



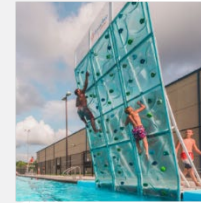
# How to Best Leverage Available Funding for Your Watershed District Needs?

Lalit Jha, PE, CFM, D.WRE  
Chris Shultz, PE, CFM

SAKW  
January 31<sup>st</sup>, 2024

# Planted in the Midwest

Started in 1937  
360+ Employees  
12 Technical Departments, including  
**Water Resources, Hazard Mitigation  
and Emergency Planning**



Aquatics & Recreation



Architecture



Community Engagement



Construction Inspection



Electrical



Environmental



Land/Site Development



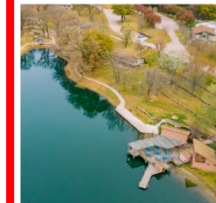
Survey



Traffic and Technology



Transportation



Water Resources



Water/Wastewater

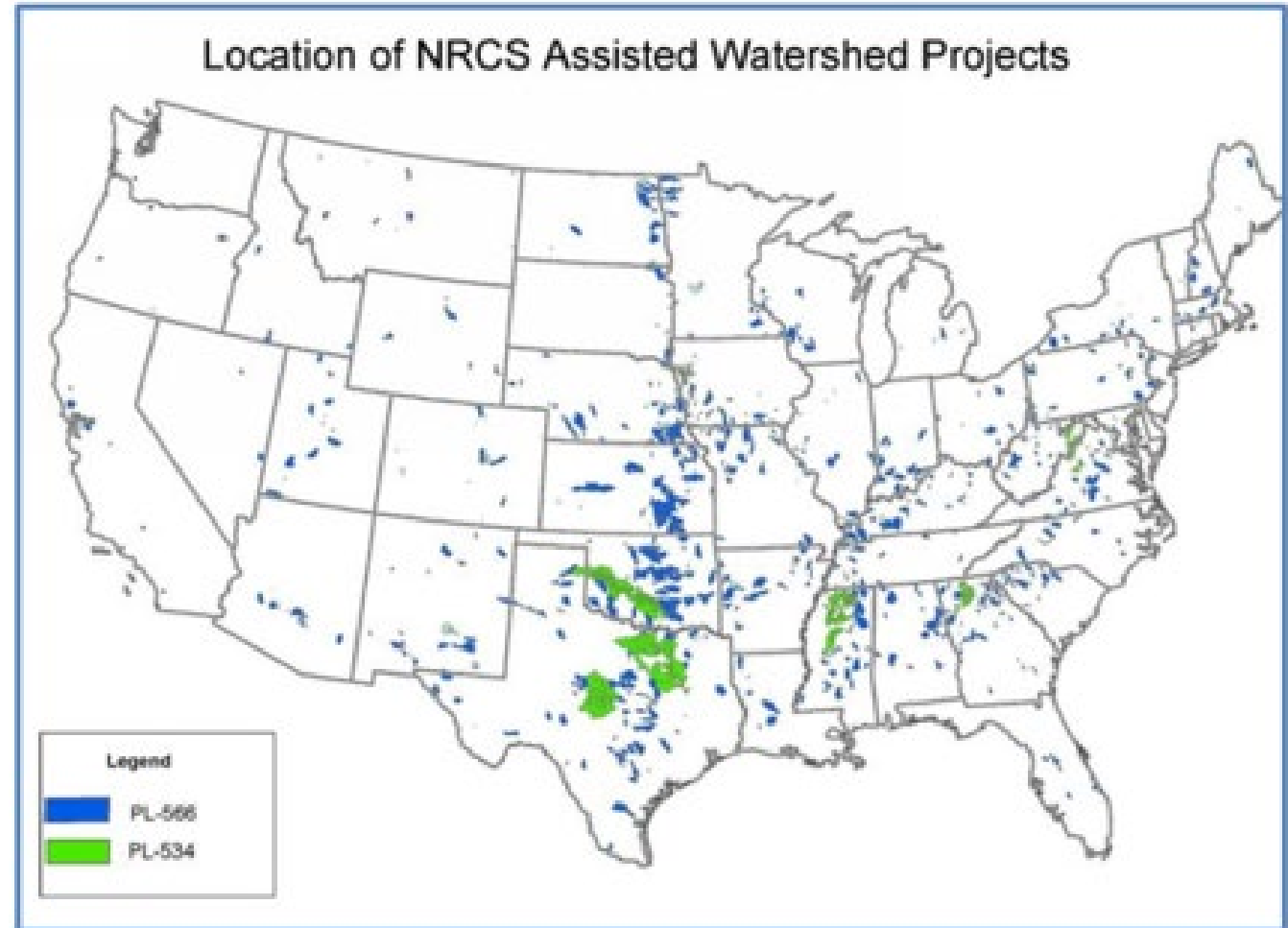
# Outline/Overview

1. Watershed District Needs
2. NRCS Fund
3. FEMA Fund
4. KWO Fund
5. Programmatic Approach to Address Dam Rehab needs

# NRCS Dams

- 1947 – 2010
- Over 2,000 NRCS authorized watershed plans
- Over 11,840 dams

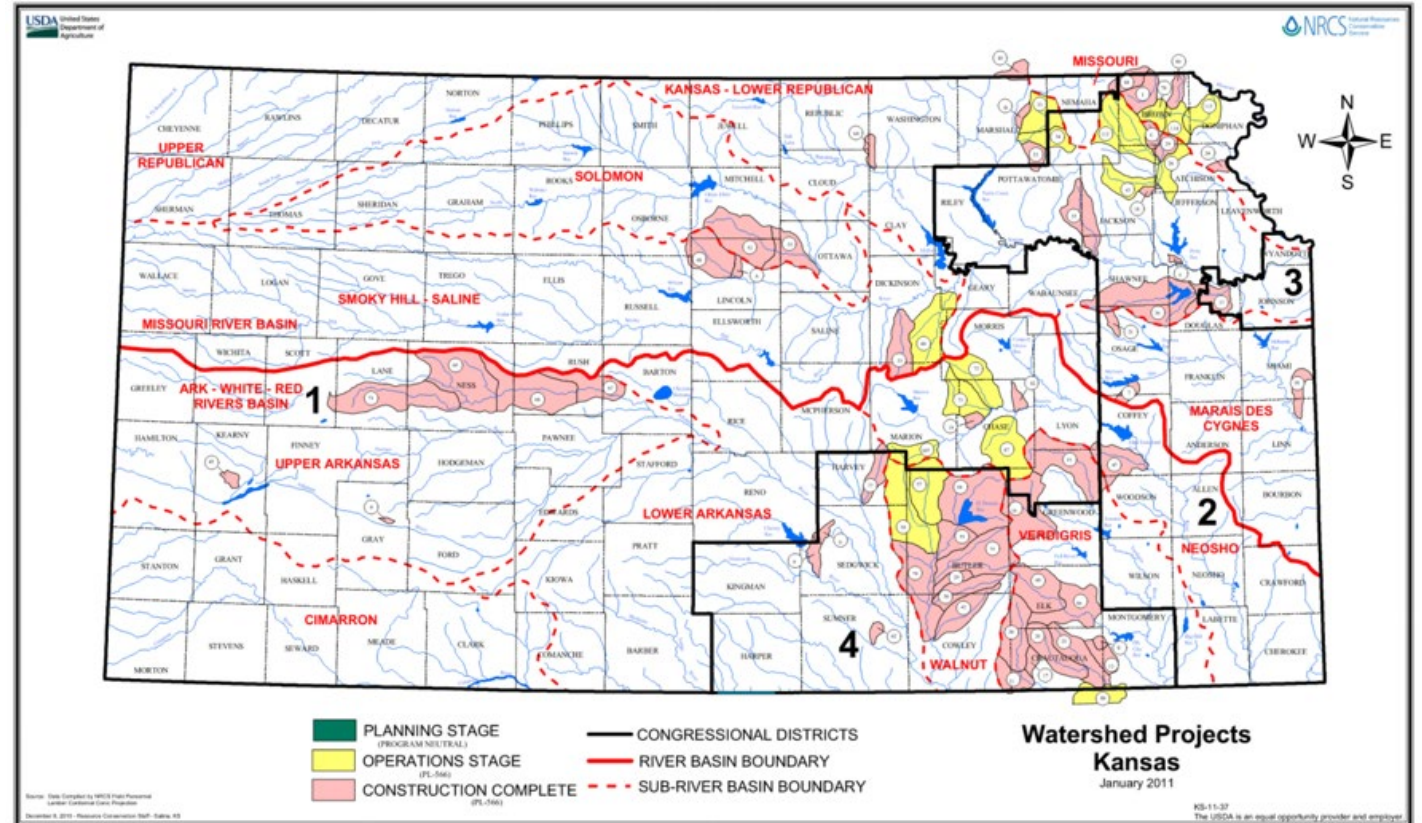
**\$2.2B in  
Annual Benefits**



# Kansas Dams

## Kansas Stats\*

- 60+ Approved watershed plans
- Approximately 1,500 watershed structures constructed



\*Source: The Kansas Watershed District Story by Christy R. Jean; 27 August 2015

# Watershed Need

**Problem:** Many Dams near or exceed their design life

- Most NRCS type dams were designed with 50-yr life
  - Physical and Structural Condition
  - Public Safety Risk / Dam Breach
  - Operation and Maintenance
  - Socioeconomic Impact
  - Financing
- Rehabilitating a dam can be expensive!
  - Especially if hazard class has changed
- Construction of new dams

