CHAPTER 6:
Water Programs

The goal of the Water Programs is to protect the surface water and groundwater resources for all purposes in Nebraska. This chapter describes the programs administered by the Water Programs, including petroleum remediation programs, surface water and groundwater monitoring and assessment programs, water quality planning, agriculture programs, wastewater permitting and certification programs, financial assistance programs, and drinking water programs.

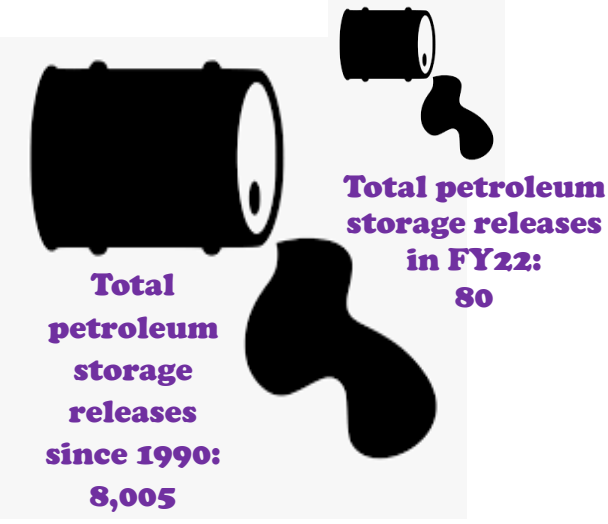
Petroleum Remediation Program

Activities regarding the Petroleum Remediation Program involve two interrelated areas:

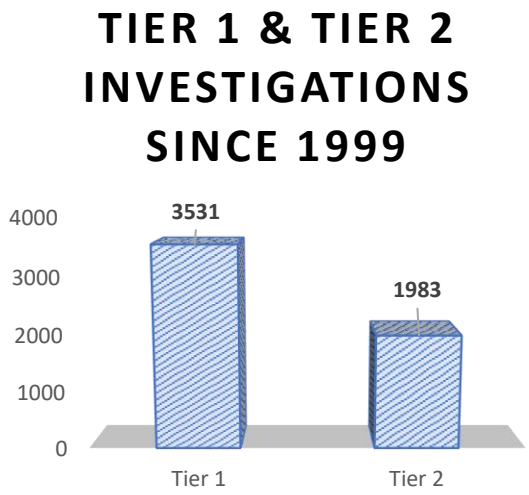
1. Overseeing the **investigation and cleanup** of petroleum contamination resulting from leaking above ground and underground storage tanks as well as other sources such as pipeline leaks and transportation spills; and
2. Administering a **financial assistance program** for persons responsible for investigation and cleanup costs due to petroleum releases from tanks.

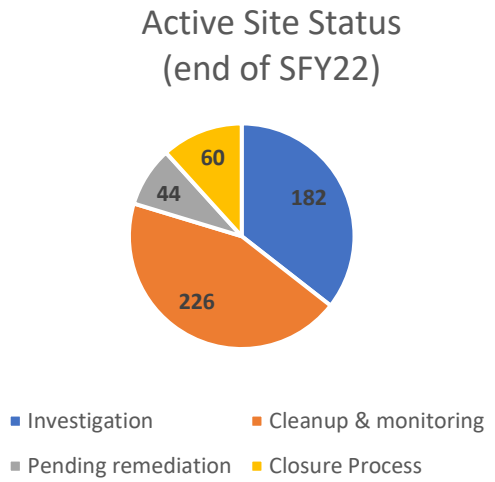
Investigation and Cleanup

The first step in the Petroleum Remediation Program is the review of tank removal assessment reports or other documentation to determine whether contamination exists. If contamination is present, NDEE decides whether more investigation and cleanup are required. NDEE also determines whether parties who caused the contamination are available and financially capable of assuming responsibility.



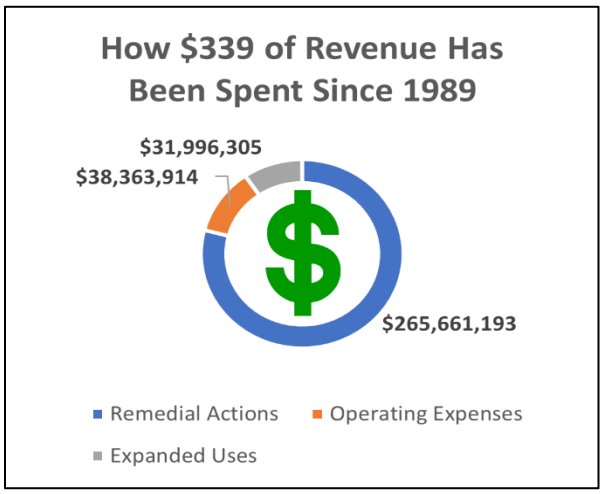
The program has incorporated Risk-Based Corrective Action (RBCA) procedures into regulations and accompanying guidance. The RBCA process allows for the evaluation of all petroleum release sites based on the risk they pose to human health and the environment. Those that pose no significant risk are closed; those that pose significant risk are prioritized for further work. Since 1999, the program has been collecting site-specific information needed for Tier 1, the first step in the RBCA process. Sites that fail Tier 1 are activated for Tier 2, which is a more detailed investigation and the next step in the RBCA process. In FY 2022, 95 Tier 1 investigations and 26 Tier 2 investigations were initiated. If sites fail Tier 2, they are normally scheduled for cleanup.





Financial Assistance – Petroleum Release Remedial Action Reimbursement Fund

When contamination has been found at a site and NDEE has determined that more investigation and/or cleanup is required, NDEE will also determine the "Responsible Person." This term refers primarily to those who owned or operated the tank or other source when the leak occurred. Those entities determined to be a Responsible Person may be eligible for reimbursement through the Petroleum Release Remedial Action Reimbursement Fund.



The Fund was created by the Legislature in order to help tank owners pay for the costs associated with assessing and cleaning up any petroleum releases from tanks as well as meet the $1 million financial responsibility requirement established for underground storage tanks. Costs for both underground and above-ground tank releases are eligible for reimbursement. The program's activities in this area include receiving and processing applications for reimbursement from the fund and subsequently issuing reimbursements for eligible costs. To

assist applicants, the program developed a guideline entitled “Reasonable Rates Schedule and Reimbursement Guidance Manual” which is available on the web site.

Revenue was $12.3 million in FY22. During the year, NDEE reimbursed about $3.3 million to Responsible Persons for work done at 119 different sites, and $7.5 million was spent to clean up orphan sites. An additional $551,278.38 of revenue was transferred to NDEE’s Superfund program, as directed by legislation passed in 2017. As of June 30, 2022, over $265 million total has been spent on site cleanups.

Responsible Person Sites

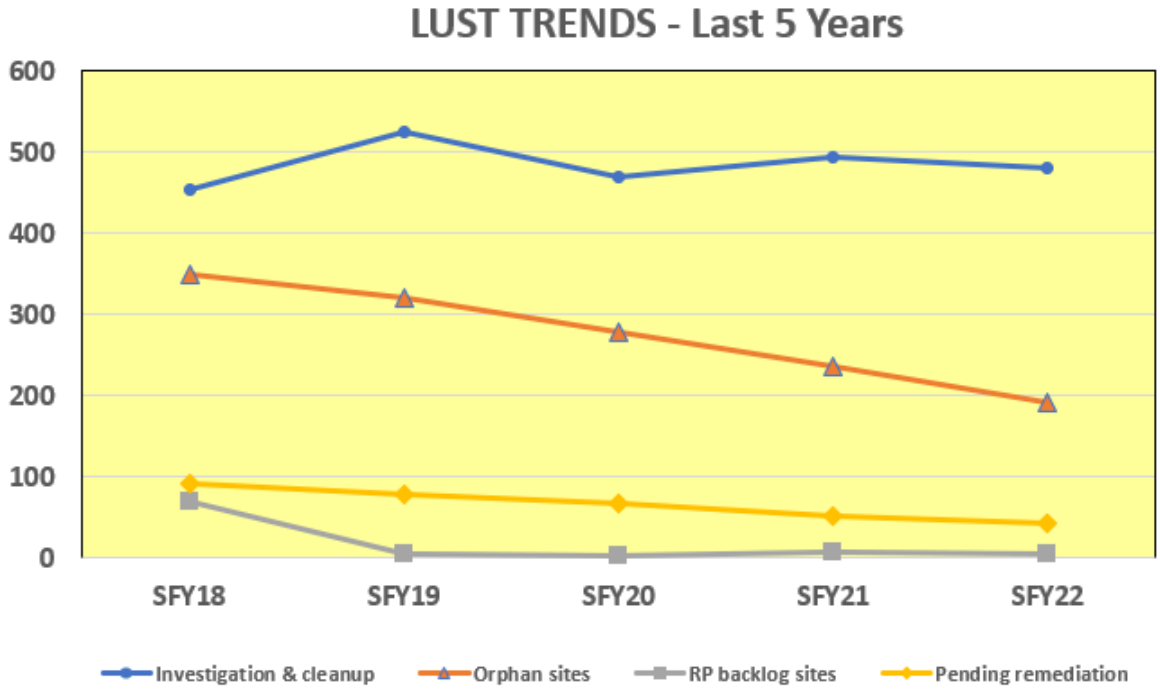
For the last several years, there have been hundreds of sites where the responsible person is known, but NDEE did not require work to begin. These were lower priority sites, and there was not sufficient funding to reimburse potential costs under the Reimbursement Fund. The sites were placed on a waiting list (backlogged) until funding was available. NDEE has worked steadily in the last several years to bring that list to zero. By November 2018, there were no more responsible person sites waiting on NDEE to require and approve work. Now when new spills are reported, they are worked on immediately with no waiting required. This helps speed property transactions and redevelopment.

Orphan Sites

In situations involving "orphan" sites (sites where there is no viable responsible person), investigation and remediation costs are paid with federal and/or state funds. In FY 2022, 56 orphan sites were activated for investigation and/or cleanup using State contractors. At the end of FY 2022, there were 194 orphan sites backlogged and not yet investigated.

Leaking Underground Storage Tanks

Another name for the entire program is the acronym **LUST**. Many states use this term for their state petroleum cleanup programs.



Equipment Reuse

As sites are undergoing cleanup, NDEE pays for the purchase of remediation equipment. When sites are cleaned up, NDEE seeks to reuse that equipment at other sites. Since June 2005, NDEE has reused hundreds of pieces of equipment, thus greatly reducing the need to buy new equipment. This reuse program has saved Nebraska taxpayers over $6.6 million in new equipment costs and allowed that money to be used for cleanup of additional sites.

Over $6.6 million since 2005

Voluntary Remedial Action

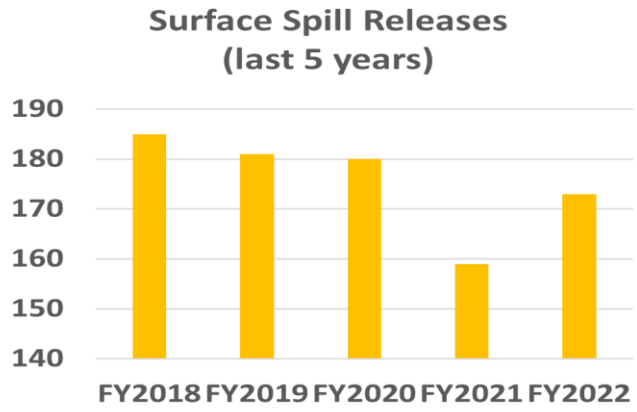
Tank owners can perform voluntary remedial action prior to NDEE's approval of their plans and still be eligible for reimbursement consideration in the future. This allows sites to move forward on their own initiative. To date, 235 suspended or backlogged leaking underground storage tank sites have been closed based on voluntary submittals.

Surface Spills

NDEE has long been aware that many trucking companies, petroleum distributors, emergency response managers, and law enforcement agencies are unaware of Nebraska regulations regarding response to a petroleum spill onto road surfaces and shoulders, especially when groundwater and/or surface water is threatened.

Therefore, the Petroleum Remediation Section developed a brochure for distribution throughout the State explaining NDEE regulations and recommendations for cleaning up after a spill. We have distributed the brochure to all Nebraska county emergency managers, many law enforcement entities, as well as many trucking companies and private citizens.

The brochure, in addition to further information, is also available on our website at http://dee.ne.gov/NDEQProg.nsf/OnWeb/PSS.



Frequently Asked Questions about the Sale and Purchase of a Retail Petroleum Convenience Store

January, 2020

The Nebraska Department of Environment and Energy (NDEE) Petroleum Remediation Section often fields questions from real estate agents, lenders, and the public regarding the sale or purchase of a convenience store/gas station. Many of the questions relate to concerns about environmental problems due to leaks of petroleum from the fuel storage tank system or concerns about costs the buyer may incur if the system needs to be upgraded to meet current requirements. Here are some commonly asked questions and suggested methods the public can use to gather information needed to make an informed buying or selling decision.

Contact for more information

NDEE-Petroleum Remediation Section http://deq.ne.gov/NDEQProg.nsf/OnWeb/LUST	(402) 471-2186
NDEE Records Management Section http://dee.ne.gov/NDEQProg.nsf/OnWeb/PRR	(402) 471-3557
NE State Fire Marshal-Fuels Division https://sfm.nebraska.gov/fuels-safety	(402) 471-9465

Sale & Purchase of Retail Petroleum Convenience Store

The Petroleum Remediation Section often fields questions from real estate agents, lenders, and the public regarding the sale or purchase of a convenience store/gas station. Many of the questions relate to concerns about environmental problems due to leaks of petroleum from the fuel storage tank system or concerns about costs the buyer may incur if the system needs to be upgraded to meet current requirements.

As a response, PRS developed a brochure for distribution to the public containing some commonly asked questions and suggested methods the public can use to gather information needed to make an informed buying or selling decision.

More information is available on the Petroleum Remediation Section website at http://dee.ne.gov/NDEQProg.nsf/OnWeb/LUST.

Water Quality Monitoring and Assessment Programs

Surface Water Assessment Programs

Niobrara River in western Cherry County

Staff working with the Surface Water Monitoring and Assessment programs collect physical, chemical, and biological water quality samples from streams and lakes; implement surface water improvement projects; and prepare surface water quality reports. Some monitoring programs collect stream and lake samples throughout the state, but most monitoring is focused in one to three major river basins each year in conjunction with a six-year rotating basin monitoring strategy. Monitoring data are used to document existing water quality conditions, assess the support of beneficial uses (such as aquatic life, recreation, and public drinking water supply), and prioritize water quality problems. Current monitoring partners include the Natural Resources Districts (NRDs), Nebraska Public Power District (NPPD), U.S. Army Corps of Engineers (USACE), Nebraska Game and Parks Commission (NGPC), University of Nebraska-Lincoln (UNL), Central District Health Department (CDHD), United States Geological Survey (USGS) and United States Environmental Protection Agency (USEPA).

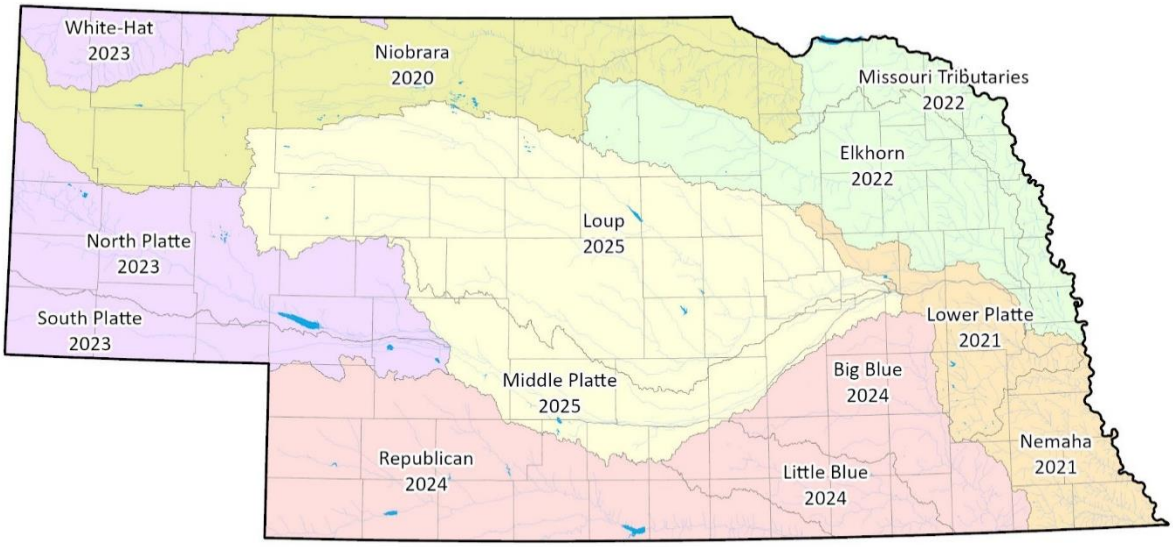
Each year, surface water samples are collected at hundreds of locations across the state, resulting in over 36,000 individual field measurements and laboratory analyses.

NDEE's surface water monitoring programs have different purposes. Brief descriptions of the basin monitoring strategy, as well as other water quality monitoring programs, are provided as follows. Additionally, a more detailed overview of the programs is provided in the Department's biennial publication Water Quality Monitoring Programs Report available online. http://dee.ne.gov/Publica.nsf/pages/WAT344

Basin Rotation Monitoring Program

- Geographically focuses water quality sampling in one to three major river basins per year.
- Weekly monitoring of flowing Waters (rivers and streams) May-September.
- Fourteen parameters analyzed at each sampling location.
- In 2022, NDEE sampled 42 sites within the Elkhorn River and Missouri Tributaries basins.

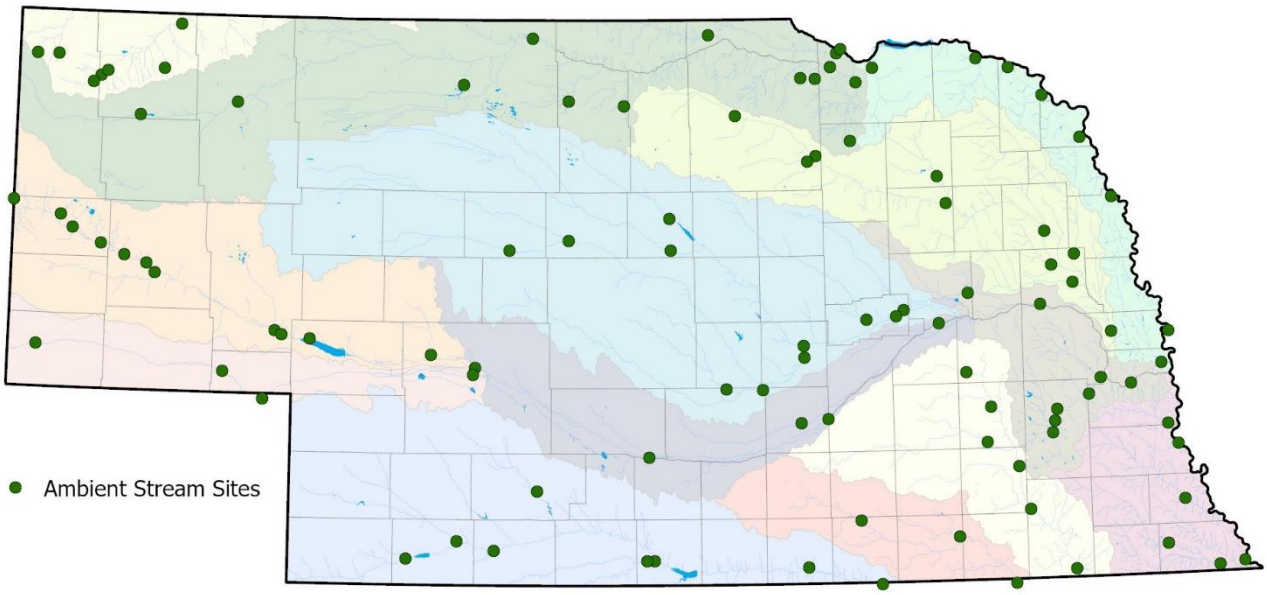
Six-year Basin Rotation Monitoring Schedule



Ambient Stream Monitoring Program

- Network of 101 fixed stations.
- Main stem and tributary streams.
- Thirty-four parameters analyzed at each sampling location.
- Samples are collected monthly, year-round.
- Long-term changes to water quality can be assessed.

Locations of NDEE Ambient Stream Monitoring Program Sites



Public Beach Monitoring Program

- Nebraska is on the forefront of national sampling and public notification for events related to Harmful Algal Bloom (HAB), also known as blue-green algae.
- Up to 56 public beaches are sampled weekly during the summer months of May-September.
- Samples analyzed for *E. coli* bacteria and the microcystin toxin.
- Risks to humans come from external exposure (prolonged contact with skin) and from swallowing the water.
- Symptoms from ingestion can include headaches, nausea, muscular pains, central abdominal pain, diarrhea, and vomiting. Severe cases could include seizures, liver failure, and respiratory arrest. The severity of the illness is related to the amount of water ingested, and the concentrations of the toxins.
- Children, because of their smaller body size, are at risk for more intensive symptoms.
- Results are reported each week during the summer on the BeachWatch Listserv and NDEE's web site. When necessary, Health Alerts are issued and signs are posted at affected beaches. The weekly and past results are available online at https://deq-iis.ne.gov/zs/bw/. Directions to sign up for the Listserv are at the bottom of the BeachWatch web page.

