

Iowa Flood Mitigation Program (FMP) Flood Mitigation Project Application

I. Applicant Information

A. Applicant/Community Name	B. Address	City, State, Zip Code	
City of Des Moines / Des Moines Metropolitan Wastewater Reclamation Authority	400 Robert D. Ray Drive	Des Moines, Iowa 50309	
C. Point of Contact (POC) Name for Project	POC Title	POC Agency	POC Email
Calvin Miller	Civil Engineer I	City of Des Moines	cbmiller@dmgov.org
POC PO Box and Zip Code	POC Street Address	POC City, State, Zip Code	POC Phone
50309	400 Robert D. Ray Drive	Des Moines, Iowa 50309	515-283-4748
Alternate POC Name or Authorized Representative	Alt POC Title	Alt POC Agency	Alternate POC Email
James Beck	WRA Facilities Engineer	WRA	jbeck@dmgov.org
Alt POC PO Box and Zip Code	Alt POC Street Address	Alt POC City, State, Zip Code	Alt POC Phone
50317	3000 Vandalia Road	Des Moines, IA 50317	515-323-8055
D. Federal Tax ID # / FEIN	E. County Name	F. US Congressional District(s)	State Legislative Districts
[REDACTED]	Polk	3rd Congressional District	Senate: 16 House: 32
G. Is the Applicant/Community participating in the National Flood Insurance Program (NFIP)?		Community's CID Number	
Yes		190227	

II. Project Cost Information *Code of Iowa, section 418.4, subsection 2*

A. Identify the requested funding source:

Sales Tax Increment

B. Project Budget Summary

Acquisitions	\$ 72,424
Management Costs	\$ 3,136,814
Construction	\$ 237,825,824
Design	\$ 34,384,638
City Interest	\$ 29,115,510
WRA Interest Cost	\$ 4,074,510
Total Project Budget Summary	\$ 308,609,720

C. Project Funding Source

Identify all anticipated funding sources for the project and the amounts. *Code of Iowa, section 418.4, subsection 2*

State that you have applied for and/or received approved federal financial assistance. *Code of Iowa 418.4, subsection 3b.*

Please insert additional rows as needed.

Identify source	Applied/ Received	Federal \$	Local \$	Sales Tax Increment
CDBG		\$ 11,517,038		
US Army Corp of Engineers		\$ 14,808,000		
Federal DOT		\$ 2,849,000		
Iowa DOT			\$ 726,071	
I-Jobs			\$ 7,476,588	
SRF- Clean Water		\$ 101,096,396		
Local In-Kind Contribution			\$ 4,058,540	
Local			\$ 54,977,814	
Iowa Flood Mitigation Program				\$ 111,100,273
Total Project Funding Source		\$ 130,270,434	\$ 67,239,013	\$ 111,100,273

% of Total Cost	42.21%	21.79%	36.00%
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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 City of Des Moines and the WRA are working together in flood prevention efforts. The WRF is located within the city limits of Des Moines and bounded on the south by the Des Moines River. Therefore, flooding in Des Moines, especially along the Des Moines River has a direct impact on the WRA's ability to provide uninterrupted wastewater treatment service to its customers. In addition, interrupted service would impact the citizens, businesses, and economy of the City of Des Moines most, as the City is the largest customer base of the WRA.

The proposed Flood Protection Plan consists of four phases of comprehensive flood protection improvements for the City of Des Moines and the Des Moines Metropolitan Wastewater Reclamation Authority (WRA). Phase 1 includes projects that have been completed, and have been funded by various sources such as CDBG, Army Corps of Engineers funds, SRF Clean Water funds, I-JOBS, and local funds. These projects have resulted in increased flood protection for the City of Des Moines and the WRA. They have also helped the City of Des Moines and the WRA improve the management of floodwater and stormwater in flooding events. The Federal funding agreements are included in Appendix 3.

Phase 2 includes projects that are currently underway. These projects have been funded by various sources such as SRF Clean Water funds and local funds. The result of the completion of these projects will increase the flood protection for the City of Des Moines and the WRA and allow both the City of Des Moines and the WRA to better manage and return floodwater and stormwater to the river in flooding emergencies.

