# MEMORANDUM

- TO: Programs, Projects, and Operations Subcommittee
- FROM: Eric Williams, Natural Resources Planner
- SUBJECT: FY 2017 Urban Cost Share Programs
  - Urban Conservation Assistance Program
  - Urban Drainageway Program
  - Recreation Area Development Program
  - Trails Assistance Program
  - Lake Dredging Program

DATE: April 7, 2016

The District solicited applications for the urban cost share programs (guidelines attached) from the various units of government in the District for the upcoming fiscal year. The following applications were received.

# Urban Conservation Assistance Program

The Urban Conservation Assistance Program (UCAP) cost shares with units of government to solve relatively minor erosion, flooding, and stormwater management problems within their jurisdiction. The Policy Manual allows for Management approval of all applications.

# Douglas County, Health Center East Slope

Parking lot renovation at the Health Department located at 42<sup>nd</sup> & Woolworth Ave has altered drainage patterns, resulting in concentrated runoff and increased erosion of adjacent areas. A turf mat-reinforced swale will be constructed, which will mitigate erosion, enhance infiltration and reduce runoff volumes.

# Fort Calhoun, City Park

Missouri River Tributary 2.1 currently divides West Market Square Park into two separate areas, with steep slopes on the existing channel which are not maintainable and are subject to erosion. It is proposed to raise the flowline through much of the channel by approximately 3 feet, and decrease slopes to approximately 5:1 to allow maintenance of the area. The existing headwall will be replaced with a drop structure near 15<sup>th</sup> Street. This project is supported in the City's strategic plan as highlighted in Chapter 6 in the "Topics Identified During the Strategic Planning Session" adopted on September 21, 2015.

# Herman, Park Drainage

Drainage from farmland to the west of town is causing damage during larger rain events. The Village plans to construct an approximately 500' earth berm along the west edge of the park to direct water down to the drainage ditch at the lower portion of the park.

# Metropolitan Community College, Bioretention

MCC is constructing a significant expansion at the Fort Omaha Campus, including new buildings and parking facilities. Detention basins are being included to help with storm water runoff quality and quantity. Basin construction is nearly complete, and cost share is requested to help provide plugs of local and appropriate plant species which have a greater establishment rate and more significant water quality improvement than just seeding the basin.

# Omaha, Raven Oaks Erosion Repair

Erosion has occurred along a small drainageway coming out of the neighborhood, exposing a stormwater pipe and destabilizing the channel slopes. The banks will be re-graded to a more stable slope, the pipe outlet will be reconstructed, and the channel bottom will be stabilized.

# Sarpy County, South Papio Creek west of 168th Street

Steep creek banks and changes in channel location along the South Papio Creek are threatening the roadway and bridge at 168<sup>th</sup> Street. It is expected that significant stabilization work will be needed along this urban drainageway in the future, but immediate action is needed to repair short-term damage while additional study and design is completed.

# SID 380 (Douglas County) Cherry Ridge, Channel Improvement

Bank erosion along a tributary to the Big Papio Creek has caused damage to property, and has made the backyards for multiple homes unsafe. The bank will be reconstructed using either gabion baskets, or concrete block wall, to restore and protect the bank from future damage.

# SID 503 (Douglas County) Silverleaf Estates, Channel Improvement

Drainage through a creek to the east of 190<sup>th</sup> & Hamilton has caused erosion along the banks and impacted adjacent property owners. The bank will be reconstructed using either gabion baskets, or concrete block wall, to restore and protect the bank from future damage.

The FY 2016 budget included \$138,000 for new projects in this program. The following table summarizes the FY 2017 applications.

| <u>Sponsor</u>                                    | <b>Total Estimated Cost</b> | FY 2016 Cost Share Request |
|---|-----------------------------|----------------------------|
| Douglas County, Health Center Slope               | \$35,640                    | \$21,384                   |
| Fort Calhoun, City Park                           | \$94,204                    | \$30,000                   |
| Herman, Park Drainage                             | \$10,000                    | \$6,000                    |
| MCC, Bioretention                                 | \$64,480                    | \$30,000                   |
| Omaha, Raven Oaks Erosion Repair                  | \$150,000                   | \$30,000                   |
| Sarpy County, South Papio at 168 <sup>th</sup> St | \$50,000                    | \$30,000                   |
| SID 380, Cherry Ridge Channel                     | \$50,000                    | \$30,000                   |
| SID 503, Silverleaf Estates Channel               | \$75,000                    | \$30,000                   |
| Total   | \$529,324                   | \$207,384                  |

• It is recommended that the Subcommittee recommend to the Board of Directors that the applications from Douglas County for \$21,384, Fort Calhoun for \$30,000, Herman for \$6,000, Metropolitan Community College for \$30,000, Omaha for \$30,000, Sarpy County for \$30,000, SID 380 for \$30,000, and SID 503 for \$30,000, for a total of \$207,384 be approved, subject to funding in the FY 2017 Budget.

# Urban Drainageway Program

The Urban Drainageway Program (UDP) cost shares with units of government to rehabilitate major urban drainageways within their jurisdiction. The cost share rate varies depending on the level of rehabilitation. This program was redefined by the Board in 2011. Board approval is required on all applications.

This project was previously approved by the Board with cost share components in FY 2016.

The <u>City of Omaha</u> has requested assistance for Hell Creek Rehabilitation at Westwood Lane. This project will remove the broken and degrading concrete liner from the channel, and improve the ecological condition of the creek through biologically-based engineering practices. Replacement of four road culverts will provide greater hydraulic capacity in the area. The total cost of this project is \$3,800,000 and the City is requesting a total of \$900,000, with \$300,000 in FY 2016, 2017, and 2018.

New program applications were received and are outlined below.

# Omaha, Barrington Park Bank Restoration

During a significant rain event in May 2015, the bank along the north branch of the West Papio Creek through Barrington Park near 168<sup>th</sup> & Dodge eroded and caused the closure of this section of the West Papio Trail. Approximately 250 feet of the east bank of the creek will be reconstructed, stabilized and reinforced with geogrid and riprap.

# Omaha, Hillsdale Drainage Swale Improvements

Erosion is occurring thru the existing swale near 156<sup>th</sup> & F Street due to high velocity flows. Soil and vegetation loss downstream of the existing buried gabion baskets is increasing. Multiple drop structures will be constructed along with energy dissipation at key locations to reduce erosion along the drainageway.

# Omaha, Mill Creek at 48th Street

An open channel urban drainageway connects the outfall of a 72-inch stormsewer to Mill Creek, stretching approximately 350 feet. The channel has experienced erosion, causing separation of a section at the end of the sewer, exposing a buried sanitary sewer, and threatening gas pipelines which cross above the channel. Drop structures, channel stabilization, grading, and energy dissipation are expected to be needed, final design will determine specifically what measures will be constructed in this channel.

# <u>Omaha, Oakbrook Park</u>

A 60-inch storm sewer outfall that drains approximately 188 acres is causing streambank erosion and channel slope degradation in a drainageway near 108<sup>th</sup> & Blondo. The existing storm sewer outfall is now located about eight feet above the channel. As the streambed eroded with high flow velocity, the streambanks became increasingly vertical leading to slope stability problems and mass failure. Final design will determine what combination of stormsewer and channel reconstruction is appropriate for this location. Funding would apply to the open channel portion of the project.

# Papillion, Portal Road

A major drainageway connecting to the West Papillion Creek shows severe erosion and degradation, with head cutting and bank erosion threatening the box culvert outlet at Portal Road near 96<sup>th</sup> Street. Cost share on a previous project helped stabilize the drainageway downstream, and additional property rights now allow for the project to be completed through this section. Energy dissipation at the outlet of the box culvert will help decrease velocity of stormwater, and protect the previously completed work.

# SID 162 (Sarpy County), Mission Creek Phase 4

Channel bank erosion along the east bank of Mission Creek is occurring near 164<sup>th</sup> & Harrison Street, and will eventually threaten the concrete trail through the park. Multiple previous phases of construction on this project have been completed, with funding from the NRD on Phase 1, and Phase 2. In order to stabilize this section, gabion baskets will be installed around the outer bend in the creek along the toe of the bank.

The FY 2016 budget included \$300,000 for new projects in this program. The following table summarizes the FY 2017 applications.

| <u>Sponsor</u>                               | <b>Total Estimated Cost</b> | FY 2016 Cost Share Request |
|--|-----------------------------|----------------------------|
| Omaha, Hell Creek (year 2 of 3)              | \$3,800,000                 | \$300,000                  |
| Omaha, Barrington Park Bank                  | \$178,532                   | \$71,413                   |
| Omaha, Hillsdale Swale Improvement           | \$120,445                   | \$48,178                   |
| Omaha, Mill Creek at 48 <sup>th</sup> Street | \$300,000                   | \$120,000                  |
| Omaha, Oakbrook Park                         | \$936,120                   | \$374,400                  |
| Papillion, Portal Road at RR Crossing        | \$242,805                   | \$97,122                   |
| SID 162, Mission Creek Phase 4               | \$152,600                   | \$61,040                   |
| Total  | \$5,730,502                 | \$1,072,153                |

• It is recommended that the Subcommittee recommend to the Board of Directors that the applications from Omaha for \$71,413, Omaha for \$48,178, Omaha for \$120,000, Omaha for \$374,400, Papillion for \$97,122, and SID 162 for \$61,040, for a total of \$1,072,153 be approved, subject to funding in the FY 2017 Budget.

# **Recreation Area Development Program**

The Recreation Area Development Program (RAD) cost shares with communities to develop and improve recreation areas within their jurisdiction. The cost share rate is 50%. On projects requesting more than \$20,000, the Policy Manual requires Board approval. On all others, Management has approval authority.

Applications have been received and are outlined below.

# Omaha, Pollinator Park Phase 1

The Omaha Parks Department received a donation of 21 acres of land north of Pacific Street along the West Papillion Creek. This long, narrow stretch of land will be redesigned into native grass and wildlife habitat, with phase 1 in 2016. The park will include three sections; Entry area, Exploration Meadow with a natural trail, and a Preserve with prairie grasses.

# Papillion, Halleck Park Fields

Due to increased demand for athletic field space, additional multi-sport fields are being considered at the east end of Halleck Park, west of 72<sup>nd</sup> Street. These fields match the goals from the Papillion Parks Plan, and would be located directly next to the West Papio Trail.

The FY 2016 budget amount for new projects in this program was \$100,000. The following table summarizes all of the FY 2017 applications.

| <u>Sponsor</u>                 | <b>Total Estimated Cost</b> | FY 2016 Cost Share Request |
|--------------------------------|-----------------------------|----------------------------|
| Omaha, Pollinator Park Phase 1 | \$141,500                   | \$50,000                   |
| Papillion, Halleck Park Fields | \$5,000                     | \$2,500                    |
| Total                          | \$146,500                   | \$52,500                   |

• It is recommended that the Subcommittee recommend to the Board of Directors that the Recreation Area Development Program applications from Omaha for \$50,000, and Papillion for \$2,500, for a total of \$52,500 be approved, subject to funding in the FY 2017 Budget.

# Trails Assistance Program

The Trails Assistance Program cost shares with sponsors on trail projects to provide recreation and active transportation opportunities in the District. The cost share rate is 50% of the local share. All projects require Board approval.

# Omaha, Riverfront Trail Phase 4

Riverfront Trail began over ten years ago and is receiving partial federal funding. Phase 4 will complete the trail from Heartland of America Park in downtown Omaha north to the Douglas-Washington County Line. This one mile section will connect Millers Landing Park at 151 Freedom Park Road to Kiwanis Park at 1524 East Locust Street. The second portion of the project involves the construction of the Levi Carter Park Trail. This trail allows access to the Riverfront Trail at two locations thereby allowing more users access to the trail system in Omaha and Carter Lake. This trail segment is covered in the master plan of Levi Carter Park.

# Papillion, Walnut Creek Recreation Area Connector

Funding for this project has been approved in previous years through the Trails Assistance Program. Design review, federal funding, and other challenges have caused delay in construction for multiple years. At this time, Papillion has a construction contract with work set to begin on July 25, 2016 and allowing 70 working days. The project will provide increased access to Walnut Creek Recreation Area, with a connection from the neighborhood trail network. An underpass at Schram Road will allow active transportation and recreation access this busy street.

# Walthill, Wellness Trail Phase 2

Following the construction of Phase 1 which included NRD cost share, Walthill is proceeding with Phase 2 of the combined Wellness Trail. This segment will be around the west side of the ballfield, and matches the objectives of the Comprehensive Plan 2014-2024.

The FY 2016 budget amount for new projects in this program was \$328,675. The following table summarizes all of the FY 2017 applications.

| <u>Sponsor</u>                    | <b>Total Estimated Cost</b> | FY 2016 Cost Share Request |
|-----------------------------------|-----------------------------|----------------------------|
| Omaha, Riverfront Trail Phase 4   | \$1,523,480                 | \$414,374                  |
| Papillion, Walnut Creek Connector | \$1,017,471                 | \$101,747                  |
| Walthill, Wellness Trail Phase 2  | \$80,784                    | \$40,392                   |
| Total                             | \$2,621,735                 | \$556,513                  |

• It is recommended that the Subcommittee recommend to the Board of Directors the applications from Omaha for \$414,374, Papillion for \$101,747, and Walthill for \$40,392, for a total of \$556,513 be approved, subject to funding in the FY 2017 Budget.

# Lake Dredging Program

The Lake Dredging Program cost shares with communities to remove accumulated sediments form public recreation lakes. The cost share rate is 50%, up to a maximum of \$100,000. All applications require Board Approval.

# Omaha, Fontenelle Park Lagoon

This dredging will be a component of larger project throughout Fontenelle Park, designed to have positive impacts on stormwater quality as well as reduction in peak flow. The entire park is being re-designed and re-constructed. Planned elevations in the lake have been approved by NGPC to provide adequate depth for fish stocking purposes, but additional depth from dredging is recommended to provide ideal fish habitat. The new lagoon bottom is designed to provide improved conditions for fish as well.

The FY 2016 budget amount for new projects in this program was \$10,412. The following table summarizes all of the FY 2017 applications.

| Sponsor                       | <b>Total Estimated Cost</b> | FY 2016 Cost Share Request |
|-------------------------------|-----------------------------|----------------------------|
| Omaha, Fontenelle Park Lagoon | \$286,000                   | \$100,000                  |
| Total                         | \$286,000                   | \$100,000                  |

• It is recommended that the Subcommittee recommend to the Board of Directors that the application from Omaha for \$100,000 be approved, subject to funding in the FY 2017 Budget.



Form 17.0.B

#### **URBAN CONSERVATION ASSISTANCE PROGRAM**

SPECIAL PROJECT REQUEST

1. <u>DATE</u>: March 9, 2016

2. PROJECT NAME: Douglas County Health Center - East Slope Stormwater Improvements

3. PROJECT SPONSOR: Douglas County Environmental Services

(ADDRESS) 3015 Menke Circle

Omaha, NE 68134

4. CONTACT PERSON: Kent E. Holm

TITLE: Environmental Services Director

5. <u>TELEPHONE:</u> 402-444-6181

6. <u>PROJECT LOCATION</u> \*\*: North of 40th and Woolworth Ave. (see attached map)

7. <u>DESCRIPTION OF PROBLEM</u> \*\*: Parking lot renovation altered some drainage patterns and

resulted in concentrated runoff and increased erosion of adjacent areas.

8. <u>PROPOSED IMPROVEMENTS</u>\*\*: Create a turf mat-reinforced swale that will also increase the flow

path, mitigating the erosion, enhancing stormwater infiltration, and reducing runoff volumes. See attached

9. TOTAL ESTIMATED COST: \$35,640

| 10. | COST SHARE REQUEST: \$21,384           |  |
|-----|--|--|
| 11. | SIGNATURE/TITLE:                       |  |
| **  | Attach additional sheets as necessary. |  |



# DOUGLAS COUNTY ENVIRONMENTAL SERVICES

3015 MENKE CIRCLE, OMAHA, NE 68134 www.dceservices.org (402) 444-6181 Kent E. Holm, Director

March 18, 2016

Eric Williams Natural Resources Planner Papio-Missouri River NRD 8901 South 154th Street Omaha, NE 68138

RE: Papio-Missouri River NRD Urban Cost Share Program, FY2017

Dear Eric:

I've enclosed the application and the supporting documents for the Douglas County Health Center - East Slope Stormwater Improvements project and I am requesting NRD Cost-Share assistance under the Urban Conservation Assistance Program.

Please let me know if you need any further information at this time.

Yours truly,

Kent E. Holm, Director

Enclosures

| $\square$ | EC   | E   | [] | V                       | E | 5  |
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# Douglas County Health Center East Slope Erosion Control and Stormwater Improvements.



General Location: One block north of 40<sup>th</sup> and Woolworth Avenue, Omaha, NE

Project Location is shown in blue highlight.

# Urban Conservation Assistance Program – Application Form



| Project name Fort Calhoun West Market Square Park Improvements                 |                        |                        |                     |                 |               |
|--|------------------------|------------------------|---------------------|-----------------|---------------|
| Project location (attach   | location map)          | SW of the Int          | ersection of 15th S | treet and N     | Monroe Street |
| Sponsor organization   | City of Fort           | Calhoun, NE            |                     |                 |               |
| Sponsor address  | 110 S 14th             | Street                 |                     |                 |               |
| City   | Fort Calhou            | In                     | State NE            | ZIP             | 68023         |
| Contact person   | Linda Welsł            | her                    |                     |                 |               |
| Title  | City Clerk             |                        |                     |                 |               |
| Email address ftcalh   | ounctyhall@abbi        | nebraska.com           | Daytime phone       | 402.4           | 468.5303      |
| See Attachment A and<br>Proposed solution (atta                                | d existing site photos | otos<br>ets as needed) |                     |                 |               |
| opinion of cost.   |                        | minary plans, s        |                     |                 |               |
| Total estimated cost<br><u>Autob Rohm</u><br>Signature<br><u>Maya</u><br>Title | \$ <u>94,204.0</u>     | 0                      | Cost share request  | \$ <u>30,00</u> | 0.00          |

# Google Maps Fort Calhoun City Park



Map data ©2016 Google

Google Maps

#### Urban Conservation Assistance Program – Attachment A

#### **Description of Problem**

The existing West Market Square Park located south and west of the intersection of 15<sup>th</sup> Street and Monroe Street in Fort Calhoun is intersected by Missouri River Tributary 2.1 that currently divides the park into two areas. The existing channel has steep side banks that are not maintainable and are subject to erosion concerns as illustrated in the attached photos. In addition, the current cross section of the channel is not conducive to a park setting and presents a safety hazard to young children.

Connecting the two areas of the park is an existing culvert with a walkway above. The walkway structure is in disrepair as well as the width of the walkway does not meet ADA standards. The existing headwall structure near 15<sup>th</sup> Street is also in disrepair and needs replaced.

The tributary receives upland runoff from a contributing area of approximately 110 acres as well as it receives urban stormwater drainage from the street intersection at 16<sup>th</sup> and Monroe. The tributary is in an existing designated Zone AE floodplain. The park and any areas subject to improvement are owned by the City of Fort Calhoun.

#### Urban Conservation Assistance Program – Attachment B

### **Proposed Solution**

The City of Fort Calhoun contracted with JEO Consulting Group in the summer of 2015 to explore alternatives to alleviate erosion and safety concerns with the tributary in the West Market Square Park as well as develop solutions to the crossing and headwall structures. The project was conducted as an intern project by JEO free of charge to the City over the course of the summer. A group of four college students led the effort to investigate alternatives and develop the current preliminary plans for the improvements. The City is currently pursuing funding and conducting the necessary permitting to make the community betterment project a reality.

It is proposed to raise the flowline through much of the channel by approximately three (3) feet and then soften the side slopes of the channel to approximately a 5:1 slope. These improvements will allow for a maintainable side slope that will be grassed as well as achieve a walkable slope from each side of the park. The existing channel crossing structure will be removed and in its place will be a low head stream crossing with a sidewalk. The low head stream crossing structure will detain minor flow events to achieve a minimal level of water quality improvement as well as provide an ADA accessible slope on the sidewalk crossing.

The existing headwall structure will be replaced with a drop structure to convey the stormwater into the existing culvert underneath 15<sup>th</sup> Street. In the area directly adjacent to the drop structure it is proposed to utilize a mixture of native grasses and other plantings for stream bank protection and to provide an additional aesthetic quality to the park.

The project has received authorization from the Corp of Engineers for a Nationwide Permit No. 43 to authorize the grading work in the channel. JEO is currently finalizing the modeling effort for the floodplain permit and has indicated that the improvements can be designed to limit a rise of less than one foot to meet the City's current floodplain ordinance. This project is supported in the City's strategic plan as highlighted in Chapter 6 in the "Topics Identified During the Strategic Planning Session" adopted on September 21, 2015.





#### DEPARTMENT OF THE ARMY CORPS OF ENGINEERS, OMAHA DISTRICT NEBRASKA REGULATORY OFFICE 8901 SOUTH 154<sup>TH</sup> STREET, SUITE 1 OMAHA, NEBRASKA 68138-3635

FEB -1 2016

JEO Consulting Group, Inc.

Lincoln Office

RECEIVED

http://www.nwo.usace.army.mil/Missions/RegulatoryProgram/Nebraska.aspx

January 27, 2016

#### DEPARTMENT OF THE ARMY NATIONWIDE PERMIT VERIFICATION

Permit No: NWO-2016-

NWO-2016-00130-WEH

Permittee: City of Fort Calhoun Attn: Mitch Robinson 110 South 14<sup>th</sup> Street Fort Calhoun, Nebraska 68203

NOTE: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the U.S. Army Corps of Engineers having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions of Department of the Army Nationwide Permit No. 43 found in the February 21, 2012 Federal Register (77 FR 10184), Reissuance of Nationwide Permits. You must comply with all special, regional and general conditions attached herein.

**Project Waterway and Location:** 

Unnamed ephemeral tributary Section 11, Township 17 North, Range 12 East 41.455313°N, 96.028391°W Washington County, Nebraska

Project Name: West Market Square Park Improvements

Date of Receipt: January 20, 2016

#### **Project Description:**

The permittee is proposing improvements and upgrades to stormwater conveyance structures within a recreational park. These upgrade include replacing an existing 48-inch corrugated metal pipe (CMP) with twin 15-inch CMP. This replacement will result in the discharge of fill material over 0.0001 acre of an existing drainage ditch. The permittee will also reshape and re-grade the existing ditch to reduce high discharge velocities of stormwater. The re-grading of the ditch will result in the discharge of fill material over 0.001 acre of fill material over 0.001 acre of the existing stormwater ditch.

#### **Special Conditions:**

1. The permittee shall notify the Nebraska Regulatory Office of any design changes to the proposed project. Notification must be received in our office for review a minimum of 14 days prior to construction.

2. Prior to the commencement of construction activities the following shall be provided to the above Regulatory Office address: project manager's or point of contact's name, telephone number and construction start date.

3. Concurrent with construction, silt curtains or other sediment control measures will be employed to reduce soil erosion and sedimentation into waters of the U.S. The amount of sediment entering waters of the U.S. and leaving the site shall be reduced to the maximum extent practicable. If the permittee fails to institute all appropriate measures, the Corps reserves the option to halt all earthmoving operations until the erosion/ sedimentation problems are corrected.

4. Construction mats or timber mats must be used to minimize heavy machinery impacting any wetlands or waters of the U.S. All mats will be removed upon completion of construction and any disturbance of wetlands or waters of the U.S. will be restored by minor grading to preconstruction conditions. Disturbed areas will be seeded and erosion control measures will be implemented as appropriate.

5. Any temporary fill (i.e. bridge debris, construction debris, etc.) discharged below the ordinary high water mark shall be removed on a daily basis. All debris shall be disposed of upland in such a manner that it cannot enter any wetlands or waters the U.S.

#### 6. Northern Long-eared Bat (NLEB):

- a. If construction activities consisting of tree clearing and grubbing, bridge work or culvert work are to occur between June 1<sup>st</sup> to July 31<sup>st</sup>, the permittee shall conduct NLEB surveys starting one week prior to construction and continue daily through the end of construction or July 31st whichever comes first, to determine the presence of NLEB roost trees and hibernacula. Qualified personnel will conduct surveys according to U.S. Fish and Wildlife Service (USFWS) and Nebraska Game and Parks Commission (NGPC) protocol along the entire project length. If species are present, the Corps shall be notified and work shall be immediately stopped within <sup>1</sup>/<sub>4</sub> miles of hibernacula and maternal roosting areas. The Corps will initiate consultation with the USFWS and NGPC to determine when work can resume.
- b. Any known, occupied NLEB roost tree will <u>NOT</u> be cut or destroyed from June 1<sup>st</sup> to July 31<sup>st</sup>.
- c. Any clearcutting (or similar harvesting methods) will <u>NOT</u> occur within <sup>1</sup>/<sub>4</sub> mile of known, occupied NLEB roost trees from June 1<sup>st</sup> to July 31<sup>st</sup>.

#### **Regional Conditions:**

1. All areas adjacent (contiguous, bordering, neighboring) to jurisdictional waters disturbed by construction shall be revegetated with appropriate perennial, native grasses and forbs and maintained in this condition. *Phalaris arundinacea* (Reed Canary Grass), *Lythrum salicaria* (Purple Loosestrife), *Bromus inermus* (Smooth Brome), *Phragmites, sp.* (Common Reed, River Reed) and *Tamarix, sp.* (Salt Cedar), are *NOT* appropriate choices of vegetation. A cover crop may be planted to aid in the establishment of native vegetation. The disturbed areas shall be reseeded concurrent with the project or immediately upon completion. Revegetation shall be acceptable when ground cover of desirable species reaches 75%. If this seeding cannot be accomplished by September 15 the year of project completion, then an erosion blanket shall be placed on the disturbed areas. The erosion blanket shall remain in place until ground cover of desirable species reaches 75%. If the seeding can be accomplished by September 15, all seeded areas shall be properly mulched to prevent additional erosion.

2. When the vegetation has become established, all temporary erosion control materials shall be removed from the project site. Biodegradable or photodegradable materials need not be removed.

### 3. Temporary Structures / Work / Fill

a. The use of dredged material in the construction of temporary structures or used for temporary work or used as temporary fill shall not be allowed. The term "dredged material" means material

that is excavated or dredged from waters of the U.S. All temporary fill material shall be obtained from an upland source.

- b. Plans for the temporary structure/work/fill shall be submitted to and approved by the Nebraska Regulatory Office prior to the commencement of construction.
- c. At the completion of the construction activity, all temporary fill material shall be removed in its entirety from the water of the U.S. to an upland area and the affected area shall be restored to its pre-construction condition.
- d. The Nebraska Regulatory Office shall be notified with documentation (i.e. photos) when the site has been restored to its pre-project condition.

4. The permittee is responsible for ensuring that the Corps is notified of the location of any borrow site that will be used in conjunction with the construction of the authorized activity so that the Corps may evaluate the site for potential impacts to aquatic resources, historic properties, and endangered species. For projects where there is another lead Federal agency, the permittee shall provide the Corps documentation indicating that the lead Federal agency has complied with the National Historic Preservation Act and Endangered Species Act for the borrow site. The permittee shall not initiate work at the borrow site in conjunction with the authorized activity until approval is received from the Corps.

#### **General Conditions:**

See attached NWP #43 Fact Sheet.

#### **Further Information:**

1. We have prepared a preliminary jurisdictional determination (JD) for the site which is a written indication that waterways within your project area may be a water of the U.S. Such waters have been treated as jurisdictional waters of the U.S. for purposes of computation of impacts and compensatory mitigation requirements. If you concur with the findings of the enclosed preliminary JD, please sign it and return it to the above address within two weeks.

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2. If you believe the preliminary JD is inaccurate, you may request this office complete an approved JD prior to your commencement of any work in a water of the U.S. An approved JD is an official determination regarding the presence or absence of waters of the U.S. Completion of an approved JD may require coordination with the U.S. Environmental Protection Agency.

3. Prior to the commencement of construction activities the following shall be provided to the above Regulatory Office address: construction start date, project manager's or point of contact's name and the project manager's or point of contact's phone number.

4. Upon completion of the authorized work and any required mitigation, please sign and return the attached Compliance Certification form to the address listed.

5. This verification will be valid until March 18, 2017.

6. Although an individual Department of the Army permit will not be required for the project, this does not eliminate the requirement that you obtain any other applicable Federal, state, tribal or local permits as required. Please note that deviations from the original plans and specifications of your project could require additional authorization from this office.

7. You are responsible for all work accomplished in accordance with the terms and conditions of the Nationwide Permit. If a contractor or other authorized representative will be accomplishing the work authorized by the Nationwide Permit in your behalf, it is strongly recommended that they be provided a copy of this letter and the attached conditions so that they are aware of the limitations of the applicable Nationwide Permit. Any activity that fails to comply with all of the terms and conditions of the Nationwide Permit will be considered unauthorized and subject to appropriate enforcement action.

8. The Omaha District, Regulatory Branch is committed to providing quality and timely service to our customers. In an effort to improve customer service, please take a moment to complete our Customer Service Survey found on our website at http://corpsmapu.usace.army.mil/cm\_apex/f?p=regulatory\_ survey. If you do not have Internet access, you may call and request a paper copy of the survey that you can complete and return to us by mail or fax.

9. If you have any questions concerning this verification or JD, please feel free to contact Richard Chong at the above address or call (402) 896-0896 or e-mail Richard.Chong@usace.army.mil and refer to file number **2016-00130-WEH**.

Welthen Signed

John L. Moeschen Nebraska State Program Manager

Enclosure

cc:

JEO Consulting Group, Inc. (Robert Hibbitts) NDEQ (Jason Garber)

### OPINION OF CONSTRUCTION COST FORT CALHOUN WEST MARKET SQUARE PARK

JEO PROJECT #131216.08



| ltem #                   | Description  | Unit | Quantity | Unit Price | Total    |
|--------------------------|--|------|----------|------------|----------|
| 1                        | Mobilization and Bonding                                 | LS   | 1        | \$5.000.00 | \$5.000  |
| 2                        | General Clearing and Grubbing                            | LS   | 1        | \$1.000.00 | \$1.000  |
| 3                        | Remove Tree  | EA   | 4        | \$850.00   | \$3,400  |
| 4                        | Remove Tree Stump  | EA   | 2        | \$275.00   | \$550    |
| 5                        | Remove Headwall and Handrail                             | LS   | 1        | \$750.00   | \$750    |
| 6                        | Remove Existing Bridge Structure                         | LS   | 1        | \$750.00   | \$750    |
| 7                        | Plug and Abandon in Place Existing 24" HDPE Storm Pipe   | LS   | 1        | \$500.00   | \$500    |
| 8                        | Remove Sidewalk  | SF   | 820      | \$2.00     | \$1,640  |
| 9                        | Earthwork Measured in Embankment (Established Quantity)  | CY   | 580      | \$30.00    | \$17,400 |
| 10                       | Remove and Relocate Grill                                | LS   | 1        | \$200.00   | \$200    |
| 11                       | Remove and Relocate Yard Hydrant                         | EA   | 1        | \$500.00   | \$500    |
| 12                       | Relocate Electricity                                     | LS   | 1        | \$1,500.00 | \$1,500  |
| 13                       | 4" Concrete Sidewalk                                     | SF   | 1,300    | \$12.00    | \$15,600 |
| 14                       | 24" CMP Storm Pipe                                       | LF   | 38       | \$66.00    | \$2,508  |
| 15                       | 24" CMP Flared End Section                               | EA   | 1        | \$445.00   | \$445    |
| 16                       | 48" RCP Storm Pipe                                       | LF   | 8        | \$250.00   | \$2,000  |
| 17                       | 15" CMP Storm Pipe                                       | LF   | 24       | \$40.00    | \$960    |
| 18                       | 15" CMP Flared End Section                               | EA   | 4        | \$300.00   | \$1,200  |
| 19                       | Rock Riprap, NDOR Type A                                 | TONS | 2        | \$100.00   | \$200    |
| 20                       | Install Decorative Limestone Boulders with Filter Fabric | TONS | 11       | \$150.00   | \$1,650  |
| 21                       | Adjust Manhole to Grade                                  | EA   | 1        | \$250.00   | \$250    |
| 22                       | Connect to Existing Manhole                              | EA   | 1        | \$1,000.00 | \$1,000  |
| 23                       | Cast-in-Place Concrete for Inlet Structure               | LS   | 1        | \$7,000.00 | \$7,000  |
| 24                       | Handrail   | LS   | 1        | \$1,000.00 | \$1,000  |
| 25                       | Cut Off Wall   | LS   | 1        | \$2,000.00 | \$2,000  |
| 26                       | Seeding, Fertilizer and Mulch                            | ACRE | 3        | \$2,500.00 | \$7,500  |
| 27                       | Erosion Control Measures                                 | LS   | 1        | \$2,000.00 | \$2,000  |
|                          |  |      |          |            |          |
| Subtotal of Construction |  |      |          |            | \$78,503 |
| 20% Contingency          |  |      |          |            | \$15,701 |
| Total Construction       |  |      |          |            | \$94,204 |

| DECEIVED<br>MAR - 7 2016<br>PAPIO-MISSOURI RIVER<br>NATURAL<br>RESOURCES  |
|---|
| Urban Conservation Assistance Program – Application Form  |
| Project name Park Drainage.   |
| Project location (attach location map)  |
| Sponsor address 504 Dais St. R. O. Box 196  |
| City <u>Herman</u> State <u>Ne</u> ZIP <u>68029</u><br>Contact person   |
| TitleBoard TrusteeEmail addressK-9.75 at Hotmail. ComDaytime phone402-456-7473  |
| Description of problem (attach additional sheets as needed)<br>WEARE having Trouble with Drainage OFF OF FARMLAND<br>Water into park. When Land was in pasture wasn't Bad &<br>Now it is Cornor beans, it has Changed and Now will<br>Flood into Park with Heavyer Rains. |
| Proposed solution (attach additional sheets as needed)<br><u>We want to build a Dirt berm Along Park Edge</u><br><u>to help Direct water to Drainage ditch at Lower</u><br><u>Partof Park. Will be APROX. 500 Feet of work</u>  |
| Total estimated cost \$ 10,000.00 Cost share request \$ 4,000.00  |
| Signature Johnson <u>3-3-16</u><br>Date   |
| Vice Chain Village of Nerman Board<br>Title   |
|   |

Updated 2015-02-12

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# Urban Conservation Assistance Program – Application Form



| Project name  | Fort Omana   | a Campus Expa             | ansion biore | etention ga       | arden |          |  |
|---|--------------|---------------------------|--------------|-------------------|-------|----------|--|
| Project location (attach location map)                    |              | 30th & Soren              | isen, Omah   | a, NE             |       |          |  |
| Sponsor organizationMetropolitalSponsor address5300 North |              | n Community C             | ollege       |                   |       |          |  |
|   |              | 30th                      |              |                   |       |          |  |
| City  | Omaha        |                           | State        | NE                | ZIP   | 68111    |  |
| Contact person Lindsay Nee                                |              | emann                     |              |                   | _     |          |  |
| Title   | Architectura | Architectural Coordinator |              |                   |       |          |  |
| Email address Ineemann1@mccneb.e                          |              | .edu                      | Daytime      | Daytime phone 402 |       | 457-2598 |  |
|   |              |                           |              |                   |       |          |  |

Description of problem (attach additional sheets as needed) **See attached.** 

# Proposed solution (attach additional sheets as needed) See attached word document and construction drawings.

| Total estimated cost   | \$ <u>\$64,480</u>                      | Cost share request | \$ \$30,000 |
|------------------------|---|--------------------|-------------|
| Sjukay 7               | Seewall                                 | 3/29/2016          |             |
| Signature              | 193699999999999999999999999999999999999 | Date               |             |
| Architectural Coordina | tor                                     |                    |             |

\_\_\_\_\_

Title



Description of Problem:

The Metropolitan Community College (MCC) Campus located on 30<sup>th</sup> and Sorensen in Omaha, Nebraska and is situated within an existing urban R4-ACl2 zoning. The capital expansion project currently under construction includes the addition of several new buildings, parking and roadways, and outdoor amenity spaces. In addition there are a large amount of underground utility improvements including the construction of new drainage systems intended to help alleviate the stressed sewers located within the south end of the MCC Campus. Part of these solutions are the incorporation of four detention basins that will help detain stormwater giving the existing sewer systems the opportunity to drain at a more reasonable pace and alleviating flooding during storm events. Due to the locations and nature of these basins they will need to function online in a relatively short time frame and this requires plant a material solution. The project budget and contracted work includes rough grading, amended soils, and seeding only of the bioretention basin. MCC would like to submit this grant application to help aid with the overall detention basin construction and plant material cost allowing the detention basin's better establishment within the MCC construction timeline.

