

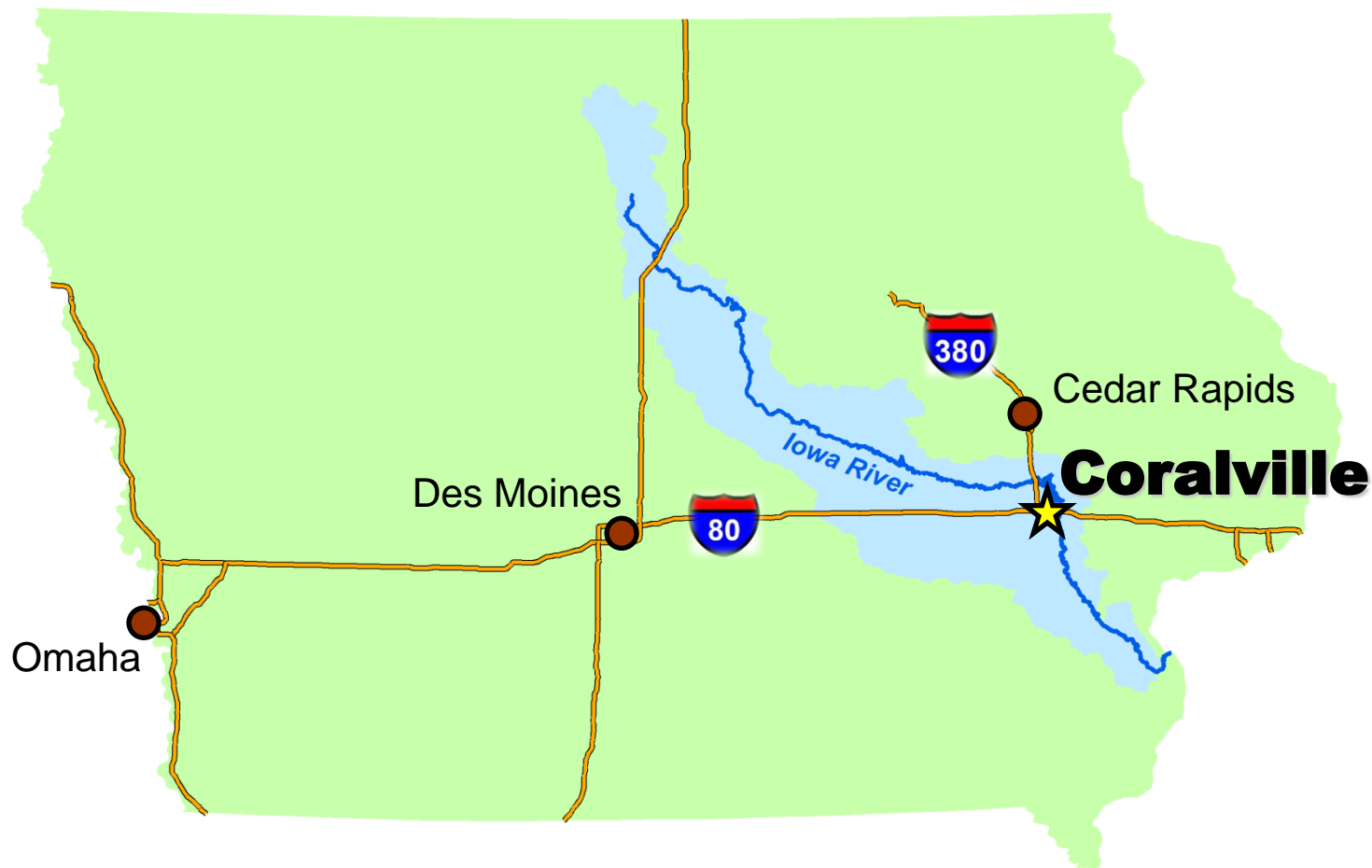
Eight Years In the Making: Flood Recovery and Protection in Coralville, IA 2008-2016

