OKABENA-OCHEDA WATERSHED DISTRICT
2022 ANNUAL REPORT

The Ocheyedan River flowing into Lake Bella during fall 2022 dry conditions

OKABENA-OCHEDA WATERSHED DISTRICT
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OKABENA-OCHEDA WATERSHED DISTRICT

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OKABENA-OCHEDA WATERSHED DISTRICT
2022 Annual Report

Clean Water Partnership
Worthington and the district formed the Okabena-Ocheda-Bella Clean Water Partnership Joint Powers Organization (JPO) in 1998 to accomplish the goals established by the 1993 Clean Water Partnership Implementation Plan. The governing board consists of two members from the city council, two managers from the watershed district and a city resident appointed at-large.

Since its formation, the JPO has paid annual incentives to install and maintain grass buffer strips, restored a wetland, installed, and managed water quality improvement basins, monitored surface water quality, measured lake water levels, and conducted studies on the sediment deposition in Sunset Bay, carp populations and causes of Lake Okabena's impairments.

The district completed the following JPO activities in 2022:

1. Provided administrative and technical assistance to manage board affairs and structures.
2. Conducted water quality monitoring of Okabena and Ocheda lakes from June through September.
3. Tested Lake Okabena algae blooms at Lake Front Park and Centennial Park beaches for microcystins toxins. Worked with the city Public Works Department to notify the public when harmful algae blooms were detected.
4. Managed water levels at the Prairie View project pond. Removed sediment from the sand filter benches to restore permeability. Sprayed thistles and cut unwanted cottonwood and willow trees near the pond and filter benches.
5. Issued incentive payments for 128.4 acres of grass filter strips covering 90 percent of the streams in the Lake Okabena sub-watershed.
6. Toured the Lake Redwood restoration project site in July with CWP board and Lake Okabena Improvement association members to learn about a state-of-the-art lake dredging operation.

The district will continue to work with Worthington in 2023 to monitor lake water quality and harmful algae blooms, provide filter strip incentives and operate and maintain the Prairie View project site. The district will also work with the city to fund the local share of the Crailsheim Water Quality Improvement Pond engineering and construction costs during 2023 and 2024.

Conservation Practices
The district budgets money annually to install best management practices to prevent flooding, and improve and protect surface water and groundwater resources. Below is a summary of how the money was spent in 2021.

1. Issued 43 CRP filter strip incentive payments totaling $36,577 and covering 244.3 acres district wide. The filter strips protect about 10 miles of stream courses and 12 miles of lake and wetland shorelines.
2. Issued three cost-share payments totaling $1500 for upgrading individual sewage treatment systems.

The district will continue to pay filter strip incentives and provide cost-share payments for eligible best management practices in 2023.

Lake Ocheda Enhancement Project
The Lake Ocheda management plan was approved by the DNR in December 2017. The plan allows for periodic lake level drawdowns to reduce carp populations, improve water quality, promote wildlife habitat, and reestablish submerged vegetation. Construction modifying the outlet dam to make the drawdown possible was mostly complete in December 2019.

The first water level drawdown was done during the fall and winter of 2020/2021. Due to warm weather for most of the season, the lake did not freeze to the bottom. Low oxygen conditions were achieved in the lake for a few weeks in February killing many rough fish and gamefish, but a significant population of carp and other species survived under the ice. Despite the fish kill, water clarity did not improve, nutrients remained high and no submerged vegetation was observed during the 2021 growing season.

The lake plan's advisory committee met and decided to attempt another drawdown during the winter of 2021/2022. After receiving permission from the DNR, stoplogs were removed for the second drawdown in early September 2021. Heavy cattail and reeds vegetation growth in the Ocheyedan River channel between lakes Ocheda and Bella slowed outflow. Lake Ocheda levels remained within a half-foot of the full-service level at the end of December 2021. Two to three feet of well oxygenated water remained under the ice until spring in most locations.

