



SANDAG

Military Installation Resilience Framework
Appendix C. Sea Level Rise and Flooding Checklist

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Pre-Checklist Conditions

- A. According to the MIR hub, is the project vulnerable to sea level rise in horizon year **2050**?
- Yes
- No
- B. According to the MIR hub, is the project vulnerable to sea level rise in horizon year **2100**?
- Yes
- No

If the project is vulnerable to sea level rise in horizon year 2050 or 2100, continue to the checklist below:

Section 1: Project information:

1.1 What is the project location? (street address or coordinates)

1.2 What type of asset or project is being proposed?

1.3 Describe the need/benefit of this project:

Section 2: Functional Lifespan /Useful Life of Project

2.1 Using the table below, what is the functional lifespan of the project?

2.1.1 Functional Lifespan: approximately

Functional Lifespan	Project Category	Examples
< 20 years	Assets requiring regular maintenance/ replacement	Asphalt Roadways; Green Infrastructure: Green Streets, Permeable Paving, Raingardens, Bioswales; Active Transportation infrastructure

20-50 years	Maintenance/Industrial facilities; Traditional Shoreline Armoring Devices	Maintenance facilities; Industrial buildings; Mechanical Equipment; Railyards; Piers/Docks; Concrete Sidewalks; Shoreline Armoring Devices; Concrete Revetments, Sheet Pile Bulkheads
50-75 years	Buildings and Infrastructure (site-scale)	Multi-modal Stations; Buildings (public and private); Levees; Galvanized Steel Culverts; Seawalls
75-100 years	Large-scale (regional) Infrastructure and Buildings	Bridges; Tunnels; Interstate Highway Structures; Railways (Intercity and Trolley); Waste-Water Treatment Plants; Dams; Concrete/Aluminum/Polymer-coated Steel Culverts and other Sewer Infrastructure; Concrete/stone Retaining Walls

2.2 When will construction start /how long will construction take?

2.2.1 Construction Start Year:

2.2.2 Time to Complete Construction:

2.3 What is the planning horizon? (time of construction + lifespan)?

2.3.1 Horizon Year:

Section 3: Existing Site Elevation and Coastal Hazards Information

3.1 Record historical flooding information (MIR hub, Gages, Local information, etc.)
- known water elevations and storm data:

3.2 What is the lowest ground elevation in the project location, including the foundation, if applicable?

3.3 What is the Mean High-Water elevation closest to the project location in Horizon Year 2050?

3.4 What is the Mean High-Water elevation closest to the project location Horizon Year 2100?

3.5 Is the project located within 100 feet of the shoreline?

Yes

No

3.6 If the project is located within 100 feet of the shoreline, what is the water elevation in the horizon year?

Section 4: Vulnerability Assessment

4.1 Exposure to Sea Level Rise (SLR). Assess if the project site or asset could be subjected to sea level rise inundation, temporary coastal flooding, or wave hazards.

4.1.1 Using the MIR Adaptation website, calculate SLR elevation and provide based on horizon year for Representative Concentration Pathway (RCP) 4.5 & RCP 8.5:

a. RCP 4.5:

b. RCP 8.5:

4.1.2 Based on the determination from Section 3.2 and Section 4.1.1, is this project area at risk due to SLR?

Yes

No

4.1.3 Provide explanation to Section 4.1.2:

4.2 Exposure to interior flooding.

4.2.1 Is this project area less than 1,000 feet from a FEMA mapped hazard, at risk for interior flooding?

Yes

No

If the project area is at risk of interior flooding,

4.2.2 List the distance from the identified hazard:

4.2.3 Note the observations on the expected flooding conditions:

4.2.4 State the expected depth of water if no precautions are taken:

4.2.5 Please indicate any measures that will be taken to prevent interior flooding:

4.3 Has the impact of scour been analyzed for this structure?

Yes

No

4.3.1 If the scour has been analyzed, please discuss the scour results. If it has not been analyzed, please indicate why it is not a concern:

4.4 Sensitivity (physically or functionally impaired when wet) - Are the assets in the project sensitive to inundation?

Yes

No

4.4.1 If yes, list the elements of the system that are sensitive:

4.4.2 List methods utilized to protect these components from SLR/flooding:

4.5 Adaptive Capacity - Is the project, or components of the project, easily adaptable to mitigate the potential damage or functional impairment due to climate hazards? Are there any components that have redundancy to minimize potential consequences due to the climate hazards that pose a threat? Have Nature-based Solutions been incorporated into the design?

4.5.1 Explain which components would need to be adapted and how they could be adapted:

4.5.2 What is the time frame for adaptation?

4.6 Using the data provided in the MIR hub, determine how this project will be impacted by climate hazards:

Example: Beginning in the year ___ there is expected to be ___ for a duration of ___ due to climate factors such as ___.

Section 5: Risk Assessment for Projects Vulnerable to Sea Level Rise

5.1 What is expected level of damage?

- Low - Damaged parts could easily be repaired or replaced
- Moderate - Damage would require costly repairs or replacement
- High - Damaged parts would not be replaceable

5.1.1 List what could be damaged:

5.1.2 List prevention measures that will be taken:

5.2 What is the level of disruption?

- Low - No or limited disruption of service would occur
- Moderate - Disruption to service would not threaten public health and safety
- High - Disruption to service would threaten public health and safety

5.2.1 What service or function will be disrupted?

5.2.2 What are methods that can prevent disruption?

5.2.3 How critical is the service?

5.3 What are the costs to replace or repair the system?

- Low - Little to no cost to return system to working condition
- Moderate - Moderate costs to repair or replace assets within the system
- High - High costs to fully replace assets or costs due to loss of service

5.3.1 What are the effects if system is shut down?**5.3.2 What prevention methods are being put in place to ensure it will not shut down?****5.3.3 Where would the funds come from to maintain the system?**