

**Iowa Flood Mitigation Program (FMP)  
Flood Mitigation Project Application**

**I. Applicant Information**

A. Applicant/Community Name	B. Address	City, State, Zip Code		
City of Burlington	400 Washington Street	Burlington, Iowa 52601		
C. Point of Contact (POC) Name for Project	POC Title	POC Agency	POC Email	
Jim Ferneau	City Manager	City of Burlington	<a href="mailto:citymanager@burlingtoniowa.org">citymanager@burlingtoniowa.org</a>	
POC PO Box and Zip Code	POC Street Address	POC City, State, Zip Code	POC Phone	
52601	400 Washington Street	Burlington, Iowa 52601	319.753.8120	
Alternate POC Name or Authorized Representative	Alt POC Title	Alt POC Agency	Alternate POC Email	
Charlie Nichols	City Planner	City of Burlington	<a href="mailto:nicholsc@burlingtoniowa.org">nicholsc@burlingtoniowa.org</a>	
Alt POC PO Box and Zip Code	Alt POC Street Address	Alt POC City, State, Zip Code	Alt POC Phone	
52601	400 Washington Street	Burlington, Iowa 52601	319.753.8130	
D. Federal Tax ID # / FEIN	E. County Name	F. US Congressional District(s)	State Legislative Districts	
[REDACTED]	Des Moines	2nd	Senate 44	House 87
G. Is the Applicant/Community participating in the National Flood Insurance Program (NFIP)?		Community's CID Number		
Yes		190114		



### III. Project Plan Summary

**A. Provide a brief description of the project. Identify separately each component of construction or reconstruction included in the project. This is a summary of Tab B - Project Plan. Code of Iowa section 418.4, subsection 2**

The Burlington Downtown Mississippi Riverfront Plan prepared by Veenstra & Kimm/SmithGroupJJR provides a conceptual plan for improvements which will help mitigate the flooding experienced by the Burlington Riverfront by reducing the the flow of stormwater towards the Riverfront while providing barriers between floodwaters and the Burlington Riverfront and the critical infrastructure of the Wastewater Treatment Plant. The Riverfront will become a regional riverfront park and provide flood mitigation for the business and residential community, which will help catalyze economic development in the Burlington Downtown. Flood walls protect the City from the rising waters of the Mississippi River but they also block stormwater runoff from reaching the river. Hence there is a need to pump stormwater from behind the flood protection, requiring pump stations that are expensive to construct and to operate.

Minimizing the quantity of stormwater that reaches the pumps through the use of green infrastructure in the downtown can create real operational and infrastructure cost savings. The primary opportunities identified for green infrastructure in the downtown include green alleys, green streetscapes and rain garden streets. A demonstration area focused in a specific area bound by 3rd Street, Washington Street, N. Front Street, and Jefferson Street would have the biggest impact as a first step towards implementation.

The entire project is broken into nine (9) phases ( Phases V, VI, VII, & IX utilizing Sales Tax Increment funding): Phase I - Hawkeye Equalization tanks (2009); Phase II- Water Works System Improvements (2009); Phase III - Cascade Watershed Separation Project (2010 - 2016); Phase IV - MASL Watershed Sewer Separation Project (2014-2022); Phase V - South Side of Market to North of Port Building (2015-2017); Phase VI - South Side of Market to Rail Yard including Market Pump Station (2019-2020); Phase VII - Tieback Wall on Market and Pump Station at Valley (2021-2022); Phase VIII - MASL Detention Storage (2023-2023); Phase IX - WWTP and Railroad Yard Closures (2022 -2023).

**B. How will the project mitigate future flooding of property that has sustained significant flood damage and is likely to sustain significant flood damage in the future? Code of Iowa, section 418.9, subsection 10, 2a Explain:**

Three major flood events have occurred in Burlington in the last six years including 2008, 2013 and 2014. Flood levels in June 2008 reached a near-record high of 25.18 feet on the Burlington Flood Gage (0.0 on the gage is 511.45 NAVD 1988). According to the Federal Emergency Management Agency (FEMA) flood maps, the 100-year flood elevation for Burlington is 20.75 feet and the 500-year flood is elevation is 24.55 feet.

