



# Grant Progress Report

## Water Quality and Storage Pilot Program 2022

**Grant Title:** Custer 7 & Sodus 32 Storage Projects - Lyon County, MN

**Grant ID:** C22-7759

**Grantee:** Lyon SWCD

**Fiscal Agent:** Lyon County

**Grant Day-to-Day Contact:** Anita Cauwels

**Grant Award (\$):** \$340,940.81

**Required Match (%):** 25

**Required Match (\$):** \$85,235.20

**Grant Execution Date:** 08/03/2022

**Grant End Date:** 12/31/2025

|             | Total Budgeted | Total Spent         | Balance Remaining* |
|-------------|----------------|---------------------|--------------------|
| Grant Funds | \$340,940.81   | <b>\$340,940.81</b> | \$0.00             |
| Match Funds | \$85,245.20    | <b>\$89,140.70</b>  | (\$3,895.50)       |
| Other Funds | \$0.00         | <b>\$0.00</b>       | \$0.00             |
| Total       | \$426,186.01   | <b>\$430,081.51</b> | (\$3,895.50)       |

\*Grant balance remaining is the difference between the Awarded Amount and the Spent Amount. Other values compare budgeted and spent amounts.

|                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Project Abstract</b> | Lyon County and Lyon SWCD are proposing a road retention and earthen embankment to improve storage in an existing wetland basin currently separated by Lyon County Road 63 (CR63). Additionally, a grade stabilization structure will provide temporary storage during peak flows from a 3,235 acre watershed, including the entire Lyon County Ditch Number 14 (CD14) drainage area. A drainage improvement for CD14 was dismissed 3/2/2022 because the improved tile capacity and increased discharge of 43.47 cfs would pose significant environmental impacts to receiving waters. Incorporating storage will reduce the necessary drainage capacity and address downstream impacts from the current discharge of CD14. Storage will also mitigate climate change impacts of more frequent and intense storm events along with fluctuating precipitation patterns. The projects are located in the North Twin Lake-Cottonwood River HUC12, which with Rock Lake subwatershed make up reach 07020008-502. This reach is listed on the 2022 Draft Minnesota Impaired Waters List for aquatic life and aquatic recreation impairments. Capturing agricultural runoff through storage would aim to limit the identified stressors of total suspended sediments (TSS), nutrients, and pathogens on |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                     | receiving waters. The projects' estimated reductions to the Cottonwood River are 172.46 tons/year TSS and 172.46 lbs/year phosphorus. This estimated TSS reduction is 14.46% of the impairment goal to delist, based on the Draft 2020 Cottonwood WRAP's. Hydrograph modeling was completed at the grade stabilization outlet into the unnamed creek and at the HUC12 outlet (confluence of the Cottonwood River and Meadow Creek). The modeling details that improvements will decrease the peak flows at both the structure outlet and HUC12 outlet during both 10 and 100-year runoff events. 46.55 acre-feet of storage is anticipated. The SWCD has collaborated with and received support from all property owners involved along with local and State agencies. |
| <b>Proposed Measurable Outcomes</b> | Estimated reductions of 172.46 T/yr TSS and 172.46 lbs/yr phosphorus. At AOI outlet, flow reductions of 78 CFS for 10-year event and 18 CFS for 100-year event. At HUC12 outlet, flow reductions of 30 CFS for 10-year event and 7 CFS for 100-year event.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

### Budget Details

| <i>Activity Name</i> | <i>Category</i>                  | <i>Source Type</i>  | <i>Source Description</i>                              | <i>Budgeted</i> | <i>Spent</i> | <i>Balance Remaining</i> | <i>Match Fund?</i> |
|----------------------|----------------------------------|---------------------|--------------------------------------------------------|-----------------|--------------|--------------------------|--------------------|
| Admin                | Administration/Coordination      | Local Fund          | In-kind contribution                                   | \$10,274.01     | \$12,668.77  | (\$2,394.76)             | Y                  |
| Storage Project      | Agricultural Practices           | Local Fund          | Lyon County                                            | \$57,728.25     | \$57,728.25  | \$0.00                   | Y                  |
| Storage Project      | Agricultural Practices           | Local Fund          | CD 14                                                  | \$17,242.94     | \$18,743.68  | (\$1,500.74)             | Y                  |
| Storage Project      | Agricultural Practices           | Current State Grant | Custer 7 & Sodus 32 Storage Projects - Lyon County, MN | \$232,195.43    | \$231,545.41 | \$650.02                 | N                  |
| Easements            | Easements                        | Current State Grant | Custer 7 & Sodus 32 Storage Projects - Lyon County, MN | \$38,175.38     | \$38,175.38  | \$0.00                   | N                  |
| Engineering          | Technical/Engineering Assistance | Current State Grant | Custer 7 & Sodus 32 Storage Projects - Lyon County, MN | \$70,570.00     | \$71,220.02  | (\$650.02)               | N                  |

