

A photograph of a river flowing through a wooded area. The water is turbulent, creating white rapids as it flows over rocks. The banks are lined with trees, some with bare branches and others with green leaves. The overall scene is a natural, outdoor setting.

**Upper Sager Creek
Regional Treatment
319 Grant Project No. 13-800**

**Funded by: EPA Region 6, ANRC and the City
of Siloam Springs**

First; was the Sager Creek Watershed Assessment and Management Plan

- ◆ Assessment and management plan completed in 2005
- ◆ Critical stream reaches were identified
- ◆ 14 major environmental perturbations affecting water quality, aquatic biota and aesthetics were also identified and ranked
- ◆ The City and the Sager Creek Advisory Commission used the management plan to initiate efforts to improve Sager Creek

Second; Was Implementation of the Management Plan

- ◆ **Stream channel restoration, bank stabilization and dam removal.**
- ◆ **Sub-watershed UTS-1 regional treatment through detention and wetland creation.**
- ◆ **Local ordinances**
- ◆ **Creation of stream side buffers**

Restoration in Sager Creek (Before and After)





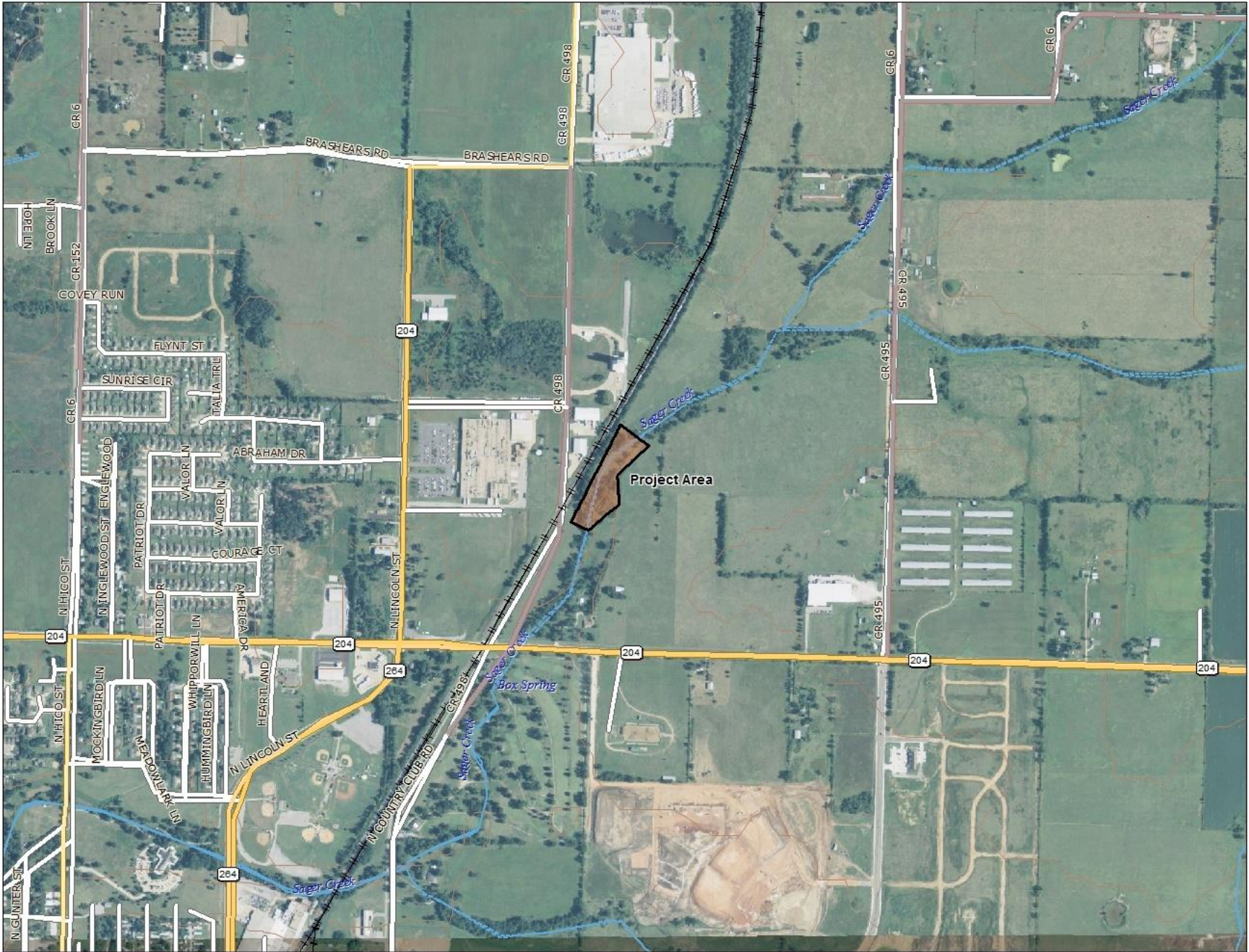
Sager Creek 2013

Now; Upper Sager Creek Regional Treatment Project

- ◆ **Establish a regional treatment feature in the SC-1 sub-watershed (upper Sager Creek)**
- ◆ **Project funded through 319 program**
- ◆ **Land for project donated by local citizen**
- ◆ **City of Siloam Springs completed the construction and maintain the feature**