The proposed ~2,550 linear feet of 42" flood mitigation wall will be constructed to the 100- year flood level, with removable walls to be installed on top of those when necessary. When installed, the removable walls will protect to the flood of record height (2008 flood level) plus 2-3 feet freeboard. The approximately 1,200 linear feet of 7' floodwall will provide flood mitigation for the critical infrastructure wastewater treatment plant and the commercial and residential properties that have sustained repetitive losses over the past years. Currently the wastewater treatment plant (WWTP) discharges effluent to the river completely through gravity flow. During large flood events, the WWTP cannot gravity discharge due to the higher river elevations. The Market Street Pump Station, the primary method to move sewage from the downtown to the wastewater treatment plant, becomes inundated during major floods and cannot function, causing sewers to backup in downtown buildings. Basements flood, infrastructure is damaged, floating deadwood becomes jammed in fencing, potential overflow contaminates the river, and millions of dollars of damage occurs. Unfortunately, 100-year (and higher) level flood events are becoming the "norm."

In Burlington, green infrastructure recommendations are focused on areas where improvements to streets and alleys would be most beneficial. These include green streetscapes on Jefferson and Washington Streets, the two main business streets that also connect to the riverfront. Green alleys are also recommended, especially where alleys are already in need of replacement. The pavement in these alleys would be replaced with permeable pavers, concrete or asphalt. Pavers are sometimes more expensive but can recreate the look of brick alleys, which were historically prevalent in Burlington (and some still exist). The project will benefit interior drainage through the reduction of road-related chemicals contaminating waterways. The resulting stormwater runoff from streets, buildings, and parking lots carries dirt, oil and other pollutants to rivers and streams and can also cause erosion and flooding that harm properties and wildlife.

**C. How does the project address the impact of flooding both upstream and downstream from the project area? Code of Iowa, section 418.9, subsection 10, 2b Explain:**

The project improvements will provide benefits to properties upstream and downstream of the flood-prone area. The pervious pavement systems will benefit downstream properties by reducing the floodwater volume that will flow towards the Mississippi River. The separated sewer system will greatly reduce the peak flow being sent to the WWTP for processing - especially when this service may already be complicated by rising floodwaters from the River. The project will also benefit downstream properties through the reduction of road-related chemicals contaminating waterways. The resulting stormwater runoff from streets, buildings, and parking lots carries dirt, oil and other pollutants to rivers and streams and can also cause erosion and flooding that harm properties and wildlife. The improvements are to be completed within the bounds of the identified floodplain and since the walls and/or levees are not in the "floodway" there is not a need for a certification stating the project will not impact the pre-project base flood elevations. So the project will not cause any regulatory issues upstream of the project. However, permits for storm sewer outlets and pump station outlets will be obtained as the project progresses.

**D. Describe how the project conforms to any applicable floodplain ordinance and identify the ordinance. Code of Iowa, section 418.9, subsection 10, 2b**

Any development within a Floodplain shall follow Chapter 17.65 Floodplain Regulations of the Burlington Zoning Code. The project, as proposed, will meet the requirements set forth in "Chapter 17.65.310 Flood Control Structures: Flood control structural work such as levees, floodwalls, etc., shall provide, at a minimum, protection from a 100-year flood with a minimum of three feet of design freeboard and shall provide for adequate interior drainage. In addition, structural flood control works shall be approved by the Iowa Department of Natural Resources."

**E. Describe how the project is sufficiently valuable to the economic viability of the state or is of sufficient historic value. Code of Iowa, section 418.9, subsection 10, 2c**

Burlington's success over the years has been celebrated through design and construction of several iconic buildings along the riverfront. The function and architectural expression of these buildings ranges from working commercial facilities like the Port of Burlington (1929) and the Railroad Depot (Holabird & Root, 1944), to civic destinations such as the Moose Lodge (no longer in existence), and the Memorial Auditorium (1938). Today, these buildings are recognized as significant landmarks listed on the National Register of Historic Places. These buildings and their surroundings continue to serve the community in a greater capacity than just interpretive structures. They are major destinations for community celebrations, recreation, and entertainment. These spaces help enrich the visitor experience and enhance the riverfront for both individual and community uses. The tourism industry in Greater Burlington contributes approximately \$125 million to the local economy. New events and attractions will develop because of the peace of mind created by the proposed protection. Many visitors as well as attractions or events are attracted to the beauty of the Burlington Riverfront, but are deterred from the location by the fear of potential flooding. Steamboat Days, Burlington's annual music festival, holds their festival along Burlington's riverfront. Flooding has forced this festival to be relocated or abbreviated, causing a multi-million dollar negative impact to the local economy.