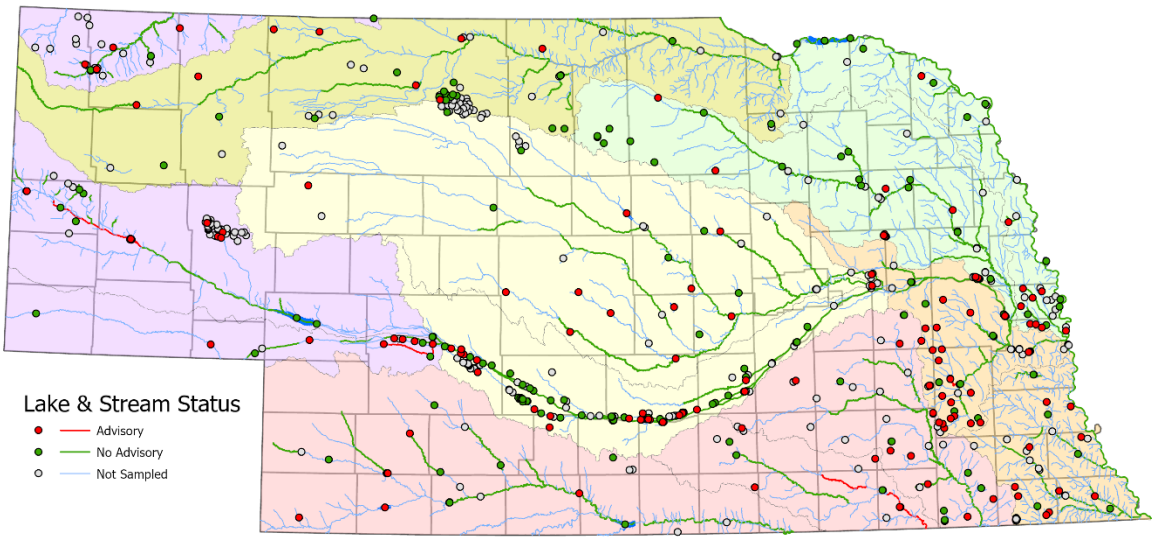
Stream Biological Monitoring Program

- Diversity and numbers of resident aquatic macroinvertebrate and fish communities are evaluated to assess the overall health of streams.
- Sites chosen with a probabilistic sampling design within the framework of the basin rotation schedule.
- Forty sites (5 completed in partnership with NGPC) were sampled in 2022 within the Elkhorn and Missouri Tributaries River basins.

Fish Tissue Monitoring Program

- Assess fish tissue for toxins, such as mercury and polychlorinated biphenyl compounds (PCBs).
- Current fish tissue consumption advisories at 137 locations (130 lakes and 7 river/stream segments).
- In 2022, 29 lakes and 6 river and stream locations were sampled within the Elkhorn and Missouri Tributaries basins.
- The most recent report is online at http://dee.ne.gov/publica.nsf/pages/WAT341

Lake and Stream Fish Consumption Advisory Locations in Nebraska Through 2022



Ambient Lake Monitoring Program

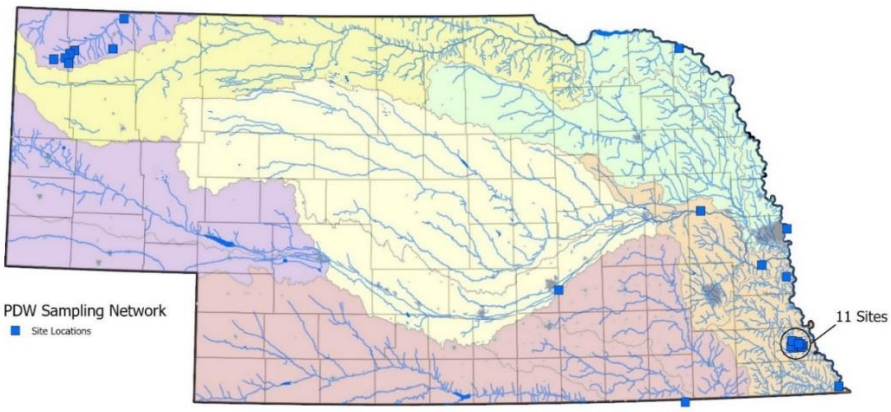
- Data from 24 trend lakes (sampled every year) and 14 basin lakes (sampled according to basin rotation schedule) were collected monthly during May-September in 2022.
- Nineteen additional trend lakes are sampled for this program by staff from the USACE and the Lower Loup and Nemaha NRD's.
- Fourteen parameters analyzed at each lake.
- Depth profile data are taken at deep water and mid-lake locations.
- Data are used to evaluate water quality suitability for fish and aquatic organisms to survive and reproduce.
- Long-term changes to water quality can be assessed.

Fish Kill and Citizen Complaint Investigations

- Dead fish and other surface water concerns are relayed to NDEE throughout the year.
- On-site investigations and water quality sampling performed at sites of many of the complaints.
- Sixteen fish kills investigated from July 1, 2021, to June 30, 2022: 11 were from low dissolved oxygen levels, 3 from disease/parasite issues, 1 from a pollutant spill and 1 resulted from an unknown cause.
- 126 complaints of surface water pollution were taken by the Monitoring Section in the last year, many were forwarded to other NDEE programs.

Public Drinking Water Special Study

- Title 117 – Nebraska Surface Water Quality Standards (NSWQS) defines the Public Drinking Water (PDW) designation as "These are surface waters which serve as a public drinking water supply. These waters must be treated (e.g., coagulation, sedimentation, filtration, chlorination) before the water is suitable for human consumption. After treatment, these waters are suitable for drinking water, food processing, and similar uses."
- Goal to develop a dataset that will allow NDEE to assess all stream segments that have the PDW designation. This will ensure sufficient data is collected to determine if a stream segment is impaired by pollution, as well as potentially identify whether the pollution source is from groundwater or surface water.
- Atrazine, nitrate/nitrite, arsenic, manganese, uranium and selenium are monitored monthly with the collection of surface water samples at 26 stream location sites statewide.



NRD Watershed Special Studies

- NDEE has partnered with several NRDs on Watershed Special Studies with strategic plans to monitor the sources and quantities of pollutants entering these systems from specific sub-watersheds.
- Information gathered allows a complete assessment of stream segments where data is insufficient to determine if all designated uses are met.
- Allows finer calibration of predictive models to allocate pollutant loads to specific sub-watersheds and to quantify load reductions from sub-watershed conservation projects.
- Sampling partners of Watershed Special Studies in 2022 include: Lewis and Clark NRD – Bow Creek Special Study, Lower Platte North NRD – Wahoo Creek Special Study, Lower Big Blue NRD – Turkey Creek and Indian Creek Special Studies and Lower Platte South NRD – Twin Lakes Special Study.

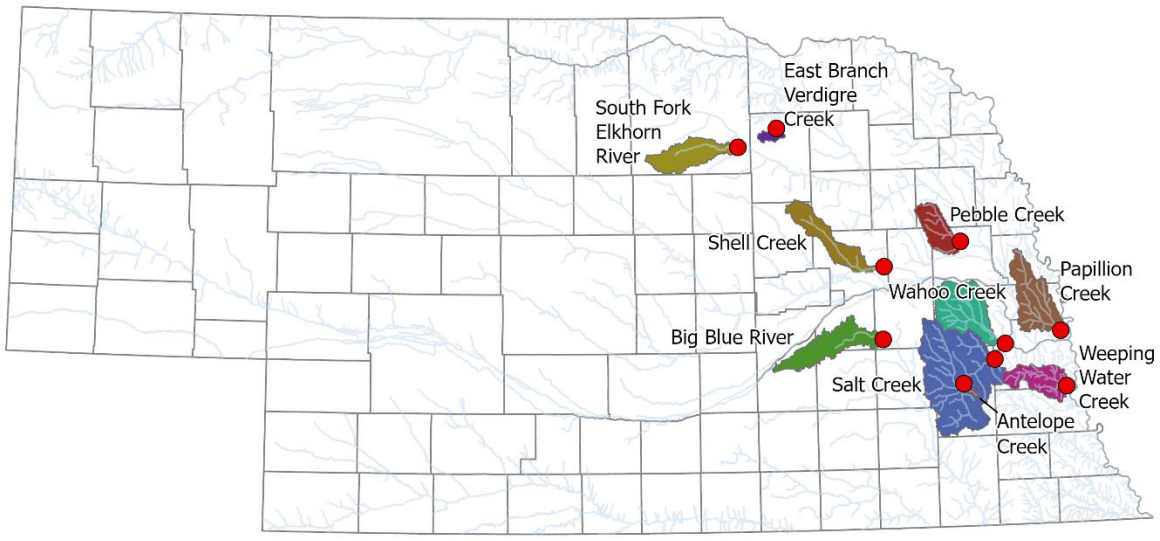
Regional Monitoring Network

- Collaboration between the USEPA and numerous states, tribes, and other organizations to collect continuous stream discharges and temperatures and other chemical and biological data.
- Data are used as baselines for long term comparisons of stream condition.
- Having many sensors deployed nationwide that collect continuous data allows USEPA and other partners to detect significant yet subtle trends in stream condition.
- NDEE has been monitoring 7 streams since May 2017.
- Each location has a sensor that collects water level and temperature every thirty minutes, typically bolted to a post driven into the stream bottom
- Each of the study locations is also sampled as part of the NDEE Ambient Stream Monitoring Program.

Stream Pesticide Special Study

- Pesticides have the potential to cause unintended consequences to non-target organisms in streams and rivers.
- Fifty-eight substances were analyzed from monthly water samples from May – August 2022 from ten Nebraska streams that are also part of the NDEE Ambient Stream Monitoring Program. Substances will include neonicotinoid and pyrethroid insecticides, strobilurin and azole fungicides, and known degradation products.
- The same substances will be analyzed from sediment samples taken in June and August.
- Benthic macroinvertebrates will also be sampled in June and August.
- Taken together, the study will provide estimates of the potential toxicity of both the water and sediments throughout the summer. Actual samples of living organisms will be compared to toxicity estimates.

Stream Pesticide Special Study Sample Locations and Upstream Watersheds



Integrated Report —States are required by the federal Clean Water Act to prepare a biennial water quality report called the Integrated Report. The Integrated Report provides a comprehensive summary of the status and trends of surface water quality in Nebraska and includes a list of impaired surface waters that do not support their assigned beneficial uses. The 2020 Water Quality Integrated Report, which was approved by the USEPA in June 2021, is available on NDEE's web site at http://dee.ne.gov/Publica.nsf/Pages/WAT352 Work on the 2022 Integrated Report is underway and expected to be completed by the end of calendar year 2022.

Groundwater Assessment Programs

Groundwater Quality Monitoring Report

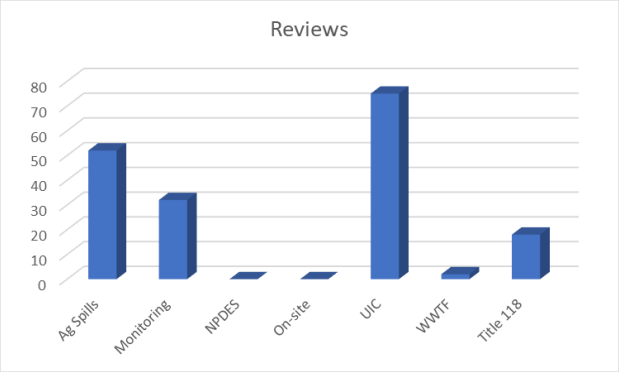
The Groundwater Quality Monitoring Report summarizes the water quality monitoring efforts of the Natural Resources Districts, NDEE, and other state, local and federal agencies. The 2021 Groundwater Quality Monitoring Report can be accessed on the NDEE website at http://dee.ne.gov/Publica.nsf/PubsForm.xsp?documentId=EEF68D78113F20B3862587D000707652&action=openDocument. This year's report was mainly a user's guide for the newly released Nebraska Groundwater Quality Clearinghouse (Clearinghouse). The statistics and maps showing nitrate-nitrogen groundwater monitoring results were all created using the Clearinghouse. The Clearinghouse contains 40 more analytes and almost 1 million more samples than the previous database. This data is accessible to the public as the Nebraska Groundwater Quality Clearinghouse at http://clearinghouse.nebraska.gov.

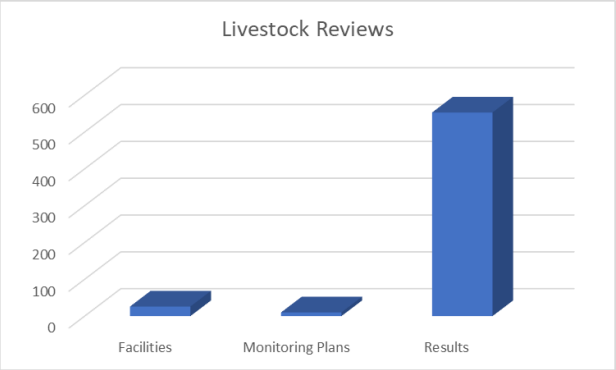
Hydrogeologic Studies and Reviews

The Groundwater Section is responsible for hydrogeologic review of various NDEE projects to determine possible effects on groundwater quality and to recommend possible courses of action. These reviews are completed for programs at NDEE that address leaking underground storage tanks, surface spills, underground injection control, wastewater treatment facilities,

septic systems, NPDES permits, livestock waste control facilities, and for outside entities, such as the Natural Resources Districts' Groundwater Management Plans

In addition, the Groundwater Section performs reviews and oversees remediation if a situation does not fall under another agency program and is of environmental significance. Section personnel continue to take responsibility under Nebraska Administrative Code (NAC) *Title 118 — Groundwater Quality Standards and Use Classification* for many site investigations and have sampled and supervised site cleanups.





Underground Injection Control (UIC)

The Underground Injection Control (UIC) program reviews and issues permits, conducts inspections, and performs compliance reviews for wells used to inject fluids into the subsurface. There are six classes of injection wells:

- Class I injection wells are for the injection of wastewater below the lowermost underground source of drinking water.
- Class II wells are associated with oil and gas production and are regulated by the Nebraska Oil and Gas Conservation Commission.
- Class III wells are used to inject fluids for the purpose of extracting minerals.
- Class IV wells are associated with the injection of hazardous waste, which are illegal, and have never been allowed in Nebraska.
- Class V injection wells are any wells not included in the other specific classes. Common examples of Class V wells include open loop heat pump systems, large capacity septic systems, and subsurface drip irrigation systems.
- Class VI wells are associated with the injection of carbon dioxide for permanent disposal. This class of wells is currently regulated by the EPA.

Currently the State of Nebraska has four permitted Class I wells. Two of these are issued to Crow Butte Resources, Inc., a uranium facility near Crawford. The other two are issued to the City of McCook and Kugler Oil Company in Culbertson. The only Class III wells in the state are at the Crow Butte Resources, Inc. Class V wells are located throughout the state and make up the majority of Nebraska UIC wells.

Mineral Exploration Program

The Mineral Exploration program reviews and issues permits, conducts inspections, and performs compliance reviews for holes drilled, driven, bored, or dug for the purpose of mineral exploration. These permits are issued to persons exploring for potential mineral resources such as consolidated rock; sand and gravel; or material commingled, in solution, or otherwise occurring beneath the surface or in waters of the State and are regulated under NAC *Title 135 – Rules and Regulations for Mineral Exploration Holes*. This type of exploration specifically excludes oil and gas exploration, which is regulated by the Nebraska Oil and Gas Conservation Commission.

Wellhead Protection

The State Wellhead Protection (WHP) program is a voluntary program, which assists communities and other public water suppliers in preventing contamination of their water supplies. State WHP activities include delineating the zones of influence which may impact public supply wells, training communities on how to inventory all potential sources of pollution within these vulnerable zones, working with the local officials to identify options to manage these potential pollution sources, developing monitoring plans and contingency plans to provide alternate water supplies and site new wells. One hundred eighteen (118) community water supplies have approved Wellhead Protection plans as of August 31, 2021.

In 2019, NDEE began using the Groundwater Evaluation Tool (GET) to model WHP areas for Nebraska's Public Water Systems (PWS). GET is a web-based subscription service which utilizes seven regional numeric groundwater models to run reverse particle tracking, which creates time-of-travel capture zones. Statewide models cover 511 of the 522 community groundwater public water systems. This tool has allowed NDEE to become more efficient in updating WHP areas throughout the state while increasing the quality of models and reports it produces for Nebraska communities. GET can also be used to assist communities in understanding the water quality in areas where new wells may be placed.

Source Water Assessment and Protection

Source Water Protection (SWP) funds have been distributed to complete 100 separate Source Water Protection projects throughout the state since 2004. In SFY2022, Source Water Protection funds were distributed to the following public water systems: Aurora and Central City. The total amount awarded was $98,550.

The Source Water Protection program coordinates closely with the CWA 319 program to engage Nebraska's communities and producers and develop Drinking Water Protection Management Plans (DWPMP) that proactively address nonpoint source contamination. SWP grant funds (from the Drinking Water State Revolving Fund) are used to develop the plans, encourage community involvement through stakeholder groups, and put on public meetings to promote the projects. Alternative 9-Element Watershed Management Plans (also known as Drinking Water Protection Management Plans (DWPMPs)) are developed and implemented under the SWP to address nonpoint source pollution issues that affect water quality. They are non-regulatory, community-based plans that provide an implementation plan for protecting drinking water by reducing groundwater contamination. Approved 9-element watershed management plans allow project sponsors to apply for nonpoint source pollution program (319) grants from NDEE. These plans provide more funding and longer-term grants (five years) than the Source Water Protection Grants are able to.

These plans bring together Natural Resources Districts (NRDs), the Natural Resource Conservation Service (NRCS), and local stakeholders to increase on-the-ground agricultural best management practices and increase outreach and education efforts in Nebraska's communities. The first Drinking Water Protection Management Plan in the nation was accepted by EPA in the summer of 2018 for the Bazile Creek area in northeastern Nebraska. Since then, four additional plans have been accepted and more are in development.

The 2018 Farm Bill dedicated 10% of total conservation funds (with the exception of Conservation Reserve Funds), to be used for source water protection each year. NDEE worked with the NRCS to develop the priority areas in Nebraska where funds are focused. This effort is meant to address excessive nutrients and other impairments of drinking water. For Nebraska, this effort will primarily focus on groundwater as it is the predominant source for drinking water in the state. The highest priority areas include community public water systems WHP areas and NRD groundwater management areas (Phases I - IV) that include WHP areas. A Phase I area covers an entire NRD district. In specific areas within an NRD where nitrate reaches a determined threshold, they may move into Phase II, III or IV areas. Some NRDs only define areas as I - III, while others go from I - IV. Each NRD determines the 'trigger' (or contaminant level) that would move a Phase area into the next level. Each Phase level has requirements for landowners/producers to follow. Moving from a Phase I to a Phase II level often means that producers need to complete an educational requirement such as nutrient management or fertilizer application training. Phase II-IV may also require that certain Best Management Practices (BMPs) may be required such as split application of fertilizer, cover crops, or not applying fertilizer in the fall for example. Best management practices incentive payments will go to the NRCS - EQIP eligible owner/operators of agricultural land who install conservation practices relating to water quality and quantity.

The farm bill helps many Nebraska communities enact voluntary Drinking Water Protection Management Plans, and the priority in funding from NRCS may ensure that all community public water systems have on-the-ground practices that work to reduce nitrates in source water protection areas.

Water Well Standards and Contractors' Licensing Program

This program is tasked with inspecting all domestic wells and 25% of all other wells drilled in the previous calendar year. Program personnel include three inspectors and one administrative assistant. This is the second year the inspectors are using iPads equipped with GPS and mapping software to assist in completing inspections and have already inspected over 37% of the wells for the year.

Starting July 1, 2021 all licensing tasks were moved to the NDEE Water Well Standards Program. The Program is responsible for licensing and regulating over 800 licensed water well professionals which includes administering examinations on a quarterly basis.

Advising the Program is the Water Well Standards and Contractors Licensing Board. The board is comprised of five government representatives (including NDEE, DHHS, Nebraska Resources Districts and Nebraska Department of Natural Resources) and five non-government entities (including pump installation contractors, irrigation water well contractors and equipment suppliers/manufacturers). Board members meet quarterly to make decisions related to issues such as application fees, rules and regulations, continuing education units and disciplinary action.

Water Quality Planning

The stated public policy of Nebraska related to water quality includes conserving water and to protect and improve the quality of water for human consumption, wildlife, fish and other aquatic life, industry, recreation, and other productive, beneficial uses (Neb. Rev. Stat. 81-1501(1)). NDEE carries out this important mandate, in part, through water quality planning along with water quality standards.

Surface Water Quality Standards

NDEE develops surface water quality standards which are found in NAC *Title 117 – Nebraska Surface Water Quality Standards*. The state's waterbodies have been assigned beneficial uses in one of the following categories:

- Public water supply
- Aquatic life
- Agriculture
- Industry
- Recreation
- Aesthetics

Each beneficial use has water quality criteria for chemical and physical parameters that are developed to be protective of that use. For example, criteria for nitrogen are different for waters assigned to public water supply use than those which have an industrial beneficial use. These criteria form the basis of water quality protection for all surface water quality programs conducted by NDEE. The federal Clean Water Act (CWA) specifies that states review their water quality standards and revise where appropriate once every three years (triennial review).

Nebraska's previous triennial review was conducted in 2019, and the current triennial review process is underway. Updates to the standards will not be proposed until next year; however, the current standards are available on NDEE's website. In addition to developing the standards, staff develop and implement procedures for applying the standards to surface water quality programs, such as NPDES permits.

