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# Resilient Massachusetts Action Team

## *Beta Climate Resilience Design Standards Tool*

### *Project Form*

The beta Climate Resilience Design Standards Tool is found at [INCLUDE URL LINK OF NEW TOOL PAGE]. If for any reason the beta web-tool is inaccessible, please complete this "Project Form" in lieu of the beta web-tool. The "Project Form" captures a majority of questions, with the exception of questions requiring geospatial input, found in the beta web-tool and should be attached to grant or other applications in place of the beta web-tool's "Project Report".

**A. Context**

The Resilient Massachusetts Action Team (RMAT) Climate Resilience Design Standards and Guidelines project includes:

- **Beta Climate Resilience Design Standards Tool**: a beta web-tool for agencies that provides a preliminary climate risk screening and recommended climate resilience design standards for State projects with physical assets
- **Climate Resilience Design Guidelines:** guidelines, best practices, and forms for State agencies to support implementation of recommended climate resilience design standards

The **Project Form** accompanies the beta Climate Resilience Design Standards Tool and is meant to be completed and submitted in lieu of the "Project Report" if the beta web-tool is inaccessible for any reason. The Site Suitability, Regional Coordination, and Flexible Adaptation Pathways Forms are **additional, optional forms** that serve to document project information and design considerations.

The forms are structured as follows:

| Form Name | Abbreviation | Complete For… | Submission Process |
|---|---|---|---|
| Project Form | *N/A* | Project Questions: Overall Project | **Only submit** this form if the beta web-tool is inaccessible. Please follow instructions of your grant and other application process. |
| | | Asset Questions: Each Asset | |

| Form Name | Abbreviation | Complete For… | Submission Process |
|---|---|---|---|
| Site Suitability Form | Form-SS | [Optional] Overall Project | Submit these **optional f**orms as a complete package to supplement your grant application or other process. |
| Regional Coordination Form | Form-RC | [Optional] Overall Project | |
| Flexible Adaptation Pathways Form | Form-AP | [Optional] Overall Project | |

## B. Instructions

The beta Tool prompts users to input details related to the project and physical asset(s). This Project Form contains project-specific questions as well as asset-specific questions, which are further categorized by project asset categories (below) as identified in the beta web-tool.

- **All projects** should complete the “Project Questions” in Section C of this form.
- Projects with **building/facility assets** should complete the corresponding “Asset Questions” in Section D.
- Projects with **infrastructure assets** should complete the corresponding “Asset Questions” in Section E.
- Projects with **natural resource assets** should complete the corresponding “Asset Questions” in Section F.

## C. Project Questions (All projects)

Provide the responses to related to the **overall project.**

1. Preparer Name: Click or tap here to enter text.
2. Preparer Contact Information: Click or tap here to enter text.
3. Project Name: Click or tap here to enter text.
4. Project Location/Municipality, identify address and tax lot number: Click or tap here to enter te
5. Project location LAT/LONG: Click or tap here to enter text.
6. Entity Submitting Project: Click or tap here to enter text.
7. Project Description: Click or tap here to enter text.
8. Estimated Capital Cost: Click or tap here to enter text.
9. Project Funding Source: Click or tap here to enter text.
10. Is this project being submitted as part of a state grant application? ☐ Yes ☐ No
    a. If yes, which state grant program? Click or tap here to enter text.
11. Is climate resiliency a core objective of this project? ☐ Yes ☐ No
12. Is this project being submitted as part of a project review process? ☐ Yes ☐ No
13. Identify the major physical assets proposed as part of the project (e.g., buildings/facilities, infrastructure, and natural resources): Click or tap here to enter text.
14. Given the expected useful life of the project, through what year do you expect the project to last (i.e., before a major reconstruction/renovation):

| | | |
|---|---|---|
| **PROJECT USEFUL LIFE** | 2021 – 2029 | ☐ |
| | 2030 – 2039 | ☐ |
| | 2040 – 2049 | ☐ |
| | 2050 – 2059 | ☐ |
| | 2060 – 2069 | ☐ |
| | 2070 – 2079 | ☐ |
| | 2080 – 2089 | ☐ |
| | 2090 – 2099 | ☐ |

