

# Cart Creek/North Branch Park River Watershed Planning



*Photograph Courtesy Civil Air Patrol*

*May 22, 2013 near Crystal, ND*

**February 17, 2016  
Initial Public Scoping Meeting  
Mountain, ND**

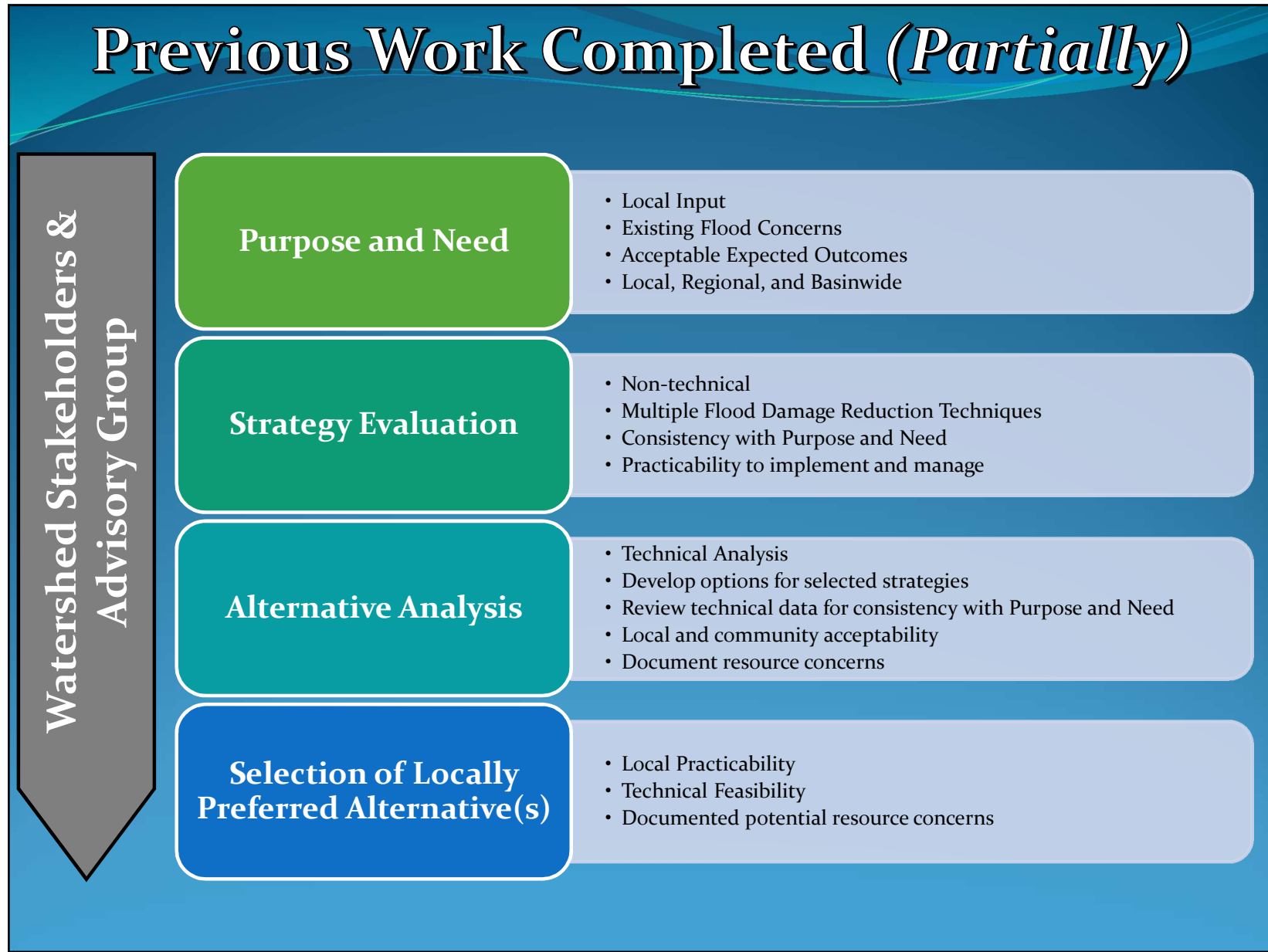
# Agenda

**Review of Previous Planning Work**

**Regional Conservation Partnership Program**

**Watershed Setting & Resource Concerns**

**Public Comment**



# 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

# Previous 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

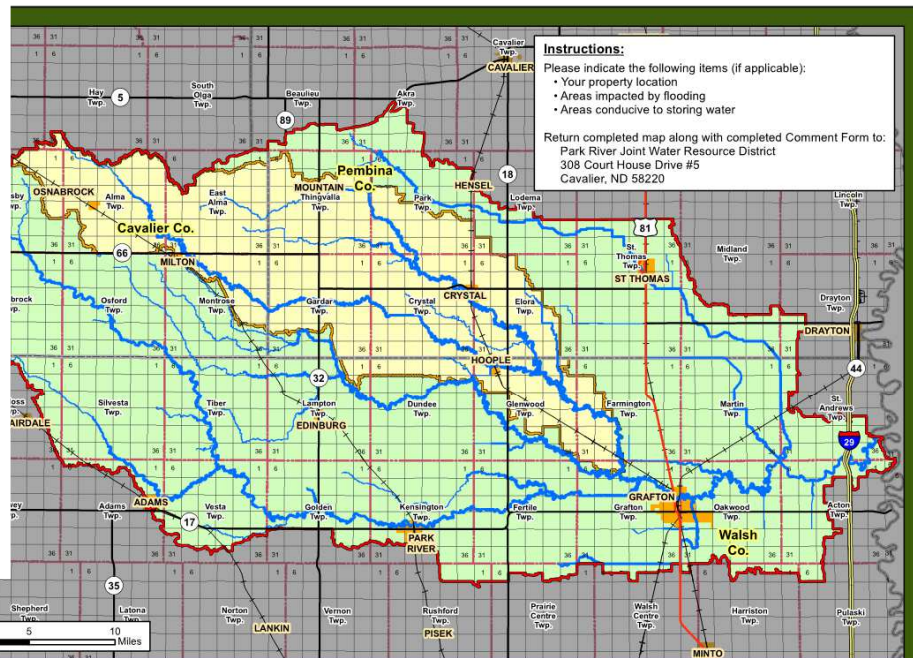
Additional Comments:

\_\_\_\_\_

\_\_\_\_\_

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



**Instructions:**  
Please indicate the following items (if applicable):

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

Return completed map along with completed Comment Form to:  
Park River Joint Water Resource District  
308 Court House Drive #5  
Cavalier, ND 58220

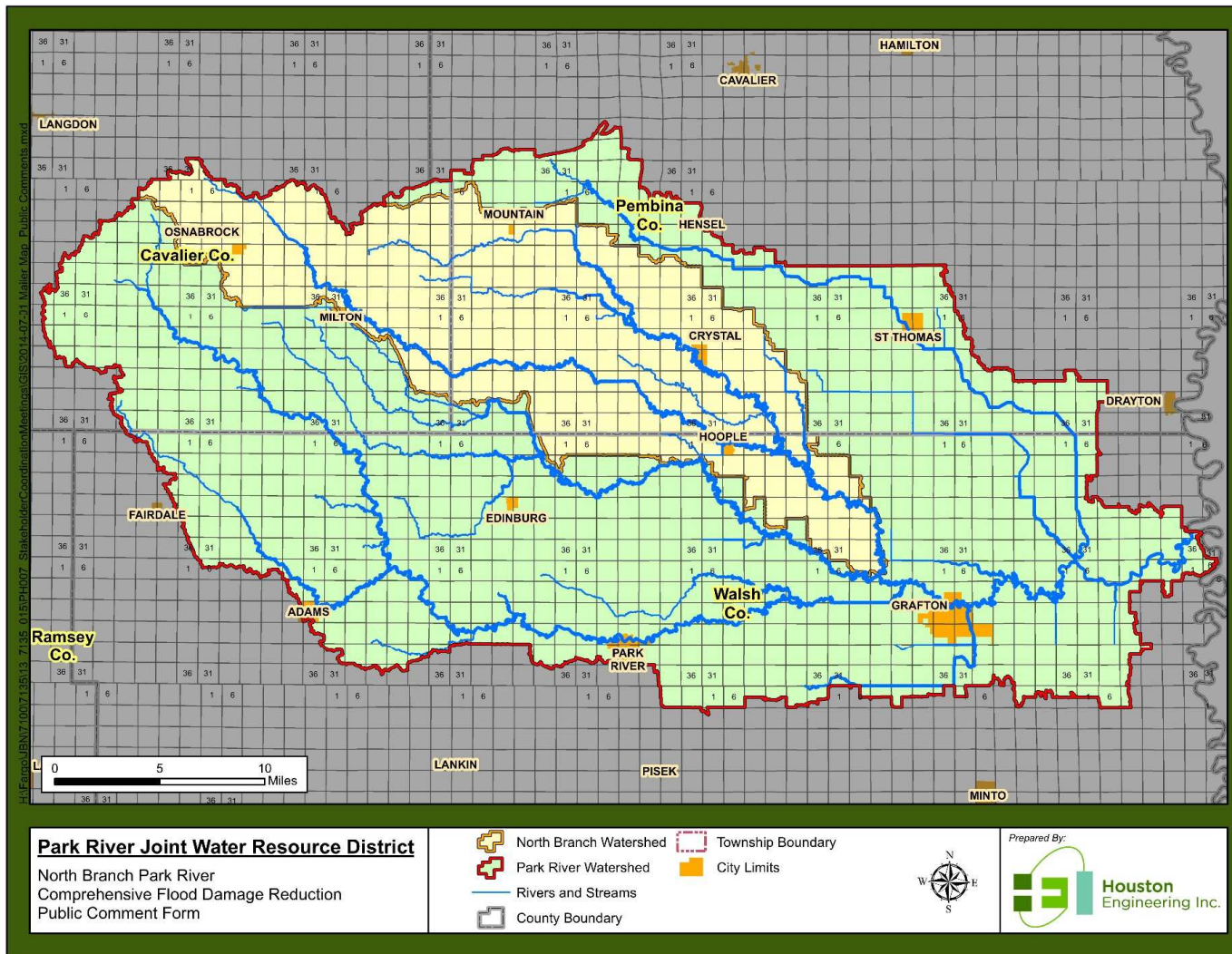
**Park River Joint Water Resource District**  
North Branch Park River  
Comprehensive Flood Damage Reduction  
Public Comment Form

