

Scope of Work (Page 1 of 3)

Title of your proposed activity (should include the type of activity and location):

Village of Fox Point Beach Drive Hazard Mitigation Project

Hazard(s) Identified to be mitigated:

Coastal Storm, Flood, Land Subsidence, Severe Storm(s)

Proposed types of Mitigation Activity(ies):

Activity Code	Activity Name
402.3	Infrastructure Protective Measures

If Other or Miscellaneous selected above, please specify:

Provide a clear and detailed description of your proposed activity:

Beach Drive is at risk to fail due to extremely high shoreline erosion along Lake Michigan. Fox Point must continue to provide access to residences and ensure utilities (water, wastewater, etc) are provided to its residents. This resilient infrastructure project will protect two areas adjacent to North Beach Drive. History: The initial road and sanitary sewer infrastructure was installed in the 1930s along the Lake Michigan shoreline in Fox Point. In the mid-1980s, Lake Michigan approached its record high of approximately 582.35. To protect the road, access to homes, and utility service, the Village installed concrete rubble to protect the shoreline from erosion. Although this proved to be fairly-effective in the short term, as lake levels receded, the shoreline seemed relatively safe from the increasing rates of erosion experienced in the 1980s. However, since 2013, lake levels have begun to rise again. It was not until late 2017 when levels really rose to concerning levels that cause the same type of increased rate of erosion along the shoreline, like in the mid 1980s. The rapid erosion along the shoreline is once again increasing the risk of undermining the road and utilities. During a roughly six-week period between mid-October 2019 and early December 2019, we experienced anywhere from about 2.5 to almost 7 feet of erosion of the shoreline. As lake levels have begun to approach the record highs (currently 6 inches from the record high), the concrete rubble has been thrown on shore and into the road during high wind and wave events. As an emergency protection measure, several hundred precast concrete blocks (each weighing 3,300 pounds) were placed in December 2019 and January 2020. These blocks were installed in two parallel lines along over 1,000 feet of shoreline. Although these blocks provide short-term protection, they alone are not expected to provide adequate long-term resistance to the wave energy experienced on this portion of shoreline (refer to the attached photos after the January 2020 storm). In fact, after the January 10-11, 2020 storm, an evaluation was performed of the temporary protection structures and it was determined that about 200-250 feet of block were overturned, shifted or washed 10 to 12 feet into the lake. Solution: To counteract the wave action along the near shore area, the proposed design (see Sheet 1_Proposed Shoreline Design for more detail) incorporates both a quarry stone revetment to armor the shoreline and beach nourishment to dissipate wave energy prior to reaching the shoreline. The advancement of erosion will be mitigated by hardening the shore with durable, energy absorbing revetments & nourishing the beach with an appropriate grain size distribution of natural sand and stone materials in order to replace the near shore sediments that are lost by the natural erosion processes. The geometry of the near shore bottom of the lake bed causes the large storm waves present offshore to break (often 16 to 20 feet tall in the large events), thereby expending most of their energy before reaching the shoreline. While a bathymetric survey will be performed in Spring 2020 to determine the precise lake bed elevations (extending as much as a quarter mile out to about 20 feet depth), the proposed design extends nearly 50-60 feet into Lake Michigan and includes a quarry stone revetment layer placed horizontally over a distance of approximately 25 feet, a cobble transition layer extending out another approximately 30 feet, and a gravelly sand to sandy gravel layer placed over the top of the cobble stone layer and extending out beyond the cobble stone layer another 15 feet. The proposed design includes leaving the existing concrete rubble and temporary protection structures in place, and placing quarry stone, cobblestone and sand layers over the top of the existing materials. The proposed sandy gravel layers serve as the zone of beach nourishment to mimic the natural range of beach dynamics.

Is there construction in this project?

