

# State of Nebraska CTP Business Plan



**March 2022 Update**

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## Overview of NeDNR Vision

The Nebraska Department of Natural Resources (NeDNR) coordinates floodplain management for the entire state. With authority designated by the Nebraska Legislature, NeDNR provides high quality, science-based data and information to communities, individuals, and state agencies to reduce risk from flooding. NeDNR's vision includes:

- Identifying flood risk for every community in the state.
- Offering technical assistance to every community, state agency, and stakeholder with an interest in reducing risk from flooding by improving floodplain management programs.
- Encouraging National Flood Insurance Program (NFIP) participation.

To further this vision, NeDNR actively seeks projects that directly reduce flood risk to human lives and property as well as outreach opportunities that engage communities on flood risk topics.

## Risk MAP Goals & NeDNR Plan

NeDNR's plans in the upcoming fiscal years closely align with the goals of Risk Mapping, Assessment and Planning (Risk MAP). The following Risk MAP goals compliment the Department's desire to provide the best possible flood hazard data and technical assistance to promote strong floodplain management programs that increase public awareness of local flood risks. NeDNR's ultimate goal is to see communities take action to reduce flood risk to life and property.

## Deliver High-Quality Risk Data

Flood maps are essential to the local floodplain administrator's job. Maps allow them to identify flood risk and to communicate flood risk to their communities. Having high-quality data gives both FEMA and the administrators more creditability in identifying flood risk and communicating risk to the public.

Nebraska has a low population density, so basic studies make up the majority of the state. In order to produce high-quality data, it is important to use LiDAR data as the underlying topography. NeDNR has made the acquisition of high-quality elevation data a priority and has acquired LiDAR for the entire state as of March 2018. Since then, Nebraska has begun to re-fly the oldest LiDAR sets in the State.

Nebraska streams and rivers rarely follow political boundaries and land use decisions in floodplains routinely affect neighbors upstream and downstream. Studying flood hazards at a watershed level prepares communities and property owners to collaborate to make better risk-informed decisions. Watersheds in Nebraska provide challenges often due to their immense size, causing them to span multiple natural resources district (NRD), county, and community boundaries. NeDNR aims to integrate the watershed study



approach into Risk MAP projects to account for the challenges as well as the opportunities for partnerships and synergies.

NeDNR continues to do much of the mapping and engineering in-house, which is an advantage because of the established relationship with local administrators. NeDNR plans to utilize experienced engineers on staff to complete the Risk MAP projects by using established hydrology and hydraulics standards, in conjunction with proven floodplain mapping techniques. In addition, NeDNR provides technical assistance related to flood hazard data to local, state, and federal agencies for floodplain management and permitting purposes. Communities use this flood data when creating or enforcing regulations and individuals use it to make informed decisions about mitigating their property's flood risk.

In addition to leveraging LiDAR, NeDNR also utilizes Nebraska's Flood Assessment Calculation Tool (NFACT) for Risk MAP projects that include basic studies. The tool is also used for providing base flood elevations (BFEs) to local, state, and federal agencies. NFACT is now available to anyone downloading ESRI's ArcHydro tools and is updated with each new version of ArcHydro tools.

### **Increased Awareness of Flood Risk**

During all phases of Risk MAP, NeDNR will engage with stakeholders by hosting meetings in deployed watersheds in an effort to reduce flood risk to life and property. NeDNR also strives to provide information to community members about the progress of a floodplain project throughout its life cycle, supply information about how new flood risk data could affect specific communities, and act as a knowledge base and resource for floodplain information for stakeholders statewide.

NeDNR will pursue successful community meetings to ensure that the flood hazard information accurately reflects on-the-ground conditions and that the community members understand the flood risk information being presented to them. NeDNR's objective in these meetings is to effectively communicate the new flood risk data to community leaders in the project area: including floodplain administrators, elected community representatives, NRD staff, and other community officials. This allows meeting participants to be in a position to communicate to members of their communities the expected changes that will accompany new flood hazard data, and where to find resources and information.

Discovery meetings seek input on local flood conditions, needs of communities, and gaps in data. This will help to ensure that NeDNR data matches a community's most current conditions. The Kick-Off meeting defines the Risk MAP project, explains the modeling methods to be used, and gives the communities time to voice any concerns regarding the modeling methods. The Flood Risk Review meeting presents the new engineering data, giving communities a chance to comment on and review draft floodplain boundary data before the preliminary maps are created. The Flood Risk Review meeting provides communities with flood risk products and demonstrates how to use the products to identify ways to reduce loss of life and property from floods. Consultation Coordination

Officers (CCO) meetings help community officials understand the mapping process and identify areas of concern. Throughout the project cycle NeDNR will work with watershed stakeholders on how to use their new risk information for flood risk reduction and prioritizing projects within their watersheds.

Additional non-Cooperating Technical Partners (CTP) action is vital to providing local officials with the information and background needed to properly implement the regulations and requirements of the National Flood Insurance Program (NFIP). NeDNR will be involved with and coordinate with other local and state agencies to provide learning opportunities to help explain topics varying from the basics of floodplain development and permitting, to reviewing and explaining technical bulletins. These outreach opportunities are outlined in the NeDNR's Outreach Plan that is updated each year.

Flood risk products provide communities with expanded datasets of information that can help a homeowner, business owner, developer, or home builder make informed decisions about a structure or property. NeDNR actively seeks ways to improve flood risk products and encourage community use of the products. NeDNR will also work one-on-one with a community to find the best applications for flood risk products in their jurisdiction. NeDNR has found useful opportunities for the products in the past and aims to get communities to add them to their floodplain management repertoire. Flood risk products are used in NeDNR's public open houses to help property owners understand flood risk, flood insurance, and the Risk MAP process.

NeDNR will continue to help communities understand the data displayed in Risk MAP products and enhance local knowledge of using the data to make informed land use decisions. Repeated engagement on flood risk reduction will help local officials, including building inspectors, public works directors, planners, and emergency managers, have the tools for the best possible floodplain management program. NeDNR provides technical assistance, upon request, to every community in the state on a wide array of floodplain management topics. NeDNR also participates in local hazard mitigation plans, which presents an opportunity for conversation with local officials in utilizing Risk MAP products to enhance mitigation projects and identify new ones.

Existing partnerships with Silver Jackets and working relationships with the Nebraska Emergency Management Agency (NEMA) and the Nebraska Floodplain and Stormwater Managers Association (NeFSMA) help facilitate flood risk communication. NeDNR will continue to be an active partner with these entities and organizations to promote mitigation actions. Working relationships with other federal, state, and local level entities will also be crucial to NeDNR's goal of reducing flood risk statewide. Open, two-way communication with these experts will increase the quality of flood risk information produced through flood risk projects and will serve to further NeDNR's goals and objectives as set out in this plan.

NeDNR plans to tie activities funded by the Community Outreach and Mitigation Strategies (COMS) program into Risk MAP projects. Although NeDNR's COMS program

covers the entire state, NeDNR plans to focus outreach on deployed watersheds by leveraging project data and utilizing project communications. Increased attention to flood risk will help community officials gain support from political leadership to implement projects.

### **Promote Community Mitigation Action**

Through Risk MAP projects, NeDNR will work with communities to identify mitigation actions using the new flood hazard data. New flood hazard data offers communities a view of the most up-to-date and accurate flood risk information for their jurisdictions. NeDNR will use best available flood risk products to assist communities in gaining a truly holistic understanding of their flood risk. Through a complete look at available datasets, a community could combine information, such as flood depth and percent flood chance over a period of time, with the regulatory boundary and other relevant information to make informed decisions for not only existing structures, but for planned community growth.