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

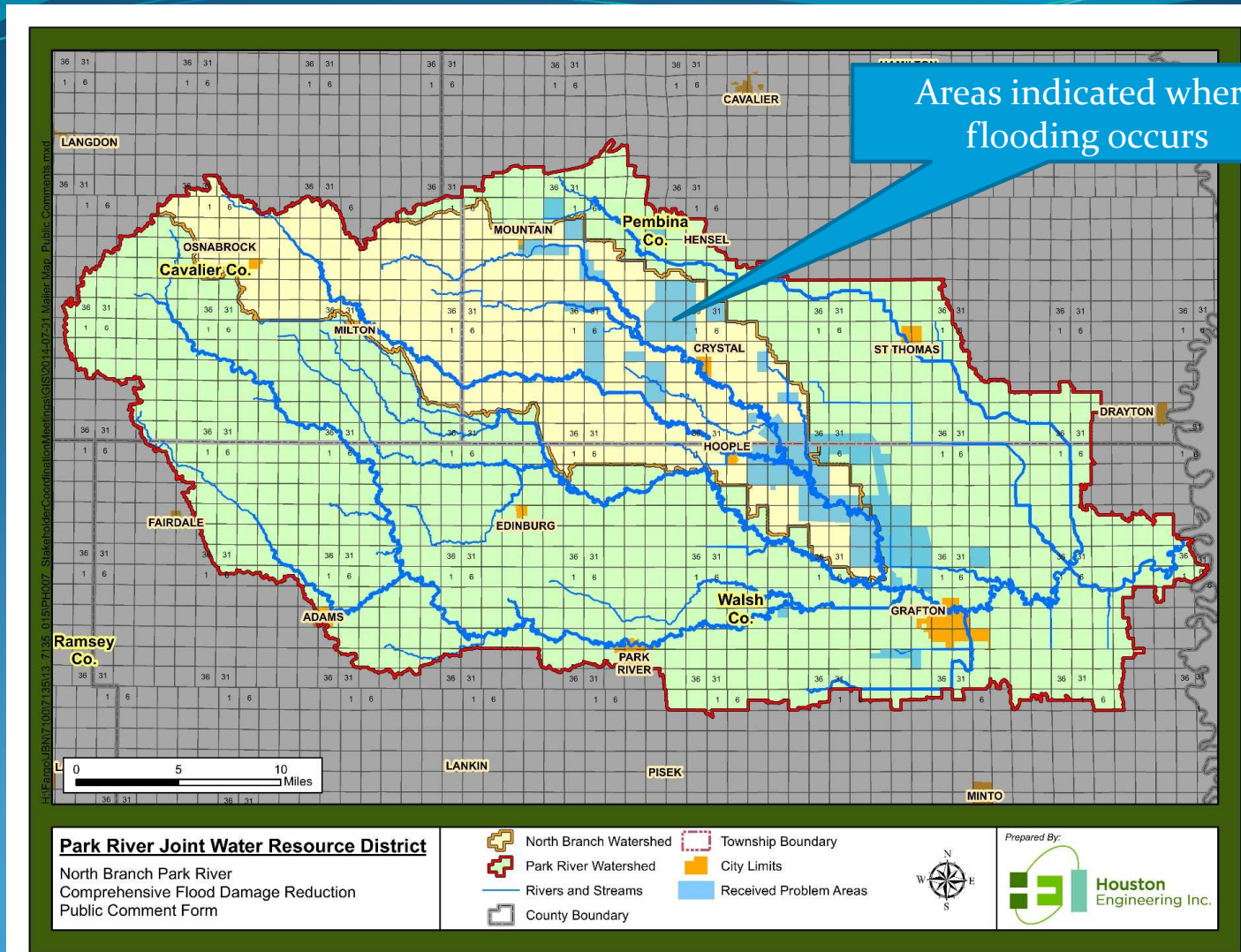


Prepared By:  
 Houston Engineering Inc.

# Mapped Results - Flood Damages



# Mapped Results - Flood Damages

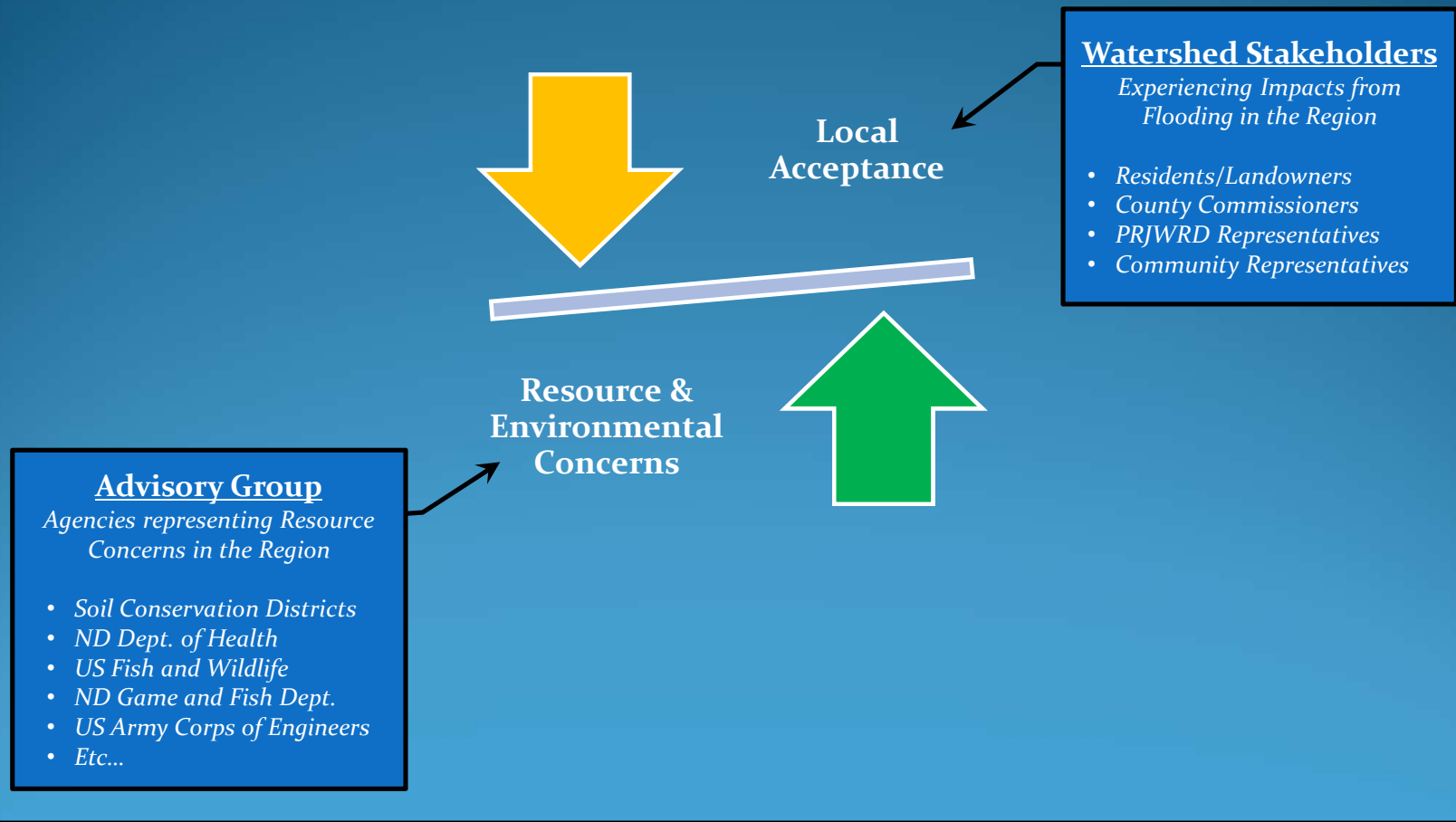






# Watershed Stakeholders & Advisory Group

**Goal:** Consider technically feasible alternatives to determine the reasonable locally preferred alternative.



# 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*

# Strategy Evaluation

## 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*

# Strategy Evaluation Summary

- **Increase Temporary Flood Storage**
  - *Most Consistent with Expected Outcomes*
  - *Dams and/or Impoundments – highest apparent practicability locally (ability to implement and manage)*
- **Increase Conveyance Capacity**
  - *Potential to solve local problems*
  - *Would result in increased flow downstream*
  - *May be desirable for Crystal, ND – however Increased Flood Storage would be required to mitigate*
- **Reduce Flood Volume**
  - *Not practical to implement to achieve with Expected Outcomes*
  - *Requires voluntary landowner enrollment*
  - *Recognized as good practices, and should be promoted by other entities*
- **Protection/Avoidance**
  - *Advanced warning systems likely not feasible given the rapid, “flashy” nature of flooding*
  - *Evacuation of floodplain considered impractical – unpredictable overland flows*
- **Conclusions:**
  - *Dams and Impoundments appear to be most consistent with Expected Outcomes*
  - *Diversion around Crystal, ND may be required in addition to upstream storage*