Y

Provide a detailed description of the proposed project's location (e.g. municipality, street address, major intersecting streets and other important landmarks). Supporting documentation such as maps that clearly identify the location and critical features to the project such as topography, waterways, adjacent community boundaries, etc., should be attached:

Fox Point's resilient infrastructure project will protect two at-risk areas along North Beach Drive on the Lake Michigan shoreline. Project Area 1: Figure 1 depicts Project Area 1, located between 7540 and 7328 North Beach Drive. Project Area 1 will follow the east of the yellow area shown in Figure 1. Figure 2 depicts the approximate utility locations along N Beach Drive in this location. The key, as noted on the figure is: -Green and purple: sanitary sewer lines, -Orange: storm water pipes, -Blue: water mains, -Red dots and lines: overhead electric and utility poles, -Yellow: gas mains. Figure 3 depicts the topography at and adjacent to the project location. Project Area 2: Figure 4 depicts Project Area 2, located between 8000 and 8040 North Beach Drive. The project will be installed along the east of the yellow area in Figure 4. Figures 5 and 6 depict the approximate utility locations and topography, respectively. The symbol key for Figure 5 is the same as that for Figure 2. Figures 7A and 7B and 8A and 8B depict the location of the FEMA floodplain for the southern and northern portions of the project, respectively. Figures 7A and 8A were generated using the Village GIS database and overlaying the FEMA floodplain map on each respective figure. Figures 7B and 8B were generated using the FEMA Flood Map Service Center.

Scope of Work (Page 2 of 3)

Latitude:

43.154188

Longitude:

-87.889781

Describe the need for this activity. Why should this mitigation activity be completed?

After a storm event in mid-October 2019, Village staff recognized that erosion would continue to be a problem along the shoreline. The Village hired a consultant to begin surveying the shoreline to document the amount of land lost to shoreline erosion after larger storm events. During a six-week period between mid-October and early-December 2019, the Village experienced average erosion rates between 2.8 and 6.7 feet. Although survey data has not been completed for the most recent storm event (January 10-11, 2020), empirical evidence suggests that an additional 1-3 feet of erosion occurred along the shoreline due to the 12-15 foot high waves that pounded the shoreline over the two day period. The shoreline erosion has reached has begun to compromise the Village-owned sanitary sewer and storm sewer infrastructure along the shoreline. If nothing is done, the erosion will soon impact the road, which is as little as approximately 12.5 feet from the nearest point of the shoreline. Images 702 and 751 show damage that has already occurred to our sanitary sewer infrastructure. 702 shows one of our manholes where the chimney section shifted about an inch due to earlier wave action and 751 shows the amount of erosion that has occurred around and behind sheet piling that is currently in place around another sanitary sewer manhole. Both structures have since been protected with the placement of additional concrete block, but it is important to note that the soil was at one time even with the front edge of the sheet piling. It is seen in Image 751 that this is no longer the case. The erosion in this section alone is approximately 8-10 feet in certain areas of the shoreline (with some of the erosion pre-dating the survey data beginning in October). Additionally, Images 703 and 777 show debris that was washed into a 54-inch diameter storm sewer outfall pipe. The debris in Image 777 was anywhere from 18-inches to 2-feet thick and extended back into the storm sewer about 30 feet. Considering that this storm sewer drains an area of 1.1 square miles, the Village cannot afford to have the outfall blocked by debris from the lake. Image 814 also depicts an 8-foot section of a 12-inch diameter storm sewer that was ripped out of the ground during an early December 2019 storm event. Image 803 depicts debris that was tossed up and onto the shore and the roadway from a storm in early December 2019. Given the repeated erosion, debris-induced storm damage and the distance of the shoreline to the road, the Village commissioned a study to determine how long it take before the road is impacted if the Village were to do nothing. Based on this engineering evaluation that takes into account measured erosion rates, it is anticipated that the road will be undermined in as little as 2.3 years (approximately March 2022). Considering that this road is the only access point for residents living along Beach Drive and that underground utilities providing water and gas provide necessary services to these residences in a do-nothing alternative, it is imperative that mitigation activities be performed to protect the shoreline and significantly reduce the shoreline erosion impacting the area.

Who will the mitigation activity benefit and/or impact?

This mitigation project will benefit property owners, the Village, taxpayers and the general public. Property Owners: North Beach Drive is located at the base of a nearly 110 foot bluff, with only one access point to Beach Drive from State Trunk Highway 32 at the top of the bluff. If washed out or undermined, upwards of four-dozen owners cannot access their properties. Village of Fox Point: Village infrastructure (storm sewer, sewer, water, and road) will be protected from future damage. Village, Taxpayers and General Public In the long term, the Village, its taxpayers and the general public will benefit from the project. By constructing this mitigation project, access to the properties on North Beach Drive will be preserved, infrastructure will be protected (and better positioned to alleviate/eliminate potential future impacts), and less funding will be required for emergency repairs as opposed to this properly-designed and planned mitigation project.

How will the mitigation activity be implemented?

