

SAN DIEGO REGION

**Military
Installation
Resilience**

FINAL

**Military Installation Resilience Transportation
Corridor Report**

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This study was prepared under contract with the San Diego Association of Governments (SANDAG), with financial support from the Office of Local Defense Community Cooperation, Department of Defense. The content reflects the views of SANDAG and does not necessarily reflect the views of the Office of Local Defense Community Cooperation.

Executive Summary

The purpose of the **Military Installation Resilience Transportation Corridor Report** (MIR Report) is to provide guidance to SANDAG, the U.S. Navy (Navy), and local and regional agencies on how to better integrate climate considerations into their processes, and safeguard long-term transportation solutions, regional resilience, and continued collaboration with the Navy to ensure naval bases remain operational in response to climate change. The resilience of Navy facilities and surrounding areas to the impacts of climate change is critical to maintaining Navy mission readiness.

Military Installation Resilience

The capability of a military installation to minimize, avoid, or adapt to and recover from the impacts of climate change.

San Diego is the Navy's most strategic port and the location for many operational and administrative headquarters. As the home port for about 20% of Navy vessels and 17% of active-duty personnel, San Diego has the second largest naval personnel concentration of any region in the country. According to the [San Diego Military Economic Impact Study \(2019\)](#), the Navy provides 354,000 military-connected jobs, including over 23,000 jobs for civilian personnel, accounting for 22% of all jobs in the San Diego region. The importance of the Navy's presence in San Diego cannot be overstated. The MIR Report is a guideline to help local agencies and jurisdictions incorporate resilience planning and data needs of the Navy into their planning strategies.

In alignment with SANDAG's 2021 Draft Regional Transportation Plan, the Comprehensive Multimodal Corridor Plans (CMCP) are data-driven plans to reduce congestion and increase transportation choices while preserving community character and creating opportunities for enhancement projects. CMCPs promote a planning process that applies a holistic and multimodal approach and strives to achieve a balanced transportation system. Corridor Plans evaluate all travel modes and transportation facilities in each corridor to optimize system operations. Additionally, CMCPs must be completed to be eligible for certain state, local, and federal funding.

The study area for this project is shown in **Figure ES.1** on the following page. Within this study area are two CMCPs: Central Mobility Hub and Connections (CMH) and a portion of South Bay to Sorrento (SB2S). This report focuses on transportation facilities within this study area that are key to Navy mission readiness and how they relate to the CMCPs in development.