# Proposed solution:

With this additional funding MCC will have the ability to provide larger and established plant materials at an earlier date to better expedite the establishment of these basins. By providing a deep-root plug based system as opposed to a seeding solution these basins can operate online at a much sooner date. This could create a functioning established detention system that is aesthetically pleasing to the community, helps to alleviate stressed sewer systems and greatly reduces erosion while picking up sediments from the adjacent parking and roadways. The bioretention basin is on a highly visible public corner at 30<sup>th</sup> and Sorensen streets, making it a publicly accessible project where pedestrians and campus visitors can learn about the low-impact stormwater quantity and quality control solution. By working with City staff MCC has determined this deep-root plug system is a much better solution to seeding and would allow these basins to be a great example of what future stormwater solution could be.

Tying all of these stormwater management strategies together will be a commonly-themed plant palette chosen for adaptability and survivability in the conditions present in bioretention gardens. Plantings will include material reflecting the plant communities found throughout the region. The bioretention gardens, already designed to function properly, will be planted to create a desirable, seasonally-interesting approach to stormwater management and native-style plantings. Using planting strategies to compliment function, the bioretention gardens on the Metropolitan Community College site will become an asset to the college and the community.



# Fort Omaha Campus Expansion Bioretention Garden Project Budget

|                              | NRD costs | MCC costs | Combined costs |
|------------------------------|-----------|-----------|----------------|
| Planting materials and labor | \$30,000  | \$34,480* |                |
|                              |           |           |                |
| Total Budget                 |           |           | \$64,480       |
| Percentage of total budget   | 47%       | 53%       |                |

\*Per Lanoha Nurseries preliminary price quote on 3/28/16

Google Maps

41°18'12.2"N 95°57'26.3"W

MCC Fort Omaha, Bioretention Basin



Google Maps

#### OMA-20140724-2616-GP1





 ADJUST MANHOLE, INLET, VALVE, HYDRANT, WULT, ETC. TO TO BE ADJUSTED TO GRADE OUTSIDE OF PAVED AREAS. 62-914. CONTRACTOR SHALL INSTALL AND MAINTAIN SILT FENCE PER : REGIONAL STORMANTER MANUAL IN THE CAMPIA

GRADING KEYNOTES

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MATCHLINE



it Dodge Road, Suite 100, Omaha, NE 6815-P. I 402.496.2498 www.L.R.A. Incoom

METROPOLITAN Community College

HOLLAND BASHAM ARCHITECTS 119 SOUTH 48TH AVENUE OMMHA, INEBRASKA 69132 (402)551-0800

HBA













REVISION DATE

DRAWING NAME GRADING AND STORMWATER POLLUTION PREVENTION

PLAN

C1.07

14900 07/08/2015

PROJECT: DATE:

SHEET NUMBER:



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drawn by distigrant by reduced by project - tait namber data book and page reduced by 376, 0114031.02-020 07/08/2015

BENCHMARK

HORIZONTAL AND VERTICAL CONTROL IS METROPOLITAN COMMUNITY COLLEGE - CAMPUS SPECIFIC

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Know what's below. Call before you dig.

LAMP RYNEARSON & A S S O C I A T E S reamins | summars | raimins DING DOCK WALLS AND STAIRS, COORDINATE WITH ARCHITECTURAL PLANS, CONSTRUCT PC CONCRETE, BAR REINFORCED REER HANDRAL WILL WITH HANDRALS. PROVED SAUFLE FOR APPROVAL BY COMPRY'S REPRESE PROVE TO FINAL CONSTRUCTION. 24" WORL HEIGHT PER GRACING PLAN, GEOMETRY PER LARDIT AND COORDINATE PLAN. SEE DETALS SAUTIST CIAJO-CIAJ. 4. CONSTRUCT STEL [DONG, BORDER HAD WITH BACK DHWEL BASED FART IT THORESS STELL [DONG, OR APPROVED [DUNC, SPLCE USING COMPUTINCE ON STELL STELLARD STELLARD STALL BE ANCORED WITH 24" [DOTHIN DUNKETED STATE, NETWICE AND FOR DOT NOT FOR STELLE STELLARD STELLARD STALL BE CONST. STELLARD STELLARD STELLARD STELLARD STELLARD STELLARD ST 57. CONSTRUCT PC CONCRETE REINFORCED BORETENTION CURB, SEE GRADING PLANS AND DETAIL B/C1.28 58. CONSTRUCT PC CONCRETE REINFORCED BIORETENTION WER. SEE DETAIL 11/C1.27. IN LOCATION OF CAR CHARGING STATIONS. SEE ELECTRICAL PLANS AND COORDINATE INSTALLA RASH COMPACTOR SCREEN WALL, COORDINATE WITH ARCHITECTURAL PLANS. CONSTRUCT BAR REINFORCED PHECAST CONCRETE TEMED SALTING. CAST IN FLACE BAR REINFORCED CONCRETE FOOTING. COLOR STANDARD GRAV WITH LIAHT SANDALAST TINEN. ALION PER PLAN. PROVIDED SAMPLE FOR GAMER APPROVAL PROR TO TING. FAMILYLICAL SEE DETALS SHEETS C.1.3.-C.1.3. METROPOLITAN COMMUNITY COLLEGE SITE FURNISHINGS KEYNOTES FORT OMAHA CAMPUS - SITE PACKAGE INSTALL BENCH. BALANCE BENCH, BACKED SEAT, THYOAL POWDERCOATED SEAT, MODEL NUMBER SBBAL-728PC ON FORME, <u>WWW.FORME-CURFACES.COM</u> OR BOL451.0410. INSTALL BENCH. BALANCE BENCH, BACKLESS SEAT, TH PORDERCOATED SEAT. MODEL NUMBER SEBAL-72NPC FORMS, WWW.200405-SUBFACES.COM OR 800.451.0410 RECEPTACLE\_ DISPATCH 45 GALLON SINGLE-STREAM LITTER RECEPTACL BODY AND SLATE TEXTURE POWDERCOATED UD. DUAL LITTER UD O NUFACTURER'S SPECIFICATIONS, CONTACT SURFACE + FORMS, MINUED INSTALL LITTER & RECYCLING RECEPTACLE. DISPATCH 45 GALLON SPLT-STREAM LITTER \* RECYCLING RECEPTACLE WITH SURFACE WOLNT WITH ALUMINUM TEXTURE POWDERCOATED BODY AND SLATE TEXTURE POWDERCOATED LID. LITTER CONCRETE BASE, TYPICAL, LID AND GENERAL RECYCLING CAPITOL BIKE RACK, TYPICAL. SURFACE MOUNT WITH EMBEDDED STANLESS STEAL ANCHORS. ALLMINUM TEXTURE BIR SKCAP OR APPROVED EQUAL. INSTALL PER MANUFACTUREN'S SPECIFICATIONS. CONTACT SURFACE + FORMS, ND STANDARD SATIN SPECIFICATIONS. STAINLESS STEE IO' DAMETER CHOSS TABLE, THRCAL, FREESTANDING IN AND BASE, MODEL NUMBER SPCRO-24R30 OR AU 42" DAMETER CROSS TABLE, THROAL FREESTANDING TABLE WITH SLATE TEXTURE POREDRODATED TOP AND STANDARD SATIN IN AND INSE. MCOEL NUMBER SPCRO-JERV2 OR APPRIVED EQUAL INSTALL PER MANUFACTURER'S SPECIFICATIONS. CON SEAL: WARS, WISTA STACKING CHAR, TYPICAL, STAINLESS STEEL FRAME WITH PERFORATED SEATS, MODEL NUMBER SCHS-P OR AF ANTHER STATE 79. LOCATION OF FUTURE ART INSTALLATION. COORDINATE FUTURE ART INSTALLATION WITH OWNER'S REPRESE 60. BUS SHELTER LOCATION. NOT PART OF THIS CONTRACT. 81. PLANTER BOXES, TYPICAL. NOT PART OF THIS CONTRACT ELECTRIC BIKE STATION LOCATION. SEE ELECTRICAL PLANS AND COORDINATE WITH OWNER'S REPRESENT REVISION DATE DRAWING NAME PAVING PLAN PROJECT: DATE: SHEET NUMBER-C1.17

 CONSTRUCT BAR REINFORCED TERED CAST-IN-PLACE BIORETENTION CURBS. 12' WOTH, HEIGHT PER GRADING PLAN COORDINATE PLAN. SEE DETAIL 1/01.28 45. CONSTRUCT BAR REINFORCED CAST-IN-PLACE BIORETENTION MALL STANDARD GRAY WIT GEOMETRY PER LAYOUT AND COORDINATE PLAN. SEE DETAIL 5/C1.27. 10. PLACE LIMESTONE BLOCKS. SPLITFACE, 4'X4'X2'. SEE PLANTING PLANS (C1.33-C1.30) 50. LOCATION FOR FUTURE MCC CORNER SIGNAGE AND FOOTING, NOT PART OF THIS CONTRACT 51. CONCRETE STADE, 30' TOTAL HEIGHT PERFORMANCE STADE. CAP FINISH SHALL BE MEDIUM BROOM. WALL FINISH SHALL BE LIGHT SANDB EDGES SHALL INCORPORATE 1' CHAMPERS. STADE AREA SHALL INCORPORATE ELECTRICAL AND DATA CONNECTIONS. SEE DETAIL 12/C1.27

52. CONSTRUCT BAR REINFORCED CAST-IN-PLACE WALLS. PROMOE SAMPLE FOR APPROVAL BY OWNER'S REPRESENTATIVE PROR TO FINAL CONSTRUCTION. 12" WOTH, HEART FOR GRADING PLAN, GEDWEIRY FOR LAYOUT AND COORDINATE PLAN. SEE DETAILS SHEETS C1.30-C1.32.

CONSTRUCT BAR REINFORCED CAST-IN-PLACE PLANTER WALLS. PROVIDE SAMPLE FOR APPROVAL BY OWNER'S REPRESENTATIVE PROR TO FINAL CONSTRUCTION. 12" WIDTH, HEIGHT PER GRADING PLAN, GEOMETRY PER LAYOUT AND COORDINATE PLAN. SEE DETAILS SHEETS C1.30-C1.32.

- CONSTRUCT BAR REINFORCED PRECAST CONCRETE TERED SOUTING WITH INTEGRAL MON CURR, CAST IN FLACE BAR REINFORCED CONCRETE FOOTING, COLOR STANDARD CHAN WITH LIGHT SANDBLIGHT TINBH, AUCH PER PLAN, PROVIDED SAMPLE FOR OWNER APPROAL PROR TO FINAL FARMCHTON, SEZ DETALS STREETS CL3A-CL32.
- 45. CONSTRUCT REINFORCED PRECAST CONCRETE TERED SEATING WING WALLS. COLOR STANDARD GRAY WITH LIGHT SANDELAST FINISH. PROVIDED SAMPLE FOR DIRINER APPROVAL, PRIOR TO FINIL FAMILYCATION. AUGH PER PLAN. SEE DETAILS SHEETS C1.30-C1.32.
- . CONSTRUCT OUTDOOR CHALKBOARD. SEE DETAIL 1/C1.29.
- 43. CONSTRUCT TYPE 4 BAR REINFORCED PRECAST CONCRETE BENCH. COLOR STANDARD GRAY WITH LIGHT SANDBLAST F APPROVAL PROR TO FINAL FABRICATION. ALIGN FER FLAM. SEE DETM. 2/01.29
- 42. CONSTRUCT TYPE 3 BAR REINFORCED PRECAST CONCRETE BENCH, COLOR STANDARD GRAY WITH LIGHT SANDBLAST FINISH. PRE APPROVAL PROR TO FINAL FABRICATION. ALION PER PLAN. SEE DETAL 8/C1.27.
- 41. CONSTRUCT TYPE 2 BAR REINFORCED PRECAST CONCRETE BENCH. COLOR STANDARD DRAY WITH LIGHT SANDBLAST FINISH. PROVIDED SAMPLE FOR OWNER APPROVAL PROR TO FINIS, FABRICATION. PLACE FOR PLAN. SEE DETAIL 7/C1.27.
- CONSTRUCT TYPE 1 BAR REINFORCED PRECAST CONCRETE BENCH. COLOR ST/ APPROVAL PROR TO FINAL FARMCHICAL SEE DETAIL 8/C1.27.

SITE FEATURE KEYNOTES

- 24. CONSTRUCT STELL TRPLE ELBOW CORNER BOLLARD GUREDS. EMBED BOLLARDS IN CONDRETE (DO NOT INSTALL BOLT DOWN BOLLARDS). COORDINATE WITH ARCHTECTURAL PLANS.
- 23. CONSTRUCT LOW EMITTING AND FUEL EFFICIENT VEHICLE PARKING STREPING
- 22. CONSTRUCT HANDICAP ACCESSIBLE PARKING STALL STRIPING PER DETAIL &/C1.28 FOR HANDICAP ACCESSIBLE STALL STRIPING
- 21. CONSTRUCT 6" HEIGHT, 6" WETH CONCRETE CURB, INTEGRAL TO WALKWAY, SEE DETAL 9/C1.27.
- 20. CONSTRUCT 4" DEPTH 11" ORAY CRUSHED LIMESTONE ORANE, WITH FINES. SUBMIT SAMPLE FOR APPROVAL
- 18. PLANTING AREA. SEE PLANTING PLAN (SHEETS C1.33-C1.39)
- 18 GENERATOR DAD, COORDINATE WITH ELECTRICAL DUALS, CONSTRUCT DER MAN LEACTURER'S SPECIFICIATIONS
- 17. CONSTRUCT 5' PC CONCRETE BINE RACK PAD INTEGRAL TO SIDEMALK, MEDIAM BROOM FINSH, WOTH PER PLAN. JOINTS PER PLAN. SEE DETAIL 4/CL27
- 16. CONSTRUCT 5' PC CONCRETE BENCH PAD INTEGRAL TO SIDEWALK, MEDIUM BROOM FINSH, WOTH PER PLAN. JOINTS PER PLAN. SEE DETAIL 4/C1.27
- 15. OUTDOOR CONDRETE WORK AREA. COORDINATE WITH ARCHITECTURAL PLANS.
- 14. CONSTRUCT PLANTER CURB. SEE DETAIL 8/C1.28.

- 12. CONSTRUCT PC CONCRETE, BAR REINFORCED RISERS, MEDIUM BROOM FINISH. NO HANDRALS REQUIRED. CONSTRUCT RISERS PER CITY OF CMANN STANDARD PLATE 600-04.
- 11. CONSTRUCT PC CONCRETE, BAR REINFORCED RISERS WITH HANDRALS, MEDIUM BROOM FINISH. SEE SHEETS C1.30-C1.32.
- 10. CONSTRUCT PC CONCRETE, BAR REINFORCED RISERS WITH HANDRALLS, MEDIUM BROOM FINISH, HEATED RISERS PER ELECTRICAL PLANS. SEE SHEETS 01.30-01.32.
- 8. CONSTRUCT PC CONCRETE CURB RAMP, SEE CITY OF OMANA STANDARD PLATE 500-82.
- CONSTRUCT 6" HEIGHT, 12" WOTH PC CONCRETE CURR, INTEGRAL TO WALKINY. SEE DETAIL 6/C1.28
- CONSTRUCT 5" PC CONCRETE SDEWLK, MEDIUM BROOM FINISH SEE DETM, 4/C1.27. EXPANSION JOINTS ADJACENT TO BUILDING STOOPS, SITE WALLS AND STAR LOCATIONS. SEE DETMI, 1/C1.27. MIDTH PER PLAN. JOINTS PDR PLAN.
- CONSTRUCT & REINFORCED PC CONCRETE PAVING. MEDIUM BROOM FINISH. SAW OUT JOINTS PER PLAN. SEE DETAIL 1/01.25 6. CONSTRUCT 7" PC CONCRETE PAVING (NO CURR).
- 4. SAW OUT JONTS PER PLAN. SEE JOINT LAYOUT AND COORDINATE PLANS (SHEETS C1.20-C1.24).
- CONSTRUCT PARKING LOT STRIPING PER PLAN (4" WHITE PAINT, TYPICAL), SEE DETAIL 8/C1.26
- 1. CONSTRUCT 6' PC CONCRETE PAVING WITH INTEGRAL CURB 2. CONSTRUCT 7 PC CONCRETE PAVING WITH INTEGRAL CURB

TECTS

HOLLAND BASHAM ARCHITE 119 SOUTH 46TH AVENUE 0MWHA, NEBRASKA 68132 (402)551-0800

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Omaha, NE RA-Inc.com

it Dodge Road. P. 1 402.496.24

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07/08/2015

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# Urban Conservation Assistance Program – Application Form

| Project name                           |                             | Raven Oaks Erosion Repair             |               |       |              |     | * |
|--|-----------------------------|---------------------------------------|---------------|-------|--------------|-----|---|
| Project location (attach location map) |                             | Southeast of N 52nd Ave and Willit St |               |       |              |     |   |
| Sponsor organization                   |                             | City of Omaha                         |               |       |              |     |   |
| Sponsor address                        |                             | 1819 Farnam St                        |               |       |              |     |   |
| City                                   | /                           | Omaha                                 |               | State |              | ZIP |   |
| Contact person                         |                             | Adam Wilmes                           | S             |       |              |     |   |
| Title                                  |                             | Environmental Engineer CE III         |               |       |              |     |   |
| Email address                          | adam.wilmes@cityofomaha.org |                                       | Daytime phone |       | 402-444-3819 |     |   |

Description of problem (attach additional sheets as needed)

Highly erodible soils in stormwater channel have eroded significantly, causing tree loss, vertical banks, and continued erosion threatens private property

Proposed solution (attach additional sheets as needed)

Reconstruct storm sewer outlet to lower elevation, stabilize erodible soils in channel, grade channel banks to sustainable slope

| Total estimated cost | \$ <u>150,000</u> | Cost share red |
|----------------------|-------------------|----------------|
| Jenege               | herly             | 3 181          |
| Signature            |                   | Date           |
| JEII-P.              | IBLIC WORKS       |                |
| Title                |                   |                |

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2016



City of Omaha Jean Stothert, Mayor

March 18, 2016

Public Works Department Omaha/Douglas Civic Center 1819 Farnam Street, Suite 601 Omaha, Nebraska 68183-0601

(402) 444-5220 Fax (402) 444-5248

Robert G. Stubbe, P.E. Public Works Director

Mr. Eric Williams Natural Resources Planner Papio-Missouri River Natural Resources District 8901 S. 154<sup>th</sup> Street Omaha, NE 68138-3621

RE: Raven Oaks Erosion Repair Project NRD Urban Conservation Assistance Program Grant Application Submittal

Dear Mr. Williams,

Enclosed please find the following material intended for the application of the District's Urban Drainageway Program grant for the above-referenced project in Omaha:

- 1. Completed Application Form 17.0A for the Urban Conservation Assistance Program
- 2. Attachment A: Location map
- 3. Attachment B: LiDAR information for the project area

#### **Description of the Problem**

The Raven Oaks neighborhood is located in north central Omaha, northeast of 60<sup>th</sup> Street and State Street. The area was developed for single family residential homes in the mid 1960's. The area of erosion in question is located at a storm sewer outlet southeast of 52<sup>nd</sup> Avenue and Willit Street (See Attachment A). It is in this location that a corrugated metal pipe (CMP) storm sewer outlets into an open drainage channel in a heavily wooded outlot, which is owned by the City of Omaha. The CMP storm sewer in question collects stormwater runoff from a small area (approximately 2.3 acres) near the intersection of 52<sup>nd</sup> Avenue and Willit Street, and conveys the runoff east approximately 200 feet where it discharges into an open channel. At the time the pipe was constructed, it is assumed that it discharged directly to the ground surface, however, due to highly erodible soils and a steep grade downstream from the pipe discharge, the downstream channel has eroded significantly. Currently, the CMP pipe discharge is approximately 20 feet above the channel flowline. Headcutting and continued erosion have caused a significant portion of the CMP pipe to be exposed (See Figure 1 and 2).

Continued erosion to the west has the potential to cause significant damage to private property. Further degradation of the channel will cause further loss of trees and habitat in this wooded area.



Figure 1. Looking northeast to suspended CMP pipe and eroded channel.



Figure 2. Looking west to exposed CMP pipe and eroded channel.

#### **Proposed Solution**

This project is in a very early stage, and has not undergone a detailed study. As part of the solution, it will be necessary to rebuild a portion of the existing CMP pipe that has been exposed and is structurally compromised. The downstream channel will be stabilized, and may require grade control structures. Some tree removal will be necessary to access the site and stabilize the channel, but tree removal will be kept to the minimum necessary to complete the project.

### Cost Estimate

The current cost estimate is based on a very preliminary estimate of the amount of storm sewer reconstruction, grading, and stabilization that will be necessary. That estimate is \$150,000. It's very likely that this estimate will change as detailed design alternatives are developed, however the maximum NRD contribution for this assistance program is 60% of the actual costs, up to a maximum of \$30,000. The maximum of \$30,000 is being requested because the actual project costs will almost certainly be greater than \$50,000.

#### **Construction Implementation Schedule**

The City of Omaha Public Works Department has included this project in its anticipated list of construction projects for the 2017 construction season.

#### **Preliminary Survey and Design Information**

A traditional topographic survey of the area has not yet been performed. The 2010 LiDAR data for the project area is being used for preliminary surface information, and has been included as Attachment B. This data is useful for determining elevations outside of the erosion area, but does not accurately portray the current state of erosion, since the data is nearly 6 years old. A detailed topographic survey will be completed during design of the project.

#### Additional Sponsor Responsibilities

The City of Omaha Public Works Department will administer the engineering design contract. We will obtain temporary and permanent construction easements as necessary for accessing the City-owned property on which the project will occur. We will comply with all local, state and federal laws and obtain any permits necessary for construction of this project. We also concur that the City shall hold and save the District free from damages or claims due to the design, construction, operation and maintenance of this project as required from the subsequent agreement between the City and the District. The City also agrees to provide all future operation and maintenance of the channel and storm sewer at no cost to the District.

Thank you for your consideration – the City hopes that the District's Board of Directors and application reviewers look favorably on this project. Please feel free to contact me at (402) 444-3819 if you have any questions or require additional information for this grant request.

Sincerely,

Ada Watur

Adam Wilmes, P.E. City Project Manager

4




## Urban Conservation Assistance Program – Application Form



| Project name South Papillio            |               | Dillion Creek Wes         | St of 168th S | street    |           |            |  |
|--|---------------|---------------------------|---------------|-----------|-----------|------------|--|
| Project location (attach location map) |               | Banks of Sou              | uth Papillion | Creek, se | ee attacl | ned map    |  |
| Sponsor organizat                      | tion Sarpy Co | Sarpy County Public Works |               |           |           |            |  |
| Sponsor address                        | 15100 S 8     | 34th Street               |               |           |           |            |  |
| City                                   | , Papillion   |                           | State         | NE        | ZIP       | 68046      |  |
| Contact person                         | Michael K     | losa                      |               |           | _         |            |  |
| Title Civil Enginee                    |               | neer                      |               |           |           |            |  |
| Email address MKosa@Sarpy.com          |               | 1                         | _ Daytime     | phone     | (402      | ) 537-6924 |  |

1 4 0 0 1

Description of problem (attach additional sheets as needed)

Significant erosion has been occurring to the creek's banks. Continued erosion could undercut the roadway surface. See attached photos.

Proposed solution (attach additional sheets as needed)

| Generate an initial study for 1.0 miles of creek adjacent to     |
|--|
| urbanized areas to determine erosion mitigation recommendations. |
| See attached description.  |

| Total estimated cost  | \$ 50,000 | Cost share request | \$ 30,000 |
|-----------------------|-----------|--------------------|-----------|
| Dennis Wilson         |           | 2016/03/18         |           |
| Signature             |           | Date               |           |
| Sarpy County Engineer |           |                    |           |
| Title                 |           |                    |           |

# South Papillion Creek Study Limits



#8 Proposed Improvements.

The intent of this assistance request is to fund a study that will identify solutions to the erosion issues shown in the photos and described in item 7. Once the study is complete, the County plans to initiate final design plans for improvements to the creek adjacent to the roadway to protect the roadway from future erosion. The expectation is that this study will be completed and the County will submit for assistance under the Urban Drainageway Program next year to secure funding for the construction phase of the project. Per discussions with Eric Williams at NRD, we suspect that the required rehabilitation work will be a Level 2 Urban Drainageway Program project. Study will include immediate suggestions to stabilize the highly unstable areas and long-term solutions for the overall channel.





















#### PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT 8901 S. 154th Street Omaha, NE 68138-3621 402-444-6222 www.papionrd.org

# Urban Conservation Assistance Program – Application Form

| Project name                            |                              | 2016 Channel Improvements                 |        |             |          |          |        |    |              |      |     |
|---|------------------------------|---|--------|-------------|----------|----------|--------|----|--------------|------|-----|
| Project location                        | Project location (attach loc |   |        | 116th & Io  | da Stree | t        |        |    |              |      |     |
| Sponsor organization<br>Sponsor address |                              | SID 380, Cherry Ridge / Cherry Ridge West |        |             |          |          |        |    |              |      |     |
|   |                              | 11440 West Center Road                    |        |             |          |          |        |    |              |      |     |
| Ci                                      | ty                           | Omaha                                     |        |             | 9        | State    | NE     |    | ZIP          | 6814 | 44  |
| Contact person                          |                              | Robert C                                  | zerw   | vinski      |          |          |        |    |              |      |     |
| Title                                   |                              | Municipa                                  | al Ser | vices Dep   | partmen  | t Manag  | ger    |    |              |      |     |
| Email address                           | bczerwin                     | ski@eacg                                  | .com   |             | [        | Daytime  | phone  |    | 402.510.1329 |      | 329 |
|   |                              |   |        |             |          |          |        |    |              |      |     |
| See attach                              | ed shee                      | et  | nal si | neets as ne | eeded)   |          |        |    |              |      |     |
|   |                              |   |        |             |          |          |        |    |              |      |     |
|   |                              |   |        |             |          |          |        |    |              |      |     |
| Proposed solution                       | on (attach a                 | dditional sl                              | heets  | s as needed | d)       |          |        |    |              |      |     |
| See attach                              | ed shee                      | et  |        |             |          |          |        |    |              |      |     |
|   |                              |   |        |             |          |          |        |    |              |      |     |
|   |                              |   |        |             |          |          |        |    |              |      |     |
| Total estimated                         | cost                         | \$ <u>50,000</u>                          | )      |             | Cost     | share r  | equest | \$ | 30,00        | 0    |     |
| ROBERT F. CZ                            | ZERWINSK                     | (]  |        |             | 3/18     | 8/2016   |        |    |              |      |     |
| Signature                               |                              |   |        |             | Date     | <u>)</u> |        |    | _            |      |     |
| Municipal Servi                         | ices Dept. I                 | Manager                                   |        |             |          |          |        |    |              |      |     |
| Title                                   |                              |   |        |             |          |          |        |    |              |      |     |

# Google Maps

41°19'11.4"N 96°05'38.1"W

SID 380, Cherry Ridge West Two Creek Erosion



Google Maps

## **URBAN CONSERVATION ASSISTANCE PROGRAM – APPLICATION FORM**

Description of problem –

A segment of the Big Papillion Creek bordering Cherry Ridge (SID 380) has experienced significant bank sloughing and erosion on the east bank. This erosion has impacted adjacent private property owners.

Proposed solution -

With the limited site access, the proposed solution consists of the placement of gabion baskets and/or solid 3'x3'x6' concrete blocks with placement and compaction of embankment material behind wall to return bank to original condition.







# Urban Conservation Assistance Program – Application Form



| Project name                 |                 | 2016 Channel Improvements                        |                |               |               |    |              |       |  |
|------------------------------|-----------------|--|----------------|---------------|---------------|----|--------------|-------|--|
| Project location             | (attach locatio | on map)  | 180th & Old    | Lincoln Hwy   |               |    |              |       |  |
| Sponsor organiz              | ation S         | SID 503, Silverleaf Estates / West Dodge Station |                |               |               |    |              |       |  |
| Sponsor address              | , 1             | 11440 West Center Road                           |                |               |               |    |              |       |  |
| Ci                           | ty C            | Omaha  |                | _ State       | NE            |    | ZIP          | 68144 |  |
| Contact person               |                 | Robert Cze                                       |                |               |               |    |              |       |  |
| Title                        | Ν               | Municipal Services Department Manager            |                |               |               |    |              |       |  |
| Email address bczerwinski@ea |                 | i@eacg.co  | om             | Davtime       | Davtime phone |    | 402.510.1329 |       |  |
| Proposed solution            | on (attach add  | litional shee                                    | ets as needed) |               |               |    |              |       |  |
| See attach                   | ed sheet        |  |                |               |               |    |              |       |  |
| Total estimated              | cost \$         | 75,000   |                | Cost share re | equest        | \$ | 30,000       | 0     |  |
| ROBERT F. CZ                 | ZERWINSKI       |  |                | 3/18/2016     |               |    |              |       |  |
| Signature                    |                 |  |                | Date          |               |    | -            |       |  |
| Municipal Servi              | ices Dept. Ma   | anager   |                |               |               |    |              |       |  |
| Title                        |                 |  |                |               |               |    |              |       |  |

## **URBAN CONSERVATION ASSISTANCE PROGRAM – APPLICATION FORM**

Description of problem –

A segment of the Papillion Creek bordering Silverleaf / West Dodge Station (SID 503) has experienced significant bank sloughing and erosion on the east bank. This erosion has impacted adjacent private property owners.

Proposed solution –

With the limited site access, the proposed solution consists of the placement of gabion baskets and/or solid 3'x3'x6' concrete blocks with placement and compaction of embankment material behind wall to return bank to original condition.