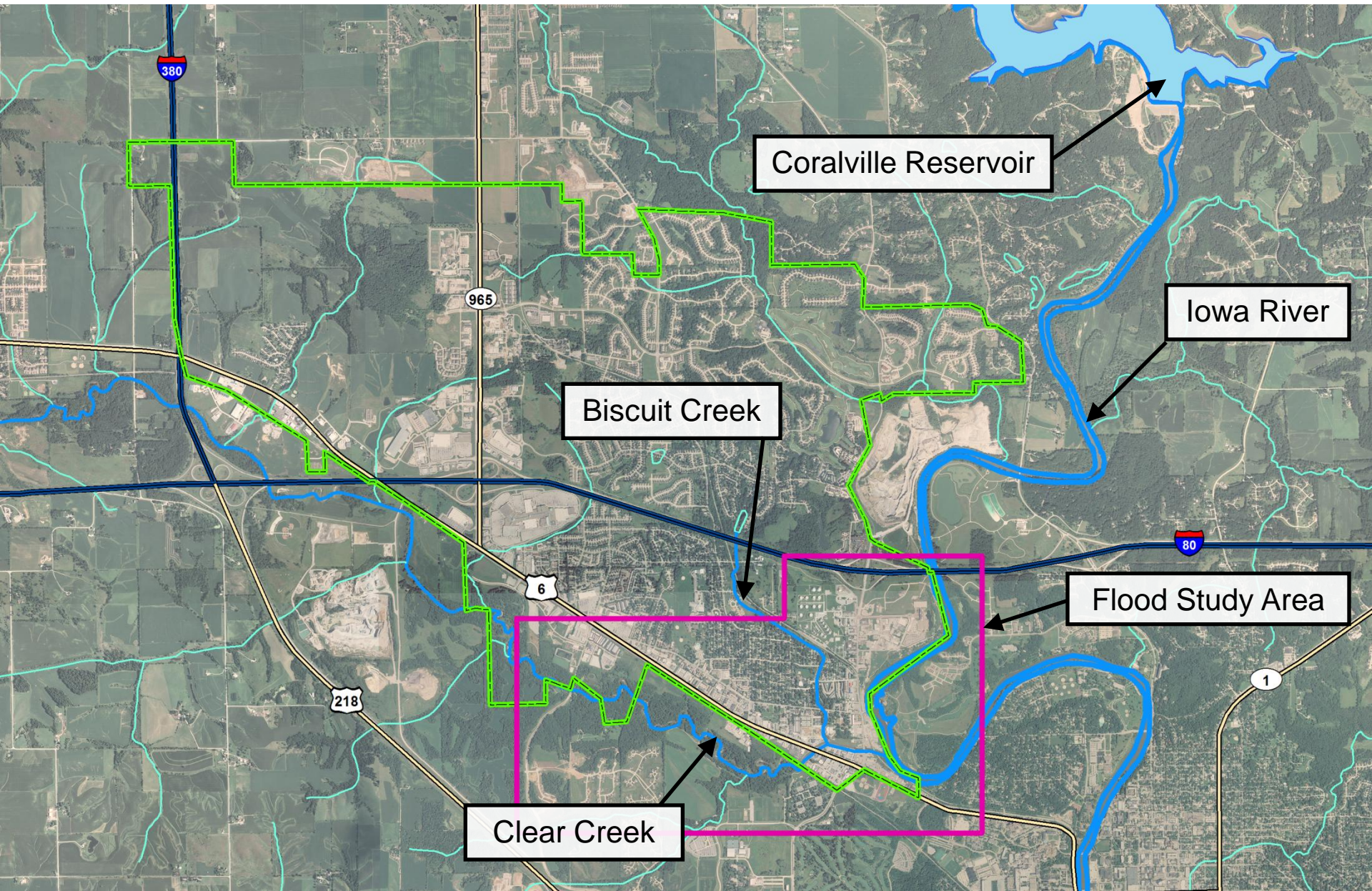


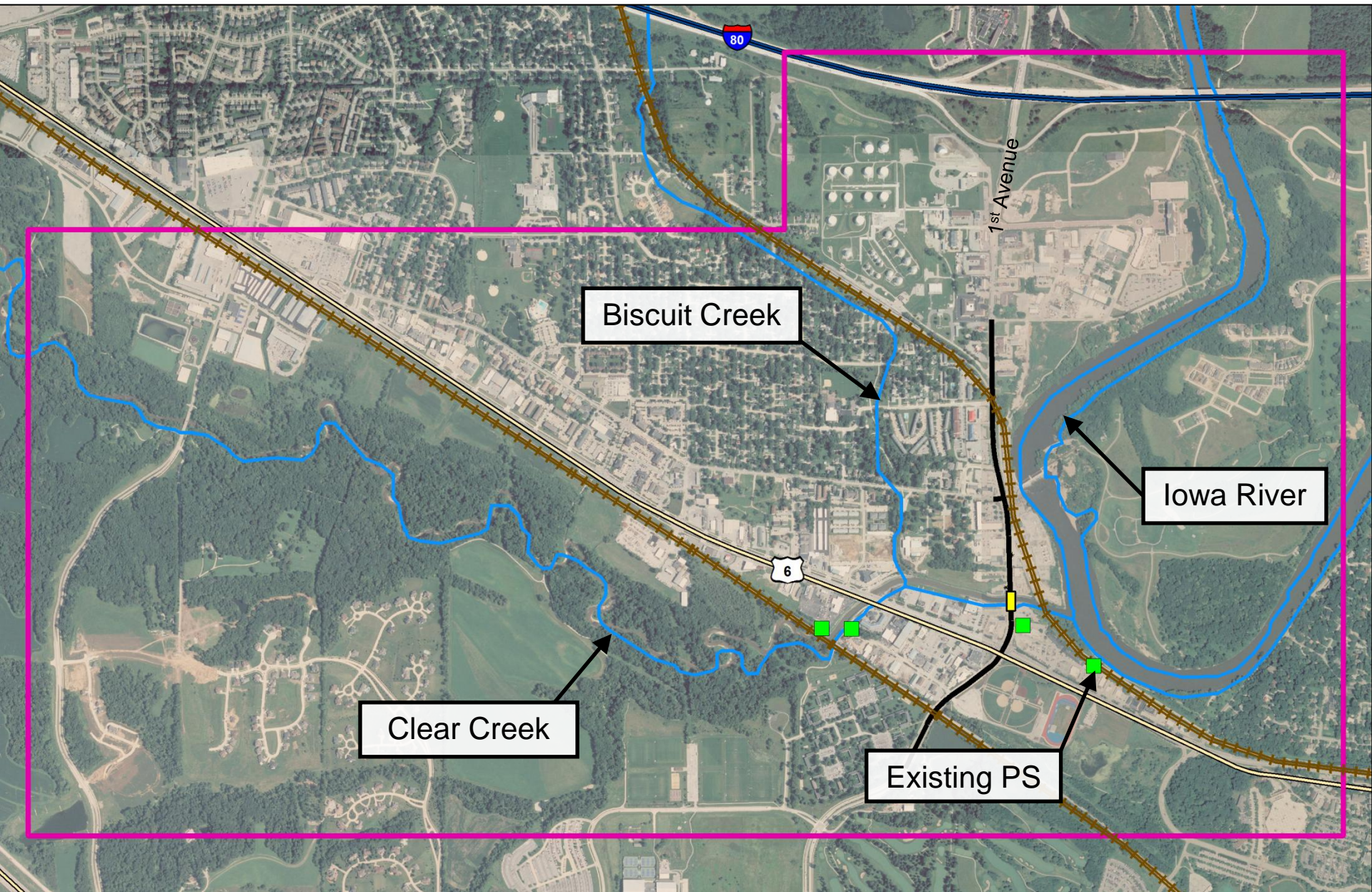
Teresa Stadelmann, PE, CFM

IAFSM Annual Conference
March 8, 2017

Location Map







2008 Flood

- Preceding winter 2007-2008 was eighth wettest on record
- April 2008 was second wettest on record
- Iowa had record-setting 15-day wet period during the first half of June 2008



