

Cart Creek/North Branch Park River Flood Damage Reduction



Photograph Courtesy Civil Air Patrol

May 22, 2013 near Crystal, ND

December 16, 2014
North Branch Stakeholders Initial Meeting
Grafton, ND



Why are we here?

Goal: Consider technically feasible alternatives to determine the “Most Practicable” locally preferred alternative.



Why are we here?

Watershed Stakeholder Team: Group of individuals impacted by flooding within the area

Responsibilities:

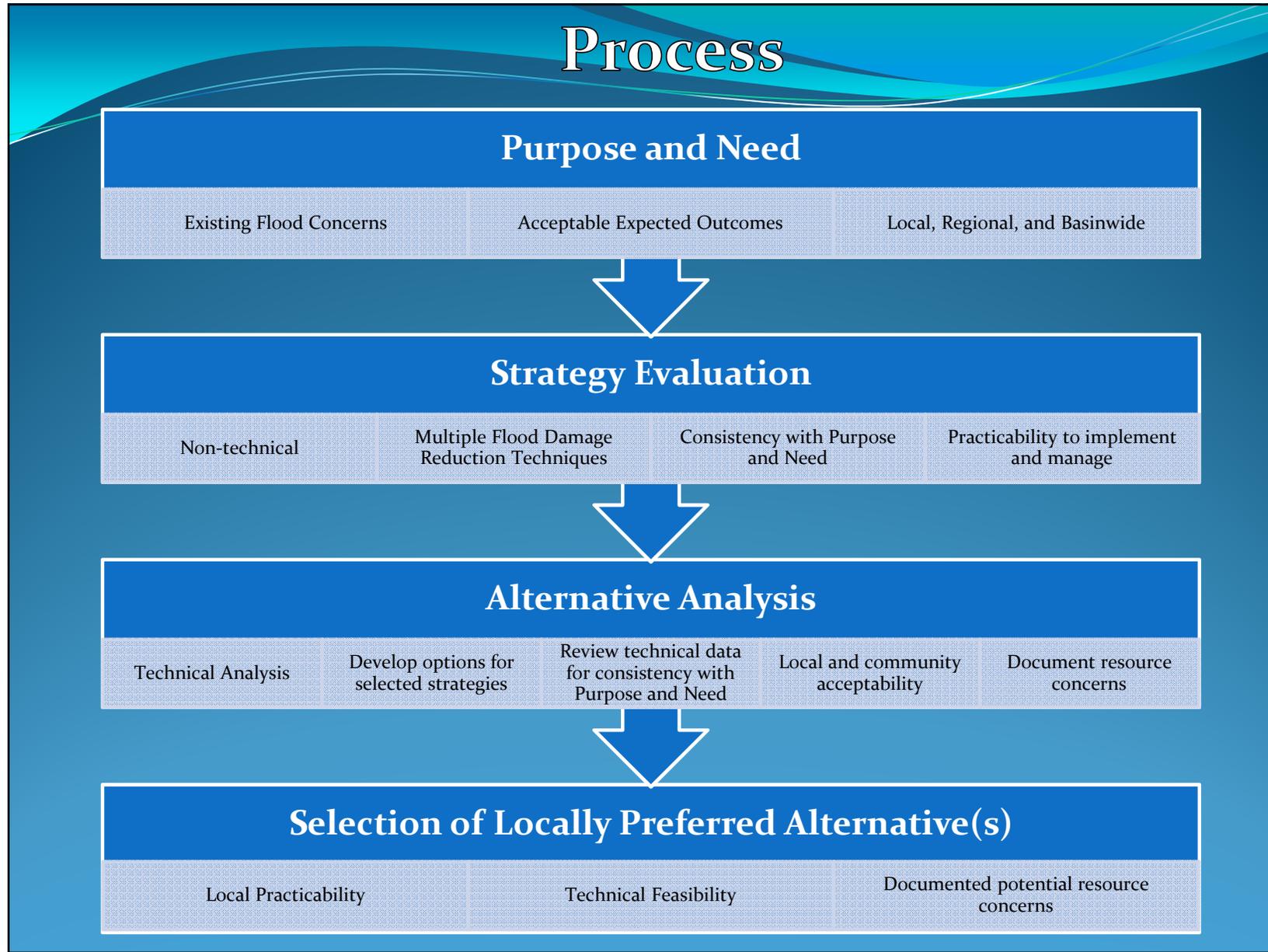
- Provide guidance to Feasibility Study process
- Review/screen potential alternatives (reductions to flood risk, adverse impacts, etc...)
- Evaluate local acceptability of alternatives
- Document potential resource concerns (existing easement, mitigation, environmental, etc...)
- Impacted landowner engagement (small group discussions)
- Determine Locally Preferred Option(s)
- Determine preferred alternative for Park River Joint Board consideration
- **Document the process through the Feasibility Study**

Advisory Committee

Individuals representing various resource concerns. Will provide guidance (as needed) on specific alternatives to determine and document potential concerns.

Advisory Committee:

- Pembina County Highway Department
- Walsh County Highway Department
- ND Dept. of Transportation
- County Soil Conservation Districts
- Department of Health
- ND Game and Fish
- US Fish and Wildlife Service
- Natural Resources Conservation Service – (Pembina Co. & Walsh Co.)
- US Army Corps of Engineers



Goals and Outcomes for Today

- **Educate Stakeholders on the Process**
- **Define Purpose and Expected Outcomes**
- **Discuss Range of Strategies**
- **Finalize Acceptable Strategies for Further Analysis**
- **After Today.....** *Begin Preliminary Alternative Screening for discussion at next stakeholder's meeting*

Purpose and Need

“Reduce flooding in the region” -- how do we better define?

Document Existing Flood Concerns:

- **Local**
 - Crystal, ND
 - Rural residences and Infrastructure
 - Agricultural

- **Regional**
 - Grafton, ND
 - Rural residences and Infrastructure
 - Agricultural

- **Basinwide**
 - Multiple Communities
 - Rural residences and Infrastructure
 - Agricultural

Public Input Meeting Review



- Meeting Held July 1, 2014, Mountain, ND

Goals:

- Provide background on Joint Board Educate on types of projects from other areas
- Explain feasibility study process
- Next steps and potential financing
- Solicit public input on flood concerns and potential solutions
- Document project development

Outcomes:

- Approximately 35 forms returned
- Survey results indicate a perceived flood risk
- Many recommendations to “slow water down” in the upper watershed

Public Meeting No. 1 – Public Input Solicitation

North Branch Park River Comprehensive Flood Damage Reduction
Feasibility Study
Public Comment Form

Name: _____

Address: _____

Describe impacts to your property as a result of flooding (e.g. Buildings, crop loss, property damages, etc.):

Please briefly describe your observations of overland flooding within the region:

How would you envision flood risk being reduced in your area:

Please indicate the following items on the attached map (if applicable):

- Your property location
- Areas impacted by flooding
- Areas conducive to storing water

Additional Comments:

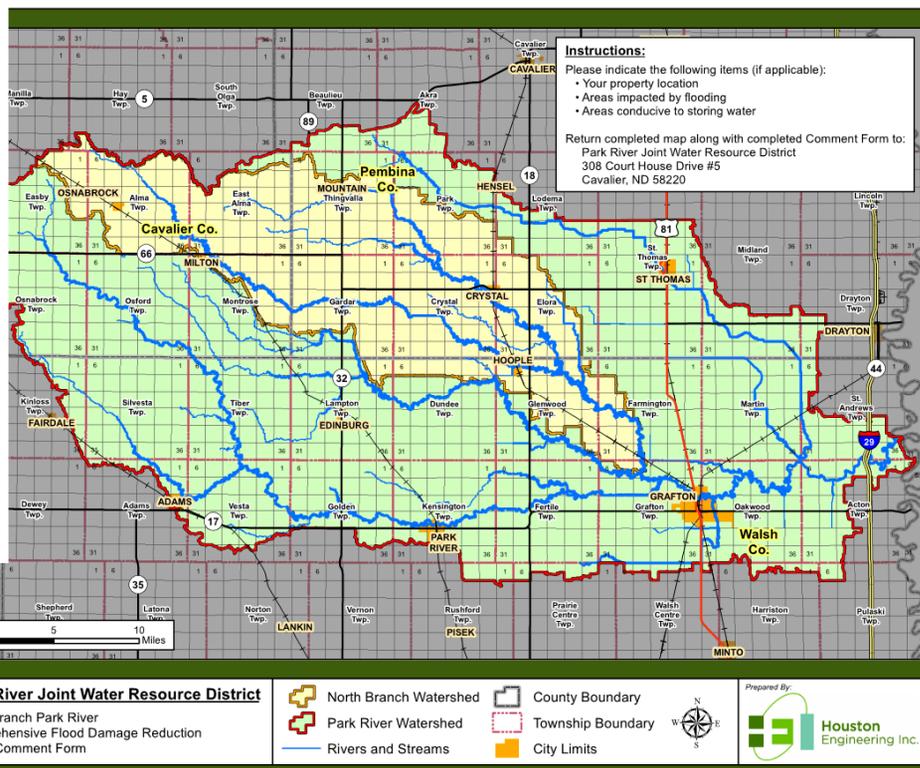
Forms may be completed and submitted to the Park River Joint Water Resource District.