If awarded the mitigation grant, a consultant will finalize the preliminary designs and the project will be bid out, ideally within 6-8 months of project award. Staging activities will occur on the vacant land east of North Beach Drive along the shoreline, which will allow traffic to flow unimpeded. Construction is planned to be completed 12 months following grant award (ideally, 2021).

Describe how the project is technically feasible and will be effective in reducing the risk by reducing or eliminating damage to property and/or loss of life in the project area. Please include engineering design parameters and references to the following: preliminary schematic or engineering drawings/design; applicable building codes; engineering practices and/or best practices; level of protection (e.g., life safety, 100-yr floor protection with freeboard, 100-yr wind design, etc.):

Construction of the proposed project will be completed with common excavating equipment by contractors with shoreline experience. Therefore, this project is technically-feasible in regards to design and construction/installation. Rip rap revetments are effective in preventing shoreline erosion by dissipating energy as waves break on the inclined face of the revetment. The revetment itself is comprised of sub-angular shaped quarry stone that is appropriately sized for this specific application. This type of energy absorbing structure minimizes wave reflection, thereby minimizing potential adverse effects on the nearshore bottom profile and adjacent shoreline properties. In this case, the rip rap quarry stones will consist of durable limestone (Silurian Dolomite) that comprises the bedrock in the region and is locally supplied. Prior to armoring, erosion of the shore provided periodic re-supply of sand to the beach and surf zone. Due to the resulting long-term shoreline recession and the necessity of protecting important public infrastructure, the shoreline has been armored with concrete rubble. Our design introduces the artificial addition of sand to account for the natural beach nourishment that would otherwise be occurring. This is important to maintain the natural dynamics of the shore in response to dramatically varying Great Lakes water levels, because the absence of the sand nourishment eventually causes down-cutting of the nearshore lakebed. The resulting deepening of the nearshore zone eventually undermines the toe stones of any revetment, which commences progressive failure over time. Design of any revetment is dependent upon the site-specific nearshore geometry of the lakebed and thus requires a bathymetric survey. The profile of the lakebed and shoreline can be analyzed to determine the range of energies and subsequent breaking wave heights the shoreline will experience at any particular water level. The breaking wave height and run-up height can then be calculated using the ACOE Design of Coastal Revetments, Seawalls, and Bulkheads Engineering Manual. Site-specific design includes determining the revetment slope, top of revetment elevation, bottom of revetment elevation, and appropriate stone sizing to avoid displacement.

Who will manage and complete the mitigation activity?

The Village of Fox Point will manage and coordinate the mitigation activity, but will use contractors to assist with implementation. A consultant will perform the final design and bidding tasks, as well as construction management/inspection tasks. Another contractor will be awarded the project through the competitive bidding process for the actual construction activities, dividing up the contract if necessary.

Scope of Work (Page 3 of 3)

Will the project address the hazards identified and what risks will remain from all hazards after project implementation (residual risk)?

The project will address the erosion of the shoreline along N. Beach Drive with the proper maintenance of the investment, including maintaining the sand. This includes flood, coastal erosion, coastal storm, and wave action hazards. Should the lake levels increase to catastrophically high levels and the project was not be able to offer protection, the cost to replace the road and utility services would be about \$6.7 million. This figure includes \$4.7 million for the south end of the project and \$2 million for the north end of the project. This is used and documented in the Benefit-Cost Analysis. While the proposed design for the shoreline stabilization anticipates fluctuation in lake levels, including an increase, there is certainly the possibility of a residual risk should a historic storm event occur. For instance, the road could be overtopped or undermined, shoreline processes during a historic storm event could undermine the beach nourishment and quarry stone revetment layer or, in an absolute worst case scenario, lake levels rise beyond the shoreline elevation of approximately 585 which would lead to large scale flooding all along Beach Drive. Nonetheless, it is anticipated that this project will last 30 years and, thereafter, may need to be reconstructed or supplemented with additional stone and beach nourishment.

When will the mitigation activity take place?

As noted, the mitigation activities are planned to occur within 12 months of project award, after design is completed. Ideally this takes place in 2021.

Why is this project the best alternative. What alternatives were considered to address the Risk and why was the proposed activity considered the best alternative?

