

Sea Level Rise: A Guide for Public and Private Projects

A Practical Guidance® Practice Note by John Erskine, Nossaman LLP



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This practice note discusses the legal and policy framework for addressing sea level rise (SLR) in the 21st century in the U.S., with an emphasis on the California Coastal Act (the Coastal Act), its administrative regulations, and policy guidance as promulgated by the California Coastal Commission (the Coastal Commission). This practice note also presents a brief overview of the laws and policies that have been implemented in the last decade to address sea level rise in Florida and New York.

The 26th United Nations Climate Change Conference of the Parties (COP26) wrapped up in Glasgow, Scotland on November 12, 2021, and policymakers, politicians, and the press continue to review the success of the event that “many believe to be the world’s best last chance to get runaway climate change under control.” See [COP26 website](#). Only time will tell whether global warming will continue unabated, seas will rise, and coastal cities will suffer environmental and economic disaster in the coming decades.

While the jury is still out in assessing the latest UN climate confab’s success in achieving consensus on staving off environmental catastrophe, geotechnical engineers, planning firms, architects, and land use lawyers in the United States are dealing with more urgent issues, particularly in planning for public infrastructure and private development projects near or on the coast. Sea level rise planning and regulatory guidance for local governments and coastal property owners

is a major policy and legal issue affecting almost 30% of the U.S. population residing or working in U.S. coastal counties.

For an overview of practical guidance related to climate change, see [Climate Change Resource Kit](#). For additional guidance on environmental issues that impact real property development, see [Wetlands Protection State Law Survey](#), [Wetlands Regulations: Considerations for Project Developers](#), [Stormwater Permitting and Management Requirements](#), and [Environmental Impact Review in Real Estate Transactions](#).

The Federal Coastal Zone Management Act (CZMA) of 1972

The U.S. Congress passed the Coastal Zone Management Act (CZMA), 16 U.S.C. §§ 1451 through 1467, in 1972. The ‘70s was an unprecedented period for passage of initiatives and new laws to protect coastal resources and ensure public access to the coast in California and nationally. Sweeping new environmental programs and legislation included the Clean Air Act of 1970, 91 Pub. L. No. 604, 84 Stat. 1676, the Clean Water Act of 1972, 33 U.S.C. §§ 1251-1387, and the National Environmental Policy Act, 42 U.S.C. § 4331, signed into law by President Nixon.

The CZMA states:

The Congress finds and declares that it is the national policy—

(1) to preserve, protect, develop, and where possible, to restore or enhance, the resources of the nation’s coastal zone for this and succeeding generations;

(2) to encourage and assist the states to exercise effectively their responsibilities in the coastal zone through the development and implementation of management programs to achieve wise use of the land and water resources of the coastal zone, giving full consideration to ecological, cultural, historic, and esthetic values as well as the needs for compatible economic development, which programs should at least provide for-

...

(B) the management of coastal development to minimize the loss of life and property caused by improper development in flood-prone, storm surge, geological hazard, and erosion-prone areas and in areas likely to be affected by or vulnerable to sea level rise, land subsidence, and saltwater intrusion, and by the destruction of natural protective features such as beaches, dunes, wetlands, and barrier islands.

16 U.S.C. § 1452.

The National Oceanic and Atmospheric Administration (NOAA), a regulatory agency within the U.S. Department of Commerce, implements the CZMA.

CZMA and the California Coastal Act

On January 28, 1969, an explosion in Union Oil's Platform A in Santa Barbara created one of the largest oil spills in U.S. history. The spill—along with high-rise development on beaches in Coronado, California and Los Angeles County and a massive oceanfront subdivision in Sonoma County called "Sea Ranch" that blocked 10 miles of public access—led in short order to a statewide initiative, Proposition 20, which created the Coastal Act, Cal. Pub. Res. Code § 30000 et seq.

Proposition 20 required that the Coastal Act, with its six regional commissions, be reauthorized by the legislature prior to the end of the 1976 legislative term. The umbrella federal legal authority for the Coastal Commission's implementation of the CZMA is CZMA § 306(d)(6), 15 C.F.R. § 930.11(o). The legislative approval did occur in 1976 (cleared by one vote) and a statewide Coastal Commission was created.

The Coastal Commission is responsible for reviewing proposed federal projects and federally authorized activities to assess their consistency with the California Coastal Management Program (CCMP) approved by NOAA in 1977.

Legal counsel representing any federal agency or contractor implementing a federal project should be cognizant that

any federal agency activity or federal development project, whether it occurs inside or outside of the coastal zone, that affects land or water uses, or natural resources of the California Coastal Zone, is subject to the federal consistency provisions of the CZMA (CZMA § 307(c)(1), 15 C.F.R. § 930.30) overseen by the Coastal Commission.