# Example Flood Storage Alternatives

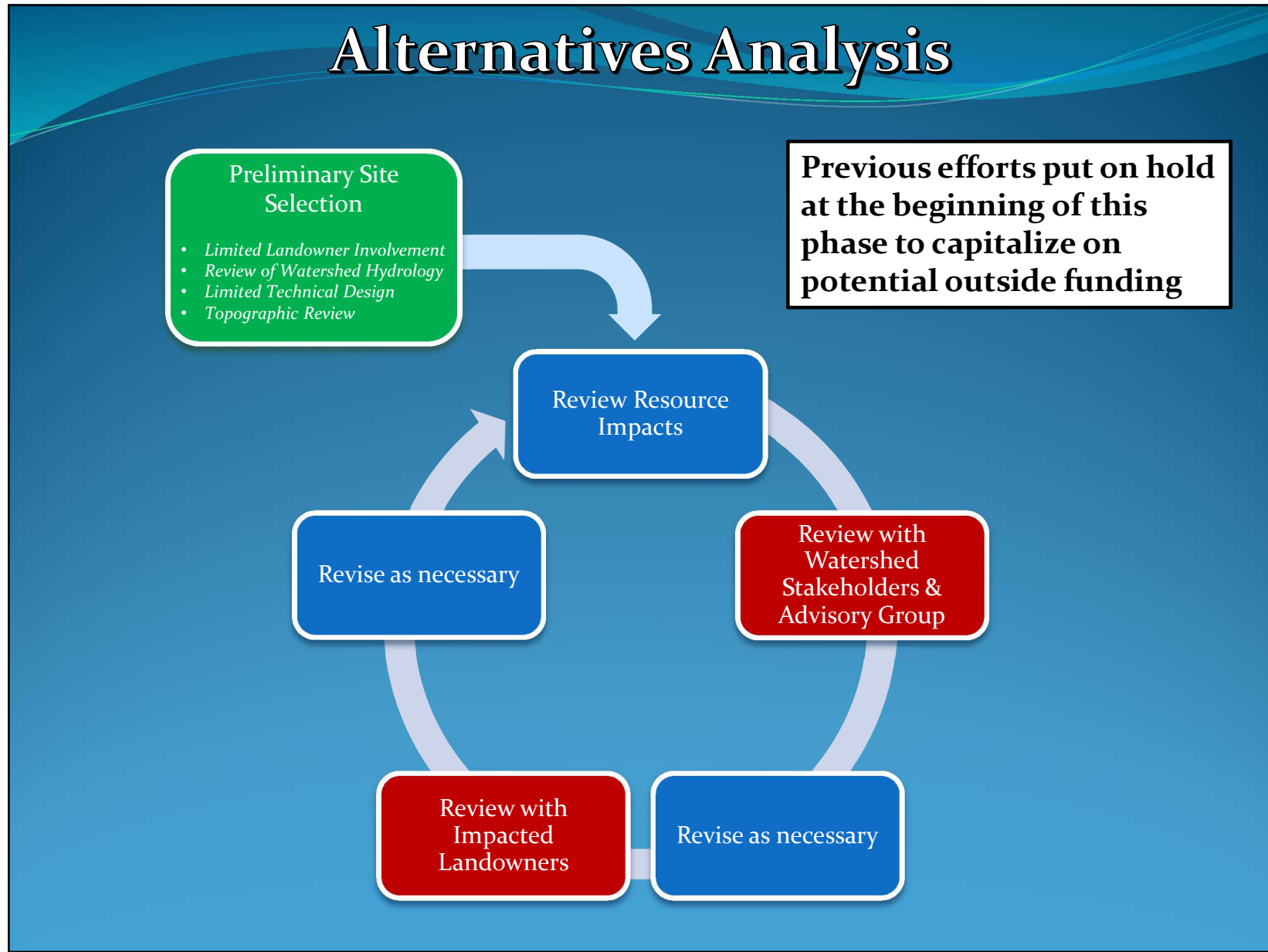
River Channel



Off-channel



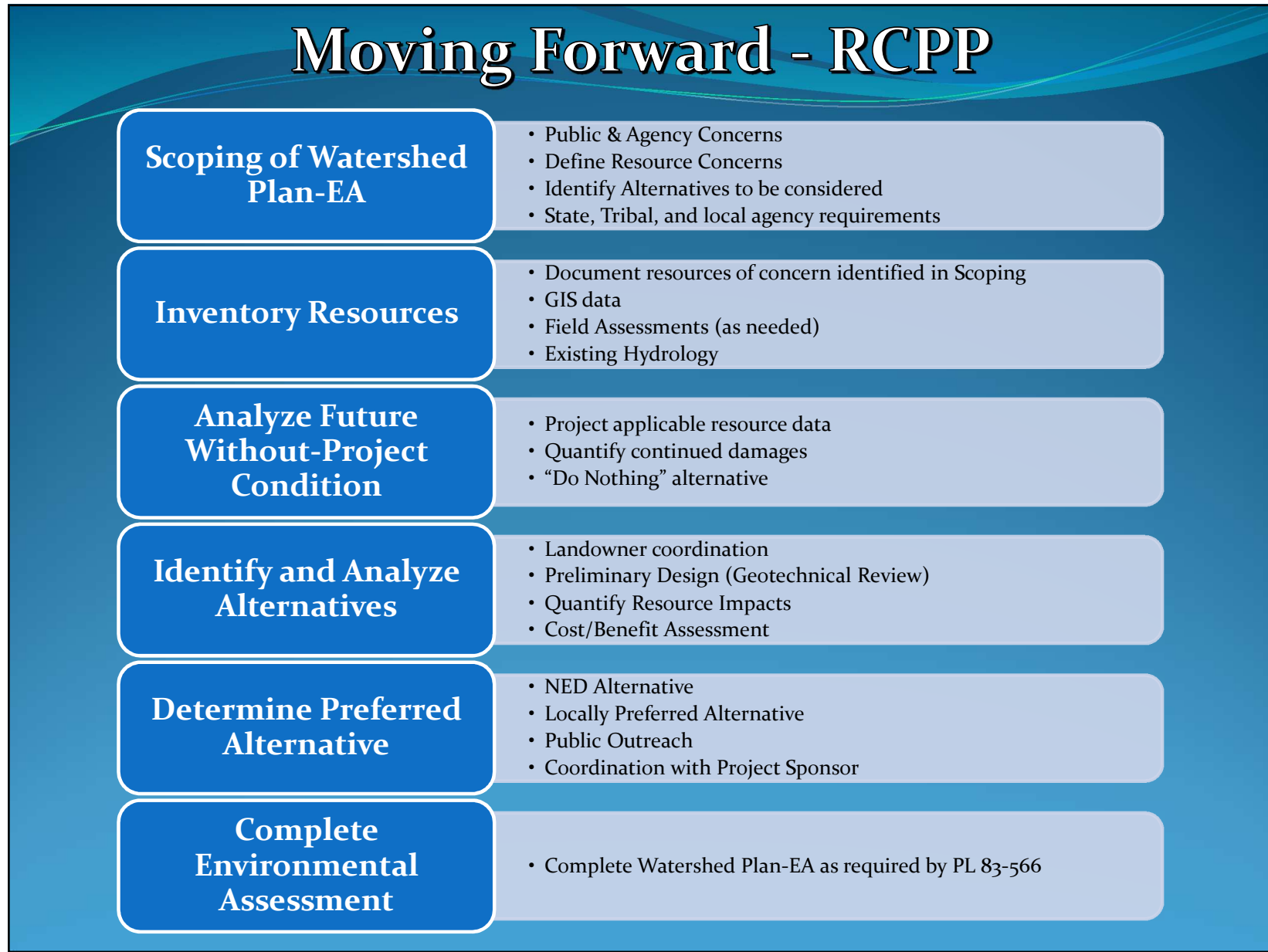
Existing Water Bodies



# Regional Conservation Partnership Program

## Timeline:

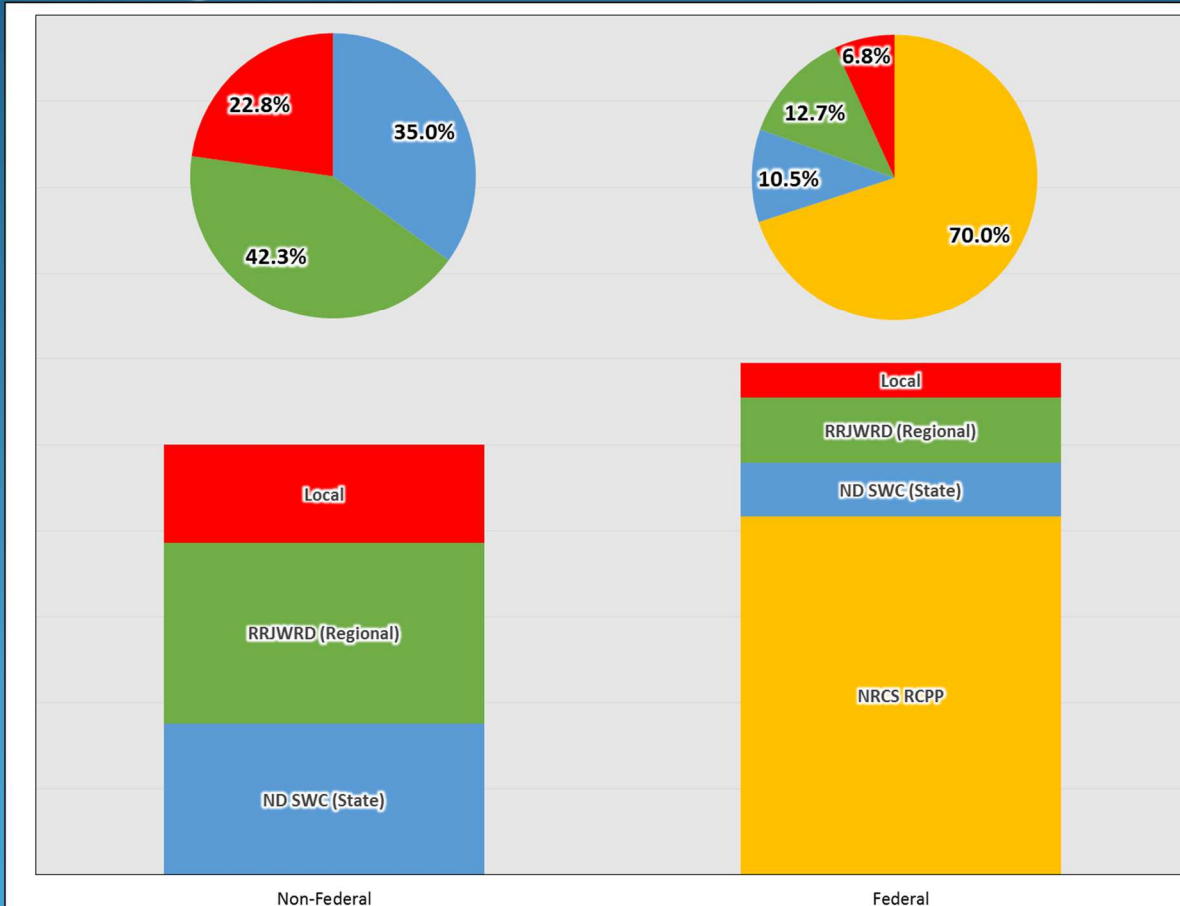
- New NRCS program created in the 2014 Farm Bill
- May 21, 2015 - Red River Retention Authority (RRRA) awarded \$12 Million
- May - June 2015 - RRRA reviews potential Watershed Planning areas for funding
- June 17, 2015 - 20 Watershed Planning applications were approved by the RRRA for RCPP Funding, including the North Branch Park River Watershed
  - *6 applications in ND, 14 applications in MN*
- September 16, 2015 - PRJWRD and NRCS enter into a Cooperative Agreement