Alternatives considered for this mitigation project included the do-nothing alternative (which certainly is not feasible given the impacts to date) as well as other shoreline type improvements, including groins/groin fields, jetties and breakwaters. While the alternatives of groins, seawalls, or the installation of an artificial offshore bar have been considered, these other methods of shoreline protection have been determined to be both less-effective and more expensive. Offshore protective bars are not effective throughout the large range of lake level fluctuations. Seawalls are wave reflective and exacerbate near shore lakebed downcutting. Groins locally intercept the long-shore littoral drift of sediments, thereby benefiting that location at the cost of "starving" the downdrift reach of shoreline of its natural re-supply. Of the options, a revetment in combination with artificial beach nourishment, will be most-effective in preventing shoreline recession. Additionally, it minimally interferes with natural shore dynamics and is highly economical in terms of life cycle costs. It also has the added benefit of breaking waves further off shore and significantly alleviating erosion along the shoreline as the wave action will be minimized.

Please identify the entity that will perform any long-term maintenance and provide a maintenance schedule and cost information. The subapplicant or owner of the area to be mitigated is responsible for maintenance (including costs of long-term care) after the project is completed:

The Village of Fox Point will be responsible for long-term maintenance of the erosion mitigation project. In some cases, the Village may contract with a third-party contractor to perform some maintenance, depending on the activity. Long-term maintenance may include periodic monitoring of the rip rap comprising the revetment, removing wave-washed driftwood and debris from the revetment, and supplementing the cobbles/sandy gravel beach nourishment when deemed desirable. Supplementing the beach nourishment portion of the project and the debris removal from the revetment is dependent upon the Lake Michigan water levels as well as storm frequencies and intensity; therefore, it cannot be precisely scheduled. Assuming a similar pattern of lake water level fluctuations as has historically been observed, we recommend allocating approximately \$10,000 to \$15,000 per year as an estimated maintenance cost.

If you would like to make any comments, please enter them below:

The Village of Fox Point recognizes the importance of proactive management of the shoreline. As Lake Michigan levels began to rise and storms began impacting the shoreline, staff immediately evaluated short-term and long-term solutions to the erosion impacts from the rising lake levels and wave action. After a storm event in early- to mid-October resulted in erosion of the shoreline, staff contracted with a consultant to measure the shoreline erosion after each significant storm in order to document the rate of recession. Staff also contracted with another consultant with shoreline expertise to develop the short-term and long-term solutions. <p> The short-term solution resulted in the Village authorizing an emergency resolution at the November 12, 2019 Village Board meeting (<https://www.villageoffoxpoint.com/AgendaCenter/ViewFile/Agenda/11122019-761>) allowing staff to contract with two separate contractors to perform emergency stabilization of the shore. One of the projects, the placement of 6-foot by 2-foot by 2-foot concrete blocks in two parallel lines along the shore over an approximate 800 foot stretch (of nearly 1,600 feet) was completed in late December. The other project includes placement of revetment stone on the northern portion of Beach Drive which commenced in early January. Both projects (of which the Village has expended over \$150,000) prevented significant damage to the shoreline and adjacent road and utility infrastructure. Nonetheless, the Village still experienced additional damages during the storm of January 10-11, 2020, including seeing approximately 250 feet (about 40 block) become completely dislodged, overturned or, in some cases, washed into the lake by a distance of up to about 12 feet. Given that each block weighs 3,300 pounds, the storm event the weekend of January 10-11 certainly confirms that the block are a short-term solution. The proposed long-term solution is critical to preserving the shoreline and adjacent road, utility infrastructure and other natural features (plants, trees, etc.).

Attachments (File Size):

[Village of Fox Point FEMA Mitigation Grant Supporting Materials.pdf](#) (18994 KB)

