

**THE COASTAL ACT, POWER PLANTS, AND THE CASE FOR
“UNDEVELOPMENT”**

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INTRODUCTION

California’s natural coastal habitat is a shadow of its former self; coastal wetlands are at 10% of their historic expanse, and other habitats—beaches, bluffs, dunes, and others—are similarly reduced.¹ Sea level rise is putting this habitat—along with communities and critical infrastructure—at risk, with sea-level-rise projections becoming more and more extreme.² Given sea level rise and ongoing development pressure, California will need to remove structures—rather than build seawalls—in order to restore and conserve what remains of the state’s coastal natural habitat. Often called “strategic retreat,” the concept of moving or demolishing structures serves two purposes: it enhances public safety by creating space between buildings and the energy of the sea, and it provides space for habitat to move landward with sea level rise.³ Although strategic retreat—hereinafter “undevelopment”—delivers both ecological and social benefits (in the form of permanent, meaningful risk mitigation), it has not been commonly deployed.⁴

The Coastal Act is well-equipped to restrict new development and protect current habitat in the existing coastal zone, but it is not designed to facilitate undevelopment to protect future habitat in light of sea level rise.⁵ Using the state’s efforts to phase out once-through cooling technology along the coastline as a case study, this article will examine the regulatory changes necessary to ensure the California Coastal Commission’s (Coastal Commission’s) appropriate role in decision-making related to permit renewal and continued siting of infrastructure in the coastal zone in order to facilitate the removal of formerly coastal dependent infrastructure and the protection and restoration of coastal habitat.

1. CAL. NAT. RES. AGENCY, STATE OF THE STATE’S WETLANDS: 10 YEARS OF CHALLENGES AND PROGRESS 8 (2010).

2. GARY GRIGGS ET AL., CAL. OCEAN SCI. TR., RISING SEAS IN CALIFORNIA: AN UPDATE ON SEA-LEVEL RISE SCIENCE 3 (2017), <http://www.opc.ca.gov/webmaster/ftp/pdf/docs/rising-seas-in-california-an-update-on-sea-level-rise-science.pdf> [https://perma.cc/YGZ8-2GCT]; COMM. ON SEA LEVEL RISE IN CAL., OR., & WASH. ET AL., SEA-LEVEL RISE FOR THE COASTS OF CALIFORNIA, OREGON, AND WASHINGTON: PAST, PRESENT, AND FUTURE 2, 14 (2012) [hereinafter COMM. ON SEA LEVEL RISE].

3. Heather Daniel, *Replenishment Versus Retreat: The Cost of Maintaining Delaware’s Beaches*, 44 OCEAN & COASTAL MGMT. 87, 92 (2001).

4. See Edward Kick et al., *Repetitive Flood Victims and Acceptance of FEMA Mitigation Offers: An Analysis with Community-System Policy Implications*, 35 DISASTERS 510, 517–18 (2011) (reviewing various reasons for resistance to relocation from residential development in the face of flood risk); Juliano Calil et al., *Aligning Natural Resource Conservation and Flood Hazard Mitigation in California*, PLoS ONE, Jul. 22, 2015, at 2.

5. CAL. PUB. RES. CODE §§ 30620–27 (West 2016).

Coastal power plants represent an excellent—but partially missed—opportunity for undevelopment in California. State regulations phasing out “once-through cooling”⁶ practices used in many coastal power plants are forcing the repowering, retrofitting, or retiring of many plants.⁷ These once-through cooling regulations provide an opportunity for state and local governments to rethink whether power plants should be sited along the coast. Removing these power plants and replacing the generation capacity elsewhere would maintain the reliability of the power grid by reducing the vulnerability of our energy infrastructure to sea level rise and storm damage while increasing coastal habitat. However, the Coastal Commission gets only one bite at the apple—at the initial siting of the plant. As such, it does not have an adequate statutory mandate to promote plant re-siting or an effective means of coordinating with the other agencies with primary responsibility to oversee the implementation of the once-through cooling regulations.

The Coastal Commission’s authority is similarly limited with respect to decisions on existing transportation infrastructure and wastewater treatment plants in the coastal zone. And—without changes to the Coastal Act—the opportunity for undevelopment will be missed again and again. As sea level rises and increasing coastal storms threaten other coastal infrastructure in California and submerge the remaining coastal habitat, the Coastal Commission’s authority with respect to renewing siting decisions for existing infrastructure in the coastal zone should be enhanced to ensure the protection of future habitat.

This article will: (1) briefly discuss the likely impacts of sea level rise on power plants and other major coastal infrastructure; (2) illustrate how the Coastal Commission—and, by extension, the protection of coastal natural resources—is marginalized in the context of decisions regarding permit renewal and ongoing siting of existing infrastructure in the coastal zone; (3) argue that because power-plant retirement and removal maximizes public benefits in this context, the Coastal Act—and other laws related to infrastructure permitting—should be amended to give the Coastal Commission more authority to influence decisions relating to the renewal of operating licenses for power plants and other infrastructure in the Coastal Zone; (4) identify the similarities between power-plant permitting and

6. LITTLE HOOVER COMM’N, *REWIRING CALIFORNIA: INTEGRATING AGENDAS FOR ENERGY REFORM* 10 (2012); *see* ELEC. POWER RESEARCH INST., *ASSESSMENT OF ONCE-THROUGH COOLING SYSTEM IMPACTS TO CALIFORNIA COASTAL FISH AND FISHERIES 1-3* (2007) [hereinafter *ASSESSMENT*] (describing once-through cooling as drawing in relatively cool ocean water, using it to absorb heat, and discharging the heated water back into the ocean).

7. CAL. CODE REGS. tit. 23, § 2922(a) (2017).

decision-making regarding other vulnerable infrastructure in the coastal zone; and (5) further argue that providing expanded Coastal Act jurisdiction over the maintenance of all existing infrastructure in the coastal zone—in particular, transportation, infrastructure, and wastewater treatment plants—is critical to any formula for sea-level-rise adaptation that maintains natural coastal habitat.

I. SEA LEVEL RISE WILL HAVE MAJOR IMPACTS ON POWER PLANTS AND OTHER CRITICAL COASTAL INFRASTRUCTURE.

Sea level is projected to rise approximately 5 to 24 inches by 2050 and 17 to 66 inches by 2100 along the California coast, posing a serious risk to critical infrastructure and current habitat.⁸ This change in sea surface elevation will exacerbate existing hazards and reduce the period of time over which coastal development is expected to remain relatively safe.⁹ Sites that might have seemed safe for 80 or 100 years might now only be stable for 40 or 50 years as the risk of coastal hazards increase over the next century.¹⁰ This poses a significant risk to California’s energy security.¹¹

The Pacific Institute identified 30 coastal power plants—providing nearly 15% of California’s electric generation capacity¹²—that are at risk of flooding under a 2080 sea-level-rise projection.¹³ Many are vulnerable to a 1% annual chance flood even today.¹⁴ The potential magnitude of these impacts will place increased pressure on the “nerve center”¹⁵ of the state’s

8. COMM. ON SEA LEVEL RISE, *supra* note 2, at 4–6. Recent projections on melting sea ice in the West Antarctic ice sheet would increase these numbers even further. See GRIGGS ET AL., *supra* note 2, at 34–36.