15. Identify the Ecosystem Services Benefits provided by the overall project. **Ecosystem Service Benefits should only be selected if the benefit applies to the entire project.** Please refer to the definitions in the Glossary for the description of ecosystem services benefits.

| Ecosystem Services Benefits | YES | NO |
|---|---|---|
| Provides flood protection through green infrastructure or nature-based solutions<br>Projects that prevent or reduce flooding and flood damage to assets, through water infiltration, retention, redirection, or buffering of water flow using nature-based solutions. Nature-based solutions are adaptation measures focused on the protection, restoration, and/or management of ecological systems to safeguard public health, provide clean air and water, increase natural hazard resilience, and sequester carbon. | ☐ | ☐ |
| Provides storm damage mitigation<br>Projects that take measures to mitigate the severity and consequence of storm conditions and impacts, including winds, precipitation, storm surge, waves, ice, water flow, erosion, and sediment movement on an asset. | ☐ | ☐ |
| Provides groundwater recharge<br>Projects that replenish the groundwater table through stormwater infiltration and retention using nature-based solutions. | ☐ | ☐ |
| Protects public water supply<br>Projects that reduce the risk of contamination, pollution, and/or runoff of surface and groundwater sources used for human consumption. | | |
| Filters stormwater<br>Projects that absorb and filter stormwater, such as through rain gardens, swales, or bio basins. | ☐ | ☐ |
| Improves water quality<br>Projects that mitigate adverse impacts from increased temperature, nutrient, sediment, and pollutant inputs to waterbodies. | ☐ | ☐ |
| Promotes decarbonization<br>Projects which aim to reduce their consumption of carbon through strategies such as using heat pumps for heating and cooling of buildings, or renewable energy sources for electric supply. | ☐ | ☐ |
| Enables carbon sequestration<br>Projects that enable the uptake of carbon containing substances, in particular carbon dioxide, in terrestrial or marine reservoirs. | ☐ | ☐ |
| Provides oxygen production<br>Projects that generate oxygen through the use of plants, trees and other vegetation as part of nature-based solutions. | ☐ | ☐ |
| Improves air quality<br>Projects that mitigate adverse impacts from increased atmospheric greenhouse gas concentrations and other toxic air pollutants. | ☐ | ☐ |
| Prevents pollution<br>Projects that prevent the release of pollutants, including but not limited to contaminants (atmospheric, groundwater, or soil), wastewater (storm or sewage), or other hazardous waste. | ☐ | ☐ |

| | | |
|---|---|---|
| Remediates existing sources of pollution<br>Projects that remove existing pollutants or contaminants on-site. | ☐ | ☐ |
| Protects fisheries, wildlife, and plant habitat<br>Projects that preserve, enhance or restore habitats important for conservation of fish, wildlife, and plant abundance and diversity. | ☐ | ☐ |
| Protects land containing shellfish<br>Projects that preserve, enhance or restore aquatic habitats important for conservation of shellfish abundance and diversity. | ☐ | ☐ |
| Provides pollination<br>Projects that provide opportunities for the transfer of pollen between plants to encourage fertilization. | ☐ | ☐ |
| Provides recreation<br>Projects that provide recreational opportunities for the public though outdoor spaces. | ☐ | ☐ |
| Provides cultural resources/education<br>Projects that provide educational opportunities to the public regarding the cultural value of natural resources. | ☐ | ☐ |

16. Identify the project's climate exposure to the best of your knowledge. (Note: The beta web-tool identifies additional climate exposures given the project location's geospatial information, which cannot be replicated in this form.)

    a. Does the project site have a history of coastal flooding?* ☐Yes ☐No
    b. Does the project site have a history of riverine flooding?* ☐Yes ☐No
    c. Does the project site have a history of flooding during extreme precipitation events?* ☐Yes ☐No
    d. Does the project result in a net increase in impervious area of the site? ☐Yes ☐No
    e. Are existing trees being removed as part of the proposed project? ☐Yes ☐No

    * Projects that have evidence of flooding since 1990, as indicated by State and/or local hazard mitigation plans, the NOAA Storm Events Database, or Town/ local historical records. This does not include flooding caused by utility infrastructure failure (e.g., sewer, water main breaks, etc.).

