

CLIMATE CHANGE TM

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FEATURE ARTICLE

CALIFORNIA WEIGHS IN ON WETLANDS

By Clark Morrison and Scott Birkey

On April 2, the State Water Resources Control Board (SWRCB) adopted sweeping new regulations for the protection of wetlands and other waters of the State of California. The regulations, carrying the ungainly title, *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State* (collectively: Procedures), will become effective nine months following the completion of review by the California Office of Administrative Law. Once effective, the Procedures will layer on additional complexity to an already onerous permitting regime for the fill of wetlands and other waters in California.

The Procedures include two principal parts. The first is a statewide definition of the term “wetlands” that includes certain features that are not treated as wetlands under the federal Clean Water Act. The second is a set of rigorous permitting standards and application requirements to be implemented by the Regional Water Quality Control Boards (RWQCBs) in their review of applications for “Section 401 Certifications” and “Waste Discharge Requirements” under the Porter-Cologne Water Quality Control Act. The Procedures are intended for inclusion in the State’s *Water Quality Control Plans for Inland Surface Waters and Enclosed Bays and Estuaries and Ocean Waters of California*.

Background

The Procedures were adopted in the context of the Trump administration’s proposed roll-back of federal wetland jurisdiction under § 404 of the Clean Water Act. Although California originally proposed adopting its own wetland definition during Governor Wilson’s administration—and the Procedures had been in the works for ten years—it was the Trump administration’s proposed roll-back that provided the impetus for final adoption.

Following the U.S. Supreme Court’s 2001 decision in *Solid Waste Agency of Northern Cook County (SWANCC)*, which eliminated federal jurisdiction over isolated non-navigable waters, the SWRCB began to assert state jurisdiction over those features. Until then, the RWQCBs generally regulated wetland fill activities only when presented with a proposed U.S. Army Corps of Engineers (Corps) permit requiring state certification under § 401 of the Clean Water Act. When the Corps stopped regulating isolated wetlands and other waters, the RWQCBs lost their regulatory hook under § 401. In order to “fill the SWANCC gap,” as many of us described it, the RWQCBs began to regulate the fill of these features, independently, through the issuance of Waste Discharge Requirements (WDRs) under their Porter-Cologne authority.

It eventually became apparent that the RWQCBs had no consistent standards to apply in either the § 401 certification or WDR processes. Accordingly, in 2008, the SWRCB directed its staff to develop a state-wide wetlands definition and a set of permit standards for the discharge of dredged or fill material to wetlands and other “waters of the State” (*i.e.*, the Procedures). The process to develop the Procedures was slow and painstaking. In fits and starts over the next nine years, the SWRCB released drafts of the Procedures and other materials related to the Procedures.

Then came the national election in 2016 and the arrival of a new federal administration. Shortly after being elected, President Trump issued an Executive Order on February 28, 2107, signaling his intent to “repeal and replace” an Obama-era regulation that defined federal wetland jurisdiction quite broadly based upon Justice Kennedy’s opinion in the Supreme Court’s decision, *Rapanos v. United States*, 547 U.S.

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715 (2006); See, <https://www.supremecourt.gov/opinions/05pdf/04-1034.pdf>.

The President's proposal, published in the Federal Register on February 14, 2019, would limit federal jurisdiction under the Clean Water Act, essentially to traditional navigable waters, their tributaries, and abutting wetlands. The comment period on the new definition closed on April 15, 2019.

The Executive Order created a flurry of activity at the SWRCB. Later in 2017, the SWRCB issued an updated version of the Procedures and initiated a renewed stakeholder and hearing process that became fairly intense in late 2018 and continued until final board action on April 2, 2019.

The Wetlands Definition

Much of the public debate focused on the Procedures' inclusion of a wetland definition that is broader than the federal definition. Under the federal definition, an area is a wetland if it satisfies three parameters: wetland hydrology; wetland (hydric) soils; and, [under normal circumstances,] the presence of wetland (hydrophytic) plants in certain concentrations. Under the state's definition, an area will be classified as a wetland if it exhibits wetland hydrology and wetland soils under normal circumstances, even if the area lacks vegetation (although if the area does exhibit vegetation, that vegetation must be dominated by hydrophytes to be considered jurisdictional). Think mudflats, playa pools and similar features. As such, the state definition eschews the three-parameter test in favor of a two-parameter test, jettisoning the requirement that hydrophytic vegetation be present before a feature can be considered a wetland.

The state's expanded wetlands definition caused considerable consternation throughout the regulated community, including homebuilders, mining interests, agriculture and public water and flood control agencies. Not only does the definition expand wetland protections to new areas, but it also creates the potential for confusion and inconsistency in the permitting of projects that include federal wetlands and other waters of the United States (WOTUS) and non-federal wetlands and other waters of the State (WOTS). That is, even though the state and federal government will apply the same technical manuals (i.e., the 1987 Wetlands Delineation Manual and the Regional Supplements; See, [https://www.usace.army.mil/Missions/Civil-Works/Regulatory-Program-and-](https://www.usace.army.mil/Missions/Civil-Works/Regulatory-Program-and-Permits/reg_supp/)

[Permits/reg_supp/](https://www.usace.army.mil/Missions/Civil-Works/Regulatory-Program-and-Permits/reg_supp/)) in determining whether an area meets certain parameters, the ultimate jurisdictional calls and applicable permits standards for any particular project or area may be quite different as between the two levels of government. Unfortunately, industry's efforts to push back on the state's proposed two-parameter definition were effectively countered by the environmental community, which expressed considerable disappointment in the state's failure to adopt a one-parameter definition.

To make matters more confusing, the Procedures state that "artificial wetlands" are considered waters of the State except in very narrow circumstances. In particular, any artificial wetland greater than one acre in size is jurisdictional unless it *currently* used and maintained primarily for one of eleven identified purposes (various types of water and stormwater treatment purposes, crop irrigation or stock watering, fire suppression, industrial processing or cooling, active surface mining, log storage, groundwater recharge, and fields flooded for rice growing). These identified exemptions for artificial wetlands are subject to some additional specific limitations and, in any case, are considerably narrower than those provided by the Corps even under the expansive wetland regulations promulgated by the Obama administration.

Making matters worse, the problem of different—and in some instances potentially irreconcilable—state and federal wetland definitions are dwarfed by broader questions of state and federal jurisdiction over waters under the Clean Water Act (which is limited by questions of isolation and navigability at issue in *SWANCC*, *Papanos* and both the Obama-era and Trump's newly proposed regulations). Given that the Procedures establish a permitting program for all waters of the State, and not just wetlands, one might reasonably ask whether the parameter wetlands definition really makes that much difference. In fact, there are only a couple of places in the Procedures where wetlands are treated more strictly than are other waters (one of which is a minimum 1:1 replacement mitigation ratio, which in most cases will be fairly meaningless given the Procedures' overall "no net loss" mitigation standard).

Permitting Standards and Procedures

As described above, the Procedures establish permitting requirements that will be implemented through the state's existing 401 certification and

WDR processes, and do not supplant those regulations. They will, however, make things more challenging from an applicant's perspective. A few examples follow.

Alternatives Analyses

Under federal regulations known as the "Section 404(b)(1) Guidelines," an applicant has the burden of demonstrating that his or her proposed project is the "least environmentally damaging practicable alternative," or "LEDPA." For most projects, the Guidelines presume that a proposed project is not the LEDPA. That is, the Guidelines presume that there are available and practicable alternatives to the project with less impact on the aquatic environment. To rebut this presumption and obtain a permit, an applicant may have to prepare a very detailed and complex "LEDPA analysis" relying on the services of biologists, civil engineers, attorneys and, in some circumstances, land economists. These analyses, and subsequent negotiations with the agencies, often take years to complete even for small to moderately-sized projects. Typically, the LEDPA requirement is the biggest hurdle to permit issuance.

The Procedures adopt the § 404(b)(1) Guidelines, with modifications, for covered projects. The thresholds triggering preparation of a LEDPA analysis under the Procedures are quite low. Any project filling more than 1/10 acre or 300 lineal feet of waters must prepare an on-site alternatives analysis. Any project filling more than 2/10 acre or 300 lineal feet of waters must prepare both an on-site and off-site LEDPA analysis. This is in contrast to the Corps and its permitting requirements, which in most cases does not require a LEDPA analysis for small projects falling within the scope of its nationwide permit program, including its nationwide permits for Residential Development (NWP 29) and for Commercial and Institutional Developments (NWP 39). The Procedures contain a nominal exemption for such projects, but the exemption is not available for projects affecting wetlands or rare, threatened or endangered species habitat, making it almost meaningless.

The San Francisco RWQCB has been requiring LEDPA analyses for some time now, so applicants in the San Francisco Bay Area may not see much change as a result of this requirement. In other regions of the State, the water boards will have a significant learning curve with respect to LEDPA

analyses as the Procedures begin to kick in. Although the SWRCB intends to provide additional guidance and training for the Regions, given the already understaffed status of the Regions, this new LEDPA requirement likely will result in some agency growing pains that project applicants may suffer.

Compensatory Mitigation

The Procedures require a mitigation plan to demonstrate that project-related impacts, together with mitigation, will not "cause a net loss of the overall abundance, diversity, and condition of aquatic resources" on a watershed basis. This determination must be made based upon a potentially very complex "watershed profile" prepared by the applicant. This watershed profile must include, for example:

... information sufficient to direct, secondary (indirect) and cumulative impacts of [the] project and factors that may favor or hinder the success of compensatory mitigation projects and help define watershed goals. It may include such things as current trends in habitat loss or conservation, cumulative impacts of past development activities, current development trends, the presence and need of sensitive species, and chronic environmental problems and site conditions such as flooding or poor water quality.

Generally speaking, projects whose watershed profiles are developed from an existing watershed plan will be subject to more favorable mitigation ratios. Fortunately, during final negotiations, water board staff agreed to language making clear that regional habitat conservation plans meeting certain criteria may serve as a watershed plan for the purpose of determining compensatory mitigation.