Mail or deliver to: Park River Joint Water Resource District
308 Court House Drive #5
Cavalier, ND 58220

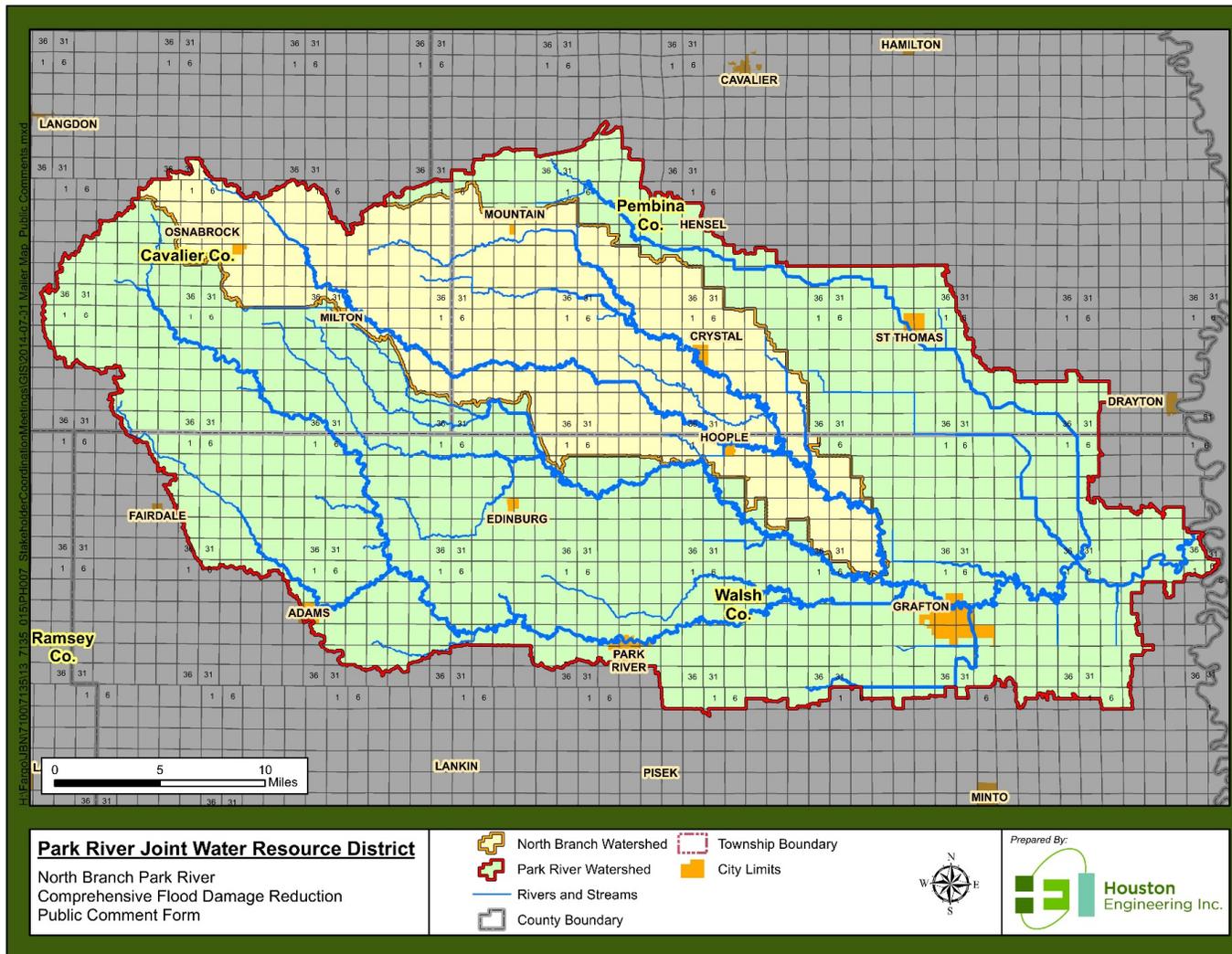
Available at:

<http://pembinacountynd.gov/county/departments/232/>

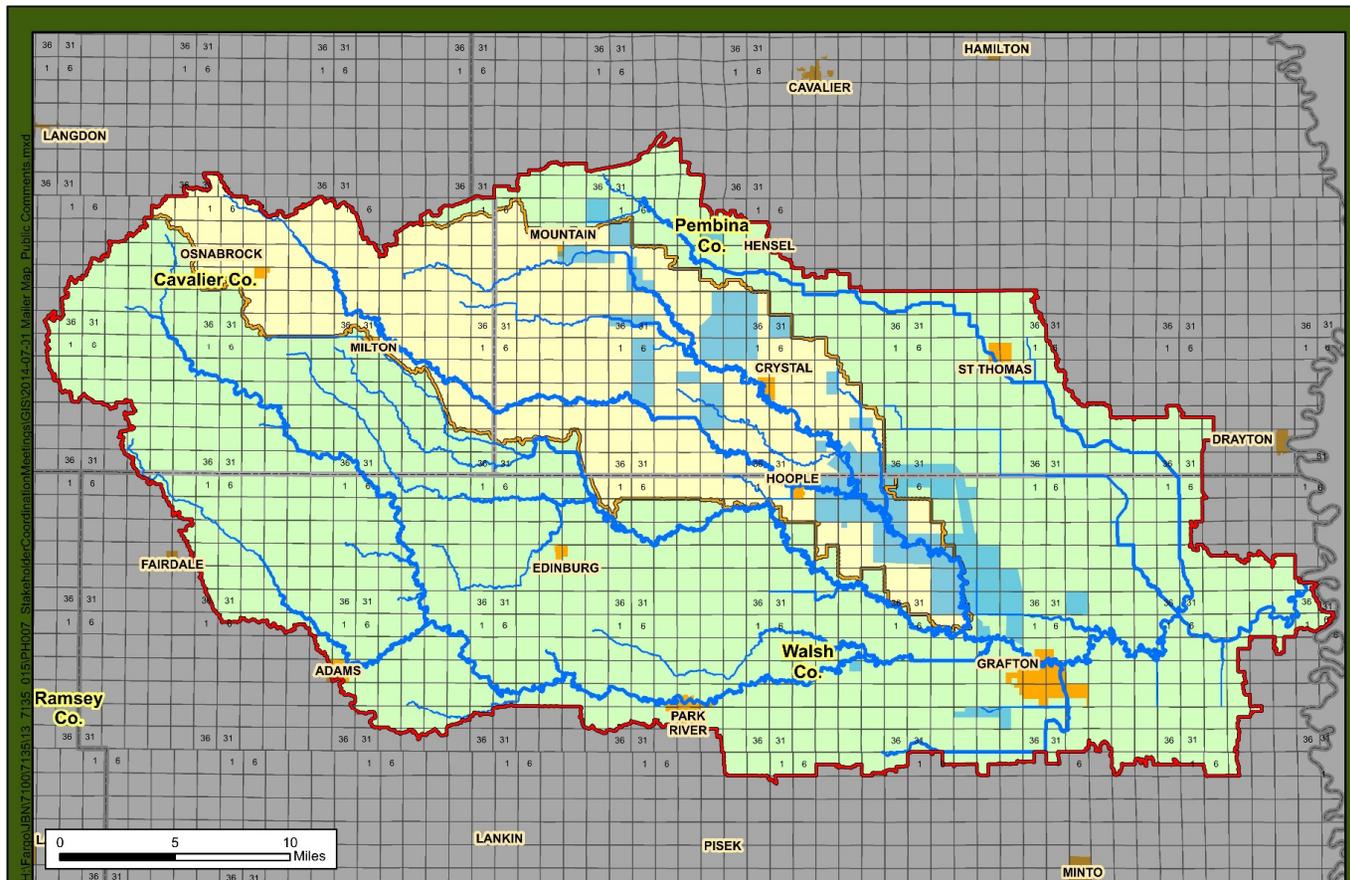
Please complete and return by July 25, 2014



