

APPLICATION FORM
CULVERT REPLACEMENT MUNICIPAL ASSISTANCE GRANT APPLICATION FORM

FY23 RFR ID: DER 2022-03

(See Section 3.3.1 in the RFR for instructions on how to fill out the Application Form)

1) APPLICANT INFORMATION

| | |
|--|--|
| i. Funding Request: \$ 124,000 | ii. Town: Town of Chelmsford |
| iii. Applicant's Name: Courtney Thompson | iv. Email/Phone: Ph: 978-250-5228 x5235 Email: CThompson@ChelmsfordMA.Gov |

2) PROJECT SUMMARY

i. **Project Summary:** Provide a brief descriptive summary for the project (e.g. 4 sentences), including existing conditions, overall project benefits, and goals of the project.
The project location is at the entrance of the Chelmsford Water District (CWD) Operation and Financial Office located at 20 Watershed Lane in Chelmsford, Ma. The existing RCP culverts are failing and currently do not meet the State Stream Standards. The Project proposes replacing two existing RCP's with a modified rectangular culvert to increase the flow, reduce flooding and improve the habitat crossing by meeting most of the State's Stream Standards.

3) DEMONSTRATED NEED

PLEASE USE AS MUCH SPACE AS NEEDED. THE BOXES WILL EXPAND AS YOU FILL THEM.

i. **Project Background:** Describe the condition of the culvert(s) and stream and provide relevant background information about the project. Consider the physical condition of the culvert(s), current risk of failure, maintenance and flooding history, erosion, environmental concerns such as impacts to fish and wildlife, and hazards to the community. If you have multiple culverts, please include a short description and existing conditions of each structure. *Please use as much space as needed.*

The existing crossing and entrance road to the CWD has experience two flooding events over the past 15 years over Watershed Lane (Attachment A). Watershed Lane serves as the main entrance to the CWD operational office which houses all of the District's operational equipment as well as the financial operations and serves as the main point of contact with the Public.

Recently the road crossing the brook has experienced several sink holes. This has necessitated the patching of those sink holes. The sink holes suggested that piping was the main mechanism of road material support loss. Pictures of the culvert are provided in Attachment B.

A study was commissioned by the District and Environmental Partners was hired to provide a recommended solution. That report is provided as Attachment C. The primary goals of the study were to: 1.) Identify crossing alternatives that would lessen the flooding and road material loss, 2.) Analyze how the road crossing alternative compares with the State Stream Standards as well as potentially obtain Water Management Act mitigation credits, 3.) Identify an alternative route to the District Operational office, 4.) Develop costs for each alternative and recommend the best alternative, and 5.) Identify funding sources. The report recommended the rectangular box culvert as the best alternative for meeting the criteria above. One alternative emergency access route was identified at Porter Road and the District has since identified a potential second emergency access at Woodhead Road.

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ii. **Project Status:** If work has already begun on the proposed culvert replacement(s), please explain the scope of what has already been initiated and/or completed. List and briefly explain any plans, reports, or documents that have been created. Consider any prioritization and planning steps, field data collection, analyses, design, permitting, utility coordination, and/or construction. If work has not started please state that below. *For projects underway, all supporting documentation should be submitted with this application (e.g., reports, design plans, permits, opinion of probable costs, etc.).*

A preliminary design has been performed and identified a modified rectangular culvert at the best option meeting most of goals listed by the District (note that the rectangular culvert meets all Stream Standards except stream 1.2x width crossing which it misses by 1.5 feet (25 ft vs. 26.5 ft). That report is provided in Attachment C. The next phase for the project is the design phase which is estimated at \$132,300 (District is budgeting \$135,000).

iii. **Financial Need:** Explain why your municipality needs funding from this grant opportunity to advance the proposed project. Describe other anticipated or secured funding sources, including municipal and outside funding, that will support any portion of this project.

CWD and the Town (like all municipalities) suffer from a crush of several unfunded mandates as well as overall continuing costs of maintenance and renewal of the existing infrastructure. The Town has recently implemented a fee on the sewer bills to fund the Town's stormwater program. The District has recently implemented a capital improve fee to fund the capital improvement program (~\$2M/yr). And recently the District failed the PFAS MCL by MassDEP which has necessitated an estimated \$12M (construction and engineering fees) treatment expansion of the Crooked Spring Water Treatment Plant. It is expected this cost may also occur at the other two drinking water plants as well. In addition to this, the District and Town own hundreds of miles of pipe which require in the ballpark of \$1M per mile to rehabilitate or replace. All of these costs apply to the tax and rate payers of the Town of Chelmsford.

