



Stormwater Master Plan – Results Overview

February 26, 2016



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01 OBJECTIVES

02 MACRO-SCALE MODEL RESULTS

03 BASIN-SCALE MODEL RESULTS – KENWOOD

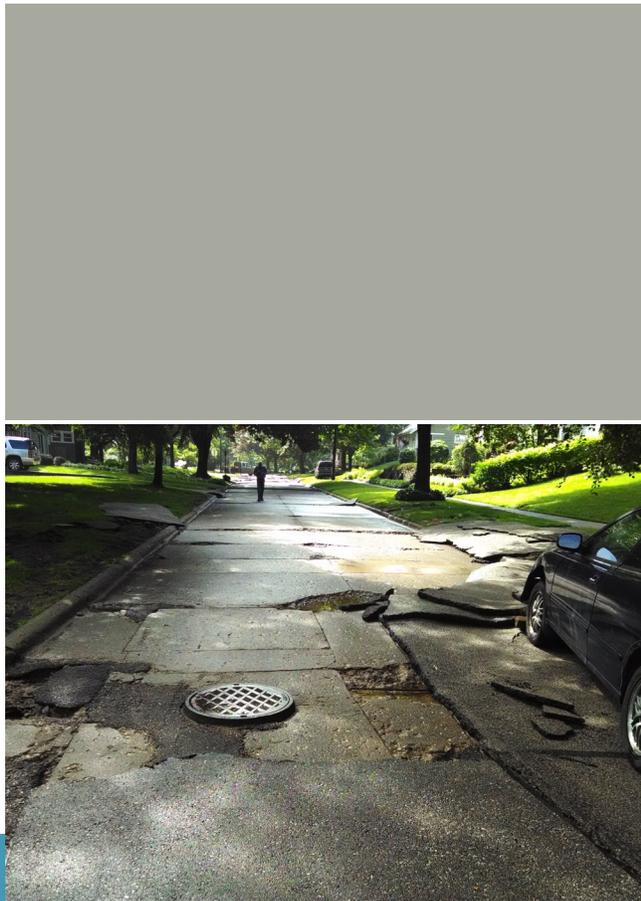
04 DISCUSSION



01 OBJECTIVES

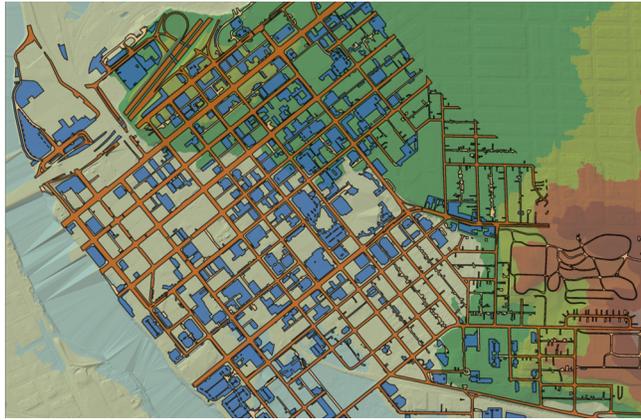
STORMWATER MASTER PLAN UPDATE TASKS

- Phase 1
 - FY 2017 CIP Development
- Phase 2
 - Existing System Summary
 - Asset Management
 - **Hydraulic Investigation**
 - **Macro-Scale Model**
 - **Basin-Scale Model**
 - CIP Improvement Plan
 - Ten Year Financial Plan
 - Policy Recommendations
 - Future Considerations



HYDRAULIC INVESTIGATION OBJECTIVES

- Select a suitable computational model
- Use the model to evaluate the City's stormwater system
- Develop recommendations based on model results
- Validate the model as data is made available
- Use model to formulate for short & long-term strategies
- Additional modeling in subsequent years



MODELING APPROACH

2 Steps of Model Development

- Step 1: Macro-scale Modeling
 - Less detail
 - Large sewers and open channels
 - Entire city
- Step 2: Critical Basin Scale Modeling
 - More detail
 - Smaller sewers
 - Critical basin