Impaired Waters and Total Maximum Daily Loads (TMDLs)

The Federal CWA, Section 303(d), requires states to prepare a list of impaired surface waters – waters that do not support the assigned beneficial uses as listed in NAC *Title 117 - Nebraska Surface Water Quality Standards*. From this list, states are to prepare TMDLs that include the pollution control goals and strategies necessary to improve the quality of these waters and remove the identified impairments so these waters may meet their assigned beneficial uses.

As in previous years, NDEE has opted to combine the required CWA Section 303(d) list with the Section 305(b) report on the general status of water quality in the state. This combination is referred to as the Integrated Report (IR). The 2020 Integrated Report was approved by EPA in

June 2021 and is available on NDEE's website. The draft 2022 Integrated Report is currently under review.

The following table summarizes NDEE's current work in this area. A comprehensive list of approved TMDLs for Nebraska is available on NDEE's website

IR Category	TMDL/5-alt Name	# of Waterbodies	Pollutant	Status
4a				
	Republican River Basin	5	*E. coli*	TMDL under development, targeted for completion in Spring 2023.
5-alt[1]				
	Willow Creek Reservoir	1	TN/TP	Lower Elkhorn WQMP approved by EPA March 2019. 5-alt on hold due to necessary revisions, will be revisited.
	Chadron Creek	1	*E. coli*	5-alt accepted 10/22/2021

[1]In 2015, NDEQ (now NDEE) and EPA created the "5-alt" alternative to developing TMDLs for impaired waterbodies in order to address missing TMDLs in areas where project sponsors have targeted restoration work. This alternative restoration approach allows the state flexibility to align efforts with public interests to restore impaired waters more effectively and efficiently.

Nonpoint Source Pollution Management Program

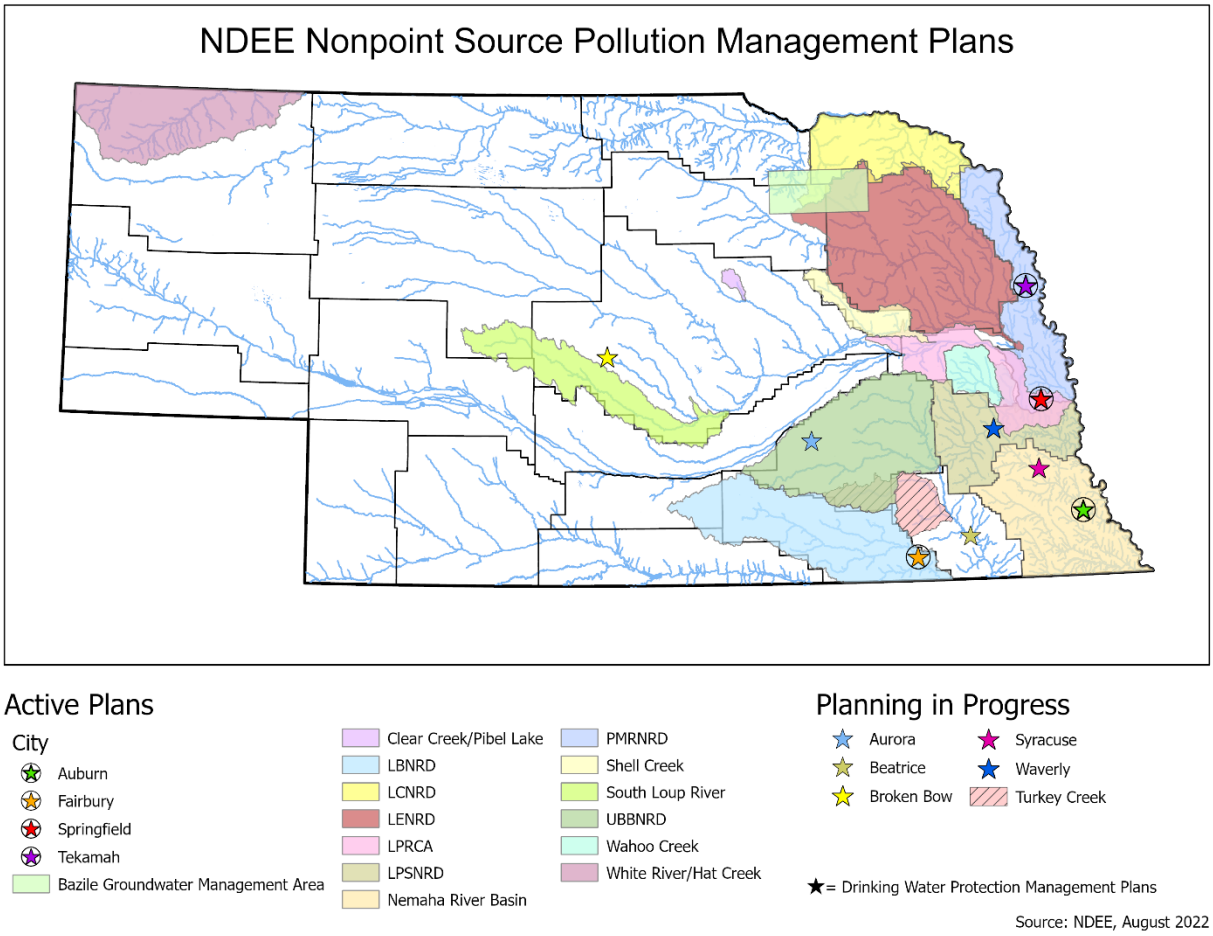
The goal of the Nebraska Nonpoint Source Pollution Management Program is to protect and improve water quality impacted by nonpoint source pollution through an integrated statewide effort. The program is of particular significance because nonpoint source pollution is the most prevalent, widespread cause of water quality degradation in Nebraska and is associated with runoff and percolation from agricultural and urban areas. The program is largely funded by the Environmental Protection Agency (EPA) through Section 319 of the federal CWA and involves key federal, state, and local partners.

State nonpoint source problems and priorities are defined in the Nebraska Nonpoint Source Management Plan: "Strategic Plan and Guidance for Implementing the Nebraska Nonpoint Source Management Program – 2021 through 2036," available at http://dee.ne.gov/publica.nsf/pages/WAT119. The program emphasizes watershed and groundwater management area planning, targeting of 303(d)-listed impaired waters, and community participation in water quality management plan development. Projects emphasize implementation of 9-Element watershed management plans or Alternative to 9-Element plans in the case of groundwater quality plans.

Included in the major program highlights this year is the approval by EPA of Project Implementation Plans for the Shell Creek Conservation Effects Study Phase I, Bazile Groundwater Management Area Plan Implementation Phase II, Kirkman's Cove Phase I Planning, and Nebraska Statewide Arboretum Waterwise Landscapes. The program also hosted the EPA Region 7 Quarterly NPS Meeting. In addition, the NPS program has continued to emphasize groundwater quality planning through development of Drinking Water Protection Management Plans (DWPMPs) as Alternative to 9-Element plans with the communities of

Aurora, Beatrice, Broken Bow, Syracuse, and Waverly. Springfield, Auburn and Fairbury DWPMPs were previously accepted by EPA, and Tekamah, was accepted this past year. Once DWPMPs are accepted by EPA, these communities are eligible to apply for 319 project funds for plan implementation.

Stormwater infrastructure tour, Omaha



Water Quality Data Handling and Storage

NDEE continues adding Nebraska surface water quality information to the EPA's Water Quality Exchange (WQX) electronic storage system for water quality data. This will make Nebraska surface water quality information available to anyone who has an internet connection. The website for this information is https://www.epa.gov/waterdata. During FY2022, NDEE continued to add surface water monitoring results to the WQX database. NDEE has developed an internal database application which has increased the efficiency of processing surface water monitoring data, resulting in significant time savings.

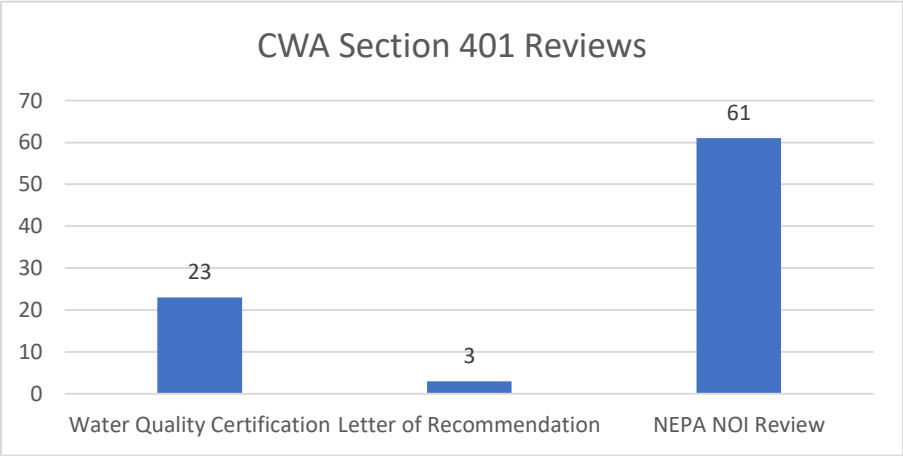
CWA 404 Program

Dredge and Fill Permits

The Clean Water Act (CWA) 404 Section was created in response to LB302 and completed a feasibility analysis for assuming the CWA 404 permitting authority from the U.S. Army Corps of Engineers (Corps) for dredge and fill activities in and around waters of the U.S. The analysis determined the assumable workload, staffing needs, program implementation costs and sustainable funding options. LB809 was subsequently passed giving NDEE the authority to develop a state dredge and fill permitting program. LB809 came with an A-bill which provides funding to cover the cost of program development over the next two fiscal years beginning in July 2022. The funds will be used to hire additional staff to work on remaining assumption program elements and develop permitting software.

CWA Section 401 Water Quality Certification

The CWA 404 Section administers the Water Quality Certification Program in accordance with Section 401 of the CWA. This program evaluates applications for federal permits and licenses that involve a discharge to waters of the U.S. and determines whether the proposed activity complies with *Title 117 - Nebraska Surface Water Quality Standards*. If the activity is likely to violate the standards, conditions for complying with the standards will be issued with the certification, or certification will be denied. The U.S. Army Corps of Engineers' Section 404 Dredge and Fill Permits and Federal Energy Regulatory Commission licenses are examples of federal regulatory programs that require State Water Quality Certification before federal permits or licenses can be issued. NDEE reviews approximately 23 projects for individual WQCs annually. The figure to the right details the number of reviews conducted by the section during FY2022:



Agriculture Section

The Agriculture Section programs consist of the Livestock Waste Control Program, the Chemigation Program, and the Agricultural Chemical Containment Program.

Livestock Waste Control Program

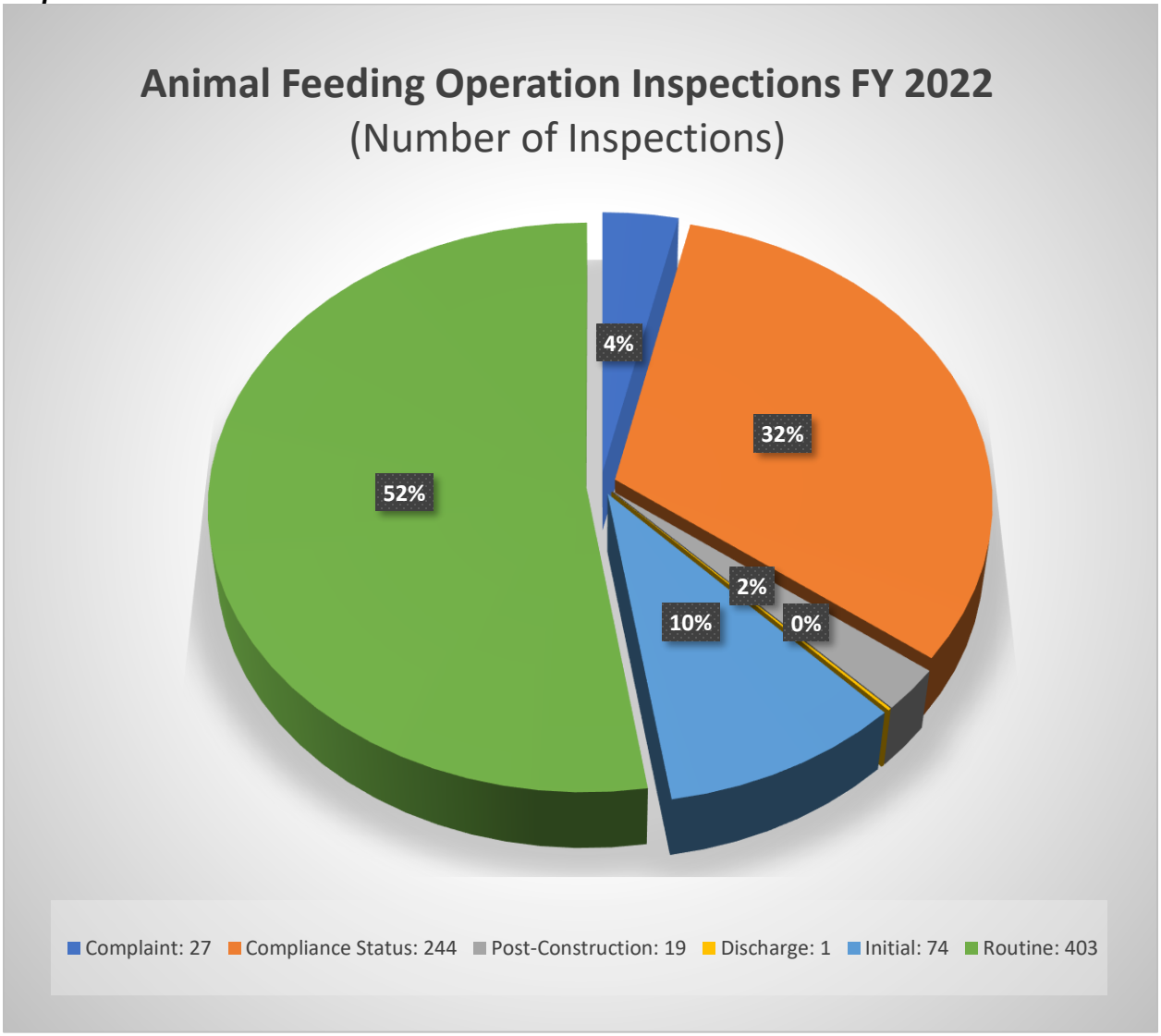
Overview

The Livestock Waste Control (LWC) Program is charged with the overall responsibility to protect Nebraska's surface water and groundwater from discharge of livestock waste from any of the thousands of Animal Feeding Operations (AFOs) in Nebraska.

To accomplish this responsibility, the program administers NAC *Title 130 - Livestock Waste Control Regulations*. The LWC Program primarily focuses on the 1,330 active large Concentrated Animal Feeding Operations (CAFOs) required to have permits, but also works with approximately 2,558 Medium Animal Feeding Operations (AFOs). The LWC Program uses inspections, permitting, and periodic monitoring to fulfill this responsibility. The program also implements the National Pollutant Discharge Elimination System (NPDES) program for CAFOs.

Amendments to Title 130 became effective in 2011 to reflect changes in the U.S. Environmental Protection Agency (EPA) CAFO Rule for NPDES permitting, which primarily involved who needs to apply for NPDES permit coverage. The changes were necessary to ensure the Department would continue to administer the NPDES permit program for EPA. As a result, only CAFOs that discharge are required to apply for NPDES permit coverage.

Inspections



The LWC Program staff conducted a total of 768 livestock waste control inspections and investigations in FY2022. The chart above illustrates the breakdown by type of inspection. A concerted effort is being made to revisit medium-sized operations to ensure that they were in compliance with Title 130 and the EPA CAFO Rule.

A short description of each type of inspection and investigation follows:

Initial Inspection: Before constructing a new operation or expanding an existing operation, all medium and large AFOs - whether or not the operation currently is permitted - must request an initial inspection by LWC Program staff. The reason for this inspection is to determine if livestock waste control facilities (LWCF) must be constructed, expanded, or modified to prevent a discharge and to properly manage the livestock waste generated by the operation.

Post-Construction Inspection: Upon completion of any required construction of a LWCF, program staff conduct a post-construction inspection to verify the LWCF was constructed as approved by the Department.

Routine Inspections: Once a CAFO or an AFO has received a permit and the Department has approved operation of the LWCF, program staff will conduct periodic routine inspections to monitor operation of the livestock waste control facilities, management of the operation's livestock waste, and the records these CAFOs and AFOs are required to maintain. Routine inspections are regularly scheduled at an AFO, involving a detailed, extensive review of the operation's recordkeeping and waste management at the operation.

Discharge Inspections: Discharge investigations are conducted when a discharge at a livestock waste control facility is reported. Permitted facilities area required to self-report all discharges to the Department.

Complaint Inspections: When a complaint is received, LWC Program staff will investigate and may conduct an on-site investigation.

Compliance Status Inspections: Generally conducted to verify the AFO's operating status or level of compliance with a specific requirement; these inspections are usually less urgent, non-emergency situations.

State Permitting

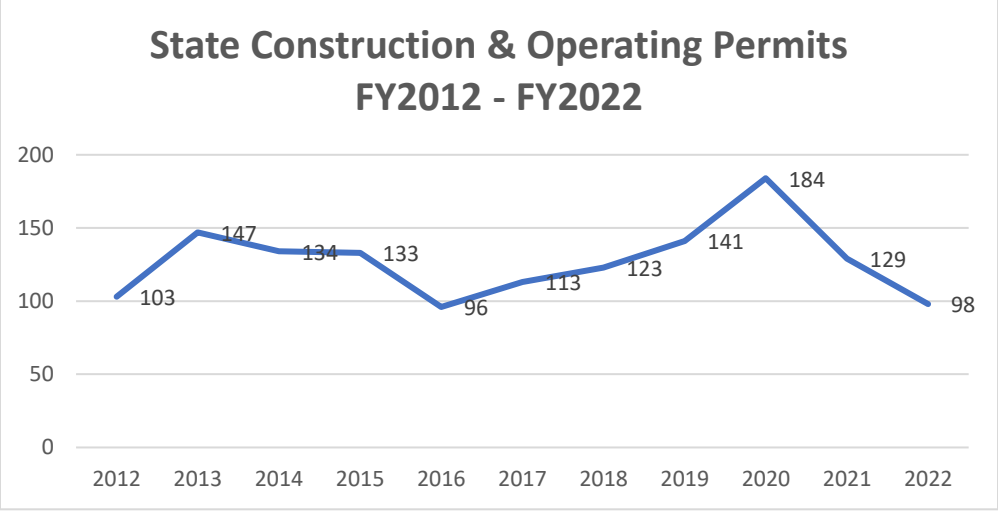
After conducting an initial inspection, the Department may require the AFO to submit an application for a Construction and Operating Permit – the state permitting process for livestock waste control facilities – prior to construction of livestock waste control facilities.

The Department received a total of 89 permit applications and issued 98 permits during FY2022, as shown in the table to the right.

Construction and Operating Permits – FY2022

Type of Application or Permit	Applications Received	Permits Issued
New permits	14	20
Modified permits	59	63
Transfer permits	16	15
TOTAL	**89**	**98**

This chart shows the total number of state permits issued annually for livestock waste control facilities since FY2012. The Department updated some existing Construction Permits, Construction Approvals and Operating Permits to Construction and Operating Permits if the AFOs updated their



nutrient management plans (NMP) to current Title 130 standards. The NMP updates were mainly in conjunction with NPDES Permit renewals or transferred permits.

Once a permitted AFO has completed its construction project, the Department conducts a post-construction inspection. If the post-construction inspection shows the construction was completed as approved, the Department notifies the AFO that operation of the new livestock waste control facility is approved. In FY2022, the Department gave approval to 102 AFOs for operation of their new or expanded LWC facilities. `

National Pollutant Discharge Elimination System (NPDES) Permit

The LWC Program also oversees the NPDES permitting process for livestock, issuing coverage under individual NPDES permits to CAFOs, as well as coverage under an NPDES General Permit for Concentrated Animal Feeding Operations Confining Cattle. Both permits expire every five years, and permittees are required to submit a reissuance application to continue NPDES permit coverage.

The table below summarizes the number of NPDES applications received and permits issued for livestock waste control facilities in FY2022.

NPDES PERMITS – FY2022		
Type of NPDES Application/Permit	Applications Received	Permits Issued
GENERAL PERMIT FOR CAFOS CONFINING CATTLE		
New Coverage	12	3
Modified or Transferred	20	9
Reissued	105	100
SUBTOTAL GENERAL PERMIT:	**137**	**112**
INDIVIDUAL PERMITS		
New Coverage	1	1
Modified or Transferred	3	1
Reissued	2	0
SUBTOTAL INDIVIDUAL PERMIT:	**6**	**2**
NPDES TOTALS:	**143**	**114**

Fees

The annual fee is assessed on all permitted Large CAFOs and all CAFOs covered under an NPDES permit. The fee is determined based upon the number of head of livestock for which the operation has a permit. The fees provide 20% of the Department's costs to administer the livestock waste control program, as required by statute. The Department received $212,900 in annual permit fees. In addition, the Department received $21,200 in initial inspection fees, $114,400 in permit application fees, and $1,522 in late payment fees, and $4,986 in investment income for a total of $355,008 in fees.

General information about the Livestock Waste Control Program, including applications, fact sheets, forms, guidance documents, copies of the NPDES General Permit and the four general permits, Title 130 regulations, and public notices of permit issuance or denial, can be found on the Department's website at http://dee.ne.gov.