# Google Maps

## 41°16'21.6"N 96°12'42.7"W

SID 503 Silverleaf Estates Channel Improvement



Google Maps







# Urban Drainageway Program – Application Form

| Project name                                    | Barrington                                 | Barrington Park Bank Failure Restoration   |   |                        |  |  |  |
|---|--|--|---|------------------------|--|--|--|
| Project location                                | (attach location map)                      | Barrington Pa  | ark, just west of N.                                  | 164th and Page Streets |  |  |  |
| ,<br>Sponsor organiz                            | ation Omaha Pa                             | Omaha Parks, Recreation & Public Property Department<br>1819 Farnam Street - Suite 701 |   |                        |  |  |  |
| Sponsor address                                 | 1819 Farn                                  |  |   |                        |  |  |  |
| Ci  | ty Omaha                                   |  | State NE  | ZIP68183               |  |  |  |
| Contact person Dennis                           |  | Bryers, FASLA,   | PLA   |                        |  |  |  |
| Title   | Landscape                                  | e Architect - Parl   | K & Recreation Pla                                    | nner II                |  |  |  |
| Email address                                   | dennis.bryers@cityo                        | fomaha.org   | Davtime phone   | 402-444-3798           |  |  |  |
|   |  |  |   |                        |  |  |  |
| Proposed solution                               | on (attach additional sh                   | eets as needed)  |   |                        |  |  |  |
| See Attach                                      | ned Sheets.                                |  |   |                        |  |  |  |
| Level of Design<br>Total estimated<br>Signature | Level 1<br>cost \$ <u>178,532</u><br>Beccl | Level 2<br>2.00  | 2 Leve<br>Cost share request<br>17 March 2016<br>Date | el 3<br>\$ 71,412.80   |  |  |  |

Director

Title

## Urban Drainageway Program – Application Form Barrington Park Bank Failure Restoration

### **Description of Problem:**

Approximately 250 foot section of the east bank along the West Papillion Creek in Barrington Park experienced cantilever failure of the embankment adjacent to the trail during a rainstorm in early May 2015, causing the closure of a section of the West Papio Trail. The site has historically experienced erosion, due to its location along a bend in the creek. Existing riprap is located at the site, but not enough upstream to prevent this erosion. The project will stabilize the east creek bank and protect the adjacent trail and residences.

## Proposed Solution:

The project involves the reconstruction of approximately 250 feet of existing creek bank along the West Papillion Creek in Barrington Park. The bank will be reconstructed with earthen fill, reinforced with geo-grid every 2 feet vertically. Nebraska Department of Roads Type B Riprap (D50=9.9 inches will be installed along the lower portion of the bank. A vegetated upper bank will be constructed with seeding and a turf reinforcement mat. The creek bank will be reconstructed tat a 2:1 to 4:1 slope.

## Project Costs

| \$ 26,625.00  |
|---------------|
| \$ 5,770.00   |
| \$ 137,550.00 |
| \$ 8,587.00   |
| \$ 178,532.00 |
|               |

#### Project Schedule

| Bids Opened:                   | 9 March 2016    |
|--------------------------------|-----------------|
| Award Contract (City Council): | Late April 2016 |
| Estimated Completion Date:     | Late July 2016  |



PROJECT LOCATION Barrington Park Bank Failure Restoration Project Barrington Park & West Papio Trail N. 164th and Page Streets Omaha, Nebraska

| Г | J     | u—      |     |     | Feet |
|---|-------|---------|-----|-----|------|
| 0 | 105   | 210     | 420 | 630 | 840  |
|   | 18 Ma | rch 201 | 6   |     |      |



PROJECT LOCATION - 2013 Air Photo Barrington Park Bank Failure Restoration Project Barrington Park & West Papio Trail N. 164th and Page Streets Omaha, Nebraska

Feet Γ 0 25 50 100 150 200

18 March 2016



Looking South on the West Papio Trail.



Looking South – Approaching Bank Failure Area.

Barrington Park Bank Failure Photos – Photos Taken 2 March 2016 Page 1 of 5



Looking South at Bank Failure Area.



Looking North at Bank Failure Area

Barrington Park Bank Failure Photos – Photos Taken 2 March 2016 Page 2 of 5



Looking Upstream of West Papillion Creek from Bank Failure.



Looking North – Closeup of Bank Failure.

Barrington Park Bank Failure Photos – Photos Taken 2 March 2016 Page 3 of 5



Looking Upstream of West Papillion Creek from Bank Failure.



Looking West across West Papillion Creek into Bluestem Prairie Preserve.

Barrington Park Bank Failure Photos – Photos Taken 2 March 2016 Page 4 of 5



Looking Downstream of West Papillion Creek from Bank Failure.



220 N. 89<sup>th</sup> Street Suite 102 Omaha, Nebraska 68114 402-614-4468 Fax: 402-614-4878 www.gonzalezcos.com

# LETTER OF TRANSMITTAL

Construction Management – Engineering

January 14th, 2016

To: U.S. Army Corps of Engineers Nebraska Regulatory Office 8901 South 154<sup>th</sup> Street Omaha, NE 68138-3635

RE: Barrington Park Bank Failure

| We Are Sending<br>⊠Attached | Under Separate cover via | the following items: |  |
|-----------------------------|--------------------------|----------------------|--|
| Shop Drawings               | Specifications           | Permit Application   |  |
| Prints                      | Copy of Letter           |                      |  |
| Plans                       | Change Order             |                      |  |

| Copies | Description   |
|--------|---|
| 1      | U.S. Army Corps of Engineers Application for the Department of the Army Permit<br>(Eng Form 4345) with Exhibits |
|        |   |
|        |   |

These are transmitted as checked below:

| $\boxtimes$ | For approval   |
|-------------|----------------|
|             | For your files |
|             | As requested   |
|             | For signature  |
|             | For bids due:  |

| Approved as submitted    |  |
|--------------------------|--|
| Approved as noted        |  |
| Returned for corrections |  |
| For review and comment   |  |
| For review and comment   |  |

| Resubmit_ | copies for approval     |
|-----------|-------------------------|
| Submit    | copies for distribution |
| Return    | _ corrected prints      |

Prints returned after loan to us

ylu Wilms

Signed: Kylie Wilmes, P.E.

If enclosures are not as noted, kindly notify us immediately

#### U.S. ARMY CORPS OF ENGINEERS APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT 33 CFR 325. The proponent agency is CECW-CO-R.

#### Form Approved -OMB No. 0710-0003 Expires: 30-SEPTEMBER-2015

Public reporting for this collection of information is estimated to average 11 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of the collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters, Executive Services and Communications Directorate, Information Management Division and to the Office of Management and Budget, Paperwork Reduction Project (0710-0003). Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. Please DO NOT RETURN your form to either of those addresses. Completed applications must be submitted to the District Engineer having jurisdiction over the location of the proposed activity.

#### PRIVACY ACT STATEMENT

Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Programs of the Corps of Engineers; Final Rule 33 CFR 320-332. Principal Purpose: Information provided on this form will be used in evaluating the application for a permit. Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public and may be made available as part of a public notice as required by Federal law. Submission of requested information is voluntary, however, if information is not provided the permit application cannot be evaluated nor can a permit be issued. One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and/or instructions) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned.

| (ITEMS 1 THRU 4 TO B   | E FILLED BY THE CORPS)  |   |  |  |  |  |
|--|---|---|--|--|--|--|
| 1. APPLICATION NO. 2. FIELD OFFICE CODE  | 3. DATE RECEIVED  | 4. DATE APPLICATION COMPLETE              |  |  |  |  |
| (ITEMS BELOW TO B  | E FILLED BY APPLICANT)  |   |  |  |  |  |
| 5. APPLICANT'S NAME  | E AND TITLE (agent is not required)   |   |  |  |  |  |
| First - Dennis Middle - Last - Bryers  | First - Kylie Middle - Ann Last - Wilmes  |   |  |  |  |  |
| Company - Omaha Parks, Recreation, and Public Property   | Company - Gonzalez Companies, LLC   |   |  |  |  |  |
| E-mail Address - dennis.bryers@cityofomaha.org   | E-mail Address - kwilmes@gonzalezcos.com  |   |  |  |  |  |
| 6. APPLICANT'S ADDRESS: 9. AGENT'S ADDRESS:  |   |   |  |  |  |  |
| Address- 1819 Farnam Street, Suite 701   | Address- 220 N. 89th St., Suite 102   |   |  |  |  |  |
| City - Omaha State - NE Zip - 68183 Country - USA  | City - Omaha State  | e - NE Zip - 68114 Country - USA          |  |  |  |  |
| 7. APPLICANT'S PHONE NOS. W/AREA CODE 10. AGENTS PHONE NOS. W/AREA CODE  |   |   |  |  |  |  |
| a. Residence b. Business c. Fax  | a. Residence b. Bus   | iness c. Fax                              |  |  |  |  |
| 402-444-3798 402-444-4921  | 402-6   | 14-4468x307 402-614-4878                  |  |  |  |  |
| STATEMENT O  | F AUTHORIZATION   |   |  |  |  |  |
| 11. Thereby authorize, <u>Kylie Wilmes</u> to act in my behalf a supplemental information in support of this permit application. SIGNATURE OF APPL | ICANT In the processing of this defined as my agent in the processing of this defined as the processing of the procesing of the processing of the | application and to furnish, upon request, |  |  |  |  |
| NAME, LOCATION, AND DESCI  | RIPTION OF PROJECT OR ACTIVIT   | Ŷ   |  |  |  |  |
| 12. PROJECT NAME OR TITLE (see instructions)<br>Barrington Park Bank Failure   |   |   |  |  |  |  |
| 13. NAME OF WATERBODY, IF KNOWN (if applicable)  | 14. PROJECT STREET ADDRESS (if applicable)<br>Address 164th & Page Street   |   |  |  |  |  |
| West Papillion Creek   |   |   |  |  |  |  |
| 15. LOCATION OF PROJECT<br>Latitude: •N 41.27 Longitude: •W 96.17  | City - Omaha  | State- NE Zip- 68118                      |  |  |  |  |
| 16. OTHER LOCATION DESCRIPTIONS, IF KNOWN (see instructions)   |   |   |  |  |  |  |
| State Tax Parcel ID 0536605505 Municipality  |   |   |  |  |  |  |
| Section - 15 Township - 15N  | Range - IIE   |   |  |  |  |  |

#### 17. DIRECTIONS TO THE SITE

From 156th & West Dodge Road in Omaha, NE, proceed north for 0.3 miles and take a left (head west) onto Webster St. Take your first right at N. 158th St. and continue straight as it turns into Burt St. At 164th St., turn left (head south). Go past two residences on the west side, and you will encounter an entrance to the West Papio Trail. Take this entrance, and continue south on the trail. The project location is just west of the residence at 732 N. 164th Street.

#### 18. Nature of Activity (Description of project, include all features)

The project involves the reconstruction of approximately 250 feet of existing creek bank along the West Papillion Creek. The bank will be reconstructed with earthen fill, reinforced with geogrid every 2 feet vertically. Nebraska Department of Roads Type B Riprap (D50=9.9 inches) will be installed along the lower portion of the bank. A vegetated upper bank will be constructed with seeding and a turf reinforcement mat. The creek bank will be reconstructed at a 2:1 to 4:1 slope.

The OHWM is estimated at Elev. 1097 based on a number of factors, including the existing tree line vegetation. Comparing the existing surface to the finished ground surface up to Elev. 1097, there are 199 C.Y. of cut and 246 C.Y. of fill, for a net difference of 47 C.Y. of fill. Over the distance of 250 feet, this activity will not exceed an average of one cubic yard per running foot placed along the bank below the plane of the OHWM.

19. Project Purpose (Describe the reason or purpose of the project, see instructions)

An approximately 250 ft section of east creek bank along the West Papillion Creek experienced cantilever failure of the embankment adjacent to the trail during a recent rain storm, causing closure of the trail. The site has historically experienced erosion, due to its location along a bend. Existing riprap is located at the site, but not enough upstream to prevent this erosion. This project will stabilize the east creek bank and protect the adjacent trail and residences.

Work is anticipated to take place in the summer of 2016. The work is proposed to be conducted under NWP 13 for bank stabilization.

#### USE BLOCKS 20-23 IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED

20. Reason(s) for Discharge

The existing creek bank in the area has failed. The project will reconstruct the bank using a geogrid to repair and reinforce the slope, riprap along the lower portion of the bank, and a vegetated soil slope to the top of bank. The fill material is required to reestablish the bank to its estimated shape prior to its failure. The amount of fill estimated to be added below the OWHM is 246 total cubic yards. This equates to 0.98 cubic yards of material per foot of creek bank being stabilized.

21. Type(s) of Material Being Discharged and the Amount of Each Type in Cubic Yards:

Type Amount in Cubic Yards Type Amount in Cubic Yards

Type Amount in Cubic Yards

Rip-rap and native soil. 243 cubic yards.

22. Surface Area in Acres of Wetlands or Other Waters Filled (see instructions)

Acres

or

Linear Feet 250

23. Description of Avoidance, Minimization, and Compensation (see instructions)

The work is limited to repairing and reestablishing the existing creek bank. The bank will be reconstructed and reinforced using a geogrid. Native soil will be used to reconstruct the bank. The face of the slope will be stabilized using a combination of rip-rap and vegetation. A turf reinforcement mat will cover the face of the slope to prevent runoff of dredged material into the water body. A backhoe and other typical earthwork equipment is anticipated on-site. Compensatory mitigation is not proposed since the proposed project will repair the bank to its previous state, prior to the failure.

| 24 Is Any Portion of                             | the Work Already Complete   |   |   |  |   |  |
|--|---|---|---|--|---|--|
| 24. 15 ANY PORIOR OF                             | the work Already Complete   | TITES XINO IF YE  | S, DESCRIBE THE COMPLE  |  |   |  |
|  |   |   |   |  |   |  |
|  |   |   |   |  |   |  |
|  |   |   |   |  |   |  |
|  |   |   |   |  |   |  |
|  |   |   |   |  |   |  |
| 25. Addresses of Adjo                            | bining Property Owners, Less                                      | sees, Etc., Whose Property                                  | Adjoins the Waterbody (if mo                                  | re than can be entered here, please                        | attach a supplemental list).                      |  |
| a. Address- Barry Fa                             | anders, 754 N. 164th St.  |   |   |  |   |  |
| City - Omaha                                     |   | State - NE  | Zip - 681   | Zip - 68118  |   |  |
| b. Address- David T                              | olo, 732 N. 164th St.   |   |   |  |   |  |
| City - Omaha                                     |   | State - NE  | Zip - 68118   |  |   |  |
| c. Address- Pete Har                             | nley, 720 N. 164th St.  |   |   |  |   |  |
| City - Omaha                                     |   | State - NE  | Zip - 68118   |  |   |  |
| d. Address- City of (                            | Omaha, C/O City Attorne   | y, 1819 Farnam Street                                       |   |  |   |  |
| City - Omaha                                     |   | State - NE  | Zip - 68183   |  |   |  |
| e. Address-                                      |   |   |   |  |   |  |
| City -   |   | State -   | Zip -   |  |   |  |
| 26. List of Other Certi                          | ficates or Approvals/Denials                                      | received from other Federa                                  | al, State, or Local Agencies for                              | or Work Described in This A                                | Application.                                      |  |
| AGENCY   | TYPE APPROVAL*  | NUMBER  | DATE APPLIED  | DATE APPROVED  | DATE DENIED                                       |  |
| City of Omaha                                    | Flood Plain Permit  | N/A   | January 2016  |  |   |  |
|  |   |   |   |  |   |  |
|  |   |   |   |  |   |  |
|  |   |   |   |  |   |  |
| * Would include but is                           | not restricted to zoning, build                                   | ding, and flood plain permit                                | S   | Sector Contraction   |   |  |
| 27. Application is here<br>complete and accurate | eby made for permit or permi<br>e. I further certify that I posse | ts to authorize the work de<br>ess the authority to underta | scribed in this application. I have the work described herein | certify that this information n or am acting as the duly a | in this application is<br>authorized agent of the |  |
| applicant.                                       | c B I   |   |   |  |   |  |
| SIGNATU  |   | 1-14-16<br>DATE   | Tylic   |  |   |  |
| The Application mu                               | st be signed by the person  | who desires to undert                                       | ake the proposed activity                                     | (applicant) or it may be s                                 | signed by a duly                                  |  |
| authorized agent if                              | the statement in block 11   | has been filled out and                                     | signed.   | (applicant) of it may be a                                 |   |  |
| 18 U.S.C. Section 1                              | 1001 provides that: Whoev   | ver, in any manner within                                   | n the jurisdiction of any de                                  | epartment or agency of t                                   | he United States                                  |  |
| knowingly and willfu<br>fraudulent statemer      | ally talsifies, conceals, or on the or representations or n       | covers up any trick, sche<br>nakes or uses any false        | eme, or disguises a mater<br>writing or document know         | ving same to contain any                                   | / false, fictitious or                            |  |
| fraudulent statemer                              | nts or entry, shall be fined                                      | not more than \$10,000                                      | or imprisoned not more th                                     | han five years or both.                                    |   |  |




### GONZALEZ COMPANIES, LLC

**GONZALEZ** 

220 N. 89th Street SUITE 102 Omaha, NE 68114 PHONE: (402) 614-4468 FAX: (402) 614-4878 WWW.GONZALEZCOS.COM

BARRINGTON PARK BANK FAILURE APPLICANT'S NAME: DENNIS BRYERS VICINITY MAP

PROJECT NO. DATE: 01/14/2016 15-301 Dwg.

No.





### Barrington Park Bank Failure

### Applicant's Name: Dennis Bryers

Site Photos



Photo 1: Looking North Along the Trail (May 2015)



Photo 2: Looking North Along the Trail, Creek is shown on the Left (May 2015)

1 of 2

### Barrington Park Trail Creek Bank Restoration

Applicant's Name: Dennis Bryers

### Site Photos

2 of 2



Photo 3: Looking South Along the Trail (January 2016)

| Omaha City Planning Department   | For C                                     | Office Use Only                 |
|--|---|---------------------------------|
| APPLICATION  | Date Filed                                | 050 · 0% - 05 t                 |
| APPLICATION  | Receipt #                                 | \$50+8%=\$54                    |
| FLOOD PLAIN DEVELOPMENT PERMIT   | Case #                                    |                                 |
|  |   |                                 |
| Property<br>Owner City of Omaha Parks, Recreationer Public                       | c Proper.                                 | ty                              |
| Name Address   | Žip                                       | Phone #                         |
| Applicant Dennis Bryers 1819 fornam Dt. Suiter                                   | Ol Omoha,NE<br>Zip                        | <u>68183 444-3</u> 7<br>Phone # |
| Contact Kylie Wilmes 220N. 89th St. Suite 102 Ome<br>Address                     | aha,NE 68114<br>Zip                       | <u>402-614-446</u> 8<br>Phone # |
| <u>E-Mail Address</u>  |   |                                 |
| General Location/Address 164th & Page St.  |   |                                 |
| Legal Description Barrington Park Lot 252 Block C                                | )   |                                 |
|  |   |                                 |
| ***************************************  | ** * * * * * * * * *                      | * ** * * * * * * * * * *        |
| Type of Improvement:   |   |                                 |
|  | ame                                       |                                 |
| Paving Concrete  | Block/Brick                               |                                 |
| <ul> <li>Channelization/Stabilization</li> <li>Other (Please Specify)</li> </ul> | cated Metal                               |                                 |
| Property is Located in: FF 🔲 FW 🔀  |   |                                 |
| To be completed by Community Official:   |   |                                 |
| Base Flood Plain Elevation: MSL. Required elevation of ne                        | w structure:                              | MSL.                            |
| Market Value of Improvements: <u>\$</u> Market Value of Existing St              | tructure: <u>\$</u>                       |                                 |
| Papio/Missouri River Natural Resources District Recommendation At                | ttached 🗌 Yes                             | □ No                            |
| Flood Plain Elevation/Floodproofing Certificate Attached                         | Yes                                       | □ No                            |
| "No-Rise" Certification Attached (Floodway Development Only)                     | ☐ Yes                                     | □ No                            |
|  |   |                                 |
| Mari E. Con Vern E.  | . On                                      |                                 |
| Owner's Signature<br>2-22-16<br>Applicant Signature                              | ire<br>E Bruen                            | 4                               |
| Date Submitted   | ire<br>E. <u>Bryen</u><br>ne of Applicant | 3                               |

This permit allows development and occupancy of the described parcel of land and/or structure(s) as constructed and used in conformance with the plans approved by the City of Omaha Planning Department, Permits and Inspection Division.

### FLOOD PLAIN DEVELOPMENT PERMIT

New development, minor improvement or substantial improvement may be undertaken in the designated flood plain only with a development permit. An application for this permit must be submitted with any construction permit application. The required flood plain and construction information may be included on the site plan and the construction drawings.

### Application Instructions

- 1. Type of improvement includes any encroachment into the designated flood plain, i.e. fill, alteration or modification of the watercourse, installation of utilities, new construction, expansion or remodeling.
- 2. Base flood plain elevation is shown on the flood insurance rate maps.
- 3. Market value of improvement should correspond with insurance and building permit value.
- 4. Market value should reflect the price of the structure if it were sold as-is today. If there is no existing structure on the site, indicate N.A.
- Plans must be presented to the Papio/Missouri River N.R.D. before applying for a building permit. If the City does not have evidence of approval from the N.R.D., a development permit cannot be released.
- 6. An elevation certificate verifying "as built" elevations for elevated or floodproofed developments must be submitted before the issuance of a Certificate of Occupancy.

### **Application Documents Required**

- X
- Plans, drawn to scale, showing location, dimensions and elevation of all proposed improvements.
- X
- Scaled site drawing showing the location of existing and proposed: structures, grading and fill, storage area, drainage facilities.



- Letter of recommendation from the Papio/Missouri River N.R.D.
- Flood Plain Development Permit application.
- Application Fee (\$54, See Section 55-890 OMC).

If you have any questions about this application form, please contact Planning Department staff at 402-444-5150 Ext 2056.

# BARRINGTON PARK BANK FAILURF RESTORATION 164th St. & Page St. Omaha, Nebraska



Park Planning Division City of Omaha Parks, Recreation & Public Property Dept. 1819 Farnam Street Suite 701 Omaha, Nebraska 68183



SHEET INDEX

COVER REMOVALS GRADING PLAN LAYOUT

- DETAILS AND NOTES
- 6-7 SECTIONS

| PROPERTY CORNER FOUND<br>PROPERTY CORNER SET<br>REBAR W/ CAP #365 (UNLESS NOTE | D)  |
|--|---|
| PROPERTY LINE  | และเอาแก่แหล่งการแต่กรรณามีและจากและกำนักสาราร์เกิดสารแน่งรางราชสารการการสารการการสารการสารการสารการการการการก<br>เสร |
| MANHOLE  | $\langle \mathfrak{S} \rangle$  |
| SEWER CLEANOUT   | ٢   |
| GRATE INLET  |   |
| LIGHT POLE   | X   |
| POWER POLE   | ø   |
| TRAFFIC SIGNAL POLE  | ~~  |
| TRAFFIC SIGNAL PULLBOX   | •   |
| DOWN GUY   |   |
| FENCELINE  | namenananan namenan yang na sanananan namenanan yang na sana namenanan yang na sanananan yang na sanananananan        |
| UTILITY RISER  | en e  |
| WATER/GAS VALVE  |   |
| EXISTING 1' INTERVAL CONTOUR   | nna anano anani isasilo inino anli $1254$ , anna 'unun anano taono anan   |
| EXISTING 5' INTERVAL CONTOUR   | nam nakana manan inakani wanan isan 👔 🚬 🏷 manan manan minana minana minana  |
| UNDERGROUND WATER LINE   | ลอดของมีกร้างการเกิดของการเกิดของการเลือกของการเกิด \iint ทั้งหลางการเกิดของการเกิดของการเกิดของการเกิดของการเกิดข    |
|  |   |

## **SURVEY LEGEND**

UNDERGROUND GAS LINE UNDERGROUND ELECTRIC LINE UNDERGROUND TELEPHONE LINE UNDERGROUND COMMUNICATION LINE UNDERGROUND QWEST COMM. LINE UNDERGROUND COX COMM. LINE OVERHEAD ELECTRIC LINE OVERHEAD CABLE TV LINE OVERHEAD TELEPHONE LINE STORM SEWER LINE SANITARY SEWER LINE

DECIDUOUS TREE

PINE TREE

## VICINITY MAP

|  | 200 |  |
|--|-----|--|
| <b>1980</b> 8000                         |     |  |
| an a |     | ารสำนักการสารแก่สารและสารและการสร้างสารหนึ่งการสร้างการสร้างสารเสียงการสร้างสารเสียง |
| (C)                                      | ом  |  |
| nerrisses §                              | QW  |  |
|  | 20) |  |
| ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~  | 240 | *<br>************************************  |
| inner (                                  | )TV |  |
| (  | ж   |  |
|  | ST  | •**************************************  |
| unnant 4                                 | SAN |  |
|  |     |  |

contribution to the second second

### **BENCHMARK**

NORTH SIDE OF COLLAR AROUND MANHOLE COVER, ELEVATION=1105.91

### LEGAL DESCRIPTION

PART OF LOT 252, BARRINGTON PARK, AN ADDITION TO THE CITY OF OMAHA, AS SURVEYED, PLATTED AND RECORDED IN DOUGLAS COUNTY, NEBRASKA.

### **CONTROL POINTS**

| NO. | NORTHING | EASTING  | ELEVATION | DESCRIPTION      |
|-----|----------|----------|-----------|------------------|
| 1   | 5300.287 | 5003.478 | 1111.44   | 5/8" REBAR       |
| 2   | 5242.924 | 5003.075 | 1111.49   | 60D SPIKE        |
| 3   | 5105.503 | 5015.972 | 1111.39   | 60D SPIKE        |
| 4   | 5000.000 | 5000.000 | 1111.85   | 60D SPIKE        |
| 5   | 4866.795 | 4930.765 | 1110.50   | 60D SPIKE        |
| 6   | 4723.701 | 4845.489 | 1108.87   | PK NAIL IN TRAIL |

Note: All elevations shown on drawing are in NAVD '88.

### **GENERAL NOTES**

- ENTRANCE.
- BY THE OWNER PRIOR TO CONSTRUCTION.

### **APPROXIMATE QUANTITIES**

NOTE: THIS PROJECT IS BID AS A LUMP SUM PROJECT AND THE QUANTITIES PROVIDED ARE FOR REFERENCE PURPOSES ONLY. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE QUANTITIES OF ALL WORK IN THE PREPARATION OF THEIR BID. NO CONSIDERATION OF A CHANGE ORDER WILL BE CONSIDERED FOR QUANTITY ADJUSTMENT UNLESS A PLAN IS DESIGNED AND AUTHORIZED BY THE CITY OF OMAHA PARKS, RECREATION AND PUBLIC PROPERTY DEPARTMENT.

| LINE<br>ITEM | ITEM DESCRIPTION                                 | BID QUANTITY | UNIT |
|--------------|--|--------------|------|
| 1            | MOBILIZATION                                     | 1            | LS   |
| 2            | GENERAL EROSION AND SEDIMENT CONTROL             | 1            | LS   |
| 3            | EARTHWORK - CUT                                  | 745          | CY   |
| 4            | EARTHWORK - FILL                                 | 3,022        | CY   |
| 5            | CLEARING AND GRUBBING                            | 1            | LS   |
| 6            | REMOVE EXISTING CONCRETE TRAIL                   | 1,089        | SF   |
| 7            | CONSTRUCT 6-INCH THICK PCC RECREATIONAL<br>TRAIL | 1,089        | SF   |
| 8            | NDOR TYPE B RIPRAP W/ SEPARATION GEOTEXTILE      | 650          | TON  |
| 9            | GEOGRID  | 2,470        | SY   |
| 10           | CRUSHED LIMESTONE SUBGRADE                       | 215          | TON  |
| 11           | LAWN SEEDING                                     | 13,114       | SF   |
| 12           | CHANNEL SEEDING                                  | 1,788        | SF   |
| 13           | TURF REINFORCEMENT MAT                           | 1,656        | SY   |

THIS PROJECT SHALL CONFORM WITH THE REQUIREMENTS OF THE CITY OF OMAHA STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 2014 AND THE SPECIFICATIONS AND TECHNICAL DOCUMENTS FOR THIS PROJECT.

COORDINATION OF EXISTING UTILITY LOCATIONS SHALL BE THE CONTRACTOR'S RESPONSIBILITY. THE UTILITIES SHOWN ON THE PLANS AND NOTES REGARDING POTENTIAL CONFLICT WITH THEM ARE FOR THE CONTRACTOR'S CONVENIENCE; HOWEVER, THE LOCATIONS OF ALL UTILITY FACILITIES MAY NOT BE KNOWN AND THEREFORE, NOT INDICATED IN THE PLANS. NO EXCAVATION WILL BE PERMITTED IN THE AREA OF UNDERGROUND UTILITY FACILITIES UNTIL ALL SUCH FACILITIES HAVE BEEN LOCATED AND IDENTIFIED TO THE SATISFACTION OF ALL PARTIES. THEN EXCAVATE ONLY WITH EXTREME CARE TO AVOID ANY POSSIBILITY OF DAMAGE TO THE UTILITY FACILITY.

THE CONTRACTOR SHALL RESTRICT ALL CONSTRUCTION OPERATIONS TO WITHIN THE PUBLIC RIGHT-OF-WAY AND THOSE CONSTRUCTION AREAS AS ILLUSTRATED ON THE PLANS. THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR ANY DAMAGE TO EXISTING PROPERTY, UTILITIES, AND STRUCTURES AND REPAIR SAME AT HIS/HER OWN EXPENSE.

THE CONTRACTOR SHALL DISPOSE OF ALL EXCESS AND UNSUITABLE MATERIALS ENCOUNTERED DURING CONSTRUCTION OF THIS PROJECT. NO UNSUITABLE MATERIAL SHALL BE USED FOR BACKFILLING OR EMBANKMENT CONSTRUCTION. THE COST FOR DISPOSAL OF UNSUITABLE MATERIAL SHALL BE AT THE CONTRACTOR'S EXPENSE.

ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL MEET THE REQUIREMENTS OF THE CITY OF OMAHA REGIONAL STORMWATER DESIGN MANUAL, 2014 AND ANY CURRENT REVISIONS. THE CONTRACTOR MUST ADHERE TO GOOD HOUSEKEEPING BEST MANAGEMENT PRACTICES AT ALL TIMES. GOOD HOUSEKEEPING BEST MANAGEMENT PRACTICES FOCUS ON KEEPING THE WORK SITE CLEAN AND ORDERLY WHILE HANDLING MATERIALS AND WASTE IN A MANNER THAT ELIMINATE THE POTENTIAL FOR POLLUTANT RUNOFF.

THE CONTRACTOR SHALL FURNISH AND MAINTAIN ALL NECESSARY BARRICADES AND WARNING SIGNS AS PER CURRENT EDITION OF THE CURRENT POLICIES AND STANDARD SPECIFICATIONS OF THE CITY OF OMAHA. WHERE CITY POLICIES AND THE SPECIFICATIONS ARE SILENT, THE CURRENT EDITION OF THE FHWA'S "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) SHALL CONTROL. FOR THIS PROJECT, AS PER THE MUTCD, CONTRACTOR SHALL INSTALL R9-9 "SIDEWALK CLOSED" OR "SIDEWALK CLOSED AHEAD" SIGNS AT THE INTERSECTION PRECEDING THE CLOSED SEGMENT, IN EACH DIRECTION. MINIMUM REQUIRED SIZE FOR THE R9-9 SIGN IS 24"X12". IN ADDITION, VEHICULAR TRAFFIC CONTROL IN CALIFORNIA STREET IS REQUIRED DURING CONSTRUCTION OF THE TEMPORARY CONSTRUCTION

A DEPARTMENT OF THE ARMY REGIONAL GENERAL PERMIT WILL BE ACQUIRED FOR THIS PROJECT BY THE OWNER PRIOR TO CONSTRUCTION. THE CONTRACTOR WILL BE PROVIDED A COPY OF THE PERMIT WITH THE ATTACHED CONDITIONS SO THAT THEY ARE AWARE OF THE LIMITATIONS OF THE APPLICABLE PERMIT.

A CITY OF OMAHA FLOODPLAIN DEVELOPMENT PERMIT WILL BE ACQUIRED FOR THIS PROJECT

THE CITY WILL WAIVE THE APPLICATION FEE FOR ANY CITY PERMITS THAT WILL BE REQUIRED FOR THIS PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ANY PERMITS FOR WORK THAT PERTAIN TO THIS PROJECT.

**GONZALEZ** 



DIGGER'S HOTLINE OF NEBRASKA: 800-331-5666 or 811



Know what's **below**. Call before you dig.