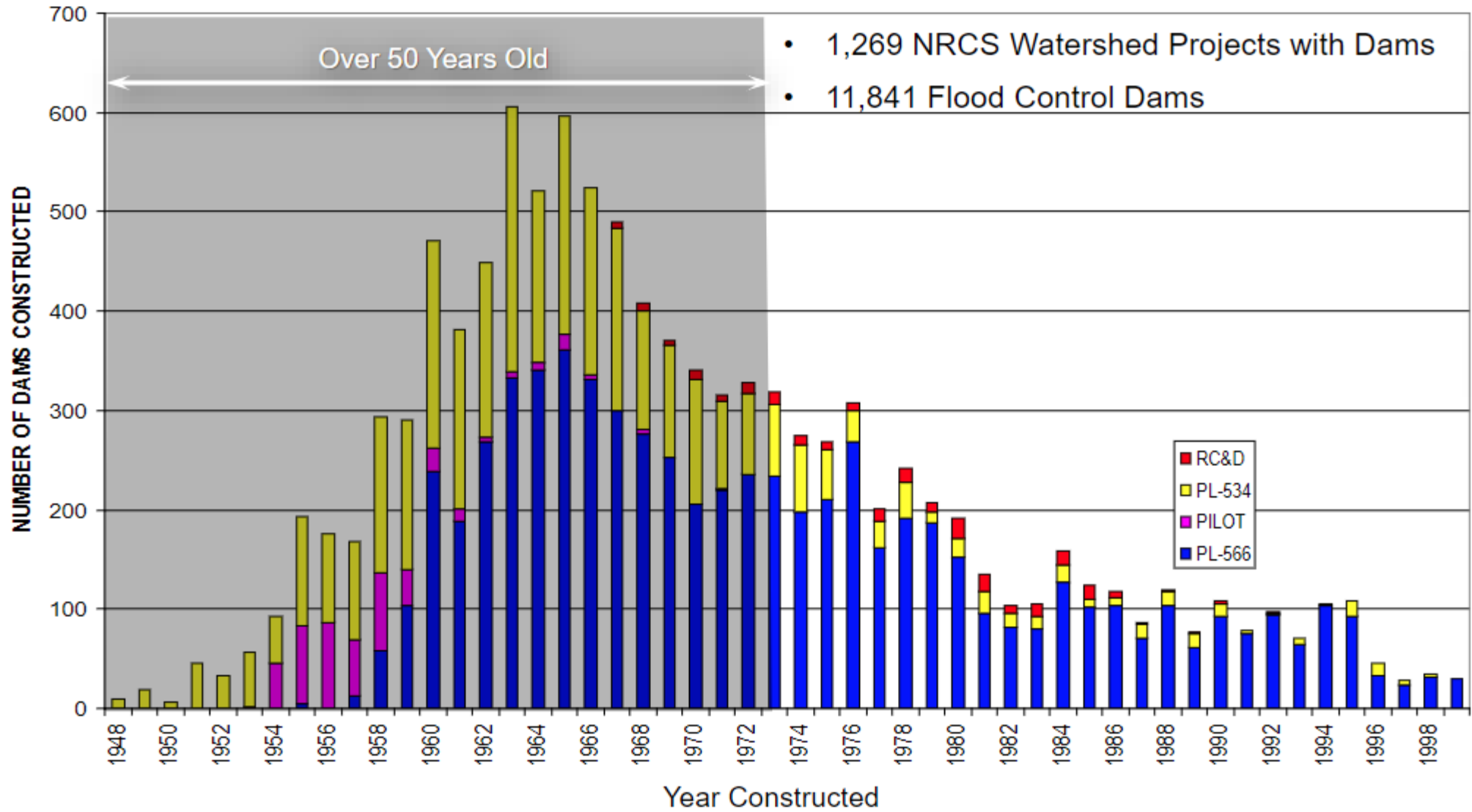


# Lessons-To-Be-Learned

“Analysis of more than 1,100 dam failures and safety related incidents indicates that ....approximately half of failures occur after 50 years of operation.”

**“An extended period of apparently successful operation does not indicate an equally successful operation in the future.”**

*(Patrick Regan - FERC, USSD)*







# NRCS Funding

# NRCS Watershed Programs

## 1. Watershed and Flood Prevention ( WFPO ) Program

- Watershed based solution to natural Resources Problem
- Originally authorized in PL-534 and PL-566 program

## 2. Watershed Rehabilitation ( REHAB) Program

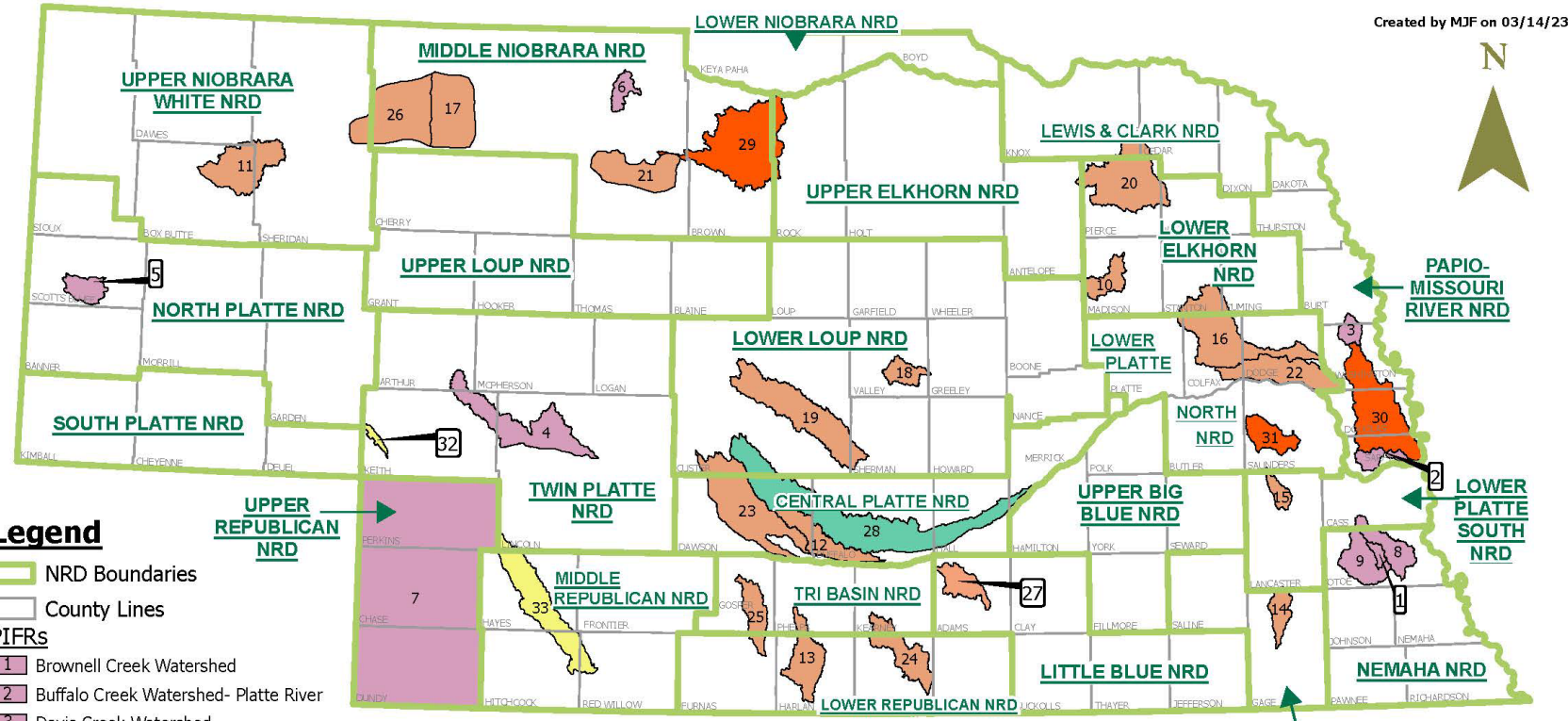
- Rehabilitate aging dams

## 3. Emergency Watershed Protection (EWP) Program

- Assistance after natural disaster to address impair watershed

# NRCS Watershed Funding since 2017

| Federal Gov.<br>Fiscal Year | WFPO<br>Program Funding<br>(M = Million) | REHAB<br>Program Funding<br>(M = Million) | EWP<br>Program Funding<br>(M = Million) |
|-----------------------------|--|---|---|
| 2017                        | \$150 M                                  | \$21 M                                    | \$103 M                                 |
| 2018                        | \$150 M                                  | \$12 M                                    | \$541 M                                 |
| 2019                        | \$200 M                                  | \$10 M                                    | \$217 M                                 |
| 2020                        | \$225 M                                  | \$10 M                                    |   |
| 2021                        | \$225 M                                  | \$10 M                                    |   |
| 2022                        | \$150 M                                  | \$1 M                                     | \$275 M                                 |
| 2022 (IIJA)                 | \$500 M                                  | \$118 M                                   | \$300 M                                 |
| 2023                        | \$125 M                                  | \$2 M                                     | \$925 M                                 |
| <b>Total</b>                | <b>\$1,725 M</b>                         | <b>\$184 M</b>                            | <b>\$2,361 M</b>                        |