402.3 - Infrastructure Protective Measures

Federal Share: \$ 1,626,337.50

Item Name	Cost Classification	Unit Quantity	Unit of Measure	Unit Cost (\$)	Cost Estimate (\$)
Revetment quarry stone	Construction And Project Improvement	5,760.00	Ton	\$ 69.25	\$ 398,880.00
Cobble stone (4 to 8 inch)	Construction And Project Improvement	4,140.00	Ton	\$ 57.25	\$ 237,015.00
Sandy Gravel (3-inch base course)	Construction And Project Improvement	6,210.00	Ton	\$ 29.25	\$ 181,642.50
Sanitary Sewer Reconstruction	Construction And Project Improvement	1,650.00	Linear Foot	\$ 370.00	\$ 610,500.00
Storm Sewer Reconstruction	Construction And Project Improvement	2,000.00	Linear Foot	\$ 70.00	\$ 140,000.00
Shoreline protection	Architectural Engineering Basic Fees	1.00	Each	\$ 46,000.00	\$ 46,000.00
Sanitary Sewer Reconstruction	Architectural Engineering Basic Fees	1.00	Each	\$ 98,000.00	\$ 98,000.00
Storm Sewer Reconstruction	Architectural Engineering Basic Fees	1.00	Each	\$ 14,000.00	\$ 14,000.00
Construction Inspection - Shoreline Restoration	Project Inspection Fees	1.00	Each	\$ 72,000.00	\$ 72,000.00
Construction Inspection - Storm Sewer	Project Inspection Fees	1.00	Each	\$ 18,000.00	\$ 18,000.00
Roadway patches	Construction And Project Improvement	875.00	Ton	\$ 80.00	\$ 70,000.00
Surveying, Easements & Construction Staking	Architectural Engineering Basic Fees	1.00	Each	\$ 42,000.00	\$ 42,000.00
Shoreline protection	Contingencies	1.00	Each	\$ 47,500.00	\$ 47,500.00
Sanitary Sewer Reconstruction	Contingencies	1.00	Each	\$ 41,500.00	\$ 41,500.00
Storm Sewer Reconstruction	Contingencies	1.00	Each	\$ 8,500.00	\$ 8,500.00
Village Contract Oversight (Shoreline)	Administrative Expense	1.00	Each	\$ 17,500.00	\$ 17,500.00
Village Contract Oversight (Sanitary)	Administrative Expense	1.00	Each	\$ 15,000.00	\$ 15,000.00
Village Contract Oversight (Storm)	Administrative Expense	1.00	Each	\$ 7,500.00	\$ 7,500.00
Grant Administration	Administrative Expense	1.00	Each	\$ 103,000.00	\$ 103,000.00
				Total Cost	\$ 2,168,537.50

Total Project Cost Estimate: \$ 2,168,537.50

	Cost Share		
Activity Cost Estimate	\$ 2,168,537.50		
Federal Share Percentage	74.99697377%		
Non-Federal Share Percentage	25.00302623%		
	Dollars	Percentage	
Proposed Federal Share	\$ 1,626,337.50	74.99697377%	
Proposed Non-Federal Share	\$ 542,200.00	25.00302623%	

Non-Federal Funds

Source Agency	Name of Source Agency	Funding Type	Amount (\$)	Action
Local Agency Funding	Village of Fox Point	Other (Capital Improvement Fund & Stormwater Utility Fund)	\$ 542,200.00	View Details
Grand Total			\$ 542,200.00	

If you would like to make any comments, please enter them below.

Attachments

Name	File Size (KB)
Fox Point Commitment Letter.pdf	188

Funding Source	Local Agency Funding
Name of Funding Source	Village of Fox Point
Funding Type	Other (Capital Improvement Fund & Stormwater Utility Fund)
Amount	\$ 542,200.00
Date of availability	09-01-2020
Funds commitment letter date	01-20-2020
Attachment (File Size) (funds commitment letter)	

* 2. Does your project remove or affect vegetation? No

If Yes, you must confirm that you have provided the following:

- Description of the amount (area) and type of vegetation to be removed or affected.
- A site map showing the project area and the extent of vegetation affected.
- Photographs or digital images that show both the vegetation affected and the vegetation in context of its surroundings.

To help FEMA evaluate the impact of the project, please indicate below any other information you are providing:

- Attached materials or additional comments.

Comments:

* 3. Is your project in, near (within 200 feet), or likely to affect any type of waterway or body of water? Yes

If Yes, and project is not within an existing building, you must confirm that you have provided the following:

- A USGS 1:24,000 scale quadrangle map showing the project activities in relation to all nearby water bodies (within 200 feet).
- Any information about the type of water body nearby including: its dimensions, the proximity of the project activity to the water body, and the expected and possible changes to the water body, if any. Identify all water bodies regardless whether you think there may be an effect
- A photograph or digital image of the site showing both the body of water and the project area.

To help FEMA evaluate the impact of the project, please indicate below any other information you are providing:

- Evidence of any discussions with the US Fish and Wildlife Service (USFWS), and/or your State Wildlife Agency concerning any potential impacts if there is the potential for the project to affect any water body.
- Attached materials or additional comments.