### **GRADING NOTES**

- "EARTHWORK CUT" QUANTITY AS SHOWN ON SHEET 1 EQUALS 745 CY. THE EARTHWORK QUANTITY WAS CALCULATED BASED ON THE TOTAL CUT VOLUME BETWEEN THE EXISTING AND PROPOSED GROUND SURFACE, TO THE BOTTOM OF THE RIPRAP. CONTRACTOR MAY REUSE CUT MATERIAL IF IT IS OF SUFFICIENT QUALITY AS STATED IN NOTE 8 BELOW.
- "EARTHWORK FILL" QUANTITY AS SHOWN ON SHEET 1 EQUALS 3,022 CY. THE EARTHWORK QUANTITY WAS CALCULATED BASED ON THE TOTAL FILL VOLUME BETWEEN THE EXISTING AND PROPOSED GROUND SURFACE, TO THE BOTTOM OF THE RIPRAP. A RAW FILL VOLUME OF 2,325 CY WAS ESTIMATED. A SHRINKAGE FACTOR OF 30% WAS INCLUDED WHICH ACCOUNTS FOR 697 CY, FOR A TOTAL FILL VOLUME OF 3,022 CY. VOLUME OF TOPSOIL IS INCLUDED IN THE QUANTITY.
- CONTOURS SHOWN ARE THE FINISHED GROUND SURFACE (TO THE TOP OF RIPRAP). SEE SHEET 5 FOR TYPICAL SECTION.
- EXISTING AND PROPOSED CONTOURS ARE SHOWN AT 1 FOOT INTERVALS.
- THE CONTRACTOR SHALL BE RESPONSIBLE TO COMPLY WITH ALL OSHA REGULATIONS IN THE PROSECUTION OF WORK UNDER THIS CONTRACT.
- THE CONTRACTOR SHALL INSTALL, MAINTAIN & REMOVE EROSION CONTROL MEASURES AS REQUIRED.
- ALL AREAS SHALL BE GRADED TO ENSURE POSITIVE DRAINAGE.
- ALL EARTHWORK SHALL CONFORM WITH THE CITY OF OMAHA STANDARDS SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION. SECTION 200 WITH THE FOLLOWING AMENDMENTS:
- A. ANY ENGINEERED FILL TO BE USED WITHIN THE PROJECT LIMITS SHOULD BE FREE OF ORGANICS, ROOTS OR OTHER DELETERIOUS MATERIALS. THE ENGINEERED FILL SHOULD BE LOW-PLASTIC OR NON-PLASTIC MATERIAL WITH A PLASTICITY INDEX (PI) OF LESS THAN 30. COMPACTED ENGINEERED FILL SHOULD CONSIST OF MATERIAL CLASSIFIED AS CL, ML, SC, SM, SP, SW, GC, GM, GP, OR GW PER ASTM D2487. FURTHERMORE, ALL ENGINEERED FILL SHOULD HAVE A MAXIMUM DRY DENSITY OF AT LEAST 90 POUNDS PER CUBIC FOOT (PCF), AS DEFINED BY THE STANDARD PROCTOR TEST (ASTM D698). SANDY SOILS SHOULD BE MOISTURE CONDITIONED TO WITHIN 2 PERCENT OF THE OPTIMUM MOISTURE CONTENT. CLAYEY SOILS SHOULD BE MOISTURE CONDITIONED BETWEEN 2 AND 4 PERCENT ABOVE THE OPTIMUM MOISTURE CONTENT.
- B. EACH LIFT OF SOIL SHOULD BE ADEQUATELY MIXED PRIOR TO COMPACTION. OFF-SITE BORROW SOIL SHOULD ALSO MEET THESE SAME CLASSIFICATION REQUIREMENTS. NON-ORGANIC, ON-SITE SOILS ARE EXPECTED TO MEET THIS CRITERION. HOWEVER, SUCCESSFUL REUSE OF THE EXCAVATED, ON-SITE SOILS AS COMPACTED ENGINEERED FILL WILL DEPEND ON THE MOISTURE CONTENT OF SOILS ENCOUNTERED DURING EXCAVATION. IT IS POSSIBLE THAT SOME SCARIFYING AND WATER CONTENT MANIPULATION OF PORTIONS OF THE ON-SITE SOILS WILL BE NEEDED BEFORE THE RECOMMENDED COMPACTION CAN BE ACHIEVED. WATER CONTENT MANIPULATION COULD LIKELY RESULT IN SOME DELAY.
- C. ALL ENGINEERED FILLS SHOULD BE PLACED IN 8 INCH LIFTS MAXIMUM AND COMPACTED TO A MINIMUM OF 90% OF THE SOIL'S STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D698) AT THE OPTIMUM MOISTURE CONTENTS DISCUSSED ABOVE. SOME MANIPULATION OF THE MOISTURE CONTENT (SUCH AS WETTING, DRYING) WILL BE REQUIRED DURING THE FILLING OPERATION TO OBTAIN THE REQUIRED DEGREE OF COMPACTION. THE MANIPULATION OF THE MOISTURE CONTENT IS HIGHLY DEPENDENT ON WEATHER CONDITIONS AND SITE DRAINAGE CONDITIONS. THEREFORE, THE GRADING CONTRACTOR SHOULD BE PREPARED TO BOTH DRY AND WET THE FILL MATERIALS TO OBTAIN THE SPECIFIED COMPACTION DURING GRADING. SUFFICIENT DENSITY TESTS SHOULD BE PERFORMED TO CONFIRM THE REQUIRED COMPACTION OF THE FILL MATERIAL.
- D. SITE TOPSOIL SHOULD BE PLACED OVER ALL OPEN SPACE CUT AND FILL SLOPES IMMEDIATELY FOLLOWING GRADING AND PRIOR TO THE INSTALLATION OF SEEDING AND TURF REINFORCEMENT MAT. THIS PRACTICE HELPS TO RESTORE RAINFALL INFILTRATION TO NATURAL LEVELS AND MORE ACTIVELY PROMOTE REVEGETATION, ENHANCE LOCAL SLOPE STABILITY, AND PROVIDE A MORE NATURAL SLOPE APPEARANCE.

| ALIGNMENT LINE TABLE |        |                  |                        |                        |
|----------------------|--------|------------------|------------------------|------------------------|
| LINE #               | LENGTH | DIRECTION        | START POINT            | END POINT              |
| L1                   | 78.81  | N25° 18' 30.17"E | N=4756.88<br>E=4751.71 | N=4828.13<br>E=4785.40 |
| L2                   | 74.35  | N28° 09' 14.83"E | N=4828.13<br>E=4785.40 | N=4893.68<br>E=4820.48 |
| L3                   | 84.66  | N33° 04' 53.43"E | N=4893.68<br>E=4820.48 | N=4964.62<br>E=4866.69 |
| L4                   | 31.33  | N9° 38' 02.54"E  | N=4968.40<br>E=4868.17 | N=4999.29<br>E=4873.41 |
| L5                   | 28.85  | N45° 20' 15.21"E | N=5004.73<br>E=4876.24 | N=5025.01<br>E=4896.76 |
| L6                   | 29.74  | N0° 13' 14.49"W  | N=5032.16<br>E=4899.73 | N=5061.90<br>E=4899.62 |
| L7                   | 64.16  | N20° 36' 11.41"W | N=5065.38<br>E=4898.98 | N=5125.43<br>E=4876.40 |
| L8                   | 123.21 | N54° 39' 51.08"W | N=5125.43<br>E=4876.40 | N=5196.69<br>E=4775.89 |
| L9                   | 28.67  | N32° 22' 18.36"W | N=5196.69<br>E=4775.89 | N=5220.91<br>E=4760.54 |

CURVE #

C1

C2

C3

C4



## LEGEND



PCC TRAIL



02/17/2016

| ALIGNMENT CURVE TABLE |        |                  |                        |                        |  |  |
|-----------------------|--------|------------------|------------------------|------------------------|--|--|
| RADIUS                | LENGTH | CHORD DIRECTION  | START POINT            | END POINT              |  |  |
| 10.00                 | 4.09   | N21° 21' 27.99"E | N=4964.62<br>E=4866.69 | N=4968.40<br>E=4868.17 |  |  |
| 10.00                 | 6.23   | N27° 29' 08.88"E | N=4999.29<br>E=4873.41 | N=5004.73<br>E=4876.24 |  |  |
| 10.00                 | 7.95   | N22° 33' 30.36"E | N=5025.01<br>E=4896.76 | N=5032.16<br>E=4899.73 |  |  |
| 10.00                 | 3.56   | N10° 24' 42.95"W | N=5061.90<br>E=4899.62 | N=5065.38<br>E=4898.98 |  |  |
|                       |        |                  |                        |                        |  |  |





2. SEEDING AND TURF REINFORCEMENT MAT SHALL CONFORM TO THE REQUIREMENTS OF THE SUPPLEMENTAL SPECIFICATION 02936.

### **PROPOSED TYPICAL SECTION**

SCALE: NOT TO SCALE

|       |           | Reinforced | · · · · · · · · · · · · · · · · · · · | <u>,</u>    |
|-------|-----------|------------|---------------------------------------|-------------|
|       |           | Depth Into |                                       |             |
| Layer | Elevation | Slope      | Start Station                         | End Station |
|       |           | (feet)     |                                       |             |
| A1    | 1092      | 15         | 12+41                                 | 13+15       |
| A2    | 1094      | 11         | 12+41                                 | 13+15       |
| A3    | 1096      | 13         | 12+41                                 | 13+15       |
| A4    | 1098      | 15         | 12+41                                 | 13+15       |
| A5    | 1100      | 35         | 12+41                                 | 13+15       |
| A6    | 1102      | 35         | 12+41                                 | 13+15       |
| A7    | 1104      | 35         | 12+41                                 | 13+15       |
| A8    | 1106      | 35         | 12+41                                 | 13+15       |
| A9    | 1108      | 28         | 12+41                                 | 13+15       |
|       |           |            |                                       |             |
| B1    | 1094      | 20         | 13+15                                 | 13+43       |
| B2    | 1096      | 15         | 13+15                                 | 13+43       |
| B3    | 1098      | 25         | 13+15                                 | 13+43       |
| B4    | 1100      | 30         | 13+15                                 | 13+43       |
| B5    | 1102      | 27         | 13+15                                 | 13+43       |
| B6    | 1104      | 27         | 13+15                                 | 13+43       |
| B7    | 1106      | 25         | 13+15                                 | 13+43       |
| B8    | 1108      | 20         | 13+15                                 | 13+43       |
|       |           |            |                                       |             |
| C1    | 1094      | 10         | 13+43                                 | 13+48       |
| C2    | 1096      | 15         | 13+43                                 | 13+48       |
| C3    | 1098      | 20         | 13+43                                 | 13+48       |
| C4    | 1100      | 25         | 13+43                                 | 13+48       |
| C5    | 1102      | 18         | 13+43                                 | 13+48       |
| C6    | 1104      | 10         | 13+43                                 | 13+48       |
| C7    | 1106      | 5          | 13+43                                 | 13+48       |

### **REINFORCED SOIL SLOPE GEOGRID TABLE**

NOTE: STATION RANGES ARE APPROXIMATE. INSTALLATION OF REINFORCED SOIL SLOPE GEOGRID SHALL BE MODIFIED AS NEEDED TO ACCOMMODATE AND BE COMPATIBLE WITH THE EXISTING SITE CONDITIONS AT THE TIME OF CONSTRUCTION, AND DESIGN INTENT AS SHOWN ON THE CROSS SECTIONS.





1120-







N: \Projects\2015\15-301 Barrington Park Bank Failure\20 Design\CADD\XREF\15-301 Design Plotted on: 2/15/2016 12:39 PM Plotted By: Kylie Wilmes







STA. 11+50









N: \Projects\2015\15-301 Barrington Park Bank Failure\20 Design\CADD\XREF\15-301 Des Piotted on: 2/15/2016 12:39 PM Piotted By: Kylie Wilmes



### PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT 8901 5. 154th Street Omaha, NE 66138-3621 402-444-6222 www.papiond.org

### Urban Drainageway Program – Application Form

| Project name                                      | Hillsdale Dr            | Hillsdale Drainage Swale Improvements |                 |    |      |                 |
|---|-------------------------|---------------------------------------|-----------------|----|------|-----------------|
| Project location (attach location map)            |                         | 150th Ave &                           | Hillsdale Av    | /e |      |                 |
| Sponsor organiza                                  | tion <u>City of Oma</u> | aha                                   |                 |    |      |                 |
| Sponsor address                                   | 5600 S 10 S             | Street                                |                 |    |      |                 |
| City  | Omaha                   |                                       | State           | NE | ZIP  | 68107           |
| Contact person                                    | Nina Cudał              | ıy                                    | _               |    | _    |                 |
| TitleEnv. QualityEmail addressNina.Cudahy@CityofC |                         | y Control Mana                        | ger             |    |      |                 |
|   |                         | Omaha.org                             | _ Daytime phone |    | (402 | ) 444-3915 x229 |

Description of problem (attach additional sheets as needed)

Erosion is occurring in the existing swale due to high velocity flows. Soil and vegetation loss downstream of existing buried gabions is getting worse, and will continue to do so.

Proposed solution (attach additional sheets as needed)

Construct drop structures and energy dissipation at key locations to reduce erosion, and two gabion drop structures to slow the velocity of the water as it flows thru the swale. Plan set attached.

| Level of Design          | Level 1           | Level 2 Level 3              |   |
|--------------------------|-------------------|------------------------------|---|
| Total estimated cost     | \$ <u>120,445</u> | Cost share request \$ 48,178 | - |
| nina Cadahu              | 1                 | 3/14/2016                    |   |
| Signature 🧹              | /                 | Date                         |   |
| Env. Quality Control Mar | nager             |                              |   |

Title

## HILLSDALE DRAINAGE SWALE IMPROVEMENTS 150TH AVE. & HILLSDALE AVE. OMAHA, NEBRASKA

### PROJECT CONTACTS

OWNER CITY OF OMAHA PUBLIC WORKS DEPARTMENT 800 DOUGLAS STREET OMAHA, NE 68102 CONTACT: NINA CUDAHY (402) 444-3915

PRIMARY ENGINEER OLSSON ASSOCIATES 2111 S 67TH ST, SUITE 200 OMAHA, NE 68106 CONTACT: TED HARTSIC (913) 908-5159

ENGINEER FELSBURG, HOLT & ULLEVIG 11422 MIRACLE HILLS DRIVE, SUITE 115 OMAHA, NE 68154 CONTACT: DAVE LAMPE (402) 445-4405

LANDSCAPE ARCHITECT STEVE RODIE UNO DEPARTMENT OF BIOLOGY, AH114 OMAHA, NE 68182 (402) 554-3752

### BENCHMARKS

- 1. TOP OF RIM OF SANITARY MANHOLE WITHIN THE INTERSECTION OF 150TH AVE. AND HILLSDALE AVE. ELEV. 1088.5760 N: 527644.8210 E: 2700293.6010
- 2. TOP OF RIM OF SANITARY MANHOLE ELEV. 1083.7880 N: 527699.5530 E: 2700514.1030
- 3. TOP OF RIM OF STORM SEWER CURB INLET ALONG HILLSDALE AVE. ELEV. 1077.5300 N: 527552.6300 E: 2700786.3200







### NOTES

- UTILITIES.
- THE CONTRACTOR'S EXPENSE.
- OWNER.

THE UNDERSIGNED CERTIFIES THIS PLAN HAS BEEN DESIGNATED IN ACCORDANCE WITH FEDERAL NPDES GUIDELINES AND APPROVED EROSION, SEDIMENT, AND STORMWATER ORDINANCES, PROGRAMS, REGULATIONS, STANDARDS, AND CRITERIA OF THE CITY OF OMAHA.



**Diggers Hotline** Of Nebraska Statewide (800) 331-5666 Metro Omaha 344-3565 www.ne-diggers.com Call Before You Dig... Its The Law



INDEX OF DRAWINGS

HEET NOTES CONDITIONS PLAN PLAN PLAN OW CHANNEL DETAILS INE SLAB TRANSITION STRUCTURE DETAIL NE SLAB TRANSITION STRUCTURE DETAIL (CONT'D) ILL DETAILS TRANSITION STRUCTURE DETAILS IG PLAN STORMWATER POLLUTION PREVENTION PLAN

THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEES JTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA. EITHEI OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT JTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED, ALTHOUGH THE SURVEYOR DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES. THIS INCLUDES PRIVATE AND PUBLIC

UNDERGROUND UTILITIES MUST BE LOCATED AND FLAGGED BY UTILITY COMPANIES AT THE REQUEST OF THE CONTRACTOR PRIOR TO INITIATING SITE WORK. FOR SPECIFIC LOCATIONS TO BE STAKED PRIOR TO DIGGING, CALL DIGGER'S HOTLINE OF NEBRASKA AND ALL APPLICABLE UTILITY COMPANIES. THE DIGGER'S HOTLINE OF NEBRASKA PHONE NUMBER IS 402-344-3565. THE CONTRACTOR SHALL CALL FOR THE EXISTING UTILITY LOCATION STAKES A MINIMUM OF 48 HOURS PRIOR TO BEGINNING WORK.

3. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROTECT, AND RELOCATE ALL EXISTING UTILITIES, PAVEMENT AND OTHER IMPROVEMENTS IF REQUIRED. ANY DAMAGES TO EXISTING UTILITIES, PAVED STREETS OR ANY OTHER IMPROVEMENTS CAUSED BY CONSTRUCTION OPERATIONS SHALL BE REPAIRED AT

4. CONTRACTOR WILL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND PAYING ALL PERMIT FEES REQUIRED TO CARRY OUT THE WORK OF THIS PROJECT.

5. ALL CONSTRUCTION OPERATIONS ARE RESTRICTED TO THE BMP AREAS. EQUIPMENT AND VEHICLE MOVEMENT, PARKING AND MATERIAL STORAGE WILL BE LIMITED TO DESIGNATED AREAS OF THE SITE. EMPLOYEE PARKING WILL BE ALLOWED ONLY IN LOCATIONS REVIEWED BY AND APPROVED BY THE A/E AND



GRAHAM

E-14215



C0.1

| SCHEDULE OF APPROXIMATE QUANTITIES  |          |      |  |  |  |
|-------------------------------------|----------|------|--|--|--|
| ITEM                                | QUANTITY | UNIT |  |  |  |
| CONSTRUCTION STAKING                | 1        | LS   |  |  |  |
| MOBILIZATION/DEMOBILIZATION         | 1        | LS   |  |  |  |
| TEMPORARY EROSION CONTROL           | 1        | LS   |  |  |  |
| REMOVE GABIONS                      | 1        | LS   |  |  |  |
| REMOVE RIPRAP                       | 4        | TN   |  |  |  |
| GRADING                             | 670      | SY   |  |  |  |
| EXCAVATION                          | 52       | CY   |  |  |  |
| EARTH FILL                          | 77       | CY   |  |  |  |
| LIMESTONE SLAB TRANSITION STRUCTURE | 1        | LS   |  |  |  |
| LOW-FLOW CHANNEL COIR LOGS          | 900      | LF   |  |  |  |
| CONSTRUCT GABION WEIR STRUCTURE     | 12       | TN   |  |  |  |
| CONSTRUCT FLEXIMAT APRON            | 336      | SF   |  |  |  |
| CONSTRUCT ROCK SILL                 | 50       | TN   |  |  |  |
| SOIL PREPARATION                    | 2950     | SY   |  |  |  |
| COMPOST                             | 165      | CY   |  |  |  |
| SEEDING                             | 0.6      | AC   |  |  |  |
| LIVE PLUGS (PRAIRIE CORDGRASS)      | 450      | EA   |  |  |  |
| EROSION CONTROL MATTING             | 2950     | SY   |  |  |  |

### GENERAL NOTES

- 1. THIS PROJECT CONSISTS OF THE CONSTRUCTION OF A STORMWATER ENERGY DISSIPATION STRUCTURE AND TWO GABION DROP STRUCTURES, AND INCLUDES SITE EXCAVATION AND GRADING, SOIL PREPARATION FOR PLANTING, CONSTRUCTION OF DRAINAGE FEATURES, EROSION CONTROL, LANDSCAPE PLANTINGS, AND SPECIAL CONSTRUCTION OF FEATURES AS SHOWN ON THE DRAWINGS. THIS PROJECT INCLUDES THE FURNISHING OF ALL LABOR, EQUIPMENT, AND MATERIALS FOR CONSTRUCTION OF THE STRUCTURES AS SPECIFIED, INCLUDING SUCCESSFUL ESTABLISHMENT OF ALL VEGETATION.
- 2. ALL SITE WORK WILL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY OF OMAHA STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 2014 EDITION AND CURRENT REVISIONS.
- 3. ALL LOCAL, MUNICIPAL, AND STATE LAWS, RULES AND REGULATIONS GOVERNING ANY PORTION OF THIS WORK ARE INCORPORATED INTO THESE SPECIFICATIONS AND THEIR PROVISION SHALL BE CARRIED OUT BY THE CONTRACTOR.
- 4. THE CONTRACTOR IS RESPONSIBLE FOR MAKING ALL NECESSARY FIELD INVESTIGATIONS TO BECOME FAMILIAR WITH THE SITE AND TO SATISFY HIMSELF OF EXISTING SITE AND SOILS CONDITIONS.
- 5. THE CONTRACTOR WILL BE RESPONSIBLE FOR OBTAINING ALL REQUIRED PERMITS AND PAYING ALL PERMIT FEES REQUIRED TO CARRY OUT THE WORK OF THIS PROJECT.
- 6. ALL CONSTRUCTION OPERATIONS ARE RESTRICTED TO THE BMP AREAS. EQUIPMENT AND VEHICLE MOVEMENT, PARKING AND MATERIAL STORAGE WILL BE LIMITED TO DESIGNATED AREAS OF THE SITE. EMPLOYEE PARKING WILL BE ALLOWED ONLY IN LOCATIONS REVIEWED BY AND APPROVED BY THE A/E AND OWNFR
- 7. THE CONTRACTOR SHALL PROTECT THE OWNER'S PROPERTY FROM INJURY OR LOSS ARISING IN CONNECTION WITH WORK ON THIS CONTRACT. THE CONTRACTOR SHALL TAKE CARE TO AVOID DAMAGE TO SITE FEATURES, INCLUDING PIPING, PIPE COVERING, ELECTRICAL SYSTEMS, SEWERS, SIDEWALKS, LANDSCAPING, AND GROUNDS, AND SHALL BE HELD RESPONSIBLE FOR ANY DAMAGE THAT MAY OCCUR. ALL MATERIALS AND EQUIPMENT SHALL BE KEPT IN A DESIGNATED STORAGE AREA.
- 8. THE CONTRACTOR SHALL GUARANTEE ALL MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE YEAR FOLLOWING THE DATE OF SUBSTANTIAL COMPLETION.

CONTROL OF WORK

- 1. THE LOCATIONS OF ALL UNDERGROUND UTILITIES ARE APPROXIMATE UNDERGROUND MUST BE LOCATED AND FLAGGED BY UTILITY COMPANIES AT THE REQUEST OF THE CONTRACTOR PRIOR TO INITIATING SITE WORK. FOR SPECIFIC LOCATIONS TO BE STAKED PRIOR TO DIGGING, CALL DIGGER'S HOTLINE OF NEBRASKA AND ALL APPLICABLE UTILITY COMPANIES. THE DIGGERS HOTLINE OF NEBRASKA PHONE NUMBER IS 402-344-3565. THE CONTRACTOR SHALL CALL FOR THE EXISTING UTILITY LOCATION STAKES A MINIMUM OF 48 HOURS PRIOR TO BEGINNING WORK.
- 2. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROTECT, AND RELOCATE ALL EXISTING UTILITIES, PAVEMENT AND OTHER IMPROVEMENTS IF REQUIRED. ANY DAMAGES TO EXISTING UTILITIES, PAVE STREETS OR ANY OTHER IMPROVEMENTS CAUSED BY CONSTRUCTION OPERATIONS SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
- 3. THE CONTRACTOR SHALL CONFINE HIS OPERATIONS TO THE LIMITS OF CONSTRUCTION AS INDICATED ON THE DRAWINGS AND REASONABLE AREAS FOR MOVEMENT OF EQUIPMENT. IF ADDITIONAL STORAGE OR STAGING AREAS ARE REQUIRED, THE CONTRACTOR SHALL OBTAIN THE OWNER'S PERMISSION TO UTILIZE DESIGNATED AREAS.
- 4. IF VEGETATION IS PRESENT THAT MAY CONFLICT WITH CONSTRUCTION OR MAY BE DAMAGED, THE CONTRACTOR SHALL INFORM THE A/E FOR A DECISION. DO NOT REMOVE ANY VEGETATION UNTIL DIRECTED BY THE A/E.
- 5. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN TEMPORARY SILT FENCE, CHECK DAMS AND/OR DIVERSION SWALES TO PROTECT THE DRAINAGE SWALE FROM SILTATION UNTIL SUBSTANTIAL COMPLETION OF THE PROJECT.
- 6. THE CONTRACTOR SHALL ERECT ANY NECESSARY BARRIERS, POST SIGNS, OR IMPLEMENT OTHER SAFETY EQUIPMENT AS NECESSARY TO CORDON OFF OR CLEARLY DEMARCATE ALL HAZARDOUS CONDITIONS CREATED DUE TO THE WORK. BARRICADES WITHIN PUBLIC RIGHT-OF-WAY SHALL CONFORM TO THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES."
- 7. ALL CONSTRUCTION AND INCIDENTAL DEBRIS (DEMOLITION, CONSTRUCTION WASTE, PACKING MATERIALS, EXCESS CONCRETE, ETC.) SHALL BE DISPOSED OF OFF-SITE AT A GOVERNMENT APPROVED DISPOSAL SITE. NO DISPOSAL OR BURYING OF THESE MATERIALS WILL BE ALLOWED ON-SITE.
- 8. IN THE EVENT OF A RELEASE OF OIL OR HAZARDOUS SUBSTANCE, THE CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF THE NEBRASKA DEPARTMENT OF ENVIRONMENTAL QUALITY FOR NOTIFICATIONS, CONTAINMENT, INVESTIGATION, REMEDIAL ACTION AND DISPOSAL. 9. CONTRACTOR SHALL PERFORM PREVENTATIVE MAINTENANCE ON ALL POLLUTION
- CONTROL MEASURES TO ENSURE THEIR PROPER FUNCTION.
- 10. CONTRACTOR MUST COMPLY WITH LOCAL NOISE AND STATE CONTROL ORDINANCES 11. CONTRACTOR SHALL BE RESPONSIBLE TO COMPLY WITH OSHA REGULATIONS

CONSTRUCTION PHASING

- 1. CONSTRUCTION WILL OCCUR IN THE FOLLOWING GENERAL SEQUENCE:
- a. SITE PREPARATION
- UTILITIES CLEARANCE • CLEARING AND GRUBBING
- REMOVAL OR RELOCATION OF NECESSARY UTILITIES AS INSTRUCTED IN PLANS OR BY THE ENGINEER
- b. SITE GRADING AND EXCAVATIONS
- c. INSTALLATION OF DRAINAGE STRUCTURES

- d. CONSTRUCTION OF FINAL GRADING
- e. INSTALLATION OF VEGETATION
- 2. THE CONTRACTOR SHALL SUBMIT A "CONSTRUCTION PHASING PLAN" TO THE OWNER AND A/E INDICATING THE SEQUENCE FOR COMPLETION OF ALL MAJOR WORK ITEMS. THE PLAN SHALL INDICATE THE PROPOSED LOCATION OF CONTRACTOR STAGING, STORAGE AND PARKING AREAS DURING EACH OF THE PROJECT PHASES, INCLUDING THE NUMBER OF DAYS ANTICIPATED TO COMPLETE EACH PHASE. THIS INFORMATION WILL BE PROVIDED TO THE OWNER AND A/E PRIOR TO BEGINNING CONSTRUCTION.
- 3. SITE WORK WILL BE SCHEDULED TO AVOID COMPACTION OF SOILS WITHIN AND ADJACENT TO THE BMP AREAS TO CONSERVE THE PERMEABILITY RATE OF THE EXISTING SUBSOILS.
- 4. THE CONTRACTOR SHALL SUBMIT A LIST OF CONSTRUCTION EQUIPMENT TO BE USED DURING CONSTRUCTION TO THE OWNER AND A/E. CONSTRUCTION EQUIPMENT SHALL BE USED THAT MINIMIZES SOIL COMPACTION.

### DEMOLITIONS AND REMOVALS

- 1. THIS WORK INCLUDES EXCAVATION AND REMOVAL OF RUBBLE, MISCELLANEOUS SITE FEATURES, AND TURF SOD REQUIRED TO COMPLETE THE WORK.
- 2. ITEMS THAT MAY BE SALVAGED BY THE CONTRACTOR AND BECOME THE
- CONTRACTOR'S PROPERTY MAY BE REMOVED BY ANY REASONABLE MEANS. 3. UNLESS OTHERWISE INDICATED, THE OWNER HAS THE FIRST RIGHT OF REFUSAL FOR REMOVAL OF ANY ITEMS NOT INDICATED TO BE RE-USED. ALL ITEMS NOT SALVAGED FOR RE-USE OR RETURNED TO THE OWNER SHALL BE HAULED OFF-SITE.
- 4. ALL DISTURBANCES OR HOLES RESULTING FROM REMOVED ITEMS SHALL BE FILLED WITH CLEAN FILL AND COMPACTED TO ORIGINAL GRADE. FOREIGN MATERIALS SUCH AS LOGS, STUMPS, SOD, WEEDS, OR OTHER ORGANIC MATERIALS WILL NOT BE USED AS FILL. LARGE STONES SHALL NOT BE USED IN THE BACKFILL.
- 5. CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO PROTECT THE SITE FROM DAMAGE CAUSED BY EXCAVATION, GRADING, OR DEMOLITION ACTIVITIES. DAMAGE TO THE SITE OR ITEMS TO REMAIN SHALL BE REPAIRED BY THE CONTRACTOR AT HIS EXPENSE.

### EROSION CONTROL NOTES

- 1. THE CONTRACTOR MUST COMPLY WITH ALL GOVERNMENT REGULATIONS IN REGARDS TO THE CONSTRUCTION ACTIVITIES SO AS TO MINIMIZE THE POTENTIAL FOR EROSION.
- 2. THE CONTRACTOR SHALL MONITOR SILT FENCING AND INSTALL ADDITIONAL SILT FENCING IF NECESSARY OR AS DIRECTED BY THE OWNER'S REPRESENTATIVE.
- 3. THE CONTRACTOR SHALL REMOVE ACCUMULATED SEDIMENT FROM BEHIND SILT FENCES, AND ALL OTHER EROSION CONTROL MEASURES THAT STORE SEDIMENT, IF NECESSARY OR AS DIRECTED BY THE OWNER'S REPRESENTATIVE.
- 4. CONTRACTOR SHALL BUILD STABILIZED CONSTRUCTION ENTRANCES IF NECESSARY TO PREVENT TRACKING MUD/SOIL ONTO CITY STREETS. CONTRACTOR SHALL MONITOR ALL STABILIZED CONSTRUCTION ENTRANCES AND MAINTAIN THE ENTRANCE(S) AS NEEDED OR AS DIRECTED BY THE OWNER'S REPRESENTATIVE.
- 9. ALL EROSION AND SEDIMENT CONTROL BMP'S MUST BE KEPT IN WORKING ORDER. THE CONTRACTOR SHALL REPAIR ALL DAMAGES CAUSED BY SOIL EROSION AND CONSTRUCTION EQUIPMENT AT OR BEFORE THE END OF EACH WORKING DAY OR AS DIRECTED BY OWNER'S REPRESENTATIVE.
- 10. EROSION AND SEDIMENT CONTROL BMP'S MAY NOT BE REMOVED WITHOUT THE OWNER'S APPROVAL AND APPLICABLE GOVERNMENTAL APPROVAL.
- 11. FOR DUST CONTROL, THE CONTRACTOR SHALL USE A TANK TRUCK OR OTHER SUCH EQUIPMENT TO SPREAD WATER ON THE STRIPPED OR BARE AREAS.
- 12. SEDIMENT THAT HAS BEEN ACCIDENTALLY TRANSPORTED ONTO PUBLIC STREETS MUST BE REMOVED ON A DAILY BASIS. SEDIMENT WILL BE SHOVELED AND/OR SWEPT FROM THE STREET AND DISPOSED OF IN A MANNER WHICH PREVENTS CONTAMINATION WITH STORM WATER OR SURFACE WATER.
- 13. THE CONTRACTOR SHALL ALLOW ALL GOVERNMENT REGULATORS ACCESS TO THE SITE FOR INSPECTIONS AT ANY TIME.
- 14. STABILIZATION MEASURES (I.E. SEEDING, MULCHING, OTHER) WILL BE IMPLEMENTED AS SOON AS PRACTICABLE IN PORTION S OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, BUT IN NO CASE MORE THAN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED.
- 15. SILT FENCE FABRIC SHALL BE MIRAFI EF OR APPROVED EQUIVALENT. LOCAL SUPPLIER: A.S.P. ENTERPRISES, OMAHA NE. PHONE NO. 402-861-8579.