Chemigation Program

The Chemigation program, which functions in cooperation with Nebraska's 23 Natural Resources Districts (NRDs), works to ensure that users of irrigation systems applying fertilizers and pesticides do not contaminate the sources of irrigation water. These regulations are contained in NAC *Title 195 – Chemigation Regulations.*

Since 1987, the NRDs have inspected irrigation systems used for chemigation for functioning safety equipment and issued site permits. Chemigation permits are issued annually and are reported to the Department on a calendar year basis. The 28,757 chemigation permits issued in 2021 constituted a 6% increase in permits issued compared to 2020 (26,951 permits).

A chemigation applicator must be certified by the Department every four years. To receive certification, an applicator must complete training and testing, which is provided under contract with the University of Nebraska-Lincoln Nebraska Extension. Applicator certifications also are reported on a calendar-year basis.

In calendar year 2021, 1,167 applicators have been trained, tested, and certified, bringing the current number of certified chemigation applicators to 5,437. Information about chemigation applicator training dates and certified applicators is available after January 1 of each year at http://dee.ne.gov/NDEQProg.nsf/%24%24OpenDominoDocument.xsp?documentId=D884FD6EE633A0AA86257CAE0077CC9D&action=openDocument. Title 195 was updated on April 19, 2020.

Agricultural Chemical Containment Program

The Agricultural Chemical Containment program regulates the construction and use of commercial and private facilities for the storage, loading, and rinsing activities of bulk liquid fertilizers and bulk liquid and dry pesticides. These regulations are contained in NAC *Title 198 - Rules and Regulations Pertaining to Agricultural Chemical Containment*.

The regulations administered by this program provide specific requirements for design by a Nebraska Registered Professional Engineer, construction materials, containment capacities,

and maintenance. Although no permit or registration is required, the operation must have a construction plan for the facility and a management program.

The Department and the Nebraska Department of Agriculture have a cooperative agreement that outlines the procedure for coordinating inspection activities between the two agencies. The agreement enhances the communication between the agencies and provides specific protocols to be followed when investigating Agricultural Chemical Containment complaints. Title 198 was updated on April 25, 2020.

Water Permitting and Certification Programs

There are a number of certification and permitting programs relating to wastewater treatment facilities, ranging from certification of those who work on septic systems to the permitting of large municipal facilities. These programs include:

- **Onsite Wastewater Treatment Facilities Program** – This program administers system design, professional certification, and system registration requirements that affect mostly smaller wastewater treatment or storage systems, such as septic systems, household lagoons, holding tanks, and anyone doing work on these types of facilities.

- **Wastewater Treatment Facility Operator Certification Program** – This program administers the certification program for wastewater treatment facility operators to ensure proper operation and maintenance of these facilities.

- **Environmental Safety** – The Environmental Safety Program inspects the following types of facilities: public swimming pools, recreational camps, and mobile home parks. The Environmental Safety Program also performs well and septic inspections upon request for property transfers. The Department has a Memorandum of Understanding with the Nebraska Department of Agriculture to perform food inspections at the following facilities: schools, college food service (room and board for students), senior centers, and childcare centers (upon referral from the DHHS Licensure Unit).

- **Wastewater Engineering Program** – The wastewater engineering program reviews and issues permits for commercial, industrial, and municipal wastewater facilities that are planned for construction. The program also maintains regulations for the operation and maintenance of wastewater facilities and for the proper abandonment of facilities when they are removed from service.

- **Drinking Water Engineering Program** – The drinking water engineering program provides engineering plan review; issuance of construction permits; inspection of newly constructed projects for issuance of approvals for placement into service; and technical assistance and advisory contacts with owners/operators of public water systems, consulting engineers, state, federal and local officials, organizations, and the general public in matters relating to siting, design, construction, maintenance, and operation of public water systems. In addition to public water systems, the program provides similar services for all new and substantially modified public swimming pools and spas.

- **The National Pollutant Discharge Elimination System (NPDES) Program** – This program is responsible for regulating discharges of pollutants to Waters of the State to

maintain and protect the water quality of Nebraska's streams, lakes, rivers, and groundwater.

- **The Nebraska Pretreatment Program** – This program functions to protect municipal wastewater collection and treatment systems from damage or overloading by industries.

Onsite Wastewater, Environmental Safety and Operator Certification Program Accomplishments and Challenges

In 2022, the Onsite Section launched the online credentialling system. The online system can be used to apply for a new credential or renew a current one, submit and check their professional development hours, as well as pay online. Every other year the Section processes roughly 433 paper registrations, development hour submittals and payments. The new system greatly speeds up the certification process and frees up resources for other priorities.

The Onsite section has prioritized its efforts to resolve a backlog of open compliance issues and complaints. Significant progress has been made by conducting file reviews, contacting homeowners and certified professions to confirm work has been completed or the issue has been resolved. The past year, the sections has closed 40 open compliance cases that originated in past years going back to 2015.

On July 1, 2021, the Environmental Safety section was officially merged with the Department. The merger required a large amount of work from many sections to complete. This included field office leases, vehicle transfers, job classifications, letterhead and form changes, IT challenges, MOU negotiations, and regulation changes. Compliance and inspection processes are still being fine-tuned to match the DEE and maximize efficiency.

Onsite Wastewater Treatment Facilities Program Overview

The requirements administered by the Onsite Wastewater Program cover septic systems, wastewater holding tanks, individual household wastewater lagoons, and other decentralized wastewater treatment systems not connected to municipal wastewater treatment systems. The majority of onsite systems are for single households. However, there are onsite or decentralized systems that provide wastewater treatment for multiple houses (these systems are sometimes called cluster systems), mobile home parks, churches, recreational facilities, camper trailer parks, a variety of businesses with high strength wastes (such as restaurants, butcher shops, and wineries), equipment maintenance buildings, and other commercial or industrial facilities. The U.S. EPA estimates that nearly one in four households depend on onsite systems for wastewater treatment.

The Private Onsite Wastewater Treatment System Contractors Certification and System Registration Act (the Act) passed in 2003 required that anyone doing work associated with onsite wastewater systems be certified by the State of Nebraska. The Act provided for the registration of all onsite wastewater systems constructed, reconstructed, altered, or modified. The law also provided for certification and system registration fees to support the program. The Act was amended in 2007 to provide for application fees for permits and subdivision approvals as well as waiving fees for government inspectors. A certification by examination is required for professionals to obtain initial certification. Currently, 433 people hold onsite wastewater certificates. Some professionals obtain certification in multiple categories. The categories of certification are Installer (Master and Journeyman), Pumper (Master and Journeyman),

Inspector, and Soil Evaluator. Current certificates expire December 31, 2023 and may be renewed via continuing education requirements or re-examination. Certificates must be renewed every two years.

The registration requirement for onsite wastewater systems provides a statewide inventory of new or modified onsite systems. Since registrations began in 2004, over 30,000 systems have been registered, with 1,448 systems registered in FY2022.

The Section receives a large number of complaints. There were 68 new onsite-related complaints in FY2022, and program staff resolved a total of 66 complaints, which includes both old and new complaints. Typical types of complaints that are investigated include: failed systems that have a surface discharge, and which may pose a threat to public health or the environment, and systems installed by individuals who are not certified by NDEE. In addition, the Section fields approximately 4,000 calls annually seeking compliance assistance.

The regulations set minimum design standards for all onsite wastewater treatment systems and include General Permits which allow for the installation of typical onsite systems by a certified professional and subsequent operation by the owner without a site-specific construction or operating permit. These standard conforming systems constitute the vast majority of all new and replacement onsite systems.

NAC *Title 124 - Onsite Wastewater Treatment Systems* requires Department approval prior to construction of any subdivision with any lot less than three acres where onsite wastewater treatment is proposed, or if design standards cannot be achieved. Common examples are if a system cannot meet setback distances or the 4-foot groundwater separation distance prescribed in the regulation. Department engineers review construction/operating permit applications. In FY2022, the program received 42 applications for construction/operating permits and 10 applications for subdivision review and approval.

Wastewater Treatment Facility Operator Certification Program

Competent and qualified operators are a critical component to ensure that wastewater treatment plants are well run and protect the environment. The life span of treatment facilities can be prolonged and proper operation and maintenance programs can protect the owner's substantial financial infrastructure investment. The Wastewater Treatment Facility Operator Certification Program was established to help accomplish this. The program administers the operator certification program, which includes administering certification exams, issuing certificates, evaluating continuing education programs, tracking certificate compliance, processing certificate renewals, and conducting facility ratings to determine operator needs, in addition to continuing to evaluate ways to help wastewater treatment facility operators obtain continuing education to maintain their certification and help them do their jobs.

This program administers nationally-accredited certification exams to new wastewater operators and operators wishing to advance their credentials, and issues certification renewals for operators who have obtained the necessary Department-approved continuing education as provided for in NAC *Title 197 – Rules and Regulations for the Certification of Wastewater Treatment Operators in Nebraska*. Staff will continue to monitor those facilities that are required to have certified operators and work with them to help them comply with the regulations.

Municipal, commercial, compatible industrial facilities, and non-compatible industrial facilities are required to employ certified operators based on the point rating assigned to each facility by NDEE. The point rating for each facility is based on the design flow, type of treatment, instrumentation and control systems, and laboratory analysis requirements at each location. Certified Operators for municipal, commercial, and compatible industrial facilities are classified under the following categories: Class L (lagoons), Class I, Class II, Class III, and Class IV, according to the type of facility and its point rating. Certified operators for non-compatible industrial facilities are classified under the following categories: Industrial I, Industrial II, Industrial III, and Industrial IV, according to the type of facility and its point rating.

This photo shows a Wastewater Treatment Facility for Lincoln.

The Wastewater Operator Certification Program currently has 946 operators with municipal/ compatible certificates. In addition, there are currently 91 certified operators with industrial certificates.

NDEE also reviews applications and issues operator certification exemptions for towns and other entities that have full-retention non-discharging lagoon wastewater treatment facilities that may not require qualified operators due to very limited maintenance and operational needs. The exemption is for a fixed four-year period and the period under current review will end at the end of 2025. NDEE has contacted approximately 300 facilities potentially eligible for the exemption and, of these, issued four-year operator exemptions to 215 facilities.

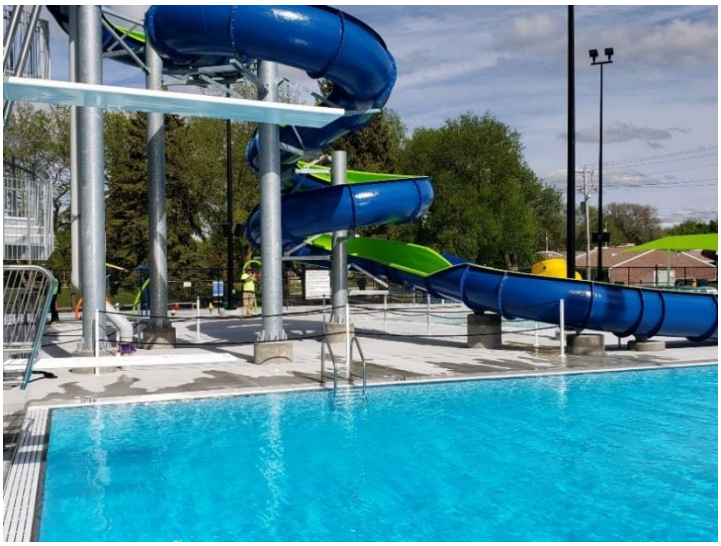
The Department contracts with the Association of Boards of Certification (ABC) for testing services for the Operator Certification Program. Starting in 2019, ABC issued a new exam series for Class I through IV that was not specific to Nebraska. Since the Department began using this exam series, the pass rate for exams has declined sharply. The Department evaluated the issue with ABC and decided the best course of action was to reinstate the previously used state-specific exams. The table below shows the current passing rate.

NDEE Wastewater Operator Certification Program. Title 197. Annual Reporting		
Fiscal Year July 1, 2021 – June 30, 2022	exams administered	Pass rate
	229	52%
• 10 WW certification testing events • 116 newly certified operators		

Environmental Safety Program

The Environmental Safety staff inspect all public swimming pools/spas located at hotels, apartments, municipalities, and recreational facilities. During inspections staff check water chemistry, safety equipment, personnel training, and mechanical areas. Recreation camps and mobile home parks are inspected to assure conditions are safe, sanitary, and comply with NAC *Title 178 - Environmental Health*. NDEE has a Memorandum of Understanding with the Nebraska Department of Agriculture to perform food inspections at the following facilities: schools, college food service (room and board for students), senior centers, and childcare centers (upon referral from the DHHS Licensure Unit). Lastly, the program conducts evaluations of domestic water supplies and onsite wastewater treatment systems at the request of homeowners, purchasers, or mortgage lending institutions. Many lenders require an inspection of the onsite water and wastewater treatment systems for compliance with applicable State of Nebraska regulations prior to granting a loan. During the evaluation, staff visually inspect the water well and the onsite wastewater treatment system and collect water samples to test for bacteria and nitrates.

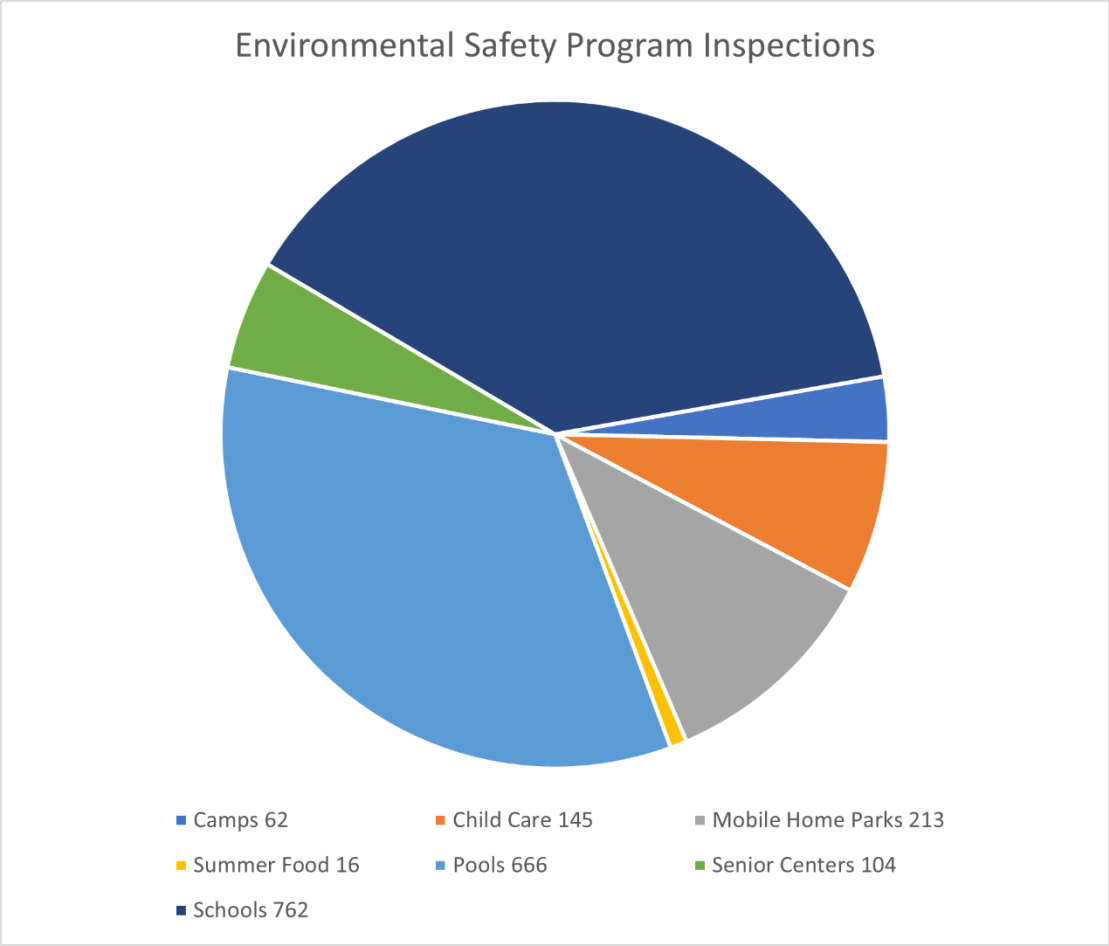
A sign is shown temporarily closing an apartment pool.



Ord Community Pool

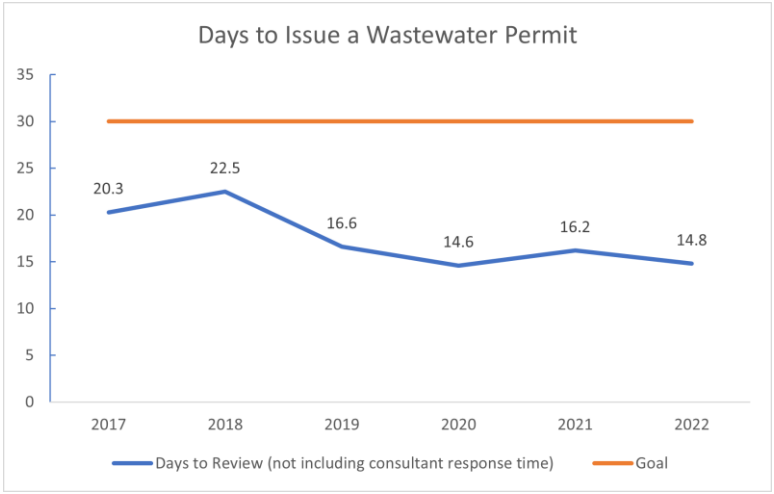
NDEE has partnerships with Douglas County Health Department, Lincoln-Lancaster County Health Department, Central District Health Department and the City of Norfolk to perform inspections at public swimming pools in their jurisdictions.

During FY2022, the seven Environmental Safety program staff completed 1,968 inspections of pools, camps, mobile home parks, childcare centers, senior centers, and schools. There were an additional 176 well and septic evaluations completed for property transfers. The chart on the following page shows a breakdown of FY2022 inspections.



Wastewater Engineering

The engineers in the program administer Nebraska's construction permit program for wastewater facilities built in the state. Industries, commercial facilities, and municipal utilities are required to submit the plans and specifications for their projects to NDEE for review and approval. The construction documents are reviewed to make sure that the collection systems and treatment facilities will function properly, are able to meet treatment standards as well as meet discharge limits and protect the public and the environment from adverse effects. During FY2022, the Engineering Section received 248 applications for wastewater projects and approved 255 projects. The average day for the Engineering Section to review and issue a construction permit is shown in this chart:



Nebraska's design standards for wastewater facilities are found in NAC *Title 123 - Rules and Regulations for the Design, Operation and Maintenance of Wastewater Works*. These standards are updated periodically to keep Nebraska in alignment with regional standards. The state's design standards are written to encourage the use of proven technologies but have also allowed the use of innovative designs where they are appropriate. The last update became effective on September 4, 2019. This update addressed duplicative language and provided clarity to the reader. It also removed an exemption for not requiring a construction permit for pretreatment facilities if the facility discharged to a public owned treatment works in another state.

Drinking Water Engineering

Drinking Water Engineering provides engineering plan review; issuance of construction permits; inspection of newly constructed projects for issuance of approvals for placement into service; and technical assistance and advisory contacts with owners/operators of public water systems, consulting engineers, state, federal and local officials, organizations, and the general public in matters relating to siting, design, construction, maintenance, and operation of public water systems. In addition to public water systems, the program provides similar services for all new and substantially modified public swimming pools and spas.

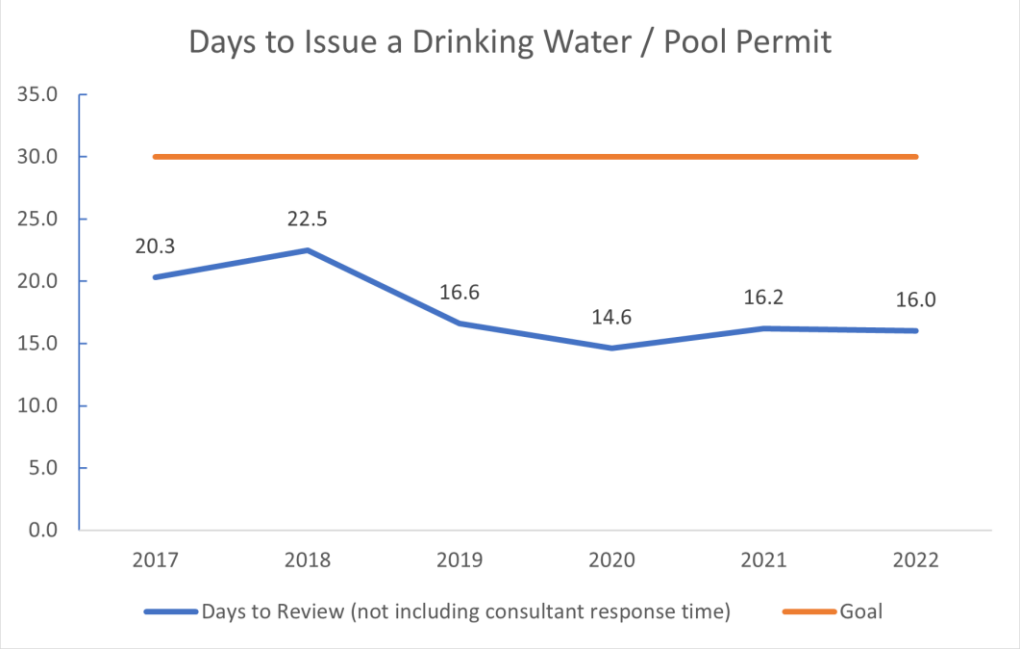
Swimming Pool Under Construction

In 2010, NAC *Title 179, Chapter 7: Siting, Design, and Construction of Public Water Systems* became effective. As a result, public water systems can enter into a three-year agreement to construct water distribution main projects without having to submit plans and specifications for review and approval. These systems are subject to an annual audit as a condition of the agreement. There are a total of 24 public water systems that have agreements with the agency.

