Nebraska Department of Environmental Quality

January 2010

NDEQ Environmental Update

Characterization Study Brings Focus to Nebraska Waste Picture

Eight landfills across the state of Nebraska recently underwent intense scrutiny over a four-season spectrum in a search for an understanding of what we throw away.

Jack Chappelle, of Engineering Solutions and Design in Overland Park, Kansas, conducted a Waste Characterization Study to collect data for NDEQ's Waste Division. The firm sampled waste at eight different landfills across the state, sorting their findings into approximately 30 different categories of waste, which was reported by commercial, residential and mixed loads.

"This study provides us with a great deal of valuable data," said Steve Danahy, Supervisor of NDEQ's Planning and Aid Unit.

"It gives us an overview of the types of waste going into our landfills, and allows us to design programs to more efficiently address recycling and landfill issues," he said. "We will use this study as a planning tool for our waste programs and in coordination with various agencies across the state."

Landfills that underwent sampling included Pheasant Point in Omaha, Bluffs Road in Lincoln, City of Hastings Landfill, Lexington Area Solid Waste Agency Landfill, Sidney Area Solid Waste Agency Landfill, Northeast Nebraska Solid Waste Coalition Landfill in Norfolk, Solid Waste Agency of Northwest Nebraska in Chadron, and the Valentine Area Solid Waste Agency. Each landfill was sampled four different times – fall, winter, spring and summer. The study began in the fall of 2007 and concluded with the sampling in summer of 2008.

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Equipment Reuse Program: NDEQ's Petroleum Remediation Equipment Reuse Program saves taxpayer dollars..

Sewer Plan: Omaha submits comprehensive plan to deal with combined sewer overflow problems.

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Waste Characterization Study (continued)

A total of 624 samples were collected during 80 days of sorting via a walk-around process. A visual inspection of each of the loads selected for sampling was undertaken as a part of this study. The visual inspection process entailed noting items seen when the collection vehicle discharged its load and conducting two walk-arounds of the load's perimeter.

During the four seasonal field walk-around sorting events undertaken for this project, data was collected for 50 different items sighted in the 624 loads sampled for this study. An important result of analyzing this data was determining how frequently certain classifications of waste were sighted during the visual inspections of the 624 sampled loads. Specifically, researchers segregated and analyzed the following classifications:

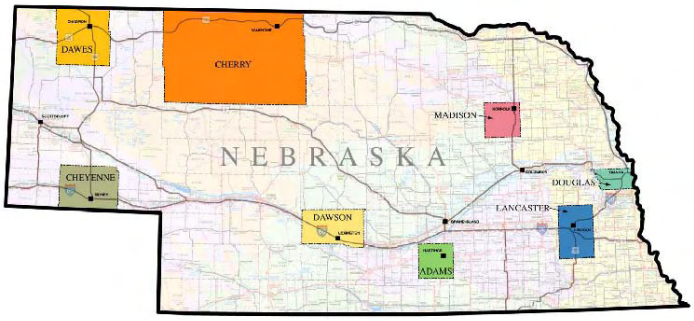
E-Waste: Includes CPU's, Monitors, Keyboards, Printers, Computer Parts, Televisions, Stereos, DVDs and VCRs, and Stereos and Speakers.

Furniture: Includes Sofas, Stuffed Chairs, Mattresses, Patio Furniture, Wood Furniture, and Metal Furniture.

Limbs and Brush: Includes Limbs, Brush, and Yard Waste (for purposes of this specific analysis, only yard waste that was sighted in the sampled loads was included).

Construction and Demolition Debris: Includes Lumber, Drywall, Plumbing Fixtures, Electric Cable, Insulation, Plastic Bins, Siding, Shingles, PVC Pipe, Carpet, Doors, Windows, and Linoleum.

Once the walk-around examination was complete, a 300-pound sample was taken from the load. Each piece of waste in this sample was then weighed, analyzed and categorized. Four major portions of the waste stream that typically can be recycled – paper fibers, plastics, glass, and



metals – comprise more than 68% of the total waste stream in Nebraska. The largest component of these four is paper fibers and the smallest is metals. The largest material categories within each of these four major components include mixed paper, plastic film/wrap/bags, clear glass containers, and tin cans. Of these categories, tin cans are the easiest to recycle while clear glass containers are the most difficult. Plastic film/wrap/bags and mixed paper are both recyclable; however, because these materials are usually highly contaminated and there are limited uses for the materials, they are very price sensitive.