# Moving Forward - RCPP

- Proceed with NRCS Watershed Planning (Public Law 83-566)
- \$500,000 Federal Contribution
- **Maximize State/Local Funds**



## Why we're here today...



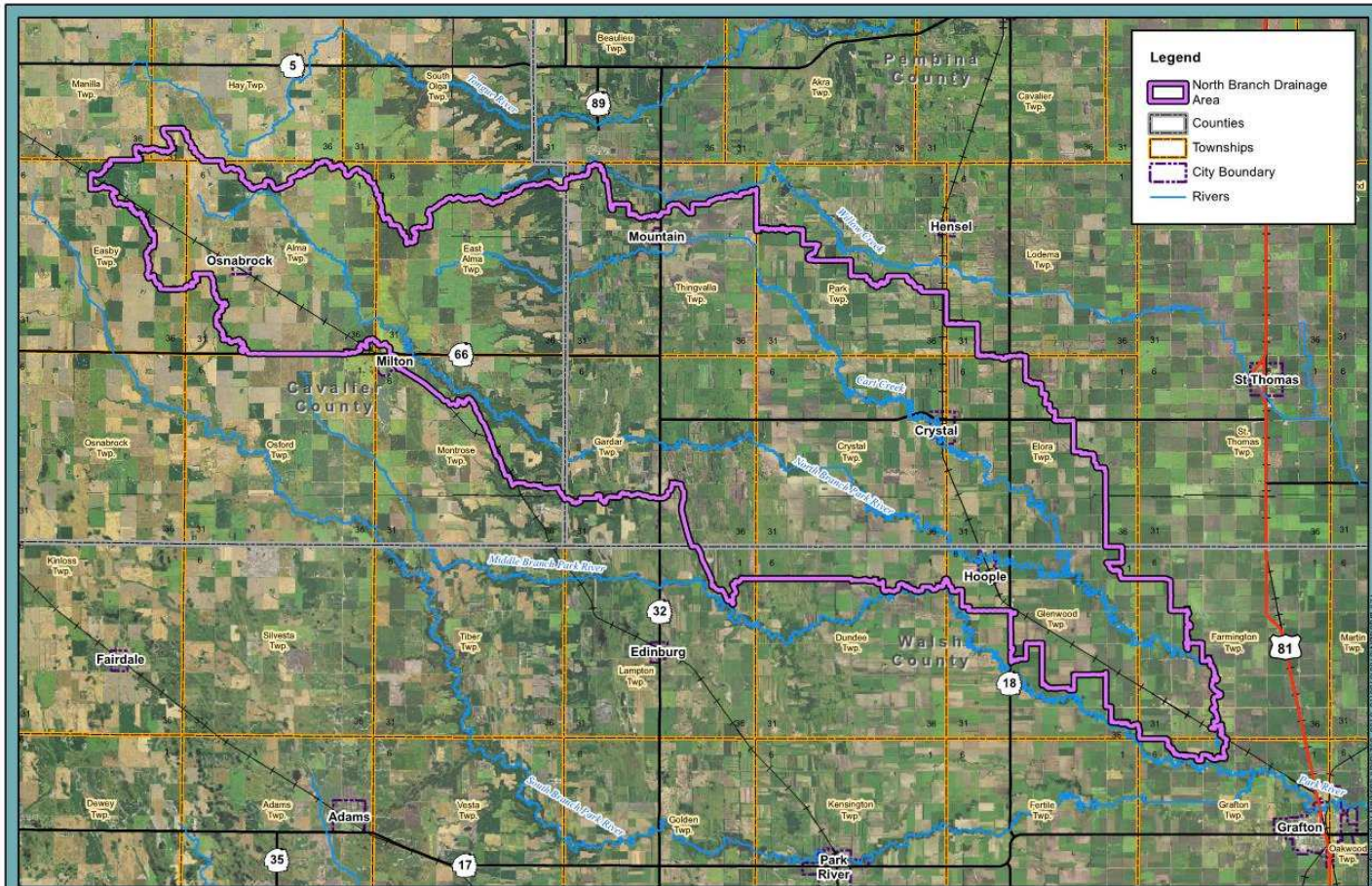
### Concerns in the Watershed:

- Frequent Flooding
  - *Recent FEMA Disaster Declarations (2004, 2005, 2006, 2009, 2011, and 2013)*
- Infrastructure Damages
  - *(Roads, Culverts, etc...)*
- Agricultural Impacts
  - *Delayed and Prevented Planting*
  - *Soil Erosion*
- Communities
  - *Crystal, Hoople, Nash, Mountain, Grafton, etc...*
- Rural Residences
- *Others?.....*

### Today's Goal:

Provide opportunity for public to participate in defining resource concerns

# Watershed Setting

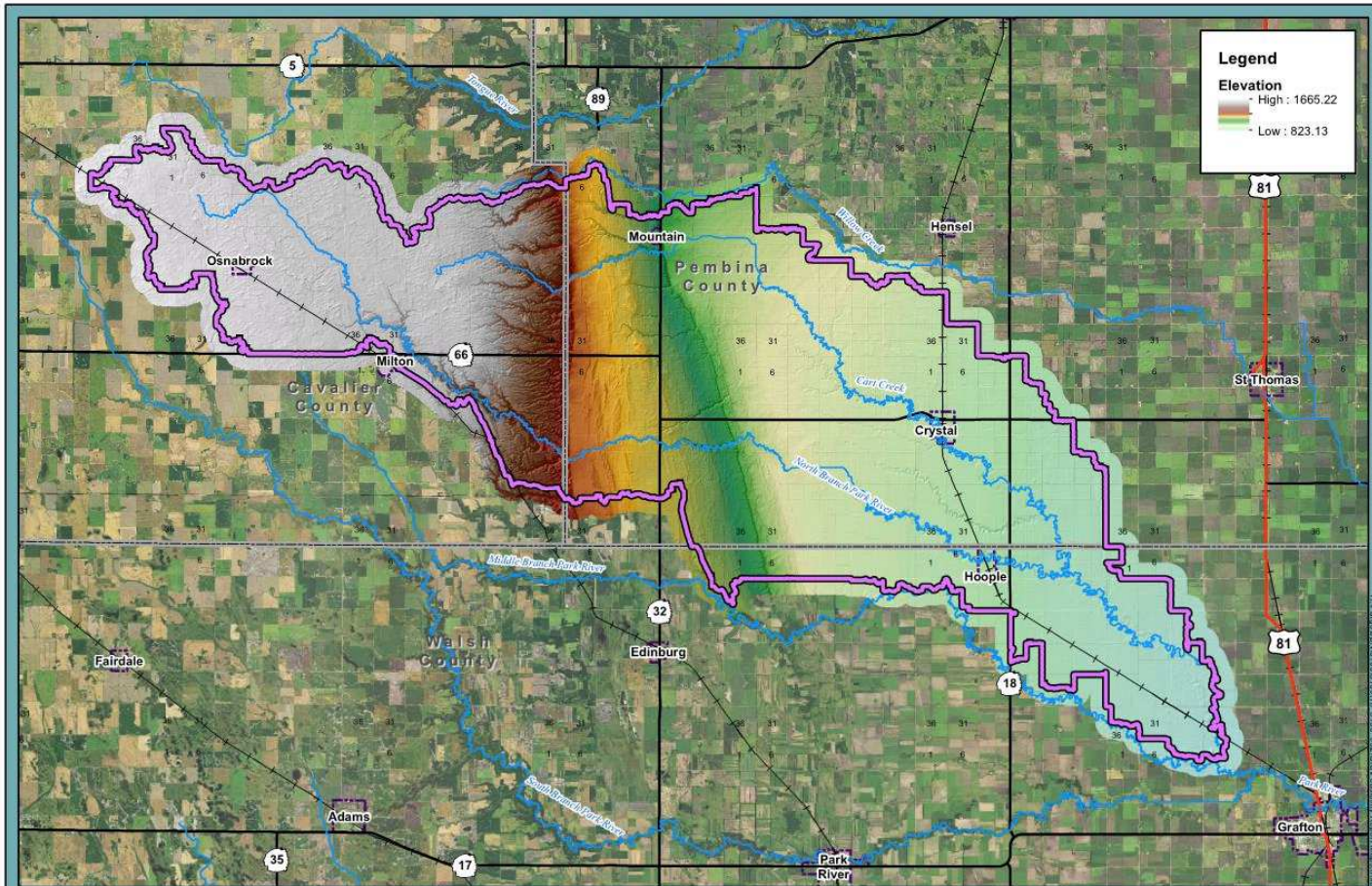


F-01

**Figure 01: North Branch Park River Watershed**  
North Branch Park River Watershed  
Feasibility Study And Plan of Work  
Park River Joint Water Resource District