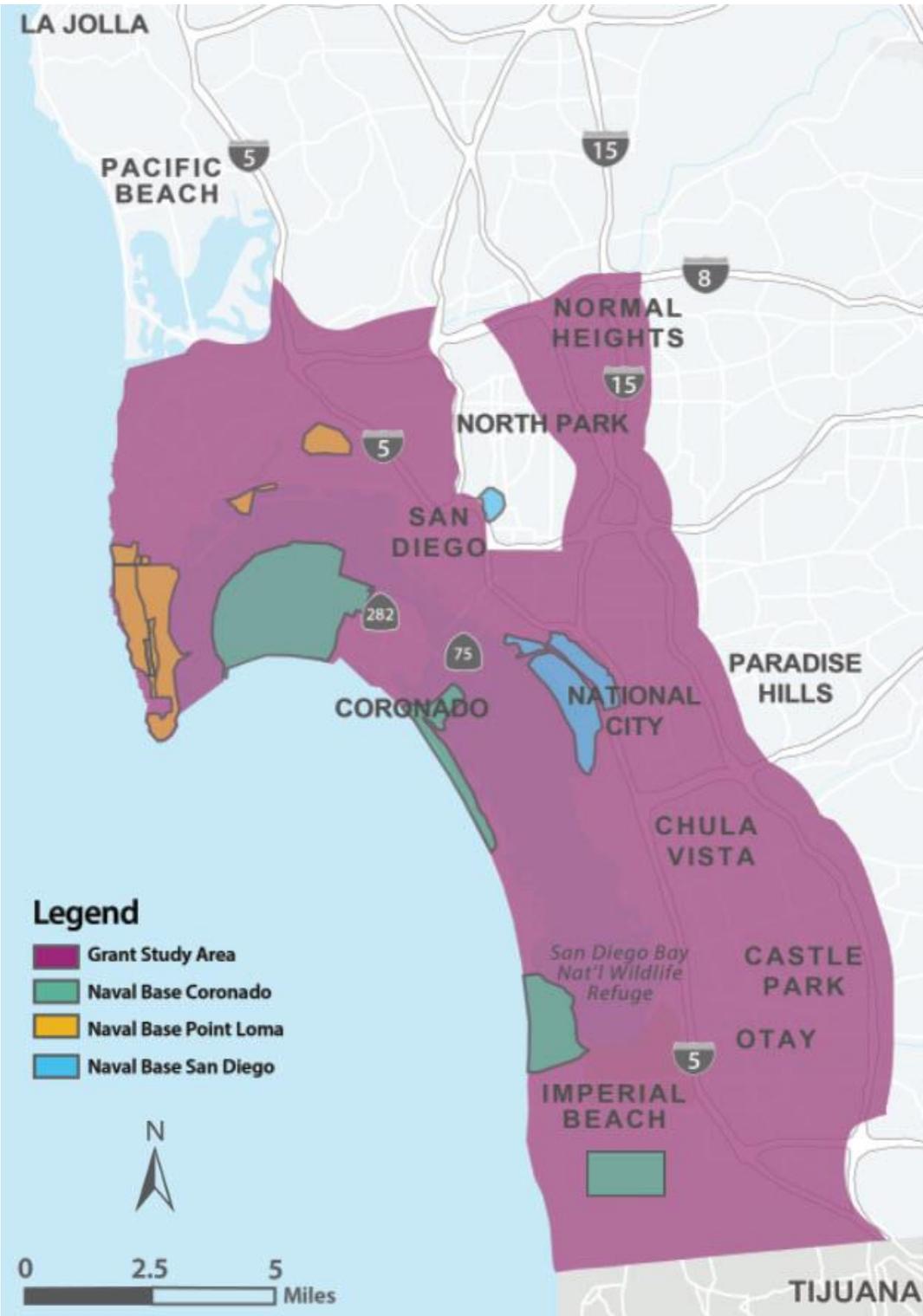


Figure ES.1 Project Study Area

In June 2020, the San Diego Association of Governments (SANDAG) was awarded a grant from the U.S. Department of Defense, Office of Local Defense Community Cooperation (OLDCC). The grant aims to enhance the existing partnerships and collaborative efforts between SANDAG and the Navy by developing climate resilience recommendations and data sharing guidelines to encourage effective long-term transportation planning and minimize anticipated climate change impacts on Navy operations. In accordance with the grant requirements, outreach was conducted to enhance Navy participation in SANDAG forums and assess the concerns of Navy installations and surrounding communities.

This report is divided into three sections, each of which consists of technical documents prepared to detail the process undertaken through this grant to identify, evaluate, and develop potential climate adaptation considerations for integration into transportation facility planning. **Table ES.1** lists deliverables and the report sections where they can be found.

Table ES.1 Overview of Grant Deliverables

Section	Deliverable
Section 1: Climate Resilience, Vulnerability Assessment, and Adaption Strategies	<ol style="list-style-type: none"> 1. Climate Resilience Assessment 2. Vulnerability Assessment 3. Adaption Planning and Design Considerations
Section 2: Data Sharing and Collaboration with Military Stakeholders	<ol style="list-style-type: none"> 4. Data Sharing and Collaboration with Military Stakeholders
Section 3: Stakeholder Engagement and Communications Strategy with Evaluation and Summary	<ol style="list-style-type: none"> 5. Stakeholder Engagement and Communications Strategy with Evaluation and Summary

Section 1 combines the first three deliverables and summarizes the analysis of climate stressors on key transportation facilities as well as potential adaptation strategies to help mitigate potential impacts.

Section 2 outlines the proposed data sharing framework between SANDAG and the Navy to ensure both agencies use the most current datasets in their respective analyses.

Section 3 summarizes the outreach and surveys conducted with Navy personnel, families and surrounding communities that will aid in communication efforts with key stakeholders in future iterations of this Grant.

Methodology

The San Diego Region Report prepared as part of California's Fourth Climate Change Assessment indicates temperatures are expected to increase, sea levels are expected to rise, wildfire risk will likely increase as the climate warms, and precipitation changes will include wetter winters and more frequent and severe droughts. Potential impacts increase risk and may adversely affect military installations, transportation facilities, and neighboring communities. As SANDAG and other regional jurisdictions develop climate change adaptation plans and strategies, it is important to consider how these plans and developments interact and potentially affect mission readiness for the naval bases in our region. This report outlines how to identify climate stressors and key transportation facilities within the CMH and SB2S CMCPs which are vital to Navy mission readiness.

