California’s Water: Where Does Urban Forestry Fit In?

By Connie Gallippi

California has long-standing water challenges. Historically, the state has focused on getting water supplies to the Los Angeles and San Diego regions where water is scarce and more than half of the state’s population resides. Billions of dollars in federal, state, and local funds have been invested to establish the water infrastructure in California today. This includes large pumps in the San Francisco Bay Delta feeding the California Aqueduct that runs all the way to Southern California, and the Colorado River Aqueduct running west to Southern California, as well as dams and reservoirs sprinkled throughout the state.

Much of this infrastructure is aging and already lacks the capacity to meet the demands of today’s population,

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much less its anticipated growth. Equally challenging are the environmental impacts resulting from pumping water out of the San Francisco Bay Delta ecosystem as well as those caused by climate change.

Anticipated sea-level rise and reduced snow pack in the Sierras coupled with an early season snow melt create even more challenges and pressures on California’s water system. If that isn’t enough to make your head spin, on top of these challenges, California is facing significant water quality and flooding issues in developed areas related to stormwater runoff.

URBAN FORESTS AS PART OF THE SOLUTION

Urban forests can play a significant role and have the potential to be critical pieces of the systems that will be implemented to address these issues. On a national level, many communities are addressing issues like water supply, water quality, and flooding already by incorporating urban forests and green infrastructure into their various water management systems. This approach allows cities to leverage urban forest’s additional benefits in ecosystem restoration, quality-of-life, climate change, public health and recreation and integrate their approach with other goals and systems such as parks and trails. At this city-wide scale, there is tremendous benefit to the community and significant efficiencies in accomplishing multiple goals with one cohesive strategy.

For example, the City of Philadelphia, Pennsylvania has adopted a comprehensive green infrastructure program that integrated the stormwater, flood, water supply, and parks and recreation needs of the city. Prior to making this commitment, the city conducted a comprehensive financial analysis to look at all the required inputs of funding for green infrastructure versus the more straight-forward, traditional grey infrastructure.

Their analysis accounted for the multiple benefits anticipated to be achieved in stormwater management, water quality, flooding, aesthetics, recreation, and more; the efficiencies and effectiveness of the integrated and green approach penciled out to be more cost-effective than the more traditional route. The city has rolled out a comprehensive, decentralized, city-wide plan to develop stormwater planters, green roofs, rain gardens, and urban forests, and more that combines with other efforts in source water protection, waterway restoration, and traditional grey infrastructure to accomplish multiple goals.

In addition to the efforts in Philadelphia, the American Rivers Conservancy has collected numerous case studies from around the country where cities and communities have adopted green infrastructure programs to help meet goals for water quality, flooding, water supply, ecosystem restoration, and quality-of-life. For example, Kansas City, Missouri, has dedicated over $250 million dollars for rain barrels, rain gardens, and other green infrastructure. Chicago, Illinois, has developed over 500,000 acres of green roofs throughout the city. Greenville, North Carolina, and Seattle, Washington, have both implemented “natural drainage systems” throughout the city to accomplish stormwater management, water quality, flooding, and natural ecosystem restoration goals.

Similarly, communities including Tulsa, Oklahoma, and Reno, Nevada - among many others who have suffered from severe flooding and damage from extreme storm events - are relocating homes out of the flood plains, restoring natural river systems, and creating community green space on waterfronts as they implement their recovery efforts. In desert and dry climate communities like San Antonio, Texas, and Tucson, Arizona, investments in green infrastructure are being made to curb water shortages and assist in water conservation efforts. Tucson has even gone so far as to require commercial developments to design and use stormwater and all new homes to be plumbed for grey water for non-potable uses such as toilets, laundry, showers, and more. Tucson has also been using recycled wastewater for irrigation of golf courses, parks, and landscaping for over 20 years in an effort to replenish the groundwater aquifer.

MAKING THE CASE IN CALIFORNIA

California has many examples of these kinds of efforts as well. TreePeople in Los Angeles has been a long-time leader in integrating urban forests and urban green space as a solution to the water-supply and water-quality challenges of the desert region that houses over 12 million people. Los Angeles also happens to have a significant shortage of green and open spaces, which have been proven to provide critical public health benefits. Water supply, water quality, and public health are just a few of the critical needs in the Los Angeles region for which green infrastructure can be part of the solution.