Although the Procedures' no net loss requirement will drive the amount, type and location of compensatory mitigation in most circumstances, the environmental community was successful in lobbying the SWRCB to include a minimum 1:1 mitigation requirement for streams and wetlands, measured in length or area. This 1:1 requirement may be satisfied by any form of mitigation (e.g., preservation, enhancement, restoration, creation), although restoration is preferred. To the extent that the 1:1 mitigation provided does not meet the "no net loss" standard, additional mitigation will be required.

Application Requirements

The Procedures' application requirements request much detailed information, which will make it difficult to secure "deemed complete" application status under the Permit Streamlining Act. In addition to the material already required under the RWQCB's Title 23 regulations, applicants must supply 1) state and federal (if any) delineation materials, 2) a detailed project description and an impact assessment down to the nearest hundredth of an acre and lineal foot, and 3) a complete LEDPA analysis. The RWQCBs may also require, among other things, a detailed compensatory mitigation plan and water quality monitoring plan.

A Note on Agriculture

Agricultural interests were heavily involved in development of the Procedures and, in the final few months, were able to gain some concessions. These included a procedural exemption for prior converted cropland consistent with federal law and procedural exemptions for certain agricultural features as described in (and roughly paraphrased from) the Obama-era Waters Of The United States regulations, including exemptions for ditches; artificially irrigated areas that would revert to dry land should irrigation cease; and features such as farm and stock watering ponds, irrigation ponds, and settling basins. The rice growers secured additional protective language to limit the potential for unnecessary regulation arising out of the fact that rice farms may exhibit wetland features for substantial parts of the year. Although agricultural interests obtained these procedural exemptions, they were unable to obtain the SWRCB's agreement to exempt farmed areas from the definition of waters of the State. They did stave off, however, rigorous efforts by the environmental community to secure permit requirements for crop conversions in agricultural areas.

Conclusion and Implications

The authors were heavily involved in the final stakeholder negotiations in late 2018 and early 2019, during which the regulated community was able to secure numerous improvements to the Procedures, adding some clarity and filing down a few of the program's pointier teeth. As a result of hard work by staff at the State Water Resources Control Board

and stakeholders—particularly the building industry, agricultural and mining interests, water agencies and the environmental community—and despite the frustrations (and occasionally tempers) that arose during those negotiations, the final product was measurably better than the draft circulated in 2017.

Nonetheless, the program will present numerous challenges to the Regional Water Quality Control Boards and project applicants as the Procedures are phased in. Most notable of these are 1) the potential for inconsistencies between the state and federal wetland programs arising out of their different jurisdictional reaches and the agencies' likely differing interpretations of regulatory requirements, even where state and federal regulations have been coordinated; and 2) the lack of resources and training for the RWQCBs to implement the program. Although the SWRCB has promised both additional resources and training, it is the authors' view that the board is vastly underestimating the complexities associated with this new program.

The water agencies and regulated community will have some time to prepare for the "watershed" moment when the Procedures become law. As noted above, the Procedures will not become effective until nine months following review by the Office of Administrative Law. Even then, the SWRCB agreed to language requested by the building industry grandfathering in legitimate (*i.e.*, non-sham) § 401 certification and WDR applications submitted before the effective date, even if those applications are not yet complete. In the meantime, the SWRCB's final resolution directed staff to 1) develop (in coordination with stakeholders) implementation guidance for potential applicants and conduct staff training prior to the Procedures' effective date; and 2) work with stakeholders, other agencies and scientific organizations to develop best practices for preparation of certain climate change analyses required by the Procedures. The resolution also directs staff to provide periodic progress reports to the State Water Resources Control Board regarding implementation issues, including updates regarding application processing timelines and environmental performance measures.

For more information on the Procedures, see, https://www.waterboards.ca.gov/press_room/press_releases/2019/pr04022019_swrcb_dredge_fill.pdf
Postscript: On May 1, 2019, the San Joaquin Tributaries Authority, a coalition of water agencies whose

members include the Modesto Irrigation District, Turlock Irrigation District, Oakdale Irrigation District, South San Joaquin Irrigation District, and the City and County of San Francisco, filed suit in the Sacramento Superior Court, against the Procedures,

alleging among other things that the Procedures improperly expand the SWRCB's jurisdictional reach. It remains to be seen whether and how this litigation will affect the ultimate implementation of the Procedures.

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CLIMATE CHANGE NEWS

**TRUMP ADMINISTRATION ALTERS THE METRICS
FOR MEASURING GLOBAL WARMING**

Due to changes in metrics allowed to be utilized in climate models, portions of the federal government will no longer meet scientific metrics of accuracy when reporting on the future effects of a rapidly warming planet and predicting what Earth may look like by 2100 if major changes to the global economy do not occur. While changes are occurring throughout the government, the most recent example involves the United States Geological Survey, whose director, James Reilly, has ordered that the office use only computer-generated climate models that project the impact of climate change through 2040, rather than through the end of the century, which was previously the required timeline for modeling.

Background

President Trump has rolled back environmental regulations put in place by the Obama administration, including pulling out of the Paris climate accord, in an effort to alter the United States' approach to a changing climate. In the coming months, the White House will complete the rollback of the broadest federal effort to curb greenhouse-gas emissions, expand efforts to impose President Trump's environmental views on the global community, and decline to sign a communique to protect the Arctic region unless it is stripped of any references to climate change. This pattern of deregulation and denial extends further throughout the federal government as Trump's first term continues.

For the last several decades, the federal government has taken a central role in what scientists consider an urgent need in climate science studies—reporting on the future effects of current emissions and the rapidly warming planet in order to determine what Earth might look like at the end of the century if changes are not made. Yet alterations to how the federal government approaches its ongoing environmental studies can have wide-ranging effects on how informative those studies may be as society attempts to grapple with global warming.

The United States Geological Survey

In May, James Reilly, the president's appointed director of the United States Geological Survey, ordered that scientific assessments produced by that office use only climate models projecting the effects of climate change through 2040. This significantly curtails the models previously in effect, which predicted the likely effects by the end of the century. Scientists indicate that will create a misleading picture because the most dramatic effects of current emissions will be felt after 2040. Current models predict the planet will most likely warm at about the same rate through about 2050, which has made that a popular date for efforts to reduce carbon emissions and get global warming under control. From 2050 through 2100, the rate of warming is expected to differ significantly depending on an increase or decrease in carbon emissions in the interim.

The main focus of this change is the National Climate Assessment, produced by a federal interagency task force roughly every four years since 2000. Government scientists used computer-generated models in the most recent report to project that if fossil fuel emissions continue at current levels, the atmosphere could warm by up to eight degrees Fahrenheit by the end of the century. That level of increase would lead to drastically higher sea levels, more devastating storms and droughts, crop failures, food losses, and severe health consequences.

The next National Climate Assessment is expected to be released in 2021 or 2022, and work has already commenced to create the report. Yet following Reilly's order, predictions that take into account warming trends over the longer term will not automatically be included in the National Climate Assessment or other reports produced by the federal government.

Trump's Proposed Climate Review Panel

The Trump administration's goals extend beyond altering the methodology used for climate models

in the National Climate Assessment through the creation of a new climate review panel. That effort, led by former Princeton physicist William Happer, is backed by National Security Adviser John Bolton, remains divisive even within the administration. Yet President Trump has indicated he is inclined to allow the panel to move forward.

Conclusion and Implications

Changes to the National Climate Assessment are a small but significant portion of a trend to roll back prior climate initiatives. The previous Assessment, which the Trump administration released on the Friday after Thanksgiving in 2018, has the potential to create legal problems for Trump’s agenda of abolishing regulations. This summer, the EPA is expected to finalize the rollback of President Obama’s regulations

to curb pollution from vehicle tailpipes and power plant smokestacks, and opponents to the rollbacks have stated they intend to use the 2018 National Climate Assessment to argue that the government cannot justify the reversals when it has concluded the effects of removing these regulations could be so harmful.

In light of these statements, the proposed changes to the National Climate Assessment fit into a broader pattern of creating the legal framework for environmental deregulation. However, taken alone, the changed methodology of the National Climate Assessment risks perhaps, set the stage for a false optimism for the future effects of pollutants and carbon emissions, and risks the loss of the federal government as a source for reliable climate research. (Jordan Ferguson)

COLORADO RIVER BASIN STATES AGREE TO ACTION PLAN TO PROTECT DWINDLING WATER SUPPLY IN DROUGHT

In May, state and federal stakeholders in the Colorado River’s water supply reached an agreement designed to reduce risks from ongoing and anticipated droughts in the Upper and Lower Colorado River Basins. The Colorado River drought contingency plans for the Upper and Lower Basins reflect years of collaborative effort by state, federal, tribal, and international stakeholders, and are trumpeted as significant cooperative efforts to fortify the Colorado River’s water supply against the effects of drought in the basins.

Background

The Colorado River provides a water supply for more than 40 million people and irrigates roughly 5.5 million acres of farmland. The Colorado River Basin, which is divided into an Upper and Lower Basin, spans seven states and extends into Mexico. The Colorado River’s water supply is governed by the “Law of the River,” which is comprised of numerous federal laws, regulatory guidelines, judicial decisions, agreements, and compacts developed over the course of nearly a century. An important function of this body of law has been federal-state and interstate cooperation in the dam and reservoir operation of the Colorado River, which has become increasingly

important as drought conditions impact the river’s supply.

In particular, in 2007, the U.S. Department of the Interior (Interior) and seven Colorado River Basin states established a set of temporary guidelines (2007 Guidelines) to address the historic drought plaguing the basin. For the Lower Basin, the guidelines provided for coordinated operations of two major reservoirs—Lake Powell and Lake Mead—and for water allocations among the Lower Basin states in the event of water shortages. Specifically, when Lake Powell’s elevation is higher than Lake Mead’s, water must be released from Lake Powell. Additionally, the guidelines provided that a shortage would be declared if Lake Mead’s elevation dropped to 1,075 feet, at which point Arizona’s apportionment of water would decrease from 2.8 million acre-feet to 2.48 million acre-feet. Nevada would also receive less water—287,000 acre-feet compared to 300,000 acre-feet. The guidelines did not establish a scenario in which California would receive less than its 4.4 million acre-feet allotment, but California would not be able to receive deliveries of intentionally created surplus water if a shortage was declared in the Lower Basin.