A federal development project includes any federal activity involving the planning, construction, modification, or removal of public works facilities or other structure, and the acquisition, utilization, or disposal of land or water resources. 15 C.F.R. § 930.31(b).

The CZMA also provides for consistency certifications for activities such as offshore oil exploration and development and production of oil or gas from any area that has been leased under the Outer Continental Shelf (OCS) Lands Act, 43 U.S.C. § 1331 et seq. Given recent (2021) California oil platform spills and increasing opposition to continuance of the federal OCS leases, practitioners should be aware of these consistency certifications for oil production and other offshore alternative energy initiatives or activities. No federal license or permit activity (each of which is described in detail in an OCS plan) may be approved by a federal agency until the requirements of the CZMA are satisfied. CZMA § 307(c)(3)(B), 15 C.F.R. § 930.76.

It is important to note that the Secretary of Commerce can override the State Coastal Commission's objection to a federal CZMA finding of inconsistency if he or she determines that the OCS activities are consistent with the objectives or purposes of the federal CZMA or are necessary in the interest of national security. 16 U.S.C. § 1456(3)(A).

Managing Sea Level Rise in California

Policy makers, coastal environmental nongovernmental organizations such as the Sierra Club, Audubon Society, and Surfrider Foundation, and coastal and land use lawyers representing public and private clients have been aware of the ongoing need to address coastal hazards and the impact of severe storms, wave run-up, sea level rise, land subsidence, and erosion, as the propensity to locate public facilities, commercial structures, and housing in coastal areas has intensified in the 20th and 21st centuries. See 16 U.S.C. §§ 1452, 1303(1). It is estimated that almost 30% of the U.S. population lived in coastal counties as of 2018, according to census data of the U.S. Department of Commerce.

In California, formal and focused SLR planning was initiated at the state level after former California Governor Arnold Schwarzenegger signed an executive order in 2008 calling

for the development of a statewide SLR strategy and ordered state agencies, in particular the Coastal Commission, to formally plan for SLR impacts.

The Coastal Commission, following a series of public hearings on the subject in 2015, published its initial draft Sea Level Rise Policy Guidance (the 2015 Policy Guidance). See Coastal Commission [website](#). After additional public comment periods and further revisions by the Coastal Commission staff, the 12-member Commission unanimously adopted the Coastal Commission's first advisory for coastal cities, counties, and permit applicants: [Sea Level Rise Policy Guidance: Interpretive Guidelines for Addressing Sea Level Rise in Local Coastal Programs and Coastal Development Permits](#) (the 2018 Policy Guidance).

In 2018, utilizing information presented by the California Ocean Protection Council's (OPC) Science Advisory Team, the Coastal Commission adopted an updated version of the 2015 Policy Guidance, [Rising Seas in California: An Update on Sea Level Rise Science](#) (the 2018 Update).

Just recently, on November 17, 2021, the Coastal Commission, pursuant to a grant agreement with NOAA under the CZMA, adopted new SLR policy guidance for public infrastructure focused primarily on coastal roads, highways, water, and wastewater systems. This critical infrastructure network is managed by California's 76 coastal jurisdictions as well as state and regional agencies and special districts, and policies adopted for development, redevelopment, and management of that infrastructure will be implemented through Commission-certified Local Coastal Programs (LCPs) and plans. [Entitled Critical Infrastructure at Risk: Sea Level Rise Planning Guidance for California's Coastal Zone](#), the 2021 guidance document (the 2021 Policy Guidance) presents six key considerations for SLR adaptation planning that are intended to enhance coastal resilience of transportation and water facilities.

As discussed below in greater detail, shoreline protective devices (SPDs), such as revetments and seawalls, continue to be disfavored, despite being the most common and widely utilized method to address coastal hazards in California and worldwide. Nature-based adaptation strategies are now prioritized, by the Commission, over strategies with additional coastal resource impacts.

Many coastal cities and counties have been critical of various aspects of the 2021 Policy Guidance, including its insistence on using the H++ High-Risk SLR scenario for hazard modeling-since there is zero assigned probability of the projected 10 feet of sea level rise occurring by 2100 associated with that scenario (see League of California Cities comment letter of September 24, 2021, available [here](#), and

City of Huntington Beach comment letter of September 24, 2021, available [here](#))-and the Coastal Commission's outright rejection of Cal. Pub. Res. Code § 30235's allowance of seawalls and other SPDs (see Item 6(e) of Coastal Commission Hearing Agenda of November 17, 2021, available [here](#)). For further guidance, see the discussion of Low-, Medium-, and High-Risk aversion scenarios below. The H++ High-Risk scenario is extremely unlikely to occur by 2100, according to NASA scientists and other commenters, including climate scientists from MIT and Boston College. See GeoSoils Comment Letter on CDP Application No. 6-20-0375.

