

Moving Towards Collaboration:

A NEW VISION FOR WATER MANAGEMENT IN THE LOS ANGELES REGION



Discovery Phase:
The Multi-Agency Collaborative

FEB
2015



12601 Mulholland Drive | Beverly Hills, CA 90210
www.treepeople.org

TreePeople's mission is to inspire, engage and support people to take personal responsibility for the urban environment, making it safe, healthy, fun and sustainable and to share the process as a model for the world.

© 2015 by TreePeople. Printed on recycled paper.

Moving Towards Collaboration:

A NEW VISION FOR WATER MANAGEMENT IN THE LOS ANGELES REGION

Discovery Phase: The Multi-Agency Collaborative

LEAD AUTHORS

DEBORAH WEINSTEIN BLOOME

PHOEBE LIPKIS

EDITORS

ANDY LIPKIS

EDITH DE GUZMAN

GRETCHEN KNUDSEN

TREVOR CLEMENTS

LESLIE FRIEDMAN JOHNSON

WITH SUPPORT FROM



DESIGN

JOLLY DE GUZMAN



FUNDING FOR THIS PROJECT PROVIDED BY:



**CALIFORNIA
WATER
FOUNDATION**

CONTENTS

02

EXECUTIVE SUMMARY

05

INTRODUCTION

05 SETTING THE CONTEXT

07 BACKGROUND

10 PROCESS

11

FINDINGS

11 BARRIERS TO COLLABORATION

15 THE FINANCIAL PICTURE

19 OPPORTUNITIES

**20 A GUIDE TO COLLABORATIVE
GOVERNANCE**

25 RECOMMENDATIONS



26

CONCLUSION

27

APPENDICES

- 27 APPX A: FINANCIAL DATA**
- 28 APPX B: POTABLE DEMAND AND CAPTURE POTENTIAL**



LIST OF FIGURES

- 08 FIG. A: DIS-INTEGRATED SERVICES**
- 08 FIG. B: INTEGRATED ECOSYSTEM MANAGEMENT**
- 16 FIG C: ANNUAL COSTS TO MANAGE STORMWATER**
- 16 FIG D: PROJECTED FUTURE ANNUAL COSTS TO MANAGE STORMWATER**
- 19 FIG E: ANNUAL POTABLE WATER DEMAND COMPARED TO STORMWATER CAPTURE POTENTIAL**
- 20 FIG. F: LEVELS OF COLLABORATION**
- 23 FIG. G: HOW INCREASED COLLABORATION CREATES OPPORTUNITIES AND ADDRESSES BARRIERS**



Agencies can create new opportunities previously sheltered within bureaucratic silos by aligning diverse infrastructure agencies' goals, investments and programs. This pathway – this new vision for water management – will create many benefits, including greener, healthier schools and more resilient neighborhoods.

02

EXECUTIVE SUMMARY

Individually, we are one drop. Together, we are an ocean.— Ryunosuke Satoro

The City and County of Los Angeles are thirsty for solutions to tackle a variety of water-related challenges. Pressing needs include: developing a reliable local water supply, meeting stormwater pollutant reduction requirements, developing climate-resilient systems, and replacing aging infrastructure across the system. At the same time, the public is experiencing tax fatigue, and support is waning for increased funding to cover anticipated costs for water infrastructure and management. TreePeople believes a new vision for water management is necessary – one where collaborative governance among agencies gives rise to more holistic, powerful solutions that enable the region to rise to the occasion and weather any storm.


This report summarizes findings and recommendations from one of two projects in the first phase of the Multi-Agency Collaborative (MAC) – a partnership among the City of Los Angeles Bureau of Sanitation (LASAN), City of Los Angeles Department of Water and Power (LADWP), Los Angeles County Department of Public Works (LACDPW), and TreePeople.¹ Arising from the unsuccessful 2013 LA County “Clean Water, Clean Beaches Measure,” the purpose of the Multi-Agency Collaborative is to build a case for a collaborative, systemic approach to address the region’s short-term drought emergency and long-term water crisis. TreePeople guides the agencies in exploring new ways of working together to manifest the opportunities and potential benefits from more systemic collaborative water management. This report identifies barriers to building a unified watershed approach for Los Angeles and recommends paths forward to a more nimble and responsive governance structure.

TreePeople has built a case for a collaborative governance approach to address the region’s current and future water-related challenges. Agencies can create new opportunities previously sheltered within bureaucratic silos by aligning diverse infrastructure agencies’ goals, investments, and programs. This pathway – this new vision for water management – will create many benefits, including greener, healthier schools and more resilient neighborhoods. The MAC approach received national attention when the White House and federal agencies recognized the Multi-Agency Collaborative as an example for increased collaboration to advance green infrastructure and community resilience.²

There is great potential – still largely untapped – to more efficiently steward the region’s water and watersheds by formalizing planning and coordination among agencies and regulators working within and across watersheds. This report highlights opportunities to tap into this potential through collaborative governance approaches, including, but not limited to, the three water-related agencies in the MAC. This collaboration could significantly increase locally-sourced water supplies to help achieve climate resilience and attain clean water standards. Specifically, TreePeople examined if and how developing shared goals and benchmarks among agencies, and instituting collaborative planning and budgeting processes, among other strategies, could lead to increased and reliable funding for integrated multi-purpose projects.

¹ Phase One was a discovery process composed of informational interviews and data collection.

² TreePeople is part of the Administration’s Green Infrastructure Collaborative in which the Multi-Agency Collaborative is highlighted. http://www.whitehouse.gov/administration/eop/ceq/Press_Releases/October_8_2014.



A sister report to the Multi-Agency Collaborative focuses on the *LAUSD Water Partnership* project.³ That project examines pathways, including greater collaboration among agencies, which could allow for more stormwater capture projects on Los Angeles Unified School District campuses. If successful, the results could make way for major public investment into greening and cooling learning environments for LA's children.

KEY FINDINGS:

The region stands to benefit from creating a shared vision, defined goals, and coordinated strategy that is managed across agencies through mutually reinforcing activities.

This requires each agency to understand that it is a uniquely skilled unit within a larger team, and to think beyond its individual regulations and mandates to an all-encompassing vision for water in Los Angeles. Project-based collaboration is occurring, but without a shared plan for the region (beginning with goals and needs *instead* of projects) and the infrastructure to support it, the collaboration will continue to be fragmented instead of becoming more systematic. TreePeople recommends the MAC partners take steps to achieve no less than the *Systemic Collaboration* approach, as described in this report, to coordinate efforts.

Distributed stormwater capture is increasingly seen as a critical strategy toward building new long-term local water supplies.

Since the project's inception, TreePeople has witnessed a shift in agency leaders' perspectives and their growing interest in making a business case for investing in distributed local water supply quickly. While centralized projects have traditionally provided ease of management and cost justification, there are a limited number of sites available to host centralized facilities. Distributed capture frequently opens up opportunities for co-investment toward achieving multiple benefits, spreading the cost over multiple sources. Additionally, preliminary results from LADWP's Stormwater Capture Master Plan show that aggressive stormwater capture can meet a significant portion of LA's projected future water demand.