Also, in 2007, the seven Basin states entered into

an Agreement Concerning Colorado River Management and Operations (2007 Agreement). That agreement was designed to improve cooperation and communication among the states, provide additional security and certainty around the Colorado River's supply, and avoid situations giving rise to disputes under the Law of the River. Both the 2007 Agreement and 2007 Guidelines form an important backdrop to the newly signed drought contingency plans for the Upper and Lower Basins (collectively: Plans), which Congress authorized in April and which are governed by a single "companion" agreement.

Drought and the Colorado River

Generally, drought response actions under the Plans will be triggered by projected reservoir levels according to 24-month studies by the U.S. Bureau of Reclamation incorporated into the Plans. The Plans, which expire December 31, 2025, do not override existing guidelines or agreements. Instead, the Plans allow for the development and testing of "tools" designed to provide security and certainty in the Colorado River's water supply. The Upper Basin drought contingency plan (Upper Basin DCP) is aimed at minimizing the risk of Lake Powell falling below a target elevation of 3,525 feet (mean sea level). To do this, the Upper Basin DCP provides for adjustments at the Glen Canyon Dam (*i.e.* Lake Powell), Flaming Gorge Dam, Curecanti, and Navajo Dam in the event of a drought operations response. Volumetric adjustments at Lake Powell will be considered first as part of a drought operation response. At the same time, Glen Canyon Dam operations will be conducted so as to maintain its ability to generate hydropower for other Colorado River system projects and electrical service customers.

For its part, the Lower Basin drought contingency plan (Lower Basin DCP) provides that Lower Basin states will make reductions per the 2007 Guidelines based on projected Lake Mead levels. Additionally, the Lower Basin DCP provides that Lower Basin states will contribute certain water supplies to Lake Mead, again depending on its level. These supplies include intentionally created surpluses, which allow entities in California, Nevada, and Arizona to store

water in Lake Mead if they are able to produce an equal amount of water within their state. This results in a water credit, and the credited volume is then delivered from Lake Mead when a surplus is declared. Under the Lower Basin DCP, some of this water may need to be contributed to Lake Mead if levels fall within certain tiered water levels. For instance, if the elevation of Lake Mead drops below 1,045 feet, Arizona, Nevada, and California must contribute 240,000 acre-feet, 10,000 acre-feet, and 200,000 acre-feet, respectively. If projected Lake Mead levels are between 1,045 and 1,090 feet, Arizona would need to contribute 192,000 acre-feet, with Nevada contributing 8,000 acre-feet. California would only need to contribute to Lake Mead levels if they do not exceed 1,045 acre-feet. However, if lake levels fall below 1,030 feet, California would need to contribute 350,000 acre-feet, with Arizona and Nevada contributions set at less than 1,045 foot levels. This arrangement generally appears to reflect the priorities each state has to Colorado River water based on the Law of the River and reflected further in the 2007 Guidelines.

Conclusion and Implications

The drought contingency plan has been widely considered a positive development in the management of the Colorado River water supply. The Plans also reflect a more precise understanding of the hydrological conditions of the Colorado River Basin developed through prior cooperative efforts, such as the 2007 Agreement and 2007 Guidelines. While it is unclear whether the interim drought response tools developed under the Plans will provide long-term solutions to drought conditions along the Colorado River, it is likely that these efforts will advance the parties' understanding of the river, its basin, and their ability to plan for and respond to anticipated drought conditions in the future. For more information, see: Interior and States Sign Drought Agreements to Protect Colorado River, available at <https://www.acwa.com/news/interior-and-states-sign-historic-drought-agreements-to-protect-colorado-river/> (Steve Anderson, Miles Krieger)

SALTON SEA SPECIES CONSERVATION HABITAT PROJECT CLEARED TO MOVE FORWARD

Declining water levels in the Salton Sea pose significant problems for wildlife and human populations in the surrounding area, due largely to increased water salinity concentration and particulate air pollution from wind erosion of newly exposed lakebed, or “playa.” According to the California Natural Resources Agency (CRNA), the situation has developed over the last several decades as a result of a variety of factors, including climate change, agricultural conservation measures, cropping practices and reduced inflows from Mexico. Under the direction of the CRNA, the Salton Sea Management Program (SSMP) is a long-term, multi-phase plan in furtherance of state’s obligations under the Salton Sea Restoration Act of 2003 to protect wildlife in the Salton Sea ecosystem and undertake its eventual rehabilitation. Though a variety of factors have hindered the progress of the SSMP to date, construction of the first major component of the SSMP, known as the Species Conservation Habitat Project (SCHP), is set to move forward following the May 2019 approval of an easement by the Imperial Irrigation District (IID) granting the state access to property on which the project will be undertaken.

The Salton Sea Management Program

The SSMP represents perhaps the most comprehensive state effort to revitalize the Salton Sea in the wake of the Salton Sea Restoration Act, following over a decade of disorganized and largely ineffective approaches. The SSMP arose when the Salton Sea Task Force, established by former Governor Brown in 2015, directed the CRNA to formulate a comprehensive, multi-phase plan for the rehabilitation of the Salton Sea ecosystem and to serve as the lead agency with respect to the implementation of the plan. Specifically, the SSMP is focused on the creation and preservation of wildlife habitats across the Salton Sea and the suppression of the spread of dust caused by exposed lakebed. In August 2016, the CRNA reached a key memorandum of understanding with the U.S. Department of the Interior to coordinate State and federal involvement in the ten-year Phase 1 Plan of the SSMP, which includes the SCHP.

Species Conservation Habitat Project

While the Phase 1 Plan features a number of varying elements and strategies, the centerpiece of the plan is the SCHP. The SCHP encompasses approximately 3,770 acres of exposed playa at the southwest end of the Salton Sea near the mouth of the New River, a tributary to the Salton Sea. Consistent with the overarching strategy of the SSMP, the SCHP is intended to limit the spread of airborne dust and cultivate sustainable fish and avian habitats through the construction of a variety of components, which include water management ponds, berms, islands, pump stations, river crossings and intake, access corridors, pipelines and dust suppression elements. An adjacent mixing basin that includes agricultural return flow water and saline water from the Salton Sea will supply the ponds. If successfully implemented, the SCHP will provide substantial support for the viability of similar strategies underlying other major components of the SSMP.

Obstacles to SSMP Implementation

Despite ongoing smaller-scale conservation and restoration efforts directed at the Salton Sea ecosystem, including wetlands projects undertaken by state agencies, the Salton Sea Authority and the Torres Martinez Desert Cahuilla Tribe, a number of obstacles have hindered the broad implementation of the SSMP. A September 2018 report by Audubon California cites complications such as a lack of staff dedicated to the SSMP at the CNRA, Department of Water Resources (DWR) and the Department of Fish and Wildlife. Turnover of personnel working on the SSMP at such agencies has reportedly further limited expertise at the staff level. Additionally, the Audubon report cites coordination inefficiencies among State and local agencies with respect to the SSMP, as well as reduced engagement and commitment at the federal level in the wake of the 2016 election.

Significantly, the implementation of the SCHP in particular has been delayed due to the need for access rights to project area land owned by IID. On May 7, 2019, the Imperial Irrigation District (IID) approved

an easement agreement with DWR that will allow construction to begin on the SCHP by granting access to IID-owned lands bordering the Salton Sea. Pursuant to the easement agreement with IID, DWR will be responsible for the costs of the SCHP, as well as the maintenance and operation of the completed project. As a result of the easement agreement, design-build proposals for the commencement of SCHP construction can now be sought. Work on the SCHP is expected to begin this year, and is expected to be completed in 2023.

Conclusion and Implications

The easement agreement with IID represents a notable milestone for the SSMP. Specifically, the ability to move forward with SCHP construction allows for tangible progress to begin on a major scale. Critically, the implementation of the SCHP will also provide essential information to the State regarding the viability and implementation of future SSMP projects. While notable progress appears to be within reach, the full realization of the SSMP will undoubtedly face continued challenges due to the complexity of the undertaking and the multitude of stakeholders involved.

(Wesley A. Miliband, Andrew D. Foley)

INSTITUTIONAL INVESTORS EFFECT (SOME) CHANGE IN THE OPERATIONS OF GREENHOUSE GAS EMITTERS

In June 2017, President Donald Trump announced that the United States would withdraw from further participation in the Paris Agreement. Since then, a number of individual states and cities have moved forward with their own plans for achieving the goals of the Paris Agreement. Recently, institutional investors have also used their influence to effect corporate change and align corporate activities with the goals of the Paris Agreement. One of the main groups in this effort is known as the Climate Action 100+.

Background

Climate Action 100+ was launched in 2017 by the California Public Employees' Retirement System (CalPers) and now includes over 320 investors who collectively manage more than \$33 trillion in assets. One of its goals is "to ensure the world's largest corporate greenhouse gas emitters take necessary action on climate change." Climate Action 100+'s focus includes 100 companies that are "systemically important emitters" and account for two-thirds of annual global industrial emissions. Climate Action 100+ seeks to work with these companies to improve their governance, curb emissions and strengthen their climate-related financial disclosures.

Climate Action 100+ has been asking the corporate boards and senior management of these companies to:

- Implement a strong governance framework which clearly articulates the board's accountability and oversight of climate change risks and opportunities;
- Take action to reduce greenhouse gas emissions across the value chain, consistent with the Paris Agreement's goal of limiting global average temperature increase to well below 2 degrees Celsius above pre-industrial level;
- Provide enhanced corporate disclosure in line with the final recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) and, when applicable, sector-specific Global Investor Coalition on Climate Change Investor Expectations on Climate Change [...] to enable investors to assess the robustness of companies' business plans against a range of climate scenarios, including well below 2-degrees Celsius, and improve investment decision-making.

Corporate Action 100+ Successes

Corporate Action 100+'s engagement with BP plc (BP), a British multinational oil and gas company, and Royal Dutch Shell plc (Shell), a British-Dutch oil and gas company, shows signs of its influence.

At BP's annual general meeting of shareholders on May 21, 2019, a climate change shareholder

resolution filed by investors acting as part of Climate Action 100+ was approved with 99.14 percent shareholder approval. The binding resolution, which received the support of BP's Board of Directors, directs BP:

...to include in its Strategic Report and/or other corporate reports, a description of its strategy which the Board considers, in good faith, to be consistent with the goals of Paris Agreement.