Interstate 380





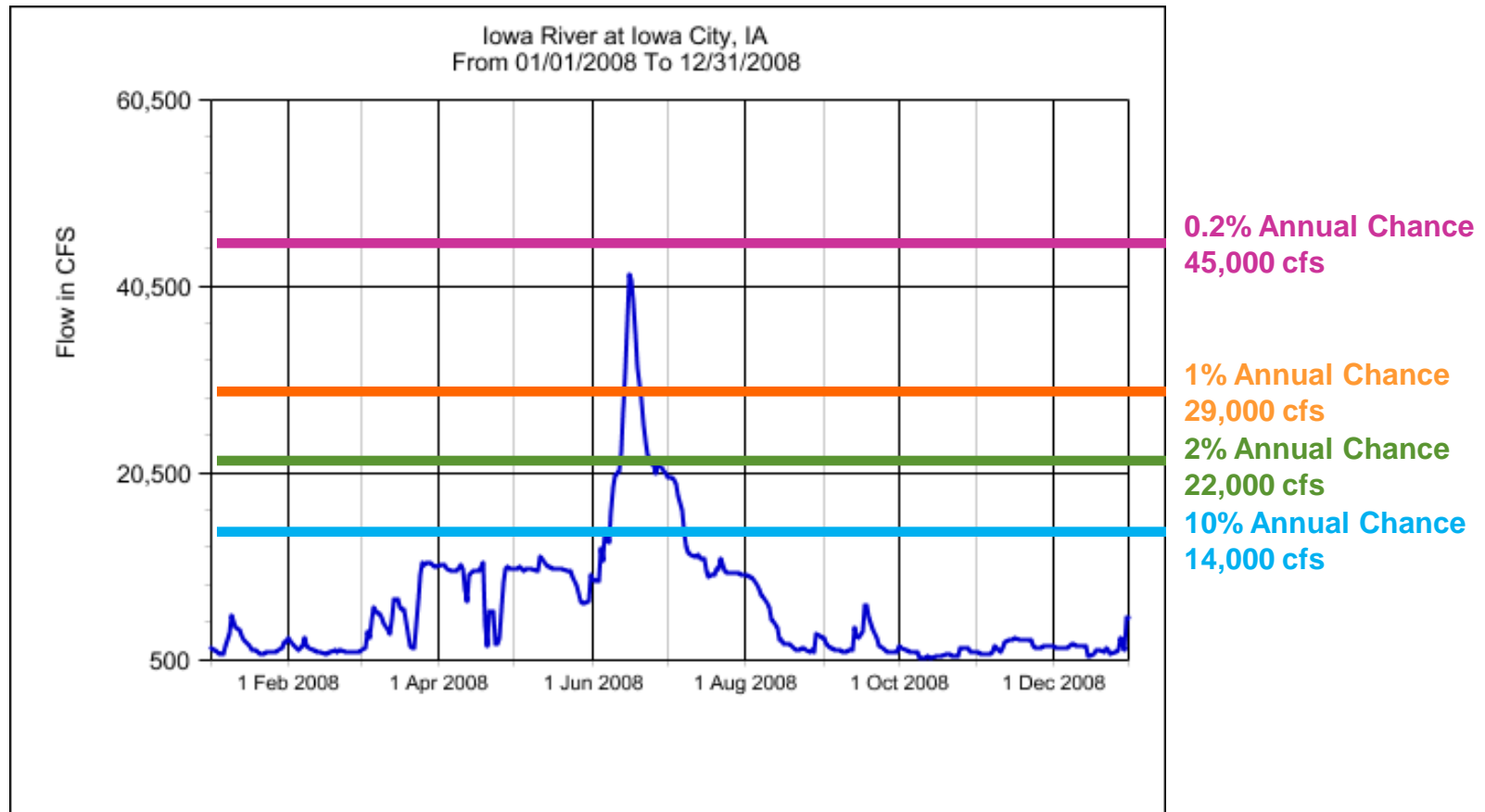
Iowa River overtops
CRANDIC embankment



June 13th



2008 Flood



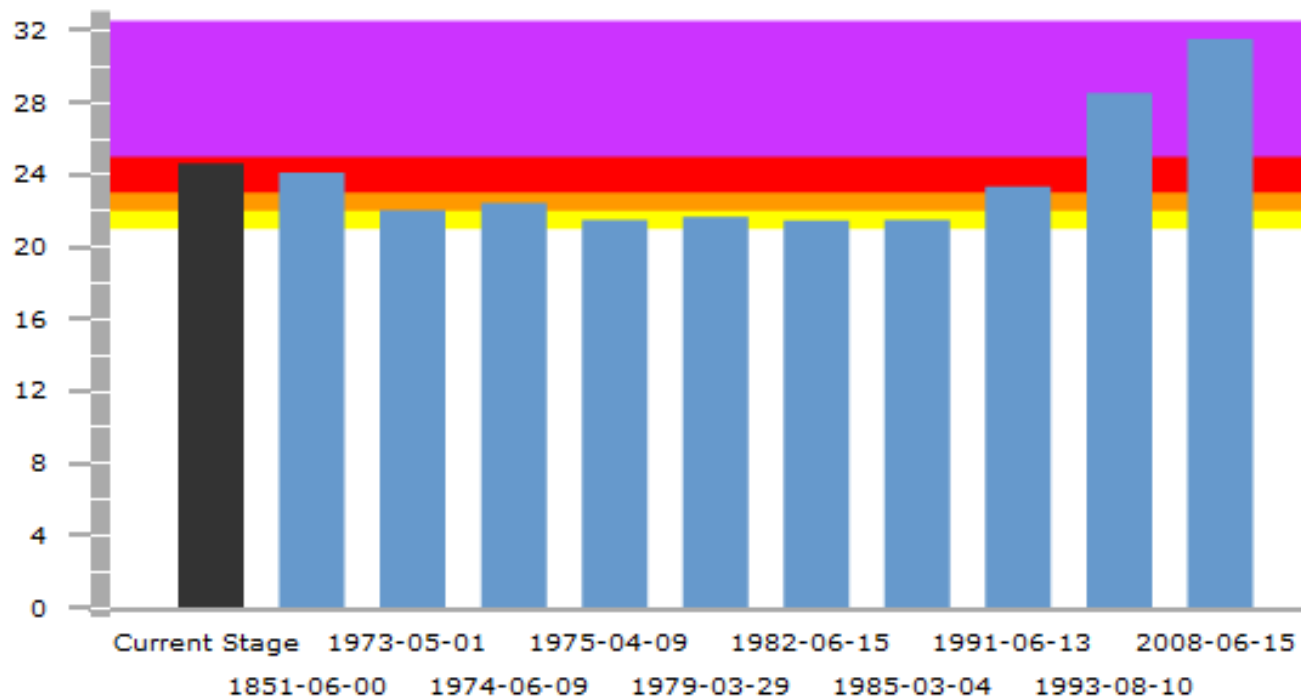
Iowa River remains above flood stage June 8 – July 7

2008 Flood

Top 10 Annual Flood Peaks

Annual Flood Peaks

Top 10 Annual Flood Peaks for Iowa River at Iowa City



2008 Flood



- Impacted
 - 273 acres flooded
 - 420 Households
 - 200 Businesses
- Damages
 - \$21M commercial
 - \$4M residential
 - \$7M public infrastructure