NeDNR will actively support projects that contribute to measurable risk reduction to properties in the state. Where Risk MAP data can influence a local hazard mitigation plan, NeDNR will work with the plan sponsor, consultant, and NEMA to incorporate new data into plans. Working with communities to maintain and update their hazard mitigation plan ensures that the plan includes the best available flood risk data, thus allowing communities to identify potential new mitigation opportunities.

NeDNR will continue to provide technical assistance on a wide range of topics including floodplain management, mitigation projects, higher regulatory standards, and map data interpretation. NeDNR will provide technical assistance in the form of technical engineering reviews for projects, including no-rise applications in floodways or Letter of Map Revision (LOMR) applications, at the request of community officials. This independent review provides communities the assurance that the projects constructed in the state will adhere to regulatory standards.

An important aspect of flood mitigation planning starts with participation in the NFIP. NeDNR will continue to encourage non-participating communities to consider entry into the NFIP during the Risk MAP project life, Hazard Mitigation Planning processes, and any other public interactions. NFIP participation provides “built-in” mitigation elements for communities that participate. If a community joins Community Rating System (CRS) as well, there are even more mitigation elements with insurance benefits for the entire community.

Working with mitigation planning will help accomplish NeDNR’s COMS goal of helping communities understand the entire life cycle of risk reduction. This includes communicating the benefits of risk reduction projects, as well as project implementation. Planning efforts offer prime opportunities to engage communities individually on their projects.

## COMS Program

### Goals and Objectives

NeDNR's goal is to provide the best possible flood hazard data and help advance risk reduction projects in Nebraska communities. NeDNR aims to support this goal through the COMS program. The Department plans to help communities understand and implement risk reduction projects in the state by focusing on the following objectives:

- Why flood risk is real and why a community should focus on reducing that risk.
- What kind of risk reduction projects achieve a community's goals?
- Where best to implement identified projects.
- How will these projects be implemented?

The first objective is addressed by providing information and data on flood risk in a variety of formats. NeDNR also helps provide flood risk information through newsletters, project updates, presentations at workshops and conferences, and other community engagement events. NeDNR plans to utilize FEMA's Community Engagement and Risk Communication (CERC) contractor to help create, review, and disseminate the materials for risk workshops, Risk MAP meetings, and other communication products.

NeDNR plans to help communities understand the various risk reduction methods available by communicating best practices, examples from other communities, and higher regulatory standards that may reduce future risk in new development. Hazard mitigation plan processes and participation in CRS provide ideal opportunities to discuss these items. NeDNR will work individually with communities to strategize about the best risk reduction solutions for economic, political, and environmental situations specific to each community.

NeDNR also plans to provide data to communities on where best to implement projects that have been identified. Every community is unique, as is the flood risk in each community, and local solutions offer the best chance for success. NeDNR will help communities identify where risk reduction projects are most needed, such as vulnerable population areas, low-income areas, redevelopment locations, and new growth areas.

Lastly, NeDNR plans to help communities understand how best to implement projects. Upon request, NeDNR will assist communities in developing risk reduction projects.

### Ongoing/Past Projects

Based on prior COMS projects, NeDNR has identified new areas of engagement with regard to flood risk. A previous project examined comprehensive plans and land use decision-making throughout the state. These studies found that communities need technical assistance to ensure flood risk is part of their long-term land use decisions. There is a need to enhance comprehensive plans with better flood risk information,

improved goals to reduce future flood risk, and appropriate actions and policies that a community can implement to encourage flood-aware decision-making. NeDNR will add this technical assistance element to on-going community engagement efforts and will ensure that the planning community is well versed in floodplain management.

Another previous COMS project focused on creating a demographic profile of populations of Nebraskans who live in flood hazard areas. The project used Census data, digital flood data, and Risk MAP project data to identify any trends among those who live in floodplains versus those who do not. Two major trends emerged: housing units in floodplains are disproportionately rental units and a much higher percentage of people in floodplains identify as Hispanic or Latino. This conclusion leads NeDNR to look at better assisting communities in their outreach to residents and businesses. Many communities will need Spanish-language resources, and some will need to engage the renter populations in understanding flood risk and flood insurance. NeDNR hopes to engage the CERC provider in developing additional community resources.

As NeDNR discusses mitigation with communities across the state, the City of Beatrice is often identified as a leader in reducing risk in a community. Over the past 40 years, the city has continually acquired floodprone land using both city and federal funds. In 2015, the city saw significant flooding and, because of their prior mitigation efforts, experienced very few flood losses. In Fiscal Year 2017, NeDNR, FEMA, and the City of Beatrice worked with the CERC provider to complete a loss avoidance study of the buyout projects that occurred in Beatrice. The end product was a story map that can be shared with the public. Having this information, particularly in an easily accessible format, can be used to illustrate to other communities the benefit of mitigation and encourage them to take action. The story map can be found here:

<http://arcg.is/1LXin5>

NeDNR plans to implement story maps to update local stakeholders on flood hazard projects in a more meaningful way. Story maps provide a visual and interactive platform, which can be used to disseminate information in a way that is engaging and informative. Different phases of a project, access to a community comment site, community flood history, historical flood photos, important dates, flood risk product information, and a wide range of other information can be hosted on a story map. The story maps can be kept active for the life of a project and beyond. Story maps will be another resource that NeDNR plans to use to engage with stakeholders in an approachable and informative way.

## **NeDNR Partnerships**

NeDNR and NEMA share the Lead State Agency role in Silver Jackets. Through the Silver Jackets program, Nebraska has worked on a wide array of projects. Below is a summary of a few of these projects:

*Nonstructural Flood Risk Resiliency Assessments for DeWitt and Hebron, Nebraska:*

This project was funded in 2017. The results of this study showed that there are

numerous structures in the two communities at notable flood risk and some nonstructural measures were both feasible and cost effective. This data can be used to assist to develop a community's nonstructural flood risk reduction plan, communicate risk, evaluate individual nonstructural implementation, or assist in making other flood risk decisions. The project partners were Village of DeWitt, City of Hebron, Saline County, Thayer County, Lower Big Blue NRD, Little Blue NRD, NeDNR, NEMA, USACE, and FEMA.

*Lower Platte River Pre-Development Risk Identification:* This project was funded in 2017. The project developed new hydrologic data for the Lower Platte River from Columbus to the confluence with the Missouri River. The previous study, dated 1997, used hydrology that was developed in 1975. After the 2019 flood event the USACE obtained funding to update the study to incorporate the gage data to determine whether this event had any impact. The project partners were NeDNR, NEMA, USACE, USGS, Lower Platte River Corridor Alliance and FEMA.

*Nebraska Silver Jackets Sandpits Risk Assessment and Risk Management Evaluation:* This project was funded in 2017. The project involved conducting a statewide assessment estimating the risk associated with sandpit developments and attempting to provide recommendations on how to manage this risk. The project partners were NeDNR, NEMA, USACE, and FEMA.

*Nebraska Silver Jackets Repetitive Loss 2.0:* This project was funded in 2018. As part of the project there was a statewide evaluation of the 2018 repetitive loss properties and nonstructural assessment. This project was delayed after the 2019 flood to ensure that the correct properties were being evaluated and to determine whether the repetitive loss list changed. The project partners were NeDNR, NEMA, USACE, and FEMA.

*Wood River Flood Risk Identification:* This project was funded in 2019. This project updated the Wood River hydrology, while using HEC-RAS 2D to better understand the complex flow splits and sub-basin interflow. The project was conducted in parallel with a USACE Section 22 to update the Central Platte hydrology and determine whether ice impacts are a factor in this reach of the Platte River. The ice impact determination will be used to determine the influence Platte River ice events have on the Wood River, as the Platte River spills into the Wood River in multiple locations during high water events. The project partners were NeDNR, Hall County, and USACE, and USGS.