With Shell, Climate Action 100+ was able obtain a number of corporate commitments. At the end of 2018, Shell and Climate Action 100+ issued a joint statement outlining Shell's steps for aligning itself with the goals of the Paris Agreement, including the following:

- Public short-term Net Carbon Footprint targets. Shell aims to reduce its Net Carbon Footprint by around 50 percent by 2050 and by around 20 percent by 2035 as an interim step.
- Targets linked to executive pay. Shell will incorporate a link between energy transition and long-term executive pay as part of its revised Remuneration Policy (to be introduced for shareholder approval at its 2020 annual general meeting of shareholders).
- Review of progress. Shell will publish annual disclosures of its progress towards lowering its Net Carbon Footprint and take an additional Paris Agreement-related review every five years.
- Alignment with the TCFD recommendations. In its disclosures and when the information is material, Shell will include a disclosure of its metrics and targets used to assess and manage relevant climate-related risks.
- Corporate climate lobbying. Shell agreed to review its membership in relevant trade associations

to ensure that those memberships did not undermine its support for the objectives of the Paris Agreement on climate change. As an example of this fifth point, in April 2019 Shell announced that it was leaving the American Fuel and Petrochemical Manufacturers, a leading U.S. lobby, due to a "material misalignment on climate-related policy positions."

Institutional Investor 'Failure'

While Climate Action 100+ has been able to obtain favorable outcomes from European oil and gas companies, the same cannot be said for major U.S.-based companies. In December 2018, institutional investors, led by two Climate Action 100+ members (the New York State Common Retirement Fund and the Church of England's investment fund), filed a shareholder resolution calling on Exxon Mobil Corporation (Exxon) to include in its annual reporting a:

...disclosure of short-, medium- and long-term greenhouse gas targets aligned with the greenhouse gas reduction goals established by the Paris Climate Agreement...

Exxon asked the Securities and Exchange Commission (SEC) for permission to block the resolution. In April 2019, the SEC sided with Exxon agreeing that the resolution would have the effect of micro-managing Exxon. As a result, Exxon was able to block a vote on the resolution at its annual general meeting of shareholders.

Conclusion and Implications

Institutional investors, led by the Climate Action 100+ group, are beginning to effectuate change in the operations of many of the largest, global greenhouse gas emitters. It remains to be seen, however, whether its influence will impact U.S.-based emitters because many believe that those emitters are protected by the Trump administration and its view on climate change.

(Kathryn Casey)

U.S. DROUGHT MONITOR BRIEFLY REPORTS NO SIGNIFICANT DROUGHT CONDITIONS NATIONWIDE, FIRST TIME IN TWENTY YEARS

For the first time in over 20 years, the U.S. Drought Monitor recently reported finding no significant drought conditions at any location in the contiguous United States. Crediting a wet winter and sustained wet spring conditions, the report was welcome news, particularly coming on the heels of all-too-recent memories of exceptional drought conditions that gripped California and other Western States.

Background

Since approximately the year 2000, the Drought Monitor has released weekly maps depicting areas of the United States, and areas of individual States, experiencing drought conditions. The Drought Monitor is produced jointly by the National Drought Mitigation Center (NDMC) at the University of Nebraska-Lincoln, the National Oceanic and Atmospheric Administration (NOAA), and the U.S. Department of Agriculture (USDA). The Drought Monitor is not a forecast; rather, it provides a weekly assessment of drought conditions based on current data.

The Drought Monitor utilizes five classifications, namely:

D0 – Abnormally Dry, showing areas that may be going into or are coming out of drought. The Drought Monitor describes examples of possible impacts of D0 to include short-term dryness that slows planting or growth of crops, and when coming out of drought, crops that do not fully recover.

D1 – Moderate Drought, with examples of possible impacts including some damage to crops, lowered stream, reservoir and well levels, developing or imminent water shortages and voluntary water-use restrictions.

D2 – Severe Drought, with examples of possible impacts including likely crop losses, water shortages and the imposition of water use restrictions.

D3 – Extreme Drought, typically resulting in major crop losses and widespread water shortages or restrictions.

D4 – Exceptional Drought, typically resulting in exceptional and widespread crop losses and shortages of water in reservoirs, streams and wells creating water supply emergencies.

The Drought Monitor defines drought primarily on the basis of lack of precipitation. As summarized on the Drought Monitor website:

It is not a statistical model, although numeric inputs are many: the Palmer Drought Severity Index, the Standardized Precipitation Index, and other climatological inputs; the Keech-Byram Drought Index for fire, satellite-based assessments of vegetation health, and various indicators of soil moisture; and hydrologic data, particularly in the West, such as the Surface Water Supply Index and snowpack. The [Drought Monitor] relies on experts to synthesize the best available data from these and other sources and work with local observers to interpret the information. The USDM also incorporates ground truthing and information about how drought is affecting people, via a network of more than 450 observers across the country, including state climatologists, National Weather Service staff, Extension agents, and hydrologists.

Regulatory Responses to Drought

The NMDC correctly acknowledges that:

No single federal agency is in charge of water or drought policy; response and mitigation fall to an assortment of federal authorities. . . . The National Drought Resilience Partnership, launched in the aftermath of widespread drought in 2012, is an effort to unify federal drought response and policy. Drought response efforts, planning, and water law vary from state to state.

The NMDC recommends that state, local, tribal and basin-level water managers adopt an operational definition of drought for their own circumstances and incorporate local data to inform drought response measures.

California and Drought

Since the year 2000 when the Drought Monitor began, the longest duration of drought conditions in California, ranging from D1 to D4 at any location in the state, lasted 376 weeks from December 2011 until March 2019. At peak intensity in late 2014, the Drought Monitor reported D4 Exceptional Drought conditions affecting geographically nearly 60 percent of California. The record-breaking California Drought prompted then-Governor Jerry Brown's historic drought emergency declarations, first-ever statewide emergency water use regulations, first-ever statewide groundwater management legislation and a host of other first-ever water law and policy changes. Drought conditions also prompted Colorado River managers and stakeholders to negotiate and reach historic drought contingency agreements.

Conclusion and Implications

The recent Drought Monitor map observing an absence of drought conditions nationwide punctuates the whiplash experienced by California and other Western States going from sustained drought to intense bursts of precipitation. Though a helpful and informative tool, the Drought Monitor acknowledges that drought conditions are more accurately defined and felt at a local level and can change quickly. Furthermore, while sporadic bursts of precipitation may boost short-term and seasonal water supplies, groundwater basin conditions generally require much more time and active management to recover from increased pumping during sustained drought conditions. For more information, see: <https://droughtmonitor.unl.edu>

(Derek Hoffman, Michael Duane Davis)

CLIMATE CHANGE'S IMPACTS ON NATIONAL PARKS AND THE GRASS-ROOTS ROAD TO A SUSTAINABLE CLIMATE

The National Parks Conservation Association has issued a report noting the effects of climate change on national parks. The report notes solutions for a sustainable climate will require participation from the national parks and its supporters.

Background

With many Americans in the midst of a summer vacation in our national parks, this conclusion from a recent report issued by the National Parks Conservation Association could be a cause for concern:

We found that [85] percent of national parks (354 parks) have air that is unhealthy to breathe at times. At 87 parks, ozone levels are a significant concern, and another 267 parks have a moderate level of concern.

The quote above is from "Polluted Parks: How America is Failing to Protect Our National Parks, People and Planet from Air Pollution" (Report). Focusing on climate change, the Report concludes:

We also found that climate change is a *significant concern* for 80 percent of our national parks, though all parks are affected at some level.

The Report was released in May 2019 by the National Parks Conservation Association and, although it includes some scientific data, it mostly focuses on the sentimentality of national parks and encourages grass-roots efforts to achieve solutions for a sustainable climate.

President Trump's Energy Policies

The Report notes that although the particular effects of climate change are park dependent, they occur in all geographic locations with several wildlife species facing plummeting populations and possible extinction. One of the Report's main points of contention appears to be President Donald Trump's energy policies. The Report opines that the Trump administration has, via the U.S. Environmental Protection Agency (EPA), dismantled "commonsense rules to limit greenhouse gas pollution from dirty, outdated energy sources." Those rules include limits on carbon dioxide from existing power plans and repealing specified emission requirements for new power plants. The Report also highlights EPA's role in weakening national standards for pollution from oil and gas development and EPA's "gutting [of] clean car rules—popular with Americans and even vehicle manufacturers."

National Park Efforts

The Report notes that solutions for a sustainable climate will require participation from the national parks and its supporters. The Report includes the following as examples of actions taken by national parks:

The National Park Service consistently monitors the air quality in over 350 national parks.

At Thomas Edison National Historical Park, the National Park Service, with help from the National Parks Foundation, installed electric vehicle charging stations for visitor use.

At Acadia National Park, the local community and park worked together to establish a shuttle service at the park. This decreased more than 2.5 million private vehicle trips at the park and prevented more than 23,000 tons of greenhouse gases emissions since 1999.

Three pilot programs are underway, at Grand Teton, Yosemite and Denali National Parks, to substantially reduce landfill waste. Since 2017, the parks and their concessionaires have offset over 9,000 million metric tons of greenhouse gas emissions by diverting waste from landfills through recycling, composting and avoided use.

In Florida, the National Park Service partnered with Florida Power and Light to establish the “Everglades Solar Initiative” in which solar panels were installed on the Shark Valley Visitor Center in Everglades National Park.

A Public Call to Action

For the public, the Report recommends a grass-roots approach to achieving solutions for a sustain-

able climate. The impacts on the public are described through the lens of five individuals, including a local activist, an outdoor recreation industry leader and an emergency management expert. Their stories describe the haze problems in national parks, the wildfires, the floods, and other impacts. In each of their stories there is an emphasis on what can be accomplished by individuals and communities, even when the result is not immediate. The Report concludes with ten grass-roots recommendations, including the following:

- Writing to Congress and telling them to right the direction of our national air and climate policies and hold EPA accountable to its mission to protect public health and the environment.
- Urging local, state and federal government representatives to return to the tenets of the Paris Agreement and speed up the transition away from coal and gas to renewable energy.
- Submitting written comments on proposed state and federal rulemakings and speaking out for park protection, clean air and a healthy climate.