Mapped Results - Flood Damages



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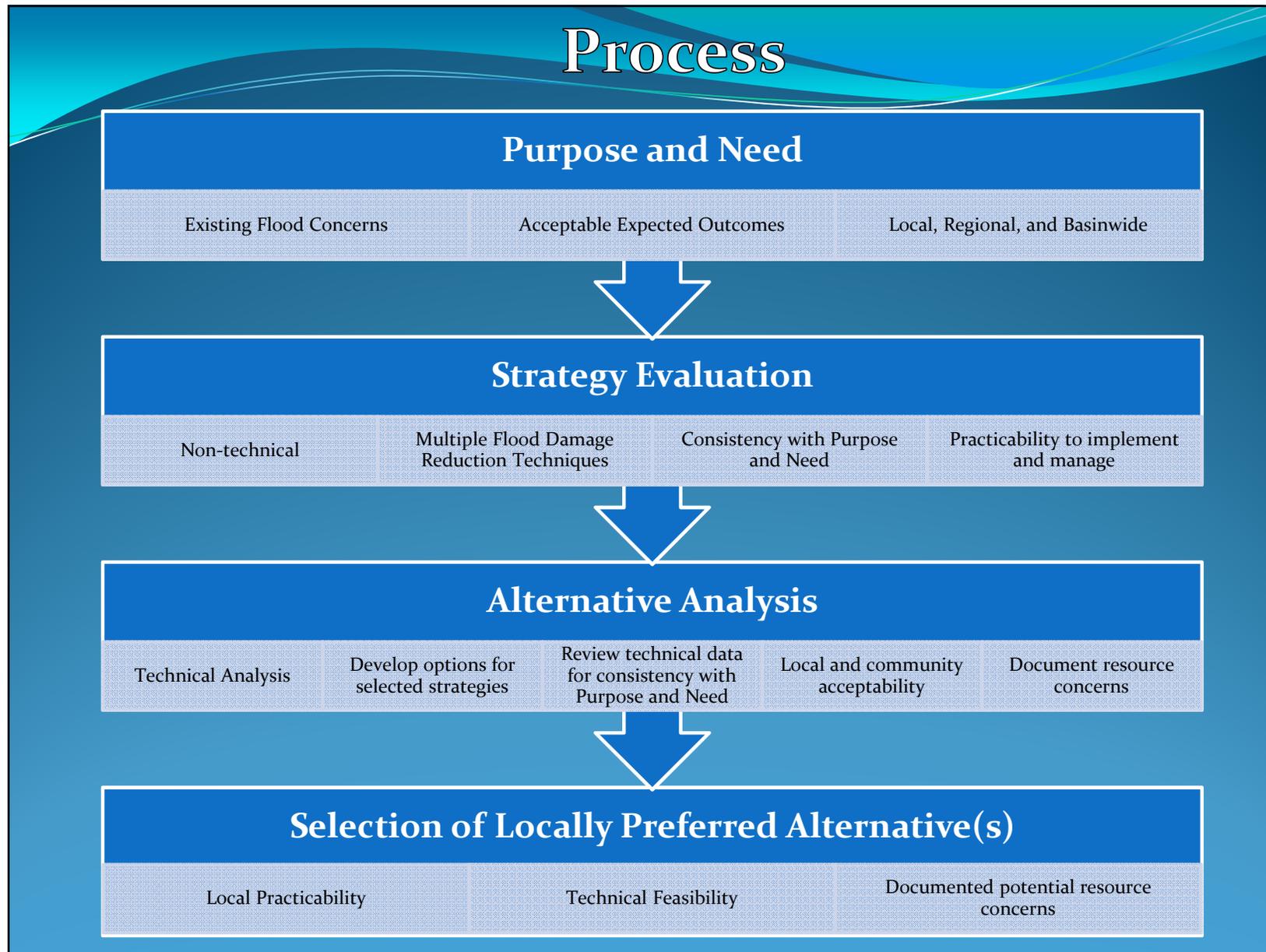
Park River Joint Water Resource District
 North Branch Park River
 Comprehensive Flood Damage Reduction
 Public Comment Form

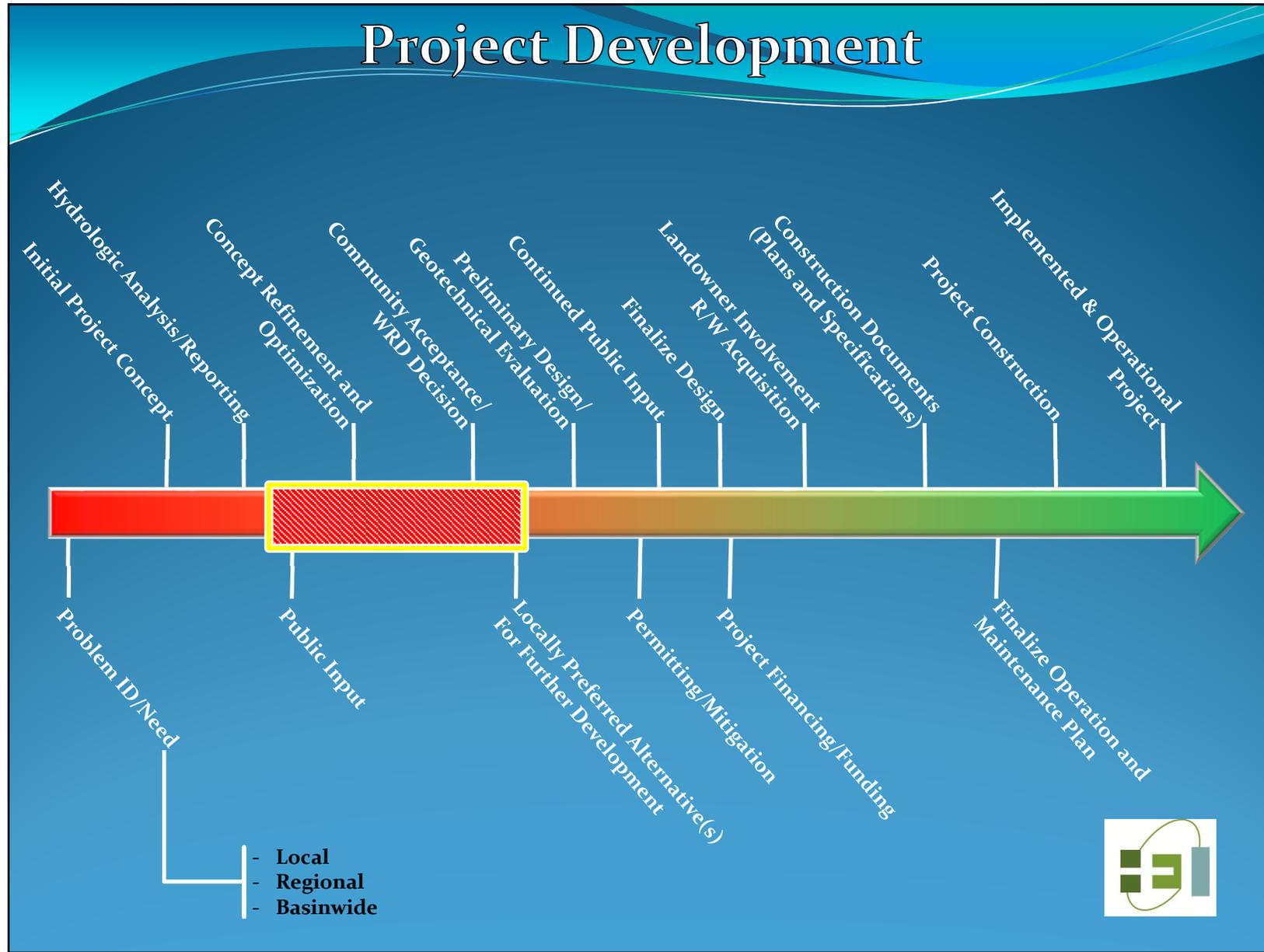
- North Branch Watershed
- Park River Watershed
- Rivers and Streams
- County Boundary
- Township Boundary
- City Limits
- Received Problem Areas



Prepared By:
 Houston Engineering Inc.