# SECTION D: BUILDING/FACILITY ASSET

Complete this section if your Project includes Building/Facility Assets

## D. Asset Questions: Building/Facility

Physical assets are defined as assets that make up the major physical components of a project and organized into three main Asset Categories; buildings/facilities, infrastructure, and natural resources. Please provide responses to the following questions for **each building/facility asset** in the project. If a project has multiple building/facility assets, please copy this Section and complete a copy for each asset.

1. For this building/facility asset, please select ONE of the following Asset Types and ONE corresponding Asset Sub-Type.

| **ASSET CATEGORY** | **BUILDING/FACILITY ASSET – **LIST HERE**** | |
|---|---|---|
| **ASSET TYPE** | **TYPICALLY OCCUPIED**<br>*If Typically Occupied, select ONE of the following, below.* | **TYPICALLY UNOCCUPIED**<br>*If Typically Unoccupied, select ONE of the following, below.* |
| **ASSET SUB-TYPE** | ☐ Airport | ☐ Food distribution center |
| | ☐ Childcare facility | ☐ Fuel storage/station |
| | ☐ Community center | ☐ Generator |
| | ☐ Correctional facility | ☐ Hazardous waste storage |
| | ☐ Elderly housing | ☐ Industrial |
| | ☐ Emergency operations/response building (fire, police, etc.) | ☐ Maintenance facility |
| | ☐ Emergency shelter | ☐ Material storage |
| | ☐ Government building | ☐ Mechanical building/vent stack |
| | ☐ Group home | ☐ Morgue |
| | ☐ Higher-education facility | ☐ Parking facility |
| | ☐ Hospital and mental health facilities | ☐ Power transmission facility, substation, and/or generation station |
| | ☐ House/place of worship | ☐ Pump Station - Sanitary |
| | ☐ Laboratory | ☐ Pump Station - Stormwater |
| | ☐ Library | ☐ Rapid Transit/Rail station |
| | ☐ IT data center | ☐ Recreational facility |
| | ☐ Judicial center | ☐ Solid waste facility (recycling facilities, transfer stations, etc.) |
| | ☐ Military facility | ☐ Telecommunications facility/communication tower |
| | ☐ Mixed-use building | ☐ Ventilation building/fan plants |
| | ☐ Non-residential building (office, commercial, retail) | ☐ Wastewater treatment plant |
| | ☐ Residential building - Public Housing | ☐ Water storage tank or tower |
| | ☐ School (primary, secondary, high, vocational, etc.) | ☐ Water treatment plant (potable water) |
| | ☐ Other | ☐ Other |

2. For the building/facility asset, check one Asset Construction Type.

| ASSET CATEGORY | BUILDING/FACILITY ASSET – **LIST HERE** | |
|---|---|---|
| **ASSET CONSTRUCTION TYPE** | New Construction | ☐ |
| | Major Repair/Retrofit | ☐ |
| | Maintenance (critical repair) | ☐ |
| | Maintenance (environmental) | ☐ |
| | Renovation | ☐ |

3. Estimated year construction will start: Click or tap here to enter text.
4. Given the expected useful life of the project, through what year do you expect the project to last (i.e., before a major reconstruction/renovation)? Check one Asst Useful Life.

| ASSET CATEGORY | BUILDING/FACILITY ASSET – **LIST HERE** | |
|---|---|---|
| **ASSET USEFUL LIFE** | 2021 - 2029 | ☐ |
| | 2030 - 2039 | ☐ |
| | 2040 – 2049 | ☐ |
| | 2050 – 2059 | ☐ |
| | 2060 – 2069 | ☐ |
| | 2070 - 2079 | ☐ |
| | 2080 - 2089 | ☐ |
| | 2090 - 2099 | ☐ |

5. Summarize the above selections here.

| Tool Input | **LIST ASSET HERE** |
|---|---|
| Asset Category | Click or tap here to enter text. |
| Asset Type | Click or tap here to enter text. |
| Asset Sub-Type | Click or tap here to enter text. |
| Construction Type | Click or tap here to enter text. |
| Estimated Year Construction Will Start | Click or tap here to enter text. |
| Asset Useful Life | Click or tap here to enter text. |

6. For ***each building/facility asset*** identified above, document the following information to the best of your knowledge, given your response to the first question in the table below, "Identify the length of time the asset can be inaccessible/inoperable without severe consequences."