9. Brief of Amici Curiae Ocean and Coastal Conservation Interests in Support of Petitioners at 12–13, 18–20, *Massachusetts v. U.S. Evtl. Prot. Agency*, 548 U.S. 903 (2007) (No. 05-1120) [hereinafter Brief of Amici Curiae].

10. CAL. COASTAL COMM’N, SEA LEVEL RISE POLICY GUIDANCE: INTERPRETIVE GUIDELINES FOR ADDRESSING SEA LEVEL RISE IN LOCAL COASTAL PROGRAMS AND COASTAL DEVELOPMENT PERMITS 33 (2015).

11. *Id.* at 61.

12. MATTHEW HEBERGER ET AL., CAL. CLIMATE CHANGE CTR., THE IMPACTS OF SEA-LEVEL RISE ON THE CALIFORNIA COAST 3 (2009).

13. *Id.* at 9 (explaining that under medium to medium-high emissions scenarios, mean sea level along the California coast will rise to an estimated 1.4 meters (4.6 feet) by 2100, not including ice-melt contributions from the Greenland and Antarctic ice sheets, and as a result, higher sea levels and the resultant damage to coastal power plants could occur as early as 2070 or 2080); see also NAT’L OCEANIC & ATMOSPHERIC ADMIN., OAR No. CPO-1, GLOBAL SEA LEVEL RISE SCENARIOS FOR THE UNITED STATES NATIONAL CLIMATE ASSESSMENT 3–12 (2012) (providing several scenarios for global mean sea level rise by 2100 and discussing impacts of ice-sheet loss from rising temperatures and relative effects on global sea level rise).

14. HEBERGER ET AL., *supra* note 12, at 8–9.

15. CAL. INDEP. SYS. OPERATOR, COMPANY INFORMATION AND FACTS 3 (2013), https://www.caiso.com/Documents/CompanyInformation_Facts.pdf [<https://perma.cc/N3L2-VBQ7>].

power grid. Damage to coastal plants from flooding, inundation, and erosion places stress on the grid by potentially increasing the need to turn on natural-gas-powered “peaker” plants,¹⁶ moving the state away from its renewable energy targets, or increase importation of out-of-state energy.¹⁷

This vulnerability is not unique to power plants. Other types of coastal infrastructure (roads, rails, wastewater treatment plants, ports, and airports) are similarly at risk.¹⁸ The Pacific Institute estimated that 3,500 miles of road would be at risk of flooding with a 1.4-meter sea level rise,¹⁹ but even small areas of flooding can cause serious transportation disruption.²⁰ There are 28 wastewater treatment plants at risk under 1.4 meters of sea level rise,²¹ and the consequences of this vulnerability are dire. Inundation of wastewater-treatment infrastructure could damage pumps and other equipment, potentially leading to the discharge of untreated sewage from coastal outfalls.²² In addition, higher water levels could interrupt discharge even under otherwise normal operating conditions.²³

Coastal natural resources are similarly vulnerable. We have already lost roughly 90% of the historic expanse of coastal wetlands in California to development and conversion to agriculture.²⁴ What remains is roughly 170,000 acres of coastal wetland, which is at risk of becoming squeezed between existing hard structures and the rising sea.²⁵ In the absence of intervention, roughly 70,000 acres of current wetland will be lost to sea level rise by the year 2100.²⁶ However, with sea level rise, one type of land

16. HEBERGER ET AL., *supra* note 12, at 1, 20, 54; LITTLE HOOVER COMM’N, *supra* note 6, at 10.

17. See generally CAL. INDEP. SYS. OPERATOR, *supra* note 15, at 8 (explaining that, as a balancing authority, CAISO must try and match generation with energy demand and maintain the electric frequency of the grid no matter what extreme weather or natural disaster is imposed on the infrastructure and facilities supporting the grid).

18. Brief of Amici Curiae, *supra* note 9, at 18–20; COMM. ON SEA LEVEL RISE, *supra* note 2, at ix; NAT’L OCEANIC & ATMOSPHERIC ADMIN., *supra* note 13, at 1.

19. HEBERGER ET AL., *supra* note 12, at 54.

20. See Megan M. Herzog & Sean B. Hecht, *Combating Sea Level Rise in Southern California: How Local Governments Can Seize Adaptation Opportunities While Minimizing Legal Risk*, 19 HASTINGS W.-N.W. J. ENVTL. L. & POL’Y 463, 500 (2013).

21. HEBERGER ET AL., *supra* note 12, at 62.

22. Herzog & Hecht, *supra* note 20, at 528–29.

23. *Id.*

24. T.E. DAHL, U.S. FISH & WILDLIFE SERV., STATUS AND TRENDS OF WETLANDS IN THE COASTAL WATERSHEDS OF THE CONTERMINOUS UNITED STATES 2004 TO 2009, at 11 (2013).

25. NATURAL RESOURCES AGENCY STATE OF CALIFORNIA, STATE OF THE STATE’S WETLANDS: 10 YEARS OF CHALLENGES AND PROGRESS 8 (June 2010).

26. Michael Bell et al., Update from the California Oceans Program: The Nature Conservancy of California Board of Trustees Meeting 19 (May 20–21, 2015) (unpublished book) (on file with authors).

can easily transition to another type.²⁷ This effect is a two-sided coin; it will cause the loss of habitat referred to above, but it also offers the potential for undeveloped uplands to transition to wetland habitat as sea level rises.²⁸ Thus, by 2100, 54,000 acres of currently undeveloped uplands could become new wetland. This total (157,000 acres) is still well short of the existing acreage of 173,000 acres.²⁹ In other words, even if our goal is a modest one of “no net loss” of wetland habitat—as opposed to a more aggressive goal aimed at restoring something closer to the historic expanse—we will not achieve it without undevelopment.

The Coastal Commission lacks sufficient authority over existing infrastructure decisions in the Coastal Zone.

Despite the potential loss of coastal habitat in the face of sea level rise, the Coastal Commission remains ill-equipped to guide decisions relating to existing infrastructure along the coast, hampering undevelopment and protection of future coastal habitat. The California Coastal Act (Coastal Act) has been remarkably successful in achieving its original policy goals of ensuring public access to the shoreline, protecting coastal natural resources from development, and prioritizing coast-dependent uses.³⁰ It was not designed, however, to empower the Coastal Commission to reconsider the wisdom of maintaining existing development as the shoreline changes over time.³¹ In fact, the Coastal Act explicitly sanctions pre-existing, nonconforming uses by exempting “existing development” from many of its regulations.³² As the threat of sea level rise increases, expanding the Coastal Commission’s authority over existing, non-conforming structures will be important.