TreePeople has been working with the major water agencies in the region to integrate green infrastructure into water quality systems and to capture and use stormwater as a local water supply source. Significant efforts are underway to develop a Stormwater Master Plan for the City of Los Angeles. The county also has efforts underway to develop a revenue source to implement solutions that capture, clean, use and store stormwater, including green infrastructure.

Other examples include work from Urban ReLeaf’s stormwater retention demonstration tree planting project in downtown Oakland, the stormwater infiltration design of the Hollywood Beautification Team’s headquarter building, North East Trees’ menu of stormwater solutions that help meet the new M54 Clean Water Act Standards in Los Angeles, Friends of the Urban Forest’s Sidewalk Garden Project in San Francisco, and other projects around the state.

These examples show that progress is being made; however, they are separate and individual efforts that are scattered across the state in various communities. The potential for much greater and broader benefit is tremendous, and it requires a comprehensive, statewide approach with implementation at the city-wide or community-wide scale - similar to those exemplified by Philadelphia and Chicago, where plans and investments are being made system wide.

FEDERAL EFFORTS FOCUS ON FUTURE

While the need for more local water supply sources, flood attenuation, and water quality are all driving efforts to invest in green infrastructure, there are significant new drivers that have been added to the equation. First, the federal Clean Water Act...
Creating Green Infrastructure in Your Own Backyard

by Donna Orozco

Cities have traditionally built storm drains that take rainwater from driveways to street gutters. There, it picks up motor oil and other pollutants and then drains into the storm sewer system, often ending up in rivers or the ocean.

Today, many cities and urban tree agencies are promoting ways to capture rainwater and are receiving large grants to do curb cuts and create bioswales and dry wells. These devices divert water so that it does not drain off, but is cleansed as it percolates into the water table or is used for irrigation.

Some of these projects are massive. TreePeople and numerous other federal, state and local partners put together a many-faceted project on Elmer Avenue in San Fernando Valley. The street had no drainage system, causing it to regularly become a dangerous flood zone. The project built a huge catch basin underground where pipes with holes in them let the water sink into the water table. In addition, the residents installed rain barrels and rain gardens. Other overflow went into a driveway trench drain and into bioswales that allowed water to sink into the ground. Trees, which naturally serve as a water sponge, were planted along the bioswales.

Hollywood/Los Angeles Beautification Team has done a number of school yard projects - replacing asphalt with permeable surfaces, building bioswales to capture rainwater and putting in native landscaping. They also have created inlets to tree wells from street gutters with a piping system for irrigation.

Last year in Visalia, California, Community Services Employment Training (CSET) and the Urban Tree Foundation installed the city's first bioswale, a small project they hope will lead to others. They made cuts in the sidewalk curbs to drain water into a shallow ditch filled with rocks and vegetation that filter and clean the water. Nearby they planted trees next to a trail that runs along Mill Creek.

These kinds of projects can also be done by homeowners on a smaller scale. Depending on their landscape, soil composition and budget, they can add elements to use rainwater. It's a good idea to check with local laws on water collection as some areas have restrictions.

RAIN BARRELS

A rain barrel is part of a system that collects and stores rainwater from a house's roof that would otherwise runoff and be diverted to storm drains and streams. Rain barrels can be made from wine barrels or ceramic or plastic containers; be sure the barrels are made of materials that don’t leech chemicals though.

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FUNDING THE VISION

Funding for implementation is needed to solve California’s water challenges. The current political and economic environment is such that it is difficult to obtain widespread support for new fees, especially when people generally do not understand that stormwater management is not covered by their current water-related fees. However, the cost of approaching the problem in a single-purpose context is much higher. Urban greening, green infrastructure, and urban forests can play a significant role here. Public and community education campaigns at the local, state, and federal level are always critical, as is the desire and willingness of stakeholders to continue to drive innovation in urban forestry to create case studies that demonstrate the tremendous value of our green infrastructure towards addressing California’s critical water quality challenges.

Past sources of funding for urban forestry and stormwater management in California have largely come from water, park, and natural resources bonds passed by voters, such as Propositions 12, 46, 50, and 84. Funds from these measures have supported, among other things, Stormwater Clean Up at the State Water Resources Control Board and Stormwater-Flood Management at the Department of Water Resources. Additionally, programs like the Integrated Regional Water Management Program, River Parkways, Urban Streams, Urban Greening, and Urban Forestry have also provided funding for projects that address stormwater while focusing on other issues like water supply, water quality, ecosystem restoration, quality of life, job creation, climate change, and public health and recreation as their primary objective. Other sources include federal funds like the Clean Water State Revolving Fund and local funds like agency infrastructure investments or local ballot measures.

