

A Partnership
to Sustain
NEBRASKA'S
Environment



NPPD/NDEQ ANNUAL REPORT

2013 NPPD/NDEQ Annual Report

Introduction

In 2000, the Nebraska Public Power District and the Nebraska Department of Environmental Quality signed the Environmental Partnership Agreement, committing to work toward three common goals:

- Enhancing the quality of life for all Nebraskans
- Sharing ideas and resources and working together to solve problems
- Producing a more sustainable and healthier environment by working together to address energy and environmental issues

Over the past year, the NPPD/NDEQ Environmental Partnership Team has pursued these goals through various activities, ranging from examination of the beneficial use of methane derived from livestock operations to increasing energy efficiency at publicly owned wastewater treatment plants.

Communication is a key component of the Partnership's efforts. This includes communication between government regulatory agencies and providers of electricity, and enhancing communication between the Partnership and the public.

These collaborative communication efforts become increasingly important as demand for electricity grows, and associated regulations evolve. The future looks to hold more of the same, making collaborative efforts and effective communication essential if Nebraskans are to attain "a more sustainable and healthier environment," as the Partnership Agreement calls for.

This report summarizes Partnership efforts in 2013. Feedback and ideas for Partnership activities are welcomed; please contact Joe Citta, NPPD Corporate Environmental Manager, or Joe Francis, NDEQ Associate Director.

PARTNERING to Address Emerging Issues

The number of issues related to energy and the environment has grown considerably in recent years.

To stay abreast of these issues, a standing item called “Emerging Issues” is on the agenda at each Partnership meeting. Among the emerging issues that have been discussed at Partnership meetings:

- Greenhouse gases
- New Source Review
- Regional haze
- Revisions to National Ambient Air Quality Standards
- Climate change
- Mercury
- Cross State Air Pollution rule
- Carbon sequestration
- Carbon Capture Demonstration Project
- Clean Water Act, parts 316 (a) & (b)
- Regulatory developments/updates
- Economic development and associated environmental assessments
- Potential changes in coal ash by-products proposed regulations
- Keystone XL Pipeline
- Steam Electric Effluent Regulation

South Platte River Flood

Historic rains fell across the front range of the Colorado Rocky Mountains from September 9 through September 15, 2013. The heavy rains largely fell in the South Platte River Basin, resulting in severe flooding in Colorado. Subsequently, extreme amounts of water surged downstream into Nebraska through the South Platte and Platte River systems.

The Nebraska Department of Natural Resources, NPPD, local natural resources districts, and irrigation districts in the Platte River Basin took steps to divert floodwaters out of the river as the water moved into Nebraska. These efforts included developing agreements and coordinating flow diversions to attenuate peak flood flows. Diversion projects were set up within a very short timeframe as Nebraska braced for the large flows.

The City of North Platte contacted NPPD regarding the possibility of utilizing NPPD's canal and reservoir system to temporarily store a portion of these floodwaters. NPPD was eager to play a role in reducing the flood's impact on Nebraska's environment.

However, since flooding can cause significant increases of bacteria levels, it was decided that NDEQ would conduct extended water sampling in the impacted reservoirs and other additional locations. NDEQ normally collects and analyzes bacteria at public beaches, such as NPPD's Sutherland Reservoir and Lake Maloney, each year through September 30 as part of its public beach monitoring program. NDEQ continued sampling at those locations, as well as several additional locations impacted by floodwaters, through October 11. NDEQ concluded that floodwaters and bacteria levels had subsided at all sampling locations by October 11. Bacterial levels were low at the NPPD reservoir and canal system throughout the extended sampling period.

PARTNERING to Enlighten and Empower the Public

Public outreach activities held in 2013 included:

March 12-13

“Elkhorn Water Daze” - Lower Elkhorn Natural Resources District

June 1

“Recycle Your Cycles” - Keep Scottsbluff/Gering Beautiful

November 5

“Power Summit” - NPPD and NDEQ

Ongoing

“GreenSchools”

Recycle Your Cycles

NPPD, Keep Scottsbluff-Gering Beautiful, and NDEQ hosted the annual “Recycle Your Cycles” event at NPPD’s Scottsbluff office. The public brings in used bicycles, which are restored or, if restoration is not possible, stripped for scrap metal. The Potter’s Wheel Ministries donates refurbished bikes to adults and children who are in need.

Approximately 50 bicycles were received and nine were fixed, rebuilt and returned to the public for use. Remaining parts were recycled as scrap, with the proceeds going to fund further Keep Scottsbluff/Gering Beautiful efforts.

Power Summit

On November 5, 2013, NPPD Corporate Environmental Manager Joe Citta and NDEQ Associate Director Joe Francis welcomed utility and environmental representatives to the ninth annual Power Summit. The summit provides an opportunity for individuals involved in electric power production in Nebraska and those who regulate that activity to discuss current and evolving issues. This year’s event saw a record number of attendees and featured various presentations, both from electric energy industry interests and from the agency that oversees monitoring and permitting of the electric industry.