Collaboration is essential to developing a cohesive and inclusive climate adaptation strategy. To identify the risks, gaps, and challenges to protecting Navy mission readiness, an existing document review was

conducted. This was key to identifying where there are opportunities to collaborate with partner agencies to develop resiliency plans to protect access to Naval bases and to utilize information in existing plans, such as data sets and models used in other jurisdictions to analyze the effects of climate change. (See Section 1.1 for a complete list of models and data sets used in this report.) Collaboration between SANDAG, the Navy, and HNTB developed a list of top climate stressors of most immediate concern and transportation facilities critical to maintain Navy mission readiness; see **Table ES.2** and

Table ES.3 for the complete lists.

Using the best available science and identifying the correct data sets and models is key to ensuring the analysis of the effects of climate change is accurate and relevant. A Peer Review Process (PRP) was conducted by SANDAG to verify the data sets and models were current. The joint review process, which included multiple jurisdictions and partner agencies, confirmed that relevant data and timelines to be analyzed were consistent with other studies in the region. The PRP confirmed the best available science and models were being used. Analysis of climate stressors on selected transportation networks were conducted using ArcGIS Online (AGOL) and ArcGIS Pro. Vulnerability maps were developed and analysis of the climate stressors on the key transportation facilities were used to develop vulnerability profiles which identified potential impacts to key transportation facilities that could potentially affect Navy mission readiness; see **Table ES.4** for a summary of key facilities potentially affected by climate stressors.

Once vulnerability profiles were defined, climate change adaptation strategies were developed using three main types of responses: protection, retreat, and accommodation. Three respective matrices were developed to identify regional, general and facility-specific strategies in existing resilience plans that could minimize risks for each vulnerable transportation facility. The matrices also included the partner agencies and jurisdictions that should be included in collaborative efforts. The purpose of the matrices is to assist with the collaboration necessary to work with not only SANDAG and the Navy but partner agencies and jurisdictions to coordinate plans and solutions to protect the transportation network supporting access to the Naval bases. In addition to identifying potential funding opportunities, the MIR Report also offers a guide to developing an adaptation process; see **Figure ES.5** for an example of an adaptation process guideline.

Sharing current and relevant data between SANDAG and the Navy is central to effective analysis and the role the Navy personnel and their families play in our region. Currently no system in place for consistent sharing of this information and data which may result in incomplete analysis of the transportation needs of the Navy. The MIR Report identifies a framework for regular and continuous data sharing between the two agencies, including a standardized data request form and establishing primary points of contact for each agency. Establishing a data sharing framework for annual and semi-annual exchange of data will aid in refining regional transportation forecasts and housing and population estimates.

Continuous public outreach was conducted throughout the development of the MIR Report to communicate the importance of this project to Navy personnel, the communities surrounding the Navy, and key stakeholders. These communities were engaged through a variety of methods, including community planning group meeting participation, CMCP meeting participation, and Military Working Group agency briefings. The Strategic Communications plan establishes a process, including communicating with stakeholders and communities with transparent and consistent messaging throughout the development of the planning process.

Recommendations

As SANDAG and other agencies in the San Diego region begin developing resilience and adaptation strategies to incorporate into CMCPs, it is essential they consider the needs of the Navy and how their corridor plans interact with and affect access to the naval bases. The MIR report (and any future phases thereof) will be used as a reference to aid regional agencies in collaboration and assessment of the needs of the Navy while developing climate adaptation solutions as part of the CMH and SB2S CMCP processes. This report will aid in the development of current and future CMCPs, to find mutually beneficial opportunities to address the needs of the Navy as well as the needs of the corridors. The MIR Report identifies transportation facilities key to Navy mission readiness which may be at risk of climate-related impacts. SANDAG and Navy planners have access to the vulnerability profiles and interactive story map on the SANDAG AGOL website, which will aid in the collaborative process.

Early and continuous collaboration is the key to ensuring the Navy remains mission ready as the region develops resilience and adaptation plans to mitigate potential impacts from climate change. The MIR Report

can be used as a guide to initiate conversations and foster alliances and a coordinated approach between SANDAG, the Navy, and other partner agencies. Maintaining open and regular lines of communication between SANDAG and the Navy is key to ensuring all parties have the information they need to make informed, data-driven decisions.

Section Summaries

Section 1. Climate Resilience, Vulnerability Assessment, and Adaptation Strategies

The San Diego Military Installation Resilience Project developed a process to analyze how top climate impacts may affect key transportation facilities and how these impacts are considered in the SANDAG planning and design processes for regional efforts to enhance resilience. **Figure ES.2** illustrates the process that was followed to complete the Military Resilience Analysis.