Strategy Evaluation

Flood Damage Reduction Strategies to Consider:

- **Increase Temporary Flood Storage** - *Dams and Impoundments*
 - *Create or Restore Wetlands*
 - *Alter ground water through drainage*
 - *Culvert sizing to meter runoff*

- **Increase Conveyance Capacity** - *Channelization of existing water courses*
 - *Drainage*
 - *Diversions*
 - *Set-back levees*
 - *Increasing road crossing capacity*

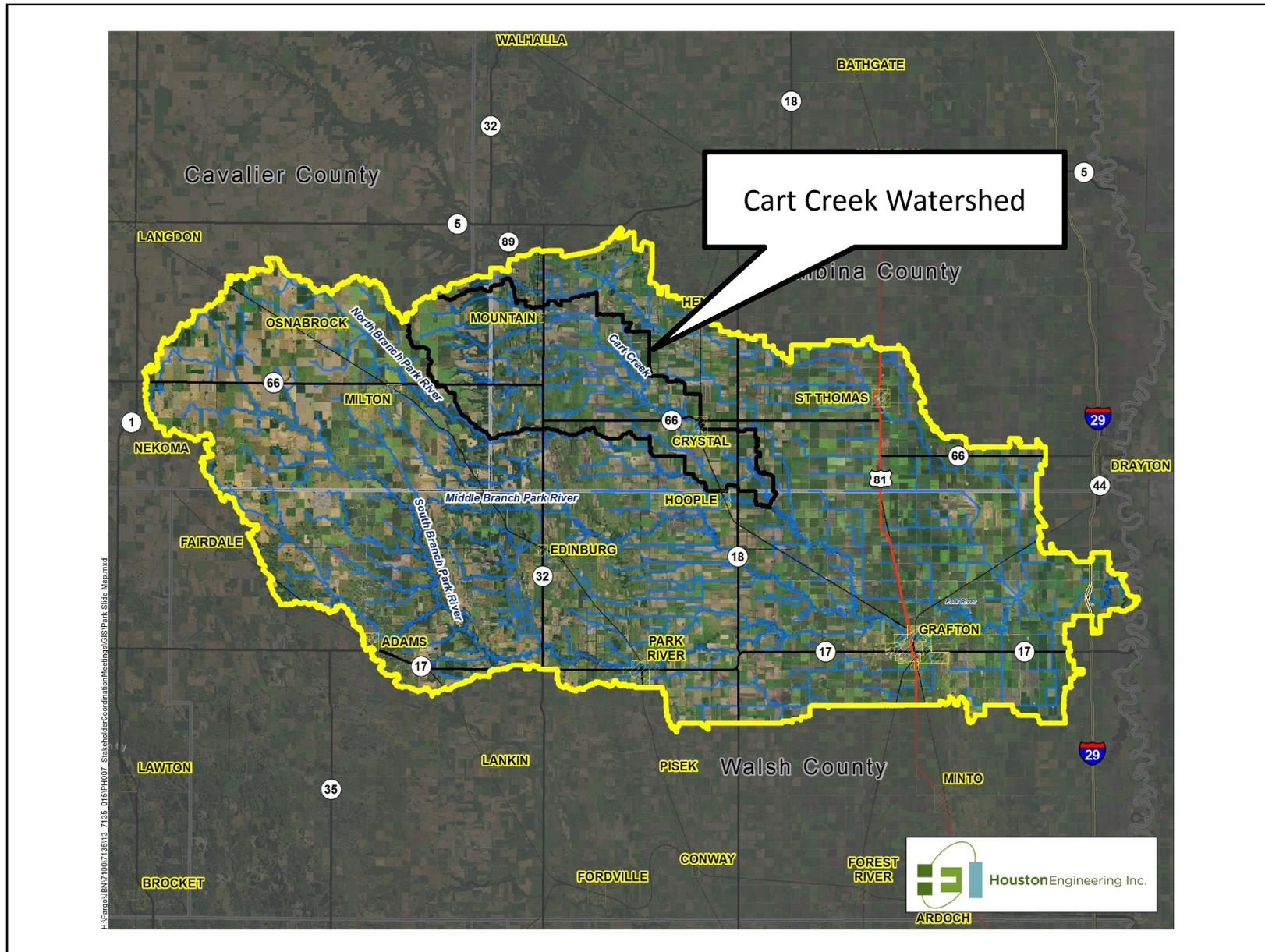
- **Reduce Flood Volume** - *Create or restore wetlands*
 - *Cropland BMPs*
 - *Cropland Conversion*
 - *Other Beneficial Uses*

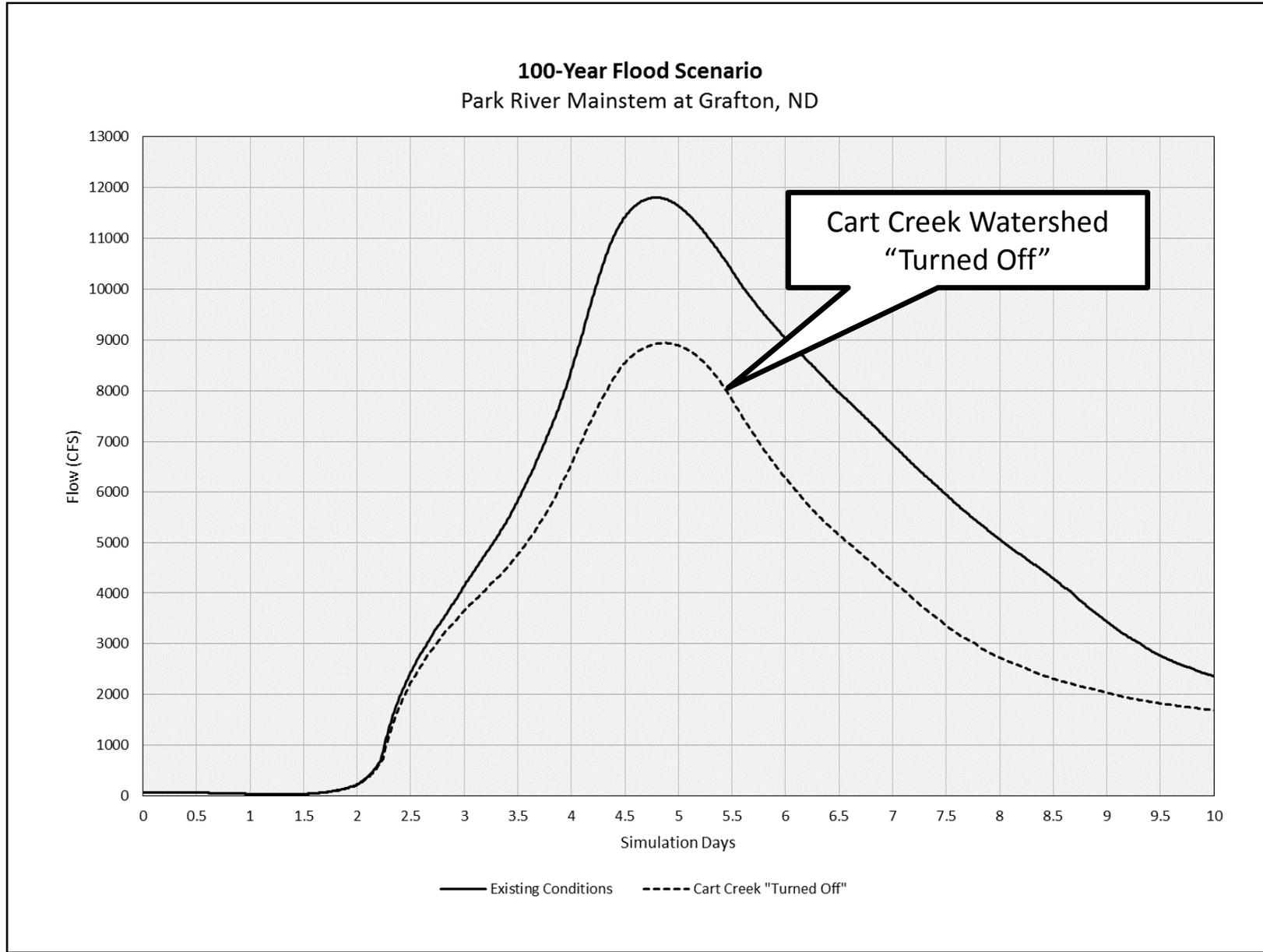
- **Protection/Avoidance** - *Urban/Farmstead/Ag Levees*
 - *Floodplain Evacuation*
 - *Flood proofing*
 - *Advanced Flood Warning Systems*

