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April 29, 2011

Ms. Nancy Sutley, Dr. John Holdren, and Members
National Ocean Council
c/o Council on Environmental Quality
722 Jackson Place, NW
Washington, DC 20503

Re: National Ocean Council Strategic Action Plan for Water Quality (Objective 7)

Dear Chairs Sutley and Holdren and National Ocean Council Members:

The California Coastkeeper Alliance represents 12 Waterkeeper groups spanning the coast from the Oregon border to San Diego. The Alliance and its member Waterkeepers work daily to protect and enhance clean, abundant water flows throughout the state. On behalf of the Alliance, I am pleased to submit these comments on the “National Ocean Council Strategic Action Plan for Objective 7: Water Quality and Sustainable Practices on Land” (Strategic Water Quality Action Plan or Action Plan).

The stated purpose of the Action Plan is to “enhance water quality in the ocean, along our coasts, and in the Great Lakes by promoting and implementing sustainable practices on land.” In order to achieve this, the Action Plan must outline effective actions to reduce polluted runoff. Polluted runoff (both stormwater and non-stormwater runoff) is the most significant and widespread source of contamination of coastal waters. The Commission on Ocean Policy found that “[n]inety percent of impaired water bodies do not meet water quality standards at least in part because of nonpoint source pollution.”¹ Additionally, “millions of dollars are spent on treating the symptoms of stormwater pollution but much less is spent on efforts to control its causes.”² The Commission has found that “substantial enhancement of coastal water quality will require significant reductions in nonpoint source pollution.”³

In order to curtail impacts to coastal waterways caused by land-based polluted runoff, the Action Plan should measure progress toward enhancing “water quality in the ocean, along our coasts, and in the Great Lakes by promoting and implementing sustainable practices on land” by measuring reductions in stormwater runoff, reduced impervious surface areas, and increased stormwater capture and storage.

¹ U.S. Commission on Ocean Policy, *An Ocean Blueprint for the 21st Century: Final Report*, p. 213, available at http://oceancommission.gov/documents/full_color_rpt/14_chapter14.pdf (COP Report).

² *Id.* at 217.

³ COP Report at 204.

I. THE ACTION PLAN SHOULD INCLUDE TASKS THAT WILL RESULT IN MEASUREABLE, NEAR-TERM REDUCTIONS IN STORMWATER RUNOFF, REDUCED IMPERVIOUS SURFACE AREAS, AND INCREASED STORMWATER CAPTURE AND STORAGE.

A. Stormwater Runoff Is a Significant Source of Coastal Pollution.

Stormwater runoff is a significant source of coastal pollution, particularly for popular coastal recreation areas such as Southern California. As noted by the Commission on Ocean Policy,

[p]oor stormwater management may increase flooding, causing property damage from flash floods and leading to higher insurance rates. Stormwater is also a source of bacterial contamination, leading to increased disease incidence, thousands of beach closures in the United States each year, and loss of revenues from coastal tourism and sport fishing. Millions of dollars are spent on treating the symptoms of stormwater pollution but much less is spent on efforts to control its causes.⁴

A UCLA and Stanford University study found that nearly 1.5 million cases of gastrointestinal illnesses occur annually as a result of fecal contamination in Southern California's waters. The researchers estimated that health care costs for the cases range from \$21 million annually (based on very conservative assumptions) to \$414 million.⁵ Moreover, stormwater discharges from roadways pollute nearby waters with metals (copper, lead, and zinc) from brake pads and tires, as well as synthetic organics (petroleum products and pesticides), sediment, nutrients, debris, oxygen-demand substances (decaying vegetation, animal waste, and other organic matter), and other pollutants.

