



1459 Washington St.
Muscatine, IA 52761-5040
(563) 263-8933
Fax (563) 263-2127

Public Works

City Transit
263-8152

MEMORANDUM

To: Mayor and City Council Members
CC: Gregg Mandsager, City Administrator
FROM: Brian Stineman, Public Works Director
DATE: December 1, 2017

Equipment Maintenance
Roadway Maintenance
Collection & Drainage
Building & Grounds
Engineering

RE: Resolution to Approve the pre-application to the Iowa Department of Agriculture and Land Stewardship for the Water Quality Initiative Urban Conservation Projects Grant

INTRODUCTION:

The City of Muscatine Public Works Department, in cooperation with HNI Corporation, The Muscatine Pollinator Project, and The Muscatine Soil and Water Conservation District, would like to submit a grant pre-application for the Water Quality Initiative Urban Conservation Projects funded by the Iowa Department of Agriculture and Land Stewardship (IDALS). This pre-application will be for construction of a bio-retention cell and permeable pavers in the 3rd Street parking lot across from City Hall, along with an infiltration trench in the HNI parking lot on the north side of E. 2nd Street.

BACKGROUND:

Water quality and localized street flooding are issues that affect all residents of Muscatine and the Mississippi River Watershed. By utilizing public and private funding to implement proven green infrastructure storm water management practices, the City of Muscatine and its partners can serve as models to local and regional governments and businesses on how to manage stormwater and improve surface water quality.

This grant offers to assist with a fifty percent cost share up to \$100,000. Public Works and HNI staff have met with IDALS representatives and have developed projects that will benefit the community by reducing nutrient pollution in an urban setting, improving water quality, addressing pollinator species decline, reducing unneeded herbicide use, and reducing localized flooding during rain events.

RECOMMENDATION/RATIONALE:

Approve the resolution to support the grant pre-application. Funding for the match amount will be contributed by HNI Corporation and the Public Works Collection and Drainage Budget, as well as in-kind contributions from other partner organizations.

BACKUP INFORMATION:

Grant pre-application

**"I remember Muscatine for its sunsets. I have never seen any
on either side of the ocean that equaled them" — Mark Twain**

RESOLUTION NO. _____

**RESOLUTION AUTHORIZING THE SUBMITTAL OF A PRE- APPLICATION TO THE IOWA
DEPARTMENT OF AGRICULTURE AND LAND STEWARDSHIP FOR WATER QUALITY
INITIATIVE URBAN CONSERVATION PROJECTS**

WHEREAS, the Iowa Department of Agriculture and Land Stewardship (IDALS) is accepting pre-applications for projects that demonstrate strong ties to the Iowa Nutrient Reduction Strategy, and

WHEREAS, These projects will focus on adoption and implementation of urban conservation practices that provide nutrient load reductions to water resources in combination with outreach and education components demonstrating how projects will work to support the nonpoint source action items outlined in Section 1 of the Iowa Nutrient Reduction Strategy, and

WHEREAS, Successful projects will serve as local and regional hubs for demonstrating urban conservation practices and providing practice information to other communities, and

WHEREAS, The Muscatine Public Works Department, in cooperation with HNI Corporation, The Muscatine Pollinator Project, and The Muscatine Soil and Water Conservation District have partnered to submit the pre-application,

NOW, THEREFORE, BE IT RESOLVED, that the pre-application to the Iowa Department of Agriculture and Land Stewardship for the Water Quality Initiative Urban Conservation Projects, Muscatine Parking Lot Runoff Solutions is hereby approved as to form and content.

BE IT FURTHER RESOLVED, that the Mayor is hereby authorized to execute and file the application on behalf of the City of Muscatine, with the Iowa Department of Agriculture and Land Stewardship for the Water Quality Initiative Urban Conservation Projects, Muscatine Parking Lot Runoff Solutions.

BE IT FURTHER RESOLVED, that the City of Muscatine, Iowa does hereby commit to address funding for the Muscatine Parking Lot Runoff Solutions Projects as outlined in the pre-application at the appropriate time in the City's budgeting process.

PASSED, APPROVED, AND ADOPTED this 7th day of December 2017.

