



CTP ASFPM: Best Practices

Tuesday, May 21st 2019 1:45-3:15PM

Laura Algeo and Dane Bailey



FEMA



Best Practices in the CTP Community of Practice



1. **FEMA HQ: Laura Algeo**

Collaboration Center, Discussion Board, Members Database, Training Resources, and shared Best Practices

2. **Region VII: Dane Bailey**

CTP Collaborative Planning Process

3. **Region V: Indiana DNR**

Streams at Your Fingertips: Access to Flood Hazard Data in Indiana

4. **Region IV: Georgia DNR**

Georgia Flood Map Program Communication & Outreach

5. **Region IV: Kentucky Division of Water**

Kentucky's Cooperating Technical Partners Best Practices

6. **Region IX: Carson Water Subconservancy District**

Blueprint for CTP Success: Carson River Watershed, Nevada & California



FEMA

FEMA HQ Best Practices



1. CTP Collaboration Center

- Discussion Board (Blog)
- CTP Member's Database
- Training Resources

2. FEMA.GOV

- Best Practices

RMD RISK MANAGEMENT DIRECTORATE CTP Collaboration Center

Home Divisions Regions Features Resources Help Center

Collaboration Center

Home About CTP Internet Programs Training Tools and Resources Meetings Important Links Upload Document FEMA CTP Resource Center Discussion Board

Need assistance in navigating the newly redesigned CTP Collaboration Center?

For more assistance, visit the [FAQs page](#)
Click out a live website walkthrough on the new [calendar page](#)

FEMA

Cooperating Technical Partners Program

FEMA is seeking qualified partners to collaborate in maintaining up-to-date flood hazard maps and other flood hazard information. This page contains information on the Cooperating Technical Partners (CTP) Program and how to get involved.

With over 20,000 communities in the [National Flood Insurance Program \(NFIP\)](#), there is a significant challenge keeping flood hazard maps current. The CTP Program is an innovative approach to creating partnerships between the Federal Emergency Management Agency (FEMA) and participating NFIP communities, regional agencies, state agencies, tribes and universities that have the interest and capability to become more active participants in the FEMA flood hazard mapping program.

If you would like to learn more about the FEMA map production processes or view FEMA's guidelines and standards to support the [Risk Mapping, Assessment and Planning \(MAP\)](#) program that are required for flood projects, visit [FEMA's Guidelines and Standards for Flood Risk Analysis and Mapping](#) page.

[Expand All Sections](#)

- [Subscribe To Receive Cooperating Technical Partners News And Information](#)
- [CTP Program Information](#)
- [CTP Partnership Agreement Template](#)
- [CTP Mapping Activity Statement Template](#)



FEMA

CTP Collaboration Center



The CTP Collaboration Center provides crucial resources for new and existing CTPs including toolkits, MAS/SOW templates, meeting notes, training opportunities and more! Program updates and resources are shared regularly via the collaboration center to keep CTPs informed, but is also a shared spaced for CTPs to collaborate and engage as a community.

The screenshot shows the CTP Collaboration Center website. At the top is a blue header with the 'Collaboration Center' title and the CTP logo. Below the header is a navigation bar with links: Home, About, CTP Internal Programs, Training, Tools and Resources, Meetings, Important Links, Upload Document, FEMA-CTP Resource Center, and Discussion Board. The main content area features a large banner with the text 'Welcome to the award-winning CTP Collaboration Center. A one-stop shop for CTPs to collaborate and disseminate information.' Below the banner are three sections: 'Program Updates' with four green boxes listing recent events, 'CTP Calendar' showing a calendar for May 2019 with specific events highlighted, and 'Upcoming Events'.

Collaboration Center

Home About CTP Internal Programs Training Tools and Resources Meetings Important Links Upload Document FEMA-CTP Resource Center Discussion Board

Welcome to the award-winning CTP Collaboration Center.
A one-stop shop for CTPs to collaborate and disseminate information.

Program Updates

- Engineering & Mapping CoP - Sessions 1 (May 9, 11-12 p.m.) and 2 (May 14, 2-3 p.m.)
Posted: 5/6/2019 at 2:50 PM
- Levee Tools and Templates
Posted: 4/24/2019 at 3:45 PM
- Non-Disaster Grant System Grant Recipient Training
Posted: 3/8/2019 at 10:43 AM
- All MIP Users Conference Call
Posted: 7/25/2018 at 10:18 AM

CTP Calendar

May 2019

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
28	29	30	1 CTP Collab 1:00 pm Non	2	3	4
5	6	7	8 1:00 pm - 3:00 Non-Disaste	9 11:00 am - Engineerin	10	11

Upcoming Events



FEMA

CTP Collaboration Center: Discussion Board (Blog)



The Discussion Board or blog post section in the Collaboration Center gives the entire Community or Practice a space to “talk”, collaborate, and use each other as resources. The board can be used to ask questions, highlight partnerships, share innovative approaches and in-the-field application of CTP activities.

A screenshot of the RMD Risk Management Directorate Discussion Board page. The page has a blue header with the RMD logo and navigation links. Below the header is a large blue banner with the text "Collaboration Center" and the CTP logo. A secondary navigation bar contains links like Home, About, CTP Internal Programs, Training, Tools and Resources, Meetings, Important Links, Upload Document, FEMA-CTP Resource Center, and Discussion Board. The main content area is titled "CTP Discussion" and includes a "new discussion" button, a "Recent" tab, and a list of discussion topics such as "Non-Disaster Grant System Grant Recipient Training", "Mentoring", "FEEDBACK NEEDED - Help Us Identify Communication Gaps", and "CTP One-Pager - Seeking comments". Each topic includes a brief description and the author's name and date.



FEMA

CTP Collaboration Center: CTP Members' Database



The CTP Program Database will allow CTP Program Stakeholders to find each other. By filtering through Region, Organization and COP Member Type, users can find CTP programs and contacts.

[Access it here.](#)

MANAGEMENT
STORATE

CTP Members_v2

Search this site

Q

Risk Management Directorate > Site > CTP Collaboration Center > CTP Resource Center

Featured Resources

Help Center

show 10 entries

Search:

FEMA
Region/HQ

View?

Last Name

First Name

Organization

Email Address

Phone
Number

CTP

Primary
Contact?

Verified
Date

Current
MoA
Date

Current
MoA
Attachment

Dissolved
Letter
Date

Dissolved
Letter
Attachment

- Any -

- Any -

- Any -

- Any -

- Any -

- Any -

HQ

Algeo

Laura

FEMA

laura.algeo@fema.dhs.gov

FEMA

No

2019/04/15

Invalid date

Link

2019/04/15

TestFile

HQ

Berginnis

Chad

Association of State
Floodplain
Managers

cberginnis@floods.org

CTP

No

2016/05/16

Invalid date

Link

Invalid date

Link



CTP Collaboration Center: Training Resources



1. The Self-Assessment Tool

Each identified role is separated into related competency categories known as knowledge, skills, and abilities (KSAs). Each competency is then aligned to recommended and available training courses designed to promote the continued growth of CTPs and FEMA staff.

2. Instructor-led Training at the Emergency Management Institute

The spring session focuses on technical topic such as mapping, guidance and standards and there system or program related topics. The summer session focuses on communications topics such as engaging stakeholders, powerful presentations, and Skillfully Handling the Q&A Exchange.

3. The CTP 101 Course

This course is designed for communities and regional and state agencies that are participating in the Cooperating Technical Partners (CTP) Programs. The course provides a foundational overview of the CTP Program.

4. CTP Program Webinars

CTP Webinars offer easy access to learning resources covering a variety of topics. Topics include goal setting, performance measures, grants, MAS/SOW, NOFO, appeals, and many others. Webinars may be accessed during live CoP meetings, ad hoc offerings, and recorded sessions stored here on the Collaboration Center. Users can view recording or download the webinar to their own computers.

5. Mentoring Program

The mentoring program will live to serve as a liaison between experienced and new CTP members seeking guidance or teaching opportunities.



This page captures success stories and notable accomplishments from CTPs across the nation and is intended for current CTP Partners or interested parties wanting to learn more about the program.

Cooperating Technical Partners Success Stories

This page captures success stories and accomplishments in the Cooperating Technical Partners (CTP) Program. This page is intended for current CTP Partners or interested parties wanting to learn more about the program.

> [Expand All Sections](#)

> [Introduction](#)

> [Maryland Department Of The Environment](#)

> [Georgia Department Of Natural Resources](#)

> [Kentucky Division Of Water](#)

> [Illinois State Water Survey](#)

> [Indiana Department Of Natural Resources](#)

> [The Earth Data Analysis Center At The University Of New Mexico And The New Mexico Department Of Homeland Security And Emergency Management](#)

> [Lycoming County, PA](#)



