

A Community Guidebook to Coastal Adaptation Legal Issues in California

January 2024

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Cover Image: Malibu, CA in October 2023 (Credit: Karina Alvarez, USC Sea Grant)

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Part 1: Introduction to Coastal Adaptation in California

I. INTRODUCTION: WHY MUST CALIFORNIA'S COASTAL COMMUNITIES ADAPT?

Greenhouse gas emissions have added carbon dioxide to our atmosphere and oceans at a rate far beyond what natural processes of removal can keep pace with. As a result, climate change has rapidly progressed and the stability of our oceans continues to decline. Impacts from climate change such as rising sea levels, ocean acidification (the lowering of the ocean's pH), and ocean warming present significant adaptation issues for California's coastal communities. Sea level rise will alter the coastline and threaten to flood coastal infrastructure. However, combined with ocean acidification and ocean warming that will destroy protective coastal ecosystems and increase extreme weather, sea-level rise will seriously disrupt the coastal zone. Furthermore, the loss of coastal ecosystems will threaten food security and harm industries that rely on marine resources.

Nevertheless, while many climate change impacts are likely to affect community adaptation, most California communities are likely to focus first on adapting to the physical consequences of sea level rise. In this state, more than 25 million people live near the ocean, and sea level rise is often the most obvious threat to business-as-usual.

Climate scientists and news reporters often discuss sea level rise in terms of global averages. However, sea level rise can be an intensely local phenomenon. Louisiana, for example, is sinking and eroding, which makes sea level rise worse. In other places, like parts of Alaska and California, the land mass is actually rising, which makes sea level rise less noticeable. California is particularly complicated in this respect, because parts of the California coast (shown in blue in Figure 1) are sinking or subsiding, while others (shown in orange and red) are rising. This NASA research thus suggests that coastal communities near San Francisco, Santa Barbara, Ventura, and San Diego will have more adaptation challenges than those around Los Angeles and many along the state's far northern coast.

Moreover, sea level rise results in different kinds of problems for communities. In many coastal areas, the day-to-day impacts of sea level rise depend on the tidal cycle. Miami, Florida, for example, is becoming famous for its "sunny day floods," where, because of sea level rise, high tides can carry sea creatures into parking garages and flood coastal streets. Sea level rise also makes storm surge worse, allowing storm waves—particularly when they arrive at high tide—to penetrate far further inland than they used to. Thus, coastal communities will often need to adapt not just to a slow sea level increase but also its more extreme consequences during storms and high tides.

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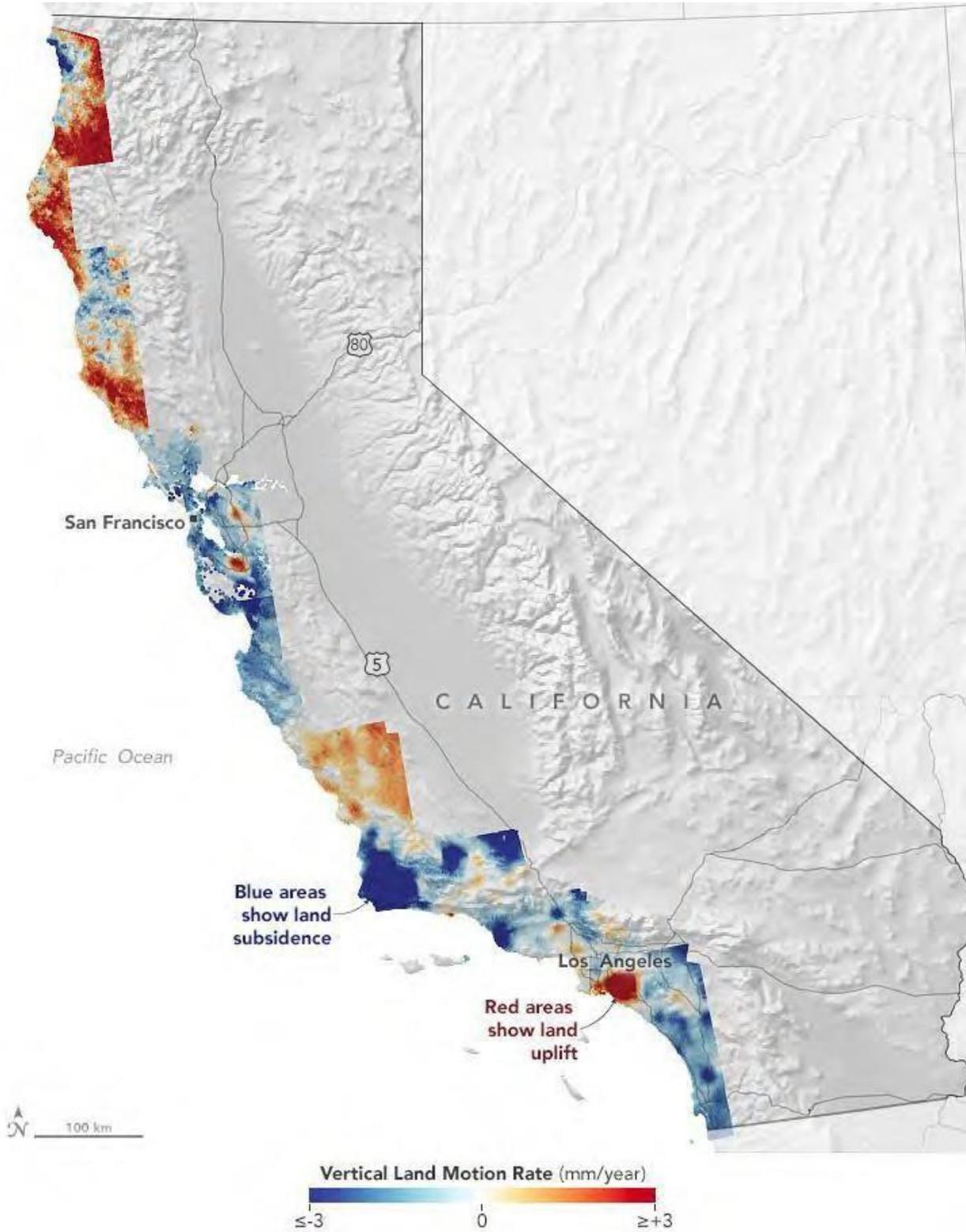


Figure 1: Rising and Falling Coastal Communities in California. Source: Map courtesy of NASA; <https://earthobservatory.nasa.gov/images/147439/californias-rising-and-sinking-coast>

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Californians have already experienced, on average, sea level rise of six inches just since 1950—although, as noted above, this average can mean very different things for different parts of the California coast. However, the rate is increasing, and currently the sea is rising (on average) about one inch every ten years. Scientists project that sea levels could increase by as much as seven feet in California by 2100. In Southern California, sea level rise poses a particular threat to the region’s iconic beaches, two-thirds of which could be completely eroded by 2100.

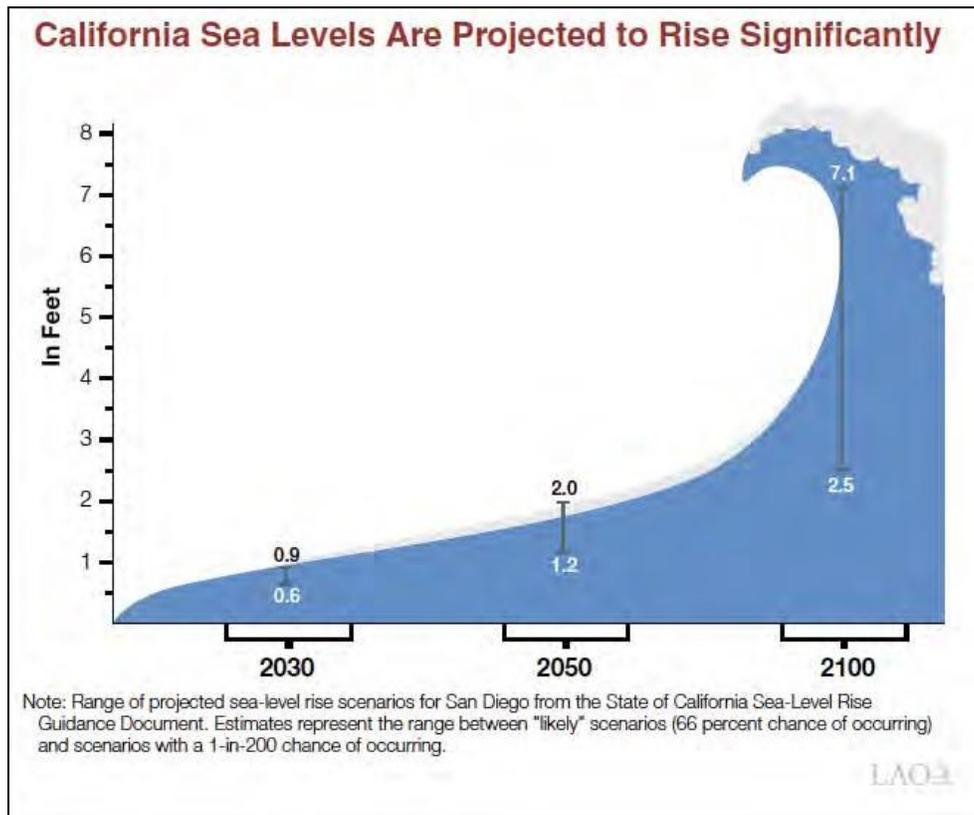


Figure 2: Projected Sea Level Rise in San Diego for 2030, 2050, and 2100. Source: California Legislative Analyst's Office, 2020, <https://lao.ca.gov/Publications/Report/4261>

Of course, there is still scientific uncertainty about exactly how much the ocean will rise here. In 2020, for example, the California Legislative Analyst’s Office created the projection shown in Figure 2 for San Diego. Nevertheless, while there is still a range of possible futures for California coastal communities, scientists are becoming more confident that higher levels of sea level rise are more likely: San Diego has a two-thirds chance of getting seven feet of sea level rise by 2100, but only a 1-in-200 chance of keeping sea level rise to 2.5 feet.

The warming ocean plays a big role in sea level rise, because water expands as it warms. Rising air temperatures are also melting glaciers, sending more water into the ocean. In addition, in California—especially Southern California—El Niño weather events can worsen the impacts of global sea level rise, both because seawater warms and expands during these events and because El Niño years bring increased rain and flooding in general.

Moreover, California communities experience the worst impacts from sea level rise in winter, when tides are highest (“king tides”). El Niño’s impacts are usually strongest in the later winter, as well, exacerbating winter flooding. Thus, many coastal communities in California should expect to experience the worst impacts of sea level rise during the winter in years with El Niño events—especially if there are storms that coincide with high tides during these winters.

Communities making decisions about how to adapt to sea level rise have many things to think about—their priorities for the future, their budget, and what kinds of strategies to deploy. However, there is also a legal component to the adaptation process. A complex matrix of laws, implemented by several state and federal agencies, governs *what* coastal communities can do to adapt to sea level rise and *how*.

This Community Guidebook seeks to provide California’s coastal communities with an overview of the legal considerations that should help to shape their adaptation planning. *Importantly, this Guidebook does not constitute legal advice regarding any community’s particular adaptation plans and projects, and community leaders should always consult an attorney licensed to practice in California about the exact legal requirements that will apply to a particular adaptation project.* Instead, this Guidebook identifies the relevant government agencies and what they are concerned about as well as some of the facts and factors that might make some adaptation projects more legally feasible than others. It begins with an overview of basic options available to communities seeking to adapt to sea level rise, ocean warming, and ocean acidification.

II. SOME BASICS ABOUT COASTAL PROPERTY OWNERSHIP AND SEA LEVEL RISE

The coastline and beach have always been areas where public and private rights rub against each other. Coastal property owners own only to the mean high tide line; below that line, the State of California owns the submerged lands (sometimes referred to as “sovereign submerged lands) and controls the water. The State holds these lands and water in trust for the public, and so the public has the right to walk and play on the beach below the mean high tide line (sometimes called the “wet sand beach”), to recreate in and on the ocean, to fish (subject to state licensing requirement), and to navigate (subject to state regulations for boats and ships). The point is, coastal private property owners control only to the high tide line—and even then, much of what they can do with that beach property is regulated, as the rest of this Guidebook will explore.

One initial complication of sea level rise is that it moves the mean high tide line, shifting property boundaries inland. Coastal property owners’ seaward boundaries are therefore *ambulatory* under California law.¹ In California, “[t]he mean high tide is determined by

¹ *E.g.*, *Lechuza Villas West v. California Coastal Commission*, 60 Cal. App. 4th 218, 245 (2d Dist. 1997). There are two potential exceptions to this rule. First, if a shoreline has been fixed in place by fill and wharves (as is common in the Bay Area, for example) *and* a quiet title action has fixed the seaward legal boundary, that boundary may no longer be ambulatory. *SLPR, L.L.C. v. San Diego Unified Port District*, 49 Cal. App. 5th 284, 305-06 (4th Dist. 2020). Second, if human activities cause

averaging the height of the high tides over roughly 19 years,”² which is the period of the lunar cycle that influences tides. Thus, as the California Court of Appeals has emphasized, the seaward boundary does not move seasonally with the shifting beach, but only gradually, over time, as the average high tide changes.³ Nevertheless, as sea levels rise in many parts of California, over time public ownership of the coastline will also shift inland.

In addition, worsening storms may also more frequently invoke some municipal authorities that apply to *all* private real estate. For example, no landowner can use their property in a way that constitutes a public nuisance. The California Coastal Act explicitly preserves cities’ and counties’ authority to declare, prohibit, and abate nuisances, and municipalities do not need a Coastal Development Permit to abate coastal nuisances or order demolition of unsafe and substandard conditions.⁴ This abatement authority includes the authority to demolish buildings and other infrastructure that have become unsafe or that pose an imminent hazard, with no compensation owed (so long as the city or county follows the required procedures). This authority to declare beachfront structures to be public nuisances and to remove them may be an increasingly important coastal adaptation authority as rising seas and more intense storms destroy coastal infrastructure.

Thus, if California coastal property owners fail to effectively adapt to sea level rise and worsening coastal storms, the law does provide mechanisms for dealing with unmanaged retreat and decaying coastlines. However, it is less disruptive and damaging for all involved, and generally less expensive, for coastal landowners and communities to plan ahead for adaptation—up to and including managed retreat. This Guidebook provides an overview both of some of the coastal adaptation options available *and* the potential legal issues that different options might raise.

III. COMMUNITY ADAPTATION OPTIONS

A. Adaptation Options for Sea Level Rise

1. Physical Options

A primary question for a coastal community is how it wants to *physically* adapt to sea level rise. A community’s answer to this question will probably depend in part on how immediately vulnerable it actually is—for example, whether it is in an area of the coast where land is rising or land is falling, how close houses and buildings are to the water line, and whether natural geography (e.g., cliffs or other steep inclines), natural barriers such as reefs or wetlands, or existing infrastructure such as breakwaters provide the community with

land to accrete to the private property, extending it farther out to sea, the boundary between private and State ownership remains at the prior mean high tide line. *Id.* at 306-07 (citation omitted).

² *Bollay v. Office of Administrative Law*, 193 Cal. App. 4th 103, 108 (3rd Dist. 2011) (citing *Borax Consolidated, Ltd. v. Los Angeles*, 296 U.S. 10, 22 (1935)).

³ *People v. William Kent Estate Co.*, 242 Cal. App. 2d 156, 158-59 (1st Dis. 1966).

⁴ Cal. Pub. Res. Code § 30005.

some protection. If the community is physically vulnerable to sea level rise, it can consider moving back from the shoreline or adding any number of physical protections along the coast, from elevating buildings on stilts to restoring coastal dunes and wetlands. The most legally complicated option (as well as often an expensive and relatively short-term protection) is physical hardening of the coast.

1. Nature-Based Approaches to Coastal Protection

While “shoreline armoring” conjures visions of concrete and seawalls, nature-based approaches to coastal protection exist that emulate or restore natural systems.⁵ These “green” solutions are often higher quality options that are more resilient to sea level rise than traditional infrastructure. As a result, they are also often more cost-effective because they do not require significant maintenance, repair, or replacement.⁶ Furthermore, green solutions provide additional environmental, economic, and social benefits to coastal communities.⁷

Some green solutions include living shorelines, dune restoration, and wetland restoration. Living shorelines are the broadest category and can encompass both dune and wetland restoration.⁸ These projects utilize the inherent ability of biological structures to protect shorelines from erosion and to minimize the impact of flooding.⁹ Furthermore, as these natural structures grow, they become self-sustaining and provide expansive ecological benefits.¹⁰ One common example is an oyster reef that mimics the ability of a breakwater, an artificial structure built parallel to the shoreline out of concrete, to dissipate wave energy¹¹ while also providing shelter for hundreds of marine species, cleaning the surrounding water, and preventing erosion.¹² Living shoreline techniques can also offset some of the unintended consequences of an existing gray structure, such as using oyster bags to repair an artificial breakwater.¹³ Beyond a Coastal Development Permit (CDP), living shorelines may be subject to permitting and coordinating agency requirements of the Clean Water Act, U.S. Army Corps of Engineers, State Lands Commission, regional water quality control board, Endangered Species Act, or California Environmental Quality Act.¹⁴

⁵ Heather Luedke, Fact Sheet I Nature as Resilient Infrastructure – An Overview of Nature-Based Solutions, Env’t and Energy Study Inst. (Oct. 16, 2019), <https://www.eesi.org/papers/view/fact-sheet-nature-as-resilient-infrastructure-an-overview-of-nature-based-solutions>.

⁶ *Id.*

⁷ *Id.*

⁸ Coastal California Adaptation Policy Briefs 7, Stan. Ctr. for Ocean Sols. (2018), https://oceansolutions.stanford.edu/sites/g/files/sbiybj13371/f/coastal_adaptation_policy_brief_compilation_web.pdf.

⁹ *Id.*

¹⁰ *Id.*

¹¹ *Id.*

¹² *Oyster Reef Habitat*, Nat’l Oceanic and Atmospheric Admin. (July 27, 2020), <https://www.fisheries.noaa.gov/national/habitat-conservation/oyster-reef-habitat>.

¹³ *Coastal California Adaptation Policy Briefs*, *supra* note 4, at 7-8.

¹⁴ *Id.* at 8.

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Dune restoration is possible for impaired or entirely lost dune systems and it is beneficial because dunes act as coastal barriers against extreme tides and storm surges to protect coastal communities from flooding.¹⁵ Dune restoration is also valuable because it increases habitat for endangered or vulnerable plants and animals¹⁶ and enhances public access to beaches, which also promotes recreation.¹⁷ However, similar to installation of an oyster reef,¹⁸ once a dune has been stabilized, its continued growth and recovery relies on natural processes and monitoring over the course of multiple years.¹⁹ Beyond a CDP, a dune restoration project may be subject to permitting and coordinating agency requirements of the U.S. Army Corps of Engineers, State Lands Commission, or California Environmental Quality Act.²⁰

Wetland restoration is suitable for impaired wetlands or for wetlands that were converted for agriculture or other human uses but remain largely undeveloped.²¹ Wetlands provide a range of ecological and protective benefits including storm surge buffering, floodwater storage, filtering polluted runoff to reduce ocean acidification, limiting saltwater intrusion into freshwater aquifers, reducing coastal erosion, and providing habitat for sensitive plant and animal species.²² Furthermore, successfully restored wetlands provide substantial economic benefits because they do not require substantial maintenance²³ and they generate revenue from increased tourism, fishing, and recreation such as hiking, birdwatching, kayaking, and biking.²⁴ Again, however, successfully restoring wetlands relies on natural processes that can take years or even decades.²⁵ Finally, beyond a CDP, a wetland restoration project will be subject to federal and state environmental laws and it will require environmental impact statements and consultations with state wildlife managers if threatened or endangered species are present.²⁶

2. Traditional Infrastructure-Based Approaches to Coastal Protection

Shoreline armoring is a form of coastal development that protect existing coastal infrastructure and that are, at minimum, subject to permitting requirements of the California

¹⁵ *Id.* at 3.

¹⁶ Coastal Dune Habitat Restoration Projects: Why is Dune Restoration Important?, Nat'l Park Serv. (Feb. 28, 2015),

https://www.nps.gov/pore/learn/management/planning_dunerestoration_importance.htm.

¹⁷ Dune Restoration Increases Flood Protection and Access for Community, DigitalCoast,

<https://coast.noaa.gov/digitalcoast/training/cardiff-state-beach.html>.

¹⁸ Understanding Living Shorelines, Nat'l Oceanic and Atmospheric Admin. Fisheries,

<https://www.fisheries.noaa.gov/insight/understanding-living-shorelines>.

¹⁹ Dune Restoration, U.S. Fish & Wildlife Serv. (Mar. 30, 2020),

https://www.fws.gov/refuge/humboldt_bay/wildlife_and_habitat/dunesrestoration.html.

²⁰ *Coastal California Adaptation Policy Briefs*, *supra* note 4, at 4.

²¹ *Id.* at 15.

²² *Id.*; Restoring Our Wetlands, Save The Bay,

<https://savesfbay.org/what-we-do/restoring-our-wetlands>.

²³ *Coastal California Adaptation Policy Briefs*, *supra* note 4.

²⁴ *Restoring Our Wetlands*, *supra* note 18.

²⁵ *Coastal California Adaptation Policy Briefs*, *supra* note 4, at 16.

²⁶ *Id.*

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Coastal Commission (CCC) or of Local Coastal Programs (LCP).²⁷ Shoreline armoring uses physical buffers or barriers to prevent flooding, while structure elevation avoids flooding by elevating structures at a pace consistent with sea-level rise.²⁸

These gray engineered solutions include seawalls, riprap, and beach nourishment. Seawalls may be most suitable for highly developed areas that need short term protection against sea-level rise.²⁹ Seawalls are built parallel to the shoreline out of concrete, wood, or steel to provide a physical barrier against flooding and their construction raises several concerns.³⁰ First, constructing a durable seawall is costly because it requires a substantial amount of construction materials, continual maintenance,³¹ and careful planning and engineering to avoid issues like seawater intrusion which can compromise the integrity of a seawall.³² Second, seawalls passively erode beaches which prevents beaches from migrating inland in response to sea-level rise; thus, public beaches would gradually narrow and disappear.³³ Third, seawalls make it more difficult to access public beaches and can provide refuge for invasive species.³⁴ Furthermore, in granting a CDP, the CCC will likely require that the community mitigate the seawall's environmental impact.³⁵ However, in limited circumstances, a looming disaster may remove the CDP requirement altogether.³⁶

Riprap is another common shoreline armoring strategy for California's coastal communities that involves creating stacks of large boulders and rock fill designed to mitigate wave impact and prevent erosion.³⁷ Riprap is often used for emergency situations because it is relatively easy to engineer and, depending on the availability of rock, less costly to implement.³⁸ However, because riprap is susceptible to rock dislodgement and because it is often hastily deployed during an emergency, the maintenance costs can be substantial.³⁹ Furthermore, riprap can have a "peninsula effect" in which either side of the structure erodes away, prompting further armoring that negatively impacts ecological processes and tidal species.⁴⁰ Beyond a CDP and outside of emergency situations that remove the CDP requirement, the CCC permits riprap only when, after considering mitigation, it is the least environmentally damaging, feasible solution available.⁴¹

Beach nourishment is an armoring technique in which large quantities of sand or sediment are dumped onto beaches to combat erosion and to maintain or increase the width of

²⁷ *Coastal Armoring*, EXPLORE BEACHES,

<https://explorebeaches.msi.ucsb.edu/beach-health/coastal-armoring>.

²⁸ *Coastal Adaptation*, 2030 PALETTE, <http://2030palette.org/coastal-adaptation/>.

²⁹ *Id.* at 13.

³⁰ *Id.*

³¹ *Coastal Armoring*, *supra* note 23.

³² *Coastal California Adaptation Policy Briefs*, *supra* note 4.

³³ *Id.* at 13-14.

³⁴ *Coastal Armoring*, *supra* note 23.

³⁵ *Coastal California Adaptation Policy Briefs*, *supra* note 4, at 14.

³⁶ *Id.*

³⁷ *Id.* at 10.

³⁸ *Id.*

³⁹ *Id.*

⁴⁰ *Id.* at 11.

⁴¹ *Id.* at 11.

narrowing beaches.⁴² Although this technique is less harmful than a seawall and potentially less costly than other strategies, it is only a temporary solution because the processes that originally damaged the beach will continue after the initial nourishment, necessitating periodic renourishment.⁴³ Furthermore, beach nourishment will immediately kill animals living on the beach, seriously disrupt the ecosystem, significantly alter the habitat if the new sand is not a close match, and increase the murkiness and turbidity of surrounding waters.⁴⁴ Beyond a CDP, beach nourishment may be subject to permitting and coordinating agency requirements of the California Environmental Quality Act, National Environmental Policy Act, and U.S. Army Corps of Engineers.⁴⁵

Finally, structure elevation is a useful short-term strategy against flooding hazards created by sea-level rise.⁴⁶ Property owners in developed areas along the coast can consult with engineers to construct stilts, columns, or piles to elevate existing structures, and local governments can amend zoning ordinances to require all future construction to do the same to extend the usefulness of this strategy for as long as possible.⁴⁷ This solution avoids “takings” issues and is, therefore, attractive to communities that are opposed to coastline retreat.⁴⁸ However, it is not a long-term solution because the conditions created by sea-level rise will become increasingly hazardous and because the elevated structures will impede coastal processes and increase erosion.⁴⁹ Beyond a CDP, new development associated with elevating structures may be subject to local ordinances, the National Historic Preservation Act of 1966, or the California Environmental Quality Act.⁵⁰

2. Financial Options

Ultimately, managed retreat from hazardous areas along the coastline is one of the most effective ways to protect people and property from sea-level rise.⁵¹ Although it requires relocating existing structures, it is less costly than maintaining gray engineered solutions⁵² and it guarantees the safety of coastal communities.⁵³ Furthermore, evacuating the coastline opens up space for more expansive green solutions that bolster protection and provide benefits that a coastal community can enjoy.⁵⁴ However, managed retreat is often met with pushback from property owners who perceive gray engineered solutions as more favorable or

⁴² *Beach Nourishment*, Explore Beaches,

<https://explorebeaches.msi.ucsb.edu/beach-health/beach-nourishment>.

⁴³ *Coastal California Adaptation Policy Briefs*, *supra* note 4, at 1.; *Beach Nourishment*, *supra* note 38.

⁴⁴ *Beach Nourishment*, *supra* note 38.

⁴⁵ *Coastal California Adaptation Policy Briefs*, *supra* note 4, at 2.

⁴⁶ *Id.* at 5.

⁴⁷ *Id.*

⁴⁸ *Id.*

⁴⁹ *Id.* at 5-6.

⁵⁰ *Id.* at 6.

⁵¹ Wendy Karen Bragg, Sara Tasse Gonzalez, Ando Rabearisoa & Amanda Daria Stoltz, *Communicating Managed Retreat in California 2*, *Water* (Mar. 13, 2021),

<https://doi.org/10.3390/w13060781>.

⁵² *Id.*

⁵³ *See id.*

⁵⁴ *See id.*

who place high subjective value on their home and lifestyle.⁵⁵ Thus, coastal governments may choose to implement buyout programs, create voluntary conservation easements, or steer development using Transfers of Development Rights (TDRs). These solutions offer flexibility and control over the property most at risk⁵⁶, albeit with some drawbacks.

Buyouts, leasebacks, and land acquisition are government buyout programs that have been traditionally used to obtain property rights from private sellers over areas that are disaster-prone or that hold important ecological or cultural resources.⁵⁷ Coastal governments could now implement these programs to combat sea-level rise by purchasing large stretches of land along the coast to use as natural buffer zones.⁵⁸ However, holdouts can significantly weaken these efforts by preventing coastal governments from obtaining continuous stretches of land; thus, coastal governments may be forced to resort to other solutions or to risk “takings” issues.⁵⁹ Furthermore, coastal governments will likely need to explore different avenues of funding because the outright purchase of land can be costly.⁶⁰ Coastal governments could, therefore, rely on Federal Emergency Management Agency (FEMA) grants available for post-disaster acquisition programs or on funds from the CCC for creating a program that enhances proactive mitigation of sea-level rise hazards.⁶¹

Conservation easement programs are a common strategy that avoid the funding challenges of buyout programs while maintaining flexibility.⁶² These programs incentivize permitting permanent restrictions on the use of private coastal property by offering private owners money or tax benefits; thus, coastal governments and property owners can reach a compromise in which the property owners can continue to productively use their property while also promoting conservation and mitigation efforts.⁶³ Conservation easements tend to be individualized to the property and can include, among other things, a complete ban on development over a portion of the property, a prohibition on shoreline armoring, or preservation of a natural buffer area.⁶⁴ However, the same individualization that offers flexibility can also create inconsistent or fragmented protection that weakens the overall adaptation effort⁶⁵ and that is further magnified by holdouts.⁶⁶

Finally, coastal communities can use a market-based approach by creating TDRs to steer development away from areas that will be impacted by sea-level rise.⁶⁷ A TDR is created by severing the development rights from an impacted parcel and then allowing those rights to be sold as development rights for a suitable parcel.⁶⁸ On top of aiding coastal adaptation efforts,

⁵⁵ *Id.*

⁵⁶ *Coastal California Adaptation Policy Briefs, supra note 4, at 18, 20, 24.*

⁵⁷ *Id.* at 17.