*High Water Mark Archive:* This project was funded in 2019. Multiple high-water mark databases have been created by local, state, and federal partners from different geographic areas and timeframes. The project compiled these high-water mark databases into a single, shareable database. The project partners were NeDNR, USGS, and USACE.

*Educational Resources Toolkit:* This is an ongoing project that was funded in 2019. This project aims to develop short modules and study guides, linked to state

curriculum standards, which can be integrated into multiple subjects and grade levels to educate students on the dangers of moving water, historic floods, and how to avoid flood risks. The project is being piloted in the Educational Service Unit #5 region, with the goal of additional Educational Service Units implementing the curriculum in the future. The project partners are NeDNR, NEMA, USACE, FEMA, NOAA, the Nebraska Forest Service, the University of Nebraska Extension Office, ESU #5.

*Little Papillion Creek Hydraulic Modeling and Mapping:* This is an ongoing project that was funded in 2019. The project team will modify the existing 1D model for Little Papillion Creek and develop a 2D model near the confluence of the Little Papillion Creek with the Big Papillion Creek. The goal of the modelling effort is to better understand the flood risk from both streams at the confluence. The USGS will then incorporate the information into their Flood Inundation Mapper for public distribution. The project partners are NeDNR, Papio-Missouri River NRD, USACE, and USGS.

*Mitigation History:* This is an ongoing project that was funded in 2022. The project aims to raise awareness of mitigation successes throughout the state by creating an interactive map that highlights past risk reduction projects, funding sources, and flood risk reduction benefits. The project partners were NeDNR, NEMA, USACE, FEMA, USGS, and NRCS.

#### *Other Silver Jacket Projects:*

- Workshops in Association with NeFSMA
  - 2013 Levee Safety
  - 2014 Nonstructural
  - 2015 Climate Adaption
  - 2016 Dam Safety
  - 2018 Hydrology
  - 2019 Flood Workshop
- 2014 Highwater Mark Project
- 2015 Dam Safety Outreach Campaign
- 2019-2020 Flood Workshops

NeDNR has been a partner with NeFSMA since it was founded in 2005. NeDNR continues to serve on the committees and provide assistance when needed. NeDNR and NeFSMA team up on many different events, such as regional workshops, local EMI classes, and other trainings throughout the state.



## Alignment with the 2021 State Hazard Mitigation Plan and the 2022 State Hazard Mitigation Plan

Approved by FEMA January 27, 2021, the Nebraska State Hazard Mitigation Plan (SHMP) presents 5 state-level Mitigation Goals that address broad local initiatives as well as problem areas identified after the 2019 flooding event:

1. Promote a comprehensive state hazard mitigation policy framework to coordinate federal, state, and local hazard mitigation planning and program efforts.
2. Reduce or eliminate long-term risk to property, including critical facilities and infrastructure, historic, and private property.
3. Promote public awareness of hazards and how to reduce their impacts.
4. Encourage the development and implementation of long-term, cost effective, and resilient mitigation projects that preserve or restore the functions of natural systems.

The SHMP considers flood risk reduction projects identified in local Hazard Mitigation Plans (HMPs). This business plan aligns well with those community-identified needs. For example, most communities included a mitigation strategy for protecting critical facilities and maintain compliance with the NFIP. NeDNR helps with maintaining compliance by providing technical assistance. Other local HMP mitigation actions that NeDNR plans to assist in include enhancing emergency management, acquiring high risk infrastructure, obtaining new floodplain data, enhancing floodplain regulations, educating on flood mitigation measures, encouraging participation in CRS, dam projects, and other flood control projects.

August 17, 2020, Nebraska's Governor approved Legislative Bill 632. Codified as Nebraska Revised Statute §61-225 through 61-229, instruction is provided to NeDNR to develop a State Flood Hazard Mitigation Plan in accordance with FEMA guidelines and to be annexed to the 2021 SHMP. The plan features several components, including but not limited to:

- An evaluation of 2019 flood issues.
- Flood insurance claim analysis by jurisdiction.
- Revamped flood hazard mitigation actions and a complementary how-to implementation guide.
- Expanded flood hazard mitigation funding resources section.
- Evaluation of existing state laws and administration thereof.
- Results of GIS-based flood risk assessment.

Through a series of public meetings and via leadership from a broad range of stakeholders, the plan incorporates the input of a broad range of stakeholders and is representative of statewide interests. Once approved by FEMA, the plan will then be appended to the 2021 State of Nebraska Hazard Mitigation Plan in December 2022.

This business plan addresses and remains in line with the overall State of Nebraska mitigation goals. NeDNR aims, through flood hazard mapping and community engagement, to help the state meet these goals and objectives. NeDNR maintains a strong relationship with NEMA and continues to provide new flood hazard data and support in the planning process. NeDNR also supports NEMA in reviewing the flood portion of Local Hazard Mitigation Plans and reviewing and selecting applications suitable for Hazard Mitigation and Building Resilient Infrastructure and Communities (BRIC) funding.

### **NeDNR Capabilities**

NeDNR has statutory authority for coordinating all floodplain management matters in the state including floodplain mapping, flood mitigation programs, and technical assistance. NeDNR is responsible for identifying and delineating floodplains and floodways in the state; providing state coordination for the NFIP and for the Flood Mitigation Assistance grant program; and providing floodplain management technical assistance to local, state, and federal agencies.

NeDNR's Floodplain Management section comprises fifteen professional positions that span experience in engineering, planning, outreach, GIS, and hazard mitigation. Ten positions work with flood hazard data development, engineering, and mapping, and five primarily help communities understand, manage, and reduce their flood risk.