### PLANTINGS

- 1. ALL PLANTS TO BE ESTABLISHED IN THE DRAINAGE SWALE WILL BE PROVIDED BY THE CITY OF OMAHA. CONTRACTOR WILL BE RESPONSIBLE FOR SOIL PREPARATION FOR PLANTING, INCLUDING SEED BED PREPARATION AS DIRECTED IN PLAN SHEETS, AND PLANTING/INSTALLATION OF ALL PLANT PLUGS.
- 2. PLANTING AREAS WITHIN THE DRAINAGE SWALE MUST BE FREE OF TURF GRASS AND/OR OTHER INVASIVE WEEDS.
- 3. VEGETATION SHALL BE ESTABLISHED AS SPECIFIED IN THE FINAL LANDSCAPE/PLANTING PLANS.
- 4. AFTER PLANTING IS COMPLETED, A TWO-INCH LAYER OF SHREDDED HARDWOOD MULCH WILL BE CAREFULLY PLACED AS SHOWN ON THE PLANTING/LANDSCAPE PLANS.
- 5. NEW VEGETATION WILL BE WATERED ONCE PER WEEK IN THE ABSENCE OF RAINFALL. THE EQUIVALENT OF ONE-HALF INCH OF WATER PER WEEK OVER THE BMP AREAS WILL BE PROVIDED TO ESTABLISH VEGETATION UNTIL THE AVERAGE DAILY TEMPERATURE FALLS BELOW 45 DEGREES FAHRENHEIT (IF PLANTING OCCURS IN FALL). IF PLANTING OCCURS IN THE SPRING, WATERING OF THE VEGETATION WEEKLY FOR THE FIRST TWO MONTHS IN THE ABSENCE OF RAINFALL WILL BE

- ACHIEVE BMP CONSTRUCTION COMPLETION. 7. PESTICIDES, HERBICIDES, AND/OR FERTILIZERS SHALL NOT, UNDER ANY CIRCUMSTANCES, BE APPLIED DURING LANDSCAPE CONSTRUCTION, PLANT ESTABLISHMENT, OR FOR A MINIMUM PERIOD OF 2 MONTHS AFTER INITIAL PLANTING.

- SIMILAR IMPLEMENT AND GRADE/RAKE TO A SMOOTH BUT FRIABLE SURFACE. INTO THE TOP 6" OF SOIL. COMPOST/SOIL MIX SHOULD BE AN EVEN, HOMOGENOUS DISTRIBUTION OF COMPOST INTO THE SOIL
- GREATER THAN 2:1, DOUBLE NET STRAW BLANKET ON SIDESLOPE OF 3:1 OR LESS)
- IN ITEM NO. 6 HOLE FOR THE PLUG ROOT BALL, AND INSERT PLANT. PRESS SOIL AROUND ROOTS TO ASSURE GOOD SOIL-ROOT CONTACT.

- 1. GRADE SWALE SURFACE TO ELEVATIONS SHOWN ON PLAN SHEETS 2. BREAK SOIL COMPACTION IN ALL DISTURBED AREAS USING SMALL HARROW OR 3. MIX 3" LAYER OF WELL-PREPARED, COMPLETED COMPOST (SEE SPECIFICATION) 4. USING A WALK-BEHIND DRUM ROLLER, COMPACT THE SOIL AND SCARIFY THE
- SURFACE. 5. IF AREAS WILL BE SEEDED, PLACE SEED ACCORDING TO PLANTING PLAN.
  - 6. PLACE EROSION CONTROL MATS AS SPECIFIED (COIR MAT 40 ON HEAD SLOPES
  - 7. IF PLANT PLUGS WILL BE PLACED, PLACE EROSION CONTROL MATS AS DESCRIBED 8. CUT SLITS IN EROSION CONTROL MATS WHERE PLUGS WILL BE PLANTED, OPEN

REQUIRED TO ESTABLISH PLANTS.

6. DURING THE FIRST SEASON OF GROWTH, REMOVAL OF DEAD/FAILED VEGETATION AND REPLACEMENT WITH THE SAME SPECIES AND LOCATION IS REQUIRED TO

SOIL CONDITIONING/MANAGEMENT

9. WATER PLANTS/SEED AFTER PLACEMENT.

|    |   |                                       |                                    |                              |                                  | ASSOCIATES |                                    |   | 2111 South 67th Street Suite 200 TEI 402 341 1116 | Omaha, NE 68106 FAX 402.341.5895 www.olssonassociates.com |
|----|---|---------------------------------------|------------------------------------|------------------------------|----------------------------------|------------|------------------------------------|---|---|---|
|    |   | 303.721.1440                          | fax 303 721 0832                   | FEI CDI IDC fini@finiena com |                                  |            | 6300 South Syracuse Way            | [J] $[J]$ $[J]$ $[J]$ $[J]$ $[J]$ $[J]$ Suite 600 | Centennial, CO 80111                              |   |
|    | TE REVISIONS DESCRIPTION  |                                       |                                    |                              |                                  |            |                                    |   |   | REVISIONS   |
|    | REV. D.   |                                       |                                    |                              | FNTS                             |            |                                    |   |   | 2016  |
| ÷. | GENERAL NOTES   |                                       |                                    |                              | HILSDALE DRAINAGE SWALE IMPROVEM |            | NEAR 150TH AVENUE & HILLSDALE AVEN |   |   | OMAHA, NEBRASKA   |
|    | drawn<br>checke<br>approv<br>QA/QC<br>project<br>drawing<br>date: | by:<br>ed b<br>ed<br>by<br>no<br>g no | y:<br>by:<br>::<br>p.:<br><b>S</b> |                              |                                  |            | c<br>T                             | 01/(  | KG<br>T<br>044                                    | GH'''   |



**OPW 52921-SP** 







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|       |         |        | CARION /MATRESS SCHEDUIL | F  |                            |                                 |
|-------|---------|--------|--------------------------|--|----------------------------|---------------------------------|
|       |         |        | ABIONY WATERS SCIEDOL    |  |                            |                                 |
| TYPE: | LENGTH: | WIDTH: | HEIGHT:                  | CAPACITY PER<br>BASKET/MATRESS<br>(CUBIC YARDS): | GABION/MATRESS<br>QUANTITY | TOTAL CAPACITY<br>(CUBIC YARDS) |
| G     | 6'-0"   | 3'-0"  | 1'-0"                    | 0.67   | 2                          | 1.34                            |
| G-G   | 6'-0"   | 6'-0"  | 1'-0"                    | 1.30   | 2                          | 2.60                            |
| V     | 9'-0"   | 6'-0"  | 1'-0"                    | 2.00   | 4                          | 8.00                            |

10. #4 BARS SHALL PENETRATE AT LEAST ONE SLAB BELOW IT TO TIE THE TWO SLABS TOGETHER.

THE SLAB.

THE SLAB.

SUPPORTED BY GABIONS.

PLACE WILL NOT BE ACCEPTED.

EQUIVALENT.

OMAHA WALL ROCK AND WHISPERING GREEN WALL ROCK HAVE LOCALLY AVAILABLE LIMESTONE SLABS.

SHALL BE AT THE CONTRACTOR'S EXPENSE.



|                                      | APPROXIMATE QUANTITIES |      |
|--------------------------------------|------------------------|------|
| BID ITEM                             | QUANTITY               | UNIT |
| ROCK RIPRAP                          | 12                     | TN   |
| 6" LIMESTONE SLABS<br>35.775 * 1.2 ) | 43                     | TN   |
| FILLER ROCK (1½")                    | 14                     | TN   |
| PERMANENT REINFORCEMENT              | 40                     | SY   |













### Urban Drainageway Program – Application Form

| Project name            | Mill Creek a     | Mill Creek at 48th Street stream stabilization |       |                                    |     |              |  |
|-------------------------|------------------|--|-------|------------------------------------|-----|--------------|--|
| Project location (attac | h location map)  | nap) Mill Creek tributary south                |       | southwest of 48th St & McKinley St |     |              |  |
| Sponsor organization    | City of Oma      | City of Omaha                                  |       |                                    |     |              |  |
| Sponsor address         | 1819 Farna       | m Street                                       |       |                                    |     |              |  |
| City                    | Omaha            |  | State | NE                                 | ZIP | 68183        |  |
| Contact person          | Adam Wilm        | es   |       |                                    |     |              |  |
| Title                   | Environmer       | Environmental Design Engineer                  |       |                                    |     |              |  |
| Email address ada       | m.wilmes@cityofc | es@cityofomaha.org                             |       | Daytime phone                      |     | 402-444-3819 |  |

Description of problem (attach additional sheets as needed)

Stream degradation has caused bank erosion, steepening of channel near storm sewer outlet, and has caused previously buried sanitary sewer line to be exposed.

Proposed solution (attach additional sheets as needed)

Stabilize eroded channel, protect existing stormwater outlet, protect exposed sanitary sewer crossing, install energy dissipation.

| Level of Design Level               | 1 Level 2 | Level              | 3                       |
|-------------------------------------|-----------|--------------------|-------------------------|
| Total estimated cost \$             | 0,000 C   | Cost share request | \$                      |
| Signature<br>CETT-PUBLIC L<br>Title | NORKS     | 3 18 20<br>Date    | DECEIVE<br>MAR 2 1 2016 |
| Form 17.17 A                        |           |                    | Updated 2015-02-12      |



City of Omaha Jean Stothert, Mayor

March 18, 2016

Public Works Department Omaha/Douglas Civic Center

> 1819 Farnam Street, Suite 601 Omaha, Nebraska 68183-0601 (402) 444-5220 Fax (402) 444-5248

Robert G. Stubbe, P.E. Public Works Director

Mr. Eric Williams Natural Resources Planner Papio-Missouri River Natural Resources District 8901 S. 154<sup>th</sup> Street Omaha, NE 68138-3621

RE: Mill Creek at 48<sup>th</sup> Street Channel Stabilization Project NRD Urban Drainageway Program Grant Application Submittal

Dear Mr. Williams,

Enclosed please find the following material intended for the application of the District's Urban Drainageway Program grant for the above-referenced project in Omaha:

- 1. Completed Application Form 17.17A for the Urban Conservation Assistance Program
- 2. Attachment A: Location map
- 3. Attachment B: LiDAR information for the project area

### **Description of the Problem**

Mill Creek is a major urban drainageway located in north Omaha. The proposed channel stabilization project is located within a tributary to the Mill Creek drainageway, and is located just southwest of the intersection of McKinley Street and North 48<sup>th</sup> Street (See Attachment A). The open channel tributary is only approximately 350 feet long from the upstream end to the downstream confluence with Mill Creek. The upstream end of the tributary is a 72-inch storm sewer outlet, which collects runoff from the area north of the tributary, and includes McKinley Street. The channel downstream of the storm sewer pipe outlet has degraded, and is showing evidence of bank erosion and scour (See Figure 1). Several utilities which cross this channel are being threatened by the channel degradation. The utilities include two gas pipelines which cross the stream well above the channel flowline, and a sanitary sewer, which was originally below the channel flowline, but has recently been exposed and is visible in the channel bottom

(See Figure 2). In addition to the exposed utilities in the channel, the degradation has also caused the outlet storm sewer pipe to be elevated in relation to the channel bottom, which has led to separation of the pipe joints (See Figure 3).

Continued channel erosion and degradation will cause further bank failure, vegetation loss, and will threaten a number of existing utilities as described above.



Figure 1. Looking south (downstream) in tributary.



Figure 2. Looking north (upstream) in tributary. Exposed sanitary sewer can be seen in lower left of photo, with two gas lines (white) in the upper right.



Figure 3. 72-inch storm sewer outlet showing separation at joints.

### **Proposed Solution**

This project is in a very early stage, and has not undergone a detailed study. The proposed solution is to stabilize the eroded channel, potentially with grade control structures that would have the dual benefit of stabilizing the channel and protecting existing infrastructure. With the high flowrate and velocity exiting the storm sewer system, it is likely that energy dissipation at the pipe outlet will be necessary to reduce the energy in the channel and prevent further erosion.

### **Cost Estimate**

The current cost estimate is a preliminary estimate based on the anticipated clearing, grading, and stabilization that will be necessary. That estimate is \$300,000. Because no detailed plans have been developed yet, this estimate is likely to change as design progresses. Based on past history of similar projects, this estimate is believed to be representative of the scope of the project.

### **Construction Implementation Schedule**

The City of Omaha Public Works Department has included this project in its anticipated list of construction projects for the 2017 construction season.

### **Environmental Acceptability Statement**

A review of the EPA's NEPAssist mapping tool did not show any EPA facilities or sites that are subject to environmental regulation in the project area. During design, the engineer will further investigate environmental resources on the site at a more detailed level.

### **Preliminary Survey and Design Information**

A traditional topographic survey of the area has not yet been performed. The 2010 LiDAR data for the project area is being used for preliminary surface information, and has been included as Attachment B. This data is useful for conceptual-level design and for determining tributary drainage areas, but more detailed information will be necessary for final design and construction. The City of Omaha will undertake a topographic survey of the area in conjunction with project design.

### **Additional Sponsor Responsibilities**

The City of Omaha Public Works Department will administer the engineering design contract. We will obtain temporary and permanent construction easements as necessary for accessing the City-owned property on which the project will occur. We will comply with all local, state and federal laws and obtain any permits necessary for construction of this project. We also concur that the City shall hold and save the District free from damages or claims due to the design, construction, operation and maintenance of this project as required from the subsequent agreement between the City and the District. The City also

agrees to provide all future operation and maintenance of the channel and storm sewer at no cost to the District.

Thank you for your consideration – the City hopes that the District's Board of Directors and application reviewers look favorably on this project. Please feel free to contact me at (402) 444-3819 if you have any questions or require additional information for this grant request.

Sincerely,

adam Mitins

Adam Wilmes, P.E. City Project Manager



### MILL CREEK PROJECT LOCATION MAP

**ATTACHMENT A** 



### Urban Drainageway Program – Application Form



| Project name   | OPW 5282                    | 28 - Oakbrook Cl | nannel Stal                 | bilization         |       |           |
|--|-----------------------------|------------------|-----------------------------|--------------------|-------|-----------|
| Project location (attach   | location map)               | 110th Street     | and Oakbro                  | ook Drive,         | Omaha | , NE      |
| Sponsor organization   | City of Om                  | aha              |                             |                    |       |           |
| Sponsor address  | 1819 Farna                  | am Street        |                             |                    |       |           |
| City   | Omaha                       |                  | State                       | NE                 | ZIP   | 68183     |
| Contact person   | Sarah And                   | erson            |                             |                    |       |           |
| Title  | Civil Engine                | eer II           |                             |                    |       |           |
| Email address sarah  | n.anderson@city             | ofomaha.org      | Davtime                     | phone              | 402-  | -444-3390 |
| See attached sl  | neets.                      |                  |                             |                    |       |           |
| See attached sl  |                             |                  |                             |                    |       |           |
| See attached sl<br>Proposed solution (atta<br>See attached sl  | ch additional she           | ets as needed)   |                             |                    |       |           |
| See attached sl<br>Proposed solution (atta<br>See attached sl<br>Level of Design<br>Total estimated cost | ch additional she<br>heets. | eets as needed)  | Cost share                  | Level 3<br>request | 374,4 | ]         |
| See attached sl<br>Proposed solution (atta<br>See attached sl<br>Level of Design<br>Total estimated cost | ch additional she<br>heets. | eets as needed)  | Cost share 1<br>3/18/2016   | Level 3<br>request | 374,4 | ]         |
| See attached sl<br>Proposed solution (atta<br>See attached sl<br>Level of Design<br>Total estimated cost | ch additional she<br>heets. | eets as needed)  | Cost share a 3/18/2016 Date | Level 3<br>request | 374,4 | ]         |


**Public Works Department** 

Omaha/Douglas Ĉivic Center 1819 Farnam Street, Suite 601 Omaha, Nebraska 68183-0601 (402) 444-5220 Fax (402) 444-5248

Robert G. Stubbe, P.E. Public Works Director

March 18, 2016

Jean Stothert, Mayor

Mr. Eric Williams Natural Resources Planner Papio-Missouri River Natural Resources District 8901 S. 154<sup>th</sup> Street Omaha, NE 68138-3621

RE: OPW 52828 – Oakbrook Channel Stabilization Project NRD Urban Drainageway Program Grant Application Submittal

Dear Mr. Williams,

Enclosed please find the following material intended for the application of the District's Urban Drainageway Program grant for the above-referenced project in Omaha:

- 1. Completed Form 17.17 for the Urban Drainageway Program Special Project Request Application
- 2. Location maps
- 3. LiDAR information for the project area
- 4. Preliminary cost estimate
- 5. Alternative design sheets
- 6. This letter

#### **Description of the Problem**

The Oakbrook Channel project is located southwest of the intersection of North 108<sup>th</sup> and Blondo Streets and northeast of Oakbrook Park (See Figure 1). A 60-inch storm sewer outfall that drains approximately 188 acres is causing streambank erosion and channel slope degradation in the drainageway. The existing storm sewer outfall is now located about eight feet above the channel thalweg as shown in Photograph 1. The erosion has occurred due to high exit velocities from the culvert displacing the moderately erosive soils and decreasing vegetative cover. As the streambed eroded with high flow velocity, the streambanks became increasingly vertical leading to slope stability problems and mass failure (See Photograph 2 and 3). The erosion is encroaching on several residences next to the channel as shown in Photograph 4. The sloughing in this area is also likely due to saturated stream banks from active springs. There is also a high voltage power line tower on the left bank approximately 45 feet downstream from the existing outfall, which should not be adversely impacted by the project activities.

The City of Omaha contracted with FYRA Engineering in 2015 to investigate potential solutions to the problem. After completing the preliminary alternatives study in August 2015, the City contracted with the engineering consultant to complete the final design and construction documents for the selected alternative or combination of alternatives.

This project primarily involves work to provide channel bank stabilization, which is why the City is requesting Level 3 (Stabilization) for the project eligibility level of design and a 40% cost share through the use of Urban Drainageway Program funds. Recent site photographs show that additional damage has occurred since the preliminary study and the engineering consultant is assessing the project extents. Stabilization efforts may need to extend further downstream which would potentially increase construction and project costs from the estimates in the preliminary study. The construction cost estimate is expected to be refined before the District's FY 2017 budgeting process.

This project is part of a larger study area that focuses on two drainageways that flow to the Big Papillion Creek (See Figure 2). Along these two drainageways there are multiple locations that have erosion and channel stabilization issues that are anticipated to require construction activities in the future. This project will help stabilize the area and prevent further degradation while allowing the future downstream projects to rehabilitate the stream.



Photograph 1. Looking north towards existing culvert outlet and failed RCP pipe segments.



Photograph 2. Looking southwest at the channel downstream of culvert.



Photograph 3. Looking northwest at a typical stream bank section.



Photograph 4. Looking northwest at neighboring properties on right stream bank.

#### **Proposed Solution**

After the completion of the preliminary study, it was anticipated that a hybrid of Alternatives 1 and 4 would be selected for the final design. The topographic survey, geotechnical investigation and wetland/stream delineation (which are all in progress) will be used to develop the final design and construction plans.

Alternative 1 includes extending the existing 60-inch RCP storm sewer to the northern extents of Oakbrook Park. To remediate the streambank erosion, the channel would be filled with imported soil or potentially soil from the channel's left bank. Sheet pile breaks would be used to create step pools in three locations to reduce the slope of the overland swale. A swale would be created on top of the channel backfill to convey localized runoff to the drainageway. See Sheet Alt-1 for a typical section and profile of this alternative.

Alternative 4 includes raising the existing energy grade of the sewer outfall. A hydraulic analysis will be completed to verify that this change does not adversely impact the storm sewer system or the contributing drainage area. A series of drop structures or step pools as described in Alternative 1 would be used to bring the stream grade down from the new outfall elevation to the channel grade at the end of the project. Sheet Alt-4 shows a typical section and profile of this alternative.

#### **Cost Estimate**

FYRA Engineering developed preliminary cost estimates for the alternatives that were evaluated in the preliminary study. It is anticipated that the selected alternative will be a combination of Alternatives 1 and 4. The overall project cost estimate, which includes design, construction and construction observation is \$936,120 as listed on the project application form. Forty percent of this figure is approximately \$374,400, which is the amount that the City is requesting from the Urban Drainageway Program.

## **Construction Implementation Schedule**

The City of Omaha Public Works Department has included this project in its anticipated list of construction projects for the 2016 construction season. We anticipate that final plans and potential nationwide permit coordination will be complete in June or July 2016. This schedule would place the construction start date around the end of September or early October 2016. It's possible that construction may start earlier in the summer.

## **Environmental Acceptability Statement**

A review of the EPA's NEPAssist mapping tool did not show any EPA facilities or sites that are subject to environmental regulation in the project area. The engineering consultant will also document environmental resources on the site at a level that is suitable for the nationwide permit submittal.

## **Preliminary Survey and Design Information**

FYRA Engineering has obtained the 2010 LiDAR data for the project area, which has been included as Figure 3. These data will be supplemented with topographic survey information to define channel sections for the project reach, to confirm storm sewer elevations and upstream layouts for hydraulics and to provide data within the channel section where the LiDAR information may be unreliable. Please refer to Sheets Alt-1 and Alt-4 for typical channel cross sections and profiles of the two alternatives that will likely be selected and potentially combined for the final design.

## **Additional Sponsor Responsibilities**

The City of Omaha Public Works Department will administer the engineering design contract. We will obtain temporary and permanent construction easements as necessary after additional coordination and during the development of the final design. We will comply with all local, state and federal laws and obtain any permits necessary for construction of this project. We also concur that the City shall hold and save the District free from damages or claims due to the design, construction, operation and maintenance of this project as required from the subsequent agreement between the City and the District. The City also agrees to provide all future operation and maintenance of the channel and storm sewer at no cost to the District.

Thank you for your consideration – the City hopes that the District's Board of Directors and application reviewers look favorably on this project. Please feel free to contact me at (402) 444-3390 if you have any questions or require additional information for this grant request.

Sincerely,

Sarah anderson

Sarah Anderson, P.E. City Project Manager



FIGURE 1: OAKBROOK CHANNEL STABILIZATION PROJECT - LOCATION MAP



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| くしいし                                  | L<br>L<br>L<br>L<br>L            | I I I I I                           | ENGINEERING            | X             |  | 3925 South 147th Street, Suite 117 FAX 402.932.6940 | Minute interesting com            |  |
|---------------------------------------|----------------------------------|-------------------------------------|------------------------|---------------|--|---|-----------------------------------|--|
| ENGINEER'S SEAL                       |                                  |                                     |                        |               |  |   |                                   |  |
| DATE                                  |                                  |                                     |                        |               |  |   |                                   |  |
| BY                                    |                                  |                                     |                        |               |  |   |                                   |  |
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|                                       |                                  | sı<br>A                             | SHEET NO.              |               |  |   |                                   |  |



| XISTING GROUND  | FYRA   | ENGINEERING  |                     | 3925 South 147th Street, Suite 117 FAX 402.932 6940<br>Omaha, NE 68144-5565 TEL 402.502.7131<br>www.iyraengineering.com |
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| EXISTING GROUND<br>RAISE EXISTING PIPE 6'<br>EXISTING 60'' RCP PIPE | CHANNEL SECTION AND DETAIL                                 | OAKBROOK CHANNEL STUDY                             | CITY OF OMAHA       | DOUGLAS COUNTY, NEBRASKA  |
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## Table 1. Oakbrook Channel Stabilization - Cost Estimate

| ltem   | Units | Quantity | Unit Price | Total     |
|--|-------|----------|------------|-----------|
| Mobilization                                       | LS    | 1        | \$42,000   | \$42,000  |
| Clearing and Grubbing                              | LS    | 1        | \$42,000   | \$42,000  |
| Earthwork  | СҮ    | 16,500   | \$11       | \$184,800 |
| Pipe Extension                                     | LF    | 550      | \$420      | \$231,000 |
| Energy Dissipation                                 | LS    | 1        | \$56,000   | \$56,000  |
| Rock Rip Rap                                       | Tons  | 270      | \$98       | \$26,460  |
| Remove and Replace Existing Pipe                   | LF    | 420      | \$70       | \$29,400  |
| Sheet Pile   | SF    | 2,200    | \$70       | \$154,000 |
| Seeding  | Acres | 16       | \$2,240    | \$35,840  |
| Construction Total                                 |       |          |            | \$801,500 |
| Construction Observation (7% of Construction Cost) |       |          |            | \$56,105  |
| Design Total (Contract with Fyra Engineering)      |       |          |            | \$78,515  |
| Project Total                                      |       |          |            | \$936,120 |
| 40% of Project Total (Requested Funding)           |       |          |            | \$374,400 |



FIGURE 3 - EXISTING 2' CONTOURS OAKBROOK CHANNEL STABILIZATION DESIGN CITY OF OMAHA









March 18, 2016

Mr. Eric Williams Papio-Missouri River Natural Resources District 8901 South 154<sup>th</sup> Street Omaha, NE 68138-3621

RE: Urban Drainageway Program Application City of Papillion – Portal Road – Drainageway Improvements TD2 File No. 181-601.2

Mr. Williams:

Enclosed is an application for the Papio-Missouri River Natural Resources District's Urban Drainageway Program and additional attachments for the above-referenced project in Papillion, Nebraska. Please advise if additional materials are required.

Please contact the undersigned with any questions.

Submitted by,

Thompson, Dreessen & Dorner, Inc.

Gen Allelle

Daren A. Konda, P.E.

DAK/tjp

Enclosures



# CITY OF PAPILLION PORTAL ROAD DRAINAGEWAY PROVEMENTS

## URBAN DRAINAGEWAY PROGRAM APPLICATION

#### **PREPARED BY:**

DAREN KONDA, P.E., PROJECT MANAGER THOMPSON, DREESSEN & DORNER, INC. 10836 OLD MILL ROAD OMAHA, NE 68154 PHONE: (402) 330-8860 FAX (402) 330-5866

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| EXHIBITS                              | 17 |



| URBAN DRAINAGEWAY PR   | OGRAM  |
|--|--|
| SPECIAL PROJECT REQUES   | T APPLICATION  |
| L DATE:  | March 18, 2016   |
| 2. PROJECT NAME  | City of Papillion - Portal Road - Drainageway Improvements   |
| 3. PROJECT SPONSOR:  | City of Papillion  |
| ADDRESS:   | City of Papillion  |
|  | 122 East 3rd Street  |
|  | Papillion, NE 68046  |
| 4. CONTACT PERSON:   | Jeff Thompson  |
| TITLE:   | City Engineer  |
| 5. TELEPHONE:  | 402-898-9092   |
| 6 F.MAII   | ieff@papillion.org   |
| 7. PROJECT LOCATION (at<br>NE of West Papillion Creek a<br>8. DESCRIPTION OF PROB  | tach location map):<br>t Hupp Drive and Portal Road, (see attachments).<br>LEM (attach additional sheets as needed):   |
| 7. PROJECT LOCATION (at<br>NE of West Papillion Creek a<br>8. DESCRIPTION OF PROB<br>The unnamed drainageway 1<br>drainageway. Head cutting a<br>the road embankment, storm<br>is the most critical as further<br>road segment serving the pu<br>The drainageway banks are<br>causes the drainageway to g<br>attachments).   | tach location map):<br>t Hupp Drive and Portal Road, (see attachments).<br>LEM (attach additional sheets as needed):<br>to the West Papillion Creek has severe erosion and degradation within the<br>ind bank erosion has undermined the Portal Road box culvert threatening<br>sever and municipal water main. The headcut undermining Portal Road<br>deterioration may require the closure of Portal Road. Portal Road<br>blic works facilities for both the City of Papillion and the City of La Vista.<br>hearly vertical and continue to be undercut and washed away which<br>row wider; washing sediment and organic material into the creek (see  |
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## EXISTING CONDITIONS

The existing condition of the unnamed drainageway to the West Papillion Creek shows severe erosion and degradation within the drainageway. Head cutting and bank erosion has undermined the Portal Road box culvert threatening the road embankment, storm sewer and municipal water main. The headcut undermining Portal Road is the most critical as further deterioration may require the closure of Portal Road. Portal Road is a road segment serving the public works facilities for both the City of Papillion and the City of La Vista. The drainageway banks are nearly vertical and continue to be undercut and washed away which causes the drainagway to grow wider; washing sediment and organic material into the creek. This action is not only destructive but it contributes to the sediment load within the West Papillion Creek. The vertical banks are approximately 12 feet in height (see photo: P6 page 10). The current grade of the channel as controlled by the existing storm sewer structures is approximately 3.0 % therefore the channel is prone to head cutting.

At the north end of the channel near the outlet of the twin 8' x 6' box culvert there is a head cut approaching an existing water main crossing. At the upstream end of the channel an existing 36" RCP storm sewer outlet has been so severely undercut three sections of pipe have become dislodged. The existing timber pipe support structure has also been disloged (see photo: P2 page 6).

The channel at this location is also restricted by two existing degraded railroad abutments and piles.

The remaining mature trees along the channel's edge have been undercut and have fallen into the channel or are in danger of falling into the channel. There are also a number of volunteer trees and saplings that have begun growing on the sloughed-off soil within the channel (see photo: P5 page 9).

The following photos show the existing conditions of the channel.



## PHOTOS



Photo: P1. Photo taken looking northeasterly (upstream) at the upstream end of the channel near Portal Road. This photo shows the outlet of the twin 8' x 6' box culvert from Portal Road and the dislodged 36" RCP. The wing walls have been fully exposed and further deterioration may require the closure of Portal Road. The discharge of the box culvert has created a scour hole and transported the existing rock and streambed material downstream. The dislodged RCP storm sewer allows for further bank erosion.





Photo: P2. This photo is taken looking southeasterly near station 9+80. This photo shows the dislodged 36" RCP pipe sections and sluffed slope along the channel bank. The channel continues to undercut the side slopes and washes sediment downstream. The dislodged timber pile bent and a portion of the degraded bridge foundation can be seen in the right hand side of the photo.





Photo: P3. This photo is taken looking northerly at the outlet of the box culvert. The cutoff wall on the wing wall foundation has been fully exposed creating a void under the wing wall. The wing wall is effectively hanging from the box culvert.





Photo: P4. This photo is taken looking northeasterly upstream toward Portal Road. Debris and rubble is visible along with the restricted channel width from the existing degraded bridge foundation.





Photo: P5. This photo looks southwesterly (downstream) from Portal Road. The existing dislodged timber pile bent and the degraded bridge foundation can be seen. The bridge foundation restricts the channel increasing velocity. The sluffed side slope is visible on the left side of the photo.





Photo: P6. This photo is taken looking southwesterly (downstream) near station 8+75. This photo shows the nearly vertical side slopes present along the channel banks. The channel continues to undercut the side slopes and washes sediment downstream. The height of the vertical bank is approximately 12 feet.





Photo: P7. This photo looks northwesterly on the east side of Portal Road. The existing concrete rubble, paving and fence are proposed to be removed to construct a bio-retention basin. The existing twin 60" RCP pipes are proposed to be connected to the box culvert to accommodate expanding the bio-retention basin. This property is located within the City of La Vista jurisdiction.



#### **PROPOSED IMPROVEMENTS**

The proposed improvements for this project are designed to repair existing erosion to the channel and channel banks, protect the existing box culvert, Portal Road Embankment and municipal water main while also creating a more sustainable channel grade to prevent future degradation to the channel and its side slopes. The project allows for the construction of a bio-retention basin with the City of La Vista. By working with the City of La Vista on this stabilization project space is created for a water quality component. This project completes the stabilization of this drainagway extending from upstream of Portal Road to the West Papillion Creek. The downstream section of work was completed under the Papillion Public Works Drainagway Improvements Project which received funding through the Urban Drainageway Improvements Program.

The following methods, products and materials will be used to complete this:

- Removal of existing debris
- Channel bank grading
- Box culvert extension with drop
- Box culvert energy dissipation structure
- Placement of rip rap for energy dissipation
- Erosion control matting
- Turf and vegetation restoration
- Tree planting

Channel bank grading will be performed to lessen the bank slopes to a more stable 3:1 slope. Erosion control matting will be installed to assist in turf and vegetation restoration.

A box culvert energy dissipation structure installed at the outlet of the existing twin 8' x 6' box culvert at Portal Road will accomplish three benefits. 1) The existing water main crossing will be protected from head cut and 2) grade control will allow the change in grade while dissipating some of the erosive force 3) the structure will protect the Portal Road embankment. The outlet side of the grade control structure will discharge at a channel grade of 0.4%.

By working with the City of La Vista on this stabilization project space is created for a water quality component. Connection of the existing 60" RCP pipes to the existing box culvert will allow expansion the proposed bioretention basin on the City of La Vista Property. This project completes the stabilization of this drainagway extending from upstream of Portal Road to the West Papillion Creek. The downstream section of work was completed under the Papillion Public Works Drainagway Improvements Project which received funding through the Urban Drainageway Improvements Program.

The slopes of the existing embankment will be restored and stabilized. Inlets will be added within the Portal Road Ditch area to convey storm water into the channel to limit bank erosion. See exhibit sheet C1.0 for proposed site plan. The channel stabilization project meets the Urban Drainageway Program Level 3 stabilization requirements due to its significant impact on critical areas including the protection of a water main crossings and road embankment. The stabilization work is generally confined to the existing channel path. Structural techniques and stabilized vegetated areas will be employed to stabilize the bed and banks, enhance habitat, improve water quality, and provide flow retention.