Created by MJF on 03/14/23



**Legend**

- NRD Boundaries
- County Lines
- PIFRs**
- 1 Brownell Creek Watershed
- 2 Buffalo Creek Watershed- Platte River
- 3 Davis Creek Watershed
- 4 East Clear Creek Watershed- North Platte River
- 5 Gering Valley Watershed
- 6 Schlagel & Evergreen Creeks Watershed
- 7 Spring Creek Watershed
- 8 Wilson Creek Watershed
- 9 Ziegler Creek Watershed

**Planning- EA**

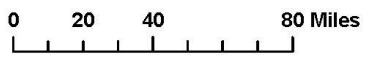
- 10 Battle Creek Watershed
- 11 Box Butte Creek Watershed
- 12 Elm & Turkey Creeks Watershed
- 13 Flag Creek Watershed
- 14 Indian Creek Watershed
- 15 Little Salt Creek Watershed
- 16 Maple Creek Watershed
- 17 Middle Snake River Watershed
- 18 Mira Creek Watershed
- 19 Upper Mud Creek Watershed
- 20 North Fork Elkhorn River Watershed
- 21 Rat & Beaver Lake Watershed
- 22 Rawhide Creek Watershed
- 23 Spring & Buffalo Creeks Watershed
- 24 Thompson Creek Watershed
- 25 Turkey Creek Watershed
- 26 Upper Snake River Watershed
- 27 West Branch 32 Mile Creek Watershed

**Planning- EIS**

- 28 Wood River Watershed
- 29 Long Pine & Bone Creeks Watershed
- 30 Papillion Creek Watershed
- 31 Upper Wahoo Creek Watershed

**Construction**

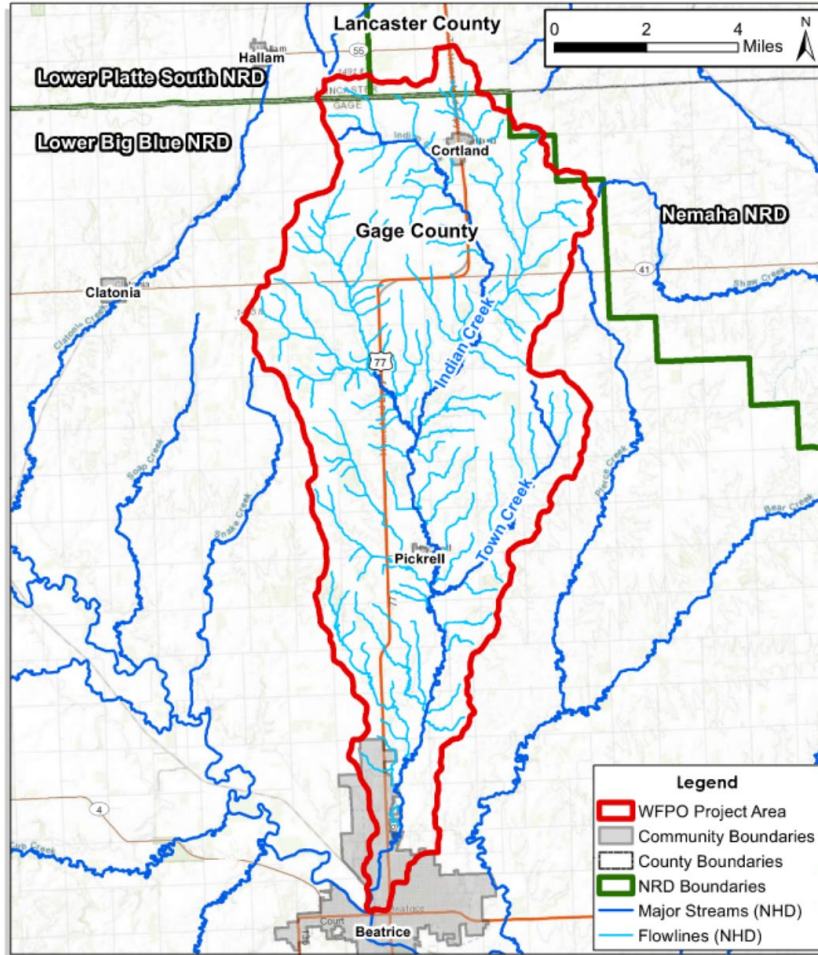
- 32 Brule Creek Watershed
- 33 Blackwood Creek Watershed



# Active Nebraska NRCS WFPO Projects- FY 2023



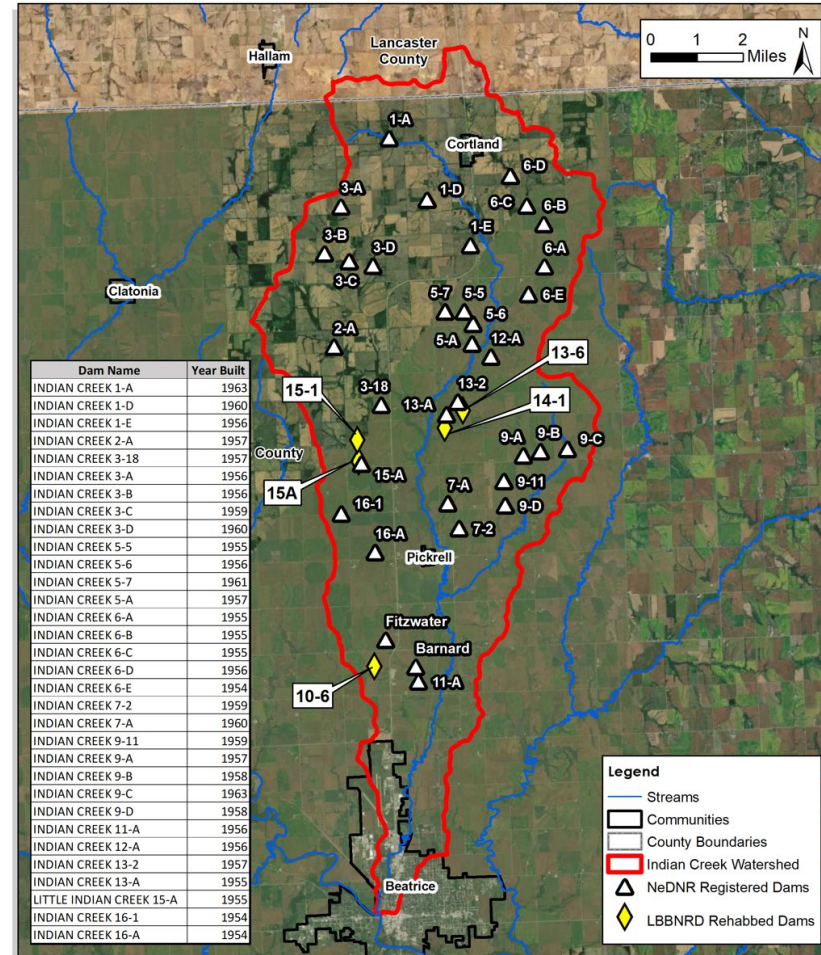
# Innovative approach to Rehab Existing Dams



**Indian Creek WFPO Project Area**

Total Area = 48,425 acres

Date: 3/30/2020  
Software: ArcGIS 10.7.1



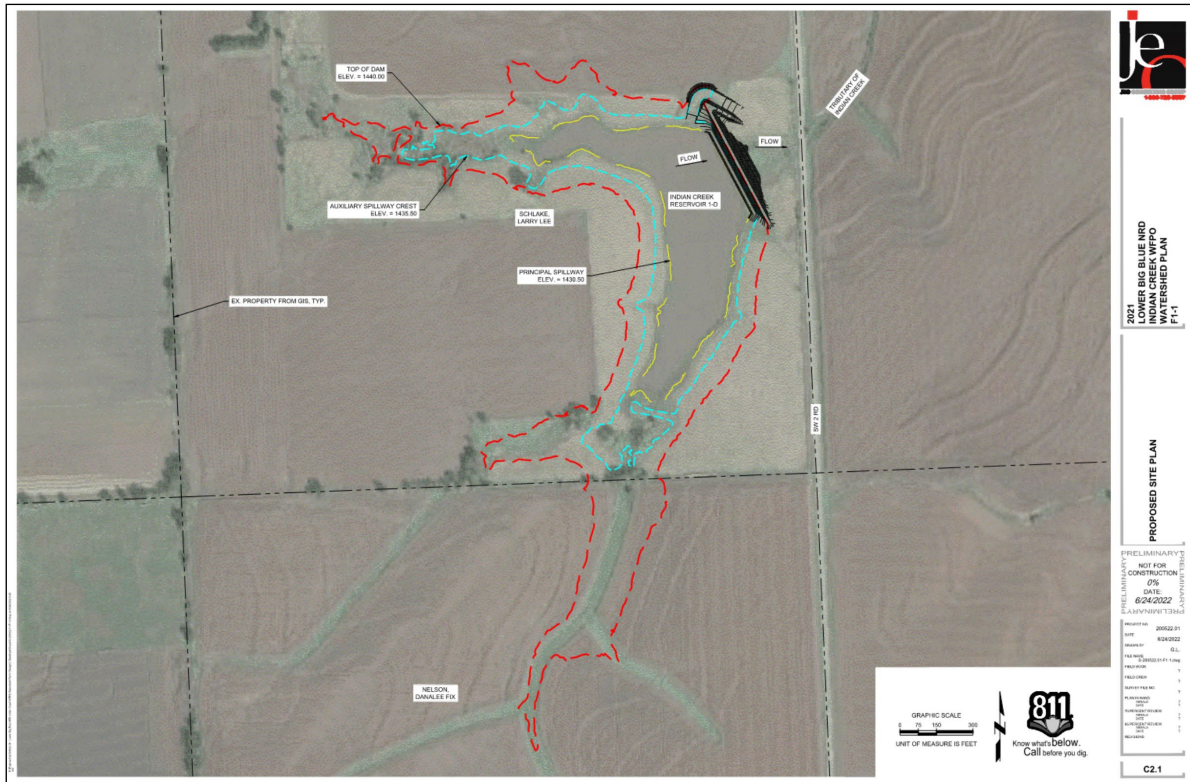
**Existing Dams**

Little Indian Creek WFPO Plan & EA

Created By: DJV  
Date: 6/10/2021  
Software: ArcGIS 10.8.1

Lower Big Blue  
Natural Resources District  
USDA NRCS  
United States Department of Agriculture  
Natural Resources Conservation Service

