Sea Level Rise Policy

for County-Owned Assets

Implementation Plan

I. Introduction

The County of San Mateo is committed to environmental, economic, and social stewardship through reducing greenhouse gas emissions and preparing and protecting San Mateo County communities from the threat of climate change, including impacts from sea level rise, storm surges, coastal erosion, and flooding. The County of San Mateo has already adopted a Green Building Policy and is taking steps to reduce emissions at County owned facilities. Creating a more resilient infrastructure to sea level rise and flooding is an important, and complementary next step. Building climate adaptive and prepared communities today is the most responsible and fiscally prudent course of action. The County recognizes that climate change will also impact people, infrastructure and ecosystems in the region, as rising temperatures and changes in precipitation contribute to inland flooding, wildfires and hotter days. The County recognizes the need to plan for these impacts in the future.

The County's Sea Level Rise Vulnerability Assessment was finalized in 2018, highlighting San Mateo County as the most vulnerable county in California to sea level rise in terms of property value at risk. Based on the Vulnerability Assessment modeling, 43 County-owned facilities are at risk from 3.3 feet of sea level rise and 50 are at risk from 6.6 feet of sea level rise.

In 2018 and 2019 the Office of Sustainability held focus groups meetings with County Departments to provide information on the science of sea level rise, discuss potential impacts to County assets, and to develop relevant policy language. In 2019, the Board of Supervisors approved a Sea Level Rise Policy for County-Owned Assets. The Policy requires that sea level rise is considered in all County-owned and operated assets, design and construction projects, leases, and property acquisitions and dispositions, as described below. These projects must also consider and take into account local and regional sea level rise adaptation and flood mitigation projects that could reduce impacts on County-owned assets prior to developing plans to modify existing facilities. Acquisitions that are exempt from this policy: tax default properties; property condemned by the County for roads, sewers, and utilities; rights of way; public utility easements; conservation easements; and public service easements. This policy does not apply to private development or development by other public entities.

The Policy also created the Climate Change Preparedness Working Group, with representatives from major County Departments whose responsibilities and assets will be impacted by sea level rise. This

Implementation Plan will serve as a roadmap to implementing the Policy and ensuring County assets are resilient to sea level rise impacts.

II. Goals

- Understand the vulnerability of County-owned property and assets over their life cycle
- Collaboration and collective development of climate adaptation strategies will be vital to protecting San Mateo County's residents and managing its valuable resources responsibly.
- Early planning and implementation of adaptation strategies using an incremental approach are expected to:
    - provide critical information on near term risks occurring before 3.3 feet of sea level rise and allow for planning and adaptation strategies over the life of the property;
    - increase the useful life of County facilities;
    - protect residents and staff today and assure County operations will be continuous;
    - reduce the current and future risks from sea level rise and flooding;
    - reduce liability and reduce insurance premiums and impacts to property value.

III. Guiding Principles

In implementing this Sea Level Rise Policy, the County will utilize the following general principles:

1. Use the best available science on climate change and sea level rise scenarios, including available field data relevant to local site conditions, and highlighted in Appendix A.

2. Prioritize sea level rise adaptation strategies that reduce climate risk and greenhouse gas emissions concurrently.

3. Minimize impacts of existing flood and erosion hazard areas, and areas at risk from sea level rise in the future on critical facilities for all County clients, especially those serving vulnerable communities.

4. Where data are available, consider Base Flood Elevations, storm surge, atmospheric forcing, groundwater table changes due to rising sea levels, bluff erosion and stability, and wave runup, where appropriate.

5. Align with long-term accessibility and emergency plans and monitoring systems to protect public health and safety and support continuity of operations.

6. Review the protection provided locally and regionally by existing and proposed sea level rise and flood mitigation projects, including their condition and elevation to ensure prudent use of public funds.

7. Encourage a range of adaptation strategies that include structural, nature-based and operational strategies as well as coordination with neighboring properties and jurisdictions.

8. Develop an incremental approach to sea level rise adaptation that includes triggers for the next phase(s) of adaptation planning based on existing flooding risks and anticipated sea level rise risks and ability of the facility to adapt to flooding impacts. The approach will

include near term and long-term actions that can be used to protect the facility over the extent of its useful life.

9. Consider adaptive reuse, such as actions to transform County facilities to nature-based sea level rise solutions, such as wetlands.