Comments:

Work will be performed along the shoreline of Lake Michigan. Lake Michigan is 307 miles long by 118 miles wide, has a maximum depth of 923 feet and a surface area of over 22,000 square miles. The shoreline length is 1,640 miles of which approximately 2.8 miles of the shoreline (less than 0.2%) is situated in Fox Point and, of which, only about one-half mile of roadway is immediately adjacent to Lake Michigan and currently impacted by the rising lake levels and wave action. The location of the lake relative to the project site is shown in the file attached to the scope of services as well as the attached USGS Map.

Attachments:

Name	File Size (KB)
USGS Map Fox Point.pdf	2051
Listed species believed to or known to occur in Wisconsin.pdf	93

D. Clean Water Act, Rivers and Harbors Act, and Executive Order 11990 (Protection of Wetlands)

* 1. Will the project involve dredging or disposal of dredged material, excavation, adding fill material or result in any modification to water bodies or wetlands designated as "waters of the U.S." as identified by the US Army Corps of Engineers or on the National Wetland Inventory? No

If Yes, you must confirm that you have provided the following:

- Documentation of the project location on a USGS 1:24,000 scale topographic map or image and a copy of a National Wetlands Inventory map or other available wetlands mapping information.

To help FEMA evaluate the impact of the project, please indicate below any other information you are providing:

- Request for information and response letter from the US Army Corps of Engineers and/or State resource agencies regarding the potential for wetlands, and applicability of permitting requirements.
- Evidence of alternatives considered to eliminate or minimize impacts to wetlands.
- Attached materials or additional comments.

Comments:

Attachments:

Name	File Size (KB)
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E. Executive Order 11988 (Floodplain Management)

* 1. Does a Flood Insurance Rate Map (FIRM), Flood Hazard Boundary Map (FHBM), hydrologic study, or some other source indicate that the project is located in or will affect a 100 year floodplain, a 500 year floodplain if a critical facility, an identified regulatory floodway, or an area prone to flooding? No

If Yes, please indicate in the text box below any documentation to identify the means or the alternatives considered to eliminate or minimize impacts to floodplains (See the 8 step process found in 44 CFR Part 9.6.) to help FEMA evaluate the impact of the project:

* 2. Does the project alter a watercourse, water flow patterns, or a drainage way, regardless of its floodplain designation? No

If Yes, please indicate below any other information you are providing to help FEMA evaluate the impact of the project:

- Hydrologic/hydraulic information from a qualified engineer to demonstrate how drainage and flood flow patterns will be changed and to identify down and upstream effects.
- Evidence of any consultation with US Army Corps of Engineers (may be included under Part D of the Environmental Information).
- Request for information and response letter from the State water resource agency, if applicable, with jurisdiction over modification of waterways.
- Attached materials or additional comments.

Comments:

Attachments:

Name	File Size (KB)
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F. Coastal Zone Management Act

* 1. Is the project located in the State's designated coastal zone? Yes

If Yes, please indicate below any other information you are providing to help FEMA evaluate the impact of the project:

- Information resulting from contact with the appropriate State agency that implements the coastal zone management program regarding the likelihood of the project's consistency with the State's coastal zone plan and any potential requirements affecting the cost or design of the proposed activity.
- Attached materials or additional comments.

Comments:

The project is located along the shore of Lake Michigan and a full review will be performed prior to grant award if the application is selected for funding.

Attachments:

Name	File Size (KB)
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G. Farmland Protection Policy Act

* 1. Will the project convert more than 5 acres of "prime or unique" farmland outside city limits to a non-agricultural use? No

Comments:

Attachments:

Name	File Size (KB)
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H. RCRA and CERCLA (Hazardous and Toxic Materials)

* 1. Is there a reason to suspect there are contaminants from a current or past use on the property associated with the proposed project? No

If Yes, please indicate below any other information you are providing to help FEMA evaluate the impact of the project:

- Comments and any relevant documentation.
- Results of any consultations with State or local agency to obtain permit with requirements for handling, disposing of or addressing the effects of hazardous or toxic materials related to project implementation.
- Attached materials or additional comments.

Comments:

* 2. Are there any studies, investigations, or enforcement actions related to the property associated with the proposed project? No

If Yes, please indicate below any other information you are providing to help FEMA evaluate the impact of the project:

- Comments and any relevant documentation.
- Results of any consultations with State or local agency to obtain permit with requirements for handling, disposing of or addressing the effects of hazardous or toxic materials related to project implementation.
- Attached materials or additional comments.