Recovery and Mitigation Planning

Planning

- City immediately began both recovery work and planning for the future
 - Coordination with neighboring communities
 - Buyouts along Edgewater Drive
- September 2008 - two consultants under contract to complete flood mitigation studies
 - Flood protection along Iowa River / CRANDIC Railroad alignment
 - Storm sewer system, pump stations and remainder of flood protection
- November 2008 – flood mitigation studies completed
 - Vital information obtained to complete funding applications

Flood Mitigation Study Goals

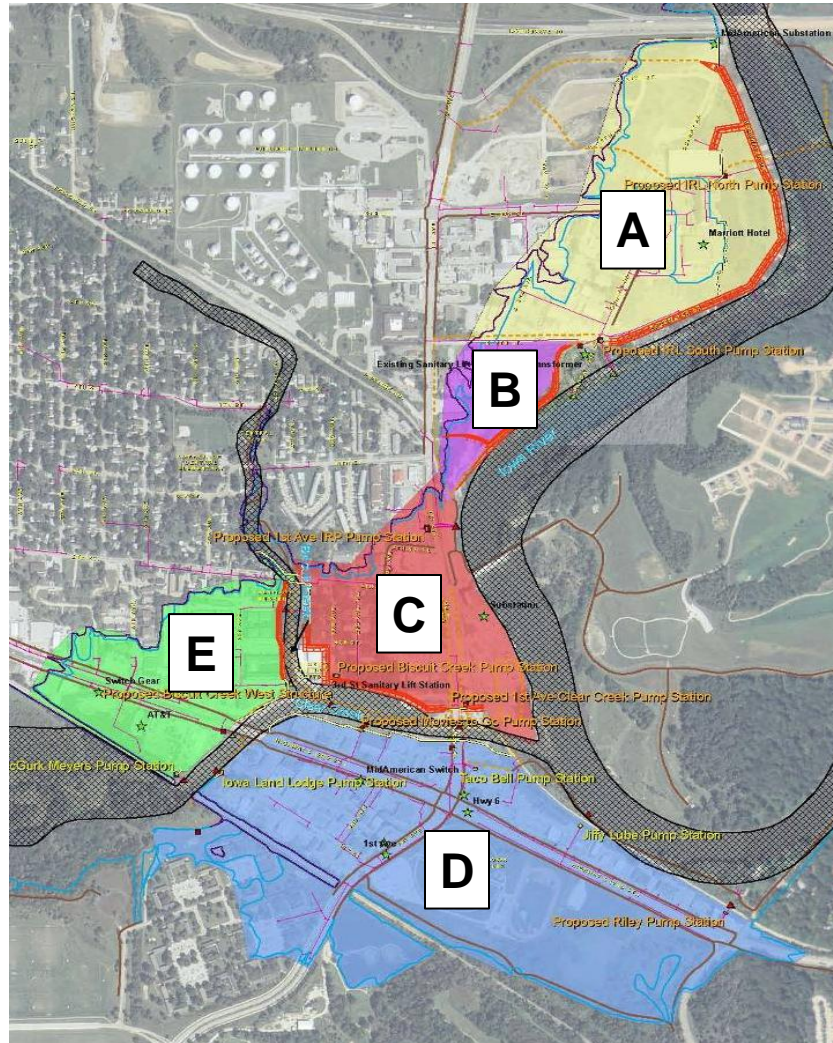
- Evaluate existing storm water and flood protection system against the June 2008 flood plus one foot of freeboard
- Identify areas for improvement in the flood protection
- Identify and evaluate alternatives to withstand a similar flood
- Develop opinion of capital costs for the improvements
- Develop recommendations to prioritize the capital improvements

Mitigation Study Recommendations

Recommendation Summary

- **Comprehensive flood protection**
 - Repair existing storm water pump stations
 - Install storm sewer backflow prevention
 - Mixture of berms, flood walls, and removable flood walls specific to each location and future development / redevelopment plans
 - Additional storm water pump stations to handle interior drainage
- **Build on the existing system**
 - Prevent backflow for entire storm sewer system
 - Raise protection level of existing pump stations and flood walls
 - Close gaps in protection
- **Protect critical infrastructure**
 - Transportation corridors
 - Sanitary lift stations
 - Electrical substations and switch gear