The following table details the drinking water review and inspection engineering activities for FY2022:

Drinking Water Engineering Activities	Number
Water Projects Received for Review	181
Water Projects Approved	176
Water Projects Inspected	65
New/Modified Swimming Pool/Spa Projects Received for Review	71
New/Modified Swimming Pool/Spa Projects Approved	75
Pool/Spa Construction Projects Inspected	40
Three-Year Agreements for Distribution Main Projects—Annual Audits Completed	24

As with the wastewater engineering program, the drinking water engineering program has also experienced improved timeliness as a result of the cross-training within the Agency. This shown in the following chart:



Other Engineering Activities

In addition to the normal plan review and approval activity, the Engineering Section spends a considerable amount of time each year working with communities that need to upgrade their facilities, meeting with municipal officials, funding agencies, and consulting engineers to develop affordable projects for Nebraska's communities. The Agency continues to have quarterly meetings with the City of Omaha to discuss their combined sewer separation projects, and regulatory, engineering and funding issues. The Engineering Section also perform various activities. The following is a list of activities conducted by the Engineering Section:

- Reviewed and approved 52 onsite projects. Engineering review and approval is needed when an onsite project cannot meet Title 124 design standards or setback distances, for non-domestic type waste or for a system with flow exceeding 1000 gallons per day.
- Inspect wastewater treatment facilities when needed or to assist the Compliance Section.
- Review and evaluate justifications provided by professional engineers for any new well siting that does not meet the setback distances identified in NAC *Title 179*, *Chapter 7*.
- Evaluate encroachment issues that may be of concern to existing public drinking water system infrastructure.
- Review preliminary engineering reports and applications to the Water Wastewater Advisory Council
- Draft Categorical Exclusion and Finding of no Significant Impact documents for projects funded by the State Revolving Loan Fund.
- Review and approve operation and maintenance manuals funded the State Revolving Loan Fund.
- Assist in drafting loan documents and providing financial capability analyses for the projects to be funded.
- Assist the NPDES program in wastewater treatment plant capacity evaluation and local limits related activity.

The National Pollutant Discharge Elimination System (NPDES) Program

The NPDES Program is responsible for regulating discharges of pollutants to Waters of the State in order to maintain and protect the water quality of Nebraska's streams, lakes, rivers, and groundwater. NPDES programs also include:

- **Combined Sewer Overflows**, which addresses those municipalities that have combined storm water and wastewater sewer systems. Currently, the City of Omaha is the only municipality operating a combined sewer in the state.
- **Wastewater Treatment Sludge and Bio-solids Disposal**, which are requirements for treatment and disposal of municipal and industrial wastewater sludges and bio-solids.
- **Storm Water Permit Program**, which involves: 1) Construction sites of a specific size; 2) the Municipal Separate Storm Sewer System permits for medium and large municipalities; and 3) Industrial facilities.

NPDES Permits

Anyone who directly discharges pollutants to Waters of the State is required to obtain a permit. NPDES permits control pollutant discharges by establishing wastewater limitations for pollutants and/or requiring permittees to maintain certain operational standards or procedures. Permittees are required to verify compliance with permit requirements by monitoring their wastewater, maintaining records, and/or filing periodic reports.

NDEE is responsible for developing and issuing NPDES permits, and for ensuring that permitted facilities comply with permit requirements. The regulatory basis for this program is through an Environmental Protection Agency (EPA) delegation agreement with the Department

and NAC *Title 119 - Rules and Regulations Pertaining to the Issuance of Permits under the National Pollutant Discharge Elimination System.* The Nebraska NPDES program encompasses a number of different types of discharges including municipal, commercial, and industrial wastewater discharges; livestock waste control; industrial discharges to public wastewater treatment systems (also known as the Nebraska Pretreatment Program); municipal combined sanitary and storm sewer overflows (CSO); and construction, industrial, and municipal storm water discharges. Livestock NPDES permits may be found in the Agriculture section.

Most NPDES permits limit the discharge of pollutants by establishing effluent limitations for specific pollutants such as carbonaceous biochemical oxygen demand, total suspended solids, and ammonia, among others. The permittee is then responsible for testing their wastewater discharge to ensure that the limits are not exceeded. Permits may also limit toxicity in effluents and permittees may be required to demonstrate that their wastewater is not toxic to aquatic organisms (e.g., daphnia or fathead minnows). Permits may also require development of Best Management Practice Plans to minimize or control pollutant discharges.

The permit development process involves identifying the pollutants of concern, and then developing permit limits based upon the more stringent of either technology-based standards or water quality-based standards. Technology-based standards reflect effluent quality that can be achieved using treatment technology that is available to the permittee. NDEE Title 119 sets forth technology-based standards for municipal facilities and many types of industrial facilities. Technology-based standards can also be developed on a case-by-case basis when necessary.

Water quality-based limits are the limits necessary to meet the in-stream water quality standards established in NAC *Title 117 - Nebraska Surface Water Quality Standards*. In some instances, where a surface water/groundwater interconnection may be of concern, NPDES permit limits may be based upon NAC *Title 118 - Groundwater Quality Standards and Use Classification*.

Permits may be developed and issued on an individual site-specific basis, or they may be developed and issued to apply to facilities with similar activities or effluent characteristics. These two types of permits are respectively referred to as individual permits and general permits. To date, the Department has developed and issued general permits for the following activity categories: hydrostatic testing, dewatering, land application of concrete grooving/grinding slurry, pesticides applications to, over, and near Waters of the State, gasoline contaminated groundwater remediation projects, petroleum product contaminated groundwater remediation projects, construction site storm water, and industrial site storm water. Municipal Separate Storm Sewer System (MS4) permits have been issued to entities, including metropolitan areas and counties that meet the criteria of the NPDES Storm Water Program.

There are 586 facilities with discharge authorizations under individual permits (municipal, industrial, and pretreatment), and 26 municipal storm water permits (MS4). There are nearly 2,927 active authorized discharges under other general permits. The general permits include 1,036 active authorizations under the construction general storm water permit, 333 dewatering, 90 hydrostatic testing, 987 industrial storm water, three pesticide, and 24 Treated Ground Water Remediation Discharge sites.

Municipal and Industrial Facilities

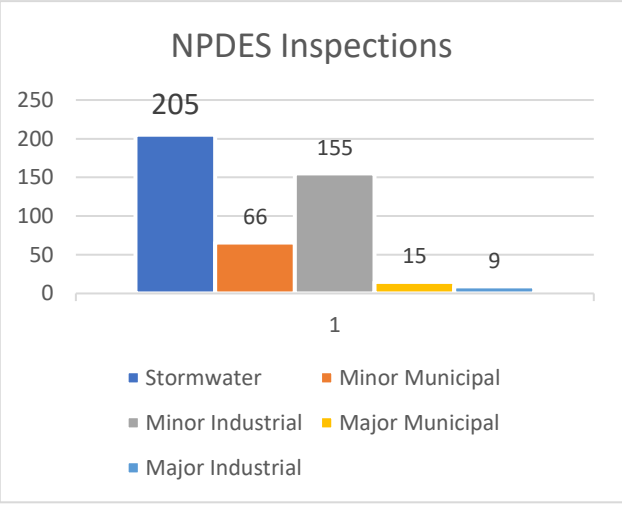
Industrial and municipal facilities are both grouped as major or minor facilities based upon their size and/or their potential to impact the receiving stream.

Municipal and industrial facilities are required to verify compliance with numeric permit limits by monitoring their effluents (i.e., self-monitoring). Monitoring frequency can vary from daily to annually depending upon the pollution and impact potential of the facility. The facility must report monitoring results to NDEE, typically on a quarterly basis. However, monitoring results that indicate non-compliance with permit requirements must be reported verbally within 24 hours. Records of all monitoring activities must be kept for a period of three years.

The Section verifies compliance through a variety of activities including reviewing discharge monitoring reports, following up on complaints and incident reports, conducting on-site inspections, and performing effluent monitoring inspections. Inspections are planned and conducted to align with the federal fiscal year.

During on-site inspections, section personnel walk through the facility and review operational procedures and records. Major industrial, major municipal, and pretreatment facilities receive annual on-site inspections. The priority of minor facilities inspections is based on discharge compliance histories, incident reports and complaints. Minor facilities are inspected once every five years at a minimum. Inspectors performed 485 NPDES inspections in Fiscal Year 2022. A breakdown of those inspections is provided in the chart below. The minor industrial inspections include 123 pretreatment inspections. During selected effluent monitoring inspections, effluent samples are collected and analyzed by the Department to compare with self-monitoring results. Facilities selected for effluent monitoring inspections are chosen based upon pollution potential, past compliance or incident report histories, complaints, and/or Basin Management Approach priorities.

Data generated by facility monitoring and NDEE on-site and effluent monitoring inspections are reviewed and entered into the federal Integrated Compliance Information System (ICIS) computer database. This database is used to generate facility reports and review facility compliance history.



In addition to inspections, NDEE provides permit assistance visits to help permittees better understand the requirements in their permits and help identify problems before they become significant noncompliance. These visits can be requested by the permittee or offered by NDEE. NDEE conducted 17 assistance visits in the 2022 Fiscal Year.

Combined Sewer Overflow Program

The City of Omaha has combined sewers that are subject to storm-induced bypasses of untreated wastewater. Many of Omaha's systems were built prior to the existence of secondary sanitary wastewater disposal standards. When storm or snow melt runoff is occurring, these

systems may become hydraulically overloaded and excess water flows bypass the treatment system. Untreated wastewater is discharged into the receiving stream when bypasses occur.

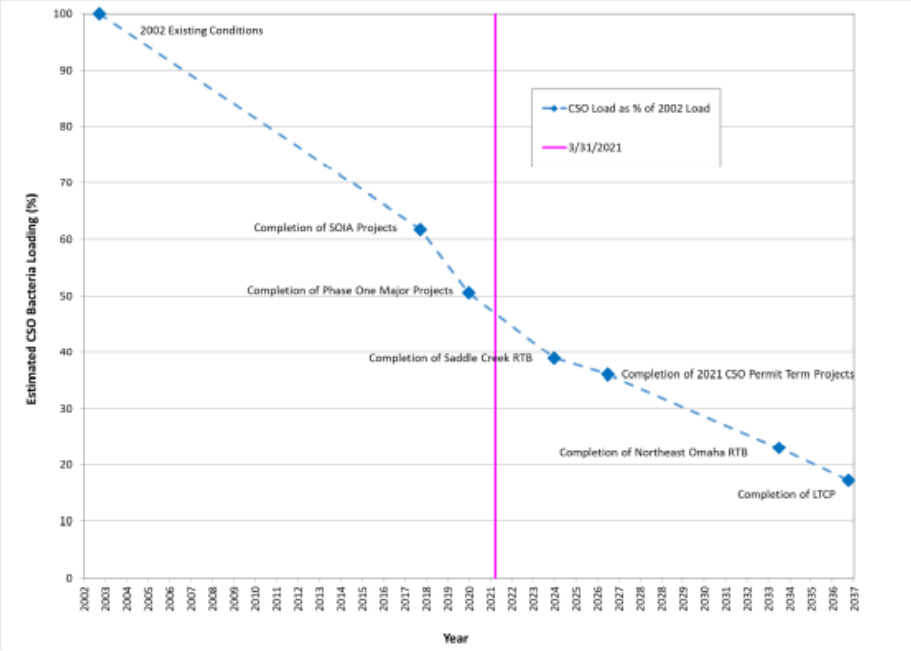
The City and the Department work within the framework of the Clean Water Act, a consent Order initiated in 2007, and the City's Long-Term Control Plan (LTCP). The projects included in the LTCP span through 2037 and are estimated to cost over $2 billion. The goal of the projects is to reduce or eliminate combined sewer overflows and comply with State and Federal regulations. The City of Omaha has identified 29 projects in the LTCP for delivery in the next 16 years. Thirteen of these projects are scheduled for completion by 2026. The order was amended in January 2018 to allow for evaluation of existing and future CSO improvements. The evaluation will help determine what efforts have been the most or least effective meeting permit requirements, provide socio-economic value to neighborhoods, improve the bid process, and improve value engineering for projects.

In the Missouri River Watershed (MRW), Omaha modeled the efforts to date to show the following:

- A 56 percent capture of representative year wet weather volume as compared to 30 percent under 2002 Existing Conditions.

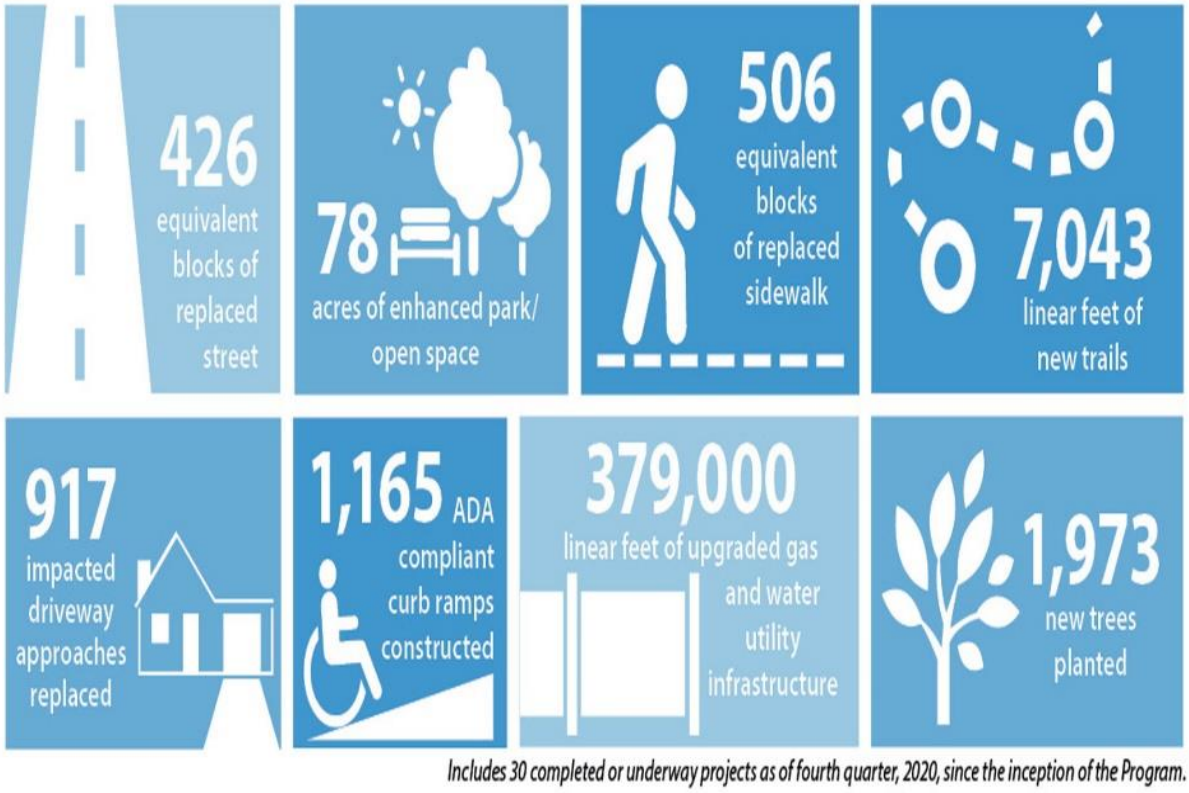
- A significant increase in flow receiving secondary treatment during wet weather due to increased treatment capacity at the Missouri River Water Resource Recovery Facility and increased pumping capacity at the new Leavenworth Lift Station; the volume receiving secondary treatment was 40 percent greater than in 2002 Existing Conditions.

- As CSO volumes are reduced, CSO pollutant loadings also will be reduced. In the MRW, it was estimated that the E. coli load to the Missouri River will be reduced by 85 percent under representative year precipitation conditions after full implementation of 2021 LTCP Update CSO controls. In the Papio Creek Watershed, it was estimated that the E. coli load to the watershed will be reduced by 71 percent for the representative year. Overall, as of 2021, Omaha estimates that E. Coli loading has been reduced by over 50 percent. The chart to the right details the progress of E. Coli reductions over time.



Clean Solutions for Omaha, City of Omaha. OmahaCSO.com

In addition to the environmental benefits from the CSO program, Omaha has realized many community benefits which have allowed for the enhancement of neighborhoods. The next figure details some of the benefits realized beyond the environmental:



Clean Solutions for Omaha, City of Omaha website. OmahaCSO.com

The City of Omaha and NDEE continue to work cooperatively on evaluating and implementing long-term solutions to protect water quality, comply with the CSO requirements of the Clean Water Act, and minimize the financial impacts to the most vulnerable citizens in the community. The key elements of this process are evaluating the success of completed efforts, maximize the effectiveness and value of future efforts, and balance these achievements with other infrastructure needs. The City provides updates and encourages public involvement with its CSO program. This can be viewed on the City's website at http://omahacso.com/.

Wastewater Treatment Sludge and Biosolids Disposal

Disposal requirements for municipal and industrial wastewater treatment sludges or biosolids can be incorporated into NPDES permits. These sludge disposal requirements assure that sludges or biosolids are treated and disposed in a manner that is environmentally sound and protective of human health. Beneficial use through the land application of biosolids is an effective management tool.

On Feb. 19, 1993, the EPA published the federal sludge regulations under 40 CFR 503. Under these regulations, an estimated 330 municipal facilities in the state have sludge monitoring requirements. These requirements include metal and nutrient content analyses, improved records for tracking the amount of sludge and metals applied to each disposal site,

and cumulative disposal limits. The Department has not sought delegation of this program from the EPA. The program is managed out of the EPA Region 7 office in Lenexa, Kansas. NDEE provides guidance for municipalities, approves land application sites, and provides permit language to assist with biosolids program compliance.

Storm Water Programs

In compliance with federal regulations, the NPDES Storm Water Programs regulate the discharge of pollutants in storm water from certain construction sites, industrial facilities, and municipal storm sewers. Federal Storm Water regulations determine the threshold for coverage of construction sites at one acre or more or sites that are less than one acre if they are part of a common plan of development or sale. Industrial facilities include a number of different types of facilities in addition to typical process industries (e.g., landfills, wastewater treatment sites, recycling centers, scrap yards, mining operations, transportation facilities, and hazardous waste facilities). These regulations also determine the number of municipalities and urban areas that are subject to the NPDES program for storm water discharges.

Two general permits have been issued to provide coverage for industrial facilities and construction sites. Both of these general permits require the permittee to develop Storm Water Pollution Prevention Plans to control and reduce the discharge of pollutants. Since FY2017, an online application process is utilized for the Construction Storm Water General Permit that streamlines the issuance of coverage to applicants. This online process coordinates with the Nebraska Game and Parks Commission and facilitates endangered and threatened species reviews, reducing the time and paperwork needed. The City of Lincoln now shares a construction storm water permitting and records system with the NDEE. This increases communication and efficiency with the state, city, and permitted community.

The Industrial Storm Water General Permit online application was made available to public in FY2022. Like the CSW online application process, the process coordinates with the Nebraska Game and Parks Commission and efficiently walks the user through portal registration and the document upload process needed to obtain approval.

Urbanized areas are subject to the Municipal Separate Storm Sewer System (MS4) Program. Currently, permitted urbanized areas in Nebraska include the cities of Lincoln and Omaha; Douglas, Sarpy, and Dakota Counties; and the communities of Beatrice, Columbus, Fremont, Grand Island, Hastings, Kearney, Lexington, Norfolk, North Platte, South Sioux City, Gretna, Gering, Terrytown, and Scottsbluff. The program also requires coverage for the University of Nebraska's campuses in Lincoln and Omaha; the Nebraska Department of Transportation; and Offutt Air Force Base. NDEE works with individual permittees and organizations, like Nebraska H2O and the Nebraska Floodplain & Stormwater Managers Association, to conduct outreach. NDEE also evaluates the individual storm water management plans provided by permittees and communicates if these plans meet requirements. This can also include site visits throughout the year to evaluate implementation of the plans.

Nebraska Pretreatment Program

The Nebraska Pretreatment Program functions to protect municipal wastewater collection and treatment systems from damage or overloading by industrial dischargers. The pretreatment regulations are found in NAC Title 119. The rules and regulations set forth prohibited discharge standards that apply to all industrial users of publicly owned wastewater treatment facilities and

require permits for significant industrial users. The significant industrial users are determined by one of several means: 1) the existence of an industrial category for which pretreatment discharge standards are established in NAC Title 119; 2) the volume or strength of the wastewater discharged from the facility; or 3) the potential of the industrial user to adversely affect the wastewater collection or treatment facilities. There are 123 significant industrial users with a pretreatment permit.

The authority for establishing the Pretreatment Program is derived from the NPDES program requirements set forth in Section 402 of the Federal Clean Water Act. The issuance procedures and general format of Pretreatment Program and NPDES permits are very similar. Permittees are required to carry out self-monitoring activities, maintain records, and submit periodic reports. Compliance activities include report reviews, on-site inspections, and compliance monitoring inspections. Compliance data are entered into the national database, ICIS, to facilitate compliance review activities.