10. Avoid maladaptive solutions: consider the impact of sea level rise, flooding and erosion adaptation strategies on adjacent communities and built and natural assets. Further, when feasible and prudent, cooperate with other local jurisdictions, agencies and property owners.

11. Provide a qualitative, or where possible a quantitative assessment of avoided costs, benefits, and costs of proposed adaptation strategies.

IV. Climate Change and Sea Level Rise Science

The Intergovernmental Panel on Climate Change (IPCC), the leading international scientific body on climate change, states that global greenhouse gas emissions must be reduced to net zero by 2050 to protect the earth from severe impacts, including substantial sea level rise.[1] Sea level rise impacts include flooding, stronger waves, rising groundwater tables and saltwater intrusion, and increased erosion of the shoreline; all of which are exacerbated by coastal storms. In addition, high water levels can prevent water from draining to the bay or ocean, which can cause flooding, further inland far from the shore.

The State of California's 2018 Ocean Protection Council guidance indicates that sea levels could rise by approximately 3.3 feet by 2070 and approximately 6.6 by 2100 under the medium-high risk projections. El Nino and atmospheric river-based winter storms have in the past and continue to have the ability to accelerate and exacerbate flooding impacts on the ocean and Bayfront of San Mateo County. Therefore, the County also incorporates coastal storms into sea level rise risks, using the 1% storm as the storm assumption, which is based on the Federal Emergency Management Administration's (FEMA) Special Flood Hazard Area.

Sea Level Rise Projections

For purposes of this policy, the initial Sea Level Rise Risk Assessment will be based on the 2100 medium-high risk scenario below (6.9 feet plus 1% annual chance storm). Inclusion of the 1% annual chance storm is generally good practice and can address drainage challenges. The data will be mapped into the Office of Sustainability's GIS sea level rise layer, so department staff can quickly determine whether a project falls in a risk zone.

The sea level rise projections used in the final Sea Level Rise Risk Assessment and development of adaptation strategies will depend on the life of the project, thresholds of flooding, and project use. The adaptation strategies may use a lower sea level rise projection than 6.9 feet, based on the life of the project, the risk, and the ability of the facility to adapt to flooding based on use, structural features, and or operations.

The sea level rise projections in Table 1 are based on the best available science on the date of publication of this policy. These originate from 2018 Guidance released by the State of California's

[1] http://report.ipcc.ch/sr15/pdf/sr15_ts.pdf

Ocean Protection Council, utilizing their high greenhouse gas emissions scenario, RCP 8.5. The Office of Sustainability will update these projections as new guidance or critical information becomes available.

Table 1 OPC 2018 Probabilistic Sea Level Rise Projections

	Low-risk (ft.)	Medium-high risk (ft.)	Extreme risk (ft.)
2030s	0.5	0.8	1.0
2040s	0.8	1.3	1.8
2050s	1.1	1.9	2.7
2060s	1.5	2.6	3.9
2070s	1.9	3.5	5.2
2080s	2.4	4.5	6.6
2090s	2.9	5.6	8.3
2100s	3.4	**6.9**	10.2

V. Climate Change Readiness Working Group

The Climate Change Preparedness Working Group (Appendix A) will consist of staff from the Office of Sustainability, Project Development Unit, Department of Public Works, Planning & Building Department, Parks Department, Real Property, Office of Emergency Service, County Manager's Office, and Budget, Policy & Performance Unit, and others as needed. The Working Group will meet quarterly or as needed to discuss upcoming projects and monitor implementation status and provided resources for Departments.

VI. Implementation Tools

A set of resources will be developed and used to inform the initial assessment of all County-owned and operated assets and new projects that are being developed. A working Group will also be established to guide the implementation of the policy.

1. ***Sea Level Rise Mapping Tool***

   The County shall establish and maintain a GIS-based sea level rise map layer for use by departments in determining whether a new or existing project is located in the sea level rise inundation area. The GIS map layer will be based on the sea level rise projections in Appendix A and will be updated as needed, based on the best available science, provided by the State of California.

2. ***Baseline Sea Level Rise Vulnerability Assessment***

   The County will develop a baseline Sea Level Rise Risk Assessment of County-owned and operated assets and leased facilities. The baseline assessment will be based on the medium-high risk projection in the State of California Ocean Protection Council's Sea Level Rise Guidance (Appendix A). The County may consider higher sea level rise scenarios under this policy when necessary for critical facilities or assets to prevent high risks to public health and safety. The approach taken will be based on the type of asset as indicated in Section V.