**F. How is this project essential to meet the necessary expenses or serious needs of the governmental entity related to the flood mitigation? Code of Iowa, section 418.9, subsection 10, 2h Explain:**

The City of Burlington is in the midst of a major sewer separation project. This vital project will remove the infiltration and inflow issue that plagues the City and overtaxes the existing utility services. The flood protection system will help eliminate not only the almost yearly flood fight and impact to the downtown and riverfront area, but provide a level of security to expand the opportunities in these areas of Burlington. Both of these improvements are major needs the community has stressed a desire to see corrected. Each phase of this project is essential to the vital operation of the City and continued vitality of the downtown. The City of Burlington has expended nearly \$10 million in the sewer separation project to date and has nearly \$25 million in remaining expenses to complete that project. This project is being funded by sewer revenues and SRF loan funding. The City's total expense for the proposed Burlington Flood Mitigation Project is estimated at over \$26 million.

**G. Provide the extent of nonfinancial support committed to the project from public and nonpublic sources. Code of Iowa, section 418.9, subsection 10, 2e**

As evidenced in the support letters included with this application, numerous private investment opportunities will move forward based on the City providing flood mitigation to protect the Burlington Downtown and Riverfront. The level of commitment from the community is evident in the community's own words. The Greater Burlington Downtown Partnership stated, "We are seeing unprecedented interest in downtown redevelopment, with nearly \$20 million in private investment in the past 12 months and another \$15 million underway right now." The Greater Burlington Convention & Visitors Bureau states, "Providing flood protection will allow for the Greater Burlington Convention & Visitor Bureau to better promote the riverfront...This will in turn lead to an increase of visitors attracted to the community and an increase to the \$125 million tourism industry in Greater Burlington." Commerce & Community Consultants states "We anticipate investing approximately \$15 million in capital that will most likely involve multiple properties...As we move closer to final decisions to invest in the downtown with our capital sources, knowing that the City of Burlington is adequately resolving flooding impact and river control will be vital to affirm our eventual commitment."

**H. Describe the coordination with other watershed management measures as applicable. Code of Iowa, section 418.9, subsection 10, 2f**

In addition to providing protection from flooding from the Mississippi River, the project will include measures to reduce the amount of stormwater runoff that will impact the downtown and riverfront from the surrounding areas. Burlington will use green streets, trees, and other green infrastructure to manage stormwater, protect water quality and improve watershed health. Green infrastructure protects the aging sewer system and makes it operate more efficiently by keeping stormwater out of the sewers. The Burlington Flood Mitigation Project will consist of a series of walls and closures designed to ensure protection up to 28 feet. However during a hypothetical "maximum probable" flood, or "design flood", the City will require significant storm sewer improvements and pumping stations to protect from interior flooding and back flow through current storm sewer outlets. The on-going separation of the sewer system in the project area will also relieve the overloads and backup of the existing sewer system. During large flood events, the WWTP cannot gravity discharge due to the higher river elevations. A permanent effluent lift station is recommended at the discharge of the WWTP, sized to provide effluent discharge of treated wastewater operating at maximum plant capacity during design flood events.