Of these four major components, the paper fibers component provides the greatest opportunity for recovery and recycling. There is recycling potential for all of the material categories in the paper fibers component. More than 75% of the metals component is readily marketable and recyclable; while at least 50% to 60% of the plastics component is recyclable and approximately 27% of the plastics component (PET #1 and HDPE #2 material categories) is readily recyclable. The glass component presents the greatest potential for recycling; however, given its weight and limited value, these recycling needs tend to be localized.

The three largest portions of Nebraska's waste stream encompass the paper fibers component at 41.15%, the plastics component at 19.13%, and the food category at 16.64%. Combined, these three portions comprise almost 77% of Nebraska's total waste stream. It is interesting to note that the food category is larger than any one category within either the paper fibers component or the plastics component.
The report made the following observations, based on a review of all the data generated for this study and the field activities undertaken as a part of this project:

- The yard waste ban appears to be very successful in reducing the amount of yard waste disposed in Nebraska's solid waste facilities.

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Waste Characterization Study (continued)

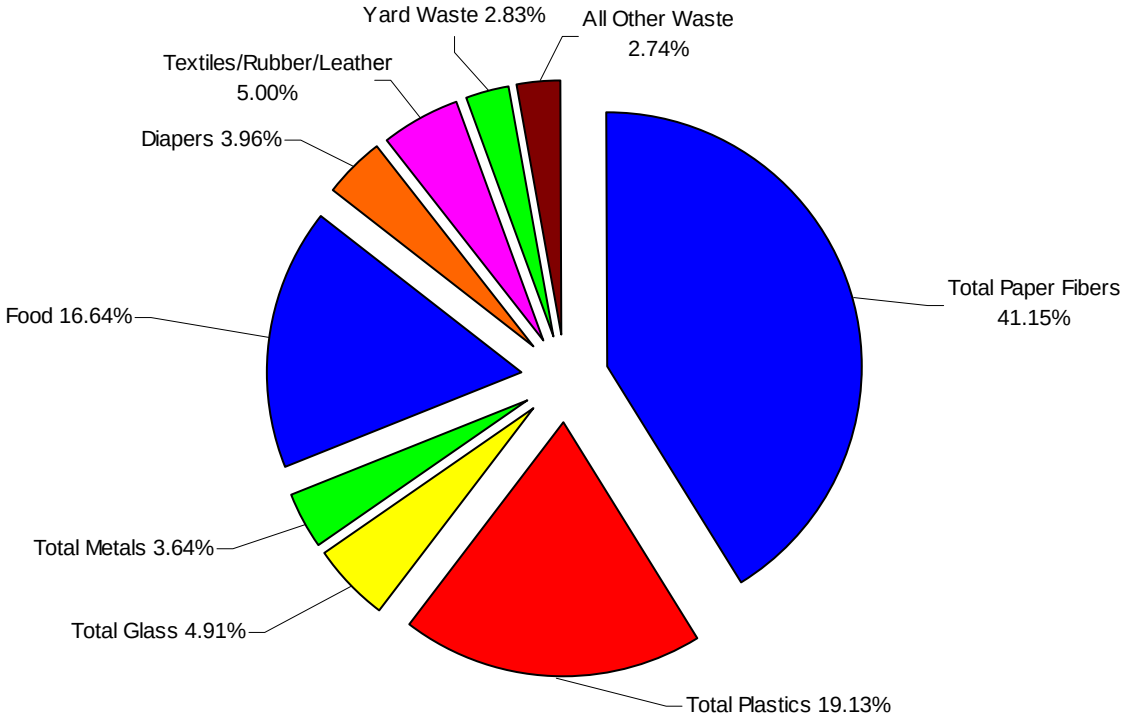
- More than 50% of the paper fibers component of Nebraska's municipal waste stream is easily recyclable.
- The plastics component comprises 19.13% of Nebraska's municipal waste stream and approximately 27% of the component is easily recyclable.
- The metals component comprises 3.64% of Nebraska's municipal waste stream and more than 75% of this component is easily recycled.
- Food comprises 16.64% of Nebraska's municipal waste stream. This material can be recovered and utilized in composting; however, recovery can be expensive and require vehicles that are exclusively utilized for food waste collection.
- The diapers category comprises 3.96% of Nebraska's municipal waste stream. The majority of this category appears to be adult diapers.
- The textiles/rubber/leather category comprises 5.00% of Nebraska's municipal waste stream. The largest portions of this category appear to be clothing (textiles) and shoes.
- Electronic waste was sighted in more than 30% of the sampled loads.
- Furniture was sighted in more than 60% of the sampled loads.
- Construction and demolition debris was sighted in more than 75% of the sampled loads.

The study was conducted with a number of uses in mind – to provide a baseline against which to compare future studies; to compare the Nebraska study results against those of other states; as a planning tool for grants programs, as well as other NDEQ Waste Division programs; and as a planning tool for various local planning agencies across the state.