Land use decisions dramatically affect the amount and type of stormwater runoff created, and so can significantly impact coastal water quality. For example, aquatic ecosystem health becomes "seriously impaired" when over 10% of the watershed is covered by impervious surfaces. By comparison, impervious surfaces cover 25%–60% of the area in medium-density residential areas, and can exceed 90% at strip malls and other commercial sites.⁶ A comprehensive approach is required to minimize disturbance to the natural hydrology, minimize water flow over surfaces, and maintain water quality....⁷ The Commission formally recommended that state and local governments "adopt or revise existing codes and ordinances to require land use planning and decision making to carefully consider the individual and cumulative impacts of development on water quality, including effects on stormwater runoff."⁸

B. Low-Impact Development Techniques Have Multiple Benefits in Addressing the Problem of Contaminated Stormwater Runoff.

To control runoff effectively and reduce expensive cleanup costs downstream, pollution should be better controlled at the source. Implementation of low-impact development (LID) measures is critical to reducing stormwater pollution into coastal waters. LID slows and sinks stormwater flow reducing

⁴ *Id.* at 217.

⁵ UCLA, "Regional Public Health Cost Estimates of Contaminated Coastal Waters: A Case Study of Gastroenteritis at Southern California Beaches," *Environmental Science and Technology* 40(16), 4851–4858 (2006).

⁶ COP Report at 216-17.

⁷ *Id.* at 220 (emphasis added).

⁸ *Id.* (emphasis added).

polluted runoff and creating new, low-energy localized water supplies.⁹ Pollution prevention through LID also offers additional benefits over after-the-fact conventional treatment, such as pollution reduction, reduced stormwater runoff volume and rate, potentially increased groundwater recharge (potentially creating a low-energy, localized water supply), habitat protection, and greater cost-effectiveness.

U.S. EPA found that using LID methods, rather than traditional stormwater management controls, results in cost *savings* of between 15% and 80%. Despite 39 federal funding sources for watershed protection along coastal waters, there is no single funding source dedicated to the implementation of LID.¹⁰ Thus, despite the laudable number of resources, tools, and manuals that EPA has created and disseminated on the benefits of LID,¹¹ coastal states do not have the funding necessary to implement LID techniques.

West Coast states have already begun development and implementation of LID strategies. Several key reports on LID have been released offering numerous other specific task recommendations.¹² These include revising state codes to encourage green design and remove disincentives to LID. Federal regulations should be revised to facilitate and require minimizing and reducing impervious surfaces, protecting existing vegetation, maintaining predevelopment runoff volume and infiltration rates, and providing water quality improvements.

Near-Term Action: Direct U.S. EPA and other members of the Council to develop specific guidance on how coastal states can finance LID techniques to reduce coastal stormwater pollution, through existing funding sources, such as the Clean Water State Revolving Fund, and carve out a new pot of funding dedicated specifically for LID in coastal areas, with preference given to designated national marine sanctuaries and other marine protected and managed areas.

Near-Term Action: Develop a thorough report on the coastal water-energy carbon nexus, including ocean desalination, with follow-up recommendations of tasks that will simultaneously: (a) reduce polluted runoff, (b) reduce demands on water supply, and (c) mitigate climate change by encouraging low-energy (and discouraging high-energy) sources of fresh water.

Mid-Term and Longer-Term Action: Develop a process that would ensure that state governments update their codes and ordinances as needed to enhance the use of LID to reduce pollution, increase water supplies, reduce flooding risks, and/or ensure stormwater permit compliance. For example, those states that accept funding for model projects should be required to make associated regulatory updates uncovered by the projects' results. This would be the mid-term action; the longer-term action would be to ensure the implementation of these processes coast-wide.

Mid-Term and Longer-Term Action: Conduct a federal survey of coastal land use and make recommendations as to how policies and programs, such as the U.S. Fish and Wildlife Service Coastal

⁹ See, e.g., OPC, "Resolution Regarding Low-Impact Development" (May 15, 2008) ("LID Resolution"), available at http://www.opc.ca.gov/webmaster/ftp/pdf/docs/Documents_Page/Resolutions/LID%20resolution.pdf.

¹⁰ See U.S. Environmental Protection Agency, Catalog of Funding Sources for Watershed Protection, available at <http://cfpub.epa.gov/fedfund/search1.cfm>.