CTP COLLABORATIVE PLANNING TOOL

REGION VII DANE BAILEY



FEMA

RVII Project Planning and Collaboration Tool

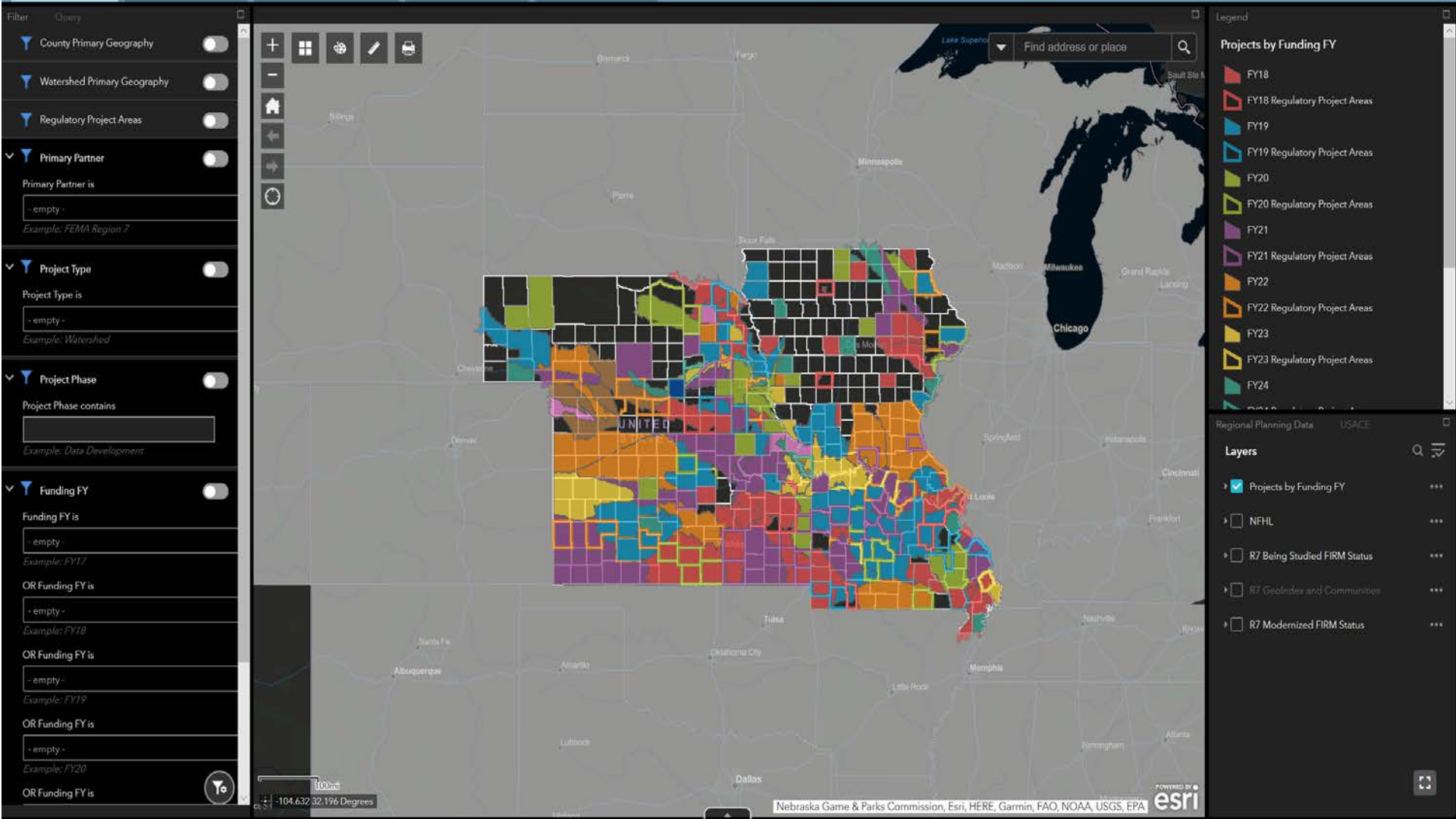


FEMA Region VII



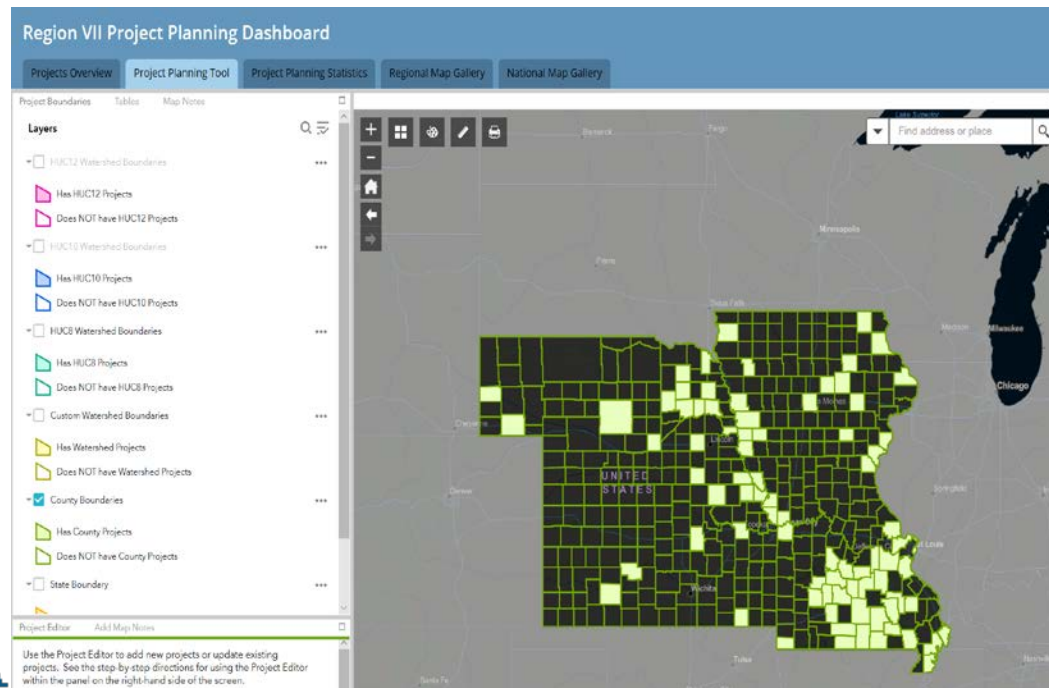
Region VII Project Planning Dashboard

Projects Overview Project Planning Tool Project Planning Statistics Regional Map Gallery National Map Gallery



Tool Development and Use?

- ▶ Developed by Region 7 and PM Team (RPML & Support)
- ▶ ArcGIS Geodatabase inventory of planned future projects hosted on the FEMA Geoplatform
- ▶ Regional and CTP-Specific Planning Applications and Viewers.



FEMA

RiskMAP
Increasing Resilience Together

CTP Facing Planning Applications

Nebraska Project Planning Dashboard

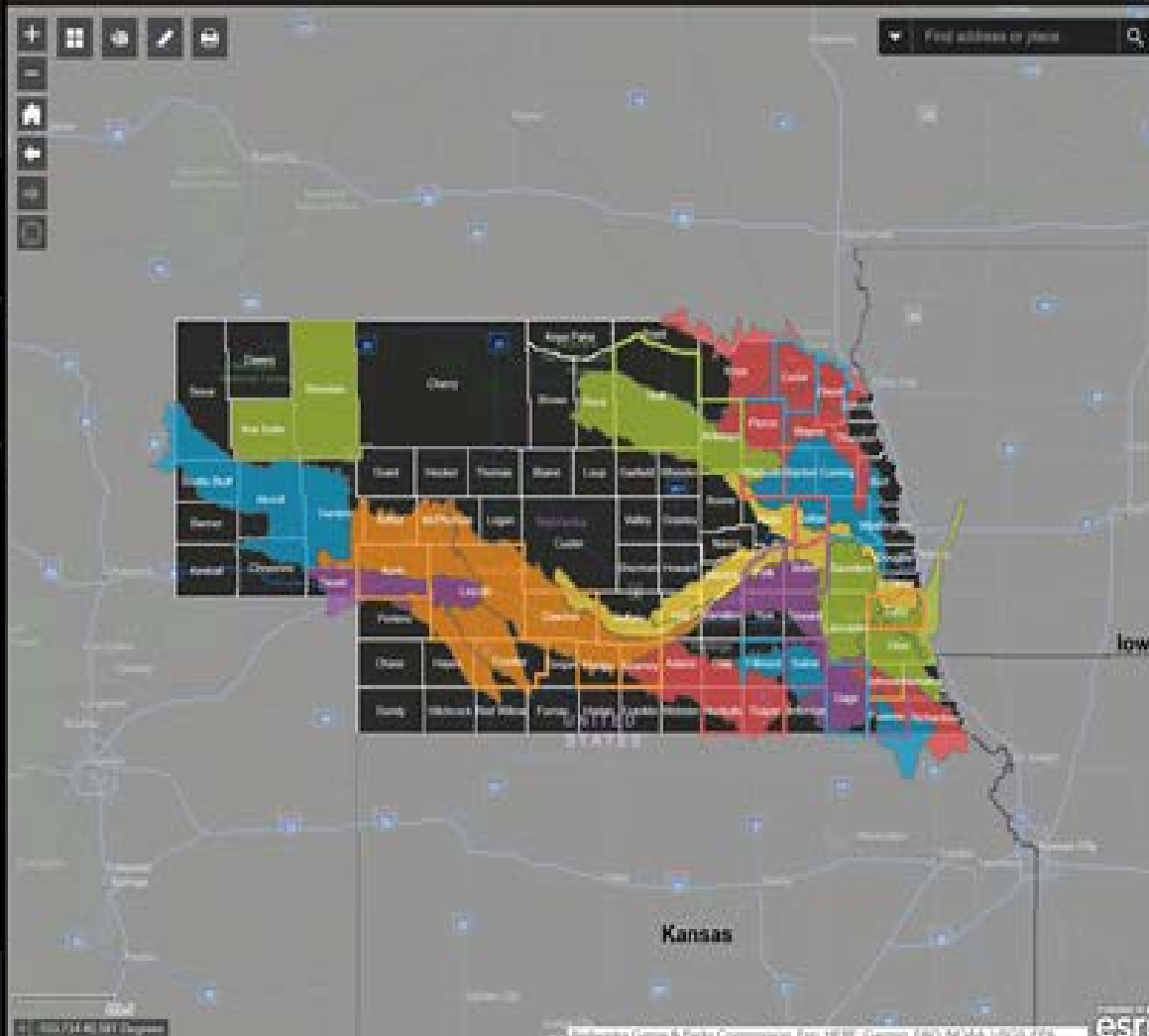
No issues detected • Settings not shared • 0 data • FEMA Region 10



Projects Overview Project Planning Tools Project Planning Statistics State and Regional Map Gallery National Map Gallery

Filter: 10000

- County Primary Geography
- Watershed Primary Geography
- Regulatory Project Areas
- Project Type
 - Project Type is
 - empty
 - Example: Watershed
- Project Phase
 - Project Phase contains
 - Example: Urban Development
- Funding FY
 - Funding FY is
 - empty
 - Example: FY20
 - OR Funding FY is
 - empty
 - Example: FY12
 - OR Funding FY is
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 - Example: FY10
 - OR Funding FY is
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 - Example: FY00
 - OR Funding FY is
 - empty
 - Example: FY02



- Legend
- NE Projects by Funding FY
- FY18
 - FY18 Regulatory Project Areas
 - FY19
 - FY19 Regulatory Project Areas
 - FY20
 - FY20 Regulatory Project Areas
 - FY21
 - FY21 Regulatory Project Areas
 - FY22
 - FY22 Regulatory Project Areas
 - FY23
 - FY23 Regulatory Project Areas
- Layers
- NE Projects by Funding FY
 - NEC 1 Watershed Boundary
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 - NEC 3 Watershed Boundary
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Regional and CTP Planning Dashboards/Viewer

Region VII Project Planning Dashboard

Projects Overview Project Planning Tool Project Planning Statistics Regional Map Gallery National Map Gallery

