

CEDAR RAPIDS STORMWATER MASTER PLAN

Meeting Notes – Final Review Meeting

Project:	CR STORM WATER MASTER PLAN
Subject:	Project Team Meeting
Date:	Thursday, March 24, 2016
Attendees:	Garrett Prestegard, David Wallace, Jonathan Durst, Sandy Pumphrey, Loren Snell, Ryan Bemrich, Bill Bogert (copied), Terry Tiedemann, Michael Butterfield, David Dechant, Justin Shields, Ralph Russell, Nate Kampman

Agenda

Objectives

- Overview of CIP, Financial Needs, and Executive Summary

Stormwater Master Plan

- Refresh Master Plan Goals
 - Phase 1 - Prioritization criteria and list for FY2017
 - Phase 2 - Develop a model for broader analysis of problems and project solutions
 - Phase 3 - Develop a living document to be integrated with annual capital improvements planning
- TM Status
 - Final FY 2017 CIP Summary TM - complete.
 - TM 1.0 - Existing System refined and resubmitted November 23
 - TM 2.0 - Asset Management submitted / Comments December 11
 - TM 3.1 - Macro Modeling submitted November 30 / Comments December 21
 - TM 3.2 - Basin Modeling submitted January 14 / Comments
 - TM 4.0 – Capital Improvements Plan submitted March 4 / Comments March 22
 - TM 5.0 – Financial Plan refined and resubmitted March 14
 - TM 6.0 – Policy Recommendations submitted January 14 / Comments January 25
 - TM 7.0 – Future Considerations submitted January 25 / Comments February 16
 - Executive Summary TM –submitted March 10
 - Final Documents – anticipated submittal late April
- Executive Summary - Overview
 - Length, Content, Format
- TM 4.0 Capital Improvements Plan - Overview
 - Current CIP
 - Modeling Implications
 - Other Potential Needs
- TM 5.0 Financial Needs - Overview
 - Historic Revenue, Expenditures, Rates
 - Future Revenue, Needs, Gap
 - Revenue Sources
 - Recommendations

Meeting Discussion

Drafts of all TMs have been submitted and initial comments received for most. HDR is looking for the City to provide feedback on Executive Summary; specifically, is the level of detail appropriate, is the length appropriate, and is any content missing.

Dave W. provided an overview of the Master Plan approach, emphasizing that it will be a living document, updated on annual basis with additional modeling and new information. Budget will be allocated on an annual basis to revisit and update the plan. The level of effort for a complete plan in 2015/16 would have been cost prohibitive; by spreading the cost over several years the City is able to spend a portion of their CIP budget to get an initial idea of citywide stormwater needs and critical areas for improvement while still having funds available to address existing stormwater infrastructure needs. HDR reviewed the specific project objectives established at the beginning of the project.

Ralph Russell discussed two key decisions that Council needs to make:

1. Topsoil Rule: It would be helpful for Council members to have an analysis that determines potential area of impact and potential quantitative benefit. Given that this rule would affect new residential development how much land are we talking about? Given a typical design storm, how much runoff can be captured or detained? What percent of runoff can be reduced over a period of say 5-10 years? Council needs to understand and be able to convey to the public and developers how this rule can benefit the City and property owners and if a rule such as this would be viewed as a deterrent to developers given that many nearby communities are enacting similar rules.
2. Old Developments: There are areas in the City that were developed prior to current detention and stormwater runoff rules. What needs to happen in these areas? Should they be retrofitted to meet current standards? Defining infiltration rates between developed and undeveloped properties demonstrates the need for current detention standards. Mr. Russell was not opposed to buying houses and installing detention basins if that is what is needed.

The green infrastructure movement is addressing these issues and providing quantitative analyses on the benefits of soil restoration and other low-impact development approaches. Neighboring communities may be waiting for Cedar Rapids to “take the lead” on soil quality issues. Existing analyses may provide insight regarding a citywide impact of topsoil conditioning.

The current plan for public rollout includes a presentation at the Infrastructure Committee then a public open house after finalizing the document. Several key figures and graphs will need to be adapted for public viewing in order to convey the essential information in non-technical language. The public will likely be keenly interested in projects that affect their property; the prioritization matrix will be a critical document to gaining public understanding of the process. Additionally, clearly explaining that the CIP list will change as modeling continues is essential for managing public expectations. Communications to the public need to emphasize three key issues:

1. It does make a difference how a property is graded.
2. Stormwater costs are going up due to the system being ignored in the past.
3. The Master Plan lays the groundwork for future major policy decisions.

Executive Summary

HDR presented an overview of the Executive Summary and its contents. Each section of the Executive Summary provides highlights of the various technical memos that make up the Master Plan.

- Existing Systems:
 - The 20% of the stormwater system presently included in the City's GIS is typical of many communities nationwide. The Master Plan has provided an opportunity to improve the GIS database.
 - The planning process considered Growth Areas consistent with EnvisionCR.
 - The 1998 Master Plan provided a baseline for the current effort, although many of the recommendations from the 1998 plan were not implemented.
- Asset Management:
 - The City is implementing several new technologies to improve the asset management program.
- Macro Modeling:
 - The objective of the macro model is to understand conveyance capabilities of the existing trunk system using a 1D model.
 - Existing data-gaps for sewers larger than 48-inches were filled in with survey information and extrapolation between known data points.
 - Modeling results identified bottleneck pipes as well as pipes that are at full capacity due to a related downstream bottleneck.
 - Discussions with City staff regarding the aftermath of the June 2014 storm event was used to validate the results of the macro model. HDR also utilized a City GIS database consisting of addresses receiving storm damage refuse pick-up and disposal to assist with validation.
 - A significant amount of the system cannot contain and convey the 5-year event. This is likely due to development prior to stormwater runoff standards.
- Basin Scale Model – Kenwood Basin:
 - The objective of the basin scale model is to understand the overland and surface conveyance aspects of the basin using a 2D model.
 - The results of the modeling identify ponding areas and overland flow that is in excess of the system capacity. Surface ponding and overland flow identified in the results of the 5-year storm are shown to be worse under a 100-year storm.
 - The model includes ground elevations, but not specifically ground-floor elevations of buildings. It does show which structures are surrounded by ponded water. Anecdotal evidence from flash flooding has helped to validate the results of the model, specifically areas of ponding.
- Capital Improvements Plan:
 - The CIP starts with the original project list identified after the June 2014 flash flood (totaling \$48 million). However, that project list is somewhat anecdotal based on calls that the City received that reported flash flooding issues.
 - The annual CIP includes \$350,000 of on-going annual activities, including Master Plan updates and miscellaneous capital needs. As the asset management program continues to develop, the miscellaneous capital needs will likely grow as regular repair and replacement needs become clear.
 - The modeling identified a potentially larger total of \$74-90 million of total capital project needs. (Later, it was discussed and agreed that the range should be shown as \$75 to \$100 million to be a bit more conservative given the uncertainty involved in the numbers.)
- Financial Needs:
 - An increase in stormwater utility fee of 3% is assumed for FY2017, then 5% annually for FY2018 and after.

- The proposed ERU/impervious area system can add \$500,000 initially and up to \$2,000,000 annually by 2021 to existing CIP funding (slightly less when rebates/incentives are included). The total revenue could grow up to \$5.5-6.0 million. The graph presented showed current conditions and no changes resulting from implementing the ERU system. It was suggested that the final graph in the Executive Summary and Financial Needs TM will represent projections using the ERU system.
- The recommendations focus on finding opportunities to shift costs / expenditures that could free more stormwater user fees for funding CIP needs.
- Recommendations include monitoring and aggressively seeking grant opportunities. The City subscribes to grants.gov and is pursuing a number of grants that are applicable to stormwater needs. The CIP list includes “keywords” for each project that should assist with finding potential grant opportunities on grants.gov.
- Stormwater user fee is recommended to focus on administrative, O&M, and trunk sewer capital needs.
- Local stormwater needs are recommended to be cost sharing opportunities, either with other utility needs or Streets.
- Additional funding sources are discussed in the Financial Needs TM. The City needs to be creative in pursuing funding given the significant CIP needs. This includes identifying potential sources of state funding and work with the State Legislature.
- Identifying opportunities for collaboration is essential for finding economies of scale in constructing stormwater improvements in conjunction with other projects, including the following approaches:
 - Work with Public Works to identify street reconstruction projects to address stormwater issues simultaneously. Inlet replacements and pipe extensions are included with Paving for Progress. Consideration should be given to including local/collector sewer issues with street projects.
 - Consider special assessments for property owners within an impacted basin.
 - Work with large impervious-area property owners to implement pilot projects to reduce downstream problems.
 - Consider reauthorizing the local option sales and services tax longer term to incorporate stormwater needs with streets projects.
- Policy Considerations:
 - The City is implementing several key recommendations, including topsoil restoration and the ERU system.
 - A post-construction grading policy can verify that the development plan was properly constructed and property drainage should perform as designed.
 - Transitioning to SUDAS will improve the City’s ability to monitor and permit drainage impacts of developments and post-construction grading. A particular (and recurring) issue is a development that is graded as-design with suitable drainageways, but the drainageways are filled in with spoils from excavations from home construction. In this case, post-construction surveys need to be delayed until after homes or other structures are complete.
- Future Considerations:
 - Future regulations may be more stringent on stormwater quality, potentially affecting the City’s NPDES permit.
 - Annual O&M costs for the Flood Control System will be significant but have not been accounted for to-date. The annual costs need to be added to the Master Plan as they are

determined. There are existing O&M costs budgeted for flood management, but these are not as significant as the future costs.