Although the Pretreatment Program is really a subprogram of the NPDES program, administration of this program requires more coordination and cooperation with local municipal officials. To accomplish this, the Department has entered into Memorandums of Agreement (MOAs) with 11 communities describing respective city and state responsibilities. The agreements vary in nature depending on the size and capabilities of the community. Omaha and Lincoln are the most active municipal partners, accepting responsibility for a large variety of activities including facility sampling, inspections, complaint investigations, permit reviews, and industrial user technical assistance. Other communities rely more heavily upon the State for compliance inspections and technical reviews. However, all cities with agreements conduct initial complaint or incident investigations, report significant incidents to the NDEE, and assist in permit development by reviewing draft permits. The NDEE is working with communities throughout the state to get them more involved in the pretreatment program and to improve cooperative efforts in this program.

State Revolving Fund and Associated Grant Programs

The Planning and Aid Division's State Revolving Fund Section administers distribution of state and federal assistance for the Clean and Drinking Water State Revolving Funds (SRFs), which provide below market loan assistance to communities. This section also oversees the Emerging Contaminants in Small or Disadvantaged Communities, Lead Remediation in Schools, Sewer Overflow and Stormwater Reuse Municipal, and Small, Underserved, and Disadvantaged Communities grant programs. The level of assistance provided by these programs was greatly increased with the recent Infrastructure Investment and Jobs Act, more commonly referred to as the Bipartisan Infrastructure Law (BIL). Many of the planning efforts for BIL funds were completed during last fiscal year, with funding awards and loans to be signed in the upcoming year.

Separate from the BIL, and signed into law by Governor Pete Ricketts on April 13, 2022, the section also administers three projects with allocations from the American Rescue Plan Act of 2021 (ARPA), as any essential water and sewer infrastructure projects funded under ARPA are aligned with those eligible under the SRFs.

Clean Water State Revolving Fund

The Clean Water State Revolving Fund (CWSRF) program provides below-market loan financing and small community matching grants to municipalities for construction of wastewater treatment facilities and sanitary sewer collection systems to alleviate public health and environmental problems. The loan principal repayments revolve back into new loans, and interest earnings on the fund are primarily used to pay off the state match bonds. An administrative fee is assessed to each loan made, which pay for program operating costs including day-to-day program management activities and for other costs associated with debt issuance, financial management, consulting, and support services necessary to provide for a complete program.

The CWSRF program receives a capitalization grant annually from EPA. There is a 20% state match requirement to obtain that grant, which is typically a debt issuance provided through a Nebraska Investment Finance Authority (NIFA) bond. In September of 2021, the EPA awarded Nebraska's 2021CWSRF capitalization grant in the amount of $8,109,000. The required match of $1,621,800 was provided both through bonds, and a cash transfer from the Administrative Cash Fund. In SFY 2022, the CWSRF funded projects totaling $205,548,527 in loans, with $1,707,383 loan forgiveness and grant assistance.

Additional Subsidy Awards

Many small municipalities find that the development and construction of needed projects are too costly without additional grant subsidy provided with CWSRF loans. To assists those communities, the CWSRF provides additional subsidy awards to financially distressed municipalities with a population of 10,000 or less. One available grant is the Project Planning Activities and Report Grant (PPAR). This grant is funded through the Administrative Cash Fund and awarded to small communities to identify wastewater project needs. After the project is identified, the CWSRF may provide a Small Town Grant (STG). Funded from the Administration Cash Fund, this grant provides subsidy of up to $250,000 per project. This grant program has provided $10.83 million in funding for 88 projects with CWSRF loans since the start of the program.

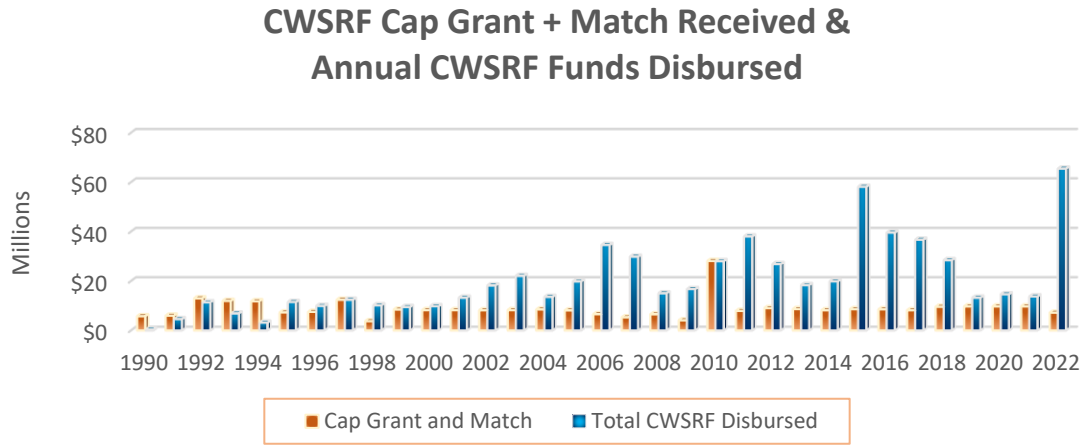
Loan forgiveness is becoming the primary method of providing additional subsidy, through reserving up to 10% of the federal CWSRF capitalization grant. Like the PPAR and STG, borrowers must show financial hardship to be eligible for this grant, then eligibility is based on:

- Loan Forgiveness eligibility follows a tiered system.
  - Population Focused
    - Population of 10,000 or less – Capped at 15%
    - Population of 3,300 or less – Capped at 20%
    - Population of 500 or less – Capped at 25%
- Borrowers were also evaluated based on standard loan forgiveness terms from prior fiscal year programs and awarded loan forgiveness amount based on whichever is greater, dependent on availability of funds.

Total CWSRF Assistance Provided

After nearly 35 years of activity, the fund's net assets have reached $346.2 million as of July 1, 2021. Since its inception, the CWSRF has provided loans for 350 projects with a cumulative loan award amount of $673.4 million.

The following graph provides the total assistance provided by the Clean Water program per year and the cumulative amounts of capitalization grants and match received and total amounts disbursed.



Drinking Water State Revolving Fund

The Drinking Water State Revolving Fund (DWSRF) program provides below-market rate loans, with forgiveness and grant assistance, but to owners of public water systems (PWSs). The DWSRF is unique in that loans may be awarded to privately-owned PWSs. Loan principal repayments revolve back into new loans, and interest earnings on the Fund are used to pay off NIFA bonds issued for the required EPA capitalization grant match. There is also a small administration fee assessed to each DWSRF loan for program management activities.

The DWSRF program receives a capitalization grant annually from EPA. There is a 20% state match requirement to obtain that grant, which is typically a debt issuance provided through a NIFA bond. In September of 2021, the EPA awarded Nebraska's 2021 DWSRF capitalization grant in the amount of $11,001,000. The required match of $2,200,200 was provided both through bonds, and a cash transfer from the Administrative Cash Fund. In SFY 2022, the DWSRF funded projects totaling $71,299,064 in loans. After nearly 25 years of activity, the Fund's Net Assets have reached $228.5 million as of July 1, 2021.

In SFY 2022, the DWSRF entered into seventeen binding commitments to PWSs, including four amendments to existing loans. From the noted loan amount above, disadvantaged communities received $6,830,772 in forgiveness assistance. The EPA grant awards required that a minimum of 20% of the grant be in the form of additional subsidization (e.g., loan forgiveness). Increased loan forgiveness is provided when a project addresses a public health concern (e.g., Nitrate in a drinking water supply).

DWSRF Set-Aside Funds

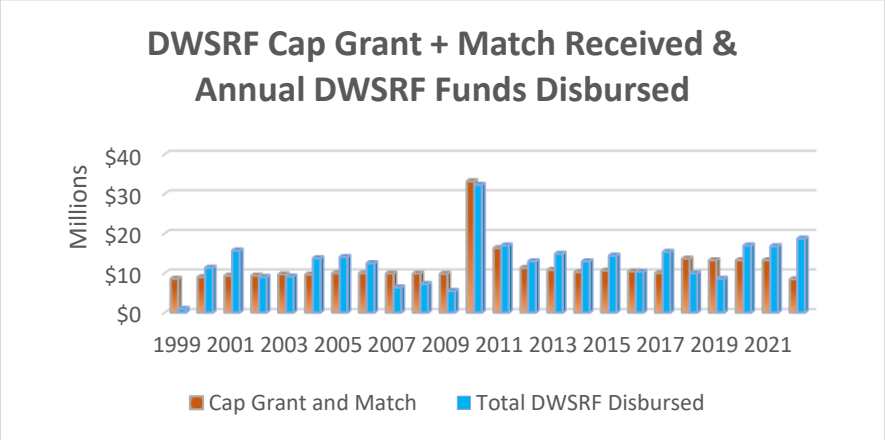
A notable difference between the SRFs, the DWSRF include set-asides for funding within Nebraska's Drinking Water Division to provide for technical assistance, source water protection, capacity development and operator certification.

The Small System Technical Assistance set-aside (up to 2% of the capitalization grant) provides technical, managerial, and financial assistance to PWSs serving a population of 10,000 or less. This is accomplished through contracts with organizations that have expertise in dealing with small systems. The state may use up to a total of 10% of the capitalization grant from the State Program Management set-aside, which the DWSRF typically allocates to help fund the NDEE's Drinking Water Division.

In SFY 2022, under the Local Assistance and Other State Programs set-aside (15%), the communities of Aurora and Central City were selected to receive Source Water Grants totaling $98,550 from the 2021 Capitalization Grant. Further, two agreements for preliminary engineering reports were awarded to high priority PWSs to address public health issues in the Village of Burr and for the Lewis & Clark Natural Resource District.

From the FFY 2021 capitalization grant, $2,970,270 was allocated to the 2% ($220,020), 10% ($1,100,100), and 15% ($1,650,150) set-asides. From the 15%, a second source water protection loan was made by the program to the City of Beatrice.

The following graph provides the total assistance provided by the Drinking Water program per year since inception and the cumulative amounts of capitalization grants and match received and total amounts disbursed.



SRF Summary

Each year the CWSRF and DWSRF publish an Intended Use Plan (IUP), which explains how the SRF programs will use capitalization grants received annually from EPA, annual state matching funds, and current program funds to meet Nebraska's communities' drinking water and wastewater infrastructure needs and funding requirements for the upcoming fiscal year. The IUP requires a comment period and is then formally presented to the Environmental Quality Council (EQC) for review and approval. Lastly, a more detailed annual report is prepared to meet EPA program requirements, including the Auditor of Public Account's report done for SRF programs. These can be found at the State Revolving Fund Section at dee.ne.gov

State Revolving Fund Assistance by Legislative District as of June 30, 2022

	CWSRF Assistance			DWSRF Assistance			Total SRF Assistance		
District	CWSRF Loan	CWSRF Subsidies	CWSRF Total Assistance	DWSRF Loan	DWSRF Subsidies	DWSRF Total Assistance	SRF Loan	SRF Subsidies	SRF Total Assistance
1	$9,330,593	$1,226,436	$10,557,029	$35,295,809	$5,819,001	$41,114,810	$44,626,402	$7,045,437	$51,671,839
2	$55,168,808	$650,919	$55,819,727	$29,152,516	$338,535	$29,491,051	$84,321,324	$989,454	$85,310,778
3	$0	$0	$0	$0	$0	$0	$0	$0	$0
4	$0	$0	$0	$0	$0	$0	$0	$0	$0
5	$0	$0	$0	$0	$0	$0	$0	$0	$0
6	$0	$0	$0	$0	$0	$0	$0	$0	$0
7	$195,369,110	$1,908,000	$197,277,110	$6,552,655	$1,272,182	$7,824,837	$201,921,765	$3,180,182	$205,101,947
8	$0	$0	$0	$0	$0	$0	$0	$0	$0
9	$0	$0	$0	$0	$0	$0	$0	$0	$0
10	$0	$0	$0	$0	$0	$0	$0	$0	$0
11	$0	$0	$0	$0	$0	$0	$0	$0	$0
12	$0	$0	$0	$0	$0	$0	$0	$0	$0
13	$0	$0	$0	$0	$0	$0	$0	$0	$0
14	$2,745,000	$0	$2,745,000	$0	$0	$0	$2,745,000	$0	$2,745,000
15	$4,274,588	$520,577	$4,795,165	$11,481,307	$959,494	$12,440,801	$15,755,895	$1,480,071	$17,235,966
16	$15,528,483	$1,435,079	$16,963,562	$31,648,477	$5,352,396	$37,000,873	$47,176,960	$6,787,475	$53,964,435
17	$60,633,244	$1,523,766	$62,157,010	$12,269,207	$908,042	$13,177,249	$72,902,451	$2,431,808	$75,334,259
18	$0	$0	$0	$0	$0	$0	$0	$0	$0
19	$11,663,750	$189,394	$11,853,144	$2,273,161	$125,000	$2,398,161	$13,936,911	$314,394	$14,251,305
20	$0	$0	$0	$0	$0	$0	$0	$0	$0
21	$1,992,000	$250,000	$2,242,000	$2,056,127	$0	$2,056,127	$4,048,127	$250,000	$4,298,127
22	$4,327,139	$1,086,404	$5,413,543	$5,234,919	$1,633,176	$6,868,095	$9,562,058	$2,719,580	$12,281,638
23	$26,025,014	$1,233,963	$27,258,977	$5,263,505	$1,057,438	$6,320,943	$31,288,519	$2,291,401	$33,579,920
24	$26,974,678	$646,583	$27,621,261	$15,941,107	$4,129,998	$20,071,105	$42,915,785	$4,776,581	$47,692,366
25	$0	$0	$0	$829,007	$112,303	$941,310	$829,007	$112,303	$941,310
26	$0	$0	$0	$0	$0	$0	$0	$0	$0
27	$34,576,358	$1,250,000	$35,826,358	$14,977,829	$0	$14,977,829	$49,554,187	$1,250,000	$50,804,187
28	$0	$0	$0	$0	$0	$0	$0	$0	$0
29	$0	$0	$0	$0	$0	$0	$0	$0	$0
30	$5,274,475	$354,478	$5,628,953	$16,422,570	$1,830,051	$18,252,621	$21,697,045	$2,184,529	$23,881,574
31	$0	$0	$0	$0	$0	$0	$0	$0	$0
32	$10,297,713	$2,027,949	$12,325,662	$10,973,681	$2,953,100	$13,926,781	$21,271,394	$4,981,049	$26,252,443
33	$5,409,430	$75,989	$5,485,419	$936,858	$213,693	$1,150,551	$6,346,288	$289,682	$6,635,970
34	$16,823,969	$1,218,350	$18,042,319	$6,286,357	$1,643,068	$7,929,425	$23,110,326	$2,861,418	$25,971,744
35	$33,831,257	$0	$33,831,257	$0	$0	$0	$33,831,257	$0	$33,831,257
36	$85,481,979	$2,681,997	$88,163,976	$10,174,539	$984,750	$11,159,289	$95,656,518	$3,666,747	$99,323,265
37	$62,663,336	$0	$62,663,336	$23,332,392	$383,869	$23,716,261	$85,995,728	$383,869	$86,379,597
38	$9,872,893	$1,737,875	$11,610,768	$2,182,316	$602,881	$2,785,197	$12,055,209	$2,340,756	$14,395,965
39	$7,775,884	$100,000	$7,875,884	$297,522	$0	$297,522	$8,073,406	$100,000	$8,173,406
40	$10,330,441	$3,205,965	$13,536,406	$17,187,069	$4,206,489	$21,393,558	$27,517,510	$7,412,454	$34,929,964
41	$15,931,457	$1,907,394	$17,838,851	$11,762,992	$3,228,706	$14,991,698	$27,694,449	$5,136,100	$32,830,549
42	$18,064,666	$40,484	$18,105,150	$10,750,175	$737,046	$11,487,221	$28,814,841	$777,530	$29,592,371
43	$37,352,645	$2,389,844	$39,742,489	$4,481,976	$317,243	$4,799,219	$41,834,621	$2,707,087	$44,541,708
44	$27,967,239	$2,023,878	$29,991,117	$22,670,185	$2,839,043	$25,509,228	$50,637,424	$4,862,921	$55,500,345
45	$6,985,901	$0	$6,985,901	$0	$0	$0	$6,985,901	$0	$6,985,901
46	$271,286	$0	$271,286	$0	$0	$0	$271,286	$0	$271,286
47	$18,074,409	$3,216,134	$21,290,543	$29,208,859	$5,693,972	$34,902,831	$47,283,268	$8,910,106	$56,193,374
48	$14,142,244	$991,959	$15,134,203	$7,688,598	$2,550,340	$10,238,938	$21,830,842	$3,542,299	$25,373,141
49	$12,613,210	$0	$12,613,210	$988,800	$0	$988,800	$13,602,010	$0	$13,602,010

**The data collected is from loan obligations and grants awarded to communities for SRF related projects. Grants include Loan Forgiveness, Small Town Grant (CW only), and Planning Grants.*

***For the cities of Omaha and Lincoln, which have multiple districts in the area, District 7 was selected for Omaha projects and District 27 was used for Lincoln area projects*

Other Clean Water and Safe Drinking Water Act Grants

Small, Underserved, and Disadvantaged Communities Grant Program

Now an annual grant program authorized under the Water Infrastructure Improvements for the Nation Act (WIIN), the Small, Underserved, and Disadvantaged Communities Grant Program was established to assist such PWSs. Awards will be as non-competitive grants to Nebraska. The grant program is designed to help systems meet and comply with the Safe Drinking Water Act. Aid is provided to underserved communities that have no household drinking water or wastewater services or are served by a PWS that violates or exceeds any Maximum Containment Level, treatment technique, or action level.

The initial recipient of this grant was the Village of Martinsburg to help the community return into compliance with the Uranium drinking water standard and to replace a deteriorated water storage tank. This past fiscal year, $370,000 was awarded to the community and due to supply chain issue resulting in higher project bids, another $464,000 is planned for the Village to construct a stainless-steel water tank.

Sewer Overflow and Stormwater Reuse Municipal Grants Program

America's Water Infrastructure Act of 2018 amended section 221 of the Clean Water Act, which reauthorized the Sewer Overflow and Stormwater Reuse Municipal Grants Program (OSG). These amendments expanded project eligibilities to include stormwater management projects and authorized appropriations for the program. Grants are awarded to states, which will then provide sub-awards to eligible entities for projects that address infrastructure needs for combined sewer overflows (CSO), sanitary sewer overflows (SSO), and stormwater management. In May of 2022, the first allotment of $882,000 in OSG funds were awarded to Nebraska.

The initial recipients were the City of Omaha ($749,700) and the Middle Niobrara NRD ($132,300). Nebraska presently receives 3.9% of the national OSG allotment primarily due to Omaha's CSO project, well above the 0.58% that is allocated under the CWSRF. As the City's project is the primary, categorically eligible, need for this grant program, it is planned that for each funding allotment, another political subdivision will be selected as a best paired fit to meet the OSG's program minimum allocation to rural and financially distressed communities, this year being the NRD.

Lead Remediation in Schools

The NDEE, in cooperation with the Nebraska Department of Health and Human Services, is committed to reducing childhood exposure to lead from drinking water. NDEE applied for grant funding as part of EPAs 2021 WIINs Lead Testing in School and Child Care Programs and will be implementing the 3Ts (training, testing, and taking action) for reducing lead exposure in drinking water.

With the passage of the BIL, the authority for this grant program has been expanded to assist schools with carrying out projects to remediate lead contamination in drinking water. This will be carried out at schools and childcare programs, but only under the jurisdiction of local educational agencies, a requirement of the federal law. As such, sampling at public pre-schools, elementary schools, and associated childcare facilities will be a renewed focus of this

WIIN Grant award. The funding will be focused on facilities serving underserved and low-income communities, and those older than 1988, as they are at highest risk for containing lead plumbing components.

American Rescue Plan Act (ARPA)

The State of Nebraska was allocated $1.04 billion of Coronavirus State Fiscal Recovery Funds, which in part may be used to make necessary investments in water and sewer infrastructure. In the final rule adopted for implementation of these funds, the U.S. Department of the Treasury aligned the eligible uses of these funds with the wide range of types or categories of projects that would be eligible to receive financial assistance through the CWSRF or DWSRF.

Signed into law by Governor Pete Ricketts on April 13, 2021, Section 51 of Legislative Bill No. 1014e states that these funds are "…*for grants for reverse osmosis systems, which shall only be used for such purpose*". The narrative of the legislation further clarified that the NDEE "…*shall provide grants for villages and cities of the second class to install reverse osmosis systems in community water systems where drinking water test levels are above ten parts per million of nitrate and, if appropriate, provide grant funds for use to install reverse osmosis systems if test levels for nitrate in drinking water pumped from private wells are above ten parts per million*". The Department is developing programs to administer the $4,000,000 allocated for the above.

Section 52 of Legislative Bill No. 1014e states that these funds are to be used "…*for wastewater and drainage system updates at the state fairgrounds, which shall only be used for such purpose*". Wastewater and drainage system updates are eligible for assistance under the CWSRF, and therefore under ARPA, when a project provides a water quality benefit or for measures to manage, reduce, treat, or recapture stormwater or subsurface drainage water. The agency drafted a contract to provide the $20,000,000 allocated to the Nebraska State Fair.

Section 53 of Legislative Bill No. 1014e states that these funds are "…*to provide grant assistance for a rural drinking water project that serves rural water connections and at least four communities in two contiguous counties in order to convert to ground water sources and to provide for water system infrastructure and distribution, which shall only be used for such purpose*". The agency drafted a contract to provide the $7,000,000 allocated for this program to the Lewis & Clark NRD. That NRD owns and operates the Cedar-Knox Rural Water Project, which is the only water system to meet the above narrative language.