¹¹ U.S. Environmental Protection Agency, Low Impact Development, available at <http://www.epa.gov/owow/NPS/lid/>.

¹² See, e.g., Low Impact Development Center, "A Review of Low Impact Development Policies: Removing Institutional Barriers to Adoption" (Dec. 2007); U.S. EPA, "Reducing Stormwater Costs through Low Impact Development (LID) Strategies and Practices," EPA Pub. No. 841-F-07-006 (Dec. 2007); Tetra Tech, Inc., "State and Local Policies Encouraging or Requiring Low Impact Development in California" (Jan. 2008); all available at http://www.opc.ca.gov/webmaster/ftp/pdf/agenda_items/20080229/06_LID/0802COPC_06_LID%20memo.pdf; see also additional information on U.S. EPA website, available at: <http://www.epa.gov/nps/lid/>.

Program and National Coastal Wetlands Conservation Grant Program can be used to facilitate a measureable increase in acres of wetlands and coastal habitats restored and protected, *and* a measureable decrease in the amount of impervious surface area through conversion or retrofit. This would be the mid-term action; the longer-term action would be to ensure the implementation of these recommendations coast-wide.

II. THE ACTION PLAN SHOULD ADVANCE INTEGRATED SOLUTIONS TO ACHIEVE OVERALL WATER, OCEAN, AND CLIMATE GOALS.

The Action Plan should focus on *integrated solutions* that advance the nation's overall water, ocean, and climate change goals. National policies, funding and programs should be designed and implemented with careful attention to the overall impacts of our water sources – such as stormwater capture versus ocean desalination – on our goals of clean, healthy oceans and lower greenhouse gas emissions. The Council should endeavor to capitalize on the energy and environmental benefits of increasing stormwater capture and storage through low-impact development, by crafting an Action Plan that discourages energy-intensive and environmentally destructive water sources such as ocean desalination, with reference to the Strategic Plan for Objective 5: Resiliency and Adaptation to Climate Change and Ocean Acidification, as needed.

Stormwater control through LID and other measures can address multiple different problems at once, including water quality, climate change adaptation/mitigation (through flood control), and water supply issues. As to the water supply, stormwater capture and storage can provide significant, low-energy, localized water sources that reduce a growing focus on destructive ocean desalination as a water source. The California Energy Commission has found that water management consumes 19% of the state's electricity generated every year. If our water sources are not sustainable from an energy and climate change perspective, they will increasingly harm, rather than benefit, the ocean environment.

In an August 2008 report,¹³ the Los Angeles County Economic Development Corporation (LAEDC) ranked conservation and “local stormwater capture” as the area's most cost-effective, energy efficient, relatively immediate water sources. By contrast, ocean desalination using current technology, which devastates sensitive near-shore ecosystems, ranked *lowest* on the list of water supply strategies in terms of greenhouse gas emission impacts.¹⁴ The Scoping Plan for California's landmark “AB 32” greenhouse gas emission reduction law promotes stormwater capture/reuse, conservation and recycling as energy-efficient alternatives that can create *millions* of acre-feet of “new,” local water supplies. The AB 32 Scoping Plan specifically promotes LID as an energy-efficient, sustainable water source, and adds that up to 333,000 acre-feet of stormwater could be captured annually in urban Southern California alone.¹⁵ Similarly, the January 2009 California Little Hoover Commission report on water governance states that:

[a] 2005 report by the Los Angeles and San Gabriel Rivers Watershed Council noted that 500,000 acre-feet of stormwater runoff flow from the Los Angeles County basin to the ocean each year. The report noted that if the region could instead capture that water and

¹³ LAEDC, *Where Will We Get the Water? Assessing Southern California's Future Water Strategies* (rev'd Aug. 14, 2008); available at http://www.laedc.org/sclc/studies/SCLC_SoCalWaterStrategies.pdf.