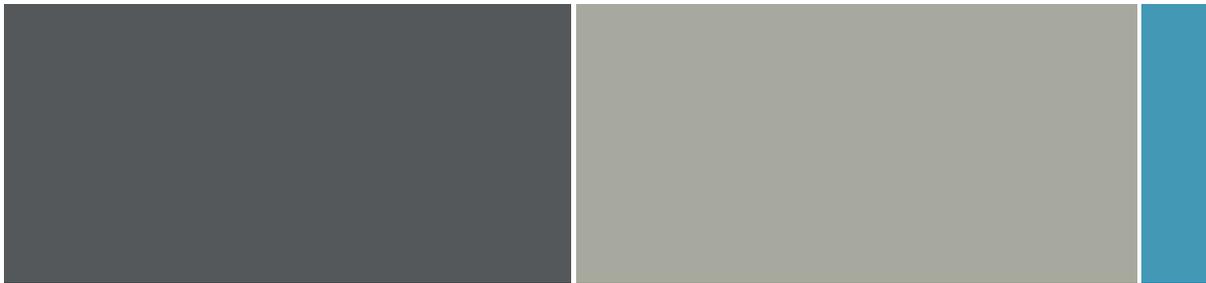


Macro-Scale Model

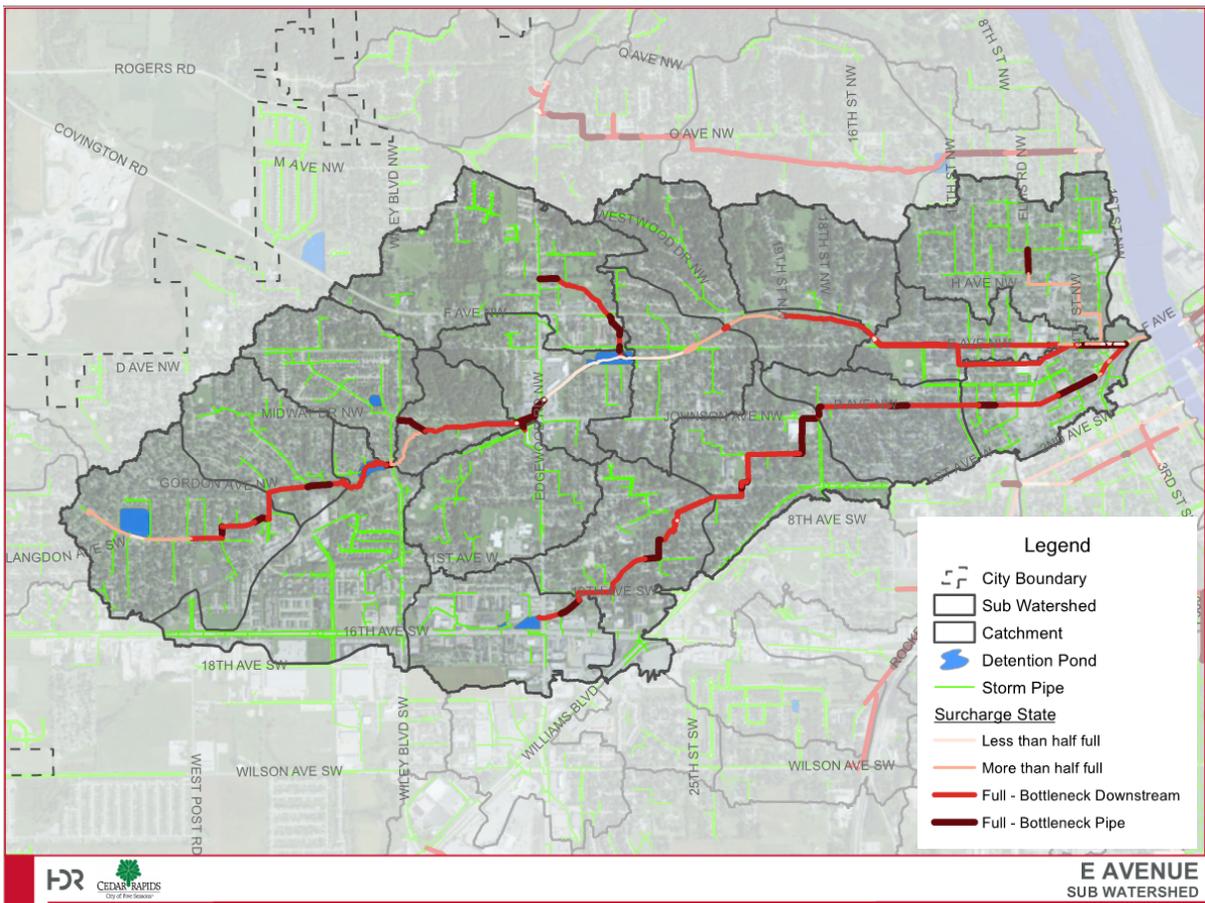
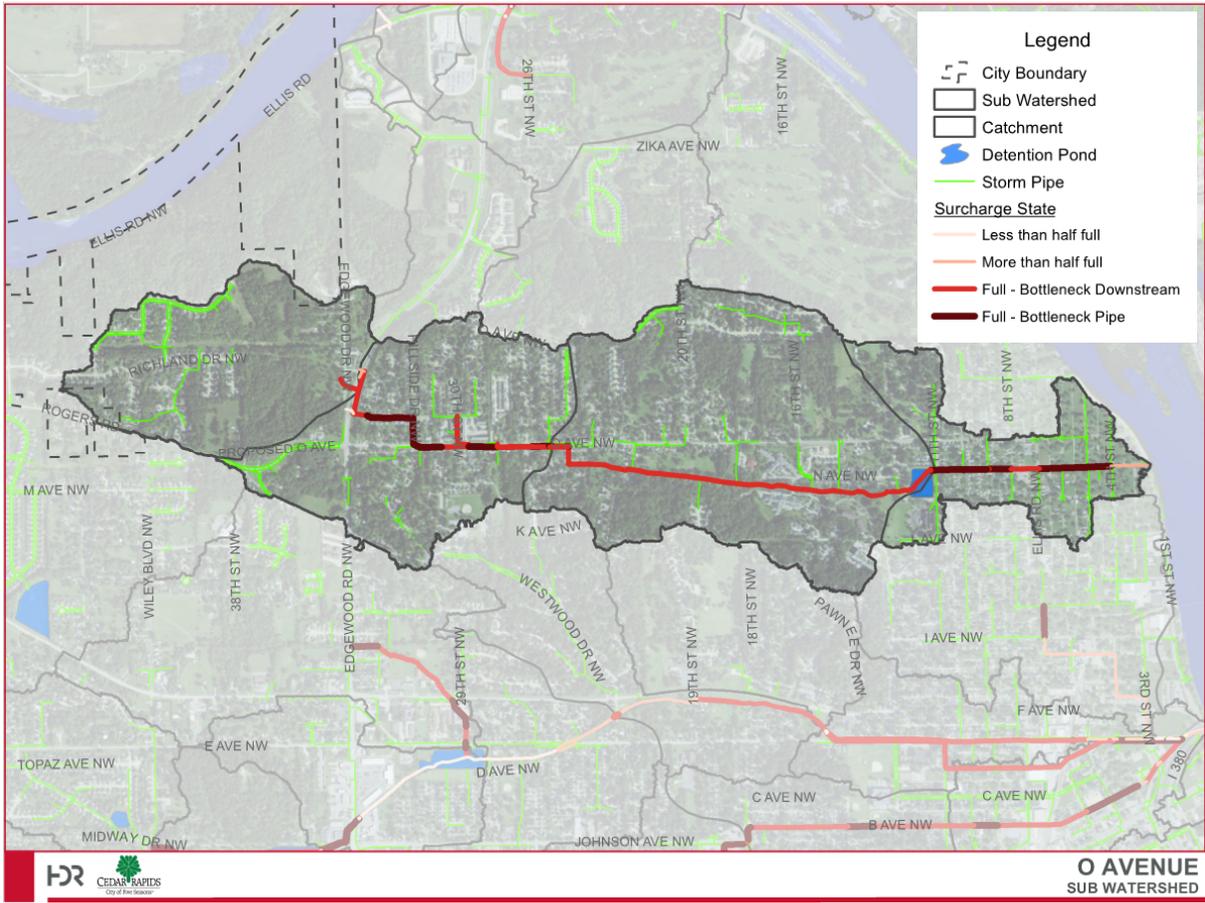
- Large pipes (greater than 48")
- Open Channels
- Major Detention Facilities
- Broad-scale city overview
- Aggregate benefits of improvements and interaction between basins, creeks and Cedar River
- Major conveyance routes
- Provides foundation for basin-scale models