The results of the study provide a differentiation of the characteristics of Nebraska's solid waste stream among: (1) facilities based upon their grouping as large urban, small urban, large rural, or small rural; (2) the four seasons; (3) the generating sectors – residential, commercial, and mixed; and (4) items sighted during the visual inspection process.

Since the study was completed, Chappelle has conducted training sessions for waste planners and others on methods for interpretation and use of the collected data.

The entire report can be found on the NDEQ website at http://www.deq.state.ne.us. Click on the link in the left side menu for "Maps & Data", then follow the link under "Land & Waste Data" to the State of Nebraska Waste Characterization Study.



Outreach Program Leverages Pollution Control Efforts

Summer 2009 P3 Students and Faculty / Staff

The University of Nebraska-Lincoln's (UNL) Partners in Pollution Prevention (P3) program has had an impact on area college students and Nebraska businesses since 1997. This educational outreach and technical assistance program is operated by the University of Nebraska Extension and College of Engineering and funded by grants from the Nebraska Department of Environmental Quality's Waste Reduction and Recycling Incentive Fund and the US EPA's Pollution Prevention program, as well as matching funds from the University of Nebraska and many industrial partners. The NDEQ Waste Reduction and Recycling Incentive Fund and the US EPA Pollution Prevention Grant projects have similar goals and serve as matching funds for each other; each grant provides a little under half the real dollar funds for the P3 program.

"The P3 program has made a measurable difference to the bottom line for many Nebraska businesses, said Joe Francis, Associate Program Director for NDEQ's Field Services and Assistance Division.

"Today, the program continues to help Nebraska businesses reduce waste, save money and strive for sustainability."

Student interns provide pollution prevention assistance to Nebraska businesses by performing waste assessments and waste reduction projects, and providing each client with a written report detailing waste minimization suggestions. Over 500 business clients based in 70 different Nebraska communities have been assisted between 1997 and summer 2009. During this period, the P3 program helped Nebraska businesses save a potential $17.6 million dollars through waste reduction and divert over 207 million pounds of solid waste from landfills. During the 2009 grant year, 41 businesses in Nebraska were provided new technical assistance in source reduction/pollution prevention. Data collected from the technical assistance reports indicate that these businesses have the potential to divert over 20 million pounds per year of solid waste from the landfill; reduce the generation and use of nearly 3,000 pounds per year of hazardous materials and waste; reduce water use by over 30 million gallons per year and reduce energy use by over 480,000 therms per year. Recommendations offered to 2009 client businesses have the potential to save them nearly $2 million per year.

The P3 program also conducts follow-up visits/interviews with previous clients to determine **the actual impact of technical assistance rendered**. Based on interviews and reassessments conducted with 166 past clients (over one-third of all those assisted 1997-2008), the P3 Program reports that 41% of all recommendations made by students were actually implemented, and that

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Grant Deadline Approaching

February 1st 2010 is the deadline to submit applications for **Waste Reduction and Recycling Incentive Program Grants**. This includes Scrap Tire Grants and Building Deconstruction Grants.

The Waste Reduction and Recycling Incentive Grants Fund provides grants to assist in financing sound integrated waste management programs and projects. These programs and projects include, but are not limited to:
Recycling systems;
Market development for recyclable materials;
Intermediate processing facilities;
Facilities using recyclable materials in new products;
Yard waste composting and composting with sewage sludge;
Waste reduction and materials exchange;
Household hazardous waste programs;
Consolidation of solid waste disposal facilities and use of transfer stations; and
Incineration for energy recovery.

Keep Up to Date on Recovery Act Progress

These links will take you to:

RECOVERY.GOV — U.S. Government Recovery Pages

Recovery.Nebraska.gov — State of Nebraska Recovery Pages

Nebraska Department of Environmental Quality — NDEQ Recovery Pages

P3 Program (continued)

78% of the businesses assisted had implemented at least one recommendation. Additional results from the 166 reassessments performed are summarized in Table 1 below. The overall impact of the P3 Program can also be seen in outreach and education, as demonstrated in Table 2 below.