Best Available Science – Models, Scenarios, and Guidance for Sea Level Rise Planning and Permitting Decisions

The potential impacts of sea level rise on the land, tidelands, and water areas within the defined Coastal Zone of the State of California fall directly within the Coastal Commission's planning and regulatory responsibilities under the Coastal Act. Cal. Pub. Res. Code § 30006.5 et seq. The Coastal Zone is the land and water area seaward to the state's outer limits of jurisdiction, offshore islands, and generally 1,000 yards inland from the mean high tide line; it does not include the area of jurisdiction of the San Francisco Bay Conservation and Development Commission. Cal. Pub. Res. Code § 30103. The Coastal Commission's legislative mandate requires it to use best available science to guide coastal management and decision-making processes-in both legislative and permitting decisions. Cal. Pub. Res. Code § 30335.5.

Use of best available science has been a widely litigated issue at both the federal and state levels, but courts will defer to agencies, particularly where a high degree of technical scientific expertise is required. *City of Waukesha v. EPA*, 320 F.3d 228, 247 (2003); see also *Maine v. Norton*, 257 F. Supp. 2d 357, 389 (D. Me. 2003) ("The court must defer to the agency's expertise, particularly with respect to decision-making which involves 'a high level of technical expertise.'"); *A.M.L. Int'l, Inc. v. Daley*, 107 F. Supp. 2d 90, 102 (D. Mass. 2000) ("Indeed, a reviewing court must afford special deference to an agency's scientific expertise.").

Sea level rise and coastal hazard analyses are therefore required in LCPs prepared by coastal cities and counties, port master plans, public works plans, long range development plans, coastal development permits (CDPs), federal

consistency reviews, and other Coastal Act-defined decision processes.

As of this writing, the Coastal Commission advocates that the best available science for probabilistic sea level rise in California in the coming decades is the OPC Science Advisory Teams' 2018 Update. See [2018 Policy Guidance](#). The 2018 Update is based on the ongoing work of the bureau of climate scientists serving on the Intergovernmental Panel on Climate Change (IPCC) formed by the UN.

Legal counsel advising public and private clients should note that the Coastal Commission's 2018 Policy Guidance states, "Other authoritative sea level science and projections may also be used, in part or in full, provided they are peer-reviewed, widely accepted within the scientific community, and locally relevant." See [2018 Policy Guidance](#).

However, the best available science is presumptively deemed to be that presented in the Coastal Commission's 2018 Update. See [2018 Policy Guidance](#). Because the best available science is a dynamic process, and subject to numerous assumptions, the question becomes, how does an advisory-only policy guidance document carry the force of law, particularly in critical private and public permitting application? Many affected stakeholders and, in particular, coastal cities and counties have posited this question.

The primary legal answer is found in Cal. Pub. Res. Code § 30253, which requires that new development minimize coastal hazard risks without the use of shoreline protective devices or coastal bluff retaining walls that would "substantially alter natural landforms." Cal. Pub. Res. Code § 30253(a), (b). However, another provision of the Coastal Act states that revetments, breakwaters, seawalls, and other such construction that alters natural shoreline processes "shall be permitted when required to serve coastal-dependent uses or to protect existing structures . . . in danger from erosion and when designed to eliminate or mitigate adverse impacts on local shoreline sand supply." Cal. Pub. Res. Code § 30235.

These two critical and, in practice, diametrically conflicting provisions of the Coastal Act set up SLR risk aversion scenarios and pose significant challenges both for public agency coastal planners attempting to incorporate adaptation or protection methodologies in LCPs, and for private or public applicants seeking to avoid infeasible conditions of approval that are often imposed on CDPs.

The best available science provided in the 2018 Update contains the following statements:

- In the past 100 years, global mean sea level increased by seven to eight inches (less than one foot in 100 years).

- Global average sea level rise is driven by the expansion of ocean waters as they increase in temperature, addition of fresh water from melting land-based ice sheets and glaciers, and extractions in groundwater.
- The 2018 Policy Guidance's updated projections of probabilistic sea level rise is based on measurements from 12 tidal gauges at various points along the entire stretch of California coast utilized in computer models.
- At the national level, the IPCC's Third National Climate Assessment released in 2014 provided four sea level rise scenarios ranging from eight inches to seven feet by 2100 based on modeled assumptions reflecting different predicted amounts of future greenhouse gas emissions, ocean warming, and ice sheet loss.
- The 2018 Policy Guidance, Appendix G, provides Low Risk Aversion, Medium-High Risk Aversion, and Extreme Risk Aversion probabilistic projections for the modeled height of sea level rise by decade, starting in 2030, for the 12 tidal gauges along the California coast. As an example, see Table G-10 in Appendix G to the [2018 Policy Guidance](#) for the projected sea level rise for the Los Angeles tidal gauge.

See [2018 Update](#).

