MARYLAND COAST SMART COUNCIL

COAST SMART CONSTRUCTION PROGRAM

Effective Date: July 1, 2015

Approved By: [signature]

Date: 6/26/15

Summary of Contents

1) Introduction
   a) The Maryland Coast Smart Council
   b) The *Coast Smart* Construction Program
2) Criteria
   a) Applicability
      i) State projects
   b) Requirements
      i) *Coast Smart* Practices
      ii) Siting Criteria
      iii) Design Criteria
3) Categorical Exceptions
   a) Project Types and Uses
   b) Process
   c) Documentation
   d) Consultation
4) *Coast Smart* Criteria Waivers
   a) Waiver Considerations
   b) Process
   c) Routine Projects
5) Reporting
   a) Annual Reporting to Council
   b) Documentation
6) Criteria Incorporation
   a) Procedural Manual for Professional Services
   b) Facility Program Manual
   c) State Hazard Mitigation Plan and State Disaster Recovery Plan
7) *Coast Smart* Construction Program: Annual Review and Analysis

Appendix

A. Definitions
B. *Coast Smart* Construction Project Screening Checklist
C. *Coast Smart* Construction Categorical Exception Cover Sheet
D. *Coast Smart* Construction Waiver Cover Sheet

1. INTRODUCTION

a. The Maryland Coast Smart Council

House Bill 615 – Section 3-1001-3-1004 of the Natural Resources Article – entitled "Coast Smart Council" was enacted into law in 2014. This law establishes the Maryland Coast Smart Council (the Council) in the Department of Natural Resources (DNR), providing for private sector membership, State agency membership and assistance and staffing by DNR. One of the primary tasks of the Council is to establish *Coast Smart* siting and design criteria to address sea level rise and coastal flood impacts on capital projects.

Additionally, Md. STATE FINANCE AND PROCUREMENT Code Ann. § 3-602.3 requires that beginning on July 1, 2015, if a State capital project includes the construction of a structure or reconstruction of a structure with substantial damage, the structure shall be constructed or reconstructed in compliance with the siting and design criteria established by the Council. The Criteria shall include, guidelines, and any other directives applicable to the preliminary planning and construction of a proposed capital project; a requirement that the lowest floor elevation of each structure located within a Special Flood Hazard Area is built at an elevation of at least 2 feet above the base flood elevation; and provisions establishing a process to allow a Unit of State Government to obtain a waiver from complying with the requirements. The *Coast Smart* Construction Program establishes how these criteria will be put into practice.

b. The *Coast Smart* Construction Program

The *Coast Smart* Construction (Program) is for the use of all State of Maryland agencies that design and build facilities or prepare programs and budgets for the design and construction of facilities. It is intended specifically for the use of project managers, capital planners, and the professionals who will design and operate State-owned facilities. The Program will be reviewed on an annual or "as necessary" basis by the Council and revised to address issues which may occur as the building of State facilities and knowledge of *Coast Smart* building practices evolves.

For all questions concerning this program, refer to the Council's website at: http://www.dnr.state.md.us/climatechange/CSCouncil/index.asp or contact:

Maryland Coast Smart Council
c/o Department of Natural Resources - Office of the Secretary
580 Taylor Ave., C-4
Annapolis, MD 21401
410.260.8101

2. CRITERIA

a. **Applicability:** The Program criteria and requirements shall be applied to all State capital projects planned or built by Units of State Government that are partially or fully funded with State funds.

i. **State Projects.**

Beginning on July 1, 2015, if a State capital project includes the construction of a new structure or reconstruction of a structure with substantial damage, the structure shall be constructed or reconstructed in compliance with the Program criteria.

