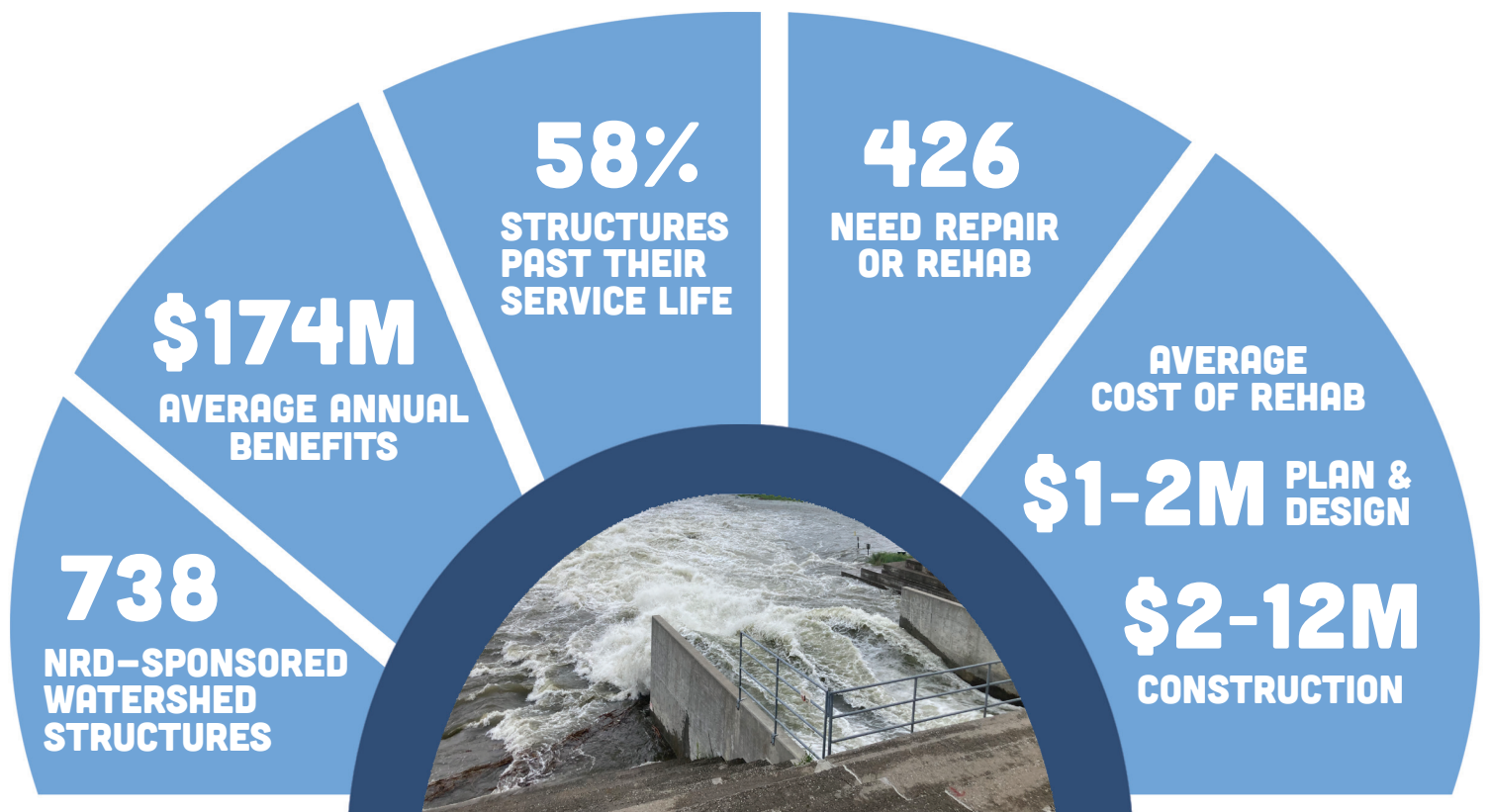


MAINTAINING NEBRASKA'S WATERSHED STRUCTURES: A GROWING NEED FOR FUNDING

Nebraska's watershed structures are critical to protecting lives, property, and vital resources. However, many of these structures are aging and in need of rehabilitation to ensure public safety and maintain their economic benefits. Key considerations include:

- **Extensive Infrastructure:** Since 1954, Nebraska has constructed 738 inventory-sized dams under the U.S. Department of Agriculture's Natural Resources Conservation Service (NRCS) Watershed Programs (PL-534, PL-566, RC&D, and Pilot). These structures are located within 17 Natural Resources Districts (NRDs) and 50 watersheds.
- **Economic Benefits:** Nebraska watershed structures provide an estimated \$174 million in average annual benefits, protecting lives and property from flood risks.
- **Aging Dams:** 426 of these dams (57.7%) have exceeded their economic service life (50 years) and may require rehabilitation or repair to ensure public safety.
- **Dam Assessments:** Partnering with NRCS, Nebraska's NRDs are actively completing dam assessments. Dam assessments are detailed inspections that analyze the current hazard classification, determine if the dam meets current design standards and evaluates if any deficiencies are present.
- **Ongoing Rehabilitation Efforts:** NRCS currently has five active Dam Rehabilitation Plans covering three NRDs and four counties. From FY19 to FY24, Nebraska NRCS has allocated approximately \$5.9 million through the federal Dam Rehabilitation Program. However, additional funding is needed to maintain and rehabilitate these structures.
- **Funding Challenges:** Securing funds for dam repair and rehabilitation is increasingly difficult, as annual federal appropriations fail to keep up with growing demand for infrastructure improvements.



PROTECTING LIVES, PROPERTY & THE FUTURE

According to the Federal Emergency Management Agency, for every dollar spent on flood mitigation, an average of \$6 can be saved in post-disaster recovery costs. Annually, those benefits are witnessed across Nebraska.

On May 21, 2024, amid a series of intense rainstorms, eastern Nebraska faced a deluge that brought up to 10 inches of rain within hours. Within the 51,000-acre Bellwood Creek Watershed, 13 dams south of Bellwood in Butler County, prevented an estimated \$1 million in damages to downstream property and infrastructure. The flood control structures were completed in 1993 at a cost of \$985,600. The Lower Platte North NRD is responsible for the operation and maintenance of these 13 structures.

In spring 2024, three Omaha metro storms were 100-year-plus rain events. Flood mitigation structures (creek channels, levee systems and dams) held during all three events. Public investments in flood mitigation infrastructure in the Papillion Creek Watershed are paying dividends.

A June 2023 storm brought an average of 4 inches of rain in the Blackwood Creek watershed in just six hours. The Blackwood Creek watershed, northwest of McCook has 11 flood reduction structures. The structures functioned as designed, capturing stormwater and runoff. It is estimated these dams prevented \$677,000 in damage to downstream property and infrastructure.



In the Papio-Missouri River NRD, floodwaters are channeled down the Papio Creek to nearby storage reservoirs in the Omaha metro preventing flooding during a heavy rain event in spring 2024.

NEMAHA NRD: DAM REPAIR & REHAB

Nemaha NRD Overview

- **Location:** SE Nebraska; 1,537,460 acres across 8 counties.
- **Population:** 42,630 residents across 8 cities and 33 village.
- **Annual Budget:** ~\$4 million with 25% allocated to watershed maintenance alone.
- **Staff:** 18 total with 5 dedicated as full-time watershed maintenance plus summer part-time hires.

Watershed Structures

- 518 watershed structures in the Nemaha NRD that include both flood control dams and grade stabilization dams.
- 334 structures built under the federal NRCS Watershed Protection and Flood Prevention Act (PL-566).
- 379 structures maintained by the Nemaha NRD.
- 156 structures maintained by landowners.
- 174 of the structures are 50+ years old.
- 152 of the structures are 30-50 years old.