Table 1: Results from Previous Technical Assistance As Determined through Reassessments Conducted 1997-2009

Metric Measured	*Value*
Number of Clients Reassessed	166
% of All Recommendations Implemented	41%
% of Business Implementing at Least One Recommendation	78%
Solid Waste Diverted from Landfill (lbs/yr)	20,213,000
Hazardous Waste/Materials Eliminated (gal/yr)	1,200,000
Electricity Use Saved (kWh/yr)	4,594,000
Water Conserved (gal/yr)	14,063,000
Direct Operating Cost Savings ($/yr)	$1,083,000

Table 2: Overall Impact of P3 Program 1997-2009

OUTREACH: Impact of the P3 Program in Outreach to Nebraska - 1997-2009	
Businesses Assisted with New Work	516
Businesses Assisted with Reassessment of Previous Work	166
Communities Served	70

EDUCATION: Impact of Program in Pollution Prevention (P2) Education - 1997-2009	
Student Interns Educated in P2	194
Citizens Educated in P2	12,000
Newspaper Articles and TV/Radio Broadcasts Concerning P2	80

NDEQ's Petroleum Remediation Equipment Reuse Program Saves Taxpayer Dollars

The program known as "Title 200" might not be well known to most of the public, but it's a welcome entity to the owners of leaking underground petroleum storage tanks.

In 1989 the cost of cleaning up leaking underground storage tanks (LUSTs) became a lighter burden for responsible parties (RPs) when the fund administered under the program came into being. This fund reimburses RPs for the cost of equipment used in cleaning up LUST sites.

At first, this equipment was owned jointly, with the RP assigned ownership proportionally, based on the amount the RP had spent toward remediation of the site. The used equipment law that governs this process has changed over the years until 1998, when equipment became 100 percent owned by the State.

Initially, all of this equipment was sold at surplus for pennies on the dollar, or otherwise disposed of. However, in 1995 that process began to change. That year, NDEQ leased a 1,600 sq. ft. ammunition bunker at a National Guard training base two hours from Lincoln to store equipment until it could be reused.

There was no electricity, heat or water at this location, but the space was adequate for the purpose. At this time, prior to 9/11, the facility was acceptable, despite its remote location and lack of amenities, and hundreds of pieces of remedial equipment were stored and reused during the ten years NDEQ operated from this location.

Remediation systems are containerized and can be moved from site to site as needed.

Post-9/11 access to the bunker became increasingly difficult, due to heightened security and the presence of live ammunition stored and used during training at the base. By this time the bunker had become full of equipment, and there were many remedial sites waiting to be torn down so the equipment could be reused.

By 2004, the Petroleum Remediation Section had proven that equipment reuse would work, and expressed the need for a larger, more accessible storage building. In June 2005 equipment was moved to a warehouse in Lincoln, the same city as NDEQ agency offices. The new warehouse has a forklift rated to lift 5,000 pounds and a semi-truck loading dock, as well as water, heat, electricity and bathrooms. Low profile vehicles with trailers can drive into the warehouse for loading and unloading and drive through to

SVE/AS (Soil Vapor Extraction/Air Sparging) systems lined up in the NDEQ Lincoln warehouse facility. The cost of the units runs from $20-40,000 each.

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Equipment Reuse Program (continued)

exit on the opposite side, allowing NDEQ to move equipment in almost any weather conditions.

In the first 14 months of operation, NDEQ mobilized 168 items to be used on current remediation projects, with a new value of $536,739. This figure represents the amount responsible parties would have needed to spend (and that the fund would be required to reimburse) to buy the remediation items. This represents a direct savings to the taxpayers in the State of Nebraska.

As of November 16, 2009, $1,143,754 has been saved by reusing more than 200 items.

More than 1,000 items have been inventoried, sorted, and shelved in the new warehouse. All items have been photographed, described, categorized, and posted on the agency website for prospective consultants to view. Some creative consultants have put the used equipment to work as part of portable remediation trailers that can be moved from site to site. Some of the equipment has also been used during emergency responses such as when an above-ground storage tank has suffered a catastrophic failure.

A dewatering remediation trailer built from stored equipment. This trailer can be used by any consultant working in Nebraska to dewater an excavation containing petroleum contaminated water, and every time it is used it saves the taxpayers the cost of renting one. This trailer can treat up to 150 GPM of contaminated water and can be expanded to handle larger amounts if required. All that is needed to operate it is a 220-volt overhead line or generator power for those rural LUST sites.

The inside and outside of a remediation trailer. All of the equipment seen inside the trailer came from the warehouse and was assembled by a consultant that does remediation work in Nebraska. This trailer has been used at two sites and will be headed to its third site soon.

In 2007, a significant effort was undertaken to reorganize the warehouse and recycle items that were no longer reusable. Nearly 7.5 tons of metal were cleaned, stripped, and recycled, providing a monetary return of $2,605. In addition to the financial reward, almost 15,000 pounds of scrap metal were kept out of the landfill.

In 2009, factory-built self-contained remediation trailers, many costing in excess of $35,000, have become more common among equipment stored and re-used throughout the warehouse. NDEQ has moved, stored and re-used more than a dozen of these trailers. The re-use of remediation trailers will become even more common as NDEQ promotes their use.