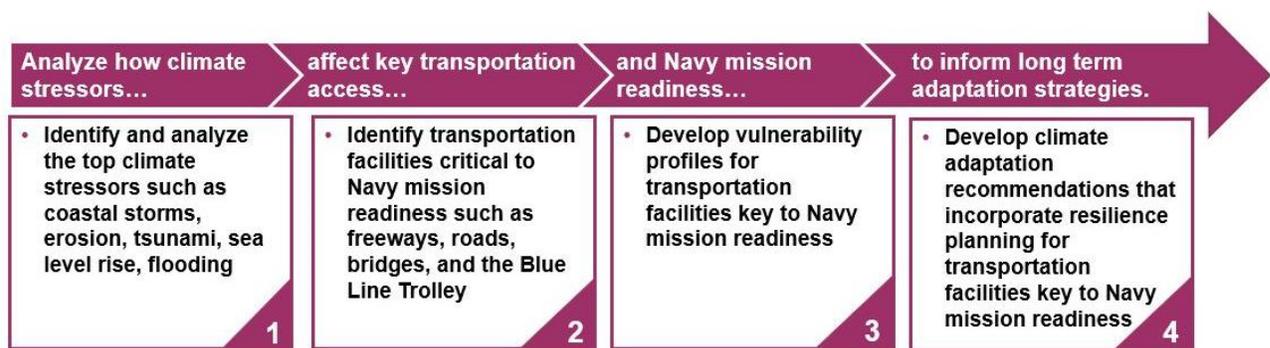


Figure ES.2 Military Resilience Assessment Process

Each step of the Military Resilience Assessment Process is further described in the three subsections of Section 1 as follows:

Section 1.1: Steps 1 and 2 – Climate Resilience Assessment memo

- Describes collaboration between SANDAG, the Navy, and HNTB.
- Identifies potential climate stressors and hazards that may present potential threats to Navy mission readiness and identifies key threats.
- Identifies the key transportation facilities critical to Navy mission readiness.

Section 1.2: Step 3 – Vulnerability Assessment memo

- Summarizes and compiles maps and analyses of potential impacts the top climate stressors may have on key transportation facilities.

Section 1.3: Step 4 – Adaptation Planning and Design Considerations memo

- Identifies potential adaptation strategies for the San Diego Region.
- Summarizes and discusses potential strategies as they apply to the key transportation facilities and the bases they serve.

1.1 Climate Resilience Assessment

The Climate Resilience Assessment memo summarizes the review of existing documentation, relevant reports, and analyses of resilience efforts in the San Diego Bay region. This review identified the strengths, opportunities, challenges, gaps, and key risks in the existing resilience planning efforts related to potential impacts to Navy operations and mission readiness, Navy personnel and families, and surrounding communities. **Table ES.2** below lists the top five climate stressors, and

Table ES.3 lists the key transportation facilities serving each of the bases, which were identified in collaboration between SANDAG, the Navy, and HNTB.

Table ES.2. Top Climate Stressors

	Coastal Storms/ Storm Surge
	Erosion
	Tsunami
	Flooding
	Sea Level Rise

Table ES.3 Key Transportation Facilities Critical to Navy Mission Readiness

Naval Base San Diego	<ul style="list-style-type: none"> • I-5 • SR 15 • Harbor Drive • Pacific Highway • 32nd Street • Main Street 	<ul style="list-style-type: none"> • 8th Street • 28th Street • Harbor Drive bridges <ul style="list-style-type: none"> ○ Chollas Creek ○ Paleta Creek • Blue and Green Line Trolleys
Naval Base Coronado	<ul style="list-style-type: none"> • I-5 • SR 75/Coronado Bay Bridge • SR 282 (3rd Street) 	<ul style="list-style-type: none"> • 3rd Street • Ocean Boulevard • 13th Street • Palm Avenue
Naval Base Point Loma	<ul style="list-style-type: none"> • I-5 • I-8 • Pacific Highway (OTC area) • Catalina Boulevard 	<ul style="list-style-type: none"> • Rosecrans Street • Nimitz Boulevard • N. Harbor Drive

Additionally, the Climate Resilience Assessment recommends models and datasets for analyzing impacts of the top climate stressors listed in **Table ES.2** on the key transportation facilities listed in

Table ES.3. The Climate Resilience Assessment memo identified the following data sources, which are consistent with other resilience studies in the San Diego Region:

- The Coastal Storm Modeling System (CoSMoS) v.3.0 for Southern California/San Diego County
- State of California Sea Level Rise Guidance (Ocean Protection Council 2018)
- Caltrans District 11 Climate Change Vulnerability Assessment Map
- Cal-Adapt
- Federal Emergency Management Agency (FEMA)
- San Diego County Tsunami Inundation Maps
- SANDAG Regional Shoreline Monitoring Program

1.2 Vulnerability Assessment

The Vulnerability Assessment memo profiles key transportation facilities critical to Navy mission readiness that may be vulnerable to climate change impacts. ArcGIS Pro and ArcGIS Online (AGOL) were used to map and analyze potential impacts to the transportation network supporting local naval bases, Navy personnel and families, and surrounding communities. The maps and analyses identify locations in the transportation network that may be vulnerable to the top climate stressors: coastal storms and storm surge, erosion, sea level rise, flooding, and tsunamis.