There is a unique and unprecedented opportunity to make critical and rapid shifts to our local water management systems due to the current financial, regulatory, and political environments.

Various factors, including the drought and new water quality regulations, provide an incentive for the region's largest infrastructure agencies to work together to meet their discrete, yet overlapping, goals. Simultaneously, the public is increasingly demanding a transparent and efficient process that shows how water management decisions that impact taxpayers and ratepayers are derived.

Annual stormwater costs to the City agencies and County are projected to increase to at least \$2B annually – or six times the existing costs. With this expected increase, the efficiencies of working together become even more critical, and further the value of a more collaborative management approach for Los Angeles.

The barriers to collaboration uncovered during this process, while manifold, are solvable. There is enthusiasm and support to see positive change institutionalized across and among the agencies. The desire and recognition exists for greater collaboration, but the process and current structure does not. However, robust models for collaborative governance from across the globe exist. TreePeople recently led a policy delegation to Australia to learn about their successes and failures from instituting a whole-systems collaborative approach to water management. Some of their approaches, as well as other new models of integrated resource management, may be adaptable for Los Angeles. One key missing ingredient is an agreed upon cost-benefit tool which would reliably make the case for co-investments with benefits to each participating agency.

³ TreePeople, "Unlocking Collaborative Solutions to Water Challenges in the Los Angeles Region: The Power of Schools," <http://www.treepeople.org/treepeople-publications>.

These findings are compelling TreePeople and its agency partners to move forward together in a second and deeper phase of the Multi-Agency Collaborative. The partners are planning to explore options to create a form of shared prioritization, quantification of benefits, decision-making and management, as they realize this may be the best path forward to a healthy, climate-resilient, and water-secure Southern California.

The current drought, as well as the increased public awareness of California's water vulnerability, provides a unique window of opportunity to create a collaborative governance approach to prepare the region for future anticipated changes in water and climate. The public as well as policymakers are recognizing that issues can no longer be addressed in isolation. The time is ripe for formalized collaboration among LA's water (and other related) agencies to jointly focus on managing an efficient and climate-resilient system.


About TreePeople

TreePeople has a long history of advocating for systemic changes in the way our cities and watersheds are managed. The organization has over 20 years of experience demonstrating the cost-effectiveness of multi-agency, multi-purpose water infrastructure, and facilitating processes to bring agencies together with communities to plan, fund, and implement the projects. In addition, TreePeople has organized projects with other partners that demonstrate the feasibility of building distributed green infrastructure at the individual parcel, school, park, and street levels. This work looks towards the future, helping the region prepare for and adapt to the increased temperatures and long-term water challenges expected in Los Angeles due to the changing climate.

SETTING THE CONTEXT

The purpose of the Multi-Agency Collaborative (MAC) is to build a case for a collaborative, systemic approach to address the Los Angeles region's short-term drought emergency and long-term water crisis. By aligning diverse water and related infrastructure agencies' goals, investments, and programs, agencies are able to seize new opportunities only made possible through collaboration. TreePeople believes this approach will yield many benefits, including greener and more resilient neighborhoods, a more responsive government, and decreased costs to the public.

There is a unique and unprecedented opportunity to make critical and rapid shifts to our local water management systems due to the current financial, regulatory, and political environments. The urgency of the statewide drought has brought attention to long-term management challenges, and has accelerated the need for the region to identify and retain new water supply sources. At the same time, existing flood protection and stormwater quality infrastructure systems require immediate and substantial investments to meet regulatory requirements, and provide protection from increasingly severe weather. These needs are occurring simultaneously, creating an opening to establish a collaborative governance approach to solve the region's water and infrastructure needs.



There is a unique and unprecedented opportunity to make critical and rapid shifts to our local water management systems due to the current financial, regulatory, and political environments.

Opportunities exist from numerous perspectives:

FINANCIAL PERSPECTIVE

Agencies and municipalities are searching for ways to cut costs and improve efficiency. The voters and ratepayers have shown they are wary of new fees or taxes without proof of benefits. The postponement of the 2013 “Clean Water, Clean Beaches Measure” is one example. Water Infrastructure agencies are seeking ways to raise operating and capital revenue for critically needed system upgrades to adapt to the changing climate and conduct deferred maintenance. They are seeking ways to show fatigued voters and ratepayers that they are managing efficiently and cost effectively.

REGULATORY PERSPECTIVE

The recent National Pollutant Discharge Elimination System (NPDES) General Permit creates an avenue and incentive for partnerships among agencies and municipalities that previously did not exist. The City and County are now both actively looking for project sites to add to their Enhanced Watershed Management Programs (EWMPs) to implement multiple benefit projects that can help meet water quality regulations, augment our local water supply, and decrease flooding risks. LA City’s Department of Water and Power (LADWP) is also identifying opportunities for projects in their Stormwater Capture Master Plan.

POLITICAL PERSPECTIVE

Public wariness demands a transparent process that shows how water management decisions that impact taxpayers and ratepayers are derived. This provides an opportunity for political leaders to take action and educate the public on the importance of a local water supply. Pressure is increasing from within the City and County agencies, as well as the public, to increase transparency and collaboration.

GENERAL PUBLIC PERSPECTIVE

Ninety-four percent of California has been in severe drought for over a year. As of December 31, 2014, over 98% of the California is experiencing severe, extreme and exceptional drought levels.⁴ California Governor Jerry Brown’s official declaration of the drought in January 2014 and LA Mayor Eric Garcetti’s Mayoral Directive in October have heightened public awareness, and accelerated the urgency for this Multi-Agency Collaborative. Public attention on the drought has increased the demand for significant and systemic changes.

Since the project’s inception, TreePeople has witnessed a shift in leaders’ perspectives. Distributed stormwater capture is increasingly seen as a critical pathway to building new short and long-term local water supplies. In addition, this Multi-Agency Collaborative has received national attention. The White House and federal agencies have recognized the MAC as an example of collaborative governance to advance green infrastructure and community resilience.

⁴ Data as of December 31, 2014; <http://droughtmonitor.unl.edu/Home/StateDroughtMonitor.aspx?CA>.