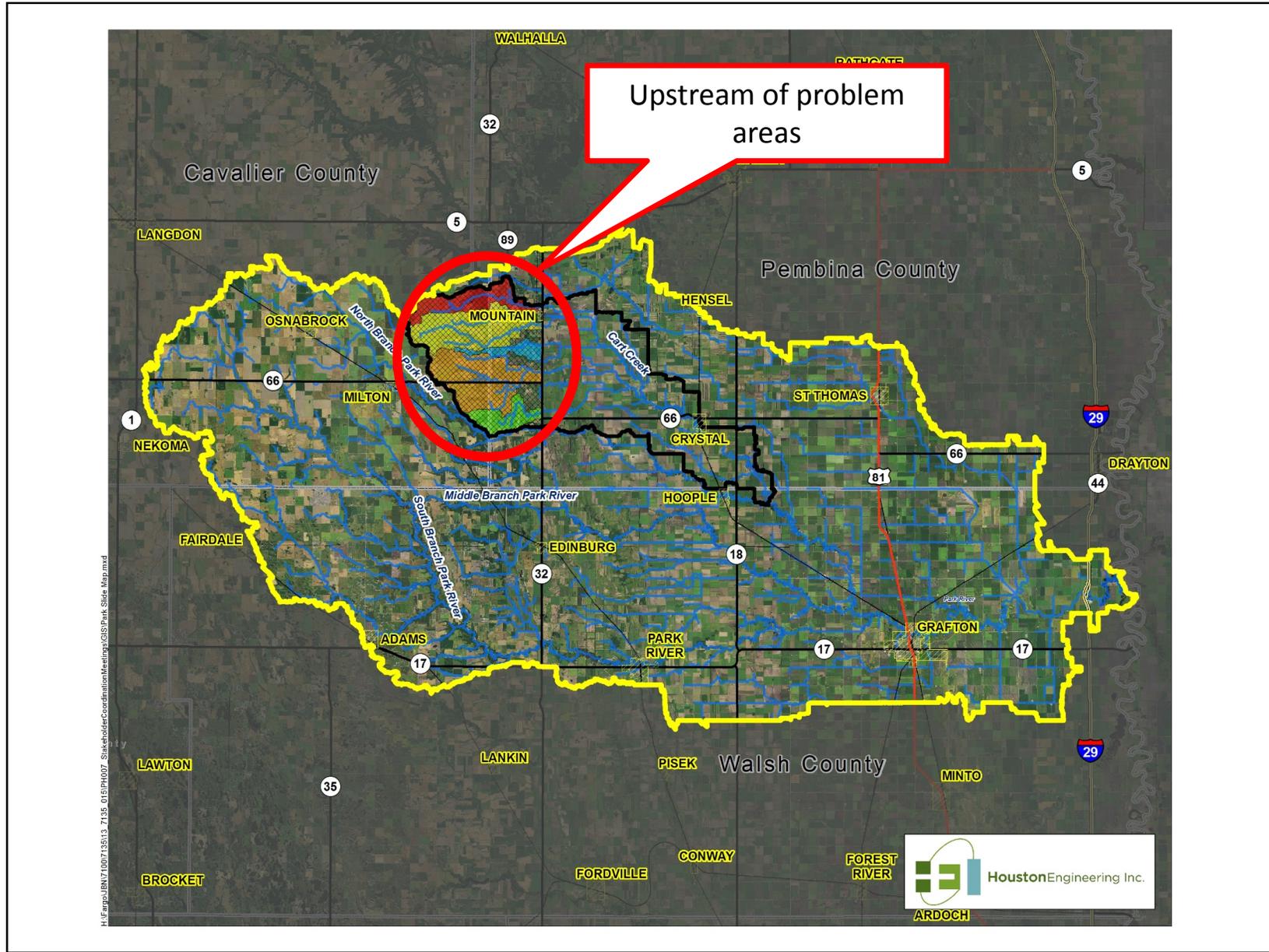
Where do we start?

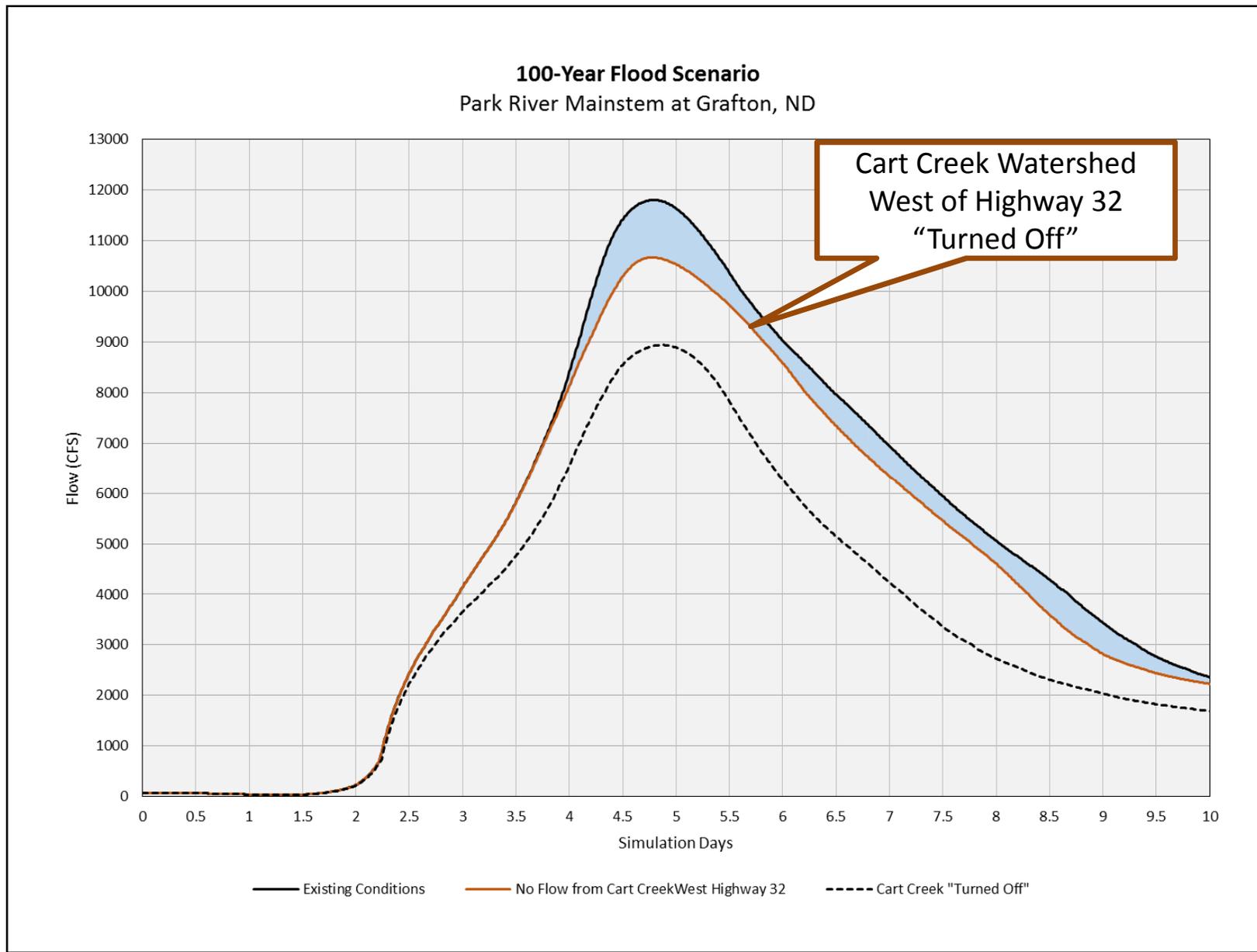
Considerations:

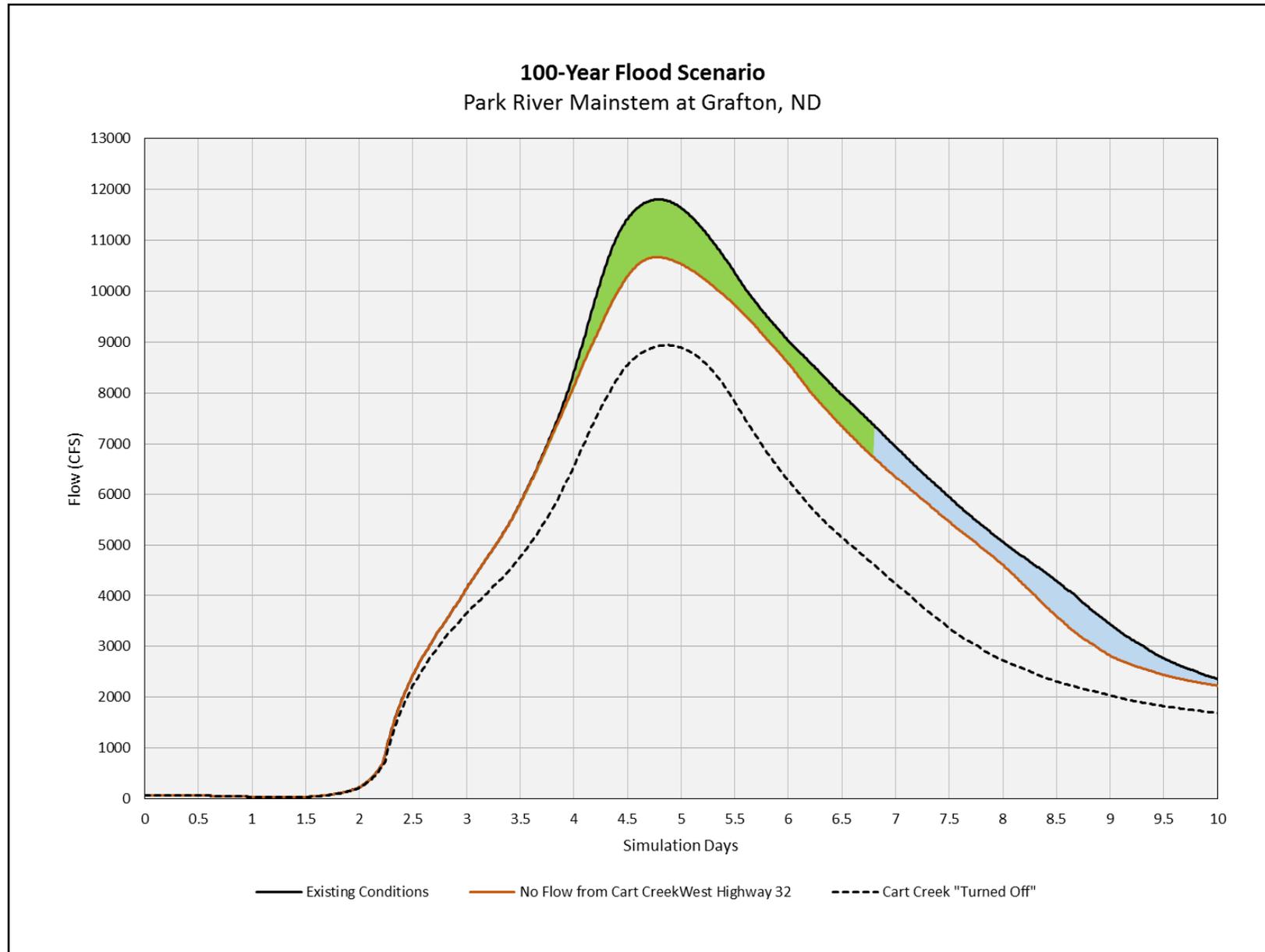
- **Consistent with Expected Outcomes?**
 - *Will this provide sufficient benefit*
- **Technically Feasible?**
 - *Engineering considerations*
- **Practical to Implement?**
 - *How long will it take?*
 - *How many individual projects?*
 - *Potential for resource concerns → High costs/time consuming mitigation*
 - *Locally acceptable*
 - *Financing*
- **Practical to Manage?**
 - *Maintenance of the project*
 - *Operation of project features (gates...)*
- **Potential for Adverse Impacts?**
 - *Potential to make things worse elsewhere*