⁵⁸ *Id.*

⁵⁹ *See id.*

⁶⁰ *Id.* at 18.

⁶¹ *Id.*

⁶² *See id.* at 20.

⁶³ *Id.*

⁶⁴ *Id.*

⁶⁵ *Id.* at 20-21.

⁶⁶ *See id.*

⁶⁷ *Id.* at 24.

⁶⁸ *Id.*

TDR markets can help maintain farmland, protect sensitive habitats, preserve historic districts, and promote low-income housing.⁶⁹ TDR markets also operate well with other adaptation strategies, avoid “takings” issues, and give coastal communities time to organize preservation efforts.⁷⁰ Unfortunately, however, TDR markets can be difficult to implement because they require widespread voluntary participation by the community.⁷¹ Furthermore, TDRs are less useful for fully developed land and could encourage development on land that should be protected for other ecological reasons.⁷²

3. Legal and Regulatory Options

The last avenue of coastal adaptation is regulatory and involves the implementation of development permit conditions, additional zoning requirements, or development moratoria in an effort to protect property owners, encourage managed retreat, and plan adaptation strategies.⁷³ However, the primary pitfall of regulatory adaptation strategies is that they can present “takings” issues.⁷⁴ Coastal governments may implement additional permit conditions over new development and redevelopment that notify coastal property owners of potential hazards and trigger once those hazards become observable.⁷⁵ If this transparency does not prompt managed retreat, the new development and redevelopment restrictions would prevent property owners from freely developing in a hazardous area or from simply replacing structures that are eventually destroyed or damaged by the hazards.⁷⁶ Instead, landowners would be compelled to conform to heightened safety mandates or outright prohibited from developing in the area because construction on the land is undesirable and dangerous; thus, over time, all hazardous land would be used appropriately.⁷⁷ Furthermore, these development restrictions can ensure that any costs associated with eventual removal or relocation are internalized to the property owner.⁷⁸

Similarly, coastal governments can designate districts as overlay zones provided the government can show that the area is subject to coastal hazards associated with sea-level rise.⁷⁹ Overlay zones impose a second set of development restrictions on property owners within the zone and could also utilize triggers to encourage managed retreat, prohibit gray shoreline armoring, and protect coastal ecosystems.⁸⁰ Finally, a development moratorium would temporarily prohibit development while land use is being planned or while

⁶⁹ *Id.*

⁷⁰ *Id.*

⁷¹ *Id.*

⁷² *Id.*

⁷³ *Regulatory Tools*, Geo. Climate Center, <https://www.georgetownclimate.org/adaptation/toolkits/managed-retreat-toolkit/regulatory-tools.html> ?chapter.

⁷⁴ *Id.*

⁷⁵ *Id.*

⁷⁶ *Coastal California Adaptation Policy Briefs*, *supra* note 4, at 30.

⁷⁷ *Id.* at 30-31.

⁷⁸ *Id.* at 31.

⁷⁹ *Regulatory Tools*, *supra* note 69.

⁸⁰ *Id.*; *Coastal California Adaptation Policy Briefs*, *supra* note 4, at 28.

environmental studies are being conducted.⁸¹ This measure provides time for a community to develop a thoughtful and comprehensive strategy against sea-level rise.⁸² However, development moratoria that extend too long can trigger “takings” issues, so the time a community has is limited.⁸³

B. Adaptation Options for Ocean Acidification and Ocean Warming

Adapting to ocean acidification and ocean warming will require thorough research and ecosystem management. Research is necessary to understand how coastal species and coastal ecosystems as a whole will be affected by acidification and warming.⁸⁴ Generally, high concentrations of carbon dioxide have increased the rate of acidification and warming beyond the evolutionary adaptation potential of coastal species;⁸⁵ thus, some coastal species are expected to retreat from unstable waters while others may face population decline.⁸⁶ Furthermore, pathogens and invasive species may migrate in.⁸⁷ Any of these outcomes can create a distributional shift in fish and invertebrate species that can uniquely alter the biodiversity and stability of coastal ecosystems.⁸⁸ Therefore, to develop an adequate adaptation strategy, coastal communities must understand the scale, nature, and impact that acidification and warming will have on their coastal zone.⁸⁹ For example, coastal communities can utilize monitoring technology to shift the borders of marine protected areas as species distribution shifts⁹⁰ or to alert shellfish hatcheries of approaching cold, low pH water so hatcheries can schedule production appropriately.⁹¹ Similarly, tracking distributional shifts of fish species can help fisheries develop sustainable practices⁹² and allow communities to prohibit development that may interfere with migration.⁹³

Ecosystem management includes maintaining resilience ecosystems and reducing non-climate related stressors.⁹⁴ Coastal communities can utilize assisted breeding techniques to develop species that are more resilient to ocean warming⁹⁵ and acidification,⁹⁶ diversify the catches of

⁸¹ *Coastal California Adaptation Policy Briefs*, *supra* note 4, at 26.

⁸² *Id.*

⁸³ *Id.* at 27.

⁸⁴ Ove Hoegh-Guldberg *Et Al.*, *Climate Change 2014: Impacts, Adaptation, And Vulnerability 1713* (Carol Turley *et al.* eds.),

https://www.ipcc.ch/site/assets/uploads/2018/02/WGIIAR5-Chap30_FINAL.pdf

⁸⁵ *Id.* at 1707.

⁸⁶ *Id.* at 1664.

⁸⁷ *Id.*

⁸⁸ *Id.* at 1714-1715.

⁸⁹ *Ocean Warming*, *supra* note 6.

⁹⁰ Hoegh-Guldberg *et al.*, *supra* note 80, at 1708.

⁹¹ *Societal Impacts and Adaptation Strategies*, NOAA Ocean Acidification Program (Dec. 22, 2017), <https://oceanacidification.noaa.gov/WhatWeDo/HumanConnections/TabId/2992/PID/14784/evl/0/CategoryID/207/CategoryName/adaptation-strategies/Default.aspx>.

⁹² Hoegh-Guldberg *et al.*, *supra* note 80.

⁹³ *Id.* at 1703.

⁹⁴ *Id.* at 1699.

⁹⁵ *Ocean Warming*, *supra* note 6.

⁹⁶ *Societal Impacts and Adaptation Strategies*, *supra* note 87.

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fisheries to reduce the burden on all stocks,⁹⁷ build structures such as rock pools that provide surrogate habitat for species,⁹⁸ or add kelp and seagrass beds that can absorb carbon dioxide to improve water quality.⁹⁹ Finally, to avoid pushing coastal ecosystems beyond recovery, communities should also control the population of invasive species,¹⁰⁰ monitor pathogen outbreaks,¹⁰¹ regulate toxic pollutants that have a detrimental effect on wildlife, and regulate nutrient runoff that creates algal blooms that release carbon dioxide and worsen water quality.¹⁰²

⁹⁷ *Hoegh-Guldberg et al., supra note 80*, at 1703.

⁹⁸ *Ocean Warming, supra note 6*.

⁹⁹ *Societal Impacts and Adaptation Strategies, supra note 87*.

¹⁰⁰ *Hoegh-Guldberg et al., supra note 80*, at 1698.

¹⁰¹ *Ocean Warming, supra note 6*.

¹⁰² *HOEGH-GULDBERG ET AL., supra note 80*, at 1658-1659.

Part 2: The Primary Agencies and the Laws They Implement

I. THE CALIFORNIA COASTAL COMMISSION

A. Introduction to the CCC

As the overview of adaptation options makes clear, coastal communities pursuing physical adaptation options will often need to receive permits from the California Coastal Commission (CCC). This part provides a basic introduction to the CCC, while the next part discusses its more direct involvement in coastal adaptation efforts.

1. California's Coastal Zone

The Coastal Act of 1976 provides a “comprehensive scheme” over land use planning for the entire coastal zone of California.¹⁰³ In the Act, the California Legislature declared that the coastal zone is a distinct and valuable natural resource of vital and enduring interest to all people, that protection of California’s natural and scenic resources is a paramount concern, that protecting the ecological balance of the coastal zone is necessary for the promotion of public welfare and the protection of property, and that existing developed uses of the coastal zone along with carefully planned future development are essential to the economic and social well-being of California residents.¹⁰⁴ The Legislature also recognized the necessity of relying on local governments to promote the Act’s objectives¹⁰⁵ and, therefore, required that local governments develop Local Coastal Programs (LCPs) consisting of land use plans, zoning ordinances, zoning maps, and sensitive resource designations.¹⁰⁶

Furthermore, the Act established the CCC to implement its policies and designated the CCC as the state coastal zone planning and management agency for any and all purposes.¹⁰⁷ Thus, the CCC has planning, regulatory, and permitting responsibilities, in partnership with local governments, over all “development” within the *coastal zone*,¹⁰⁸ a 1.5-million-acre area encompassing California’s coastline from “the Oregon border to the border of the Republic of Mexico” as well as three miles seaward and up to several miles inland.¹⁰⁹ The following maps show the inland boundary of Southern California’s coastal zone from San Luis Obispo to San Diego.

¹⁰³ Pac. Palisades Bowl Mobile Ests., L.L.C. v. City of L.A., 288 P.3d 717, 720-21 (Cal. 2012).

¹⁰⁴ Cal. Pub. Res. Code § 30001 (Deering 2021).

¹⁰⁵ Id. § 30004.

¹⁰⁶ Id. §§ 30500, 30502, 30512-30513; *The California Coastal Commission’s Legal Authority to Address Climate Change*, Cal. Coastal Comm’n, <https://www.coastal.ca.gov/climate/whyinvolved.html>.

¹⁰⁷ Id. §§ 30300, 30330.

¹⁰⁸ Id. § 30336; *The California Coastal Commission’s Legal Authority to Address Climate Change*, *supra* note 102.

¹⁰⁹ Pub. Res. § 30103; *The California Coastal Commission’s Legal Authority to Address Climate Change*, *supra* note 102.

Part 2: The Primary Agencies and the Laws They Implement



Figure 3: The inland boundary of Southern California's coastal zone from San Luis Obispo to San Diego

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Figure 4: The inland boundary of Southern California's coastal zone in Ventura County

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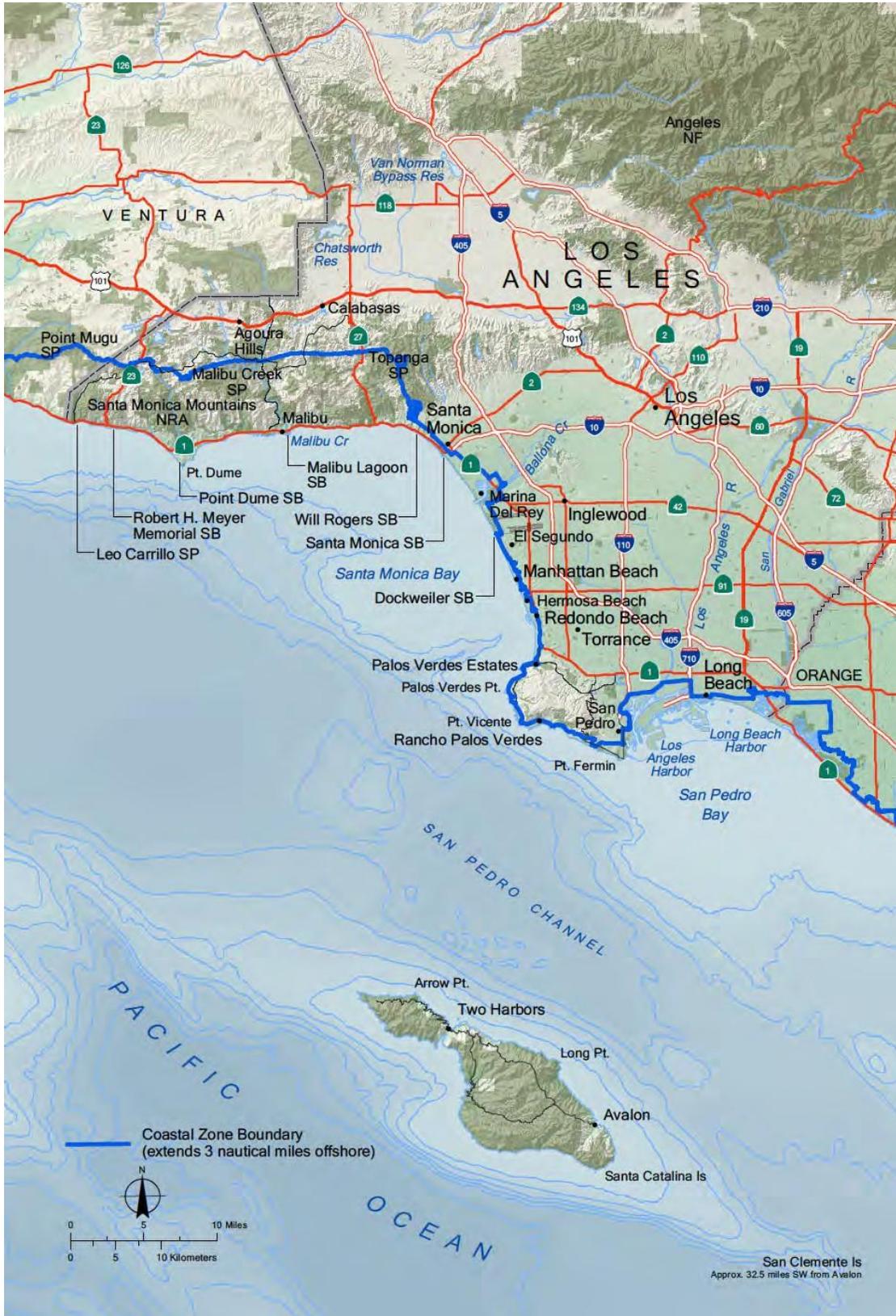


Figure 5: The inland boundary of Southern California's coastal zone in Los Angeles County

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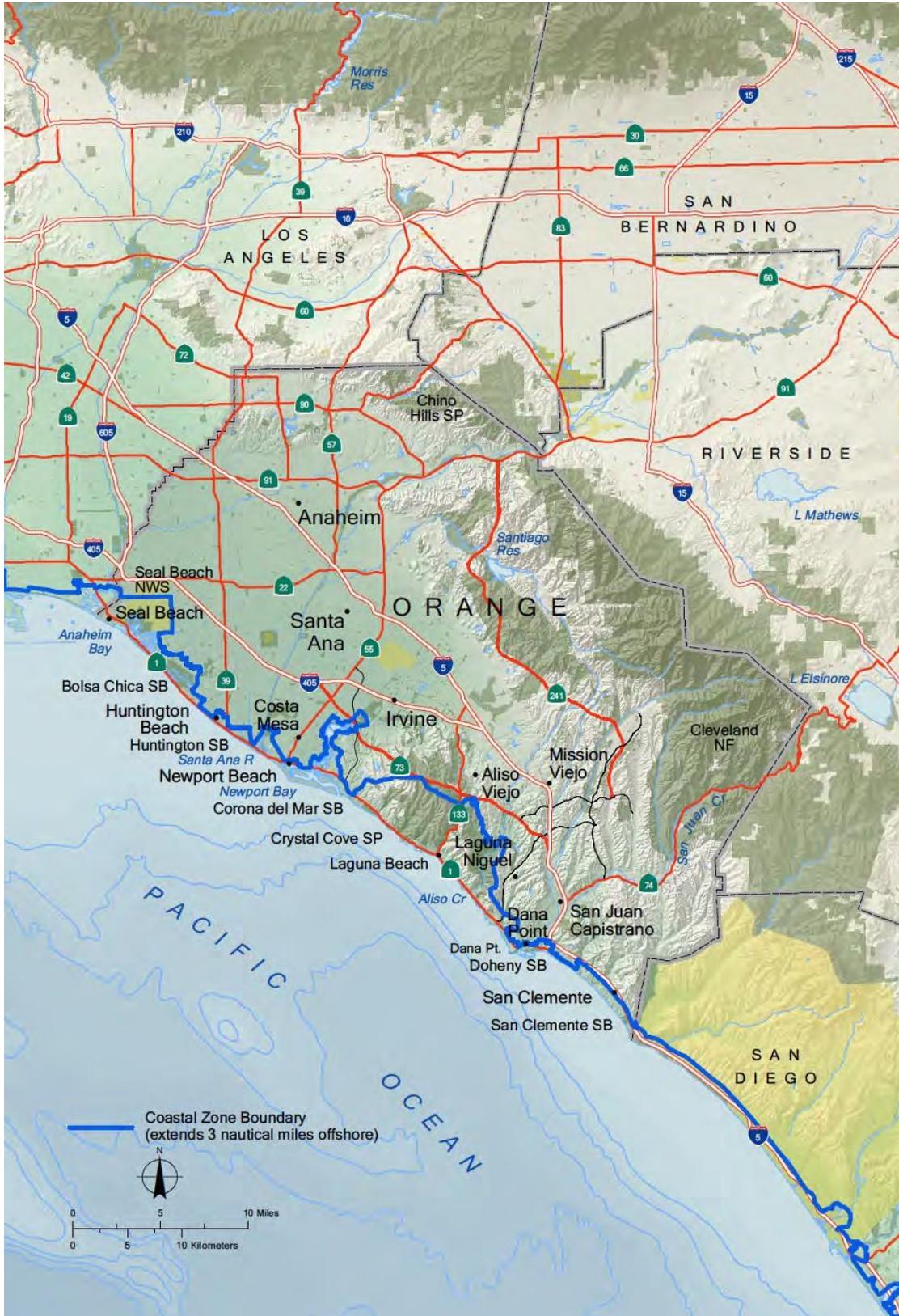


Figure 6: The inland boundary of Southern California's coastal zone in Orange County

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Figure 7: The inland boundary of Southern California's coastal zone in San Diego County

2. The CCC's Authority

The Coastal Act gives the CCC regulatory jurisdiction over “any permit action, federal consistency review, appeal, local coastal program, port master plan, public works plan, long-range development plan, categorical or other exclusions from coastal development permit requirements, or any other quasi-judicial matter requiring commission action, for which an application has been submitted to the commission.”¹¹⁰ In practice, the CCC generally aids and approves LCPs, hears appeals stemming from locally issued permits or from a local government’s failure to conform to an approved LCP, and retains the power to directly review and approve certain development plans.¹¹¹

California courts have consistently recognized that the Coastal Act and the CCC implement state policy, which prevails over the local concerns that might be embodied in LCPs.¹¹² For example, in *Charles A. Pratt Construction Co. v. California Coastal Commission*, the CCC could revoke a permit granted pursuant to an LCP¹¹³ because the CCC retains the ultimate authority to ensure that coastal development conforms to the policies of the Act.¹¹⁴

Moreover, while the Act requires that any permit be subject to reasonable terms and conditions¹¹⁵ it does not authorize the CCC to take or damage private property for public use without just compensation.¹¹⁶ In *Nollan v. California Coastal Commission*, for example, the U.S. Supreme Court held that the CCC unconstitutionally took coastal private property by requiring a public access easement over a beach. According to the Supreme Court, CCC’s requirement of a physical easement was not closely enough related to the problem that the CCC said that building a bigger house would cause, because the CCC emphasized the “psychological” impacts—people not thinking that the beach was public—rather than an physically interference with public access.¹¹⁷

3. Activities Requiring CCC Permission or a Permit

Under the Coastal Act, any person wishing to perform or undertake any “development” in the coastal zone must obtain a coastal development permit (CDP).¹¹⁸ “Development” includes: (1) the placement or erection of any structure on land, in water, or underwater; (2) the disposal of any dredged material or waste; (3) the grading, removing, dredging, mining, or extraction of any materials; (4) the change in density or intensity of use of land; and (5) any other division of land except where the division is connected to a purchase by a public agency for a public recreational use, to a change in use of or access to water, to an alteration of the size of any structure, or to remove major vegetation for non-agricultural purposes.¹¹⁹

¹¹⁰ *Pub. Res. § 30321.*

¹¹¹ *Id.* §§ 30600-30600.5, 30601, 30602-30603.

¹¹² *Pac. Palisades Bowl Mobile Ests., L.L.C. v. City of L.A.*, 288 P.3d 717, 721 (Cal. 2012).

¹¹³ *Charles A. Pratt Construction Co. v. Cal. Coastal Comm’n*, 76 Cal. Rptr. 3d 466, 472 (Cal. Ct. App. 2008).

¹¹⁴ *Id.* at 471.

¹¹⁵ *Pub. Res. § 30607.*

¹¹⁶ *Id.* § 30010.

¹¹⁷ *Nollan v. Cal. Coastal Comm’n*, 483 U.S. 825, 838 (1987).

¹¹⁸ *Pub. Res. § 30600.*

¹¹⁹ *Id.* § 30106.

In enacting the Coastal Act, the California Legislature indicated that the statute should be “liberally construed to accomplish its purposes and objectives;” thus, coastal “development” triggering the permit requirement is not restricted to physical alteration of land and extends beyond development of real property.¹²⁰ For example, in *Pacific Palisades Bowl Mobile Estates, L.L.C. v. City of Los Angeles*, the conversion of a mobile home park from tenant occupancy to resident ownership was a “development” subject to review by the CCC because all subdivisions are “development.”¹²¹ Similarly, in *Surfrider Foundation v. Martins Beach*, the permanent closure of a gate providing public access to a beach and the erection of beach closure signs also constituted “development” because any impediment to access is “development.”¹²²

4. Forbidden and Encouraged Activities

In its third chapter, the Coastal Act lays out standards for the CCC to use when evaluating CDPs and LCPs.¹²³ This section of the Act also reveals an intent to preserve certain uses of the coastal zone. First, the Act prohibits any development that interferes with public access to the coastal zone and it reserves land suitable for recreational activities, recreational development, coastal-dependent aquaculture.¹²⁴ Furthermore, the Act encourages development of low-cost visitor and recreational facilities, gives priority to uses of private land that enhance coastal recreation, and encourages development that will increase recreational boating on coastal waters.¹²⁵

Second, the Act gives “special protection” to marine resources that serve important biological or economic roles to sustain the biological productivity of coastal waters and, therefore, the long-term commercial, recreational, scientific, and educational uses of coastal waters.¹²⁶ Thus, development that threatens marine resources must be planned carefully to protect against and mitigate any adverse environmental effects.¹²⁷ Similarly, the Act designates any area with rare or ecologically important plants, animals, or habitat that can be easily disturbed or degraded by human activities and development as environmentally sensitive habitat areas (ESHAs)¹²⁸ that receive additional protection.¹²⁹ Development cannot significantly disrupt ESHAs, and only development that is dependent on resources within an ESHA is permissible.¹³⁰ Furthermore, adjacent development must be sited and designed to minimize any adverse impact on an ESHA.¹³¹

¹²⁰ *Id.* § 30009; *Pac. Palisades Bowl Mobile Ests., L.L.C. v. City of L.A.*, 288 P.3d 717, 722 (Cal. 2012).

¹²¹ *Pac. Palisades Bowl Mobile Ests., L.L.C.*, 288 P.3d at 723.

¹²² *Surfrider Foundation v. Martins Beach*, 221 Cal. Rptr. 3d 382, 394 (Cal. Ct. App. 2017).

¹²³ *Pub. Res.* § 30200.

¹²⁴ *Id.* §§ 30211, 30220-30223.

¹²⁵ *Id.* §§ 30213, 30222, 30224.

¹²⁶ *Id.* § 30230.

¹²⁷ *Id.* §§ 30232, 30233.

¹²⁸ *Id.* § 30107.5.

¹²⁹ *Id.* § 30240.

¹³⁰ *Id.*

¹³¹ *Id.*

Third, the Coastal Act requires that new development be located near or within existing developed areas and it encourages development designed to protect views and scenic coastal areas.¹³² The restrictions on new development are perhaps most strict with regard to industrial development. The Act encourages industrial development to locate and expand within existing sites to the maximum extent possible and also lays out a number of requirements for approval, which are designed to mitigate the development's environmental impact and to ensure that the development is necessary.¹³³

Finally, although gray coastal armoring will conflict with many of the Act's policies, the Act does allow such development "when required to serve coastal-dependent uses or to protect existing structures or public beaches in danger from erosion, and when designed to eliminate or mitigate adverse impacts on local shoreline sand supply."¹³⁴ The CCC has broad discretion to adopt measures designed to mitigate all significant impacts that the construction of gray coastal armoring may have.¹³⁵ In *Ocean Harbor House Homeowners Association v. California Coastal Commission*, the CCC permitted construction of a seawall that would erode an acre of beach in exchange for a fee representing the recreational value of the beach.¹³⁶ Although this method of calculation required assumptions about the economic value that beaches goers place on the beach,¹³⁷ the CCC acted appropriately under the Act and did not commit a taking.¹³⁸

B. The Coastal Act, the California Coastal Commission, and Coastal Adaptation

1. The CCC, Climate Change, and Coastal Adaptation

The CCC recognizes that climate change poses a threat to much of California's coast. As it states on its climate change web page:

Human activity is causing global climate change, which will have increasingly significant impacts on California and its coastal environments and communities. The Coastal Act mandates the California Coastal Commission to "protect, conserve, restore, and enhance" the state's coastal resources. As a result, the Commission must consider climate change, including global warming and potential sea level rise, through its planning, regulatory, and educational activities, and work to reduce

¹³² *Id.* §§ 30250-30251.

¹³³ *Id.* §§ 30260-30264.

¹³⁴ *Id.* § 30235.

¹³⁵ *Ocean Harbor House Homeowners Ass'n v. Cal. Coastal Comm'n*, 77 Cal. Rptr. 3d 432, 453 (Cal. Dist. Ct. App. 2008).

¹³⁶ *Id.* at 437, 439.

¹³⁷ *Id.* at 438.

¹³⁸ *Id.* at 450.

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*greenhouse gas emissions and the detrimental impacts of global warming on the California coast.*¹³⁹

In addition, pursuant to California state laws and policies to reduce greenhouse gas emissions, “[t]he Commission reviews coastal development projects on a case-by-case basis in an effort to reduce emissions and prepare for potential impacts.”¹⁴⁰

On August 12, 2015, the CCC unanimously adopted its Sea Level Rise Policy Guidance, supplemented in November 2018 with a Science Update.¹⁴¹

2. Adaptation Measures and the Coastal Act

New development within the coastal zone must conform to the policies of the Coastal Act, as enforced by the CCC. Development along the coastline and, in particular, gray coastal armoring often conflicts with the policies of the Act because they tend to reduce public access, negatively impact the environment, and interfere with the scenic qualities of the coastal zone. Therefore, the CCC often imposes conditions, or approves LCPs that impose conditions, that minimize the negative impact of new development, including coastal armoring.

Somewhat recently, the CCC has been proactively forbidding gray coastal armoring and requiring inland retreat under certain conditions. In *Lindstrom v. Cal. Coastal Comm’n*, on appeal the CCC required property owners to waive the right to build any gray coastal armoring and to remove or relocate the proposed residence if a government agency orders it because of natural hazards.¹⁴² The first requirement raised taking concerns but ultimately did not amount to a taking.¹⁴³ Therefore, the CCC may be free to restrict unfavorable uses of property.¹⁴⁴ Furthermore, although the second condition was found to be overbroad as written, the CCC can require a permitted development’s removal if a government agency with legal jurisdiction determines that the structure is permanently unsafe for occupancy due to specific hazards that cannot be remedied without the use of prohibited structures.¹⁴⁵ For coastal communities, incorporating similar requirements into LCP approved CDPs can encourage managed retreat by essentially requiring it and create space for green coastal armoring. Furthermore, once hazards associated with sea-level rise become significant, any threat posed by abandoned structures that might erode beaches attempting to migrate inland or harm marine resources would be eliminated if removal is required.

Natural structures that function as green coastal armoring may also be designated as ESHAs, subjecting any adjacent development or restoration efforts to heightened regulation by the CCC. In general, this regulation can support coastal adaptation efforts to restore and preserve

¹³⁹ Climate Change, Cal. Coastal Comm’n (viewed Sept, 10, 2023), <https://www.coastal.ca.gov/climate/climatechange.html>.

¹⁴⁰ *Id.*

¹⁴¹ *Sea Level Rise Adopted Policy Guidance, Cal. Coastal Comm’n* (viewed Sept. 10, 2023), <https://www.coastal.ca.gov/climate/slrguidance.html>.

¹⁴² *Lindstrom v. Cal. Coastal Comm’n*, 252 Cal. Rptr. 3d 817, 829 (Cal. Dist. Ct. App. 2019).