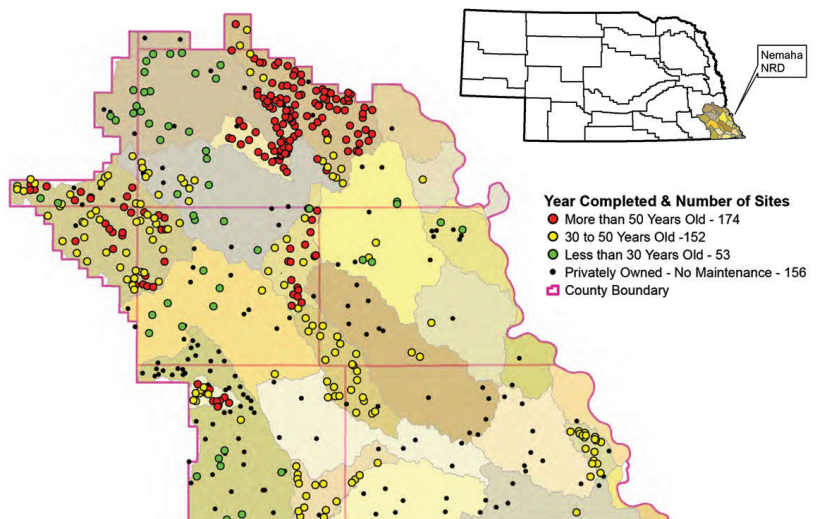
Challenges of Aging Infrastructure

- **Maintenance Needs:** Riprap placement, tree removal, and vegetation control to preserve structure integrity.
- **Repair Costs:** Addressing failed components is unpredictable and expensive.
 - In 2024, a repair on a dam near Adams was \$150,000.
- Proactive repairs are cost-effective compared to catastrophic dam failures.

Funding Constraints

- Federal programs exist for rehabilitation, decommissioning, and new construction, but funding remains limited.
- Nebraska's NRDs are tasked with maintaining critical infrastructure with constrained budgets, balancing immediate repairs and long-term stability.
- Increased state and federal investment is essential to maintaining the economic benefits and public safety these systems provide for Nebraska's future.

Nemaha NRD Flood & Erosion Control Structures with Maintenance Responsibilities by Age of Structure



MAINTAINING & REPAIRING WATERSHED STRUCTURES

Nebraska's Natural Resources Districts (NRDs) are working diligently to maintain aging watershed structures, many of which are past their designed 50-year lifespan. Two of the most pressing repair needs are primary spillways and riprap:

- **Primary Spillways:** Aging corrugated metal pipes rust and develop holes, pulling soil into the pipe and creating voids that can lead to dam failure. Repairs cost \$55,000–\$60,000 per structure. Slip lining, a trenchless method of reinforcing existing pipes, offers a cost-effective solution.
- **Riprap:** Adding rock to the lake side of a dam protects against wave erosion, with costs averaging \$25,000–\$30,000 per structure.

For the Nemaha NRD alone, repairing its 174 watershed structures that are over 50 years old would require \$8.7 million. In less than 10 years, they will have another 170+ structures reach their 50-year service life requiring additional repairs or rehabilitation. Without increased funding, maintaining these critical structures—and the public safety and economic benefits they provide—will be a growing challenge.

Investment in dam rehabilitation and repair is essential to:

- Safeguard public safety by addressing aging infrastructure.
- Preserve the economic benefits provided by dams, including flood protection and water management.
- Ensure these critical structures continue to protect Nebraska's communities and natural resources for future generations.

Support for the dam rehabilitation and related initiatives is vital to maintain and improve Nebraska's watershed infrastructure. Additional funding will empower local NRDs and NRCS to address aging dams, enhance public safety, and sustain the significant economic and environmental benefits these structures provide.



Little Blue NRD adds riprap to an earthen dam near Fairfield to prevent erosion.

“ Many residents within these watersheds or downstream may not realize the existence of the dams, but their value becomes evident during major rain events. ”