Conclusion and Implications

The Report issued by the National Parks Conservation Association brings attention to the dangers faced by our national parks. Its lasting effect, however, will depend on whether those who read the Report are inspired to implement its grass-roots recommendations to achieving solutions for a sustainable climate. The Report is available online at: <https://npca.s3.amazonaws.com/documents/NPCAParksReport2019.pdf>. For more information, see also: <https://www.npca.org/reports/air-climate-report> (Kathryn Casey)

CLIMATE CHANGE SCIENCE

RECENT SCIENTIFIC STUDIES ON CLIMATE CHANGE

Extreme Precipitation and Climate Change

Precipitation plays many important roles in society. We rely on our understanding of precipitation patterns in many aspects of public, private, and personal life. It determines how and where we build our infrastructure, plant our agriculture, and spend our vacation days. As a result, unpredictable or extreme precipitation can lead to serious problems. For example, an extreme reduction in precipitation could lead to drought and famine. On the other end, an extreme increase in precipitation could cause flooding, which can stress water treatment plants and cause outbreaks in diseases. To avoid significant impacts in a changing climate, it is imperative to understand where precipitation will happen, what type of precipitation will happen, and how much precipitation there will be.

A recent collaboration prepared for the American Geophysical Union uses historic precipitation records to project how precipitation patterns would change as a result of climate change. To do this, they performed a global analysis of 8,730 daily precipitation records from 1964 through 2013, years during which climate change has been accelerating. Within these 8,730 records, they performed a numerical analysis on the 50 largest precipitation extremes. The precipitation data were sampled from stations located primarily in North America, Europe, China, and Australia.

The goal of the study was to understand how both frequency of extreme precipitation events and magnitude of extreme precipitation events were changing with climate change. With regards to frequency of precipitation events, the study finds that more of the stations sampled are likely to have an increased frequency of extreme precipitation events than are likely to have a decreased frequency, and areas with the same trend in frequency are located near each other. The analysis on magnitude of precipitation events similarly showed that more of the world is likely to experience increased magnitude of precipitation than to experience decreased magnitude of precipitation. However, there does not appear to be any correlation indicating that areas with an increased

frequency of extreme precipitation will also experience an increased magnitude, or vice-versa.

Due to the location of sampling sites, this study is not globally comprehensive, so similar work should be performed for areas in the Southern Hemisphere that did not have enough data for this study. It is important to understand world-wide how extreme precipitation patterns will change, as radically different global precipitation patterns can have an array of detrimental impacts on society. Refining models of extreme precipitation events as a result of climate change can help policymakers understand the potential costs associated with these extreme precipitation events.

See, Papalexou, S. M., & Montanari, A. Global and Regional Increase of Precipitation Extremes under Global Warming. American Geophysical Union, 2019; DOI: 10.1029/2018WR024067.

Bitcoin Mining Emits as Much Carbon as Small Countries

Bitcoin is a cryptocurrency that is based on blockchain technology. “Blocks” that represent financial value are added to a chain of numbers by computers solving increasingly complex math puzzles. Bitcoin “miners” set computers to the task of solving these puzzles and profit from the resulting Bitcoins. Miners range from individual students and gamers with personal computers to large-scale dedicated groups operating large computer farms. The benefit of blockchain-based cryptocurrency is that transactions are decentralized and valid worldwide. However, virtual Bitcoin mining may have negative environmental consequences. Financial transactions are not generally considered an obvious source of greenhouse gas (GHG) emissions, but recent increases in the amount of energy used for Bitcoin mining have garnered scientific studies and projections.

Researchers from the Technical University of Munich and the Massachusetts Institute of Technology evaluated the total annual electricity use and associated GHG emissions from power production for Bitcoin mining in 2018. They used hardware data de-

rived from recent initial public offering (IPO) filings from major hardware manufacturers to evaluate the power consumption per calculation for new hardware. This data was combined with geographic locations of mining based on calculations from IP addresses, which were used to estimate auxiliary factors (e.g., cooling needs) and geographically specific carbon intensity for electricity production. As of November 2018, Bitcoin consumes 45.8 terawatt-hours per year of electricity and emits between 22 and 22.9 million tons of carbon dioxide. For context, this level of emissions is between the levels produced by the countries of Jordan and Sri Lanka and is comparable to the level of Kansas City. Adding in the effects of other cryptocurrencies besides Bitcoin could potentially double this value.

As computer hardware continues to become more efficient, the calculations needed to generate new Bitcoin blocks will become more complex and will consume more electricity. This will likely increase GHG emissions. Even if the computers operate near renewable electricity sources, they consume power that could otherwise service other electric loads (unless they only operate during renewable curtailment scenarios). More than two-thirds of the computing power currently used for Bitcoin mining is in China, where a mix of hydropower and coal supply much of the electricity. A better set of regulations or incentives may be needed to incorporate the environmental externalities of cryptocurrency mining.

See, Stoll, C., Klaasen, L., and Gallersdorfer, U. 2019. The Carbon Footprint of Bitcoin. *Joule*. DOI: 10.1016/j.joule.2019.05.012

The Role of Seaweed in Combatting Climate Change

Seaweed is most often seen as a waste of the sea that washes up on Atlantic Ocean beaches and leaves a sticky residue to the touch. However, recent research has shown that macroalgae play an important role in the ecosystem of the oceans and the balance of our atmosphere. The earth's oceans have been known to play a large role in sequestering carbon, especially from mangroves, seagrass beds and salt marshes. With the 2015 Paris Agreement and more research about

the onset of climate change, policies have emphasized the responsible management and protection of these carbon sinks, but these policies typically do not include the potential sequestration by seaweed and other macroalgae.

A recent study by researchers at Florida State University and ecologists from Plymouth Marine Laboratory in the United Kingdom investigated the role of microalgae in the mitigation of climate change. The researchers studied seaweed in the English Channel and the shoreline of Plymouth, UK at a deep coastal sedimentary site for thirteen months. The researchers took samples of environmental DNA from different types of seaweed at different site locations and modelled isotopes of carbon and nitrogen to track the seaweed's uptake. Additional experiments were undertaken to observe the seaweed's interaction with seabed sediment's ability to sequester carbon as well.

The goal of the study was to determine if there was an interaction between the seaweed and deep coastal sediment and if the seaweed should be considered in schemes to increase oceanic carbon sequestration. The study found evidence that seaweed supports the sequestration of carbon by absorbing and trapping carbon in the sediment of the seafloor. The study results estimated that approximately 8.75 grams of macroalgae carbon are sequestered per square meter of sediment each year, which is about 4-5 percent of the sequestration of other oceanic carbon sinks.

Several limitations exist with a study at the local scale, such as seasonal and geographic variability and the inability to include interconnected ecosystems, so further research in other parts of the world would give the results more reliability. However, the study takes an important first step to understanding the potential that macroalgae-sediment systems have for climate change mitigation and provides perspective on the likely consequences of disrupting these systems with seabed mining, aggregate extraction, and bottom fisheries.

See, Queirós, Ana Moura, et al. "Connected macroalgal-sediment systems: blue carbon and food webs in the deep coastal ocean." *Ecological Monographs* (2019): e01366. (Abby Kirchofer, Libby Koolik, Shaena Berlin Ulissi, Ashley Krueder)

REGULATORY DEVELOPMENTS

FACING SEA LEVEL RISE, CALIFORNIA COASTAL COMMISSION TESTS POWERS FOR ‘MANAGED RETREAT’ OF HOMES ALONG THE COASTLINE

The California Coastal Commission (Commission) is charged with protecting the state’s beaches from the effects of overdevelopment. Yet with climate change projections predicting rising sea levels over the coming decades, the Coastal Commission is considering how best to approach the changing coastline in years to come. One option may result in the removal of beachfront residential homes, though the possibility may be at the limits of the Coastal Commission’s authority.

Background

The Commission oversees development on over 1,100 miles of coastal land, possessing the authority (sometimes shared with local jurisdictions) to approve or deny the construction of any project within the Coastal Zone. Created in 1972 pursuant to Proposition 20, and endowed with this authority through the 1977 California Coastal Act, the Commission is charged with preserving public access to beaches. Recent estimates indicate that rising sea levels could eliminate two-thirds of state beaches before 2100, with researchers for the U.S. Geological Survey describing rising oceans as a greater threat to the California economy than wildfires or extreme earthquakes. Effects are estimated to materialize as early as 2040.

In response, the Commission has expressed a desire for beach cities and coastal counties to create proactive plans to address climate impacts. One such plan could force homeowners to abandon beachfront homes. In addition to single-family residences, coastal infrastructure including wastewater treatment facilities, pipelines, highways and railroads may be at risk from rising sea levels. Yet the ability for the Commission to mandate that homes be abandoned to accommodate public access to changing coastlines has yet to be tested in the courts. The full authority of the Commission will need to be litigated to determine whether the agency can put limits on seawalls, and how far it may be able to go with actions that could

undermine property values or render some homes unlivable in the medium term.

Upcoming Coastal Commission Hearings

The agency plans to hold hearings in July on proposed language for managing sea-level rise in residential areas, and expects to adopt a “Residential Adaptation Guidance” by the end of the year. The most recent draft details several options, including “managed retreat” which would remove homes so beaches can migrate inland rather than disappearing under the rising water. The “managed retreat” proposal already faces fierce opposition from local governments, homeowners, and the real estate industry, with the California Association of Realtors opposing the suggestion that cities create hazard zones as a first step towards a “managed retreat.” Those zones would likely negatively impact property values, and could make obtaining insurance more difficult for homeowners. It may even make selling the homes more difficult.

“Managed retreat” is only one of the options being included in the upcoming Guidance, though it has understandably taken much of the focus leading up to the hearings. The Commission does not claim the authority to force the removal of any private homes, but instead hopes to encourage local governments to create and implement plans that will protect beaches against the encroaching ocean.

Cities and counties with land in the Coastal Zone have oversight authority as well under the Coastal Act, and are intended to create local coastal programs to manage development near the coastline. Cities with approved plans have primary authority to decide whether to issue new permits for development, though the Commission can challenge permits if it believes they do not comply with the Coastal Act.