Project Goal

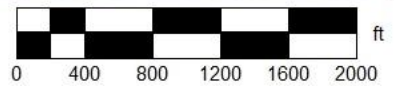
- ◆ The goal of this project was to construct a regional treatment feature in upper Sager Creek that will reduce peak flow, sediment and nutrient transport in the stream system during storm flow events.



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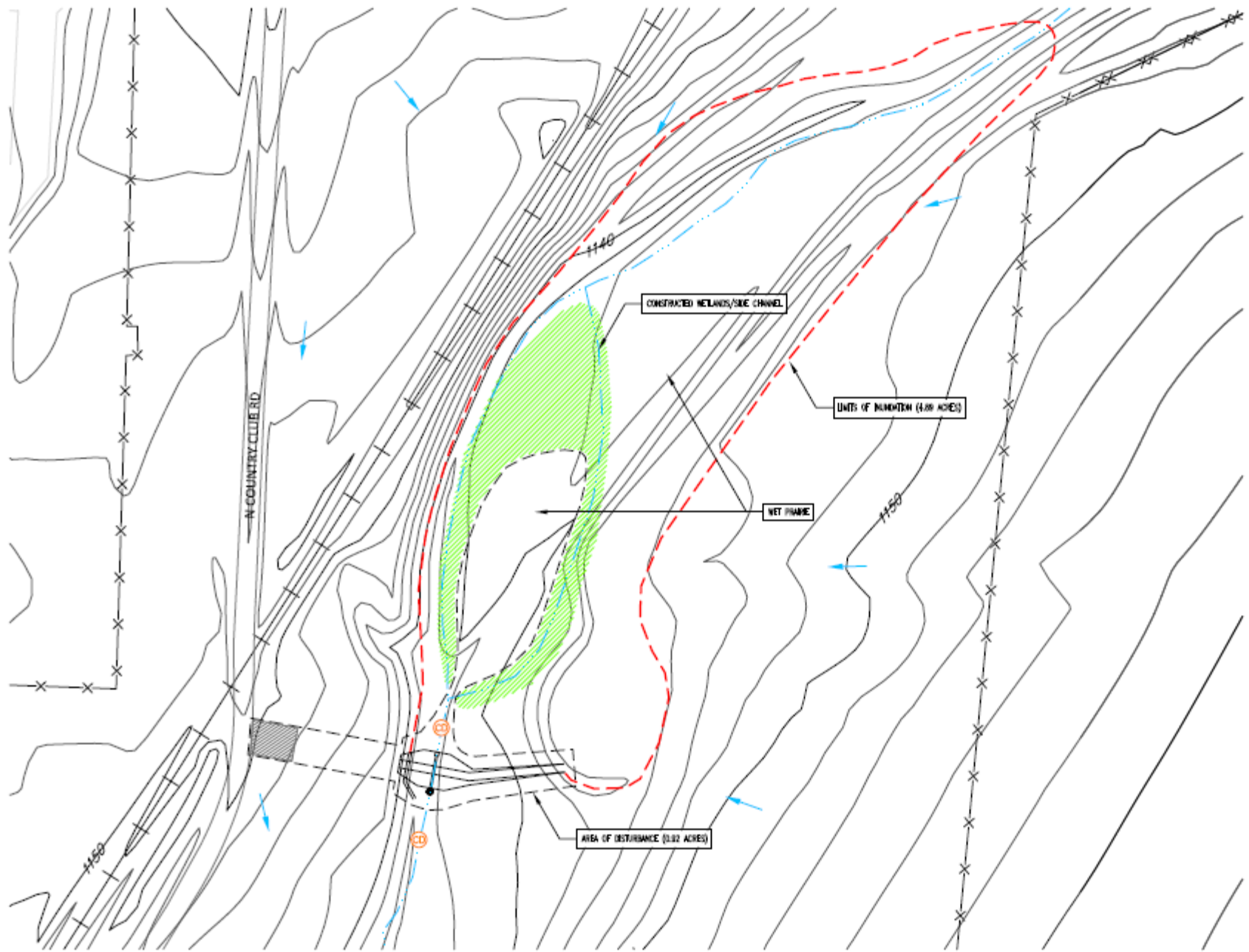
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Intended Outcome

- ◆ The project was anticipated to result in a system level reduction in sediment and nutrient loading and provide channel protection resulting from the decrease in peak flows.