The latest water bond, originally passed by the California Legislature in 2009 and now slated for the 2014 ballot, is destined for defeat as is, and will likely be re-negotiated in the state Legislature in order to make it more likely to succeed in the current political and economic environment. The bond, as currently written, does not include funding for stormwater management or urban forestry - both critical elements to seeing small storm events to succeed in the current political and economic environment. The bond, as currently written, does not include funding for stormwater management or urban forestry - both critical elements to seeing small storm events to succeed in the current political and economic environment.
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To collect rainwater, water needs to be diverted from rain gutters to the barrel. Extensions that attach to the bottom of existing down spouts can be purchased. The barrel needs to have a spigot inserted a few inches above the base of the container. Then, a drip garden hose can be attached to irrigate a lawn or planters.

RAIN GARDENS

Probably the most beautiful way to collect rainwater is to create a rain garden. A rain garden can be compared to a bowl or basin that captures rainwater from roof, sidewalk, and driveway runoff allowing it to soak into the soil instead of polluting local watersheds. Most rain gardens are made by digging out an area where runoff would naturally flow. A berm is then built to retain the water in the garden area. Native grasses, wildflowers and hardy perennials, which will filter the water as it soaks into the ground, can be planted in the garden.

BIOSWALLES

Bioswales can be thought of as longer rain gardens - shallow channels planted with native vegetation that absorbs stormwater runoff. They are typically planted on gentle slopes designed to maximize the time water spends flowing along the length of the swale. The vegetation, mulch and rocks slow and filter the water, allowing it to seep into the water table. Sometimes the swale can direct water to an area that needs irrigation. Often, bioswales are used in parking lots and high density apartment projects to intercept runoff.

Donna Orozco is a freelance writer based in Visalia, California.

The Palo Alto Forest: Creating Community One Tree at a Time

by Karen Kuntze

To encourage communities to take large strides towards integrating urban forests into their city’s infrastructure, they need to understand that the trees in their community impact them.

The Palo Alto Forest, a unique art installation by Angela Buenning Filo, began with a simple question: How do the trees that surround us impact our lives? That basic question provoked the creation of an engaging and complex artwork for the Palo Alto Art Center that has inspired thousands of visitors and educated hundreds of schoolchildren.

For the past decade, Angela Buenning Filo has documented the changing landscape of Silicon Valley in her photographs, including the intensive study of one of our region’s last orchards. The artist shares, “my photography focuses on landscapes in transition, exploring the way changes in technology and the global economy are shaping the places we live.”

In 2012, faced with the opportunity to participate in the Palo Alto Art Center’s Community Creates exhibition, Filo focused her attention on the local landscape of Palo Alto, exploring the role that trees play in our individual and collective identity. Trees remain an important aspect of life in Palo Alto—our heritage trees and extensive canopy make our neighborhoods stunningly distinctive and our City’s very nameake is a tree.

To conduct the project, Filo asked community members to photograph a tree in Palo Alto that was meaningful to them, then to submit that photograph with a six-word story about the tree. In order to publicize the project, the artist and Art Center worked closely with Canopy, an environmental nonprofit that protects and grows the urban forest in Palo Alto, East Palo Alto, and neighboring communities. Early submissions included a photograph by Dave Dockter, one of the City of Palo Alto’s arborists, and the Walter Passmore, the City’s new urban forester who participated in spreading the word about the project. By the end, 391 people responded to the project—everyone from children to senior citizens, City of Palo Alto councilmembers to Art Center staff.

To integrate the numerous individual photographs into a cohesive art installation, Filo developed an ingenious solution after months of research and prototyping. In a unique process, each of the photographs are printed on glass then integrated into an immersive circular environment thanks to a wood frame, wire, and acrylic fasteners. The resulting installation features a wide range of trees in a variety of settings and seasons.

During exhibition of The Palo Alto Forest, hundreds of children experienced the installation as part of the Art Center’s Project LOOK! school tour program. After an inquiry-based tour of the installation, students observed trees in the Art Center campus then created their own collective tree drawing. Students then created a “tree wish” with pictures and text and hung them on one of the Art Center’s two gingko trees. The tours provided a chance for students to see the trees around them in a new way, observing their beauty and potential as subject s for art.

As one third grader shared: “You taught me that nature can be art. I liked the photos because they are trees from our area. There are trees around the whole world. All trees look different and are beautiful.”