The District is pursuing a FEMA/MEMA Hazard Mitigation Grant coupled with the Culvert Replacement Grant. The timeline of that grant as well as anticipated funding requests at District meeting are provided in Attachment D. The crossing replacement design would occur in FY23 (July 2022 to June 2023) with application to FEMA during this time for construction funding (See Attachment E for FEMA application and F for Engineering solicitation to meet FEMA requirements). Funding for this project will aid in pushing the project forward to the next phase which is design.

4) PROJECT DESCRIPTION

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i. **Project Scope:** Please describe the proposed culvert replacement(s) and the specific work to be covered by this funding (end date 6/30/23). Consider project tasks, personnel, deliverables, etc. As guidance, you may use, but are not limited to using, the topics listed in Appendix C: *Proposed Work Checklist Reference Guide*. If there are any considerations or differences in the proposed scope based on the location (e.g. Structure 1, Structure 2, etc.), then please be sure to clarify below.

Specific Tasks proposed for the project are as follows:

1.) Predesign

- a. **Wetland delineation**
- b. **Radial Survey**

2.) Design Phase

- a. **Geotechnical and Structural Design**
- b. **Construction Details and Final Design**

3.) Permits

- a. **Local Permitting**
- b. **Chapter 85, Section 35 MassDOT Review**
- c. **Notice of Intent (Conservation Commission)**
- d. **Massachusetts Endangered Species Act (MESA) Project Review**
- e. **(DEP) Section 401 Water Quality Certificate**
- f. **Massachusetts Environmental Policy Act (MEPA) Filing**
- g. **Massachusetts Historical Commission Project Notification Form**
- h. **Army Corps of Engineers 404 Programmatic General Permit**
- i. **FEMA Floodplain Letter of Map Revision/Conditional Letter of Map Revision**

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ii. **Project Budget Narrative:** Briefly explain your project budget, including how cost estimates were determined and any considerations or differences in the budget due to location (e.g. Structure 1, Structure 2, etc.) and/or work proposed. Be sure to describe how DER funds will be used. Where possible, provide supporting documentation. List any additional sources of known funding for the culvert replacement and the amount. Be sure to clarify if these sources are anticipated, pending or secured. *Please fill-in budget table on next page.*

The design budget was determined during the Preliminary Design (see Attachment C). The culvert grant funds will exclusively be used for the design phase. Construction phase funding is being targeted from FEMA's Hazard Mitigation Grant. Breakdown of grant funding is as follows:

- 1.) HMG Application: \$14,500. Part of the FY22 District budget.**
- 2.) Design and Permitting Budget : \$124,000. To be secured at District meeting on April 27, 2022 and if selected here, reimbursed by Culvert grant (part of the request here).**
- 3.) Bidding Services: \$8,500. To be secured at District meeting on April 27, 2022 (total warrant ask of \$135,000 for Design and Bidding Phase).**
- 4.) Construction and Construction Administration Services. To be secured at District meeting in April, 2023. Construction estimated at \$1,400,000. The District is currently pursuing a FEMA/MEMA Hazard Mitigation Grant for reimbursement of costs.**

Please check if you will be submitting Supporting Documentation as part of your application (e.g., budget details, Opinion of Probable Costs, design or construction bids, etc.)

Budget Table: To the best of your ability, complete the table below, which incorporates project cost and funding needs by project activity. In the box above, provide a short but descriptive budget narrative. Refer to *RFR Section 3. Instructions for Application Submission, Evaluation Criteria, Project Budget* for additional guidance.

| Project Phase | Funding Request from DER | Other Funding (Please describe in budget narrative) | Sub-Total Cost Estimate |
|--|--------------------------|--|-------------------------------|
| Field Data Collection | | | |
| Structure 1 | \$34,000 | | |
| Structure 2 (if applicable) | | | |
| Structure 3 (if applicable) | | | |
| TOTAL FIELD DATA COLLECTION EXPENSES: | | | \$34,000 |
| Engineering and Design | | | |
| Structure 1 | \$67,000 | | |
| Structure 2 (if applicable) | | | |
| Structure 3 (if applicable) | | | |
| TOTAL ENGINEERING & DESIGN EXPENSES: | | | \$67,000 |
| Permitting | | | |
| Structure 1 | \$23,000 | | |
| Structure 2 (if applicable) | | | |
| Structure 3 (if applicable) | | | |
| TOTAL PERMITTING EXPENSES: | | | \$23,000 |
| Construction | | | |
| Structure 1 | | 1,400,000 | |
| Structure 2 (if applicable) | | | |
| Structure 3 (if applicable) | | | |
| TOTAL CONSTRUCTION EXPENSES: | | | \$1,400,000 |
| Other – | | | |
| Structure 1 | | \$8,500 Bidding Services \$14,500 HMG Application | |
| Structure 2 (if applicable) | | | |
| Structure 3 (if applicable) | | | |
| TOTAL OTHER EXPENSES: | | | \$23,000 |
| Narrative: Please briefly describe proposed work for this category. | | | |
| *TOTAL PROJECT BUDGET: | | | \$1,547,000 |
| Total Secured Funding (List source in budget narrative above): | | | \$14,500 (HMG application) |
| Pending Funding/ Outstanding Funding Needs: | | | \$1,532,500 |
| TOTAL GRANT REQUEST (Design Effort): | | | \$124,000 |

* This line should equal the sum of amounts listed under secured, pending/outstanding, and grant request lines.