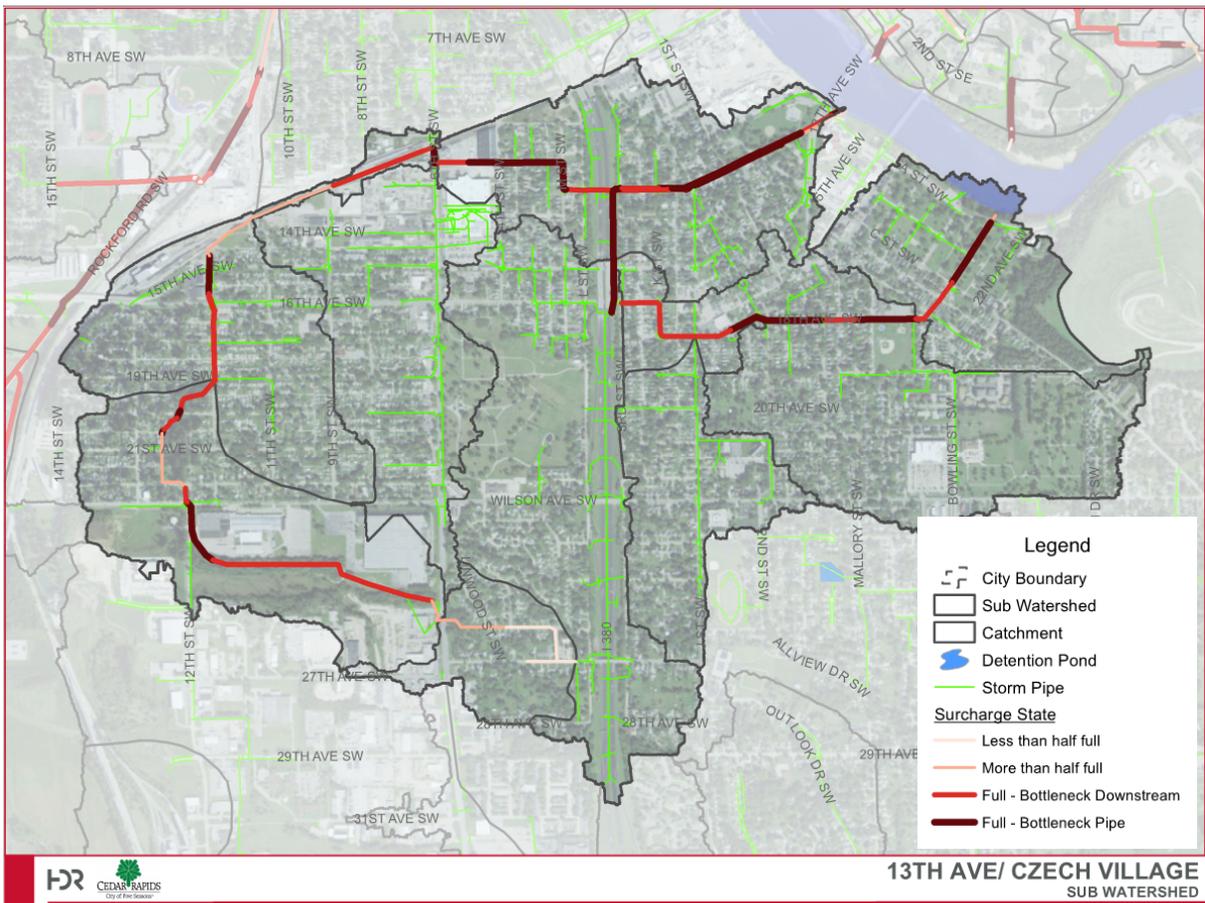
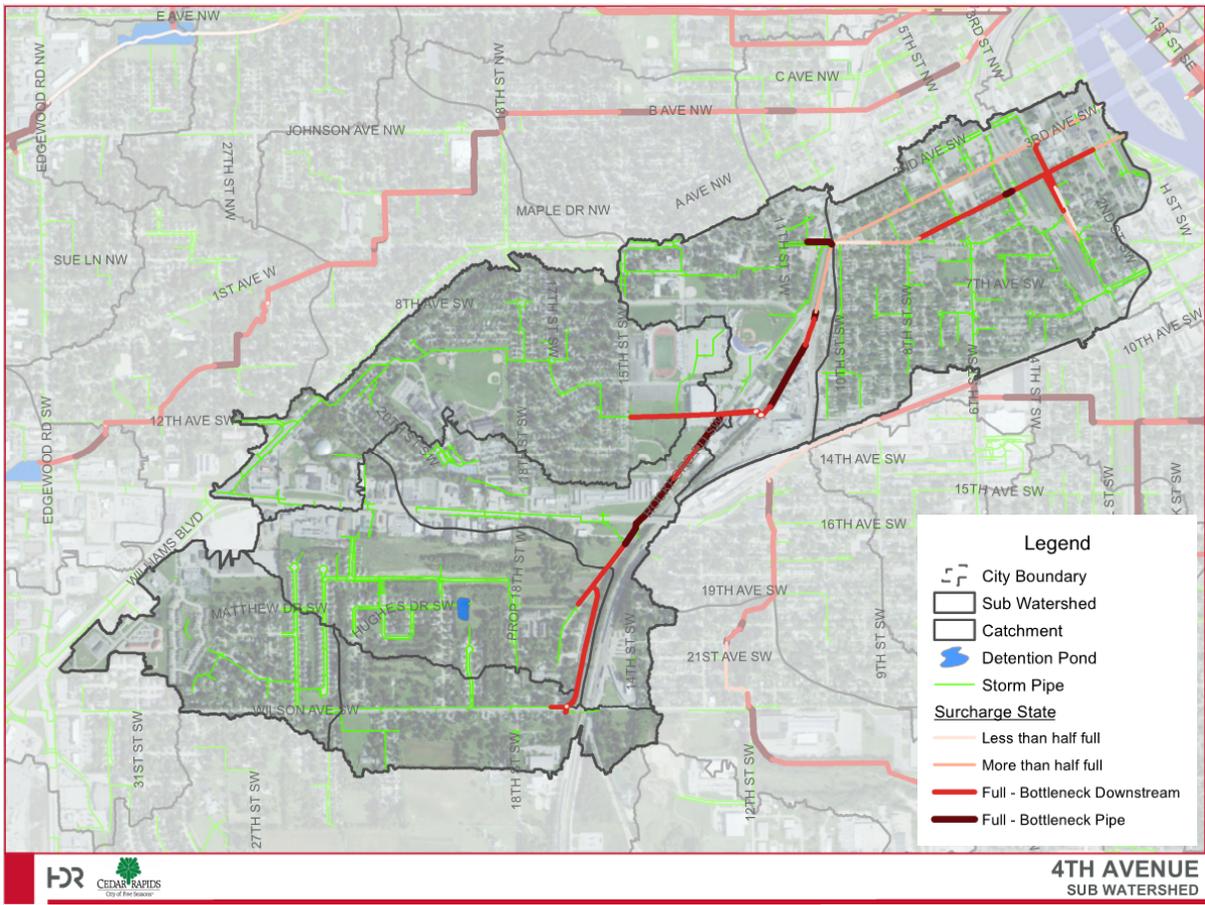
Basin-Scale Models