Opponents of the “managed retreat” strategy argue it would amount to a taking of private property, and should be accomplished through eminent domain rather than any local or statewide policy harming the property value of coastal residences. Yet taking

a property through eminent domain requires paying the homeowner fair market value, and the value of a home which may soon be harmed due to rising sea levels may be increasingly questionable in the years to come.

Yet other options favored by local governments to date—including dumping sand on beaches to combat higher ocean levels—only work in the short term and serve only to delay the inevitable. The Commission’s first guidance on sea-level rise was released in 2015, and told cities and counties of the need to address the issue in planning and permitting decisions. To date, local efforts have not been sufficient to assuage the Commission’s concerns.

Sea Walls Reduce Access but Fail to Combat Sea-Level Rise

One of the primary issues in recent years has been the propagation of sea walls. In 1971, walls existed on roughly 7 percent of beaches in Ventura, Los Angeles, Orange and San Diego counties. By 1998, that number grew to 33 percent, and in 2018 it reached 38%, based on research conducted by California State University, Channel Islands. In response, the Commission has tightened policies permitting sea walls,

now limiting walls to homes built before 1977, when the Coastal Act took effect. Homes built before that year which undergo major redevelopment are also considered new and must waive their right to a sea wall to obtain Commission approval.

Conclusion and Implications

The California Coastal Commission faces great opposition to its proposed “managed retreat” policies in the forthcoming “Residential Adaptation Guidance.” While pushback is inevitable, the limits to the Commission’s authority remain unknown until challenged in court. Rising sea levels also alter the Commission’s jurisdiction, which covers the Coastal Zone, or the area extending inland roughly 1,000 yards from the mean high tide line. As sea levels rise, the Coastal Zone will move further inland, and the Commission’s authority will travel with it. As the ocean moves inland, public access is required to do the same, with inevitable effects on private property. How the Commission, and the local jurisdictions it must work alongside, will handle these shifts may completely alter the way we think about public access to beaches and private property along the coastline.
(Jordan Ferguson)

PENALTIES & SANCTIONS

RECENT INVESTIGATIONS, SETTLEMENTS, PENALTIES AND SANCTIONS

Editor's Note: Complaints and indictments discussed below are merely allegations unless or until they are proven in a court of law of competent jurisdiction. All accused are presumed innocent until convicted or judged liable. Most settlements are subject to a public comment period.

•On June 25, 2019, the U.S. Environmental Protection Agency (EPA) announced a settlement with Dyno Nobel, a Delaware-based chemical manufacturing company, to address environmental violations at the company's St. Helens, Oregon facility. Dyno Nobel makes anhydrous ammonia and related chemical products used in fertilizer, refrigerant, and other agricultural and industrial applications at the St. Helens plant. EPA alleges that Dyno Nobel violated the Comprehensive Response, Compensation and Liability Act (CERCLA) and the Emergency Planning and Community Right-to-Know Act (EPCRA) by the company's failure to immediately report to federal, state, and local agencies large, unplanned ammonia releases in 2010 and 2015, as well as its failure to accurately estimate and report the total amount of routine ammonia releases from the facility to EPA's publicly-available Toxic Release Inventory. EPA also charged Dyno Nobel with failing to comply with Clean Air Act (CAA) section 112(r), on Risk Management Programs. Alleged violations of the Risk Management Program regulations included failure to adequately maintain certain equipment, regularly test certain equipment, and develop and implement written operating procedures for certain aspects of its operations. Dyno Nobel will pay a \$492,000 civil penalty under the settlement, as well as provide authorities in Columbia County, Oregon with \$939,852 in emergency response equipment, file revised estimates of its total ammonia releases, update its Risk Management Plan, and hire a third party to audit its compliance with chemical release reporting, emergency response, and risk management regulations. In 2018, Dyno Nobel paid a \$250,000 criminal penalty related to the 2015 unplanned ammonia release.

•On June 20, 2019, EPA, the U.S. Department of Justice (U.S. DOJ), and the Wyoming Department of Environmental Quality announced that Sinclair Wyoming Refining Company will pay \$1.6 million in penalties and install additional pollution controls to resolve violations of air emissions limits and monitoring requirements at its refinery in Sinclair, Wyoming. The settlement follows actions by Sinclair to install approximately \$20 million in pollution controls at the refinery and requires the company to take additional measures to reduce emissions of sulfur dioxide. Sinclair allegedly violated state and federal air emissions limits and monitoring requirements, including those established in a consent decree entered by the U.S. District Court for the District of Wyoming in 2008. The alleged violations at the Sinclair refinery include exceeding sulfur dioxide emissions limits at the flares and the sulfur recovery plant's tail gas units, and failing to operate, maintain, and certify continuous emissions monitors (CEMS). Sinclair has installed a Central Amine Facility and upgraded its flare gas recovery system to reduce emissions and advance compliance with air emissions limits at the facility. Sinclair will undertake additional measures to reduce flaring and improve CEMS operations and complete several projects to secure the efficient operation of the flare gas recovery system. Additionally, the stipulated penalty provisions in the consent decree are being modified to provide further incentive for Sinclair to comply with the consent decree emission limits.

•On June 25, 2019, the U.S. DOJ and EPA announced a settlement with Dow Silicones Corporation, resolving alleged violations at the company's chemical manufacturing facility in Midland, Michigan related to excess emissions of hazardous air pollutants (HAPs) and volatile organic compounds (VOCs), unauthorized discharges of pollutants, inadequate management of hazardous waste, and untimely reporting of hazardous substance releases. The primary violations alleged consist of Dow's fail-

ure to monitor and repair VOC leaks from thousands of components and properly operate the facility's thermal oxidizer, which is the primary HAP control device; failure to identify and characterize hazardous waste streams; and failure to properly manage and monitor stormwater at the facility. The consent decree requires Dow to undertake extensive measures that should result in estimated annual emissions reductions of 218 tons of HAPs and 43.53 tons of VOCs, as well as estimate annual pollutant reductions of three tons of nitrogen and zinc. Dow will also spend approximately \$1.6 million on supplemental environmental projects, including lead abatement projects in or near Midland, donation of air monitoring equipment to local responders, and more frequent monitoring and improved repair and replacement procedures for equipment that contains HAPs. Dow will pay a penalty of \$4.55 million. In addition, Dow must implement a revised benzene sampling plan, a comprehensive leak detection and repair program for equipment, and a compliance plan to remedy all CAA violations identified through a voluntary audit performed by Dow; implement specified measures to control vent streams that contain HAPs and improve the operation of air pollution control equipment; identify and characterize all hazardous waste streams; implement adequate secondary containment for tanks; evaluate and improve the management and monitoring of stormwater at the facility and update the Stormwater Pollution Prevention Plan; and implement a revised hazardous substance release reporting policy and training procedures.

• On June 10, 2019, Hector M. Garza, Jr. and Tammy L. Garza of Richland, Washington and their companies, HTG Trucking, LLC and Freedom Fuel, Inc., pled guilty to fraud and false statement charges in connection with a renewable energy fraud scheme. Hector Garza, HTG Trucking, and Freedom Fuel were participants in a conspiracy involving Gen-X Energy Group, Inc., a renewable energy company formerly located in Pasco and Moses Lake, Washington. Between January 2013 and April 2013, Hector Garza and his co-conspirators falsely claimed the production of hundreds of thousands of marketable renewable energy credits, which they then sold for more than \$296,000, and filed false claims with the IRS for \$284,546 in excise credit refunds. Throughout this period, much of the renewable fuel claimed to be pro-

duced at the Gen-X facilities was either not produced or re-processed multiple times. Hector Gaza, HTG Trucking, and Freedom Fuel pled guilty to conspiring to defraud the United States with respect to the false claims made upon the IRS, through the use of the trucking companies, which were used to "round" supposed renewable fuel by driving the same material back and forth between Gen-X's Moses Lake facility and the Garzas' businesses in Othello, Washington, and generating fraudulent renewable energy credits and tax credits each time the material was "rounded." Tammy Garza, wife of Hector Garza, pled guilty to aiding and abetting the use of false statements in connection with the renewable energy credits that were claimed and sold as part of the scheme. A number of other conspirators have previously pled guilty and been sentenced in connection with their role in the fraud. In June 2017, Scott Johnson, the former CEO of Gen-X, was sentenced to a 97-month term of imprisonment in connection with his role in the fraud scheme. In June 2018, Jin Chul "Jacob" Cha of Tustin, California, was sentenced to 51 months of imprisonment in connection with his role in the fraud. The conspiracy offense to which Hector Garza pled guilty carries a maximum term of imprisonment of ten years, while the false statement charge to which Tammy Garza pled guilty has a maximum imprisonment term of two years. Each corporation faces a maximum fine of \$500,000 or double the loss to the victim or the gain to the defendant, whichever is greater. All four defendants are scheduled to be sentenced on October 17, 2019 in Richland Washington.

• On May 22, 2019, IAV GmbH (IAV), a German company that engineers and designs automotive systems, was sentenced in federal court in Detroit to pay a \$35 million criminal penalty. The penalty is the result of the company's guilty plea for its role in a long-running scheme for Volkswagen AG (VW) to sell approximately 335,000 diesel vehicles in the U.S. by using a defeat device to cheat on U.S. emissions tests mandated by the U.S. Environmental Protection Agency and the California Air Resources Board (CARB). During the sentencing hearing, U.S. District Judge Sean F. Cox of the Eastern District of Michigan accepted the parties' plea agreement, which includes the appointment of an independent corporate compliance monitor for a period of two years. Principal Deputy Assistant Attorney General

John P. Cronan of the Justice Department's Criminal Division, U.S. Attorney Matthew J. Schneider of the Eastern District of Michigan, Deputy Assistant Attorney General Jean E. Williams of the Justice Department's Environment and Natural Resources Division, Assistant Administrator Susan Bodine of the EPA's Office of Enforcement and Compliance Assurance and Special Agent in Charge Timothy R. Slater of the FBI's Field Office made the announcement. IAV pleaded guilty in December 2018 to participating in a conspiracy to defraud the United States and VW's U.S. customers and to violate the Clean Air Act by misleading the EPA and U.S. customers about wheth-

er certain VW- and Audi-branded diesel vehicles complied with U.S. emissions standards. IAV admitted that it and its co-conspirators knew the vehicles did not meet U.S. emissions standards and worked collaboratively to design, test and implement cheating software to cheat the U.S. testing process. IAV further admitted that it was aware the VW concealed material facts about its cheating from federal and state regulators and U.S. customers. Pursuant to the U.S. Sentencing Guidelines, IAV's \$35 million fine was set according to the company's inability to pay a higher fine amount without jeopardizing its continued viability.

