

INTER-GOVERNMENTAL AGREEMENT
Between the
Nebraska Department of Environmental Quality
and the
City of Lincoln Watershed Management
regarding
the implementation of the project

Lincoln Children's Zoo Water Quality Education Project

THIS INTER-GOVERNMENTAL AGREEMENT is made and entered into by and between the Nebraska Department of Environmental Quality (NDEQ) and the City of Lincoln Watershed Management in accordance with the Interlocal Cooperation Act, Nebraska Stat. Sec. 13-801 to 13-807 (Reissue 1987) or Nebr. Rev. Stat. Sec. 81-1504 (supp.1997) of the Nebraska Environmental Protection Act, whichever is applicable;

WHEREAS, the Sponsor made a request to the NDEQ for Section 319 grant funds (CFDA #66.460), pursuant to the federal Clean Water Act and the Nebraska Nonpoint Source (NPS) Management Program, which have been made available to NDEQ through the Region VII Office of the U.S. Environmental Protection Agency (USEPA); and

WHEREAS, the Sponsor agrees to comply with all provisions of the Federal Clean Water Act as amended by the Water Quality Act of 1987, 33 U.S.C. §1251 et seq. and intends to use the funds as set out in this Agreement;

NOW, THEREFORE, the parties do hereby agree to the terms and requirements of this Agreement as follows:

I. TERM OF THE AGREEMENT

This Agreement will begin on Friday, March 01, 2013, and will remain in effect until all identified tasks are completed for this Section 319 Project unless terminated under §IV-C-12 of this agreement, but will not remain in effect past Tuesday, June 30, 2015.

II. WORK DESCRIPTION AND SCHEDULE

This project shall complete objectives and work items as described in the approved project implementation plan (PIP). The PIP is hereby incorporated into this document in its entirety (Attachment A).

2. A Quality Assurance Project Plan (QAPP) must be approved by NDEQ prior to any collection of environmental data and subsequent reimbursement request from Section 319 grant funds for monitoring activities. All environmental data collected under this agreement shall be provided to NDEQ.
3. The Sponsor agrees to submit progress reports to the NDEQ by March 20 and September 20 each year for the duration of the project agreement. These reports shall contain the following components:
 - a. Progress to date;
 - b. Significant findings or events;
 - c. Corrective actions taken to resolve any problems that are encountered;
 - d. Activities planned for the next reporting period.
4. A final project report must be submitted to NDEQ within 60 days after completion of project tasks, but no later than by Tuesday, June 30, 2015. This report shall contain the following components in addition to those outlined in the 319 Project Final Report Guidelines to be provided by NDEQ:
 - a. Significant findings or events;
 - b. Corrective actions taken to resolve any problems that were encountered;
 - c. Final budget with actual amounts of expenditures and matchign listed as well as the source(s) of matching identified.
5. The Sponsor agrees that if indirect costs are authorized, as specified in the approved PIP, they will be charged at the approved indirect rate.
6. The Sponsor agrees that any contract, inter-governmental agreement, sub-agreement and/or procurement of equipment under this grant must receive NDEQ approval prior to expenditure of funds associated with those transactions. Copies of all sub-agreements and inter-governmental agreements will be provided to the NDEQ.
7. All equipment purchased with Section 319 grant funds must be approved by the NDEQ. Any such purchased equipment shall be retained by the NDEQ upon completion of the project unless otherwise authorized in writing by the NDEQ.
8. The Sponsor agrees that all water quality data collected under this grant shall be provided to the NDEQ.
9. The Sponsor agrees to recognize the contributions and/or involvement of the federal Nonpoint Source Management Program (authorized by Section 319 of the Clean Water Act and administered by USEPA and NDEQ) in project publicity, reports, newsletters, and other materials. The Sponsor shall work with the NDEQ to ensure that all necessary peer review requirements are met prior to publication. A minimum of three (3) copies of outreach material (printed or other media) produced under this grant shall be provided to the NDEQ unless otherwise specified.