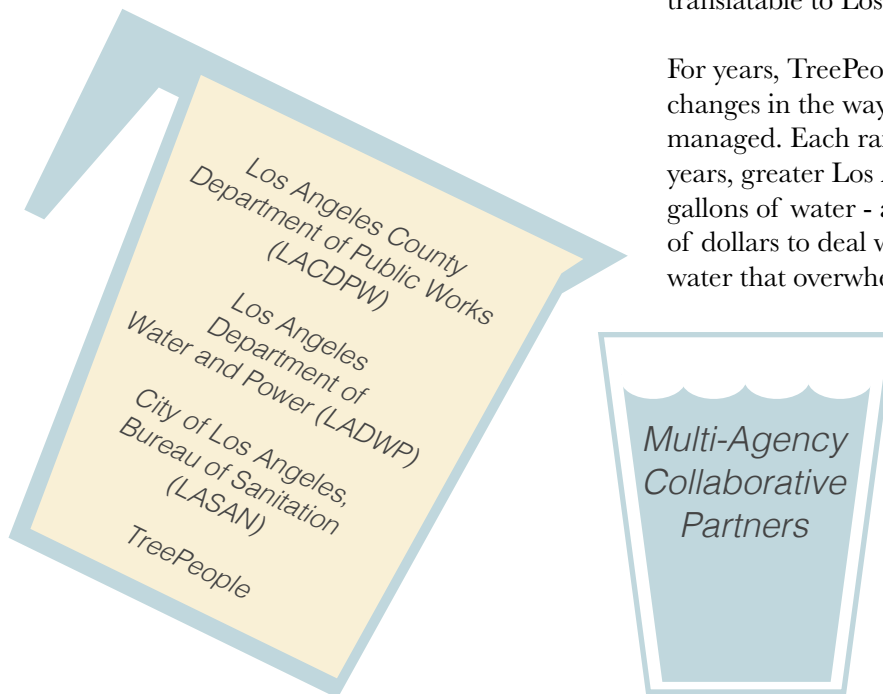
BACKGROUND

The Multi-Agency Collaborative highlighted in this report grew out of LA County's 2013 "Clean Water, Clean Beaches Measure." That Measure was designed to raise \$270 million annually for stormwater projects. The Measure lost traction due to strong resistance from some elected officials, homeowners, businesses, and importantly, school districts across the County, especially the Los Angeles Unified School District (LAUSD). Additionally, the Measure was intended to be a multi-purpose water-improvement platform, but key water supply agencies were not engaged in planning the programs, and policy leaders across the region were not aware of the multi-benefit approach. With such strong resistance expressed by the public, County Supervisors placed the Measure on hold.

In response, TreePeople proposed forming a unique, high-level collaboration to explore deeper partnerships among key agencies. The Los Angeles Department of Water and Power (LADWP), the LA County Department of Public Works (LACDPW), and the City's Bureau of Sanitation (LASAN) were identified as critical agencies, each responsible for managing different aspects of the water cycle. The potential to expand

the collaboration to include partnerships with private and public landowners, including the Los Angeles Unified School District (LAUSD), catapulted the opportunities for multiple benefits to even greater heights.

TreePeople brings unique skills and perspectives to this collaboration, with over 20 years of experience demonstrating the cost effectiveness of multi-agency, multi-purpose water infrastructure. TreePeople also has significant experience facilitating processes to bring agencies together with communities to plan, fund, and implement projects.⁵ TreePeople has created a cost-benefit analysis tool for multi-benefit watershed projects, and organized projects with other partners that demonstrated the feasibility of building distributed green infrastructure at the individual parcel, school, park, and street levels. The organization is also in an active learning exchange with Australia's leading infrastructure agencies, policymakers, and researchers who are sharing lessons from their own 12-year drought and their massive cultural shift to adapt the public and cities to a new norm around water. TreePeople recently led a policy delegation to Australia to determine what policies, technologies and governance approaches could be translatable to Los Angeles and California.



For years, TreePeople has called for systemic changes in the way our City and County are managed. Each rainy season, even in the driest years, greater Los Angeles throws away billions of gallons of water - and hundreds of millions of dollars to deal with flooding and the polluted water that overwhelms our storm drains, threatens our neighborhoods, and fouls our ocean. At the same time, the region spends billions of dollars, and a significant amount of California's total energy use, to import water from hundreds of miles away, with all the costs - economic, health, and environmental - that entails.

⁵ TreePeople has played significant leadership roles in the Sun Valley Watershed Management Plan, City of LA Integrated Resources Plan for Water, the TREES Cost-Benefit Modeling Tool, and Hall House Demonstration Project, among others.

The two figures below illustrate the principles of integrated management and set the context for the Multi-Agency Collaborative. As shown in Figure A, when we built our cities, we replaced natural systems with segregated bureaucratic systems and constructed infrastructure to manage each ecosystem component separately, resulting in waste, duplication and economic inefficiencies. Specific regulations, funding sources, and departments now manage each of nature’s sectors. However, as illustrated in Figure B, when we integrate solutions, the ecological, economic, and social benefits begin to emerge.

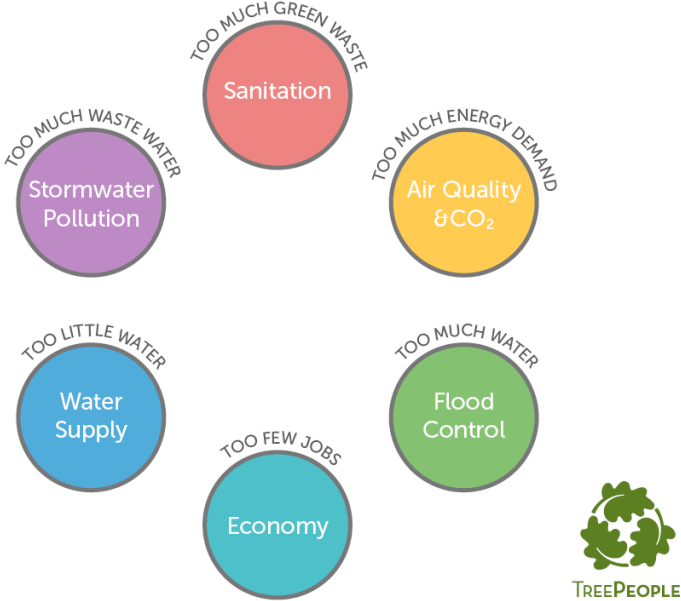


Figure A: Dis-integrated Services



Figure B: Integrated Ecosystem Management

When we built our cities, we replaced natural systems with segregated bureaucratic systems and constructed infrastructure to manage each ecosystem component separately. Specific regulations, funding sources, and departments now manage each of nature’s sectors. However, when we integrate solutions, the ecological, economic, and social benefits begin to emerge.

This vision requires each agency to understand that it is a uniquely skilled unit within a larger team, and to think beyond the individual regulations and mandates to an all-encompassing vision for water in Los Angeles.

All three partner water agencies in the MAC are investing in new solutions for developing a local water supply, while maintaining a flood-safe region with healthy, clean water. LADWP is investing in the Stormwater Capture Master Plan. LASAN and LACDPW are preparing for a new round of projects to meet the MS4 mandates using the new Enhanced Watershed Management Program (EWMP) model, which emphasizes green infrastructure. Simultaneously, LACDPW is prioritizing planning and construction of multi-use projects.⁶

With so much investment and so much need, there is an enormous opportunity to create a shared vision, defined goals, and coordinated strategy for the region that is managed across the three agencies through mutually reinforcing activities. This vision requires each agency to understand that it is a uniquely skilled unit within a larger team, and to think beyond the individual regulations and mandates to an all-encompassing vision for water in Los Angeles.