A peer review process was held to review the models, tools, and datasets identified in the Climate Resilience Assessment memo and ensure that the best available science and current datasets were being used to analyze the top climate stressors. The PRP meeting included representatives from SANDAG, the Navy, Caltrans, the Port of San Diego, the San Diego County Regional Airport Authority, and the cities of San Diego, Imperial Beach, and Coronado.

Vulnerability profiles were developed by base and included the key transportation facilities serving each base. The profiles identified potential impacts from coastal storms and storm surge, erosion, sea level rise, flooding, and tsunamis. **Table ES.4** lists the key transportation facilities critical to maintaining Navy mission readiness that were analyzed and identifies the top climate stressors that may impact them. Vulnerability profiles also include potential adaptation strategies, described in greater detail in Section 1.3: Adaptation Planning and Design.

Table ES.4. Summary of Key Transportation Facilities Potentially Affected by Climate Stressors

Climate Stressor	Key Transportation Facilities																			
	I-5	I-8	SR 15	SR 75/Coronado Bay Bridge	SR 282 (3rd Street)	8th Street	13th Street	28th Street	32nd Street	Catalina Boulevard	Harbor Drive	Main Street	Nimitz Boulevard	N. Harbor Drive	Ocean Boulevard	Pacific Highway	Rosecrans Street	Blue Line Trolley	Chollas Creek Bridge	Paleta Creek Bridge
Coastal Storm/ Storm Surge	•	•		•	No	•	No	•	•	No	•		•	•	•	•	•	•	•	•

Erosion				•									•						
Sea Level Rise	•	•		•		•		•	•		•		•	•	•	•	•	•	
Flood	•	•		•		•		•	•		•	•				•	•	•	
Tsunami			•	•							•		•	•			•	•	•

An interactive online map and stagnant maps were developed using ArcGIS Pro and AGOL and are included in Section 1.2 (Vulnerability Assessment). The maps and analyses show the extent to which each climate stressor may affect each key transportation facility. The vulnerability analysis used the following data sets to develop each vulnerability profile and map:

- 100-year storm or 1% storm (CoSMoS)
- Erosion without shoreline mitigation (CoSMoS)
- Year 2050, sea level rise projections of 75 cm or 2.5 feet (CoSMoS)
- Year 2100, sea level rise projections of 200 cm or 6.6 feet (CoSMoS)
- FEMA Flood Hazard Layer 100-year/500-year flood
- Tsunami data from University of Southern California Tsunami Research Center

Figure ES.3 is an example of vulnerability mapping and that was used for analysis showing the impacts of sea level rise in conjunction with a 100-year storm event, a worst-case scenario. The 2050- and 2100-year time horizons were used to show the greatest extent of flood.