1. A "structure" is defined as a walled or roofed building; a manufactured home; or a gas or liquid storage tank that is principally above ground.
2. "Substantial damage" means damage caused by any source that is sustained by a structure such that the cost of reconstruction to its before-damaged condition is at least half of the structure's replacement cost before the damage occurred.

b. **Requirements:** Projects required to comply with the Program shall satisfy the following:

i. ***Coast Smart* Practices:** All Units of State Government shall employ *Coast Smart* practices when constructing all new state structures, or reconstructing or rehabilitating substantially damaged state structures.
   1. "*Coast Smart* Practices" are practices in which, preliminary planning, siting, design, construction, operation, maintenance, and repair of a structure avoids or, in the alternative, minimizes future impacts associated with coastal flooding and sea level rise.
   2. "*Coast Smart*" includes both siting and design guidelines that are applicable throughout the entire life cycle of a project.

ii. **Siting Criteria:** The following specifications related to the location of a structure or use on a lot or parcel or within a larger geographic area are required:
   1. Construction of new state structures and the reconstruction of substantially damaged state structures shall be avoided, to the fullest extent practicable, within areas likely to be inundated by sea level rise within the next 50-years.
   2. New state "critical or essential facilities" shall not be located within Special Flood Hazard Areas designated under the National Flood Insurance Program (NFIP), specifically "V" Zones, Coastal "A" Zones or floodways.
   3. Manufactured homes shall not be allowed in floodways or "V" Zones.
   4. Natural and nature based features that may serve to buffer the project from the impacts of future sea level rise, coastal flooding or storm surge (e.g., vegetated or forested buffers, dunes, wetland adaptation areas) or that support general climate adaptation practices (e.g., habitat adaptation areas), shall be identified and should be protected and maintained to the maximum extent practicable.
      a. All projects shall be in compliance with COMAR 27.02.05, Critical Area Commission for the Chesapeake and Atlantic Coastal Bays, Development in the Critical Area Resulting from State and Local Agency Program.

5. Whenever possible, onsite mitigation measures should enhance, restore or create natural and nature based features to provide additional protection against future sea level rise and coastal storm impacts.

iii. **Design Criteria:** The following structural specifications related to the shape, size, or form of construction practice guidelines are required:

1. All projects shall be designed to avoid or minimize future impacts associated with future sea level rise, coastal flooding and storm surge over the anticipated design life of a project.
2. All new non-critical State structures and the reconstruction or rehabilitation of substantially damaged non-critical State structures located in Special Flood Hazard Areas shall be constructed with a minimum of two (2) feet of freeboard above the 100-year base flood elevation, as defined by the NFIP.
    a. For State purposes, the regulatory 100-year floodplain elevation is defined on the Flood Insurance Rate Map (FIRM) or Digital Flood Insurance Rate Map (DFIRM) that will be in effect at the time construction will begin.
3. All new "critical and essential" structures and reconstruction or rehabilitation of such substantially damaged structures located in the Special Flood Hazard Areas shall be constructed with a minimum of three (3) feet of freeboard above the 100-year base flood elevation, as defined by NFIP.
4. State structures serving transportation purposes that are not water dependent or dependent on integral infrastructure shall be constructed with a minimum of two (2) feet of freeboard above the 100-year base flood elevation, as defined by the NFIP.
5. Flooding potential should be considered when choosing building materials for all structural projects, including minor improvements or maintenance and repair, as corrosion and other environmental and health consequences can become a concern for materials subjected to flood waters.[1]
6. Utilize FEMA standards (44CFR60.3(c)(3)(ii)) for dry-proofing or wet-proofing parts of a structure located below base flood elevation to prevent or minimize the effect of coastal flooding.[1]
7. Structures and infrastructure proposed within a Limit of Moderate Wave Action (LiMWA) boundary, also known as the "Coastal A Zone," when mapped under the NFIP shall be designed in compliance with construction standards applicable for V Zones.
    a. The LiMWA is a boundary that identifies the landward location of the 1.5 ft wave height delineating a zone called the "Coastal A Zone" where wave damage is substantial.

[1] Maryland Department of Environment. 2014. *Maryland Model Floodplain Management Ordinance.* Maryland Dept. of Environment, Baltimore, Maryland.