A special presentation dealt with the carbon capture pilot project that will be conducted over the next 45 months at NPPD’s Gerald Gentleman Station near Sutherland. Presenters included Melanie Jensen from the Energy and Environment Research Center (EERC) and Dr. Nate Brown with ION Engineering, along with NPPD Engineer Mike Matheson. They provided background information into the project, from initial testing stages at the EERC to NPPD’s role in the pilot project, as well as the ins and outs that will actually determine how well the project can capture CO₂ emissions.

Other summit presenters included Dr. Michael Nastasi, director of the University of Nebraska-Lincoln Energy Research Center; John McClure, NPPD Vice President of Governmental Affairs & General Counsel; Jay Ringenberg, NDEQ Deputy Director; representatives from the Grand Island and Fremont municipal utilities on emission control projects at their generating plants; Lincoln Electric System's landfill methane project; and, an update on the proposed Nebraska Unicameral's Legislative water funding task force.

GreenSchools: Empowering Students to Make a Difference

Three key words best describe the GreenSchools program – energize, investigate and innovate.

GreenSchools is an environmental-focused program for students from kindergarten through the 12th grade. It encourages students to take personal responsibility for improving the environmental quality of their school, home and community.

GreenSchools consists of five student-led investigations designed to be carried out in the school setting. (The investigations also include elements where students can apply what they have learned to their homes.) Students are trained to use diagnostic tools to assess energy usage in their school; thus, the school building becomes a learning lab. GreenSchools helps improve students' academic performance in STEM (science, technology, engineering and math) classes, and it assists students in developing critical thinking skills and growing as leaders.

The GreenSchools program leads students to develop action plans that focus on reducing their school's energy usage, increasing the school's energy efficiency and improving environmental quality, both indoors and on the school grounds.

NPPD is conducting GreenSchools workshops for teachers around the state. One of these workshops was held in Kearney in the fall of 2013. During the workshop, teachers learned about GreenSchools investigations through hands-on activities and expert presentations.

Kevin Stoner and Lindsay Phillips, from NDEQ, developed a presentation for the environmental quality investigation. This investigation focuses on four main areas: transportation, indoor air quality, mercury and other chemicals, and volatile organic compounds.

Kevin Stoner, Field Services and Assistance for NDEQ, presented at the Kearney workshop about different environmental quality issues in schools. Through the presentation, teachers discovered how environmental quality of their school affects student health and academic achievement.

The next GreenSchools workshop will be held in Norfolk in the spring of 2014. Other possible workshop locations will include Auburn and Ogallala.

PARTNERING to Share Our Collective Resources

Topical Presentations

At each Partnership meeting, a specific topic of mutual interest is examined in detail.

Subject matter experts present the programs, which cover a broad range of topics, including (in 2013), among others: NPPD's carbon capture demonstration project; Title 122 carbon dioxide sequestration; NDEQ's environmental evaluation of the Keystone XL pipeline; energy conservation at publicly owned treatment works; general energy conservation updates; South Platte River flooding and water quality; and the Plains Carbon Dioxide Reduction Partnership carbon capture, utilization, and storage demonstration activities.

Through topical presentations and discussions, NPPD and NDEQ staff members have developed a better understanding of each other's perspective on issues of common interest. In addition, this regularly occurring activity has enhanced the relationships of Partnership members with those presenting the information of interest.

Methane

Methane recovery from livestock operations was one of the first major topics addressed by our fledgling environmental Partnership. As part of this early effort, the Nebraska Methane Workgroup was formed.

One of the first lessons learned in pursuit of methane projects was that many organizations played key roles. NPPD and NDEQ were joined by USDA-Rural Development and the Nebraska Energy Office as critical players on methane efforts.

In 2010, many members of the Nebraska Methane Workgroup formally joined the EPA AgSTAR State Partnership. Joining organizations included the Nebraska Pork Producers, the Nebraska Department of Agriculture, the Nebraska Energy Office, the Nebraska Department of Natural Resources, Olean Energy and the Midwest Dairy Association.

The primary goal of the AgSTAR State Partnership is to ensure that the latest information on technologies, financial resources and general developments in livestock-related methane capture and recovery are readily available to interested parties.

During 2013 there was increased interest expressed in methane projects. Responding to that, NPPD, NDEQ, USDA-Rural Development, the Nebraska Energy Office and the Nebraska Department of Agriculture met to determine if there was a role the Partnership could play in facilitating potential methane recovery projects. We are optimistic that there will be continuing developments in 2014 and hope we are able to report significant progress in next year's report.

Small Wastewater Treatment Plants: Energy Efficiency

A positive accomplishment of the Partnership Agreement, among many over the years, began in 2010 when the Partnership turned its attention to small municipal wastewater treatment facilities.