**I. Describe how this project is consistent with applicable comprehensive, countywide emergency operations plan in effect and other applicable local hazard mitigation plans. Code of Iowa, section 418.9, subsection 10, 2g**

The project complies with the City of Burlington Zoning Ordinance Floodplain Regulations by providing protection to at least the 100-year floodplain elevation. The project also addresses the issues which arose during the update of the Burlington Comprehensive Plan in 2012. Those issues include, " Flooding on the Mississippi River becoming more frequent and more extreme and limited resources for hazard mitigation and response. The project also complies with the Des Moines County Pre-Disaster Mitigation Plan adopted on April 12, 2010. This project helps to address the identified Short Term Goals of the Plan of: #4 Provide for continuity of government and continuity of operations and #5 Protect property, homes and businesses, industry, and educational facilities and the Long Term Goals identified as Goal #1: Protect human life and property from natural and technological hazards; Goal #3: Mitigate the impact of identified hazards; and Goal #4: Assess the basis for funding mitigation projects.

**J. Description of Project Location (i.e. Latitude and Longitude (minimum 6 digits after the decimal), Neighborhood, Subdivision, Geographic Boundaries, Driving Directions, etc.)**

The project is located in the City of Burlington, in the area encompassing the Central Business District and bound by North Street the to the north, the Mississippi River to the west, Central Avenue to the east, and South Street to the south. The north portion of the project is located at 40° 49' 7.98" N, 91° 05' 58.52" W and extends along the Mississippi River to a point at the south boundary at 40° 47' 50.65" N, 91° 05' 44.64" W.

**K. Number of people and properties protected as a result of the completion of the entire proposed project:**

	Properties/ Facilities	People	Average Value	Total Potential Losses Mitigated
# of People		17271	\$0.00	\$0.00
# of Residential Properties	1331		\$57,665.00	\$76,752,115.00
# of Commercial Properties	486		\$82,983.00	\$40,329,738.00
# of Public Properties	104		\$0.00	\$0.00
# of Critical Facilities	4		\$250,000.00	\$1,000,000.00
<b>Total Potential Losses Mitigated</b>	1925	17271	\$390,648.00	<b>\$118,081,853.00</b>

**K1. Description average value computation (i.e. average assessed property value in affected area, average insured value of critical facilities in affected area, average value of loss of critical service, etc.)**

The average value computation was computed using the 2014 assessed value of the properties located within the project area, as provided by the Des Moines County Assessor Office, divided by the total properties in each tax class. The population of the project area was determined using EJView based on 2006-2010 American Community Survey of the U.S. Census Bureau.



**IV. Work Schedule**

**A. List the major milestones for this project.**

Task	Months/Years from Award		Responsible Party
	Start	Complete	
Phase I -Hawkeye Equalization Tanks, Phase II - Water Works		FY 2009	City, Consulting Engineer, Contractor
Phase III - Cascade Watershed Separation Project	FY 2010	FY 2016	City, Consulting Engineer, Contractor
Phase IV - MASL Watershed Sewer Separation Project	FY 2014	FY 2022	City, Consulting Engineer, Contractor
Phase V - South Side of Market to North of Port Building	FY 2015	FY 2017	City, Consulting Engineer, Contractor
Phase VI - South Side of Market to Rail Yard w/ Market Street	FY 2019	FY 2020	City, Consulting Engineer, Contractor
Phase VII - Tieback Wall on Market and Pump Station at	FY 2021	FY 2022	City, Consulting Engineer, Contractor
Phase VIII - MASL Detention Storage	FY 2023	FY 2023	City, Consulting Engineer, Contractor
Phase IX - WWTP and Railroad Yard Closures	FY 2022	FY 2023	City, Consulting Engineer, Contractor
<b>Total Project Duration:</b>	<b>15 years</b>		

**V. Certifications**

To the best of my knowledge and belief, I certify that all data in this application packet is complete, true and correct. The governing body of the applicant has duly authorized this document and hereby applies for assistance as documented in this application. The applicant understands that the project shall not proceed until Flood Mitigation Board approval is granted.

	
Signature of the Chief Executive Officer	Signature of the Authorized Representative
Shane A. McCampbell	Jim Ferneau
Name of the Chief Executive Officer	Name of Authorized Representative
Mayor	City Manager
Title	Title
City of Burlington, Iowa	City of Burlington, Iowa
Organization	Organization
	1/12/2015
Date	Date
	400 Washington Street
Phone Number	PO Box / Street Address
	Burlington, Iowa 52601
	City, State and Zip Code
	319-753-8120
	Phone Number
	citymanager@burlingtoniowa.org
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