Below are actions taken in 2022 and observations on the effectiveness of the two lake level drawdowns.

1. The 2021/2022 winter drawdown was generally unsuccessful with water levels only dropping about 0.8 feet and dissolved oxygen concentrations remaining high in the water under the ice over the winter.
2. The stoplogs were reinstalled and fish screens lowered on March 24th to allow the lake to refill.
3. No winter killed fish were observed as the ice melted in March and April.
4. The DNR stocked additional perch and northern pike in the lake during the early spring.
5. Water quality samples were taken monthly during June through September. Water clarity and phosphorus concentrations showed no improvement from conditions before the drawdowns began in 2020.
6. DNR staff conducted a survey of the surviving fish population in June. Significant numbers of rough fish were present in the lake and small carp, likely hatched after the first drawdown, were caught.
7. The DNR cancelled the submerged vegetation survey scheduled for August after observations from shore and drone photos showed no significant aquatic vegetation regrowth.

The results of the attempted drawdowns over two consecutive winters were disappointing. None of the water quality, vegetation or habitat goals were met. The Ocheda Management Plan advisory committee will continue to monitor the lake and rethink strategies for achieving the lake's goals before the next drawdown is tried three to five years from now.

Lake Okabena Carp Population Analysis and Control Project

In 2018, Worthington allocated approximately $52,000 for a multi-year carp population analysis and control project. The Olson Trust board approved approximately $35,000 more for the project. Three electrofishing transect surveys were completed to estimate the lake's carp population density. All the surveys agreed that the lake's carp biomass density exceeded the 100 kg/ha threshold for maintaining healthy water quality but did not agree about by how much.

Radio telemetry tags were implanted in 15 carp in 2019 and their movements were tracked during 2019 and 2020. Passive integrated transponder (PIT) tags were implanted in about 178 carp to better assess their carp population after removal events. Radio telemetry tags were implanted in another 20 carp during October 2020.

Radio tagged carp were located during January and February 2021 to facilitate potential seining and estimate the size of the lake's carp population. Telemetry and sonar data showed a school of fish large enough for Deslauriers Fishing to sein on February 25th. A total of 600 pounds of carp were caught during the day's haul. The captured carp were measured and scanned but none had telemetry or PIT tags. Deslauriers Fishing was paid $3,500 to subsidize the fishing costs. Radio telemetry tagged fish were located weekly during the spawning season and monthly thereafter until the tag's batteries were depleted in September. Deslauriers Fishing attempted to remove carp again on December 2nd. About 800 pounds more carp were caught. None were radio tagged. Damage to the

nets and cold weather prevented making additional hauls before lake freeze up.

The district contracted with Carp Solutions in 2022 to better determine the carp biomass density for the lake. To accomplish this electrofishing transects were completed. Pitt tags were implanted in 101 carp. Box nets were installed and baited with cracked corn. Carp were removed using the box nets twice during July. Of the 676 carp captured and removed from the lake, 11.8% were PITT tagged. Carp Solutions estimated that about 4600 carp individuals remain in the lake and the biomass density is 68.8 kg/ha.

Since the tag and capture gives the most accurate population estimate of the two methodologies used, it appears that carp populations are below the threshold where they degrade Lake Okabena's water quality. The district, Worthington and Olson Trust partnership will explore options in 2023 for keeping the carp population low in the future.

Public Information and Education
The district works with partners to provide watershed related educational opportunities for Worthington's residents, area civic groups and schools. Below are the 2022 accomplishments.

1. Worked with Nobles SWCD to provide walking tours and Prairie Ecology Bus activities at the Worthington Prairie Wetland Learning Area for all the 5th grade students in the district's schools.
2. Updated the district website monthly.
3. Worked with Worthington to accomplish educational components of the city's Stormwater Pollution Prevention Plan including:
    - Distributing three pollution prevention factsheets to Worthington Public Utilities customers.
    - Installing 157 catch basin markers in Worthington.