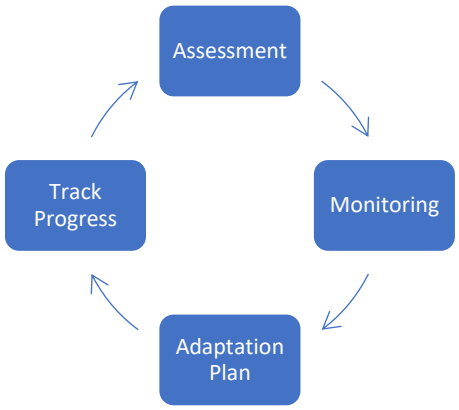
This assessment will help to identify which facilities are vulnerable to sea level rise, and recommend consideration of adaptation measures when a given facility is scheduled for improvements through the Capital Improvement Planning process. Information from the baseline will be stored in a database of site specific sea level rise risks and will be updated as sea level rise projections are updated.

3. ***San Mateo County Sea Level Rise Project Database***
   The County will develop and maintain a database to track major existing and planned sea level rise adaptation projects along the San Mateo County bay and coast shorelines. The database will include a project overview, area covered, and proposed elevation. The database will be updated on an annual basis.

   The database will be used to inform the initial assessments at all county owned and operated assets and for new projects as they are developed. This will ensure that any site-based adaptation options within the Monitoring and Adaptation Plans will be designed with regional shoreline approaches taken into account. The County will collaborate with regional collaboratives or agencies to ensure accuracy of information in the database.

VII. Implementation Framework

In order to transition to climate adaptive and prepared county facilities, the County will implement this SLR policy for existing and new County-owned and operated assets and leased facilities in an incremental approach as follows:



Project Specific Assessment

Subsequent to the baseline assessment, all new projects will be screened using the Office of Sustainability sea level rise mapping tool to determine whether a project falls within the sea level rise inundation area as defined in Section IV and in Figure 1.

If the project is outside of the inundation area, no additional steps are required.

Risks to projects within the sea level rise inundation area will be preliminarily assessed by the Office of Sustainability. See section VIII. for further asset specific policy and process guidance.

Preliminary assessment will include initial consultation on risks from Sea Level Rise and potential protection provided by existing and/or planned sea level rise adaptation or flood mitigation projects in the local jurisdiction. This will help to determine the need for facility-level adaptation strategies.

Monitoring and Adaptation Plan

If the project faces risks from sea level rise beyond what will be protected through local or regional planned sea level rise adaptation projects, the overseeing department will be responsible for developing and implementing a site-specific incremental sea level rise adaptation plan to monitor and eventually protect the property, continuity of County operations, and staff and resident safety and access to services.

Overseeing departments will establish thresholds and triggers and accordingly monitor facilities for flooding and plan for subsequent steps in the incremental adaptation approach when the facility has experienced flooding for a certain number of days a year, based on the Sea Level Rise Risk Assessment and Adaptation Plan.

When the need for an adaptation plan is triggered, a range of adaptive strategies will be explored including structural, nature-based, and operational strategies as well as coordination with neighboring properties and jurisdictions. Any strategies recommended or implemented will be based on the *timing* and *level of risk.* Furthermore, strategies will be implemented in a incremental approach over the life of the asset based on thresholds and a cost-benefit analysis.

Where appropriate, County staff will share each risk assessment with the regional collaboratives or agencies responsible for sea level rise or flood mitigation projects, and appropriate County and City staff and departments leading flooding and sea level rise work in those areas.

Tracking Progress

The County will maintain copies of the Sea Level Rise Risk Assessment, Adaptation Plan and monitoring results and share with regional collaboratives and/or agencies responsible for implementing sea level rise or flood mitigation projects. A summary will be shared with the Board of Supervisors and County Manager's Office.