CITY OF PAPILLION - PORTAL ROAD - DRAINAGEWAY IMPROVEMENTS

## COST ESTIMATE

| CITY O           | F PAPILLION - PORTAL ROAD - DRAINAGEWAY IMPR  | OVEMENTS | 6   |             |              |
|------------------|---|----------|-----|-------------|--------------|
| PAPILL<br>TD2 PR | ION, NE<br>ROJECT NUMBER: 181-601   |          |     |             |              |
| ESTIM            | ATED PROJECT COST   |          |     |             |              |
| ltem             | Description   |          | ies | Unit Price  | Amount       |
| 1                | Mobilization  | 1        | LS  | \$1,500.00  | \$1,500.00   |
| 2                | Clearing and Grubbing with Concrete Pavement<br>Removal, Debris Removal               | 1        | LS  | \$6,500.00  | \$6,500.00   |
| 3                | Remove Existing Bridge Abutments and Piles  | 1        | LS  | \$26,000.00 | \$26,000.00  |
| 4                | Remove 36" RCP Pipe   | 75       | LF  | \$24.00     | \$1,800.00   |
| 5                | Remove Area Inlet and Pipe  | 1        | LS  | \$900.00    | \$900.00     |
| 6                | Remove Existing Wing Walls  | 1        | LS  | \$12,000.00 | \$12,000.00  |
| 7                | Remove and Replace Chain Link Fence   | 160      | LF  | \$8.00      | \$1,280.00   |
| 8                | Erosion Control, Restore Disturbed Area   | 1        | LS  | \$1,800.00  | \$1,800.00   |
| 9                | Channel Grading   | 2,000    | CY  | \$5.25      | \$10,500.00  |
| 10               | 2" Caliper Trees  | 6        | EA  | \$350.00    | \$2,100.00   |
| 11               | Native Grass Seeding  | 0.50     | AC  | \$2,500.00  | \$1,250.00   |
| 12               | Erosion Control Matting   | 1,950    | SY  | \$3.00      | \$5,850.00   |
| 13               | Construct Type II Area inlet  | 4        | EA  | \$2,200.00  | \$8,800.00   |
| 14               | Box Culvert Extension with Drop   | 30       | LF  | \$1,200.00  | \$36,000.00  |
| 15               | Box Culvert Energy Dissipation  | 1        | LS  | \$65,000.00 | \$65,000.00  |
| 16               | Rip Rap at Energy Dissipation   | 75       | TON | \$35.00     | \$2,625.00   |
|                  | SUBTOTAL  |          |     |             | \$183,905.00 |
|                  | 10% CONTIGENCY  |          |     |             | \$18,400.00  |
|                  | SUBTOTAL ESTIMATED CONSTRUCTION COST  |          |     |             | \$202,305.00 |
|                  | ESTIMATED ENGINEERING, PERMITTING, SURVEY<br>AND CONSTRUCTION OBSERVATION COSTS (20%) |          |     |             | \$40,500.00  |



|      | SUBTOTAL ESTIMATED COST                         |            |    |            | \$242,805.00 |
|------|---|------------|----|------------|--------------|
|      |   |            |    |            |              |
|      | 40% NRD COST SHARE                              |            |    |            | \$97,122.00  |
|      |   |            |    |            |              |
|      | Pipe connection work within project (Ineligible |            |    |            |              |
|      | Costs)  |            |    |            |              |
|      |   | Approx.    | I  |            |              |
| Item | Description                                     | Quantities |    | Unit Price | Amount       |
| 1    | Construct 60" RCP Pipe                          | 70         | LF | \$165.00   | \$11,550.00  |
| 2    | Construct 102" Storm Manhole                    | 2          | EA | \$7,200.00 | \$14,400.00  |
| 3    | 60" RCP Pipe Head Wall Connection               | 2          | EA | \$5,500.00 | \$11,000.00  |
| 4    | Construct 18" RCP Stormsewer                    | 140        | LF | \$55.00    | \$7,700.00   |
|      |   |            |    |            |              |
|      | SUBTOTAL  |            |    |            | \$44,650.00  |
|      | 10% CONTIGENCY                                  |            |    |            | \$4,500.00   |
|      |   |            |    |            |              |
|      | SUBTOTAL ESTIMATED CONSTRUCTION COST            |            |    |            | \$49,150.00  |
|      |   |            |    |            |              |
|      | ESTIMATED ENGINEERING, PERMITTING, SURVEY       |            |    |            | \$9,900.00   |
|      | AND CONSTRUCTION OBSERVATION COSTS              |            |    |            |              |
|      | (20%)   |            |    |            |              |
|      |   |            |    |            |              |
|      | SUBTOTAL ESTIMATED COST                         |            |    |            | \$59,050.00  |
|      |   |            |    |            |              |
|      | TOTAL ESTIMATED COST                            |            |    |            | \$301,855.00 |
|      |   |            |    |            |              |



## IMPLEMENTATION SCHEDULE

| Task   | Estimated Completion Date |
|--|---------------------------|
| Submit Urban Drainageway Program Application to NRD  | March 18, 2016            |
| Receive approval of funding from NRD   | August 15, 2016           |
| Finalize Interlocal Agreement with the City of La Vista for work on the east side of Portal Road     | September 15, 2016        |
| Finalize construction plans and documents, complete permit applications, and receive permit approval | October 1, 2016           |
| Bid project  | November 1, 2016          |
| Begin construction   | November 15, 2016         |
| Finish construction  | May 1, 2017               |
| Final payment to contractor  | June 1, 2017              |
| Reimbursement from NRD   | July 1, 2017              |



#### ENVIRONMENTAL ACCEPTABILITY STATEMENT

This project is expected to stabilize the channel banks and prevent further head cutting of the channel bed. The project further stabilizes the box culvert outlet under Portal Road protecting the road embankment, storm sewer and municipal water main. The project allows for the construction of a bio-retention basin with the City of La Vista. By working with the City of La Vista on this stabilization project space is created for a water quality component. No adverse impacts are expected to endangered species or other sensitive environmental features. Due to the channel being considered a "waterway of the U.S." and the impact to the potential wetlands within the project area, the stabilization project is expected to be constructed under the provisions of a United Stated Army Corps of Engineers Nationwide 404 permit. The channel stabilization project is also expected to be constructed under the project limits are within both the City of La Vista and the City of Papillion grading permits from both jurisdictions are anticipated to be required. No other permits or impacts are anticipated for this project. Trees removed from the banks of the channel are proposed to be mitigated by planting new trees within a zone above the banks of the channel to enhance habitat.



## EXHIBITS







engineering & surveying

thompson, dreessen & dorner, inc. p.402.330.8860 www.td2co.com

MM-DD-YY

Date: 3-18-13

## Urban Drainageway Program – Application Form

| PAPIO-MIS | SOURI RIVER          |
|-----------|----------------------|
|           | NATURAL              |
|           | RESOURCES            |
|           | DISTRICT             |
|           | 8901 S. 154th Street |
|           | Omaha, NE 68138-3621 |
|           | 402-444-6222         |
|           | www.papionrd.org     |

| Project name                           |      |  |  |               |    |              |       |  |
|--|------|--|--|---------------|----|--------------|-------|--|
| Project location (attach location map) |      | Mission Creek southwest of 164th Ave & Audrey Circle |  |               |    |              |       |  |
| Sponsor organization                   |      | Sanitary and Improvement District 162 - Millard Park |  |               |    |              |       |  |
| Sponsor address                        |      | C/O Larry Fo   | C/O Larry Forman 7171 Mercy Road Suite 650 |               |    |              |       |  |
| City                                   | Citv |  |  | State         | NE | ZIP          | 68106 |  |
| Contact person                         |      | Rick Hansen  |  |               |    |              |       |  |
| Title                                  |      | SID Chairma  | n  |               |    |              |       |  |
| Email addressrickwood(                 |      | @cox.net   |  | Daytime phone |    | 402-891-0607 |       |  |

Missian Creak Channel Debehilitation Dhase 4

Description of problem (attach additional sheets as needed)

Significant channel bank erosion on east bank which will eventually impact concrete park trail. See Area B in Mission Creek Channel Rehabilitation Master Plan submitted to the NRD in March 2011.

Proposed solution (attach additional sheets as needed)

Construct gabions along the toe of the channel bank through the bend in the creek and re-grade the channel banks to a stabilized slope. See attached Creek Rehabilitation History and Preliminary Dwgs

| Level of Design      | Level 1 |   | Level 2 |               | Level 3   |        |
|----------------------|---------|---|---------|---------------|-----------|--------|
| Total estimated cost | \$      | 0 | _ Co:   | st share re   | equest \$ | 91,560 |
| Richards Z.          | 2frans  | w | Z       | $\frac{z}{z}$ | 4/10      | 2      |

SID 162 Chairman

Title

## Mission Creek Channel Reestablishment Phase IV SID 162 - Millard Park Subdivision, Sarpy County NE Urban Drainageway Program

Sanitary & Improvement District 162, Millard Park, would like to request continued funding through the NRD Urban Drainageway Program for Phase IV of the Mission Creek Channel Rehabilitation. The Phase IV project corresponds to the Area "B" improvements as outlined in the rehabilitation Master Plan submitted to the NRD in March 2011. An aerial drawing indicating the project location, an Overall Creek Plan indicating the repair locations, and a preliminary plan of the Phase IV / Area "B" Improvements are attached.

Phases I, II, and III of the five phase rehabilitation project were funded and constructed as follows:

|                  | Year Constructed | Total Cost   | NRD Funding (60%) |
|------------------|------------------|--------------|-------------------|
| Phase I (Area E  | E) 2009          | \$258,123.35 | \$154,874.01      |
| Phase II (Area ( | C) 2011          | \$290,630.05 | \$168,700.00      |
| Phase III (Area  | A) 2014          | \$445,130.00 | \$0.00            |

The SID was approved to receive 60% funding for the Phase III construction but subsequent cuts in the NRD budget were made after the approval which eliminated the funding for the project. The SID had put the Phase III project out to bid following the initial approval. The bid prices for Phase III had come in very favorable so the SID proceeded with the project without the funding instead of waiting to re-apply for funding the following year.

The Phase IV Channel Bank Stabilization addresses erosion along the creek bank adjacent to our park trail south of Audrey Circle. Erosion has caused the top edge of the channel bank to move 4 to 6 feet closer to the trail in the last 5 years after comparing the topographic survey completed for the Master Plan in 2011 to a topographic survey completed in Feburuary 2016.

If you have any questions or need additional information, please contact SID Board Chairman, Rick Hansen at 402-891-0607 or SID 162 Engineer Bill Glismann, HGM Associates, at 402-346-7559.








#### MISSION CREEK CHANNEL RESTORATION PROJECT MILLARD PARK - SID 162 HGM PROJECT No. 703510-003

## PRELIMINARY OPINION OF PROBABLE PROJECT COSTS February 16, 2016

## **AREA B - PHASE 4**

| ITEM |                                       | ESTIM | ATED   | UNIT       | TOTAL       |
|------|---------------------------------------|-------|--------|------------|-------------|
| No.  | DESCRIPTION                           | QUAN  | TITIES | PRICE      | AMOUNT      |
| 1    | Mobilization                          | 1     | LS     | \$8,000.00 | \$8,000.00  |
| 2    | Clearing and Grubbing General         | 1     | LS     | \$9,500.00 | \$9,500.00  |
| 3    | Earthwork (Excavation)                | 140   | CY     | \$28.00    | \$3,920.00  |
| 4    | Haul and Place Topsoil                | 167   | CY     | \$35.00    | \$5,845.00  |
| 5    | Remove 6" Trail                       | 182   | SY     | \$14.00    | \$2,548.00  |
| 6    | Construct 6" Concrete Trail           | 182   | SY     | \$45.00    | \$8,190.00  |
| 7    | Geotextile Fabric                     | 230   | SY     | \$11.00    | \$2,530.00  |
| 8    | Gabion Basket                         | 155   | CY     | \$350.00   | \$54,250.00 |
| 9    | Rolled Erosion Control Blanket - S150 | 665   | SY     | \$2.00     | \$1,330.00  |
| 10   | Rolled Erosion Control Blanket - C350 | 600   | SY     | \$8.00     | \$4,800.00  |
| 11   | Chain Link Fence                      | 140   | LF     | \$15.00    | \$2,100.00  |
| 12   | Seeding - Type A                      | 665   | SY     | \$1.50     | \$997.50    |
| 13   | Seeding - Channel                     | 600   | SY     | \$2.00     | \$1,200.00  |
| 14   | Sodding                               | 20    | SY     | \$15.00    | \$300.00    |
| 15   | Silt Fence                            | 205   | LF     | \$4.25     | \$871.25    |
| 16   | Shade trees                           | 5     | EA     | \$400.00   | \$2,000.00  |

|--|

- Contingencies (20%) \$21,700
- Total Construction Cost \$130,100
- Engineering & Construction Mgmt. \$22,500
  - Total Project Cost \$152,600

5022 S. 114TH STREET, SUITE 200, OMAHA, NEBRASKA 68137-2329 (402) 346-7559, FAX (402) 346-0224



## **Recreation Area Development Program – Application Form**

| Project name   | Pollinator F | Park - Phase I                           |               |      | 1901-1901-2016-0-6 |    |     |       |
|--|--------------|--|---------------|------|--------------------|----|-----|-------|
| Project location (attach location map)<br>Sponsor organization City of Omal                          |              | 162nd and Pacific St, north side         |               |      |                    |    |     |       |
|  |              | ha Parks, Recreation and public Property |               |      |                    |    |     |       |
| Sponsor address  | 1819 Farna   | am St., Suite 701                        |               | 5.15 |                    |    |     |       |
| City Omaha<br>Contact person Patrice Slav<br>Title Park Planne<br>Email address pat.slaven@cityofoma |              |  | State         |      | State              | NE | ZIP | 68183 |
|  |              | ven                                      |               |      |                    |    |     |       |
|  |              | er II                                    |               |      |                    |    |     |       |
|  |              | aha.org                                  | Daytime phone |      | 402-444-3977       |    |     |       |

Description of project (attach additional sheets as needed)

The City of Omaha recently became the recipient of almost 21 acres on the north side of Pacific Street, at approximately 162nd Street (just west of Bob Boozer Drive (Exhibit A). The site is linear in

| Total estimated cost \$ 141,500           | Cost share request \$ |
|---|-----------------------|
| Supplered                                 | March 16, 2016        |
| Signature                                 | Date                  |
| Director - Parks, Recreation & Public Pro |                       |

Title

nature, averaging about 300 feet wide by 3,000 feet long. However, the property is bounded on the west by the West Papio Creek and on the east by a Union Pacific rail line, making it seem to be somewhat isolated from the neighboring development. Because of the somewhat wild nature of the park and limitations in access, the City wants to develop this as a non-traditional park, or a preserve for pollinators, birds and other wildlife which would be a passive source of recreation.

Since this park has only been added the City's system in the past few months, it has not yet been incorporated into the City's comprehensive plan. However, a consultant was hired to develop a master plan for the park. This has recently been finalized, with the participation of staff from the Papio-Missouri River Natural Resources District (P-MRNRD). The park is conceptually divided into three distinct areas: The Entry, the Exploration Meadow and the Preserve and is illustrated in Exhibit B.

The **Entry** is focused on providing a welcoming presence along Pacific Street, while introducing the concept of pollinators to the park's visitors. A dramatic street presence is essential for the park, due to a number of existing factors which limit the visibility and access to the property. Pacific Street is elevated roughly ten feet above the park with only right in/right out access to the property. Eastbound drivers must make a U-turn at the Bob Boozer intersection to reach the park entry drive. While vehicular access may be less than ideal, pedestrian traffic access is quite good. The West Papio Trail runs underneath Pacific Street then swings to the east through park property. This means that numerous pedestrians and cyclists will be accessing the park on a daily basis. The proposed vehicular parking lot is intended to accommodate twenty cars. The layout of the parking lot must allow for the busses to be both parked and easily turned around. Therefore, the initial design shows a circular drive with an interior median which would allow an ideal spot for pollinator plantings identification. Interpretive signage would be included to help share the story of wetland pollinators and the importance of water in prairie landscapes. Site furnishing would include benches and bicycle racks. The addition of trees suitable for pollinators or that are good wildlife food and shelter will help delineate the spaces even better. This will be the location of park regulatory signage, including a pack in/pack out litter policy. The Entry also provides opportunities for future projects such as entry monuments, original art, an open air shelter, water feature and other unique features.

The **Exploration Meadow** comprises the largest area of the park and is devoted to interaction, exploration, and interpretation of pollinator species. A ten-foot-wide looping path, constructed of stabilized limestone screenings, makes two long loops through the park. This path will be signed for use of pedestrians only, though sized and controlled in a way that can allow maintenance and emergency vehicles when the need arises. The planting strategy in this portion of the park will be to use a short prairie mix, specializing in showy wildflowers important to pollinators. However, massings of a few species of native plants known to be heavily used by insects for gathering nectar and pollen would be over-planted. Examples might be group plantings of blazing star, showy goldenrod, and stiff goldenrod. Other patches may feature species of milkweed, a critical larval food for monarch butterflies. These would be planted as individual container plants to accelerate their development. Nearby trees would be judiciously removed and pruned to create overnight roosts for monarch butterflies. Showy flowering small trees such as eastern redbud, with their bright pink spring flowers, could be planted strategically along the trails. The centers of the trail loops will be planted in a tall prairie mix that also features showy species of flowering plants and grasses important to pollinators. The combination of an abundance of pollinator plants, especially during the monarch migration, with overnight roost trees, should begin to attract monarchs and other migratory insects, such as the green darner dragonfly, after a few years. These insects do require time to discover and learn to use new resources, which the pollinator park will represent. This strategy will not only attract pollinators, it will make the prairie more visually pleasing.

While the experienced and intrepid park user may see beauty in a prairie restored from seed, others may see unkempt chaos and "weeds." By planting specific flowering forbs in contiguous areas, a small amount of order will be given to the prairie and a few more people may come to value the natural landscape. Selective tree and brome removal is expected to require one growing season. After that, a prairie seed mix will be planted with a cover crop to protect the soil from erosion. Lastly, two to three years of mowing and carefully-applied herbicides will be employed to control weeds while the prairie plants develop. After two or three growing seasons the prairie will be ready for a controlled burn, which stimulates the prairie's growth. After that a three-year rotation of hay, burn, rest will be used to control trees, shrubs, smooth brome, and weeds.

The trail through the Exploration Meadow connects the Entry features to the various plant communities and interpretive elements along the way. Opportunities exist for unique features such as a boardwalk overlooking the West Papio Creek, a knoll which would afford people an opportunity to see out across the Preserve section and stone council rings which could serve as an outdoor classroom. Wildlife enhancements could include bird houses, bee houses, bumblebee underground hives, bat houses and nesting materials for hummingbirds and other nesters.

The **Preserve** is the farthest north section of the site and will be intentionally off-limits to the public, favoring wildlife that prefer to keep a distance from people and development. It will be planted as a truly native prairie, without the overplanting of flowering forbs found in the Exploration Meadow. This section will be visible only from the trail or overlook, and will be truly dedicated as space without humans, favoring those less common animals that prefer to keep a distance from people and development. Depending on various animals' preference, bird or bat houses may be included in this section, though honey bee hives should be kept out. This will ensure there aren't even routine footpaths into the area that may encourage the public to explore on their own. Another wildlife feature that would add value to the local ecology would be the installation of underground snake dens that would attract garter snakes for overwintering. Installing snake dens in the Preserve, rather than the Exploration Meadow, would minimize conflict with human visitors, although snakes tend to flee when encountering people.

The project is proposed to be implemented in three phases. Phase I, for which the City is requesting FY2017 cost share assistance from the P-MRNRD, is scheduled for 2016-early 2017 and will include the entry road, parking lot and automated gate. Thirty-thousand dollars would be allocated for new trees and plantings throughout the Entry area. Estimated cost for Phase I is \$141,500, with \$91,500 coming out of the City's Park Bonds and \$50,000 requested from the P-MRNRD. In addition, City maintenance forces would conduct almost \$70,000 in in-kind services including, tree removal and pruning, initial mowing of the site and initial grading of a maintenance road/trail throughout the site for temporary access. Water will eventually be provided by a well since there is no easy or affordable access to the city water system. However, at first, it is hoped the City can receive a permit from the P-MRNRD to pump water from the West Papio Creek. Exhibit C, a "Preliminary Opinion of Probable Cost" is attached, showing the three phases we believe will be necessary to achieve a functioning pollinator park.



POLLINATOR PARK - Vicinity Map 162nd and Pacific Omaha, Nebraska







## MASTER PLANNING

## Entry Gate

- Plant Island in Pacific St.
- Electronic Gate w/ Sign, Art, and plant natives in Circle
- Parking for 20 cars
- Shelter and expanded wetland

## **Exploration Meadow**

- 3/4 Mile Trail
- 10' Wide Limestone Screenings •
- Restored Prairie with selected • trees to remain
- 5 Destinatons see below
  - 1: Creek Side Overlook
  - 2: Forest Rest
  - 3: Prairie Overlook Steel
  - 4: Stone Council Ring
  - 5: Stone Council Ring

## The Preserve

Pacific St

- Maintain and grow the young forest edge
- Restore Prairie to support pollinators
- No Paths / Limited Access



## **EXHIBIT B - MASTER PLAN**

## CITY OF OMAHA - POLLINATOR PARK



## City of Omaha

## **Pollinator Park**

EXHIBIT C - Preliminary Opinion of Probable Cost

| Description                                      | Quantity | Unit  | Unit Cost | Construction<br>Costs | Phase 1 - City<br>CIP (2016) | Phase 1 -<br>Inhouse | Phase 1 - Others<br>(2016) NRD | Phase 2 - City<br>CIP (2017) | Phase 2 - Others<br>(2017) | Phase 3 - City<br>CIP (2018) | Phase 3 -<br>Others (2018) | Potential Donor<br>Projects |
|--|----------|-------|-----------|-----------------------|------------------------------|----------------------|--------------------------------|------------------------------|----------------------------|------------------------------|----------------------------|-----------------------------|
| Land Restoration and Habitat Development         |          |       |           |                       |                              |                      |                                |                              |                            |                              |                            |                             |
| Tree Removal, Pruning and Protection             | 20       | AC    | \$1,700   | \$34,000              |                              | \$34,000             |                                |                              |                            |                              |                            |                             |
| Brome Grass Removal - 3 applications             | 20       | AC    | \$1,200   | \$24,000              |                              |                      |                                | \$24,000                     |                            |                              |                            |                             |
| Prairie Seed Mix with Cover Crop                 | 20       | AC    | \$4,320   | \$86,400              |                              |                      |                                |                              | \$86,400                   |                              |                            |                             |
| Prairie Wildflower Plugs                         | 5,000    | EA    | \$5       | \$25,000              |                              |                      |                                |                              | \$25,000                   |                              |                            |                             |
| Establishment - Year 1 (Mow Only)                | 1        | LS    | \$5,800   | \$5 <i>,</i> 800      |                              | \$5,800              |                                |                              |                            |                              |                            |                             |
| Establishment - Year 2 (Mow and Spot Herbicide)  | 1        | LS    | \$10,875  | \$10,875              |                              |                      |                                | \$10,875                     |                            |                              |                            |                             |
| Establishment - Year 3 (Spot Herbicide and Burn) | 1        | LS    | \$10,875  | \$10,875              |                              |                      |                                |                              |                            | \$10,875                     |                            |                             |
|  |          |       | TOTAL     | \$196,950             |                              | \$39,800             | \$0                            | \$34,875                     | \$111,400                  | \$10,875                     | \$0                        | \$0                         |
| The Entry  |          |       |           |                       |                              |                      |                                |                              |                            |                              |                            |                             |
| Earthwork  | 1        | Allow | \$30,000  | \$30,000              |                              | \$30,000             |                                |                              |                            |                              |                            |                             |
| Paved Entry Road                                 | 550      | LF    | \$130     | \$71,500              | \$61,500                     |                      | \$10,000                       |                              |                            |                              |                            |                             |
| Paved Parking Lot                                | 20       | EA    | \$1,000   | \$20,000              | \$10,000                     |                      | \$10,000                       |                              |                            |                              |                            |                             |
| Automated Gate                                   | 1        | EA    | \$20,000  | \$20,000              | \$20,000                     |                      |                                |                              |                            |                              |                            |                             |
| Gate Monuments                                   | 2        | EA    | \$14,000  | \$28,000              |                              |                      |                                |                              |                            |                              |                            | \$28,000                    |
| Fencing  | 650      | LF    | \$40      | \$26,000              |                              |                      |                                | \$26,000                     |                            |                              |                            |                             |
| Entry Art Piece                                  | 1        | EA    | \$80,000  | \$80,000              |                              |                      |                                |                              |                            |                              |                            | \$80,000                    |
| Open-air Shelter with Stone Terrace              | 800      | SF    | \$200     | \$160,000             |                              |                      |                                |                              |                            |                              | \$100,000                  | \$160,000                   |
| Stone Terrace                                    | 2,000    | SF    | \$60      | \$120,000             |                              |                      |                                |                              |                            |                              |                            | \$120,000                   |
| Water Feature and Terrace wall                   | 80       | LF    | \$200     | \$16,000              |                              |                      |                                |                              |                            |                              |                            | \$16,000                    |
| Paved Primary Trails 10' wide                    | 450      | LF    | \$50      | \$22,500              |                              |                      |                                | \$22,500                     |                            |                              |                            |                             |
| Limestone Trails - 10' wide w/ Geo Fabric        | 220      | LF    | \$25      | \$5,500               |                              |                      |                                | \$5,500                      |                            |                              |                            |                             |
| Site Furniture                                   | 12       | EA    | \$1,200   | \$14,400              |                              |                      |                                |                              | \$14,400                   |                              |                            |                             |
| Trees and Plantings                              | 1        | LS    | \$20,000  | \$20,000              |                              |                      | \$30,000                       | \$0                          |                            |                              |                            |                             |
| Entry Signage                                    | 1        | LS    | \$8,000   | \$8,000               |                              |                      |                                | \$0                          |                            |                              |                            |                             |
| Well/Water Service                               | 1        | LS    | \$15,000  | \$15,000              |                              |                      |                                |                              | \$15,000                   |                              |                            |                             |
| Portable Restroom Enclosure                      | 1        | LS    | \$15,000  | \$15,000              |                              |                      |                                |                              |                            | \$15,000                     |                            |                             |
| Drinking Fountain                                | 1        | LS    | \$1,500   | \$1,500               |                              |                      |                                |                              | \$1,500                    |                              |                            |                             |
|  |          |       | TOTAL     | \$673,400             | \$91,500                     | \$30,000             | \$50,000                       | \$54,000                     | \$30,900                   | \$15,000                     | \$100,000                  | \$404,000                   |
| Exploration Meadow                               | •        |       |           |                       |                              |                      |                                |                              |                            |                              |                            |                             |
| Limestone Trails - 10' wide w/ Geo Fabric        | 3,000    | LF    | \$25      | \$75,000              |                              |                      |                                |                              |                            | \$75,000                     |                            |                             |
| Boardwalk  | 600      | SF    | \$60      | \$36,000              |                              |                      |                                |                              |                            |                              |                            | \$36,000                    |
| Overlook   | 1        | LS    | \$60,000  | \$60,000              |                              |                      |                                |                              |                            |                              |                            | \$60,000                    |
| Stone Council Rings                              | 2        | EA    | \$20,000  | \$40,000              |                              |                      |                                |                              |                            |                              |                            | \$40,000                    |
| Site Furniture                                   | 8        | EA    | \$1,200   | \$9,600               |                              |                      |                                |                              | \$9,600                    |                              |                            |                             |
| Trees and Plantings                              | 1        | LS    | \$10,000  | \$10,000              |                              |                      |                                | \$10,000                     |                            |                              | \$20,000                   |                             |
| Interpretive Signage                             | 5        | EA    | \$5,000   | \$25,000              |                              |                      |                                |                              |                            |                              | \$25,000                   |                             |
|  |          | -     | TOTAL     | \$255,600             | \$0                          | \$0                  | \$0                            | \$10,000                     | \$9,600                    | \$75,000                     | \$45,000                   | \$136,000                   |
|  |          |       |           |                       |                              |                      |                                |                              |                            |                              |                            |                             |
|  |          |       |           |                       | Phase 1 City                 |                      | Phase 1 Others                 | Phase 2 City                 | Phase 2 Others             | Phase 3 City                 | Phase 3 Others             | Future                      |
|  |          |       |           | TOTAL                 | \$91,500                     | \$69,800             | \$50,000                       | \$98,875                     | \$151,900                  | \$100,875                    | \$145,000                  | \$540,000                   |





## CITY OF PAPILLION David P. Black, Mayor

#### Anthony Gowan, Parks Director 145 West Second Street

Papillion, Nebraska 68046 Phone 402-597-2049 Fax 402-827-3280 E-Mail: tgowan@papillion.org

March 28, 2016

Papio-Missouri River NRD Eric Williams, Natural Resources Planner 8901 S. 154<sup>th</sup> Street Omaha, NE. 68138-3621

Mr. Williams,

Please find requested documents following this note for application in the NRD's Recreation Area Development Program. The City of Papillion is requesting funding to begin engineering of a new athletic field area just south of the Papio Creek, in the N.E. corner of Halleck Park in Downtown Papillion. This area will, at a point in time, be the main practice area for Papillion youth soccer groups, as well as be utilized by other area groups looking for open field practice areas here in Papillion.

As you will see from the document also enclosed, the 2012 Papillion Parks Plan does note that additional soccer fields are warranted in Papillion (highlighted for easy reading), and that this funding will begin that process. We do not have an estimated overall dollar figure for the completed project. Funding at this time would be for engineering involved at the site for floodway issues, grading levels, future budget needs for completion.

If funding is granted, we believe the engineering process could begin yet this summer. Thank you for considering this project.

Anthony Gowan Parks and Facilities Director

#### PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT 8901 S. 154th Street Omaha, NE 68138-3621 402-444-6222 www.papiord.org

## **Recreation Area Development Program – Application Form**

| Project name  | Halleck F | Halleck Park Athletic Field Construction Project |                                 |     |      |          |  |  |
|---|-----------|--|---------------------------------|-----|------|----------|--|--|
| Project location (attach location map)  |           | Halleck Park,                                    | Halleck Park, Central Papillion |     |      |          |  |  |
| Sponsor organization City of Papil  |           | apillion   |                                 | 4.4 |      |          |  |  |
| Sponsor address   | 122 E. 3r | 122 E. 3rd Street                                |                                 |     |      |          |  |  |
| City Papillion<br>Contact person Tony Gowa<br>Title Parks and F<br>Email address tgowan@papillion.org |           |  | State                           | NE  | ZIP  | 68046    |  |  |
|   |           | wan  | - 7.7 miles                     |     |      |          |  |  |
|   |           | d Facilities Director                            | acilities Director              |     |      |          |  |  |
|   |           | org  | Daytime phone                   |     | 402- | 597-2049 |  |  |

Description of project (attach additional sheets as needed)

This is a project to add additional outdoor athletic field space to the N.E. corner of Papillion's Halleck Park. At this time, engineering needs to be accomplished for future construction.

Total estimated cost

5,000.00

Cost share request \$ 2,500.00

Signature

3/28/2016

Date

Parks and Facilities Director

Title



## Sarpy County Property Information





## The Park System: Existing and Future Needs

some of the communities in Table 2.3 but meets exceeds national standards of 1 to 2 acres per 1,000.

- Although the city has a good level of service, to maintain its reputation as one of the "Great Places to Live" the city will need to add additional park land as the population grows. At the city's current level of service there will be a demand for an additional 304 acres by 2030.
- Papillion is adequately served (on a statistical basis) by most major recreational facilities, such as softball fields, soccer fields, playgrounds, tennis courts, and golf courses.
  Since Papillion has such a strong organized youth recreation program, certain facilities remain in demand despite the number of current facilities. Table 2.4 relates the city's specific facilities to its served population. Table 2.4 indicates a need for:
  - · 6 new baseball fields
  - · 3 new t-ball fields
  - · 7 softball fields
  - 10 soccer fields
  - New basketball courts in neighborhood parks
  - 1 additional pool
  - 7-10 new tennis courts
  - · 3 new volleyball courts
- Parcels of land exist within current neighborhoods that could be utilized to satisfy isolated recreational demand areas. Still, projected growth will be geographically distant from existing parks. As development proceeds, the city must require quality land to be set aside for future neighborhood parks. In addition, the city must provide a system of trails to link new subdivisions with other recreational opportunities in the city.



## Trails Assistance Program – Application Form

| Project name            | Riverfront 7         | Frail Phase IV   |                 | -     |      |              |  |  |
|-------------------------|----------------------|--|-----------------|-------|------|--------------|--|--|
| Project location (a     | attach location map) | Abbott Drive & Levi Carter Park  |                 |       |      |              |  |  |
| Sponsor organiza        | tion Omaha Pa        | Omaha Parks, Recreation & Public Property Department<br>1819 Farnam Street - Suite 701 |                 |       |      |              |  |  |
| Sponsor address         | 1819 Farna           |  |                 |       |      |              |  |  |
| Citv                    | , Omaha              |  | State           | NE    | ZIP  | 68183        |  |  |
| Contact person Dennis E |                      | Bryers, FASLA,   | PLA             |       |      |              |  |  |
| Title                   | Landscape            | Architect - Park   | & Recreat       | er II |      |              |  |  |
| Email address           | dennis.bryers@cityof | omaha.org  | _ Daytime phone |       | 402- | 402-444-3798 |  |  |

Description of project (attach additional sheets as needed)

## See Attached Sheets.

| Total estimated cost \$ 1,523,480.00 | Cost share request \$\$\$\$ |
|--------------------------------------|-----------------------------|
| L'ANY Seve                           | 18 March 2016               |
| Signature                            | Date                        |
| Director                             |                             |

Title

## **DESCRIPTION OF THE PROJECT:**

The trail project would consist of the design and construction of two connections to the City's Riverfront Trail. The first is known as the Riverfront Trail 4, the last phase of the Riverfront Trail started over ten years ago. This section would be one mile long and connect the trail from Millers Landing Park at 151 Freedom Park Road to Kiwanis Park at 1524 East Locust Street. This would allow trail users to travel from Heartland of America Park in downtown Omaha north to the Douglas/Washington County Line.