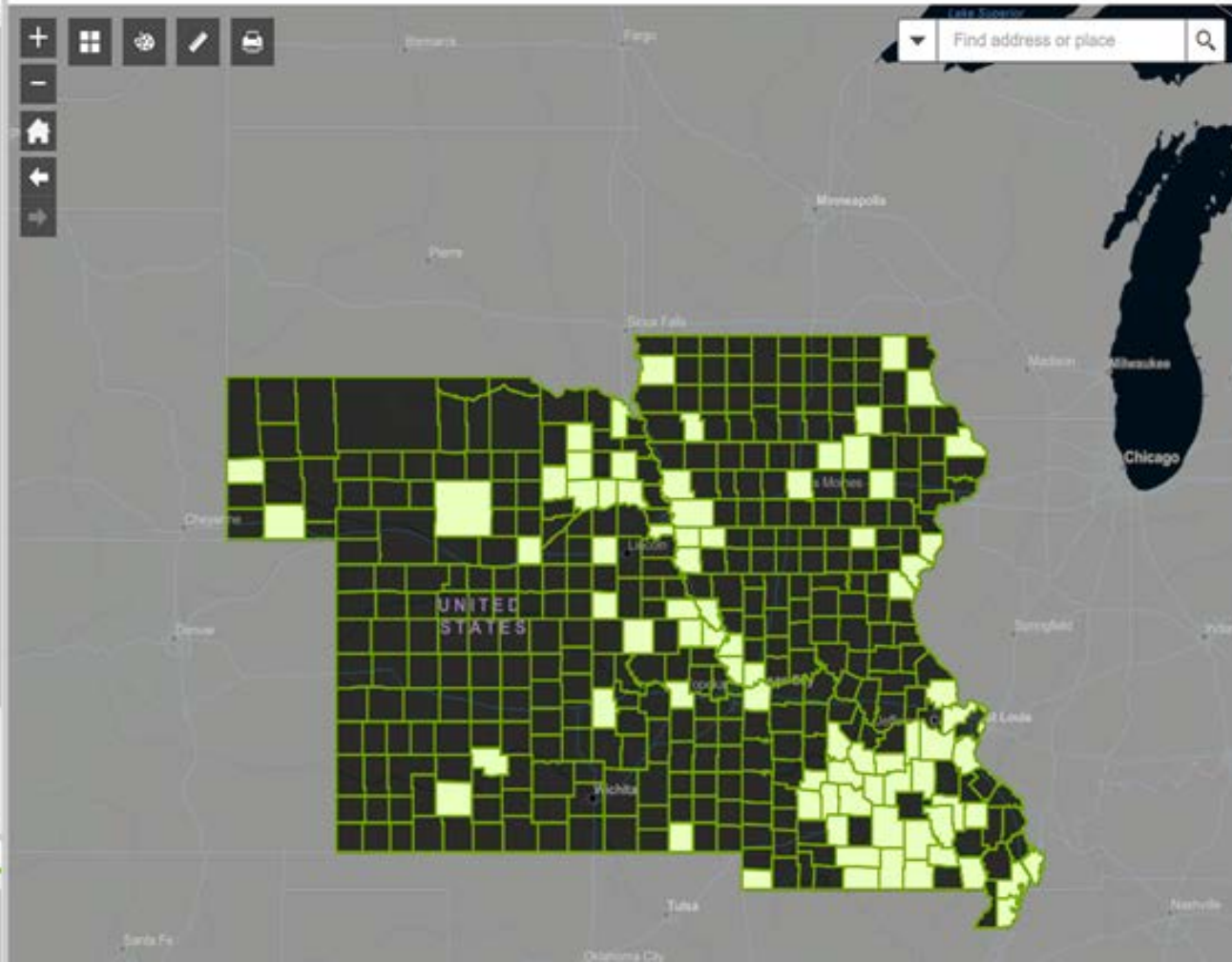
Project Boundaries Tables Map Notes

Layers

- ☐ HUC12 Watershed Boundaries
- ☒ Has HUC12 Projects
- ☐ Does NOT have HUC12 Projects
- ☐ HUC10 Watershed Boundaries
- ☒ Has HUC10 Projects
- ☐ Does NOT have HUC10 Projects
- ☐ HUC8 Watershed Boundaries
- ☒ Has HUC8 Projects
- ☐ Does NOT have HUC8 Projects
- ☐ Custom Watershed Boundaries
- ☒ County Boundaries
- ☒ Has County Projects
- ☐ Does NOT have County Projects
- ☐ State Boundary

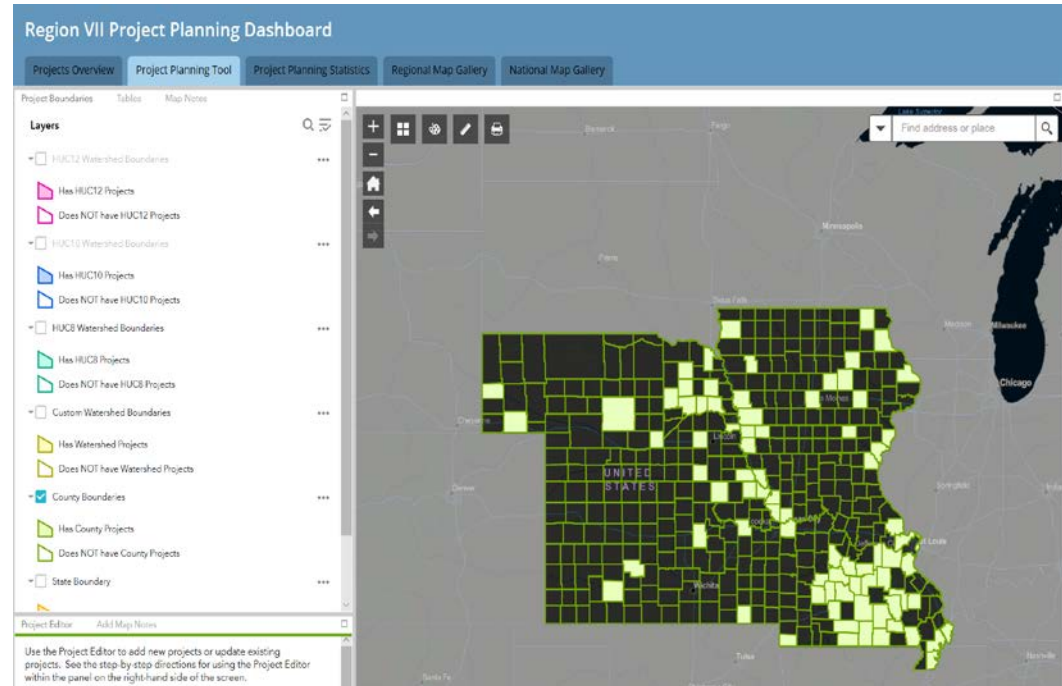
Project Editor Add Map Notes

Use the Project Editor to add new projects or update existing projects. See the step-by-step directions for using the Project Editor within the panel on the right-hand side of the screen.



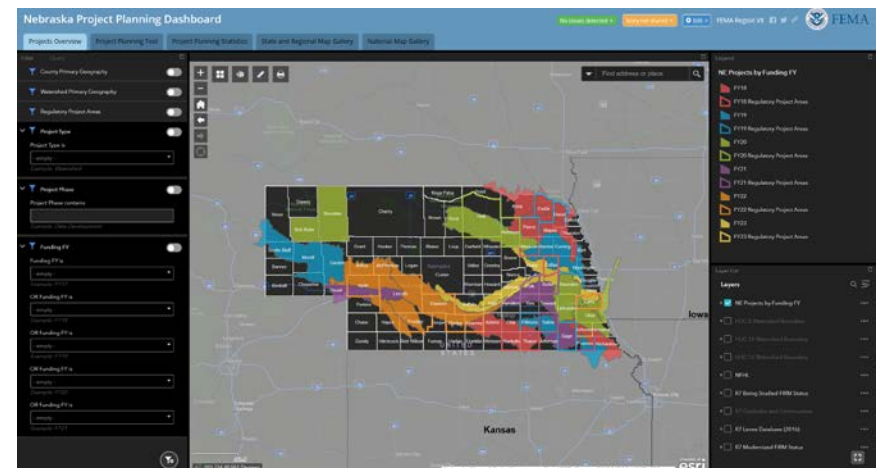
Why did we develop the tool?

- ▶ Improve the Region's collaborative planning process with our CTP's
- ▶ Enable collaborative planning within FEMA and with our Federal Partners
- ▶ Improve FEMA's internal planning process to make better and more informed decisions



How do we use the tool?

- ▶ Secure CTP specific groups established on the FEMA Geoplatform
- ▶ Project data entry and editing available via online portal and GIS Desktop or Pro
- ▶ Overlay planned projects with relevant data such as status of current projects, paper map inventory, NFHL
- ▶ Excel spreadsheets developed and connected directly to the planning database
- ▶ Dynamic [Story Maps](#) developed to communicate multi-year plans to internal and external partners



What benefits have we gained?