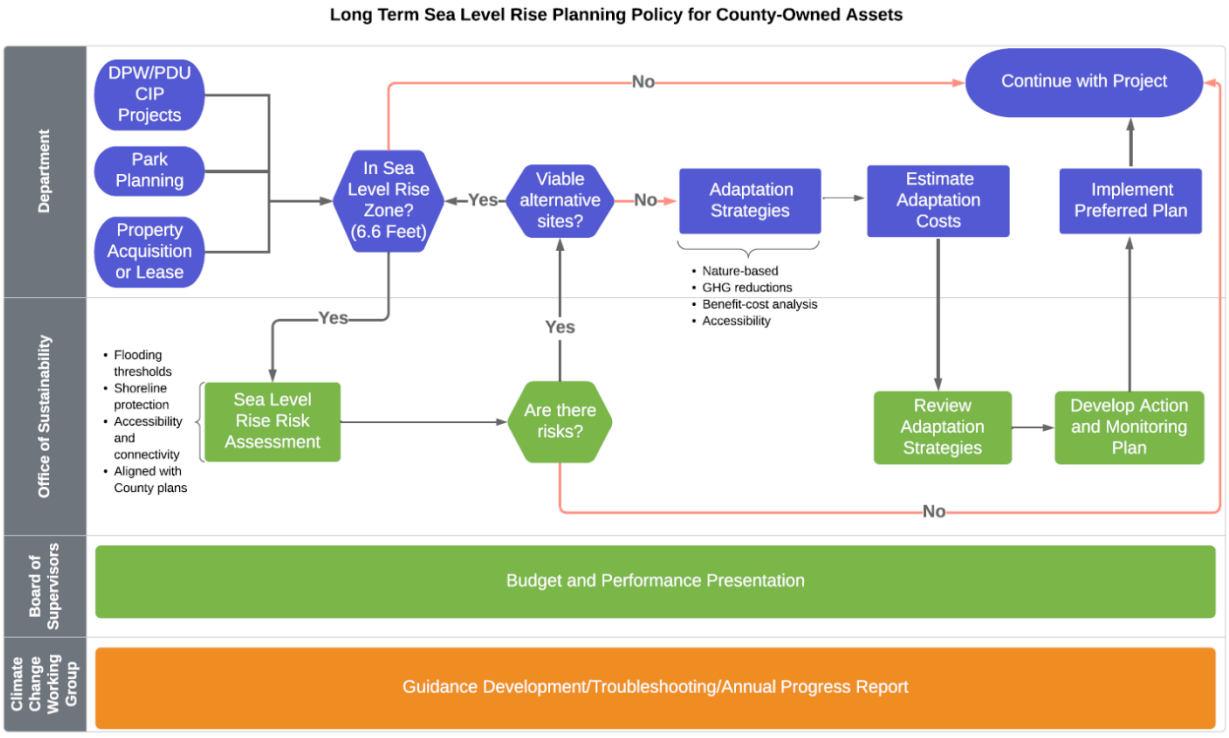


Figure 1 Sea Level Rise Implementation Framework and Assessment Process

VIII. Facility and Property Specific Guidance

New Facilities and Infrastructure

All new facility projects funded by the County shall be sited, designed, constructed, and adaptively managed to minimize sea level rise risks over the life of the project. For critical facilities or projects serving vulnerable communities, priority will be given to locations outside of existing flood and erosion hazard areas and outside of areas at risk from future sea level rise. When this is not feasible, site and structural modifications to minimize sea level rise risks should be outlined. Once built, facilities will be entered into the County's database of baseline assessment at facilities.

Existing Facilities and Infrastructure

Baseline Assessment: The County will assess existing County-owned facilities and infrastructure for sea level rise risks through a one-time baseline assessment, with support from a technical consultant as needed. The assessment will evaluate current and future sea level rise related risks to assets in terms of sensitivity, exposure and adaptive capacity; identify a timeline for adaptation planning needs; and identify high level adaptation costs. The assessment will also incorporate information about local and regional sea level rise protection projects to ensure no duplication of effort. The baseline assessment will be updated, as needed, based on new science on sea level rise or relevant facilities monitoring data indicating an increased risk from sea level rise.

Ongoing Capital Projects: During the Capital Improvement Planning process, major renovations or replacement of existing facilities and infrastructure located in areas at risk from sea level rise beyond

what will be protected through local or regional planned sea level rise adaptation projects will incorporate an assessment of sea level rise risk, and development of monitoring and adaptation strategies as needed.

Leased Property

The County will assess existing leased facilities and infrastructure for sea level rise risk when the County considers a new lease or lease extension of office or warehouse space and: 1) the premises being considered exceeds 7,500 square feet or 2) there is a tenant improvement project with a value greater than $500,000.

Property Acquisitions and Dispositions

For real property acquisitions not exempt from this policy, sea level rise risks will be evaluated at least 50 years beyond the date of acquisition.