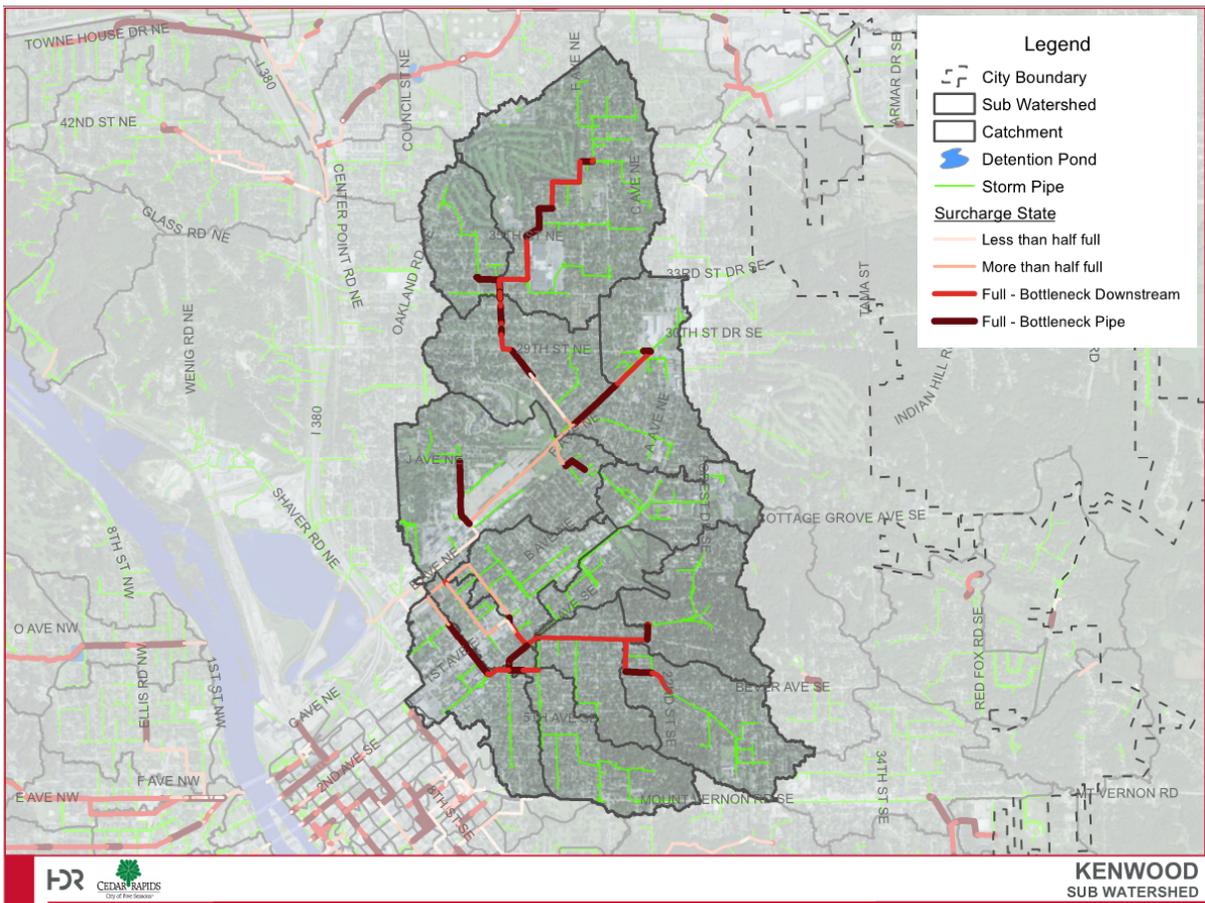
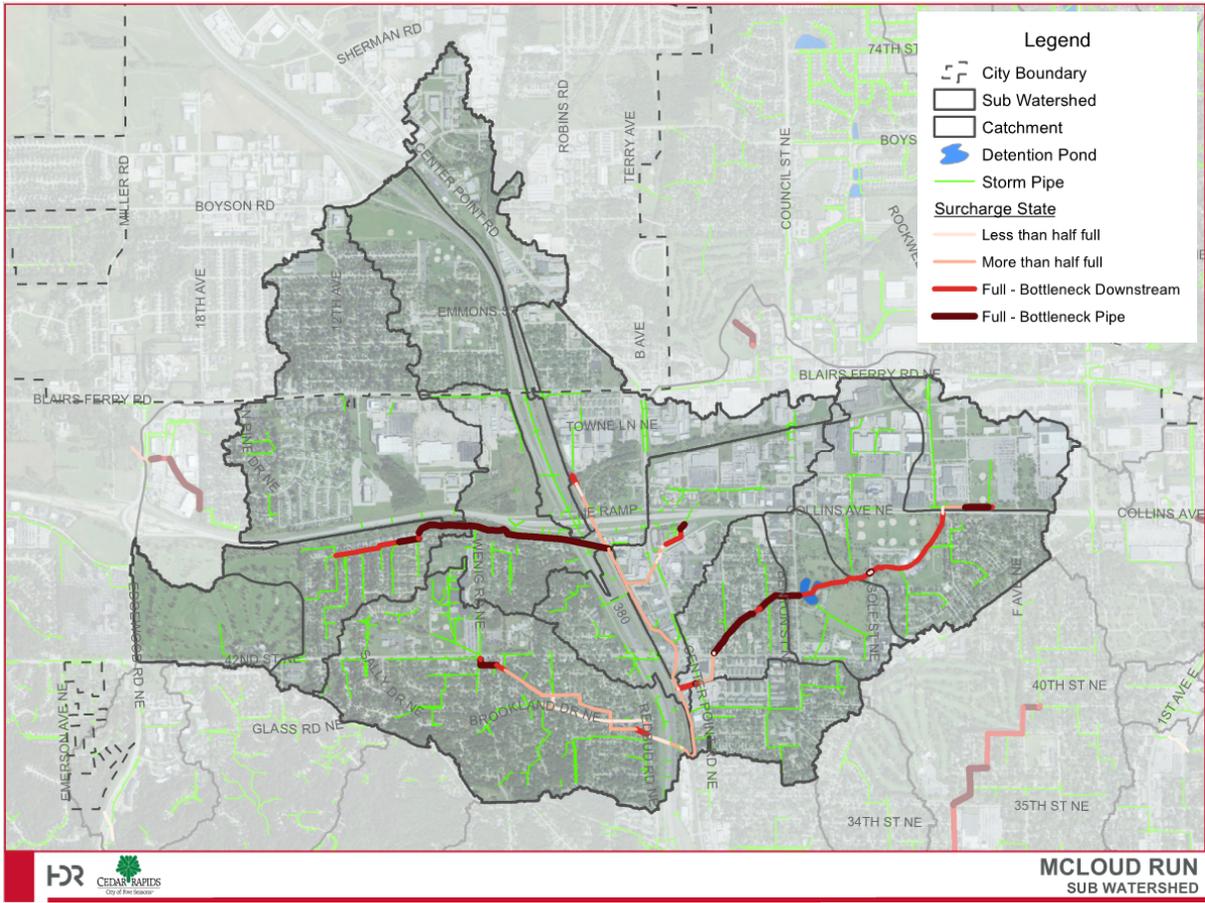
- More-detailed pipe network (greater than 12")
- Overland flow
- Ponding and detention
- Project-scale evaluation
- Individual conveyance bottlenecks
- Tool for evaluating mitigation alternatives