2. Trafficking Victim Protection

Prohibition Statement

You as the recipient, your employees, subrecipients under this award, and subrecipients' employees may not engage in severe forms of trafficking in persons during the period of time that the award is in effect; procure a commercial sex act during the period of time that the award is in effect; or use forced labor in the performance of the award or subawards

C. State Requirements

1. Amendments

This agreement may be amended in writing at any time by mutual agreement of the parties, except insofar as any proposed amendments are in any way contrary to applicable law or requirements of the USEPA or NDEQ.

2. Forfeiture, Repayment, and Delays in Disbursement of Funds

Violation of any of the requirements of this Agreement by the Sponsor or failure of the Sponsor to complete and maintain the project in the manner described in the project implementation plan, including any amendments thereto which have been properly approved, shall result in the forfeiture of any funds not disbursed. In addition, if for any reason the project is not completed as described in the project PIP, including any amendments thereto that have been or are hereafter approved by the NDEQ, the NDEQ

3. Remedies Not Exclusive

The use by either the Sponsor or the NDEQ of any remedy specified herein for the enforcement of this Agreement is not exclusive and shall not deprive the party from using such remedy, or limit the application of any other remedy provided by law.

4. Assignment

No assignment or transfer of this agreement or any part hereof, rights hereunder, or interest herein by the Sponsor shall be valid unless and until it is approved by the NDEQ and made subject to such reasonable terms and conditions as the NDEQ may

9. Nondiscrimination

The Nebraska Fair Employment Practice Act prohibits contractors to the State of Nebraska and their subcontractors from discriminating against any employee, or applicant for employment in the performance of such contracts, with respect to hire, tenure, terms, conditions or privileges of employment because of race, color, religion, sex, disability, or national origin. The Sponsor's signature is a guarantee of compliance with the Nebraska Fair Employment Practice Act, and breach of this provision shall be regarded as a material breach of this Agreement. The Sponsor shall insert a similar provision in all subcontracts for services to be covered by any contract resulting from this Agreement.

10. Drug Free Workplace

The Sponsor by executing this Agreement certifies and assures that it operates a drug free workplace as addressed in the State of Nebraska Drug Free Workplace Policy of July 7, 1989.

11. Publication Rights

All parties shall have publication and reproduction rights for all reports and materials, which are produced as a result of this Agreement.

12. Termination

This agreement may be terminated in whole or in part in writing by either party in the event of substantial failure by the other party to fulfill its obligations under this Agreement through no fault of the terminating party provided that no termination may be effected unless the other party is given:

- a. Not less than thirty (30) calendar days' written notice (delivered by certified mail, return receipt requested) of intent to terminate, and
- b. An opportunity for consultation with the terminating party prior to termination.
- c. If an emergency situation occurs, the effective date of termination will be negotiated.

V. PROJECT MANAGERS

The Project Manager for each party to this agreement shall be as follows. The Project Manager may be changed by any agency upon written notification.

Nebraska Department of Environmental Quality (NDEQ)

John Danforth
Program Specialist
Water Quality Planning Unit
1200 'N' Street, Suite 400
P.O. Box 98922
Lincoln, NE 68509-8922
Phone: (402) 471-3373

City of Lincoln Watershed Management

Jared Nelson
555 South 10th Street, Suite 203
Lincoln, NE. 68508
Phone: (402) 441-4955
JLNelson@lincoln.ne.gov

VI. SIGNATORIES TO THIS INTER-GOVERNMENTAL AGREEMENT

NEBRASKA DEPARTMENT OF ENVIRONMENTAL QUALITY

BY: Thomas R. Lamberson

TITLE: Deputy Director

Thomas R. Lamberson

Date: *February 22, 2013*

CITY OF LINCOLN WATERSHED MANAGEMENT

BY: Chris Beutler

TITLE: Mayor of Lincoln

_____ **Date:** _____

FEDERAL TAX ID NUMBER _____ **DUNS NUMBER:** _____

PROJECT IMPLEMENTATION PLAN

“Lincoln Children’s Zoo Water Quality & Educational Project”