BY THE CITY COUNCIL OF THE
CITY OF MUSCATINE, IOWA

Diana Broderson, Mayor

ATTEST:

Gregg Mandsager, City Clerk

1. Project Title:

“Muscatine Parking Lot Runoff Solutions”

Applicant Entity: City of Muscatine

Contact Person: Brian Stineman

Address: 1459 Washington Street
Muscatine, Iowa 52761

Phone: 563-263-8933

E-mail: bstineman@muscatineiowa.gov

2. List the name, location, and the importance of the surface water that will be benefit by this project:

The receiving water for these projects is the Mississippi River. The River makes up the southern border of Muscatine and is the most recognizable feature of the community. Water quality in the Mississippi is paramount to a healthy nation. It is the goal of the City of Muscatine to do our part to invest in the river and contribute to help improve its water quality.

3. Include a listing of project partners at the time of pre-application:

The City of Muscatine
HNI Corporation
Muscatine Soil And Water Conservation District
Muscatine Pollinator Project

4. Provide a total budget summary, utilizing the format shown here:

	IDALS Request	Applicant Contributions	Partner Contributions	Total Budget
April 1, 2018 – June 30, 2018	\$65,000			
July 1, 2018 – June 30, 2019		\$55,000	\$10,000	
Overall	\$65,000	\$55,000	\$10,000	\$130,000

Proposed Timeline of Events



Pre-Proposal Narrative: (2 page maximum)

Provide a brief narrative on the following items:

- **Describe the primary components/practices that will be installed by this project.**

The City of Muscatine plans to address surface stormwater run-off from approximately one and a half acres of a three acre impervious parking lot that empties via storm sewer into the Mississippi River. Using the Water Quality Volume (WQv) calculation, it estimated that the area sheds 6,807 cubic feet of water per a rain event of 1.25 inches. The Channel Protection Volume (CPv) of this same area is expected to be 12,960 cubic feet of water per a rain event of 2.38 inches. We propose to construct a bio-retention cell in place of the existing raised median in the parking lot and to install permeable pavers around the existing stormwater inlet to treat the channel protection volume of water, removing sediment, nitrates, phosphates and other pollutants in addition to alleviating recurring issues of standing water and flooding of the parking lot and adjacent street. The bio-cell and amount of permeable pavement will be sized and constructed based on the Iowa Stormwater Manual.

In addition to the practices in the city hall parking lot, the City of Muscatine is partnering with HNI Corporation to assist them in incorporating green infrastructure stormwater management practices on their corporate campus. HNI is primarily concerned about stormwater management for flooding, however, the City of Muscatine is using this opportunity for partnership to educate the leaders of HNI on the benefits of water quality management. By assisting HNI with grant funding to design and construct an infiltration trench on the downhill side of one of their parking lots we will be able to convince a world-wide company of the benefits of stormwater management for water quality. This partnership will make a tremendous impact by showing that cooperation with corporate entities to enhance water quality is not only possible, but that the benefits are far-reaching and well worth the investment.

- **Describe the primary anticipated benefits from each partner and benefits to urban and rural populations in the watershed.**

The City of Muscatine is committed to improving the health of local waterways. Using this project as a demonstration site, the City hopes that the inclusion of bio-retention cells and permeable pavement in an urban setting close to City Hall will be able to be duplicated throughout the City, further reducing the nutrient load into the Mississippi River. Bio-retention cells have been proven to remove up to 80 percent of total suspended solids in stormwater. In addition, it is anticipated that we will achieve reductions in hydrocarbons, heavy metals, bacteria, nutrients and pesticides.

The partnership with HNI Corporation is the crown jewel in this proposal. By working with a major corporation to install and promote the use of green infrastructure practices the door will be thrown open to other public and private firms to utilize these practices in multiple locations. Currently green infrastructure practices are relatively unknown in the city of Muscatine. By receiving this grant and partnering with HNI, the Muscatine County Conservation District, and the Muscatine Pollinator Project, we are ensuring the success and publicity of these practices which will help to spread the knowledge of their benefits and increase the frequency of their construction and use throughout the community and this region of Iowa.

- **If there will be other / future phases of this project or if the things that would be funded by this application are part of a larger scale project, describe the larger project and how this application fits in or compliments other aspects of a larger project.**

These projects provide great opportunities as demonstration sites for urban stormwater treatment. The City of Muscatine is in the process of reconstructing Mississippi Drive. Several design elements from the Mississippi Drive project are planned to be incorporated into streetscaping the rest of the downtown. By demonstrating the effectiveness of infiltration practices such as bio-retention cells and permeable pavement we hope to be able to incorporate these types of stormwater management practices into the future streetscapes of the community. As mentioned in the previous section, by working with an international

corporation, as well as local partners, we are ensuring the success of these practices and will be able to promote them throughout the community as valuable solutions to stormwater management.

