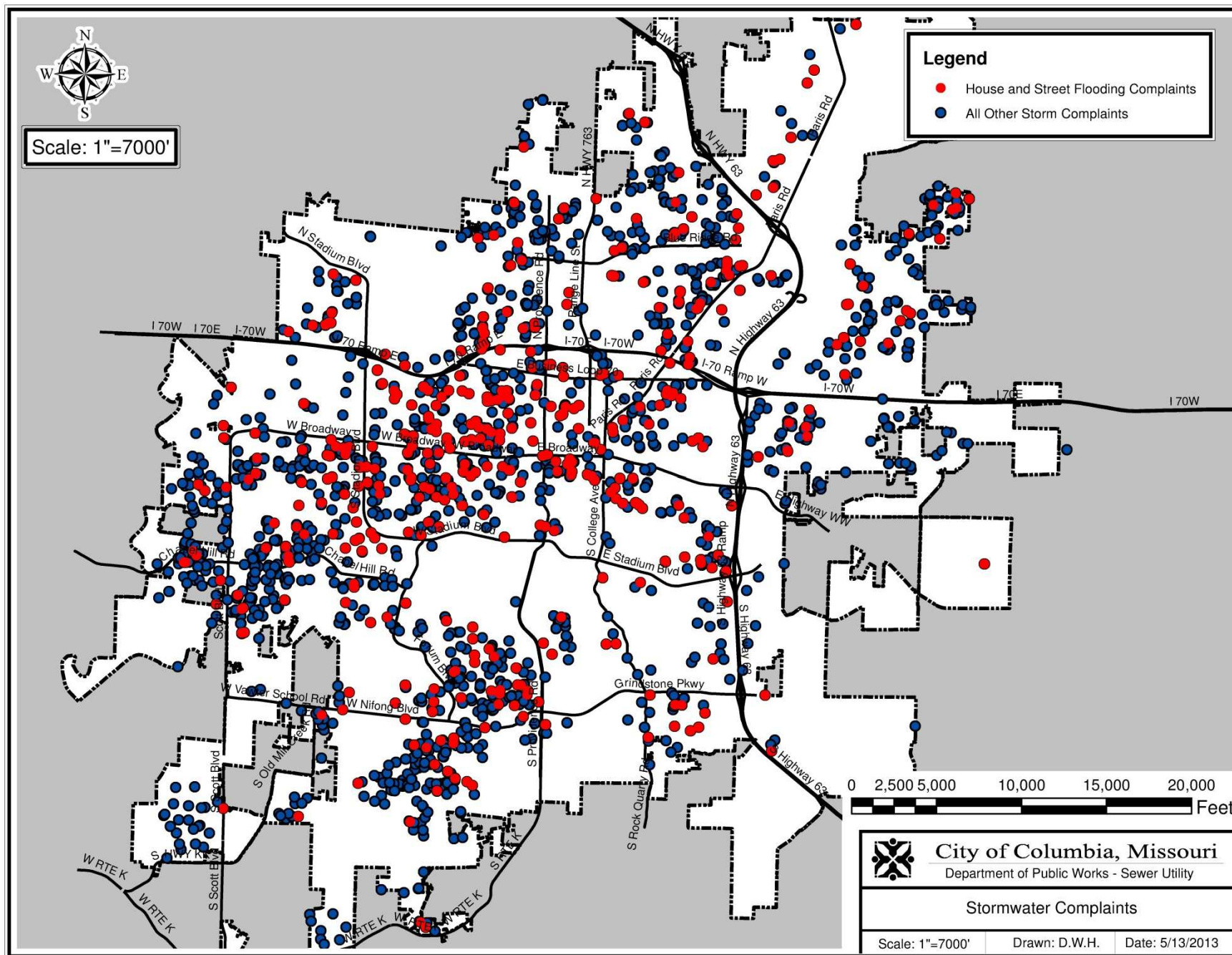
Erosion is undermining our existing infrastructure and costing big \$\$\$.