## Indicator Summary

| Indicator Category                    | Proposed Indicator          | Total Value | Unit    |
|---------------------------------------|-----------------------------|-------------|---------|
| Water Pollution (Reduction Estimates) | Phosphorus (Est. Reduction) | 172.46      | Lbs/Yr  |
| Water Pollution (Reduction Estimates) | Soil (Est. Savings)         | 492.75      | Tons/Yr |
| Water Pollution (Reduction Estimates) | Sediment (Tss)              | 172.46      | Tons/Yr |

| Indicator Category                    | Final Indicator             | Total Value | Unit    |
|---------------------------------------|-----------------------------|-------------|---------|
| Water Pollution (Reduction Estimates) | Phosphorus (Est. Reduction) | 172.46      | Lbs/Yr  |
| Water Pollution (Reduction Estimates) | Sediment (Tss)              | 172.46      | Tons/Yr |
| Water Pollution (Reduction Estimates) | Soil (Est. Savings)         | 492.75      | Tons/Yr |

## Grant Activities

### Activity Name: Admin

**Activity Category:** Administration/Coordination

**Staff time?:** No

**Description:** Administration of the grant by SWCD staff and Highway Department staff to implement storage projects. Staff workload will include permitting, wetland impact review, easement development and review, and landowner coordination efforts.

#### Budget Details

| Source Type | Source Description   | Budgeted    | Spent       | Balance Remaining | Last Transaction Date | Match Fund? |
|-------------|----------------------|-------------|-------------|-------------------|-----------------------|-------------|
| Local Fund  | In-kind contribution | \$10,274.01 | \$12,668.77 | (\$2,394.76)      | 12/31/2024            | Y           |

#### Actual Results

| <u>Results</u>                                                                                                                          | <u>Date Added</u>     |
|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
|                                                                                                                                         | 7/12/2022 11:26:36 AM |
| John Biren - 2022 Hours 4 hours x Billing Rate \$77.97 = \$311.88 2023 Hours 45 hours x Billing Rate \$84.01 = \$3,780.45 2024 Hours 72 | 8/28/2025 2:39:39 PM  |

**Results****Date Added**

hours x Billing Rate \$85.88 = \$6,183.36 TOTAL \$10,275.69 Luke Olson 2022 Hours 20 Hours x \$51.97 Billing Rate = \$1,039.40 2023  
Hours 4 Hours x \$54.21 Billing Rate = \$216.84 TOTAL \$1,256.21

**Activity Name: Easements****Activity Category:** Easements**Staff time?:** No

**Description:** Portion of maximum easement payments based on 2018 RIM rates for crop and non-cropland. 18.17 acres of non-cropland and 5.06 acres of cropland will be eligible for easement payments. Easement will be perpetual and recorded on the property deed. The Sodus 32 flowage easements will be held by Lyon County and the Custer 7 flowage easements will be held by Lyon County Drainage Authority (County Ditch No. 14). Lands donated within the project footprint will be applied as match. Easement drafting, recording and title review expenses incurred by landowners and the SWCD will be expensed to the grant.

**Budget Details**

| <u>Source Type</u>  | <u>Source Description</u>                              | <u>Budgeted</u> | <u>Spent</u> | <u>Balance Remaining</u> | <u>Last Transaction Date</u> | <u>Match Fund?</u> |
|---------------------|--------------------------------------------------------|-----------------|--------------|--------------------------|------------------------------|--------------------|
| Current State Grant | Custer 7 & Sodus 32 Storage Projects - Lyon County, MN | \$38,175.38     | \$38,175.38  | \$0.00                   | 03/04/2025                   | N                  |

**Actual Results****Results****Date Added**

6/29/2022 11:24:11 AM

**Activity Name: Engineering****Activity Category:** Technical/Engineering Assistance**Staff time?:** No

**Description:** Bolton & Menk Inc. design the storage projects and provide construction oversight, inspection and construction certification of each project. Specifically, Shaun Luker, P.E. License No. 48756 and Duane Hansel, P.E. License No. 14972 will be the project engineers through Bolton & Menk Inc. Lyon County Highway Engineer Aaron VanMoer, P.E. License No. 50428 will provide construction oversight and inspection of the 230th Ave road raise and road embankment protection.