   *Only one answer choice may be selected per question.*

| BUILDING/FACILITY ASSET – **LIST ASSET HERE** | | | |
|---|---|---|---|
| **Component** | **Questions** | **Answer Choices** | **Selection** |
| **TIME** | 1. Identify the length of time the asset can be inaccessible/inoperable without severe consequences. | Building may be inaccessible/inoperable more than a week after natural hazard events without consequences | ☐ |
| | | Building may be inaccessible/inoperable for more than a day, but less than a week after natural hazard events without consequences | ☐ |
| | | Building may be inaccessible/inoperable during natural hazard events, but must be accessible/operable within one day after natural hazard events | ☐ |
| | | Building must be accessible/operable at all times, even during natural hazard events | ☐ |
| **SCOPE** | 2. Identify the geographic area directly affected by permanent loss or significant inoperability of the building/facility. | Impacts limited to site only | ☐ |
| | | Impacts would be limited to local area and/or municipality | ☐ |
| | | Impacts would be regional (more than one municipality and/or surrounding region) | ☐ |
| | | State-wide or greater impacts | ☐ |
| | 3. Identify the population directly served that would be affected by the permanent loss or significant inoperability of the building/facility. | Less than 100 people | ☐ |
| | | Less than 1,000 people | ☐ |
| | | Less than 10,000 people | ☐ |
| | | Greater than 10,000 people | ☐ |
| | 4. Identify if the building/facility is located within an environmental justice community or provides services to vulnerable populations. | The building is not located in an environmental justice community and does not provide services to vulnerable populations | ☐ |
| | | The building is located in an environmental justice community, and/or does provide services to vulnerable populations (services are not available elsewhere to same population) | ☐ |

| BUILDING/FACILITY ASSET – **LIST ASSET HERE** | | | |
|---|---|---|---|
| **Component** | **Questions** | **Answer Choices** | **Selection** |
| **SEVERITY** | 5. If the building/facility became inoperable for longer than acceptable in Question 1, how, if at all, would it be expected to impact people's health and safety? | Inoperability of the building/facility would not be expected to result in injuries | ☐ |
| | | Inoperability of the building/facility would be expected to result in minor impacts to people's health, including minor injuries or minor impacts to chronic illnesses | ☐ |
| | | Inoperability of the building/facility would result in moderate or severe injuries or moderate or severe impacts to chronic illnesses | ☐ |
| | | Inoperability of the building/facility would be expected to result in possible loss of life | ☐ |
| | 6. If there are hazardous materials in your building/facility, what are the extent of impacts related to spills/releases of these materials? | There are no hazardous materials in the building/facility | ☐ |
| | | Spills and/or releases of hazardous materials would be relatively easy to clean up | ☐ |
| | | Spills and/or releases of hazardous materials would be moderately difficult to clean up | ☐ |
| | | Spills and/or releases of hazardous materials are expected with difficult remediation and pose a severe threat to public health or safety (e.g., wastewater treatment plant; biohazard laboratory) | ☐ |
| | 7. If the building/facility became inoperable for longer than acceptable in Question 1, what are the impacts on other facilities, assets, and/or infrastructure? | Minor – Inoperability will not likely affect other facilities, assets, or buildings | ☐ |
| | | Moderate – Inoperability may impact other facilities, assets, or buildings, but is not expected to affect their ability to operate | ☐ |
| | | Significant – Inoperability is likely to impact other facilities, assets, or buildings and will likely affect their ability to operate | ☐ |
| | | Debilitating – Inoperability will result in cascading impacts that will render other facilities, assets, or buildings inoperable and/or prevent the functionality of major regional or statewide facilities and/or delivery of critical services | ☐ |