3. CATEGORICAL EXCEPTIONS

a. **Project Types and Uses**: The following project types may be determined by the Using Agency to be exempt from strict application of *Coast Smart* Construction Criteria, provided that it can be demonstrated that the project has been designed to increase resiliency to future impacts.

i. *Water-dependent uses.* Projects that require continued direct access to the water as an integral part of the use, or facilities that directly support water dependent uses.

ii. *Existing transportation system assets.* Projects that support the continued function of existing transportation system assets.

iii. *Passive public access.* Projects that provide either recreational or scenic access to water bodies or shoreline areas which, need to be within a flood zone for their purpose.

iv. *Historic structures.* The necessity of continued investment of state resources in properties individually listed or determined eligible for listing in the National Register of Historic Places or a contributing resource within a historic district listed on or determined eligible for listing in the National Register.

v. *Temporary structures or uses.* Structures intended to be in place for less than 180 consecutive days in any given calendar year or will be removed at the end of a construction project.

vi. *Stabilization projects.* Actions to secure and maintain assets, structures, and natural and cultural resources to prevent additional damage and to prevent future resource/facility damage; efforts to mitigate a safety or environmental hazard; mold remediation; facility weatherization; silt fencing; and minor repairs and restorations.

vii. *Emergency uses*: Structures essential to save lives and protect property, public health and safety.

b. Process: Projects not subject to comply with the Program requirements, including projects eligible for Categorical Exceptions, shall employ *Coast Smart* principles and practices, wherever practicable. See Appendix C for more information on Categorical Exception documentation.

c. Documentation: Using Agencies shall submit documentation and reporting materials to *Coast Smart* Council on an annual basis. Reporting documents will be used by the Council for the purposes of further development and/or refinement of *Coast Smart* Siting and Design Criteria, Categorical Exceptions, and or general standards and procedures for applying and obtaining a compliance waiver.

d. Consultation: Using Agencies may request a formal consultation with the Coast Smart Council for the purposes of reviewing a proposed project and/or to seek a determination of compliance with the Categorical Exception provisions, as specified above.

4. COAST SMART CRITERIA WAIVERS

Any Unit of State Government may request a waiver from one or more of the specific *Coast Smart* Siting and/or Design Criteria. Waiver requests will be reviewed for approval by the Governor's Smart Growth Subcabinet, established under Code State Government Article, §9-1406.

a. **Waiver Considerations**: Exceptions to the Criteria may be granted based on consideration of the following factors:

   i. *Cost-Benefit Analysis.* The full extent of short-term and long-term costs, including those associated with additional shore protection, emergency response during extreme weather events, and the potential necessity of rebuilding or repairing damaged structures. Included in this analysis should be the costs of providing government services during and after flood conditions, including maintenance and repair of public utilities and facilities such as sewer, gas, electrical, and water systems, and streets and bridges.

   ii. *Importance of the services.* Determination of the level of importance of services to the State of Maryland provided by the proposed project.

   iii. *Socio-Economic and Cultural Considerations.* The necessity of continued investment of state resources in coastal communities in order to protect and stimulate economic growth and revitalization or maintain a unique cultural value.

   iv. *Structural and Natural and Nature-Based Resiliency Measures.* Proposed construction practices and site development standards for the protection of structural and ecological features on site, in anticipation of the need to prepare for, respond to, and recover from extreme weather events, sea level rise inundation, coastal flooding, storm surges and shoreline erosion.

   v. *Statutory/Regulatory Conflicts.* Statutory or regulatory requirements (e.g., Americans with Disabilities Act) that may conflict with the strict application of the *Coast Smart* Siting and Design Criteria.

   vi. *Federal Grant Funding Criteria.* Specific grant requirements which may specify alternative construction standards or practices and/or may preclude application of strict interpretation of the Siting and Design Criteria.

   vii. *Mapping Error.* Land elevations shown on mapping products or tools are proven to be inaccurate by a licensed surveyor or engineer.

   viii. *Public Health, Safety and Welfare.* An analysis of the danger that materials may be swept onto other lands to the injury of others or the danger to life and property due to flooding or erosion damage.

   ix. *Suitability of alternative locations.* Availability of suitable alternative project locations that are subject to a lower risk of flooding or erosion damage.