► Consistency

- Data
- Level of Planning
- Budget Awareness
- Submission Format

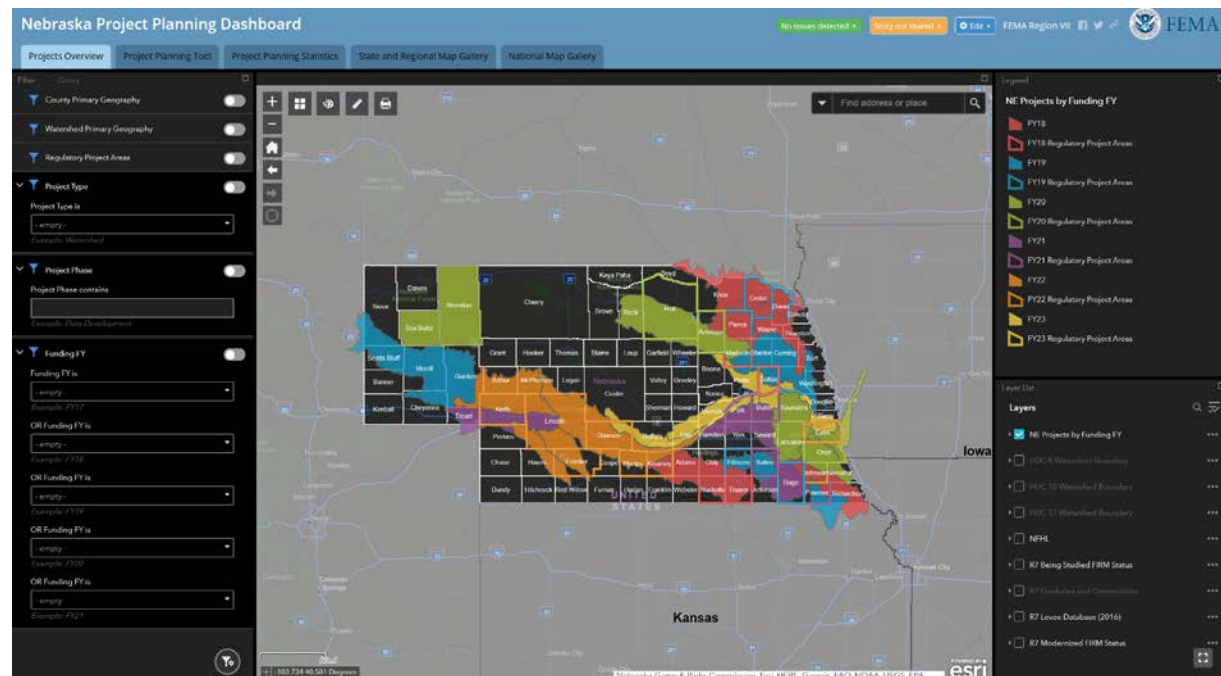
► Convenience

- One Stop Shop

► Transparency

► Information

- Queries
- Statistics



CTP Planning Statistics

Nebraska Project Planning Dashboard

FEMA Region VII



Projects Overview Project Planning Tool **Project Planning Statistics** State and Regional Map Gallery National Map Gallery

Nebraska Project Planning Statistics (FY18-FY23)

Funding Year **FY18** FY19 FY20 FY21 FY22 FY23 Project Type

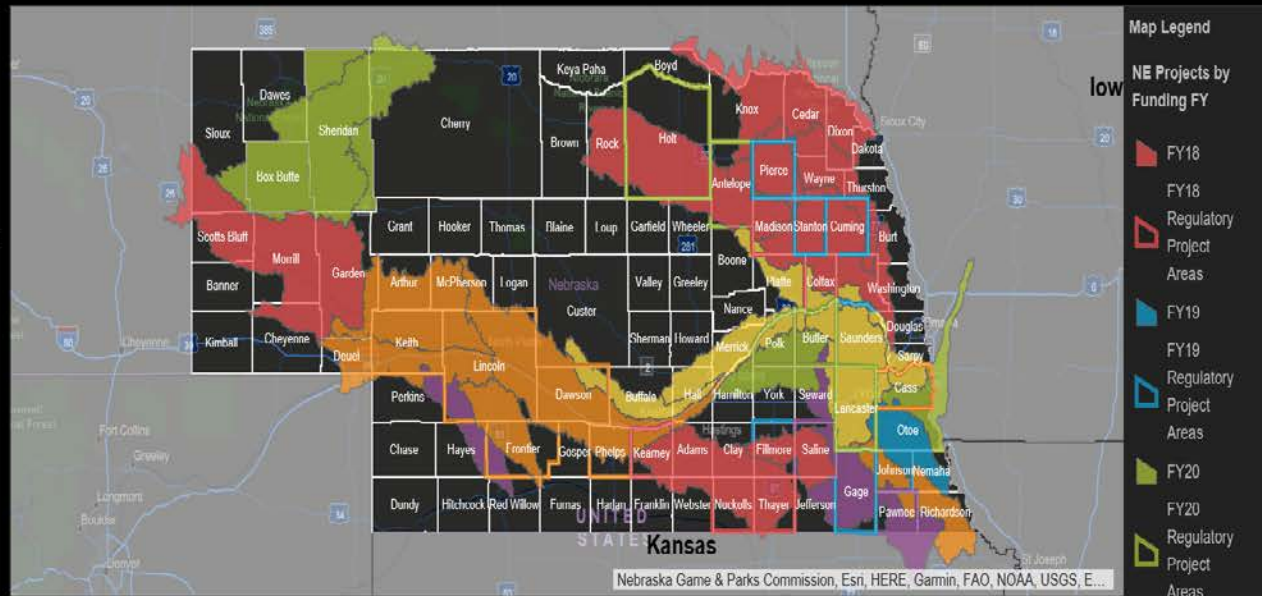
Total Estimated Project Costs

8.8M
NVUE Miles
11.3k

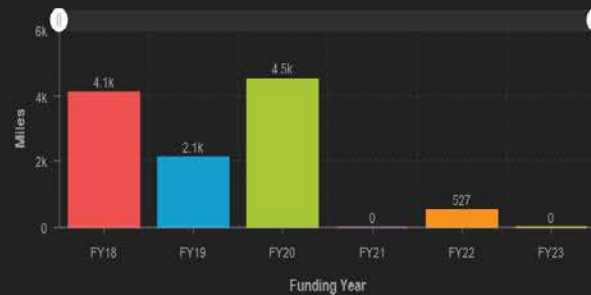
Costs Per Funding Year



Funding for All Project Types



Sum of NVUE

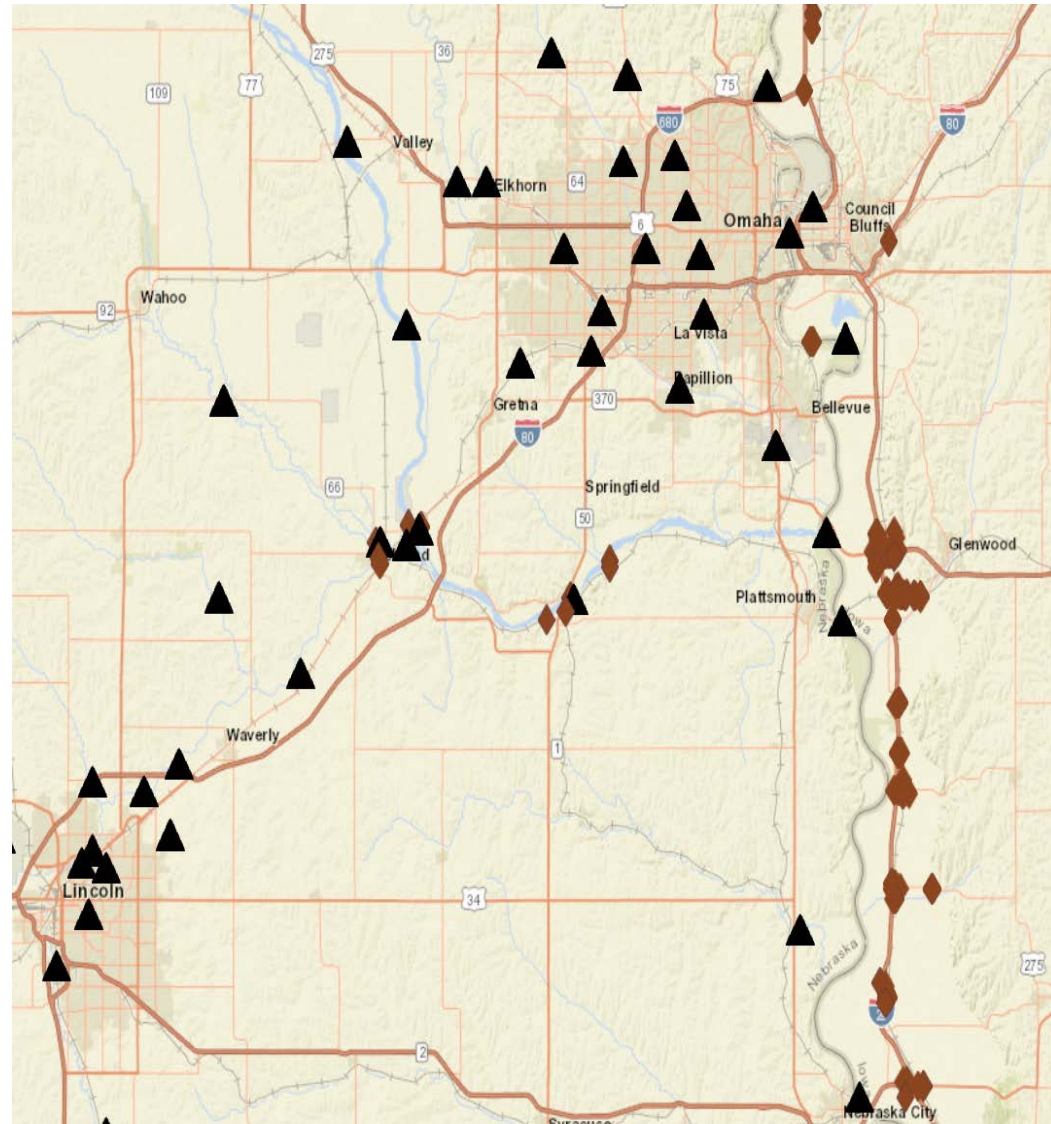


Sum of BLE



Where do we go from here?

- ▶ Use of historical data to capture NFIP policies, claims, individual assistance, buyouts, etc; to identify areas for targeted mitigation
- ▶ Overlay USACE and OFA project information
- ▶ Adding available technical data



FEMA

Where do we go from here?

- ▶ Project proposals submitted by attributed Shapefile
- ▶ CTPs will submit detailed scope linework rather than data enter project information
- ▶ Platform will calculate mileage, NVUE stats, and export to MAS (hopefully)
- ▶ “Pre-project” linework will reduce Proposed vs CNMS mileage errors



FEMA

STREAMS AT YOUR FINGERTIPS: ACCESS TO FLOOD HAZARD DATA IN INDIANA

**REGION V
INDIANA DNR**



FEMA

Access to Flood Hazard Data in Indiana



The Portals

1. **The Indiana Hydrology and Hydraulics Model Library**
2. **The Indiana Floodplain Information Portal**
3. **The Indiana Peak Discharge Determination System**



Where do I find all of these???

Floodmaps.in.gov

The screenshot shows the Indiana Department of Natural Resources (DNR) website. The header includes the IN.GOV logo and navigation links for BUSINESS & AGRICULTURE, RECREATION, GOVERNMENT, EDUCATION, TAXES & FINANCE, VISITING & PLAYING, and FAMILY & HEALTH. The DNR logo and name are prominently displayed. The main content area features a section for "INDIANA FLOODPLAIN MAPPING" with a large image of a flooded area and the text "Floodmaps.IN.gov". Below this, there is a description of the Engineering Service Center's role in providing engineering and technical support for floodplain management. The page also includes a sidebar with "DNR HOME" links, "Online Services", and "Top FAQs".