| BUILDING/FACILITY ASSET – **LIST ASSET HERE** | | | |
|---|---|---|---|
| **Component** | **Questions** | **Answer Choices** | **Selection** |
| **SEVERITY** | 8. If this building/facility was damaged beyond repair, how much would it approximately cost to replace? | Less than $10 million | ☐ |
| | | Between $10 million and $30 million | ☐ |
| | | Between $30 million and $100 million | ☐ |
| | | Greater than or equal to $100 million | ☐ |
| | 9. Is this a recreational facility which can be vacated during a natural hazard event? | No | ☐ |
| | | Yes | ☐ |
| | 10. If the building/facility became inoperable for longer than acceptable in Question 1, what are the public and/or social services impacts? | Many alternative programs and/or services are available to support the community | ☐ |
| | | Some alternative programs and/or services are available to support the community | ☐ |
| | | Few alternative programs and/or services are available to support the community | ☐ |
| | | No alternative programs and/or services are available to support the community | ☐ |
| | 11. If the building/facility became inoperable for longer than acceptable in Question 1, what are the environmental impacts related to natural resources? | No impact on surrounding natural resources is expected | ☐ |
| | | Impact on natural resources can be mitigated naturally | ☐ |
| | | Impact on natural resources will require remediation/rehabilitation | ☐ |
| | | Impact on natural resources is irreversible/natural resource lost | ☐ |
| | 12. If the building/facility became inoperable for longer than acceptable in Question 1, what are the impacts to government services (i.e., the building is not able to serve or operate its intended users or function)? | Loss of building is not expected to reduce the ability to maintain government services. | ☐ |
| | | Loss of building may reduce the ability to maintain some government services, while a majority of services will still exist. | ☐ |
| | | Loss of building may reduce the ability to maintain most government services, while some services will still exist. | ☐ |
| | | Government agency will no longer be able to maintain services | ☐ |

| BUILDING/FACILITY ASSET – **LIST ASSET HERE** | | | |
|---|---|---|---|
| **Component** | **Questions** | **Answer Choices** | **Selection** |
| **SEVERITY** | 13. If the building/facility became inoperable for longer than acceptable in Question 1, what are the impacts to loss of confidence in government (i.e., the building is not able to serve or operate its intended users or function)? | Reduced morale and public support | ☐ |
| | | Loss of confidence in government agency | ☐ |
| | | Loss of confidence in Commonwealth | ☐ |

# SECTION E: INFRASTRUCTURE ASSET

Complete this section if the Project includes Infrastructure Assets

## E. Asset Questions: Infrastructure

Physical assets are defined as assets that make up the major physical components of a project and organized into three main Asset Categories; buildings/facilities, infrastructure, and natural resources. Please provide responses to the following questions for **each infrastructure asset** in the project. If a project has multiple infrastructure assets, please copy this Section and complete a copy for each asset.

1. For this infrastructure asset, please select ONE of the following Asset Types and ONE corresponding Asset Sub-Type.

| **ASSET CATEGORY** | **INFRASTRUCTURE ASSET – **LIST HERE**** | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **ASSET TYPE** | **TRANSPORTATION** | | **DAMS AND FLOOD CONTROL STRUCTURES** | | **UTILITY INFRASTRUCTURE** | | **SOLID AND HAZARDOUS WASTE** | |
| | *If Transportation, select ONE of the following, below.* | | *If Dam and Flood Control Structure, select ONE of the following, below.* | | *If Utility Infrastructure, select ONE of the following, below.* | | *If Solid and Hazardous Waste, select ONE of the following, below.* | |
| **ASSET SUB-TYPE** | ☐ | Roads (local) | ☐ | Dams | ☐ | Energy (electric, gas, petroleum, renewable) | ☐ | Landfill |
| | ☐ | Roads (highway) | ☐ | Dikes and/or levees | ☐ | Telecommunications (telephone, internet, data, cable/TV) | ☐ | Solid Waste Facility/Transfer Station |
| | ☐ | Pedestrian ways and bikeways | ☐ | Seawalls/Walls | ☐ | Wastewater | ☐ | Other Solid and Hazardous Waste (e.g., salvage/junk yard) |
| | ☐ | Railways (rail and rapid transit) | ☐ | Multi-purpose flood storage | ☐ | Water | | |
| | ☐ | Bridge | ☐ | Other Flood Barrier | ☐ | Stormwater utility infrastructure | | |
| | ☐ | Culvert | | | ☐ | Other Utility | | |
| | ☐ | Bus (stops) | | | | | | |
| | ☐ | Ferry/water taxi | | | | | | |
| | ☐ | Ports | | | | | | |
| | ☐ | Other Transportation | | | | | | |