The warehouse also houses NDEQ's Emergency Response truck and equipment, and a bio lab for use by the NDEQ Surface Water Unit. All of NDEQ's water- and fish-sampling boats are stored at the complex, as is the air program's sampling equipment. The remediation equipment storage portion of the warehouse now totals approximately 9,000 sq. ft.

To access information on the Petroleum Remediation Equipment Reuse Program, go to the NDEQ website at http://www.deq.state.ne.us. Click on "Focus on Water", select the link for the "Petroleum Remediation Program", and finally click on "LUST Remedial Equipment Inventory".

EPA Proposes Stricter Ozone Standard

On January 19, 2010, the U.S. Environmental Protection Agency proposed new standards for ground-level ozone, which is commonly referred to as smog.

EPA is proposing to set the primary standard, which protects public health, at a level between 0.060 and 0.070 parts per million (ppm) measured over eight hours. The standard was revised to 0.075 ppm in March 2008, but EPA subsequently announced that the standards were being reconsidered.

Ground-level ozone forms when emissions from industrial facilities, power plants, landfills and motor vehicles react in the sun. Children are at the greatest risk from ozone, because their lungs are still developing, they are most likely to be active outdoors, and they are more likely than adults to have asthma. Adults with asthma or other lung diseases and older adults are also sensitive to ozone.

The area in Nebraska that could be directly impacted by the proposed new standards is the Omaha metropolitan area. The potentially affected area includes several counties in eastern Nebraska and western Iowa. In anticipation of these proposed standard changes, NDEQ has been in discussion with other agencies that are involved with air quality in the Omaha area, including the City of Omaha, the Metropolitan Area Planning Agency, and the State of Iowa. Now that the range of standards has been proposed, more discussions will take place and other interested parties will be invited to become involved in the discussions.

Shelley Schneider, NDEQ Air Division Administrator, said the purpose of these meetings is to: 1) further define the activities in the area that may contribute to increased ozone levels; and 2) to determine what types of voluntary measures can be taken to reduce ozone emissions to avoid exceeding new ozone standards.

Schneider said it would be to the area's benefit if they could cooperatively find methods to avoid exceeding new standards in the future. If the air standards are exceeded and it is determined that the area is in "non-attainment," then there are considerably more regulatory requirements that would need to be followed. Therefore, a preventative, voluntary approach is being pursued now in an effort to avoid greater regulatory oversight in the future, she said.

EPA will accept public comments through March 22, 2010. For more information, go to:
http://www.epa.gov/groundlevelozone

Nebraska Students' Environmental Artwork Featured in 2010 NDEQ Calendar

The artwork of 13 Nebraska students is featured in the 2010 **"Nebraska: Don't Waste It!"** environmental calendar. The statewide contest is sponsored by the Nebraska Department of Environmental Quality (NDEQ) and focuses on the importance of waste reduction, recycling and litter cleanup.

The students whose submissions were selected for the 2010 calendar were invited to a ceremony at the State Capitol on Thursday, August 13, where they were honored by Lt. Gov. Rick Sheehy and NDEQ Director Mike Linder. Each month features one of the 12 winning environmental posters, and a 13th winner's artwork provides the calendar's cover.

The entry featured on the cover was submitted by David von Behren, 8th grade, Falls City Middle School of Falls City. The other 12 winners who are featured in the calendar are: Austin Cornelius, 5th grade, Knickrehm Elementary, Grand Island; Maddy Dimmitt, 1st grade, St. Ludger Elementary, Creighton; Justin Lee, 6th grade, Brownlee Elementary, Brownlee; Mariola Sanchez, 5th grade, Knickrehm Elementary, Grand Island; Sloan Roseberry, 9th grade, Falls City High School, Falls City; Darci O'Neel, 4th grade, Elyria School, Elyria; Kelsey Sloup, 6th grade, St. John Lutheran, Seward; Hannah Standlea, Kindergarten, West Lawn Elementary, Grand Island; Jazzmine Tate, 8th grade, McMillan Magnet Center, Omaha; Kara Trampe, 11th grade, Amherst High School, Amherst; Brian Mueting, Madonna Special Needs School, Omaha; Bailey Anstey, 6th grade, St. Bernadette, Bellevue. Copies of the calendar are available by contacting NDEQ at P.O. Box 98922, Lincoln, NE 68509-8922, or by sending an e-mail request to NDEQ.moreinfo@nebraska.gov.

NDEQ 2009 Manager, Employee of the Year

Dale Busch

NDEQ Manager of the Year

Dale devoted tremendous time and effort into getting NDEQ's Quality Assurance processes in place so the Petroleum Remediation Program could more fully utilize the program's three state contractors.