In 2015, the Coastal Commission took a significant step toward illustrating how sea level rise should be integrated into local coastal programs’ and coastal development permit decision-making by issuing Sea

27. See HEBERGER ET AL., *supra* note 12, at 27 (providing several mechanisms for creation of new wetlands).

28. *Id.*

29. Bell et al., *supra* note 26.

30. CALIFORNIA COASTAL COMM’N, STRATEGIC PLAN 2013–2018, at 1 (2013).

31. See CAL. PUB. RES. CODE § 30001(d) (West 2016) (noting that a key finding behind the Coastal Act’s creation was “[t]hat existing developed uses, and future developments that are carefully planned and developed consistent with the policies of this division, are essential to the economic and social well-being of the people of this state and especially to working persons employed within the coastal zone”).

32. *E.g.*, *id.* § 30600(e)(2) (exempting existing developments from commission review projects).

Level Rise Policy Guidance.³³ It is clear from the Guidance that the Coastal Commission believes that evolving legal and technological standards—and scientific information regarding impacts to the coast associated with climate change—should drive power plants away from the coast.³⁴ In the Guidance, the Coastal Commission calls for consideration of greater design standards for critical infrastructure like coastal power plants.³⁵ Specifically, the Coastal Commission recommends that critical infrastructure be built to withstand a 200- or 500-year event, whereas typical coastal projects are designed to withstand a 100-year event.³⁶ In addition, the Coastal Commission recommends applying high sea-level-rise projections and “worst case scenarios” for the siting and design of critical facilities.³⁷ The Coastal Commission further recommends that local jurisdictions develop guidance pertaining to the managed retreat of critical infrastructure, including developing plans for managed relocation of at-risk facilities and “when to consider managed retreat rather than continue with repairs and maintenance in light of sea level rise.”³⁸ While these recommendations are prudent, they are not binding and, therefore, may be ignored both by state agencies and by local jurisdictions when making coastal-development decisions.³⁹ Furthermore, the Guidance as it pertains to local coastal program amendments and coastal development permits primarily informs traditional Coastal Act functions—specifically the design and permitting of new development.⁴⁰

33. The Coastal Commission reviews and approves Local Coastal Programs (LCPs) that include land use plans (LUPs) and zoning ordinances and implementation programs for the LUPs. CAL. PUB. RES. CODE §§ 30512–13. LCPs must be consistent with—and adequate to carry out—Coastal Act policies, after which that local government becomes the lead agency for permitting most coastal development above the mean high tide line, subject to limited Coastal Commission appeal authority. *Id.* § 30514(a), (b).

34. *See id.* at 112 (“Changes and modifications could include the use of foundation elements that will allow for building relocations or removal of portions of a building as it is threatened or reserving space to move on-site waste treatment systems away from eroding areas or areas that will be susceptible to a rising water table or increased flooding.”).

35. CAL. COASTAL COMM’N, *supra* note 10, at 82.

36. *Id.* at 244.

37. *Id.* at 140.

38. *Id.* at 140, 175; LITTLE HOOVER COMM’N, *supra* note 6, at 18.

39. CAL. COASTAL COMM’N, *supra* note 10, at 5.

40. *Id.* at 69.

II. REMOVING ONCE-THROUGH COOLING COASTAL POWER PLANTS WOULD HAVE RESTORED COASTAL HABITAT, PROTECTED MARINE RESOURCES, AND IMPROVED ENERGY RELIABILITY IN CALIFORNIA.

Given the Coastal Commission’s constraints in decision-making regarding existing development, undevelopment opportunities are rare. The 2010 Water Board order on once-through cooling created such an opportunity.⁴¹

Prior to the 2010 once-through cooling order, 19 electrical power plants (including two nuclear-fueled plants) collectively drew billions of gallons of marine or estuarine water every day to cool generators and then discharged the heated water back into the ocean or other body of water.⁴² Concerns over the environmental impacts of the increased ambient water temperature and the impingement and entrainment of millions of fish, larvae, eggs, seals, sea lions, turtles, and other creatures led California to phase out the practice of once-through cooling.⁴³ The State Water Resources Control Board’s (SWRCB’s) 2010 regulations required these 19 plants to comply with technology-based standards to reduce the harmful effects associated with cooling water-intake structures on marine and estuarine life.⁴⁴ Power-plant owners and operators had three response options to comply with the regulations: (1) no longer using once-through cooling technology, (2) reducing entrainment by 93%, or (3) shutting down.⁴⁵

While response options 1 and 2 largely address the harmful marine impacts associated with once-through cooling, they do not address the safety and reliability issues associated with siting energy infrastructure (or extending the useful life of that infrastructure) in high-hazard areas in the coastal zone.⁴⁶ Only option 3, retiring the plants, would both avoid marine impacts from once-through cooling (thereby satisfying the once-through cooling regulation objectives) and avoid flooding and associated energy-supply impacts that would be caused by sea level rise.⁴⁷ In addition, phasing out these plants in favor of distributed solar generation and other renewable energy sources would help move California toward its renewable energy

41. STATE WATER RES. CONTROL BD., FACT SHEET (2015), http://www.waterboards.ca.gov/publications_forms/publications/factsheets/docs/once-through-cooling.pdf [<https://perma.cc/SG7D-YR8K>] [hereinafter SWRCB FACT SHEET].

42. *Id.*

43. LITTLE HOOVER COMM’N, *supra* note 6, at 18; SWRCB FACT SHEET, *supra* note 41.

44. *See generally* CAL. CODE REGS. tit. 23, § 2922(a) (2017) (addressing power plants’ negative impact on the environment).

45. *Id.*

46. SWRCB FACT SHEET, *supra* note 41.

47. *See id.* (retiring plants are the only option that guarantees full compliance).

and greenhouse-gas reduction targets, particularly because some of these once-through cooling plants are inefficient and expensive peaker plants.⁴⁸ Thus, four independent policy objectives—maintaining the reliability of the power grid, transitioning to an energy portfolio with more renewable energy sources, protecting marine organisms from entrainment and impingement, and restoring coastal habitat—converged to support the removal of once-through cooling power plants from the coastline.

Unfortunately, however, the agencies with primary responsibility for overseeing these objectives are distinct from one another and do not have an efficient means of coordinating to ensure this outcome.⁴⁹ The Coastal Commission, in particular, watched most of the action from the sidelines—both because the Coastal Act does not require its direct involvement and because of institutional capacity issues.⁵⁰ Instead, without adequate Coastal Commission involvement and authority, protracted negotiations⁵¹ led to only five generators retiring their facilities, with most of the remainder indicating that they will repower their plants on site and no longer use once-through cooling technology.⁵²

48. *Emergency Peaker Power Plants California*, CAL. ENERGY COMM'N, <http://www.energy.ca.gov/maps/powerplants/EmergencyPeakerPowerPlants.pdf> [<https://perma.cc/9ZLD-JK3W>] (last visited May 9, 2017).

49. See Proposed Memorandum of Agreement Between the Coastal Commission and the Energy Commission Regarding the Roles and Duties of Each During the Energy Commission's Application for Certification (AFC) Review from Al Wanger, Deputy Dir. to Coastal Commissioners and Interested Parties (Mar. 31, 2005) [hereinafter Proposed Memorandum] (clarifying the roles of the Coastal Commission and Energy Commission to ensure efficient coordination).