Phase 3 and Phase 4 include projects that have been identified by technical or professional studies that benefit the City of Des Moines and the WRA by increasing flood prevention and protection. These studies and reports are included in Appendix 1.

The City and the WRA are requesting Sales Tax Increment Funding for projects identified in Phase 3 and Phase 4. The amount of the Sales Tax Increment Funding Request follows the project titles. The remaining project costs for Phase 3 and Phase 4 will be funded by the City of Des Moines and the WRA. The goal of the Flood Protection Plan is once the projects are complete, is to either lower the regulatory flood profile or raise the height of flood protection. This would enable the City to have the new levees certified by FEMA.

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:

The Flood Protection Plan includes a balanced approach to flood mitigation and provides improvements that lower the water surface elevation and raises the level of flood protection along the Des Moines River. In 2008, portions of the city along the Des Moines River suffered significant flood damage. Homes and businesses in the area protected by the Birdland levee were inundated with floodwaters causing millions in damages. Since 2008, the City of Des Moines has completed many projects including construction of the Riverwalk floodwall, replacement of the Birdland and Central Place levees, and installation of multiple stormwater pump stations. In 2008 and 2010 the Des Moines Metropolitan Wastewater Reclamation Authority's (WRA) Wastewater Reclamation Facility (WRF) was severely impacted by the high river levels with floodwater entering WRA facilities. Both flooding events led to conditions in which the WRF were required to operate at maximum capacity, and even though the WRF was able to continue to provide service to the 17 participating communities, the conditions created a situation in which the facility was extremely close to being incapacitated. The Flood Protection Plan will result in reduced flood risk for the WRA service area since the WRF (which provides sanitary sewer service and wastewater treatment for the 17 participating communities) will be better protected from flooding.

Going forward, it is imperative that the WRA continue to provide the approximately 460,000 citizens of the 17 participating communities with an operable wastewater treatment facility 24 hours a day, 365 days a year. The projects included in the Flood Protection Plan will mitigate future flooding of property and key wastewater treatment infrastructure to the east of downtown Des Moines. The projects in the Flood Protection Plan will allow the WRA to continue the conveyance and treatment of wastewater at the WRF during flood events and will help protect critical public infrastructure in which the 17 participating communities have heavily invested. The Flood Protection Plan will help protect private properties and businesses that are located within the 100 year floodplain in Des Moines.

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 Flood Protection Plan will help minimize flooding impacts upstream and downstream by reducing the water surface elevation in the Des Moines River. This work will have a positive upstream impact by lowering the 100-year water surface elevation along the Southeast Des Moines Levee by as much as two (2) feet. This approach also helps minimize the impacts downstream by allowing floodwater to spread out across a much greater area, thus reducing the velocity of the floodwater. The Corps of Engineers (COE) Section 408 requirements include review of risks within the project area, as well as upstream and downstream. The COE is focused on reducing risk for the Des Moines area, but also concerned with the possibility of potentially shifting risk to others. Negative impacts, if any, will have to be addressed to obtain the Corps of Engineers approval for the project improvements. The Flood Protection Plan also protects and mitigates the impacts of floodwaters upstream by conveying, partially treating, and removing the water from the combined sewer system and returning the water back to the regulated floodway through the WRA New Main Outfall and the WRA Combined Sewer Solids Separation Facility. By doing so, the Flood Protection Plan protects the WRF from inundation and allows the WRA to remain operational and to continue to convey and process wastewater from the 17 participating communities. Affecting the quantity and frequency of flow through the City will reduce flood risk long term to both the City and downstream communities.

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

The City of Des Moines currently has a floodplain ordinance in place as described in Chapter 50 of the City Code, "Floodplain development regulations of the City of Des Moines, Iowa". It states the following:
It is the purpose of this article to promote the public health, safety and general welfare by minimizing those flood losses described in section 50-28 of this article with provisions designed to:

- (1) Restrict or prohibit uses which are dangerous to health, safety or property in times of flood or which cause excessive increases in flood heights or velocities.
- (2) Require that uses vulnerable to floods, including public utilities which serve such uses, be protected against flood damage at the time of initial construction.
- (3) Ensure that eligibility is maintained for property owners in the community to purchase flood insurance through the National Flood Insurance Program.