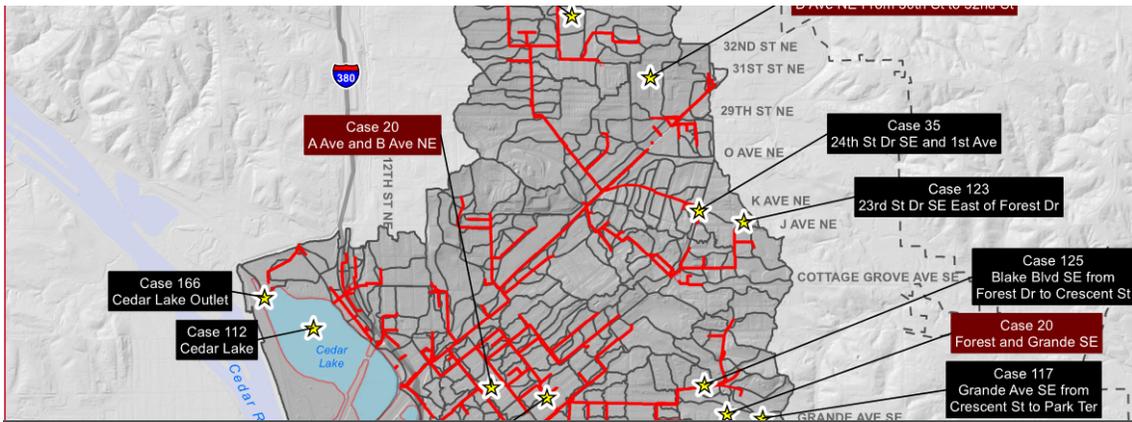


02 MACRO-SCALE MODEL RESULTS





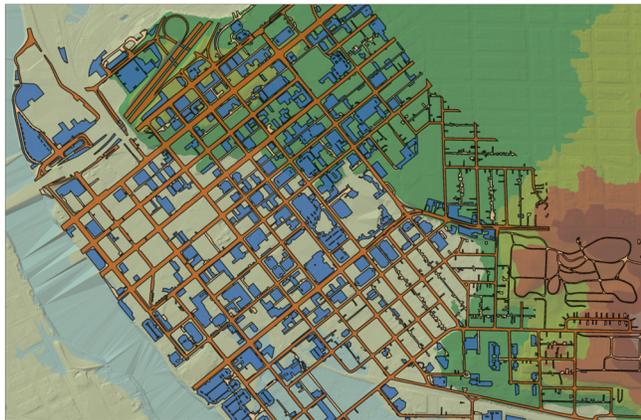


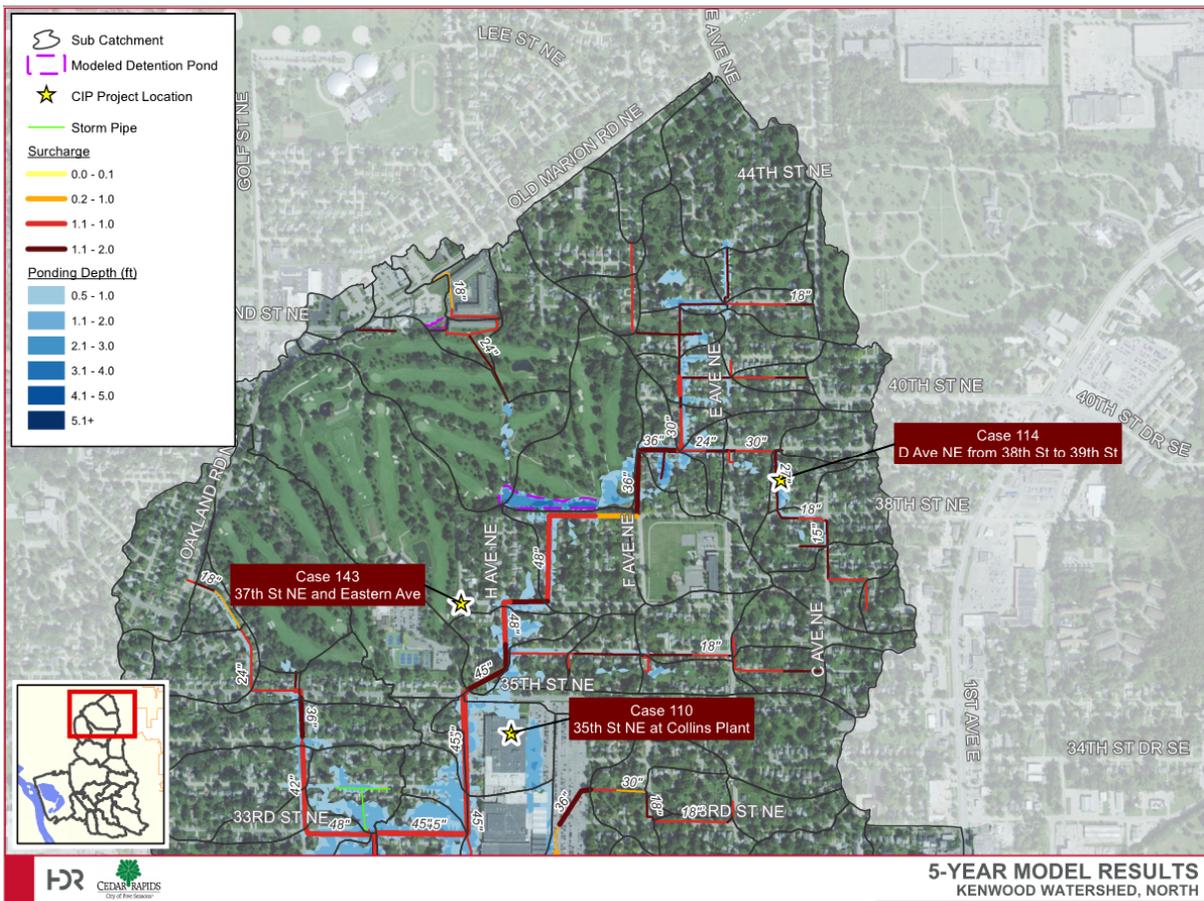
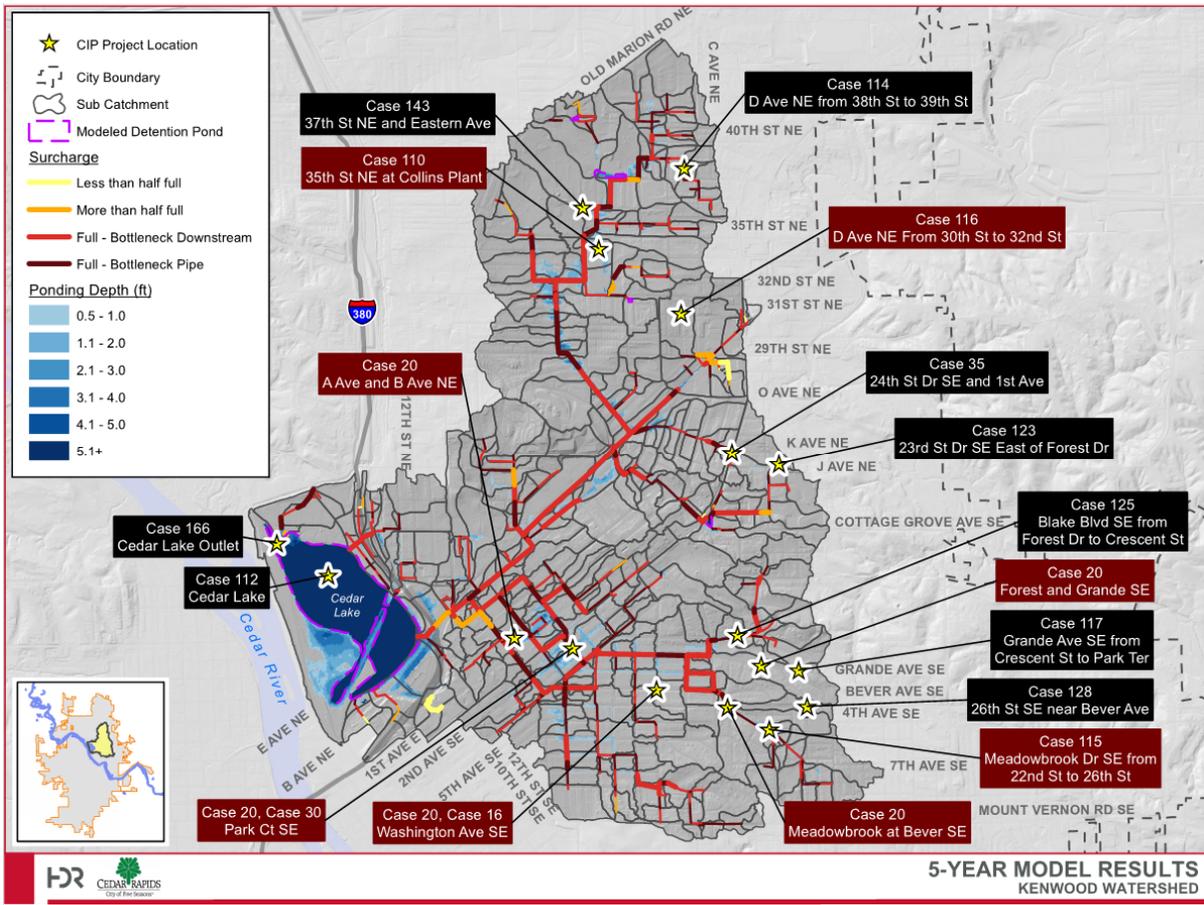