DNR HOME

- WATER
 - About Us
 - Contact Us
 - Conservation & Stewardship
 - Water & Land Use
 - Ground Water / Wells
 - Lake Michigan
 - Regulatory Permit Programs and Related Information
 - Publications
 - Statutes & Rules
 - Surface Water
 - Water Availability / Use / Rights
 - Fees
 - Site Information
 - Related Links

INDIANA FLOODPLAIN MAPPING

Floodmaps.IN.gov

The Engineering Service Center of the Indiana Department of Natural Resources, Division of Water, provides engineering and technical support in support of Floodplain Management in Indiana.

The Engineering Service Center (ESC) develops, maintains, and updates floodplain maps, water technical manuals, and related information for the public and floodplain management. The ESC also provides technical support to the National Flood Insurance Program (NFIP).

Additionally, as a Cooperating Technical Partner (CTP) with FEMA, the Engineering Service Center is continuously identifying, developing and updating flood hazard areas, including floodways, flood fringes, and floodplains for all the counties in the State.

This information will be used to update the Flood Insurance Studies (FIS) and Flood Insurance Rate Maps (FIRM) into digital format. The new flood maps will allow the State, counties and municipalities to administer a floodplain management program to decrease coastal flood damages, mitigate future flood damages, and protect the health, safety, and general welfare of the people of Indiana.

The following quick links identify major programs managed by or associated with the Engineering Service Center:

Indiana Floodplain Mapping Quick Links

Online Services

- Apply for Construction Permit
- Search Existing Water Permits
- Search Water Well Records
- Request Water Use
- Request Floodplain Information
- Request Permit Application

More Online Services

- Subsidence Control

Top FAQs

- 1. Learn More about Water Rights
- 2. Find Out if my Property is in a Floodplain
- 3. Learn More about Wells and Leaks
- 4. Register a Surface Water Withdrawal Facility
- 5. Prepare a Plan for Gold
- 6. Remove a Segment from a Waterway
- 7. Register a Surface Water Withdrawal Facility



FEMA

Indiana Floodplain Information Portal (INFP)

Indiana Floodplain Information Portal Indiana Department of Natural Resources **DNR**

Find an address **Jump to a county** Want to use the [eFARA Wizard](#) to submit a floodplain information request to the State of Indiana, IDNR, Division of Water?

Example: 200 Michigan Avenue, Auburn, IN 46706 - or - Select your county from below: Adams

[Go To Address](#) [Previous Tips](#) [Next Tips](#)

Map FEMA Flood Insurance Study Floodplain Layers Frequently Asked Questions

Layers **Legend** **Options** **Help**

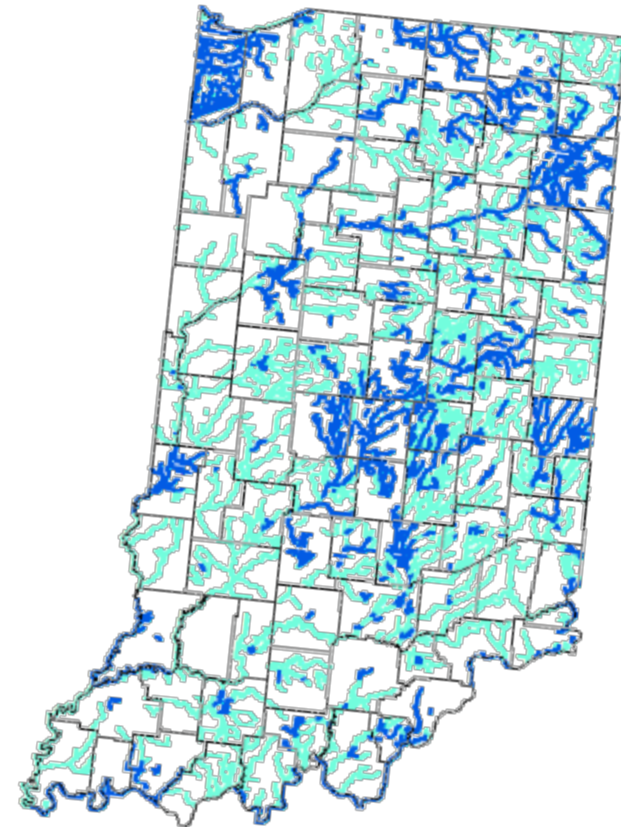
Click on the map or enter an address to view Floodplain Information at that Point of Interest. [Click to return to the instructions](#)

Below is the available floodplain information for your Point of Interest. If you would like to request a Floodplain Analysis / Regulatory Assessment (FARA) from the IDNR Division of Water, click on "eFARA Wizard".

Point of Interest
Approximate Address: 1283 West County Road 750 South, CLAY CITY, IN, 47941
Effective Flood Zone: Effective Zone X
Approximate Flooding Elevation: 547.3ft NAVD88
Source: Zone A Model Delineation
Distance from click: 432 ft
Nearest Stream: UNPAVED TRIBUTARY CONNELY DITCH
[eFARA Wizard](#)

Local Ordinance Information
Local floodplain regulations may be more restrictive than that of federal and state government. **ALL REGULATORY MUST BE MET.** Please contact your local floodplain administrator for further information.
Floodplain Administrator: Bryan Hubbard
Local Government Agency: Clay County Emergency Management
Phone Number: (812) 448-6400
E-Mail: bhubbard@claycountypd.gov

Download Report
Flood Zone Type: Effective
[Download Report](#)



4,388 Miles of Detailed Points
18,739 Miles of Approximate Points
22,767 Total Miles of Data

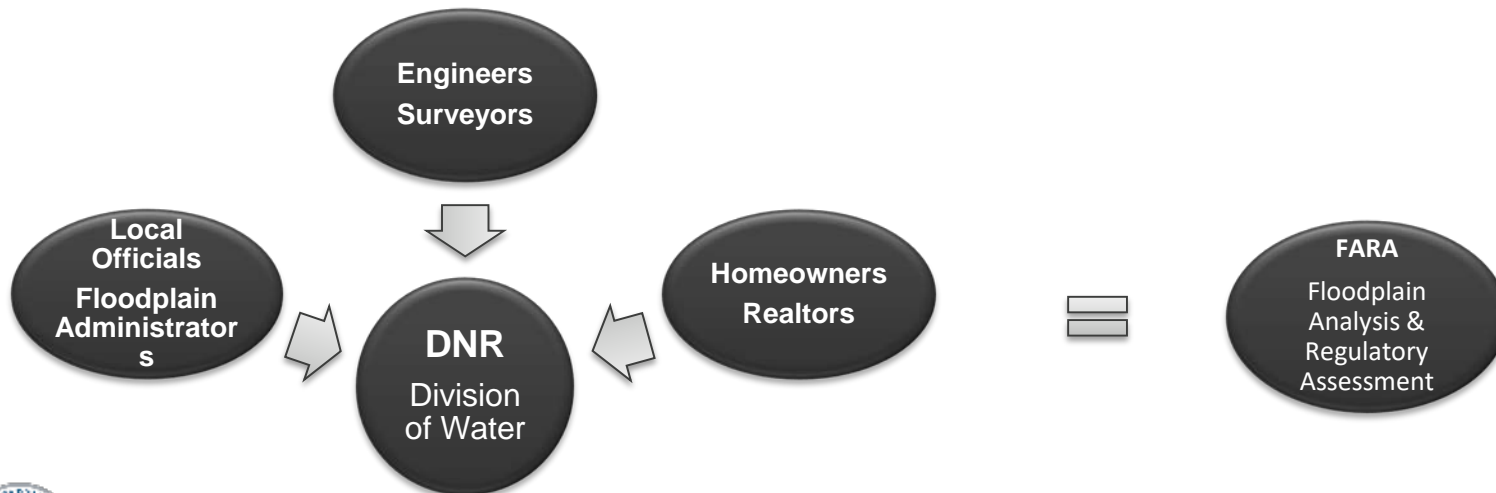
Base Flood Elevations spaced by 50 feet
~2,500,000 Data Points



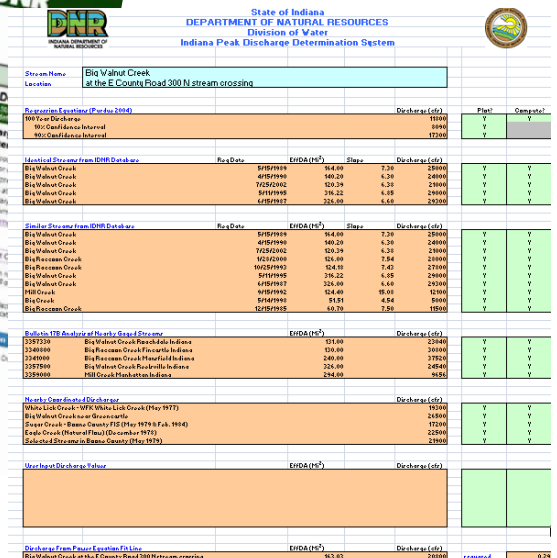
FEMA

What does INFIP do?