¹⁴³ *Id.* at 842.

¹⁴⁴ *Id.*

¹⁴⁵ *Id.* at 848.

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protective coastal ecosystems. In *Dunn v. Cnty. of Santa Barbara*, an approved LCP acted within its authority by denying a property owner's CDP application in order to protect a "small, isolated and artificial/degraded wetland" and by requiring setbacks from the boundaries of the wetland.¹⁴⁶ However, the CCC's regulation can also complicate restoration efforts. In *Citizens for a Better Eureka v. Cal. Coastal Comm'n*, an LCP approved a development plan for a large retail, housing, and open space complex that also included the creation and restoration of an 11.89 acre wetland reserve.¹⁴⁷ However, because phase 1 of the development involved filling in an existing 5.6 acres of wetland,¹⁴⁸ the CCC could further review and condition the CDP because the highest priority must be given to environmental considerations in interpreting the Coastal Act and of all the ESHAs wetlands are afforded the most stringent protection.¹⁴⁹ Similarly, dune ecosystems can be subject to heightened protection. In *Feduniak v. Cal. Coastal Comm'n*, the CCC restricted development to 14 percent of the land on a 1.67 acre parcel and required the developers' agreement to an open space easement to preserve a dune ecosystem.¹⁵⁰ Although the developers later received permission from a local agency to expand development in violation of the easement,¹⁵¹ the CCC was not stopped from ordering the removal of the violating development and restoration of the disturbed ecosystem 18 years later.¹⁵² Thus, any restoration effort will likely need to stringently conform to the policies of an approved LCP and be planned in coordination with the CCC.

Finally, the broad interpretation of "development" used by California courts may begin to affect existing development as the coastline shifts with sea-level rise. The shifting coastline may alter access points to public beaches, areas suitable for recreational use, and the distribution of marine resources. Under *Surfrider Foundation*, any impediment to beach access will likely be considered "development" subject to review by the CCC; thus, any existing structures that interfere with public access may need to acquire a CDP and, in the process, need to mitigate the structure's impact. Furthermore, under *Pac. Palisades Bowl Mobile Ests., L.L.C.*, because the conversion of ownership over a mobile home park constitutes "development," perhaps abandonment of a structure would also constitute "development." In either case, the CCC may be acting consistently with the Legislature's mandate to "liberally construe" the Act to accomplish its objectives by requiring removal, relocation, or renovation of the existing structures if doing so is necessary to maintain balanced use of the coastal zone. Like *Ocean Harbor House Homeowners Ass'n*, the CCC could also require payments for the loss of recreational value or perhaps for the loss of aesthetic and scenic value. Any of these requirements may encourage or complicate coastal adaptation and, therefore, should be considered when planning adaptation strategies.

¹⁴⁶ *Dunn v. Cnty. of Santa Barbara*, 38 Cal. Rptr. 3d 316, 329 (Cal. Ct. App. 2006).

¹⁴⁷ *Citizens for a Better Eureka v. Cal. Coastal Comm'n*, 127 Cal. Rptr. 3d 602, 604 (Cal. Dist. Ct. App. 2011).

¹⁴⁸ *Id.* at 605.

¹⁴⁹ *Id.* at 609.

¹⁵⁰ *Feduniak v. Cal. Coastal Comm'n*, 56 Cal. Rptr. 3d 591, 595 (Cal. Dist. Ct. App. 2007).

¹⁵¹ *Id.* at 599.

¹⁵² *Id.* at 617.

C. Conclusion

In ensuring balanced utilization of the coastal zone, California’s coastal communities will need to work in partnership with the CCC as they plan coastal adaptation strategies. The Act did not foresee the challenges that coastal communities now face, but the CCC has already attempted to address concerns by adopting the Sea Level Rise Policy Guidance to help communities conform to the policies and objectives of the Act. Ultimately, however, the CCC will retain broad authority over the coastal zone.

II. THE U.S. ARMY CORPS OF ENGINEERS

While the California Coastal Commission is the primary *state* agency that might be interested in coastal adaptation projects, in a broader legal view, the ocean is inherently federal. Pursuant to the federal Submerged Lands Act of 1953,¹⁵³ states like California got title to the submerged lands out to three miles from shore, plus default control over most of the natural resources in that coastal zone. However, Congress reserved to the federal government the ability to intervene in the coastal zone, or preempt state law, for reasons of national security, international relations, navigation, or interstate commerce.

While many federal agencies have jurisdiction over some activities in the coastal zone, the one most relevant to coastal adaptation law is the U.S. Army Corps of Engineers (“Army Corps” or “Corps”). Specifically, the Army Corps has authority to protect the navigability of the coastal zone and other navigable waters pursuant to the Rivers and Harbors Act of 1899 and to regulate dredging and filling of navigable waters pursuant to the Federal Water Pollution Control Act of 1972, better known as the Clean Water Act. This section discusses each statute in turn.

A. The Rivers and Harbors Act of 1899

Congress enacted the Rivers and Harbors Act of 1899 (RHA) to promote commerce by ensuring free and open navigability across the nation’s waterways and vested the U.S. Army Corps of Engineers (Corps) with regulatory power to uphold the RHA’s policies.¹⁵⁴ Although not originally intended by Congress, sections 9¹⁵⁵ and 10¹⁵⁶ of the RHA are now being utilized as tools for environmental protection in response to environmental concerns relevant to coastal adaptation. Section 9 of the Act requires a permit from the Corps for the construction of any bridge, causeway, dam, or dike over or in any port, roadstead, haven, harbor, canal, or “navigable water of the United States.”¹⁵⁷ Section 10 prohibits any obstruction to the navigable capacity of

¹⁵³ 43 U.S.C. §§ 1301 et seq.

¹⁵⁴ Jurisdiction, U.S. Army Corps of Eng’rs, <https://www.nwp.usace.army.mil/missions/regulatory/jurisdiction.aspx>.

¹⁵⁵ 33 U.S.C. § 401 (2021).

¹⁵⁶ *Id.* at § 403.

¹⁵⁷ *Id.* at § 401.

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“any of the waters of the United States” unless authorized by Congress.¹⁵⁸ Section 10 also makes it unlawful to construct structures in any water of the United States and to excavate, fill, or alter “in any manner” any navigable water without Corps approval.¹⁵⁹ Finally, although section 13 of the RHA prohibits the discharge of “refuse” into navigable waters without Corps approval, the Corps’ permitting authority over “refuse” has been superseded by the Environmental Protection Agency (EPA) and Clean Water Act (CWA).¹⁶⁰

Under the RHA, the “navigable water of the United States” means “all places covered by the ebb and flow of the tide to the mean high water (MHW) mark in its unobstructed, natural state.”¹⁶¹ The MHW line for the Pacific coast is the average of the two daily high tides over a period of 18.6 years.¹⁶² In *Leslie Salt Co v. Froehlke*, wetlands that were cut off from navigable waters by the construction of dikes and, therefore, no longer subject to tidal action¹⁶³ were still subject to the RHA and regulation by the Corps.¹⁶⁴ Courts have also consistently found that the RHA provides broad coverage and that it should be read “charitably in light of the purpose to be served.”¹⁶⁵ Therefore, in *United States v. Milner*, the Ninth Circuit found that several coastal property owners violated the RHA by refusing to remove gray coastal armoring at the Corps’ demand¹⁶⁶ even though the RHA does not explicitly mention the maintenance of structures in navigable waters.¹⁶⁷ Although the armoring structures in *Milner* were lawfully constructed to protect the properties from sea-level rise, once the tidal boundary reached the structures, they obstructed navigable waters¹⁶⁸ and could no longer be maintained without a permit from the Corps.¹⁶⁹

The broad applications of the RHA by *Leslie Salt* and *Milner* are important because they can provide coastal communities with a means of furthering coastal adaptation strategies that provide long-term protection and co-benefits. Through *Leslie Salt*, the Corps can provide additional protection to cut off and potentially degraded wetlands that, if restored and maintained, can provide a range of protective, environmental, and recreational benefits that will further coastal adaptation. Furthermore, through *Milner*, the Corps can force private owners to mitigate or remove gray coastal armoring and, therefore, encourage alternative strategies like managed retreat and green coastal armoring that protect against the hazards presented by sea-level rise, ocean acidification, and ocean warming in sustainable ways.

¹⁵⁸ *Id.* at § 403.

¹⁵⁹ *Id.*

¹⁶⁰ Section 13, *U.S. Army Corps of Eng’rs*,

<https://www.poa.usace.army.mil/Portals/34/docs/regulatory/Section%2013.pdf>.

¹⁶¹ *Leslie Salt Co. v. Froehlke*, 578 F.2d 742, 753 (9th Cir. 1978).

¹⁶² *Id.* at 746.

¹⁶³ *Id.* at 745.

¹⁶⁴ *Id.* at 753.

¹⁶⁵ *United States v. Milner*, 583 F.3d 1174, 1191 (9th Cir. 2009).

¹⁶⁶ *Id.* at 1193.

¹⁶⁷ *Id.* at 1191.

¹⁶⁸ *Id.* at 1192.

¹⁶⁹ *Id.* at 1193.

B. Army Corps Permits in California

1. Nationwide Permits

The Corps recently issued 16 Nationwide Permits (NWP) that will expire on March 14, 2026 and is expected to reissue 40 more NWP prior to their expiration on March 18, 2022.¹⁷⁰ These NWP facilitate coastal development, maintenance of development, scientific research, gray coastal armoring, and green coastal armoring. NWP 29, 39, and 42 permit the discharge of dredged or fill materials into non-tidal waters for the construction of residential,¹⁷¹ commercial and institutional,¹⁷² and recreational development,¹⁷³ respectively. The NWP also permit attendant or support facilities but, in total, the loss of non-tidal waters cannot be greater than half of an acre and discharge into non-tidal wetlands is not authorized.¹⁷⁴ These NWP require: (1) pre-construction notification to the district engineer, (2) individual certification or waiver thereof from the California State Water Resources Control Board (SWRCB), EPA, Hoopa Valley Indian Reservation, and Dry Creek Rancheria Band of Pomo Indians, and (3) Coastal Zone Management Act (CZMA) consistency determinations from the California Coastal Commission (CCC) or San Francisco Bay Conservation and Development Commission (BCDC).¹⁷⁵ Furthermore, NWP 29 and 39 are prohibited within the San Francisco Bay diked baylands.¹⁷⁶ NWP 43, which permits discharge of dredged or fill materials into non-tidal waters for the construction of stormwater management facilities, is under similar restrictions.¹⁷⁷ However, NWP 43 does not authorize discharge into perennial streams,¹⁷⁸ and, instead of individual certification or waiver thereof, applicants must provide notice and opportunity for inspection to the EPA and applicants cannot proceed with projects involving point source discharge into active channels of water identified as impaired.¹⁷⁹

NWP 3 permits the repair, rehabilitation, or replacement of any previously authorized and currently serviceable structure, provided it will be put to same previously authorized use and

¹⁷⁰ Final 2021 Nationwide Permit Regional Conditions for the State of California, U.S. Army Corps of Eng'rs (Mar. 8, 2021),

<https://www.spn.usace.army.mil/Missions/Regulatory/Public-Notices/Article/2529243/final-2021-nationwide-permit-regional-conditions-for-the-state-of-california/>.

¹⁷¹ Decision Document Nationwide Permit 29 at 1, U.S. Army Corps of Eng'rs (2021),

<https://usace.contentdm.oclc.org/utis/getfile/collection/p16021coll7/id/16836>.

¹⁷² Decision Document Nationwide Permit 39 at 1, U.S. Army Corps of Eng'rs (2021),

<https://usace.contentdm.oclc.org/utis/getfile/collection/p16021coll7/id/16837>.

¹⁷³ Decision Document Nationwide Permit 42 at 1, U.S. Army Corps of Eng'rs (2021),

<https://usace.contentdm.oclc.org/utis/getfile/collection/p16021coll7/id/16839>.

¹⁷⁴ *Id.*; Decision Document Nationwide Permit 29, *supra* note 167; Decision Document Nationwide Permit 39, *supra* note 168.

¹⁷⁵ Final 2021 Nationwide Permit Regional Conditions for the State of California, *supra* note 166.

¹⁷⁶ *Id.*

¹⁷⁷ *Id.*; Decision Document Nationwide Permit 43 at 1, U.S. Army Corps of Eng'rs (2021),

<https://usace.contentdm.oclc.org/utis/getfile/collection/p16021coll7/id/16840>.

¹⁷⁸ Decision Document Nationwide Permit 43, *supra* note 173.

¹⁷⁹ Final 2021 Nationwide Permit Regional Conditions for the State of California, *supra* note 166.

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qualifies for maintenance under CWA section 404(f).¹⁸⁰ Minor deviations in the structure's configuration due to, among other things, the requirements of other regulatory agencies or current safety standards are also permitted.¹⁸¹ Furthermore, structures destroyed or damaged by disaster events can only be repaired, rehabilitated, or replaced within two years of the disaster unless the two year limit is waived by the district engineer.¹⁸² Permittees must submit a pre-construction notification to the district engineer, including information regarding the original design capacities and configurations of the outfalls, intakes, small impoundments, and canals.¹⁸³

NWP 31 permits the discharge of dredged or fill materials resulting from the maintenance of existing flood control facilities that were previously authorized by the Corps, did not require a permit at the time of construction, or were constructed by the Corps and transferred to a non-Federal sponsor for operation and maintenance.¹⁸⁴ All dredged and excavated materials must be deposited and retained in an area that has no waters of the United States unless approved by the district engineer.¹⁸⁵ Permittees must submit a pre-construction notification to the district engineer, including a description of the physical characteristic of the project, or "maintenance baseline."¹⁸⁶ The district engineer must then approve the maintenance baseline and ensure that the project utilizes management practices that minimize any adverse environmental impacts.¹⁸⁷ Furthermore, the district engineer can require a one-time mitigation to ensure that any adverse environmental impacts are minimal.¹⁸⁸ In emergency situations, NWP 31 may be used to authorize maintenance activities without approval of the maintenance baseline.¹⁸⁹

NWP 5 allows the use of scientific measurement devices to record scientific data, such as water quality testing and improvement devices, tide and current gages, and biological observation devices.¹⁹⁰ Any discharge from such devices is limited to 25 cubic yards and, upon completion of any measurement, any devices must be removed and the site must be restored to pre-construction elevations.¹⁹¹ Similarly, NWP 6 allows survey activities, such as exploratory trenching for mapping or sampling exposed bedrock or substrate, soil surveys,

¹⁸⁰ *Decision Document Nationwide Permit 3 at 1-2*, U.S. Army Corps of Eng'rs (2017), <https://usace.contentdm.oclc.org/utis/getfile/collection/p16021coll7/id/6716>.

¹⁸¹ *Id.* at 1.

¹⁸² *Id.*

¹⁸³ *Id.* at 2.

¹⁸⁴ *Decision Document Nationwide Permit 31 at 1*, U.S. Army Corps of Eng'rs (2017), <https://usace.contentdm.oclc.org/utis/getfile/collection/p16021coll7/id/6743>.

¹⁸⁵ *Id.*

¹⁸⁶ *Id.* at 2-3.

¹⁸⁷ *Id.* at 1-2.

¹⁸⁸ *Id.* at 2.

¹⁸⁹ *Id.*

¹⁹⁰ *Decision Document Nationwide Permit 5 at 1*, U.S. Army Corps of Eng'rs (2017), <https://usace.contentdm.oclc.org/utis/getfile/collection/p16021coll7/id/6718>.

¹⁹¹ *Id.*

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and sample plots for wetland delineations.¹⁹² Surveyed areas must be restored to their pre-construction elevation and must not drain any water of the United States.¹⁹³ Furthermore, any discharge cannot exceed a tenth of an acre and the discharge of drilling mud may also require a permit under section 402 of the CWA.¹⁹⁴ For wetlands, the top 6 to 12 inches of the trench should be backfilled with topsoil from the trench.¹⁹⁵ Finally, drilling and discharge for oil and gas exploration are not authorized.¹⁹⁶

NWP 13 permits bank stabilization activities necessary for erosion control or prevention, such as rip rap, revetment, bulkheads, and vegetative stabilization, provided: (1) no material is placed in excess of the minimum needed for erosion protection, (2) the activity is no more than 500 feet in length unless waived by the district engineer, (3) the activity will not exceed an average of one cubic yard per running foot below the plane of the ordinary high water mark or high tide line unless waived by the district engineer, (4) the activity does not involve discharges of dredged or fill material into special aquatic sites unless waived by the district engineer, (5) no material is of a type or placed in a manner that will impair surface water flow into or out of any waters of the United States, (6) no material is placed in a manner that will be eroded by normal or expected high flows, (7) no material is placed in a manner that will be eroded by high flows, (8) appropriate native plants are used for bioengineered or vegetative bank stabilizations, (9) the activity is not a stream channelization activity, and (10) the activity is properly maintained.¹⁹⁷ Furthermore, the permittee must submit a pre-construction notification to the district engineer if the activity involves discharges into special aquatic sites, is in excess of 500 feet in length, or will involve the discharge of greater than an average of one cubic yard per running foot below the plane of the ordinary high water mark or high tide line.¹⁹⁸

NWP 27 permits activities in the waters of the United States associated with the restoration, enhancement, or establishment of tidal and non-tidal wetlands, riparian areas, open waters, and streams, provided the activities result in net increases in aquatic resource functions and services.¹⁹⁹ Any activity must also resemble an ecological reference such as an intact habitat of the same type that exists in the same region or a conceptual model developed from regional ecological knowledge.²⁰⁰ This NWP allows the relocation of non-tidal waters within the project site but does not authorize the conversion of a stream or wetland to another habitat type or the relocation and conversation of tidal waters to other aquatic uses.²⁰¹ The

¹⁹² *Decision Document Nationwide Permit 6* at 1, U.S. Army Corps of Eng'rs (2017), <https://usace.contentdm.oclc.org/utis/getfile/collection/p16021coll7/id/6719>.

¹⁹³ *Id.*

¹⁹⁴ *Id.*

¹⁹⁵ *Id.*

¹⁹⁶ *Id.*

¹⁹⁷ *Decision Document Nationwide Permit 13* at 1-2, U.S. Army Corps of Eng'rs (2017), <https://usace.contentdm.oclc.org/utis/getfile/collection/p16021coll7/id/6726>.

¹⁹⁸ *Id.* at 2.

¹⁹⁹ *Decision Document Nationwide Permit 27* at 1, U.S. Army Corps of Eng'rs (2017), <https://usace.contentdm.oclc.org/utis/getfile/collection/p16021coll7/id/6739>.

²⁰⁰ *Id.*

²⁰¹ *Id.* at 2.

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permittee must also submit a pre-construction notification to the district engineer unless: (1) The activity is conducted on non-Federal public lands and private lands in accordance with a binding agreement between the landowner and the U.S. Fish and Wildlife Service (FWS), the Natural Resources Conservation Service (NRCS), the Farm Service Agency (FSA), the National Marine Fisheries Service (NMFS), the National Ocean Service (NOS), U.S. Forest Service (USFS), or their designated state cooperation agencies; (2) The activity is a voluntary stream or wetland restoration, enhancement, or establishment documented by the NRCS or USDA Technical Service Provider pursuant to NRCS Field Office Technical Guide standards; or (3) The activity is a reclamation of surface coal mine lands in accordance with a Surface Mining Control and Reclamation Act (SMCRA) permit issued by the Office of Surface Mining Reclamation and Enforcement (OSMRE) or an applicable state agency.²⁰² Furthermore, activities outside of these categories as well as voluntary stream restoration, enhancement, or establishment require a separate permit for any reversion.²⁰³ Finally, for all activities that do require a pre-construction notification, a permittee must submit to the district engineer a report including a binding agreement or project description, NRCS or USDA Technical Service Provider documentation, or a SMCRA permit issued by OSMRE or an applicable state agency.²⁰⁴ The report must also include information on baseline ecological conditions on the project site and must be submitted at least 30 days prior to commencing activities authorized by this NWP.²⁰⁵

NWP 37 permits emergency watershed protection and rehabilitation done by or funded by the NRCS for a situation requiring immediate action under its emergency Watershed Protection Program, the USFS under its Burned-Area Emergency Rehabilitation Handbook, the Department of the Interior (DOI) for wildland fire management burned area emergency stabilization and rehabilitation, the Office of Surface Mining or state approved programs for abandoned mine land reclamation under the SMCRA, or the FSA under its Emergency Conservation Program.²⁰⁶ The permittee must submit a pre-construction notification and either wait for approval by the district engineer or for 45 calendar days before proceeding unless there is an unacceptable hazard to life or a significant loss of property or economic hardship.²⁰⁷

NWP 45 authorizes discharges of dredged or fill material into all waters of the United States for activities associated with the restoration of upland areas damaged by storms, floods, or other discrete events.²⁰⁸ The restoration can include bank stabilization but it cannot exceed the ordinary high water mark or high tide line that existed before the damage occurred and it

²⁰² *Id.* at 3.

²⁰³ *Id.* at 2-3.

²⁰⁴ *Id.* at 3.

²⁰⁵ *Id.*

²⁰⁶ *Decision Document Nationwide Permit 37* at 1, U.S. Army Corps of Eng'rs (2017), <https://usace.contentdm.oclc.org/utills/getfile/collection/p16021coll7/id/6749>.

²⁰⁷ *Id.* at 1-2.

²⁰⁸ *Decision Document Nationwide Permit 45* at 1, U.S. Army Corps of Eng'rs (2017), <https://usace.contentdm.oclc.org/utills/getfile/collection/p16021coll7/id/6757>.

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cannot include beach restoration or nourishment.²⁰⁹ The permittee must submit a pre-construction notification, including documentation justifying the extent of the proposed restoration, to the district engineer within 12 months of the date of damage unless waived.²¹⁰ The district engineer can determine the extent of pre-existing conditions and the extent of authorized restoration work.²¹¹ Restoration must commence within 2 years of the date of damage unless waived and restoration cannot be performed to reclaim lands lost to normal erosion processes.²¹² Finally, uplands can be replaced without a CWA section 404 permit.²¹³

NWP 54 authorizes structures, work, and discharge of dredged or fill material in navigable waters for the construction and maintenance of living shorelines to stabilize banks and shores in coastal waters.²¹⁴ Living shorelines must have a substantial biological component, should maintain continuity of the land-water interface, and should retain or enhance shoreline ecological processes.²¹⁵ A project authorized by this NWP: (1) must not have a structure or fill area that extends beyond the mean low water line or ordinary high water mark unless waived by the district engineer, (2) must be no longer than 500 feet along the bank unless waived by the district engineer, (3) must ensure materials are anchored or installed in a manner that prevents relocation in most conditions, (4) must use appropriate native plants if it consists of wetland, (5) must involve only the minimum necessary discharge, (6) must construct any breakwater or similar structure at the minimum size necessary for the protection of fringe wetlands, (7) must be designed, constructed, and maintained so that it has no more than a minimal adverse effect on water movement and movement of aquatic organisms between the waterbody and the shore, and (8) must be properly maintained.²¹⁶ The permittee must submit a pre-construction notification to the district engineer including a delineation of special aquatic sites.²¹⁷ Pre-construction notice is not required for maintenance and repair activities.²¹⁸ Finally, outside of coastal waters, nature-based bank stabilization techniques may be authorized by NWP 13.²¹⁹

The Army Corps' nationwide permits are not valid in a specific state until and to the extent that the state certifies the permits pursuant to Section 401 of the Clean Water Act.²²⁰ California has a long history of not certifying Army Corps nationwide permits, making them ineffective in California, or of certifying them with conditions. The following table replicates

²⁰⁹ *Id.*

²¹⁰ *Id.*

²¹¹ *Id.*

²¹² *Id.*

²¹³ *Id.*

²¹⁴ *Decision Document Nationwide Permit 54* at 1, U.S. Army Corps of Eng'rs (2017), <https://usace.contentdm.oclc.org/utis/getfile/collection/p16021coll7/id/6765>.

²¹⁵ *Id.* at 1-2.

²¹⁶ *Id.* at 2.

²¹⁷ *Id.*

²¹⁸ *Id.*

²¹⁹ *Id.*

²²⁰ 33 U.S.C. § 1341(a).

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the Sacramento District of the U.S. Army Corps’ information on the status of the Army Corps’ nationwide permits in California.²²¹

Table 1: Status of the Army Corps’ nationwide permits in California

Nationwide Permit Number	Version	Expiration date	U.S. Environmental Protection Agency (EPA), Region 9	State Water Resources Control Board (SWRCB)	Kletsel Dehe Wintun Nation
NWP 1 Aids to Navigation	2021	3/14/26	Not certified	Certified subject to conditions	Not certified
NWP 2 Structures in Artificial Canals	2021	3/14/26	Not certified	Not certified	Not certified
NWP 3 Maintenance	2021	3/14/26	Certified subject to conditions	Activities under paragraph (a) certified subject to conditions	Not certified
NWP 4 Fish & Wildlife Activities	2021	3/14/26	Expressly waived	Certified subject to conditions	Certified subject to conditions
NWP 5 Scientific Measuring Devices	2021	3/14/26	Certified subject to conditions	Certified subject to conditions	Certified subject to conditions
NWP 6 Survey Activities	2021	3/14/26	Certified subject to conditions	Certified subject to conditions	Not certified
NWP 7 Outfall/Intake Structures	2021	3/14/26	Certified subject to conditions	Not certified	Certified subject to conditions
NWP 8 Oil/Gas Structures on the OCS	2021	3/14/26	Not certified	Not certified	Not certified
NWP 9 Structures in Fleeting/Anchorage Areas	2021	3/14/26	Not certified	Certified subject to conditions	Not certified
NWP 10 Mooring Buoys	2021	3/14/26	Not certified	Certified subject to conditions	Not certified

²²¹ 401 Water Quality Certification Status of the Nationwide Permits in the State of California, Sacramento District, U.S. Army Corps of Engineers, <https://www.spk.usace.army.mil/Missions/Regulatory/Permitting/Nationwide-Permits/NWP-CA-Summary-Table/>.