¹⁴ Though these comments do not specifically address the Climate Change section, we urge the Governors to include in the Climate Change Work Plan a specific process for discouraging ocean desalination as a water supply source, at a minimum until all other conservation, stormwater capture, recycling and other energy-efficient and sustainable water sources have been exhausted.

¹⁵ California Air Resources Board, “Climate Change Scoping Plan: Volume 1,” at C-135 (Dec. 2008), available at http://www.arb.ca.gov/cc/scopingplan/document/appendices_volume1.pdf.

reuse it, Southern California would be less dependent on water imports from Northern California.¹⁶

Such water strategies should be significantly encouraged, and strategies that are destructive to the ocean should conversely be discouraged in the Council's Strategic Action Plans. The above water supply benefits information demonstrates that LID implementation runs across both the Climate Change and Water Quality Action Plans; both Action Plans should reflect this information.

III. THE ACTION PLAN SHOULD INCLUDE FOCUSED ACTIONS TO REDUCE NON-STORMWATER POLLUTED RUNOFF THROUGH ENFORCEABLE "BEST MANAGEMENT PRACTICES."

A. Non-Stormwater Runoff Is a Significant Source of Coastal Pollution.

Many coastal waterways critical to fish health do not meet standards and are in fact significantly polluted, in many cases well above water quality standards.¹⁷ The Commission on Ocean Policy Report found that "substantial enhancement of coastal water quality will require significant reductions in nonpoint source pollution."¹⁸ Since the 2004 release of the COP Report, significant new scientific research has been unveiled demonstrating that polluted runoff-caused contamination harms and kills fish even at low *and legal* concentrations. Most recently, a study by NOAA and Washington State University found that five of the most common pesticides used in California and the Pacific Northwest – diazinon, malathion, chlorpyrifos, carbaryl and carbofuran – act in "deadly synergy" by suppressing an enzyme that affects the nervous system of salmon.¹⁹ Exposures to a single chemical did no harm, but pairing chemicals lowered enzyme activity, sometimes fatally. Moreover, scientists noticed effects at lower pesticide levels when chemicals were applied in combinations. The scientists concluded that "[s]ingle-chemical risk assessments are likely to underestimate the impacts of these insecticides on salmon in river systems where mixtures occur." This means that even if our existing water quality laws are implemented fully, they will fail to protect fish, because the standards on which they are based are too low.

A NOAA/NMFS study of juvenile fall Chinook salmon similarly found that salmon accumulate significant concentrations of chemical contaminants even during relatively short residence times in estuaries, and that juvenile salmon from polluted environments "exhibit abnormalities ranging from subcellular effects to changes in immune function and growth. In many cases the effects alter physiological processes, such that the potential for survival is reduced." The study further found that because the pollutants suppressed the salmon's immune systems, there was an increased susceptibility to infectious disease.²⁰ This is consistent with multiple sets of findings from scientists presenting at the 2008 Annual Meeting of the American Association for the Advancement of Science (AAAS), who reported that pesticides that run off the land and mix in rivers and streams *combine to have a greater than expected toxic effect* on the salmon nervous system than the pesticides would have individually. The scientists concluded that "[c]urrent risk assessments based on a single chemical will likely underestimate

¹⁶ California Little Hoover Commission, "Clearer Structure, Cleaner Water," at 81 (Jan. 2009), available at <http://www.lhc.ca.gov/studies/195/report195.pdf>.

¹⁷ See California Coastkeeper Alliance website, available at <http://www.cacoastkeeper.org/programs/mapping-initiative/ca-polluted-water-maps>.

¹⁸ COP Report at 204.

¹⁹ Laetz, Cathy, *et al.*, "The Synergistic Toxicity of Pesticide Mixtures: Implications for Risk Assessment and the Conservation of Endangered Pacific Salmon," *Environmental Health Perspectives*, Vol. 117, No. 3 (March 2009), available at http://www.eenews.net/public/25/9960/features/documents/2009/03/03/document_gw_01.pdf. See also Goodman, Sara, "Mix of common farm pesticides deadly to salmon – study," *New York Times* (March 3, 2009).