The Flood Protection Plan conforms to the City's floodplain ordinance by designing and constructing sewer systems that minimize or eliminate floodwaters into the system (Sec 50-34 (5)), as well as by improving and increasing levees and floodwalls (Sec 50-34 (6)). Overall, the Flood Protection Plan works hand in hand with the City's floodplain ordinance to protect citizens and vulnerable assets within the community.

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*

The Flood Protection Plan improves flood protection in multiple areas of Des Moines including the downtown area, East Village, Riverpoint West, as well as major industrial areas in the southeast section of the city. Several large, national insurance companies such as Wellmark, Nationwide, Principal, and EMC reside in downtown Des Moines, making it the third largest insurance capital in the world. Each of these companies has made a substantial investment in downtown Des Moines over the last five years, including a current project underway by Principal valued at over \$238 million. Wellmark recently completed construction of a new \$194 million corporate headquarters project in 2011, and Nationwide completed a \$127 million project in 2009. Des Moines has a strong interest to protect these investments and the jobs provided by the companies.

Also over the last fifteen years, Des Moines has prioritized the revitalization of its downtown, targeting new business investment as well as the repopulation of vacant office and warehouse buildings and vacant sites. Many vacant and dilapidated structures have been successfully redeveloped into workforce housing and ground floor commercial space. These investments total over \$900 million, and have added over 3,500 residential units to the downtown market. A number of additional projects are planned or under construction, including the \$101 million Iowa Events Center Hotel, four additional hotels, new retail space, and an anticipated additional 860 residential units through projects totaling over \$174 million. The Historic Court Avenue District has been proposed for the location of a downtown grocery store in 2015. Kum & Go Corporation has announced a plan to build a \$92 million corporate headquarters downtown that will be completed in 2017.

The East Village has emerged over the last decade as a destination retail district in the Central Iowa region. Formerly vacant buildings and surface parking lots have been converted to commercial and mixed use spaces, including restaurants, professional offices, retail and personal services. A \$49 million project is under construction that will include a hotel, 124 housing units and structured parking. With the expansion of Martin Luther King Jr. Parkway, extending east as the SE Connector, it is forecast that the Market District south of the East Village will be the next area to see revitalization and new investment. In 2014, Modus Engineering finalized a \$14 million historic rehabilitation project to renovate a vacant warehouse into their corporate headquarters, creating a net zero commercial building that creates as much energy as it consumes. A number of properties have been purchased for conversion into professional office space; City owned sites are in discussion for new housing.

The Riverpoint West development area includes over 300 acres south of the downtown core along Martin Luther King Jr. Parkway. This brownfield area has been reclaimed from its former underutilized heavy industrial remnant status to provide an opportunity for an urban mixed use neighborhood. The City of Des Moines worked with EPA, HUD, the Iowa DNR and the project developer to facilitate the work necessary to remediate the brownfield sites, construct public improvements and manage stormwater. An \$8.5 million HUD Section 108 loan is being repaid through new valuation created in the Riverpoint West area. A hotel is currently under construction, two housing projects and an office building, along with additional street and utility construction, will begin in 2015.

The southeast section of Des Moines is home to Kemin Industries, Cargill, Helena Industries, Systech Environmental, the WRF, and major regional natural gas and other fuel distribution facilities. All told, the metropolitan area annually generates \$42 billion in Gross Domestic Product (GDP), the equivalent of \$115 million per day. However, the effects of serious flooding extend well beyond the economic impacts. The total population of Des Moines is over 200,000 people, with nearly 8,000 living downtown and another 80,000 working there.

The Flood Protection Plan also protects the WRA's critical wastewater conveyance and treatment facility (WRF). If the WRF were inundated with floodwater, all sewers entering the facility would also be inundated. This would lead to combined sewer overflows and sanitary sewer overflows in private residences and commercial businesses, as well as overflows in properties or areas which have historic value. This project protects the critical infrastructure and investment of the 17 participating communities as well as all residential and commercial properties served by the facility.

Overall, the Flood Protection Plan will provide accredited flood protection which will lead to affordable flood insurance. This will enable current businesses and homes to remain in desirable locations, and provide opportunities for future development.