TM 4.0 Capital Improvements Plan

The CIP in the document will be a 5-year plan given additional uncertainties in projecting beyond 5 years. The plan should include an explanation that projects may shift over time depending on future modeling results.

Modeling implications from the Citywide Macro model and the Kenwood Basin model show potential needs of \$74 to \$90 million extrapolated across the City. It was agreed to represent this potential need as \$75-100 million.

In theory, the stormwater management impact fee pays for growth. The City reimburses developers for installing storm sewers that are 12-inch diameter or larger. Consideration is given to more regional needs and impacts of individual developments. Problems have resulted from areas that included storm drainage systems that are less than standard or regional requirements. Developers currently are responsible for detention on their own property. Targeting regionally-based detention basins for future development will enable the City to have more control on sizing, design, construction, and annual maintenance of a detention basin, as well as fewer detention basins. The downside of this approach is either the City or the first developer having to front costs of regional detention early.

Another approach to future development is a managed-growth policy. The City is responsible for trunk sewers for an area that the City will eventually release for development. Each of the developments then has responsibility for local and collector sewers. This provides an opportunity for the City and developers to collaborate and connect development costs to fees. Most importantly, stormwater management systems need to be designed and constructed early and managed in order to prevent future issues.

TM 5.0 Financial Needs

It was agreed that consideration will be given as to whether or not there is an approach to normalize figures in the Historical 671 graph to take out the anomalies associated with separation of the storm sewer fund from the sanitary sewer fund and to transfer fund balances greater than 30 percent from the storm sewer operations fund to the storm sewer capital improvements fund.

Zoning & Subdivision Fees – need financial analyst to confirm what this is; it seems to be another potential revenue item that gets pulled out of stormwater. It is not clear whether or not Zoning & Subdivision fees include Stormwater Impact Fee revenue or whether those fees are accounted for in other items.

Cedar Rapids stormwater rates are near the median of national surveys. Jon D. has information showing that other communities recognized for outstanding stormwater management programs have rates that are 3-4 times what is proposed for Cedar Rapids.

It was agreed that an order of magnitude cost for flood control system operation and maintenance would be helpful. Currently, there is nothing budgeted in the storm sewer accounts for future flood control system operations and maintenance. HDR will reach out across the company to identify typical unit rates available for annual O&M and inspections of the Flood Control System, including:

- Annual \$/LF for levee
- Annual \$/LF for permanent floodwall

- Annual \$/cfs for pumping capacity
- Annual \$/SF for removable floodwall systems

The Utilities Department is considering a five-cent line item on utility bills (per month per customer) for flood control system O&M costs. Contrasting the anticipated annual FCS O&M costs against current costs for flood operation will help determine how much a FCS O&M fee will need to be.

Financial projections do not reflect growth in accounts. That growth has shown, historically, to be approximately 0.8% annually.

The distinction of what is part of street infrastructure and what is stormwater infrastructure was discussed. A consideration for shifting costs from stormwater to streets is that other cities assign open culverts and ditches to streets, with stormwater and sewer maintenance limited to continuous closed conduits.

Action Items

1. City: Verify if there is a current budget line item for annual operation and maintenance of the existing Flood Control System.
2. HDR: Include explanation in TM 4 that projects listed in the CIP may shift over time depending on future modeling results.
3. HDR: Contact others at HDR regarding order of magnitude flood control system O&M costs from other communities.
4. City: Identify where the stormwater impact fee is accounted for in the storm sewer budgets and more specifically what is reflected in the Zoning & Subdivision Fees line item.
5. City: Jonathon will share the information that he has on higher stormwater utility fees for communities that have been recognized for outstanding stormwater management programs.
6. City: Complete comments on the Executive Summary by April 1st.
7. HDR: Consider whether the financial plan can be updated to include the anticipated ERU / impervious area conversion for stormwater utility fees.
8. HDR: Consider whether historic financial information for storm sewer operations can be normalized to take out some of the anomalies.
9. City: Revise master CIP list with changes that have been identified over the last year; send to HDR by April 1st.

I. SCOPE OUTLINE

A. TASK SERIES 100 – PROJECT MANAGEMENT

- Task 110 – Team Management and Project Control
- Task 120 – Project Initiation
- Task 130 – Project Management Plan
- Task 140 – Quality Control

PHASE 1 – FY 2017 CIP Development

B. TASK SERIES 200 – PHASE 1 – FY 2017 CIP DEVELOPMENT

- Task 210 – Collect and Review Available Information
- Task 220 – Draft Stormwater Master Plan Outline
- Task 230 – Workshop 1
- Task 240 – Site Visits, Alternative Evaluation, Concept Refinement
- Task 250 – Develop/Confirm Costs and Preliminary Priorities
- Task 260 – Draft FY 2017 CIP TM
- Task 270 – Workshop 2
- Task 280 – Finalize FY 2017 CIP Summary TM

PHASE 2 – Stormwater Master Plan

C. TASK SERIES 300 – EXISTING SYSTEM

- Task 310 – Compile and Review Existing Background Information
- Task 320 – Regulatory Summary
- Task 330 – Watershed Summary
- Task 340 – Existing System TM

D. TASK SERIES 400 – ASSET MANAGEMENT

- Task 410 – Summary of Stormwater Assets
- Task 420 – Condition Assessment
- Task 430 – Level of Service
- Task 440 – Maintenance Levels
- Task 450 – Asset Management Plan Improvement Recommendations
- Task 460 – Asset Management TM

E. TASK SERIES 500 - HYDRAULIC INVESTIGATION

- Task 510 – Model Selection
- Task 520 – Critical Area Identification
- Task 530 – Hydraulic Model Development
- Task 531 – Data Cleanup
- Task 532 – Macro-Scale Model Development

- Task 533 – Identify System Deficiencies
- Task 540 – Workshop 3
- Task 550 – Critical Basin-Scale Model Development
- Task 560 – Field Investigations
- Task 570 – Model Validation
- Task 580 – Alternatives Analysis
- Task 590 – Workshop 4

F. TASK SERIES 600 – CIP IMPROVEMENTS PLAN

- Task 610 – Recommended Projects
- Task 620 – Project Prioritization
- Task 630 – Workshop 5
- Task 640 – Documentation

G. TASK SERIES 700 – TEN YEAR FINANCIAL PLAN

- Task 710 – Summary of Expenses
- Task 720 – Estimated Cash Flow Projection
- Task 730 – Revenue Options
- Task 740 – Financial Plan

H. TASK SERIES 800 – POLICY RECOMMENDATIONS

- Task 810 – Current Policies and Planning Goals
- Task 820 – Floodplain Management
- Task 830 – Green Infrastructure BMPs
- Task 840 – Future Policies
- Task 850 – Policy TM

I. TASK SERIES 900 – FUTURE CONSIDERATIONS

- Task 910 – Development and Growth
- Task 920 – Regulatory/Water Quality Changes
- Task 930 – Maintenance Procedures
- Task 940 – Watershed Management Considerations
- Task 950 – Stormwater Master Planning

J. TASK SERIES 1000 – STORMWATER MASTER PLAN

- Task 1010 – Stormwater Recommendations Summary
- Task 1020 – Executive Summary
- Task 1030 – Draft Plan
- Task 1040 – Workshop 6
- Task 1050 – Final Plan

Stormwater Master Plan

Workshops

- 1 Kickoff Meeting Phase 1 and 2
- 2 Review Draft FY 2017 CIP TM
 - Discuss Existing System
 - Discuss Model Selection / Development
- 3 Macro Level Model Results
 - Initiate Basin Level Model
 - Discuss Asset Management
- 4 Basin Level Model Results
 - Discuss Financial Planning
 - Discuss Policy Consideration
 - Discuss Future Considerations
- 5 FY18 Capital Improvements Plan
 - Financial Plan
 - Policy Consideration
 - Future Considerations
- 6 Executive Summary
 - Draft Plan

Stormwater Master Plan

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- TM 1.0 – Existing System
- TM 2.0 – Asset Management
- TM 3.1 – Macro-Scale Model Results
- TM 3.2 – Basin Scale Modeling Results
- TM 4.0 – Capital Improvements Plan
- TM 5.0 – Financial Plan
- TM 6.0 – Policy Recommendations
- TM 7.0 – Future Considerations

Stormwater Master Plan

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Contract Approval	June 9, 2015
Task Series 100 Project Management	June 24, 2016
Task Series 200 – Phase 1 – FY 2017 CIP Development Draft Technical Memorandum	August 21, 2015
Task Series 200 – Phase 1 – FY 2017 CIP Development Complete	September 4, 2015
Task Series 300 – Existing System Draft Technical Memorandum	September 25, 2015
Task Series 400 – Asset Management Draft Technical Memorandum	January 8, 2016
Task Series 500 – Hydraulic Investigation Draft Technical Memorandum	January 29, 2016
Task Series 600 – CIP Improvements Plan Draft Technical Memorandum	February 19, 2016
Task Series 700 – Ten Year Financial Plan Draft Technical Memorandum	February 19, 2016
Task Series 800 – Policy Recommendations Draft Technical Memorandum	February 5, 2016
Task Series 900 – Future Considerations Draft Technical Memorandum	February 5, 2016
Task Series 1000 – Stormwater Master Plan Draft Executive Summary	March 4, 2016
Task Series 1000 – Stormwater Master Plan Complete	June 3, 2016