Legal counsel for private project applicants and counsel for public agencies should continue to closely evaluate and analyze the Coastal Commission's three mandated risk aversion scenarios. As Table G-10 (referenced above) shows, the Low Risk Aversion scenario has a 17% probability, the Medium-High Risk Aversion scenario has a 1-in-200 chance or 0.5% probability, and the Extreme Risk Aversion (H++) scenario has no assigned probability of occurring. See [2018 Policy Guidance](#), Appendix G.

It is important to note that these projections emanate from the IPCC and its climate models. The computer modeling of future SLR utilized by the IPCC was based on less-than-precise measurements taken at a global network of tidal gauges between 2009-2012. The complexity of assumptions and multitude of models is increasingly a challenge for climate scientists. The most extreme scenarios are increasingly being rejected by the UN's panel. See Hotz, Robert Lee, "Climate Scientists Encounter Limits of Computer Models, Bedeviling Policy," *The Wall Street Journal*, February 6, 2022, available [here](#). However, there are now actual measurements of SLR at California's 12 coastal tidal gauges for over 10 years, from which the rate of SLR can be compared to predictive modeling.

Recent analysis by coastal engineering experts (including GeoSoils, Inc. and others) of NOAA's tidal gauge data from the La Jolla, California tidal gauge, based on satellite altimetry measuring the actual rate of sea level rise over

the last decade (rather than modeled projections), indicate the modeling the IPCC relied on may be significantly off. See, e.g., GeoSoils Comment Letter on CDP Application No. 6-20-0375. NOAA's measurements at this tidal gauge indicate that sea level rise of only 0.079 feet has occurred over the last 11 years. This is actual data, rather than hard to calibrate computer models, and would project out to an SLR of only 0.5 feet by the year 2100, rather than 6 to 10 feet by 2100. If current measurements are matched to the various SLR models, the model that most closely aligns with what is currently being measured projects an SLR of about one foot by the year 2100. Satellite altimetric data from some of the other 11 tidal gauges show similar lower levels of SLR, exactly on par with the seven to eight inches that occurred in the last century.

Practical Application of the Coastal Commission's SLR Policy Guidance

While the Coastal Commission's 2015, 2018, and 2021 guidance all state that they are advisory-only and not "regulatory document[s] or legal standard of review," in practice, they are being force fit through suggested modifications from the Coastal Commission into mandatory SLR LCP amendments. Many of these SLR LCP amendments have been years in preparation, yet the Coastal Commission staff has routinely rejected LCP amendments—even after some suggested modifications have been accepted incorporated—leading to withdrawals by various coastal cities. See, e.g., the City of Del Mar's June 2021 [notice of withdrawal](#) of an SLR LCP amendment following receipt of 25 staff-recommended "suggested" modifications.

Notably, the California Legislature passed 2021 Cal. SB 1, which now mandates SLR implementation in LCPs, with the hope of \$100 million per year in state funding for grants to coastal cities and counties for preparation of LCPs consistent with the 2018 Policy Guidance and the 2021 Policy Guidance. This may lead to uniform adaptation mandates from the Coastal Commission rather than a menu of coastal resiliency options, thus removing "local" options in LCPs.

SLR policy guidance is implemented through the LCP certification process, which serves to ensure that the 61 cities and 15 counties that have some or all of their boundaries in the Coastal Zone comply with SLR guidance. The carrot provided to local elected officials is return of permit authority for coastal development projects except in retained jurisdiction areas. The stick is control of all coastal permitting within the coastal city or county by the Coastal Commission through its district offices.

As noted above, even after an LCP is certified and becomes effective, the Coastal Commission retains continuing direct permit authority over some lands (e.g., over tidelands, submerged lands, and public trust lands) and authority to act on appeals for certain categories of local CDP decisions.

The SLR policy guidance now applies to all development in the Coastal Zone through review and approval of CDP applications. The definition of the term "development" is extensive and comprehensive. Cal. Pub. Res. Code § 30106 defines "development" to be:

On land, in or under water, the placement or erection of any solid material or structure; discharge or disposal of any dredged material or of any gaseous, liquid, solid, or thermal waste; grading, removing, dredging, mining, or extraction of any materials; change in the density or intensity of use of land, including, but not limited to, subdivision pursuant to the Subdivision Map Act . . . and any other division of land, including lot splits, except where the land division is brought about in connection with the purchase of such land by a public agency for public recreational use; change in the intensity of use of water, or of access thereto; construction, reconstruction, demolition, or alteration of the size of any structure, including any facility of any private, public, or municipal utility; and the removal or harvesting of major vegetation other than for agricultural purposes, kelp harvesting, and timber operations which are in accordance with a timber harvesting plan submitted pursuant to the provisions of the Z'berg-Nejedly Forest Practice Act of 1973 (commencing with Section 4511). As used in this section, "structure" includes, but is not limited to, any building, road, pipe, flume, conduit, siphon, aqueduct, telephone line, and electrical power transmission and distribution line.