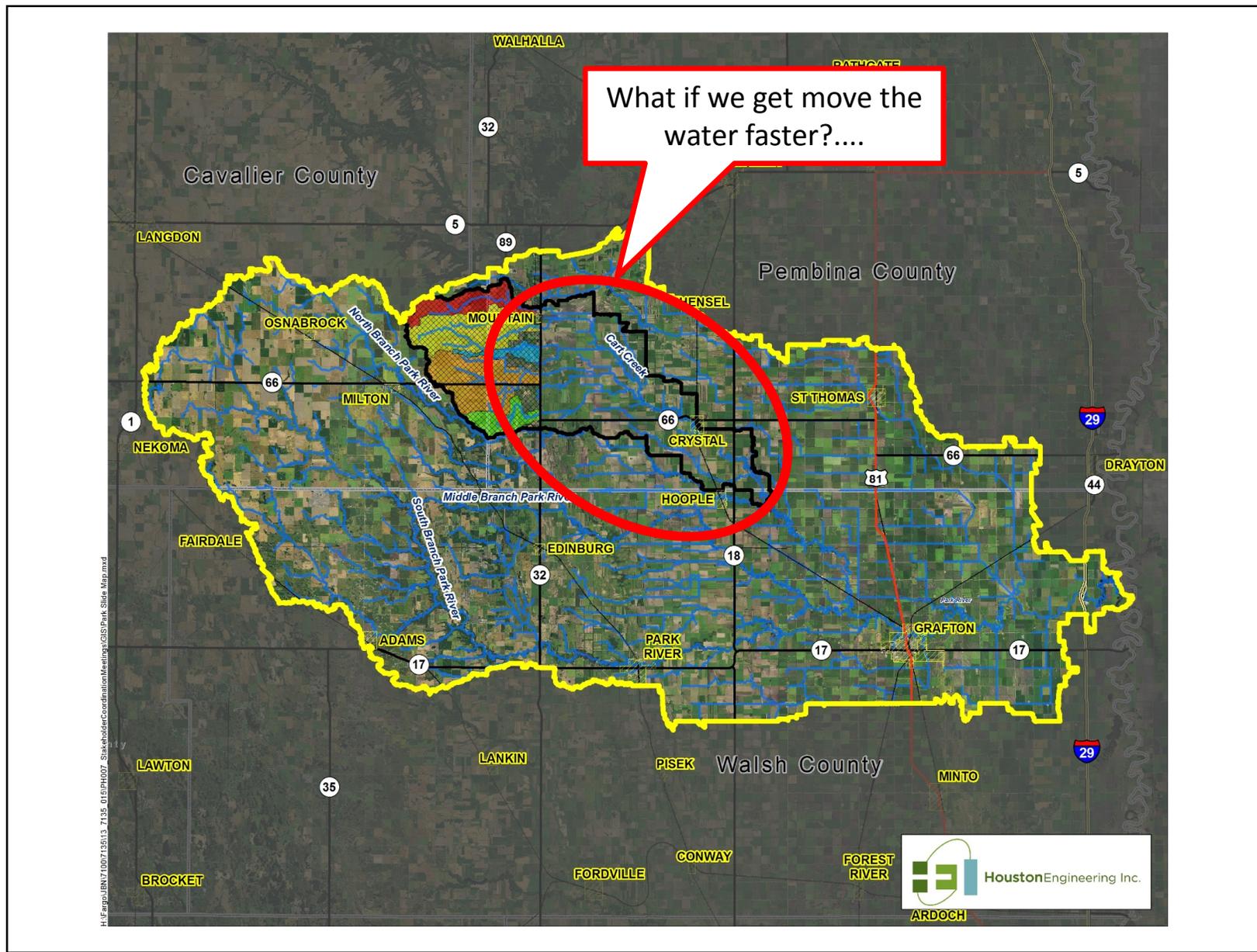


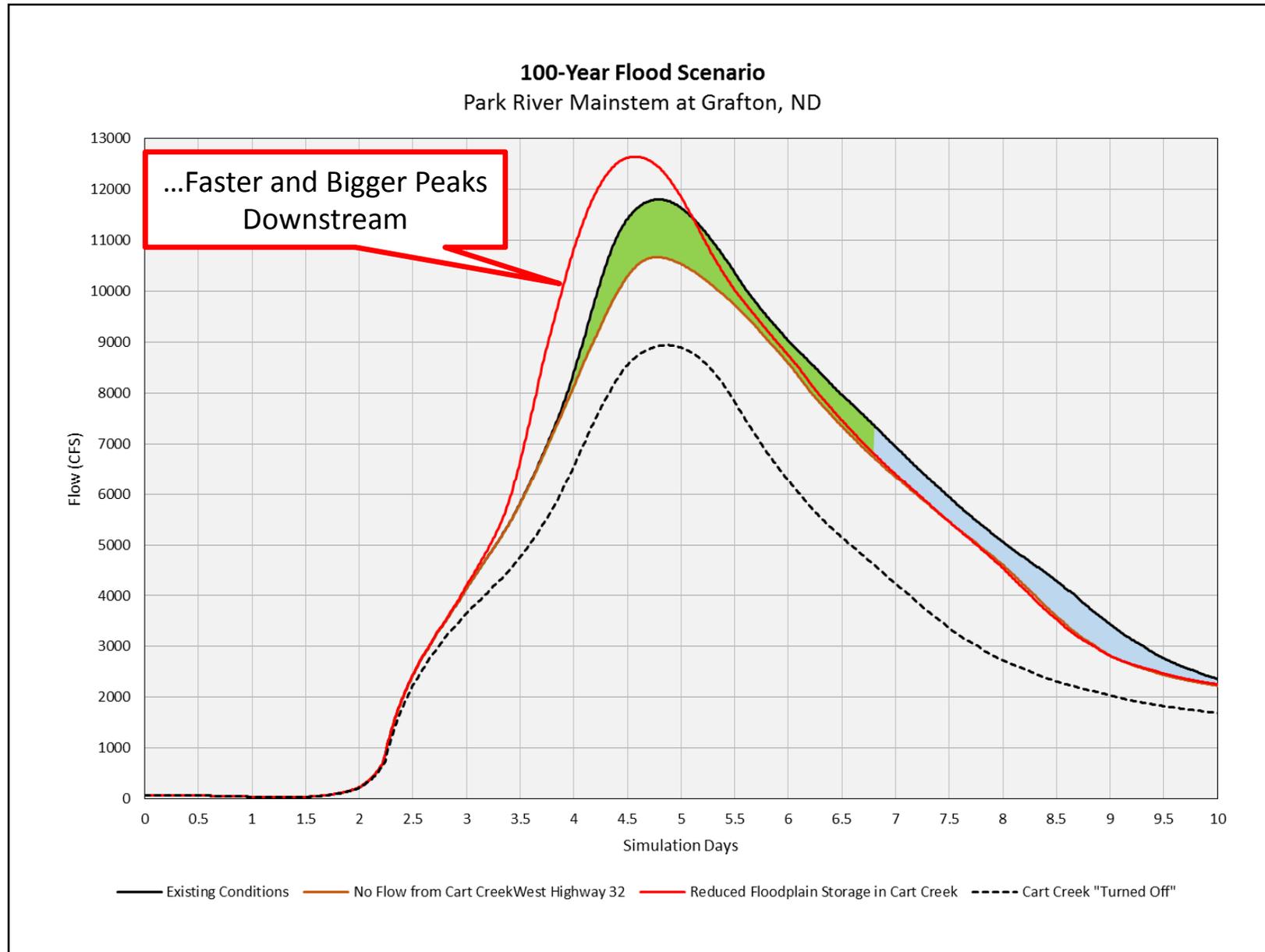


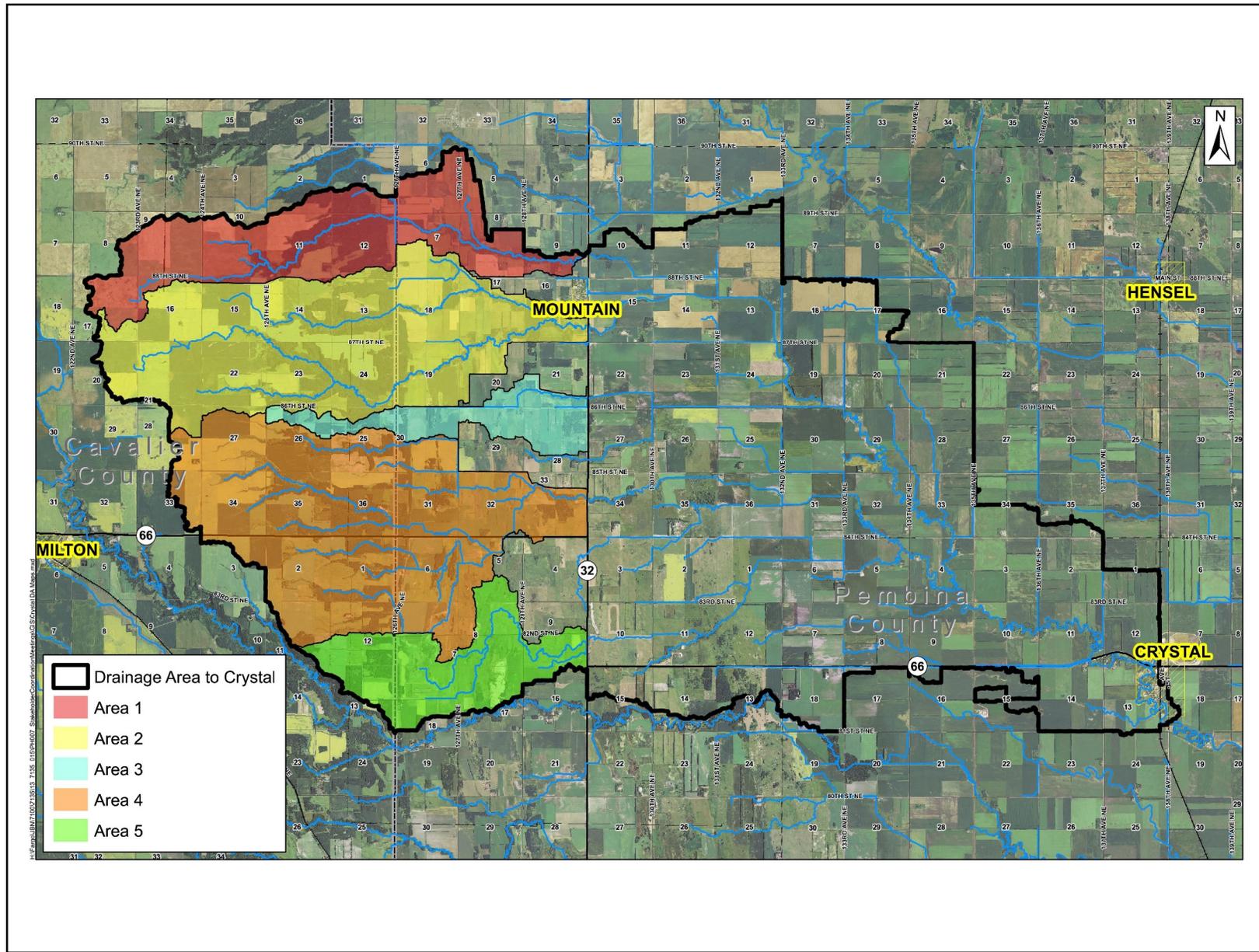