⁶ Municipal Separate Storm Sewer System (MS4) is a portion of the National Pollutant Discharge Elimination System (NPDES) permit that regulates municipal runoff.

PROCESS

At the inception of this Multi-Agency Collaborative, TreePeople proposed a three-phase project to design and test the viability of a collaborative governance system to support sustainable solutions for Los Angeles:

PHASE ONE DISCOVERY PHASE

Identify key opportunities and barriers, through interviews and research, for both systemic agency collaboration, as well as LAUSD engagement in stormwater capture. This phase is complete and this report is one of two reports summarizing the results.

PHASE TWO DESIGN COLLABORATIVE SOLUTIONS

Bring groups together to design integrated pilot projects and collaborative systems through a series of facilitated meetings and design charrettes.⁷ The collaborative process enables the agencies to confront and either eliminate or solve issues that make deeper and systemic collaboration difficult to achieve.

PHASE THREE MODEL NEW WAYS OF WORKING

Building upon the charrette results, the partners create the necessary systems and management agreements, and then build the pilot sites.

In September 2013, TreePeople entered into contracts with LACDPW, LADWP and LASAN to perform research and discovery for Phase One. Between October 2013 and April 2014, TreePeople interviewed agency staff at LADWP, LASAN, and LACDPW about their goals for the project, visions for their agencies, partnership histories, and budgetary policies. Following the initial interviews, additional information about funding sources, budgeting, planning processes, priorities, and much more was collected. From these interviews and research, TreePeople staff analyzed the barriers to creating stronger partnerships and opportunities for growth. Working with a team at Tetra Tech (a worldwide consulting, engineering, and construction firm), TreePeople analyzed financial and organizational data, and researched examples of agency integration from around the world. Based on all of the data collected, TreePeople has outlined several options for collaborative governance approaches and provided policy recommendations.

As part of Phase One, TreePeople also examined pathways that could allow for increased stormwater capture projects on school campuses, and make way for major public investment into greening and cooling campuses for LA's children. TreePeople published a sister report entitled, *Unlocking Collaborative Solutions to Water Challenges in the Los Angeles Region: The Power of Schools*, which explores opportunities and potential barriers to building stormwater projects on school campuses and identifies paths forward for addressing each barrier.⁸

⁷ A design charrette is an intensive, multi-disciplinary design workshop to facilitate an open discussion among various stakeholders. The format is designed to increase transparency, as information is shared immediately between the design professionals and the stakeholders, building trust among the parties involved.

⁸ TreePeople, "Unlocking Collaborative Solutions to Water Challenges in the Los Angeles Region: The Power of Schools," <http://www.treepeople.org/treepeople-publications>.

BARRIERS TO COLLABORATION

As Albert Einstein famously pointed out “Problems cannot be solved with the same **mindset** that created them.” By recognizing old mindsets, more emphasis can be placed on overcoming them instead of succumbing to them. TreePeople heard from multiple voices that there is a shared aspiration to look beyond individual agency missions, regulations, funding sources, and geographic boundaries, and to *permeate* silos.

In fact, some of this collaboration is already in place. Los Angeles has an award-winning stormwater program, and LASAN has gained national recognition for its leadership on the Integrated Resource Plan (IRP) for water. Similarly, LACDPW has been a leader in the Integrated Regional Water Management Plan (IRWMP). However, while both have achieved an unprecedented level of integration, there is room for improvement. For example, the IRP structure keeps each agency focused on its individual performance objectives for their respective parts of the water cycle. The IRWMP currently coordinates projects late in the process, missing opportunities for true integrated planning across watersheds.

Additionally, in our interviews, TreePeople heard many examples of successful projects involving co-investment across agencies. Increasingly, in part because of requirements and incentives for collaboration, the agencies approach one another when the possibility exists for multiple benefits. This project-based collaboration is important, but without setting shared goals and a plan for the region, collaboration will continue to be fragmented instead of systematic.

Project-based collaboration is important, but without setting shared goals and a plan for the region, collaboration will continue to be fragmented instead of systematic.

Key barriers that prevent this from occurring were illuminated during interviews with stakeholders, including:

COMMUNICATIONS

- TreePeople heard repeatedly that open, tri-directional, and systemic communication is not occurring reliably, so that agencies, leaders, and staff are often left out of processes.
- Scheduling time to have important conversations between agencies is not prioritized. TreePeople observed that it took three months to find a meeting time that would work for all parties. This type of delay and difficulty can lead to missed opportunities and can cause leaders to infer that the partnerships are not valued.⁹
- Lack of transparency is an issue – both among agencies and to the public. An increase in true collaboration, and messaging around collaboration, could be beneficial.
- There is a perception that the “One Water” initiative belongs to the Bureau of Sanitation and does not include water supply or other agencies to the degree necessary. There is a lack of deeper planning and communication between agencies to define what “One Water” means for the region.

TRUST

- There appears to be some lack of trust among agencies, resulting from failures to fulfill previous agreements, and stemming from many of the barriers identified. While the three water agencies often work closely together on successful projects, a sense of mistrust is reinforced when partners are left out of conversations or processes, or when information is not shared. Though these ongoing lapses likely stem from busy schedules rather than intentional silos, they are an inevitable result of the current system, and will continue unless there is a shift in the system.
- Tensions exist between the City and the County, including not adequately crediting partnerships and not participating in the others’ processes.
- There is a perception that agencies use funding restrictions, limited resources, or budget cuts as a reason not to collaborate.
- The lack of shared systems and measurements across agencies can create conflict and mistrust. Agencies use different periods of time to make projections and work with various modeling systems. Finding a shared language can be difficult and frustrating.

⁹ The MAC partners asked TreePeople to ensure the MAC meetings continued regularly, as TreePeople’s facilitation of the partnership, and the partnership itself, created the impetus to meet with productive outcomes.

ORGANIZATIONAL IDENTITY

- A number of interviewees expressed concern with losing organizational identity and team strength by pursuing a more integrated approach.
- Collaborative efforts and agreements at the top level often do not filter down to the program staff, leading to missed opportunities and mixed messages among agency staff. Likewise, some mid-level staff collaborations and successes are not fully communicated across and throughout the partner agencies.

PROJECT PLANNING

- There is concern both within the agencies and from the community that priority stormwater project planning processes do not align, often due to different regulatory mandates. For example, concurrent but separate planning processes – LADWP's Stormwater Capture Master Plan and the Enhanced Watershed Management Plans (LASAN and LACDPW), both deal with capturing stormwater. At the outset of this process, these two efforts were not aligned. Pressure from internal and external forces helped to improve coordination, in this particular instance, to some degree. Future efforts must also be coordinated, and ideally co-developed.
- There is no system in place for a centralized or coordinated regular review of capital projects, either within or among the agencies. Input and involvement in projects continues to happen in a one-off or piecemeal approach. LA County's Integrated Regional Water Management Plan (IRWMP) is a major step in the right direction, but it often brings together collaborators too late in the process, when projects are already established.

