Comments on the Los Angeles County Department of Public Works Sediment Management Strategic Plan

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General Comments

After reviewing the 523 printed pages of the Los Angeles County Department of Public Works Sediment Management Strategic Plan and numerous technical publications and proceedings of various organizations and associations involving flood control and sediment management, it is my opinion that the LADPW is actively and willfully resisting the implementation of modern innovative sediment management strategies and intentionally ignoring advancements and innovations that have been made in the field. While the body of agencies and organizations responsible for establishing and executing sediment management plans and projects are moving towards interagency planning and cooperation on a regional scale, and employing strategies that optimize sediment management across multiple projects and agencies, the LADPW instead continues to act as an insular agency moving forward with a long range Sediment Management Strategic Plan lacking even a rudimentary examination of potential innovative solutions to the environmental, social, and fiscal impacts of the current flood control system and its need for perpetual costly maintenance. Instead, we are offered a parochial list of debris basins and reservoirs where LADPW's lack of vision and innovation has led to yet another decade or more of sediment accumulation that must be addressed at great expense to the taxpayer and the environment. By failing to contemplate more sustainable and efficient sediment management practices such as Flow-Assisted Sediment Transport and beach deposition, by failing to make provisions for pilot projects and studies to identify new and innovative sediment management strategies, and by LADPW's apparent lack of coordination with other regional agencies, the Sediment Management Strategic Plan amounts to nothing more than a roadmap for repeating of the mistakes of the past and insuring the continued destruction of wild places and massive expenditures of taxpayer dollars on future sediment removal projects.

Detailed Comments

1. Consideration of Flow-Assisted Sediment Transport (FAST) should be a critical element of any long range sediment management plan.

In simple terms, the FAST sediment management technique involves opening a dam's flood gates at the onset of a flood event to allow sediment to pass through in its natural manner, and then closing the gates while there is sufficient water in the watershed to replenish the reservoir. This technique is most effective in small reservoirs with a capacity smaller than the annual inflow, but it can also be adapted to larger reservoirs through the use of a "flushing channel" dredged into the bottom of the reservoir.

The FAST terminology is somewhat unique to the LADPW, being called

"sediment pass-through" in the world of hydraulic engineering, but the principle is the same. Since major flood events are responsible for an extremely large portion of the total sediment transport in a watershed, the goal of sediment pass-through is to open the dam and let the flood event more or less take its natural course. Not only is sediment accumulation drastically reduced, but as sediment takes its natural course downstream it creates and maintains aquatic habitat and ultimately replenishes the sand on local beaches.

The Sediment Management Strategic Plan itself details the DPW's own positive assessment of the efficacy and feasibility of FAST. On page 7-12, a prior LADPW study of FAST is described as follows:

> *In the late 1990s, the Flood Control District did a study of FAST at Cogswell Dam and Reservoir that consisted of developing models of a FAST operation at the dam and analyzing the potential sediment pass-through volumes and impacts to biological resources in the West Fork downstream of the dam. The results of the study indicated that FAST had the potential to be an effective means to pass significant volumes of sediment inflow through the reservoir, thus greatly slowing down the rate of sediment accumulation in the reservoir and significantly decreasing the frequency of reservoir cleanouts. The study results also indicated that by timing sediment-laden flows to occur during the storm season, as would happen under natural conditions, a FAST regime would likely not adversely impact the sensitive native non-game fish species (Santa Ana sucker, Santa Ana speckled dace, arroyo chub).*

Given this glowing review of the technique, it's interesting that the DPW chooses to classify FAST as a highly uncertain technique elsewhere in the Plan. Far from being highly uncertain, sediment pass-through is nothing new to hydrological engineers. There is a body of published research involving the use of sediment pass-through techniques as a means of sustainably managing sediment accumulation behind dams of all sizes and purposes – from flood control dams to massive hydroelectric dam. Unless the LADPW's engineers are ignorant of the academic research involving sediment pass-through techniques, the choice to exclude FAST from further study in the Sediment Management Strategic Plan can only be explained by a desire to resist innovation and change. Instead, it appears that the DPW wishes to preserve the perpetual cycle of costly sediment removal and beach sand replenishment projects, both of which come at a very high cost to the taxpayers of Los Angeles County and to the habitats which are sacrificed to accommodate them.

Because the successful implementation of FAST requires that the reservoir be essentially clean of sediment or a flushing channel be dredged, it is imperative that FAST be considered now as a method to manage sediment accumulation after the current round of removal projects are completed. Delaying further consideration of FAST will necessitate another round of sediment removal projects before the possibility of implementing FAST again presents itself.

2. The LADPW needs to get more involved with regional efforts to coordinate sediment management, and needs to pioneer efforts to identify innovative and effective sediment management strategies. A successful Sediment Management Strategic Plan must identify a specific plan for research and development of new sediment management techniques.

The California Coastal Sediment Management Working Group (CSMWG) is a collaborative effort between various State and Federal agencies chaired by the Army Corps of Engineers. Participants include the US Minerals Management Service, the US Geological Survey, the California Coastal Commission, the California Department of Fish and Game, and the California Department of Parks and Recreation. The CSMWG is currently developing individually-tailored regional sediment management plans for individual littoral cells (a concept similar to a watershed, but for sediment) designed to coordinate the beneficial reuse of sediment resources in a regional context to help to restore natural processes and simultaneously address sediment imbalances. Unfortunately, the Sediment Management Strategic Plan makes no mention of the Los Angeles County Regional Sediment Management Plan being developed by the CSMWG.