Comments:

* 4. Do you know if any of the current or past land-uses of the property affected by the proposed project or of the adjacent properties are associated with hazardous or toxic materials? No

If Yes, please indicate below any other information you are providing to help FEMA evaluate the impact of the project:

- Comments and any relevant documentation.
- Results of any consultations with State or local agency to obtain permit with requirements for handling, disposing of or addressing the effects of hazardous or toxic materials related to project implementation.

Attached materials or additional comments.

Comments:

Attachments:

Name

File Size (KB)

I. Executive Order 12898, Environmental Justice for Low Income and Minority Populations

* 1. Are there low income or minority populations in the project's area of effect or adjacent to the project area? No

If Yes, you must confirm that you have provided the following:

Description of any disproportionate and adverse effects to these populations.

To help FEMA evaluate the impact of the project, please indicate below any other information you are providing:

Description of the population affected and the portion of the population that would be disproportionately and adversely affected. Please include specific efforts to address the adverse impacts in your proposal narrative and budget.

Attached materials or additional comments.

Comments:

Attachments:

Name

File Size (KB)

J. Other Environmental/Historic Preservation Laws or Issues

* 1. Are there other environmental/historic preservation requirements associated with this project that you are aware of? No

If Yes, please indicate in the text box below a description of the requirements, issues or public involvement effort.

* 2. Are there controversial issues associated with this project? No

If Yes, please indicate in the text box below a description of the requirements, issues or public involvement effort.

* 3. Have you conducted any public meeting or solicited public input or comments on your specific proposed mitigation project? Yes

If Yes, please indicate in the text box below a description of the requirements, issues or public involvement effort.

Some preliminary meetings have been held with the Village Board and residents have been informed of the activities via regular updates. A PIM will be held prior to the commencement of the project.

Attachments:

Name

File Size (KB)

K. Summary and Cost of Potential Impacts

* 1. Having answered the questions in parts A. through J., have you identified any aspects of your proposed project that have the potential to impact environmental resources or historic properties? No

If Yes, you must confirm that you have:

Evaluated these potential effects and provided the materials required in Parts A through J that identify the nature and extent of potential impacts to environmental resources and/or historic properties.

Consulted with appropriate parties to identify any measures needed to avoid or minimize these impacts.

Considered alternatives that could minimize both the impacts and the cost of the project.

Made certain that the costs of any measures to treat adverse effects are realistically reflected in the project budget estimate.

Comments:

Please note that a full review will be performed prior to grant award if the application is selected for funding.

Attachments:

Name

File Size (KB)

Evaluation (Page 2 of 2)

How will this mitigation activity leverage involvement of partners to enhance its outcome?

The Village of Fox Point has already proactively partnered with a number of local and state agencies to evaluate cost-effective and appropriate short-term and long-term solutions. We have worked with Milwaukee County Office of Emergency Management (OEM) as well as Wisconsin Emergency Management (WEM) and the Wisconsin Department of Administration (DOA). We have also reached out to the Department of Natural Resources (DNR), the Army Corps of Engineers (Corps) and NOAA in order to account for long-term forecasting of lake levels and appropriate permitting and design to account for an anticipated rise in the lake levels. These parties have been active partners since we began evaluating the various solutions and will continue to lend their expertise to the overall success of the project. Each party will guide staff and our consultants and contractors through the necessary permitting process and will assist in the overall completion of the project by providing guidance, suggestions, and recommendations. We will also work with consultants and contractors who have shoreline expertise to ensure the best possible outcome for the Village of Fox Point, its residents and the general public.

How will this mitigation activity offer long-term financial and social benefits or promote resiliency for the community?

As noted, a do-nothing alternative is a non-starter as there is a significant likelihood that our roads and utility infrastructure will be compromised in two to five years. The proposed design alternative virtually eliminates potential failure of the roads and utility infrastructure which, in itself, is a tremendous cost savings. Doing nothing could result in a catastrophic failure that could cost the Village \$7,455,000 and, if the Village were to simply replace what is already in place, could experience similar catastrophic failures over time. In contrast, the proposed mitigation design is estimated at approximately \$2,200,000 and would enhance and stabilize the shoreline along both sections of road. In doing so, it is anticipated that long-term capital expenditures after the initial investment would disappear and there would only be nominal long-term annual maintenance costs of approximately \$10,000-\$15,000. Further, it is anticipated that this resiliency project will nourish the beach and encourage community use and enjoyment.