–Robert Lawson, NRCS State Conservationist



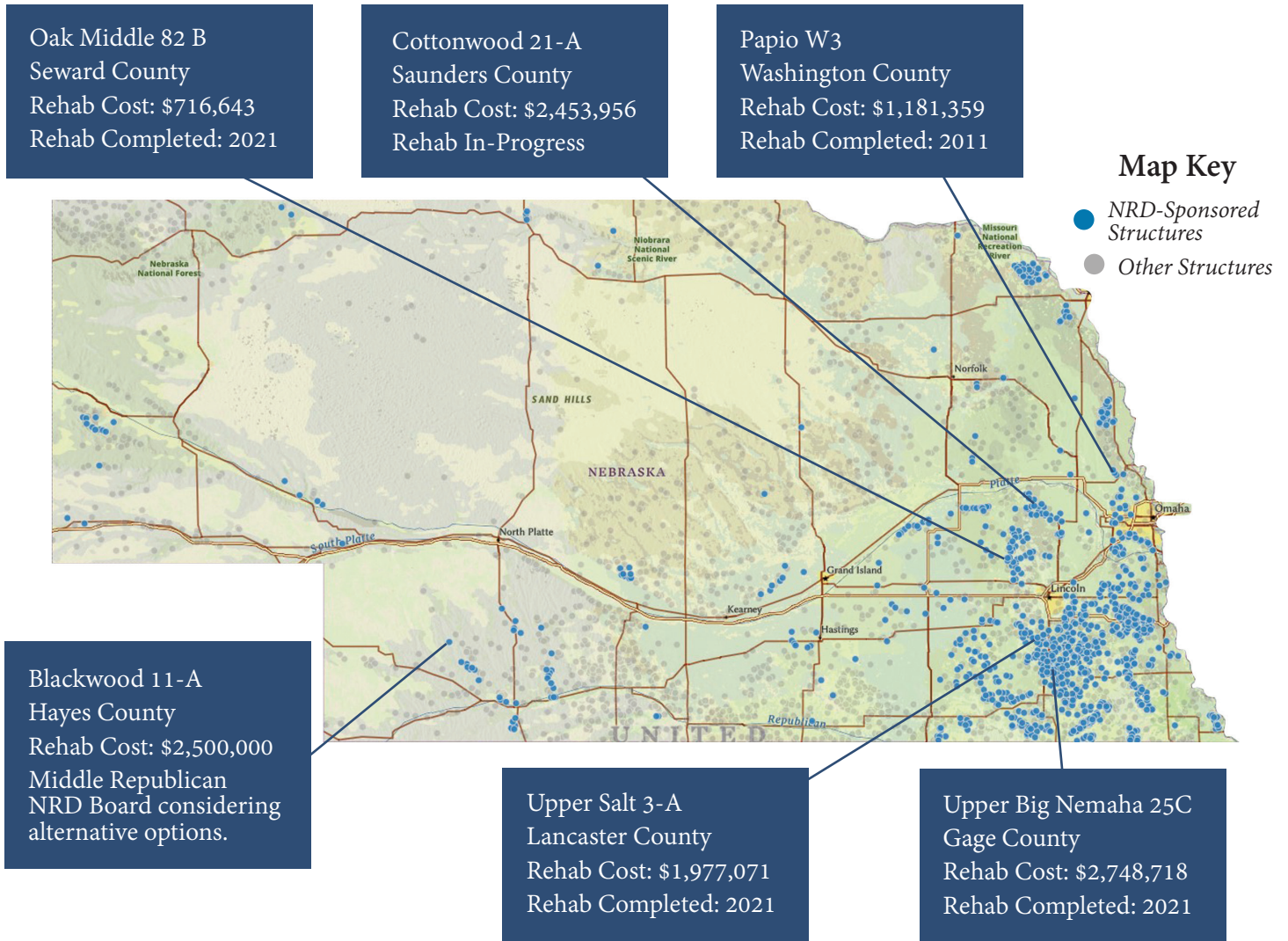
A crew slip lines a primary spillway on a dam in the Nemaha NRD. In 2024, the Nemaha NRD slip lined seven aging watershed structures.



Water runs through Lower Big Blue NRD's Plum Creek Structure in Pawnee County, which was completed in 1979. The primary spillway of the 45-year old structure was recently slip lined.

DAM REHAB: AN INVESTMENT IN SAFETY & STABILITY

In 2022 and 2023, Nebraska's NRDs worked with NRCS to complete Dam Assessments on 27 high hazard structures. From those assessments, nine of the 27 structures are recommended by NRCS for rehabilitation. The map below indicates six structures that were recently rehabilitated or are currently in the construction phase.



Lower Platte South NRD rehabilitated Upper Salt 3-A near Sprague, Nebraska. Originally constructed in 1955, the Upper Salt 3-A Dam was upgraded to meet high hazard standards and completed in fall 2021 at a cost of \$1.9 million. The project included raising and widening the dam, expanding the auxiliary spillway, increasing flood pool storage, installing a new inlet structure, a larger principal spillway pipe, and a plunge pool impact basin to slow discharge flows. NRCS covered 65% of the funding through the Watershed Rehabilitation Program, with Lancaster County contributing by realigning the county road as part of the project.