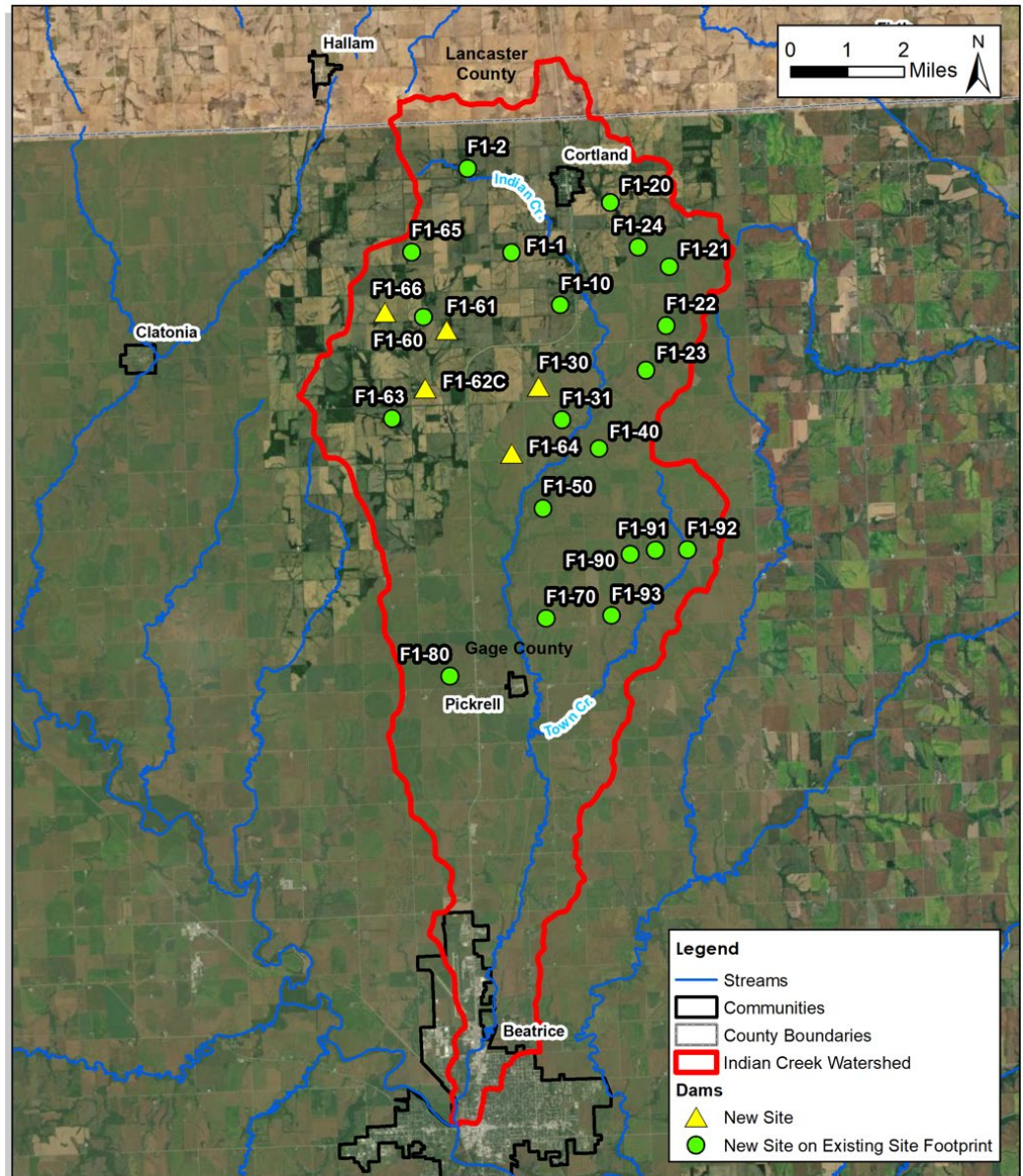




- 100-yr Sediment Life
- Easement to TOD
- NRCS TR-60 Design
- Possible downstream zoning restrictions

## Alternative – New Dam on Existing Dam (not Rehab)

# Indian Creek WFPO

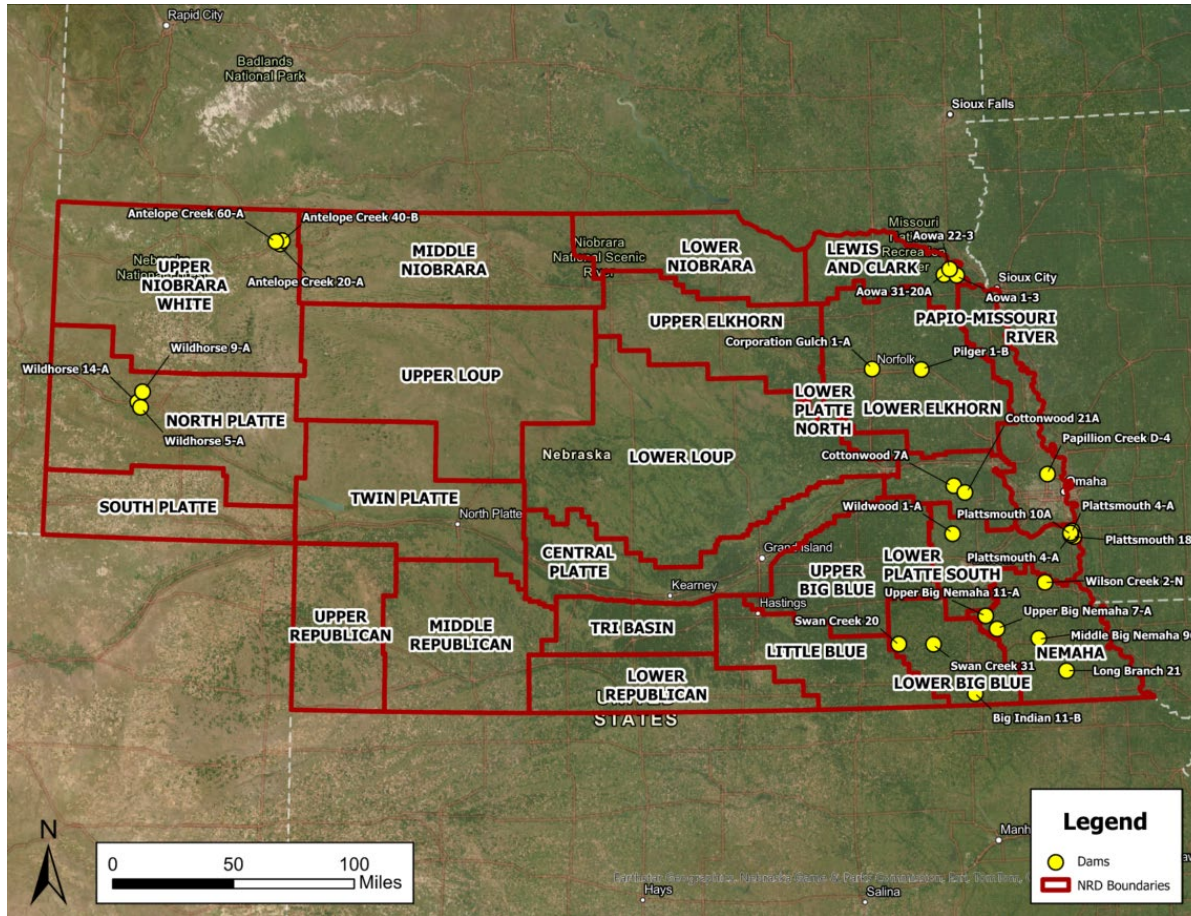


## Multiple Dams Alternative

Little Indian Creek WFPO Plan & EA



# Multiple Watershed Dam Assessment



- Inter-watershed and NRCS collaboration

- Contract Administration by NARD

(NARD is Nebraska version of SAKW)





# FEMA Funding

# FEMA Mitigation Funding



## HMGP

- **Post-disaster**
- NEMA administered; projects prioritized by governor's task force
- For use across the state
- Open applications; awards based on available funding