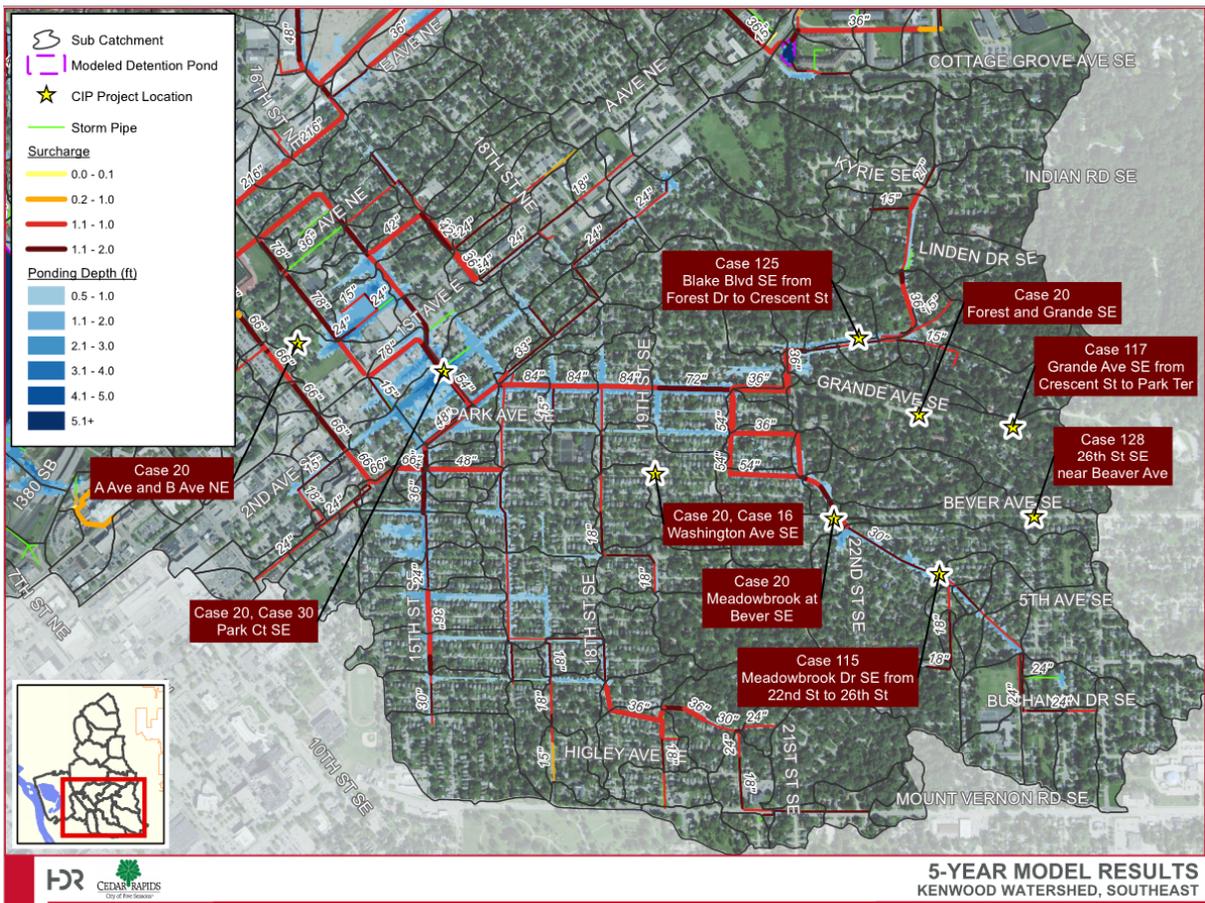
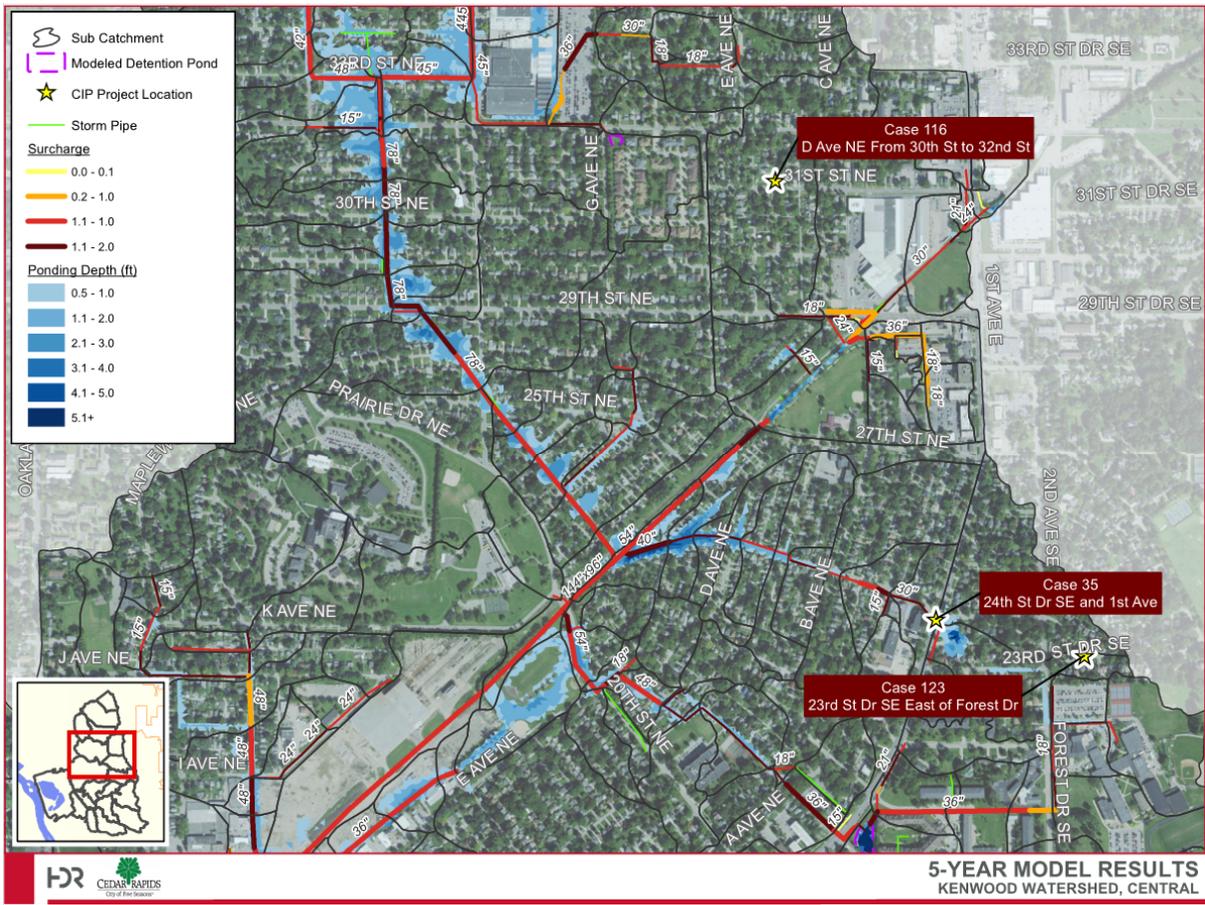
03 BASIN-SCALE MODEL RESULTS – KENWOOD