To comply with Cal. Pub. Res. Code § 30253, referenced above, or the equivalent LCP provision, both private and public development projects now need to be planned, located, designed, and engineered for changing tidal and wave run-up impacts that will be potentially exacerbated by various sea level rise scenarios. The Commission's authorization of which risk scenario to utilize is critical to the viability, realization, and cost of any private or public project and the best use of coastal property.

Sea Level Rise Adaptation Strategies

Adaptation strategies for coastal inhabitants and local government decisionmakers may involve modifications to land use plans (in LCPs), regulatory changes, individual

project modifications, or permit conditions that focus on avoidance or minimization of risks and the protection of coastal resources, also described as building coastal resiliency. Not just specific to California coastal, bluff, and bayfront properties, the options for adapting to coastal hazards that may experience a greater risk of loss of property and life due to increases in sea level rise include (1) protection, (2) accommodation, and (3) retreat. See Figure 17 in Chapter 7 of the [2018 Policy Guidance](#).

Protection

Cal. Pub. Res. Code § 30235 addresses protection from sea level rise, erosion, and coastal hazards. The statute permits shoreline protective devices (e.g., seawalls, revetments, etc.) when necessary to serve coastal-dependent uses, such as marinas and commercial fishing operations, or to protect existing structures or public beaches in danger from erosion and when the protective device is designed to eliminate or mitigate impacts on sand supply.

Unfortunately, “existing structures” have been deemed by the Coastal Commission to be only those structures in existence prior to the January 1, 1977, effective date of the Coastal Act.

No appellate decision in California addresses the legal question of whether the term “existing structures” in Cal. Pub. Res. Code § 30235 means only those structures built prior to the Coastal Act—the Coastal Commission’s interpretation—or whether it also includes structures previously approved by the Coastal Commission and in existence at any time the Coastal Commission acts on an application for a new seawall or revetment. There is also no appellate decision addressing the ostensibly mandatory nature of this section of the statute, which states that the SPDs “shall be permitted.” Cal. Pub. Res. Code § 30235.

Many legal observers believe that Cal. Pub. Res. Code § 30235 was intended to apply to all Coastal Commission-approved structures, even those built post-January 1, 1977, where the approved development is in fact in danger from coastal hazards and the proposed SPD is the least environmentally damaging alternative to abate the danger.

The Coastal Commission and its legal counsel actually took that very position in *Surfrider Foundation v. California Coastal Commission*, Walter Cavanaugh and Gary Grossman (2001 Case No. 110033), but that unpublished decision was decided by the Court of Appeal on other grounds. Since the mid-2000s, the Coastal Commission has interpreted “existing structures” to mean only pre-1977 structures that have not been substantially modified, although Commission legal counsel has acknowledged that “in a few instances . . .

the Commission has treated structures built after 1976 as existing structures entitled to shoreline protection even if no adjacent pre-Coastal Act structure also needed protection.” See [2018 Policy Guidance](#), Chapter 8.

Due to the pervasive influence of lobbying of the Coastal Commission’s appointing authorities and the California legislature and commissioners, and litigation by Surfrider Foundation, the Coastal Commission now primarily focuses on soft protection options such as living shorelines, not SPDs. Examples are provided in Chapter 7, Adaptation Strategies, of the [2018 Policy Guidance](#). These options are often not viable means to ensure maintenance of critical infrastructure, private structures, and, in some cases, access to the coast (roads, bridges, and coastal accessways).

Accommodation

Accommodation includes siting and design standards and retrofit of existing structures. Common in Gulf States of the eastern seaboard and Florida, these adaptation methods are expensive, reduce square footage of structures, and require breakthrough first floor construction techniques and/or an often-drastic reduction in site utilization due to increased setbacks. Accommodation measures are introduced and adopted by local government in certified LCPs, or imposed on project applicants during hearings on CDPs as “special conditions” of approval.

Managed Retreat

Finally, managed retreat—the erstwhile lodestar of some climate scientists and environmental activists for addressing the next 75-100 years of sea level rise—is, in many commenters’ opinions, financially burdensome and logistically problematic if not impossible to accomplish on any effective scale in urban and suburban coastal settings. See [2018 Policy Guidance](#); Coastal Commission CDP Archives, available [here](#). Managed retreat along the California coast has been estimated to cost hundreds of billions of dollars and would require removing and/or completely relocating large commercial structures, businesses, oceanfront residential subdivisions, highways, bridges, and other public facilities. Many cities and public agencies have concluded that this approach is essentially financially infeasible. This author is of the opinion that policy directives based on 1-in-200 probability that SLR will be in the six- to seven-foot range by 2100, let alone the speculative H++ scenario, are ill-advised.