Nebraska's Public Water Systems

Information presented for the rest of this chapter reflects 2021 calendar year activities as published in the Nebraska Public Water System 2021 Annual Report, issued in June 2022.

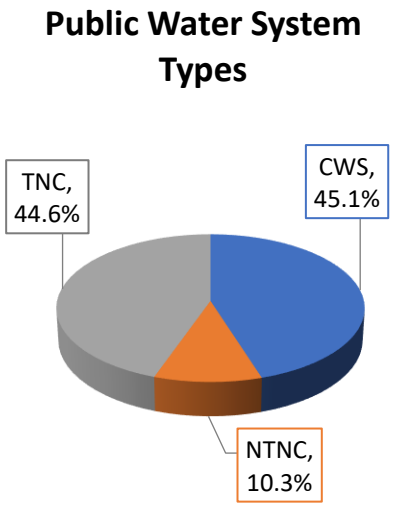
Population and Type of System

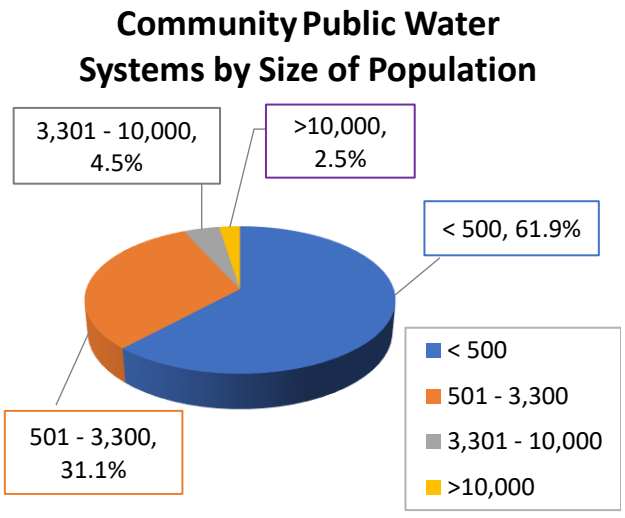
Nebraska public water systems can be broken down into categories based on the size of the population served and/or the type of population served.

Population	CWS	NTNC	TNC	Total Systems	Percentage*
<101	103	74	497	674	50.8%
101-500	267	45	88	400	30.2%
501-1000	98	8	6	112	8.4%
1001-3300	88	8	0	96	7.2%
3301-10000	27	2	0	29	2.2%
10001-50000	12	0	0	12	0.9%
>50000	3	0	0	3	0.2%
TOTAL	598	137	591	1326	100.0%

**Based on approximate population*

CWS = Community Water System ..... 598 systems
NTNC – Non-transient, non-community .....137 systems
TNC = Transient, non-community .....591 systems





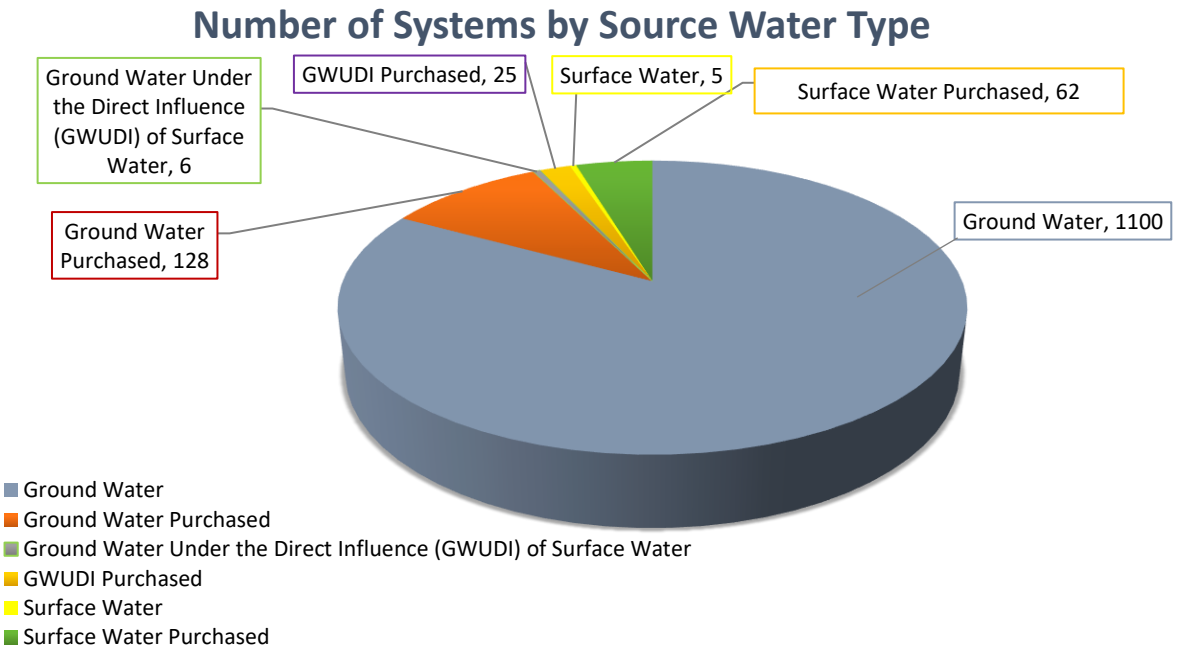
Over 60% of Nebraska's CWSs serve populations less than 500 people. Water systems with populations below 3,300 are considered to be 'small systems' by the EPA. This makes

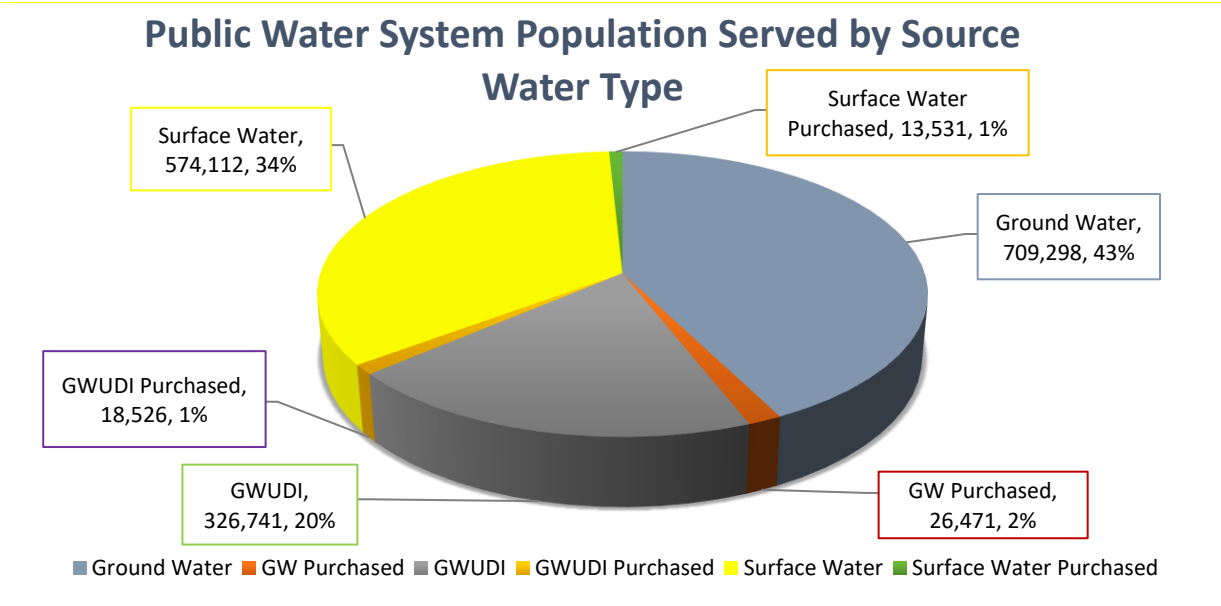
Nebraska a predominantly small system state with 93.0% of all of the State's CWSs serving 3,300 or fewer people.

Public Water in Nebraska

The Drinking Water and Groundwater Division at the Nebraska Department of Environment and Energy administers the State's regulations governing PWSs, Title 179 NAC 2 through 26, promulgated under the State's SDWA pursuant to and in accordance with the federal SDWA. State regulations must be at least as stringent as the federal regulations.

Public water systems provide water to approximately 80% of the people of Nebraska. Private domestic wells, which are not regulated under the SDWA, provide water for other 20% of Nebraskans. Most of the water Nebraskans drink is ground water and only five public water systems in the state obtain their drinking water from surface water. Another 62 systems purchase water from those five systems. In addition, 6 systems utilize ground water under the influence of surface water (GWUDI), and 25 additional systems purchase water from those six systems. The remaining 1,100 systems use ground water, and an additional 128 systems purchase their water from another ground water system.





**Percentages rounded to nearest 1%*

Nebraska's Drinking Water Division's Activities

The Drinking Water Division has 31 full time equivalent positions (FTEs). The Monitoring and Compliance Section has 10, the Engineering Section has 9, the Field Services and Training Section has 12, and 2 FTEs contribute to the administration of the program.

Drinking Water Field Services, Water Operator Training, and Capacity Development

These areas encompass four separate, but related areas of responsibility:

1) Field Services (inspections, operator assistance, etc.)
2) Water Operator Training
3) Capacity Development, and
4) Water System Security

Field Services staff include a supervisor, eight field representatives, and two program coordinators. The Water Operator Training and Capacity Development components of the program are overseen by a training coordinator, and capacity development coordinator, respectively. Staff within these areas conduct sanitary surveys, train public water system operators, attend and present information at continuing education programs for water operators, assist public water systems (PWSs) with Level 1 and Level 2 assessments, provide support during emergency situations, and help public water systems to achieve or maintain adequate technical, financial, and managerial capacity. There are eight field areas located throughout the State to provide close contact and timely assistance to Nebraska's public water systems.

2021 Field Services & Training Covid-19 Response

The Covid-19 Pandemic impacted the activities of the FS&T Section. All field and training activities were suspended in mid-March and did not resume until mid-June. At that time, sanitary surveys, as well as other inspections, were allowed to resume under specific protocols to minimize the risk of spreading Covid-19. All NDEE staff were required to wear masks and gloves when at a PWS, and social distancing was observed whenever possible.

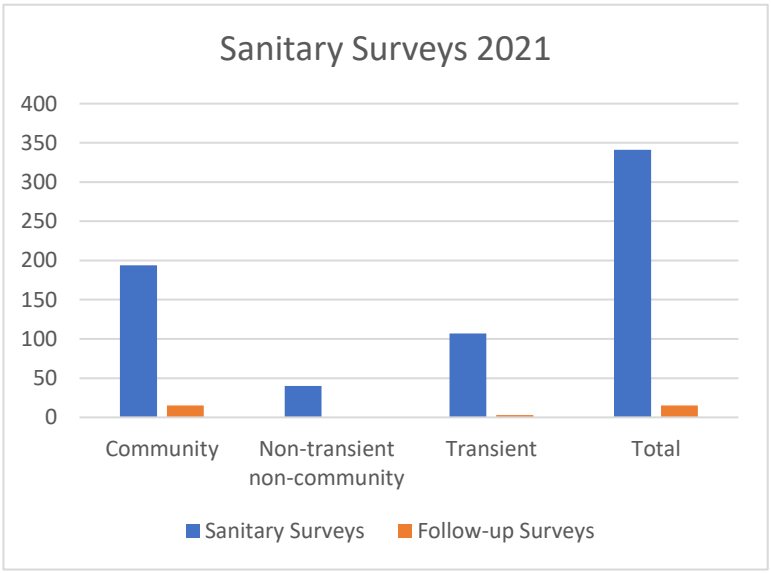
Operator training courses and examinations also resumed with modified procedures. Class sizes were reduced to ensure adequate social distancing, masks were worn by students and instructors at all times, and materials were prepared in advance for each student/examinee to limit the possibility of transmission. Additional courses were added to make up for the suspended courses and smaller class sizes.

Following the initial suspension of activities, the FS&T Section was able to complete all required inspections for the year and clear the backlog of those needing training for water operator licensure. As cases of Covid-19 began to rise a second time in Nebraska, activities were again suspended in November, in all counties that were designated as "red" on their local risk dial, representing a severe risk for spread. The conditions in the individual counties was monitored closely and as the risk dials began moving back out of the "red," NDEE was able to resume activities in most counties by the end of the year.

Field Services

Sanitary Surveys

Routine sanitary surveys are conducted once every three years for community water systems (CWS) and non-transient non-community (NTNC) public water systems and once every five years for transient non-community (TNC) PWSs. A sanitary survey helps to ensure that a water system is operating properly by working with their licensed water operator(s) to evaluate records, review their emergency plan and cross-connection control program, and inspect components of the water system.



Field personnel conducted 341 sanitary surveys (194 community, 40 non-transient non-community, and 107 transient public water systems) and 18 follow-up surveys (15 community and 3 transient public water systems). A total of 637 deficiencies were found in 2021. This reflects an overall deficiency rate of 1.9 deficiencies per sanitary survey in 2021. No deficiencies were found in 162 (48%) of the sanitary surveys completed in 2021. The average

number of deficiencies found in Nebraska's public water systems remained stable from 2019 to 2021, highlighting the great work of water operators in our State.

Outside of sanitary surveys, field staff conduct site inspections for the location of new public wells, assist engineering services personnel in conducting construction inspections of public water system projects (such as the drilling of wells, the construction of treatment plants, and the erection of water towers). Field services staff are essential workers that respond to emergencies associated with natural disasters, water service interruption, and/or contamination of a public water system

Level 1 & Level 2 Assessments

When public water systems have a confirmed presence of coliform bacteria, the Revised Total Coliform Rule (RTCR) requires that an assessment of the system be conducted. An assessment helps to identify the likely reason for the presence of coliform bacteria in the system. Any identified defects are required to be corrected.

A Level 1 assessment is triggered by the confirmed presence of total coliform bacteria in a public water system. The public water system is responsible for completing a Level 1 assessment. Then field staff are responsible for completing a review of this assessment.

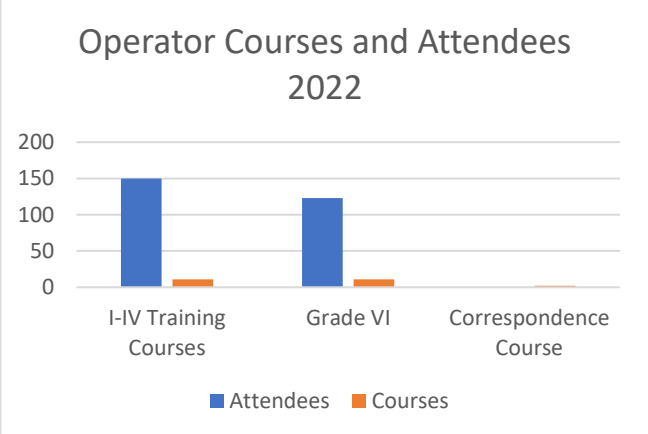
A Level 2 assessment is triggered by either multiple Level 1 assessments within a running twelve-month period, or by the confirmed presence of *E. coli* bacteria in the system. A Level 2 assessment is conducted by field staff and provides a much more detailed evaluation of the public water system.

Hypochlorinators

The Drinking Water Division maintains a number of hypochlorinators for temporary loan to public water systems when bacterial contamination is a source of concern. This equipment helps communities with temporary chlorination of their water supplies to ensure the safety of their drinking water. When a power outage or source failure is involved, program staff also help systems locate equipment and supplies which may be needed.

Training

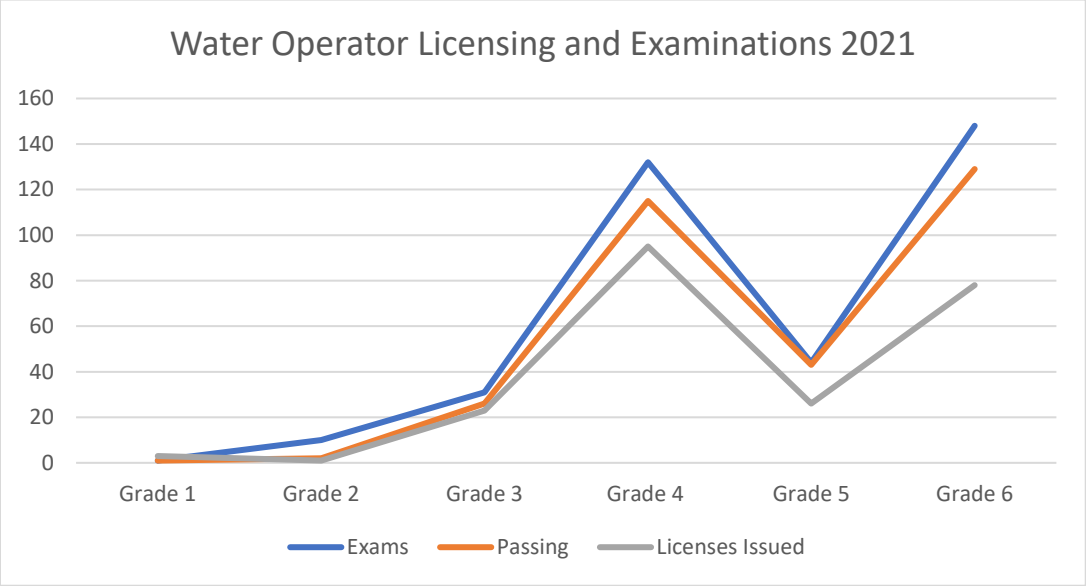
Field Services & Training Program personnel conducted 11 water operator training courses, Grades I through IV, with a total of 150 attendees. An additional 2 individuals completed the correspondence course that is also offered to prepare for the Grade IV licensure examination. For Grade VI licensure (backflow preventer testing and repair), 11 courses were offered with a total of 123 attendees. For Grade V operators (transient systems only), there are no classroom courses. Training is obtained through a self-study process. Water operators are licensed only



after successfully passing an exam. Examinations are offered following each training course and can also be scheduled individually.

The following table breaks down the number of initial licenses issued, and examinations conducted at each grade level:

Grade	Examinations	Passing	Number of Licenses Issued
I	1	1	3
II	10	2	1
III	31	26	23
IV	132	115	95
V	44	43	26
VI	148	129	78



Although COVID-19 did slow continuing education activities in 2021, the Drinking Water Division and other training providers adapted to existing conditions both in person and virtual training formats for water operators. Coordinated by the program, a group informally known as the Water Operator Training Coalition, met to identify training needs and to assist with scheduling of training opportunities. Members include the Nebraska Rural Water Association, the League of Nebraska Municipalities, the Midwest Assistance Program, Central Community College, and the Nebraska Section of the American Water Works Association. In 2021, as in past years, the Coalition produced a calendar identifying dates and locations of continuing education opportunities for distribution to licensed water operators.

A total of 73 workshops/seminars/conferences were initially offered in Nebraska for the purpose of water operator continuing education. Of these, 31 focused primarily on backflow prevention continuing education for Grade VI operators.

Capacity Development

Capacity development is a proactive approach, through which water systems acquire and maintain adequate technical, managerial, and financial capabilities, enabling them to provide safe drinking water to Nebraskans. NDEE's activities to bolster water systems' capacity are overseen by the program's Capacity Development Coordinator.

Additional support is provided by the 2% Team, which consist of the same members as the Water Operator Training Coalition. The name comes from the 2% set-aside from the Drinking Water State Revolving Fund (DWSRF).

DWSRF 2% Set-Aside Funds

Funds from the 2% Set-Aside of the DWSRF are used to provide assistance to public water systems to develop, and maintain, technical, managerial, and financial capacity. NDEE contracts with technical assistance providers to provide on-site technical assistance, capacity assessment, and board/council trainings.

On-Site Assistance: The Department, along with the 2% Team, prioritize water systems in need of assistance. Providers then work with water systems, providing assistance with applications for funding, capacity development training, manuals, and mentorship to assist water systems. Technical assistance providers made 302 in-person or phone contact visits with systems.

Capacity Assessment: Assessments of a system's managerial and financial capacity are conducted at water systems that receive loans through the DWSRF. An assessment is completed before the funded project begins, and again after it is completed, to determine the impact of the project on improving the system's capacity. Two systems received final assessments through this process during the 2021 calendar year.

The technical assistance contract which performed these assessments wasn't renewed for the SFY 2022 contract year, which started July 1, 2021. With this change, the decision was made to modify the process for performing assessments. An updated capacity assessment has been created, which includes detailed information about asset management using EPAs five core components. These assessments are being sent out several weeks prior to routine sanitary surveys for community and non-transient non-community systems. The surveys are to be completed by board member(s) or owner(s) with input from other water system personnel. The survey also requests signature/verification from a board member or owner and the operator. This process will ensure surveys are updated every three years for community systems and every five years for non-transient systems. If a survey isn't on file when a system applies for a DWSRF loan, the DWSRF program sends the survey as part of the application.

Board/Council Training:

Before the contract for assessments and board training ended July 1, 2021, nine board trainings were given. After that time, systems that were interested in board training were contacted through the other 2% set-aside technical assistance contractor, although those contacts didn't result in any additional board trainings. However, throughout 2021, the active 2% contractor reached out to 41 systems to informally educate them on elements of technical, managerial, and financial capacity that they could implement in order to build capacity of the

system. These outreach efforts were initiated by the capacity development coordinator through analysis of capacity information obtained during routine sanitary surveys. The educational visits provided by the contractor were done with board members and owners of systems and included topics such as asset management, policies and procedures, budgets, rates, water meters, and water loss accounting.