Scale: 1"=7000'

Legend

- House and Street Flooding Complaints
- All Other Storm Complaints



60+ CIP Projects Completed Since 1993

Garth & Sexton

Mill Creek Phase I & II

Walnut-Bicknell- Aldeah

Richmond-Kentucky

Brandon Road

N. Parklawn Ct

Doris Drive

Concordia

Westridge

Hardin-Mikel Donnelly I &II

Alton I & II

Detention Basins

Parkade Heights

Rutledge Wehmeyer

Defoe

Worley Again

Brown Station Road

Lynn & Oak

Hamlet

Harvard


Paris & Ann

Rollins & Rothwell

Completed Water Quality Projects

- Fire Stations 7, 8, 9
 - Bioretention / Raingardens
 - Porous asphalt at FS 7
- Health Department on Worley
 - Infiltration trench
 - Depressed island raingardens
- Leroy Anderson Salt Storage Facility
 - Bioretention
- Forum Blvd to Old Plank Road; Vandiver Drive, Providence Road, Mexico Gravel Road
 - Water quality cells
- Other CIP Storm Drainage projects
 - Infiltration trenches
 - Bioretention
- Harvard
 - Bulb out raingardens
- Providence South Bikeway
 - Work with Parks & Rec to install 18 raingardens
- Parkside Mulch Site
 - Level spreader
- Rollins & Rothwell
 - Bioretention
- Forum Nature Area
 - Level Spreader
- Grissum Building
 - Bioretention
 - Underground detention

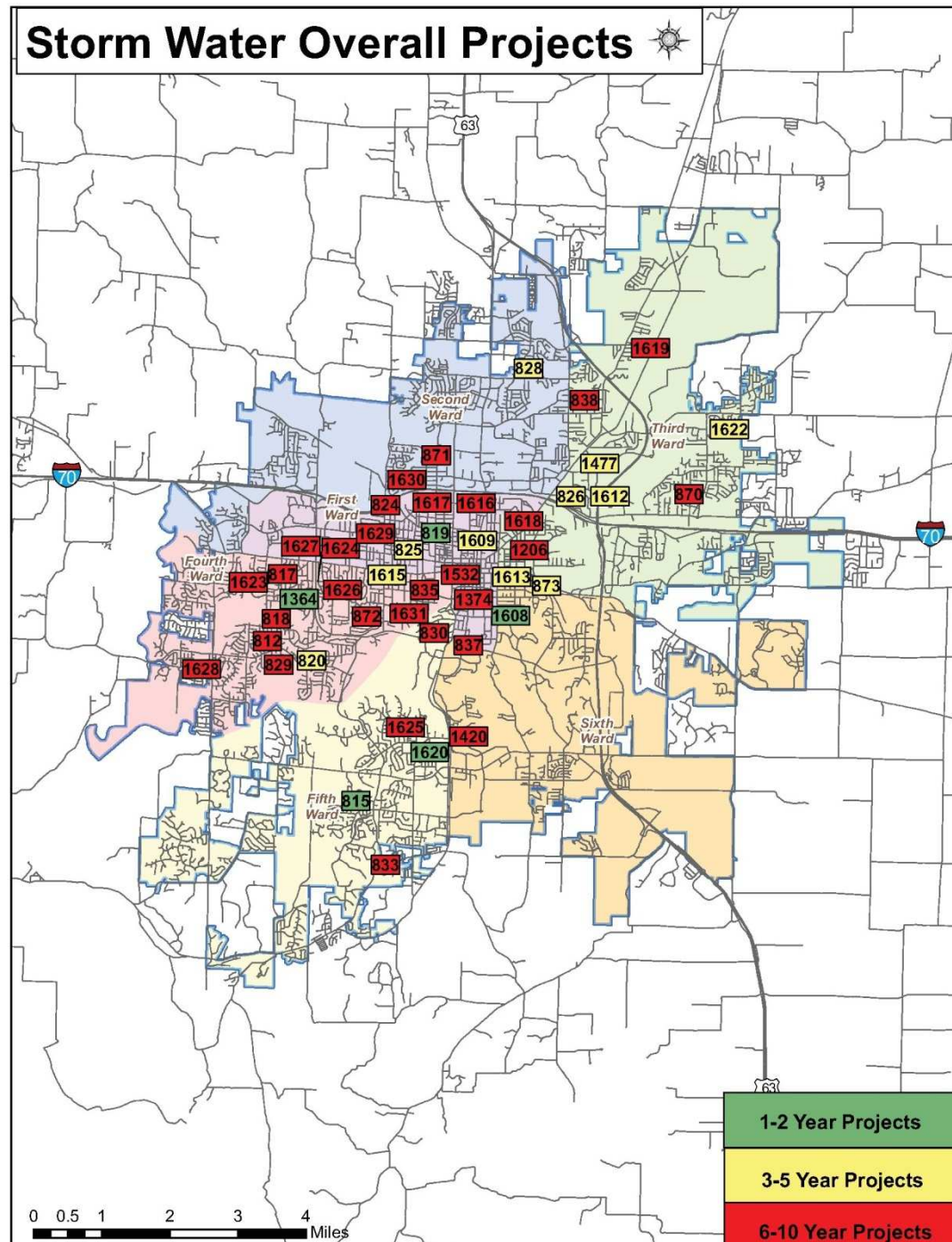
Current Solutions

- Floodplain management
 - Tree preservation
 - Stream buffers
 - Regulation for development
 - Education
- 