50. *Id.*

51. See CAL. PUB. UTIL. CODE § 399 (West 2017) (listing the purposes and responsibilities of the California Public Utilities Commissions (CPUC)); CAL. INDEP. SYS. OPERATOR CORP., FLEXIBLE FUTURE: 2012 STATE OF THE GRID 1 (2012), <http://www.caiso.com/Documents/2012StateoftheGrid.pdf> [<https://perma.cc/5QXX-QGNJ>] (stating that the California Independent System Operator is an impartial operator of the wholesale power grid that facilitates the spot market for power and helps plan for electricity needs and transmission lines); SWRCB FACT SHEET, *supra* note 41. The state and regional water boards enforce once-through-cooling regulations and issue NPDES permits as needed. CAL. CODE REGS. tit. 23, § 2922(a) (2017). Finally, a Statewide Advisory Committee on Cooling Water Intake Structures (SACCWIS)—comprised of members from the California Public Utilities Commission, Coastal Commission, Energy Commission, California Air Resources Board (CARB), State Water Resources Control Board, State Lands Commission, California Independent System Operator—reviews implementation plans and provides annual recommendations to the State Water Resources Control Board regarding the implementation plans and their impact on reliability. STATEWIDE ADVISORY COMM. ON COOLING WATER INTAKE STRUCTURES, REPORT OF THE STATEWIDE ADVISORY COMMITTEE ON COOLING WATER INTAKE STRUCTURES 1 (2016), http://www.waterboards.ca.gov/water_issues/programs/ocean/cwa316/saccwis/docs/saccwis_final_report_052416.pdf [<https://perma.cc/5AG9-5BLG>].

52. Order Instituting Rulemaking to Integrate and Refine Procurement Policies and Consider Long-Term Procurement Plans, No. 13-02-2015, slip op. at 7 (Feb. 13, 2013); SWRCB FACT SHEET, *supra* note 41.

III. THE COASTAL COMMISSION AND COASTAL RESOURCES ARE MARGINALIZED IN THE ENERGY COMMISSION’S COASTAL POWER PLANT INFRASTRUCTURE DECISIONS.

The phased transition away from once-through cooling has triggered interplay between various state agencies that have jurisdiction over coastal power plants.⁵³ While many agencies are involved in these coastal-power-plant decisions, only the Coastal Commission has the protection of coastal resources squarely within its mandate.⁵⁴ However, as illuminated by the Huntington Beach case study below, the Coastal Commission does not have a meaningful seat at the table in the deliberations over the future of coastal once-through cooling plants.⁵⁵

As noted above, many plant operators have already decided whether to repower or to retire their once-through cooling plants to comply with the 2010 regulations.⁵⁶ The fates of other plants, such as the Mandalay and Ormond Beach power plants, remain undecided.⁵⁷ However, without stronger Coastal Act provisions, most of the state’s opportunities to undevelop by removing these plants from the coastal zone have been and will be missed.

This experience has provided many lessons for what kinds of regulatory changes are necessary to ensure that undevelopment is considered as future decisions are made regarding the maintenance or removal of existing

53. See CAL. PUB. UTIL. CODE § 399 (discussing agency interaction); *Energy Facilities Licensing Process - Guide to Public Participation*, CAL. ENERGY COMMISSION, http://www.energy.ca.gov/siting/guide_license_process.html [<https://perma.cc/H2CC-LPQQ>] (last visited Mar. 4, 2017) (stating that the Energy Commission “has the exclusive authority to certify the construction and operation of thermal electric power plants 50 megawatts or larger and all related facilities in [California]” and that it gets involved only if the project involves a change of 50 megawatts or more); Order Instituting Rulemaking to Integrate and Refine Procurement Policies and Consider Long-Term Procurement Plans, No. 13-02-2015, slip op. at 33–34 (describing examples of agency involvement); E-mail from Tom Luster, Senior Envtl. Scientist, Cal. Coastal Comm’n, to Sarah Reiter, former Law & Policy Fellow, Ctr. for Ocean Sols. (May 8, 2015, 02:03 PST) (on file with author); SWRCB FACT SHEET, *supra* note 41 (explaining that the Coastal Commission’s involvement since the once-through cooling policy took effect, includes, among others, Huntington Beach, El Segundo, Alamitos, Redondo Beach, and Mandalay).

54. Proposed Memorandum, *supra* note 49.

55. See, e.g., CAL. ENERGY COMM’N HEARING OFFICE, No. 12-AFC-02, HUNTINGTON BEACH ENERGY PROJECT FINAL COMMISSION DECISION 5.1-33, 5.1-34, 5.3-23, 5.2-24 (2014) (providing examples of the Energy Commission disregarding Coastal Commission suggestions).

56. See CAL. ENERGY COMM’N, ONCE-THROUGH COOLING PHASE-OUTS 6–7 (2017), http://www.energy.ca.gov/renewables/tracking_progress/documents/once_through_cooling.pdf [<https://perma.cc/227V-AZPB>] (stating that decisions were made pursuant to a schedule carefully negotiated by CAISO).

57. See, e.g., NRG OXNARD ENERGY CTR., PUENTE POWER PROJECT APPLICATION FOR CERTIFICATION 1-1 (2015), http://docketpublic.energy.ca.gov/PublicDocuments/15-AFC-01/TN204219-4_20150416T104347_10_Executive_Summary.pdf [<https://perma.cc/M7UN-SSWX>] (providing the application for certification regarding Mandalay plan).

infrastructure. Indeed, many power plants vulnerable to sea level rise remain in the coastal zone;⁵⁸ these plants will likely need to be modified and updated with new infrastructure and facilities, thereby triggering Coastal Energy Commission (Energy Commission) review.⁵⁹ The Coastal Commission and the Energy Commission will thus once again come head-to-head on these issues in the near future. Amending the Warren-Alquist Act and Coastal Act will be critical to ensuring that the Coastal Commission can protect California's iconic coastline.

The Warren-Alquist Act governs the circumstances under which power plants are licensed.⁶⁰ The Act gives the Energy Commission the "exclusive authority" to license new power plants or repower projects with capacity greater than 50 megawatts.⁶¹ This means that, in the once-through cooling context, if a plant is upgraded and repowered—rather than retired—the plant operator typically needs an Energy Commission license.⁶² The Warren-Alquist Act lays out the process and the factors that the Energy Commission must consider when deciding whether to grant a license.⁶³ It also provides for Coastal Commission involvement in the application process for project proposals in the coastal zone,⁶⁴ although the Coastal Commission does not have independent permitting authority over coastal power plants within the Energy Commission's jurisdiction.⁶⁵

The Energy Commission exercises its authority using two main types of review: the Notice of Intent (NOI) process and the Application for

58. HEBERGER ET AL., *supra* note 12, at 54.

59. CAL. PUB. RES. CODE §§ 25500.1, 25507 (West 2017).

60. *Id.* §§ 25500–43.