A new contract is planned with a beginning date of July 1, 2022, for individual board trainings and regional board training workshops. Along with requests from systems, individual workshops will be mandatory for systems receiving administrative orders. The contractor will be provided with a priority list of systems that would benefit from training for purposes of outreach and promotion of the regional workshops. Capacity development analysis will be used to place systems on the priority list for workshops

Education and Outreach

In-person training was still a restriction for the capacity development coordinator during 2021, however, the coordinator was able to give two, four-hour training sessions virtually for the Nebraska Clerk Institute and Academy in 2021, along with a recorded slide presentation for a water conference.

During 2021, the coordinator worked with stakeholders to update the capacity development strategy to include asset management; created a new capacity survey and process for obtaining needed capacity information to guide assistance and to provide needed information for DWSRF applicants; guided improvements in the current 2% contract assistance given; began outlining requests for proposals for more effective contracted assistance; worked with systems and EPA to ensure completion of America's Water Infrastructure Act required risk assessments and emergency response plans, including help with submission; began crafting an in-house presentation for board training to be placed on the website; enhanced the capacity development webpages on the agency website; and other activities, including continued support for systems to meet state regulatory requirements for emergency response plan updates.

Engineering Section

The Nebraska Safe Drinking Water Act and regulations adopted thereunder require that plans and specifications for all major construction related to public water systems be prepared by a registered professional engineer and be approved by the Department before construction begins. The law defines major construction as structural changes that affect the source of the water supply, treatment processes, or transmission of water to service areas, but it does not include the extension of service mains within an established service area.

Plan Reviews and Inspections

The Engineering Section provides engineering plan reviews; issuance of construction permits; inspection of newly constructed projects for issuance of approvals for placement into service; and technical assistance and advice to owners/operators of PWSs, consulting engineers, state, federal and local officials, organizations, and the general public in matters relating to siting, design, construction, maintenance and operation of PWSs.

Water system plan review was incorporated into state law to increase assurance that water source development, treatment, storage, and distribution facilities would be constructed or

expanded in a manner contributing to the ability of the system to deliver safe drinking water. Emphasis is placed on encouraging long-term benefits from capital investment as opposed to temporary actions designed to eliminate an emergency situation.

NDEE received 176 sets of plans and specifications for the construction of water projects for review and approval. In addition, engineering staff conducted 151 inspections of water projects constructed.

Annual Audits

On April 4, 2010, state regulations – Title 179 NAC 7, *Siting, Design and Construction of Public Water Systems – became* effective. As a result, public water systems can enter into a 3-year agreement to construct water distribution main projects without having to submit plans and specifications to NDEE for review and approval. These systems are subject to an annual audit by the Engineering Section as a condition of the agreement. In 2021, 18 annual audits were completed and as of December 31, 2021, a total of 24 public water systems have entered into 3-year agreements with the NDEE.

Drinking Water State Revolving Fund

The engineering staff also participates in the common pre-application review process for federal and state agency loans; grant programs for water and wastewater projects; and the Drinking Water State Revolving Fund (DWSRF) program activities. Following a Kaizen Process, separate engineering review meetings that are focused on the funding of infrastructure projects, was implemented. Establishment of this monthly meeting allows for detailed focus on engineering issues.

The annual DWSRF infrastructure needs survey was sent out to all public water systems. A ranking system developed by NDEE was used to prioritize and establish the funding order for infrastructure projects that could be funded by the DWSRF. The surveys indicated 394 eligible projects with just under $1 billion in infrastructure needs. The DWSRF provided six loans in 2021 for a total of $9,235,000 with $1,634,000 of that provided in forgiveness assistance.

Each year the Clean Water State Revolving Fund (CWSRF), which addresses wastewater, and the DWSRF, which addresses drinking water, publish an Intended Use Plan (IUP), which explains how the SRF programs will use capitalization grants received annually from the federal government, annual state matching funds, and current program funds to meet Nebraska's community water needs. IUPs also include a priority-funding list for CWSRF and DWSRF projects, listing and prioritizing projects that are submitted by the communities to the program. Every year, IUPs undergo a public hearing and comment period that are presented to the Environmental Quality Council (EQC) for review and approval.

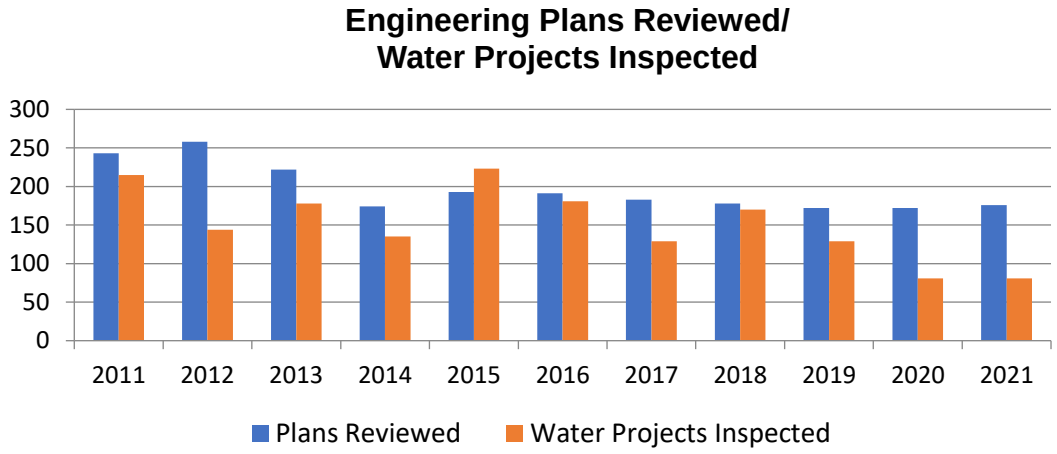
Other Engineering Activities

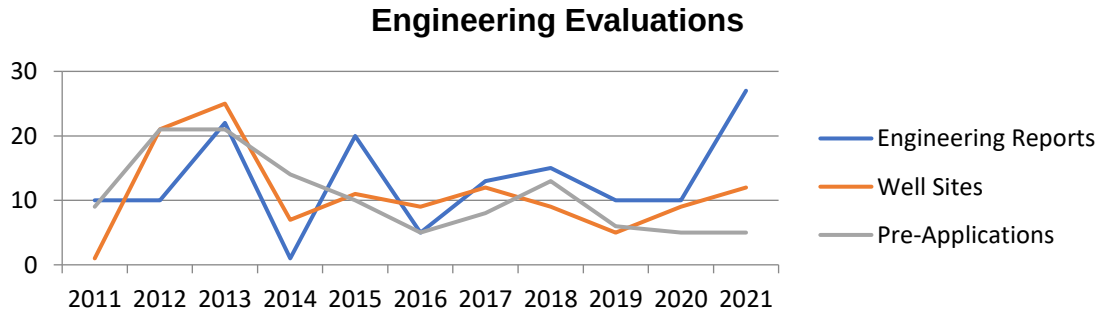
The Engineering Section staff also reviewed justifications provided by professional engineers for any new well siting that does not meet the setback distances identified in Title 179 NAC 7. A total of 12 new well site justifications were reviewed and 11 of these were approved. In addition, the engineering staff worked with city officials to evaluate encroachment issues that may be of concern to existing public drinking water wells. Four encroachment related issues

were evaluated and resolved. In addition, three operation and maintenance manuals for DWSRF projects were reviewed.

SUMMARY OF ENGINEERING SECTION ACTIVITIES
January 1, 2021, to December 31, 2021

ACTIVITIES	NUMBER
Water Projects Received for Review and Approval	176
Water Projects Inspected	81
Engineering Reports for Water System Improvements Evaluated	27
New Water Well Sites Evaluated	12
Common Pre-Applications for Water/Wastewater Projects for Federal and State Financial Assistance Reviewed	5
Operation and Maintenance Manuals for Drinking Water State Revolving Loan Funded Projects Reviewed	3
Three-Year Agreements for Distribution Main Projects—Annual Audits Completed	18
Encroachment Issues	4





Monitoring and Compliance Section

The Monitoring and Compliance (M&C) Section of the Drinking Water Division reviews analytical results for contaminants in drinking water. In this review of analytical results, M&C personnel determine compliance with the SDWA and issue appropriate enforcement actions, when necessary, to help a PWS return to compliance.

Safe Drinking Water Information System

The Safe Drinking Water Information System (SDWIS) is a database developed by EPA for States to report water quality data test results, violations, compliance assistance, enforcement, compliance schedules, water operator licensure, and PWS operating permits. It receives electronic data from the State of Nebraska Environmental Health Laboratory and 4 contract laboratories (Midwest Lab, Hall County, American Ag, and Enviro Services) that perform water analyses for NDEE.

NDEE is preparing for transition to cloud-based software called SDWIS Optimization. This transition includes staff training, implementing routine quality assurance and quality control measures, and implementing standard data entry and reporting methods.

Monitoring and MCL Violations, and Assessments

A public water system is required to monitor for the presence of 83 different contaminants. If a contaminant is present in the water, the system must verify that the contaminant does not exceed its maximum contaminant level (MCL).

In 2021, only 6 of 83 contaminants for which community public water systems monitor were found to be present above a MCL. That means 77 contaminants, for which monitoring was conducted, were not found above their respective MCL in a PWS in Nebraska.

Monitoring & Compliance enforces nine different federal monitoring rules. Each rule contains a group of similar contaminants. Below is a list of the federal monitoring rules:

1- Revised Total Coliform Rule
2- Disinfections Byproducts
3- Groundwater
4- Lead & Copper
5- Inorganic Chemicals
6- Radionuclides
7- Synthetic Organic Chemicals
8- Surface Water Treatment
9- Volatile Organic Chemicals

A major monitoring violation occurs when a system fails to collect any samples during a required compliance period. Significant monitoring violations are defined as any major monitoring violation that has occurred during a specified reporting period, which differs for each contaminant.

There were a total of 103 violations from 59 public water systems in 2021 for exceeding an MCL or failing to properly monitor. More detailed information on each of the monitoring rules follows the summary table below.

Revised Total Coliform Rule (RTCR)

The objective of the Revised Total Coliform Rule (RTCR) is to reduce potential exposure to bacterial contamination in drinking water. Testing for coliform bacteria is a way to indicate whether potentially harmful bacteria may be present. All public water systems are required to routinely monitor for the presence of coliform bacteria and *E.coli,* a type of coliform bacteria. The RTCR establishes a MCL for *E. coli*. Assessments of the PWS and corrective actions are required if *E.coli* bacteria are found. A system is required to issue a Public Notice (PN) if they fail to monitor for coliform bacteria, if *E.coli* bacteria are found, or for failure to complete an assessment or corrective action.

A Level 1 Assessment is triggered when total coliform is found in the system. The public water system conducts the Level 1 Assessment and the Drinking Water Division then reviews it. Identified deficiencies noted in the Assessment are required to be corrected in a timely manner.

A Level 2 Assessment is triggered when a system incurs more than one Level 1 Assessment in a running 12-month period, or if a system has a confirmed *E. coli* bacteria presence within their system. The Level 2 Assessment is conducted by the Drinking Water Division with a representative of the public water system. Level 2 paperwork is completed and identified deficiencies are noted and the system is responsible for correcting deficiencies in a timely manner.

Significant deficiencies must be corrected within 120 days and minor deficiencies must be corrected within 12 months.

RTCR Assessments 2021

Type of RTCR Assessment	Number of Assessments Triggered	Number of Systems	% of Systems with Assessments
Level 1	111	111	8.0%
Level 2	76	66	5.0%
Level 2, *E. coli* MCL triggered	11	11	.83%

RTCR Violations 2021

Type of RTCR Violation	Number of Violations Issued	Number of Systems	% of Systems with Violations
Treatment Technique, Level 1 requirements not met	0	0	0%
Treatment Technique, Level 2 requirements not met	0	0	0%
MCL – *E. coli* +	11	11	0.6%
Monitoring, Additional Routine, Major Routine	18	18	1.4%

Nitrate-Nitrite Rule

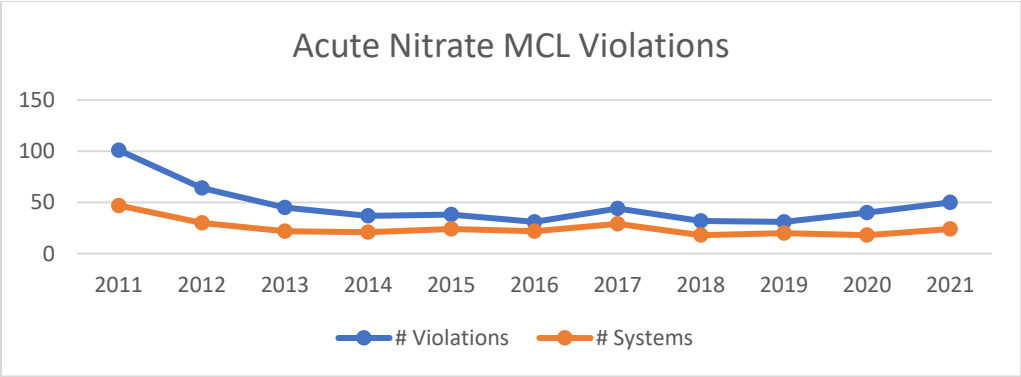
All public water systems monitor for nitrate-nitrite. Adverse health effects may be experienced when pregnant women, infants under six months of age, and nursing mothers, consume high levels of nitrate or nitrite in drinking water. A system is out of compliance when it

receives one monitoring or MCL violation. A system is issued an Administrative Order to correct a nitrate contamination problem if two nitrate-nitrite violations are issued within a consecutive three-quarter period.

A summary of the 2021 nitrate-nitrite violations is presented below along with historic data. Nitrate MCL violations have decreased significantly in Nebraska since 2011.

Nitrate-Nitrate Violations 2021

Violation	Number of Violations	Number of Systems	% of Systems with Violations
MCL – 10 mg/l	50	24	1.8%
Monitoring	5	3	0.2%



Public Notification Rule 2021

Public Notification is required if a PWS receives a MCL, Monitoring, or acute violation. There were two systems in violation of the PN Rule.

Rule	Number of Violations	Number of Systems
Public Notification Rule	2	2

Consumer Confidence Rule 2021

The CCR Rule requires all community water systems to prepare and distribute a brief annual water quality report summarizing information regarding source water, detected contaminants, compliance, and educational information. There was one system in violation of the CCR Rule.

Rule	Number of Violations	Number of Systems
Consumer Confidence Rule	1	1

MCL Violations for Chronic Contaminant Exposure

Ingestion of bacteria and nitrate-nitrite in drinking water are typically associated with acute (i.e., sudden) adverse health effects. Exposure to other drinking water contaminants are considered to be associated with chronic health effects (i.e., the adverse health effect is evident

only after repeated exposure or ingestion over a long period of time. Depending on the contaminant, routine monitoring occurs every year, every three years, or every six years (per EPA). If a contaminant is detected, monitoring is increased to quarterly.

If the level decreases below the MCL, the monitoring frequency may be reduced. A public water system is issued an AO after three quarterly MCL violations are issued in a rolling 12-month period. An AO is issued immediately if the contaminant is found at a level that may pose a health risk.

The tables below show contaminants and the number of violations issued for each.

Volatile Organic Chemical (VOC) Violations 2021

(Per the SDWA, only community and non-transient, non-community systems monitor for VOCs.)

VOC Contaminant	Number of MCL Violations	Number of Monitoring Violations	Number of Systems	% of Systems with Violations
Aldrin	0	0	0	0.0%
Benzene	0	0	0	0.0%
Carbon tetrachloride	0	0	0	0.0%
cis-1,2-Dichloroethylene	0	0	0	0.0%
Dicamba	0	0	0	0.0%
1,1-Dichloroethylene	0	0	0	0.0%
Dichloromethane	0	0	0	0.0%
1,2-Dichloropropane	0	0	0	0.0%
Metribuzin	0	0	0	0.0%
Monochlorobenzene	0	0	0	0.0%
o-Dichlorobenzene	0	0	0	0.0%
para-Dichlorobenzene	0	0	0	0.0%
Styrene	0	0	0	0.0%
Tetrachloro-ethylene	0	0	0	0.0%
Toluene	0	0	0	0.0%
trans-1,2-Dichloroethylene	0	0	0	0.0%
1,2,4-Trichlorobenzene	0	0	0	0.0%
Trichloroethylene	0	0	0	0.0%
1,1,1-Trichloroethane	0	0	0	0.0%
1,1,2-Trichloroethane	0	0	0	0.0%
Vinyl chloride	0	0	0	0.0%
Xylenes (total)	0	0	0	0.0%

Inorganic Chemical Contaminant (IOC) Violations 2021

(Per the SDWA, only Community and Non-transient, non-community systems monitor for IOCs.)

Contaminant	Number of MCL Violations	Number of Monitoring Violations	Number of Systems	% Systems with MCL Violations
Antimony	0	0	0	0%
Asbestos	0	0	0	0%
Arsenic	12	0	6	0.45%
Barium	0	0	0	0%
Beryllium	0	0	0	0%
Cadmium	0	0	0	0%
Chromium total	0	0	0	0%
Cyanide (as free cyanide)	0	0	0	0%
Fluoride	0	0	0	0%
Mercury	0	0	0	0%
Nickel	0	0	0	0%
Selenium	1	0	1	0.07%
Sodium	0	0	0	0%
Thallium	0	0	0	0%

Non-Volatile Synthetic Organic Chemical (SOC) Contaminants 2021

(Per the SDWA, only community and non-transient, non-community systems monitor for SOCs.)

Contaminant	Number of MCL Violations	Number of Monitoring Violations	Number of Systems	Systems with Violations
Alachlor (Lasso)	0	0	0	0%
Atrazine	0	0	0	0%
Benzo[a]pyrene	0	0	0	0%
Butachlor	0	0	0	0%
Carbaryl	0	0	0	0%
Carbofuran	0	0	0	0%
2,4-D	0	0	0	0%
2,3,7,8-TCDD (Dioxin)	0	0	0	0%
2,4,5-TP	0	0	0	0%
Chlordane	0	0	0	0%
Dalapon	0	0	0	0%

Di(2-ethylhexyl) adipate	0	0	0	0%
Di(2-ethylhexyl) phthalate	1	0	1	0.07%
Dibromochloropropane	0	0	0	0%
Dieldrin	0	0	0	0%
Dinoseb	0	0	0	0%
Diquat	0	0	0	0%
Endothall	0	0	0	0%
Endrin	0	0	0	0%
Ethylene dibromide	0	0	0	0%
Glyphosate	0	0	0	0%
Heptachlor	0	0	0	0%
Heptachlor epoxide	0	0	0	0%
Hexachlorobenzene	0	0	0	0%
Hexachlorocyclopentadiene	0	0	0	0%
Lindane	0	0	0	0%
Methomyl	0	0	0	0%
Methoxychlor	0	0	0	0%
Oxamyl (Vydate)	0	0	0	0%
Pentachlorophenol	0	0	0	0%
Picloram	0	0	0	0%
Polychlorinated biphenyls	0	0	0	0%
Propachlor	0	0	0	0%
Simazine	0	0	0	0%
Toxaphene	0	0	0	0%

Radionuclide Violations 2021

(Per the SDWA, only Community water systems monitor for Radionuclides.)

Contaminant	Number of MCL Violations	Number of Monitoring Violations	Number of Systems	Systems with Violations
Combined Radium (Radium -226 and Radium -228)	0	0	0	0%
Gross Alpha Including Radon and Uranium	0	0	0	0%
Uranium Mass Combined Uranium	9	0	3	0.22%

Disinfection Byproduct Violations 2021

(Only water systems that disinfect their water, monitor for Disinfection Byproducts, and Disinfectant Residuals.)

Contaminant	Number of MCL Violations	Number of Monitoring Violations	Number of Systems
Total Haloacetic Acids	0	0	0
Total Trihalomethanes	0	0	0

Disinfection Byproducts Stage 1 Monitoring

Violation	# Violations	# Systems
Qualified Operator Failure	0	0

Disinfection Byproducts Monitoring

	# Violations	# Systems
Monitoring	0	0

Disinfectant Residual Contamination Violations

MRDL	Treatment Technique # Violations	Treatment Technique # Systems	Monitoring # Violations	Monitoring # Systems
0	0	0	0	0

Lead and Copper Rule Violations

(Per the SWDA, only Community and Non-transient, non-community water systems monitor for Lead and Copper.)

Contaminant	Number of Monitoring Violations	Number of Systems	Systems with Violations
Lead and Copper	0	0	0%

Surface Water Treatment Rule Violations 2021

Type of Violation	Number of Violations	Number of Systems
Monitoring	0	0
Record Keeping	0	0
Treatment Technique	0	0

Ground Water Rule 2021

Type of Violation	Number of Violations	Number of Systems
Monitoring/Reporting/Recordkeeping	0	0
Sanitary Survey – Failure to Address Deficiency	0	0
Sanitary Survey – Failure to Consult	0	0
Treatment Technique	0	0

Administrative Orders 2021

The Drinking Water Division issues an Administrative Order (AO) when a public water system is significantly out of compliance. (Each contaminant has different parameters that indicate what constitutes "significantly out of compliance.") Once an AO is issued, MCL violations continue to be issued until the System returns to compliance. Failure to comply with the terms of an AO can result in administrative action or revoking the system's permit to operate.

	Total Coliform Monitoring	Nitrate	Arsenic	DBP
Number of Orders	0	0	1	0
Population Affected	0	0	150	0

Variances and Exemptions

No variances or exemptions were issued in 2021.

MCL Violations for Chronic Contaminants

Population Affected by Various Contaminants

Contaminant	Number of MCL Violations	Number of Systems	Population Affected
Arsenic	12	6	1430
Selenium	1	1	1307
Uranium Mass	9	3	630