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:*

Since 2008, the City of Des Moines and the WRA have spent over \$178.3 million on completed flood projects, as well as \$5.8 million on flood projects currently in process. The purpose of each of the flood projects is to maximize the protection of critical infrastructure from the effects of floodwaters, and funding through the Flood Mitigation Program is essential to the City of Des Moines and the WRA's 17 participating communities. Future proposed projects such as the District 9 Buyouts, Ag Levee Removal, Quarry & Meander Grading, and Wetland Mitigation currently would not be possible due to budget constraints of the City of Des Moines. Any delay of these projects as well as other projects identified in the Flood Protection Plan will increase the likelihood of increased damage due to the next flood event. The Flood Mitigation Program would also enable the WRA to accelerate the identified WRA flood protection projects listed in the Flood Protection Plan. This would allow the WRA to continue down the path of flood hardening, and protecting the Authority's existing assets from future flooding.

The service population of the WRA includes the 17 participating communities serving an estimated 460,000 people. An interruption of service could take a variety of forms depending on the buildings and processes impacted by the floodwaters. If the WRF were to be compromised by floodwaters, untreated wastewater could flow downstream into the Red Rock Reservoir and the recovery time for the complete wastewater treatment process could be extensive. According to the WRF Flood Protection Study performed by HDR Engineering which utilized information gathered from the Cedar Rapids Water Pollution Control Plant flood recovery effort, if flood waters were to impact the WRF's secondary treatment process, the estimated service interruption time would be approximately 120 days. If the WRF were to be inundated by flood water, the estimated emergency repairs and permanent repairs that would be necessary for the WRF total almost \$44,134,038. These service interruption impacts and emergency and permanent repair costs can be reviewed in the WRF Flood Protection Study in Appendix 1.

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*

Letter of Support from Clive
Letter of Support from Des Moines
Letter of Support from Johnston
Letter of Support from Pleasant Hill
Letter of Support from Urbandale Windsor Heights Sanitary Sewer District
Letter of Support from Waukee
Letter of Support from West Des Moines

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

The City of Des Moines partnered with Polk County, Ankeny, and Pleasant Hill in 2011 to begin a study of the Fourmile Creek Watershed. This study focused primarily on updating the hydrologic and hydraulic model for Fourmile Creek to more accurately identify flood risk based on current and anticipated future land use in the watershed. The study provided recommendations which focused on sustainable rural and urban land management and development, targeted stormwater detention in the upper sub watersheds as that area further develops, and preserving and restoring the existing stream corridor.

In the course of completing the watershed study, the Fourmile Creek Watershed Management Authority (WMA) was also created which is made up of 15 members including counties, cities, and soil-water conservation districts throughout the watershed. The Fourmile Creek WMA allows for ongoing communication and cooperation among members while addressing flood risk and water quality issues throughout the watershed. In the last two years three watershed projects have moved forward with the help of funding from Iowa DNR and Iowa Finance Authority, including a program for the voluntary buy out of private properties in the 100 year flood plain, stream stabilization improvements for up to 5000 lineal feet of the main channel of Fourmile Creek, and further planning efforts to finalize a watershed management plan for implementation of water quality initiatives in the watershed.

The watershed management plan has been developed over the past year with input from both urban and rural stakeholders within the watershed. The implementation will likewise identify water quality strategies that address both rural and urban needs. Several recommendations are being considered including a comprehensive water quality sampling/monitoring plan to help track progress of the plan and the designation of a watershed coordinator to facilitate the implementation of the plan. Rural strategies being considered include promoting vegetative cover, minimizing soil disturbance with reduced tilling, and end of field treatments such as a bio reactors to treat runoff and field tile flows. Urban strategies being considered include working towards consistent stormwater management standards for developments within all jurisdictions in the watershed, promoting the establishment of a greenbelt within the flood plain, increasing the use of green streets, and preservation of the stormwater detention characteristics of prairie potholes as they are developed.

The watershed management plan will be finalized in the coming weeks and then will begin the task of implementing the included recommendations. Implementation of the plan will require cooperation among city, county, and state agencies and all watershed stakeholders both rural and urban. The City of Des Moines will continue to be active in the Fourmile Creek WMA in an effort to reduce flood risk and improve water quality for residents and property owners within the watershed.