# Watershed Setting

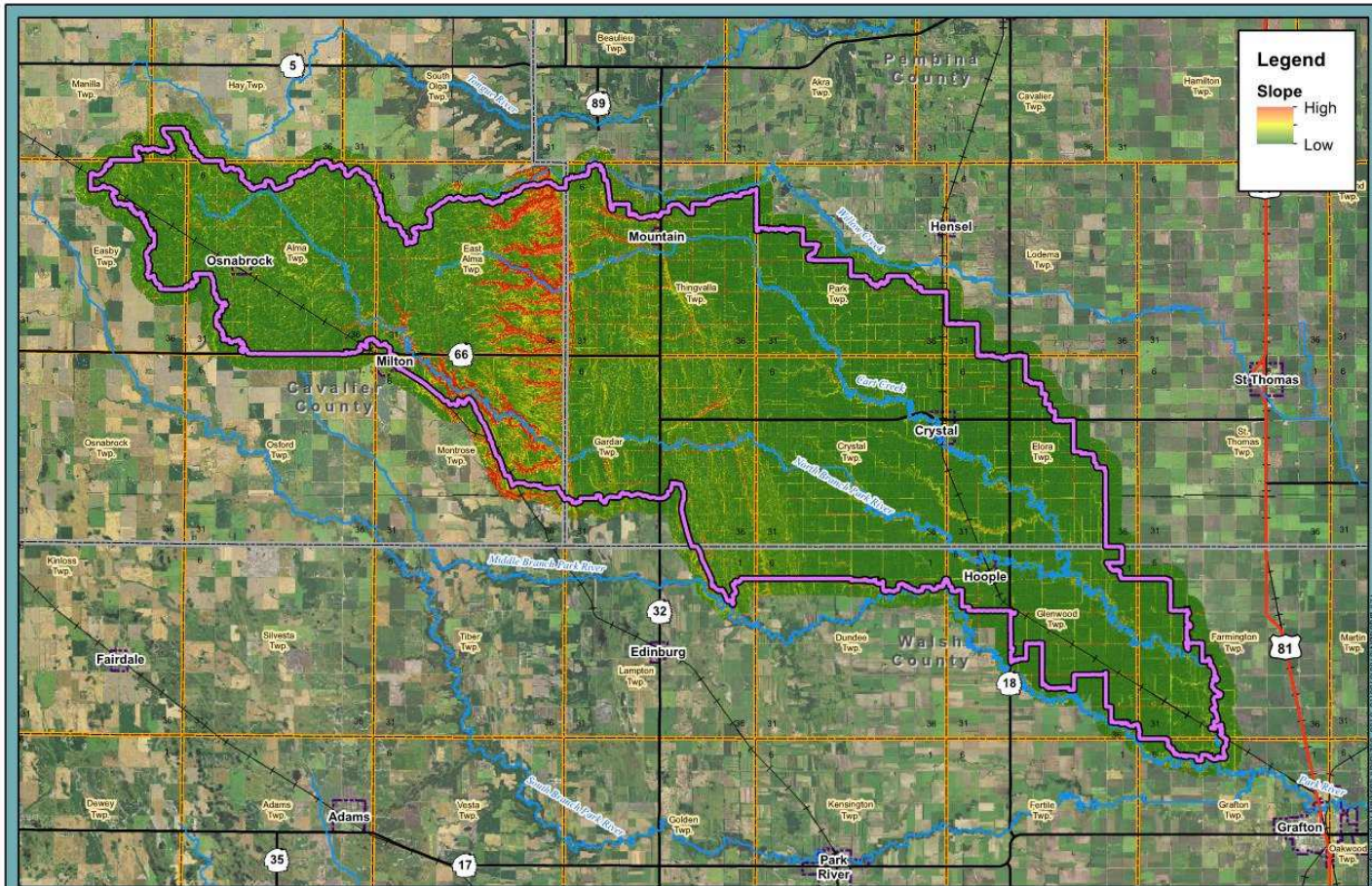


F-02

**Figure 02: LiDAR Map**  
North Branch Park River Watershed  
Feasibility Study And Plan of Work  
Park River Joint Water Resource District



# Watershed Setting



**Legend**

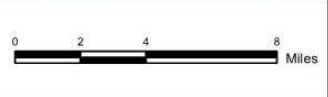
**Slope**

High

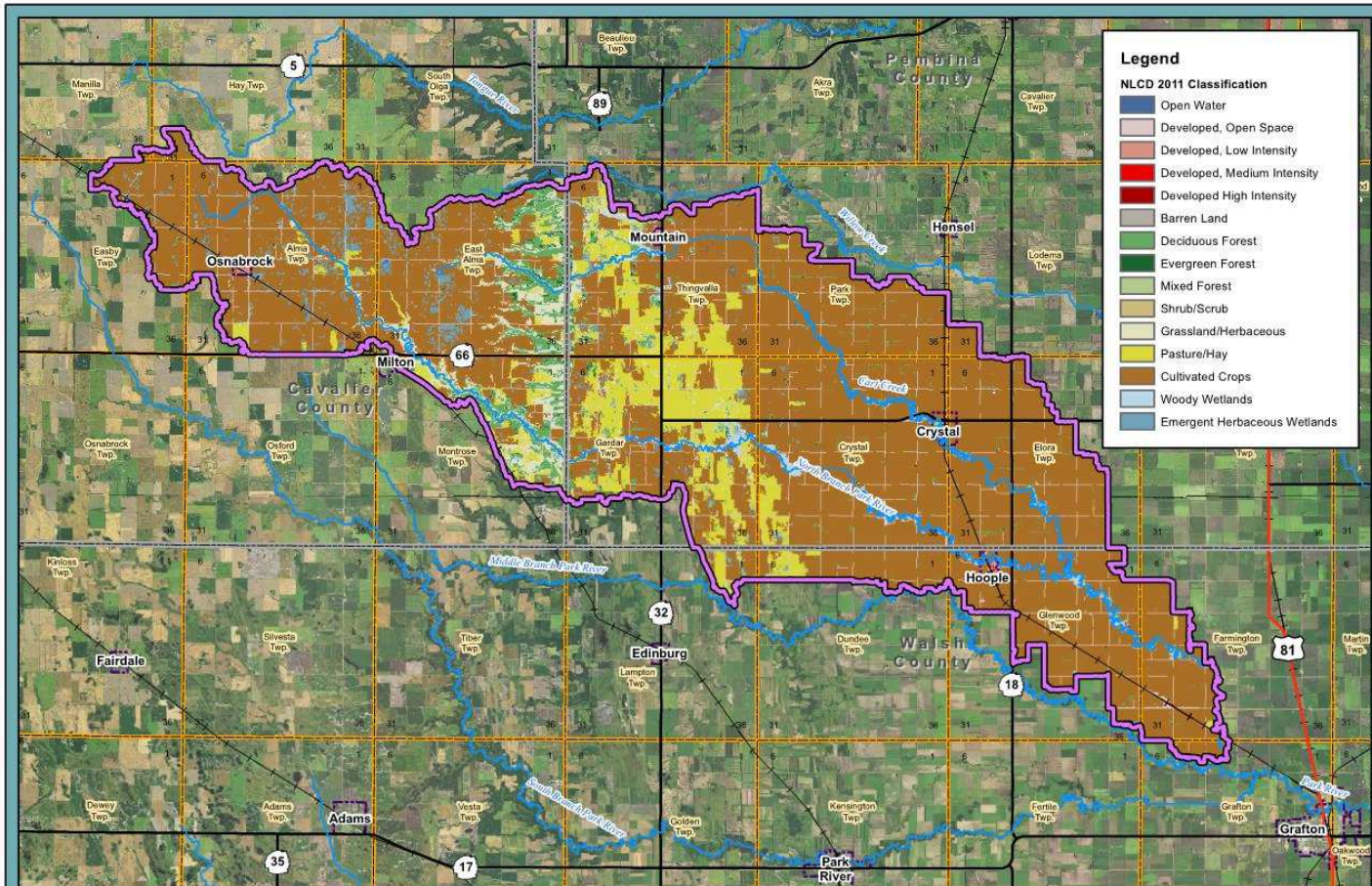
Low

F-03

**Figure 03: LiDAR Derived Slope**  
 North Branch Park River Watershed  
 Feasibility Study And Plan of Work  
 Park River Joint Water Resource District



# Watershed Setting



**Legend**

**NLCD 2011 Classification**

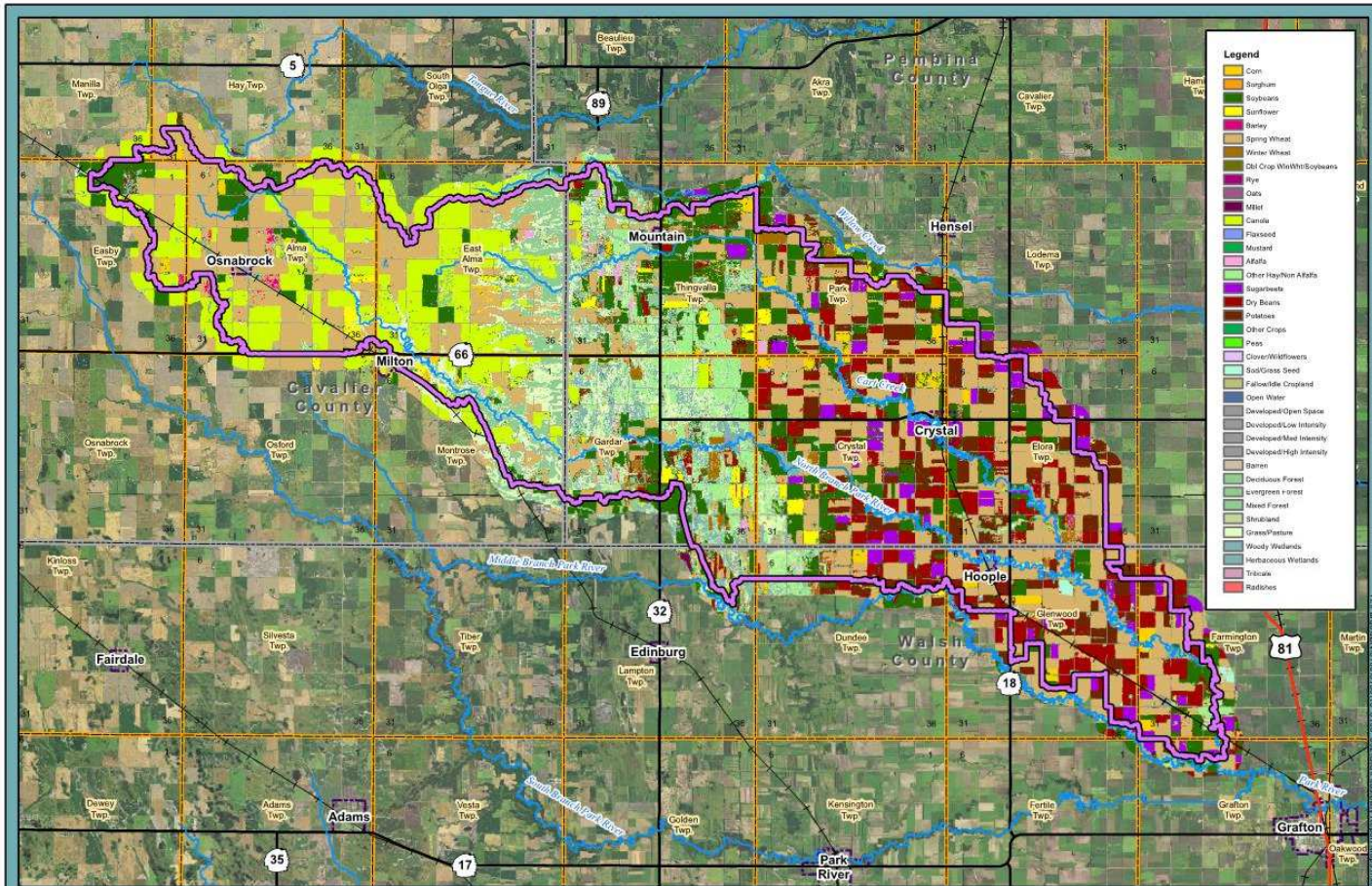
- Open Water
- Developed, Open Space
- Developed, Low Intensity
- Developed, Medium Intensity
- Developed High Intensity
- Barren Land
- Deciduous Forest
- Evergreen Forest
- Mixed Forest
- Shrub/Scrub
- Grassland/Herbaceous
- Pasture/Hay
- Cultivated Crops
- Woody Wetlands
- Emergent Herbaceous Wetlands