[California Senate Bill 83](#) was introduced on December 15, 2020, and proposed a revolving low-interest loan program for local governments to purchase properties found to be vulnerable to sea level rise and to repay those loans with proceeds accrued through rental use of the properties. This would have been a financial incentive to institute managed

retreat through the adoption of LCP amendments. While the bill passed the legislature, during the 2021 session, Governor Gavin Newsom vetoed the bill, stating that it did not “comprehensively address the costly activities envisioned [to protect vulnerable coastal properties], likely to be carried out over decades.” See [October 7, 2021, SB 83 Veto Message](#).

The Hybrid Adaptation Approach to Sea Level Rise in Practice

The 2018 Policy Guidance references a hybrid adaptation strategy, which calls for (1) accommodation over the short term and relocation over the long term, (2) updating land use designations and zoning ordinances, (3) redevelopment restrictions, and (4) permit conditions. See [2018 Policy Guidance](#), Figure 17. This hybrid approach to development approvals already incorporates a form of forced retreat through nonnegotiable CDP conditions.

After determining compliance with applicable land use plan policies and the implementation plan regulations within the jurisdiction’s Commission-certified LCP (or, if no LCP, Chapter 3 of the Coastal Act), practitioners and their geotechnical engineers should focus on addressing the coastal hazard-submittal requirements for CDP applications.

The project site must be examined for potential erosion, flooding, wave attack, and wave run-up hazards. This includes consideration of potential 50- to 100-year storm events and, of course, calculated effects of expected sea level rise depending on the identified life of the project. Counsel representing private or public project applicants must ensure that the project team has qualified and experienced coastal engineering consultants.

Despite the allowance under Cal. Pub. Res. Code § 30235 for protection of pre-Coastal Act or coastal-dependent use development through SPDs, the Coastal Commission uses Cal. Pub. Res. Code § 30253 to prohibit or limit any use of seawalls, revetments, or other shoreline protection now, or in the future, due to the potential elimination of lateral public beach access (i.e., access parallel to the mean high tide line) through erosion. This presents significant challenges to the Coastal Commission’s finding that the project has sufficiently “minimize[d] risks to life and property in areas of high geologic, flood, and fire hazard.” Cal. Pub. Res. Code § 30253(a).

Public Trust Resources

Coastal hazards and seawalls, revetments, and other shoreline protective devices raise public trust concerns. The common law public trust doctrine protects the public’s right to access and/or navigate tidelands, submerged lands, and navigable waters, which the state holds in trust for the public’s use and enjoyment. Cal Const, Art. X § 4.

Localized site (beach, bayfront, etc.) conditions must be carefully evaluated so that, based on the appropriate sea level rise risk scenario and beach width, coastal hazards will not likely impact the proposed development during the expected life of the project.

As a result, recent CDP approvals by the Coastal Commission have imposed a special condition that it will not permit future SPD to protect the residence or commercial building. Additionally, applicants are also required to agree that they will remove the approved development if:

- Any government agency has ordered the structures to not be occupied, or to be removed, due to coastal hazards
- Essential services to the site can no longer feasibly be maintained (e.g., utilities, roads)
- The development is no longer located on private property due to the migration of the public trust boundary
- Removal is required due to new SLR policies in an area’s LCP -or-
- The development would require an SPD to prevent any of the items listed above

See Commission CDPs approved from 2018 to present. For example, see [CDP Application No. 5-17-0678](#). Special Conditions require new beachfront home permit applicants to waive their legal right under PRC § 30235 to any future shoreline protective device. See [CDP Application No. 5-17-0678](#), Special Condition No. 3.

In *Lynch v. Cal. Coastal Com.*, 229 Cal. App. 4th 658 (2014), two beachfront homeowners in Encinitas, California (just north of San Diego) received a CDP for a new seawall, but with a time limit that requires a new hearing after 20 years; the Coastal Commission wanted to assess the impact of sea level rise and potentially remove the bluff-protecting device. Notwithstanding the fact that the homeowners had an older existing seawall (lost in a major storm) that was not subject to a time limit, the Coastal Commission’s managed retreat condition was upheld by the California Supreme Court on the grounds of waiver: Applicants cannot accept the benefit of a permit, construct development, and then ignore approved

and accepted conditions. *Lynch v. Cal. Coastal Com.*, 229 Cal. App. 4th 658 (2014). In this case, the homeowners objected to the special conditions but nevertheless signed and recorded deed restrictions agreeing to the conditions and completed the project, thereby waiving their right to challenge the conditions. *Id.*

Managed retreat, described in the 2018 Policy Guidance as advisory and only an option in certain areas, is essentially being fully implemented by the Coastal Commission under its hybrid adaptation approach.