Workplan Tasks

- ◆ **Task 1. Financial Review**
- ◆ **Task 2. Monitoring and Quality Assurance Project Plan (QAPP)**
- ◆ **Task 3. Topographic Survey**
- ◆ **Task 4. Design and Construction of Regional Treatment Feature**
- ◆ **Task 5. Reporting and Grant Coordination**



DESIGNED BY
 DRAWN BY ENU
 CHECKED BY GLP



DATE PLOTTED

OVERALL SITE MAP

UPPER SAGER REGIONAL WETLANDS

Schedule

- ◆ The project began on May 1, 2013, and all construction activities on upper Sager Creek were completed by March 31, 2014.



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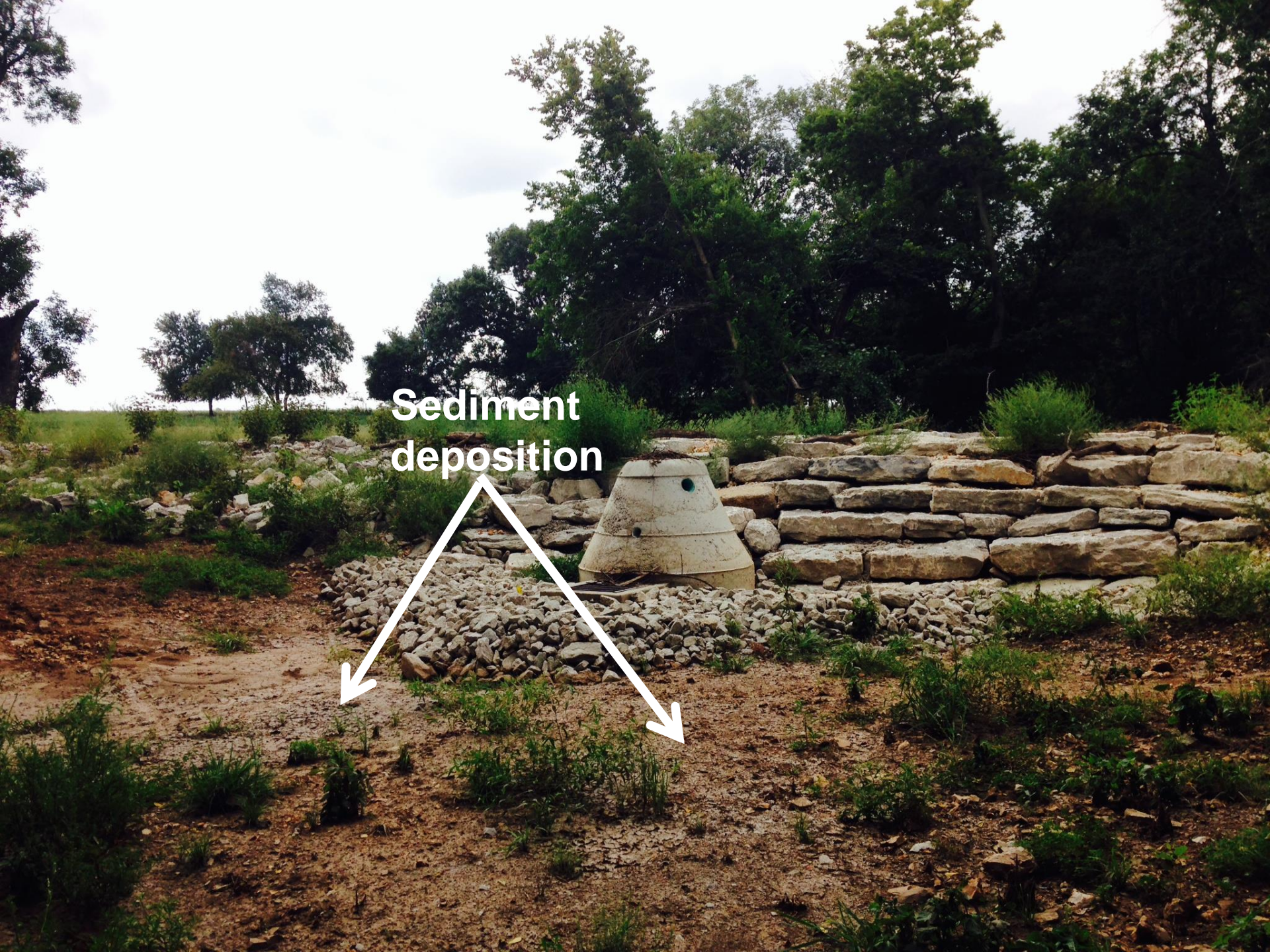
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**Sediment
deposition**