COMMUNITY BARRIERS

- Though interest in multi-benefit projects is increasing, lack of public awareness of the triple bottom line approach translates into an audience that is increasingly resistant to approving taxes or additional funding sources.¹⁰
- Angelenos increasingly understand that most of the water they use is imported and becoming less reliable. However, most citizens do not know it is possible, nor do they have the tools or information required, to mitigate their reliance on imported water by capturing and reusing their own stormwater.

FUNDING

- Distinct, and often tightly restricted, funding vehicles for each agency and associated legal mandates make it more difficult to fund projects that manage the watershed holistically.
- There is agreement across all agencies that there is a need for increased funding to support local water projects.

¹⁰ Triple bottom line is an accounting framework with three parts: social, environmental (or ecological) and financial.

VALUE OF STORMWATER

- Each agency funds stormwater projects from individual funding sources, generally heavily restricted, and based on legal mandates. Since each agency is responsible for various parts of the water cycle, the methods for calculating these costs and benefits is not transparent to the public.
- There is currently no consistent or accepted way to value or monetize the benefits of stormwater capture – either to the community (e.g., emergency preparedness, climate resilience, increased supply), or to the environment (e.g., increased habitat, etc.).
- Neither the City agencies, nor the City and the County, have an agreed upon cost-benefit analysis tool. Therefore, investment decisions cannot currently weigh benefits to the City, County, watershed, or region, or reliably make the case for the co-investments that could make stormwater projects more economically feasible. Current planning occurs using a single-purpose cost-benefit approach—in essence, the costs and benefits to that one agency. This can lead to decisions that rule out certain multi-benefit projects if costs and benefits are not identified for other agencies (and potential investors).
- TreePeople’s observation is that one reason agencies are not integrating is because stormwater is not historically seen as a reliable source of water. Due to increased awareness, cross-agency conversations, new cost effective treatment and storage technology, and higher water prices, that is beginning to change.
- Various barriers exist to using the San Fernando Basin to its full capacity in capturing and storing LA’s fresh water, including overdraft, pollution, pumping rights, and any future adjudication of the Upper Los Angeles River Area watersheds.

LEADERSHIP

- Changing organizational protocols takes time away from everyday duties and requires direction from upper management.
- Each agency and its executive leadership have legitimate needs to be valued as innovative leaders. There are concerns that the need for leadership visibility is a barrier to a true collaboration where the cost burdens, work, and credit is shared.

FINANCIAL COSTS

The anticipated financial costs, and associated resources required for collaboration, emerged as a significant barrier. However, these costs also present an opportunity for eventually reaping substantial financial savings through greater collaboration. For this reason, this financial picture is considered separately below.

THE FINANCIAL PICTURE

To better understand the opportunities for collaboration from a financial perspective, TreePeople sought to draw a clear picture of what is currently spent on stormwater management – from water quality, to flood control, to capture – across these agencies. Due to new regulations, such as the new water quality standards set through the MS4 permit, including retaining the 85th percentile storm event, and the uncertainty of how to meet the requirements, the financial data provided by agency varies as some values are projected or unknown. Some agencies have both current and future estimates of costs, while others are still determining the costs to comply with changing needs and regulations.

Stormwater management budgets, like many other public works budgets, include planning, design, and construction. However, Operations and Maintenance (O&M) costs are not always captured. While only one component of what is currently in the budgets of the different agencies and organizations, **stormwater is a key indicator of opportunity due to its overlap among the different agencies and multiple benefits, including:**



water quality, including treatment



flood control, including conveyance infrastructure



capture and infiltration, including water supply



*multi-purpose benefits for the community,
including recreation and habitat areas*

It is important to note that since each agency plans, funds, and values water differently, even the process of gathering and analyzing this cost data to create a whole picture is complex. Additionally, some have already included the impacts of climate change in their budgets, and others have not. Varying funding categories in annual budgets for activities and components further complicates this effort. In addition, the criteria and technical assumptions need to be stated and shared. The difficulty in collecting and analyzing this financial data alone highlights the need for increased collaboration and transparency across the agencies.

Figure C: Annual Costs to Manage Stormwater

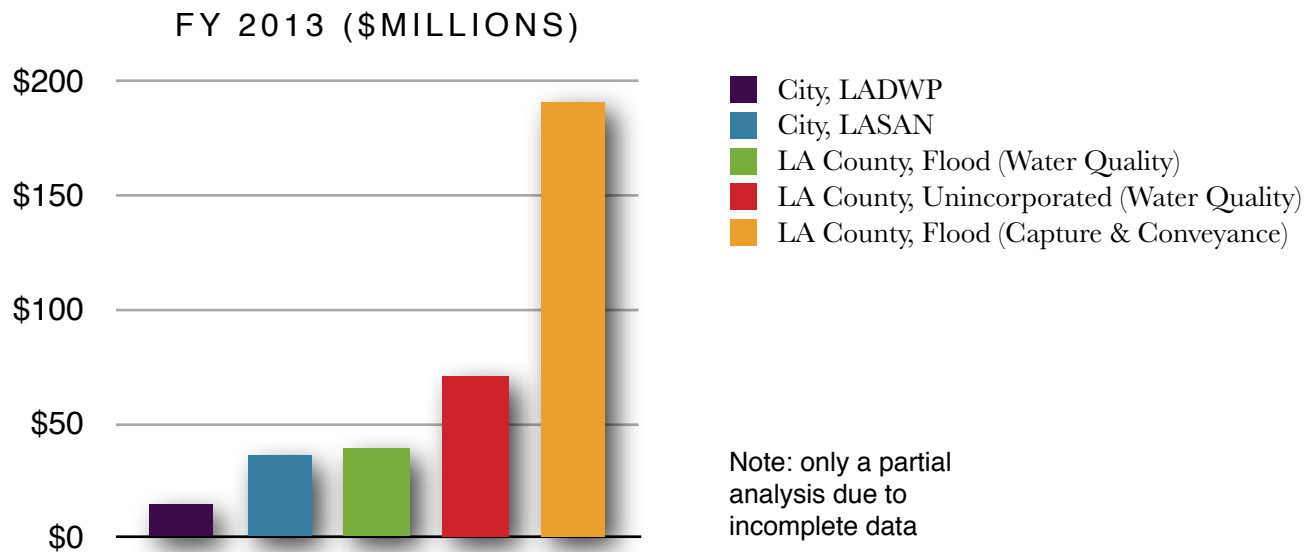


Figure C presents a snapshot of the 2013 costs to manage stormwater for the agencies and departments in the Multi-Agency Collaborative, including capital and O&M. A full explanation of the numbers and data sources can be found in Appendix A.