MORE SOLUTIONS – PROPOSED IMPROVEMENT PROJECTS


- Calvert Drive Water Quality
- Forum Nature Area
- Mill Creek Phase 3 & Detention Retrofit
- Downtown Tree Planters
- Flat Branch Basin Inventory & Modeling
- Flood Plain Mapping
- Sexton & McBaine
- Hitt & Elm
- 5th & Elm to 6th
- 6th & Hickman
- Vandiver & Sylvan
- 7TH & Locust to 8TH & Cherry
- Rockhill Road
- Rollins at Rock Creek
- Capri Estates
- Martinshire Drive
- Greenwood Stewart Phase II
- Royal Lytham – Fallwood
- Lakeshire Estates Lake Modification
- Oak Forest Detention Retrofit
- Bray - Longwell
- Wilson - Ross





Stormwater Goals

We want:

- ✓ safe infrastructure to support community activity
 - ✓ flood control and safe passable roads
 - ✓ clean water to benefit the life of our community
 - ✓ all aspects of stormwater managed in a cost efficient way
- 

Solutions

\$3 million annually in additional funding would:

- Construct Proposed Project List
- Address failing infrastructure
- Incorporate water quality improvements

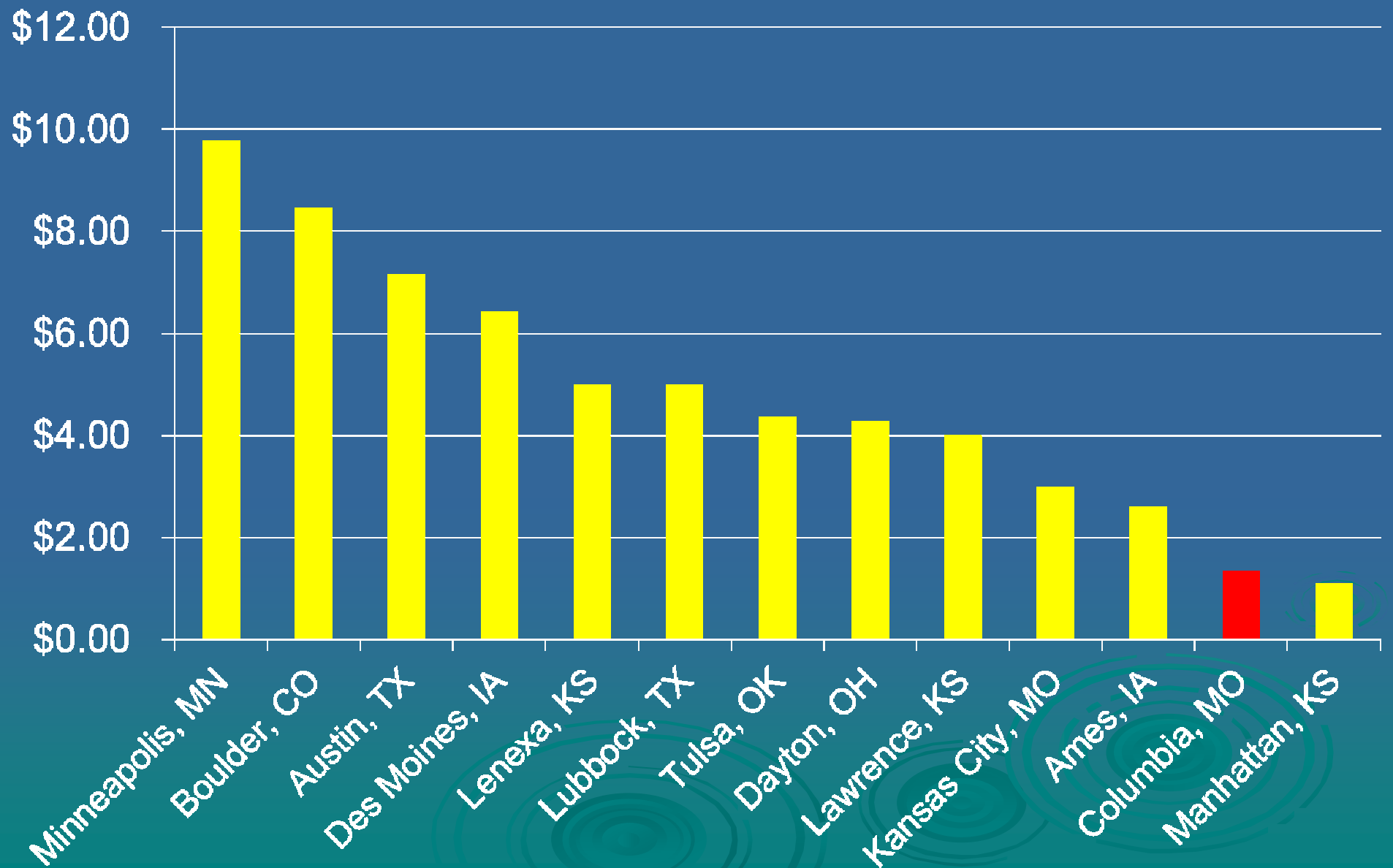
Columbia Utility Increases 1993 to 2012

- Electric + 46%
- Sewer + 78%
- Water + 87%