Project Sponsor: City of Lincoln Watershed Management
555 S. 10th Street, Lincoln, Nebraska 68508
Phone: 402-441-4955; Fax: 402-441-8609
JLNelson@lincoln.ne.gov

Project Partners: Nebraska Department of Environmental Quality: *Funding through the EPA Section 319 for final design and construction of water quality best management practices, educational components, and project administration*
City of Lincoln, NE: *Matching funds and project management.*
Lower Platte South Natural Resources District: *Matching funds.*
Lincoln Children’s Zoo: *Matching funds.*

Project Area: Lincoln Children’s Zoo, Lincoln, Nebraska.

Section 319 Funds Requested: \$285,000

Non-Federal Match: \$190,000

Project Duration: April 2013 through June 2015

Introduction/Background

Antelope Creek flows through the heart of Lincoln, Nebraska and is well known to its residents. Many of the City's key features, tourism attractions, city bike trails and businesses are located along the creek corridor to the enjoyment and benefit of many. Recently, there have been major roadway, flood reduction, and development projects along the Antelope Creek including the creation of wonderful public spaces that emphasize the natural environment and recreation. A main attraction along the bank of Antelope Creek is the Lincoln Children's Zoo where each year approximately 180,000 visitors experience and learn about animals, the environment, and our planet.

The Antelope Creek watershed is 7.7 square miles and drains to its outlet at Salt Creek, which is part of the larger Lower Platte River Basin. The majority (44%) of the 4,932 acres in the watershed are residential with the remaining land use consisting of transportation (25% roadways, right of ways, etc.) and other (31%) various uses such as schools, parks, commercial and others.

Antelope Creek (Waterbody ID: LP2-20900) has experienced a decline in water quality as the watershed has fully urbanized over the last century. In 2007, Antelope Creek was listed on EPA's Clean Water Act Section 303(d) list for impairments due to elevated levels of ammonia and the bacterium *Escherichia coli* (*E. coli*), an indicator of fecal contamination. All of the stormwater runoff from the Zoo flows into Antelope Creek. While there have been other past efforts in the watershed, they have primarily focused on flood control and channel improvements and little has been done to address water quality and education.

As a result of the pollutant loads and impaired waters, the City has prepared a Watershed Basin Management Plan for Antelope Creek. This Watershed Plan recommended water quality projects and non-structural programs to address water quality improvements to the watershed. The primary goal of the projects recommended by the Plan is to reduce pollutant loads below EPA criteria and to eventually remove this stream segment from the impaired waters list. The proposed projects also seek to provide education to the public about water quality. The project proposed was identified in the Watershed Basin Plan as project AC-P06 with a prioritization rank of 300. The prioritization ranking was the highest ranked project in the entire Basin Management Plan. The sub-watershed for this project is approximately 14 acres in size, consisting of park and zoo areas.

Project Description

The purpose of this project is to reduce runoff and promote infiltration at the Lincoln Children's Zoo site to reduce pollution flowing into Antelope Creek and to educate the public about water quality.

Goal 1 - Increase infiltration at the Lincoln Children's Zoo

Objective 1: Construct several bioretention cells totaling 5,000 square feet around the Zoo parking lot and entrance.

Objective 2: Install 5,000 square feet of pervious pavers near the entrance of the Zoo.

Objective 3: Install a green roof.

Objective 4: Disconnect downspouts and construct a rainwater cistern.

Objective 5: Establish a Water Quality Management Plan for the Zoo.

Goal 2 - Information and Outreach

Objective 1: Install signs explaining the benefit of the installed management practices.

Objective 2: Construct an observation area for the green roof.

Objective 3: Install an outdoor interactive educational area to educate on the best management practices.