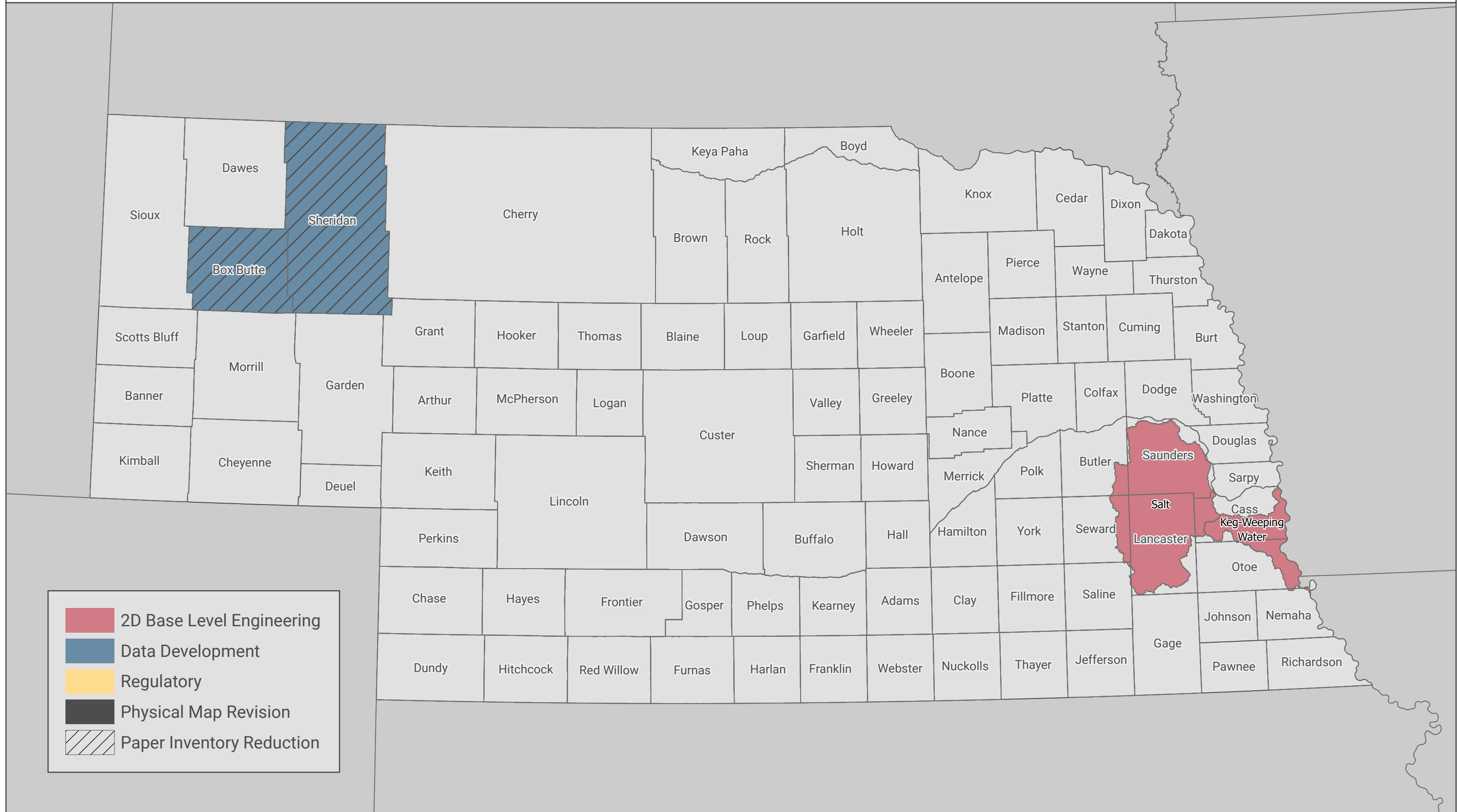
### **Project Prioritization**

NeDNR understands that there are limited resources available for Risk MAP projects across the country and will actively seek to prioritize Nebraska projects based on three main qualities. First, NeDNR will assess the existing data available for a watershed to see where limited FEMA resources can be extended. Second, NeDNR will work with communities to understand their flood risk reduction and floodplain management needs to evaluate the best possible implementation of Risk MAP projects. Third, NeDNR will ensure that projects can be completed using the available staff. If additional funds are available, NeDNR will consider securing contracts with consulting firms for some Risk MAP projects in order to provide the best possible data to Nebraska's communities.

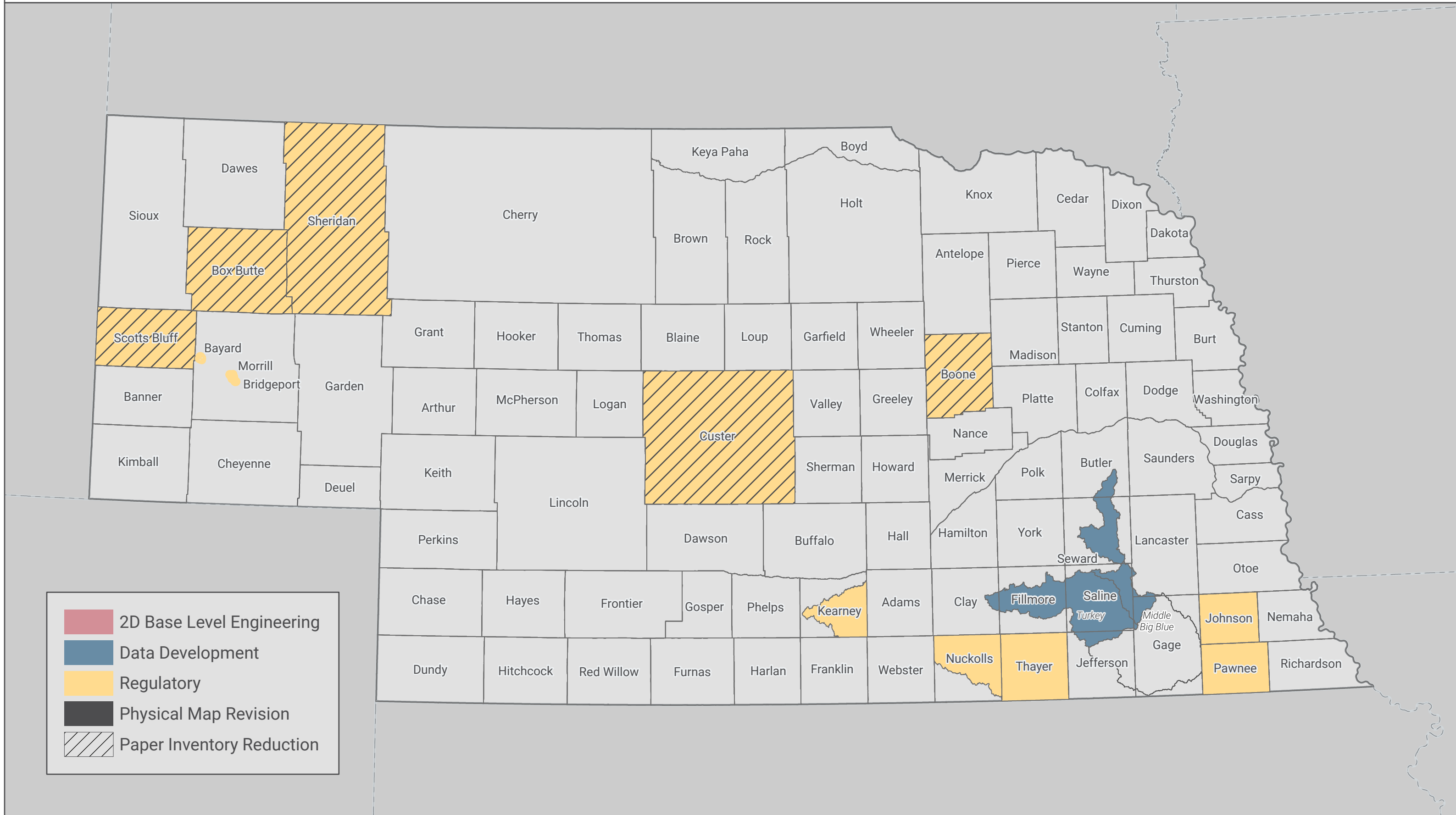
The following sections provide a road map for NeDNR's proposed projects from Fiscal Year 2022 through Fiscal Year 2028. The first section provides a series of figures showing the proposed projects by fiscal year. The second section provides a series of figures showing the ongoing and proposed projects by fiscal year.

## **Section 1. Proposed Projects Figures FY2022 – FY2028**

# Floodplain Management Proposed Projects in FY 2022



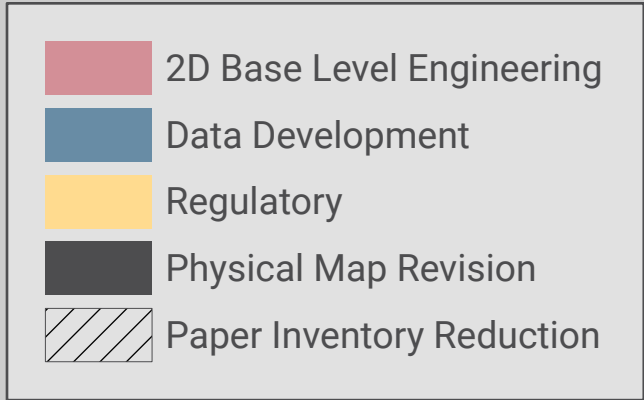
## Floodplain Management Proposed Projects in FY 2023