F-04

**Figure 04: National Land Cover Data 2011**  
 North Branch Park River Watershed  
 Feasibility Study And Plan of Work  
 Park River Joint Water Resource District



# Watershed Setting

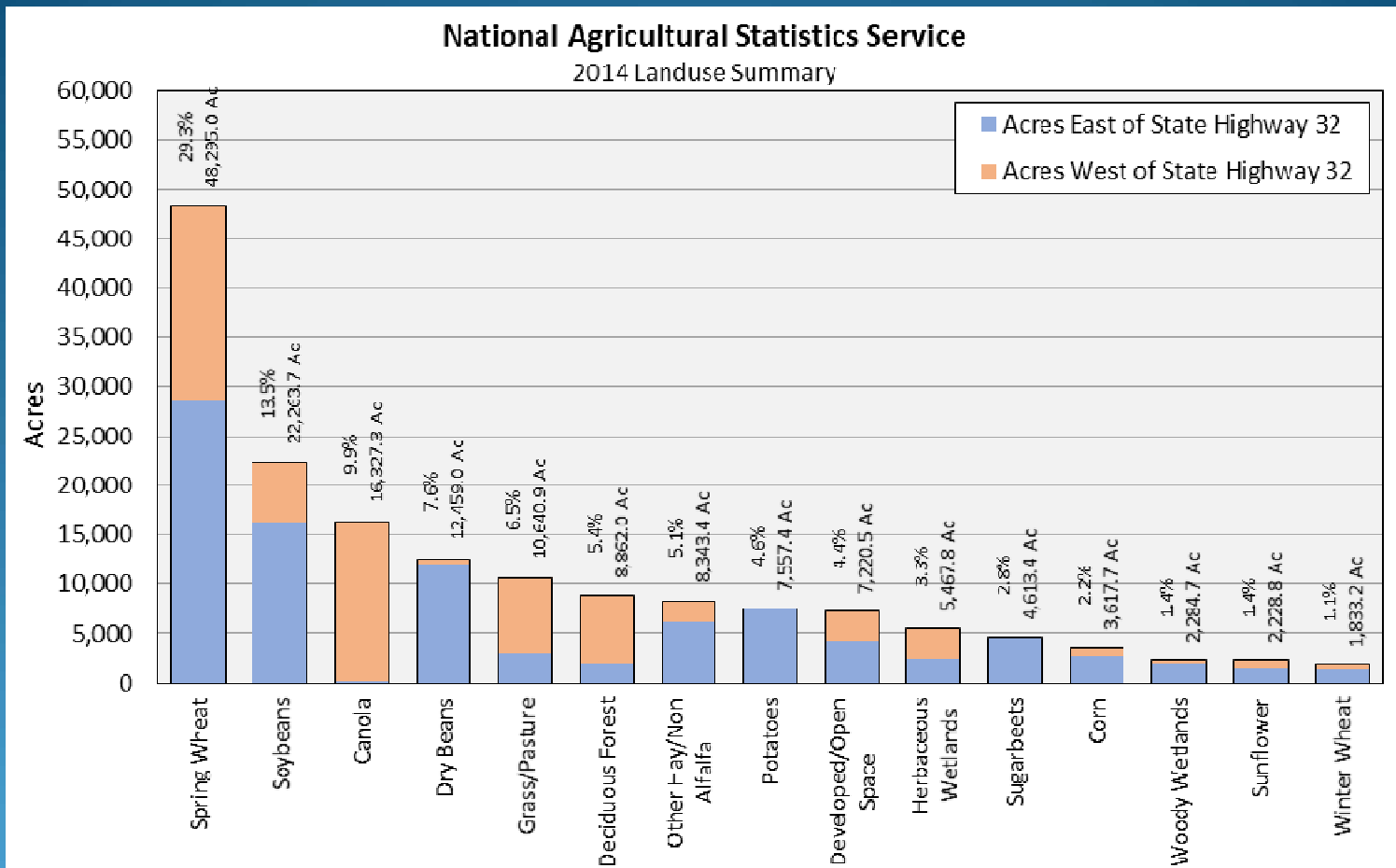


F-05

**Figure 05: National Agricultural Statistics Service Cropland Data (2014)**  
 North Branch Park River Watershed  
 Feasibility Study And Plan of Work  
 Park River Joint Water Resource District