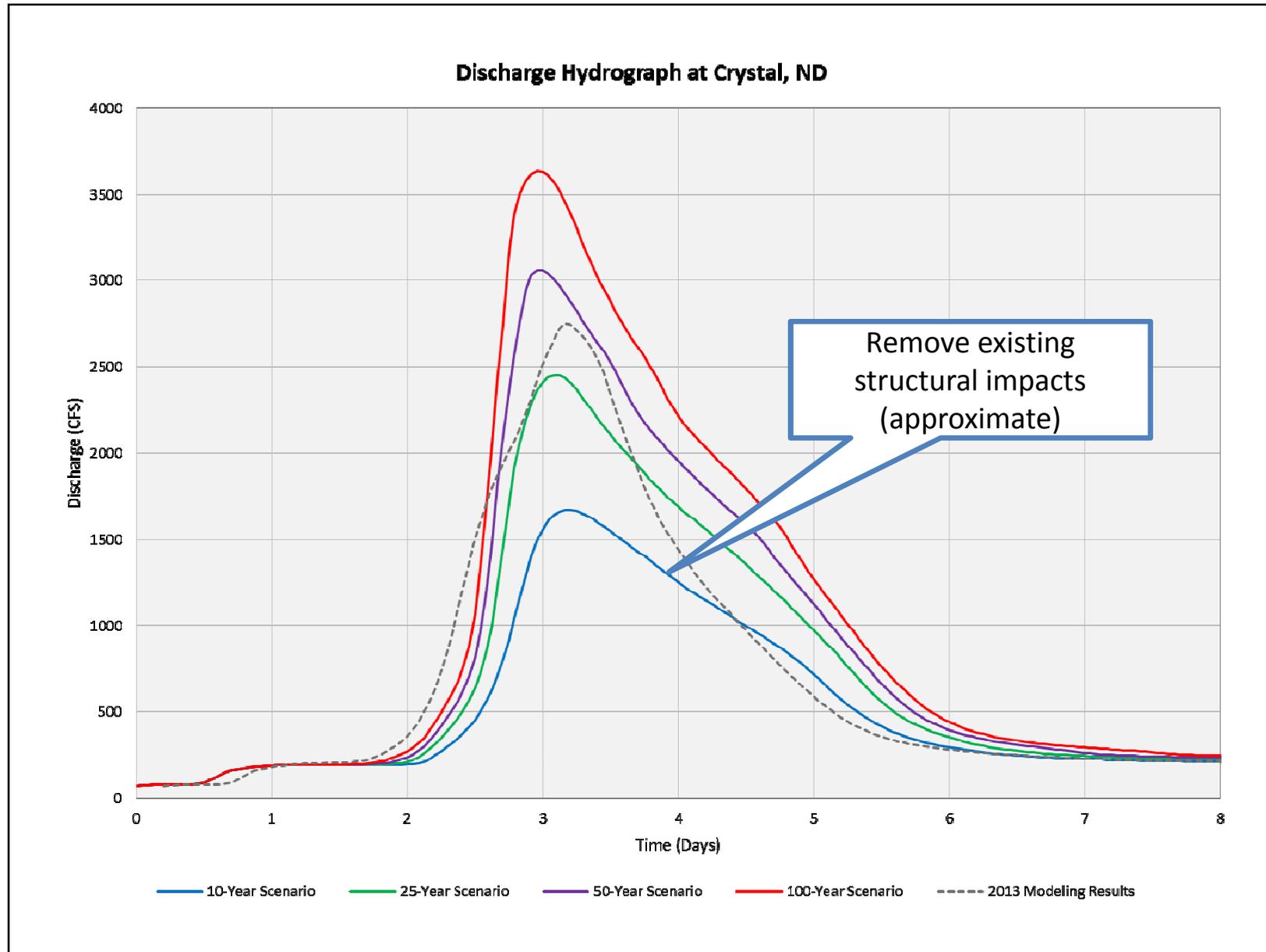


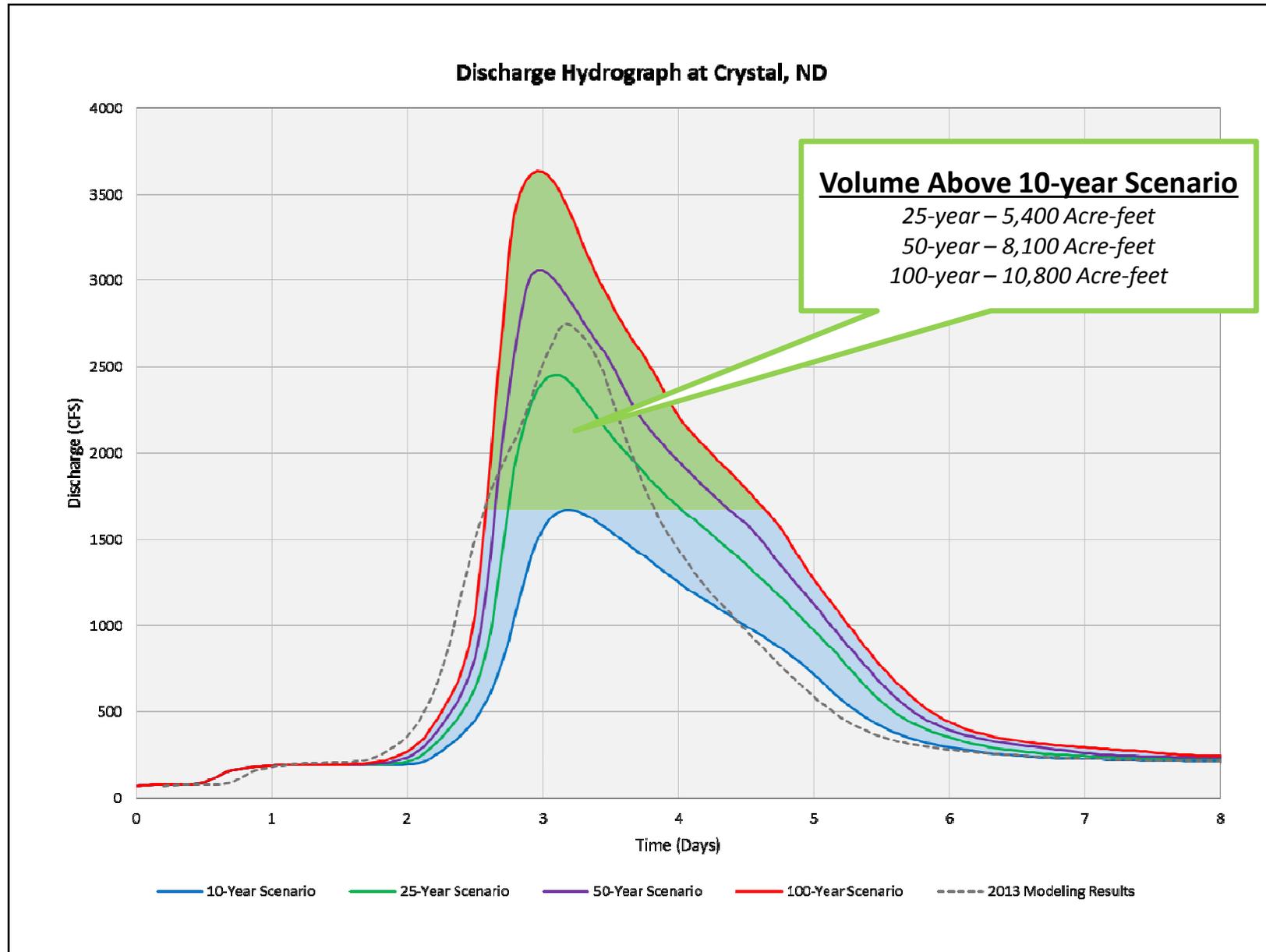












Discuss Strategy Review Table