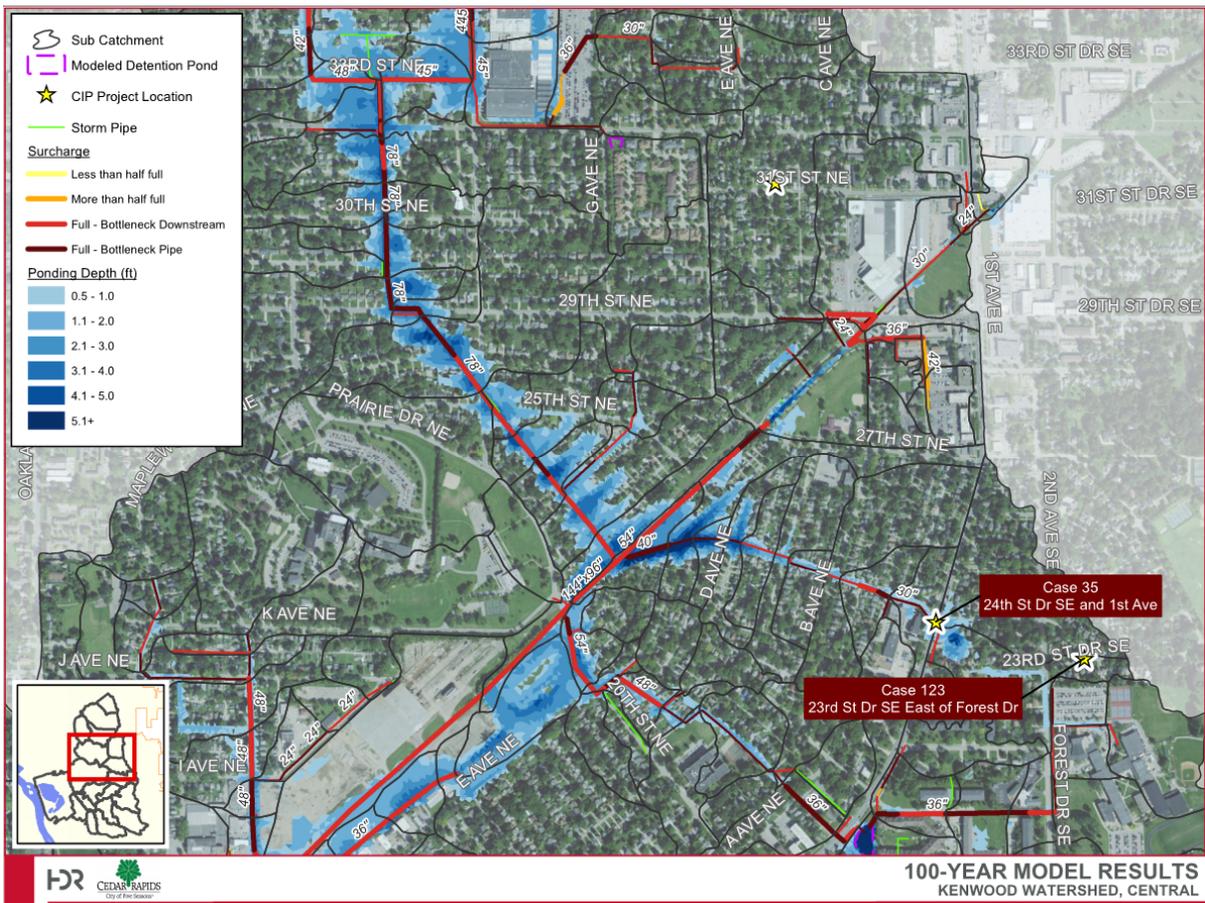
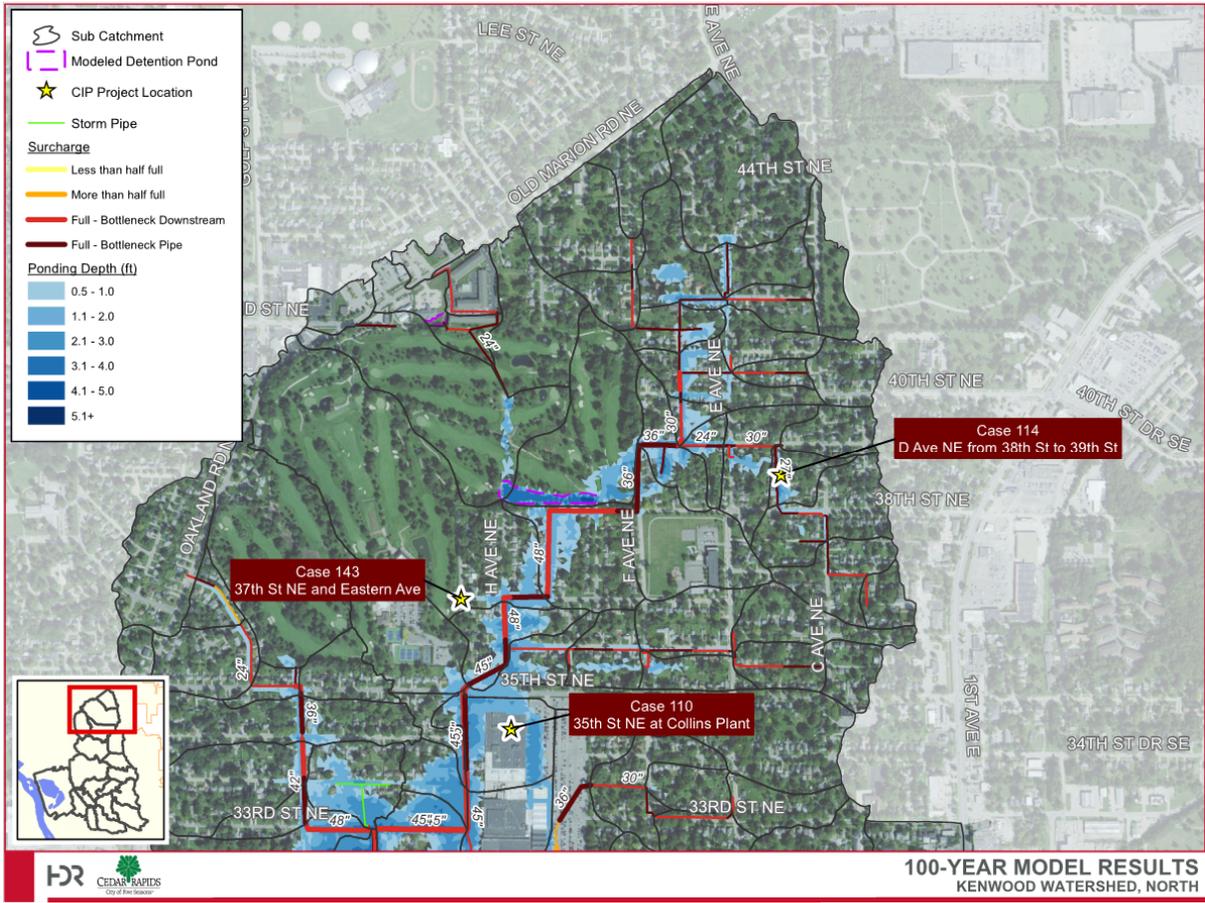
BASIN-LEVEL HYDRAULIC INVESTIGATION OBJECTIVES