The Program has several hundred orphan sites on a waiting list with significant amounts of federal money that has to be spent in a short time. Therefore, we decided to make all state contractors available to work on the federally funded sites.

Dale agreed to lead this effort. Dale wrote, reviewed and edited many pages of documents. He completed all the Master QAPPs (Quality Assurance Project Plans) and other procedures, had everything approved and usable in a couple of months. During this time, Dale typically worked overtime each week. Dale continued the process by getting all other procedures finished. He also provided training for our project managers in using the procedures.

Dale Busch (left) with Governor Dave Heineman.

Steve Moeller (right) with NDEQ Director Mike Linder

Steven Moeller

NDEQ Employee of the Year

Steve is a valuable, positive and popular employee of the NDEQ. He is on a years-long plateau of crowded and demanding case-load. He has been vigorously and successfully litigating the legislature's "three strike" provision regarding "bad actor" confined livestock feeding operations. His efforts are challenged by talented and well-funded operations, yet he prevails consistently. He has been recently very active in the Department's efforts to suppress illegal septic disposal practices. This requires great ingenuity and persistence in dealing with septic disposal operations that do not conform to regulations.

Steve continually extends himself for employees by providing training and answers to questions about legal issues. Steve volunteered to instruct the field services staff in the complex area of inspection and search warrant practice. Steve used humor to attract and heighten interest, with visual graphics, costume and textual materials evocative of the relentless Hawaii Inspector played by Jack Lord, to enliven and transcend normal instruction.

Omaha Submits Comprehensive Plan To Deal With Combined Sewer Overflow Problems

On, Sept. 25, 2009, the City of Omaha submitted its final combined sewer overflow (CSO) plan to the Nebraska Department of Environmental Quality. This comprehensive plan provides the schedule of completion of a series of projects which will reduce overflows from its combined sewer system.
A consent order with the state had established an October 1st deadline for the city to submit this plan to meet requirements of the federal Clean Water Act.
"The submission of this final plan is an important step by the City of Omaha to decrease discharges from their combined system and to protect the quality of our water," said Steve Goans, supervisor of NDEQ's Wastewater Section. "This is a significant milestone in a project that could transform the city's water infrastructure."

What are combined sewer systems and CSOs?

Combined sewer systems are an older design (many were built over 100 years ago), that allow wastewater from homes and businesses to be combined with stormwater. In more modern sewer systems, these two aspects are built as separate systems – that is, the wastewater system conveys homes' and businesses' sewage to treatment facilities, while the separate storm water drainage systems transport rainfall directly into rivers and streams.
The environmental concern with the older combined sewer systems is that, during wet weather, sewage overflow can bypass the communities' wastewater system, combining with the stormwater to discharge directly into our rivers without proper treatment. When this happens, it is called a combined sewer overflow (CSO). In Omaha, CSOs are discharged into tributaries of Papillion Creek or the Missouri River.

Currently, these overflows can occur even during relatively small precipitation events in Omaha. A rainfall as small as one-tenth of an inch can cause the system to overflow and directly discharge sewage into Nebraska's rivers.

Omaha is not unique in this regard; the federal government estimates that over 770 communities across the nation have combined systems.

The City of Omaha has been making efforts to reduce CSOs in recent years. Since the 1960s, newly constructed sewer systems include separate pipes for wastewater and stormwater, and many projects have been initiated by the city to separate parts of the existing combined systems. However, the city still has most of the old combined sewer system in use.

The city, the state and the federal government are all in agreement that comprehensive action must be taken in Omaha to address this CSO problem. In fact, the city could face severe penalties if it did not develop and implement a comprehensive plan to correct the situation.

"The City of Omaha has recognized that extensive wastewater renovations are needed, and they have accomplished a great deal already," NDEQ Director Mike Linder said. "This plan formalizes efforts that are already under way, and presents a clear and effective road map to resolving CSO issues in the future.

"The City is to be commended for taking a comprehensive approach to address these issues."

NDEQ will be reviewing these plans in great detail in coming months to ensure the city's plans will conform with all relevant water quality regulations.

NDEQ's Deputy Director Jay Ringenberg (left) accepts Omaha's Comprehensive Plan to address combined sewer overflow problems from Marty Grate, of the City of Omaha.

How Will CSOs be addressed?