- View Published, Preliminary and Best Available data layers
- Determine Base Flood Elevations for both Zone A and Zone AE streams
- Submit a request to DNR for verification
- Letter of Map Amendment
- Local Permitting Requirements



- [illegible]



GEORGIA FLOOD MAP PROGRAM COMMUNICATION & OUTREACH BEST PRACTICES

GEORGIA DNR REGION IV



FEMA

Georgia CTP Program at a Glance



\$44M
In mapping since FY2008

694 Communities
100% Modernized

41,470 mi
Model Back Studies

16 % of Region IV Inventory
35,561 A Zone | 5,909 AE Zone

28,182 mi NVUE Compliant | **13,288 mi** Unverified

201
Communities have active Risk
MAP Projects

231 Communities received
effective Risk MAP projects

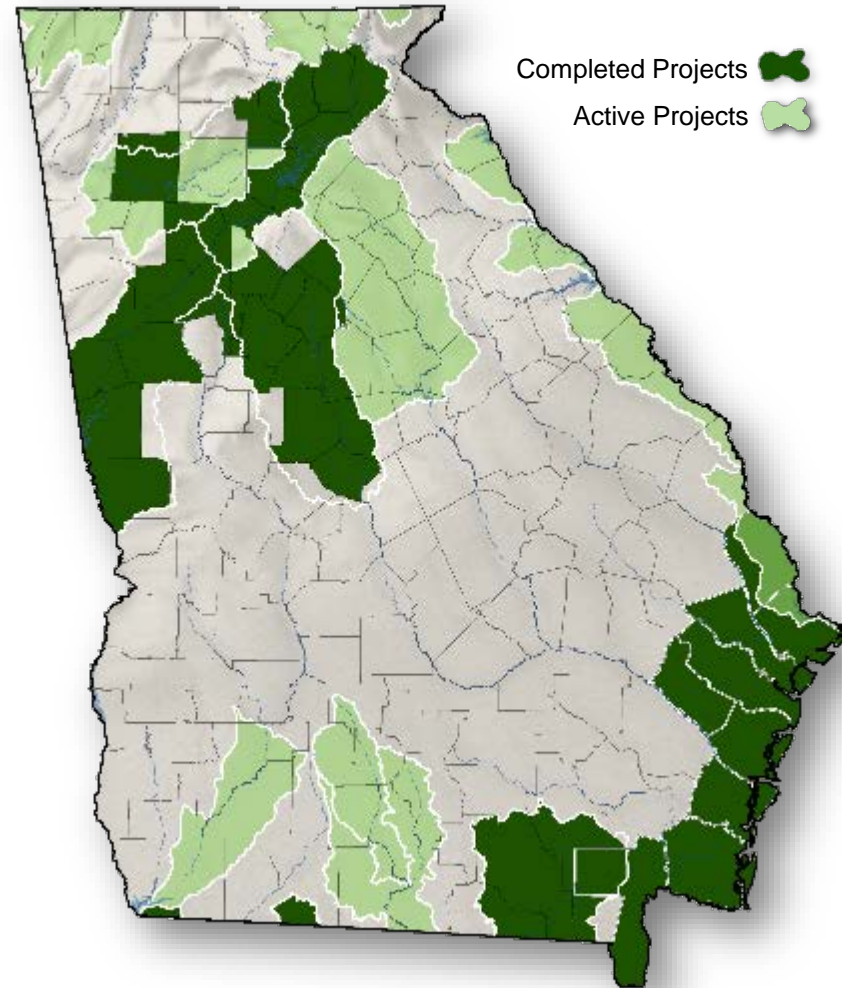
54
Communities Participate in
CRS & **33** are a class **7** or
lower

565 Communities
participate in NFIP

\$7.15M in CRS
community savings

83
Communities with mapped
SFHA still do not participate in
NFIP **BUT 16**
Communities without mapped
SFHA do participate

Statewide LiDAR
by 2020



FEMA

RiskMAP
Increasing Resilience Together

Path to Communication Plan

DRIVERS

FEMA Metrics

Volume of mapping

> 100 counties / < 2yrs

Population receiving Risk MAP Projects

1st Risk MAP Watershed Project covered Metro-Atlanta, ~6m pop.

Complex Mapping Projects

Revised Coastal Mapping for 9 Counties

Public Policy

2010 HB introducing individual property notification

Risk MAP Products

Statewide LiDAR

GA DNR GOALS

Increase community NFIP participation

Create a quality community experience

Achieve greater acceptance of modeling & mapping

Educate and create a more flood risk aware and responsible society

Reduce flood risk to life and property



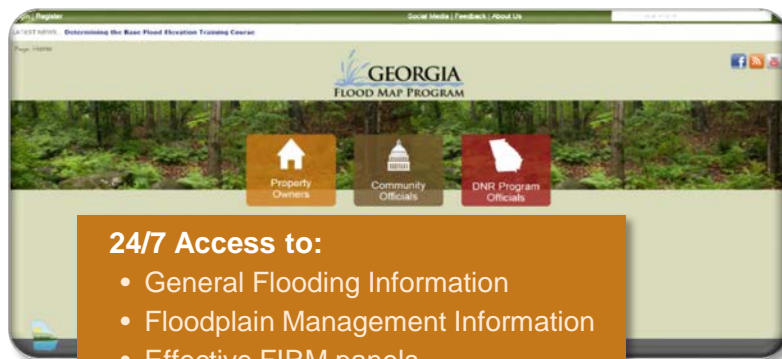
SOLUTION: Robust Communication & Outreach Program



FEMA

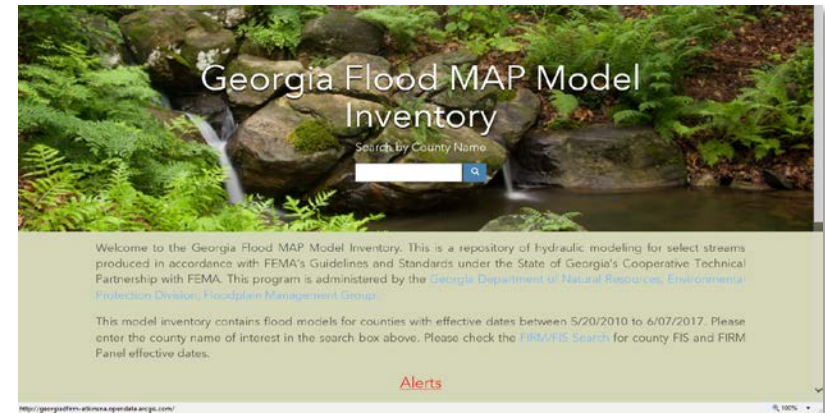
Georgia Flood MAP Website

www.georgiadfirm.com

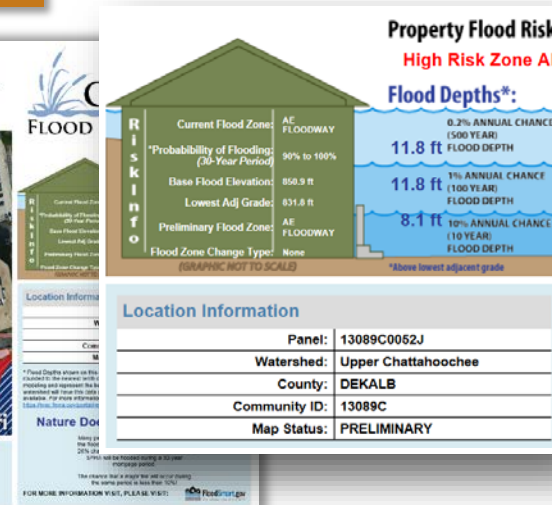


24/7 Access to:

- General Flooding Information
- Floodplain Management Information
- Effective FIRM panels
- Status of Mapping Updates
- Web Mapping Services



2970 Clairmont Rd NE, Atlanta, Georgia, 30329



Best Practice & Outreach Guidebooks



Quick Guides & Toolkits

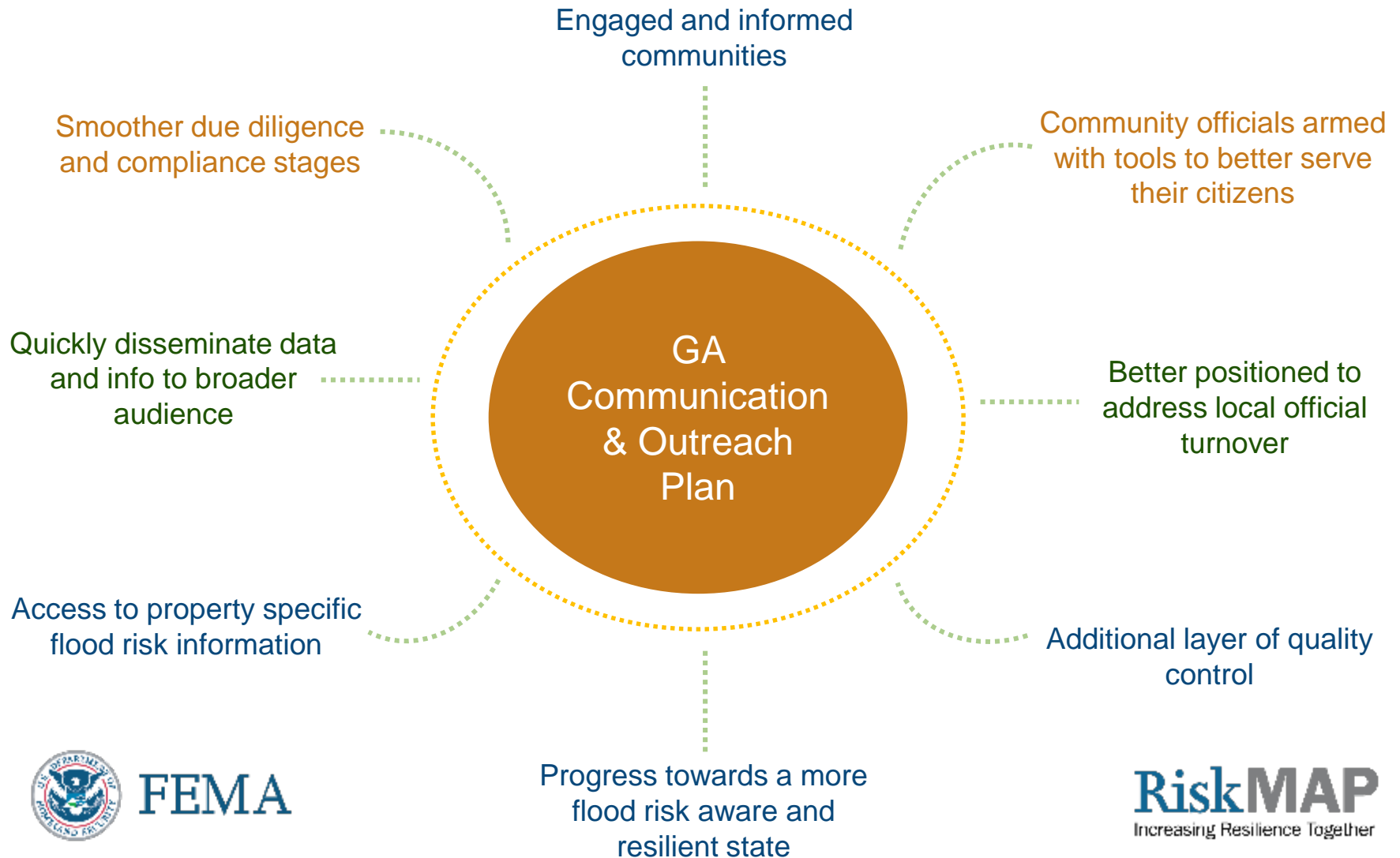


Educational Materials & Videos

High usage | Downtime reported immediately | Informed calls based on information from site | Reported Users: Realtors, Insurance Agents, FPAs