Storm Sewer Master Plan Final Review

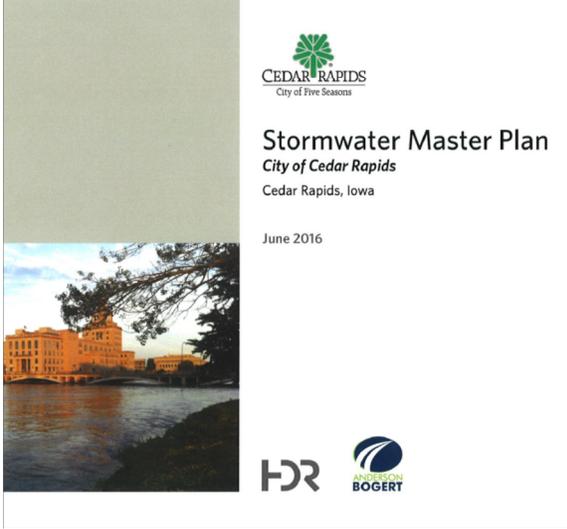
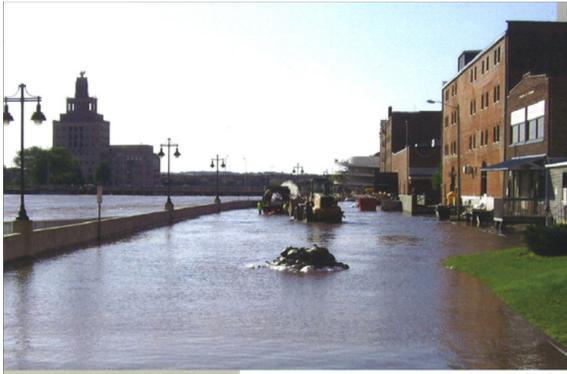
March 24, 2016



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Objectives

- Fresh perspective & innovative thought to recommend projects and prioritization criteria for the FY2017 budget cycle
- Development of living Stormwater Master Plan that will become more comprehensive and expansive with time
- Use available information (GIS and other) to facilitate higher level hydraulic modeling Citywide with more detailed hydraulic modeling in priority areas
- Capital Improvements Plan that clearly communicates the priorities, rationale, and timeline to address known stormwater issues
- Identify funding and financial needs to close the gap between current revenues and capital needs
- Incorporate the City's vision as reflected in EnvisionCR
- Incorporate City staff's vision for asset management
- Engage and work collaboratively to identify potential stormwater policy solutions to fundamental issues that have contributed to current flooding problems
- Establish the framework for annual updates to expand and improve upon the initial plan



Executive Summary

TM 4.0 Capital Improvements Plan

TM 5.0 Financial Needs



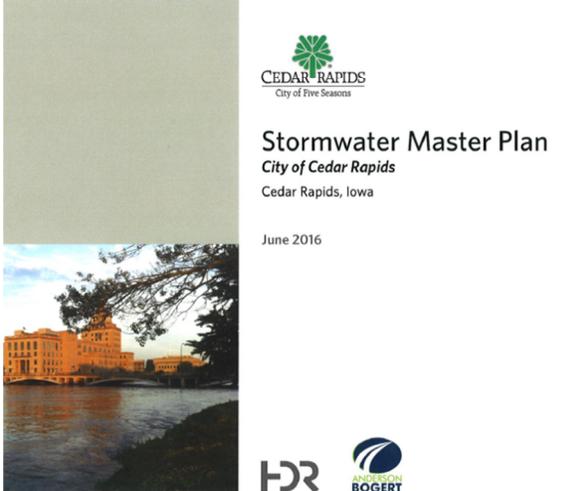
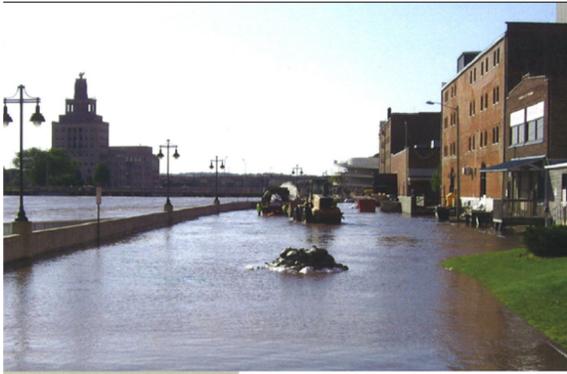


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 - TM 7.0 Future Consideration

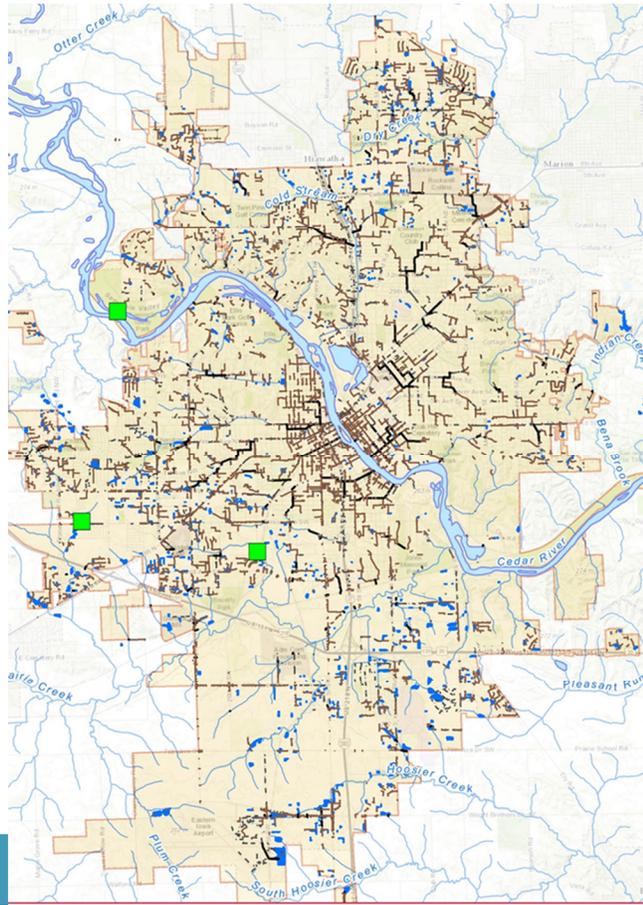
Summary

- Living Document
 - Initial update to 1998 Master Plan
 - Identify & move forward with highest priority needs
 - Made more comprehensive with time
- Annual Updates
 - Capital Improvements Plan
 - Fiscal Year Plan
 - Additional Modeling and Studies
 - Policy
 - Field and Reactive Inputs
- 5 Year Updates
 - Master Plan
 - Financial Plan



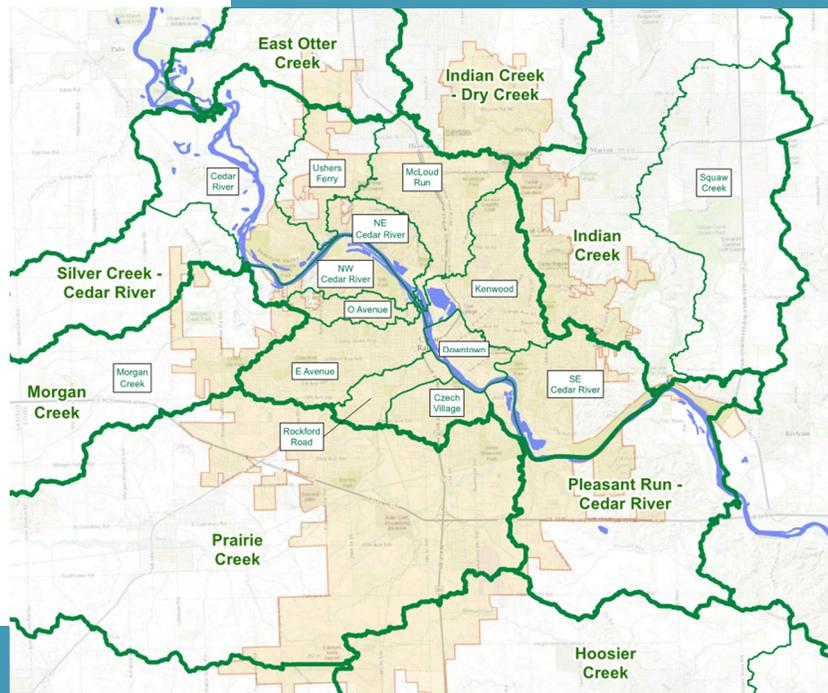
TM 1.0 Existing System

- Multiple Assets
 - > 500 miles of conveyance
 - ~20% in GIS
 - nearly 800 detention basins (95 public)
 - three constructed wetlands
 - 127 miles of open channels and ditches
 - flood mitigation berms and levees.
- Intended to:
 - For Minor (5 year) Event
 - Protect against regularly recurring damage
 - Reduce street maintenance costs
 - Provide an orderly urban drainage system
 - Provide public conveyance of runoff
 - For Major (100 year) Event
 - Prevent major property damage
 - Prevent loss of life



TM 1.0 Existing System

- 7 Watersheds
- 20 Subwatersheds
 - 10 East / 10 West
 - 19 Cedar River / 1 Iowa River