Proposed Management Practices

There are both structural practices and non-structural practices of public outreach and education as part of this project. Below is a more detailed description of the proposed management practices and the benefits. Note that all best management practices below will be designed for the 80th percentile rainfall runoff event for Lincoln, NE.

- **Construct bioretention areas:** Construct several bioretention areas totaling between 4,500 to 5,000 square feet. Each bioretention area is to be approximately 1.0 to 1.5 feet deep, with 2 to 3 feet of engineered soil. Overflows within each are to direct large events to nearby storm drain inlets. Curb cuts, as well as re-directed downspouts, will allow runoff from the Zoo facility and nearby parking areas to be captured and treated. Bioretention areas will be capable of removing up to 90% of sediments from the stormwater.
- **Permeable Pavement:** Install a permeable paver system of approximately 5,000 square feet at the entrance of the Zoo where there is very high foot traffic volume. The system will be capable of capturing and retaining stormwater runoff and then infiltrating it into the soils below or to bio-swale. It will be capable of removing up to 80% of sediments from the stormwater.
- **Green Roof:** Install a green roof on a suitable structure at the Zoo. A structural evaluation will be done prior to final design to determine the location and extents of the green roof. The green roof will serve to capture rainfall. Capturing this stormwater will prevent it from running off the site and conveying with it pollutants. This equates to a 100% removal of sediments from the runoff. Many other opportunities exist with the green roof such as incorporating a Zoo exhibit or an expansion to the façade of the buildings to incorporate a living wall.
- **Downspout Disconnection & Rainwater Cistern:** Disconnect downspouts throughout the zoo grounds and direct them onto nearby green spaces such as the constructed bioretention areas and a rainwater cistern. A cistern will allow rainwater to be harvested and can be used for watering vegetation. The cistern captures stormwater and prevents runoff, effectively reducing sediment in its runoff by 100%. The Cistern is envisioned to be incorporated into an outdoor educational area (described below) where it will have a large educational component. The downspout disconnects in areas where rainwater is directed through a grassy swale and will be capable of removing up to 60% of the sediments.
- **Water Quality Management Plan:** Establish a Water Quality Management Plan to accompany the BMP's and future stormwater management at the Zoo. The Water Quality Management Plan will outline goals and objectives for water quality management and recommend potential water quality actions that could potentially be completed in the future. The water quality plan would list current and future BMP's and ensure good maintenance practices.
- **Educational Signage:** Educational signage would be included at the location of best management practices, such as at the entrance for guests to view for the permeable pavers and bioretention areas. Signage will also be included with the observational and educational areas. The signs will describe the best management practice and benefits.

- **Green Roof Observation Area:** In conjunction with the green roof, an observation area is planned to accompany the green roof. This area will be important for education and will allow visitors to view the roof and learn about best management practices and water quality.
- **Outdoor Interactive Educational Area:** An educational area will be constructed to facilitate an interactive learning environment, such as near the rainwater cistern or downspout disconnects. The area will have signage to teach about water quality and best management practices, and will facilitate a more hands-on learning environment. It's anticipated that this be located in an area within the zoo with high visibility and foot traffic to maximize educational opportunities.

Pollutant Source

The targeted pollutant in the watershed is E.coli bacteria. It exceeds the TMDL limit of 113/100mL at all sampling locations in the watershed. No specific sampling was done in the sub-basin in which these projects are proposed. The watershed study determined that the source of bacteria was a non-point source, likely due to wildlife and domestic pet animal waste. The highest concentrations of E.coli observed in dry weather sampling were in the range of 1,500 – 1,800/100 mL. Although the concentrations are an order of magnitude above the stream standard, they are not outside of the range of concentrations associated with transient urban wildlife sources. Also no evidence of illicit sanitary sewer connections was discovered. Other pollutants of concern including total suspended solids and nutrients are also targeted to be reduced with the BMP's proposed in these projects. Estimated pollutant loads at the Zoo project site are shown in the following section.