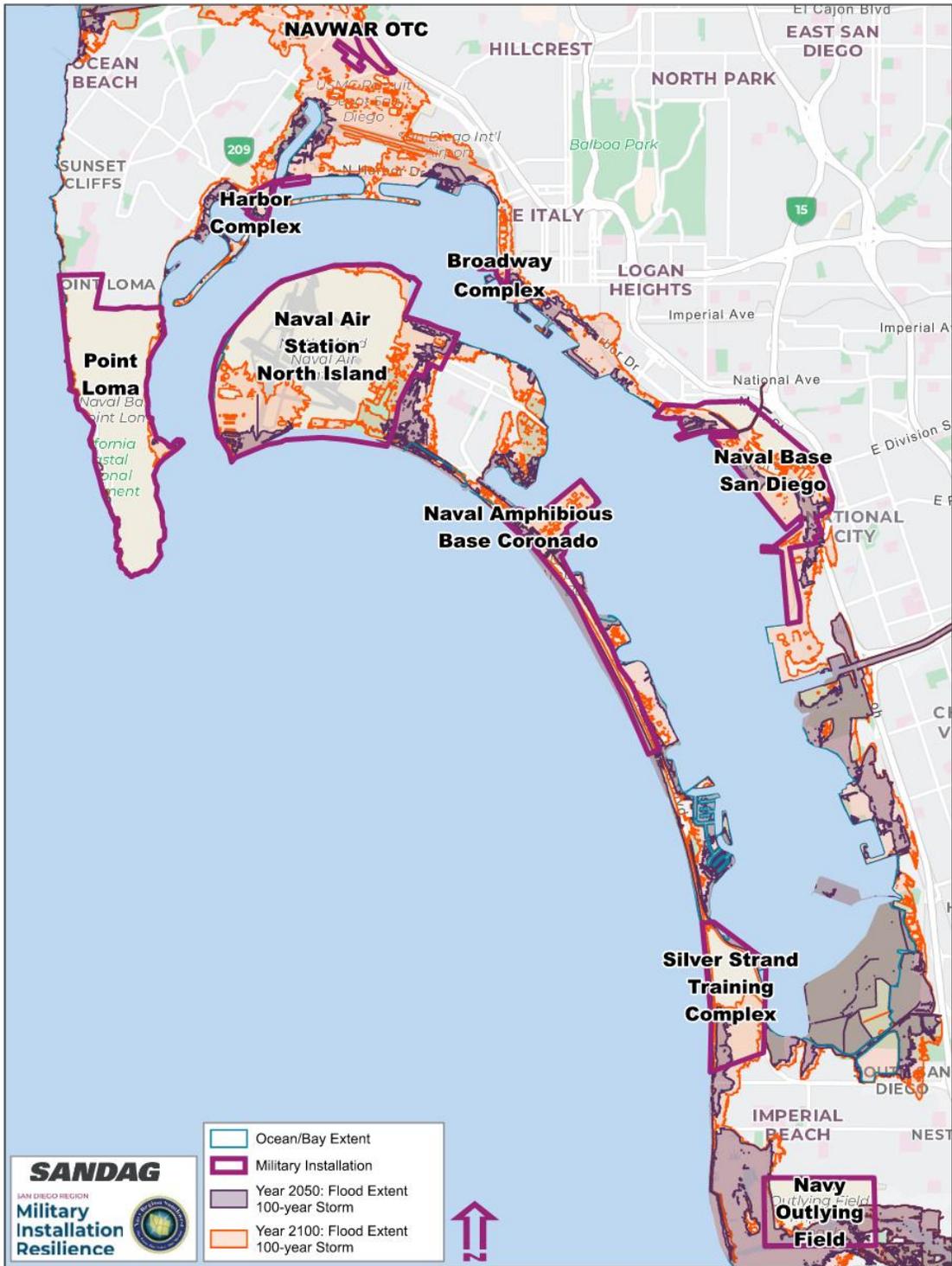


Figure ES.3 Year 2050 and 2100 Flood Extent During a 100-Year Storm Event

1.3 Adaptation Planning and Design Considerations

The Adaptation Planning and Design memo summarized potential climate change adaptation strategies (policies, programs, and projects), planning considerations, and best practices for long-range resilience planning. Potential strategies focus on protection of key transportation facilities critical to Navy mission readiness within the SB2S and CMH CMCP planning areas. This memo looks at three main types of adaptation responses—protect, accommodate, and retreat (see **Figure ES.4** below)—and outlines regional, general, and facility-specific strategies, describing how each could be applied to help protect the identified key transportation facilities.

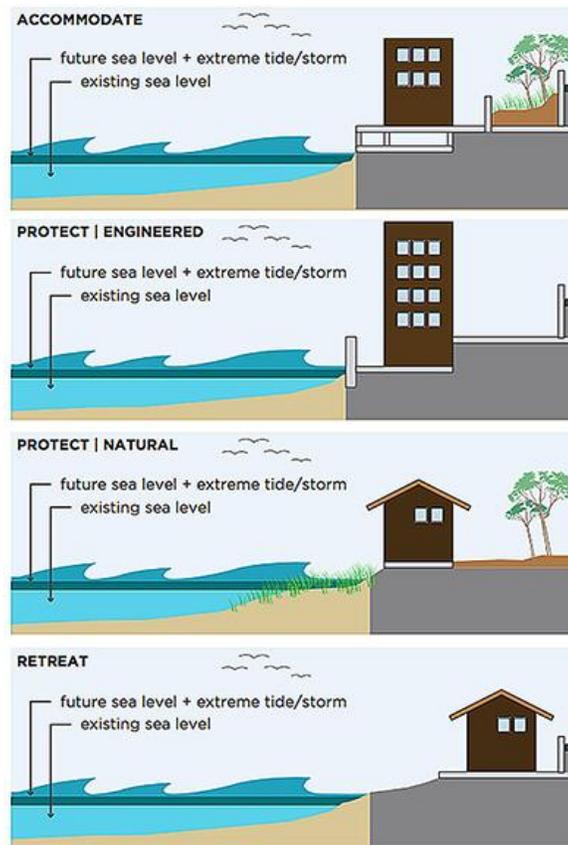


Figure ES.4 Adaptation Responses (Source: *SF Planning*)

Matrices for each strategy were developed to highlight recommended adaptation strategies and strategies already being implemented or proposed in the San Diego region. These matrices identify which jurisdictions and bases would benefit from the adaptation strategy identified.