   x. *Emergency Response and Access.* Safety of access to and from a site, facility or the structure or infrastructure by passenger and emergency vehicles during a flood.

b. **Process:** The Agency requesting the waiver shall provide a brief (no more than two pages) letter of request for a waiver to the Governor's Smart Growth Subcabinet established under Code State Government Article, §9-1406, explaining and

demonstrating 1) why a proposed project is unable to meet Program requirements and; 2) how the project is eligible for a waiver based on one or more of the considerations listed above. The waiver request should be provided in MS Word or pdf format for distribution, review and consideration by the Smart Growth Coordinating Committee and Smart Growth Sub-Cabinet. Using Agencies should allow up to 8 weeks for a response to waiver requests. See Appendix D for more information on the Waiver submittal package and process.

c. **Routine Projects:** The Council may establish, in writing, an agency-specific procedure by which certain routine projects may be handled in an expedited way without individual waiver approval.

5. REPORTING

a. **Annual Reporting to Council:** Beginning on October 1, 2016, and for every year thereafter, all Units of State Government shall report to the Council on individual State agency actions, which were undertaken within the previous fiscal year and related to implementation of *Coast Smart* Construction program, including Categorical Exception and Waiver determinations.

b. **Documentation:** Reporting materials shall include all documentation used to determine compliance with *Coast Smart* Construction Siting and Design Criteria, including the *Coast Smart* Project Screening Checklist (See Appendix B). Reporting documents will be used by the Council for the purposes of further development and/or refinement of *Coast Smart* Siting and Design Criteria, Categorical Exceptions, and or general standards and procedures for applying and obtaining a compliance waiver.

6. CRITERIA INCORPORATION

a. **Procedural Manual for Professional Services.** The Maryland Department of General Services (DGS) shall incorporate the *Coast Smart* Construction Program Requirements into Chapter II, Section 6 of the Procedural Manual for Professional Services, as appropriate.
   i. The Procedural Manual serves as a guide for providing professional services during all phases of design and preparation of contract documents for capital projects involving the construction, alteration or renovation of state buildings with an estimated construction cost greater than $2 million. It is intended that the procedures also be followed to the fullest extent practicable for other state public improvements such as facilities renewal projects, special structures, roads, utilities, and site improvements. Chapter II, Section 6 of the Manual outlines Coastal/Flood Plain Design Requirements in two subsections: 6.1 Chesapeake Bay Critical Area Consideration and 6.2 Climate Change and '*Coast Smart*' Construction. Appendix C of the Manual covers Floodplain Management Criteria for Flood Prone Areas.

b. **Facility Program Manual.** The Department of Budget and Management (DBM) and DGS shall amend the Facility Program Manual to incorporate *Coast Smart* Construction Program requirements.
    i. Section 3-602(d) of the State Finance and Procurement Article requires that before an appropriation may be authorized for a capital project, the unit of State government requesting the appropriation shall submit a facility program justifying the project (Part I) and describing, in detail, the scope and purpose of the project (Part II). The Facility Program Manual defines and describes the content of a facility program; provides instruction on the preparation of a facility program; and provides information regarding facility program submission requirements.

c. **Maryland State Hazard Mitigation Plan and State Disaster Recovery Plan.** The Maryland Emergency Management Agency (MEMA) shall incorporate the *Coast Smart* Construction Criteria into the 2016 State Hazard Mitigation Plan Update and into the State Disaster Recovery Plan. MEMA should also review and update progress on actions and additional recommended *Coast Smart* Construction Siting and Design Guidelines[2], including the following:
    i. Inventory hazard risks to state-owned facilities and identify their risks to hazards including climate change related hazards (e.g., sea level rise, coastal and riverine stream erosion, and increased flooding);
    ii. Incorporate climate change and coastal hazard considerations into building codes for coastal communities (e.g., freeboard, septic siting); and
    iii. Leverage relationships with universities/scientists, through programs such as Cooperative Extension, to educate on hazards and climate change.