## HMGP Post Fire

- **Post-disaster**
- Fire Management Assistance Grant (FMAG) declared disaster



## BRIC

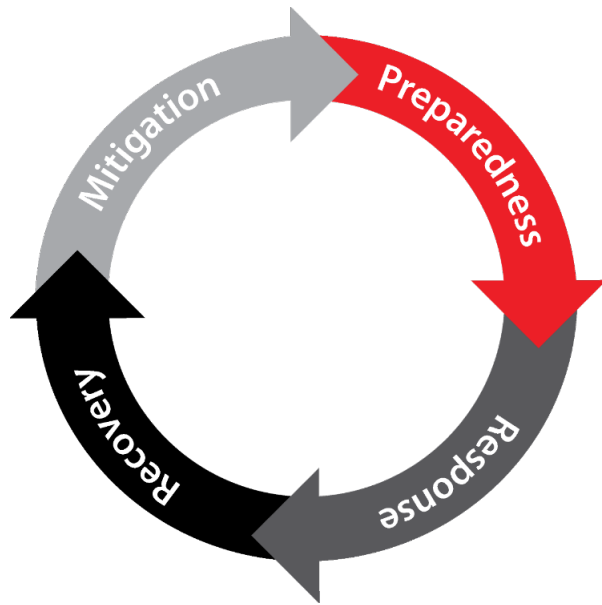
- **Pre-disaster**
- 6% set aside from federal post-disaster grant funding
- Applications Period: September – January
- Awards: Fall
- 36-month period of performance



## FMA

- **Pre-disaster**
- Annual appropriations (\$800M in 2022)
- NeDNR/FEMA administered
- Applications Period: September – January
- Awards: Fall
- 36-month period of performance

# Hazard Mitigation – What is it?



## FEMA defines Mitigation as

*“...efforts to reduce loss of life and property by lessening the impact of disasters; taking action now—before the next disaster—to reduce human and financial consequences later (analyzing risk, reducing risk, insuring against risk).”*

# Leveraging FEMA funds Mitigation Plan Requirements

## LOCAL PLANS

- COMMUNITY LEVEL
- COUNTY LEVEL
- LOCAL REGIONS
- SPECIAL DISTRICTS
- 5- YEAR UPDATES
- HAZARD MITIGATION FUNDING ELIGIBILITY



# Eligible Activities for FEMA Grants

FEMA reviews all applications for eligibility, cost-effectiveness, technical feasibility, and effectiveness.

This table gives common eligible activities but is not exhaustive.



|   | Hazard Mitigation Grant Program | Hazard Mitigation Grant Program – Post Fire | Building Resilient Infrastructure and Communities | Flood Mitigation Assistance |
|---|---------------------------------|---|---|-----------------------------|
| <b>1. Mitigation Projects</b>               |                                 |   |   |                             |
| Property Acquisition                        | •                               | •   | •   | •                           |
| Structure Elevation                         | •                               | •   | •   | •                           |
| Mitigation Reconstruction                   | •                               | •   | •   | •                           |
| Flood Risk Reduction Measures               | •                               | •   | •   | •                           |
| Stabilization                               | •                               | •   | •   | •                           |
| Dry Floodproofing Non-Residential Buildings | •                               | •   | •   | •                           |
| Tsunami Vertical Evacuation                 | •                               | •   | •   |                             |
| Safe Rooms                                  | •                               | •   | •   |                             |
| Wildfire Mitigation                         | •                               | •   | •   |                             |
| Retrofitting                                | •                               | •   | •   | •                           |
| Generators                                  | •                               | •   | •   |                             |
| Earthquake Early Warning Systems            | •                               | •   | •   |                             |
| Innovative Mitigation Projects              | •                               | •   | •   | •                           |
| <b>2. Capability and Capacity Building</b>  |                                 |   |   |                             |
| New Plan Creation and Updates               | •                               | •   | •   | •                           |
| Planning-Related Activities                 | •                               | •   | •   | •                           |
| Project Scoping/Advance Assistance          | •                               | •   | •   | •                           |
| Financial Technical Assistance              |                                 |   |   | •                           |

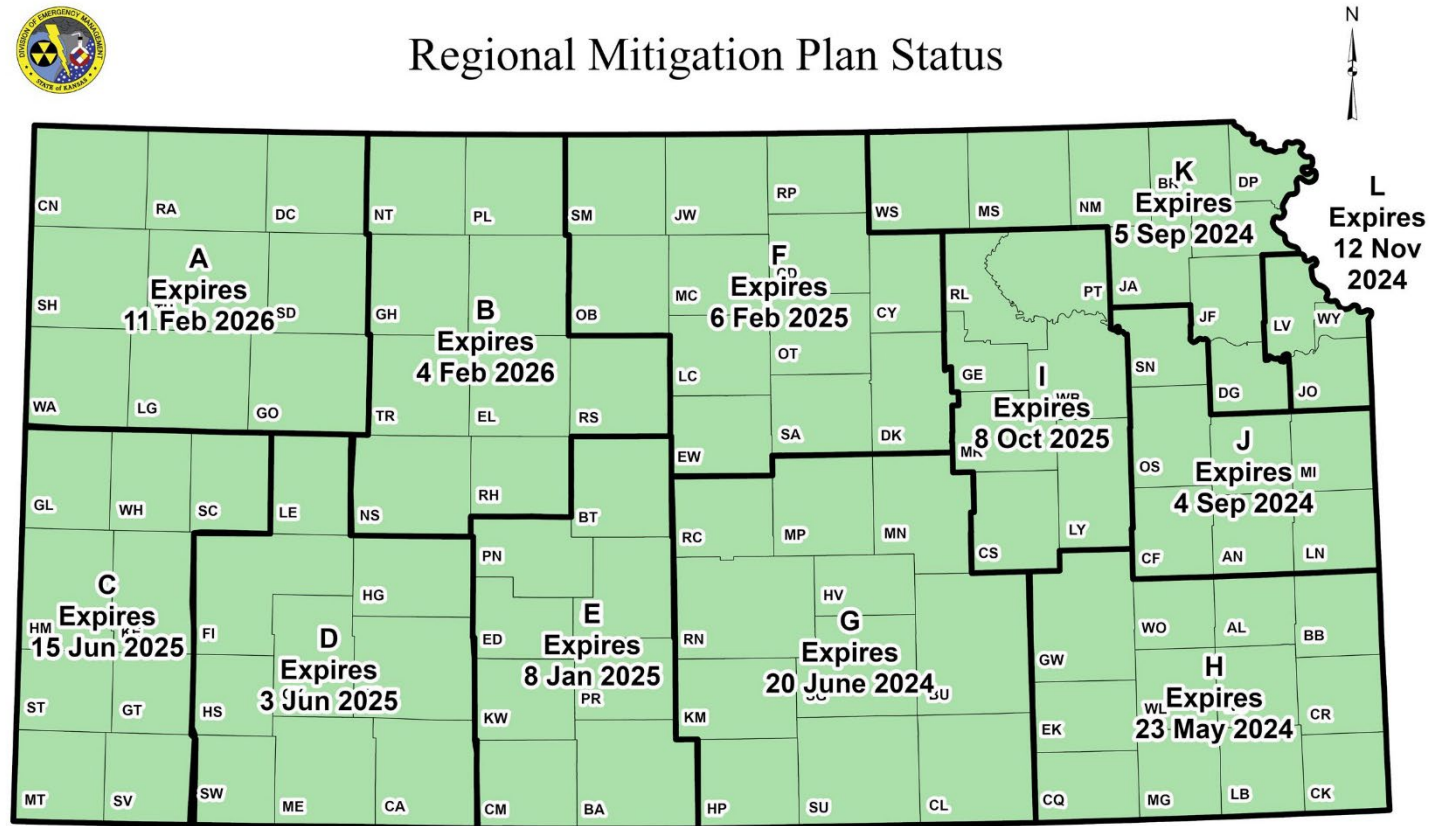
# FEMA Mitigation Funding Cost Share

| Program  | Mitigation Award Activity<br>(percent of federal/<br>non-federal cost share) |
|--|--|
| Hazard Mitigation Grant Program  | 75/25  |
| Hazard Mitigation Grant Program Post Fire  | 75/25  |
| Building Resilient Infrastructure and Communities  | 75/25  |
| Building Resilient Infrastructure and Communities<br>Small Impoverished Communities  | up to 90/10  |
| Flood Mitigation Assistance<br>(Community Flood Mitigation, Project Scoping, individual mitigation of insured properties, and planning grants) | 75/25  |
| Flood Mitigation Assistance – Repetitive Loss Property   | 90/10  |
| Flood Mitigation Assistance – Severe Repetitive Loss Property  | 100/0  |