Omaha's final plan focuses on three main components to address combined sewer overflows. They are:

- **Targeted Sewer Separation** – In several of the areas in Omaha that still have a combined system, targeted sewer separation will be the primary control used. The existing single-pipe combined sewer systems will be separated to carry its two components, storm water and sewage. This will ensure that storm water is transported to rivers, and sewage will go directly to wastewater treatment.
- **High Rate Treatment Facilities** – Three high rate treatment facilities will be built at outflow locations to treat overflows before reaching the Missouri River, Papillion Creek or Cole Creek. These facilities are designed to temporarily hold sewage overflows during rain events, until it can be treated and released at a manageable rate.
- **Deep Conveyance Tunnel** – The plan proposes a 5.8 mile cross-basin tunnel which will carry combined sewage and storm water runoff to one high-rate treatment plant adjacent to the current Missouri River Waste Water Treatment facility.

The final plan and related detailed information are available for review at http://www.omahacso.com.

Old Lake in Hooper's Memorial Park is New Again

Hooper's Memorial Park is located on city-owned land in the north part of the community adjacent to the golf course and established residential neighborhoods.

Memorial Park includes a swimming pool, ball fields, campground, and a shallow muddy segment of an old oxbow to the Elkhorn River. This old oxbow became known as Old Lake in the 1960's when a levee was constructed around the north side of Hooper creating a four-surface-acre impoundment.

While the park facilities were heavily utilized, the lake was not. Water depths of less than two feet prevented a fishery from being established, and algae blooms were severe and frequent enough to warrant continuous treatment with chemicals.

In 2007, the City of Hooper -- located north of Fremont in northeastern Dodge County -- applied for and received Community Lake Enhancement And Restoration (CLEAR) funding in the amount of $211,240 through the Nebraska Environmental Trust and NDEQ/Environmental Protection Agency's Section 319 Nonpoint Source Management Program.

Representatives from the University of Nebraska-Lincoln, Nebraska Game and Parks Commission, and NDEQ worked with the city and Kirkham Michael Consultants on a complete renovation project that was fully completed by the end of 2008.

The excavation of 14,400 cubic yards of sediment increased maximum lake depths from two feet to over 12 feet. The shoreline of the lake was re-shaped to include fishing jetties, and part of the stormwater drainage was routed around the lake to help maintain good water quality. The lake was stocked with largemouth bass, bluegill, and catfish in 2009.

Old Lake before.

The new Old Lake in Hooper's Memorial Park.

As with many CLEAR projects, other park improvements followed, including handicap access to the lake and additional parking.

Education plays an important role in every CLEAR project. UNL initiated educational efforts with local residents and Immanuel Lutheran School in 2009. Students utilized scientific water quality equipment and sampling techniques to collect, analyze, compare and contrast water quality results.

As a result of the event, students expressed an increased interest in water-quality-related issues. Fifty-one percent of the students prior to the event felt lake water quality was either extremely or very important. After the event that number increased to 71%.

Pre- vs. post-trip responses revealed a 26% increase in students understanding that it is extremely important to control nutrient inputs to keep a lake clean, with a 40% increase in their understanding that phosphorus is the most common nutrient pollutant that leads to poor water quality.

Once students generate interest in a subject, it is assumed there is an increased possibility the student will share the information offered with friends, family, etc. Nearly two-thirds indicated they were planning to share the information learned about improving and protecting water quality with their parents.

Significant improvements in water quality followed the project. Total phosphorus and total nitrogen in the lake were reduced by 82 percent and 87 percent respectively, and water clarity increased from a few inches to 28 inches.

Grants to Help Communities "Deconstruct" Abandoned Buildings

A recent change in state law is providing new incentives to small communities to "deconstruct" abandoned buildings.

The goal for making this change in NDEQ's waste grants program is to further encourage the recycling of building materials and decrease the amount of demolition material that is being disposed of in landfills, according to David Haldeman, NDEQ Waste Management Division Administrator.

In the spring of 2009, the Nebraska Legislature passed LB180, which created an additional category or type of grant project that can be funded under NDEQ's Waste Reduction and Recycling Incentive Act. Specifically, the new law makes the reimbursement of some of the costs associated with the deconstruction of abandoned buildings in small communities an eligible grant project.

The concept of "building deconstruction" refers to the physical dismantlement of a building's components to recover the materials for reuse, recycling, or other waste management options. It might simply be thought of as the reverse of construction of a building, or taking a building apart piece by piece.

The size of the political subdivisions identified as being eligible are cities of the second class, villages, and counties of 5,000 or fewer in population. Deconstruction costs related to the recovery and processing of recyclable or reusable materials from the abandoned buildings will be eligible for reimbursement.

The first round of annual grant applications is due by February 1, 2010.

Although some building deconstruction has occurred in Nebraska in the past, the primary method of getting rid of old buildings has been to simply raze them and then haul the waste to either municipal landfills or landfills that are specifically permitted to receive construction and demolition waste.