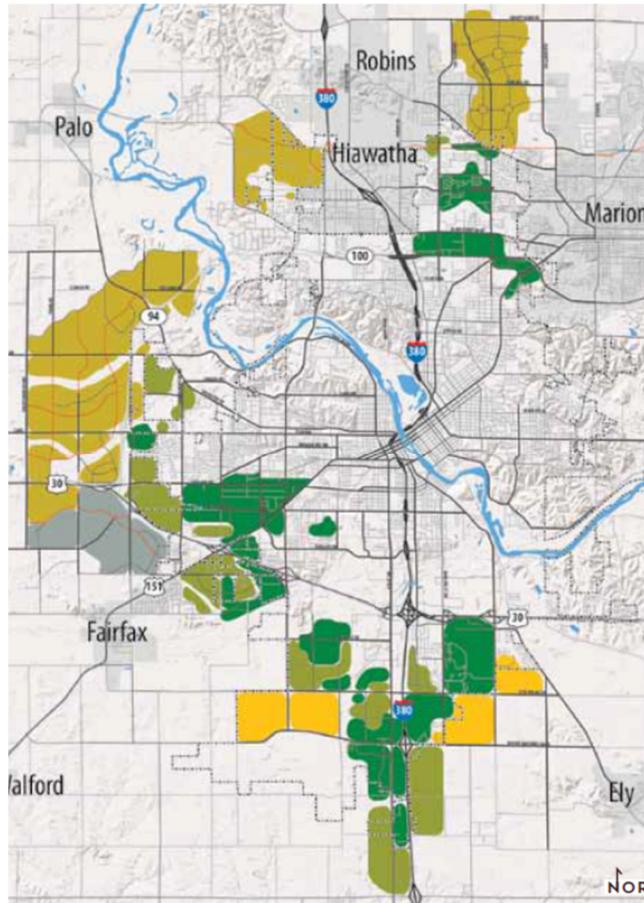
TM 1.0 Existing System

Growth Areas per EnvisionCR

- **West.** Highway 100
- **Southwest.** Industrial projects
- **South.** Major employer / large parcel
- **North.** Residential development.
- **Northwest.** Residential

Multiple stormwater related initiatives

- Watershed management plans
- Stormwater drainage master plan
- Capital improvements plan
- Refine stormwater management regulations
- Identify, evaluate, & acquire technology, equipment, and facilities
- Analyze & define organizational structure
- Use sustainable practices



EnvisionCR (ProtectCR) – Multiple Stormwater Initiatives

- Prepare watershed management plans that provide improved aquatic habitats, recreational opportunities, and increased public access to natural resources, while maintaining necessary levels of flood control through coordination with appropriate stakeholders, including state and federal agencies, and other jurisdictions.
- Develop watershed stormwater drainage master plan to measure, monitor, and manage stormwater drainage for the City's watersheds.
- Prepare a capital improvements plan that addresses both the needs of existing core neighborhoods and the future infrastructure needs in areas where growth is planned.

EnvisionCR (ProtectCR) – Multiple Stormwater Initiatives (Cont)

- Refine existing stormwater management regulations to enhance clarity and adaptability.
- Identify, evaluate, and acquire technology, equipment, and facilities to improve infrastructure and service delivery
- Analyze and define organizational structure to reflect best management practices in areas of staffing, operations, and equipment.
- Use sustainable practices for the maintenance, rehabilitation, and construction of public facilities prior to adoption of a green building program.

TM 1.0 Existing System

1998 Stormwater Master Plan

- 201 outfalls \geq 36-inches
- 26 drainage problems
- Policy / planning issue
- Recommendations
 - additional storm sewers
 - flood protection measures
 - new detention basins
 - enforcement of existing policies.
- \$14.4 million of construction
- Costs beyond funding capabilities
- Generally not implemented.
- Provided a baseline

Stormwater Master Plan
Cedar Rapids Metropolitan Area Utility Study
Linn County Regional Planning Commission

April 1998

Prepared by:

Camp Dresser & McKee Inc.
The Sears Tower, Suite 450
200 South Wacker Drive
Chicago, IL 60606



I hereby certify that the engineering documents prepared by me or under my direct personal supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Iowa.

David H. Lee
David H. Lee

April 27, 1998

My license renewal date is December 31, 1998

Pages are electrically scanned by this office. White Paper

TM 2.0 Asset Management

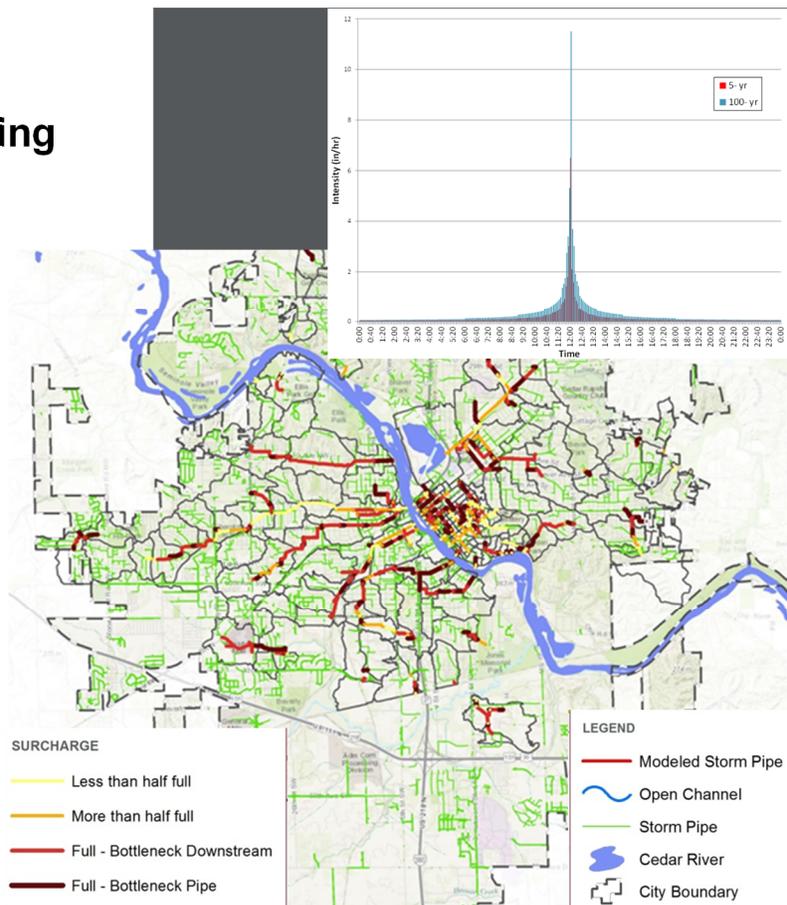
“Cost effective life cycle management of assets”

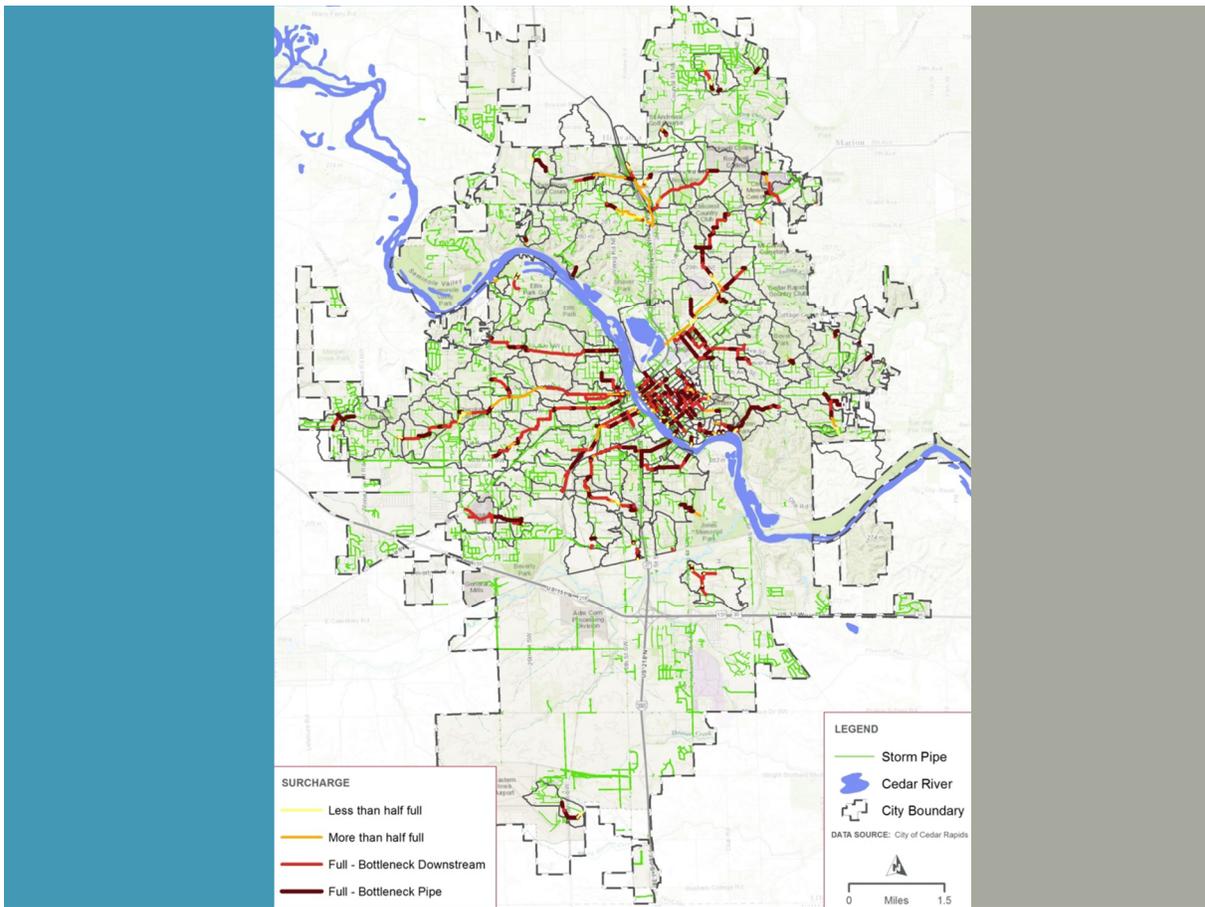
- Significant changes in process
 - Asset Inventory
 - Condition Assessments
 - Maintenance
 - Asset Management Policies
- Improvements
 - Updating GIS and IMS
 - Transitioning to EnerGov for CMMS
 - Implementing CUES digital inspection equipment
 - Integrating all three
- Recommendations
 - Standardize using the Iowa Stormwater Management Manual.
 - Benchmark with other
 - Integrate with Master Plan
 - Continue to develop and evolve



