Oklahoma Corrugated Metal Pipe (CMP) Pilot Project

The Oklahoma Natural Resources Conservation Service (NRCS) is currently conducting a Corrugated Metal Pipe Pilot Project in partnership with the Oklahoma Conservation Commission (OCC) and Oklahoma conservation districts.

The project began in October 2020 and runs through October 2022, according to Chris Stoner, Oklahoma NRCS State Conservation Engineer who is overseeing the pilot project.

Background of the Proposal for the Project:

Oklahoma's Trey Lam knows that assisting the local project sponsors of Oklahoma's 2,107 Natural Resources Conservation Service (NRCS) watershed dams is a major undertaking. When you couple that many dams with a 35 year history of a focused O&M effort you begin to learn some things and recognize some patterns. As executive director of the Oklahoma Conservation Commission Lam listened to his staff and in the discussion surrounding materials, designs and trends seen in the field identifiable patterns emerged. Through his connection with the National Watershed Coalition (NWC) and National Association of State Conservation Agencies (NASCA) he learned that the issues that Oklahomans had identified existed in other states around the country. Discussions at several conferences and a few trips to Washington D.C. with the NWC led to the organization of a multi-state workgroup to further analyze the issues. The group focused on looking for solutions as well as new approaches to protecting the national, state and local investment these Watershed Program projects represent.

In December 2019 Lam and the Conservation Commission were hosts to the working group for a work session in Stillwater, Oklahoma. Watershed Sponsor leaders from Mississippi, Oklahoma, Texas and West Virginia put in a couple of intense days with the NWC serving as the meeting facilitator. A draft White Paper on the issues and a plan of action were the products of that Stillwater session.

Plans were made to go to DC in March of 2020 to meet with National NRCS Watershed Leaders and share the draft paper along with the high points and commonalities of the session. Then Came Covid.

To make a frustrating story shorter, Lam continued to visit with workgroup members and NRCS Headquarters watershed staff. "My previous affiliation, training and travel with the National Watershed Coalition had provided me the opportunity to meet, develop contacts and build relationships with Key NRCS leaders," said Lam.

“Those things became essential as we moved ahead to propose solutions to issues the group identified.” Working with NRCS at both the State and National level Lam and the work group sparked acknowledgement by NRCS of the legitimate nature of the issues identified.

In response NRCS made a commitment to explore options to address the issues. One of the first actions to occur was a pilot effort proposed by Oklahoma NRCS. The NRCS Oklahoma state office is now conducting a Corrugated Metal Pipe Pilot Project in partnership with the Oklahoma Conservation Commission and Oklahoma conservation district watershed project sponsors.

According to Chris Stoner, the Oklahoma NRCS State Conservation Engineer who is overseeing the pilot project the project began in October 2020 and runs through October 2022,

Background of Oklahoma’s Watershed Dams and Project Details:

Stoner said Oklahoma has 2,107 NRCS-assisted flood control dams that were constructed with sponsorship by local watershed project sponsors (usually an Oklahoma conservation district). Of the dams constructed there are 439 constructed between 1948 and 1977 that have metal pipe components. Some have corrugated metal inlet towers; some have corrugated metal pipes through the dam and some have a combination of concrete and metal components. Metal components were often used in lieu of concrete to reduce the cost of early projects, but unfortunately those savings disappeared through the years as the metal components deteriorated at a faster rate than those made of concrete. Project sponsors and OCC have repaired 101 of these dams. Over 300 dams with some metal components as part of their principal spillways have surpassed their 50-year evaluated life.

The deteriorating condition of some of these metal components have become a concern for the operation and safety of the dams. Many of these dams are classified as low hazard dams and probably would not immediately qualify for funding through the NRCS Watershed Rehabilitation Program. None the less, they provide critical protection and many important natural resource benefits.

As the work group pointed out this situation not only affects Oklahoma but other states as well. No federal funding was previously available to address the CMP issue. Lam and his NRCS partners decided that a pilot project would be a good method of analyzing the need for addressing the issues with these dams and to develop alternative methods for repairs. The Oklahoma NRCS Engineering staff also designed the pilot to identify the cost of repairs. Information on methods and costs gathered in the pilot will be valuable as NRCS considers addressing these issues on a larger scale.

The Oklahoma Pilot Project activity includes:

- Evaluation of 50 dams with metal components (all older than 50 years)
- Assessing each dam and spillway configuration
- Developing best alternatives and design procedures for various configurations
- Making repairs to the dams

- Developing a final report on the best solutions to address the remaining Oklahoma dams with CMP as well as others across the country.

The pilot project was spread across the state in 20 different watersheds and 14 different conservation districts to more evenly distribute workloads for both sponsors and NRCS. The distribution also lets the pilot cover several types of structural configurations and it includes experience with material performance under varying environmental conditions.

For the Oklahoma pilot NRCS is providing 65% of the cost of the project and the Conservation Commission is assisting the sponsors by providing 35% of the cost. Three million dollars was made available for two years for construction, design, and administrative costs.

"The pilot project will give us a better handle on the issues and hopefully broaden the effort to address them," says Stoner.

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