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NWP 11 Temporary Recreational Structures	2021	3/14/26	Not certified	Certified subject to conditions	Not certified
NWP 12 Oil/Gas Utility Lines	2021	3/14/26	Not certified	Not certified	Not certified
NWP 13 Bank Stabilization	2021	3/14/26	Certified subject to conditions	Not certified	Not certified
NWP 14 Road Crossings	2021	3/14/26	Certified subject to conditions	Certified subject to conditions	Certified subject to conditions
NWP 15 USCG Approved Bridges	2021	3/14/26	Expressly waived	Not certified	Certified subject to conditions
NWP 16 Return Water from Upland Disposal	2021	3/14/26	Expressly waived	Not certified	Certified subject to conditions
NWP 17 Hydropower Projects	2021	3/14/26	Expressly waived	Not certified	Certified subject to conditions
NWP 18 Minor Discharges	2021	3/14/26	Certified subject to conditions	Not certified	Not certified
NWP 19 Minor Dredging	2021	3/14/26	Certified subject to conditions	Not certified	Certified subject to conditions
NWP 20 Oil/HazMat Response Activities	2021	3/14/26	Certified subject to conditions	Certified subject to conditions	Certified subject to conditions
NWP 21 Surface Coal Mining	2021	3/14/26	Not certified	Not certified	Not certified
NWP 22 Removal of Vessels	2021	3/14/26	Expressly waived	Certified subject to conditions	Certified subject to conditions
NWP 23 Approved Categorical Exclusions	2021	3/14/26	Certified subject to conditions	Not certified	Certified subject to conditions
NWP 24 Tribal/State Admin. 404 Program	2021	3/14/26	Not certified	Not certified	Not certified
NWP 25 Structural Discharges	2021	3/14/26	Certified subject to conditions	Not certified	Certified subject to conditions
NWP 27 Aquatic Habitat Restoration	2021	3/14/26	Certified subject to conditions	Not certified	Certified subject to conditions

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NWP 28 Modification of Existing Marinas	2021	3/14/26	Not certified	Certified subject to conditions	Not certified
NWP 29 Residential Developments	2021	3/14/26	Not certified	Not certified	Not certified
NWP 30 Moist Soil Management for Wildlife	2021	3/14/26	Expressly waived	Not certified	Certified subject to conditions
NWP 31 Maintenance of Flood Control Facilities	2021	3/14/26	Certified subject to conditions	Not certified	Certified subject to conditions
NWP 32 Completed Enforcement Actions	2021	3/14/26	Certified subject to conditions	Certified subject to conditions	Certified subject to conditions
NWP 33 Temporary Construction, Access, and Dewatering	2021	3/14/26	Certified subject to conditions	Not certified	Certified subject to conditions
NWP 34 Cranberry Production Activities	2021	3/14/26	Expressly waived	Not certified	Certified subject to conditions
NWP 35 Maintenance Dredging of Existing Basins	2021	3/14/26	Not certified	Not certified	Not certified
NWP 36 Boat Ramps	2021	3/14/26	Certified subject to conditions	Certified subject to conditions	Certified subject to conditions
NWP 37 Emergency Watershed Protection and Rehabilitation	2021	3/14/26	Certified subject to conditions	Not certified	Certified subject to conditions
NWP 38 Cleanup of Hazardous and Toxic Waste	2021	3/14/26	Certified subject to conditions	Not certified	Not certified
NWP 39 Commercial and Industrial Developments	2021	3/14/26	Not certified	Not certified	Not certified
NWP 40 Agricultural Activities	2021	3/14/26	Not certified	Not certified	Not certified
NWP 41 Reshaping Existing Drainage Ditches	2021	3/14/26	Certified subject to conditions	Not certified	Certified subject to conditions
NWP 42 Recreational Facilities	2021	3/14/26	Not certified	Not certified	Not certified

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NWP 43 Stormwater Management Facilities	2021	3/14/26	Certified subject to conditions	Not certified	Not certified
NWP 44 Mining Activities	2021	3/14/26	Not certified	Not certified	Not certified
NWP 45 Repair of Uplands Damaged by Discrete Events	2021	3/14/26	Certified subject to conditions	Not certified	Certified subject to conditions
NWP 46 Discharges in Ditches	2021	3/14/26	Certified subject to conditions	Not certified	Certified subject to conditions
NWP 48 Shellfish Mariculture	2021	3/14/26	Not certified	Not certified	Not certified
NOTE: There is no NWP 47					
NWP 49 Coal Remining Activities	2021	3/14/26	Expressly waived	Not certified	Certified subject to conditions
NWP 50 Underground Coal Mining	2021	3/14/26	Not certified	Not certified	Not certified
NWP 51 Land-Based Renewable Energy Generation Facilities	2021	3/14/26	Not certified	Not certified	Not certified
NWP 52 Water-Based Renewable Energy Generation Facilities	2021	3/14/26	Not certified	Not certified	Not certified
NWP 53 Removal of Low-Head Dams	2021	3/14/26	Expressly waived	Not certified	Certified subject to conditions
NWP 54 Living Shorelines	2021	3/14/26	Expressly waived	Certified subject to conditions	Certified subject to conditions
NWP 55 Seaweed Mariculture Activities	2021	3/14/26	Not certified	Not certified	Not certified
NWP 56 Finfish Mariculture Activities	2021	3/14/26	Not certified	Not certified	Not certified
NWP 57 Electric Utility and Telecommunication Activities	2021	3/14/26	Not certified	Not certified	Not certified
NWP 58 Water/Other Substance Utility Lines	2021	3/14/26	Not certified	Not certified	Not certified
NWP 59 Water Reclamation and Reuse Facilities	2021	3/14/26	Certified subject to conditions	Not certified	Certified subject to conditions

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The Corps also issues Regional General Permits (RGPs) through its Los Angeles, Sacramento, and San Francisco Districts. In Los Angeles, RGP 41 may be particularly relevant to the restoration of protective ecosystems. RGP 41 authorizes the mechanized removal of invasive plant species in areas that are isolated or are at least ½ an acre in size and that contain 50% or more relative or canopy cover of exotic plant species.²²² This RGP is further limited by the percentage of infestation, the presence of endangered or threatened species, and whether the proposed project is conducted during the migratory bird breeding season.²²³ Notification to the Corps requesting authorization under this RGP also requires additional information such as a project description, site description, and copies of letters to other agencies that inquire about, among other things, the presence of sites listed in the National Historic Register or species listed as endangered.²²⁴ This RGP expires on September 5, 2024,²²⁵ it prohibits activities that substantially disrupt the movement of indigenous aquatic life,²²⁶ and it prohibits activities causing more than a minimal adverse effect on navigation as well as activities that interfere with the public's right to free navigation.²²⁷

RGP 63 authorizes discharges of dredged or fill material into U.S. waters, including wetlands, for necessary repair and protection measures in emergency situations that present an unacceptable hazard to life or threat of significant property loss.²²⁸ This RGP expires on November 19, 2023 and all authorized work must complete within 60 days of that date.²²⁹ The permittee must provide pre-construction notice to the district engineer, including personal information, location, project description, and emergency description.²³⁰ The district engineer will then provide a copy to the offices of the EPA, FWS, NMFS, CCC, and other coordinating agencies or affected Native American territories, as appropriate.²³¹ The district engineer will also determine any appropriate mitigation measures such as reducing the project's size or establishing buffer zones to ensure that discharges are minimized.²³² However, the district engineer can deny the application if they determine that the activity will result in more than minimal individual or cumulative adverse environmental effects or that the project is contrary to the public interest.²³³ Once authorized, the project must be initiated

²²² *Department of the Army Regional General Permit Number 41 for Mechanized Removal of Invasive, Exotic Plants (Exotics) From Waters of the U.S.* 1, 3, U.S. Army Corps of Eng'rs (Sept. 5, 2019), https://www.spl.usace.army.mil/Portals/17/docs/regulatory/RGP/RGP41_05Sep2019.pdf.

²²³ *Id.* at 3-4.

²²⁴ *Id.* at 5.

²²⁵ *Id.*

²²⁶ *Id.* at 5-6.

²²⁷ *Id.* at 6.

²²⁸ *Department of the Army Regional General Permit Number 63 for Repair and Protection Activities in Emergency Situations 1*, U.S. Army Corps of Eng'rs (Nov. 19, 2018), https://www.spl.usace.army.mil/Portals/17/docs/regulatory/RGP/RGP63_Permit_19Nov2018.pdf?ver=2018-11-19-173731-523.

²²⁹ *Id.*

²³⁰ *Id.* at 2.

²³¹ *Id.* at 3.

²³² *Id.* at 3-4.

²³³ *Id.* at 4.

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within 14 days, representatives from the Corps and other agencies must be allowed to inspect the activity at any time, and no activity may impair tribal rights.²³⁴

Other RGPs such as 24,²³⁵ 30,²³⁶ 54,²³⁷ and 100²³⁸ permit certain coastal communities to perform minor maintenance on beaches or on existing structures in ports, harbors, and along navigable waters with the same or similar general conditions. Permittees must maintain the authorized activity in good condition and in conformance with the terms and conditions of the permit, abandonment requires authorization and potentially restoration, the Corps must be notified of any historic or archeological remains found while accomplishing the authorized activity, property transfer requires validation, conditioned water quality certifications must be followed, and representatives from the Corps must be allowed to inspect the activity at any time.²³⁹

²³⁴ *Id.* at 5.

²³⁵ *Department of the Army Permit*, U.S. Army Corps of Eng'rs (Feb. 1, 2018), https://www.spl.usace.army.mil/Portals/17/docs/regulatory/RGP/RGP24_SPL-2011-01154_25Jan2023.pdf?ver=2018-02-07-181211-977 (Ventura Port District Maintenance).

²³⁶ *Department of the Army Permit*, U.S. Army Corps of Eng'rs, https://www.spl.usace.army.mil/Portals/17/docs/regulatory/RGP/RGP030_SPL-1999-15256_20161110.pdf?ver=2017-06-08-161827-757 (City of Long Beach Maintenance).

²³⁷ *Department of the Army Regional General Permit Number 54*, U.S. Army Corps of Eng'rs (Dec. 21, 2020), https://www.spl.usace.army.mil/Portals/17/docs/regulatory/RGP/RGP54_22Dec2020.pdf (City of Newport Beach Maintenance).

²³⁸ *Department of the Army Regional General Permit (RGP) Number 100*, U.S. Army Corps of Eng'rs (Dec. 21, 2020), https://www.spl.usace.army.mil/Portals/17/docs/regulatory/RGP/RGP54_22Dec2020.pdf (Orange County Public Works Countywide Maintenance Program).

²³⁹ *Id.*

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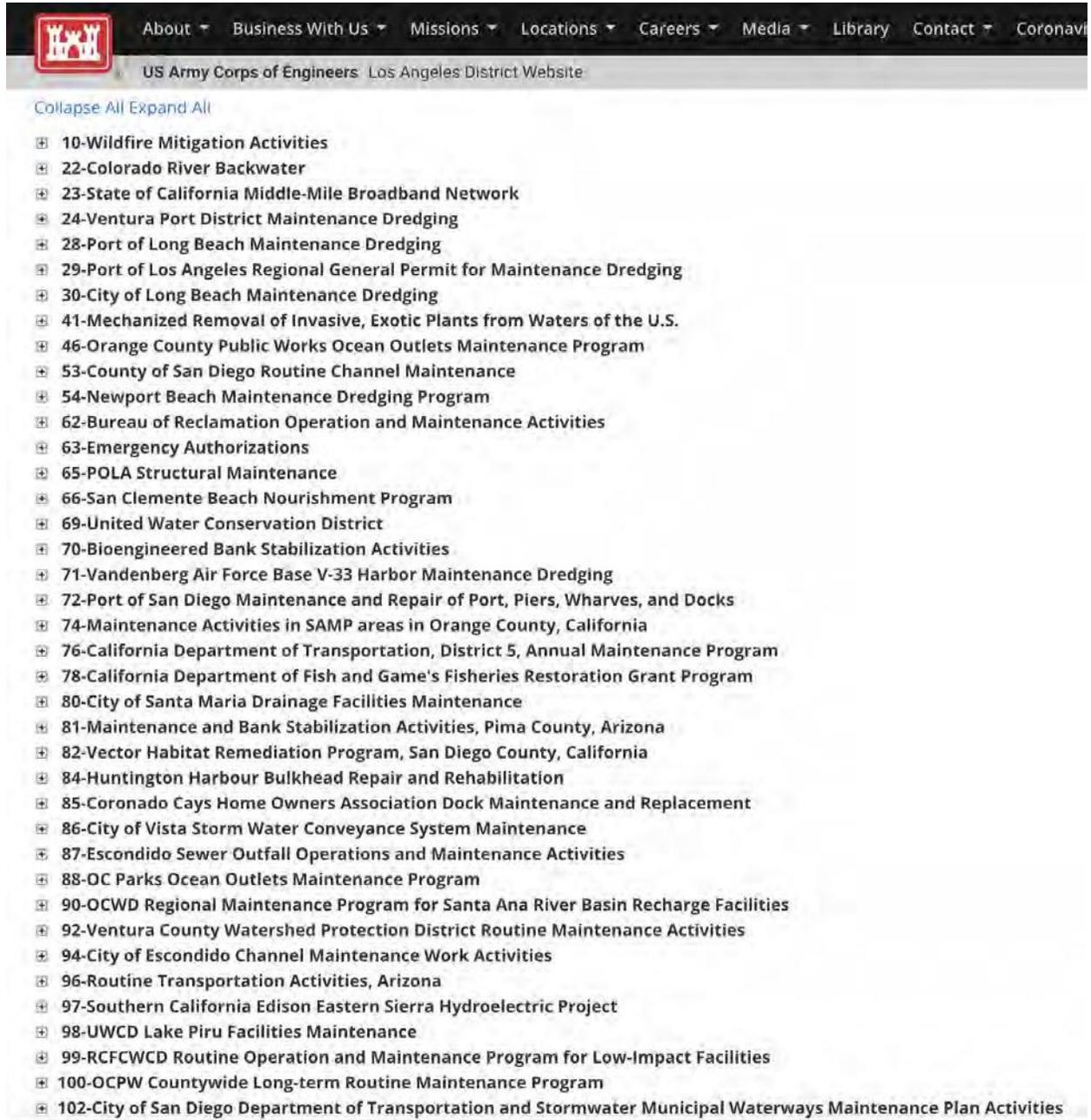


Figure 8: The U.S. Army Corps of Engineers Regional General Permits (RGPs) in Los Angeles, CA

3. Regional Permits: San Francisco District

RGP 3 authorizes state agencies and landowners to place and maintain levees, bulkheads, and riprap and to conduct activities within the Suisun Marsh to expand or improve the wetland.²⁴⁰

²⁴⁰ Department of the Army Regional General Permit Number 3 for the Suisun Marsh Managed Wetlands Operations and Maintenance Project 1-6, U.S. Army Corps of Eng'rs,

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This RGP expires on March 1, 2023 and permittees must maintain the authorized activity in good condition and in conformance with the terms and conditions of the permit.²⁴¹ Furthermore, abandonment requires authorization and potentially restoration, the Corps must be notified of any historic or archeological remains found while accomplishing the authorized activity, conditioned water quality certifications must be followed, representatives from the Corps must be allowed to inspect the activity at any time, and the permittee must remove, relocate, or alter the authorized work if required by future operations of the U.S. or by an unreasonable obstruction to the free navigation of navigable waters.²⁴² Activities must be authorized prior to being commenced.²⁴³

RGP 5 authorizes discharges of dredged or fill material into U.S. waters, including wetlands, for necessary repair and protection measures in emergency situations that present an unacceptable hazard to life or threat of significant property loss.²⁴⁴ This RGP expires on October 15, 2024, construction must commence within 14 days of approval, work must be completed within 180 days of enrollment unless an extension is approved, all construction should be kept to the minimum necessary, failure to comply with conditions of the RGP can result in administrative and civil liability, authorized work cannot violate water quality standards, and the permittee must comply with additional monitoring requirements.²⁴⁵

RGP 6 permits construction in waters and wetlands adjacent to existing levees to perform maintenance on the levees.²⁴⁶ This RGP expires on April 2, 2024.²⁴⁷ Permittees must maintain the authorized activity in good condition and in conformance with the terms and conditions of the permit, abandonment requires authorization and potentially restoration, the Corps must be notified of any historic or archeological remains found while accomplishing the authorized activity, property transfer requires validation, conditioned water quality certifications must be followed, representatives from the Corps must be allowed to inspect the activity at any time, conditions specified by the BCDC must be followed, and the permittee must remove, relocate, or alter the authorized work if required by future operations of the U.S. or by an unreasonable obstruction to the free navigation of navigable waters.²⁴⁸

https://www.spn.usace.army.mil/Portals/68/docs/regulatory/RGP/RGP03_2018.pdf?ver=tjL1RLiedFij5GtEU9njgg%3d%3d.

²⁴¹ *Id.* at 7.

²⁴² *Id.*

²⁴³ *United States v. Sweeney*, 483 F. Supp. 3d 871, 930 (9th Cir. 2020).

²⁴⁴ *Water Quality Order No. 2019-0044-Exec Clean Water Act Section 401 Water Quality Certification and Order 4*, State Water Res. Control Bd.,

https://www.waterboards.ca.gov/water_issues/programs/cwa401/docs/RGP_5_Signed.pdf.

²⁴⁵ *Id.* at 10-12.

²⁴⁶ *Department of the Army Permit Regional General Permit 6* at 1, U.S. Army Corps of Eng'rs, https://www.spn.usace.army.mil/Portals/68/docs/regulatory/RGP/RGP6_2019.pdf?ver=BDJbxUSxWrzPpN8Rkrnwyw%3d%3d.

²⁴⁷ *Id.*

²⁴⁸ *Id.* at 1-2.

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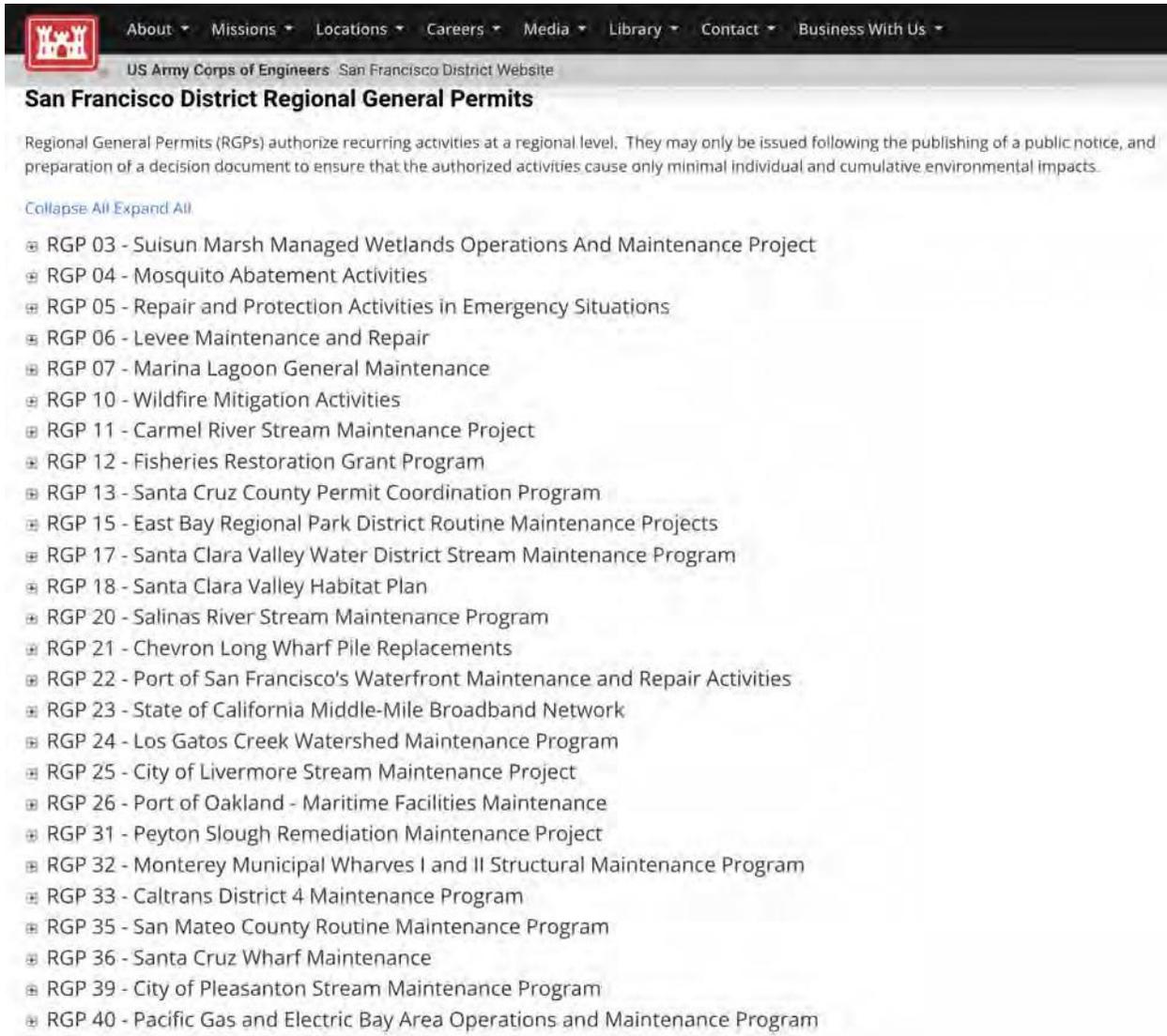


Figure 9: The U.S. Army Corps of Engineers Regional General Permits (RGPs) in San Francisco, CA

RGPS 15,²⁴⁹ 22,²⁵⁰ and 26²⁵¹ permit certain coastal communities to perform minor maintenance on existing structures in ports and along navigable waters and to perform minor construction with the same or similar general conditions. Permittees must complete the activity before expiration of the permit unless an extension is granted, permittees must

²⁴⁹ Department of the Army Regional General Permit 15, U.S. Army Corps of Eng'rs, https://www.spn.usace.army.mil/Portals/68/docs/regulatory/RGP/RGP15_2018.pdf?ver=DODuvmJQ_Mh4GLUYjxNCcw%3d%3d (East Bay Regional Park).

²⁵⁰ Department of the Army Permit 22, U.S. Army Corps of Eng'rs, https://www.spn.usace.army.mil/Portals/68/docs/regulatory/RGP/RGP22_2017.pdf (Port of San Francisco).

²⁵¹ Department of the Army Regional General Permit (RGP 26), U.S. Army Corps of Eng'rs, https://www.spn.usace.army.mil/Portals/68/docs/regulatory/RGP/RGP26_2018.pdf (Port of Oakland).

maintain the authorized activity in good condition and in conformance with the terms and conditions of the permit, abandonment requires authorization and potentially restoration, the Corps must be notified of any historic or archeological remains found while accomplishing the authorized activity, property transfer requires validation, conditioned water quality certifications must be followed, representatives from the Corps must be allowed to inspect the activity at any time, and the permittee must remove, relocate, or alter the authorized work if required by future operations of the U.S. or by an unreasonable obstruction to the free navigation of navigable waters.²⁵²

4. Regional Permits: Sacramento District

RGP 8 authorizes discharges of dredged or fill material into U.S. waters, including wetlands, for necessary repair and protection measures in emergency situations that present an unacceptable hazard to life or threat of significant property loss.²⁵³ Any activity must be the minimum necessary to alleviate the immediate emergency unless otherwise determined by the Corps.²⁵⁴ Bank stabilization must include green, bioengineered techniques and minor deviations in structure or fill area are permitted.²⁵⁵ The permittee must also provide notice to the Corps, begin work within 14 days of authorization, and complete work within 180 days unless granted an extension by the Corps.²⁵⁶ Furthermore, the permittee must allow inspection, must not impair tribal rights, must comply with water quality conditions, must not jeopardize threatened or endangered species, cannot disrupt indigenous aquatic life, and should comply with laws protecting migratory birds.²⁵⁷ Finally, the permittee must comply with other laws such as historic preservation laws if applicable structures are found on site and must submit a post-project report to the Corps.²⁵⁸

RGP 3 expedites the installation, repair, modification, replacement, or removal of pile supported docks, floating docks, and associated structures if such activity has a minimal impact on the aquatic environment.²⁵⁹ The permittee must submit pre-construction notice and will receive authorization within 30 days.²⁶⁰ Similar to RGP 8, the permittee must comply with inspections, tribal rights, and policies to protect native species.²⁶¹ The structures must

²⁵² *Id.*

²⁵³ *Regional General Permit 8* at 1, U.S. Army Corps of Eng'rs, https://www.spk.usace.army.mil/Portals/12/documents/regulatory/gp/RGP-08/2018-RGP08/RGP8-sign ed.pdf?ver=B_7iSIa_Oa5xWkddwX-mXA%3d%3d.

²⁵⁴ *Id.* at 2.

²⁵⁵ *Id.*

²⁵⁶ *Id.* at 3.

²⁵⁷ *Id.* at 3-4, 6.

²⁵⁸ *Id.* at 5, 7.

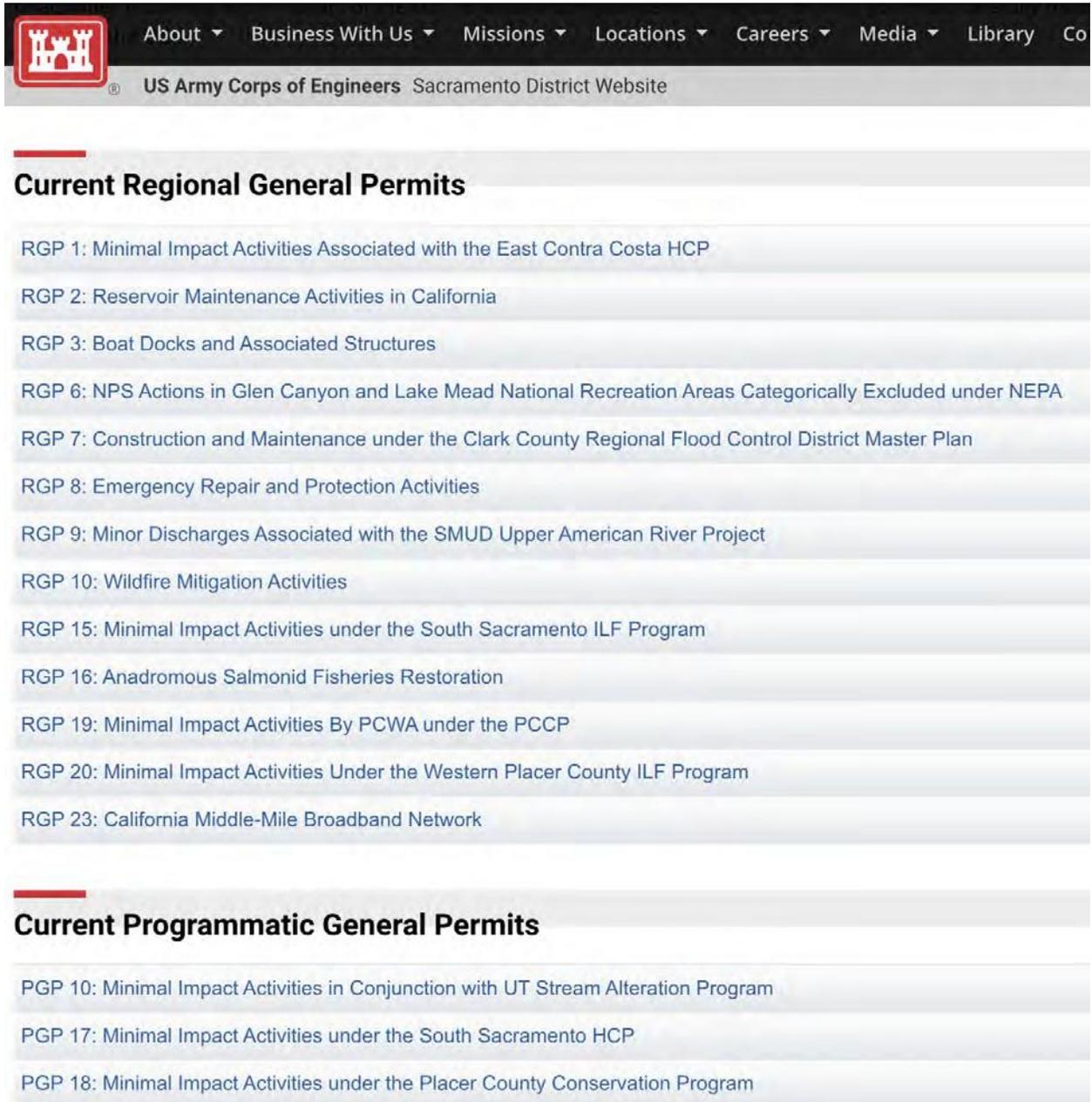
²⁵⁹ *General Permit 3* at 1, U.S. Army Corps of Eng'rs, <https://www.spk.usace.army.mil/Portals/12/documents/regulatory/gp/RGP3/2019%20RGP%203%20-%20Full%20Text.pdf?ver=2019-08-22-194945-897>.

²⁶⁰ *Id.* at 5, 7.

²⁶¹ *Id.* at 3-4.

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not interfere with the public's right to access and free navigation on navigable waters, and the structures must comply with building restrictions such as size or prohibition on enclosure.²⁶²



The screenshot shows the top navigation bar of the US Army Corps of Engineers Sacramento District Website. The navigation menu includes: About, Business With Us, Missions, Locations, Careers, Media, Library, and Co. Below the navigation bar, the page title reads "US Army Corps of Engineers Sacramento District Website".

Current Regional General Permits

- RGP 1: Minimal Impact Activities Associated with the East Contra Costa HCP
- RGP 2: Reservoir Maintenance Activities in California
- RGP 3: Boat Docks and Associated Structures
- RGP 6: NPS Actions in Glen Canyon and Lake Mead National Recreation Areas Categorically Excluded under NEPA
- RGP 7: Construction and Maintenance under the Clark County Regional Flood Control District Master Plan
- RGP 8: Emergency Repair and Protection Activities
- RGP 9: Minor Discharges Associated with the SMUD Upper American River Project
- RGP 10: Wildfire Mitigation Activities
- RGP 15: Minimal Impact Activities under the South Sacramento ILF Program
- RGP 16: Anadromous Salmonid Fisheries Restoration
- RGP 19: Minimal Impact Activities By PCWA under the PCCP
- RGP 20: Minimal Impact Activities Under the Western Placer County ILF Program
- RGP 23: California Middle-Mile Broadband Network

Current Programmatic General Permits

- PGP 10: Minimal Impact Activities in Conjunction with UT Stream Alteration Program
- PGP 17: Minimal Impact Activities under the South Sacramento HCP
- PGP 18: Minimal Impact Activities under the Placer County Conservation Program

Figure 10: The U.S. Army Corps of Engineers Regional General Permits (RGPs) in Sacramento, CA

²⁶² *Id.* at 2-3.