Florida Statewide Flooding and Sea Level Rise Resilience Act; Coastal Construction Control Line

In May 2021, Governor Ron DeSantis signed 2021 Fla. SB 1954, which, along with the 2021-2022 budget, will provide over \$640 million to support state and local communities to address the expected continuing impacts of sea level rise, severe storms, and coastal flooding. The bill was not only supported by Governor DeSantis but also received unanimous bipartisan approval in both the Florida House and Senate. The comprehensive legislation provides:

- \$12.5 million for coral reef protection and resilience efforts
- \$29 million for planning programs
- \$500 million for the Statewide Flooding and Sea Level Rise Resilience Plan, Fla. Stat. Ann. § 380.093 -and-
- \$100 million for local community-based projects starting in 2022

The Coastal Construction Control Line (CCCL) Program-Florida's equivalent of a "coastal zone" regulatory and permitting framework-uses an amalgamation of policies and statutory guidelines for coastal development and preservation to regulate structures and activities along Florida's coastal areas. Detailed regulations for coastal development are found in the Florida Administrative Code. Key sections include the following:

- **Fla. Admin. Code Ann. r. 62B-26.001 (62B-26.001, F.A.C. et seq.).** Describes the location of the CCCLs in the 35 coastal counties.
- **Fla. Admin. Code Ann. r. 62B-33.002 (62B-33.002, F.A.C. et seq.).** Sets out rules and procedures to obtain development permits for coastal construction seaward of the CCCL.

- **Fla. Admin. Code Ann. r. 62B-36.001 (62B-33.002, F.A.C. et seq.).** Outlines a series of guidelines for a far-reaching, statewide beach management strategy aimed at protecting Florida's critically eroded shoreline.
- **Fla. Admin. Code Ann. r. 62B-41.002 (62B-41.002, F.A.C. et seq.).** Contains the criteria and procedures for obtaining a coastal construction permit.

Further, effective July 1, 2021, Sea Level Impact Projection Study Standards require analysis of the following three elements for any state-financed coastal construction:

- 50 years (or structured life expectancy) of estimated sea level rise using the NOAA intermediate sea level rise scenario per the NOAA report, [Global and Regional Sea Level Rise Scenarios for the United States](#)
- 1% risk (100-year storm) flood inundation, over 50 years or the expected structural life -and-
- Risk to public safety and environmental impacts, including structural integrity

See Fla. Admin. Code Ann. r. 62S-7.012 (62S-7.012, F.A.C.).

Fla. Stat. Ann. § 161.085(1) says that the "state recognizes the need to protect private structures and public infrastructure from damage or destruction caused by coastal erosion." Fla. Stat. Ann. § 161.085(2)(a) states, "Permits for present installations may be issued if it is determined that private structures or public infrastructure is vulnerable to damage from frequent coastal storms." And Fla. Admin. Code Ann. r. 62B-33.0051(1)(a) (62B-33.0051, F.A.C.) sets forth eligible structures for coastal seawalls and revetments. Additional thresholds center on vulnerability and frequent storm events as well as additional impacts due to adjacent armoring. The Administrative Code also provides exemptions for seawall gap-closure. Fla. Admin. Code Ann. r. 62B-33.0051 (62B-33.0051, F.A.C.).

As in California and other coastal jurisdictions, practitioners in Florida should identify and include an experienced and qualified geotechnical engineer in addressing coastal hazards and sea level rise impacts under Florida's regulatory regime for coastal development projects.

The New York Community Risk and Resiliency Act

The New York State Legislature passed the Community Risk and Resiliency Act (CRRRA), 2014 N.Y. Laws 355, in June 2014, and New York Governor Andrew M. Cuomo signed the CRRRA into law on September 22, 2014. The CRRRA became effective on March 21, 2015, and applies to all applications

and permits received after the adoption of guidance on the implementation of the CRRA but no later than January 1, 2017. 2014 N.Y. Laws 355 § 19. 2014 N.Y. The bill was introduced to strengthen New York State's preparedness for the effects of climate change-specifically, to help protect communities against sea level rise.

Then, in July 2019, the New York State Climate Leadership and Community Protection Act (CLCPA), 2019 N.Y. SB 6599, amended the CRRA. The CLCPA addresses adaptation and resilience across state programming, land use planning, and local government support in addition to its climate mitigation goals, which include zero greenhouse gas emissions by 2050.

Consideration of Sea Level Rise, Storm Surge, and Flooding in Facility Siting, Permitting, and Funding

The CRRA amended three state statutes:

- The Environmental Conservation Law
- The Agriculture and Markets Law -and-
- The Public Health Law

It required applicants for permits or funding in a number of specified programs to demonstrate that future physical climate risk due to sea level rise, storm surge, and flooding have been considered in project design. It also required that these factors be incorporated into certain facility-siting regulations. 2014 N.Y. Laws 335 §§ 2-5, 9, 14, 14a, 15 (2014 N.Y. ALS 335, 2014 N.Y. Laws 335, 2014 N.Y. Ch. 335, 2013 N.Y. AB 9234).