**Budget Details**

| <u>Source Type</u>                                                                                                                  | <u>Source Description</u>                              | <u>Budgeted</u> | <u>Spent</u> | <u>Balance Remaining</u> | <u>Last Transaction Date</u> | <u>Match Fund?</u> |
|-------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|-----------------|--------------|--------------------------|------------------------------|--------------------|
| Current State Grant                                                                                                                 | Custer 7 & Sodus 32 Storage Projects - Lyon County, MN | \$70,570.00     | \$71,220.02  | (\$650.02)               | 01/02/2025                   | N                  |
| <b>Actual Results</b>                                                                                                               |                                                        |                 |              |                          |                              |                    |
| <u>Results</u>                                                                                                                      |                                                        |                 |              |                          | <u>Date Added</u>            |                    |
| Expenses associated with Soil Technologies soil boring and reporting: \$10,231.50 for Sodus 32 dam and \$8,872.50 for Custer 7 dam. |                                                        |                 |              |                          | 6/29/2022 11:24:25 AM        |                    |

|                                                                                                                                                                                                          |                        |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| <b>Activity Name: Local Contribution</b>                                                                                                                                                                 |                        |
| <b>Activity Category:</b> Technical/Engineering Assistance                                                                                                                                               | <b>Staff time?:</b> No |
| <b>Description:</b> Technical/Engineering Assistance, including but not limited too: permitting oversight, staff workload with landowner participation and project implementation, easement development. |                        |
| <b>Actual Results</b>                                                                                                                                                                                    |                        |
| <u>Results</u>                                                                                                                                                                                           | <u>Date Added</u>      |
|                                                                                                                                                                                                          | 6/29/2022 11:27:56 AM  |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                        |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| <b>Activity Name: Storage Project</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                        |
| <b>Activity Category:</b> Agricultural Practices                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <b>Staff time?:</b> No |
| <b>Description:</b> Storage to be achieved through three grade stabilization structures, including: Sodus 32 embankment, Custer 7 embankment, and 230th Ave road raise and armoring. All structures will meet NRCS standards and specifications for grade stabilization structure. The Lyon County Highway Department will contribute 510 tons of aggregate surfacing for 230th Ave, blading/leveling and traffic control as match for the project. Landowner's and/or land operators will be responsible for all storage component operation and maintenance requirements. The SWCD will conduct site spot checks to ensure storage components are functioning as designed. |                        |
| <b>Budget Details</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                        |

| <u>Source Type</u>  | <u>Source Description</u>                              | <u>Budgeted</u> | <u>Spent</u> | <u>Balance Remaining</u> | <u>Last Transaction Date</u> | <u>Match Fund?</u> |
|---------------------|--------------------------------------------------------|-----------------|--------------|--------------------------|------------------------------|--------------------|
| Local Fund          | Lyon County                                            | \$57,728.25     | \$57,728.25  | \$0.00                   | 11/27/2024                   | Y                  |
| Current State Grant | Custer 7 & Sodus 32 Storage Projects - Lyon County, MN | \$232,195.43    | \$231,545.41 | \$650.02                 | 01/08/2025                   | N                  |
| Local Fund          | CD 14                                                  | \$17,242.94     | \$18,743.68  | (\$1,500.74)             | 01/16/2025                   | Y                  |

#### Actual Results

| <u>Results</u>                                                                                                                                                                                                                                                                      | <u>Date Added</u>     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
|                                                                                                                                                                                                                                                                                     | 6/29/2022 11:24:36 AM |
| Custer 7 - Sodus 32 Water Quality Storage Grant - Pilot - Project completed on 12-6-2024. Project consisted of three grade stabilizations. TSS Reductions - 172.46 T/yr. Phosphorous 172.46 Lbs/yr and Soil Estimated Savings 492.75 / T/yr. Total Project Storage 46.55 acre-feet. | 11/3/2025 1:33:01 PM  |

#### Final Indicators

| <u>Indicator</u>            | <u>Total Value</u> | <u>Unit</u> |
|-----------------------------|--------------------|-------------|
| Phosphorus (Est. Reduction) | 172.46             | Lbs/Yr      |
| Sediment (Tss)              | 172.46             | Tons/Yr     |
| Soil (Est. Savings)         | 492.75             | Tons/Yr     |

|                       |                                                                |                          |
|-----------------------|----------------------------------------------------------------|--------------------------|
| Activity Action Name: | County Ditch 14 - Water & Quality Storage Grant                | Activity Count: 3        |
| Practice Type:        | 410 - Grade Stabilization Structure                            | Size/Units: 3 - Count    |
| TA Provider/JAA:      | Private Consultant                                             | Lifespan: 25 Years       |
| Practice Description: | Three grade stabilization structures with underground outlets. | Install Date: 12/06/2024 |
|                       |                                                                | Mapped: Yes              |

| Indicator Name              | Units   | Value  | Calculation Tool                | Waterbody                                              |
|-----------------------------|---------|--------|---------------------------------|--------------------------------------------------------|
| Soil (Est. Savings)         | Tons/Yr | 492.75 | Bwsr Calc (Gully Stabilization) | 070200080102 HUC 12 North Twin Lake - Cottonwood River |
| Sediment (Tss)              | Tons/Yr | 172.46 | Bwsr Calc (Gully Stabilization) | 070200080102 HUC 12 North Twin Lake - Cottonwood River |
| Phosphorus (Est. Reduction) | Lbs/Yr  | 172.46 | Bwsr Calc (Gully Stabilization) | 070200080102 HUC 12 North Twin Lake - Cottonwood River |