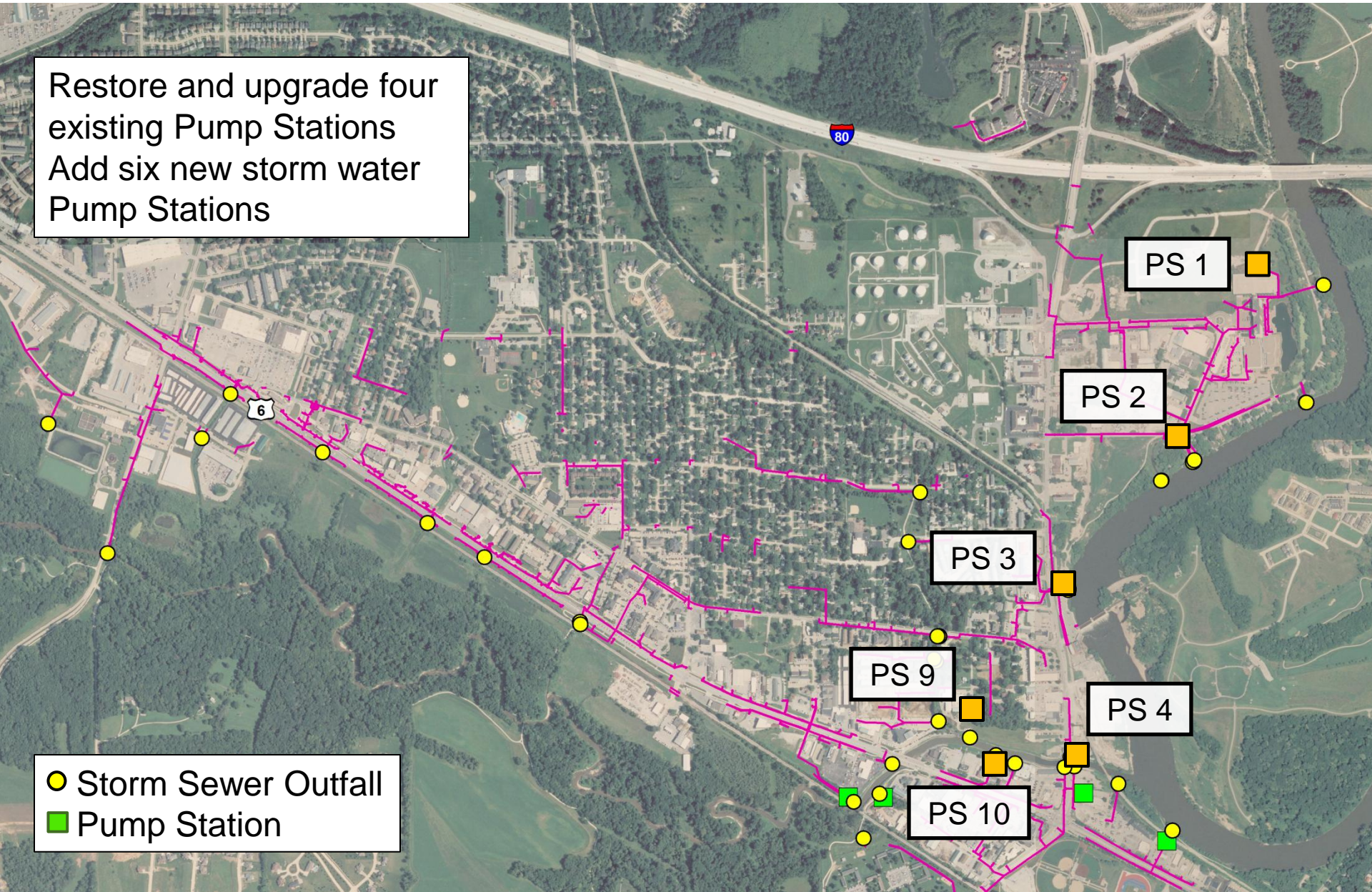
Flood Protection Regions

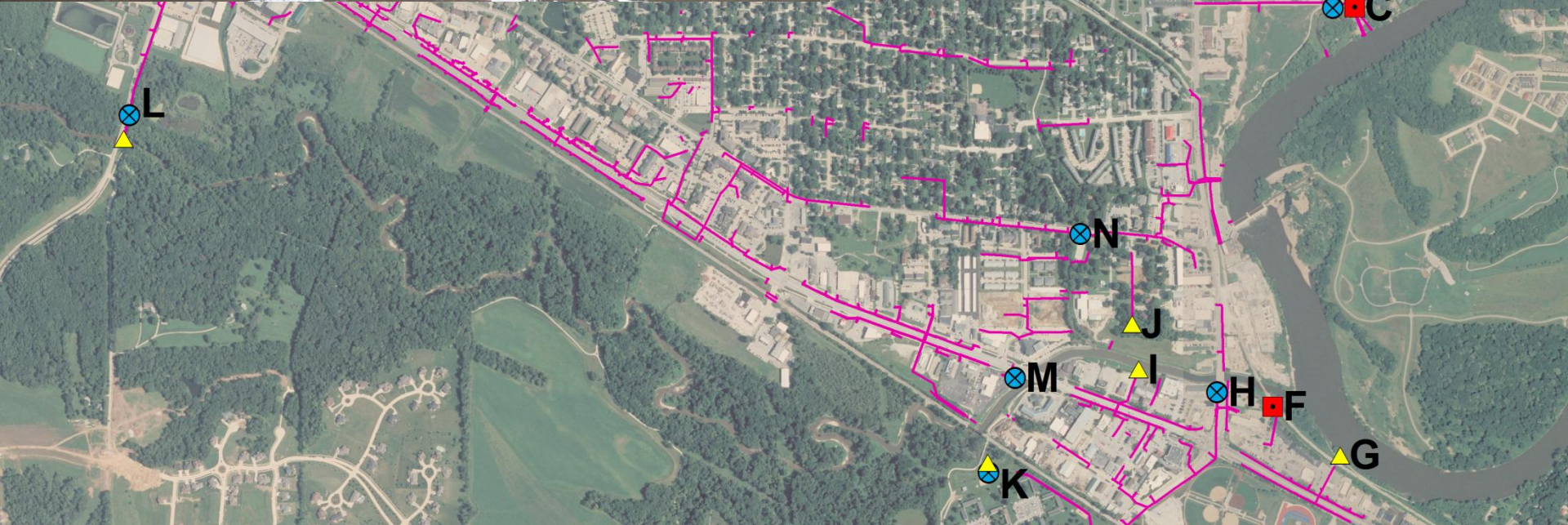


- Each region can be built independently and provide flood protection for that region alone
- Allows for smaller projects to be completed as funding becomes available

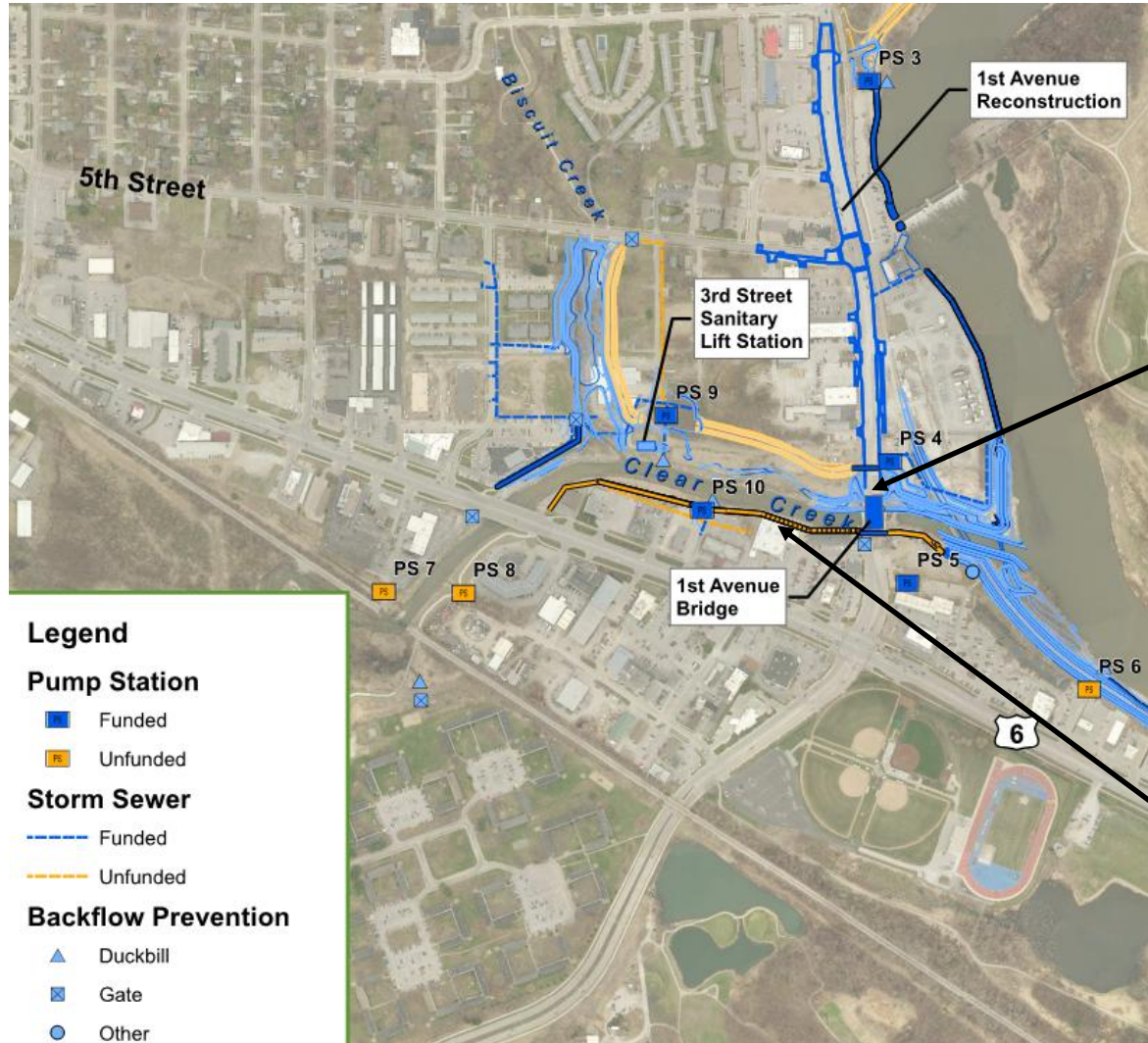
Restore and upgrade four
existing Pump Stations
Add six new storm water
Pump Stations