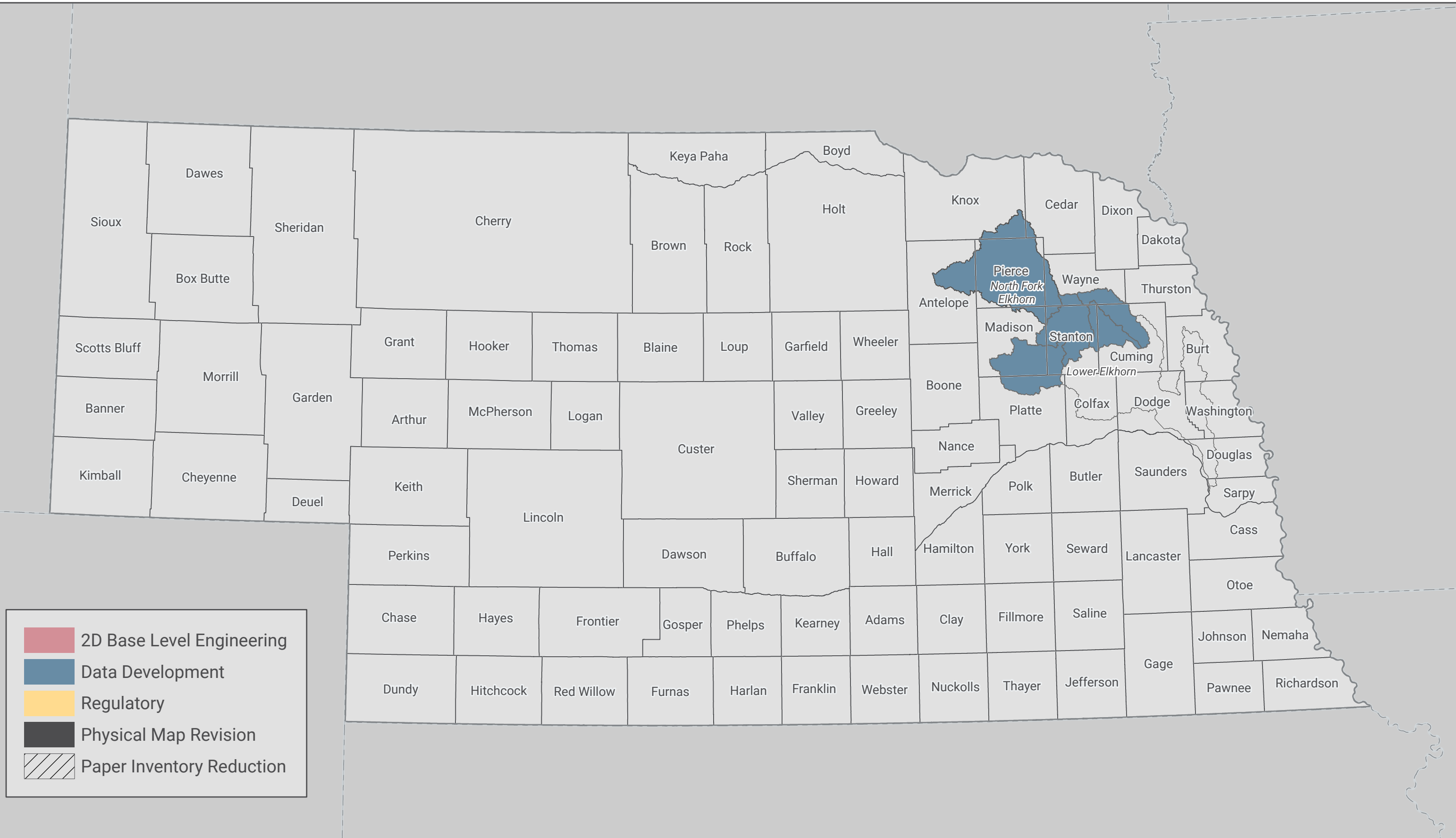




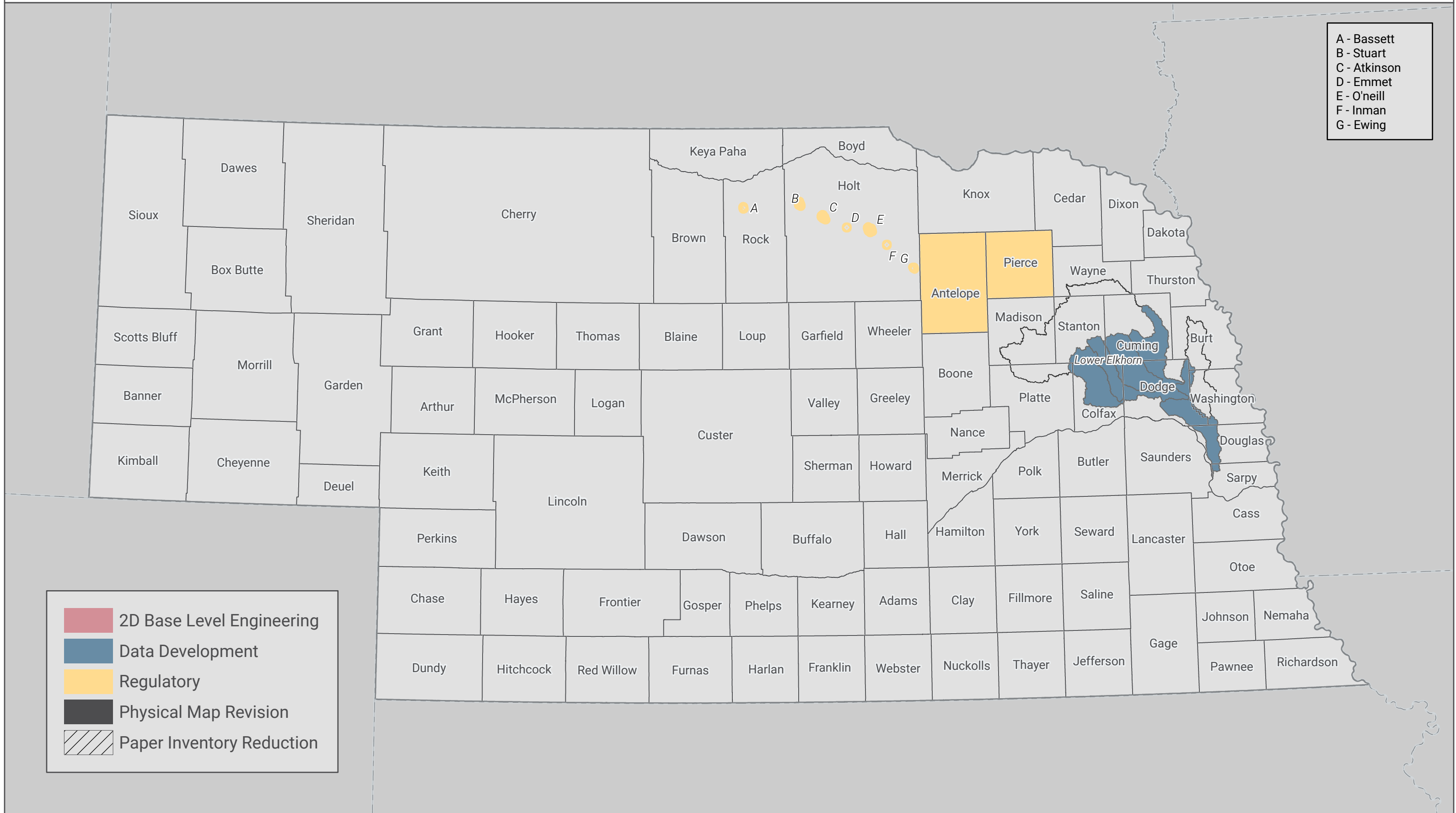




# Floodplain Management Proposed Projects in FY 2027

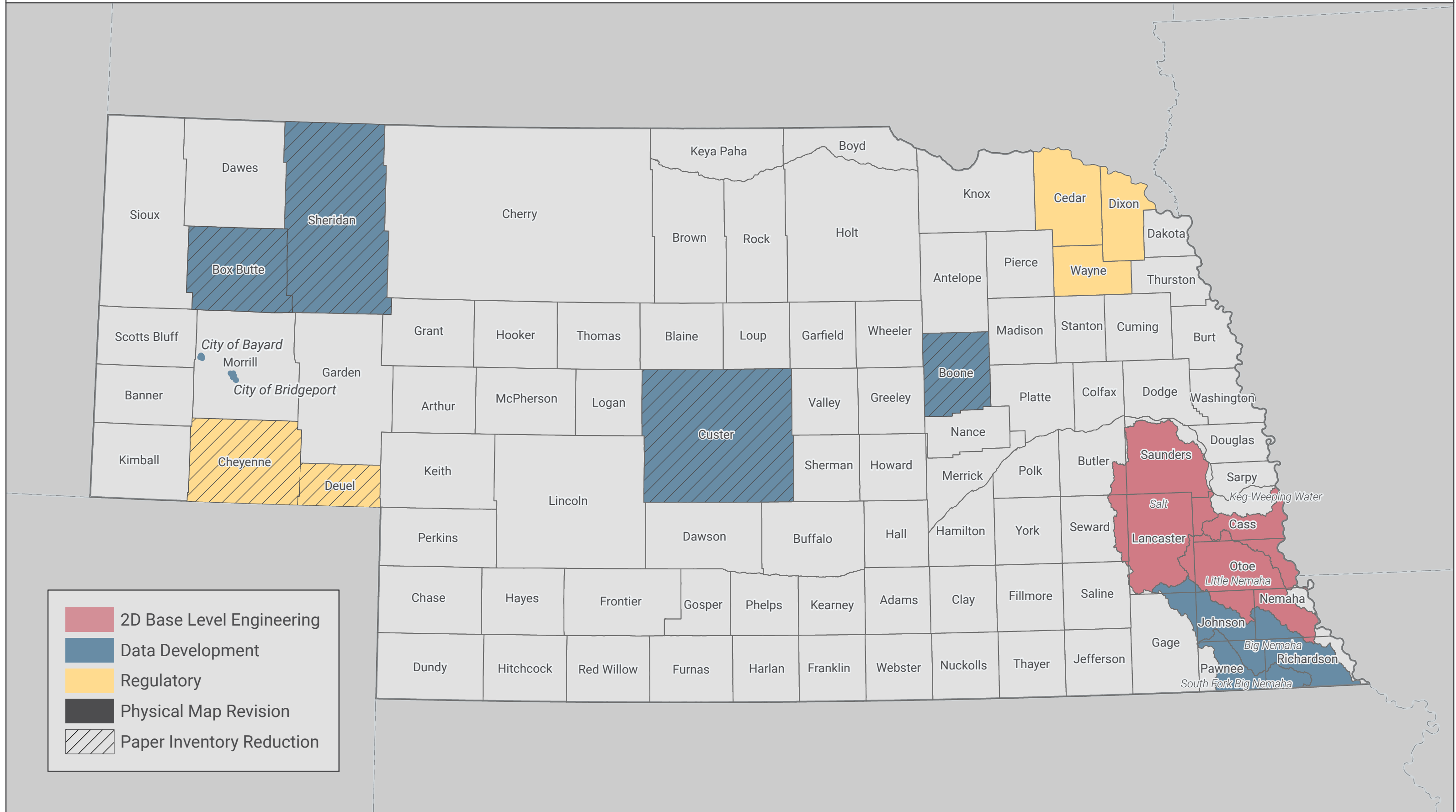


# Floodplain Management Proposed Projects in FY 2028

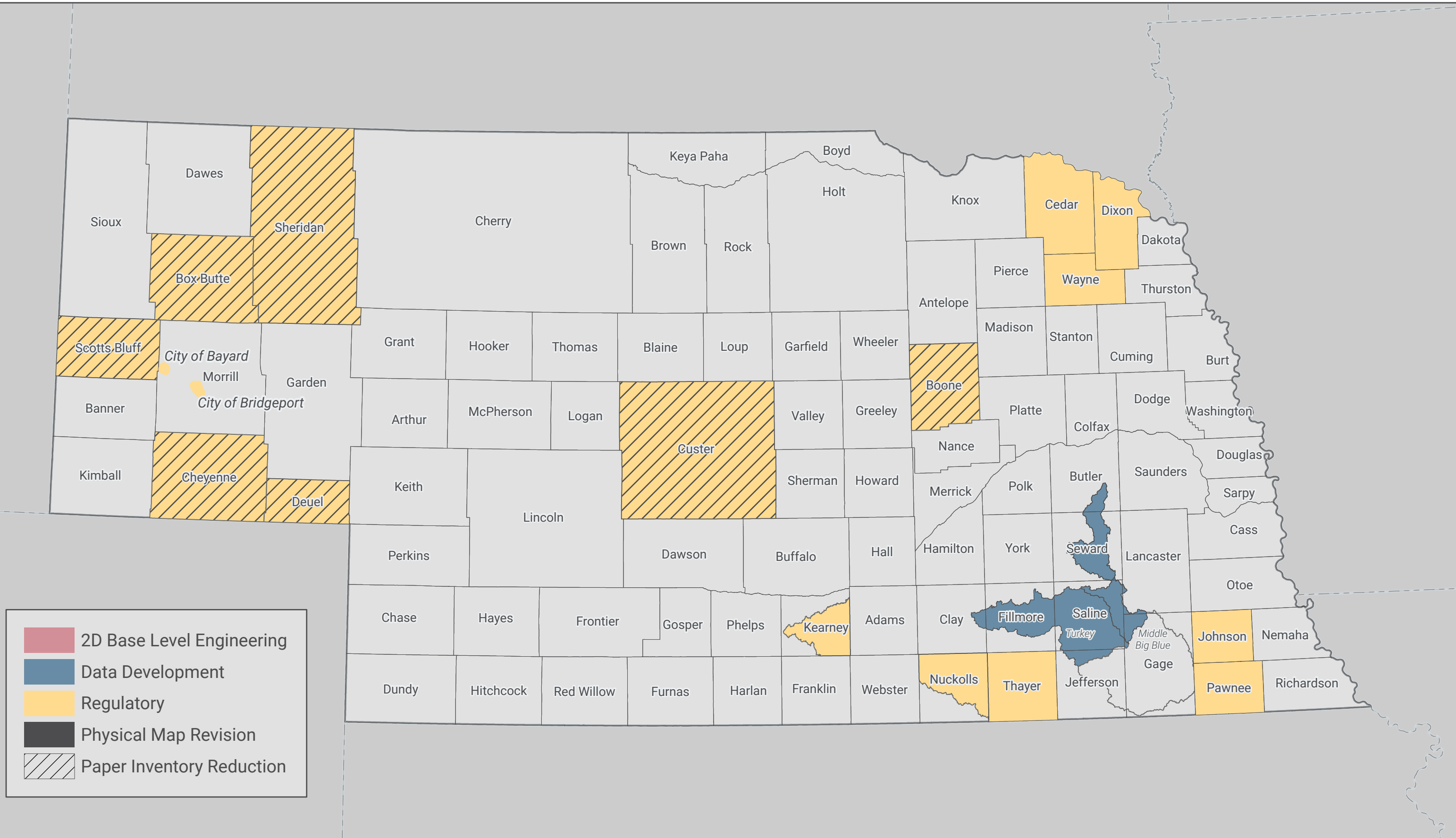