61. CAL. PUB. RES. CODE § 25543(b); CAL. ENERGY COMM'N, No. 09-AFC-4, OAKLEY GENERATING STATION: FINAL STAFF ASSESSMENT 2-2 (Mar. 1, 2011).

62. Proposed Memorandum, *supra* note 49; see MICHAEL R. JASKE ET AL., IMPLEMENTATION OF ONCE-THROUGH COOLING MITIGATION THROUGH ENERGY INFRASTRUCTURE PLANNING AND PROCUREMENT 3–4 (2009), <http://www.energy.ca.gov/2009publications/CEC-200-2009-013/CEC-200-2009-013-SD.PDF> [<https://perma.cc/5MC2-TWW3>] ("The more costly the requirements [including permitting] compared to the net revenues available from these facilities under expected market conditions, the more likely retirement becomes.")

63. The Warren-Alquist Act also provides that in order to grant a license, the Energy Commission must certify the need for the plant and the suitability of the site of the plant, including environmental review, prior to the construction or modification of an electric generating plant. CAL. PUB. RES. CODE §§ 25502, 25519(c), 25500. In determining the suitability, the Energy Commission must also find that the project conforms with applicable laws, ordinances, regulations, and standards. *Id.* § 25525. "In making the determination, the commission shall consider the entire record of the proceeding, including, but not limited to, the impacts of the facility on the environment, consumer benefits, and electric system reliability." *Id.* In addition, when reviewing power plant applications, the Energy Commission must consider at least one alternative site that is not in the coastal zone. *Id.* § 25503.

64. *E.g., id.* (granting Energy Commission review of projects in the coastal zone); Proposed Memorandum, *supra* note 49.

65. CAL. PUB. RES. CODE §§ 25500–43.

Certification (AFC) process.⁶⁶ The Coastal Act mandates that the Coastal Commission play a role in the NOI process for power-plant facilities, outlining specific findings that the Coastal Commission must make, including the potential adverse environmental and aesthetic effects.⁶⁷ However, due to a change in the Warren-Alquist Act, most proposed projects no longer require an NOI and now undergo only AFC review.⁶⁸ This is problematic because it creates uncertainty regarding the Coastal Commission’s involvement in the process.⁶⁹ However, according to the Memorandum of Agreement (Agreement) that the Coastal Commission and the Energy Commission entered into in 2005, both agencies understand the law as requiring that the Coastal Commission must participate in any AFC proceedings in the same way that the Coastal Commission is required by the Coastal Act to participate in an NOI proceeding.⁷⁰ The Agreement states that the Coastal Commission must prepare a report on the AFC to the Energy Commission with findings related to compatibility with coastal resources, adverse aesthetic and environmental effects, mitigation opportunities, and other matters, as well as necessary measures to ensure that the project conforms with the Coastal Act.⁷¹

Despite the Agreement, however, for nearly a decade, the Coastal Commission declined to participate in the Energy Commission’s AFC

66. Proposed Memorandum, *supra* note 49.

67. CAL. PUB. RES. CODE § 30413(d); *compare* Letter from Alison Dettmer, Deputy Dir., Cal. Coastal Comm’n, and Tom Luster, Senior Env’tl. Scientist, Cal. Coastal Comm’n, to Coastal Comm’rs & Interested Parties 1 (July 9, 2014) (on file with journal) (relating conflicting opinions regarding interpretation of § 30413) [hereinafter Coastal Commission Letter], *with* Proposed Memorandum, *supra* note 49 (explaining that the 2005 Memorandum of Agreement between the CEC and CEC states that Section 30413(d) is intended to cover the AFC proceedings, which would make Coastal Commission participation mandatory).

68. Proposed Memorandum, *supra* note 49; CAL. PUB. RES. CODE § 25540.6(a) (defining which types of power plants and modifications are exempt from the NOI process); *see also id.* § 25102 (defining application as any request to the Energy Commission for certification of any new or modified site or related facility).

69. CAL. PUB. RES. CODE § 25519(d). The Coastal Commission may participate in the proceeding as an interested party. *Id.* § 25508.

70. Proposed Memorandum, *supra* note 49.

71. *Id.*; CAL. PUB. RES. CODE § 30413(d). Specifically, in an NOI review process, the Energy Commission must share a copy of the NOI with the Coastal Commission for its review and comments, and the Coastal Commission must prepare a report to the Energy Commission with necessary measures to ensure the project conforms with the Coastal Act. *Id.* § 25519(d) (“If the site and related facility specified in the application is proposed to be located in the coastal zone, the commission shall transmit a copy of the application to the California Coastal Commission for its review and comments.”). The Coastal Commission report must contain findings regarding compatibility with coastal resources, conflict with coastal-dependent land uses, adverse aesthetic and environmental effects, mitigation opportunities, and other matters. *Id.* § 30413(d). The Energy Commission’s final written decision on the project must include conditions to meet Coastal Act objectives specified by the Coastal Commission’s report unless the Energy Commission finds that conditions are infeasible or would result in greater impact on the environment. *Id.* § 25523(b).

review process for certain projects due to budget and capacity constraints.⁷² In recent years, the Coastal Commission has once again participated in AFC proceedings according to the terms of the MOA. An amendment to the Coastal Act clarifying the requirement for Coastal Commission participation in AFC proceedings, including a requirement that the Coastal Commission perform a more robust analysis of undevelopment as an alternative, would eliminate any uncertainty regarding this requirement.

Another potential deterrent to more robust Coastal Commission participation is that the Warren-Alquist Act gives ultimate power to the Energy Commission to actually make a final decision on the project—even over Coastal Commission’s objections—and preempts other state laws.⁷³ Because the Coastal Commission’s participation in Energy Commission licensing decisions may ultimately prove futile, the Coastal Commission has little incentive to dedicate scarce resources to this issue, and coastal natural resources and sea level rise considerations likely get short shrift in coastal-power-plant decisions.

*Huntington Beach Spotlight: The Role of Sea Level Rise in Energy
Commission Permitting and the Futility of Coastal Commission Input*

The Energy Commission-Coastal Commission interplay on siting power plants in the coastal zone is best illustrated through the Energy Commission’s final decision on the proposed Huntington Beach Energy Project, a facility proposed in 2012 to be sited within the existing footprint of an operating power plant subject to the 2010 once-through cooling policy.⁷⁴ The proposed facility was a natural-gas-fired, combined cycle and dry-cooled electrical power-plant facility proposed in the city of Huntington Beach, Orange County.⁷⁵

In its final decision on the application for certification, the Energy Commission determined that the power plant was “sufficiently above [sea level rise] to ensure power plant reliability, even with expected [sea level

72. Coastal Commission Letter, *supra* note 67; E-mail from Tom Luster, *supra* note 53 (noting that the Coastal Commission waived involvement in Energy Commission review due to budget and workload issues for a period of time).

73. CAL. PUB. RES. CODE § 25500. The Energy Commission ultimately has the final say on project decisions and can license a project if the CEC determines that “the proposed coastal site has . . . greater relative merit . . . than available alternative sites and related facilities for an applicant’s service area which have been determined to be acceptable.” *Id.* § 30264.