C. The Clean Water Act

Congress had been addressing water quality since 1948 through the Federal Water Pollution Control Act (FWPCA),²⁶³ but until 1972 those efforts focused on encouraging states to address water quality, eventually through setting water quality standards, providing federal money for sewage treatment works, and providing federal research, limiting the federal regulatory role to interstate waters and, in 1970, oil spills.²⁶⁴ In 1969, however, two water pollution disasters spurred Congress to increase the federal government's involvement in water quality regulation: the latest in a century-long series of Cuyahoga River fires,²⁶⁵ and the Santa Barbara oil spill from an oil drilling platform.²⁶⁶

The first federal intervention came in 1970, when President Richard M. Nixon ordered the brand new U.S. Environmental Protection Agency (EPA) and the U.S. Army Corps of Engineers (Army Corps or Corps) to establish a permit program under the Refuse Act²⁶⁷ (Section 13 of the Rivers and Harbors Act of 1899 (RHA)) to punish people who polluted the navigable waters (although the statute was an imprecise fit given its larger focus on preserving navigation).²⁶⁸ The two agencies did so within the year.²⁶⁹

More comprehensively, in 1972, Congress substantially amended the FWPCA, creating the contemporary regulatory regime better known as the Clean Water Act, “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.”²⁷⁰ Under the Clean Water Act’s common prohibition, “the discharge of any pollutant by any person shall be unlawful” except as in compliance with the Act,²⁷¹ which generally means that the discharger must get and comply with a permit. The Act defines “the discharge of a pollutant” to be “any addition of any pollutant to navigable waters from a point source” and “any addition of any pollutant to the waters of the contiguous zone or the ocean from any point source other than a vessel or other

²⁶³ Act of June 30, 1948, 62 Stat. 1155.

²⁶⁴ *Id.* at 12-21 (citations omitted).

²⁶⁵ Lorraine Boissoneault, *The Cuyahoga River Caught Fire at Least a Dozen Times, but No One Cared Until 1969*, Smithsonian Magazine, June 19, 2019, <https://www.smithsonianmag.com/history/cuyahoga-river-caught-fire-least-dozen-times-no-one-cared-until-1969-180972444/>.

²⁶⁶ Christine Mai-Duc, *The 1969 Santa Barbara oil spill changed oil and gas exploration forever*, L.A. Times (May 20, 2015, 6:38 PM PT),

<https://www.latimes.com/local/lanow/la-me-ln-santa-barbara-oil-spill-1969-20150520-htmllstory.html>.

²⁶⁷ 33 U.S.C. § 407. For a complete history of the 1972 amendments to the Federal Water Pollution Control Act, see Robin Kundis Craig, *The Clean Water Act and the Constitution 10-27* (2d ed. ELI 2009); see also Sam Kalen, *Commerce to Conservation: The Call for a National Water Policy and the Evolution of Federal Jurisdiction Over Wetlands*, 69 N.D. L. Rev. 873, 877-79 (1993) (tracing much of this history).

²⁶⁸ *Craig, supra note 263*, at 12 (citations omitted).

²⁶⁹ *Id.* at 21 (citations omitted).

²⁷⁰ Pub. L. No. 92-500, § 2, 86 Stat. 818 (Oct. 18, 1972), *codified as* 33 U.S.C. § 1251(a).

²⁷¹ 33 U.S.C. § 1311(a).

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floating craft.”²⁷² Thus, the five elements of Clean Water Act jurisdiction are that: (1) a person (2) adds (3) any pollutant (4) to jurisdictional waters (5) from an applicable point source.

The Act goes on to define most of these terms in more detail, generally providing for broad jurisdiction. A “person,” for example, is “an individual, corporation, partnership, association, State, municipality, commission, or political subdivision of a State, or any interstate body.”²⁷³ A “pollutant” is “dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical waste, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water.”²⁷⁴ However, this definition explicitly exempts discharges of sewage and discharges incidental to normal operations from vessels, as well as state-regulated injections into oil and gas wells.²⁷⁵ A “point source,” in turn, is “any discernible, confined, and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, vessel or other floating craft, from which pollutants are or may be discharged.”²⁷⁶ However, this definition exempts “agricultural stormwater discharges and return flows from irrigated agriculture.”²⁷⁷

The Act also provides several definitions for jurisdictional waters. Probably least familiar is the “contiguous zone,” which the Act defines by reference to the United Nations Convention of the Territorial Sea and the Contiguous Zone,²⁷⁸ which created a band from three to six nautical miles out to sea for enforcement purposes. More important is the “ocean,” which is the portion of the ocean beyond the contiguous zone under U.S. control;²⁷⁹ the United States relies on customary international law to claim jurisdiction 200 nautical miles out from its shores. The current jurisdictional problem, however, derives from “navigable waters,” which the Act defines as “waters of the United States, including the territorial seas.”²⁸⁰ The Act defines “territorial seas” to be the first three miles of ocean,²⁸¹ but it leaves “the waters of the United States” undefined.

The distinction between the two permit programs lies in exactly what pollutant the polluter is discharging. If it is dredged or fill material, the polluter is subject to the Section 404 permit program, which the Army Corps takes lead in implementing.²⁸² All other dischargers subject to the Clean Water Act must get Section 402 NPDES permits.²⁸³

²⁷² *Id.* § 1362(12). Discharges from vessels into the contiguous zone and ocean are regulated through a different provision of the Act. *Id.* § 1322.

²⁷³ *Id.* § 1362(5). Notably absent from this list is any part of the federal government. However, the Act independently addresses federal facilities, *id.* § 1323, and discharges from U.S. Navy and other federal vessels. *Id.* § 1322(d).

²⁷⁴ *Id.* § 1362(6).

²⁷⁵ *Id.*

²⁷⁶ *Id.* § 1362(14).

²⁷⁷ *Id.*

²⁷⁸ 33 U.S.C. § 1362(9).

²⁷⁹ *Id.* § 1362(10).

²⁸⁰ *Id.* § 1362(7).

²⁸¹ *Id.* § 1362(8).

²⁸² 33 U.S.C. § 1344(a).

²⁸³ *Id.* § 1342(a).

Thus, dredging and filling in the navigable waters, including the coastal zone, requires a Section 404 permit from the Army Corps. Because the Army Corps issues a unified set of nationwide permits and regional general permits, however, the general permits available for adaptation activities are the same for Section 404 as they are for the Rivers & Harbors Act.

D. Climate Change Guidance

The Corps created the Climate Change Adaptation Plan to evaluate the most significant climate change related risks and vulnerabilities to its operations and missions.²⁸⁴ The Plan outlines actions that the Corps is taking to manage these risks and vulnerabilities, including information on climate preparedness and resilience programs, policies, and plans already in place as well as information on the progress of additional actions.²⁸⁵ Notably, the Plan includes a link to a letter evaluating sea-level rise and providing guidance on how it will affect decision making.²⁸⁶ The letter describes a 6 step process in which the Corps will: (1) identify problems and opportunities, (2) determine project area exposure and vulnerability, (3)-(4) consider and evaluate alternative strategies like protection, accommodation, or retreat, and (5)-(6) compare the strategies and make a recommendation.²⁸⁷ The letter also discusses coastal adaptation strategies²⁸⁸ and provides a chart on the type of projects that they would be suited for.²⁸⁹

III. THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA)

A. The Coastal Zone Management Act

As will be discussed in connection with species, NOAA exercises regulatory authority granted by environmental laws, such as the Endangered Species Act (ESA) and Marine Mammal Protection Act (MMPA), for the protection of marine species, marine ecosystems, and fisheries.²⁹⁰ However, NOAA is also granted authority under the Coastal Zone Management Act (CZMA).²⁹¹ In the CZMA, Congress declared that the Nation's coastal zone is rich in natural,

²⁸⁴ *Climate Change Adaptation Plan 4*, U.S. Army Corps of Eng'rs (2015), <https://cdm16021.contentdm.oclc.org/utis/getfile/collection/p266001coll1/id/5265>.

²⁸⁵ *Id.*

²⁸⁶ *Id.* at 8.

²⁸⁷ *Procedures to Evaluate Sea Level Change: Impacts, Responses, and Adaptation 3-2*, U.S. Army Corps of Eng'rs (2019), https://www.publications.usace.army.mil/Portals/76/Publications/EngineerTechnicalLetters/ETL_110-0-2-1.pdf.

²⁸⁸ *Id.* at 3-5 – 3-8.

²⁸⁹ *Id.* at 3-9.

²⁹⁰ *Laws & Policies*, Nat'l Marine Fisheries Serv., <https://www.fisheries.noaa.gov/topic/laws-policies#magnuson-stevens-act> (last visited Oct. 22, 2021).

²⁹¹ 16 U.S.C. § 1454.

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commercial, recreational, ecological, industrial, and esthetic resources²⁹² and it implemented a policy of preservation, protection, and development of those resources, as well as restoration and enhancement wherever possible.²⁹³ The CZMA also advised states to anticipate and plan for sea level rise,²⁹⁴ in part through the implementation of coastal zone management programs²⁹⁵ operated in coordination with applicable federal, state, and local agencies.²⁹⁶ For the purposes of this Act, the coastal zone is defined as all coastal waters and their adjacent shorelands, including islands, transitional and intertidal areas, salt marshes, wetlands, and beaches.²⁹⁷

Once coastal states develop a management program, they must submit it to the Secretary of Commerce for review and approval;²⁹⁸ NOAA is the delegated office within the Department of Commerce that oversees the adoption of coastal zone management programs. Coastal states must notify relevant federal agencies, state agencies, local governments, regional organizations, port authorities, and other interested public or private parties of the program's development and provide them with the opportunity of full participation.²⁹⁹ The program itself must (1) identify the boundaries of its coastal zone, (2) define permissible land and water uses, (3) designate areas of particular concern, (4) identify the means by which the state will enforce permissible land and water uses, (5) provide guidelines on the priority of uses, (6) describe the organizational structure that will implement the program, (7) define "beach" and a planning process for the protection of, and access to, public beaches and other areas of environmental, recreational, historical, esthetic, ecological, or cultural value, (8) include a planning process for energy facilities within and likely to affect the coastal zone, and (9) include a planning process for studying, evaluating, and restoring areas affected by shoreline erosion.³⁰⁰

The state must also (1) coordinate with local, areawide, and interstate plans applicable to the coastal zone,³⁰¹ (2) establish an effective mechanism for continuing consultation and coordination with other relevant agencies,³⁰² (3) designate a single State Agency to receive and administer grants,³⁰³ (4) have authority through its chosen agencies to regulate³⁰⁴ and control³⁰⁵ land and water use to ensure compliance with the program without unreasonably restricting uses of regional benefit,³⁰⁶ and (5) provide for public participation in the permitting process, consistency determinations, and other similar decisions.³⁰⁷ Following approval by NOAA, the

²⁹² *Id.* at § 1451(b).

²⁹³ *Id.* at § 1452(1).

²⁹⁴ *Id.* at § 1451(1).

²⁹⁵ *Id.* at § 1452(2).

²⁹⁶ *Id.* at § 1452(5).

²⁹⁷ *Id.* at § 1453(1).

²⁹⁸ *Id.* at § 1454.

²⁹⁹ *Id.* at § 1455(d)(1).

³⁰⁰ *Id.* at § 1455(d)(2).

³⁰¹ *Id.* at § 1455(d)(3)(A).

³⁰² *Id.* at § 1455(d)(3)(B).

³⁰³ *Id.* at § 1455(d)(6).

³⁰⁴ *Id.* at § 1455(d)(10)(A).

³⁰⁵ *Id.* at § 1455(d)(11).

³⁰⁶ *Id.* at § 1455(d)(12).

³⁰⁷ *Id.* at § 1455(d)(14).

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state-submitted coastal zone management program becomes the governing federal standard within the coastal zone.³⁰⁸ Therefore, federal agencies carrying out activities or granting permits within the coastal zone of an approved program must submit a consistency determination to relevant state agencies.³⁰⁹ States may also engage in consistency reviews, subject to an override by NOAA,³¹⁰ to ensure federal agencies act consistently with the approved program to the maximum extent possible when conducting development³¹¹ or granting permits for any activity that affects land use, water use, or natural resources of the coastal zone.³¹²

Furthermore, NOAA may make grants to any coastal state for the purpose of administering an approved management program,³¹³ and the CZMA allows states to amend or modify an approved management program, subject to approval by NOAA.³¹⁴ In the case of an amendment, NOAA must be promptly notified, and it may then suspend all or part of any grants, pending review.³¹⁵ NOAA must approve, deny, or extend the period of review within 30 days, and a failure to respond results in automatic approval.³¹⁶ Any extension cannot exceed 120 days and it must be done only as necessary to meet the requirements of the National Environmental Policy Act (NEPA) (see Environmental Impact Review, below).³¹⁷ If NOAA determines on a preliminary basis that an amendment is likely to be approved, it may permit the state to funnel grants towards implementation of the amendment.³¹⁸

Finally, NOAA must conduct a continuing review of the performance of coastal states in implementing and enforcing the approved program and in adhering to the terms of any grants.³¹⁹ NOAA may suspend financial assistance if it determines that the state is failing to adhere to the management program or the terms of any grants.³²⁰ NOAA may also withdraw financial assistance or approval of the management program if, after providing the Governor with written specifications stating what actions should be taken by the state to resolve any deficiencies, issues are not resolved.³²¹ Before withdrawal, NOAA must also provide notice to the state and an opportunity for a public hearing on the proposed action.³²²

B. California's Coastal Zone Management Plan

³⁰⁸ *Id.* at § 1456(c)(1)(A).

³⁰⁹ *Id.* at § 1456(c)(1)(C).

³¹⁰ *Id.* at § 1456(c)(3)(A).

³¹¹ *Id.* at § 1456(c)(2).

³¹² *Id.* at § 1456(c)(3)(A).

³¹³ *Id.* at § 1455(a)-(c).

³¹⁴ *Id.* at § 1455(e).

³¹⁵ *Id.* at § 1455(e)(1).

³¹⁶ *Id.* at § 1455(e)(2).

³¹⁷ *Id.*

³¹⁸ *Id.* at § 1455(e)(3)(B).

³¹⁹ *Id.* at § 1458(a).

³²⁰ *Id.* at § 1458(c)(1).

³²¹ *Id.* at § 1458(d).

³²² *Id.* at § 1458(e).

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In 1978, NOAA approved the California Coastal Management Program (CCMP), comprised of the California Coastal Act (CA), the McAteer-Petris Act (MAPA), and the Suisan Marsh Preservation Act (SMPA).³²³ The Program is administered by three state agencies: the California Coastal Commission (CCC), the San Francisco Bay Conservation Development Commission (BCDC), and the California Coastal Conservancy (CC).³²⁴ In *American Petroleum Institute v. Knecht*, a gas and oil association sought to enjoin the final approval of the CCMP because it lacked the requisite specificity to enable private parties to predict whether or not their proposed activities will be consistent with the program.³²⁵ However, the approval remained valid because Congress granted “considerable discretion” to NOAA and did not require “such detailed criteria” that private parties could rely on them as “predictive devices;” instead, Congress intended only that standards be “sufficiently specific ‘to guide public and private uses.’”³²⁶

In *California by California Coastal Commission v. Mack*, NOAA conducted a review of the CCMP and reached an agreement with the CCC on areas of significant improvement.³²⁷ NOAA later conditioned the issuance of a grant on the CCC’s agreement to an additional improvement task,³²⁸ but attaching the condition was beyond NOAA’s authority because Congress did not intend for NOAA to possess the authority to force states to choose between modifying an approved program and losing federal financial assistance under the CZMA.³²⁹ Furthermore, while the CCMP normally governs California’s coastal zone, the CZMA allows an exception if the President determines that an activity is in the “paramount interest” of the United States.³³⁰ In *Winter v. NRDC, Inc.*, this exception contributed to an exemption allowing the Navy to conduct training exercises in the coastal zone despite a possibility of irreparable harm to marine mammals protected under the Marine Mammal Protection Act (see below) and the Coastal Act because the exercises were “essential to national security.”³³¹

More recently, in 2010, NOAA published an adaptation guide to help state coastal managers develop and implement adaptation plans in response to climate change.³³² NOAA used a variety of resources to develop the guide that are specific to climate change, sustainability, resilience, general hazard mitigation, and natural resource management.³³³ Key resources are noted at the end of each chapter,³³⁴ and additional resources can be found on NOAA websites.³³⁵

³²³ Description of California’s Coastal Management Program, Cal. Coastal Comm’n 1, https://www.coastal.ca.gov/fedcd/ccmp_description.pdf (last visited Oct. 22, 2021).

³²⁴ *Id.*

³²⁵ *Am. Petroleum Inst. v. Knecht*, 609 F.2d 1306, 1312 (9th Cir. 1979).

³²⁶ *Id.*

³²⁷ *Cal. by Cal. Comm’n v. Mack*, 693 F. Supp. 821, 823 (N.D. Cal. 1988).

³²⁸ *Id.* at 824.

³²⁹ *Id.* at 826.

³³⁰ 16 U.S.C. § 1456(c)(1)(B).

³³¹ *Winter v. NRDC, Inc.*, 555 U.S. 7, 26 (2008).

³³² *Adapting to Climate Change: A Planning Guide for State Coastal Managers*, Nat’l Oceanic and Atmospheric Admin. 2 (2010), <https://coast.noaa.gov/data/czm/media/adaptationguide.pdf>.

³³³ *Id.* at 3.

³³⁴ *Id.* at 4, 15, 25, 42-44, 97-101, 106.

³³⁵ See Nat’l Oceanic and Atmospheric Admin., www.climate.gov/ (last visited Oct. 22, 2021); *Coastal Change: Vulnerability, Mitigation, and Restoration*, Nat’l Ctrs. For Coastal Ocean Sci.,

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In its second chapter, the guide seeks to establish the importance of coastal adaptation by providing an overview of the value of coastal resources and how climate change might affect those resources.³³⁶ In 2004, the “ocean economy”—consisting of economic activities tied or partially related to the ocean or Great Lakes and located in a shore-adjacent zip code—contributed \$138 billion to the U.S. economy.³³⁷ Furthermore, “coastal ecosystems”—coastal lands, areas where fresh water and salt water mix, and nearshore marine areas—provide services that do not have traditional market values, such as storm protection services provided by coastal wetlands that are estimated to be worth \$23.2 billion annually.³³⁸ Other services include flood protection, erosion control, water quality maintenance, biological productivity, fish and wildlife habitat, recreational opportunities, and aesthetic values.³³⁹ The guide discusses key environmental phenomena—increasing air temperature,³⁴⁰ rising sea levels,³⁴¹ declining Great Lake levels,³⁴² storm intensity and frequency,³⁴³ changing precipitation patterns,³⁴⁴ increasing water temperature,³⁴⁵ and ocean acidification³⁴⁶—and provides charts listing each phenomenon and its associated potential impacts, associated potential consequences, observed progression, and projected future change.³⁴⁷

The third chapter describes a step-wise framework for adaptation planning, focusing on where to begin and leaving room for flexibility that will allow for accommodation of new data, perceptions, realizations, and vulnerabilities.³⁴⁸ Coastal managers should establish a planning process by first determining the scope of adaptation efforts based on the states’ short and long term goals and any existing efforts.³⁴⁹ Coastal managers should then assess the need for and the availability of human resources, technical resources like data and scientific expertise, and financial resources.³⁵⁰ Coastal managers should coordinate with outside agencies and organizations at the local, state, or federal level that are invested in climate change adaptation and can provide additional resources.³⁵¹ These partners should be included in the planning

<https://coastalscience.noaa.gov/research/coastal-change/> (last visited Oct. 22, 2021); *The National Coastal Zone Management Program*, Nat’l Oceanic and Atmospheric Admin., <https://coast.noaa.gov/czm/> (last visited Oct. 22, 2021).

³³⁶ *Adapting to Climate Change: A Planning Guide for State Coastal Managers*, *supra* note 640, at 4.

³³⁷ *Id.* at 6.

³³⁸ *Id.*

³³⁹ *Id.*

³⁴⁰ *Id.* at 12.

³⁴¹ *Id.* at 12-13.

³⁴² *Id.* at 13.

³⁴³ *Id.*

³⁴⁴ *Id.* at 14.

³⁴⁵ *Id.*

³⁴⁶ *Id.*

³⁴⁷ *Id.* at 8-11.

³⁴⁸ *Id.* at 16-17.

³⁴⁹ *Id.* at 17-18.

³⁵⁰ *Id.* at 19.

³⁵¹ *Id.*

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process³⁵² and coastal managers should educate, engage, and involve these stakeholders to ensure that they are prepared and committed to the cause.³⁵³

As described in chapter four, once a planning process is established, coastal managers can lay a foundation for the adaptation strategy by conducting vulnerability assessments to identify climate change phenomena of concern as well as the areas and assets most vulnerable to these phenomena.³⁵⁴ The vulnerability assessment is based on the phenomena that are expected to impact the coastal manager's state, based on past and current regional data.³⁵⁵ Coastal managers can use the guide's resources to determine the associated impacts of identified phenomena,³⁵⁶ but coastal managers must use regional data to determine how the physical characteristics of the region will affect the impacts.³⁵⁷ Coastal managers should also identify people, property, systems, and functions that could be lost, injured, or damaged, including infrastructure,³⁵⁸ natural resources, historical resources, cultural resources, economic resources,³⁵⁹ socially vulnerable populations,³⁶⁰ and vulnerable ecosystems and habitats.³⁶¹ In addition, coastal managers should consider the adaptive capacity—the ability of vulnerable areas to adjust to stressors—of their region³⁶² by examining regulatory and planning capabilities,³⁶³ administrative and technical capabilities, fiscal capabilities, and infrastructure.³⁶⁴

Once this planning is complete, coastal managers can project a range of future scenarios at various points in time and on multiple levels of emission.³⁶⁵ These projections will be most reliable if they are based off of global climate models,³⁶⁶ but coastal managers can develop region-specific models if they are comfortable with additional uncertainty.³⁶⁷ Visualization techniques like mapping will be useful when evaluating what the projections mean for vulnerable areas.³⁶⁸ Finally, coastal managers should summarize vulnerability based on the prior findings.³⁶⁹ At this point, coastal managers should also reengage with stakeholders to discuss the most realistic outcomes and the extent of acceptable impacts in the planning area.³⁷⁰

³⁵² *Id.* at 20.

³⁵³ *Id.* at 23.

³⁵⁴ *Id.* at 26.

³⁵⁵ *Id.* at 28.

³⁵⁶ *Id.* at 29.

³⁵⁷ *Id.* at 30.

³⁵⁸ *Id.* at 31.

³⁵⁹ *Id.* at 32.

³⁶⁰ *Id.* at 33-34.

³⁶¹ *Id.* at 34-35.

³⁶² *Id.* at 35.

³⁶³ *Id.*

³⁶⁴ *Id.* at 36.

³⁶⁵ *Id.*

³⁶⁶ *Id.* at 37.

³⁶⁷ *Id.* at 39.

³⁶⁸ *Id.*

³⁶⁹ *Id.* at 40.

³⁷⁰ *Id.* at 40-41.

Part 2: The Primary Agencies and the Laws They Implement

The fifth chapter provides an outline for developing an adaptation strategy in which planning teams should set goals, identify actions, evaluate actions, and write an action plan.³⁷¹ The vulnerability assessment should provide a base for planners to identify the goals of their adaptation strategy, but planners should also look to the strategies of other states and governments.³⁷² While considering goals, and after setting goals, planners should consider if there are available actions that make each goal attainable.³⁷³ The guide encourages planners to think broadly³⁷⁴ and lists some potential actions, including zoning, redevelopment restrictions, conservation easements, setbacks, infrastructure protection, living shorelines, dune management, ecological buffer zones, and green infrastructure.³⁷⁵ These measures are briefly described later in the chapter.³⁷⁶ The guide then provides an evaluation framework for proposed actions called STAPLEE.³⁷⁷ Under STAPLEE, coastal managers should evaluate whether proposed actions are socially acceptable, technically feasible, administrable by the state, politically acceptable, within the legal authority of the state, economically feasible,³⁷⁸ and environmentally appropriate.³⁷⁹ With all of this done, coastal managers should write action plans for each action selected, including a title, any responsible parties, priorities, a cost-benefit analysis, a schedule and milestones, an evaluation plan, description, other involved parties, cost, potential funding sources, maintenance needs, and goals addressed.³⁸⁰

Finally, the adaptation plan can be adopted and implemented.³⁸¹ The guide recommends formally adopting the plan to demonstrate the state's commitment to climate change adaptation and to legitimize the plan.³⁸² Implementation will require significant and ongoing funding, and planners can expect the creation of grant programs to fund climate change adaptation actions.³⁸³ The guide provides the information of federal agencies that can offer funding,³⁸⁴ advises planners to try to get funding for adaptation incorporated into existing state and local budgets, and advises planners to look to other sources of state and local funding like general taxes, impact fees, and use fees.³⁸⁵ The plan should be integrated into existing adaptation efforts,³⁸⁶ and the plan should be continuously tracked and evaluated to ensure its effectiveness.³⁸⁷ Finally, based on these evaluations, the plan should be periodically updated.³⁸⁸

³⁷¹ *Id.* at 45.

³⁷² *Id.* at 46.

³⁷³ *Id.* at 47.

³⁷⁴ *Id.*

³⁷⁵ *Id.* at 51.

³⁷⁶ *Id.* at 54-96.

³⁷⁷ *Id.* at 52.

³⁷⁸ *Id.*

³⁷⁹ *Id.* at 53.

³⁸⁰ *Id.* at 54.

³⁸¹ *Id.* at 102.

³⁸² *Id.* at 103.

³⁸³ *Id.*

³⁸⁴ *Id.*

³⁸⁵ *Id.* at 104.

³⁸⁶ *Id.*

³⁸⁷ *Id.*

³⁸⁸ *Id.* at 105.

Part 3: Other Legal Considerations

I. ENVIRONMENTAL IMPACT REVIEW

The National Environmental Policy Act (“NEPA”) and the California Environmental Quality Act (“CEQA”) were both designed to encourage thoughtful decision-making to lessen the environmental impact of projects on the human environment.³⁸⁹ NEPA was the first major piece of environmental legislation passed in the United States and applies strictly to Federal projects.³⁹⁰ CEQA was implemented in the same year but only applies to government agencies in California, including regional and local agencies, boards, districts and commissions.³⁹¹ NEPA and CEQA are similar in purpose and process; they both encourage joint Federal and state review when necessary. Their implementing regulations are “designed to allow flexibility in consolidating and avoiding duplication among multiple governmental layers of review.”³⁹²

The following sections will provide an overview of NEPA and CEQA, including their processes and major requirements, and offer resources for compliance. Additionally, this paper will address overlap between the two Acts and note potential for coordination. Moreover, the following will discuss the cost of compliance and the burden imposed on both Federal and state agencies. Lastly, this paper will provide examples of NEPA and CEQA litigation in the context of coastal adaptations.

A. Introduction to NEPA

The National Environmental Policy Act of 1969 (“NEPA” or the “Act”) was enacted by Congress and signed into law on January 1, 1970. The preamble to NEPA summarizes its goals, which are to: encourage productive and enjoyable harmony between man and his environment; to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man; to enrich the understanding of the ecological systems and natural resources important to the Nation; and establish a Council on Environmental Quality.³⁹³

NEPA seeks to achieve its goals by requiring all Federal agencies in the executive branch to evaluate the potential direct and indirect environmental impacts of proposed Federal projects

³⁸⁹ Office of Planning and Research, NEPA and CEQA: Integrating Federal and State Environmental Reviews (2014), http://opr.ca.gov/docs/NEPA_CEQA_Handbook_Feb2014.pdf.

³⁹⁰ National Environmental Policy Act of 1969, 42 U.S.C. §4331 (NEPA’s implementing procedures are codified at 40 C.F.R. § 1500 et seq.).

³⁹¹ Cal. Pub. Res. Code §21000 et seq. (CEQA implementing regulations are codified at Cal. Code Regs., tit. 14, § 15000 et seq.; hereafter CEQA Guidelines).

³⁹² Office of Planning and Research, NEPA and CEQA: Integrating Federal and State Environmental Reviews (2014).

³⁹³ National Environmental Policy Act of 1969, 42 U.S.C. §4331.

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before the project is approved.³⁹⁴ NEPA covers a broad range of Federal actions such as permit application approvals, adopting Federal land management actions, and constructing highways or other publicly owned facilities.³⁹⁵ If an action falls within NEPA's scope, agencies must prepare a "detailed statement" for every action. NEPA is procedural in nature and does not impose guidelines to achieve particular substantive results.

NEPA also established the Council on Environmental Quality ("CEQ" or "Council"). The Council is made up of three members appointed by the President and is able to employ additional officers and employees as they see fit.³⁹⁶ The Council is charged with a variety of tasks, including assisting the President in preparing the Environmental Quality Report, overseeing Federal compliance with NEPA procedures, developing guidance and resolving disputes between Federal agencies.³⁹⁷ Most notably, CEQ developed the "Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act" (40 C.F.R. Parts 1500-1508).³⁹⁸ The regulations set forth in the CFR help guide Federal agencies navigate the environmental review process, which is not detailed in NEPA itself.