## **Section 2. Proposed and Ongoing Projects Figures FY2022 – FY2028**

## Floodplain Management Proposed and Ongoing Projects in FY 2022

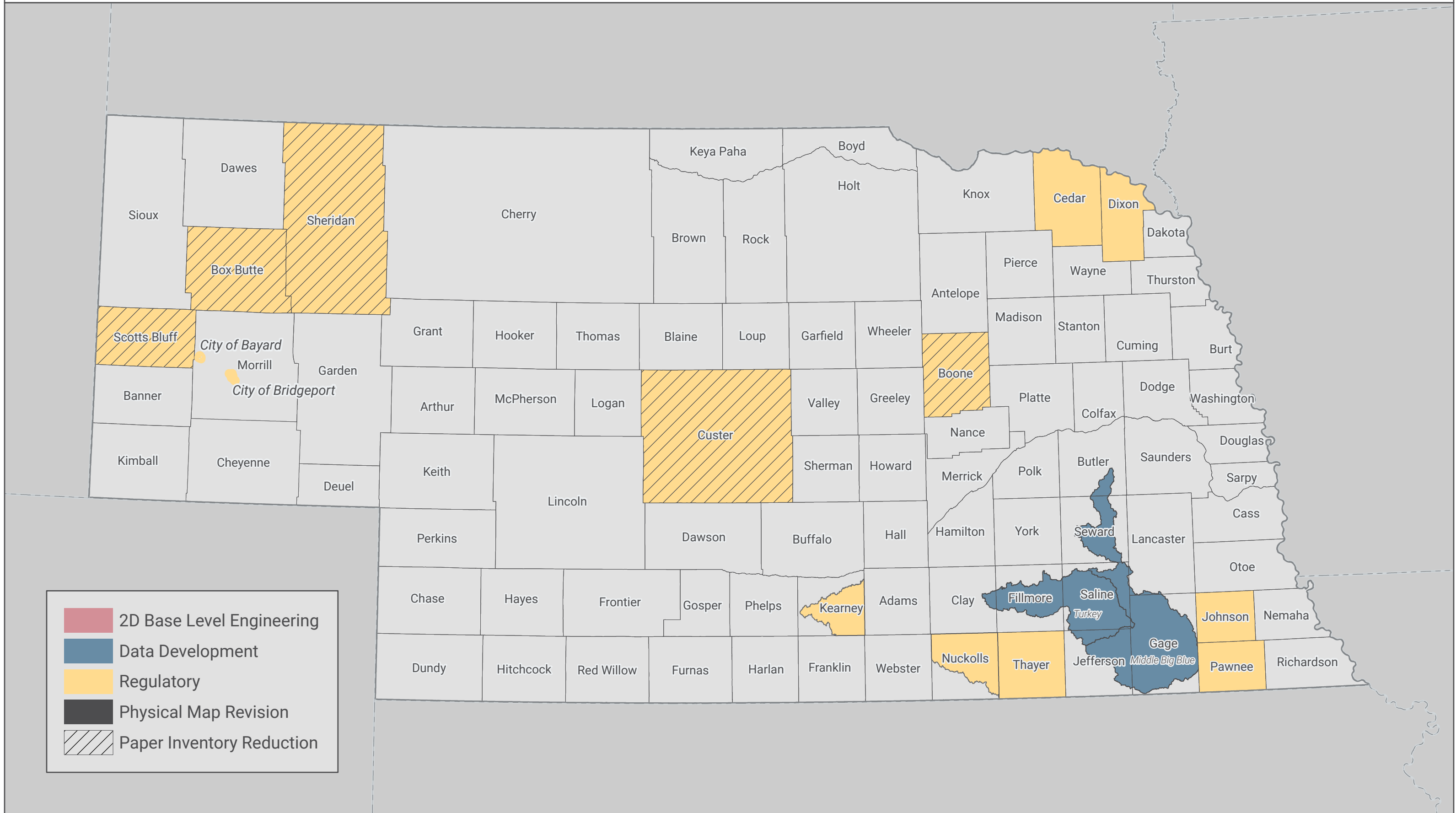