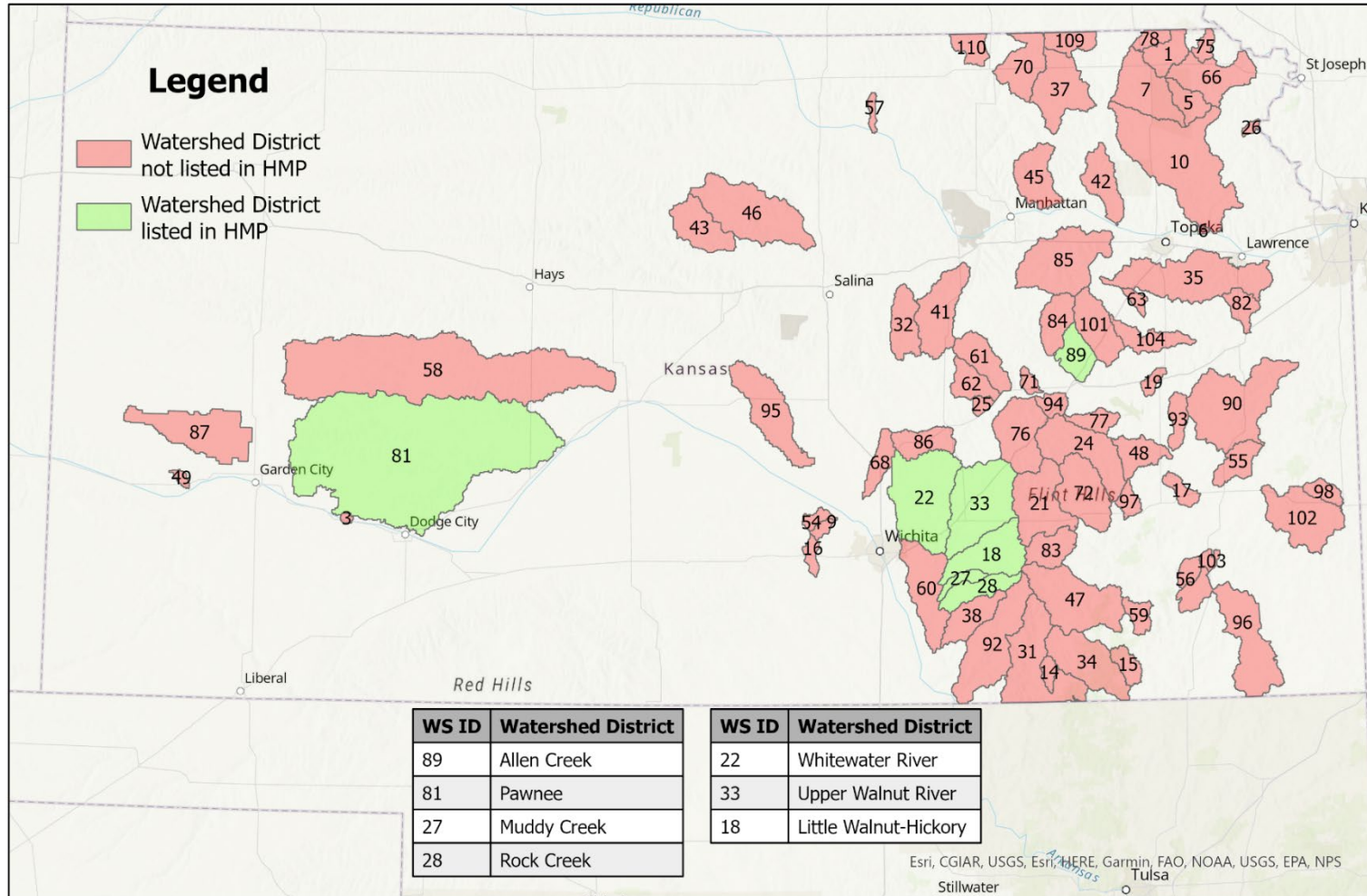
# Kansas Mitigation Sub-Regions



## Regional Mitigation Plan Status



# Watershed Districts in HMP



|   |   |
|---|---|
| Watershed Districts #18, #22, # 27, #28, #33 -1 | Education about watersheds, building above or below the floodplain zone, and the impact on flooding (NFIP)  |
| Watershed Districts #18, #22, # 27, #28, #33 -2 | Conduct regular dam maintenance as required for established watershed districts.  |
| Watershed Districts #18, #22, # 27, #28, #33 -3 | Identify and clearly mark evacuation routes on watershed emergency Description plans. Ensure people are aware of evacuation routes in the event of major flooding. (NFIP) |



# Provide “Real” Value Through Planning

## Beyond “Planning to Plan”

- Funding Workshops
- Economic Study
- Dam Inventory and Risk Assessment
- *Dam Breach Mapping and Hazard Zoning Overlay Regulation*
- *High Hazard Dam Failure Tabletop Exercise*
- Detailed Flood Risk Assessment and Flood Forecast
- Detailed Project Evaluation/Screening (to determine/support) potential FEMA funding opportunities
- Dam Rehabilitation
- Dam Construction

# FEMA – BRIC (Building Resilient Infrastructure in Communities )



# FEMA – Rehabilitation of High Hazard Potential Dam (HHPD) Grant Program

- FEMA started this program in 2019
- State is eligible to apply for the HHPD grant
- Fund can be used for planning, design and construction



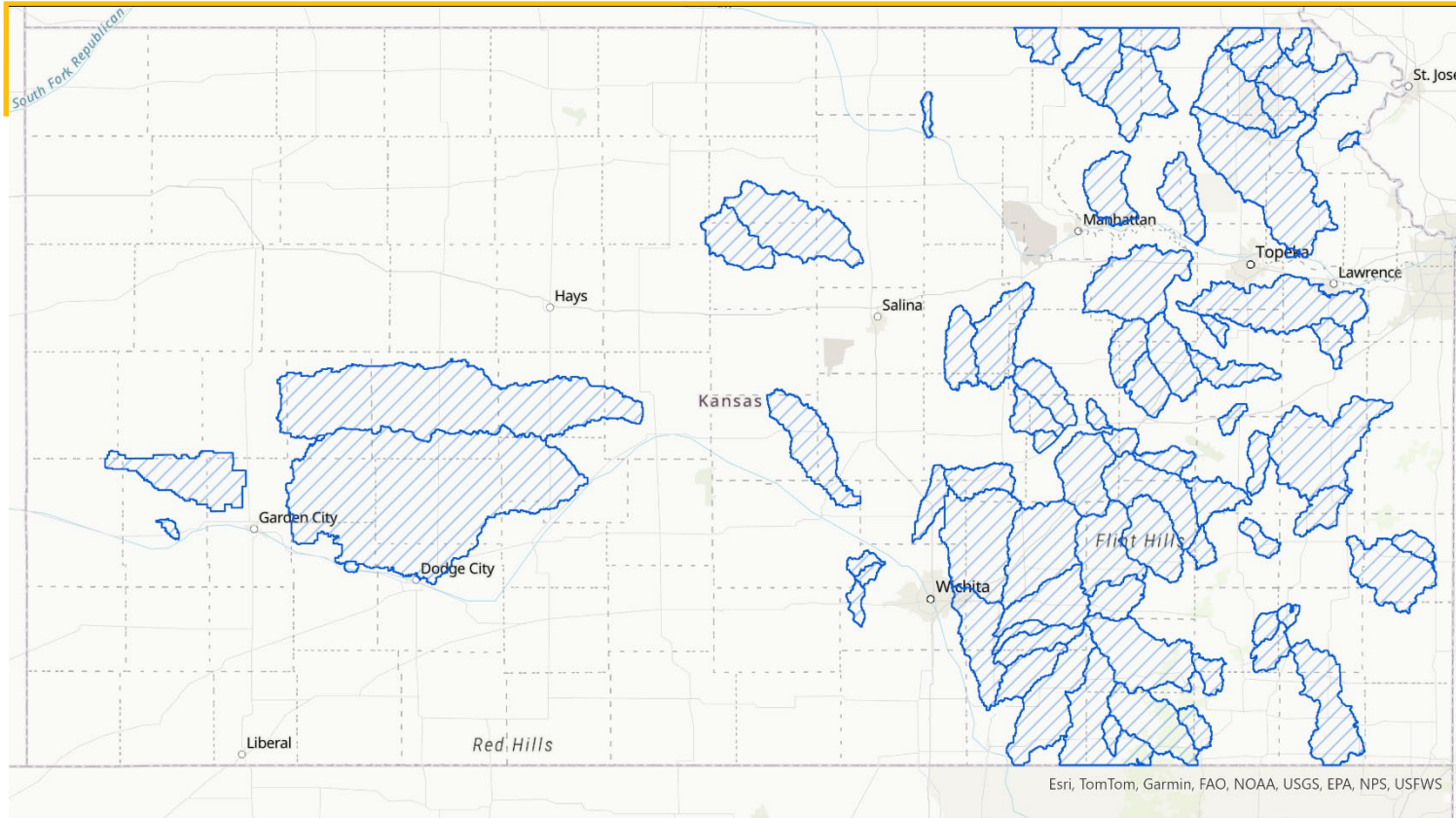
**High Hazard Potential** is a classification standard for any dam whose failure or mis-operation will cause loss of human life and significant property destruction.