- **Describe how the project will be evaluated to determine if anticipated benefits are realized.**

These practices will be designed and constructed per the Iowa Stormwater Management Manual. Visual inspections and maintenance will be conducted weekly by city staff trained in stormwater management practices. Monitoring wells will be installed in the bio-cell and infiltration trench for visual observation of water levels and potential future monitoring equipment installation.

- **Describe the education/information program that will be developed as part of the project and anticipated budget.**

The City plans to install educational signage in the parking lot at the edge of the bio-cell. There are one hundred parking spaces located in the city parking lot. These spaces are filled daily by workers in the downtown area. This exposure guarantees that at least one hundred people per day will be exposed to the bio-cell and permeable pavement practices. Additionally, this lot is used for the local farmer's market during the spring and summer months. We can think of no better way to reach the agricultural and urban populations and explain to them the benefits of the state's nutrient reduction strategy and how it affects both the urban and rural population. The city will use these events to educate the public about the project and the grant and the benefits that they provide.

Once construction is complete the city's communications department will put together a press release and public notification of the project. Announcements will also be made on the city website and social media outlets and the city newsletter that is sent out with the sewer bill. An opening ceremony will be held and public officials and the general public will be invited. At this time we are planning for this event to coincide with the city's July 4th festivities. This parking lot is used as the staging area for our local soapbox derby. Therefore the lot will be filled with participants and it will be a great time to invite the public to visit the site and experience the opening.

Finally the Stormwater Manager will add this project to his education and outreach workload and include stops to the project site on educational tours. The location of the project, directly across the street from City Hall in a public parking lot, will ensure that the public will have access to the project location for tours and general site seeing. We will be able to track the number of people at who visit the project via head counts at events and social media and website visits as well as the known circulation of the city newsletter.

Provide a description of each practice utilizing the format shown here (Table will not count towards the two-page maximum):

Practice #1: <i>(provide name and description of practice)</i> Bio-retention cell	IDALS: <i>(IDALS budget contribution to practice)</i> \$50,000 TOTAL: <i>(Applicant and partner budget contributions to practice)</i> \$50,000
Practice Details: <i>(provide a general description of the location, design status, permits required, and current permit status)</i> The location of the project is in the city-owned parking lot on the north side of 3 rd Street between Cedar and Sycamore Streets. The cell will be designed by the City of Muscatine Public Works Department per the guidelines established in the Iowa Storm Water Management Manual. It is hoped that construction can be completed by in-house public works staff. If scheduling does not permit this then a contract will be let for the construction. It is anticipated that this aspect of the project can be completed within 90 working days of receipt of grant funding.	
Practice #2: <i>(provide name and description of practice)</i> Permeable Pavement	IDALS: <i>(IDALS budget contribution to practice)</i> \$5,000 TOTAL: <i>(Applicant and partner budget contributions to practice)</i> \$5,000
Practice Details: <i>(provide a general description of the location, design status, permits required, and current permit status)</i> There is one stormwater intake on the south side of the parking lot. This area will be surrounded with an area of permeable pavement designed and sized per the Iowa Storm Water Management Manual to infiltrate stormwater before it enters the storm sewer system. If City crews are unable to complete this work a contract will be let for the construction. It is anticipated that this aspect of the project can be completed within 90 working days of receipt of grant funding.	
Practice #3: <i>(provide name and description of practice)</i> Infiltration Trench	IDALS: <i>(IDALS budget contribution to practice)</i> \$10,000 TOTAL: <i>(Applicant and partner budget contributions to practice)</i> \$10,000 from HNI Corporation
Practice Details: <i>(provide a general description of the location, design status, permits required, and current permit status)</i> The location of this project is in a parking lot owned by HNI Corporation near 725 E. 2 nd Street. The trench will be designed and constructed per the Iowa Storm Water Management Manual by a local contractor hired by HNI Corporation. It is anticipated that this aspect of the project can be completed within 90 working days of receipt of grant funding.	