TM 3.1 Macro Modeling

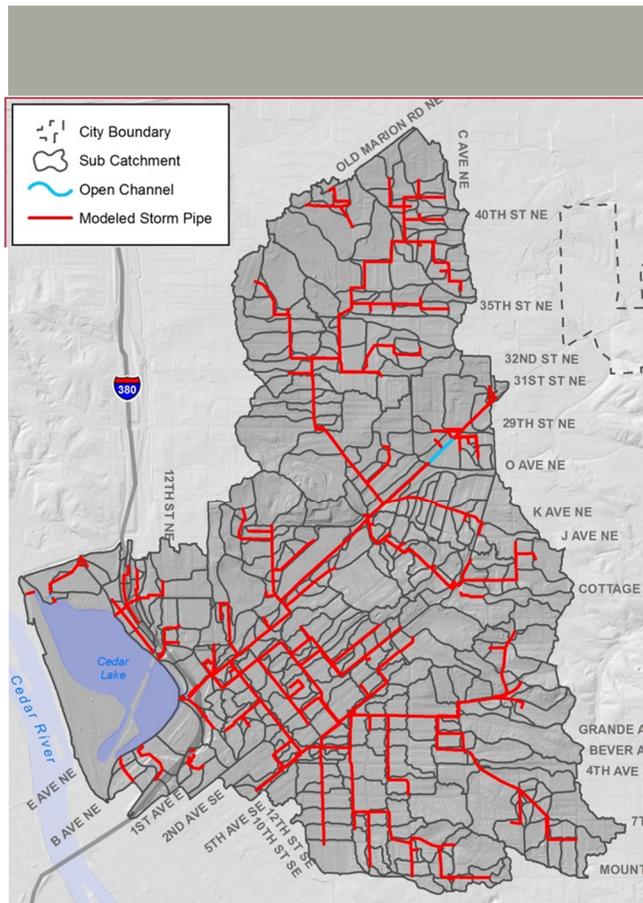
- Macro Scale 1D
 - 45.4 miles of large pipes ($\geq 48"$)
 - 9.5 miles of open channels
 - 13 major detention facilities
 - 52 outfalls
- Broad overview of conveyance
 - Bottlenecks
 - Surcharges
- Relatively large data gaps
- Validated to June 2014 event
- Simulated 5- and 100-year
 - Much of the system can't contain & convey five-year event
 - Significant ponding & overland flow which for 100-year event

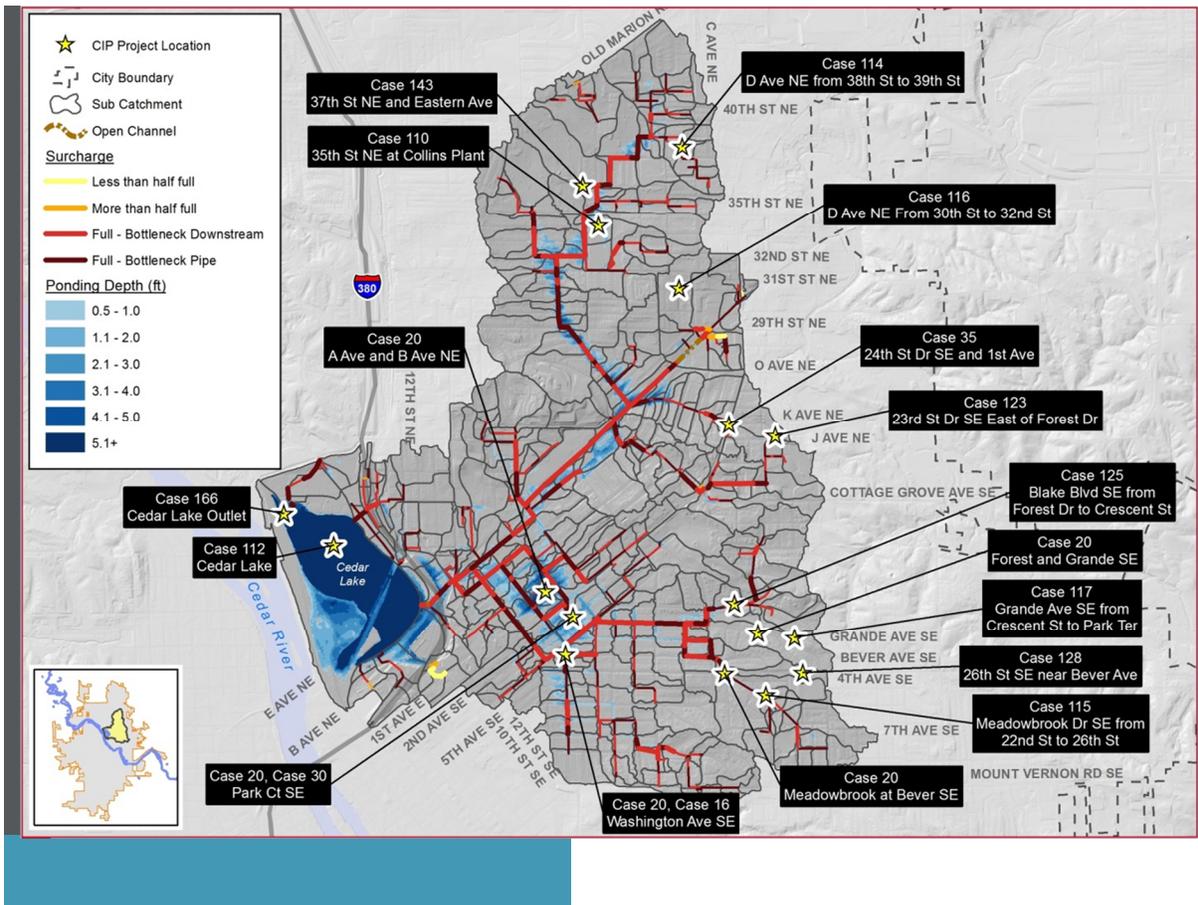




TM 3.2 Kenwood Basin Model

- Basin Scale 2D Model
 - 27 miles of pipe
 - >900 junctions
 - 900 linear feet of open channel
 - four detention facilities and Cedar Lake
 - Outfalls to Cedar Lake & the Cedar River
- Ponding and overland flow in excess of system capacity
- Evaluate individual projects & basin wide mitigation alternatives
- Validated to June 2014 event
- Simulated 5- and 100-year
 - multiple pipe bottlenecks & areas of ponding
 - More severe at 100-year
- No silver bullet
 - Green infrastructure
 - Distributed & regional storage
 - Conveyance





TM 4.0 Capital Improvements Plan

- Current CIP - June 2014 + Prior Study
 - \$48.25 million project needs
 - \$0.35 million ongoing annual
- Modeling Implications
 - Potentially \$74 to \$90 million project needs
- Other Considerations
 - Growth needs?
 - Condition needs?