# Kansas Water Office Funding

Technical Assistance Fund Grants

Water Projects Fund Grants

Kansas Water Plan Partnership Initiative



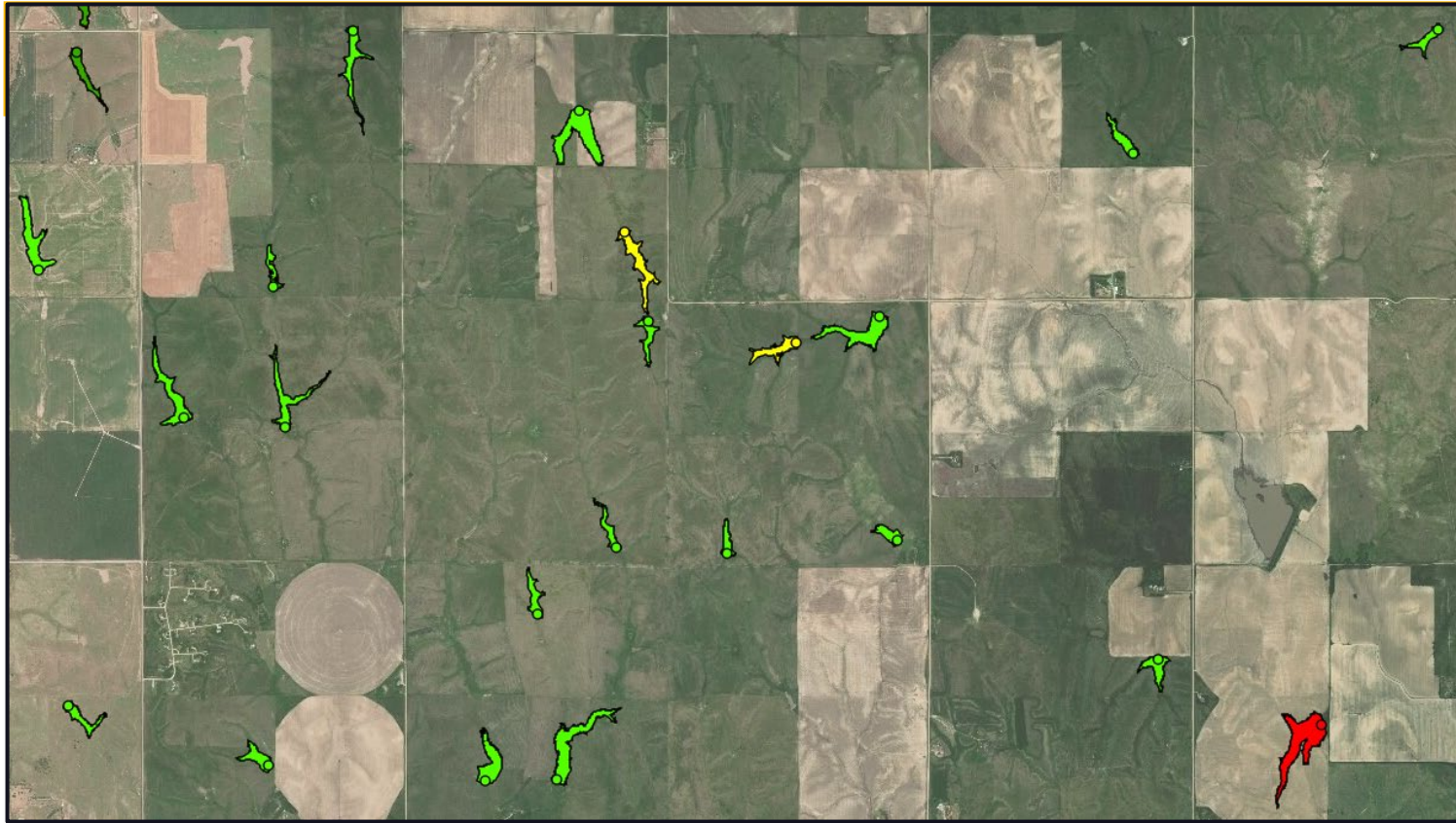
## Eligible Projects:

- Planning, engineering, managing and other technical assistance in develop of plans for water infrastructure projects

## Applicants:

- Municipalities
- **Special district related to water organized under the Laws of Kansas**

# Technical Assistance Fund Grants



- Programmatic, screening level assessment
  - Dam Inventory, digitization
  - Condition assessment
  - Risk tiers
  - Aggregate results: prioritization and ranking

## Project Example: Dam Rehabilitation Prioritization



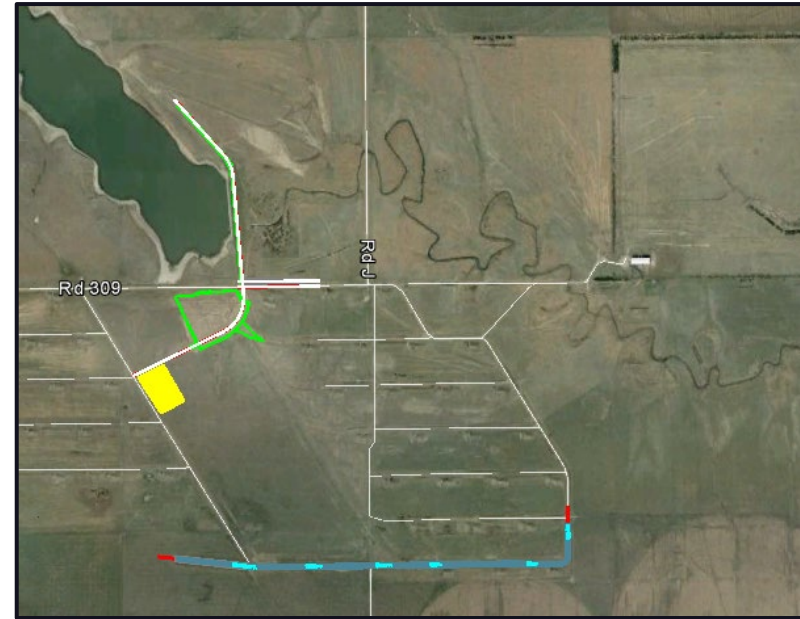
# Water Projects Fund Grants

## Eligible Projects:

- **Construction, repair, maintenance or replacement of water-related infrastructure and construction costs**
- Matching money for grant or load for water-related infrastructure projects

## Applicants:

- Municipalities
- **Special district related to water organized under the Laws of Kansas**

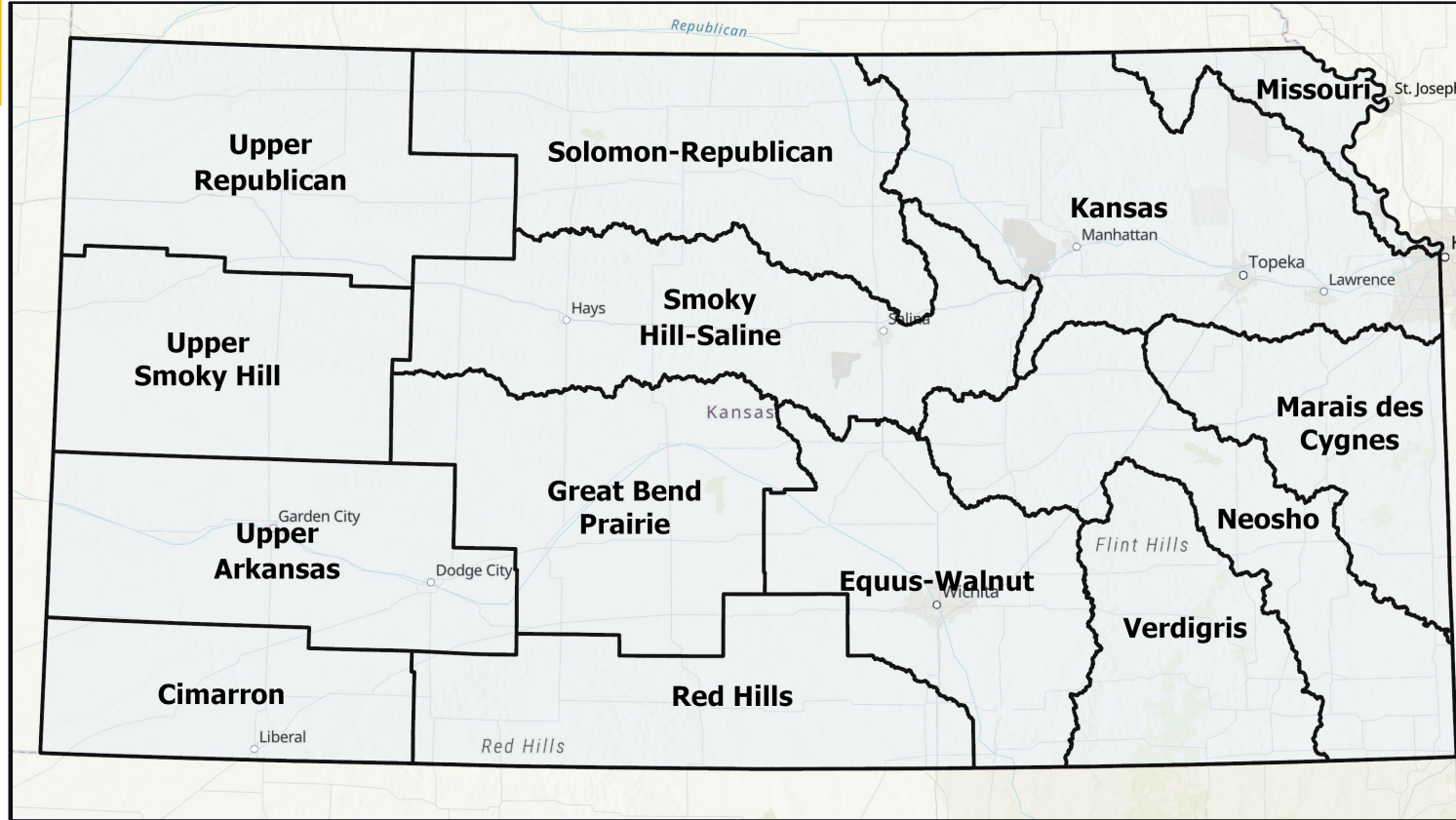


# Project Example: Dam Rehabilitation

## Dam/Spillway Projects

- Rehabilitation
- Improvements
- New Construction






# Kansas Water Plan Partnership Initiative

## Categories:

- Conserve & Extend the High Plains Aquifer
- Improve Our State's Water Quality
- **Reduce Our Vulnerability to Extreme Events**
- Increase Awareness of Kansas Water Resources

## Applicants:

- Agricultural Commodity/ Advocacy Organizations
- Colleges/Universities
- Conservation Organizations
- Private Sector Partners
- Public Governmental Entities
- **Water-related Districts**



# Proactive Approach to Dam Rehab



# Challenge

Which Dams need to be rehabbed first?