Crailsheim Water Quality Improvement Pond Grant
During 2021, the OOWD and the Worthington school board worked with Houston Engineering to propose a water quality improvement pond to detain and clean up water flowing through the school district's Crailsheim property. The chosen alternative will prevent 327 pounds of phosphorus pollution from reaching Lake Okabena annually and reduce sediment loading by 234,464 pounds per year.

In early 2022, the school board agreed to issue and easement to the OOWD to build, operate and maintain the project if a state grant is received. The OOWD applied for a $970,312 Clean Water Legacy Grant in August. The grant was approved by the Board of Water and Soil Resources in December. The grant will require a minimum $242,578 local match.

The OOWD will work with the school district to develop and sign and record an easement in early 2023. Work on the final project design and permits will begin as soon as the grant agreement is signed – likely in February. Bidding and construction are expected to occur in 2024.

District Property Management
The district owns 414 acres of land in four locations. Approximately 15 acres is managed as pollinator habitat, with the rest managed for water quality protection, recreational activities or wildlife habitat. At Lake Bella Park, the district operates and maintains the Stateline Dam structure, a boat landing, park shelters, roads, trails and a restroom. Below are the land management activities completed in 2022.

1. Mowed and maintained the trails at Bella Park.
2. Picked up litter and mowed around the picnic shelters and restrooms as needed at Bella Park.
3. Sprayed and cut trees growing on the Lake Bella dam.
4. Removed litter multiple times at the St. John Property.
5. Sprayed herbicide to kill volunteer cottonwood and willow trees growing in the St. John property waterway to allow for future maintenance.

Construction Site Inspections
The district works with Worthington to require erosion and sediment control permits for construction sites and complete inspections monitoring compliance with watershed district and state required plans. During 2022, the district conducted 118 inspections at 20 different NPDES permitted construction sites in Worthington. District staff communicated regularly with the City Engineer and Stormwater Pollution Prevention Plan responsible parties about installation and maintenance of required Best Management Practices

Permits and Drainage Project Notifications
The district reviewed applications and issued permits eighteen projects in 2022 including:

1. Six large projects requiring implementation of Stormwater Pollution Prevention Plans (SWPPP),
2. Nine smaller construction projects requiring erosion and sediment control, and
3. Three shoreland stabilization projects.

Okabena-Ocheda Watershed District
2022 Income and Expenses

Ordinary Income/Expense	
Income	
Checking Interest	24.27
CWP Reimbursements	11,513.40
District Levy	251,047.03
Insurance Premium Refund	1,569.00
Local Government Aid	1,620.33
Money Market Account Interest	998.20
Permit Inspection Fees	225.00
Property Rent	1,400.00
Storm Water Education	9,220.01
Total Income	277,617.24
Expense	
Audits	4,300.00
BMP Cost-Share	1,200.00
CWP Board Expense Contributions	2,473.00
Education Expenses	2,190.24
Filter Strip Incentives	35,967.00
Insurance and Bonds	3,415.00
Lake Ocheda Enhancement Project	16.16
MAWD Dues	2,424.00
MAWD Meeting Expenses	1,460.66
Miscellaneous	10.00
Office Expenses	6,428.41
Payroll Expenses	95,091.50
Property Maintenance	15,607.51
Property Taxes	15.86
Public Notices	219.23
Staff and Managers Training	143.47
Storm Water Education Expenses	3,399.51
SWCD Services	5,000.00
Vehicle Maintenance	120.81
Water Sampling	1,246.52
Total Expense	180,728.88
Net Ordinary Income	96,888.36
Other Income/Expense	
Other Income	
Okabena Carp Control Reimburse	31,162.00
Total Other Income	31,162.00
Other Expense	
ISD 518 Crailsheim Engineering	9,099.90
Okabena Carp Population	33,529.15
Total Other Expense	42,629.05
Net Other Income	-11,467.05
Net Income	**85,421.31**