With more than 10 different agencies and jurisdictions as well as with three naval bases in the SB2S and CMH CMCPs, ongoing collaboration is necessary to maintain an inclusive and coordinated approach to the needs and priorities for each stakeholder. The Adaptation Planning and Design Considerations memo outlines potential resilience planning implementation considerations, constraints, and opportunities, including funding to facilitate collaboration between agencies. The memo is intended to serve as a guiding tool to initiate future discussions when considering cross-jurisdictional long-range transportation resilience planning needs, including incorporating the needs of the Navy.

Early guiding principles include:

- Climate change considerations are an essential element of national security. Long-term resilience planning and implementation of adaptation strategies for key transportation facilities in the San Diego region are critical to maintaining **Navy mission readiness**.
- Adaptation planning and strategies should prioritize **social equity, environmental justice**, and the **needs of vulnerable communities**.
- Adaptation strategies should prioritize **protection of coastal habitats** and **public access**.
- Adaptation strategies should consider the **unique characteristics, constraints**, and **values** of existing water-dependent infrastructure, ports, and public-trust users.
- Allowances for **phased implementation** of realignment and relocation projects must be given to make incremental changes in transportation networks so that access to and along the coast can be maintained while coastal hazards are addressed over the long term.
- Transportation networks must be designed to function even if the highest projected sea-level rise amounts occur, which requires retrofitting existing transportation infrastructure (as needed) and **building redundancy into the transportation system**.
- An **adaptive management approach** must be applied to maintain flexibility and to adjust strategies in the face of uncertain conditions and ever-changing climate stressors.
- An **informed and iterative approach to adaptation** founded on the best available science, and data monitoring in the San Diego region must be used to reduce risks from key climate stressors.
- A process to select the **best adaptation strategies in collaboration with partner agencies** based on criteria and a step-by-step approach to decision-making should be adopted, as illustrated in **Figure ES.5** below.



Figure ES.5. Adaptation Process Guideline

Lastly, this memo also provided an overview of partner agency roles and responsibilities and resilience planning goals to help foster consensus between regional agencies and the Navy. As the region continues to develop, consideration and integration of the Navy mission readiness into the region’s transportation and resilience planning efforts is imperative.

Section 2. Data Sharing and Collaboration with Military Stakeholders

SANDAG uses a variety of data sources to create a regional and subregional growth forecast, yearly population and housing estimates, and periodic employment estimates for San Diego County and its subregional areas. These data are used in research products and publications to inform decision-making in the region. Local Naval installations provide an important component of these data pertaining to the

active-duty Navy and civilian/contractor population in the county and their households. It is important to consider and understand the Navy's critical resilience efforts and minimize impacts to military operations; therefore, SANDAG has partnered with the Navy to establish a framework to guide and enhance collaboration between the two agencies.

Currently, SANDAG compiles and integrates military-centric data into regional planning efforts. These data come from a variety of publicly available data sources as well as from Naval representatives through periodic outreach. However, data gathered through ad-hoc requests and from multiple sources can result in data that are not up-to-date or comprehensive which can impede development of regional recommendations to support Navy operations and minimize impacts to mission readiness. The current process is also time consuming and staff turnover at either SANDAG or the Navy can also make the process difficult.

The proposed framework will streamline this process and make data deliveries to SANDAG more regular and uniform for Naval installations in the region. This will allow the Navy and SANDAG to improve collaboration on data products to research and prioritize transportation improvements that support Navy installations to maintain operations while also supporting neighboring communities.

Section 3. Stakeholder Engagement and Communications Strategy with Evaluation and Summary

During the planning stage of engagement activities, a Strategic Communications Plan (Plan) was developed to present and outline the approach to stakeholder outreach and public engagement for the OLDCC Grant project. This Plan served as a roadmap for stakeholder education and engagement, outlined the outreach approach and implementation plan, and defined the diverse outreach tools and materials used to facilitate engagement. In addition, outreach methods were established based on the best and most effective techniques for reaching stakeholder groups in the study area. These outreach methods included the development of project collateral materials, hosting of a Partner Agency Workshop, participation in CMH and SB2S CMCP meetings, and development of community planning group and agency briefings. The main objectives of this outreach strategy were to:

- Effectively communicate and present engaging information about the Grant's objectives and expected outcome to its diverse audience.
- Develop and administer programming to collect and analyze stakeholder input on climate resilience solutions focusing on impacts to Navy operations and mission readiness.
- Analyze and summarize stakeholder input.