"Disposal in a permitted landfill is a lawful method for getting rid of a building; however, the department is looking for ways to support and further encourage recycling and reuse over disposal," Haldeman said. "Most buildings have components like metal, lumber, block, brick, or fixtures that can be sold or salvaged for reuse or recycled into other products. We think there is a fair amount of potential to recover these materials, which is a better alternative to placing them in a landfill."

Deconstruction grants may also help address other solid waste concerns. Every year, NDEQ's solid waste program receives complaints about the illegal disposal of building demolition waste. Typically, illegal disposal occurs when disposal options are expensive or there are few management/recycling options to choose from. Promoting building deconstruction should help make the public aware of one other management option that can be considered.

In addition, NDEQ believes that building deconstruction would compliment another existing program that is designed to assist communities interested in redevelopment. NDEQ receives money from the Environmental Protection Agency that is specifically designated for land redevelopment projects. This money is primarily used for assessing sites for contamination. The clearing of unused properties of old structures is one part of redevelopment that the federal dollars cannot effectively address. Every year the Department of Environmental Quality receives calls from small communities inquiring whether there is any financial assistance available to help demolish abandoned buildings. A reason for this is that the demolition and disposal costs of a structure or building is so prohibitive. NDEQ recognizes that abandoned buildings can be a safety hazard and contribute to economic blight in small communities; providing financial assistance to these small communities is something the agency has not been able to do in the past.

Those interested in the grants process should contact NDEQ's Waste Grants and Planning Unit at (402) 471-0273.

On our web site

(www.deq.state.ne.us)

The application "Deconstruction of Abandoned Buildings" can be found in Publications/ Integrated Waste Management/ Grant Information. Direct URL: http://www.deq.state.ne.us/Publica.nsf/pages/WAS061

Improvements to Lake Ogallala Completed Ahead of Schedule

Major renovation work to improve circulation at Lake Ogallala has been mostly completed, well ahead of the predicted completion schedule of next Spring.

The renovation is designed to improve circulation at the lake, which is one of the state's premier trout fisheries. The only work remaining is the planting of wetland grasses and other plants, which will likely be completed in March, 2010.

Historically, the lake has suffered from episodes of low dissolved oxygen. Crews from the Central Nebraska Public Power and Irrigation District (CNNPID) began excavating a channel in late September that is aimed at improving circulation and enhancing the aquatic habitat of the lake. The work was completed on December 3, and water will begin flowing to the lake once again this winter. Trout will be stocked in late winter or early spring, after water levels and habitat conditions have stabilized.

Along with the channel, the lake was chemically treated with rotenone on October 20th to remove undesirable fish species, such as carp, white suckers and alewife. Nebraska Public Power District and CNPPID also took advantage of the low water to carry out maintenance projects on the Keystone Diversion Canal gates and the Kingsley Hydroelectric facility, respectively.

Original planning indicated the lake would likely need to be lowered for several weeks in the Spring of 2010 to allow for completion of the project. In spite of heavy October snow, however, the workers were able to finish ahead of schedule. Along with being completed sooner, the project will not cost as much as budgeted.

Partners in these projects include the Nebraska Game and Parks Commission, Nebraska Department of Environmental Quality, Nebraska Public Power District and The Central Nebraska Public Power and Irrigation District, with funding coming from the Nebraska Environmental Trust Fund and the Environmental Protection Agency. Olsson Associates provided the technical assistance for the channelization project.

Contact Us

The Nebraska Department of Environmental Quality (NDEQ) was created pursuant to passage of the Nebraska Environmental Protection Act in 1971. Although the Department has grown and been given additional responsibilities over the years, its mission has remained the same - the protection of Nebraska's air, land and water resources.

NDEQ welcomes your comments and questions, and your input regarding the NDEQ Environmental Update. We can be reached:

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Please visit our website at http://www.deq.state.ne.us for news, information and links to technical information and forms. Follow the link for "Your Environment" from our site for information about the environment across the state of Nebraska, as well as more specific information about the region you live in. Click on any section of the map to find more specifics about that region. Or, select any of the "Focus on..." topics on the site to find out more information about Nebraska's air quality, water quality and waste management issues.

If you would like to receive an e-mail when we produce a new newsletter, sent a request to *NDEQ.moreinfo@nebraska.gov*, listing your name and e-mail address.

About This Newsletter

The NDEQ Environmental Update is published twice a year, in the Spring and the Fall.

The electronic version of the newsletter can be found on the NDEQ website at http://www.deq.state.ne.us/Newslett.nsf/Update+Winter+2010 E-mail notification when a new Update is posted is also available. See instructions at left.