Figure D: Projected Future Annual Costs to Manage Stormwater

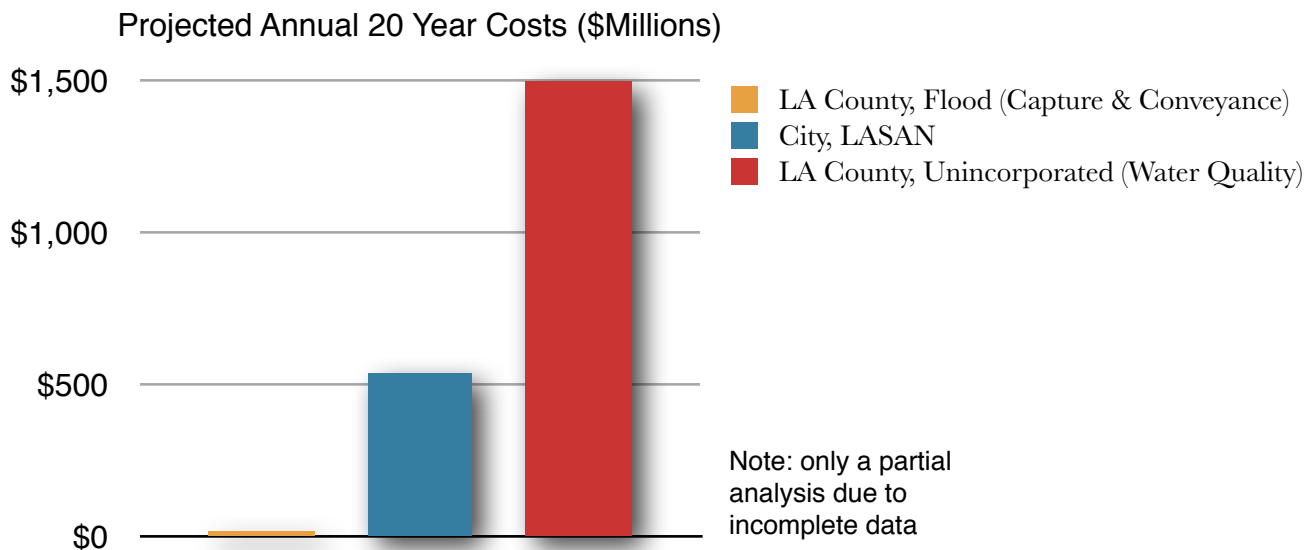
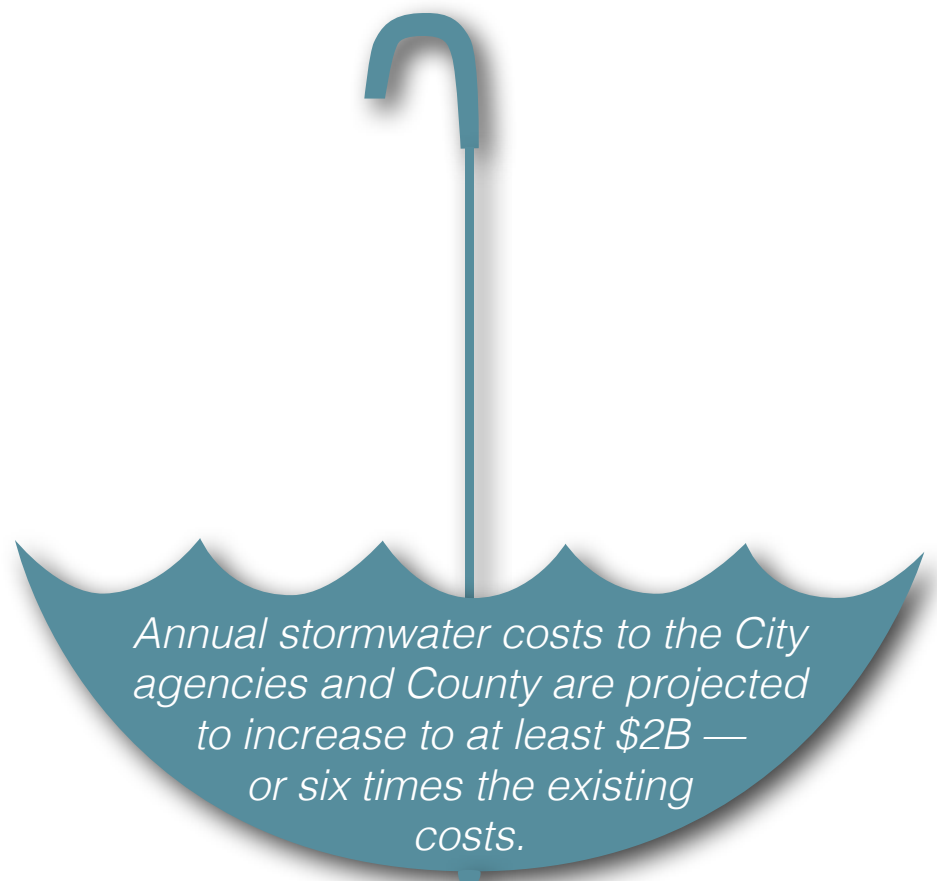


Figure D presents the annualized projected costs (where available) for LASAN, LADWP, and LACDPW to manage stormwater quality, treatment, capture, naturalization, and conveyance infrastructure. These costs include capital and O&M and are preliminary and provisional estimates. A full explanation of Figure D can be found in Appendix A, including an explanation of the numbers and data sources.

As presented in Figure C, the FY 2013 budgets of the three entities add up to over \$350M spent annually. This includes planning, design, and construction activities, as well as controlling, maintaining, and treating runoff. Figure D highlights the future annual estimated costs to manage stormwater. Using 20-year cost projections, costs were annualized for that 20-year period. Based on these annualized calculations, **stormwater costs to the City agencies and unincorporated County are estimated to increase to at least \$2B – or six times the existing costs at a minimum, as this estimate does not include the following:**

- Increases for any new spending projections that will emerge from LADWP's Stormwater Capture Master Plan.
- Required projects and programs that will emerge from the Enhanced Watershed Management Plans (EWMP).
- Spending in all other LA County Basin Cities for stormwater efforts to meet the MS4 requirements under the National Pollutant Discharge Elimination System (NPDES) permit.¹¹
- Other related agency budgets, such as the City's Bureau of Engineering's Flood Control Division which is responsible for design and construction budgets.



¹¹ All cities and municipalities in Los Angeles County are regulated under the Municipal Separate Storm Sewer System (MS4) portion of the NPDES permit. In the NPDES Permit Reporting Year 2011-12, there were 86 Permittees (LACFCD, County of LA, and 84 cities). It does not include the Cities of Long Beach, Avalon, Palmdale, Lancaster, and Unincorporated Areas in the Antelope Valley.

If this analysis were to expand to include current spending across all LA County Basin Cities for stormwater quality related efforts, the amount spent increases by at least \$244 million and brings the existing total regional spending to roughly \$354M.¹² Each of the individual cities, Los Angeles County, and the Flood Control District are separately responsible for their individual water quality compliance requirements.