	CIP - \$million / Fiscal Year						
	16	17	18	19	20	21	Beyond
Ongoing	\$0.35	\$0.35	\$0.35	\$0.35	\$0.35	\$0.35	Ongoing
5-Year	\$1.35	\$1.7	\$1.75	\$1.80	\$1.86	\$1.91	\$4.33
Beyond	-	-	-	-	-	-	\$32.96
Total	\$1.7	\$2.05	\$2.1	\$2.15	\$2.21	\$2.26	Ongoing +\$37.29

\$48.25 + Ongoing



TM 5.0 Financial Needs

Significant Funding Gap

- \$48.24 million identified needs
- Potentially \$74 million to \$90 million needs
- Plus \$0.35 million ongoing annual need

Vs

- \$1.5 to \$3 million revenue source

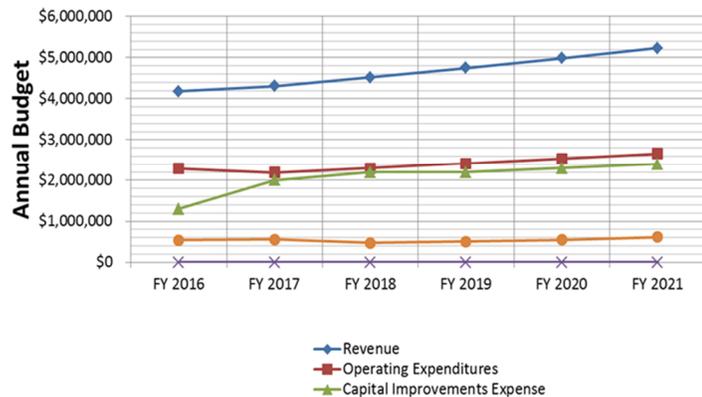


Financial Plan

- 3% 2017, then 5% annually
- \$2 to \$2.4 million annually for CIP (w/out other funding sources)
- If 5% / 10%, add \$0.6 million by 2021
- If ERU/impervious, add \$0.5 to \$2.0 million

Storm Sewer Financial Projection

3% 2017 then 5%



Recommendations

- Monitor and aggressively seek other grant or other special funding opportunities
- Increase stormwater utility fees & other user fees
- Continue to refine stormwater utility fee structure to reflect the quantities to be managed
- Focus stormwater user fee revenue on administrative, O&M, and trunk sewer related capital needs
- Set aside a small amount for cost sharing to continually capitalize on multipurpose projects to address collector and local stormwater needs
- Shift street sweeping costs to solid waste
- Prepare basin plans & establish fees to pay for stormwater needs in the growth areas

Recommendations (Cont)

- Work collaboratively
 - With Public Works to identify street reconstruction projects to address collector and localized stormwater needs with sales tax revenue
 - With Utilities to identify additional CWSRF and Sponsored Project Funding Opportunities
 - With a neighborhood to implement a pilot special assessment / benefits district project to address a localized stormwater problem.
 - Work collaboratively with large impervious property Owner to implement a pilot cost share project to implement modifications to reduce downstream problems.
- Continue educating the public as to benefits, costs, and funding challenges

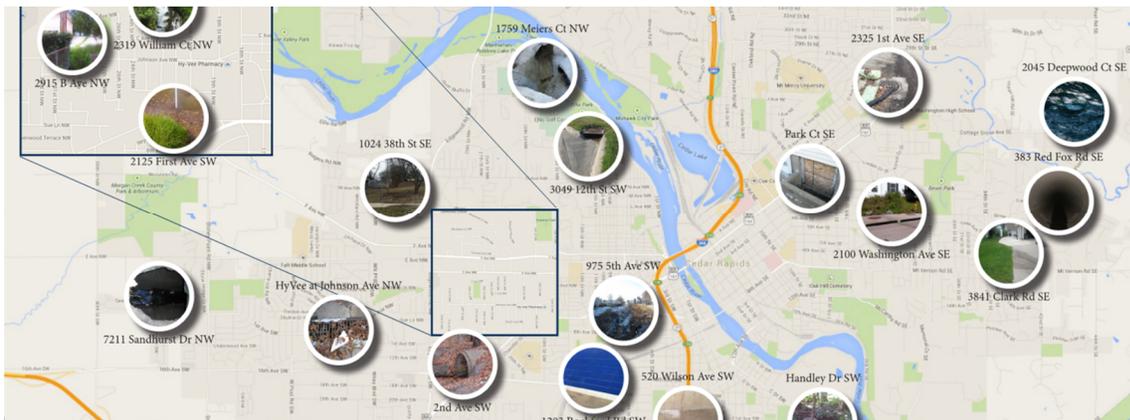
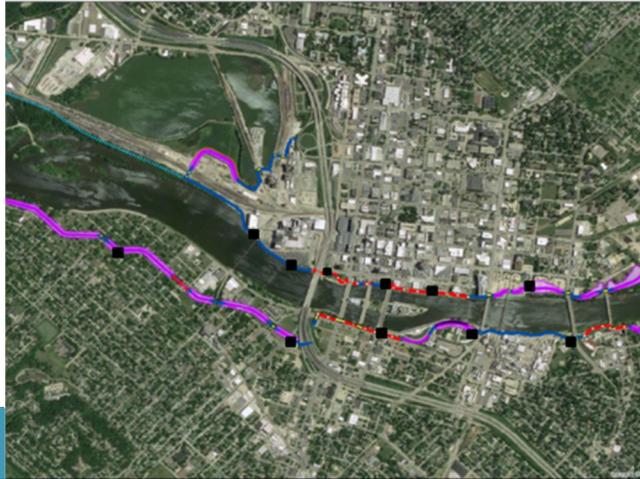
TM 6.0 Policy Considerations

- Develop a Framework for a Green Infrastructure Program.
- Develop a private cross connect program
- Implement a post construction grading survey
- Implement a “Soil Quality Plan”
- Incentivize green practices
- Develop a funding policy for non-City stormwater property losses.
- Require low level openings and lot corner grades on site development plans
- Move towards regional detention basins
- Develop a policy for facilities encroaching on drainage easements
- Consider targeted buy-outs for flood prone properties
- Increase Educational Program Awareness



TM 7.0 Future Considerations

- Living document with annual updates
 - Additional modeling
 - Basin planning
 - Annual CIP
 - Financial Plan
- Responsibility for implementation
 - Sewer Utility Engineering Manager
 - Support from Sewer Superintendent, Project Engineers, Stormwater Coordinator
 - Roles for City Council, City Manager, Stormwater Commission, Public Works, and Development Services
- Planning to avoid growth area CIP needs
- Regulations continue to evolve
- Significant Flood Control System O&M costs not included



02 TM 4.0 Capital Improvements Plan

Current CIP – Based on June 2014 + Prior Studies

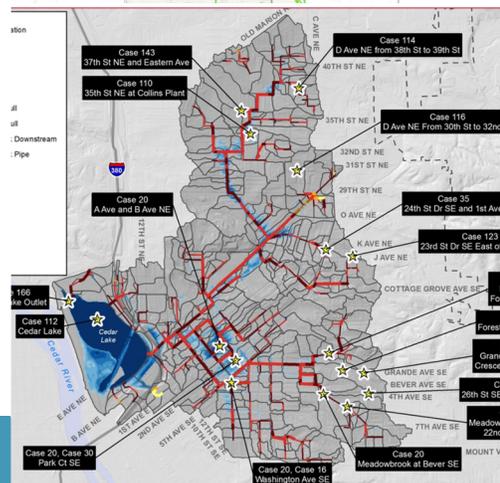
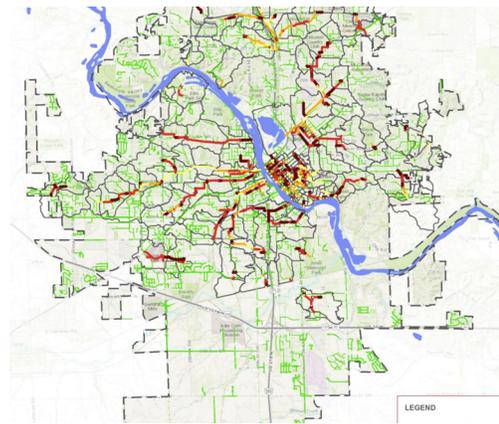
	CIP - \$million / Fiscal Year						
	16	17	18	19	20	21	Beyond
Ongoing	\$0.35	\$0.35	\$0.35	\$0.35	\$0.35	\$0.35	Ongoing
5-Year	\$1.35	\$1.7	\$1.75	\$1.80	\$1.86	\$1.91	\$4.33
Beyond	-	-	-	-	-	-	\$32.96
Total	\$1.7	\$2.05	\$2.1	\$2.15	\$2.21	\$2.26	Ongoing +\$37.29

\$48.25 + Ongoing

Modeling Implications

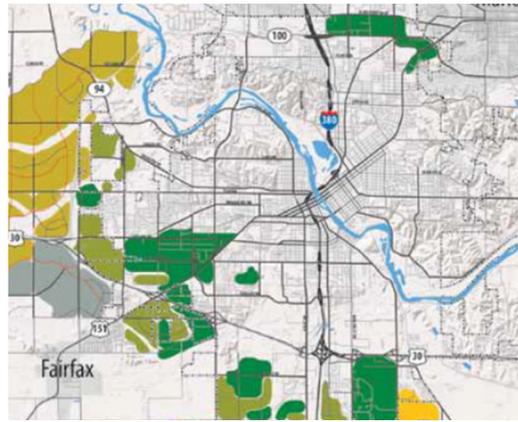
- Macro Model Citywide $\geq 48"$ Only
 - \$16 million for conveyance
- Basin Model Kenwood Only
 - \$12.5 million for conveyance
 - \$2.8 million for green infrastructure
 - \$4.6 million for storage
 - \$19.9 million total

- Extrapolated Macro ~ \$74 million
- Extrapolated Basin ~\$90 million



Other Potential Needs

- Growth Implications
 - Stormwater Management Fee Pays for Growth
 - CIP if Inadequate
- Condition Related Needs
 - Currently \$250,000 for Misc Stormwater Projects
 - AM Program may identify more need



Considerations for Next Budget Cycle

- Status of Ongoing Projects
- Potentially increased funding from ERU / impervious area refinements to fee structure
- Basin modeling priorities
- Growth corridor planning priorities
- Basin modeling and asset management identified needs
- Potential need for water quality component in basin modeling
- Scope for next phase of master planning