The Palo Alto Forest beautifully honors the role that trees play in shaping our landscape and community. During the run of the exhibition Community Creates, the Art

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Join California ReLeaf Network members at one of the upcoming regional workshops. These workshops will feature speakers, case studies, and activities designed to promote action and individualization before the meeting is even over. Non-Network members are welcome to attend as well. We encourage you to send staff members, key volunteers, and close collaborators to learn more.

More information about these workshops including registration information, can be found at californiareleaf.org/programs/webinars-workshops. The website will be updated as information becomes available, so make sure you check back often. You can also contact Ashley (amastin@californiareleaf.org) to request email updates. We hope to see you at one or all of these workshops.

Urban Forestry Education
Current Issues in California’s Urban Forests and How Integrating Approaches Provides Multiple Solutions
Thursday, August 1
Los Angeles
By the end of this workshop, you will be able to:
• Explain how urban forestry can be integrated with existing or new infrastructure to create an improved approach to air, water, and public health issues
• Identify potential funding sources that have not traditionally funded urban forestry projects
• Combine efforts to reach shared interests groups in your area, i.e., utilities, AQMDs, Transportation Management Associations

Marketing Our Urban Forests
Social Media & Social Marketing - Using Today’s Tech to Change the Way People Think About Urban Forestry
Thursday, October 3
Palo Alto
By the end of this workshop, you will be able to:
• Understand the difference between social marketing and social media
• Use social marketing and environmental education principles to improve your marketing in a way that challenges the public to become stewards
• Use social media to reach diverse audiences with your improved messaging

Strategic Partnerships
How to Talk to Decision Makers About Trees and Urban Forests While Building Strategic Partnerships Within Your Community
Late October
Central Valley
By the end of this workshop, you will be able to:
• Identify key public policy issues and how they connect to urban forestry
• Schedule meetings with local and statewide elected officials to discuss those issues and how to integrate urban forestry into their policy priorities
• Identify ways to build partnerships with other key players in your community, i.e., schools, businesses, and civic groups
• Empower your membership or volunteer base to be effective urban forestry advocates.

Federal Budget and Bills Offer Mixed Bag for Urban Forestry

The first third of the 2013-14 Congressional Session was largely occupied with transition and failed efforts to avoid sequestration – resulting in budget cuts across the board for virtually every agency in US Government. Consequently, Congress and the President are getting a late start on new items, which is both good and bad for urban and community forestry.

Obama Budget Proposal Cuts 20% From Urban Forestry Funding
In April, President Obama released a proposed Fiscal Year 2014 US Budget that unfortunately trims more than $6 million from the line item for the Urban and Community Forestry Program.

For more information about Angela Buenning Filo see: http://www.angelabuenning.com/
For more information about The Palo Alto Art Center see: www.cityofpaloalton.org/artcenter
For more information about The Palo Alto Art Forest contact the Palo Alto Art Center at artcenter@cityofpaloalton.org

Administration of about $25 million is the starting point for discussions in what is expected to be a prolonged debate over the entire 2014 budget.

Urban Forestry Centerpiece of Matsui’s Trees Act
In honor of National Arbor Day, Congresswoman Doris Matsui (CA-6) introduced The Residential Energy and Economic Savings (TREES) Act in April. The legislation aims at reducing residential energy consumption and costs through strategically planting shade trees nationwide, and is largely modeled after a successful partnership between the Sacramento Tree Foundation and the Sacramento Municipal Utility District (S-MUD).

Sacramento Tree Foundation, California ReLeaf, Trees Forever, and the National Association of State Foresters worked collaboratively on specific elements of the bill that ensure appropriate roles and opportunities for nonprofits and state foresters. A companion bill is currently under consideration for the US Senate.
Governor’s Revised Budget Proposal dims urban forestry funding hopes

In May, Governor Jerry Brown revealed a revised spending plan for the 2013-14 fiscal year that contains no funding for urban forestry through any of at least three mechanisms that are available to the Administration. Consequently, prospects for any dollars that would support local assistance grants are fading.

Cap and trade revenues freeze in 2013

The greatest shock to stakeholders to come out of the Governor’s May revise was his recommendation to loan all existing and projected cap and trade revenues for the next fiscal year to the General Fund, leaving no money for projects over the next 12 months. Sources in the Administration and at the Legislature confirmed this decision was made very late in the process, and is supported by the Administration’s insistence that too many variables currently exist to expend the funds.