# Floodplain Management Proposed and Ongoing Projects in FY 2023



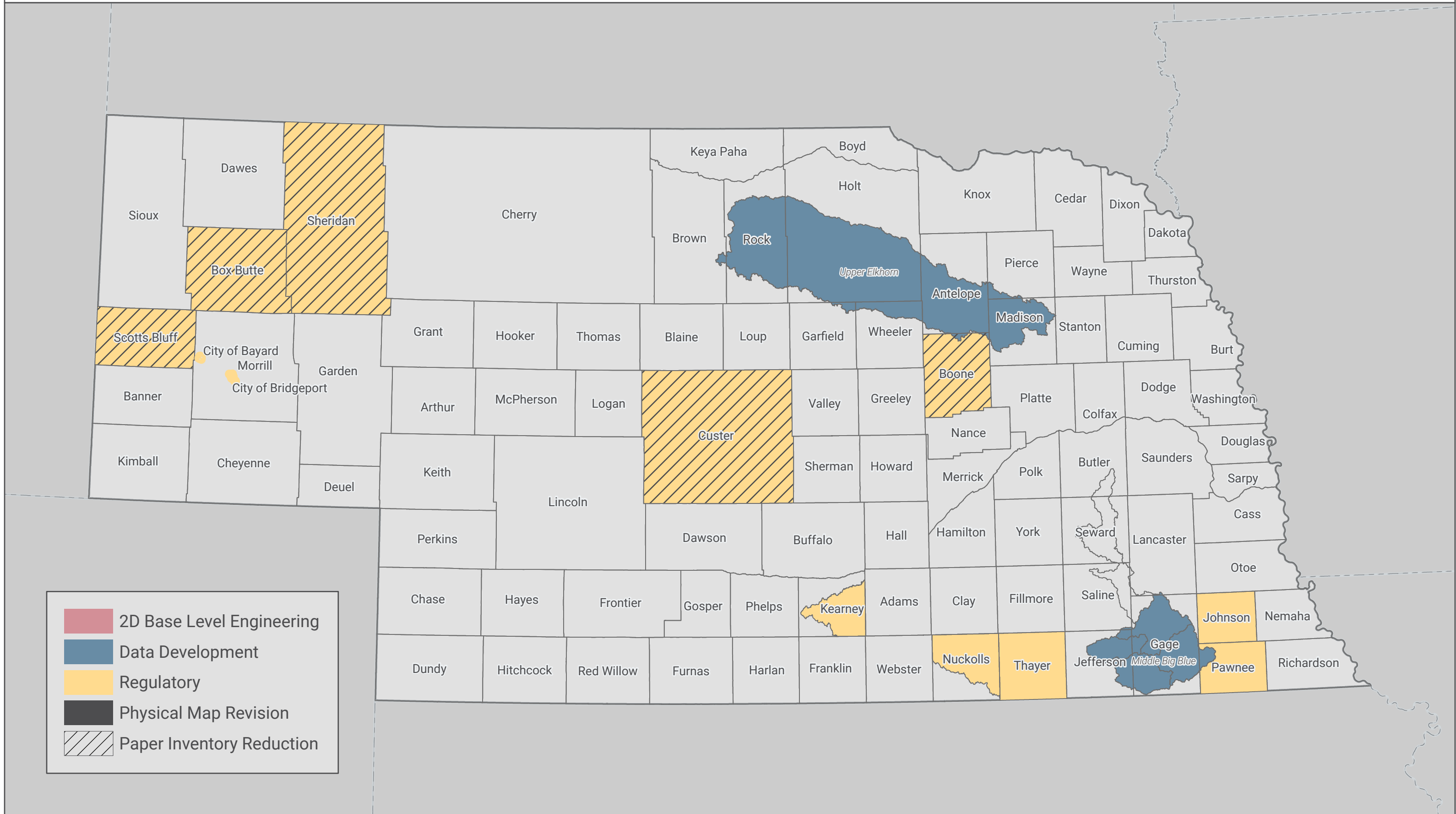


## Floodplain Management Proposed and Ongoing Projects in FY 2024

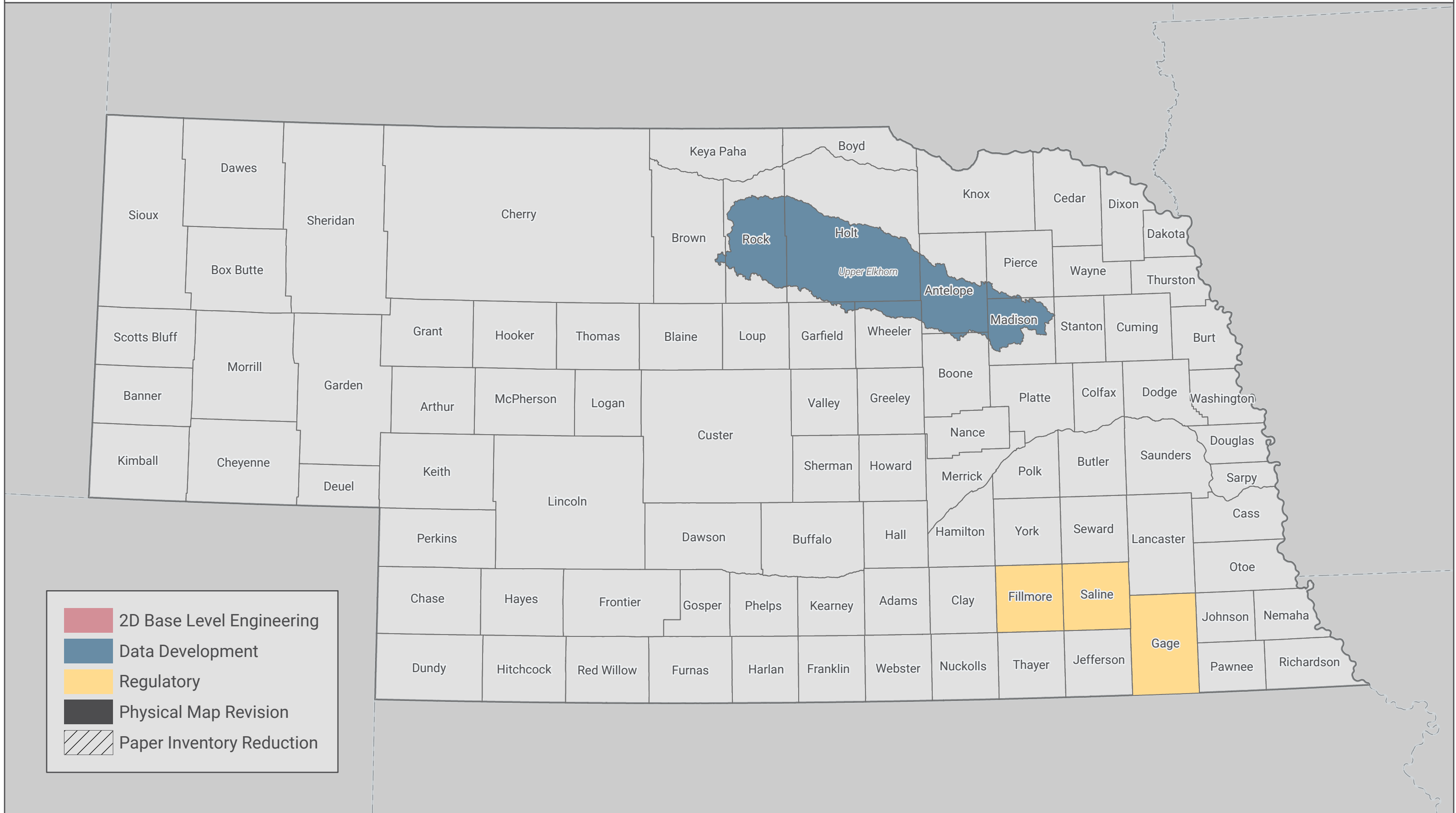




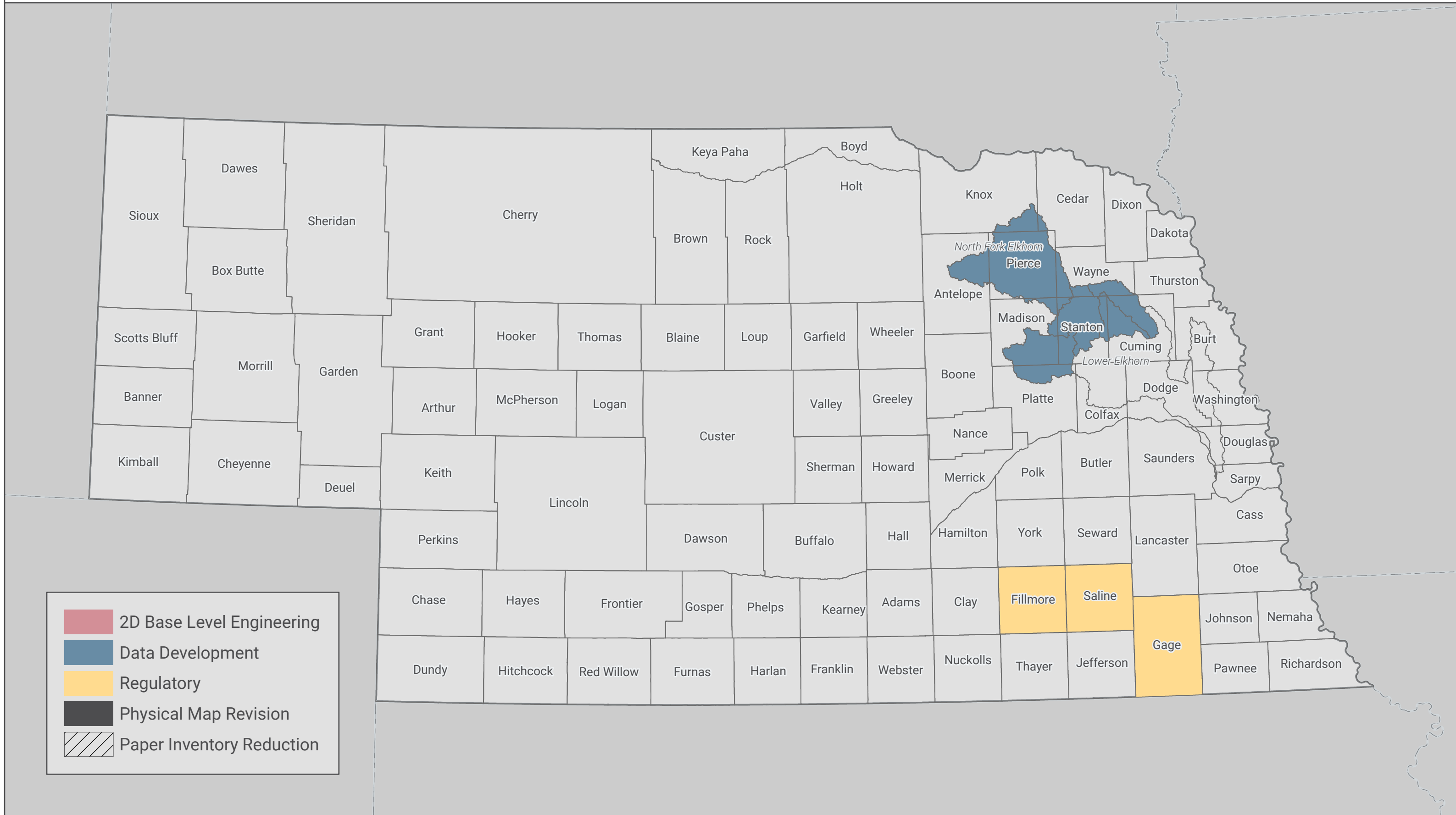
# Floodplain Management Proposed and Ongoing Projects in FY 2025



# Floodplain Management Proposed and Ongoing Projects in FY 2026



## Floodplain Management Proposed and Ongoing Projects in FY 2027



## Floodplain Management Proposed and Ongoing Projects in FY 2028