B. Cost of Compliance

Some claim that NEPA "systemically causes chronic delays and promotes obstructionist litigation," which can result in huge financial burdens.³⁹⁹ In 2018, approximately 100 natural resource law professors from across the U.S. addressed the House Committee on Natural Resources after the Committee claimed that "NEPA imposes undue burdens on Federal agencies or the private parties seeking regulatory permission from them."⁴⁰⁰ However, this is seldom the case. In reality, "roughly 99% of NEPA compliance for thousands of Federal actions occurs through the truncated framework offered by the categorical exclusion or environmental assessment process" instead of through the more costly Environmental Impact Statement ("EIS") assessment.⁴⁰¹

The EIS process can take years and can be costly to complete. However, according to the non-partisan Government Accountability Office ("GOA"), only about 1% of agency actions are subject to review under EIS.⁴⁰² Although, approximately 100 cases pertaining to NEPA are filed annually in Federal courts,⁴⁰³ this number is low considering there are approximately 100,000 Federal actions subject to NEPA regulations each year. Additionally, NEPA litigation does not

³⁹⁴ *Id.* §4332.

³⁹⁵ *What is the National Environmental Protection Act?*, EPA, <https://www.epa.gov/nepa/what-national-environmental-policy-act> (last visited Aug. 11, 2021).

³⁹⁶ *Id.*

³⁹⁷ 42 U.S.C. §§4341-4347.

³⁹⁸ CEQ National Environmental Policy Act Implementing Regulations, 40 C.F.R. §§1500-158.

³⁹⁹ Letter from a Group of Law Professors, H.R. REP. NO. 115-44, at 82 (2018), <https://www.govinfo.gov/content/pkg/CHRG-115hrg29883/html/CHRG-115hrg29883.htm>.

⁴⁰⁰ H.R. REP. NO. 115-44.

⁴⁰¹ *Id.*

⁴⁰² H.R. REP. NO. 115-44.

⁴⁰³ *Id.* (Federal agencies conduct hundreds of EIS and "tens of thousands of abbreviated EAs).

Part 3: Other Legal Considerations

cause “chronic delays” as the “duration of NEPA litigation is roughly comparable to or shorter than that of administrative law cases generally.”⁴⁰⁴

Despite statistics highlighting the small number of EIS statements submitted each year and low number of NEPA cases filed annually, in June 2020, former President Donald Trump announced dramatic changes to the regulations that govern NEPA.⁴⁰⁵ Trump equated NEPA to “mountains and mountains of bureaucratic red tape” and revised NEPA regulations to accelerate the NEPA process and reduce cost.⁴⁰⁶ Shortly into the Biden-Harris Administration, the Department of the Interior issued Secretarial orders 3399 and 3398 which highlight the importance of addressing environmental change and rescind various orders which limit NEPA issued during the Trump Administration.⁴⁰⁷ As of August 2021, CEQ is in the process of reconsidering the 2020 regulations imposed by Trump.⁴⁰⁸

C. Overview of NEPA

NEPA can be categorized into two distinct sections: (1) requirements and procedures imposed on Federal agencies and (2) CEQ and its duties.⁴⁰⁹ Section one outlines three major requirements of Federal agencies. First, Federal agencies must utilize a “systematic, interdisciplinary approach” in planning and decision making “which may have an impact on man’s environment.”⁴¹⁰ Second, Federal agencies must work together with the CEQ to develop their own procedures to insure unquantified environmental “amenities and values may be given appropriate consideration in decision making along with technical considerations.”⁴¹¹ Third, agencies must provide a report for any legislation or proposed actions that “significantly affect the quality of the human environment.”⁴¹² The initial report, also known as an Environmental Assessment (“EA”), mandates an analysis of: (1) the environmental impact of the proposed action, (2) any adverse effects which cannot be avoided should the proposal be implemented, (3) alternatives to the proposed action, (4) the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and (5) any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented.⁴¹³ If a proposed action will significantly affect the quality of the environment, agencies are required to prepare an Environmental Impact Statement (“EIS”). If the proposed

⁴⁰⁴ *Id.*

⁴⁰⁵ Jeff Brady, *President Trump Announces Changes to National Environmental Policy Act Regulations*, NPR (July 15, 2020, 4:03 AM)

<https://www.npr.org/2020/07/15/891563712/president-trump-announces-changes-to-national-environmental-policy-act-regulatio>.

⁴⁰⁶ *Id.*

⁴⁰⁷ Morgan Capilla, *Key Changes to CEQ’s NEPA Implementing Regulations*, EPA (2020),

<https://www.epa.gov/sites/default/files/2021-04/documents/rtoc-presentation-nepa-2021-04.pdf>.

⁴⁰⁸ *Id.*

⁴⁰⁹ 42 U.S.C. §§4321-4347.

⁴¹⁰ §102, 42 U.S.C. §4332.

⁴¹¹ *Id.*

⁴¹² *Id.*

⁴¹³ *Id.*

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action will not have a significant impact, agencies may submit a Finding of No Significant Impact (“FONSI”) report.⁴¹⁴

Section two outlines CEQ’s responsibilities. In 1978, CEQ established a series of procedures, codified at 40 C.F.R. §§1500-1508, to help Federal agencies determine if NEPA regulations apply to their proposed action.⁴¹⁵ In addition, CEQ also requires Federal agencies to develop their own procedures to supplement those put forth by CEQ. Agencies have published their own procedures in both the C.F.R. and their own personal guidebooks and manuals.⁴¹⁶

1. Categorical Exclusion

First, CEQ instructs agencies to determine if their proposed action is Categorically Excluded (“CE”) from the NEPA.⁴¹⁷ Agencies are instructed to utilize their own NEPA procedures for categories of action to determine if CE applies.⁴¹⁸ Most agencies have codified their procedures in the C.F.R. Agencies are then asked to evaluate the categorically excluded action for any extraordinary circumstances that may result in a significant environmental impact.⁴¹⁹ If an extraordinary circumstance is present, agencies are allowed to maintain CE status if “they determine that there are circumstances that lessen the impacts or other conditions sufficient enough to avoid significant effects.”⁴²⁰ If the extraordinary circumstance cannot be lessened, agencies are required to complete an Environmental Assessment (“EA”) to determine impact.⁴²¹

2. Environmental Assessments (EA)

Aside from extraordinary circumstances stemming from a CE that cannot be mitigated, an EA is required when a proposed action is not likely to have a significant environmental impact or the effects of the proposed action are unknown.⁴²² The objective of the EA process is to determine if any significant environmental impact is present. If no significant impact is uncovered during the EA process, agencies are directed to complete a Finding of No Significant Impact (“FONSI”) statement. If significant impact is discovered during the course of the EA, agencies are required to complete an Environmental Impact Statement (“EIS”).

CEQ mandates several procedural and substantive requirements for Federal agencies to follow when preparing their EA. First, agencies must commence the EA “as soon as

⁴¹⁴ 40 C.F.R. §1501.

⁴¹⁵ CEQ National Environmental Policy Act Implementing Regulations, 40 C.F.R. §§1500-1508; 42 U.S.C. §4341.

⁴¹⁶ CEQ, Federal Agency NEPA Implementing Procedures, <https://ceq.doe.gov/docs/laws-regulations/federal-agency-nepa-implementing-procedures-2020-06-04.pdf> (last visited Aug. 10, 2021).

⁴¹⁷ 40 C.F.R. §1501.3.

⁴¹⁸ 40 C.F.R. §1501.4; Federal Agency NEPA Implementing Procedures, CEQ (Jun. 4, 2020) <https://ceq.doe.gov/docs/laws-regulations/federal-agency-nepa-implementing-procedures-2020-06-04.pdf> (hyperlinked list to all federal agency implementing procedures).

⁴¹⁹ 40 C.F.R. §1501.4 (b).

⁴²⁰ 40 C.F.R. §1501.4 (b)(1).

⁴²¹ 40 C.F.R. §1501.4 (b)(2).

⁴²² 40 C.F.R. §1501.5 (a).

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practicable” after receiving the EA application and complete the EA within one year.⁴²³ Second, agencies are required to involve the “public, State, Tribal, and local governments, relevant agencies, and any applicants, to the extent practicable in preparing environmental assessments.”⁴²⁴ Third, the discussion must be sufficient enough to determine whether to prepare a FONSI or EIS.⁴²⁵ Fourth, agencies must discuss the purpose for their proposed action, any alternatives (as required by section 103(2)(E) or NEPA), and include a list of agencies and persons consulted during the EA process.⁴²⁶ Finally, the EA may not exceed 75 pages, excluding appendices, without approval from a senior agency official.⁴²⁷

In addition to the guidelines set forth by CEQ, each Federal agency has adopted its own NEPA procedures for the preparation of EAs which provide more robust instruction.⁴²⁸

3. Finding of No Significant Impact (FONSI)

Once an agency has determined that their proposed action will not produce any significant environmental effects, they must prepare a FONSI.⁴²⁹ If the proposed action is similar to an action that normally requires an EIS or the action is one without precedent, the agency must make the FONSI available for public review for 30 days before making a final determination.⁴³⁰

4. Environmental Impact Statement (EIS)

An EIS statement is required when a proposed action has a significant environmental impact. If a project will clearly have a significant effect, the agency may skip the EA and begin immediately working on drafting an EIS. The statement “outlines the status of the environment in the affected area, provides a baseline for understanding the potential consequences of the proposed project, identifies positive and negative effects for the environment, and offers alternative actions, including inaction, in relation to the proposed project.”⁴³¹ This requirement does not bar a Federal agency from moving forward with an action that will cause a significant impact, but rather forces the agency to disclose harm and reflect on alternatives.⁴³²

The review process for Federal Environmental Impact Statements can be broken into eight parts.

⁴²³ 40 C.F.R. § 1501.5 (d); 40 C.F.R. § 1501.10 (a)(1).

⁴²⁴ 40 C.F.R. § 1501.5 (e).

⁴²⁵ 40 C.F.R. § 1501.5 (a).

⁴²⁶ 40 C.F.R. § 1501.5 (b).

⁴²⁷ 40 C.F.R. § 1501.5 (f).

⁴²⁸ National Environmental Policy Act Review Process, EPA, <https://www.epa.gov/nepa/national-environmental-policy-act-review-process#CATEX>; (last visited Aug. 8, 2021).

⁴²⁹ 40 C.F.R. § 1501.6 (a).

⁴³⁰ 40 C.F.R. § 1501.6 (a)(1-2).

⁴³¹ Tiffany Middleton, What is an Environmental Impact Statement?, ABA (Mar. 2, 2021), https://www.americanbar.org/groups/public_education/publications/teaching-legal-docs/teaching-legal-docs--what-is-an-environmental-impact-statement-/.

⁴³² *Id.*

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- a) *Scoping*: The scoping process begins after the agency has completed its proposal for action. Scoping helps the agency understand the key issues that should be addressed in the EIS. An important part of the process is inviting affected Federal, State, and Tribal agencies to meet and investigate significant issues and eliminate non-significant issues.⁴³³ Agencies are also encouraged to participate in “scoping outreach” by holding scoping meetings to communicate with stakeholders and individuals affected by the action.⁴³⁴
- b) *Notice of Intent*: The public must be notified that an agency is preparing an EIS. CEQ requires agencies to publish a notice in the Federal Register.⁴³⁵ The notice must include: (1) purpose and need of the proposed action, (2) description of the proposed action and any alternatives the EIS will consider, (3) summary of expected impacts, (4) anticipated permit needs, (5) a schedule for the decision making process, (6) a description of the scoping process and methods, and (7) contact information for a person within the agency that can answer questions about the proposed action and EIS.⁴³⁶ Notices are then sent to local media outlets, individuals, and special interest groups. The public may submit comments and recommend issues that the EIS should address.⁴³⁷
- c) *Draft EIS*: CEQ provides agencies with an EIS template to “encourage good analysis and clear presentation of the alternatives including the proposed action.”⁴³⁸ The Council expects Federal agencies to include: (1) cover page, (2) summary, (3) table of contents, (4) purpose and need for action, (5) alternatives including the proposed action, (6) affected environment and environmental consequences, (7) submitted alternatives, information and analysis, (8) list of preparers, and (9) any appendices.⁴³⁹

The substantive requirements listed in CEQ’s EIS template can be broken into four sections. First, agencies must introduce their proposed action and its purpose and need for said action.⁴⁴⁰ Second, agencies must describe the environment of the area affected by the

⁴³³ 40 C.F.R. §1501.9 (a-b).

⁴³⁴ 40 C.F.R. §1501.9 (c).

⁴³⁵ 40 C.F.R. §1501.9 (d).

⁴³⁶ 40 C.F.R. §1501.9 (d)(1-8).

⁴³⁷ Tiffany Middleton, What is an Environmental Impact Statement?, ABA (Mar. 2, 2021).

⁴³⁸ 40 C.F.R. §1502.10 (a)(1-9)

⁴³⁹ 40 C.F.R. §1502; Environmental Impact Statement Database, EPA,

<https://cdxnodengn.epa.gov/cdx-enepa-public/action/eis/search> (last visited Aug. 12, 2021) (site contains an EIS statement database).

⁴⁴⁰ Federal Agency NEPA Implementing Procedures, CEQ (Jun. 4, 2020)

<https://ceq.doe.gov/docs/laws-regulations/federal-agency-nepa-implementing-procedures-2020-06-04.pdf> (hyperlinked list to all federal agency implementing procedures). See also Environmental Assessment Process Flowchart & Environmental Impact Statement Flowchart, Bureau of Reclamation <https://www.usbr.gov/gp/nkao/ainsworth/flowcharts.pdf> (last visited Aug. 8, 2021); Environmental Impact Statement Format and Content Process, Bureau of Ocean Energy Mgmt., <https://www.boem.gov/environment/environmental-assessment/environmental-impact-statement-eis-format-and-content-process> (last visited Aug. 9, 2021); National Environmental Policy Act Review Process, EPA <https://www.epa.gov/nepa/national-environmental-policy-act-review-process#CATEx>

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proposed action. CEQ expects descriptions of environmental consequences to be “commensurate with the importance of the impact.” However, CEQ warns that verbose descriptions of the affected environment are not a measure of EIS adequacy. Third, agencies are expected to present a range of alternatives to their proposed action. This is considered “the heart of the EIS.”⁴⁴¹ The agency must objectively discuss reasonable alternatives and “for alternatives which were eliminated from detailed study, briefly discuss the reasons for having been eliminated.”⁴⁴² Agencies must also include a “no action alternative” statement to discuss what would happen if the agency simply did not go through with their proposed action. Additionally, agencies should identify their preferred alternative, if any.⁴⁴³ Fourth, agencies should analyze “the full range of direct, indirect and cumulative effects of the preferred alternative, if any, and of the reasonable alternatives identified in the draft.”⁴⁴⁴ The analysis should include an examination of any adverse environmental effects that cannot be avoided if the action is approved, the relationship between short-term and long-term uses of the environment, irreversible commitments of resources involved, possible conflicts between the proposed action and objectives of the Federal government in regards to local land usage or policies and controls for the area in consideration, and impacts to natural resources and conservation efforts. In addition, agencies should consider the effect on cultural, historical, and economic factors as well as the impact on local communities.

Overall, CEQ expects agencies to prepare the document using an interdisciplinary approach by integrating natural and social sciences in their analysis. They also expect agencies to “ensure the professional integrity, including scientific integrity, of the discussions and analyses in environmental documents” by utilizing reliable data and scientific methods. Although an EIS may contain technical, scientific language and references, agencies must write in plain language and use appropriate graphics so that decision makers and the public are able to provide comments.⁴⁴⁵ Moreover, CEQ recommends that agencies hire writers with clear, simple prose to write, review and edit EIS.⁴⁴⁶

(last visited Aug. 8, 2021); Environmental Impact Statement Template, U.S. Dept. of Transp. (May 2010), https://www.oregon.gov/ODOT/GeoEnvironmental/Docs_NEPA/EIS_Annotated_Template.pdf; The NEPA Process, U.S. Dept. of Ag. <https://www.fs.fed.us/emc/nepa/revisions/includes/docs/NEPAProcessFlowchart-508.pdf> (last visited Aug. 9, 2021); What is an Environmental Impact Statement?, U.S. Army Corp of Eng’rs. (May 1, 2012), <https://www.swg.usace.army.mil/Media/News-Stories/Article/480374/what-is-an-environmental-impact-statement/>.

⁴⁴¹ 40 C.F.R. § 1502.14; Tiffany Middleton, What is an Environmental Impact Statement?, ABA (Mar. 2, 2021).

⁴⁴² 40 C.F.R. § 1502.14.

⁴⁴³ CEQ, A Citizen’s Guide to the NEPA: Having Your Voice Heard (Dec. 2007), https://www.boem.gov/sites/default/files/uploadedFiles/BOEM/Environmental_Stewardship/Environmental_Assessment/NEPA/Citizens_Guide_Dec07.pdf.

⁴⁴⁴ *Id.*

⁴⁴⁵ 40 C.F.R. § 1502.8.

⁴⁴⁶ 40 C.F.R. § 1502.8.

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In addition to the structural requirements listed above, CEQ has also provided agencies with additional EIS guidelines. In terms of formatting, CEQ imposes a 150 page limit, excluding appendices, on the EIS draft.⁴⁴⁷ The page limit may be increased if a senior agency officer approves it in writing.⁴⁴⁸ If an agency includes an appendix, it may contain material prepared in connection with the EIS, material needed to substantiate any analysis in the EIS, information relevant to the decision to be made, or comments received during the scoping period.⁴⁴⁹ Agencies must also include a list of the names of persons responsible for preparing the EIS as well as their qualifications.⁴⁵⁰ Typically, this list does not exceed two pages.⁴⁵¹

- d) *Comments:* After preparing the EIS draft, agencies are instructed to “make diligent efforts to involve the public in preparing and implementing their NEPA procedures.”⁴⁵² Here, again, agencies are required to request government and public input by posting notice of NEPA-related hearings, public meetings, or any other opportunities for public involvement.⁴⁵³ Notice is always delivered to those who have requested notice on an individual action.⁴⁵⁴ In cases where the effects of the proposed action are of national concern, notice is often published in the Federal Register.⁴⁵⁵ When an action has effects of local concern, notice is generally provided to State, Tribal and local agencies that may be interested or affected by the proposed action.⁴⁵⁶ Local notice may be disseminated via newspaper publications, local news stations, publication in a local newsletter, direct mail to nearby owners or occupants of the affected environment, or through electronic media (social media, website or email).⁴⁵⁷ After publishing notice, agencies must allow at least 45 days for comments.⁴⁵⁸ In addition to providing notice and holding public meetings, agencies should also provide the public with information on where to find information or status reports on an EIS or other NEPA processes.⁴⁵⁹ Moreover, agencies are required to make EIS, comments, and underlying documentation available to the public under the Freedom of Information Act, as amended.⁴⁶⁰

Aside from public comments, agencies must obtain the comments of any Federal agency that has “jurisdiction by law or special expertise with respect to any environmental

⁴⁴⁷ 40 C.F.R. § 1502.7.

⁴⁴⁸ 40 C.F.R. § 1502.7.

⁴⁴⁹ 40 C.F.R. § 1502.18.

⁴⁵⁰ 40 C.F.R. § 1502.19.

⁴⁵¹ 40 C.F.R. § 1502.19.

⁴⁵² 40 C.F.R. § 1506.6 (a).

⁴⁵³ 40 C.F.R. § 1506.6 (b).

⁴⁵⁴ 40 C.F.R. § 1506.6 (b)(1).

⁴⁵⁵ 40 C.F.R. § 1506.6 (b)(2).

⁴⁵⁶ 40 C.F.R. § 1506.6 (b)(3)(i-ii).

⁴⁵⁷ 40 C.F.R. § 1506.6 (b)(3)(v-x).

⁴⁵⁸ 40 C.F.R. § 1506.11(a)(d) (the comment period may be extended at the agency’s discretion); CEQ, A Citizen’s Guide to the NEPA: Having Your Voice Heard (Dec. 2007).

⁴⁵⁹ 40 C.F.R. § 1506.6 (c).

⁴⁶⁰ 40 C.F.R. § 1506.6 (c).

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impact involved or is authorized to develop and enforce environmental standards.”⁴⁶¹ If an agency decides to provide a comment, it should be “as specific as possible” and provide “as much detail as necessary to meaningfully participate and fully inform the agency of the commenter's position.”⁴⁶² If an agency required to comment believes that the EIS “adequately reflects its views,” then said agency is not required to provide a comment.⁴⁶³

- e) *Final EIS*: After the comment period on the draft EIS closes, the agency analyzes the comments and prepares the final EIS. The final EIS must address all substantive comments from government agencies and private individuals.⁴⁶⁴ Responses to comments may be in the form of modifying alternatives, proposing new alternatives, modifying analyses, or explaining why a comment is irrelevant or does not need a response.⁴⁶⁵ Each EIS must contain a summary, not to exceed 15 pages, that discusses major conclusions, disputed issues raised by agencies or the public, and issues to be resolved.⁴⁶⁶ The final EIS should be no longer than 150 pages, unless it is deemed more complex. In this case, the EIS may reach 300 pages. As always, a senior agency official may extend this limit.⁴⁶⁷

Once the EIS is finished, the agency shall publish a Notice of Availability in the Federal Register. Once published, the agency must wait 30 days before rendering a decision. During this time, the agency may review the EIS and weigh alternatives, review objectives and make a final decision.

- f) *Re-Evaluation*: A re-evaluation may be necessary if substantial changes are required to the proposed action, or if a long period of time has elapsed between issuing the Final EIS and beginning the planned action.⁴⁶⁸
- g) *Supplemental EIS*: If an agency must prepare a supplemental EIS if they make a substantial change to a draft or final EIS or if significant new circumstances arise that impact the proposed action.⁴⁶⁹
- h) *Record of Decision (ROD)*: The Record of Decision (“ROD”) is the final step before the proposed action may be implemented. The ROD identifies the agency’s decision, lists any alternatives considered by the agency, discusses mitigation efforts and any means adopted to reduce environmental harm, explores why the agency did, or did not, select an

⁴⁶¹ 40 C.F.R. § 1503.1 (a)(1).

⁴⁶² 40 C.F.R. § 1503.3 (a) (Comments should express why the issues raised could lead to significant environmental impacts and propose alternatives. Comments should also reference specific sections of the EIS and propose specific changes to the EIS itself. Moreover, comments should include data or methodologies to support proposed changes.)

⁴⁶³ 40 C.F.R. § 1503.2.

⁴⁶⁴ 40 C.F.R. § 1503.4.

⁴⁶⁵ 40 C.F.R. § 1503.4 (a).

⁴⁶⁶ 40 C.F.R. § 1502.12.

⁴⁶⁷ 40 C.F.R. § 1502.7.

⁴⁶⁸ Tiffany Middleton, What is an Environmental Impact Statement?, ABA (Mar. 2, 2021).

⁴⁶⁹ 40 C.F.R. § 1502.9 (d).

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alternative action, and outlines any enforcement commitments.⁴⁷⁰ After this stage, any protesters may raise a claim against the action in Federal court.⁴⁷¹

D. NEPA and Coastal Adaptation

The federal courts have played a limited role in enforcing NEPA. However, when NEPA claims are raised, they are subject to the review provisions of the Administrative Procedure Act (“APA”). Consequently, courts are unable to apply Congress’s substantive mandate that agencies use “practicable means” to advance the goal of the Act. They may, however, assess an agency’s compliance with the Act’s procedural requirements.⁴⁷²

Notably, few cases have been raised regarding coastal adaptations and NEPA non-compliance. On March 26, 2021, the 4th Circuit found the United States Army Corp of Engineers (“USACE”) in compliance with NEPA regulations when they excluded an analysis of environmental effects beyond five years regarding the construction of a terminal groin at Ocean Isle Beach.⁴⁷³ Ocean Isle Beach in Brunswick County, North Carolina, was suffering from chronic erosion despite continual dredging efforts and “strategically placing” protective sandbags. There were 45 homes located near Isle Beach, five of which were destroyed by coastal flooding as a result of erosion. Consequently, the USACE obtained a permit under the Clean Water Act to construct a terminal groin extending seaward from the shoreline to prevent further erosion. The USACE expected the groin to trap sand on its west side and replenish Isle Beach. Moreover, the USACE planned to place additional sand on the west side of the groin every five years to maintain a permanent “sand fillet.” In addition to the terminal groin proposal, the Corps proposed four alternatives, including: (1) a “no action” alternative, (2) an “abandon/retreat” plan under which the beach nourishment would continue but the use of sandbags would end, (3) a “beach fill only” plan, (4) a beach nourishment and realignment plan, and (5) the proposed construction of a terminal groin.

Nine months after the USACE published its final EIS, they issued their ROD. The USACE found that alternative 5 best achieved the purpose of reducing erosion and had the fewest environmental effects. The National Audubon Society (“NAS”) challenged the USACE’s EIS and ROD, arguing that the USACE’s decision did not meet the standard of review fixed by the APA. Under the APA, agency decisions may be set aside if they are “arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law.”⁴⁷⁴ To determine whether an agency’s decision meets the APA standard of review, a court must decide if “the agency articulated a rational connection between the facts found and the choice made.”⁴⁷⁵ Here, the NAS

⁴⁷⁰ 40 C.F.R. § 1505.2.

⁴⁷¹ Tiffany Middleton, What is an Environmental Impact Statement?, ABA (Mar. 2, 2021).

⁴⁷² Sam Kalen, *The Devolution of NEPA: How the APA Transformed the Nation’s Environmental Policy*, 33 Wm. & Mary L. & Pol’y Rev. 483, (2009) (discussing the limited role the court plays in NEPA legislation).

⁴⁷³ Nat’l Audubon Soc’y v. U.S. Army Corps of Eng’rs, 991 F.3d 577 (4th Cir. 2021).

⁴⁷⁴ 5 U.S.C. § 706(2)(A).

⁴⁷⁵ Ariz. Cattle Growers’ Ass’n v. United States Fish Wildlife, 273 F.3d 1229, 1236 (9th Cir. 2001).

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accused the USACE of being capricious in their analysis because they only discussed indirect environmental effects of their proposed action over a five year period instead of the full 30-year period. However, the indirect environmental effects beyond five years on the coastal shoreline in the proposal were not “reasonably foreseeable” and thus “inclusion of such effects [were] not necessary for purposes of final environmental impact statement (“FEIS”) under NEPA.”⁴⁷⁶ The USACE “articulated a rational connection between the facts found and the choice made” when they provided a qualitative discussion of potential effects based on material available; a discussion of effects after this period could only be speculative.

E. Introduction to CEQA

The California Environmental Quality Act (“CEQA”) was signed into law in 1970, shortly after the passage of NEPA, by California Governor Ronald Reagan.⁴⁷⁷ CEQA’s objectives echo those expressed in NEPA; however, CEQA’s requirements are more broadly applicable than that of NEPA because it involves a greater breadth of agencies. Here, the Governor’s Office of Planning and Research (“ORP”) oversees the CEQA process. The ORP, together with the Natural Resources Agency, developed CEQA guidelines (Cal. Code Regs., tit. 14, § 1500 et. seq.) to help navigate the CEQA process.⁴⁷⁸ Additionally, the ORP, specifically the State Clearinghouse, is charged with reviewing all CEQA documentation and ensuring compliance.⁴⁷⁹ The ORP also provides resources and assistance to state and local agencies.⁴⁸⁰

F. Cost of Compliance

Because CEQA requires a thorough analysis of environmental impacts, like NEPA, compliance can be costly. Many worry about expenses and project delays. However, when compared against total project costs, CEQA expenses are reasonable. For example, the ARTIC train station project in Anaheim, California cost \$185 billion to complete.⁴⁸¹ The total cost of environmental review was \$1 million, only 0.5% of the project budget.⁴⁸² Additionally, the process took only 10 months to complete.⁴⁸³ In Millbrae, California, a Bay Area Rapid Transit (“BART”) expansion project underwent NEPA’s EIR process in 13 months.⁴⁸⁴ The city spent \$300,000 on environmental

⁴⁷⁶ Nat'l Audubon Soc'y v. U.S. Army Corps of Eng'rs, 991 F.3d 577 (4th Cir. 2021).

⁴⁷⁷ Cal. Pub. Res. Code §21000 et seq.

⁴⁷⁸ Office of Planning and Research, NEPA and CEQA: Integrating Federal and State Environmental Reviews 2 (2014), http://opr.ca.gov/docs/NEPA_CEQA_Handbook_Feb2014.pdf.

⁴⁷⁹ *Id.*

⁴⁸⁰ *Id.*

⁴⁸¹ CEQA in the 21st Century: Environmental Quality, Economic Prosperity, and Sustainable Development in California, BAE Urban Economics (Aug. 2016), <https://rosefdn.org/wp-content/uploads/2016/08/CEQA-in-the-21st-Century.pdf>.

⁴⁸² *Id.*

⁴⁸³ *Id.*

⁴⁸⁴ *Id.*

review, a mere 0.025% of the total buildout costs.⁴⁸⁵ While CEQA imposes a financial obligation, costs have been consistently fair.

G. Overview of CEQA

There are four distinct phases of CEQA. First, agencies must conduct a preliminary review of their proposed action. If the action meets the definition of “project” under CEQA, then it is subject to CEQA review. Proposed projects may fall into one of four categories: (1) statutorily exempt, (2) categorically exempt, (3) initial study (“IS”) and negative declaration (“ND”)/mitigated negative declaration (“MND”), or (4) Environmental Impact Report (“EIR”).