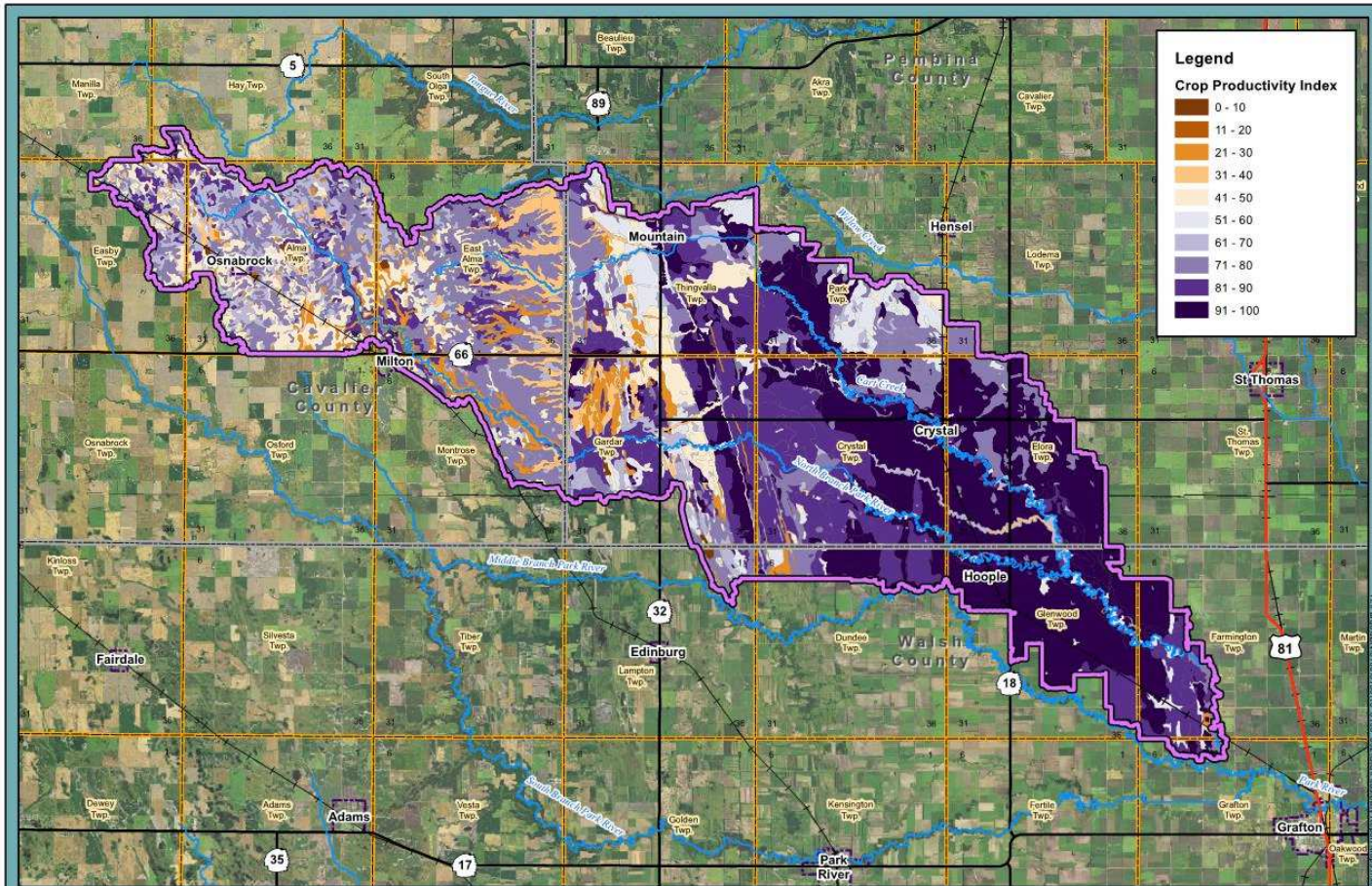


# Watershed Setting





# Watershed Setting



**Legend**

**Crop Productivity Index**

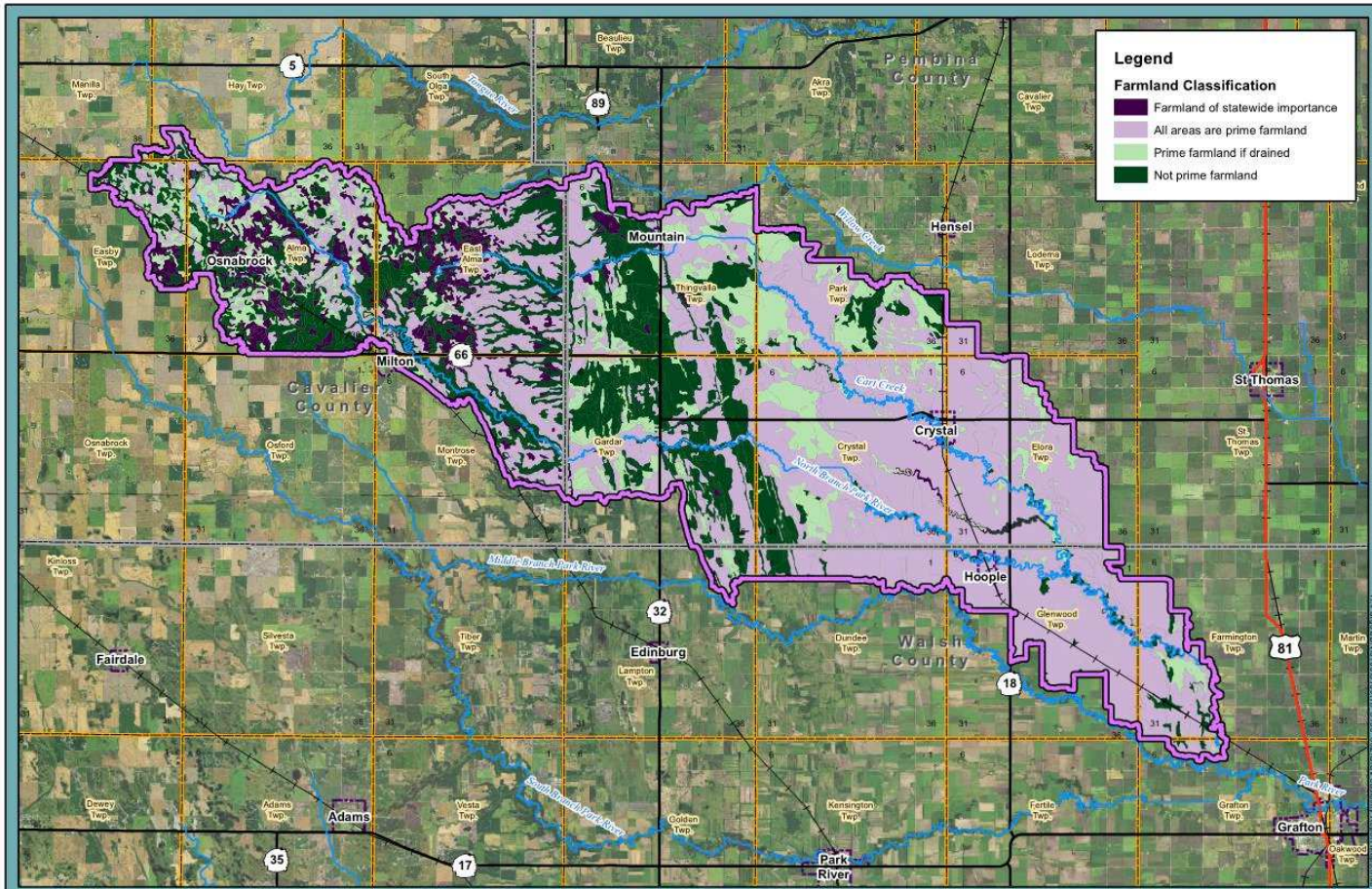
- 0 - 10
- 11 - 20
- 21 - 30
- 31 - 40
- 41 - 50
- 51 - 60
- 61 - 70
- 71 - 80
- 81 - 90
- 91 - 100

**F-08**

**Figure 08: USDA SSURGO Crop Productivity Index**  
 North Branch Park River Watershed  
 Feasibility Study And Plan of Work  
 Park River Joint Water Resource District



# Watershed Setting

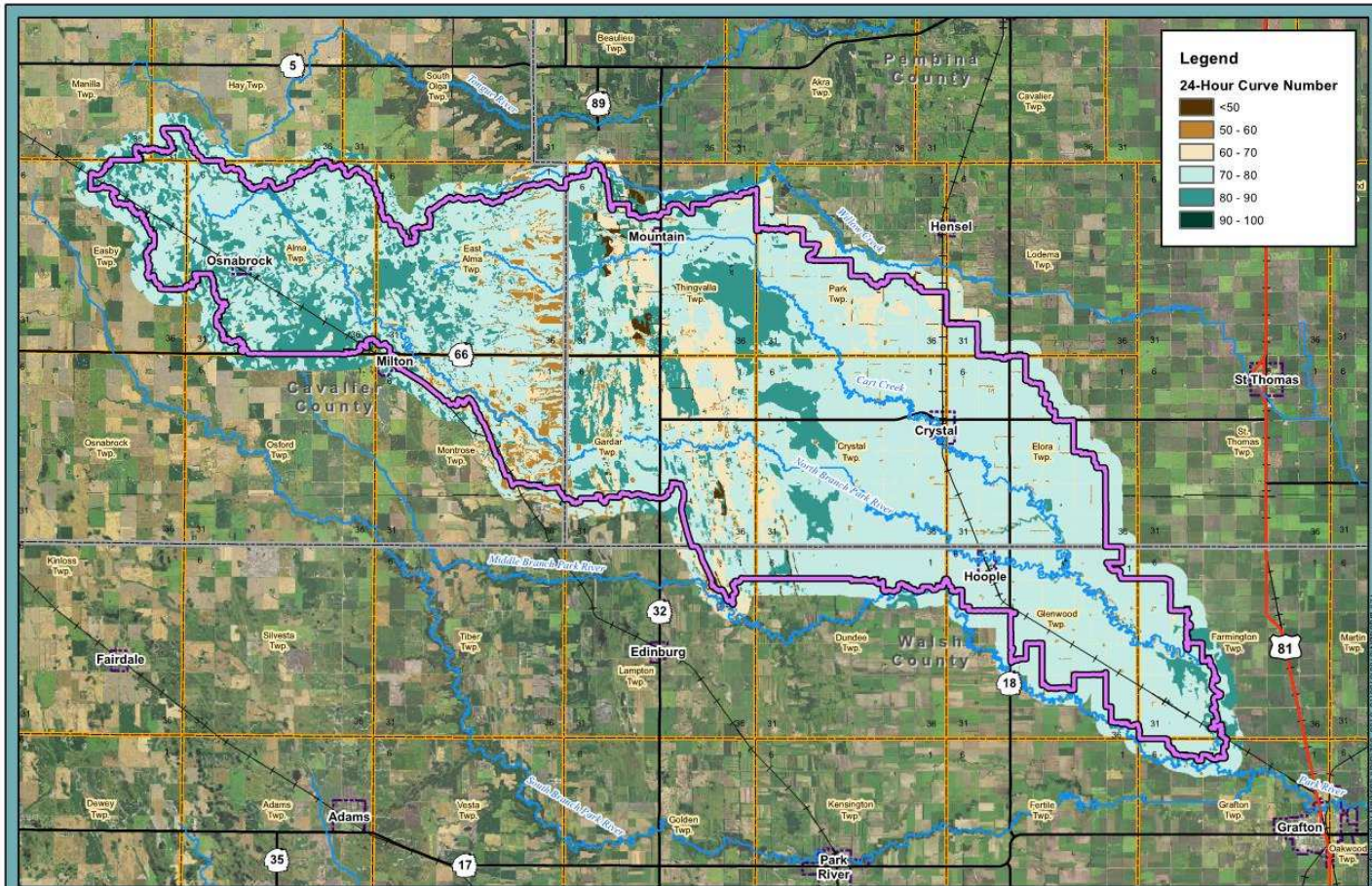


F-09

**Figure 09: USDA SSURGO Farmland Classification**  
North Branch Park River Watershed  
Feasibility Study And Plan of Work  
Park River Joint Water Resource District