For future projected spending for the LA County Basin Cities, Tetra Tech's, "Evaluation of Water Quality Design Storms" Report for the LA region estimated \$120 billion for full compliance, or increased spending of \$8 billion annually for the next 20 years.¹³ Tetra Tech's report is consistent with the California Contract Cities Association's projections which estimate compliance could cost the region from \$43 billion to over \$200 billion total.¹⁴ The large range is due to uncertainty in actual costs to meet compliance.

Referring back to Figures A and B (page 08), which illustrate integrated ecosystem management, one must also consider spending in areas not typically associated with water. One example of many is greenwaste.¹⁵ Given that an estimated 50% of LA's water supply is used toward irrigation, our landscapes represent a huge water cost.¹⁶ A significant portion of that vegetation is hauled to landfills, and accounts

for 30% of residential solid waste in the City of Los Angeles.¹⁷ This cycle consumes energy, releases air pollutants and carbon into the atmosphere, and adds to our current waste of both money and natural resources. If green-waste were managed as part of our water cycle, it would be allowed to stay in our landscapes as mulch. With current systems, the region misses out on the benefits greenwaste provides – soaking up rainwater and preventing flooding.

Importing water also has significant energy costs. The State Water Project, which pumps water over the Tehachapi Mountains to Los Angeles,¹⁸ is the single greatest consumer of energy in California; and water-related energy use is about 20% of total electric consumption in California.¹⁹

Costs are high and getting higher. Greenwaste and energy are just two examples of costs related to water that could be leveraged through increased agency collaboration in planning and budgeting. These investments in our environment are critical but must be made together, creating collaborative multi-functional infrastructure solutions rather than continuing to respond to problems separately as they arise, with more limited resources and tools.

¹² Calculated from Los Angeles County Municipal Storm Water Permit (Order 01-182), Unified Annual Stormwater Report Appendix D - Principal Permittee Annual Report and the 84 individual Annual Reports by City. The \$244M value is not stated explicitly in any report, it is calculated from all of the individual reports.

¹³ Preliminary and provisional estimates based on Tetra Tech's "Evaluation of Water Quality Design Storms" Report, assuming full compliance with TMDLs and that facilities would be centralized and not distributed.

¹⁴ Stormwater Funding Options Report, May 2014, Prepared for the California Contract Cities Association and The League of California Cities, Los Angeles County Division City Managers Committees, prepared by Ken Farfing and Richard Watson.

¹⁵ According to the LACDPW, greenwaste includes: yard waste (e.g., vegetative cuttings, grasses, tree trimmings); untreated wood waste; and similar materials generated by homeowners from their lawns and gardens or commercial or nonresidential activities.

¹⁶ Greenwaste has an embedded water footprint of approximately 300,000 AFY (50% of total demand). That number is multiplied by \$1,000 as an approximate retail rate to determine cost of \$300M per year.

¹⁷ From communications with LASAN, Solid Resources Support Services Division, on July 8, 2014.

¹⁸ Natural Resources Defense Council and Pacific Institute, "Energy Down the Drain," 2004, available at: <https://www.nrdc.org/water/conservation/edrain/edrain.pdf>.

¹⁹ LADWP recently examined the economic case for investing in water conservation and found that the savings to its energy budget from importing less water is up to \$350,000 per year. Each acre-foot conserved costs \$366, compared to the \$847 for an acre-foot purchased through Metropolitan Water District (MWD). Data from DWP.

OPPORTUNITIES

An exciting paradigm shift is underway that will give rise to extraordinary leadership in managing water as one resource. We can no longer afford traditional management styles based on outdated silos. Embracing holistic perspectives and collaborative governance models will yield greater results and greater cost-savings than traditional management structures allow. Multi-benefit stormwater capture projects lend themselves to collaborative approaches – seeking to simultaneously recharge groundwater, conserve water, and reduce green waste, pollution, and flooding. These approaches are undertaken with the goal of keeping water sources local as much as possible, and can reduce costs and increase benefits across all entities.

Opportunities also arise from the preliminary results of LADWP’s Stormwater Capture Master Plan. While the plan is still underway, initial results indicate that the City could capture **between thirty and forty-five percent of LA’s current water demand** if the required infrastructure, programs and policies are funded.²⁰ Once supported, these investments could provide billions of gallons of water for public use, and decrease our reliance on imported water while also creating a boon for our economy by providing local, sustainable jobs. (See Figure E. Note full explanation in Appendix B.) In addition, preliminary results from the EWMPs in the region show that distributed water capture projects will be necessary to capture much of the water required. In fact, approximately 70% of all runoff in the developed regions of Los Angeles could be managed by green infrastructure opportunities.²¹ Both of these plans, as well as other opportunities, create options for increased collaboration among the partners.

Figure E: Annual Potable Water Demand Compared to Stormwater Capture Potential

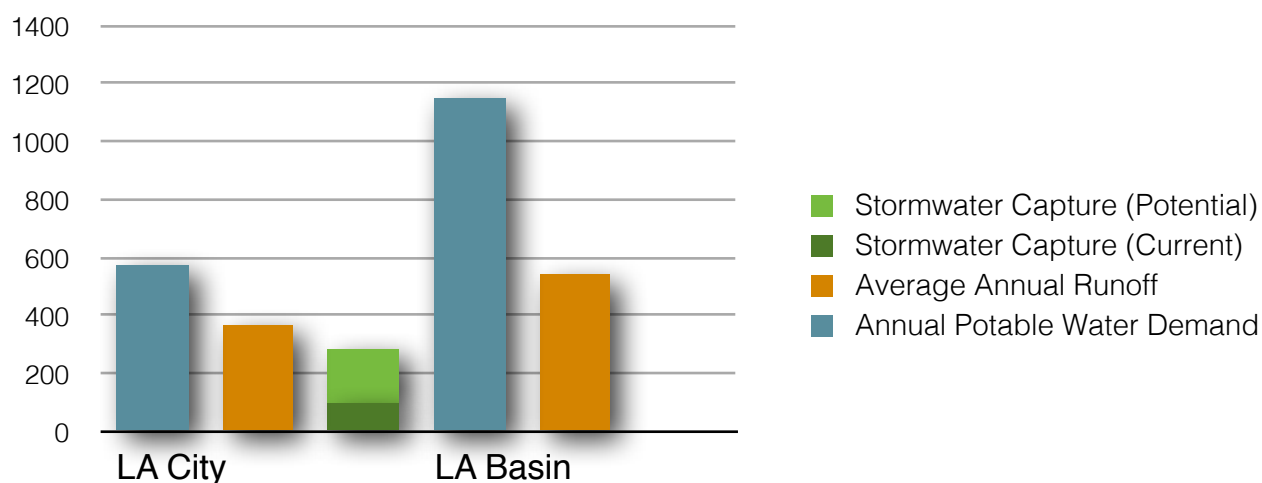


Figure E demonstrates the potential stormwater holds for boosting LA’s water supply. For LA City, the dark green bar represents current stormwater capture within the City of Los Angeles. The light green bar shows projections that significantly increase LA’s stormwater capture. On the right are figures from across LA County. (No capture potential figures were available.) See Appendix B for a full explanation.

