Background on the Green Solution Project, Upper L.A. River Watershed

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Summary

Focused on long-term water sustainability, CCS' Green Solution is an integrated approach that provides a metrics-driven, prioritized method for selecting stormwater (including dry weather runoff) capture projects for implementation to maximize water quality, water supply, community and conservation benefits. This makes best use of public funds to integrate runoff capture with development of local water supplies, habitat restoration
and creation of "smart" parks and open space.

Community Conservation Solutions' **Green Solution Project Study, Phase III,** prioritized nearly 300 potential sites for stormwater capture and water quality improvement projects on existing public lands in the Upper L.A. River Watershed. These parcels met rigorous screening and evaluation criteria for 'Green Solution' projects that integrate natural treatment of stormwater and urban runoff with native habitat restoration and creation of new parks and open space in park-poor and under-served communities. The Phase III analysis focused on four specific public land uses: elementary, middle and high schools; colleges; and vacant lands. If implemented as Green Solution projects, these opportunity public parcels could treat stormwater and polluted dry weather runoff from **up to 20 square miles of the Upper L.A. River Watershed**, while **creating 1,000 acres of new "smart" habitat, parks and open space** in communities that most need these amenities.

To prioritize these potential stormwater capture projects for implementation, CCS quantified and integrated hydrology, pollutant loading, hydraulics, conservation and community needs, and applied these factors to all potential parcels. Maps were developed showing the location of the opportunity public parcels by size and land use.

Phase IV of the Green Solution Project will further evaluate these identified stormwater capture and water quality improvement projects for the Upper L.A. River Watershed to quantify the projects' water storage, reuse and supply capacity and regional water supply benefits. The Phase IV study will also analyze park and recreation parcels in the Upper L.A. River Watershed; integrate them into the prioritization of stormwater capture projects for implementation; identify priority projects recommended for concept site design as a precursor for project implementation; produce concept site reports for up to four priority projects; and evaluate the potential for project funding through various state sources. A matching grant from the State Coastal Conservancy will help fund this work, and will fund the analysis of energy savings and resulting potential reduction in greenhouse gas emissions, and integration of the water supply and reuse, energy and greenhouse gas emission reduction benefits with previously quantified land, habitat, community and water quality benefits.

This study will assist the SMMC in implementing projects that can provide the greatest possible water quality improvement, water supply, conservation/open space and community benefits in the Upper L.A. River Watershed.

The Phase IV analysis will develop Green Solution concept designs for up to four of the highest priority sites. Each site will feature a design that uses engineered "smart" parks and open space or native habitat

restoration to capture, clean, store and reuse stormwater and dry weather runoff and improve water quality. The site concept designs will include hydrologic, hydraulic and stormwater runoff treatment elements, natural habitat or other public use, education, or green open space features, as appropriate. The volume of stormwater and dry weather runoff that can be captured, stored and made available for reuse by each site will be estimated, as will the acres of watershed area potentially treated.

What is a Green Solution?

"Green Solution" Projects improve water quality by using soil and plants to capture, clean and store urban and stormwater runoff, creating new water supplies by making the runoff available for groundwater recharge or reuse, while creating new parks, natural habitat, recreation and other open space lands, particularly in under-served areas.

The **Green Solution** uses natural treatment processes, which take advantage of the natural functions of soils and plants to capture, filter, and clean pollutants, storing water both in surface wetlands and in underground detention basins, allowing water to infiltrate and converting pollutants to beneficial uses. Soils provide a rich biota of micro-organisms, and – with their associated physical and biochemical processes – soils and plants are very effective at filtering and converting a wide range of pollutants and toxins to forms they can uptake and use. Engineered "treatment trains" make green stormwater capture projects efficient, and include separation of trash, oil and grease and removal of inassimilable toxins. Proper site design and on-going maintenance ensure that remaining pollutants do not infiltrate to groundwater.

Why are Green Solution Projects so Critical?
Even in dry weather, billions of gallons of runoff flow daily throughout California to our rivers, bays and ocean. In Los Angeles County, dry weather runoff alone produces 370,000 acre-feet each year.[1] When it rains, the volume of stormwater increases exponentially, presenting an even greater opportunity for runoff capture and re-use. We have a tremendously outdated and inefficient water system, in which we spend billions of dollars and produce high tonnages of greenhouse gases to move potable water over very long distances, while at the same time disposing of billions of gallons of stormwater and dry weather runoff by sending it to our creeks, rivers, bays and ocean as quickly as possible.

The **Green Solution** focuses on stopping this waste of stormwater and dry weather runoff, particularly in urban areas, and on transforming the problem of polluted runoff into an invaluable resource of sustainable, clean water.

The drought makes even more urgent the pressing need to maximize the "repurposing" of stormwater runoff to develop new local and regional. In Los Angeles, 90% of the city's potable water is imported for both drinking water and irrigation purposes, and only 1% of the city's water comes from recycled sources.

In addition, **all of the 51 miles of the Los Angeles River, most of its tributaries and San Pedro Bay are in violation of the U.S. Clean Water Act,** which sets water quality standards intended to protect human health and marine and aquatic life. There are nearly 100 different pollutants found in various

[1] Los Angeles County Department of Public Works

combinations throughout the Upper L.A. River Watershed, along all of the county's beaches and in its bays and ocean, and the impacts of this polluted water on beaches, the ocean, aquatic and marine life and human health have been well documented.

The Regional Water Quality Control Board and other water quality experts believe that much of the toxins, bacteria and other pollutants carried by stormwater and daily urban runoff could be permanently addressed by directing these polluted waters to a network of new and well-designed multi-benefit green areas throughout L.A. County: restored habitat, parks, recreation lands and other natural open space that would allow soil and plants to naturally filter and clean water and pollutants as well as providing a wide range of badly needed recreation and other benefits.

Green Solution Projects are proving to be one of the most effective and cost-efficient ways to make lasting water quality improvements consistent with the requirements of the Regional Water Quality Control Board. While providing park and recreation opportunities in heavily urbanized and park-poor areas and restoring important natural habitat, Green Solution Projects can also be effective "water recyclers", and can reduce the effects of drought caused by global warming by catching, storing and re-using stormwater to water parks and landscaping or to sustain restored natural habitat lands.

The **Green Solution's** goal is to maximize public benefits by integrating solutions to water quality and water supply problems, park deficits in urban communities and loss of native habitat. The **Green Solution** focuses on converting lands already in public ownership - to which runoff in storm drains can be diverted - to bio-engineered "smart" parks, habitats and open space that naturally capture and clean polluted runoff and store it for re-use, while restoring native wetlands and creating networks of new green open spaces in densely-populated urban areas where these amenities are most needed.