RiskMAP
Increasing Resilience Together

Plan Benefits



FEMA

KENTUCKY'S COOPERATING TECHNICAL PARTNERS BEST PRACTICES

KENTUCKY DIVISION OF WATER REGION IV



FEMA

Kentucky's Cooperating Technical Partners Best Practices

Carey Johnson
Assistant Director, Kentucky Division of Water



To Protect and Enhance Kentucky's Environment



FEMA

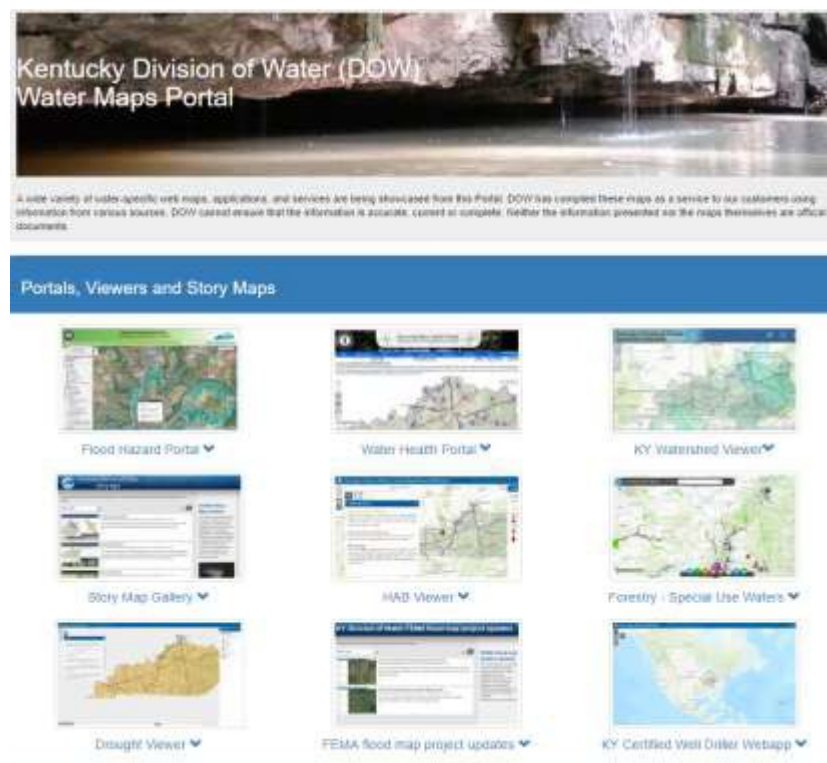
1. DOW Water Maps Portal

- Flood Hazard Portal
- Flood hazard map updates
- Story Maps

2. Structure-based flood risk assessments

Kentucky DOW Water Maps Portal

- ▶ **Flood Hazard Portal**
- ▶ **Water Health Portal**
- ▶ **KY Watershed Viewer**
- ▶ **DOW Story Maps Gallery**
- ▶ **Harmful Algal Blooms (HAB) Viewer**
- ▶ **Special Use Waters**
- ▶ **Drought Viewer**
- ▶ **Flood Map Project Updates**
- ▶ **Certified Well Driller's Webapp**



<http://watermaps.ky.gov>

Kentucky Flood Hazard Portal

► Statewide flood hazard areas in a single map

- Displays the same floodplain as the FEMA GeoPlatform

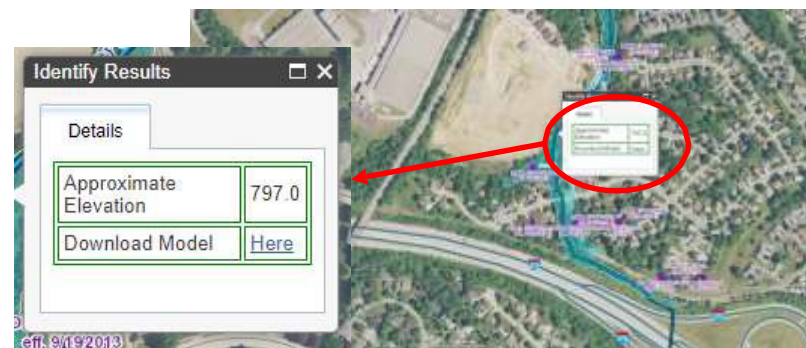
► Provides: Zone A flood hazard data in 119 counties (excludes Louisville Metro)

- 1% annual chance flood elevations in Zone A floodplains with a simple click on the stream centerline
- Hydrologic & Hydraulic reports and HEC RAS models available for download
- FIS also available for download

► Future Improvements

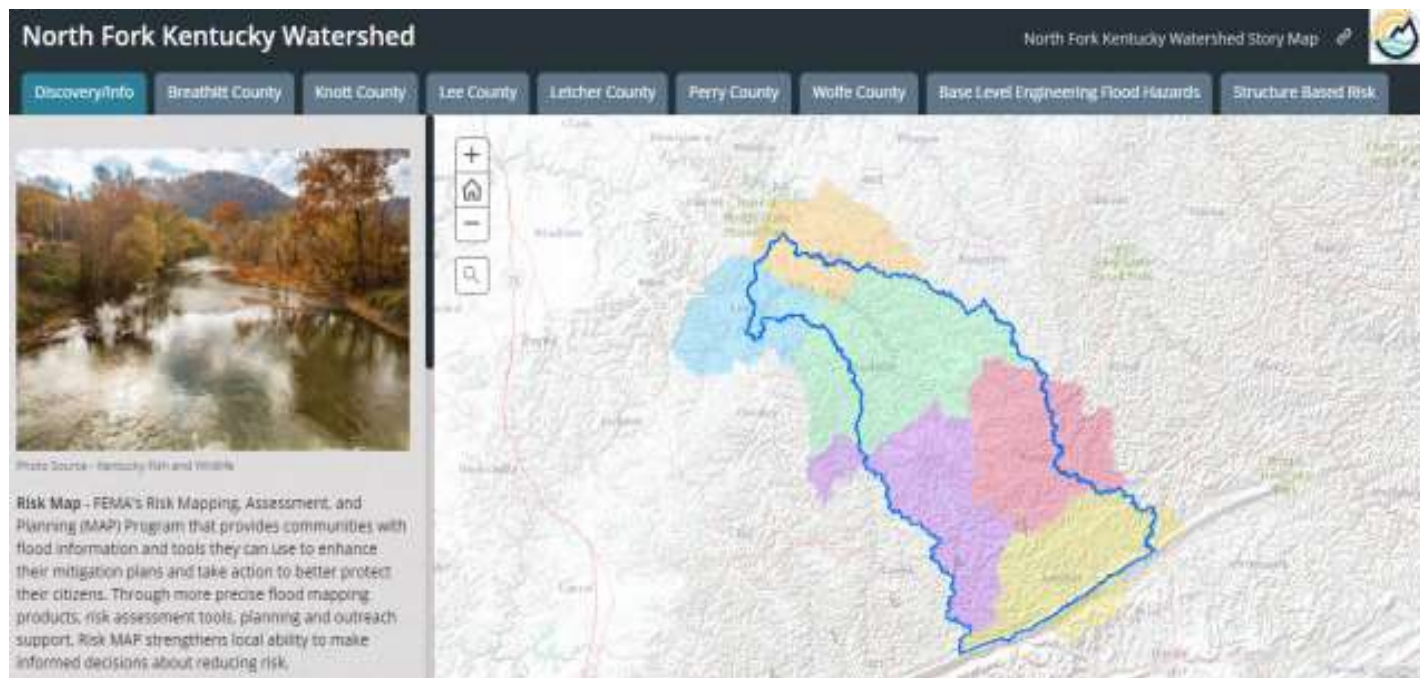
- Flood depth grids and other Risk MAP products
- Dam safety information
- Mobile-friendly

<http://watermaps.ky.gov/RiskPortal/>



Story Maps

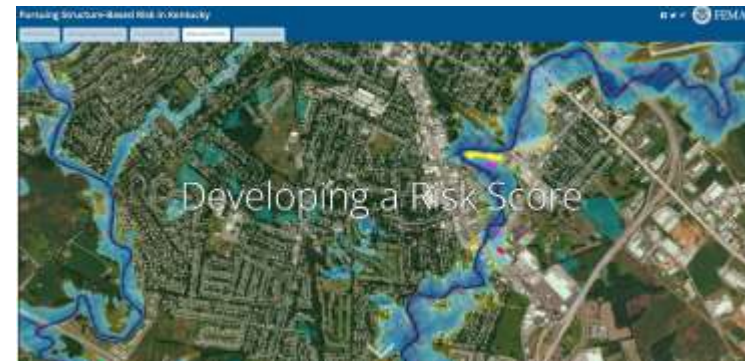
- ▶ Simplifies engagement
- ▶ Facilitates consistent interaction between stakeholders
- ▶ Provides robust tools in a simple



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Structure-based flood risk

- ▶ **DOW focused on defining a methodology with the following objectives:**
 - May be implemented with currently available data;
 - Is cost effective;
 - Produces a risk score that is not skewed towards high-value assets (i.e. is independent of structure value);
 - Has the flexibility to be applied to structure values to help floodplain administrators and community officials quantify projected flood damage and losses



Structure-based flood risk

- ▶ Average Annualized Percent Loss (AAPL)
- ▶ AAPL is a risk score and coefficient that is specific to a structure.
- ▶ May be produced from datasets created through Risk MAP program and other available public data.
- ▶ AAPL is derived from the relationship of how much damage a structure is projected to sustain during a flood event and the probability of that event happening.
- ▶ Damage to a structure is expressed as the percent of a structure's value that is lost during a flood event.



Questions?