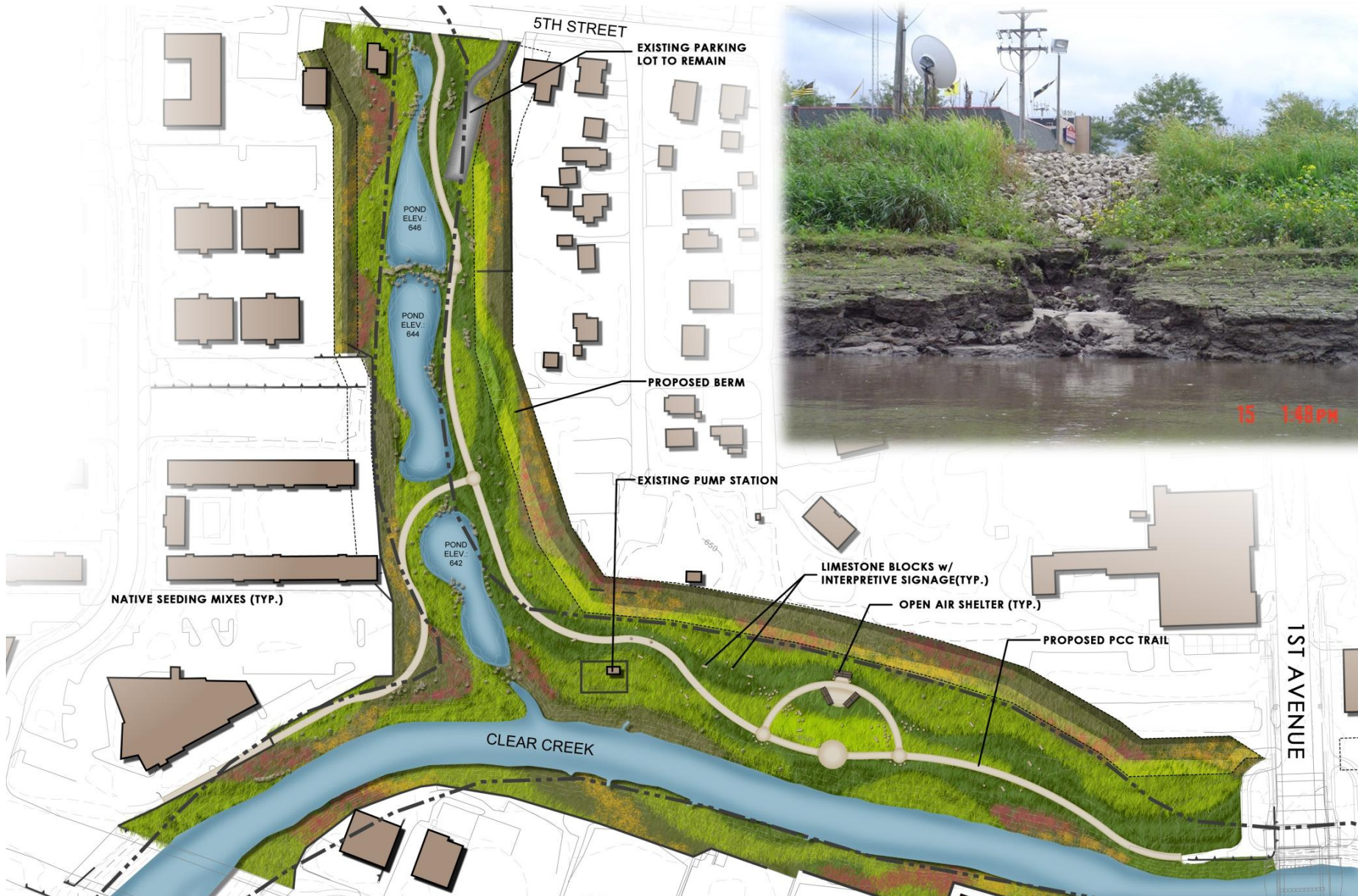
● Storm Sewer Outfall
■ Pump Station





Flood Protection





Progress

Funding

- Mitigation studies completed with City funds
- Several grant programs pursued for design/construction
 - HMGP, CDBG, EDA, I-JOBS, HUD Disaster Resiliency
- Grants awarded

▫ I-JOBS	\$27.1 Million	Berms, walls, pump stations, 1st Avenue, Bridge
▫ EDA	\$ 7.1 Million	Flood protection along CRANDIC
▫ CDBG	\$ 3.1 Million	Flood protection along CRANDIC
▫ CDBG	\$ 600,000	Storm sewer backflow prevention
▫ I-JOBS II	\$ 3.6 Million	Clear Creek & Biscuit Creek flood protection
▫ CDBG	\$10.0 Million	Pump stations, 4 th Avenue storm sewer
▫ HUD	\$ 1.8 Million	Pump stations (2017-18 construction)
- Flood Mitigation Sales Tax Increment Funding
 - 5th Street reconstruction over Biscuit Creek
 - Flood protection south bank of Clear Creek (2016-17 construction)