Next, agencies assess whether the project is exempt from CEQA. If yes, they may submit a Notice of Exemption (“NOE”). If not, agencies move to phase two: initial study (“IS”). The IS process is used to determine whether the project will have a significant environmental impact. If no significant impact is discovered, agencies may submit a Negative Declaration (“ND”) or a Mitigated Negative Declaration (“MND”). If a project creates any significant impact, in whole or part, agencies move into phase three, the Environmental Impact Report “EIR.” In the last phase, the project is considered and approved.⁴⁸⁶

1. Phase I: Preliminary Review

- a) *What is a “Project”?*: CEQA applies to state and local agencies to carry out “discretionary projects . . . including, but not limited to, the enactment and amendment of zoning ordinances, the issuance of zoning variances, the issuance of conditional use permits, and the approval of tentative subdivision maps unless the project is exempt from this division.”⁴⁸⁷ A project includes any “activity which may cause either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment,” and which is actively directed, supported, in whole or in part, or involved the issuance of a lease, permit, license, certification or other entitlement for use by a public agency.⁴⁸⁸ If the proposed action is not a “project,” no further action is required.
- b) *Exemptions*: If an agency determines that its proposed action is a project, they must first assess whether the project is exempt.⁴⁸⁹ There are two forms of exemptions under CEQA: (1) statutory and (2) categorical. First, 15 statutory exemptions are codified in the

⁴⁸⁵ *Id.*

⁴⁸⁶ CEQA Process Flow Chart, UCSF, https://campusplanning.ucsf.edu/sites/campusplanning.ucsf.edu/files/CEQA_FlowChart_151230.pdf (last visited Aug. 10, 2021); CEQA Process Flow Chart, Cal. Dept. of Conservation, https://www.conservation.ca.gov/calgem/CEQA/Documents/CEQA_Process_Flowchart_OPR.pdf; CEQA Flow Chart, L.A. City Planning, https://planning.lacity.org/odocument/e524a6c4-8de9-449a-87e5-b5093d65c4c2/CEQA_flow_chart.pdf.

⁴⁸⁷ Cal. Pub. Res. Code § 21080.

⁴⁸⁸ *Id.*

⁴⁸⁹ *CEQA Exemption Decision Tree*, U.S. DEPT. OF TRANS., <https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/ser/ceqa-exemption-tree-a11y.pdf> (last visited Aug. 9, 2021) (flowchart to determine exemption status).

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California Public Resource code §21080. CEQA's Statutory exemptions apply regardless of potential environmental impact. They include ministerial projects, emergency repairs to public service facilities, projects to maintain, repair or replace property or facilities damaged or destroyed as a result of a disaster in a disaster-stricken area in which a state of emergency has been proclaimed by the Governor, actions needed to mitigate an emergency, unapproved projects, actions undertaken by a public agency relating to any thermal power plant site, actions needed in the hosting, staging or funding of Olympic Games (except for facility construction), projects to increase passenger or commuter service already in use, facility extensions required for the transfer of passengers from or to a public mass transit or busway transit services, regional transportation improvement, projects in another state subject to NEPA, and projects undertaken by a local agency to implement a rule imposed by state or local government under a certified regulatory program.⁴⁹⁰ Although, the statutory exemptions only apply under CEQA; any other state and Federal laws remain applicable.

Second, categorical exemptions, which do not have a significant impact on the environment, are codified in the CEQA Guidelines §15300.4⁴⁹¹ There are 33 classes of categorical exemptions, they include: repairs to existing facilities, replacement or reconstruction actions, new construction or conversions of small structures, minor alterations to land and land use limitations, actions by regulatory agencies to protect natural resources and/or the environment, inspections, loans, accessory structures, surplus government property sales, acquisition of land for wildlife conservation, minor additions to schools, minor land divisions, transfer of ownership of land to create public parks, open space contracts or easements, designation of wilderness areas, annexations of existing facilities, organizational changes of local agencies, regulatory enforcement actions, normal operations of facilities for public gatherings, regulation of work conditions, transfer of ownership of land to preserve open space, acquisition of housing for housing assistance, leasing new facilities, hydroelectric and cogeneration projects at existing facilities, minor actions to prevent the release of hazardous waste and substances, historical resource restoration, in-fill development projects, and small habitat restoration.⁴⁹² If a project is categorically exempt, the agency must also consider if an exception applies to the exemption. Exceptions are not permitted if a project is in an environmentally sensitive location, successive projects of a similar nature will result in cumulative impacts, unusual circumstances create the reasonable possibility of significant environmental effects, a project may result in damage to scenic or historic resources, or a project is located on a site affected by hazardous waste.⁴⁹³

⁴⁹⁰ Cal. Pub. Res. Code § 21080.

⁴⁹¹ Cal. Code Regs. tit. 14, §15300.4; List CEQA Exemption Types, San Francisco Planning (last updated Jun. 29, 2021), <https://sfplanning.org/list-ceqa-exemption-types>.

⁴⁹² Cal. Code Regs. tit. 14, §15300.4; *Procedures for Preparation & Processing of Environmental Documents Pursuant to the California Environmental Quality Act (CEQA)*, Sacramento County (2009)

<https://planning.saccounty.net/applicants/Documents/Procedures%20For%20Env%20Doc.%20Prep%20Final%202009.pdf>.

⁴⁹³ *Id.* §§15300-15333

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Additionally, any actions to prevent or mitigate an emergency is considered a CEQA exemption. However, an emergency does not exempt agencies from complying with other state or Federal laws.⁴⁹⁴ Also, even if a project is not statutorily or categorically exempt from CEQA analysis, a “common sense” exemption may apply.⁴⁹⁵ A common sense exemption is relevant when a project will not, for certainty, have an effect on the environment. After exemption is determined and the project is approved, the relevant agency must file a Notice of Exemption (“NOE”) with their county clerk.⁴⁹⁶ No further action is required.

2. Phase 2: Significant Effects

- a) *Initial Study*: CEQA and NEPA largely dictate the same process to determine if a project or action has a significant environmental impact.⁴⁹⁷ Here, an Initial Study (“IS”) is used to determine if an agency should prepare an Environmental Impact Report (“EIR”) or a Negative Declaration (“ND”).⁴⁹⁸ This requirement is similar to NEPA’s EA process, which assists agencies in determining if a project has a significant impact and informs the need for an EIS or a FONSI. Like the EA, an IS requires agencies to describe their project and consider potential environmental impacts. They must support their findings with facts, technical studies or other substantial evidence to determine impact.⁴⁹⁹ While some detail is required, the IS should *not* include the level of detail included in an EIR. Additionally, CEQA permits a lead agency to use an “environmental assessment (EA) or a similar analysis prepared pursuant to the National Environmental Policy Act” *in substitute of the IS*.⁵⁰⁰ Regardless of outcome, an agency must prepare an EIR or an ND/MND.
- b) *“Significant” Defined*: Both CEQA and NEPA ask agencies to assess projects or actions for “significant” impact on the environment. However, NEPA requires agencies to prepare an EIS when a Federal action, in totality, has the potential to “significantly affect the quality of the human environment.”⁵⁰¹ Under CEQA, agencies are required to identify each “significant impact on the environment,” and propose mitigation measures for each effect.⁵⁰² Additionally, even if a significant impact is only speculative, an EIR must be prepared.⁵⁰³ As a result, some impacts deemed significant under CEQA may not require

⁴⁹⁴ *Id.* § 15269

⁴⁹⁵ *Id.* § 15061(b)(3).

⁴⁹⁶ *Id.* § 15062; CEQA Document Submission, California Governor's Office of Research and Planning, <https://opr.ca.gov/clearinghouse/ceqa/document-submission.html> (last visited Aug. 9, 2021).

⁴⁹⁷ Office of Planning and Research, NEPA and CEQA: Integrating Federal and State Environmental Reviews 2 (2014), http://opr.ca.gov/docs/NEPA_CEQA_Handbook_Feb2014.pdf.

⁴⁹⁸ Cal. Pub. Res. Code § 21080.

⁴⁹⁹ Cal. Code Regs. tit. 14, § 15063.

⁵⁰⁰ *Id.* § 15063.

⁵⁰¹ 42 U.S.C. § 4332.

⁵⁰² Cal. Code Regs. tit. 14, § 15064.

⁵⁰³ *Id.* § 15063.

an EIS under NEPA.

- c) *No Finding of Significant Effect*: If a project does not cause significant environmental impact, or the impact of the project can be mitigated, agencies may prepare a Negative Declaration (“ND”) or a Mitigated Negative Declaration (“MND”). Agencies may adopt an ND if a proposed project has no significant environmental effects. Alternatively, agencies may adopt a MND if a project has significant environmental impact that can be mitigated so that they become “less than significant.” The ND and MND processes are similar to NEPA’s FONSI and Mitigated FONSI. However, unlike NEPA, here, agencies are required to prepare and distribute a Notice of Intent (“NOI”) to adopt a ND or MND as well as circulate the ND or MND documentation. The NOI and ND/MND must be made available to all organizations and individuals who have requested such notice. They must also inform the relevant public by publishing the notice in a newspaper in the area affected by the proposed project, posting notice on the physical project site, or directly mailing a notice to owners and occupants of property contiguous to the project.⁵⁰⁴ The agency must accept comments on the proposed ND or MND for no less than 20 days and no less than 30 days if the project is submitted through the State Clearinghouse.⁵⁰⁵ Additionally, the lead agency must file notice of ND with the county clerk.⁵⁰⁶ The clerk must post the notice within 24 hours of receipt for a period of 20 days.⁵⁰⁷ After this review period, the agency must review the comments and decide whether to adopt the ND or MND.⁵⁰⁸ If an MND is adopted, the lead agency must adopt a program for monitoring the project to mitigate or avoid significant environmental effects.

3. Phase 3: Environmental Impact Report (EIR)

If a proposed project would have one or more significant environmental effects, an agency must prepare an EIR.⁵⁰⁹ The EIR process is similar to the EIS under NEPA. Under NEPA, an agency may use a completed CEQA review in substitute of an EIS. However, agencies interested in using an EIR to satisfy NEPA requirements should cross reference NEPA regulations to ensure all requirements are satisfied. On the other hand, a NEPA EIS review may be used to satisfy the EIR requirement if the NEPA review meets all CEQA requirements.⁵¹⁰ CEQA guidelines recommend using an EIS if an EIS or FONSI will be prepared before an EIR or ND/MND and complies with the provisions of EIR guidelines.⁵¹¹ However, the guidelines warn agencies to include a separate discussion of mitigation measures before using an EIS as an EIR.⁵¹²

⁵⁰⁴ *Id.* §15072.

⁵⁰⁵ *Id.* §15074(b).

⁵⁰⁶ *Id.*

⁵⁰⁷ *Id.*

⁵⁰⁸ *Id.*

⁵⁰⁹ *Id.* §§ 15120-15131 (this section of the CEQA guidelines describes the required elements of the EIR).

⁵¹⁰ *Id.* § 15221

⁵¹¹ *Id.*

⁵¹² *Id.*

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- a) *Notice of Preparation:* Before an EIR is prepared, the lead agency must prepare and distribute notice.⁵¹³ Notice shall be filed with the Office of Planning and Research as well as the county clerk. The notice should include a description of the project, location, and possible effects. Subsequently, the agency must solicit comments for at least 30 days and conduct a scoping meeting.⁵¹⁴ The lead agency is permitted to begin working on the EIR immediately but may need to revise to incorporate responses in the draft EIR.⁵¹⁵
- b) *Draft EIR:* Agencies are expected to work in conjunction with any other responsible agencies, trustee agencies or other state, Federal or local agencies which have jurisdiction over the project.⁵¹⁶ The draft should include a summary identifying each significant impact and proposed mitigation measures or alternatives, a discussion of areas of controversy, and an assessment of issues that must be resolved.⁵¹⁷ The draft should also provide all necessary details of the proposed project, such as objectives, required permits, precise location, and a list of other agencies involved.⁵¹⁸ Additionally, the agency should provide a detailed description of the environmental setting and the condition of the physical environment.⁵¹⁹ Lastly, the EIR must discuss significant environmental impacts, mitigation measures, discussion of alternative project options, cumulative impact, and effects that cannot be mitigated should the project be approved.⁵²⁰
- c) *Notice of Completion and Notice of Availability:* Once the draft is complete, the lead agency files a Notice of Completion with the State Clearinghouse and publishes and distributes a copy of the Draft EIR to the public. The draft must be made available for public comment for at least 45 days.⁵²¹
- d) *Final EIR:* A final EIR is completed once all comments are received during the review period. The final draft must include responses to comments. Responses to comments must be made available for 10 days before the project is approved.⁵²²

⁵¹³ *Id.* §15082

⁵¹⁴ *Id.*

⁵¹⁵ *Id.*

⁵¹⁶ *Id.* §15086.

⁵¹⁷ UC CEQA Checklist, UC,

<https://www.ucop.edu/design-services/resources/ceqa-compliance-planning/uc-ceqa-checklist.html> (website provides a detailed EIR template); Environmental Impact Report Format and General Content Requirements, Cnty of S.D: Land Use and Env't Grp (Sept. 2006), <https://www.sandiegocounty.gov/content/dam/sdc/pds/ProjectPlanning/docs/EIR-Format-Content-Req.pdf>.

⁵¹⁸ *Id.* §15124.

⁵¹⁹ *Id.* §15125.

⁵²⁰ *Id.* §15125-15127.

⁵²¹ *Id.* §15087

⁵²² Cal. Pub. Res. Code § 21092.5.

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- e) *Consideration and Approval*: The lead agency reviews the Final EIR and is tasked with certifying the document before deciding whether to approve or deny the project.⁵²³

4. Phase 4: Decision: Once approved, the lead agency will submit a Notice of Determination (“NOD”) to the Office of Planning and Research within five days of deciding to carry out approval.⁵²⁴ The agency will also file copies of the EIR and NOD in the county where the project will commence.⁵²⁵

H. CEQA and Coastal Adaptation

Like NEPA, CEQA litigation remains relatively low. From 2002 to 2016, CEQA lawsuits averaged 195 per year.⁵²⁶ In other words, the “rate of litigation for CEQA projects undergoing environmental review (excluding exemptions) was 0.7 percent from 2013 to 2016.”⁵²⁷ Nonetheless, litigation arises. Coastal adaptation projects, including sea walls or shoreline armoring structures, are subject to CEQA review given their potential for significant environmental impact on coastal habitats.⁵²⁸ However, many coastal armoring projects are permitted as a Geological Hazard Abatement District (“GHAD”). When classified under GHAD, armoring and coastal adaptation projects are considered emergencies and thus exempted from CEQA review and litigation.⁵²⁹

The “emergency” nature of sea walls has been called into question. In 2002, the City of Solana Beach applied for an emergency exemption under CEQA to construct a seawall due to the threat of a bluff collapse. Environmental advocates opposed the construction of the seawall and argued that a bluff collapse was not an emergency under CEQA.⁵³⁰ CEQA defines an emergency as an “unexpected occurrence.” The environmental advocates believed that because beach erosion is a condition and the erosion of the bluffs causes the bluffs to fall, the failure of a bluff is a condition and not an “sudden, unexpected occurrence,” and thus CEQA’s emergency exemption did not apply.⁵³¹

The Court of Appeals disagreed. First, the collapse of a sea bluff is an occurrence, not a “condition.”⁵³² Next, the anticipatory nature of the collapse did not prevent the potential collapse

⁵²³ Cal. Code Regs. tit. 14, §15090.

⁵²⁴ *Id.* §15094.

⁵²⁵ *Id.*

⁵²⁶ CEQA in the 21st Century: Environmental Quality, Economic Prosperity, and Sustainable Development in California, BAE Urban Economics (Aug. 2016), <https://rosefdn.org/wp-content/uploads/2016/08/CEQA-in-the-21st-Century.pdf>.

⁵²⁷ *Id.*

⁵²⁸ Molly Loughney Melius & Margaret R. Caldwell, California Coastal Armoring and Climate Adaptation in the 21st Century, 25 (Stan. L.Sch. 2015) <https://www.coastsidebuzz.com/wp-content/uploads/2021/02/stanford-CACoastalArmoringRpt.pdf>.

⁵²⁹ *Id.*

⁵³⁰ CalBeach Advocates v. City of Solana Beach, 127 Cal.Rptr. 2d 1, 529 (Ct. App. 2003).

⁵³¹ *Id.*

⁵³² *Id.*

from being deemed an emergency under CEQA. Further, evidence of potential damage to human life and property supported the emergency nature of the situation. However, the city did not have to complete a preliminary study to use the emergency exemption because the seawall project was already categorically exempt under CEQA.⁵³³

II. PROTECTING COASTAL SPECIES

A. Protecting Marine Species Under Federal Law

1. Federal Fish and Wildlife Agencies:

The U.S. Fish and Wildlife Service (FWS) is a bureau within the Department of the Interior established in its present form by an amendment to the Fish and Wildlife Act (FWA) of 1956 on July 1, 1974.⁵³⁴ The FWS has three basic objectives: (1) to assist in the development and application of an environmental stewardship ethic for our society, based on ecological principles, scientific knowledge of fish and wildlife, and a sense of moral responsibility; (2) to guide the conservation, development, and management of the Nation's fish and wildlife resources; and (3) to administer a national program to provide the public opportunities to understand, appreciate, and wisely use fish and wildlife resources.⁵³⁵ The FWS aims to use these objectives as support for its primary mission of conserving, protecting, and enhancing fish and wildlife and their habitats for the continuing benefit of the American people.⁵³⁶ To do so, the FWS is granted the authority to implement environmental laws, such as the Endangered Species Act (ESA), Marine Mammal Protection Act (MMPA), Lacey Act (LA), Migratory Bird Treaty Act (MBTA), Migratory Bird Conservation Act (MBCA), and North American Wetlands Conservation Act (NAWCA).⁵³⁷

The National Marine Fisheries Service (NOAA Fisheries) is an office of the National Oceanic and Atmospheric Administration (NOAA) within the Department of Commerce, established in its present form in 1970.⁵³⁸ NOAA Fisheries is responsible for the stewardship of the nation's ocean resources and their habitat, utilizing scientific research and an ecosystem-based approach to manage productive and sustainable fisheries, safe sources of seafood, the recovery and conservation of protected resources, and healthy ecosystems.⁵³⁹ NOAA Fisheries is granted regulatory authority through environmental laws such as the

⁵³³ *Id.*

⁵³⁴ *About the U.S. Fish and Wildlife Service*, U.S. FISH & WILDLIFE SERV., https://www.fws.gov/help/about_us.html.

⁵³⁵ *Creation, Authority, and Functions*, U.S. FISH & WILDLIFE SERV., <https://www.fws.gov/policy/022fw1.html>.

⁵³⁶ *Id.*

⁵³⁷ *About the U.S. Fish and Wildlife Service*, *supra* note 431; *A Guide to the Laws and Treaties of the United States for Protecting Migratory Birds*, U.S. FISH & WILDLIFE SERV., <https://www.fws.gov/birds/policies-and-regulations/laws-legislations.php>.

⁵³⁸ *About Us*, NAT'L MARINE FISHERIES SERV., <https://www.fisheries.noaa.gov/about-us#overview>.

⁵³⁹ *Id.*

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ESA, MMPA, LA, and Magnuson-Stevens Fishery Conservation and Management Act (MSA).⁵⁴⁰

2. Endangered Species Act (ESA):

Congress enacted the ESA to facilitate conservation of threatened and endangered species as well as their habitats because these species are of esthetic, ecological, educational, historical, recreational, and scientific value to the Nation and its people.⁵⁴¹ Congress gave regulatory authority to the Secretary of the Interior and the Secretary of Commerce, including the authority to determine which species are listed as endangered or threatened.⁵⁴² Because the FWS and NOAA Fisheries share responsibility,⁵⁴³ some species, such as sea turtles, are under the jurisdiction of both agencies.⁵⁴⁴ However, generally, the FWS is responsible for terrestrial and freshwaters species while NOAA Fisheries is responsible for marine and anadromous species.⁵⁴⁵

The ESA defines endangered species as any species in danger of extinction throughout a significant portion of their range and it defines threatened species as those likely to become endangered within the foreseeable future.⁵⁴⁶ A determination that a species is endangered or threatened must be backed by the best scientific data available and be based on: (1) the present or threatened destruction, modification, or curtailment of the species' habitat; (2) overutilization of the species for commercial, recreational, scientific, or educational purposes; (3) disease or predation; (4) the inadequacy of existing regulatory mechanisms; or (5) other natural or manmade factors affecting the species' continued existence.⁵⁴⁷ Along with the species designation, any geographical area that it occupies and that is essential to conservation⁵⁴⁸ may be designated as critical habitat protected by the ESA.⁵⁴⁹

Once listed, it is illegal to import, export, trade, sell, or "take" that species,⁵⁵⁰ meaning harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to do any of these things.⁵⁵¹ Furthermore, federal agencies must consult with the FWS and NOAA Fisheries to ensure that any activities they authorize, fund, or carry out are not likely to destroy or adversely modify critical habitat or to jeopardize the continued existence of any endangered

⁵⁴⁰ *Laws & Policies*, NAT'L MARINE FISHERIES SERV., <https://www.fisheries.noaa.gov/topic/laws-policies#magnuson-stevens-act>.

⁵⁴¹ 16 U.S.C. § 1531.

⁵⁴² *Id.* at § 1533.

⁵⁴³ *Listing and Critical Habitat Overview*, U.S. FISH & WILDLIFE SERV., <https://www.fws.gov/endangered/what-we-do/listing-overview.html>.

⁵⁴⁴ *Laws & Policies: Endangered Species Act*, Nat'l Marine Fisheries Serv., <https://www.fisheries.noaa.gov/topic/laws-policies#endangered-species-act>.

⁵⁴⁵ *Id.*

⁵⁴⁶ 16 U.S.C. § 1532.

⁵⁴⁷ *Id.* at § 1533.

⁵⁴⁸ *Id.* at § 1532.

⁵⁴⁹ *Id.* at § 1533.

⁵⁵⁰ *Id.* at § 1538.

⁵⁵¹ *Id.* at § 1532.

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or threatened species.⁵⁵² Activities that are likely to result in a taking can still be authorized by the FWS or NOAA Fisheries through an incidental take permit, provided the applicant submits a conservation plan specifying measures for mitigation and alternative actions.⁵⁵³

3. Marine Mammal Protection Act (MMPA)

Congress passed the MMPA to protect marine mammals from depletion or extinction as a result of man's activities because of their international, esthetic, recreational, and economic significance.⁵⁵⁴ Regulatory authority over the MMPA's prohibition on the "taking"⁵⁵⁵ and importation of any marine mammal is again split between the Secretary of the Interior and the Secretary of Commerce.⁵⁵⁶ Here, the FWS is responsible for the management of polar bears, walruses, sea otters, manatees, and dugongs while NOAA Fisheries is responsible for whales, dolphins, porpoises, seals, and sea lions.⁵⁵⁷ The MMPA also established the Marine Mammal Commission (MMC) to conduct independent studies on the condition of marine mammals, methods of conservation, and human impacts on marine mammals and their ecosystems.⁵⁵⁸

The MMC consults with the FWS and NOAA Fisheries, providing reports and recommendations on policies and methods of conservation as well as revisions to the endangered species list and threatened species list of the ESA.⁵⁵⁹ In determining regulations, the FWS and NOAA Fisheries should also consider: (1) current and future population levels of marine mammals; (2) existing international treaty obligations; (3) marine ecosystem and related environmental considerations; (4) the conservation, development, and utilization of fishery resources; and (5) the economic and technological feasibility of implementation.⁵⁶⁰ Regulations can prescribe limitations on the number, age, size, sex, season, or manner in which takings and importation of marine mammal species occur,⁵⁶¹ and both agencies can issue permits authorizing the taking or importation of a marine mammal species.⁵⁶²

4. Lacey Act (LA)

The LA provides comprehensive protection to wildlife because it reinforces other federal, state, and foreign wildlife protections laws by making it an offense to import, export, transport, sell, receive, acquire, or purchase any fish, wildlife, or plant "taken,"⁵⁶³ possessed,

⁵⁵² *Id.* at § 1536.

⁵⁵³ *Id.* at § 1539.

⁵⁵⁴ 16 U.S.C. § 1361.

⁵⁵⁵ *Id.* at § 1362 (The term "take" means to harass, hunt, capture, or kill, or attempt to do so).

⁵⁵⁶ *Id.* at § 1373.

⁵⁵⁷ Laws & Policies: Marine Mammal Protection Act, Nat'l Marine Fisheries Serv., <https://www.fisheries.noaa.gov/topic/laws-policies#marine-mammal-protection-act>.

⁵⁵⁸ 16 U.S.C. §§ 1401-1402.

⁵⁵⁹ *Id.* at § 1402.

⁵⁶⁰ *Id.* at § 1373.

⁵⁶¹ *Id.*

⁵⁶² *Id.* at § 1374.

⁵⁶³ *Id.* at § 3372 (The term "taken" means captured, killed, or collected).

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transported, or sold in violation of any law, treaty, or regulation.⁵⁶⁴ Regulatory authority over the provisions of the LA are granted to the Secretary of the Interior and the Secretary of Commerce as well as the Secretary of Transportation and the Secretary of the Treasury.⁵⁶⁵

5. Migratory Bird Treaty Act (MBTA) and Migratory Bird Conservation Act (MBCA)

The MBTA is intended to ensure sustainable populations of protected migratory bird species in accordance with four international conservation treaties between the United States and Canada, Mexico, Japan, and Russia⁵⁶⁶ by making it unlawful to pursue, hunt, take, capture, kill, possess, sell, trade, or transport these species⁵⁶⁷ without prior authorization by the FWS.⁵⁶⁸ A migratory bird species is included on the protected list if it is native to the United States such that it occurs in the United States or its territories as a result of natural biological or ecological processes.⁵⁶⁹ Introduced species may also be included if they were native and extant in 1918, extirpated from their range in the United States after 1918, and then reintroduced as part of a federal program.⁵⁷⁰

The MBCA established a Migratory Bird Conservation Commission (MBCC) led by the Secretary of the Interior to approve acquisitions by purchase, rental, or gift of land suitable for migratory bird conservation.⁵⁷¹ The Secretary is granted the authority to recommend areas for acquisition if the area is necessary for migratory bird conservation and if applicable units of local government and State agencies have been consulted with.⁵⁷² Thus, the FWS has an obligation to cooperate with local authorities in wildlife conservation⁵⁷³ and with State agencies in acquisition,⁵⁷⁴ management,⁵⁷⁵ and enforcement.⁵⁷⁶

6. North American Wetlands Conservation Act (NAWCA)

Congress enacted the NAWCA to protect, enhance, restore, and manage wetland ecosystems and their associated habitats, fish, and wildlife in order to support the commercial, recreational, scientific, aesthetic, and protective qualities of those resources.⁵⁷⁷ The NAWCA established the North American Wetlands Conservation Council (NAWCC) consisting of the Director of the FWS as well as members appointed by the Secretary of the Interior. The NAWCC recommends wetland conservation projects to the MBCC for approval based on

⁵⁶⁴ *Id.*

⁵⁶⁵ *Id.* at § 3375.

⁵⁶⁶ *Id.* at § 712; Migratory Bird Treaty Act, U.S. Fish & Wildlife Serv.,

<https://www.fws.gov/birds/policies-and-regulations/laws-legislations/migratory-bird-treaty-act.php>.

⁵⁶⁷ 16 U.S.C. § 703.

⁵⁶⁸ *Id.* at § 704.

⁵⁶⁹ *Id.* at § 703.

⁵⁷⁰ *Id.*

⁵⁷¹ *Id.* at § 715(a).

⁵⁷² *Id.* at § 715(c).

⁵⁷³ Migratory Bird Conservation Act Law Digest, U.S. Fish & Wildlife Serv.,

<https://www.fws.gov/laws/lawsdigest/MIGBIRD.HTML>.

⁵⁷⁴ 16 U.S.C. § 715(f).

⁵⁷⁵ *Id.* at § 715(g)-(h).

⁵⁷⁶ *Id.* at § 715(p).