Moving and treating drinking water and wastewater are energy intensive. (It is estimated most communities devote from 20 percent to as much as 60 percent of their energy budgets to this effort.) Realizing this, NDEQ and NPPD began to explore how water-related energy consumption could be reduced, thereby saving Nebraska communities precious resources.

The NPPD/NDEQ Partnership, in conjunction with help from the EPA Region VII and the University of Nebraska-Lincoln's Partners in Pollution Prevention Internship program, developed a program to pursue the project.

Coincidentally, NPPD was also seeking opportunities to develop and implement a comprehensive energy efficiency program and composed a wastewater energy efficiency self-audit checklist that fit perfectly into the project.

Realizing a potential synergy, NDEQ, NPPD and UNL began performing wastewater energy efficiency assessments at Nebraska wastewater treatment plants in 2010. In 2013, two more assessments were performed for the communities of Scribner and Snyder.

Taking part in the assessments in 2013 were NPPD's Energy Efficiency Consultant Kenneth Young, NDEQ's Field Office Supervisor Kevin Stoner and UNL intern Charlie Hinds,. Using the NPPD-constructed self-audit list, Hinds evaluated various techniques and technologies for reducing energy consumption.

NDEQ's Stoner summarized the efforts: "The wastewater energy efficiency audits performed at Scribner and Snyder are representative of the processes that we hope to continue. Working with small Nebraska communities to improve their lives and create a more sustainable future is rewarding for not only the towns, but also the state of Nebraska. The energy savings created by these audits are vital to our state."

The program continues to identify potential energy savings in a cost effective manner, Young said. "The assessment provides information that allows communities to prioritize their investment in wastewater infrastructure," he explained. "Once again, the program has shown that much can be accomplished when entities work together for a common good," Young concluded.

Water Quality Sampling

NPPD Corporate Environmental Department staff members assisted NDEQ with the Nebraska Recreational Season Water Quality Monitoring Program.

As stated earlier in this report, NDEQ collects statewide water samples on a weekly basis during the summer (May to September) to gather information on the quality of the state's water resources. Samples are monitored for E-coli, an indicator bacteria used to determine the presence of other harmful pathogens, bacteria and viruses.

Water sampling results are also used to inform Nebraska citizens of the quality of Nebraska's recreational waters. In 2013, NPPD personnel assisted NDEQ by taking water samples from Loup Power District's Lake North near Columbus.

NDEQ provided training and test equipment, and NPPD personnel collected and ran tests on the samples and submitted results to NDEQ.

PARTNERING to Enhance Nebraskans' Quality of Life

Conclusion

One important tool the Partnership has used to address challenges posed by constantly changing organizational demands has been an examination of emerging issues at each Partnership meeting. The Partnership has also made these a focus of the annual Power Summit.

One only has to examine the emerging issues considered over the last few years to recognize the many varied, evolving and sometimes surprising changes our organizations face. The Partnership's 2012 annual report examined challenges posed by extremely dry weather in North Central Nebraska and the need to have portable stand-by power to meet the area's increased irrigation load.

In 2013 NPPD and NDEQ worked together to address issues related to flooding on the South Platte due to torrential rains in Colorado. The stark contrast of these issues is obvious; however, there is similarity in that communication between NPPD and NDEQ enabled our organizations to successfully address many of the challenges posed by these situations.

In the coming year, the Partnership expects to continue to support outreach efforts, particularly the Power Summit. Efforts will also be devoted to helping small communities in Nebraska implement energy conservation efforts at their wastewater treatment plants. The Partnership will continue to coordinate efforts of the Nebraska Methane Workgroup in hopes of facilitating establishment of anaerobic digestion facilities on livestock operations. We will also continue our critical dialogue on new and revised energy regulations and on environmental issues in general.

The NPPD/NDEQ Partnership looks forward to contributing to the overall Partnership goal: the development of a sustainable Nebraska for our citizens.

We welcome any and all ideas on potential Partnership projects. Additionally, if you would like to attend a Partnership meeting, contact Chris Ahlstrom: (402) 563-5855 at NPPD; or Steve Stevenson: (402) 471-3585 at NDEQ for meeting dates and agenda.

This Annual Report is jointly submitted and approved by:



Patrick W. Rice, Acting Director
Nebraska Department
of Environmental Quality



Patrick L. Pope
President & CEO
Nebraska Public Power District



Joe P. Francis, Associate Director
Nebraska Department
of Environmental Quality



Joe L. Citta, Jr.
Corporate Environmental Manager
Nebraska Public Power District

The NDEQ and NPPD share a desire to continue the development
of a sustainable Nebraska, which will leave our descendents
with the same high quality environment
to which we have become accustomed.



Nebraska Public Power District

Always there when you need us

nppd.com



**Nebraska Department
of Environmental Quality**

deq.state.ne.us



This report is printed on paper with recycled content

G142297.ZIP
04/14