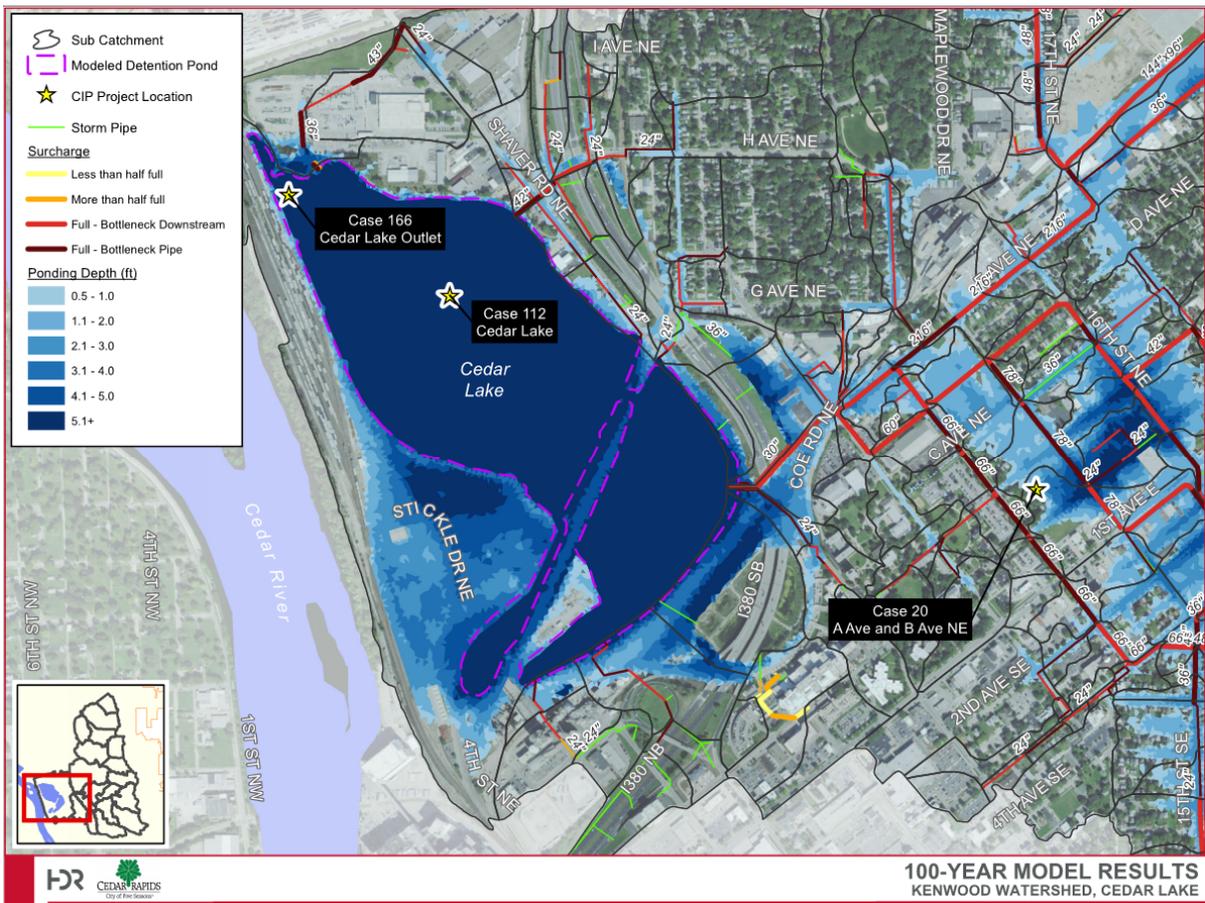
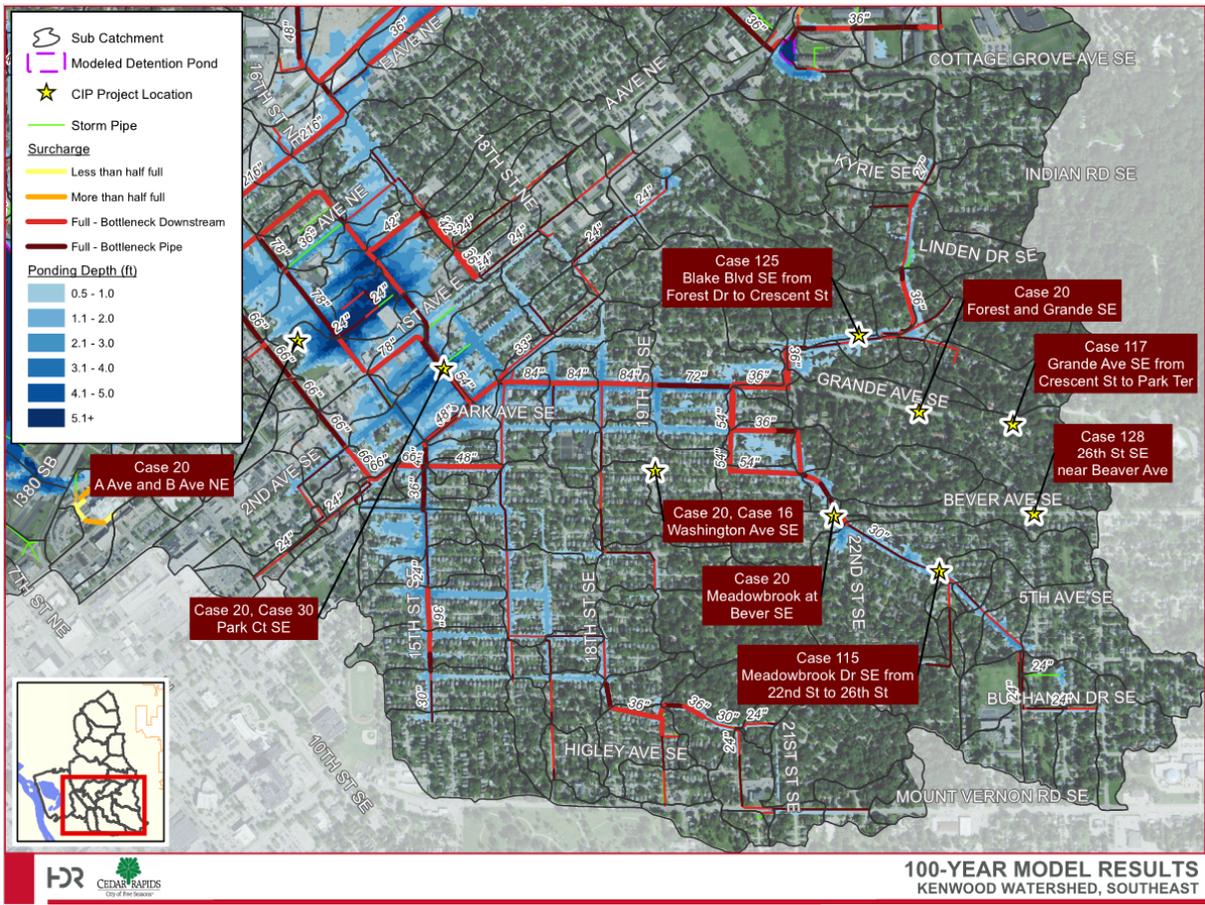
- Build on macro basin model with increased detail
- Use the basin-level model to evaluate the City's stormwater system and overland flow
- Validate the model using available information
- Evaluate near-term improvements with model
- Additional modeling in subsequent years













04 DISCUSSION

Master Plan Project Prioritization

- Use model results to validate & update CIP
- Kenwood improvement project prioritization discussion
 - 5-year vs. 100-year results
 - Detention versus new sewer
 - Regional vs. satellite detention
 - Highest downstream benefits
 - Green vs. grey benefits
 - Water quality benefits