Progress

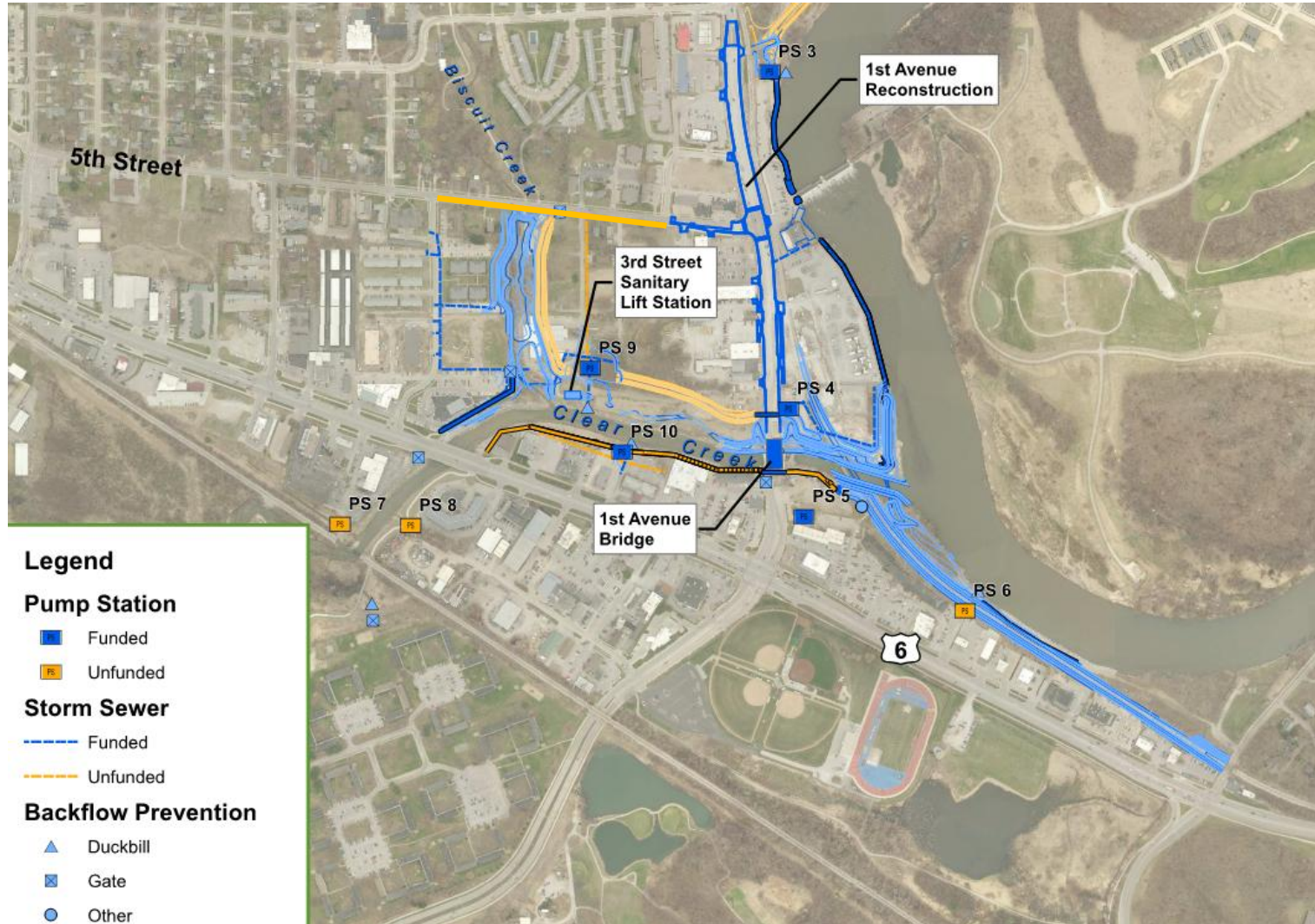
- Restored existing pump stations to pre-flood operation Summer 2009
- Raised pump station electrical and controls above 2008 + 1ft
- Completed backflow prevention at all locations



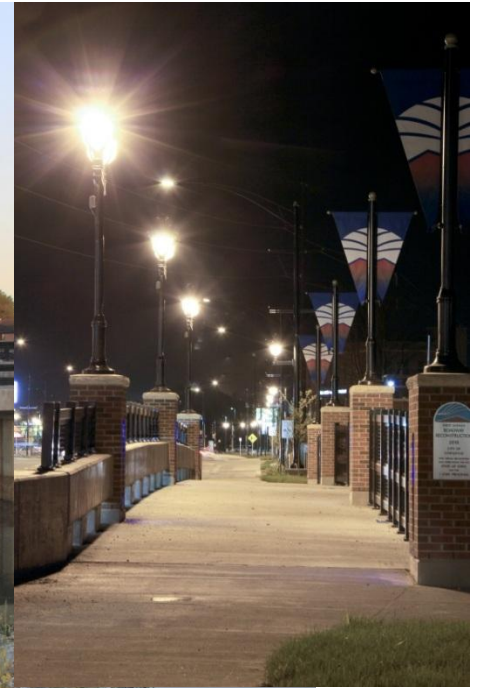
Construction



Progress



Construction



Construction



Construction



Construction



10/11/2012 15:07

Keys to Success

- Coordination and quick response within community
- Data collection during the flood (HWMs, etc.)
- Coordination with Iowa City and University of Iowa
 - Updated Iowa River and Clear Creek HEC-RAS models
- Coordination with consultants during and after flood
- Aggressive pursuit of grant funding opportunities
- Commitment to an aggressive schedule
- Work Continues...
 - post-construction storm water ordinance
 - Clear Creek Watershed Coalition