74. *Id.* §§ 25500–43; CAL. ENERGY COMM’N HEARING OFFICE, *supra* note 55, at 2-1, 2-8; E-mail from Tom Luster, *supra* note 53 (noting that in the last 10 years, the Coastal Commission has been involved in Energy Commission review for Huntington Beach, El Segundo, Morro Bay, and a few others).

75. CAL. ENERGY COMM’N HEARING OFFICE, *supra* note 55, at 1-1.

rise],” despite that the project was to be located in an area of increased risk of flooding due to sea level rise.⁷⁶ The Energy Commission rejected the Coastal Commission’s recommendation that the power-plant owner submit proof of protection from a 500-year flood event,⁷⁷ reasoning that the 2013 Draft State of California Sea-Level Rise Guidance Document⁷⁸ recommendation calling for analysis of the 500-year flood event was not a binding law or regulation.⁷⁹

Second, the Energy Commission did not consider alternative sites outside the coastal zone.⁸⁰ In particular, the Energy Commission did not consider whether the proposed facility’s dry-cooled technology constituted “coastal-dependent development” and as such, needed to be located in the coastal zone.⁸¹ Instead, the Energy Commission relied on Coastal Act policy “that prefers on-site expansion of existing power plants to development of new power plants in undeveloped areas of the Coastal Zone.”⁸² The Energy Commission quoted the definition for “coastal-dependent development or use”⁸³ from the Coastal Act but never addressed whether the Huntington Beach Energy Project proposed technology that, while better for the marine environment than once-through cooling, would depend on access to the sea as required by the definition.⁸⁴

76. *Id.* at 5.2-27. The Energy Commission reasoned that: (1) the site is higher than the surrounding areas, which provide additional buffering capacity against coastal inundation, and (2) even if the minimum separation between the site and the surrounding floodplain is reduced from four to two feet due to rising seas, there would still be a level of flood protection. *Id.* at 5.2-15.

77. *Id.* at 5.2-23 to -24.

78. CAL. OCEAN PROT. COUNCIL, STATE OF CALIFORNIA SEA-LEVEL RISE GUIDANCE DOCUMENT (2013), http://www.opc.ca.gov/webmaster/ftp/pdf/docs/2013_SLR_Guidance_Update_FINAL1.pdf [<https://perma.cc/H7ME-JFY9>] [hereinafter CALIFORNIA GUIDANCE DOCUMENT].

79. CAL. ENERGY COMM’N HEARING OFFICE, *supra* note 55, at 5.2-24; CALIFORNIA GUIDANCE DOCUMENT, *supra* note 78; *see also* E-mail from Tom Luster, *supra* note 53 (“[O]ur 30413(d) review focuses on identifying the conditions needed for a power plant to comply with Coastal Act and LCP policies, so the SLR policy, unless adopted in the Act or in an LCP, would be considered guidance. That said, the CEC is likely to evaluate projects for conformity to other similar state-level sea level rise guidance, such as that developed by the Natural Resources Agency and the Ocean Protection Council.”).

80. CAL. PUB. RES. CODE §§ 25507–08 (West 2017); CAL. ENERGY COMM’N HEARING OFFICE, *supra* note 55, at 8-1 to -19.

81. CAL. ENERGY COMM’N HEARING OFFICE, *supra* note 55, at 8-1 to -19.

82. *Id.* at 6.1-14.

83. CAL. PUB. RES. CODE § 30101 (“‘Coastal-dependent development or use’ means any development or use which requires a site on, or adjacent to, the sea to be able to function at all.”).

84. CAL. ENERGY COMM’N HEARING OFFICE, *supra* note 55, at 6.1-13 to -14. The Energy Commission stated that the Huntington Beach Energy Project “proposed inside the existing boundaries of the HBGS site[] is consistent with the Coastal Act policy that prefers on-site expansion of existing power plants to development of new power plants in undeveloped areas of the Coastal Zone.” *Id.* at 6.1-14.

This case study illustrates some of the shortcomings of the Energy Commission-Coastal Commission interplay on power-plant siting. First, the Energy Commission can reject the Coastal Commission's recommendations, as the Energy Commission did with respect to the 500-year flood analysis at Huntington Beach.⁸⁵ Second, although the Coastal Act itself sets up a preference for on-site expansion rather than new development in the coastal zone, it does not consider the third alternative—development OUTSIDE the coastal zone—because this alternative typically does not trigger Coastal Commission authority. Factually, power generation is no longer dependent on coastal siting, but its legal status may still reflect the outdated once-through-cooling technology that ties this infrastructure to the shore.⁸⁶

IV. STATUTORY RECOMMENDATIONS TO INCREASE THE COASTAL COMMISSION'S ABILITY TO INFLUENCE REMOVAL OF EXISTING COASTAL INFRASTRUCTURE

The Coastal Commission—and, by extension, the protection of coastal natural resources—is marginalized in the policy context in which power-plant decisions are made today. Because power-plant retirement and removal maximizes public benefits—maintaining the reliability of the power grid, transitioning to an energy portfolio with more renewable energy sources, protecting marine organisms from entrainment and impingement, and restoring coastal habitat—the Coastal Act and the Warren-Alquist Act should be amended to give the Coastal Commission more authority to influence decisions relating to the renewal of operating licenses for power plants in the Coastal Zone.⁸⁷

85. *Id.* at 1-1, 5.2-23 to -24. The Coastal Commission's participation is often not well-coordinated with the Energy Commission; the Energy Commission noted that the Coastal Commission's report came too late in the process and that "the staffs of the Coastal Commission and the Energy Commission do not appear to have coordinated their analysis of the HBEP as is anticipated by the [Agreement]." *Id.* at 6.1-12 to -13.

86. As Section 30101 of the Coastal Act clarifies, only uses that MUST be sited along the coast to function are deemed coastal-dependent. CAL. PUB. RES. CODE § 30101. Because these former once-through cooling plants could repower to use dry-cooling technology—which does not require access to a waterbody—they no longer qualify as coastal dependent uses. *See id.* (defining coastal-dependent uses as ones that requires the sea to operate).

87. CAL. PUB. RES. CODE §§ 25500-43, 30000-900; SWRCB FACT SHEET, *supra* note 41; *see also* JASKE ET AL., *supra* note 62, at 1, 3, A-1 (analyzing reliability concerns regarding retirement of once-through cooling facilities in draft joint staff agency paper).

A. Amend Coastal Act Section 30260 and 30264 to encourage removal or relocation of large coastal infrastructure under certain conditions.

Section 30260 provides: “Coastal-dependent industrial facilities shall be encouraged to locate or expand within existing sites and shall be permitted reasonable long-term growth where consistent with this division.”⁸⁸

This is effectively a thumb on the scale in favor of rebuilding and updating energy infrastructure on the same footprint on which it was originally built. When the Coastal Act was passed in 1976, it made sense to encourage major energy infrastructure to remain where it is on habitat that is already disturbed, rather than encouraging its location elsewhere.⁸⁹ Indeed, in some contexts, it continues to make sense. However, dry-cooled—and even potentially closed-cycle wet-cooled—power generation is no longer a coastal dependent use,⁹⁰ and it should no longer receive the priority that coastal-dependent uses receive under the Coastal Act.⁹¹ This provision should be modified to clarify this.