Please provide the percent of the population benefiting from this mitigation activity.

5.0

Please explain your response.

There are approximately 350 residents on Beach Drive that would benefit from the project and an overall approximate population of 6,800.

Does this mitigation activity protect a critical facility?

Yes

If yes, please select the type of critical facilities to be protected

Water Facilities, Sewer and wastewater treatment Facilities

Comments:

Name

File Size (KB)

Date Attached

Name of Section	Comment	Comments and Attachments
Scope of Work	<p>The Village of Fox Point recognizes the importance of proactive management of the shoreline. As Lake Michigan levels began to rise and storms began impacting the shoreline, staff immediately evaluated short-term and long-term solutions to the erosion impacts from the rising lake levels and wave action. After a storm event in early- to mid-October resulted in erosion of the shoreline, staff contracted with a consultant to measure the shoreline erosion after each significant storm in order to document the rate of recession. Staff also contracted with another consultant with shoreline expertise to develop the short-term and long-term solutions. The short-term solution resulted in the Village authorizing an emergency resolution at the November 12, 2019 Village Board meeting (https://www.villageoffoxpoint.com/AgendaCenter/ViewFile/Agenda/_11122019-761) allowing staff to contract with two separate contractors to perform emergency stabilization of the shore. One of the projects, the placement of 6-foot by 2-foot by 2-foot concrete blocks in two parallel lines along the shore over an approximate 800 foot stretch (of nearly 1,600 feet) was completed in late December. The other project includes placement of revetment stone on the northern portion of Beach Drive which commenced in early January. Both projects (of which the Village has expended over \$150,000) prevented significant damage to the shoreline and adjacent road and utility infrastructure. Nonetheless, the Village still experienced additional damages during the storm of January 10-11, 2020, including seeing approximately 250 feet (about 40 block) become completely dislodged, overturned or, in some cases, washed into the lake by a distance of up to about 12 feet. Given that each block weighs 3,300 pounds, the storm event the weekend of January 10-11 certainly confirms that the block are a short-term solution. The proposed long-term solution is critical to preserving the shoreline and adjacent road, utility infrastructure and other natural features (plants, trees, etc.).</p>	<p>Village of Fox Point FEMA Mitigation Grant Supporting Materials.pdf 18994</p>
Cost Share	<p>The work to be performed may disturb some shoreline ground but, predominantly, is related to the placement of revetment quarry stone, cobble stone and a sandy gravelly layer along the lake bed to reduce wave action and erosion. Additionally, relocation of the sanitary sewer main is anticipated to be performed by using the directional drilling method with strategically</p>	<p>Fox Point Commitment Letter.pdf 188</p>
EHP - B - National Historic Preservation Act - Archeological Resources	<p>The work to be performed may disturb some shoreline ground but, predominantly, is related to the placement of revetment quarry stone, cobble stone and a sandy gravelly layer along the lake bed to reduce wave action and erosion. Additionally, relocation of the sanitary sewer main is anticipated to be performed by using the directional drilling method with strategically</p>	<p>EHP - C - Endangered Species Act and Fish and Wildlife Coordination Act</p>
EHP - B - National Historic Preservation Act - Archeological Resources	<p>The work to be performed may disturb some shoreline ground but, predominantly, is related to the placement of revetment quarry stone, cobble stone and a sandy gravelly layer along the lake bed to reduce wave action and erosion. Additionally, relocation of the sanitary sewer main is anticipated to be performed by using the directional drilling method with strategically</p>	<p>It is unknown v endangered spec The Environment accessed through website (https://www.fv), lists 17 spec or known to</p>
EHP - B - National Historic Preservation Act - Archeological Resources	<p>The work to be performed may disturb some shoreline ground but, predominantly, is related to the placement of revetment quarry stone, cobble stone and a sandy gravelly layer along the lake bed to reduce wave action and erosion. Additionally, relocation of the sanitary sewer main is anticipated to be performed by using the directional drilling method with strategically</p>	<p>EHP - F - Coastal Zone Management Act</p>
EHP - B - National Historic Preservation Act - Archeological Resources	<p>The work to be performed may disturb some shoreline ground but, predominantly, is related to the placement of revetment quarry stone, cobble stone and a sandy gravelly layer along the lake bed to reduce wave action and erosion. Additionally, relocation of the sanitary sewer main is anticipated to be performed by using the directional drilling method with strategically</p>	<p>The project is Michigan and a grant award if funding.</p>