Advocates from all sectors universally challenged the Governor’s proposal, citing a projected budget surplus and a lengthy and thorough investment plan process conducted over the last six months by California’s Air Resources Board. Though the legislature initially signaled an interest in weighing in on this proposal with something that could drive dollars out to projects in the next several months, both the Senate and Assembly leaders ultimately supported the Governor’s proposal as part of a negotiated budget deal.

Uncertainty still surrounds EEMP

Another question mark in the State Budget surrounds the $10 million Environmental Enhancement and Mitigation Program (EEMP). Though the resource conservation community has been effective in working with the Legislature and other stakeholders on removing the EEMP from a proposed Active Transportation Program which would re-purpose the funds, there is still uncertainty as to whether or not the EEMP will be funded in the next fiscal year while conversations around the Active Transportation Program continue.

No surplus timber tax funds this year

Legislation signed into law last year creates a one percent sales tax on specific lumber and engineered wood products. Though the revenue from the tax will be used primarily to support state review of timber harvest plans, surplus revenues from the tax can be used for a small set of specified purposes, including urban forestry. Unfortunately, the first year of this new revenue did not produce a surplus, creating the potential of zero state dollars for local urban forestry projects in the next year.

Cap and trade legislation falls flat in both houses

California ReLeaf and its network took a support position on three measures introduced this year that sought to set up new programs for directing cap and trade revenue to local governments, sustainable communities, and natural resources. Though all three measures made it through their policy committees, none of them survived the Appropriations Committee, and are essentially dead for this year. They are:

Assembly Bill 416 (Gordon) would have created the Local Emission Reduction Program to utilize cap and trade funds for providing grants and other financial assistance to develop and implement greenhouse gas emissions reduction projects in the state. Nonprofit organizations working in coordination with a local government were specifically called out as eligible recipients of the funds.

Assembly Bill 1051 (Bocanegra) would have created the Sustainable Communities for All program to fund transit-related projects through competitive grants and loans using cap and trade funds. California ReLeaf worked with Housing California, Trans Form, and the Nature Conservancy to craft language that spoke to needs for integrating parks, agriculture, and urban forestry into sustainable communities’ strategies.

Senate Bill 511 (Lieu) would have required the Secretary of the Natural Resources Agency, in coordination with the State Air Resources Board, to develop guidelines for the awarding of grants from cap and trade revenues for projects that enhance greenhouse gas emissions avoidance and sequestration associated with natural resources. The bill specifically highlighted the Urban Forestry Act as an eligible expense.

Urban forestry finds a voice in climate change solutions

As discussions started in earnest around investment priorities for cap and trade revenue in late 2012, one thing became very clear in the natural resources world: urban forestry was now in the spotlight. Though large-scale projects such as forest conservation and working lands preservation would share that spotlight, urban forestry captured a bit more because of its value to disadvantaged communities and its comparatively lower cost.

By January, 2013, urban forestry was firmly imbedded as a priority investment issue for the natural resources sector and those advocating for disadvantaged communities. It became part of the local government platform, and eventually was integrated into coalitions advocating for sustainable communities and transportation, too.

Governor Brown referenced urban forestry in his proposed 2013-14 State Budget as a potential investment priority.

That support translated into multiple voices at the first workshop held in Fresno by the California Air Resources Board (CARB) in February on this topic. The only issues receiving more stakeholder support were agriculture and disadvantaged communities.

This momentum continued in Sacramento and Los Angeles in March, with groups like Tree Fresno, North East Trees, TreePeople and Sacramento Tree Foundation attending these workshops and making their voices known. CARB Chair Mary Nichols was quoted later that month advocating for urban forestry as a climate change solution in front of the graduate school for business at Stanford.

But it is the Investment Plan developed by CARB and the Administration that says it all. Urban forestry is highlighted more than a dozen times as a recommended investment priority by either the Board itself or stakeholders engaged and chronicled in the Plan’s Appendix. The report highlights the role urban forestry plays in benefiting disadvantaged communities, and notes “These investments also offer significant opportunities to provide jobs.” As part of a broader natural resources recommendation, the report proclaims “there is potential for achieving greater reductions and realizing significant co-benefits to human health and the environment.”

This document will guide cap and trade investments through 2015. So while cap and trade funds will not be available in 2013, the significance of how stakeholders from multiple sectors have successfully framed urban forestry as a critical component of this discussion cannot be lost.

It will be incumbent on the urban forestry community as a whole to sustain that voice on this issue and other priorities such as water quality and storm water management in the months to come.
Open this special issue of “California Trees” to find out how.

Trees are an integral part of stormwater management in California’s communities.

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