2. For the infrastructure asset, check one Asset Construction Type.

| ASSET CATEGORY | INFRASTRUCTURE ASSET – **LIST HERE** | |
|---|---|---|
| **ASSET CONSTRUCTION TYPE** | New Construction | ☐ |
| | Major Repair/Retrofit | ☐ |
| | Maintenance (critical repair) | ☐ |
| | Maintenance (environmental) | ☐ |

3. Estimated year construction will start: Click or tap here to enter text.
4. Given the expected useful life of the project, through what year do you expect the project to last (i.e., before a major reconstruction/renovation)? Check one Asst Useful Life.

| ASSET CATEGORY | INFRASTRUCTURE ASSET – **LIST HERE** | |
|---|---|---|
| **ASSET USEFUL LIFE** | 2021 - 2029 | ☐ |
| | 2030 - 2039 | ☐ |
| | 2040 – 2049 | ☐ |
| | 2050 – 2059 | ☐ |
| | 2060 – 2069 | ☐ |
| | 2070 - 2079 | ☐ |
| | 2080 - 2089 | ☐ |
| | 2090 - 2099 | ☐ |

5. Summarize the above selections here.

| Tool Input | **LIST ASSET HERE** |
|---|---|
| Asset Category | Click or tap here to enter text. |
| Asset Type | Click or tap here to enter text. |
| Asset Sub-Type | Click or tap here to enter text. |
| Construction Type | Click or tap here to enter text. |
| Estimated Year Construction Will Start | Click or tap here to enter text. |
| Asset Useful Life | Click or tap here to enter text. |

7. For ***each infrastructure asset*** identified above, document the following information to the best of your knowledge, given your response to the first question in the table below, "Identify the length of time the asset can be inaccessible/inoperable without severe consequences."

   *Only one answer choice may be selected per question.*

| INFRASTRUCTURE ASSET – **LIST ASSET HERE** | | | |
|---|---|---|---|
| **Component** | **Questions** | **Answer Choices** | **Selection** |
| **TIME** | 1. Identify the length of time the asset can be inaccessible/inoperable without severe consequences. | Infrastructure may be inaccessible/inoperable more than a week after natural hazard events without consequences. | ☐ |
| | | Infrastructure may be inaccessible/inoperable for more than a day, but less than a week after natural hazard events without consequences. | ☐ |
| | | Infrastructure may be inaccessible/inoperable during natural hazard events, but must be accessible/operable within one day after natural hazard event. | ☐ |
| | | Infrastructure must be accessible/operable at all times, even during natural hazard events. | ☐ |
| **SCOPE** | 2. Identify the geographic area directly affected by permanent loss or significant inoperability of the infrastructure. | Impacts limited to location of infrastructure only | ☐ |
| | | Impacts would be limited to local area and/or municipality | ☐ |
| | | Impacts would be regional (more than one municipality and/or surrounding region) | ☐ |
| | | State-wide or greater impacts | ☐ |
| | 3. Identify the population directly served that would be affected by the permanent loss or significant inoperability of the infrastructure. | Less than 5,000 people | ☐ |
| | | Less than 10,000 people | ☐ |
| | | Less than 100,000 people | ☐ |
| | | Greater than 100,000 people | ☐ |

| INFRASTRUCTURE ASSET – **LIST ASSET HERE** | | | |
|---|---|---|---|
| **Component** | **Questions** | **Answer Choices** | **Selection** |
| | 4. Identify if the infrastructure is located within an environmental justice community or provides services to vulnerable populations. | The infrastructure is not located in an environmental justice community and does not provide services to vulnerable populations | ☐ |
| | | The infrastructure is located in an environmental justice community, and/or provides some services to vulnerable populations (services are not available elsewhere to same population) | ☐ |
| | 5. Will the infrastructure reduce the risk of flooding? | No | ☐ |
| | | Yes | ☐ |
| **SEVERITY** | 6. If the infrastructure became inoperable for longer than acceptable in Question 1, how, if at all, would it be expected to impact people's health and safety? | Inoperability of the infrastructure would not be expected to result in injuries | ☐ |
| | | Inoperability of the infrastructure would be expected to result in minor impacts to people's health, including minor injuries or minor impacts to chronic illnesses | ☐ |
| | | Inoperability of the infrastructure would result in moderate or severe injuries or moderate or severe impacts to chronic illnesses | ☐ |
| | | Inoperability of the infrastructure would be expected to result in possible loss of life | ☐ |
| | 7. If there are hazardous materials in your infrastructure, what are the extent of impacts related to spills/releases of these materials? | There are no hazardous materials in the infrastructure | ☐ |
| | | Spills and/or releases of hazardous materials are expected with relatively easy cleanup | ☐ |
| | | Spills and/or releases of hazardous materials are expected with moderately difficult cleanup | ☐ |
| | | Spills and/or releases of hazardous materials are expected with difficult remediation and pose a severe threat to public health or safety (e.g., wastewater treatment plant; biohazard laboratory) | ☐ |