⁵⁷⁷ *Id.* at § 4401.

factors like cost, the presence of fish and wildlife that are candidates to be listed as endangered or threatened, and the input of other agencies.⁵⁷⁸ Once approved, any federal agencies with overlapping jurisdiction over the wetland ecosystems and other habitats for migratory birds, fish, and wildlife must cooperate with the FWS to restore, protect, and enhance them.⁵⁷⁹

7. Magnuson Stevens Fishery Conservation and Management Act (MSA)

Congress established the MSA to conserve and manage the fishery resources of the United States, including the fish off the coast, highly migratory species of the high seas, species that dwell within the Continental Shelf, and anadromous species which spawn in rivers or estuaries, with the goal of promoting sustainable commercial and recreational fishing and protecting essential fish habitat.⁵⁸⁰ The MSA established eight Regional Fishery Management Councils (RFMC), including the Pacific Council which consists of California, Oregon, Washington, and Idaho, consisting of the applicable regional director of NOAA Fisheries and members appointed by the Secretary of Commerce.⁵⁸¹ With the support of NOAA Fisheries, RFMCs conduct research on fishery resources and develop or amend fishery management plans that establish permitting systems, catch limits, and other regulations.⁵⁸² RFMCs must submit fishery management plans or amendments to the Secretary of Commerce for review and approval based on its consistency with national standards, provisions of the MSA, and any other applicable law.⁵⁸³

B. Protecting Marine Species under California State Law

1. California Fish and Wildlife Agencies

The California Department of Fish and Wildlife (CDFW) is a department of the California Natural Resources Agency (CNRA) responsible for managing California's diverse fish, wildlife, and plant species, as well as their habitat, to protect their ecological value and to preserve them for use and enjoyment by the public.⁵⁸⁴ The CDFW is responsible for over 1,100,000 acres of fish and wildlife habitat,⁵⁸⁵ in partnership with agencies like the California Fish and Game Commission (Commission)⁵⁸⁶ and the Ocean Protection Council (Council).⁵⁸⁷ The Commission is a wildlife conservation agency that promulgates regulations over fishing,

⁵⁷⁸ *Id.* at § 4404.

⁵⁷⁹ *Id.* at § 4408.

⁵⁸⁰ *Id.* at § 1801.

⁵⁸¹ *Id.* at § 1852.

⁵⁸² Laws & Policies: Magnuson-Stevens Act, Nat'l Marine Fisheries Serv., <https://www.fisheries.noaa.gov/topic/laws-policies#magnuson-stevens-act>; Partners, Nat'l Marine Fisheries Serv., <https://www.fisheries.noaa.gov/topic/partners>.

⁵⁸³ 16 U.S.C. § 1854.

⁵⁸⁴ Departments in Our Agency, Cal. Nat. Res. Agency, <https://resources.ca.gov/Our-Agencies>.

⁵⁸⁵ CDFW Lands, Cal. Dep't of Fish & Wildlife, <https://wildlife.ca.gov/Lands>.

⁵⁸⁶ CESA, Cal. Dep't of Fish & Wildlife, <https://wildlife.ca.gov/Conservation/CESA>.

⁵⁸⁷ About the Council, Ocean Prot. Council, <https://www.opc.ca.gov/about/>.

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hunting, and conservation⁵⁸⁸ in accordance with state environmental laws, such as the California Endangered Species Act (CESA).⁵⁸⁹ The CDFW acts as an advisory resource for the Commission during the decision making process and, once regulations are set, the CDFW implements and enforces the Commission's regulations.⁵⁹⁰ The California Ocean Protection Act (COPA) established the Council and tasked it with coordinating the activities of ocean-related state agencies, establishing policies to coordinate the collection and sharing of ocean-related research, and identifying and recommending change in state law, federal law, and policy.⁵⁹¹ Furthermore, under the Marine Life Protection Act (MLPA), the Council is responsible for the direction of policy of marine protected areas (MPAs).⁵⁹²

2. California Endangered Species Act (CESA)

In the CESA, the California Legislature (Legislature) established a statewide policy of conservation, protection, restoration, and enhancement of endangered species, threatened species, and their habitat⁵⁹³ because of their value to the people of California.⁵⁹⁴ The CESA tasks the Commission with establishing lists of both endangered and threatened species,⁵⁹⁵ establishing guidelines by which an interested person can petition to add or remove species from the lists,⁵⁹⁶ and approving or denying petitions.⁵⁹⁷ The CESA also provides that the CDFW shall recommend the criteria for determining if a species is endangered or threatened,⁵⁹⁸ evaluate petitions and provide recommendations to the Commission,⁵⁹⁹ and even petition to add or remove species.⁶⁰⁰

Once listed, any person or public agency is prohibited from importing, exporting, taking, possessing, purchasing, or selling that species,⁶⁰¹ unless authorized by an incidental take statement or incidental take permit pursuant to the ESA,⁶⁰² an enhancement of survival permit from the Secretary of Commerce or the Secretary of the Interior,⁶⁰³ or an exception under the Native Plant Protection Act (NPPA) or the California Desert Native Plants Act (CDNPA).⁶⁰⁴ Furthermore, the CDFW may issue permits authorizing prohibited acts for activities with

⁵⁸⁸ About the California Fish and Game Commission, Cal. Fish & Game Comm'n, <https://fgc.ca.gov/About>.

⁵⁸⁹ CESA, Cal. Fish & Game Comm'n, <https://fgc.ca.gov/CESA>.

⁵⁹⁰ *About the California Fish and Game Commission*, *supra* note 486.

⁵⁹¹ *About the Council*, *supra* note 485.

⁵⁹² Cal. Fish & Game Code § 2850.5.

⁵⁹³ *Id.* at § 2052.

⁵⁹⁴ *Id.* at § 2051.

⁵⁹⁵ *Id.* at § 2070.

⁵⁹⁶ *Id.* at § 2071.

⁵⁹⁷ *Id.* at § 2074.2.

⁵⁹⁸ *Id.* at § 2071.5.

⁵⁹⁹ *Id.* at § 2073.5.

⁶⁰⁰ *Id.* at § 2072.7.

⁶⁰¹ *Id.* at § 2080.

⁶⁰² *Id.* at § 2080.1.

⁶⁰³ *Id.* at §§ 2080.3, 2080.5.

⁶⁰⁴ *Id.* at § 2080.

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scientific, educational, or management purposes,⁶⁰⁵ and for takings that are incidental to a lawful activity, that have their impacts minimized and fully mitigated, that have mitigation efforts funded and monitored by the permittee, and that would not jeopardize the continued existence of the species.⁶⁰⁶

3. Marine Life Protection Act

In the MLPA, the Legislature recognized that California's MPA system fell short of its potential to protect and conserve the state's marine life, habitat, and biodiversity⁶⁰⁷ and directed the state to reexamine and redesign the system to increase its coherence and effectiveness.⁶⁰⁸ The MLPA required the Commission to adopt a Marine Life Protection Program (Program) with the following goals: (1) to protect marine biodiversity, abundance of marine life, and marine ecosystems; (2) to conserve and rebuild marine life populations; (3) to improve recreational, educational, and study opportunities provided by marine ecosystems; (4) to protect marine natural heritage; (5) to ensure California's MPAs have clearly defined objectives, effective management measures, and adequate enforcement based on sound scientific guidelines; and (6) to ensure that California's MPAs are designed and managed as a network.⁶⁰⁹ The Commission also needed to adopt a master plan guiding the adoption and implementation of the Program, including decisions regarding the siting of new MPAs and major modifications to existing MPAs.⁶¹⁰

The CDFW works with other state agencies and advisors to develop the master plan⁶¹¹ and then submits the plan to the Commission for review.⁶¹² The Commission approved plans in 2008 and 2016.⁶¹³ Once an MPA is established, the taking of marine species within the MPA is prohibited for any purpose, including recreational and commercial fishing, except as authorized by the Commission for scientific purposes or by the CDFW under a scientific collecting permit.⁶¹⁴ Furthermore, in reviewing proposed projects that will impact MPAs, the CDFW must recommend measures to avoid or fully mitigate any adverse impacts on marine life and habitat within the MPA,⁶¹⁵ and the CDFW must confer with the United States Navy as necessary.⁶¹⁶

⁶⁰⁵ *Id.* at § 2081(a).

⁶⁰⁶ *Id.* at § 2080(b).

⁶⁰⁷ *Id.* at § 2851.

⁶⁰⁸ *Id.* at § 2853.

⁶⁰⁹ *Id.*

⁶¹⁰ *Id.* at § 2855.

⁶¹¹ *Id.* at § 2856.

⁶¹² *Id.* at § 2858.

⁶¹³ 2008 MLPA Master Plan, Cal. Dep't of Fish & Wildlife (Jan. 2008), <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=113006&inline>; 2016 MLPA Master Plan, Cal. Dep't of Fish & Wildlife (Aug. 2016), <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=112486&inline>.

⁶¹⁴ *Id.* at § 2860.

⁶¹⁵ *Id.* at § 2862.

⁶¹⁶ *Id.* at § 2863.

C. Species Protection and Coastal Adaptation

Although the FWS and NOAA Fisheries are provided with expansive regulatory power through numerous species protection laws, the federal wildlife agencies have not extensively utilized their regulatory power to further coastal adaptation efforts. In *NRDC v. Kempthorne*, a District Court even admonished the FWS for failing to consider the issue of climate change in its review of a federal project.⁶¹⁷ Still, the stage may be set for federal wildlife agencies to take a bigger role in coastal adaptation. In *TVA v. Hill*, the Supreme Court recognized the ESA as the most comprehensive legislation for the preservation of endangered species ever enacted by any nation.⁶¹⁸ Furthermore, in *Babbitt v. Sweet Home*, the Supreme Court found that Congress delegated broad administrative and interpretive power to the Secretary of the Interior and the Secretary of Commerce in the ESA because the exercise of their delegated powers necessarily requires a high level of knowledge, expertise, and discretion.⁶¹⁹

Accordingly, the Supreme Court has a policy of deference towards the Secretaries' reasonable interpretation of Congress' intent.⁶²⁰ Therefore, in *Babbitt*, the Interior Department lawfully implemented a regulation defining the term "harm" contained within the definition of "take" as any act that directly or *indirectly* kills or injures wildlife, meaning activities by private parties that alter or modify the habitat of a protected species and are reasonably certain to cause actual injury to that species can also be regulated by the FWS and NOAA Fisheries.⁶²¹ Combined with the protections given to critical habitat, the FWS and NOAA Fisheries are seemingly granted broad permitting authority over activities affecting protected species and their habitat. Thus, the wildlife agencies can act as strict authorities over proposed coastal adaptation efforts, even checking other federal agencies with relevant permitting authority, such as the U.S. Army Corps of Engineers, and encourage additional planning for conservation or mitigation within an adaptation project.

In California, the CESA and MLPA reinforce federal species protection laws with additional permitting requirements that lengthen the planning process of coastal adaptation efforts and influence the suitability of adaptation options. MPA designations may be particularly relevant to coastal adaptation because the Commission has established well over one hundred MPAs spanning California's coast. Thus, coastal communities should consult with the CDFW if they are seeking to implement armoring techniques that could have an impact on protected ecosystems, such as beach nourishment, breakwaters, wetland restoration, dune restoration, and living shorelines.

⁶¹⁷ *NRDC v. Kempthorne*, 506 F. Supp. 2d 322, 370 (E.D. Cal. 2007).

⁶¹⁸ *Tenn. Valley Auth. v. Hill*, 437 U.S. 153, 180 (1978).

⁶¹⁹ *Babbitt v. Sweet Home Chapter of Cmty. for a Great Or.*, 515 U.S. 687, 708 (1995).

⁶²⁰ *Id.*

⁶²¹ *Id.*

III. SPECIAL CONSIDERATIONS FOR PORTS AND NAVAL BASES

A. Coastal Adaptation and Ports

The Coastal Act (CA) mandates that any development within the Ports of Long Beach, Los Angeles, and San Diego⁶²² must be consistent with a port master plan⁶²³ certified by the California Coastal Commission (CCC) or with an approved development permit.⁶²⁴ Port master plans must be prepared by each port governing body and included in the local coastal program (LCP) of any city or county with a port within its jurisdiction.⁶²⁵ Port master plans are made in accordance with the policies of the CA and must include: (1) proposed land and water use; (2) projected design and location of port land areas, water areas, berthing, and navigation ways and systems intended to serve commercial traffic; (3) an estimate of the effect of development on habitat areas and marine environment along with proposals to mitigate and minimize any substantial adverse impact; (4) appealable projects; and (5) provisions for adequate public hearings and public participation in port planning and development decisions.⁶²⁶

In general, all port-related development should minimize substantial adverse environmental impacts and provide for other beneficial uses consistent with the public trust, including recreation and wildlife habitat.⁶²⁷ Furthermore, certified port master plans may be amended by the relevant port governing body so long as the amendment is approved by the CCC;⁶²⁸ thus, ports that did not initially account for climate change may do so in the future. However, the CCC will likely have broad authority during their review of proposed amendments even though the CA prohibits the CCC from modifying a plan as a condition for approval.⁶²⁹ In *San Diego Unified Port Dist. v. Cal. Coastal Comm'n*, the CCC lawfully rejected an amendment and suggested language that would correct its deficiencies⁶³⁰ because the CCC's broad supervisory role over statewide coastal policy is particularly important for port master plans and the CCC is free to reject an amendment if it determines that it does not conform with and carry out the CA's policies.⁶³¹

The San Francisco Bay Conservation and Development Commission (BCDC) has jurisdiction over the Port of San Francisco under the McAteer-Petris Act (MAPA)⁶³² and the San Francisco

⁶²² Cal. Pub. Res. Code § 30702 (Deering 2021).

⁶²³ *Id.* § 30715.5.

⁶²⁴ *Id.* § 30715.

⁶²⁵ *Id.* § 30711.

⁶²⁶ *Id.*

⁶²⁷ *Id.* § 30708.

⁶²⁸ *Id.* § 30716.

⁶²⁹ *Id.* § 30714.

⁶³⁰ *San Diego Unified Port Dist. v. Cal. Coastal Comm'n*, 238 Cal. Rptr. 3d 671, 695 (Cal. Ct. App. 2018).

⁶³¹ *Id.* at 693.

⁶³² *Id.* § 30103.

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Bay Plan (Plan).⁶³³ The MAPA defines the BCDC's jurisdiction as the San Francisco Bay, a shoreline band extending inland 100 feet from the shoreline of the Bay, salt ponds, managed wetlands, and certain waterways consisting of tidal action on named tributaries that flow into the Bay.⁶³⁴ The MAPA requires that any person or government agency wishing to fill, extract materials, or make any substantial change to water, land, or structure use obtain a permit from the BCDC.⁶³⁵ The BCDC will approve permits if it finds that the project is either necessary to the health, safety or welfare of the public in the entire bay area or is of such a nature that it will be consistent with the provisions of the MAPA and the provisions of the Plan.⁶³⁶ The MAPA declares the Bay as the single most valuable natural resource of the region and recognizes that it is in the public interest to carefully analyze, plan, and regulate its use.⁶³⁷ In doing so, the MAPA prioritizes the protection of wildlife,⁶³⁸ water and air quality,⁶³⁹ recreational and commercial water-oriented land uses, including ports,⁶⁴⁰ and shoreline development that improves and preserves the Bay's shoreline.⁶⁴¹

The Plan, adopted pursuant to the MAPA, further authorizes the BCDC to control Bay filling, dredging and shoreline development.⁶⁴² The Plan recognizes threats associated with climate change and encourages adaptation approaches that minimize public safety risks and impacts to critical infrastructure, maximize compatibility with and integration of natural processes, are resilient over a range of sea levels, potential flooding impacts and storm intensities, and are adaptively managed.⁶⁴³ To reach these goals, the Plan encourages the creation of a comprehensive regional adaptation strategy through a process involving careful review and monitoring as well as various stakeholders and local, regional, state, and federal agencies.⁶⁴⁴ Until such a plan is created, the BCDC is responsible for evaluating each project proposed in vulnerable areas on a case-by-case basis to determine the project's public benefits, resilience to flooding, and capacity to adapt to climate change impacts.⁶⁴⁵ The BCDC may also issue cease and desist orders, including removal of fill and restoration of development sites, if any person or government agency undertakes, or threatens to undertake, a regulated activity without a permit or in a manner inconsistent with an approved permit.⁶⁴⁶ Courts have consistently interpreted provisions of the MAPA broadly to effectuate its purpose of establishing comprehensive

⁶³³ San Francisco Bay Plan, S.F. Bay Conservation & Dev. Comm'n, https://bcdc.ca.gov/plans/sfbay_plan.html (Part I - Areas of Jurisdiction).

⁶³⁴ Cal. Gov. Code § 66610.

⁶³⁵ *Id.* § 66632(a).

⁶³⁶ *Id.* § 66632(f).

⁶³⁷ *Id.* § 66600.

⁶³⁸ *Id.* § 66601.

⁶³⁹ *Id.*

⁶⁴⁰ *Id.* § 66602.

⁶⁴¹ *Id.* § 66605.1.

⁶⁴² *San Francisco Bay Plan, supra* note 531 (Part I - Scope of Authority).

⁶⁴³ *Id.* (Part IV – Climate Change – Findings(h)).

⁶⁴⁴ *Id.*

⁶⁴⁵ *Id.* (Part IV – Climate Change – Policies(7)).

⁶⁴⁶ Gov. § 66638.

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regulation over development within the Bay;⁶⁴⁷ thus, in *Leslie Salt Co. v. San Francisco Bay Conservation and Dev. Comm'n*, the BCDC could even lawfully hold a landowner responsible for unauthorized fill placed on their property by unknown third persons.⁶⁴⁸

The Ports of Long Beach,⁶⁴⁹ San Diego,⁶⁵⁰ and San Francisco⁶⁵¹ have already begun to address and create plans for coastal adaptation. The Port of Los Angeles has yet to release a formal assessment or plan, but existing structures such as a breakwater⁶⁵² and riprap⁶⁵³ may provide immediate protection. The Port of Long Beach published the Climate Adaptation and Coastal Resiliency Plan in which it evaluated the impact that climate change may have on coastal infrastructure,⁶⁵⁴ transportation networks,⁶⁵⁵ critical facilities,⁶⁵⁶ utilities,⁶⁵⁷ and an existing breakwater.⁶⁵⁸ The Port then considered over 20 coastal adaptation strategies and identified 5 that will be prioritized,⁶⁵⁹ including: (1) new port policies, plans, and guidelines that ensure climate change impacts are considered in planning and development projects;⁶⁶⁰ (2) incorporating sea level rise analysis into harbor development permits;⁶⁶¹ (3) conducting studies to identify the combined impacts of riverine and coastal flooding on Piers A and B;⁶⁶² (4) implementing a seawall to protect Pier S;⁶⁶³ and (5) implementing shoreline armoring to protect the Pier S substation.⁶⁶⁴ Within the next 5 years, the adaptation plan recommends implementing strategies 1 and 2, continuing to evaluate and potentially implementing strategies 4 and 5, and reviewing

⁶⁴⁷ *Leslie Salt Co. v. S.F. Bay Conservation and Dev. Comm'n*, 200 Cal. Rptr. 575, 616-17 (Cal. Ct. App. 1984).

⁶⁴⁸ *Id.* at 617-18.

⁶⁴⁹ Climate Change Overview, Port of Long Beach,

<https://polb.com/environment/climate-change/#climate-change-overview>; Climate Adaptation and Coastal Resiliency Plan, Port of Long Beach,

<https://polb.com/environment/climate-change/#climate-change-overview>.

⁶⁵⁰ *Sea Level Rise Vulnerability Assessment & Coastal Resiliency Report*, PORT OF SAN DIEGO, <https://pantheonstorage.blob.core.windows.net/environment/FINAL-San-Diego-Unified-Port-District-Sea-Level-Rise-Vulnerability-and-Coastal-Resiliency-Report-AB691.pdf>.

⁶⁵¹ Waterfront Resilience Program, Port of S.F., <https://sfport.com/waterfront-resilience-program>; Strategic Plan, Port of S.F.,

<https://sfport.com/sites/default/files/Executive/Strategic%20Plan%202021%20-%20Online%20Version.pdf>.

⁶⁵² *Climate Adaptation and Coastal Resiliency Plan*, *supra* note 547, at 6.

⁶⁵³ *Port Master Plan 74-75*, PORT OF L.A.,

https://kentic.portoflosangeles.org/getmedia/adf788d8-74e3-4fc3-b774-c6090264f8b9/port-master-plan-update-with-no-29_9-20-2018.

⁶⁵⁴ *Climate Adaptation and Coastal Resiliency Plan*, *supra* note 547, at 22, 24, 44-45.

⁶⁵⁵ *Id.* at 4, 22, 24, 48-50.

⁶⁵⁶ *Id.* at 5, 52-53.

⁶⁵⁷ *Id.* at 5, 54-60.

⁶⁵⁸ *Id.* at 6, 61-63.

⁶⁵⁹ *Id.* at 6, 67.

⁶⁶⁰ *Id.* at 7, 73.

⁶⁶¹ *Id.* at 8, 89.

⁶⁶² *Id.* at 8, 105.

⁶⁶³ *Id.* at 9, 125.

⁶⁶⁴ *Id.* at 9, 139.

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other policy-related strategies.⁶⁶⁵ Within the next 5-20 years, the Plan recommends implementing strategy 4, reviewing and implementing strategy 3, and reviewing the latest climate science to update the Plan.⁶⁶⁶ The Port has also incorporated climate change adaptation policy into an updated port master plan draft that is awaiting final review and approval.⁶⁶⁷

The Port of San Diego has recently published the Sea Level Rise Vulnerability Assessment & Coastal Resiliency Report evaluating potential impacts on each port district⁶⁶⁸ and recommending an adaptive management approach.⁶⁶⁹ The report focuses on the impacts that coastal storm events and rising sea levels will have on critical infrastructure, public access, and recreational opportunities.⁶⁷⁰ The report then broadly discusses available adaptation strategies, including protection, accommodation and retreat, but does not reach a conclusion on what strategies will be most appropriate.⁶⁷¹ The intent of the report is to establish a framework by which the Port can address climate change impacts in the future;⁶⁷² thus, the report describes a process in which the Port will regularly conduct vulnerability assessments,⁶⁷³ set an adaptation goal, identify potential adaptation strategies, identify the benefits and limitations of each strategy, evaluate the technical, financial and legal feasibility of each strategy, evaluate whether the strategies are appropriate for the severity of impacts and are consistent with existing policies and plans,⁶⁷⁴ and then implement the strategies.⁶⁷⁵

Finally, the Port of San Francisco has established the Waterfront Resilience Program to develop a resilience framework that can be used to address both immediate and future hazards presented by sea level rise, flooding, and earthquakes.⁶⁷⁶ The Port Commission coordinates with city and regional officials to incorporate flood risk in to new development projects⁶⁷⁷ and tailor waterfront land use for water-dependent activities, public access, open space, and recreation.⁶⁷⁸ The Port has also partnered with the U.S. Army Corps of Engineers (USACE) and other federal, state, and local agencies to study flood risk along the Bay's shoreline in an effort to better understand flood risk and produce adaptation strategies.⁶⁷⁹ One strategy currently in the planning phase for the protection of key recreational, utility, and transportation infrastructure is the Embarcadero

⁶⁶⁵ *Id.* at 10.

⁶⁶⁶ *Id.* at 10.

⁶⁶⁷ Port Master Plan Update, Port of Long Beach, <https://polb.com/port-info/mission-vision/#master-plan-update>.

⁶⁶⁸ *Sea Level Rise Vulnerability Assessment & Coastal Resiliency Report*, *supra* note 548, at 41.

⁶⁶⁹ *Id.* at 137.

⁶⁷⁰ *Id.* at 41-43.

⁶⁷¹ *Id.* at 139,144.

⁶⁷² *Id.* at 147.

⁶⁷³ *Id.* at 138.

⁶⁷⁴ *Id.* at 143.

⁶⁷⁵ *Id.* at 137.

⁶⁷⁶ *Waterfront Resilience Program*, PORT OF S.F., <https://sfport.com/waterfront-resilience-program>.

⁶⁷⁷ *Id.*

⁶⁷⁸ *Goals of the Waterfront Land Use Plan*, PORT OF S.F., https://sfport.com/ftp/uploadedfiles/about_us/divisions/planning_development/ch2.pdf; *About the Waterfront Plan*, PORT OF S.F., <https://sfport.com/about-waterfront-plan>.

⁶⁷⁹ *USACE Flood Resiliency Study*, PORT OF S.F., <https://www.sfportresilience.com/-flood-study>.

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Seawall Program.⁶⁸⁰ In accordance with the resilience framework, immediate changes are aimed at high priority disaster response and life safety projects along the existing seawall while future changes will include policy decisions that create coordinated adaptation efforts between the city, region, and private parties.⁶⁸¹

B. Coastal Adaptation and Military Facilities

In 2014, the Department of Defense released the Climate Change Adaptation Roadmap focused on identifying and assessing the effects of climate change on the Department's functions, integrating climate change considerations across the Department and managing associated risks, and collaborating with internal and external stakeholders on climate change challenges.⁶⁸² The Department established the Senior Sustainability Council (SSC) in 2010 to serve as a coordinating body that, under the Roadmap, develops adaptation strategies while also analyzing and recommending climate-change related policy, guidance, and practice.⁶⁸³ The SSC established a Climate Change Adaptation Working Group (CCAWG) in 2012 that leads development of the Roadmap and provides advice to the SSC on climate science, vulnerability and impact assessments, and adaptation practices.⁶⁸⁴ Congress recently enacted the National Defense Authorization Act (NDAA) for Fiscal Year 2021 which requires the Department to update the Roadmap by February 1, 2022 and include an outline of the Department's strategy and implementation plan, including an overarching approach⁶⁸⁵ and cost estimates,⁶⁸⁶ to address extreme weather and sea level rise.⁶⁸⁷

In the 2014 Roadmap, the Department is primarily concerned with rising global temperatures, changing precipitation patterns, increased frequency and intensity of extreme weather events, rising sea levels, and storm surge.⁶⁸⁸ The Department expects these changes to affect the design, operation, maintenance, and repair of military and civilian infrastructure,⁶⁸⁹ and the ability to maintain built and natural infrastructure used to ensure military readiness.⁶⁹⁰ The Department maintains that it will ensure the continued availability of the land, air, and water resources at their installations and ranges so the Department can continue its normal operations.⁶⁹¹ Master plans guiding development, new design and construction standards, and emergency preparedness planning aimed initially at protecting critical infrastructure are listed as potential methods by

⁶⁸⁰ *Embarcadero Seawall Program*, PORT OF S.F., <https://www.sfportresilience.com/seawall-program>.

⁶⁸¹ *Waterfront Resilience Program*, *supra* note 574.

⁶⁸² 2014 Climate Change Adaptation Roadmap 1, Dep't of Def., https://www.acq.osd.mil/eie/downloads/CCARprint_wForward_e.pdf.

⁶⁸³ *Id.* at 3.

⁶⁸⁴ *Id.*

⁶⁸⁵ National Defense Authorization Act for Fiscal Year 2021, Pub. L. No. 116-283, 134. Stat. 3388, §327(b)(1), <https://www.congress.gov/116/bills/hr6395/BILLS-116hr6395enr.pdf>.

⁶⁸⁶ *Id.* at §§ 327(b)(2)(C)(vii), 327(b)(2)(D)(v).

⁶⁸⁷ *Id.* at § 327(a).

⁶⁸⁸ 2014 *Climate Change Adaptation Roadmap*, *supra* note 580, at 4.

⁶⁸⁹ *Id.* at 5, 7.

⁶⁹⁰ *Id.* at 6.

⁶⁹¹ *Id.* at 10.

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which this goal can be accomplished.⁶⁹² The Department also plans to collaborate with state and local officials to effectively adapt their plans and operations, and with surrounding communities for planning climate change adaptation and emergency preparedness and response.⁶⁹³

In 2017, the Navy published a climate change handbook to provide an analytical framework, tools, and other guidance to help Navy Master Development Planners understand how climate change should be addressed in plans and projects for installation infrastructure based on the 2014 Roadmap.⁶⁹⁴ First, planners should identify the project area, associated hazards, timeline for development and conflicting hazards, and specific impacts that need to be addressed.⁶⁹⁵ Second, planners should identify potentially suitable adaptation options and evaluate their strengths, weaknesses, feasibility, and appropriateness.⁶⁹⁶ Third, planners should evaluate the costs of each adaptation option over its life cycle as well as its cost effectiveness.⁶⁹⁷ Fourth, planners should compile a report summarizing the evaluations, identifying key future variables, and evaluating risk.⁶⁹⁸ The handbook includes worksheets for each step to streamline the process. Notably, the Port of San Diego uses a modified version of this framework in its Sea Level Rise Vulnerability Assessment & Coastal Resiliency Report.⁶⁹⁹

⁶⁹² *Id.* at 10, 11.

⁶⁹³ *Id.* at 13.

⁶⁹⁴ Climate Change Installation Adaptation and Resilience Planning Handbook at IN-1, Naval Facilities Eng'g Command, https://www.fedcenter.gov/_kd/go.cfm?destination=ShowItem&Item_ID=31041.

⁶⁹⁵ *Id.* at IN-3.

⁶⁹⁶ *Id.* at IN-3.

⁶⁹⁷ *Id.* at IN-3.

⁶⁹⁸ *Id.* at IN-3.

⁶⁹⁹ *Sea Level Rise Vulnerability Assessment & Coastal Resiliency Report*, *supra* note 548, at 141.