03 TM 5.0 Financial Needs

Historical Operations

- Stormwater Combined with Sanitary Sewer until FY 2014
- Net revenue less expenditures (\$1.8 m) & fund balance over 30% transferred to CIP
- Virtually all revenue is Stormwater Utility Fee - \$3.7m in 2014 & \$4.2m in 2015

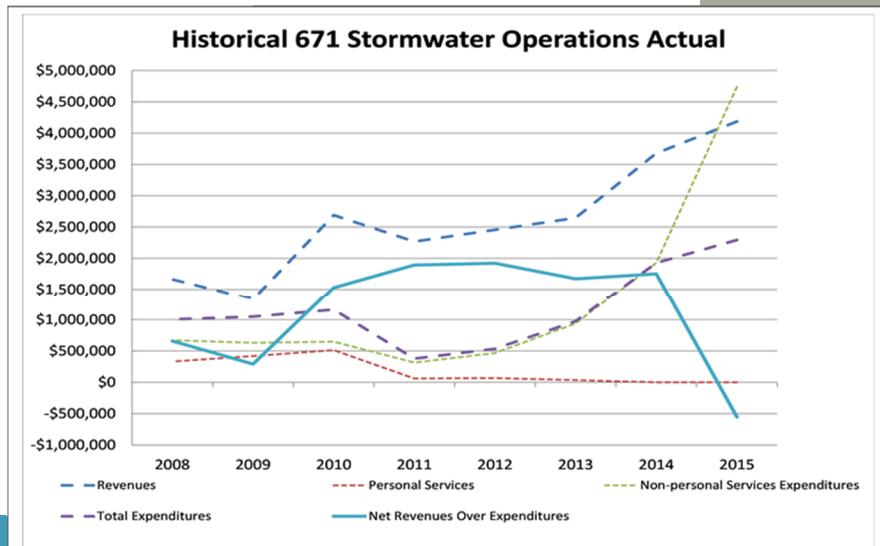


Figure 1 Historical Stormwater Operations

Historical CIP

- \$1.5 to \$6 million per year (with CDBG)
- \$1.5 to \$3 million per year (w/out CDBG)

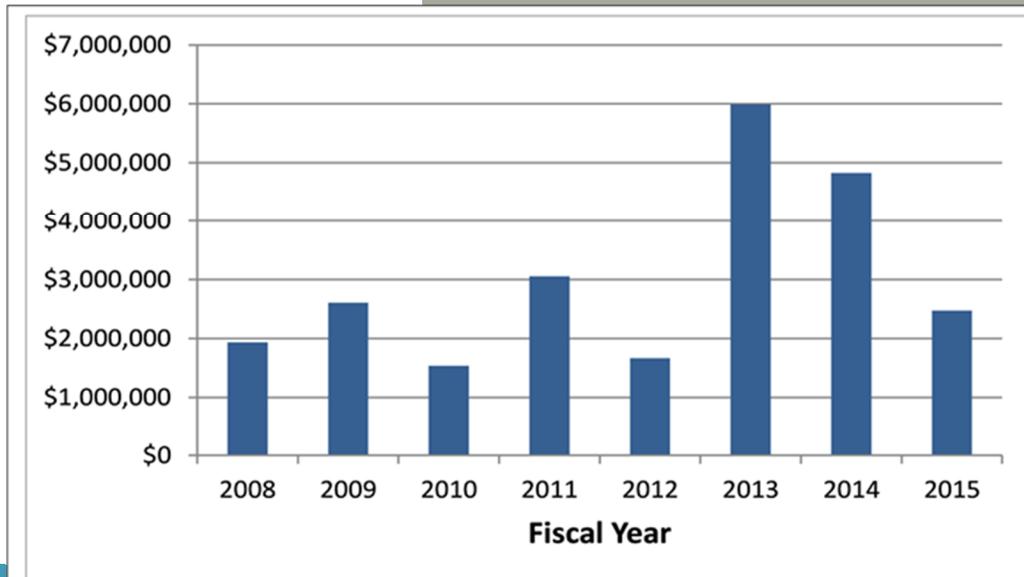


Figure 2 - Stormwater Related Capital Expenditures

CIP Revenue

True revenue sources

- Operating Transfer In – Inter (Net Utility Fee – Operations)
- Federal Capital (Grants)
- State Capital (Grants)

No longer bonding

Accounting sources

- Operating Transfer In – Intra (
- Capital Contributions (Maintenance Bond Value)

Past two fiscal years

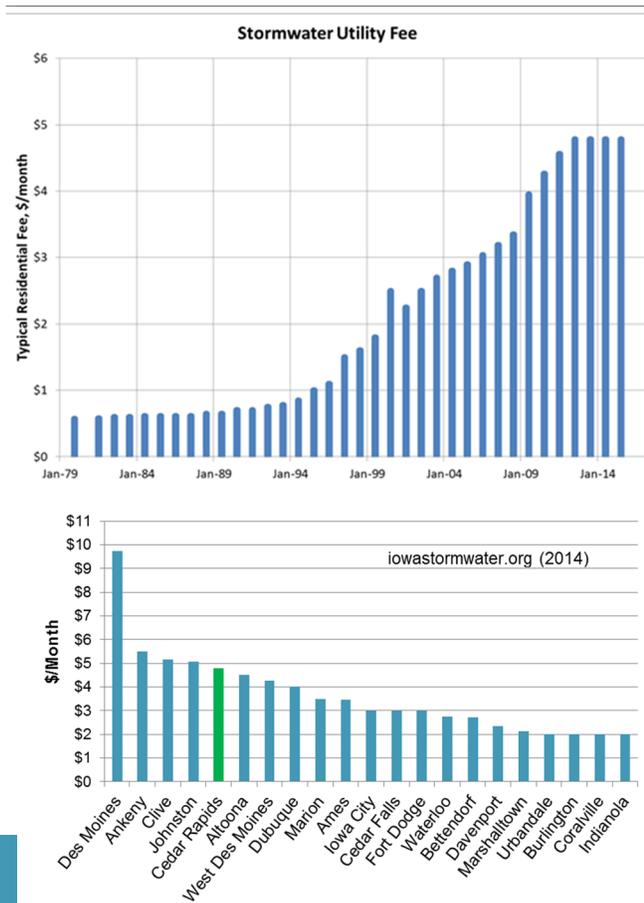
▪ Federal Capital	\$6,223,700
▪ Operating Transfer In – Inter	4,605,222
▪ Operating Transfer In – Intra	2,868,992
▪ Capital Contributions	1,048,041
▪ Total	\$14,906,738

Past eight years

▪ Federal Capital Grants	\$8,115,675
▪ Capital Contributions	8,296,999
▪ General Obligation Bond Proceeds	4,617,282
▪ Operating Transfer – In	5,338,347
▪ Operating Transfer – Intra	2,868,992
▪ Zoning and Subdivision Fees	542,662
▪ State Capital	540,904
▪ Interest/Dividends – Nonproprietary	332,067

Historic Rates

- Evolved
 - Flat to tiered based on lot size (FY 2014)
 - Tiered to ERU/impervious acreage (FY 2017?)
- Comparison to others
 - lowastormwater.org median of \$3 (2014)
 - B&V national survey range from \$0.24 to \$26.58 in 2014 - 56% rates above the City
 - Southeast Stormwater Association Survey range from \$0.12 to over \$9.60 with - 24% rates at or above the City



Funding Gap

- Identified \$48.24 million need
- Potentially \$74 million to \$90 million
- Plus \$0.35 million ongoing annual need

Vs

- \$1.5 to \$3 million revenue source

Plus

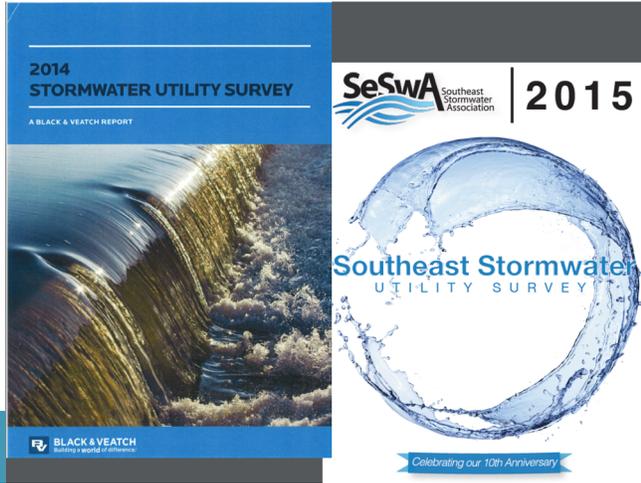
- Future regulatory requirements
- Future Flood Control System O&M costs



Other Utilities

Same needs and challenges

- User fees account for more than all other sources
- Other sources included grants, permitting and other taxes, special tax districts, new development impact fees, sales taxes and ad valorem taxes in order
- Nearly all use cash financing in lieu of debt financing
- Majority note that they do not have funding to meet needs



Other Funding Sources?