The Army Corps of Engineers has been working on regional sediment management with the aim of implementing adaptive management strategies across multiple projects which optimize the use of sediment while supporting sustainable solutions to the navigation and dredging, flood and storm damage reduction, and environmental enhancement missions. Towards that end the Corps has implemented pilot projects with the objectives of improving sediment management practices and strategies to provide lessons learned that will benefit other districts and regions. At the 2011 American Shore & Beach Preservation Association Conference, the Army Corps of Engineers reported:

> *The pilot projects have resulted in significant advancements in technologies in the areas of data collection, management, and analysis; numerical modeling; web-based tools; and communications that have positioned the USACE to more efficiently and effectively implement regional approaches to improve our understanding of regional processes, share information and data, collaborate, and therefore improve decision making in the management of our sediments and projects ... Adaptive management practices provide the opportunity to try new strategies and revise those strategies to reach a balance between efficient project performance and project constraints.*

While other agencies responsible for sediment management are developing regional sediment management strategies, and reporting significant advancements in efficiency and efficacy of their management efforts, the LADPW remains stubbornly resistant to such an approach. Not only does the Sediment Management Strategic Plan feature no coordination with other regional agencies or the CSMWG's regional sediment management plan, but it specifically and categorically rejects FAST and sediment placement at beaches, the only sediment management alternatives that have any potential to

contribute solutions to the coastal sediment deficit that the CSMWG is working to address. The lack of participation in collaborative efforts to address regional sediment issues, and the development of a long range Sediment Management Strategic Plan that offers no pilot projects and no new strategies paints an image of the LADPW as a relic agency fearful of innovation and change. I believe the citizens of Los Angeles County want and deserve an agency that is at the forefront of innovation, rather than one that seems more interested in justifying the perpetual and expensive maintenance of a system designed and built in the days before the advent of color television.

3. Beach transport of sediment is erroneously excluded from consideration.

The Sediment Management Strategic Plan rejects transporting sediment to beaches on the basis of cost, but does not deduct the potential offset from the cost of sand replenishment projects. This omission artificially inflates the cost of transporting sediments to local beaches and leads to the rejection of that alternative.

For example, current projects to replenish beach sand are experiencing costs in the neighborhood of $10 per cubic yard. If a beach or beaches were to accept the 3.3 million cubic yards of sediment from Morris Reservoir and reimburse the LADPW for up to $10 per cubic yard, the total net cost to the County of excavating the material and transporting it to a beach would be in the neighborhood of $16.5 million, which is the least costly of all the options presented in the Strategic Plan.

4. All environmental and social impacts are unjustifiably treated as equal.

Throughout the plan, temporary impacts such as air pollution, traffic, and noise are treated as equivalent to permanent habitat destruction. This perverse and misguided lack of prioritization frequently leads the DPW to choose obliterating rare habitat from the face of the Earth for all eternity as a temporary mitigation of traffic and/or noise.

5. The LADPW demonstrates a fundamental ignorance of the biological diversity and significance of California's unique ecosystems, and maintains a cavalier attitude towards their destruction.

In considering potential alternatives, the LADPW treats mitigation sites as functionally equivalent to having fully repaired the environmental destruction brought about by their projects. To say that the acquisition and preservation of mitigation sites remediates the environmental impacts of a project is a bit like suggesting that an arsonist can alleviate the damage he has caused by setting aside a number of homes and promising not to set alight any of those homes in the future while still allowing him to continue burning homes so long as it isn't one of those identified for protection.

In addition to the erroneous beliefs concerning the efficacy of mitigation sites, the LADPW consistently understates the habitat they schedule for demolition in project documents and at public meetings. At the Arcadia Woodlands, the LADPW chose to characterize the destruction of a nearly pristine Coast Live Oak riparian

woodland – one of the last on flat land remaining in all of Los Angeles County – as nothing more than the casual "removal of native vegetation." It is no wonder that the public felt like they had been duped by a slick used car salesman when the equipment started leveling the oak trees.

In describing the solution to the environmental disaster of filling in two canyons adjacent to Pacoima Wash – an area known to contain both the endangered Davidson's bush mallow and Nevin's barberry in addition to being a likely location for 6 other endangered or threatened plant species – LADPW staff demonstrate their complete ignorance of the significance of the area and the complexity of the habitat they would be destroying by casually suggesting that, "once work is complete, habitat could be re-established on disturbed areas."

As a result of their fundamental ignorance of the biology of Southern California ecosystems, the LADPW adopts a cavalier attitude towards environmental devastation, and project alternatives that are disastrous calamities for the environment are seen as nothing more than temporary inconveniences to the environment which can be corrected at a later date. This egregious behavior could be minimized if the LADPW were required to maintain an independent department permanently and adequately staffed with professional wildlife and fisheries biologists, botanists, and other relevant scientists with real power to influence the development and selection of project alternatives. Many other governmental agencies responsible for planning and executing projects have their own staff of qualified wildlife and plant scientists and make them an integral part of planning and implementing projects, and the LADPW would be wise to follow their lead.