The second portion of the project involves the construction of the Levis Carter Park Trail. This trail was added to the project at the request of the Nebraska Department of Roads. The remaining earmark funds for the Riverfront Trail (\$694,733.15) were more than the cost to design and construct that one mile section so the NDOR requested that the City expand the project. As a result of this request the City decided to add the proposed trail in Levi Carter Park.

This 10 foot wide concrete trail would connect to the existing Riverfront Trail on the north east side of the lake, head west and then south along the west side of the lake connecting to the trail along Locust Street in Carter Lake, Iowa. The Locust Street Trail runs east and terminates at the Riverfront Trail at Kiwanis Park. The addition of this trail segment to the overall project allows access to the Riverfront Trail at two locations thereby allowing more users access to the trail system in Omaha and Carter Lake, Iowa. It also provides a nice loop that trail users can navigate. The City had already completed a master plan of Levi Carter Park (copy enclosed) that includes the trail.

Both trails would be 10 feet wide and be poured concrete.

## ESTIMATED PROJECT CONSTRUCTION COST

| Estimated Construction Costs (60% Drawings): | \$1,523,480.00 |
|--|----------------|
|  |                |

#### ESTIMATED PROJECT FUNDING

| Federal Earmark Funds:                       | \$ 694,733.00  |
|--|----------------|
| NRD Trails Assistance Program Request (50%): | \$ 414,373.50  |
| City of Omaha Funding:                       | \$ 414,373.50  |
| Total Funding:                               | \$1,523,480.00 |

#### **IMPLEMENTATION SCHEDULE**

| Out to Bid:         | August 2016         |
|---------------------|---------------------|
| Award Contract:     | Late September 2016 |
| Project Completion: | July 2017           |







## Opinion of Probable Construction Costs

## Riverfront Trail - Phase IV Omaha, Nebraska Design Firm: Big Muddy Workshop, Inc. 8/24/2015

| ITEM #    | ITEM  | QTY.     | UNIT | UNIT COST    | <b>ITEM TOTAL</b> |
|-----------|---|----------|------|--------------|-------------------|
|           |   |          |      |              |                   |
| Grading   | Items - Group 1                                       |          |      |              |                   |
| 0030.10   | Mobilization  | 1        | LS   | \$20,000.00  | 20,000.00         |
| 1000.00   | Large Tree Removal                                    | 10       | EA   | \$450.00     | 4,500.00          |
| 1009.00   | General clearing and grubbing                         | 1        | LS   | \$100,000.00 | 100,000.00        |
| 1010.10   | Excavation, borrow                                    | 2,091.0  | CY   | \$15.00      | 31,365.00         |
| 1030.00   | Earthwork measured in embankment                      | 4,641.0  | CY   | \$8.00       | 37,128.00         |
| 1041.00   | Salvaging and placing topsoil                         | 35,246.0 | SY   | \$0.75       | 26,434.50         |
| 1101.00   | Remove pavement                                       | 175.0    | SY   | \$6.00       | 1,050.00          |
| 1101.25   | Sawing pavement                                       | 2,583.0  | LF   | \$8.00       | 20,664.00         |
| 1101.50   | Remove 6" base course                                 | 1,537.0  | SY   | \$2.50       | 3,842.50          |
| 1102.00   | Remove asphalt surface                                | 3,306.0  | SY   | \$6.00       | 19,836.00         |
| 1108.00   | Remove combination curb and gutter                    | 562.0    | LF   | \$6.00       | 3,372.00          |
| 1111.00   | Remove fence  | 560      | LF   | \$2.50       | 1,400.00          |
| 1116.00   | Remove guard post                                     | 16.0     | EA   | \$100.00     | 1,600.00          |
| L019.12   | Erosion control, class 1C                             | 33,319.0 | SY   | \$2.25       | 74,967.75         |
| L021.50   | Erosion checks, type wattle                           | 14,137.0 | LF   | \$4.00       | 56,548.00         |
| L022.11   | Fabric silt fence - low porosity                      | 5,866.0  | LF   | \$3.50       | 20,531.00         |
| NA        | Relocate light pole - by others                       | 1        | EA   | \$0.00       | 0.00              |
|           |   |          |      |              | \$423,239         |
|           |   |          |      |              |                   |
| Retainin  | g Wall Items - Group 1A                               |          |      |              |                   |
| 0030.20   | Mobilization  | 1        | LS   | \$5,000.00   | 5,000.00          |
| 4095.00   | Wall materials  | 3,717    | SF   | \$16.00      | 59,472.00         |
| 4095.10   | Compacted earth leveling pad                          | 914      | LF   | \$6.00       | 5,484.00          |
| 8024.75   | Select granular backfill for retained earth structure | 550      | CY   | \$20.00      | 11,000.00         |
|           |   |          |      | _            | 80,956.00         |
|           |   |          |      |              |                   |
| Paveme    | nt Items - Group 3                                    |          |      |              |                   |
| 0030.30   | Mobilization  | 1        | LS   | \$30,000.00  | 30,000.00         |
| 2018.05   | Crushed concrete surface course                       | 239      | Ton  | \$80.00      | 19,120.00         |
| 3010.03   | Concrete class 47b-3500 curb                          | 1,519    | LF   | \$25.00      | 37,975.00         |
| 3016.39   | Detectable warning panel                              | 352      | SF   | \$15.00      | 5,280.00          |
| 3016.71   | 6" Concrete class 47b - 3500 bikeway                  | 19,481   | SY   | \$26.50      | 516,246.50        |
| 3017.21   | Concrete class 47b - 3500 imprinted surfacing         | 326      | SY   | \$60.00      | 19,560.00         |
| 3020.24   | Concrete class 47b - 3500 driveway                    | 1,770    | SY   | \$34.00      | 60,180.00         |
| 9000.01   | Asphaltic concrete                                    | 8        | Ton  | \$90.00      | 720.00            |
| L032.10   | River rock mulch                                      | 105      | Ton  | \$120.00     | 12,600.00         |
|           | Interlocking pedestrian grade crossing - by others    | 1        | LS   | \$0.00       | 0.00              |
|           |   |          |      |              | \$701,682         |
| Culvert I | Items - Group 4                                       |          |      |              |                   |
| 0030.40   | Mobilization  | 1        | LS   | \$2,000.00   | 2,000.00          |
| 4015.00   | Adjust manhole to grade                               | 4        | EA   | \$300.00     | 1,200.00          |
| 4210.12   | Bar grate for 12" concrete flared-end section         | 6        | EA   | \$225.00     | 1,350.00          |
| 4210.15   | Bar grate for 15" concrete flared-end section         | 4        | EA   | \$275.00     | 1,100.00          |
| 4210.18   | Bar grate for 18" concrete flared-end section         | 1        | EA   | \$300.00     | 300.00            |
| 4210.36   | Bar grate for 36" concrete flared-end section         | 2        | EA   | \$520.00     | 1,040.00          |
| 4310.12   | 12" flared-end section                                | 6        | EA   | \$250.00     | 1,500.00          |
| 4310.15   | 15" flared-end section                                | 4        | EA   | \$275.00     | 1,100.00          |
| 4310.18   | 18" flared end-section                                | 1        | EA   | \$355.00     | 355.00            |

| 4310.36 | 36" flared end-section            | 2     | EA   | \$900.00   | 1,800.00    |
|---------|-----------------------------------|-------|------|------------|-------------|
| P700.12 | 12" storm sewer pipe - type 7     | 103   | LF   | \$28.00    | 2,884.00    |
| P700.15 | 15" storm sewer pipe - type 7     | 42    | LF   | \$33.00    | 1,386.00    |
| P700.18 | 18" storm sewer pipe - type 3     | 12    | LF   | \$34.00    | 408.00      |
| P700.36 | 36" storm sewer pipe - type 1     | 18    | LF   | \$80.00    | 1,440.00    |
|         | Boulders                          | 10    | Tons | \$250.00   | 2,500.00    |
|         |                                   |       |      |            | \$20,363    |
| Seeding | ltems - Group 5                   |       |      |            |             |
| 0030.50 | Mobilization                      | 1     | LS   | \$1,000.00 | 1,000.00    |
| L003.51 | Seeding                           | 6.8   | AC   | \$2,500.00 | 17,000.00   |
|         |                                   |       |      |            | \$18,000    |
| Fencing | Items - Group 7B                  |       |      |            |             |
| 0030.60 | Mobilization                      | 1     | LS   | \$4,000.00 | 4,000.00    |
| 6404.00 | Pedestrain rail - chain link type | 813   | LF   | \$65.00    | 52,845.00   |
| 7130.95 | Wood fence                        | 1,108 | LF   | \$35.00    | 38,780.00   |
|         |                                   |       |      |            | \$95,625    |
| Signing | Items - Group 7C                  |       |      |            |             |
| 0030.70 | Mobilization                      | 1     | LS   | \$1,000.00 | 1,000.00    |
| 7321.00 | Type A sign                       | 15    | SY   | \$600.00   | 9,000.00    |
| 7330.00 | Accessible parking sign           | 2     | EA   | \$100.00   | 200.00      |
| 7333.00 | Sign post                         | 400   | LF   | \$35.00    | 14,000.00   |
| 7390.02 | Relocate sign                     | 3     | EA   | \$150.00   | 450.00      |
|         |                                   |       |      |            | \$24,650    |
| Subtota | I Construction Costs              |       |      |            | \$1,364,514 |
|         | Project Contingency - 10%         |       |      |            | \$136,451   |
|         | Bond Fee - 1.5%                   |       |      |            | \$22,514    |
| TOTAL 0 | CONSTRUCTION COSTS                |       |      |            | \$1,523,480 |



## Trails Assistance Program – Application Form

| Project name Papillion Walnut Creek Connector Trail                              |                              |   |                         |  |  |  |  |  |
|--|------------------------------|---|-------------------------|--|--|--|--|--|
| Project location (attach location map) <u>Approximately 98th and Schram Road</u> |                              |   |                         |  |  |  |  |  |
| Sponsor organization City of Papillion   |                              |   |                         |  |  |  |  |  |
| Sponsor address  | 122 E. Third Street          |   |                         |  |  |  |  |  |
| City   | Papillion                    | StateNE                                   | ZIP <u>68046</u>        |  |  |  |  |  |
| Contact person   | Marty Leming                 |   |                         |  |  |  |  |  |
| Title  | Director of Public Works     |   |                         |  |  |  |  |  |
| Email address mleming  | g@papillion.org              | Daytime phone                             | 402-597-2044            |  |  |  |  |  |
|  |                              |   |                         |  |  |  |  |  |
| Description of project (attacl   | h additional sheets as neede | d)  |                         |  |  |  |  |  |
| (Please see attachment.  | ) I have revised the total   | estimated cost, and                       | we have a start date of |  |  |  |  |  |
| July 25, 2016 with 70 wo   | orking days.                 | 67 - 10 - 10 - 10 - 10 - 10 - 10 - 10 - 1 |                         |  |  |  |  |  |
|  |                              |   |                         |  |  |  |  |  |
|  |                              |   |                         |  |  |  |  |  |
| Total estimated cost   | \$ <u>1,017,471.31</u>       | Cost share request                        | \$ <u>101,747.13</u>    |  |  |  |  |  |
| A  |                              |   |                         |  |  |  |  |  |
| 3/16/16  |                              |   |                         |  |  |  |  |  |

Signature

Date

| City Administrator |  |
|--------------------|--|
| Title              |  |

# **Project Location Diagram**



Disclaimer: This data is for informational purposes only, and should not be substituted for a true files search, property appraisal, survey, or for zening district verification. Samy County and the Samp County GIS Coalitian assume no legal responsibility for the information contained in this data.

<u>Map Scale</u> 1 Inch = 200 feet 5/7/2013

#### **Project Description:**

The Papillion Walnut Creek Connector Trail Project involves the construction of a pedestrian and bike trail and a parking facility in the Walnut Creek Recreation Area west of 96<sup>th</sup> Street and Schram Road intersection in Papillion, Nebraska. The trail would be constructed as a 10-foot wide concrete trail approximately 1,633 feet long. The trail would connect 1) the existing Savanna Shores Trail south of Schram Road, 2) the existing Walnut Creek Recreation north of Schram Road, 3) the existing sidewalk on Placid Lake Circle in the Edgewater Estates residential neighborhood to the east, 4) a new concrete parking facility on the north side of Schram Road, with realignment of the entrance and exit with Creekside Drive to the south. The trail would cross under Schram Road through a concrete box culvert structure.

Schram Road intersects 96<sup>th</sup> Street to the east and Sunburst Drive to the west of the project site. At these intersections, Schram Road was constructed with three lanes consisting of two through lanes and a designated center turn lane. Within 250 feet from these intersections, Schram Road tapers to a 2-lane roadway. The segment of Schram Road located along the project site is a 2-lane, 24-foot wide, rural, asphalt roadway.

In the vicinity of the Walnut Creek Connector Trail project, an existing residential roadway, Creek Side Drive, forms a T-intersection on the south side of Schram Road. Creek Side Drive is a 2-lane, concrete roadway with a center landscaped area that tapers to a 2-lane, undivided roadway to the south of the intersection.

The access drive to the existing gravel parking lot in the Walnut Creek Recreation Area forms a Tintersection on the north side of Schram Road. The gravel drive is offset approximately 120 feet west of Creek Side Drive. A new concrete parking lot and access drive would be reconfigured and would serve as a trailhead. The access drive would be constructed to the east to match the existing Creek Side Drive alignment and allow for a traditional 4-way approach intersection. The parking lot would have two handicap and 14 regular parking stalls. The length of the access road and parking lot is approximately 212 feet long.

The concrete box-culvert would be constructed under Schram Road as a 10-foot high by 12-foot wide by 82-foot long structure. The length of the box culvert for the existing Schram Road geometry extends beyond the clear recovery zone and would be constructed without guardrails. Additionally, the box-culvert length should accommodate a future expansion of Schram Road to 3-lanes, if needed. Retaining walls would be constructed on the east side of the box culvert and extend approximately 200 feet north and 135 feet south. The height of the north and south retaining walls relative to the trail would be up to approximately 8 feet and 4 feet, respectively.

The trail design and the box culvert design would meet all existing NDOR requirements and design standards. The box culvert design would satisfy the Load Factor and Resistance Design (LFRD) load rating standards. The bicycle trail would accommodate a 25 mile per hour design speed as specified in current design standards. The parking lot would have a handicap stall and a handicap

ramp to provide access to the trail that meets current Americans with Disabilities Act (ADA) standards. Retaining walls would be constructed to meet current ADA standards.

The current design of the project has construction to occur within the public right-of-way for Schram Road and within the Walnut Creek Recreational Area, owned by the City of Papillion. The land south of Schram Road to Savanna Shores Trail is also owned by the City of Papillion. Therefore, additional right-of-way is not needed for this project.

Existing utilities in the area may be affected as part of this project. A segment of the water line on the north side of Schram Road would be rerouted in the vicinity of the trail and undercrossing. Similarly, the sanitary sewer on the south side of Schram Road would be rerouted to accommodate this project. An existing fiber-optic line and telephone cable would be investigated to see what impacts the design of this project may have on these utilities. The existing stormwater sewers on the north and south side of Schram Road would be extended to the west and outlet downgradient of the trail. Because the trail and box culvert are designed at an elevation below the existing ground surface, stormwater ditches on the north and south side of Schram Road would be constructed to provide adequate drainage.

The proposed project also includes clearing and grubbing, concrete pavement repair, crack sealing and joint sealing, culvert extension for an ephemeral ditch, curb and gutter, earth shoulder construction, erosional controls (consisting of checks, inlet/outlet protection, post construction control, rolled control, and vegetation), fencing, lighting with and without soil disturbance, major grading beyond the hinge point, minor grading from edge of pavement to hinge point, pavement marking, pavement removal, paving, and signs with soil disturbance.

The project is anticipated to involve a closure of Schram Road for the construction of the box culvert. The detour route would shift traffic north to Highway 370 at 96<sup>th</sup> Street and 108<sup>th</sup> Street. Access to the residential houses in the area would be provided throughout construction via Schram Road and during the closure of the roadway.

The Environmental Study Area is defined by the length of the project plus up to one quarter mile on either end including the existing ROW and extending to 150 feet beyond the ROW at culvert locations for wetlands and most other resources. For Hazardous Material, the study area extended to 0.1 miles and for Section 4(f) resources 0.25 miles beyond the ROW.



## Trails Assistance Program – Application Form

| Project name         | Walthill We         | Ilness Trail, Pha | se 2       |               |     |                |  |
|----------------------|---------------------|-------------------|------------|---------------|-----|----------------|--|
| Project location (at | tach location map)  | Walthill Recre    | ation Area |               |     |                |  |
| Sponsor organizatio  | on Village of V     | Valthill          |            |               |     |                |  |
| Sponsor address      | 224 Main S          | Street            |            |               |     |                |  |
| Citv                 | Walthill            |                   | State      | NE            | ZIP | 68067          |  |
| Contact person       | Rita Dunn           |                   |            |               | -   |                |  |
| Title                | Planner/De          | veloper           |            |               |     |                |  |
| Email address        | RitaDunn@hotmail.co | n@hotmail.com     |            | Daytime phone |     | (402) 846-5921 |  |

Description of project (attach additional sheets as needed)

A walking trail around the west side of the ball field that loops back to the Phase 1 walking trail which was constructed in 2016. This is the second of a 4-phase wellness trail system. See attached.

| Total estimated cost        | \$         | Cost share request | \$ <u>40,392</u> |
|-----------------------------|------------|--------------------|------------------|
| [ see original application, | attached ] | 3-18-2016          |                  |
| Signature                   |            | Date               |                  |
|                             |            |                    |                  |

Chair, Board of Trustees

Title

Tillage of Walthi

224 MAIN STREET PO BOX 246 WALTHILL, NE 68067 PH: (402) 846-5921 FAX: (402) 846-5114

March 18, 2016

Eric Williams Natural Resources Planner Papio-Missouri River Natural Resources District 8901 S. 154<sup>th</sup> Street Omaha, NE 68138-3621

Dear Eric:

Enclosed is the Village of Walthill's Recreation Area Development Program Application. Thank you for the opportunity to submit this application. The Village has a completed recreation plan that includes a walking trail. This application is the second phase towards making a trail system a reality in Walthill. The Comprehensive Plan 2014-2024 allows for trails as a part of our planning, and as such, the Village does not have a Master Trail Plan at this time. However, the Village does have a completed Master Wellness and Recreation Plan that features a four-phase walking trail system as its main project. I have included that plan with this application.

The Village of Walthill is a poverty community with a large minority population and limited resources. As evidenced in our surveys from 2011-2014 the community itself has been asking for a walking trail. We are extremely excited about the possibilities that submitting this application create and look forward to working with your organization in the future.

Sincerely

Rita Dunn, Planner/Developer





## **Recreation Area Development Program – Application Form**

| Project name                           |      | V              | lalthill We         | llness I      | rail-Phas  | e II |           |  |
|--|------|----------------|---------------------|---------------|------------|------|-----------|--|
| Project location (attach location map) |      |                | Wa                  | lthill R      | lecreation | Area |           |  |
| Sponsor organization Vi                |      |                | Village of Walthill |               |            |      |           |  |
| Sponsor address                        |      | 224 Ma         | 224 Main Street     |               |            |      |           |  |
| City                                   |      | Walthill       |                     | State         | NE         | ZIP  | 68067     |  |
| Contact person                         | Rice | Rita Dunr      | 1                   |               |            |      |           |  |
| Title Planner/Developer                |      |                |                     |               |            |      |           |  |
| Email addressritadunn@                 |      | tadunn@hotmail | .com                | Daytime phone |            | 402- | -846-5921 |  |

## Description of project (attach additional sheets as needed)

A walking trail around the west side of the ballfield that loops back

to the Phase I walking trail being installed in 2016. This is the second phase of a 4-phase wellness trail system. See attached sheets.

| Total estimated cost   | \$80,784.72                   | Cost share request | \$ |
|------------------------|-------------------------------|--------------------|----|
| Muhael                 | Jang                          | 3-18-2015          |    |
| Signature              |                               | Date               |    |
| Chair, Board of Tr<br> | ustees<br><del>Walthill</del> |                    |    |



## Walthill Wellness Trail Budget-Phase II

Village of Walthill, Nebraska

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| Item  | Unit                         | Number Required        |       | Unit Cost |    | Cost      |    | Village   |    | PMRNRD    |
|---|------------------------------|------------------------|-------|-----------|----|-----------|----|-----------|----|-----------|
| Professional Services:                            |                              |                        |       |           |    |           |    |           |    |           |
| Wetland Delineation                               | Lump sum                     | 1                      | \$    | 2,500.00  | \$ | 2,500.00  |    | 1250      | \$ | 1,250.00  |
| Professional Services Subtotal                    |                              |                        |       |           | \$ | 2,500.00  |    |           |    |           |
|   |                              |                        |       |           |    |           |    |           |    |           |
| Construction Costs                                |                              |                        |       |           |    |           |    |           |    |           |
| Clearing and Grubbing                             | No clearing and grubbingno   | trees or shrubs in the | e pat | :h        | \$ | -         |    |           |    |           |
| Earth work (cut and fill)                         | Cubic yard                   | 405                    | \$    | 15.00     | \$ | 6,075.00  | \$ | 3,037.50  | \$ | 3,037.50  |
| Trail surfacing: concrete 8' wide x 4" deep       | Square Feet                  | 5800                   | \$    | 8.00      | \$ | 46,400.00 | \$ | 23,200.00 | \$ | 23,200.00 |
| Subgrade Preparation                              | Square Yards                 | 275                    | \$    | 4.50      | \$ | 1,237.50  | \$ | 618.75    | \$ | 618.75    |
| Erosion control fencing, ditch protection         | LS                           | 1                      | \$    | 500.00    | \$ | 500.00    | \$ | 250.00    | \$ | 250.00    |
| Fine grading & Shoulder grading                   | LF                           | 725                    | \$    | 5.00      | \$ | 3,625.00  | \$ | 1,812.50  | \$ | 1,812.50  |
| Seeding/erosion control mat/mulch                 | Acre                         | 0.2                    | \$    | 4,000.00  | \$ | 800.00    | \$ | 400.00    | \$ | 800.00    |
| Construction Costs Subtotal                       |                              |                        |       |           | \$ | 58,637.50 |    |           |    |           |
|   |                              |                        |       |           |    |           |    |           |    |           |
| Engineering Costs:                                |                              |                        |       |           |    |           |    |           |    |           |
| Design Engineering                                | 12% of construction costs    | 1                      | \$    | 7,036.50  | \$ | 7,036.50  |    |           | \$ | 7,036.50  |
| Construction Engineering                          | 4.5% of construction costs   | 1                      | \$    | 2,638.69  | \$ | 2,638.69  | \$ | 2,638.69  | 10 |           |
| Engineering Subtotal:                             |                              |                        |       |           | \$ | 9,675.19  |    |           |    |           |
|   |                              |                        |       |           |    |           |    |           |    |           |
| Contingency                                       | 5% of construction /engineer | 5%                     | \$    | 68,312.69 | \$ | 3,415.63  | \$ | 1,707.82  | Ś  | 3,415.63  |
|   |                              |                        | 0     |           |    | •         |    |           |    | -,        |
| Other Costs:                                      |                              | N.                     |       |           |    |           |    |           |    |           |
| Grant Administration/traffic control and security | Lumpsum (Sepatach            | mont) 1                | \$    | 6,556.40  | \$ | 6,556.40  | Ś  | 6.556.40  |    |           |
| Professional Services Subtotal                    | Coreanast                    |                        |       |           | Ś  | 6.556.40  |    | .,        |    |           |
|   |                              |                        |       |           | T  | -,        |    |           |    |           |
| TOTAL PROJECT COSTS                               |                              |                        |       |           | Ś  | 80,784,72 | Ś  | 41,471,65 | Ś  | 41,420,88 |
|   |                              |                        |       |           | T  |           | Υ. | ,         | Υ. | 12,120.00 |

TOTAL Match TOTAL Grant

| General Labor  | Wage     | Health Ins | Total per hour | Hrs for Project | Total for Project |
|--|----------|------------|----------------|-----------------|-------------------|
| Maintenance Crew:  |          |            |                |                 |                   |
| Fred Appleton, Maintenance Supervisor                      | \$ 16.37 | \$ 7.20    | \$ 23.57       | \$ 55.00        | \$ 1,296.35       |
| Roger Anderson, Water/Sewer Superintendent                 | \$ 15.11 | \$ 1.80    | \$ 16.91       | \$ 55.00        | \$ 930.05         |
| Security   |          |            |                |                 |                   |
| Brad Irwin, Chief of Police                                | \$ 19.62 | \$ 5.98    | \$ 25.60       | \$ 50.00        | \$ 1,280.00       |
| Village part-time maintenance                              | \$ 10.00 | \$ -       | \$ 10.00       | \$ 60.00        | \$ 600.00         |
|  |          |            |                |                 |                   |
| Grant Administration                                       |          |            |                |                 |                   |
| Rita Dunn, Planner/Developer/Certified Grant Administrator | \$ 35.00 | \$ -       | \$ 35.00       | \$ 70.00        | \$ 2,450.00       |
|  |          |            |                |                 | \$ 6,556.40       |

### In-kind Labor--Walthill Wellness Trail Phase II

General Labor: The Village maintenance crew will assist with locating utilities, identifying encumbrances, connecting to other agencies that may need to locate, general labor assistance to general contractor including hauling, backhoe, etc. Security:

Estimating the project will take 6 weeks to construct. Because it is an very busy area, security will have to be provided to keep people off the cement until it dries and to keep equipment free from creative tagging.

Administration: on-site project management, grant reporting and drawdowns, project management

|             | ESTIMATE OF WO  | RK      |                 |                                     | 1                              |                           |
|-------------|---|---------|-----------------|-------------------------------------|--------------------------------|---------------------------|
|             | Prepared by<br>Brad Blakeman, P.E<br>Blakeman Engineering<br>10423 Hansen Ave.<br>Omaha, NE 68124<br>(402) 933-5777 | NA .    | All Contract    | MANLEY R<br>ELANGIUM<br>[0]3][Dol5] | BLAKEMA                        | N<br>N<br>ING<br>UNDALEDS |
|             |   |         | 3 41            | OF NEBRISE                          | BE Project No.                 | BE013                     |
| Project [   | Description:  |         |                 |                                     | Period Ending:                 | 26-Oct-15                 |
| Owner:      | Walthill Wellness Trail Cost Estimate   | Controo | 10m             |                                     | Data of Estimates              | 00 0 4 45                 |
| owner.      | Village of Walthill, NE   | Contrac | tor.            |                                     | Revised<br>Percent Completion: | 26-Oct-15                 |
|             | Walthill, NE  |         |                 |                                     | Estimated Completion:          |                           |
|             | Phases 1, 2, 3 Wellness Trail   | -       |                 |                                     |                                |                           |
|             | CONSTRUCTION COSTS  |         |                 |                                     |                                |                           |
| Item<br>No. | Description   | Unit    | Approx.<br>Quan | Unit<br>Price (\$)                  | Costs                          |                           |
|             | Phase I Trail Construction Costs:   |         |                 |                                     |                                |                           |
|             | General Earthwork (cut and fill)  | CY      | 535             | \$15.00                             | \$ 8,025.00                    |                           |
|             | Concrete Trail Path (4" thick x 8'-0" wide)   | SF      | 7,640           | \$8.00                              | \$ 61,120.00                   |                           |
|             | Subgrade compaction   | CY      | 365             | \$4.50                              | \$ 1,642.50                    |                           |
|             | Erosion Control rencing, ditch protection   | LS      | 1               | \$500.00                            | \$ 500.00                      |                           |
|             | Seeding/eroison control mat/mulch   |         | 955             | \$5.00                              | \$ 4,775.00                    |                           |
|             | Trailhead sign  | FA      | 0.250           | \$375.00                            | \$ 1,000.00                    |                           |
|             | Phase I Construction Costs Subtotal   |         |                 | \$575.00                            | \$ 77.437.50                   |                           |
|             |   |         |                 |                                     |                                |                           |
|             | Phase II Trail Construction Costs:  |         |                 |                                     |                                |                           |
|             | General Earthwork (cut and fill)  | CY      | 405             | \$15.00                             | \$ 6,075.00                    |                           |
|             | Concrete Trail Path (4" thick x 8'-0" wide)   | SF      | 5,800           | \$8.00                              | \$ 46,400.00                   | >                         |
|             | Subgrade compaction   | CY      | 275             | \$4.50                              | \$ 1,237.50                    |                           |
|             | Erosion Control fencing, ditch protection   | LS      | 1               | \$500.00                            | \$ 500.00                      | 2.5%                      |
|             | Seeding/eroison control mat/mulch   |         | 725             | \$5.00                              | \$ 3,625.00                    |                           |
|             |   |         | 0.200           | \$4,000.00                          | φ 00.00                        | ./ .                      |
| A           | Phase II Construction Costs Subtotal  |         |                 |                                     | \$ 58,637.50                   | A                         |
|             | Phase III Trail Construction Costs  |         |                 |                                     |                                |                           |
|             | General Earthwork (cut and fill)  | CY      | 285             | \$15.00                             | \$ 4 275 00                    |                           |
|             | Concrete Trail Path (4" thick x 8'-0" wide)   | SF      | 4.040           | \$8.00                              | \$ 32 320 00                   |                           |
|             | Subgrade compaction   | CY      | 195             | \$4.50                              | \$ 877.50                      |                           |
|             | Erosion Control fencing, ditch protection   | LS      | 1               | \$500.00                            | \$ 500.00                      |                           |
|             | Fine Grading & Shoulder grading   | LF      | 505             | \$5.00                              | \$ 2,525.00                    |                           |
|             | Seeding/eroison control mat/mulch   | AC      | 0.170           | \$4,000.00                          | \$ 680.00                      |                           |
|             | Culvert under bridge (30" LD_Min )w/EES   | EA      | 0               | \$4,500.00                          | <u>s</u> -                     |                           |
|             | Trailhead sign  | EA EA   | 1               | \$60.00                             | ⇒ -<br>¢ 275.00                |                           |
|             | Phase III Construction Costs Subtotal   | LA      | 1               | \$375.00                            | \$ 375.00<br>\$ 41,552.50      |                           |
|             |   |         |                 |                                     |                                |                           |
|             | TOTAL ESTIMATED CONSTRUCTION COSTS  |         |                 |                                     | \$ 177,627.50                  |                           |
|             | ENGINEERING COSTS:  |         |                 |                                     |                                |                           |
|             | Construction Engineering/staking/losp (4.5% of  | %       |                 |                                     | \$ 21,315.30                   |                           |
|             | construction costs  | %       |                 |                                     | \$ 7003.04                     |                           |
|             | NEPA Study  | LS      | 1               | \$10,000.00                         | \$ 10,000,00                   |                           |
|             | Engineering Costs Subtotal  |         |                 |                                     | \$ 39,308.54                   |                           |
|             | TOTAL ESTIMATED PROJECT COST  |         |                 |                                     | \$ 216,936.04                  |                           |
|             |   |         |                 |                                     |                                |                           |
|             |   |         |                 |                                     |                                |                           |

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## WALTHILL WELLNESS TRAIL IMPLEMENTATION SCHEDULE

| Project Activity /  | 1 <sup>st</sup> QTR. | 2 <sup>nd</sup> QTR. | 3 <sup>rd</sup> QTR. | 4 <sup>th</sup> OTR. | 5 <sup>th</sup> OTR. |
|---|----------------------|----------------------|----------------------|----------------------|----------------------|
| Milestones  | A M J                | JAS                  | OND                  | JFM                  | AMJ                  |
| a)Project Initial<br>Approval                               | Х                    |                      |                      |                      |                      |
| b) Wetland<br>Delineation                                   |                      | х                    |                      |                      |                      |
| c) Approval in<br>PPRNRD Annual<br>Budget                   |                      | Х                    |                      |                      |                      |
| d) RFP for design and construction                          |                      |                      | Х                    |                      |                      |
| g) Award contracts  |                      |                      | Х                    |                      |                      |
| h) Construction<br>plans & blueprints<br>completed; permits |                      |                      | Х                    |                      |                      |
| i) Let for bid, bid opening, and award                      |                      |                      |                      | х                    |                      |
| j) Construction   |                      |                      |                      | x                    | ххх                  |
| k) Grant Admin  |                      | ххх                  | ххх                  | ххх                  | ххх                  |
| l)Traffic control,<br>security                              |                      |                      | ххх                  | ххх                  | ххх                  |
| m) Project<br>complete                                      |                      |                      |                      |                      | Х                    |
|   |                      |                      |                      |                      |                      |
|   |                      |                      |                      |                      |                      |
|   |                      |                      |                      |                      |                      |

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# **WALTHILL, NEBRASKA** COMPREHENSIVE PLAN - 2024.