In addition, Section 30264 provides: “...[N]ew or expanded thermal electric generating plants may be constructed in the coastal zone if the proposed coastal site has been determined by the [Energy] Commission to have greater relative merit pursuant to the provisions of Section 25516.1 than available alternative sites....”⁹² This section should be modified to require an explicit consideration of inland relocation for decisions on expansion of existing facilities.

B. Amend Coastal Act Sections 30413 to clarify that the Coastal Commission is required to provide recommendations on all applications to the Energy Commission regarding existing energy-infrastructure expansion updates.

As noted above, Section 30413 requires:

(d) Whenever the State Energy Resources Conservation and Development Commission exercises its siting authority and undertakes proceedings pursuant to the provisions of Chapter 6

88. CAL. PUB. RES. CODE § 30260.

89. Joan Hartmann, *The Southern California Wetlands Recovery Project: The Unfolding Story*, 30 GOLDEN GATE U. L. REV. 885, 919–20 (2000).

90. *Id.*

91. CAL. PUB. RES. CODE § 30255 (“[C]oastal-dependent developments shall have priority over other developments on or near the shoreline.”).

92. *Id.* § 30264.

(commencing with Section 25500) of Division 15 with respect to any thermal powerplant or transmission line to be located, in whole or in part, within the coastal zone, the commission shall participate in those proceedings and shall receive from the State Energy Resources Conservation and Development Commission any notice of intention to file an application for certification of a site and related facilities within the coastal zone. . . .

(e) The commission may, at its discretion, participate fully in other proceedings conducted by the State Energy Resources Conservation and Development Commission pursuant to its powerplant siting authority.⁹³

According to both commissions and the terms of the 2005 Memorandum of Agreement, subsection (d) applies any time the Energy Commission exercises its siting authority, which includes the AFC process.⁹⁴ However, because the timing provisions of Section 30413(d) are tied solely to the NOI process and Section 30413(e) is ambiguous about which proceedings it pertain to, confusion persists.⁹⁵ Amending Coastal Act Section 30413 to remove any ambiguity that it also applies to the AFC process will ensure that the Coastal Commission participates fully in this process.

Moreover, a subsection should be added to this provision to require that the location of future coastal habitat, given sea level rise and coastal-inundation projections, be considered in any decisions to upgrade existing infrastructure. Proposed Section 30413(d)(4) would read:

(d) . . . The commission's report shall contain a consideration of, and findings regarding, all of the following: . . .

(4) The potential adverse environmental effects on fish and wildlife and their habitats, including projected future locations of coastal habitat, given sea level rise.⁹⁶

93. *Id.* § 30413.

94. *Id.*; Proposed Memorandum, *supra* note 49.

95. CAL. PUB. RES. CODE § 30413.

96. *Cf.* CAL. PUB. RES. CODE § 30413 (comparing the proposed language with the language in the current statute). "The potential adverse environmental effects on fish and wildlife and their habitats." *Id.*

This clause will help ensure that facility removal will be among the options considered when deciding whether to retrofit and expand existing infrastructure or retire it.

C. Amend the Warren-Alquist Act to remove its preemption of other state laws, including the Coastal Act.

Section 25500 of the Warren-Alquist Act states:

§ 25500. Authority; necessity of certification

In accordance with the provisions of this division, the commission shall have the exclusive power to certify all sites and related facilities in the state, whether a new site and related facility or a change or addition to an existing facility. The issuance of a certificate by the commission shall be in lieu of any permit, certificate, or similar document required by any state, local or regional agency, or federal agency to the extent permitted by federal law, for such use of the site and related facilities, and shall supersede any applicable statute, ordinance, or regulation of any state, local, or regional agency, or federal agency to the extent permitted by federal law.⁹⁷

This strongly preemptive language creates—at best—a serious question about the impact of Coastal Commission participation in energy siting decisions.⁹⁸ Paired with the limited staff capacity to develop recommendations regarding these power plants, it is hard to blame the Coastal Commission for declining to participate. Indeed, the Huntington Beach case study above amply demonstrates the shortcomings of this unbalanced interagency process. Section 25500 should add the following:

Notwithstanding the above, the commission shall implement the recommendations of the California Coastal Commission, submitted under Section 30413 of the Coastal Act, when making determinations for facilities in the Coastal Zone.⁹⁹

97. *Id.* § 25500.

98. See generally Steven Ferrey, *Soft Paths, Hard Choices: Environmental Lessons in the Aftermath of California’s Electric Deregulation Debacle*, 23 VA. ENVTL. L.J. 251, 253 (2004) (discussing California’s energy crisis resulting from regulatory malfunctions and California’s responsive legislation).

99. Cf. CAL. PUB. RES. CODE § 25500 (comparing the proposed language with the language in the current statute). “In accordance with the provisions of this division, the commission shall have the exclusive power to certify all sites and related facilities in the state, whether a new site

V. BROADER IMPLICATIONS FOR OTHER COASTAL INFRASTRUCTURE

Expanded Coastal Act jurisdiction over the maintenance of all existing infrastructure—not just power plants—in the coastal zone is critical to any formula for sea-level-rise adaptation that maintains the remaining natural coastal habitat. The two examples provided below on transportation infrastructure and wastewater treatment plants illustrate how and why the Coastal Act should be amended to give the Coastal Commission a stronger voice in the process of ongoing permitting and maintenance of existing infrastructure. Only by doing this will the needs of coastal natural resources be adequately represented—now and into the future.

A. Transportation Infrastructure

The risk of coastal roadway flooding is anticipated to increase considerably with sea level rise.¹⁰⁰ Indeed, an estimated 3,500 miles of road would be at risk of flooding with a 1.4-meter sea level rise.¹⁰¹ Despite this risk, however, the Coastal Commission has little influence over the California Department of Transportation (Caltrans) decisions to extend the longevity of roads in hazardous coastal areas.

Under Section 30610 of the Coastal Act, no coastal development permit is typically required for maintenance and repairs:

Notwithstanding any other provision of this division, no coastal development permit shall be required pursuant to this chapter for the following types of development and in the following areas: . . .

(d) Repair or maintenance activities that do not result in an addition to, or enlargement or expansion of, the object of those repair or maintenance activities; provided, however, that if the commission determines that certain extraordinary methods of repair and maintenance involve a risk of substantial adverse environmental impact, it shall, by regulation, require that a permit be obtained pursuant to this chapter.¹⁰²

and related facility or a change or addition to an existing facility. The issuance of a certificate by the commission shall be in lieu of any permit, certificate, or similar document required by any state, local or regional agency, or federal agency to the extent permitted by federal law, for such use of the site and related facilities, and shall supersede any applicable statute, ordinance, or regulation of any state, local, or regional agency, or federal agency to the extent permitted by federal law.” *Id.*

100. HEBERGER ET AL., *supra* note 12, at 54.

101. *Id.* at 62.