- Taxes
- Grants
- Permitting and other taxes
- Special tax districts
- New development impact fees
- Sales taxes
- Cost sharing
- Other fees

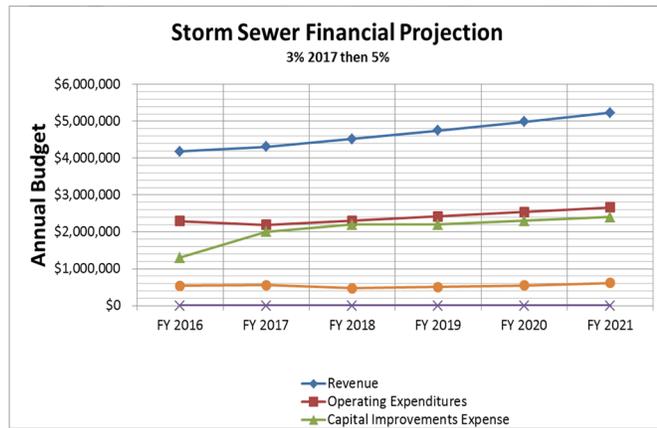


Watershed	Location	Issue	Proposed Scope of Work	Grants - Key Words
Prairie Creek	Waconia Avenue	Sanitary Sewer capacity increase is needed for industrial development	Increase sewer capacity	Economic development
Prairie Creek	From Hawkeye Downs to J St	Sanitary Sewer capacity increase is needed for industrial development	Increase sewer capacity	Economic development
Kenwood	Lennox Area/Grande Ave	Excessive inflow and infiltration	Reduce inflow and infiltration	I/I (inflow and infiltration), flood prevention, wastewater treatment, sanitary sewer overflow prevention
Morgan Creek	Rockhurst Drive SW	Overland flooding within the Stoney Point subdivision	Construct an upstream detention basin	Flood prevention, water quality
O Avenue	Detention basin west of 11th Street NW and south of N Avenue	No suitable overland flow path from the detention basin near Harrison Elementary overtops. Outlet structure from basin does not meet design standards	Model drainage area to compare upstream basin vs overland path	Flood prevention, water quality, wetlands



Current Financial Plan

- No additional revenue beyond local fees
- 5.0% annual increase in operations costs.
- No existing or new debt service obligations.
- \$2.0 to \$2.4 million annually for CIP



- 5% then 10% increases would generate additional \$0.6 million annually by FY 2021
- ERU/impervious area rate structure would generate additional \$0.5 to \$2.0 million annually

Budget Item	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
Revenue	\$4,179,901	\$4,305,298	\$4,520,563	\$4,746,591	\$4,983,921	\$5,233,117
Operating Expenditures	\$2,287,966	\$2,192,364	\$2,301,983	\$2,417,082	\$2,537,936	\$2,664,833
Capital Improvements Expense	\$1,300,000	\$2,000,000	\$2,200,000	\$2,200,000	\$2,300,000	\$2,400,000
Debt Service Expenditures	\$0	\$0	\$0	\$0	\$0	\$0
Net Income/Loss	\$541,935	\$12,934	(\$81,420)	\$29,509	\$45,985	\$68,284
Ending Cash Balance	\$541,935	\$554,868	\$473,449	\$502,958	\$548,943	\$617,227

Recommendations

- Increase stormwater utility fees & other user fees
- Continue to refine stormwater utility fee structure to reflect the quantities to be managed.
- Focus stormwater user fee revenue on administrative, O&M, and trunk sewer related capital needs
- Monitor and aggressively seek other grant or other special funding opportunities
- Set aside a small amount for cost sharing to continually capitalize on multipurpose projects to address collector and local stormwater needs.
- Shift street sweeping costs to solid waste.
- Prepare basin plans & establish fees to pay for stormwater needs in the growth areas

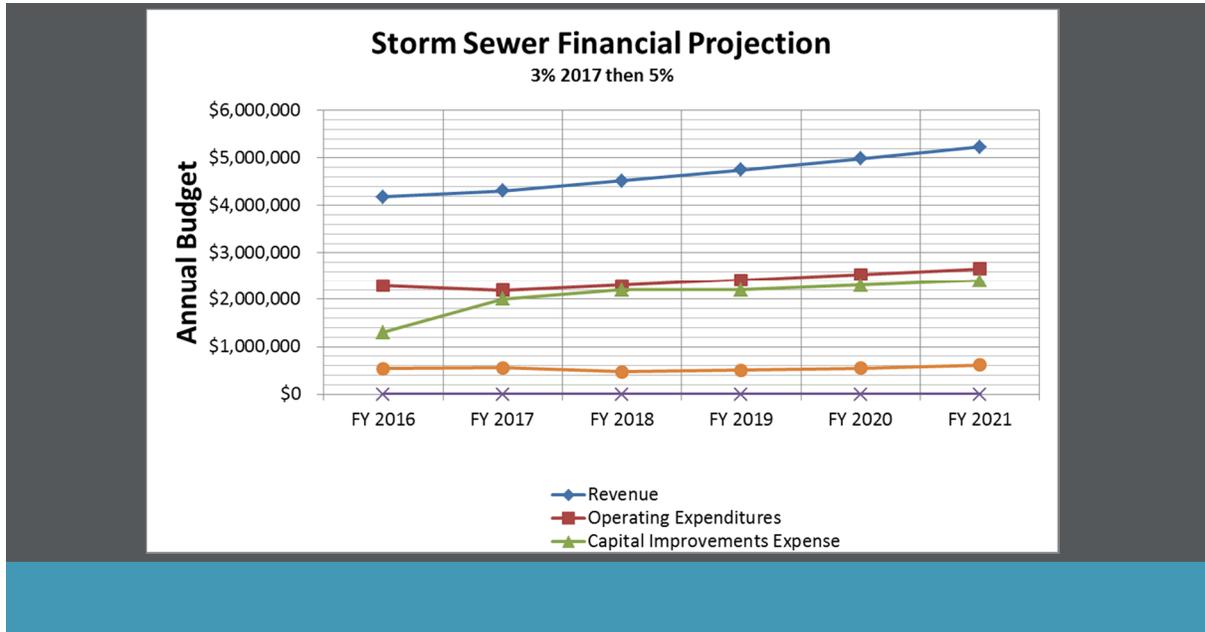
Recommendations (Cont)

- Work collaboratively
 - With Public Works to identify street reconstruction projects to address collector and localized stormwater needs with sales tax revenue
 - With Utilities to identify additional CWSRF and Sponsored Project Funding Opportunities
 - With a neighborhood to implement a pilot special assessment / benefits district project to address a localized stormwater problem.
 - Work collaboratively with large impervious property Owner to implement a pilot cost share project to implement modifications to reduce downstream problems.
- Continue educating the public as to benefits, costs, and funding challenges



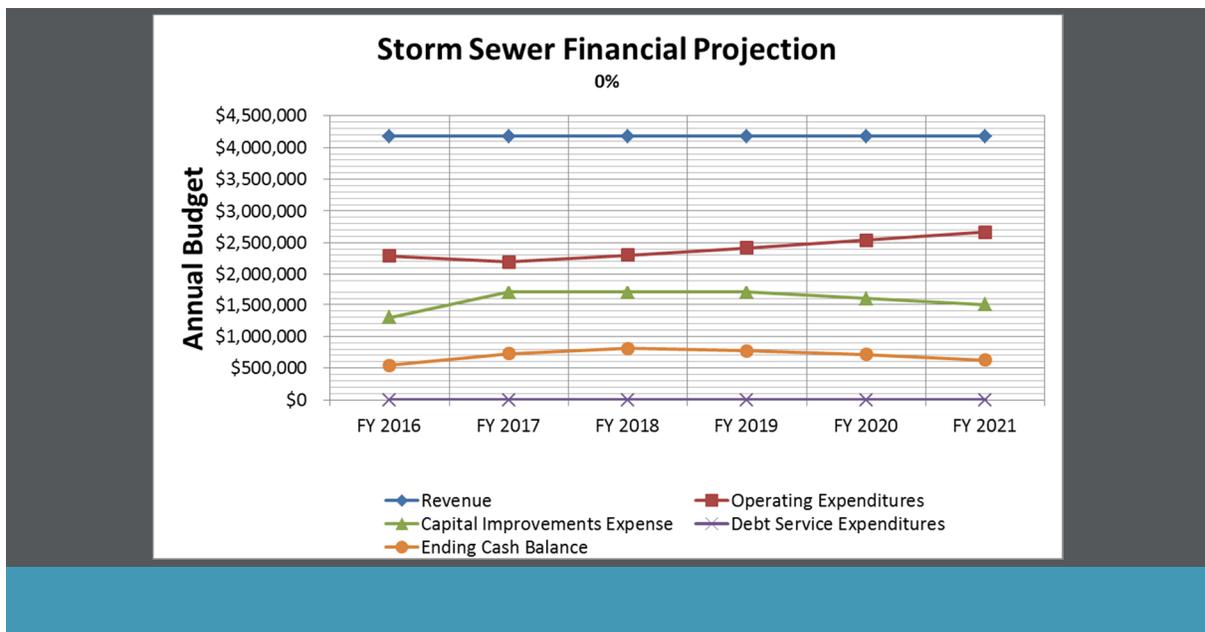
Financial Projection – Scenario 1

- 3% FY17 & 5% FY18-FY21 Revenue Increase
- 5% Cost Increase FY17-21
- \$200k to Water for CCB Upgrade ends FY16



Financial Projection – Scenario 2

- 0% FY17 -FY21 Revenue Increase
- 5% Cost Increase FY17-21
- \$200k to Water for CCB Upgrade ends FY16



Financial Projection – Scenario 3

- 5% FY17 & 10% FY18-FY21 Revenue Increase
- 5% Cost Increase FY17-21
- \$200k to Water for CCB Upgrade ends FY16