While this project certainly aims to reduce pollutant sources, the project goal is also for education on water quality and BMP's since over 180,000 visitors can be reached annually at the Zoo.

Load Reduction

The table below summarizes the current pollutant load for each pollutant, as well as the anticipated load reduction based on the structural BMP's to be implemented within this site at the Zoo. These loads are largely based upon WinSLAMM, and were adjusted to account for a variety of site specific measures.

Pollutant	Pollutant Load	Anticipated Load Reduction	Percent Reduction
TSS	12,240 lbs	2000 - 2500 lbs	16 - 20%
Phosphorus	16 lbs	0 - 5 lbs	0 - 31%
E. coli	5.0 x 10 ¹² counts	3.0 – 7.0 x 10 ¹¹ counts	6 - 14%

Information and Education

The project at the Zoo has a tremendous educational component. It's a very unique circumstance in which the Zoo naturally provides a platform for learning and education. Because of this, this project seeks to include education on all of the structural BMP's. The educational components will provide a platform for effective communication with the goal of changing behaviors and attitudes of citizens. There is very high visibility for the 180,000 annual visitors as well as people

enjoying a ride on the passenger train and traffic along the trail next to Antelope Creek and the Zoo. There is even an established water fountain along the trail adjacent to the Animal Kingdom building that could include signage for users of the public trail. The Zoo conducts many children programs, classes, and tours that will include hands-on learning of stormwater and water quality. Also, the City, University of Nebraska, National Forest Service, and local consulting firms frequently seek demonstration sites and the Zoo would be included in a place to visit and learn. The Zoo has a full time graphic designer on staff to ensure the signage will always be maintained and relevant. Below is a list of outreach products and activities:

- Signage at each Best Management Practice (Permeable Pavers, Bio-retention areas, etc.) will be placed to explain the features and explain how they improve stormwater quality.
- Interpretive panels at the Outdoor Educational Area for children and adults to read, learn, and see real examples of BMP's.
- Hand Water Pump at the Outdoor Educational Area for children to interactively play with and learn about water. Meanwhile, adults, parents, or staff can correlate water quality with the enjoyment the children are having. Even young children could learn using this method.
- Outdoor classrooms can be held at the facilities.
- Public Open houses are anticipated through the project process to involve the community in the design and construction process.

Monitoring and Evaluation Criteria

There are no monitoring goals associated with this project. It is part of the phase one implementation of the Antelope Creek Watershed management plan which is intended to reduce pollutants in one sub-basin and thus be the first step in reducing the overall pollutants in Antelope Creek to meet the EPA established levels.

Schedule

This section describes an estimated timeline for implementing management, education, monitoring, reporting and other activities being implemented:

Activity	Year		
	2012	2013	2014
Information Education Activities			
Conduct Public Meeting # 1		X	
Begin Education Signage & Features		X	
Complete Signage of BMP Features			X
Information Gathering and Assistance			
Stormwater Management Plan		X	X
Structural Analysis for Green Roof		X	
Complete BMP Designs		X	
Construction Activities			
Select Contractor		X	
BMP construction		X	X
Complete Construction			X
Other			
Complete Project and Submit Final Report			X

Milestones

This is the end points of the groups of activities mentioned in the schedule.

Milestone	% Completed	Date
Complete Final Design & Construction Plans	100	12/2013
Complete I&E Activities	100	12/2014
Complete Construction	100	12/2014
Complete Project and Submit Final Report	100	12/2014

Budget

Activity	Section 319	NET	NRD*	City* Funds	Others*	Total
Contractual/Implementation						
Structural Evaluation & Design	24,000		6,000	6,000	4,000	40,000
Construction of BMP features	174,000		65,250	65,250	43,500	435,000
TOTAL	\$285,000	\$0	\$71,250	\$71,250	\$47,500	\$475,000

*non-federal match, the \$47,500 is anticipated donations through the Lincoln Children's Zoo