(Allison Smith)

LAWSUITS FILED OR PENDING

CALIFORNIA FILES FOIA LAWSUIT AGAINST EPA IN THE FACE OF FEDERAL ROLLBACKS OF FUEL EMISSIONS STANDARDS

California, a national leader in setting fuel economy standards, has sued the U.S. Environmental Protection Agency (EPA) and National Highway and Transportation Safety Administration (NHTSA) to challenge the federal government's proposal to slow a scheduled increase in fuel economy standards that was established under the Obama administration. California—the fifth largest economy in the world—has historically set fuel economy standards and others have followed suit. (At least 16 other states have committed to following California's lead.)

This standoff, one of several between California and the Trump administration, has many in the fuel and auto industry watching on the extent California can exert control over industrial business policies. On April 5, 2019 California filed suit [*California Air Resources Board v. U.S. Environmental Protection Agency*, Case No. 1:19-cv-965 (D. D.C.)]:

The state of California filed a lawsuit on Friday seeking to force two federal agencies to provide data they used to justify rolling back landmark Obama-era vehicle emission standards, accusing the Trump administration of “willfully withholding” information. (*Reuters*: <https://www.reuters.com/article/us-autos-emissions-california/california-sues-u-s-agencies-over-data-on-vehicle-emissions-freeze-idUSKCN1RH2G4>)

Background

On August 2, 2018, the EPA and NHTSA, an administrative agency under the U.S. Department of Transportation, initiated a proposed rule-making to revise existing fuel-economy standards and proposed capping such standards at approximately 37 per mile per gallon from year 2020 through 2026, rather than allowing the standard to rise to the near 50-mile per gallon requirement by 2025 as required under existing rules established during the Obama administration. The proposal challenges California's authority to set fuel economy standards that are more stringent than

federal standards.

According to the NHTSA and EPA, more aggressive fuel economy standards would have an adverse impact on American safety, and that rolling back the Obama standards would “reduce highway fatalities by 12,700 lives [over the lifetime of vehicles through model year 2029.]” The EPA further contends that fuel economy standards would increase new vehicle costs by \$2,340. The EPA concludes that this cost increase will deter people from purchasing new vehicles when they need to even though new cars are generally safer, and would result in fewer deaths and injuries compared to older vehicle models.

Critics have noted that research has not been able to show “a statistically rigorous association between traffic fatalities and fuel economy.” To establish such a relationship, University of Michigan Energy Institute Professor John DeCicco stated that one would “have to show it beyond a reasonable doubt that higher fuel economy impacts safety,” and in the absence of such data, the EPA has “contrive[d] these things through modeling.” DeCicco further pointed out that any new regulation is costly, not just fuel economy standards.

In support of its proposal, the EPA also contends that the net air emissions impact of implementing its policy of lower fuel economy standards will be marginal because when the cost of fueling your car or trips is higher, people will have a decreased incentive to drive or take such trips. Here, Professor DeCicco noted that while there is some truth to this assertion, the impact is marginal on a broad scale.

Health officials have also noted the negative health impacts of rolling back fuel economy standards. “Dirty air already causes too many Americans to suffer from asthma attacks, heart problems and other serious health issues,” said Georges C. Benjamin, M.D., executive director of the American Public Health Association:

The federal government should not roll back Clean Car Standards that we know can further

protect people from harmful pollution and save their lives.

The auto industry, for its part, has weighed in to state that it supports improving fuel economy standards while “balancing [other] priorities like affordability, safety, jobs and the environment,” and that it hopes California and the federal government can reach a “common sense” solution.

The Auto Alliance and Global Automakers position is as follows:

Automakers support continued improvements in fuel economy and flexibilities that incentivize advanced technologies while balancing priorities like affordability, safety, jobs, and the environment. With today’s release of the Administration’s proposals, it’s time for substantive negotiations to begin. We urge California and the federal government to find a common sense solution that sets continued increases in vehicle efficiency standards while also meeting the needs of America’s drivers.

Negotiations Don't Pan Out

California officials, including representatives from California Air Resources Board, led by Mary Nichols, a life-long champion of stringent emissions policies, have engaged in the Trump administration in negotiations with the EPA, but these efforts have not been fruitful.

In an initial response to the new policy announcement, Mary Nichols issued the following statement:

At first glance, this proposal completely misrepresents costs and savings. It also relies on bizarre assumptions about consumer behavior to make its case on safety. . . .CARB will examine all 978 pages of fine print to figure out how the administration can possibly justify its absurd conclusion that weakening standards to allow dirtier, less efficient vehicles will actually save lives and money. Stay tuned for further comment. Meantime, California remains fully committed to a rigorous 50-state program with a full range of vehicle choices. That program is in effect

right now and will remain so for the foreseeable future.

After negotiations broke down this past winter, the state of California filed a lawsuit against the EPA and the NHTSA in the U.S. District Court for the District of Columbia.

The Lawsuit

On April 5, 2019, California filed suit against the EPA and NHTSA over inadequate and insufficient information turned over in a Freedom of Information Act (FOIA) request made by the state. In a statement addressing the lawsuit, CARB leader Mary Nichols stated:

Since releasing the proposed rule last summer, the Trump Administration has repeatedly failed to comply with California’s FOIA request, and the reason is clear: They are unwilling to admit that the facts and analysis simply do not support their desired outcome. . . .This lawsuit will break down [the federal administration’s] silence and secrecy. The public has a right to see all the facts and analysis used to support a rollback that increases oil consumption, hurts consumers, and pumps more air pollution and hundreds of million tons of climate-changing gases into the atmosphere.

Conclusion and Implications

Many are watching this lawsuit as an indicator for the strength and success states might have in challenging federal policies, particularly where, as here, significant industry interests are at stake. The lawsuit also arrives when many are looking to states to take the lead on implementing aggressive climate policies to combat climate change. California’s ability to continue leading and implementing its own aggressive climate policies will be key in achieving its ambitious carbon neutrality goals by 2050. For more information on the lawsuit, see: <https://www.gov.ca.gov/2019/04/05/suit-against-trump-administration-for-withholding-data-on-efforts-to-weaken-vehicle-emission-regulations/> (Lilly McKenna)

JUDICIAL DEVELOPMENTS

U.S. DISTRICT COURT ORDERS EPA TO PROMULGATE GUIDELINES FOR MUNICIPAL SOLID WASTE LANDFILL GREENHOUSE GAS EMISSIONS

State of California et al., v. U.S. Environmental Protection Agency, et al.,
___F.Supp.3d___, Case No. 18-cv-03237-HSG (N.D. Cal. May 6, 2019).

The U.S. District Court for the Northern District of California recently declared that the U.S. Environmental Protection Agency (EPA) failed to perform its non-discretionary duties under the federal Clean Air Act (CAA) to implement regulations to reduce air pollutants from municipal solid waste landfills. The court considered limited questions of law after the parties agreed on the merits that the EPA failed to implement the landfill emission plans adopted in October 2016. District Court Judge Haywood S. Gilliam determined, as a matter of law, the eight state party plaintiffs had standing to file the action based upon their “special solicitude” as sovereign states under existing U.S. Supreme Court precedent. Further, the court determined it had authority to compel the EPA “to complete its long-overdue nondiscretionary duties” pursuant to a court-determined schedule.

Factual and Procedural Background

Plaintiffs include eight states, and intervenor-plaintiff the Environmental Defense Fund (EDF). Plaintiffs sued the EPA for declaratory and injunctive relief after it failed to take actions regarding landfill emission guidelines that became effective October 28, 2016. Under the Obama administration, EPA promulgated the landfill emission guidelines intending to address harmful pollutants emitted from solid waste landfills. The United States produces roughly 265 million tons of solid waste annually, and solid waste landfills emit greenhouse gases and:

... ‘nearly thirty different hazardous air pollutants’ which ‘present a range of public health and safety concerns.’

The landfill emission guidelines were the result of decades of consideration; EPA first proposed rules for

such emission regulations in 1991 and also promulgated landfill emission guidelines in 1996.

EPA adopted the landfill emission guidelines pursuant to the CAA, which directs the EPA Administrator to publish a list of categories of stationary sources that “in [the Administrator’s] judgment” cause or contribute significantly to air pollution “which may be reasonably anticipated to endanger public health or welfare.” Once EPA lists a category of stationary sources, it must “publish proposed regulations, establishing federal standards of performance” for emission of pollutants from new or modified sources “within such category.” Further, the CAA provides for the regulation of “existing sources” and requires the Administrator to “prescribe regulations” to establish a procedure for each state to submit a plan that:

... establishes standards of performance. . .[and].
... provides for the implementation and enforcement of such standards of performance.

Consistent with the statutory requirements, the 2016 landfill emission guidelines established deadlines for states to submit their plans for implementation to EPA by May 30, 2017. EPA was to approve or disapprove the submitted plans by September 30, 2017. For states that either failed to submit a plan, or that submitted a plan which EPA disapproved, EPA was required to promulgate a federal plan by November 30, 2017. EPA received plans from five states, including California, New Mexico, Arizona, Delaware, and West Virginia. The court noted that contrary to the regulatory requirements “to date, EPA has neither approved or disapproved of any submitted plans nor promulgated a federal plan.”

The District Court’s Decision

EPA admitted that it failed to take action on the

landfill emission plans, but argued that (1) plaintiffs lacked standing, and (2) plaintiffs' proposed deadlines were not feasible for EPA to meet under the CAA.

Standing

In reviewing standing, the court applied a three-part test. First, the plaintiff must have "suffered an injury in fact" that requires "an invasion of a legally protected interest" that is concrete, particularized, and actual or imminent, rather than conjectural or hypothetical. Second, the plaintiff's injury must be "fairly traceable to the challenged conduct of the defendant." Third, the injury must be "likely to be redressed by a favorable judicial decision."