# Watershed Setting

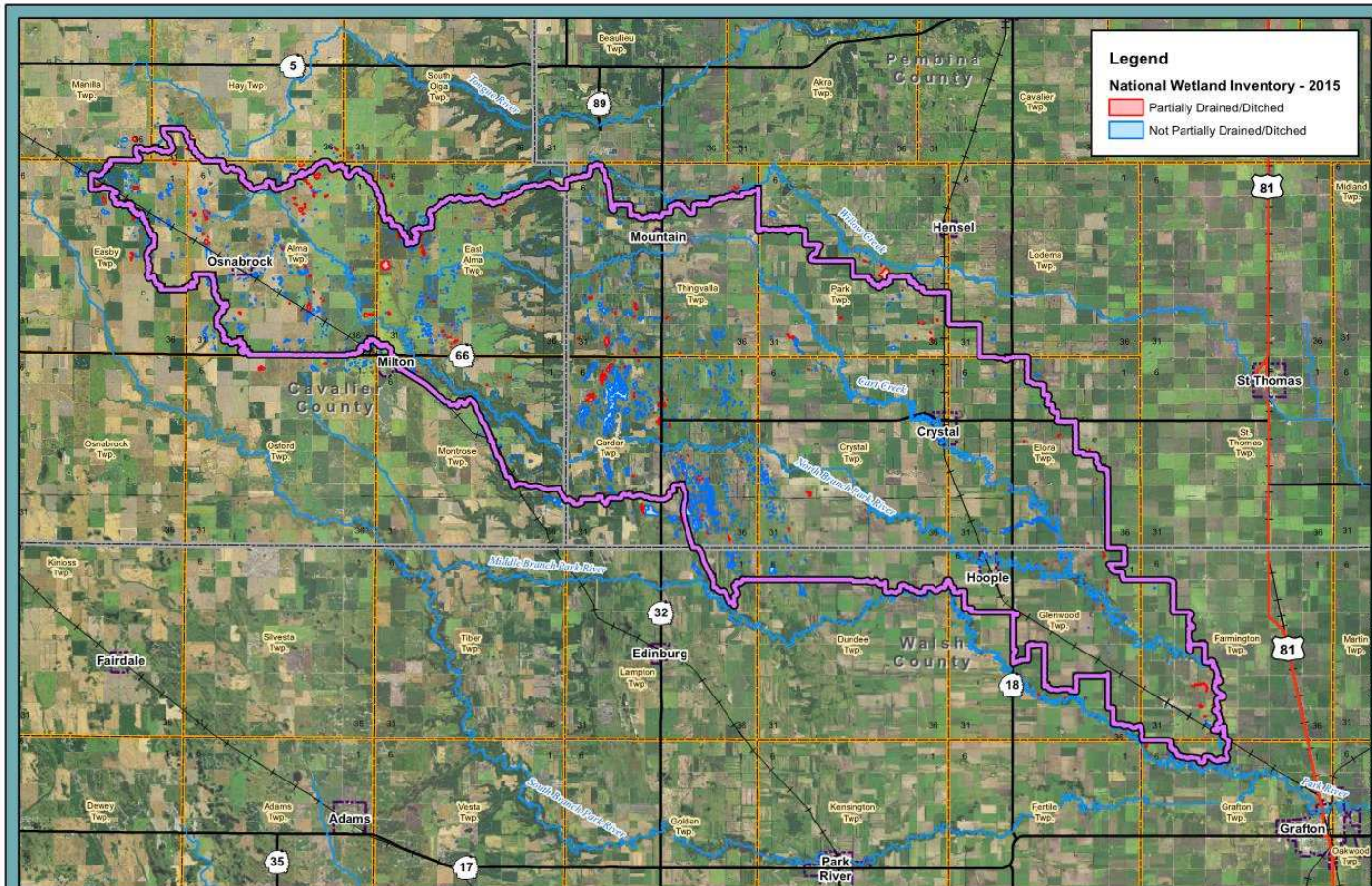


F-11

**Figure 11: NRCS 24-Hour Curve Number**  
North Branch Park River Watershed  
Feasibility Study And Plan of Work  
Park River Joint Water Resource District



# Watershed Setting



F-12

**Figure 12: USFWS National Wetlands Inventory**  
North Branch Park River Watershed  
Feasibility Study And Plan of Work  
Park River Joint Water Resource District



# History of Flood Impacts



## Concerns in the Watershed:

- Frequent Flooding
  - *Recent FEMA Disaster Declarations (2004, 2005, 2006, 2009, 2011, and 2013)*
- Infrastructure Damages
  - *(Roads, Culverts, etc...)*
- Agricultural Impacts
  - *Delayed and Prevented Planting*
  - *Soil Erosion*
- Communities
  - *Crystal, Hoople, Nash, Mountain, Grafton, etc...*
- Rural Residences
- *Others?.....*

## Today's Goal:

Provide opportunity for public to participate in defining resource concerns

# 2013 Flood Impacts - Agriculture



05/23/2013

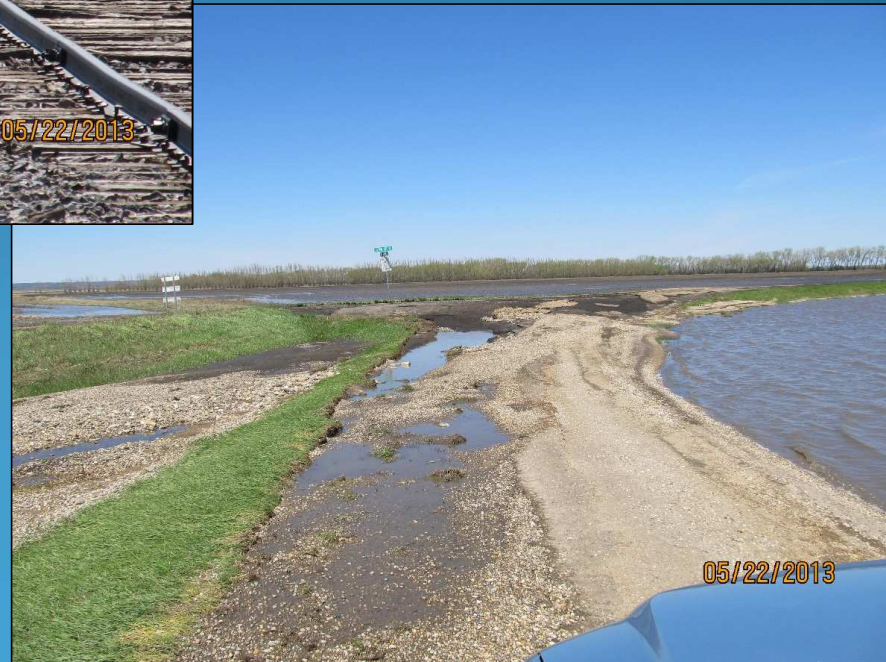


05/22/2013

## 2013 Flood Impacts - Erosion



## 2013 Flood Impacts - *Infrastructure*





# 2013 Flood Impacts – *Overland Flooding*







# Resource Concerns for Consideration



## Required Resource Concerns

- National Economic Development (NED)
- Air quality
- Coral reefs
- Cultural Resources
- Ecologically critical areas
- Endangered and threatened species
- Environmental justice and civil rights
- Essential fish habitat
- Fish and wildlife (including coordination requirements)
- Floodplain management
- Forest resources
- Invasive species
- Land use
- Migratory birds
- Natural areas
- Parklands
- Prime and unique farmland, and farmland of statewide significance
- Public health and safety
- Regional water resource plans (including coastal zone plans)
- Riparian areas
- Scenic beauty
- Scientific resources
- Sole source aquifers
- Social issues
- Soil resources
- Water quality
- Water resources
- Waters of the United States, including special aquatic sites
- Wetlands
- Wild and scenic rivers

## Other Possible Concerns

- Delayed planting
- Prevented planting
- Crop damages from prolonged inundation
- Road damages
- Culvert and bridge wash outs
- Field erosion/deposition
- Breakout flows to Willow Creek/Drain 67
- Community impacts
- Channel erosion/deposition
- Transportation disruptions
- Business/Commerce disruptions

**Any additional concerns???**

# Public Comments

Available for download at:

<http://pembinacountynd.gov/county/departments/1436/>

Please complete and return by March 17, 2016

**Public Scoping Meeting Comment Form**  
**North Branch Park River**  
**NRCS Watershed Plan**  
**February 17, 2016**

**Background**

The Park River Joint Water Resource District (PRJWRD) was formed in 2013 between Walsh and Pembina Counties in an effort to develop flood damage reduction projects to alleviate impacts caused by high flows. The initial focus of the PRJWRD is aimed at the North Branch and Carl Creek tributaries of the Park River Watershed. Beginning in 2014, the PRJWRD began stakeholder and river NRCIS through the Riparian eligible applicants as part of watershed planning in these funds are provided National Environmental available in the feasible.

**Purpose of Today's Meeting**

The initial step in NRCIS including federal, state, resource concerns with this list. In order to gather the attached comment form.

**Required NEPA Concerns**

- Natural Economic Development (NED)
- Air quality
- Coral reefs
- Cultural Resources
- Ecologically critical
- Endangered and threatened species
- Environmental justice
- Essential fish habitat
- Fish and wildlife (in coordination with the appropriate agency)
- Floodplain management
- Other possible concerns:
  - Delayed planning
  - Prevented planting
  - Crop damages from proposed harvest
  - Road damages

**Please fill out the following information based on your priorities in the North Branch Watershed. Comments form will be accepted for all forms postmarked on or before March 22, 2016. Completed comment forms can be mailed to the PRJWRD office at:**

**Park River Joint Water Resource District**  
**308 Courthouse Drive No. 5**  
**Cavaler, ND 58220**

Or via email to [tlrmp@nd.gov](mailto:tlrmp@nd.gov)

Name: \_\_\_\_\_  
 Address: \_\_\_\_\_

Affiliation: \_\_\_\_\_  
(Federal, state, local, tribal, business, etc.)

Circle the most appropriate ranking for each concern listed below. Refer to the degree of concern is not indicated will be considered a zero value (No Concern).

**KEY: 0 = No Concern or Not Relevant    1 = Minimal Concern    2 = Moderate Concern    3 = Significant Concern**

Regional water resource plans (including coastal zone plans).....	0	1	2	3	4	5
Riparian areas.....	0	1	2	3	4	5
Scenic beauty.....	0	1	2	3	4	5
Scientific resources.....	0	1	2	3	4	5
Soil source activities.....	0	1	2	3	4	5
Soil erosion.....	0	1	2	3	4	5
Soil resources.....	0	1	2	3	4	5
Water quality.....	0	1	2	3	4	5
Water resources.....	0	1	2	3	4	5
Waters of the United States, including special aquatic sites.....	0	1	2	3	4	5
Wetlands.....	0	1	2	3	4	5
Wild and scenic rivers.....	0	1	2	3	4	5

**Other possible concerns:**

- Delayed planning..... 0 1 2
- Prevented planting..... 0 1 2
- Crop damages from prolonged inundation..... 0 1 2
- Road damages..... 0 1 2
- Culvert and bridge wash-outs..... 0 1 2
- Field erosion/deposition..... 0 1 2
- Breakout flows to Willow Creek/Drain 67..... 0 1 2
- Community impacts..... 0 1 2
- Channel erosion/deposition..... 0 1 2
- Transportation disruptions..... 0 1 2
- Business/Commerce disruptions..... 0 1 2
- \_\_\_\_\_ (Write in)..... 0 1 2
- \_\_\_\_\_ (Write in)..... 0 1 2
- \_\_\_\_\_ (Write in)..... 0 1 2
- \_\_\_\_\_ (Write in)..... 0 1 2

Additional Comments: \_\_\_\_\_

**Instructions:**

Please indicate the following items (if applicable):

- Your property location
- Specific areas of resource concerns, labeled with the resource concern (i.e. flooding, erosion, etc....)
- Any additional information that may be pertinent to watershed planning

Return completed map along with completed Comment Form to:  
 Park River Joint Water Resource District  
 308 Court House Drive #5  
 Cavaler, ND 58220

**Park River Joint Water Resource District**  
 North Branch Park River  
 Watershed Planning  
 Public Comment Form

**North Branch Watershed**  
 Park River Watershed  
 July 1, 2014 Indicated  
 Areas of Flood Concern

**County Boundary**  
**Township Boundary**  
**City Limits**

PREPARED BY:  
 Houston Engineering Inc.