| INFRASTRUCTURE ASSET – **LIST ASSET HERE** | | | |
|---|---|---|---|
| **Component** | **Questions** | **Answer Choices** | **Selection** |
| **SEVERITY** | 8. If the infrastructure became inoperable for longer than acceptable in Question 1, what are the impacts on other facilities, assets, and/or infrastructure? | Minor – Inoperability will not likely affect other facilities, assets, or buildings | ☐ |
| | | Moderate – Inoperability may impact other facilities, assets, or buildings, but cascading impacts do not affect ability of other facilities, assets, or buildings to operate | ☐ |
| | | Significant – Inoperability is likely to impact other facilities, assets, or buildings and result in cascading impacts that will likely affect their ability to operate | ☐ |
| | | Debilitating – Inoperability will result in cascading impacts that will render other assets inoperable and/or prevent the functionality of major regional or statewide infrastructure or delivery of critical services | ☐ |
| | 9. If the infrastructure was damaged beyond repair, how much would it approximately cost to replace? | Less than $10 million | ☐ |
| | | Between $10 million and $30 million | ☐ |
| | | Between $30 million and $100 million | ☐ |
| | | Greater than or equal to $100 million | ☐ |
| | 10. Does the infrastructure function as an evacuation route during emergencies? This question only applies to roadway projects. | No | ☐ |
| | | Yes | ☐ |
| | 11. If the infrastructure became inoperable for longer than acceptable in Question 1, what are the environmental impacts related to natural resources? | No impact on surrounding natural resources is expected | ☐ |
| | | Impact on natural resources can be mitigated naturally | ☐ |
| | | Impact on natural resources will require remediation/rehabilitation | ☐ |
| | | Impact on natural resources is irreversible or the natural resources are lost | ☐ |

| INFRASTRUCTURE ASSET – **LIST ASSET HERE** | | | |
|---|---|---|---|
| **Component** | **Questions** | **Answer Choices** | **Selection** |
| **SEVERITY** | 12. If the infrastructure became inoperable for longer than acceptable in Question 1, what are the impacts to government services (i.e., the infrastructure is not able to serve or operate its intended users or function)? | Loss of infrastructure is not expected to reduce the ability to maintain government services | ☐ |
| | | Loss of infrastructure may reduce the ability to maintain some government services, while a majority of services will still exist | ☐ |
| | | Loss of infrastructure may reduce the ability to maintain most government services, while some services will still exist | ☐ |
| | | Government agency will no longer be able to maintain services | ☐ |
| | 13. What are the impacts to loss of confidence in government resulting from loss of infrastructure functionality (i.e. the infrastructure asset is not able to serve or operate its intended users or function)? | Reduced morale and public support | ☐ |
| | | Loss of confidence in government agency | ☐ |
| | | Loss of confidence in Commonwealth | ☐ |

# SECTION F: NATURAL RESOURCE ASSET

Complete this section if the Project includes Natural Resources Assets

## F. Asset Questions: Natural Resources

Physical assets are defined as assets that make up the major physical components of a project and organized into three main Asset Categories; buildings/facilities, infrastructure, and natural resources. Please provide responses to the following questions for **each natural resource asset** in the project. If a project has multiple natural resource assets, please copy this Section and complete a copy for each asset.