<u>PREPARED FOR:</u> The Village of Walthill, Nebraska

# PREPARED BY: HANNA:KEELAN ASSOCIATES, P.C. community planning & research

COMPREHENSIVE PLANS & ZONING \* HOUSING STUDIES \* DOWNTOWN, NEIGHBORHOOD & REDEVELOPMENT PLANNING \* CONSULTANTS FOR AFFORDABLE HOUSING DEVELOPMENTS\*

\* Lincoln, Nebraska \* 402.464.5383 \*

**MARCH**, 2014

## GOALS, POLICIES & ACTION STRATEGIES.

#### SECTION 2

## Action Strategy 2.1.8

Residential growth areas are identified in the Land Use Plan to the south of the current Corporate Limits, to the south of Walthill Park. Local, State and Federal incentives and funding sources should be used in combination to entice new residents to Walthill. Community Development Block Grants, First-Time Homebuyer Programs, Credit- or Lease-To-Own Housing Program and/or HOME funds must be used in creative combinations to attract new residents to the Community.

Action Strategy 2.1.9 Continue to enforce regulations which encourage development of affordable housing.

## PUBLIC FACILITIES, INFRASTRUCTURE AND TRANSPORTATION

#### Goal 1

Maintain and improve the existing public facilities and services in Walthill, and develop, as needed, new facilities and services to reflect the Community's needs and demands.

#### Policy 1.1 ÷.

Provide public services in an efficient and economic manner in Walthill to protect and enhance the safety and welfare of all residents. Address needed health, educational and supportive services.

#### Action Strategy 1.1.1

Insure public services are maintained and improved to keep pace with population growth.

#### Action Strategy 1.1.2

Provide adequate law enforcement and fire protection services, with increased emphasis on community relations as well as adequate civil defense and emergency service. Insure facilities necessary to support such services are available throughout the Community.

## Action Strategy 1.1.3

Promote the coordination of these services among the various governmental and quasi-governmental entities. Walthill maintains its own municipal police department.

#### Policy 1.2 •

Preserve and expand existing parks and open spaces throughout the Community to enhance recreational opportunities in Walthill.

#### Action Strategy 1.2.1

The Walthill 2013 Strategic Plan established priorities to replace the existing swimming pool and rebuild the baseball field, as well as to implement a nature/wellness walking trail.

#### Action Strategy 1.2.2

Provide and improve recreation programs for youth, elderly, persons with disabilities and families.

#### Action Strategy 1.2.3

Walthill parks are used by both the Community residents and visitors. Continue and improve maintenance efforts to reinforce a positive community image.

#### Action Strategy 1.2.4

Utilize the Parks and Recreation Master Plan, to be completed in 2014, as a guide to make park improvements, including but not limited to, reusing the old basketball court as a new gathering area with sheltering canopies and cooking areas and creating new landscaping and flower beds around light poles throughout the park.

#### Policy 1.3 •••

Maintain the provision of facilities and services necessary to prevent pollution of the environment. Provide sewage treatment, refuse collection and disposal, street cleaning, flood control and similar environmental control processes.

#### Action Strategy 1.3.1

Provide adequate, efficient and appropriate utilities and services throughout the community of Walthill to existing and future residential, recreational, commercial and industrial areas.

## Action Strategy 1.3.2

Maintain an adequate supply of potable water and an expanded distribution system suitable for present and future consumption and fire protection within Walthill.

## Action Strategy 1.3.3

Educate the general public on solid waste management and the recycling of materials.

> Walthill, Nebraska Comprehensive Plan - 2024 2.11

## COMMUNITY & ECONOMIC DEVELOPMENT ACTION STRATEGIES

- Create a Community and Economic Development Initiative in Walthill to partner economic development activities with all major "players," both public and private;
- Establish an annual Community and Economic Development Strategy in conjunction with the Initiative;
- Maintain tools of "public intervention" to finance economic development activities in Walthill, including Tax Increment Financing and LB 840 and 1240;
- Create a mix of new businesses appropriate for the Village of Walthill; Recruit volunteers for Community and Economic Development;
- Develop urban design criteria for residential and commercial activities in existing developed areas;
- Actively recruit businesses and light industry located in other Communities, to expand in Walthill. Establish programs of (various) tax incentives to stabilize and increase local jobs;
- Maximize positive traits of the Community such as small town living with short commute time to facilities in Pender, West Point and South Sioux City for employment, health care, shopping and entertainment;
- Continue to focus on redevelopment efforts in the Downtown and along Highway corridor areas focusing on commercial and residential rehabilitation and over all property clean up, the reduction of noise, dust and other pollutants created from the Burlington Northern Santa Fe Railroad Corridor, landscaping and street trees, and infrastructure improvements, and;
- Utilize the 2014 Parks and Recreation Master Plan to make improvements to parks and recreational areas such as upgraded and new playground equipment, additional athletic fields and to expand available recreation activities to existing and potential trail systems.
#### MAINTENANCE PLAN FOR WALTHILL WELLNESS TRAIL WALTHILL NE 68067

#### **NON-MOTORIZED TRAIL**

The maintenance of the proposed Walthill Wellness Trail will be the responsibility of the Village of Walthill's Maintenance Department. Specifically, the maintenance staff will be assigned to maintain the trail. This includes both fulltime and seasonal members. During the summer months we will encourage mission groups to assist with maintenance of the trail. During the school year, the Village will work with the Walthill Public Schools student council to assist us in maintaining the trail. However, we will not rely on either group to keep the trail in good working condition. The majority of the trail will be a concrete surface. Maintenance will be primarily mowing around the trail during the growing season, spraying for weeds as needed, removal of snow and ice during the winter season, trash pick up along the trail, and any periodic repairs to the surface and signage that may arise throughout the anticipated life expectancy of the trail. Trail maintenance includes the trail itself in Phase I of the trail development. When Phases II, III and IV are completed maintenance will be extended to these areas, including a small tree bark path through a wooded area and parking along amenities.

The costs of the trail maintenance will be absorbed into the parks and recreation division of the Village of Walthill's annual budget. There are sufficient funds available to do so. The anticipated budget impact should be minimal.

#### Lake Dredging Program – Application Form



| Project name            | Fontenelle         | Fontenelle Park Lagoon Improvements      |                    |      |        |            |
|-------------------------|--------------------|--|--------------------|------|--------|------------|
| Project location (attac | h location map)    | ation map) 45th & Ames, see attached map |                    |      |        |            |
| Sponsor organization    | City of Oma        | aha                                      |                    |      |        |            |
| Sponsor address         | 1819 Farna         | 1819 Farnam, Suite #600                  |                    |      |        |            |
| City                    | Omaha              |  | StateNE            |      | ZIP    | 68183      |
| Contact person          | Adam Wilm          | es, P.E.                                 |                    |      |        |            |
| Title                   | Environmer         | ntal Engineer                            |                    |      |        |            |
| Email address Ada       | am.Wilmes@Cityo    | fOmaha.org                               | Daytime phone      | ē    | (402)  | ) 444-3819 |
|                         |                    | <b></b>                                  |                    |      |        |            |
| Original capacity of la | ke/basin           |  | Ac-ft              |      |        |            |
| Proposed excavation a   | amount <u>42.0</u> |  | Ac-ft              |      |        |            |
| Total estimated cost    | \$ <u>286,000</u>  |  | Cost share request | t \$ | 100,00 | 00         |
| James E. Theiler        |                    |  | 3/18/2016          |      |        |            |

Date

Signature

CE IV - Public Works

Title

#### City of Omaha, Nebraska OPW 52658 - Fontenelle Park Lagoon Improvements CSO Project Dredging Fontenelle Park Lagoon - 60% Design Opinion of Probable Construction Cost for Excavation Beyond CSO Requirements

|     | STANDARD | ENR CCI 10092            |         |               |               |           |
|-----|----------|--------------------------|---------|---------------|---------------|-----------|
|     | BID ITEM | DESCRIPTION              | UNIT    | QUANTITY      | UNIT COST     | TOTAL     |
| NU. | NUMBER   |                          |         |               |               |           |
| 1   | 201.000  | EXCAVATION ON-SITE       | СҮ      | 5,015         | \$18.50       | \$92,778  |
| 2   | 201.100  | EXCAVATION HAUL-OFF      | СҮ      | 5,015         | \$7.50        | \$37,613  |
| 3   | 9000.143 | LAGOON SOIL DISPOSAL FEE | TON     | 6,785         | \$17.50       | \$118,738 |
|     |          |                          |         |               | Subtotal      | \$249,000 |
|     |          |                          | Continç | gency (15% of | Direct Costs) | \$37,000  |
|     |          |                          |         |               | Total         | \$286,000 |

#### Description of the Project

The Fontenelle Park Lagoon Improvements (FPLI) Combined Sewer Overflow (CSO) Program Project is located in a City of Omaha (City) public park and is an important community resource and amenity that provides regional green infrastructure, water quality benefits, and flood control in the Paxton watershed, which ultimately drains to the Minne Lusa CSO 105 outfall. The purpose of this application to request grant funds for additional dredging to provide enhanced urban fishery habitat in the lagoon that the CSO Program cannot fund. For the project location please see the attached location map.

The FPLI project is part of the City's CSO Long Term Control Plan (LTCP) and is just one component of an overall basin plan; which includes sewer separation upstream of the park and a stormwater conveyance sewer downstream of the park. The main goals of the overall basin plan include reduction of sewer backups, reduction of street flooding within the basin, and reduction of the wet weather inflow to the combined sewers to help reduce combined sewer overflows to the Missouri River. Design of lagoon improvements were based on improving water quality and providing additional flood storage to attenuate the incoming stormwater inflows from the upstream sewer separation while improving the recreational opportunities and user experience of the lagoon. Reducing the peak stormwater flows traveling downstream will help reduce the size and cost of stormwater infrastructure downstream of the lagoon.

The proposed lagoon improvements include expansion of the surface footprint, deepening of the lagoon, improved sediment capture, a new walking trail, wetland features, and improved water quality aesthetics around the lagoon, all funded by the CSO Program. Proposed upstream sewer separation will remove stormwater from the combined sewer system and provide additional stormwater flow to the expanded lagoon. The expanded lagoon will attenuate and reduce the peak flows being conveyed downstream. Through-out the design of the project the City's Public Works, CSO Program Management Team, and the project design team has communicated and worked with the City's Parks, Recreation, and Public Property Department to enhance lagoon function, aesthetics of the lagoon, and provide an urban fishery. However, greater lagoon depths achieved through additional dredging that cannot be funded by the CSO Program (because it is not necessary to achieve the CSO project goals) will provide enhanced urban fisheries habitat for park users to benefit from while fishing at the lagoon.

With the proposed excavation improvements the future lagoon depths are as follows, please see attached proposed grading plan:

- Less than 25% of the lagoon will be less than 4-ft deep
- At least 50% of the lagoon will be at least 6-ft deep
- At least 25% of the lagoon will be at least 8-ft deep

The proposed deepening of the lagoon will increase the capacity of the conservation pool by 75%. These depths were approved by Nebraska Game and Parks Commission (NGPC) to provide adequate

depth for fish stocking purposes. In addition, the lagoon bottom contours are designed to provide underwater trenches and terraces for fish habitats. However, NGPC recommends slightly greater (2 to 4 feet deeper) maximum depths for ideal fish habitat. Grant funds requested with this application would be applied to costs associated with providing these greater lagoon depths.

#### Additional Information

Original construction plans from the early 1900's for the lagoon are not available, therefore, the original depth and capacity of the lagoon is unknown. A bathymetry survey showed that the majority of the current lagoon bottom is approximately between elevations of 1112 to 1113 feet North American Vertical Datum for 1988 (NAVD88) with a small section being the deepest at 1109 feet. An outlet pipe on the north side of the lagoon sets the lagoon's normal pool at 1115.5 feet but due to a lack of inflow the normal pool elevation is typically below the outlet pipe. Given this information, the majority of the lagoon's water depth is between 2.5 feet and 3.5 feet. With this depth the existing lagoon's volume is only 14.9 acre-ft up to elevation 1115.5 feet. This depth has resulted in stagnation of water in the pond, allowing for algae growth and overall poor water quality. This algae has had a large impact on both dissolved oxygen and pH within the lagoon and sedimentation has provided nutrients to allow for algae growth. The pH within the lagoon was measured at above 9.5 during water quality sampling in September 2014. The pond was previously stocked with fish by NGPC however, due to the decreased water quality, the fish stocking has ceased in recent years. The lagoon has not been dredged in the past 10 years. The eastern third of the lagoon was dredged in 1993 as part of a park improvements project and it is unknown the last time the entire lagoon was dredged.

The proposed lagoon excavation plan will remove approximately 67,100 cubic yards of solids from the existing lagoon footprint. Additional grading will be required on the project to provide wetlands, sediment forebays, and expansion of the lagoons surface area. With this excavation, the proposed storage volume of the lagoon below the normal pool water surface elevation of 1115.5 feet will be 59 acre-ft to provide an increase in volume of 75%. The original capacity of the lagoon is unknown, however with the proposed improvements the capacity of the lagoon will be increased by 75% from current conditions. Also, the sewer separation project in upstream watershed will provide additional sources of stormwater to supply water through the lagoon, addressing the stagnation issues currently occurring. A wall on the northeast end of the lagoon is the low-point and acts as a spillway with a top of wall elevation of 1117.3 feet. This does not qualify as a regulated dam with the Nebraska Department of Natural Resources. Disposal of excavated material will be per City's Department of Public Works' standards. Testing of the soil has been conducted and no hazardous material has been found.

The work proposed in the park around the lagoon will enhance sediment capture from the upstream watershed prior to getting to the lagoon through the use of sediment forebays and screening structures. This will greatly reduce the possibility of sediment-carrying contaminants from entering the lagoon. In addition, wetland plantings around the lagoon will uptake some of the dissolved nutrients that do enter the pond. The additional lagoon depths proposed will also provide additional storage for any sediment that bypasses the sediment forebays and enters the lagoon.

Increasing the depth of the lagoon, removing sediment, increasing the flushing rate, and enhancing the sediment capture from the upstream watershed will increase the lagoon's water quality. Increasing the lagoon's average depth alone will decrease the chlorophyll A concentration by approximately 34%, (see chlorophyll a calculations attached). In addition removal of existing sediment and capture of suspended solids upstream through trash screens and sediment forebays will reduce the nutrient loading on the lagoon.

A watershed management plan to control erosion and reduce sedimentation in the drainage area is attached.

A simplified Opinion of Probable Cost estimate based on the 60 percent design of the proposed project is also attached. A more detailed cost estimate is available upon request.



OPW 52658 Fontenelle Park Lagoon Improvements CSO Project

Attacment 1 Fontenelle Park Project Location Map



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LEGEND

Fontenelle Park Boundary



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OPW 52658 – Fontenelle Park Lagoon Improvements CSO Project NRD Lake Dredging Grant Application – Description of Project

#### City of Omaha, Nebraska OPW 52658 - Fontenelle Park Lagoon Improvements CSO Project Chlorophyll a Concentration Reduction Calculations Attachment 3

#### NRD Lake Dredging Application

# Bp (Phosphorus Potential Chlorophyll a Concentration) = $\frac{p^{1\cdot 37}}{4.88}$

|            |  | Existing Conditions | Proposed Conditions |
|------------|--|---------------------|---------------------|
| Where,     | * p (Phosphorus Concentration, mg/m <sup>3</sup> ) = | 100                 | 100                 |
| Therefore, | Bp (mg/m <sup>3</sup> ) =                            | 112.6               | 112.6               |

| Fs (Summer Flus | $shing Rate) = \frac{Inflow}{Volume}$ |                     |                     |  |
|-----------------|---------------------------------------|---------------------|---------------------|--|
|                 |                                       | Existing Conditions | Proposed Conditions |  |
| Where,          | Inflow (ac-ft) =                      | 5                   | 80                  |  |
|                 | Volume (ac-ft) =                      | 15                  | 46                  |  |
| Therefore,      | Fs (year <sup>-1</sup> ) =            | 0.333               | 1.739               |  |

G (Kinetic Factor Used in Chlorophyll a Model) =  $Zm_{ix}$  (0.19 + 0.0042 Fs)

|            |   | Existing Conditions | Proposed Conditions |
|------------|---|---------------------|---------------------|
| Where,     | Z <sub>mix</sub> (Mean Depth of Mixed Layer, m) = | 1                   | 2                   |
|            | Fs (year <sup>-1</sup> ) =                        | 0.333               | 1.739               |
| Therefore, | G =   | 0.191               | 0.395               |

 $B(Chlorophyll a Concentration) = \frac{CB * Bp}{(1+0.025 * Bp * G)*(1+Ga)}$ 

|            |   | Existing Conditions | Proposed Conditions |
|------------|---|---------------------|---------------------|
| Where,     | CB - Calibration Factor =                     | 1                   | 1                   |
|            | Bp (mg/m <sup>3</sup> ) =                     | 112.6               | 112.6               |
|            | G =   | 0.191               | 0.395               |
|            | * a - Nonalgal Turbidity (m <sup>-1</sup> ) = | 0.61                | 0.61                |
| Therefore, | B (mg/m <sup>3</sup> ) =                      | 65.5                | 43.0                |

| Therefore, | Percent Reduction =                      | 34%  |  |
|------------|--|------|--|
|            | Proposed Lagoon B (mg/m <sup>3</sup> ) = | 43.0 |  |
| Where,     | Existing Lagoon B $(mg/m^3) =$           | 65.5 |  |

Notes:

\* These values are assumed based on expected values given the pond paramters.

## 1 Introduction

A Post Construction Stormwater Management Plan (PCSMP) for the OPW 52658 – Fontenelle Park Lagoon Improvements (FPLI) CSO Project has been developed and is summarized herein. The FPLI project is located in the upstream portion of the Paxton watershed and is bordered by Ames Avenue on the north, Fontenelle Boulevard on the east, Pratt Street on the south, and 48<sup>th</sup> Street on the west.

#### 1.1 Project Description

The FPLI project includes expanding the existing lagoon for the purpose of attenuating and reducing peak stormwater flows from proposed upstream sewer separation before being conveyed to the PBSCS. The park project has a contributing area of approximately 54 acres and the proposed upstream sewer separation has a contributing area of approximately 423 acres. Under proposed conditions, 367 acres of the upstream contributing area (423 acres) will be directly separated and collected by the storm sewer system. The remaining 56 acres will drain directly to combined sewer inlets but could still contribute to the storm sewer system via flow slippage of the combined sewer inlets. The upstream watershed has approximately 107 acres that is not targeted for sewer separation. This area includes a separate sanitary sewer paralleling the combined sewer in the low laying areas that was constructed as part of previous project (RNCL 5790B) to alleviate the basement backup issues in the area. During large rain events some of the stormwater flow from this area will travel overland to an existing dry detention basin and be collected by the storm sewer system when the dry detention basin is full.

#### 1.2 Site Data

The park presently consists of a lagoon on the north side of the park with wetlands covering the majority of the perimeter and an island in the middle. There is an overlook on the northeast end of the lagoon which faces the lagoon and the island. On the northeast side of the park there is a parking lot, a spray park, tennis courts, and a building with a parking lot and garage. On the northwest section of the park there is another parking lot with a pavilion nearby. An existing layout of Fontenelle Park can be seen below in Figure 1.



Figure 1 – Fontenelle Park Site Layout

## 2 Existing Conditions

#### 2.1 Environmental Site Surveys

A wetland delineation and survey was completed for the proposed project area, as summarized in the *Assessment of Wetlands and Waters of the United States OPW52658/52659 – Lake James to Fontenelle Park CSO Project* dated May 11, 2015, which identified 0.41 acres of wetland area according to USACE criteria.

The park has a wetland fringe consisting of a wetland bench with sloping sides extending outward. Vegetation on the bench consists of herbaceous plants with the wetland indicator status ranging generally from Facultative Wet (FACW) such as reed canarygrass (Phalaris arundinacea) to Obligate wetland (OBL) plants such as broad-leafed cattail (Typha latifolia). Sloping away from the bench, most plants are ranked Facultative (FAC) wetland, including tall fescue (Festuca arundinacea, Facultative Upland, FACU). In the uplands outside of the delineated wetland boundary, small trees and smaller saplings have become established, consisting mainly of black willow (Salix nigra), silver maple (Acer saccharinum) and green ash (Fraxinus pennsylvanica). For more information please see *Assessment of Wetlands and Waters of the United States OPW52658/52659 – Lake James to Fontenelle Park CSO Project* dated May 11, 2015.

A geotechnical report was completed for the proposed project area. Surface geology of the park consists of Silty Colluvium and Peoria Loess. Peoria Loess typically consists of lean clays. Sub-surface geology of the park consists of lean clay. Sub-surface geology of the lagoon consists of soft/muck lean clay. Groundwater depths in the park range from 3.4 to 16.5 feet. Man-placed fill was encountered in several borings and ranged from 0 to 8 feet.

A bird survey of the project area was completed, and species found include: robin, common grackle, American goldfinch, sparrow, hairy woodpecker, Canada goose, and mallard duck.

The FPLI CSO Project site does not have any special site conditions related to floodplains or receiving waters

## 2.2 Site Topography

The project area has areas of mild slopes and high slopes. South of the lagoon there is a valley in the park from the south end (Pratt Street) to the lagoon that has an approximate slope of 1%. The areas to the west and east of the south valley are sloped towards the south valley with slopes of 13% and 9% respectively. West of the lagoon there is a valley from the intersection of 48<sup>th</sup> Street & Boyd Street to the lagoon that has an approximate slope of 1%. The areas to the north and south of the west valley are sloped toward the west valley at slopes of 12% and 12.5% respectively. The area to the north is sloped towards to the lagoon with slopes up to 16%. The area to the northeast of the lagoon is sloped to the east parking lot with an approximate slope of 5%.

The existing lagoon receives stormwater flows from local runoff and a storm sewer on the southeast perimeter of the lagoon that only conveys flows to the lagoon during large rain events. The existing lagoon has two outlet structures with one on the north end that conveys flows to the combined sewer when the lagoon pool elevation reaches 1115.58 ft and one on the southeast end that conveys flows to the combined sewer when the lagoon pool elevation reaches 1116.6 ft.

## **3** BMP Calculations

The Fontenelle Park Lagoon Improvements include three pre-treatment screening structures (see OPW 52658 – FPLI 60% Drawings Sheets 53, 55, and 57), two sediment forebays (see OPW 52658 – FPLI 60% Drawings Sheet 30 and 31), dry detention basin (see OPW 52658 – FPLI 60% Drawings Sheet 48), SAFL Baffle (see OPW 52658 – FPLI 60% Drawings Sheet 21), and a hydrodynamic separator (see OPW 52658 – FPLI 60% Drawings Sheet 29). The purpose of the proposed best treatment practices (BMPs) are maintain or improve water quality within the downstream Fontenelle Park lagoon and have no other adverse impacts. The screening structures will filter and screen out larger unwanted debris before introducing the waters into the lagoon. The sediment forebays will encourage sedimentation and thus increase water quality before introducing the waters into the lagoon. The SAFL Baffle and hydrodynamic separator will help remove debris and grit from the stormwater flows before introducing the waters into the lagoon.

## 3.1 Screening Structure Design

The screening structures will consist of a static bar screen with 2-inch clear spacing to provide removal of any large debris from the inflow prior to entering the lagoon. These screens will be housed in concrete chambers to allow for access and cleaning. The screen width and height was designed to provide adequate screening capacity for the 10-year design storm event, under conditions when the screen is 50% blocked. Should the screen become completely blocked, an overflow weir is included to provide sufficient weir length to pass the 10-year design event and prevent upstream surcharging. The screen is also designed with a sump area upstream of the screen to allow for grit and debris storage.

#### 3.2 Sediment Forebay Design

The sediment forebays were sized using guidance from the *Omaha Regional Stormwater Design Manual Chapter 8, the Mid America Regional Council (MARC) BMP Manual, KC Metro Chapter American Public Works Association (APWA) Section 5600, and Maryland Stormwater Design Manual* to develop a comprehensive design. The *Omaha Regional Stormwater Design Manual* indicates the Water Quality Volume (WQv) is calculated by multiplying the disturbed drainage area from the land development process by 0.5-inches to determine the runoff from the water quality event. The Fontenelle Lagoon retention facility is not designed to serve a land development process; therefore, the InfoWorks model was utilized to determine the volume of water at each inflow point during the water quality event to determine the WQv. Each forebay was then sized to provide storage of 10% of the WQv as required by the *Omaha Regional Stormwater Design Manual* Chapter 8 and the *MARC BMP Manual*. The forebays provide a centralized location to capture and maintain sediments. The *Omaha Regional Stormwater Design Manual* was also used to establish forebay grading characteristics such as depth, length to width ratio, and side slopes.

## 3.3 Dry Detention Basin Design

The dry detention basin was designed to retain and infiltrate all of the stormwater runoff from the proposed south parking lot during the 0.5-inch storm event. The area of the south parking lot is approximately 7000 sf. Therefore, the dry detention basin was designed to retain and infiltrate a total runoff volume of approximately 300 cf. The runoff will be conveyed to the northeast section of the parking lot where it will be conveyed to the dry detention basin via a rip rap channel. Any runoff volume over 300 cf will overflow the detention basin and travel through the park towards the lagoon.

### 3.4 SAFL Baffle Implementation

The SAFL Baffle is a post construction stormwater treatment system that will be installed on a proposed sump manhole. The SAFL Baffle promotes the removal of suspended sediment from the stormwater flows and helps prevent washout of the collected sediment. All flows collected from the proposed inlets on Pratt Street will be conveyed through the SAFL Baffle structure before discharging into the lagoon.

## 3.5 Hydrodynamic Separator Implementation

The hydrodynamic separator was designed to separate sediment and grit from the stormwater flows on the north lagoon inflow point. A hydrodynamic separator was proposed for this inflow point because a sediment forebay could not be installed within the lagoon at this inflow point location. The hydrodynamic separator was designed to be an offline structure, downstream of the screening structure, which can handle the expected peak stormwater flows from the first flush event. Any flows over the first flush event will bypass the separator and be conveyed to the lagoon.

## 4 BMP Maintenance Requirements & Agreement

Certain aspects of the Fontenelle Park Lagoon Improvements design will require routine maintenance by the City of Omaha Public Works Sewer Maintenance and Parks, Recreation, and Public Property Department for varying aspects of design. These maintenance items include: Fontenelle Park Lagoon, screening structures (3), sediment forebays (2), dry detention basin, SAFL Baffle sump manhole, hydrodynamic separator, and wetland areas. Table 1 shows the BMP maintenance items and schedule.

#### Table 1 - BMP Maintenance Items and Schedule (Structures Maintenance)

| Screening Structures                        |   |  |  |
|---|---|--|--|
| Task  | Schedule  |  |  |
| Sediment, Trash, and Debris Removal         | Evaluate after each rainfall equaling or exceeding 0.5 inches to remove any accumulated sediment or trash.                |  |  |
|   | Sediment Forebays   |  |  |
| Task  | Schedule  |  |  |
| Sediment Removal and Repair of Eroded Areas | Evaluate after each rainfall equaling or exceeding 0.5 inches to remove any accumulated sediment and to check for erosion |  |  |
| (Short Term: Year 1 – Year 3)               | inside and around the forebay. Repair erosion damage if it occurs.  |  |  |
| Sediment Removal and Repair of Eroded Areas | Inspect in early spring to remove any sediment and repair any eracion   |  |  |
| (Long Term: Year 3 – Later)                 | inspect in early spring to remove any sediment and repair any erosion.  |  |  |
| Trash and Debris Removal                    | As needed.  |  |  |
|   | SAFL Baffle Sump Manhole  |  |  |
| Task  | Schedule  |  |  |
| Sediment, Trash, and Debris Removal         | Evaluate after each rainfall equaling or exceeding 0.5 inches to remove any accumulated sediment or trash.                |  |  |
|   | Dry Detention Basin and Rip Rap Channel   |  |  |
| Task  | Schedule  |  |  |
| Sediment Removal and Repair of Eroded Areas | Evaluate after each rainfall equaling or exceeding 0.5 inches to remove any accumulated sediment and to check for erosion |  |  |
| (Short Term: Year 1 – Year 3)               | inside and around the forebay. Repair erosion damage if it occurs.  |  |  |
| Sediment Removal and Repair of Eroded Areas | Inspect in early spring to remove any sediment and repair any eracion   |  |  |
| (Long Term: Year 3 – Later)                 | inspect in early spring to remove any sediment and repair any erosion.  |  |  |
| Maintain Underdrain                         | Clean underdrain if clogged   |  |  |
| Trash and Debris Removal                    | As needed.  |  |  |
| One year check-up                           | At one year after installation, inspect vegetation. Replace dead plants and remove invasive plant species.                |  |  |
| Hydrodynamic Separator                      |   |  |  |
| Task  | Schedule  |  |  |
| Sediment, Trash, and Debris Removal         | Evaluate after each rainfall equaling or exceeding 0.5 inches to remove any accumulated sediment or trash.                |  |  |
|   | Fontenelle Park Lagoon  |  |  |
| Task  | Schedule  |  |  |
| Outlet/inlet inspection and cleanout        | Evaluate after each rainfall equaling or exceeding 0.5 inches to determine appropriate long-term schedule.                |  |  |

#### Table 2 - BMP Maintenance Items and Schedule (Parks Maintenance)

| Fontenelle Park Lagoon                 |   |  |  |
|--|---|--|--|
| Task                                   | Schedule  |  |  |
| Trash and Debris Removal               | As needed.  |  |  |
| Sediment Removal                       | Evaluate annually.  |  |  |
|  | Dry Detention Basin   |  |  |
| Task                                   | Schedule  |  |  |
| Weeds<br>(Short Term: Year 1 – Year 3) | Eliminate weeds using spot application of herbicide or pulling throughout the first year. |  |  |
| Weeds<br>(Long Term: Year 3 – Later)   | Inspect one to two times each year and remove weeds and invasive species.                 |  |  |
| Mowing                                 | As needed.  |  |  |
|  | Sediment Forebays   |  |  |
| Task                                   | Schedule  |  |  |
| Weeds<br>(Short Term: Year 1 – Year 3) | Eliminate weeds using spot application of herbicide or pulling throughout the first year. |  |  |
| Weeds<br>(Long Term: Year 3 – Later)   | Inspect one to two times each year and remove weeds and invasive species.                 |  |  |

#### Table 3 - BMP Maintenance Items and Schedule (Wetlands Maintenance)

| Wetland Areas  |   |  |  |
|--|---|--|--|
| Task Schedule  |   |  |  |
| Weeds  | Eliminate woods using spot application of berbicide or pulling throughout the first year  |  |  |
| (Short Term: Year 1 – Year 3)  | cintinate weeds using spot application of herbicide of pulling throughout the first year. |  |  |
| Weeds  | Inspections to two times each year and remove weads and invasive species                  |  |  |
| (Long Term: Year 3 – Later)  | inspect one to two times each year and remove weeds and invasive species.                 |  |  |
| Trash and Debris Removal   | As needed.  |  |  |
| One year check-up At one year after installation, inspect vegetation. Replace dead plants and remove invasive plant specie |   |  |  |

#### 4.1 Screening Structures

The screening structures will require sediment, trash, and debris removal. The structures should be checked and cleaned monthly during dry weather and following every 0.5" rain event.

## 4.2 Sediment Forebays

The sediment forebays may require sediment, trash, and debris removal. Sediment accumulation should be checked monthly for the first year, to determine an appropriate long-term schedule, and removed when the sediment accumulation becomes visible. The rip rap dissipation bays should be checked monthly, for the first year to determine an appropriate long-term schedule, and repaired as needed. Maintenance and cleaning of the forebay may require the use of a vac truck.

## 4.3 SAFL Baffle

The SAFL Baffle sump manhole will require sediment, trash, and debris removal. Sediment, trash, and debris accumulation should be checked and removed monthly during dry weather and after each 0.5" rain event. Maintenance and cleaning of this structure will require the use of a vac truck.

## 4.4 Dry Detention Basin

The dry detention basin may require sediment, trash, and debris removal. Sediment accumulation should be checked monthly for the first year, to determine an appropriate long-term schedule, and removed when the accumulation is becomes visible. The rip rap dissipation channel should be checked monthly for the first year, to determine an appropriate long-term schedule, and repaired as needed. The dry detention basin will have a grass surface that will require maintenance consistent with the rest of the grass in the park.

## 4.5 Hydrodynamic Separator

The hydrodynamic separator will require sediment, trash, and debris removal. Sediment, trash, and debris accumulation should be checked monthly during dry weather and following every 0.5" rain event. Maintenance and cleaning of this structure will require the use of a vac truck.

## 4.6 Fontenelle Park Lagoon

The Fontenelle Park Lagoon may require trash and debris removal along the banks and may require the removal of certain floatables. Sediment accumulation should be checked annually and removed when the accumulation is greater than 18 inches.

#### 4.7 Wetland Areas

The wetlands may require trash and debris removal, invasive species removal, and replanting as necessary. Regular inspections will be required to identify other maintenance requirements throughout the year.