On the "injury in fact" test, the court held that the state plaintiffs were entitled to "special solicitude." The court considered it relevant "that the party seeking review [was] a sovereign State and not . . . a private individual." *Id.* at 518. The court observed that the CAA created an express procedural right to challenge EPA's conduct and that existing case law affirms standing where an action of the EPA affected the state's "quasi-sovereign" interest in its territory.

Relying on recent climate change litigation, EPA also argued that the state plaintiffs lacked standing because they failed to plead facts supporting the causation and redressability tests. The court distinguished the climate change litigation by noting that here, plaintiffs were state sovereigns, and that the plaintiffs in the climate change litigation did not provide evidence that the relevant emissions had a "meaningful contribution" on greenhouse-gas levels. By contrast, the landfill emissions guidelines applied directly to emissions of harmful pollutants and methane, a leading greenhouse gas. Thus, the court rejected EPA's standing and derivative redressability challenge and noted that:

. . . [w]here Congress has expressed the need for specific regulations relating to the environment, that expression supports an inference that there is a causal connection between the lack of those regulations and adverse environmental effects.

'Long Overdue'

Upon finding that the State Plaintiffs had standing, the court considered the timetable to impose on EPA to complete its "long-overdue nondiscretionary duties." The court considered its ability to set a schedule for EPA to comply with its order and the feasibility of completion in light of EPA's phased rule-making for final action, and its present capabilities. The court adopted a four month deadline for EPA to approve or disapprove the five existing state plans by September 6, 2019, and a six month deadline for EPA to promulgate regulations for a federal plan to address municipal solid waste landfill emissions no later than November 6, 2019. The court found EPA failed to meet its "especially heavy" burden to prove that a six month deadline is infeasible. Further, the court ordered EPA to submit status reports with the court every ninety days detailing its progress in complying with the order.

Conclusion and Implications

This case upholds the federal court's authority under the CAA to compel EPA to comply with mandatory duties set forth in regulations promulgated by EPA. In addition, this case stands as an example of the federal district court's finding of "special solicitude" standing for sovereign state plaintiffs who seek to remedy environmental harms pursuant to federal statutes and regulations.

(Rebecca Andrews, Patrick Skahan)

HAWAII SUPREME COURT ADDRESSES GREENHOUSE GAS EMISSIONS ANALYSIS FOR BIOMASS FUEL FACILITY PROJECT

In re Application of Hawai'i Electric Light Company, Inc.,
___P.3d___, Case No. SCAD-18-0000015 (May 10, 2019).

The Supreme Court of the State of Hawaii issued an opinion regarding an appeal of the Public Utilities Commission's (PUC) approval of an amended power purchase agreement (Amended PPA) between Hawai'i Electric Light Company, Inc. (HELCO) and Hu Honua Bioenergy, LLC (Hu Honua). The Amended PPA memorialized an agreement between HELCO and Hu Honua in which Hu Honua would construct and operate a new biomass-fueled energy production facility, and HELCO agreed to purchase energy from the facility for its customers. Life of the Land (LOL), an environmental nonprofit organization comprised of members who live, work, and recreate in Hawaii, argued that the PUC: 1) failed to explicitly consider greenhouse gas emissions in determining whether to approve the Amended PPA; 2) denied LOL due process to protect its interest in a clean and healthful environment by restricting its participation in the proceeding; and 3) abused its discretion and violated due process by denying LOL full party status in the proceeding. Ultimately, the Supreme Court vacated the PUC's decision and order approving the Amended PPA and remanded for further consideration by the agency.

Factual Background

HELCO originally sought approval for its agreement with Hu Honua in 2012. The original agreement involved the refurbishment of a biomass power plant to use harvested timber and other "woody biomass" as a fuel source. HELCO was to purchase energy from the refurbished biomass power plant for a term of twenty years.

During PUC's review of the original agreement, LOL sought to intervene in the PUC proceedings on the grounds that it had environmental interests and the use of biofuels for energy production was adverse to such interests. LOL raised concerns regarding the original agreement, including the timber fuel source, the comparative cost, and whether the proposed facility would cut into the energy purchased from exist-

ing and/or planned wind and solar farms. The PUC found that LOL's concerns were insufficient to grant full intervention, but allowed LOL to participate on a limited basis. Specifically, LOL was authorized to participate in two issues: 1) whether the energy price components properly reflect the cost of biomass fuel supply; and 2) whether HELCO's purchase power agreement are prudent and in the public interest.

The PUC approved the original agreement between HELCO and Hu Honua, but HELCO eventually terminated the agreement. The parties agreed to amend the original agreement, and subsequently, sought approval of the PUC for the Amended PPA.

2017 PUC Proceedings

Similar to the proceedings in 2012, HELCO filed an application for approval of the Amended PPA. The PUC, once again, granted limited participation status to LOL for the same two issues it previously authorized in the prior proceedings.

During the 2017 PUC proceedings, LOL filed several Information Requests (IRs) that sought information from HELCO, Hu Honua, and the Consumer Advocate regarding the potential greenhouse gas emissions from the proposed project and other potentially adverse environmental impacts of the new biomass facility. HELCO acknowledged that greenhouse gas emissions would occur by the equipment used to harvest trees used as a fuel source for the facility, but also admitted that it had not quantified the amount of such emissions. However, HELCO argued that although carbon would be released upon combustion of the trees in the facility, it would be recaptured upon the growth of additional trees and would result in a carbon neutral operation.

LOL argued that the proposed biomass facility was not in the public interest by failing to address climate change and environmental impacts of the proposed operations. Additionally, LOL demonstrated that the proposed project was not in the public interest when compared to other lower-priced solar-based electricity proposals previously approved by the PUC.

Hu Honua demonstrated that the new biomass facility would make a significant contribution to Hawaii's Renewable Portfolio Standards by approximately 11 percent of the life of the Amended PPA and would avoid the emission of hundreds of thousands of tons of carbon. Hu Honua also argued that:

...the estimated emissions due to transportation of fuel to the plant pale in comparison to the emissions reductions that will result from the displacement of fossil fuel.

The PUC eventually approved the Amended PPA, citing to the proposed project's contribution to Hawaii's Renewable Portfolio Standards, the fact that the contract price for the Amended PPA is de-linked from fossil fuel pricing, and that renewable energy provided by the new biomass-fueled facility could save approximately 15,700 barrels of fuel per year.

The Hawaii Supreme Court's Decision

LOL appealed directly to the Supreme Court for three main issues concerning the PUC's approval of the Amended PPA: 1) the PUC was required by state statute to explicitly consider greenhouse gas emissions in determining whether the costs of the Amended PPA were reasonable, but failed to make such considerations; 2) the PUC denied LOL due process to protect its right to a clean and healthful environment by restricting its participation in the 2017 Proceedings; and 3) the PUC erred in denying LOL's motion to upgrade its participation status.

Greenhouse Gas Emissions

Pursuant to Hawaii state law, the PUC must explicitly consider the effect of greenhouse gas emissions and the state's reliance on fossil fuels. The Court acknowledged simply because the facility proposed to be constructed and later operated was a biofuel facility did not absolve the PUC from considering the effect of greenhouse gas emissions expelled from the project. The Court also held that the PUC's "findings should be sufficient to allow the reviewing court to track the steps by which the agency reached its decision." *Kauai Springs, Inc. v. Planning Comm'n of Cty. Of Kuai*, 324 P.3 951 (2014). Since the record of the 2017 PUC Proceedings did not reflect that the agency explicitly considered the reduction of

greenhouse gas emissions in approving the Amended PPA, the Court found that the PUC failed to comply with its statutory obligations. In fact, there were only minimal references to greenhouse gas emissions in the PUC's decision and order, which read:

...[c]omments in opposition to the Project tended to focus on potential adverse environmental impacts, an expected rise in [greenhouse gas emissions], ... and general objects to biomass as a fuel resource.

And although the PUC reiterated HELCO's statements relating to the biomass facility potentially saving approximately 15,700 barrels of fuel per year and contributing to Hawaii's Renewable Portfolio Standards, the PUC failed to make its own findings and conclusions regarding the environmental impacts of the proposed facility. Without such independent findings and conclusions, the Court held that it was unable to determine the adequacy of the PUC's actions and remanded the matter to the agency for further proceedings.

Second, LOL argued that it was entitled to be heard regarding the consideration of the Amended PPA due to its constitutional right to a clean and healthful environment. The Court determined that "the right to a clean and healthful environment" was a property interest to be protected by due process pursuant to the State Constitution. Since LOL was authorized to participate in only two sub-issues in the proceedings to consider the Amended PPA, the Court found that the PUC did not afford an opportunity for LOL to be heard on its right to a clean and healthful environment in a meaningful time and manner. Instead, the PUC prevented LOL from protecting its property interest since it limited LOL's participation to only two sub-issues. Thus, LOL's due process rights were violated based on its limited participation status in the 2017 PUC Proceedings.

Last, LOL contended that the PUC acted erroneously and abused its discretion when it denied its motion to upgrade its participation status during the 2017 PUC Proceedings. The Court noted that it could not review the PUC's actions as an abuse of discretion since the PUC did not explicitly consider the project's reduction of greenhouse gas emissions at all (which, on remand, the PUC is now ordered to do). The Court reinforced the PUC's authority

and discretion to determine to what extent LOL may participate in the additional proceedings (whether limited or full party status), but stated that the PUC must comply with its statutory and constitutional obligations afforded to LOL.

Ultimately, the Court remanded the matter back to the PUC for additional proceedings for a genuine consideration of the impacts and reduction of greenhouse gas emissions in the proposed biomass facility project.

Conclusion and Implications

The Supreme Court's decision may impact the approval of future "carbon neutral" or "environmen-

tally friendly" projects set for approval by the PUC. However, several environmental groups disagree with defining biofuel as carbon neutral simply because the net reduction cancels the production of potential greenhouse gas emissions. Environmental groups argue that any greenhouse gas emissions should be reviewed with scrutiny. The Court's decision also reassures environmental groups that the PUC is required, per the Hawaii Constitutional and state law, to evaluate and make its own findings relating to the impacts of greenhouse gas emissions for each and every application under its purview.
(Nicolle A. Falcis, David D. Boyer)

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