7. COAST SMART CONSTRUCTION PROGRAM: ANNUAL REVIEW AND ANALYSIS

The Coast Smart Council will meet quarterly, or as deemed necessary, for the purposes of further development and/or refinement of *Coast Smart* Siting and Design Criteria, Categorical Exceptions, and or general standards and procedures for applying and obtaining a compliance waiver.

[2] Z.P. Johnson (ed.). 2013. Climate Change and Coast Smart Construction: Infrastructure Siting and Design Guidelines. Special Report of the Adaptation and Response Working Group of the Maryland Commission on Climate Change. Maryland Department of Natural Resources, Annapolis, MD.

APPENDICES

A. DEFINITIONS

Base Flood: A flood having a one-percent chance of being equaled or exceeded in any given year; the base flood also is referred to as the 1-percent annual chance (100-year) flood.

Base Flood Elevation: The water surface elevation of the 100-year base flood in relation to the datum specified on Flood Insurance Rate Maps. In areas of shallow flooding, the base flood elevation is the highest adjacent natural grade plus the depth number specified in feet on the Flood Insurance Rate Map, or at least four (4) feet if the depth number is not specified.

Climate Change: Any change in climate over time, whether due to natural variability or as a result of human activity. Climate refers to long-term trends in weather that extend multi-decadal periods.

Coast Smart: A construction practice in which, preliminary planning, siting, design, construction, operation, maintenance, and repair of a structure avoids or, in the alternative, minimizes future impacts associated with coastal flooding and sea level rise. "*Coast Smart*" includes design criteria and siting guidelines that are applicable throughout the entire life cycle of a project.

Critical and Essential Facilities: Buildings and other structures that are intended to remain operational in the event of extreme environmental loading from flood, wind, snow or earthquakes [Note: See Maryland Building Performance Standards, Sec. 1602 and Table 1604.5]. Critical and essential facilities typically include hospitals, fire stations, police stations, storage of critical records, facilities that handle or store hazardous materials, airports, transit and highway access and other essential transportation, and similar facilities.

Design Criteria: Structural specifications related to the shape, size, or form of a construction practice.

Design Life: The period of time during which, the item is expected by its designers to work within its specified parameters; in other words, the life expectancy of the item. It is the length of time between placement into service of a single item and that item's onset of wear-out, that is, where additional maintenance is no longer sufficient to prolong its life expectancy.

Erosion Vulnerability: The susceptibility of a given stretch of shoreline to future change in shoreline position due to erosion.

Flood or Flooding: A general and temporary condition of partial or complete inundation of normally dry land areas from: (1) the overflow of inland or tidal waters, and/or (2) the unusual and rapid accumulation or runoff of surface waters from any source.

Freeboard: A factor of safety that compensates for uncertainty in factors that could contribute to flood heights greater than the height calculated for a selected size flood and floodway conditions, such as wave action, obstructed bridge openings, debris and ice jams, climate change, and the hydrologic effect of urbanization in a watershed.

Habitat Adaptation Areas: Areas that may serve as wildlife habitat, wildlife corridors or support high priority aquatic and terrestrial living resources in the future. These include, but are not limited to areas with hydric soils suitable for future tidal wetland establishment and marsh-dependent breeding bird habitat, as well as species and habitat representation areas, ecosystem and habitat type replication areas, and refugia or relocation areas for climate-sensitive species.

Historic Structure: Eligibility or designation as a historic structure as defined by the U.S. Department of the Interior and/or the Maryland Historical Trust.

Infrastructure: Built infrastructure, including roads, bridges, sewer and water systems, drainage systems, and essential public utilities.

Inundation: The condition of formerly dry areas becoming permanently submerged, such as when the annual average elevation of Mean Lower Low Water (MLLW)rises relative to land. [3]

Fullest Extent Practicable: Actions or practices capable of being effected, done, or put into practice.

Limit of Moderate Wave Action (LiMWA): The LiMWA identifies areas that will be affected by waves with a 1.5 foot wave height or greater within the Coastal A zone. While FEMA currently does not require special floodplain management standards or flood insurance purchase requirements based on LiMWA delineations, it is likely that properties and structures within the LiMWA will receive substantial damage from wave action during a one-percent-annual-chance flood event.