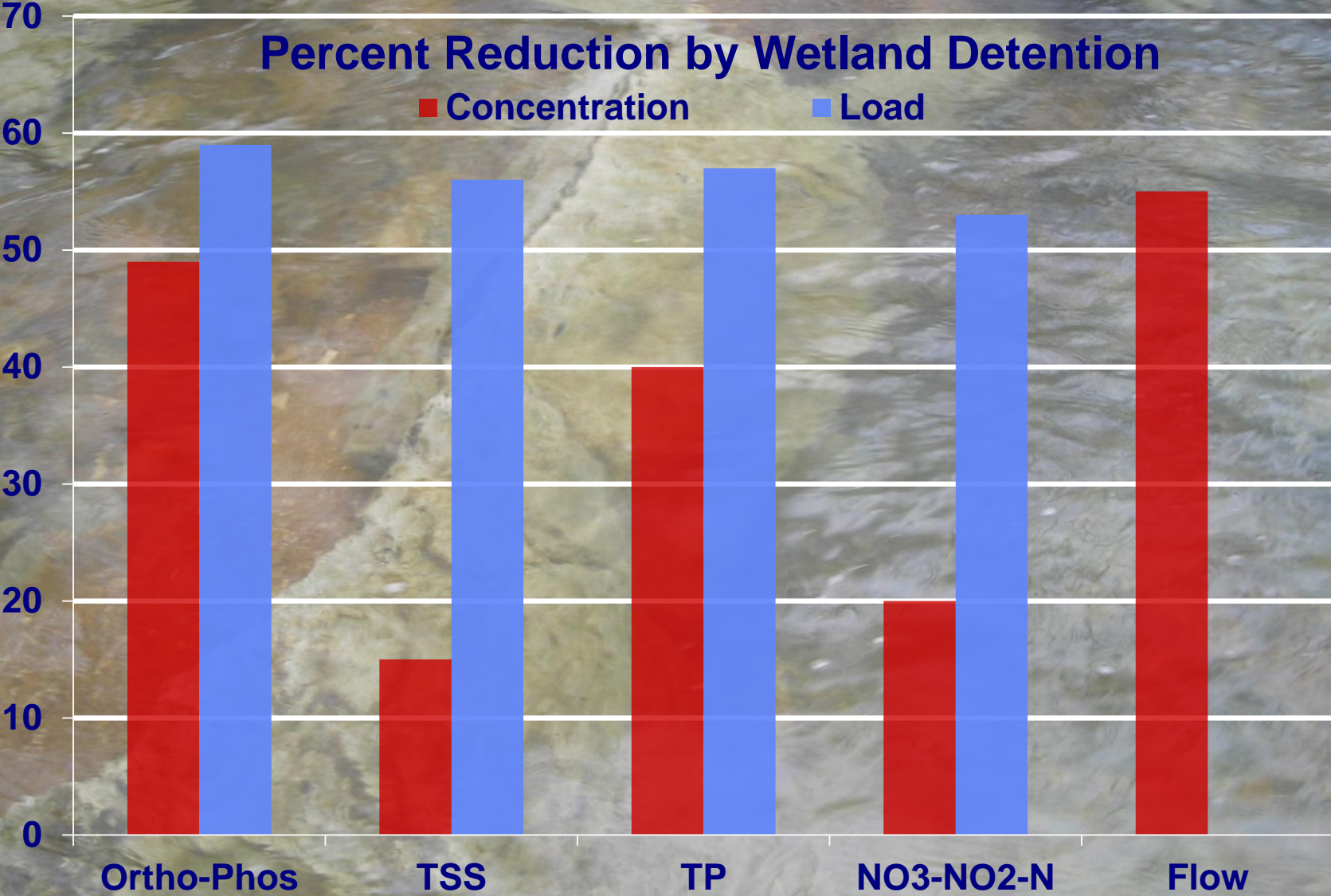


Measured Results

- ◆ Sediment (TSS), nitrate and phosphorus loading has been shown by the monitoring to have decreased by as much as 57%.
- ◆ Downstream flow during storm events has been reduced as much as 55% by the active detention of water in the SC-1 system and the low flow release structure.

Percent Reduction by Wetland Detention

■ Concentration ■ Load



Technical Transfer

- ◆ Communicate needs and concerns to team..... to ensure the outcome is what is needed and/or expected.
- ◆ More time for monitoring post construction. This will help prove the full pollutant reduction potential the treatment feature can attain.

Thanks to:



Region 6

Questions?

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