Stakeholder groups received project collateral materials, which were designed to educate them about the Grant and to also provide the project team's contact information as another outlet for collecting public input. All messaging was developed in close coordination with SANDAG and the Navy, keeping in mind sensitive community issues and active projects. These materials included talking points, a Fact Sheet, and presentations.

The series of meetings outlined in the Plan were held in collaboration with the Navy. This coordination began prior to introducing the project to the public. The internal meetings consisted of a Partner Agency Workshop, a military group focus discussion, and a PRP meeting, in addition to resilience planning and potential adaption strategies discussions. Meeting objectives included discussing key information about the Grant, receiving valuable input and direction for the Grant, and establishing open communication and constant collaboration with all parties. The outcome of this collaboration allowed the project team to refine the Grant's focus, including the definition of target areas and development key messaging for all outreach activities.

As a result of these meetings, the project team was able to identify:

- Top climate stressors that may affect the community and focused Navy assets
- Critical modes of access and transportation to three major Naval Bases
- Expected outcomes of climate resilience work
- Perceived challenges
- Potential obstacles of resilience planning, best practices, and challenges perceived with data sharing
- Best community outreach approach

The identification of climate stressors (coastal storms and storm surge, erosion, sea level rise, flooding, and tsunamis) and critical modes of access and transportation (freeways, roads, bridges, and transit) were key to refining the Grant's focus. This process allowed the project team to focus specifically on developing vulnerability profiles for transportation facilities key to Navy mission readiness and designing climate adaptation recommendations that incorporated resilience planning for these transportation facilities.

During the public outreach phase, key stakeholders were engaged through a variety of methods, including standing community planning group meeting participation, CMH and SB2S CMCP meeting participation, and Military Working Group agency briefings. During these outreach activities, stakeholders were provided information about Grant objectives, top climate stressors being analyzed, Navy facilities critical to the study, data sharing goals, and the Grant's next steps. Stakeholders provided valuable input that will be key for the implementation of the next phase of the Grant. During the participation in community planning group meetings, the outreach team coordinated with six groups to share an informational item with the group and hold a live discussion with all the attendees. Stakeholders were able to ask questions about the project and receive live answers. A total of 126 stakeholders were engaged during this outreach effort.

Next Steps – OLDCC Grant: Phase II

In Phase II of SANDAG's Military Installation Resilience project, SANDAG will continue coordination with the Navy and the Department of Defense in implementing strategies to improve climate resilience and safeguard mission readiness for San Diego-area military installations. In addition to collaboration with the military, SANDAG will also work with a consultant to advise and prepare best approaches to addressing resilience planning for transportation on and around military bases. To ensure consistency across the region's major jurisdictions, SANDAG will also continue its collaboration with the City of San Diego and Caltrans District 11.

SANDAG will first select an appropriate consultant for this project, and will identify stakeholders from local jurisdictions, public agencies, and parallel project efforts that could be leveraged to support San Diego Military Installation Resilience efforts. Working alongside the consultant, the City of San Diego, Caltrans, and appropriate stakeholders, SANDAG will leverage existing Military Working Group meetings to provide project updates, encourage regional collaboration, and to solicit feedback on project activities and deliverables, while also engaging other working groups when necessary. To successfully complete resilience planning for military installations, SANDAG will collect data on various aspects of current efforts at military installations as well as adjacent data (for example, climate, land use, and transportation planning) while incorporating these data into SANDAG's regional models for travel behavior, corridor congestion, and facility inventory. As part of this data collection, SANDAG will work with its partners in the Navy to organize a framework for long-term ongoing data sharing through SANDAG's anticipated Open Data Portal.

Once relevant data are compiled, SANDAG will review existing and newly collected data to form mitigation and adaptation plans. Planning for mitigation will consist primarily of transit demand management strategies in existing and potential new corridors. SANDAG will identify such corridors and plan for outreach, funding, and implementation. Adaptation planning will include a vulnerability profile review of high-risk corridors, including Pacific Highway, N. Harbor Drive, and SR 75/SR 282. SANDAG will develop a list of appropriate solutions and corridor improvements while taking into consideration engineering project standards, funding, and overall resilience design. Once complete, SANDAG will draft, publish, and present a Consolidated

Project Corridor Climate Adaptation Solutions Report for use and review by local jurisdictions, stakeholders, and SANDAG working groups and committees.