Natural and Nature-Based: Natural Features are created and/or evolve over time through the actions of physical, biological, geologic, and chemical processes operating in nature. Natural coastal features take a variety of forms, including reefs (e.g., coral and oyster), barrier islands, dunes, beaches, wetlands, and maritime forests. The relationships and interactions among the natural and built features comprising the coastal system are important variables determining coastal vulnerability, reliability, risk, and resilience. Nature-Based Features are those that may mimic characteristics of natural features but are created by human design, engineering, and construction to provide specific services such as coastal risk reduction. The combination of both natural and nature-based features is referred to collectively as natural and nature-based features (NNBF). [4]

Non-State Structure and Infrastructure Projects: Structures and built infrastructure, including roads, bridges, sewer and water systems, drainage systems, and essential public utilities, used primarily for non-State purposes.

---

[3] Strategic Environmental Research and Development Program. 2013. Assessing Impacts of Climate change on Coastal Military Installations: Policy Implications. US Department of Defense.

[4] USACE. 2015. North Atlantic Coast Comprehensive Study: Resilient Adaptation to Increasing Risk. USACE, Baltimore District, Baltimore, MD. Access online: http://www.nad.usace.army.mil/Portals/40/docs/NACCS/NACCS_main_report.pdf

Permanent Structure: A structure, as defined herein, installed, used, or erected for a period of greater than 180 days.

Replacement Cost: The current replacement cost of property is the amount it would cost to replace the property today using materials of the same kind and quality, with no deduction for depreciation, and does not include the value of land. At the time of reconstruction, the cost of reconstructing a structure and its surrounding property to full use with materials of the same kind and quality as the original materials. Replacement cost does not include the value of the land on which a structure is located or for tax purposes, a deduction for depreciation.

Resilience: Capability to anticipate, prepare for, respond to, and recover from significant multi-hazard threats with minimum damage to social well being, the economy, and the environment. [5]

Risk: Combination of the magnitude of the potential consequence(s) of climate change impact(s) and the likelihood that the consequences(s) will occur.[5]

Sea Level Rise Vulnerability: The susceptibility of a coastal area to seasonally high-tides or prolonged or permanent inundation or submergence due to a combination of land subsidence and future rise in water level.

Siting Criteria: Specifications related to the location of a structure or use on a lot or parcel or within a larger geographic area.

Special Flood Hazard Areas: Land in the floodplain subject to a one-percent or greater chance of flooding in any given year and are designated by the Federal Emergency Management Agency in Flood Insurance Studies and on Flood Insurance Rate Maps as Zones A, AE, AH, AO, A1-30, and A99, and Zones VE and V1-30.

Storm Surge: An abnormal and significant rise of water generated by a storm, over and above the predicted astronomical tides.

State-Funded: Partially or fully funded with State of Maryland monies.

Stillwater: The 100-year floodplain elevation on a FIRM or DFIRM before wave heights and wave runups are added. Stillwater elevations should match the 100-year floodplain elevations is all coastal A-zones, but in areas where wave heights are included (LiMWA's and V-zones), stillwater elevations do not include wave heights. For regulatory purposes, the 100-year elevation must include wave heights.

Structure: That which, is built or constructed; specifically, a walled or roofed building, including a gas or liquid storage tank that is principally above ground, as well as a manufactured home. A structure, whether permanent or temporary, is not intended to include roads, bridges, rail tracks, dredge material containments facilities or other transportation infrastructure that are not roofed buildings.

---

[5] National Research Council. 2011. Committee on America's Climate Choices. National Academies Press. Washington, D.C.

State Structure and Infrastructure Projects: Structures and built infrastructure, including but not limited to roads, bridges, sewer and water systems, drainage systems, and essential public utilities, planned and built by Maryland State agencies, used primarily for State purposes.

Substantial Damage: Damage of any origin sustained by a structure whereby the cost of restoring the structure to before damaged condition would equal or exceed 50 percent of the replacement cost of the structure before the damage occurred.