102. CAL. PUB. RES. CODE § 30610(d).

Most roadway, bridge, and other transportation infrastructure upkeep and updates are included under the umbrella of repair and maintenance activities that do not require a coastal development permit.¹⁰³

A coastal development permit is only required if the Caltrans maintenance activities: (1) enlarge the road or other transportation infrastructure, or (2) are “extraordinary methods of repair and maintenance” that are likely to cause substantial environmental impact, as detailed in Section 13252 of the Coastal Commission regulations.¹⁰⁴ These “extraordinary” repairs and maintenance that require a permit are generally limited to shoreline armoring repairs, dredging, or repair or maintenance activities undertaken within an environmentally sensitive habitat area.¹⁰⁵ Thus, Caltrans has nearly limitless discretion to extend the useful life of roadways in the coastal zone by investing taxpayer money to maintain and update the roads—even where it would be more prudent to relocate or elevate those roadways considering sea level rise.¹⁰⁶

Ultimately, as with power plants, the Coastal Commission’s review authority is largely limited to new or expanded transportation infrastructure in the coastal zone: the Coastal Act makes no provision for subsequent review of most Caltrans decisions relating to aging or at-risk transportation infrastructure.¹⁰⁷ To remedy this, Section 30610 of the Coastal Act and Section 13252 of the Coastal Commission regulations should be amended to

103. See CAL. COASTAL COMM’N, REPAIR, MAINTENANCE AND UTILITY HOOK-UP EXCLUSIONS FROM PERMIT REQUIREMENTS (1978). According to the 1978 document issued by the Coastal Commission (as explicitly recognized in Section 13252(a)(3)(B) of the Coastal Act regulations): no permit is required for repair and maintenance of existing public roads including landscaping, signalization, lighting, signing, resurfacing, installation, or expansion of retaining walls, safety barriers, railings and other comparable development within the existing right-of-way as specified below. *Id.* Maintenance activities are generally those necessary to preserve the highway facility as it was constructed, including: construction of temporary detours, removal of slides and slip cuts, restoration and repair of drainage appurtenances, slope protection devices, installation of minor drainage facilities for preservation of the roadway or adjacent properties, restoration, repair and modifying for public safety bridges and other highway structures, restoring pavement and base to original condition by replacement, resurfacing, or pavement grooving. *Id.* A permit is required for excavation or disposal of fill outside of the roadway prism. *Id.*

104. *Id.*; CAL. CODE REGS. tit. 14, § 13252(a) (2017).

105. CAL. CODE REGS. tit. 14, § 13252(a). Indeed, even for these activities listed in § 13252, if the Commission determines that no substantial environmental impact is likely, it can waive the coastal development permit requirement. *Id.* § 13252(e).

106. Caltrans has shown increasing awareness of the need to consider highway realignment in the face of sea level rise and coastal erosion. *Piedras Blancas Realignment Project*, CAL. DEP’T TRANSP., http://dot.ca.gov/dist05/projects/slo1_piedras/index.htm [<https://perma.cc/6GNC-PS36>] (last visited June 7, 2017). Construction is underway on a realignment project on the Pacific Coast Highway from Point Piedras Blancas to Arroyo De La Cruz Bridge near San Simeon in San Luis, Obispo County. *Id.*

107. CAL. PUB. RES. CODE § 30610(d).

expand the types of repair and maintenance activities for which a coastal development permit is required. Specifically, for roads, bridges, etc. that are estimated to be at risk according to the state's near and medium-term sea-level-rise projections, Caltrans should be required to get a coastal development permit from the Coastal Commission for any *cumulatively significant* repair and maintenance activity.¹⁰⁸ Enabling Coastal Commission review in these circumstances will create greater opportunities to consider the relocation of this infrastructure.

B. Wastewater Treatment Facilities

The consequences of inundation or flooding at the 28 wastewater treatment facilities located within the 1.4-meter sea-level-rise inundation zone include the discharge of untreated sewage from coastal outfalls, which would have devastating impacts on marine life and coastal recreation.¹⁰⁹ The Coastal Commission has the responsibility to review applications for the development or significant expansion of a wastewater treatment facility for consistency with several specific criteria. Specifically:

(c) Any [wastewater treatment] development within the coastal zone or outside the coastal zone which provides service to any area within the coastal zone that constitutes a treatment work shall be reviewed by the commission and any permit it issues, if any, shall be determinative only with respect to the following aspects of the development:

(1) The siting and visual appearance of treatment works within the coastal zone.

(2) The geographic limits of service areas within the coastal zone which are to be served by particular treatment works and the timing of the use of capacity of treatment works for those service areas to allow for phasing of development and use of facilities consistent with this division.

(3) Development projections which determine the sizing of treatment works for providing service within the coastal zone.¹¹⁰

108. *Id.* § 30600(e)(2) (exempting emergency projects on existing highways from commission control).

109. HEBERGER ET AL., *supra* note 12, at 62.

110. *Id.* § 30412.

However, the Coastal Act clearly reserves primary permitting authority for the State Water Resources Control Board and Regional Water Quality Control Boards and makes Coastal Commission jurisdiction subordinate to these agencies’ regulation.¹¹¹ Thus, the permitting scheme established for water treatment facilities is similar to the power-plant scheme in that it only includes the Coastal Commission as a junior player in a decision that is largely in the hands of another agency. Further, as with power plants, the Coastal Commission’s review authority is limited to new or expanded facilities; there is no provision for subsequent review of the siting of aging or at-risk infrastructure in coordination with the water boards’ review of water quality permit conditions (or otherwise).¹¹² In sum, as sea level rises and threatens wastewater treatment facilities, there will be little opportunity to consider the removal of these facilities unless the regulatory scheme is amended in a manner similar to what is recommended above for power plants.

CONCLUSION

The Coastal Commission must be empowered to steward the coast through the difficult years ahead. Amending the Coastal Act and related statutes to increase the Coastal Commission’s authority over decisions related to existing infrastructure will enable the Coastal Commission to help the state avoid ongoing investment in coastal infrastructure that is both risky and inconsistent with natural habitat resilience. Right now, momentum for undevelopment is building as sea-level-rise adaptation planning ramps up in coastal jurisdictions throughout the state. By implementing the recommendations in this article, the legislature can capitalize on this momentum and encourage more sustainable and fiscally responsible infrastructure decision-making. Positing undevelopment as a suitable response option for addressing sea level rise and related coastal hazards will be critical to not only preserving California’s iconic coastline, but also to ensuring that the state’s critical energy, transportation, and water-treatment infrastructure remain out of harm’s way and functional.

111. *Id.* § 30412(b) (“Except as specifically provided in this subdivision, the decisions of the State Water Resources Control Board relative to the construction of treatment works shall be final and binding upon the commission.”).

112. *See id.* § 30610(d) (limiting commission review to new or expanded projects).