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iii. **Project Timeline:** Describe the estimated timeline for the overall project *and* the timeline for proposed work to be covered by this funding (end date 6/30/23). Topics listed in Appendix C: *Proposed Work Checklist Reference Guide* may provide direction for the type of milestones or goals to be included in a timeline.

Attachment D provides a timeline for the overall project. The following is a brief timeline for the proposed design phase work:

- 1.) Predesign (Start: April 2022, End June 2022)**
 - a. Wetland delineation
 - b. Radial Survey
- 2.) Design Phase**
 - a. 75% Design (Start: July 2022, End: Sept 2022)
 - b. Final Design (Start: November 2022, End February 2023)
- 3.) Permits**
 - a. Massachusetts Endangered Species Act (MESA) Project Review (Start: April 2022, End July 2022)
 - b. Massachusetts Historical Commission Project Notification Form (Start: April 2022, End July 2022)
 - c. Army Corps of Engineers 404 Programmatic General Permit (Start: April 2022, End July 2022)
 - d. Notice of Intent-Conservation Commission (Start Sept 2022, End November 2022)
 - e. Local Permitting (Start Sept 2022, End November 2022)
 - f. Chapter 85, Section 35 MassDOT Review (Start Sept 2022, End November 2022)
 - g. (DEP) Section 401 Water Quality Certificate (Start Sept 2022, End November 2022)
 - h. Massachusetts Environmental Policy Act (MEPA) Filing (Start Sept 2022, End November 2022)
 - i. FEMA Floodplain Letter of Map Revision/Conditional Letter of Map Revision, (Start Sept 2022, End November 2022)

5) PROJECT BENEFITS

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- i. **Benefits to the Environment:** Briefly explain any known environmental information about your proposed culvert location(s) or possible environmental benefits for replacing the existing culvert(s) with a structure meeting the Massachusetts Stream Crossing Standards. Consider critical and connected habitat, bank erosion, water quality, fish and wildlife species that inhabit the site/area, and problems for these organisms to pass through the culvert.

The baseline databases online suggest the upgrade of this culvert will have low to moderate environmental Improvement. The redesign will be more environmentally friendly for existing habit in that it will be more nature based design. The new design also will prevent the sinkholes (and movement of sand) from the current culvert system.

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- ii. **Public Safety Benefits:** Describe how the project will improve public safety and reduce vulnerability to changing climatic conditions, such as flooding and damage caused by more frequent, high intensity storms. Consider road closures, culvert failure, road washout, and access to municipal and emergency services. If available, include supporting documentation (e.g., photos, recent inspection reports, news stories, etc.) of the hazard and/or anticipated public safety benefits.

The proposed design will replace a failing culvert which is the single entry point to the CWD operational building, containing all the financial and operational equipment for the District. The hydraulic model suggests moderate improvements to reducing the flooding condition until downstream conditions are addressed (tailwater controlling water levels). As part of the design effort, a secondary emergency access is being proposed in the event the drainage system cannot withstand the drainage demands during high flow conditions.

iii. **Economic and Community Benefits:** Describe expected economic benefits to the community from the culvert replacement(s). Consider increased economic activity, enhanced recreation, cost savings through improved infrastructure resilience, and/or reduced maintenance cost.

Overall, the project will allow more flow through the culvert, lessen the localized flooding, and provide an alternative access to the Operation Building which is the main contact to the public as well as District equipment.

iv. **Environmental Justice Communities:** If a portion of your project falls in or within 0.5 miles of a mapped Environmental Justice Neighborhood, i.e. EJ Block Group, then please describe the climate resiliency, public safety and/or socio-economic benefits for this EJ population. Be sure to describe where the EJ neighborhood is located geographically relative to the project site and whether the EJ population has been engaged and/or demonstrated support for the project.

The Environmental Justice community (classified as minority) is approximately 0.62 miles from the project office and located on Turnpike Road and Warren Avenue and areas north and east of these road locations. The Environmental Justice Community is approximately 0.56 miles from the proposed emergency entrance. These populations tend to access the Operation Building directly to pay bills, or make arrangements to pay bills over time in person. Providing access to the building is important to allow for this population to communicate with the District in person and remotely as all power and communication are buried lines to the Operation building and traverse over this crossing.