- Solid Waste + 87%
- Storm Water Utility +0%
- Gas + 134%

Current Stormwater Utility Funding

Annual Income	
Utility Fees (monthly)	\$1,000,000
Development Charges (one time fee)	\$200,000
Total Current Funding	\$1,200,000
Monthly Utility Fee	
Residential Rate	\$0.65 to \$1.30 depending on main floor square footage
Commercial Rate	\$0.04 per 100 square feet impervious area or \$4.00 (whichever greater)

Stormwater Utility Monthly Residential Rate



How do we fund more stormwater solutions?

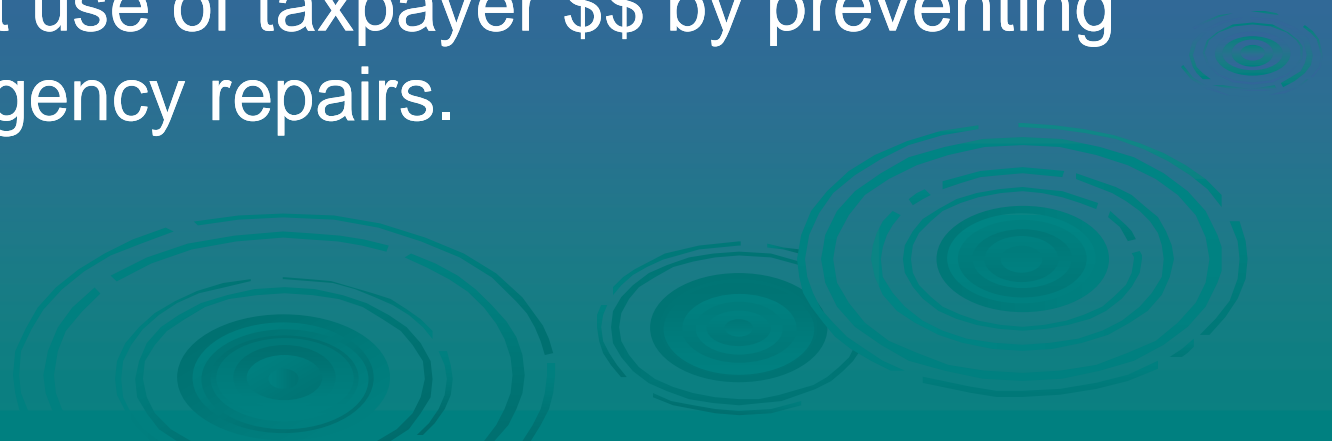
- Rate increase
 - Phased in over 5 years, transition from tiers to impervious surface calculation
 - Transition from \$1.35/month to \$8.60/month to generate additional \$3 million/yr
- Sales tax increase
 - 1/8 cent will raise approximately \$3 million /yr
- Property tax increase
 - \$0.18 per \$100 assessed value will raise approximately \$3 million / yr
- Some combination of the above

Is safe infrastructure worth it?

Safe and passable roadways during a storm.

Basements and homes free from flowing water.

Efficient use of taxpayer \$\$ by preventing emergency repairs.





QUESTIONS?