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BLUEPRINT FOR CTP SUCCESS: CARSON RIVER WATERSHED, NEVADA & CALIFORNIA

CARSON WATER SUBCONSERVANCY DISTRICT REGION IX



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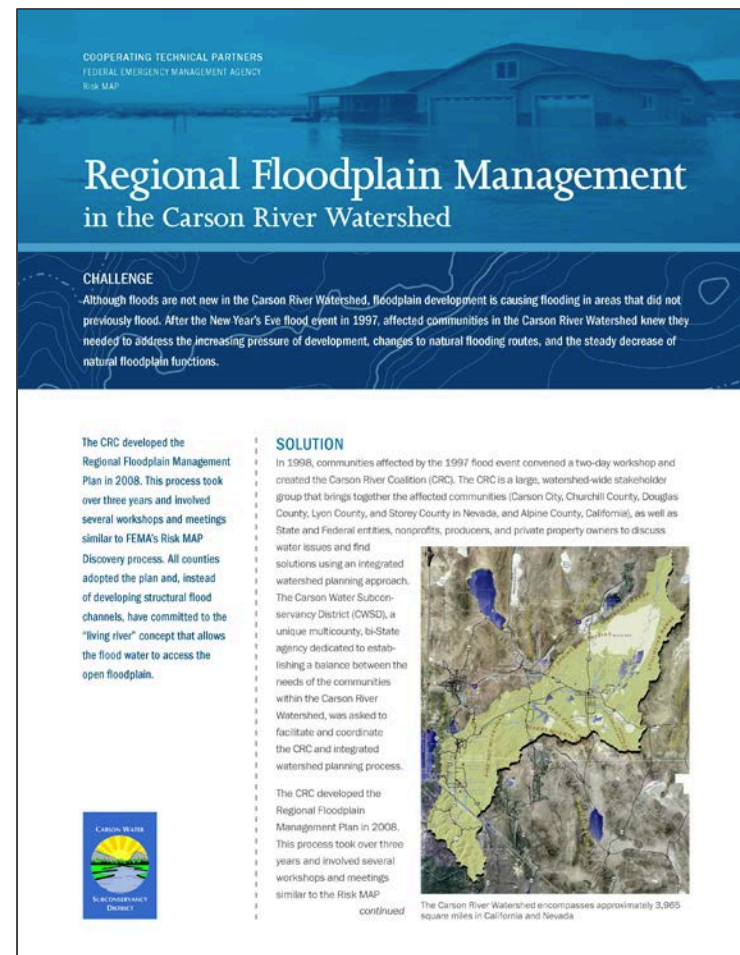
Carson Water Subconservancy District



- Already recognized for its best practices for its facilitation of the Carson River Coalition
- Created Watershed Floodplain Management Plan in 2008

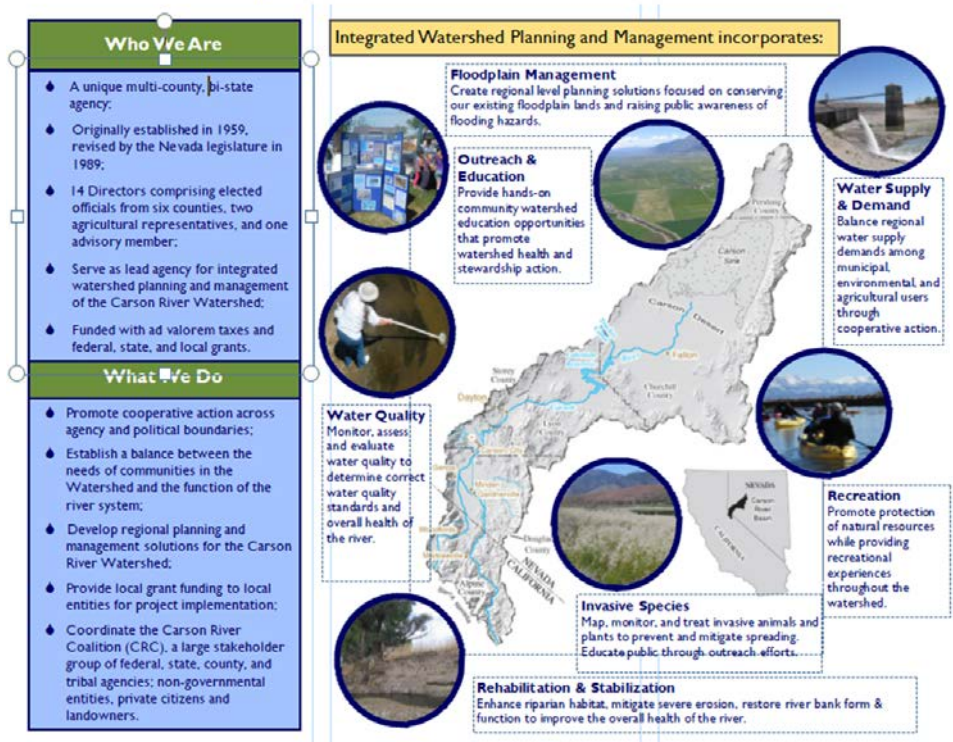


Fallon Shoshone Paiute Tribal Wetlands, 2016
Carson River Coalition's Get on the Bus Watershed Tour Courtesy of Brenda Hunt



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Integrated Watershed Program Management



Adaptive Stewardship Plan - 2008, 2012 & 2017

- Holistic Watershed Management is the nexus that drives all CWSD planning, projects, and programs.

Since Nevada still floods, CWSD's CTP Efforts Continue:



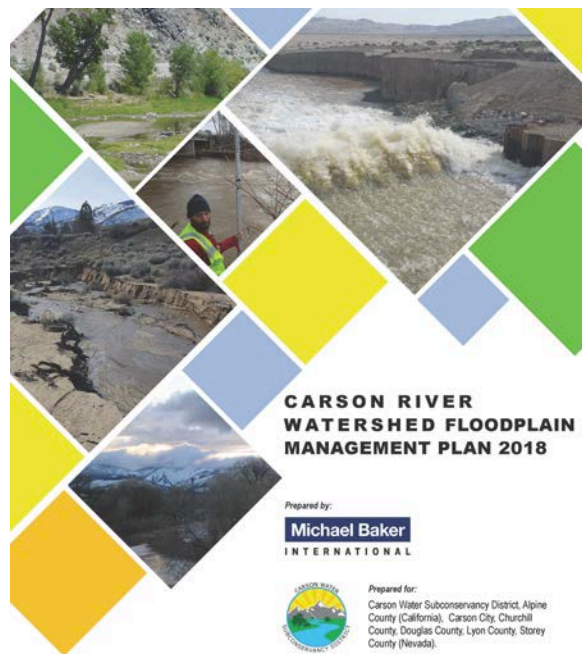
*Churchill County, Diverting Flood Water Around the City of Fallon, 2017,
Photo by Pete Olson*

- Original Floodplain Management Plan provided blueprint for ongoing actions – adopted by 5 watershed counties
- CRC Floodplain Management Working Group meets regularly – provides venue for constant communication with local floodplain managers and other stakeholders staff
- Floodplain's Natural Function and Value is underscored.
- In the Carson River Watershed, we stress every dollar spent in Mitigation saves \$6 in recovery costs.



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CWSD's CTP Outcomes:



(SA)	CRS#
AL	310, 320, 350, 410, 420, 520, 530
ANT to PPROACH on & value)	350, 420, 520
RDS	430

SA's #12-#21	FLOOD DATA INFORMATION AND MAINTENANCE	350, 410, 440
SA's #22-#29	CHANNEL MIGRATION AND BANK EROSION MONITORING	410, 430, 440, 510
SA's #30-#34	FLOODPLAIN AND FLOOD HAZARD OUTREACH AND EDUCATION	330
SA's #34-#39	REDUCE INFRASTRUCTURE IMPACTS	510, 540
SA's #40-#43	ALLUVIAL FAN HAZARD REDUCTION	440, 530
SA's #44-#48	MINIMIZE STORMWATER IMPACTS	320, 450

DISCOVERY REPORTS

- 2013 FMP Update added 2012 Discovery Report
- 2018 FMP Revision includes an updated Discovery Report

2018 FMP

- Stakeholders Identified Goals and Strategies – “Suggested Actions” for Regional Floodplain Management and Flood Risk Reduction
- Alluvial Fan Hazard Reduction & Minimize Stormwater Impacts were added in 2018 FMP.

CWSD's CTP Outcomes:

COOPERATION

- ✓ EPA – Stewardship Plan for Integrated Watershed Management – FMP is a component of this plan
- ✓ USACE HEC-RAS 2D Beta tester
- ✓ Nevada Silver Jackets
- ✓ Inundation Maps from NOAA's National Weather Service
- ✓ LIDAR through USGS

MAP STUDIES AND REVISIONS

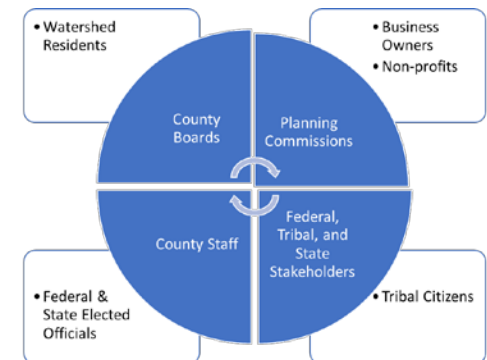
- Restudied hundreds of miles
- Physical Map Revision through 4 counties
- Multiple LOMRs throughout watershed
- Area Drainage Master Plans for several critical alluvial fans
- Flood Mitigation Plan 2016 – provided template for
- Revised or New Floodplain Ordinances

OUTREACH

- Multi-faceted Outreach Approach – Internal to External Audiences
- CWSD participates in Flood Awareness program led by state floodplain manager
- Created Floodplain Outreach and Education Video Series



Nevada Governor Steve Sisolak and his wife watch flood awareness demonstration of Watershed/ Floodplain Model 2/28/2019



Resources

***Carson Water Subconservancy District
is happy to share CTP knowledge, templates
or documents.***

Check out CWSD's floodplain management page:

<http://www.cwsd.org/floodplain-management/>

Documents:

<http://www.cwsd.org/flood-risk-mitigation-projects/>

Flood Awareness Info

<http://www.cwsd.org/flood-awareness/>

or Contact:

debbie@cwsd.org

edjames@cwsd.org

**Videos shown at local public meetings & are on the website,
and Facebook page:**

- Agriculture is a Good Fit for Floodplain Lands
- <https://www.youtube.com/watch?v=UPdSlp0Lcyk>
- Floodplains as a Community Asset/Developers:
- <https://www.youtube.com/watch?v=CVIF2rquGO0>
- Floodplains as a Community Asset/Officials:
- <https://www.youtube.com/watch?v=uUswSHIXUUI>
- Sample script provided by another CTP – Urban Drainage & Flood Control District, Denver, Colorado

Q & A



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