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 City of Des Moines is a participating jurisdiction along with Polk County and 15 other cities in the 2009 Polk County Multi-Jurisdictional Hazard Mitigation Plan. Riverine and flash flooding was identified as one of the most significant natural hazards to be addressed by the mitigation plan. As a result, the majority of the mitigation action items within the plan address flooding. Specific action items from the mitigation plan which are addressed by the Flood Protection Plan include the construction of the WRA New Main Outfall and WRA Combined Sewer Solids Separation Facility, as well as the flood mitigation actions along the Des Moines River related to the Southeast Des Moines Red Rock Remedial Levee and US Highway 65 bypass. By reducing flood risk, the Flood Protection Plan mitigates one of the most important hazards and aligns with the mitigation plan's stated goals to "Protect the public health, safety and welfare...by encouraging collective and individual responsibility for mitigating hazard risks" as well as to "Protect the most vulnerable populations, buildings, and critical facilities through the implementation of cost-effective and technically feasible mitigation actions". The City of Des Moines is continuing to cooperate with FEMA, Polk County and surrounding communities to update the mitigation plan. An updated plan which includes additional action items addressed by the Flood Protection Plan, was adopted by the City of Des Moines on July 28, 2014.

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

Des Moines is the capital of Iowa and is located in Polk County in Central Iowa. Located at the center of Des Moines and adjacent to downtown Des Moines is the confluence of the Des Moines and Raccoon Rivers. The Raccoon River flows from the western boundary of the City of Des Moines, and the Des Moines River flows from the northwest city limits to the southeast city limits of Des Moines. The Des Moines Metropolitan Wastewater Reclamation Facility (WRF) is located along the Des Moines River, within the southeast city boundary of Des Moines, at coordinates 41.5738 and -93.5594.

Individual projects listed in the Flood Protection Plan are located in various parts of the City, mostly along the Des Moines and Raccoon Rivers; however, future projects listed in the Flood Protection Plan focus on the downtown and the southeast quadrant of the City including the WRF and associated nearby property.

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		460000	\$0.00	\$0.00
# of Residential Properties	3690		\$103,210.00	\$380,844,900.00
# of Commercial Properties	1216		\$461,953.00	\$561,734,848.00
# of Public Properties	238		\$1,136,205.00	\$270,416,790.00
# of Critical Facilities	11		\$28,605,387.00	\$314,659,257.00
Total Potential Losses Mitigated	5155	460000	\$30,306,755.00	\$1,527,655,795.00

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 individuals protected as a result of the completion of the project is the number of individuals in the WRA service area. This is due to the fact that an extended loss of sanitary sewer service has a financial consequence for all individuals serviced by the WRA. Also, the entire City of Des Moines is included in the WRA's service area, including 6295 people who live within the 500 year floodplain.

The residential, commercial, and public properties listed in the table are the properties located within the 500 year floodplain in the City of Des Moines. The total and average values for the residential and commercial properties are calculated from the Polk County Assessor values. The average value of the public properties is calculated by the insured value of each property.

The properties that are identified as critical facilities provide essential services to the citizens and customers of the City of Des Moines and WRA. The values of the critical facilities were also calculated by the insured value of each. The WRF is included in this calculation and the most current insured value of the contents and buildings owned by the WRA at the WRF is estimated to be \$232,595,470.


IV. Work Schedule

A. List the major milestones for this project.

Task	Months/Years from Award		Responsible Party
	Start	Complete	
Phase I	2005	2015	City of Des Moines & WRA
Phase 2	2013	2016	City of Des Moines & WRA
Phase 3	2016	2019	City of Des Moines & WRA
Phase 4	2019	2024	City of Des Moines & WRA
Please see tab "Project Schedule Chart" for further detail			
Total Project Duration:	20 years		

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 Administrative Officer

Scott Sanders
 Name of the Chief Administrative Officer

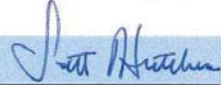
City Manager
 Title

City of Des Moines
 Organization

6/17/15
 Date

515-283-4141
 Phone Number

sesanders@dmgov.org
 Email Address


 Signature of the Authorized Representative

Scott Hutchens
 Name of Authorized Representative

WRA Director
 Title

Des Moines Metropolitan Wastewater Reclamation Authority
 Organization

6/17/15
 Date

400 Robert D. Ray Drive
 PO Box / Street Address

Des Moines, IA 50309
 City, State and Zip Code

515-323-8170
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