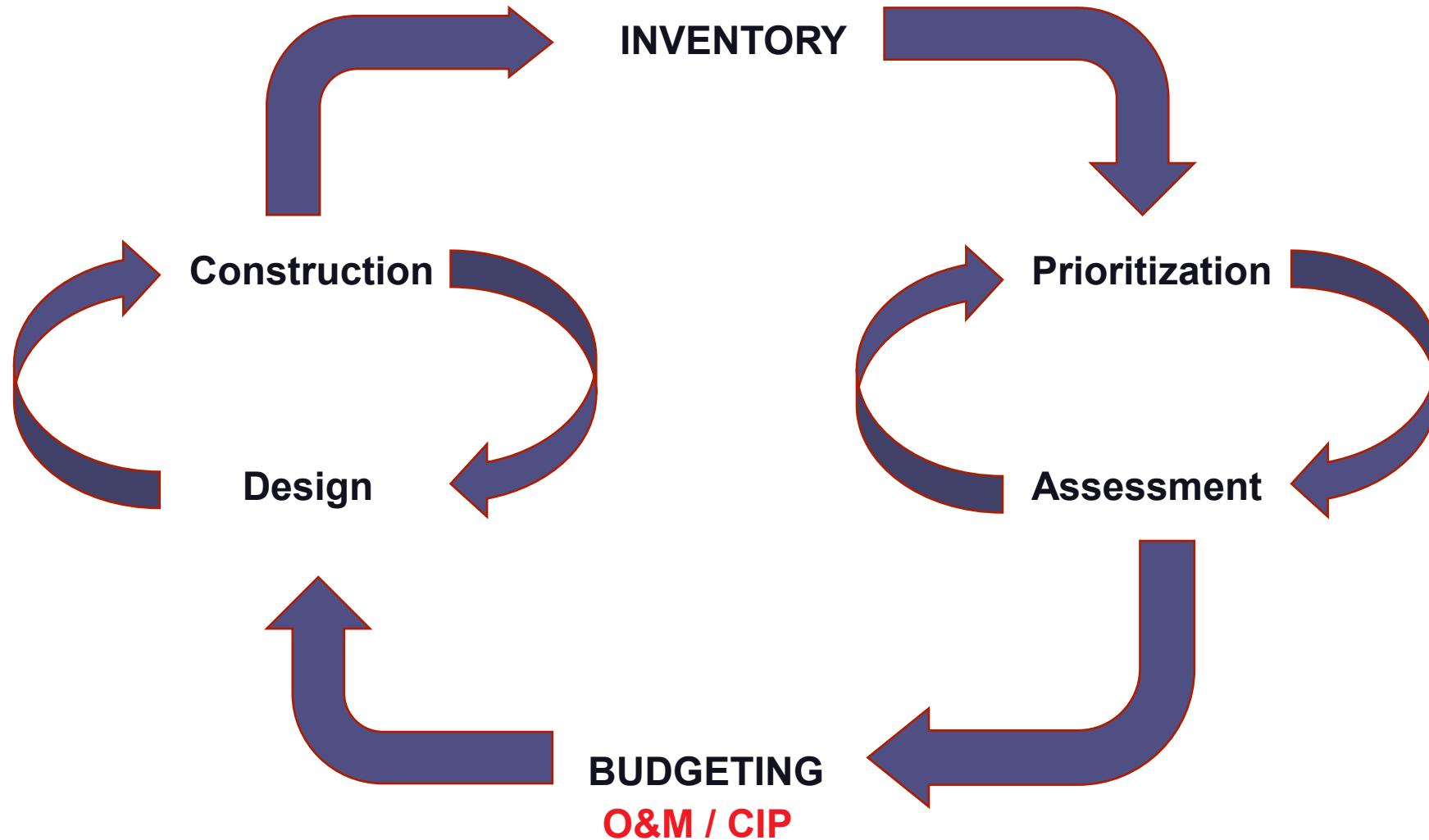
What are the financing needs?

***“How to get most bang for the buck”***

Typically reactive approach:

***“Squeaky wheel gets the grease”***

# The Proactive Approach



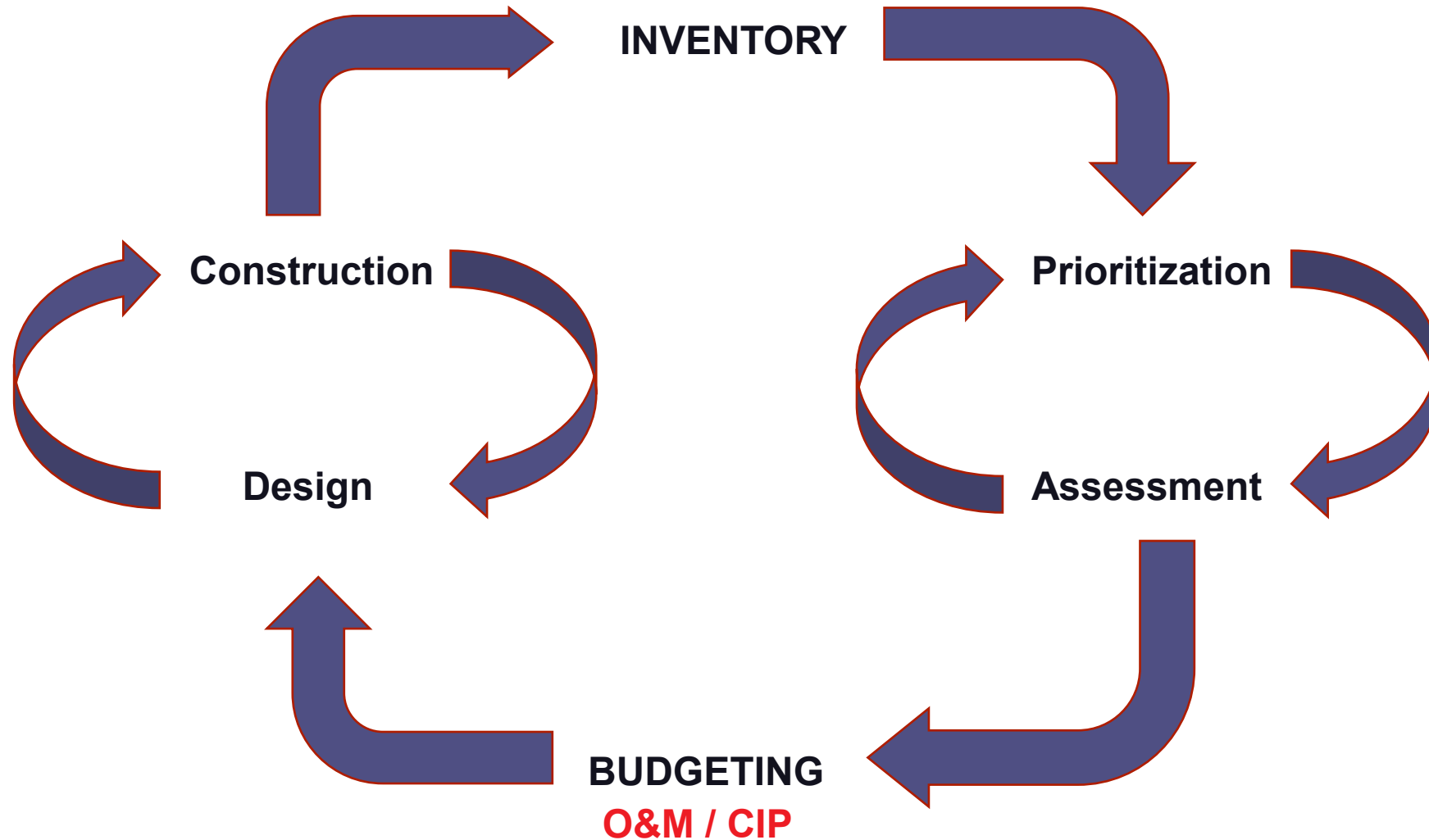
# Prioritization

- Potential Screening Criteria
  - Physical condition
  - Failure impacts
  - Ownership
  - Cost
  - Access
  - Landowner cooperation
  - Regulatory needs

# Identify Funding

- Watershed annual budget
- KWO
- NRCS programs
- FEMA / HMP
- Stakeholder and Partners
  - Counties, Cities, Etc.

# The Proactive Approach



# Benefit of Proactive Approach

- Cost-effective approach to develop a proactive Dam Rehab Program
- Ensures taxpayers' dollars spent on most needed projects
- Helpful in justifying program financing needs to elected officials and public





# Summary

1. Watershed District Needs
2. NRCS Fund
3. FEMA Fund
4. KWO Fund
5. Programmatic Approach to Address Dam Rehab needs



# Thank You

Questions?