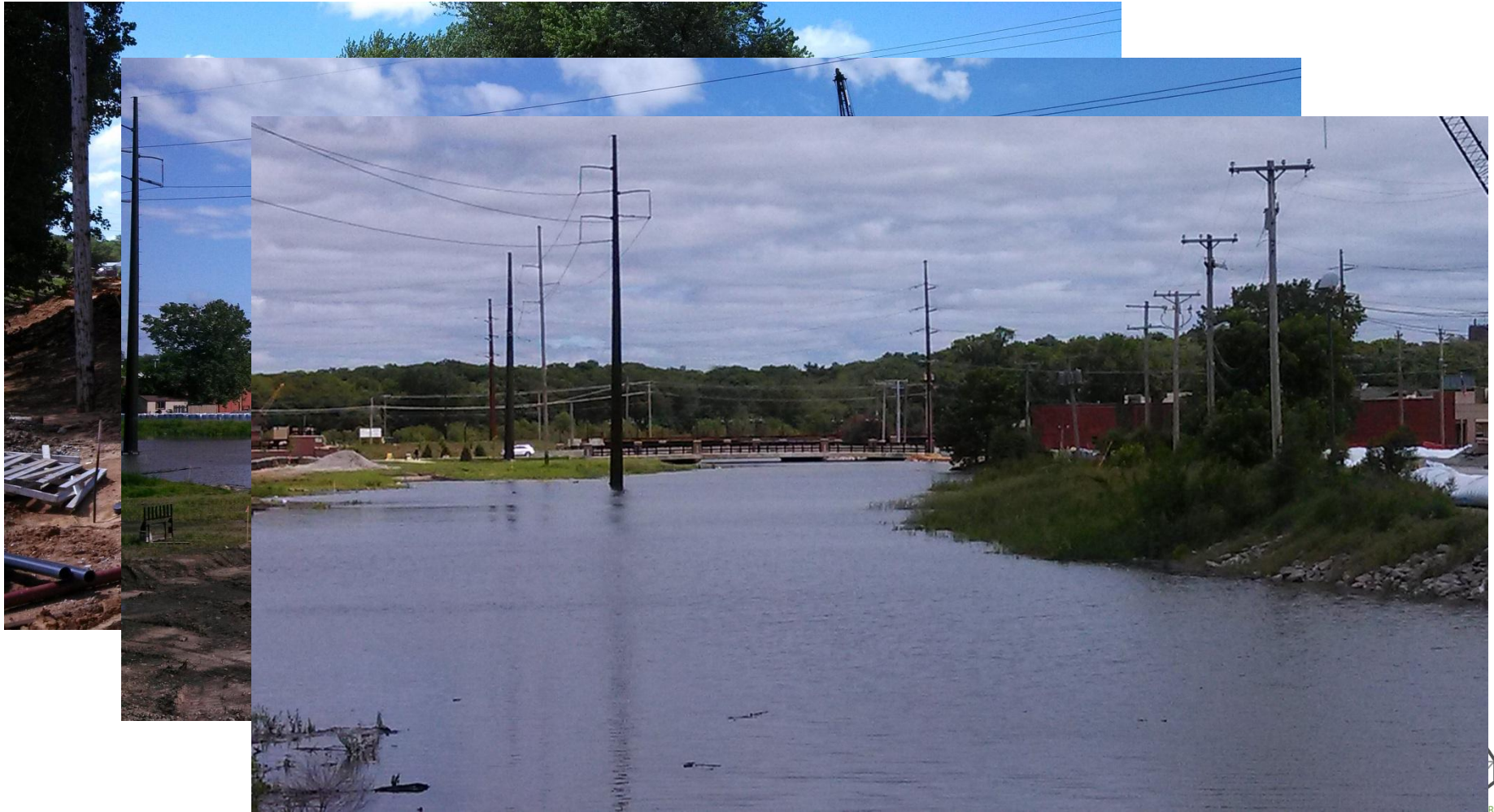
But that will never happen
again....



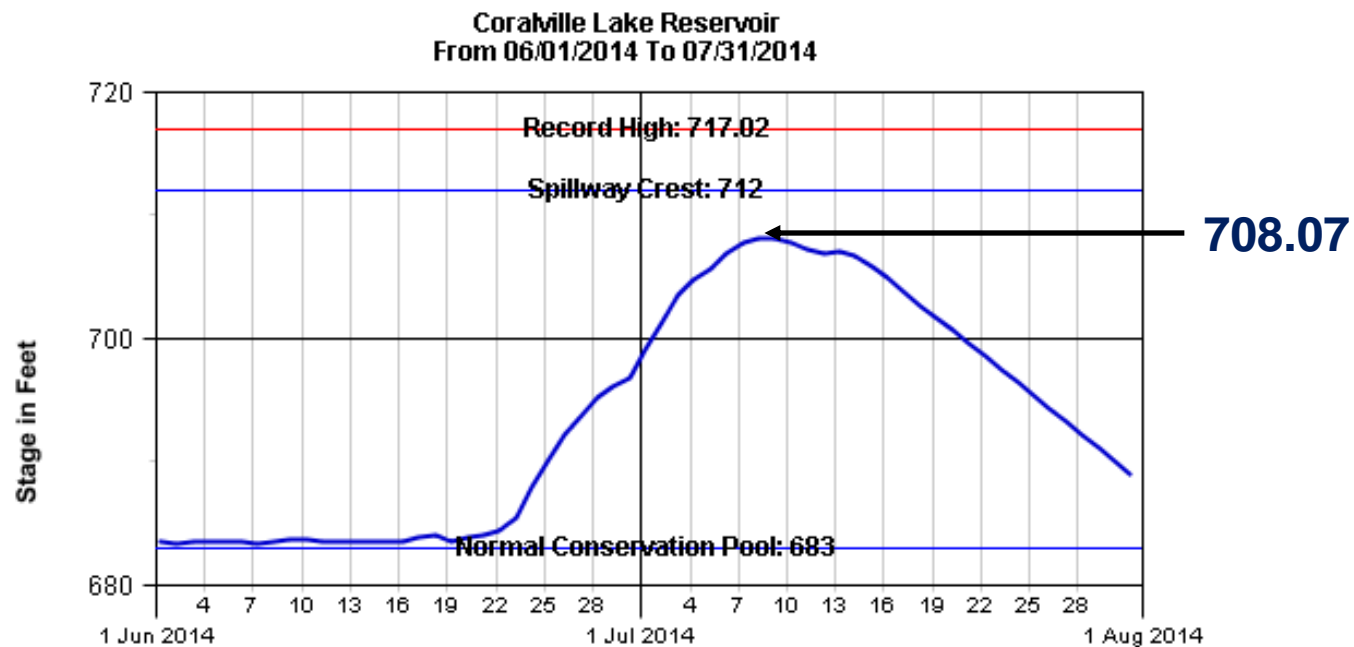
April 2013 Flooding – Clear Creek



June 2013 Flooding – Iowa River



July 2014 Flooding – Iowa River



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Questions?