Temporary Structures: Structures or uses intended to be in place for 180 consecutive days or less in any given calendar year or will be removed at the end of a construction project.

Water Dependent Use: A use which, cannot perform its intended purpose unless it is located or carried out in close proximity to water; the term includes docking facilities, port facilities that are necessary for the loading and unloading of cargo or passengers, and ship building and ship repair facilities, but does not include long-term storage or related manufacturing facilities.

Wetland Migration: Long-term inland and upward movement of tidal wetlands, limited by human and geological barriers, in response to changes in sea level.

Vulnerability Assessment: Practice of identifying and evaluating the effects of climate change and climate variability on natural and human systems, so as to understand system sensitivity, exposure, and adaptive capacity.[6]

[6] Strategic Environmental Research and Development Program. 2013. Assessing Impacts of Climate change on Coastal Military Installations: Policy Implications. US Department of Defense.

B. COAST SMART CONSTRUCTION PROJECT SCREENING CHECKLIST

1. ***General Project Information.***
    a. Project name: _____
    b. Location: _____
    c. Brief project description: _____
    _____
    _____
    _____
    _____

2. ***Project Scope.*** What is the timescale for project planning, design, construction, maintenance and operational decisions are being made? Select one.
    a. Short-term project (design life < 25 years)
    b. Medium-term project (design life between 25-50 years)
    c. Long-term project (design life between 50 – 100 years)
    d. Very long-term project (design life > 100 years)

3. ***Project location.*** What are the proposed project's vulnerabilities to sea level rise impacts (i.e., future inundation, flooding and storm surge) over the course of the project's design life?

> Note:
> For planning of new state structures or other infrastructure for which, the design life is not expected to extend beyond 2100 (short- to medium-term projects) or with a relatively high risk tolerance limit (e.g., rare flooding is tolerable), assess vulnerability using current "medium range" or "best estimate" relative sea level rise projections. For structures or public infrastructure projects for which, the design life is expected to extend beyond 2100 (long- to very long-term projects) or where there is a very low acceptance of any flooding risk, apply current "high" end relative sea level rise scenarios or projections.
> Using Agencies should consult with the Maryland Commission on Climate Change, Scientific and Technical Working Group for additional guidance on sea level rise projections for the State of Maryland.[7]

[7] Boesch, D.F., et.al, 2013. Updating Maryland's Sea Level Rise Projections. Special Report of the Scientific and Technical Working Group to the Maryland Climate Change Commission, 22 pp. University of Maryland Center for Environmental Sciences, Cambridge, MD.

a. Applying the above standard, is the proposed project within a 50- or 100- year sea level rise inundation zone?

a. 50-year b. 100-year c. Neither

b. Is the project within a mapped Special Flood Hazard Area?

a. Yes b. No

c. What is the 100-year flood elevation for the project's location?

_____ feet

d. What is the proposed first floor elevation of the structure (as measured above the 100-year Base Flood Elevation)?

_____ feet

e. Is the project within a Limit of Moderate Wave Action (LiMWA) on the FEMA Coastal studies?

a. Yes b. No

f. Is the project within a storm surge inundation zone (Category 1-4)?

a. Yes b. No

g. Is the project a critical project?

a. Yes b. No

h. Explain any additional risk of heightened storm surge due to future sea level rise:

_____

_____

_____

_____

_____

4. ***Ecosystem Resiliency.*** Circle all ecological features on site that may serve to buffer the project from the impacts of future sea level rise, coastal flooding or storm surge:

a. Vegetated or forested buffers
b. Dunes
c. Beaches

d. Wetland or marsh system
e. Oyster beds or reefs
f. Barrier island(s)
g. Potential wetland migration on site
h. Habitat adaptation areas on site
i. Natural features that could be enhanced, restored or created to provide additional protection against future sea level rise and coastal storm impacts

Explanation/Others:

5. ***Resiliency Measures***. Identify *Coast Smart* Siting and Design Criteria incorporated into project siting, design, construction, maintenance and operational planning, or other measures included in state or local climate adaptation plans (e.g., flood gates) that are scientifically workable and with a likelihood of construction within the needed timeframe. These may include:

a. Is the project sited outside areas vulnerable to sea level rise within the project's anticipated design life? a. Yes b. No, because _____

b. Does the project incorporate ecosystem resiliency measures? a. Yes b. No
Explain:

c. Other siting considerations:

d. What building materials will be used to increase resiliency?

e. What type of construction will be used (e.g., relocatable, portable, expendable in the event of storm damage)?

f. Will there be any functional use restrictions placed on the project (e.g., temporary)?

g. Other design considerations:

h. Is there adequate shoreline protection at the proposed project's site?

6. ***Cost/Benefit Analysis.*** Assess anticipated benefits and costs of the proposed project with the following factors:

a. *Risk v. Time.* What is the potential future financial and other losses associated with sea level rise, coastal flooding and storm surge over the project's anticipated design life? How does this cost compare to inaction?

b. *Risk Tolerance.* What is the risk tolerance for the proposed project?

i. Low ii. Medium iii. High

Explain:

c. *Socio-economic Considerations.* What is the full extent of costs of the project over both the short and long term?

i. What costs are associated with the need for additional shore protection?

ii. What types of emergency responses will there be during extreme events?

iii. What is the possible need for the repair or rebuilding of damaged structures?

d. *Environmental Impacts.* Are there increased impacts of the project to the environment due to the incorporation of resiliency measures (e.g., increasing the height of a bridge may necessitate need for larger bridge abutments with greater impact to waterway and nearby wetland areas)?

C. COAST SMART CONSTRUCTION CATEGORICAL EXCEPTION COVER SHEET

Project Title: _____ Date Submitted:_____

Summary Description of Project: _____

_____

_____

Categorical Exception Determination Approved by:

Agency: _____

Agency Staff Contact: _____

Justification for Categorical Exception:

- ☐ *Water-Dependent Use*
- ☐ *Existing Transportation System Asset*
- ☐ *Passive Public Access*
- ☐ *Historic Structure*
- ☐ *Temporary Structure or Use*
- ☐ *Stabilization Project*
- ☐ *Emergency Use*

Materials Provided:

- ☐ *Coast Smart Construction Project Screening Checklist*
- ☐ *Project site plans and designs*
- ☐ *Maps - project location, surrounding land use and road network*

Project Funding:

Cost of Project: _____

Funding Source: _____

Agency Comments: _____

_____

_____

_____

_____

Coast Smart Council Review Date: _____

Comments: _____

_____

_____

_____

_____

D. COAST SMART CONSTRUCTION WAIVER

COVER SHEET

Project Title: _____ Date Submitted:_____

Summary Description of Project:_____

_____

_____

Approval Requested by:

Agency: _____

Staff to present project to Smart Growth Coordinating Committee (SGCC):

_____

Target date to be presented/reviewed by SGCC:_____

Waiver Request (Identify siting and/or design criteria for which a waiver is being sought):

_____

_____

Waiver Justification(s):

- ☐ *Sufficient Structural Protection Measures*
- ☐ *Adequate Natural and Nature-Based Resiliency Measures*
- ☐ *Positive Cost-Benefit Analysis*
- ☐ *Unique Socio-Economic or Cultural Considerations*
- ☐ *Statutory/Regulatory Conflict*
- ☐ *External Grant Funding Criteria*
- ☐ *Mapping Error*
- ☐ *No Foreseen Significant Danger to Public Health, Welfare, or Safety*
- ☐ *Other* _____

Materials Provided:

- ☐ *Coast Smart Construction Project Screening Checklist*
- ☐ *Project Site Plans and Designs*
- ☐ *Maps - project location, surrounding land use and road network, areas to be served*

Project Funding:

Cost of Project: _____

Funding Source: _____

SGCC Decision:

- ☐ *APPROVED*
- ☐ *APPROVED WITH CONDITIONS*
- ☐ *FORWARD TO SMART GROWTH SUB-CABINET FOR CONSIDERATION*

Comments: _____

_____

_____

_____

_____