1. For this natural resource asset, please select ONE of the following Asset Types and ONE corresponding Asset Sub-Type. *See table on following page.*

| ASSET CATEGORY | NATURAL RESOURCES - **LIST ASSET HERE** | | | | | | |
|---|---|---|---|---|---|---|---|
| **ASSET TYPE** | **COASTAL RESOURCE AREA** | **FORESTED ECOSYSTEMS** | **AQUATIC ECOSYSTEMS** | **WETLAND RESOURCE AREA - INLAND** | **AGRICULTURAL RESOURCES** | **OPEN SPACE** | **URBAN FOREST** |
| | *If Coastal Resource Area, select ONE of the following, below.* | *If Forested Ecosystem, select ONE of the following, below.* | *If Aquatic Ecosystem, select ONE of the following, below.* | *If Wetland Resource Area, select ONE of the following, below.* | *If Agricultural Resources, select ONE of the following, below.* | *If Open Space, select ONE of the following, below.* | *If Urban Forest, select ONE of the following, below.* |
| **ASSET SUB-TYPE** | ☐ Coastal bank | ☐ Upland forest | ☐ Large- and mid-size rivers | ☐ Banks | ☐ Cropland and/or arable land (annual replanting) | ☐ Open recreation space | ☐ Street trees |
| | ☐ Coastal wetland | ☐ Lowland forest | ☐ Small streams | ☐ Land under Water Bodies or Waterways | ☐ Permanent Cropland | ☐ Trails | ☐ Stormwater detention/retention |
| | ☐ Coastal beach | ☐ Woodlands | ☐ Connecticut and Merrimack Mainstems | ☐ Vernal Pool Habitat | ☐ Permanent Pastures (grasslands, shrublands) | ☐ Conservation land | ☐ Rain gardens |
| | ☐ Coastal dune | ☐ Forested swamps | ☐ Lakes and Ponds - Non water supply | ☐ Lower Floodplains | | ☐ Reserves | |
| | ☐ Land under the ocean | ☐ Riparian forest | | ☐ Riverfront Area | | ☐ Grassland | |
| | ☐ Land under an estuary | ☐ Shrub swamps | | ☐ Wooded deciduous swamps | | ☐ Parklands | |
| | ☐ Land under a salt pond | ☐ Young forests and shrublands | | ☐ Emergent wetlands | | ☐ Peatlands | |
| | ☐ Land subject to tidal action | | | ☐ Marsh | | | |
| | ☐ Land subject to coastal 100-year storm flowage | | | ☐ Wet meadows | | | |
| | ☐ Land under streams, rivers, lakes, or creeks within the coastal zone that are anadromous/ catadromous fish runs | | | ☐ Bogs | | | |
| | ☐ Barrier beach | | | | | | |
| | ☐ Estuarine open water | | | | | | |
| | ☐ Salt marsh | | | | | | |
| | ☐ Rocky intertidal shores | | | | | | |
| | ☐ Coastal plain ponds | | | | | | |

2. For the natural resource asset, check one Asset Construction Type.

| ASSET CATEGORY | NATURAL RESOURCES ASSET – **LIST HERE** | |
|---|---|---|
| **ASSET CONSTRUCTION TYPE** | New Construction | ☐ |
| | Restoration or enhancement | ☐ |
| | Maintenance (environmental) | ☐ |
| | Dam removal | ☐ |

3. Estimated year construction will start: Click or tap here to enter text.
4. Given the expected useful life of the project, through what year do you expect the project to last (i.e., before a major reconstruction/renovation)? Check one Asst Useful Life.

| ASSET CATEGORY | NATURAL RESOURCE ASSET – **LIST HERE** | |
|---|---|---|
| **ASSET USEFUL LIFE** | 2021 - 2029 | ☐ |
| | 2030 - 2039 | ☐ |
| | 2040 – 2049 | ☐ |
| | 2050 – 2059 | ☐ |
| | 2060 – 2069 | ☐ |
| | 2070 - 2079 | ☐ |
| | 2080 - 2089 | ☐ |
| | 2090 - 2099 | ☐ |

5. Summarize the above selections here.

| Tool Input | **LIST ASSET HERE** |
|---|---|
| Asset Category | Click or tap here to enter text. |
| Asset Type | Click or tap here to enter text. |
| Asset Sub-Type | Click or tap here to enter text. |
| Construction Type | Click or tap here to enter text. |
| Estimated Year Construction Will Start | Click or tap here to enter text. |
| Asset Useful Life | Click or tap here to enter text. |