CITY HALL PARKING LOT

CEDAR ST

E 3RD ST

E 4TH ST

SYCAMORE ST



LEGEND



BIO-RETENTION CELL

PERMEABLE PAVEMENT

60 30 0 Feet

HNI PARKING LOT

FAMILY DOLLAR

E 2ND ST



LEGEND



INFILTRATION TRENCH

60 30 0 Feet




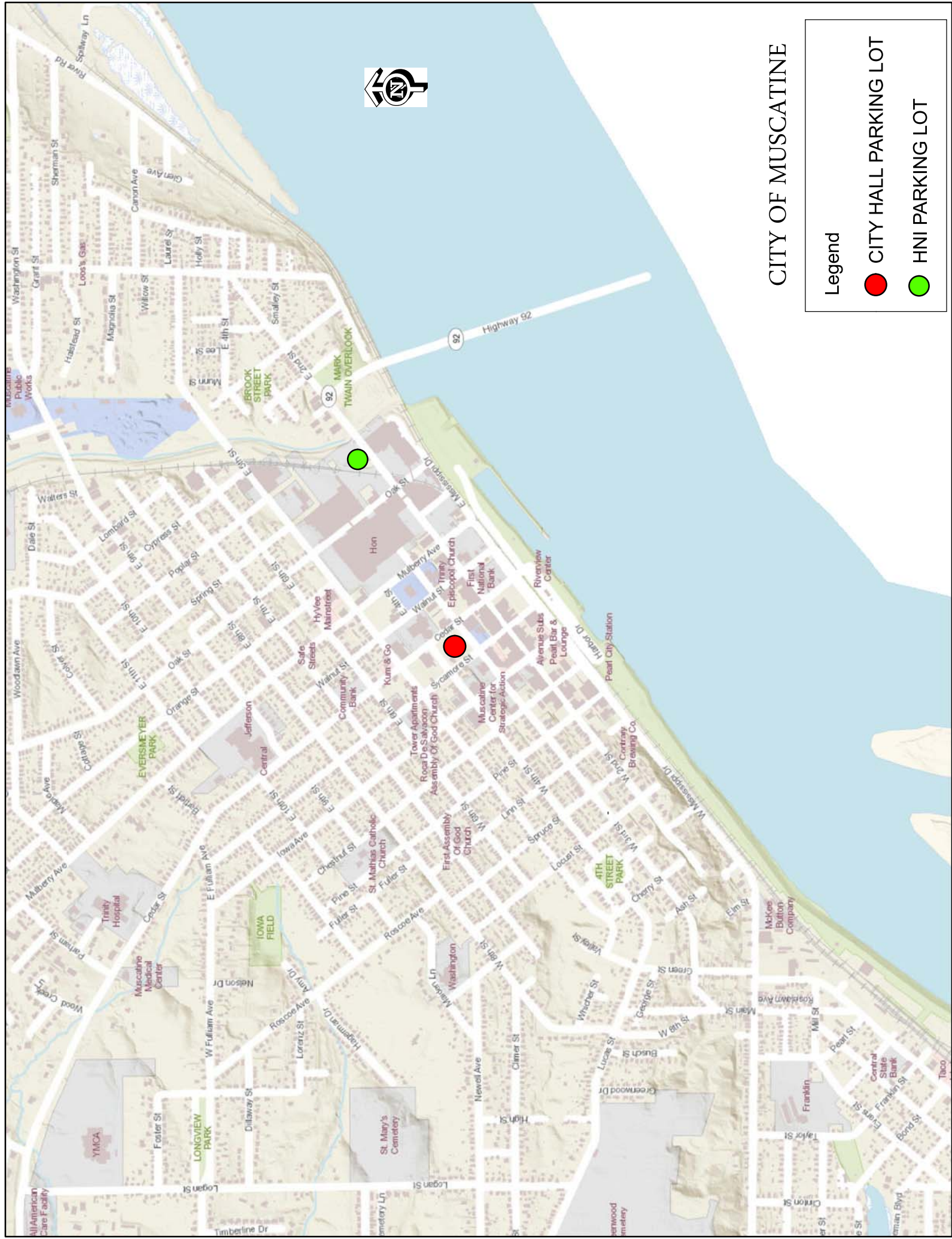


CITY OF MUSCATINE

Legend

 CITY HALL PARKING LOT

 HNI PARKING LOT



- **Demonstrated ability to implement the project /practices in an efficient manner; readiness to proceed quickly upon project approval (20)**
- **Project reduces nutrient loading to a water resource of high value to a large population of users (10)**
- **Demonstrated strong partnerships and landowner willingness/participation levels (10)**
- **Demonstrated linkages providing benefits to both urban and rural populations in the watershed (10)**
- **Demonstrated ability to reduce nutrient loading to Iowa surface waters (10)**
- **Collaborative outreach/education efforts to increase practice adoption and disseminate information broadly (10)**
- **Identified financial and in-kind support available from project partners as matching funds/resources (10)**
- **Project evaluation: Are the expected outcomes measurable, and is the evaluation plan suitable for measuring the outcomes? (10)**
- **Targeting of most effective practices to areas providing most benefit (10)**