The CLCPA then amended the CRRA to include all permits subject to the Uniform Procedures Act and expanded the scope of the CRRA to require consideration of all climate hazards in these permit programs. Specifically, the CLCPA requires the New York Department of Environmental Conservation (DEC) to assess all reasonably foreseeable risks of climate change on any proposed projects and identify which risks are the most significant. Issues to be considered include

sea level rise, tropical and extratropical cyclones, storm surges, flooding, wind, changes in average and peak temperatures, changes in average and peak precipitation, public health impacts, and impacts on species and other natural resources.

2019 N.Y. SB 6599 § 17-a(a)-(b).

Note that the CRRA also added consideration of climate-related risks to the criteria state infrastructure agencies must consider in funding public infrastructure projects. 2014 N.Y. Laws 355 § 2.

Local Governments

As to local governments, the CRRA does the following:

- Requires the New York State Department of State (DOS) to work with the DEC to develop model climate change adaptation zoning laws to help municipalities incorporate measures related to future physical climate risks into their local laws (2014 N.Y. Laws 355 § 14. Adoption of the model local laws is voluntary. Id.)
- Provides funding on a competitive basis, subject to appropriation, to municipalities for local waterfront revitalization planning projects that mitigate future physical climate risks (Eligible costs include "planning, studies, preparation of local laws, and construction projects." 2014 N.Y. Laws 355 § 10. However, the CRRA allows the imposition of "contractual requirements and conditions upon any municipality which receives state assistance payments" under ECL § 54-1101 "to ensure that a public benefit shall accrue from the use of such funds by the municipality." Id. This includes demonstrating that the municipality has considered "future physical climate risk due to sea level rise, and/or storm surges and/or flooding, based on available data predicting the likelihood of future extreme weather events, including hazard risk analysis data if applicable." Id.)
- Allows the Commissioner of Environmental Conservation to provide, on a competitive basis and subject to appropriation, assistance payments to municipalities or not-for-profit corporations toward the cost of any coastal rehabilitation projects, provided that the Commissioner of Environmental Conservation determines that future physical climate risk due to sea level rise, storm surges, and/or flooding has been considered (2014 N.Y. Laws 355 § 11.)
- Allows the Commissioner of the Office of Parks, Recreation and Historic Preservation to enter into maintenance and operation agreements for open space land conservation projects in urban areas or metropolitan park projects with municipalities, not-for-profit corporations, and unincorporated associations, if the project demonstrates consideration of future physical climate risk due to sea level rise, storm surges, and/or flooding (2014 N.Y. Laws 355 § 7.)

The CRRA also applies to the Commissioner of Agriculture and Markets' evaluation of applications for state funding for local farmland protection programs, 2014 N.Y. Laws 355 § 12, the Commissioner of Health's evaluation of applications for state funding for drinking water projects, 2014 N.Y. Laws 355 § 13, and DEC's consideration of applications for certain "major projects," including applications for permits under the following programs:

- Protection of waters
- Sewerage service for realty subdivisions
- Liquified natural and petroleum gas
- Mined land reclamation
- Freshwater wetlands
- Tidal wetlands -and-
- Coastal erosion hazard areas

2014 N.Y. Laws 355 § 15.

The CRRA further requires the DEC to:

- Adopt regulations establishing science-based sea level rise projections by January 1, 2016, and to update those projections every five years -and-
- In consultation with DOS, to provide guidance to state agencies on the implementation of the CRRA, including the use of “resiliency measures that utilize natural resources and natural processes to reduce risk”

2014 N.Y. Laws 355 § 16-17.

The DEC released four guidance documents for the implementation of the CRRA:

- [Using Natural Measures to Reduce the Risk of Flooding and Erosion](#), which describes natural resilience measures and their uses for reducing risks associated with erosion and flooding
- [New York State Flood Risk Management Guidance](#), which presents recommendations to state agencies on considering flood risk in planning and project implementation
- A guide on [Estimating Guideline Elevations](#), which presents the principles introduced in the New York State Flood Risk Management Guidance to assist planners, engineers, designers, and architects in flood mitigation project design -and-
- [Guidance for Smart Growth Public Infrastructure Assessment](#), which provides general principles of climate risk mitigation that state agencies should follow

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John Erskine has substantial experience counseling property owners and development teams on compliance with planning and zoning laws, the California Environmental Quality Act, State resource agency issues, and the California Coastal Act. He has advised and coordinated large development teams in connection with major urban infill multifamily projects, residential/retail mixed use centers, office complexes, mid and high-rise residential projects, oil field land use conversions, and beach/waterfront coastal projects. John has also represented numerous homeowner associations and residential and commercial land owners before counties, cities, and the California Coastal Commission.

John serves as co-chair of Nossaman’s statewide coastal law practice. Prior to joining Nossaman as a partner in 1989, he served in several elected and appointed positions in local, County, and State government.

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