²⁰ Casillas, E., *et al.*, NOAA-NMFS-NWFSC, "Estuarine Pollution and Juvenile Salmon Health: Potential Impact on Survival" (2007), available at <http://www.nwfsc.noaa.gov/publications/techmemos/tm29/papers/casillas.htm>.

impacts on wildlife in situations where that chemical interacts with other chemicals in the environment,” and that the findings may have relevance for human health because these toxins act on the nervous systems of salmon and humans in a similar way.²¹

While the Clean Water Act fails to mandate controls on many sources of non-stormwater runoff, the Action Plan should fill the gap until that problem is corrected. The Commission on Ocean Policy found that “[i]mprovements to the [nonpoint] programs should . . . require enforceable best management practices and other management measures throughout the United States . . .”²² and recommended that “[t]o ensure protection of coastal resources nationwide, Congress should provide authority under the Clean Water Act and other applicable laws for federal agencies to establish enforceable management measures for nonpoint sources of pollution . . .”²³ The existing federal programs of incentives and voluntary efforts²⁴ are insufficient to reduce non-stormwater polluted runoff.

The Action Plan must move beyond solely voluntary and incentive-based actions, which will not achieve clean coastal waters, and instead include a set of tasks that will result in the adoption and full implementation of state programs mandating enforceable controls on polluted runoff. This action would be a model for the rest of the country, and potentially spur the adoption of similar controls within the Clean Water Act, as called for by the Commission.

B. Action Is Needed to Address Growing Contamination and Associated Damage

Near-Term and Mid-Term Action: (a) Support the Commission’s call for “enforceable best management practices,” both in state law and in the Clean Water Act for *all* sources of polluted runoff, and (b) adopt specific tasks to implement this COP Report recommendation in each coastal state.²⁵ This would be the near-term action; the mid-term action would be to ensure the implementation of enforceable BMPs on all sources of polluted runoff – including irrigated agriculture – nationwide.

Near-Term and Mid-Term Action: Direct U.S. EPA and U.S. Fish and Wildlife Service to compile and augment scientific research on synergistic impacts of pesticides and other key pollutants on coastal habitats, fish and wildlife (particularly salmon). This would be the near-term action; once agencies have collected and analyzed the scientific information, they should make recommendations for new standards as needed, which should then be adopted in a mid-term time frame.

Mid-Term Action: Ensure the development of a national monitoring network of coastal, near-shore and marine ecosystems that includes: (a) clearly defined goals that fulfill user needs and provide measures of management success, (b) a core set of variables to be measured at all sites, (c) regional flexibility to measure additional variables where needed, (d) and technical coordination that establishes standard procedures and techniques.²⁶

²¹ Scholz, Nat, NOAA, “Health effects of pesticide mixtures: Unexpected insights from the salmon brain,” (AAAS Annual Meeting, Feb. 2008), available at http://www.eurekaalert.org/pub_releases/2008-02/nh-nsa_1021208.php (emphasis added); see also NOAA Office of Communications, “New findings on emerging contaminants: Chemicals in our waters are affecting humans and aquatic life” (AAAS Annual Meeting, Feb. 2008), available at http://www.eurekaalert.org/pub_releases/2008-02/s-nfo020808.php.

²² COP Report at 218 (emphasis added).

²³ *Id.* at 220 (emphasis added).

²⁴ See Work Plan Action 1.1, available at http://westcoastcoceans.gov/Docs/PollRunoffACT_Draftworkplan_May09.pdf.

²⁵ While California’s Porter-Cologne Water Quality Control Act already mandates such controls on polluted runoff, and the mandates of Porter-Cologne are beginning to be implemented, full statewide implementation of these mandates has yet to occur.

²⁶ *Id.* at 234.

We respectfully request that the Action Plan include the above-described actions to protect water quality, in order to effectively ensure the good health of coastal and marine waters and affected habitat and life.

Thank you for your continued strong support and action for a vibrant coast and ocean.

Regards,



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