During the acquisition process, where Federal, State and local laws and regulations allow, preference shall be given to uses of the real property to be acquired that minimize or reduce the number of people exposed to sea level rise, based on protection provided by existing and/or planned sea level rise adaptation or flood mitigation projects. When the County considers property for purchase, properties which are not subject to sea level rise or flooding should be prioritized. When it is not possible to purchase a property that will not be impacted by sea level rise and flooding, the County will implement cost effective physical and operational sea level rise adaptation efforts over time to assure continuity of County operations and protect people and property from harm. During the disposition process and where feasible, priority shall be given to uses that support sea level rise adaptation efforts.

Parks and Open Space

For acquisition of real property that will be used for open space or parkland uses, the County shall consider the potential sea level rise risks based on the potential or proposed use.

Permanent structures and subsurface utilities that are planned or will undergo major renovations should consider design strategies that minimize sea level rise risks and allow projects to be easily modified as sea level rise impacts occur. Routine maintenance and repair is exempt from the assessment process. Potential risks discovered during routine maintenance shall receive support from Office of Sustainability staff as needed to assess risks and identify solutions.

Trails that are planned or will undergo realignment should consider adaptive design for sea level rise while preserving, maintaining, or enhancing coastal access.

Appendix A: Climate Change Readiness Working Group

The Climate Change Preparedness Working Group will consist of staff from the Office of Sustainability, Project Development Unit, Department of Public Works, Planning & Building Department, Parks Department, Real Property, Office of Emergency Service, County Manager's Office, and Budget, Policy & Performance Unit, and others as needed. The Working Group may be an existing group or a new ly created group. The Working Group will meet quarterly or as needed to discuss upcoming projects and monitor implementation status.

The Climate Change Preparedness Working Group will develop annual reports, led by the Office of Sustainability, on the implementation of this policy that will be used to inform the development of best practices on vulnerability assessments, and development and tracking of adaptation strategies. A brief summary will be presented to the Board of Supervisors during the annual budget and performance presentation. Those reports will include the following information at a minimum:

- Properties and facilities at risk from sea level rise
- An appendix of Sea Level Rise Risk Assessment and Adaptation Plans
- Examples of projects that have gone through the assessment process
- Lessons learned and recommendations on policy updates

The Office of Sustainability will serve as the lead Department on drafting and issuing these annual reports, with feedback from the working group.

County Division or Department	**Responsibility**
Budget, Policy & Performance Unit	The Budget, Policy & Performance Unit is a division of the County Manager's Office responsible for overseeing the County's budget including design and construction projects (such as capital improvement projects).
County Counsel	The Office of County Counsel serves as attorney for, and provides legal advice and representation to, the Board of Supervisors of the County of San Mateo, County departments, and other public offices and agencies.
Department of Public Works (DPW)	The Department of Public Works plans, designs, constructs, operates, and maintains facilities and equipment that are safe and accessible to the clients of County agencies, the general public and County employees.
Office of Emergency Service (OES)	OES coordinates countywide preparedness, response, recovery, and protection services and activities for large-scale incidents and disasters.
Office of Sustainability (OOS)	The OOS is a division of the County Manager's Office responsible for chairing the Climate Change Steering Committee, developing, and updating the Sea Level Rise Primer and tracking the resilience of County-owned buildings.
Parks Department	Parks is responsible for planning and management of County-owned parks and trails.

Planning & Building Department (P&B)	P&B is responsible for plan-checking and building permits for County projects where the local jurisdiction has deferred jurisdiction and the County is the authority-having-jurisdiction. P&B also leads the development and implementation of the County's Hazard Mitigation Plan.
Project Development Unit (PDU)	The PDU is a division of the County Manger's Office responsible for the design and ground-up construction of new County-owned buildings.
Real Property Services (RPS)	RPS serves County departments and other agencies by managing acquisitions, disposition, and leased space. RPS determines leased facility needs, identifies appropriate alternatives, negotiates leases on competitive terms, and administers agreements throughout the term of the lease. Additionally, RPS provides right of way acquisition services and real property expertise.
Risk Management Division (Human Resources)	The Risk Management Division manages 14 insurance and self-insurance programs that are used to control exposure in the areas of general and automobile liability, medical malpractice, and property damage, as well as contractual liability. This work includes disaster preparedness and bond issuances.