The costs and opportunities described above create a compelling case for a collaborative management approach. Without collaboration, each agency will face unprecedented increases in spending to meet mandates only within their silos. Together, the agencies could invest less and get much more. It has become clear that it is unsustainable to import the majority of our water supply – and these costs and opportunities point to a better option – clean, locally sourced water.

²⁰ Department of Water and Power’s Stormwater Capture Master Plan, Task 2: Existing and Potential Stormwater Capture Chart.

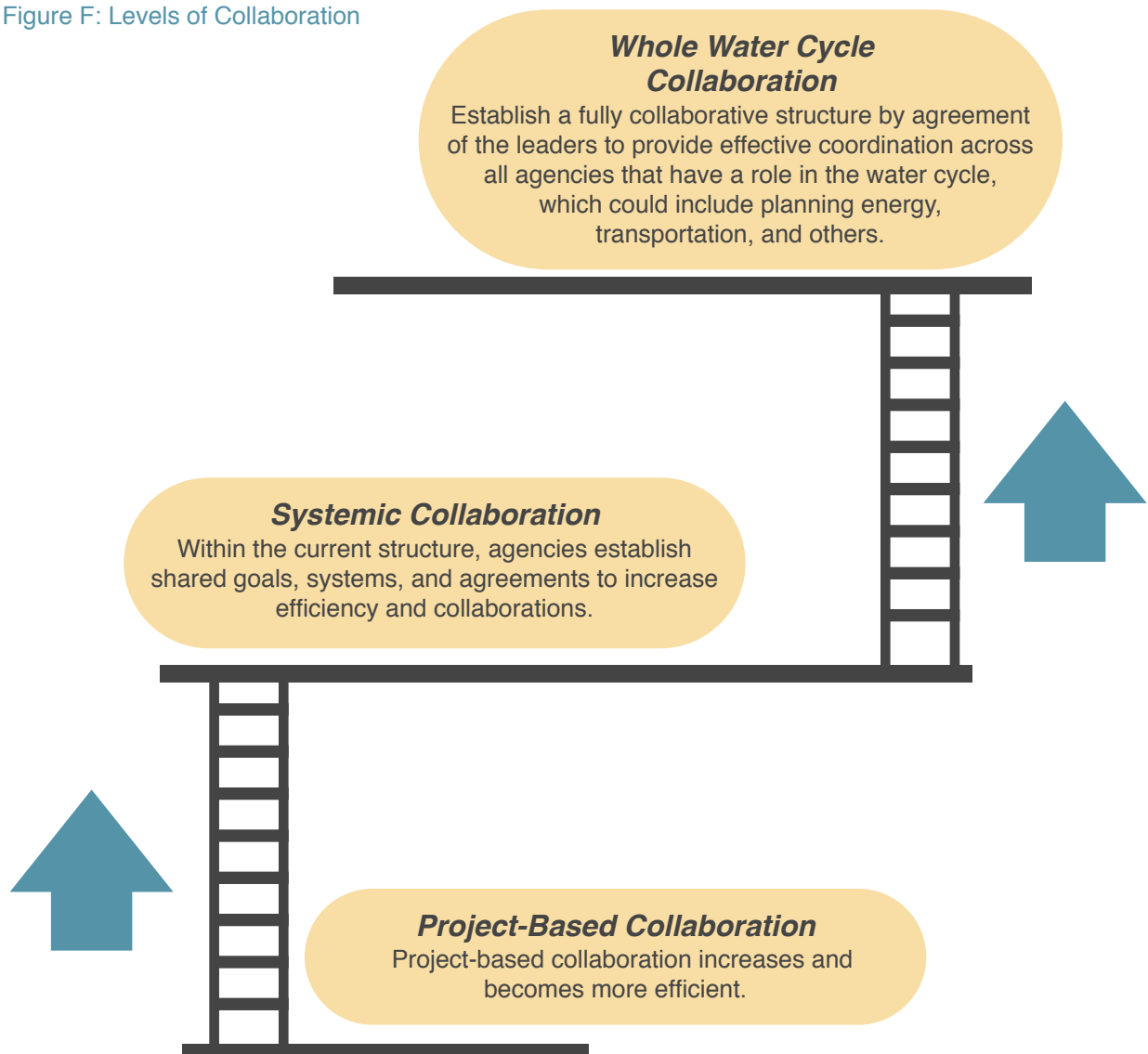
²¹ Information shared at EWMP Public Meeting. 11/20/14 at LA Zoo.

A GUIDE TO COLLABORATIVE GOVERNANCE

Using examples of integrated management from across the world, TreePeople has developed a guide to collaborative governance to help leaders consider how future management changes could impact their organizations and their work, including how to address the barriers identified. Figure F (Levels of Collaboration) shows how each level changes the process or structure of how agencies and municipalities collaborate. The levels of collaboration in this figure are a continuum rather than rigid hierarchical categories.

It is important to note that none of the approaches outlined are designed to merge functions, remove individual power from agencies, or transfer decision making out of the hands of local leaders. Instead they are designed to provide a context and a system to make smarter decisions together with clear mandates and robust performance measures, thereby fostering exponentially greater impacts on the environment and populations served. An effective collaborative system makes clear which elements or functions of current organizations operate within a shared framework. All organizations retain their own functionality and expertise, but in a collaborative system the outputs are coordinated.

Figure F: Levels of Collaboration





The following highlights changes to existing water-related work that could manifest as agencies become increasingly collaborative. Options are broken down categorically using the levels of collaboration shown in Figure F. The list begins with alternatives requiring the least commitment and funding, continuing with those that require more significant changes and larger investments.

PROJECT-BASED COLLABORATION

Agencies continue working within the same structures with added commitments to collaborate on the project level more regularly.

- Individual planning efforts are better aligned.
- Agencies pursue opportunities to co-fund top projects and promote policies and ordinances to further their plans and implementation.
- Regular meetings are set between principals and managers working in related areas to enhance communication on particular projects.

SYSTEMIC COLLABORATION

Within the current structures, agencies establish shared goals, systems, and agreements to increase efficiency and collaboration.

- Engaging in a facilitated process to identify a shared vision and systemic way of bringing together members of water agencies – from the highest level of leadership to the planners, designers, and finance staff – to evaluate the short and long-term needs for water supply, flood protection, and water quality.
- Exploring integrated capital planning opportunities, including sharing of Capital Improvement Plans to allow for joint planning and decision-making long before designs and budgets are locked in.
- Exploring the economies of scale and efficiencies associated with consistent operations and maintenance practices, level of service goals, consolidated permitting, and uniform budgeting.
- Identifying a shared cost-benefit tool that can be agreed upon by all agencies and that identifies benefits in non-traditional areas like street services, air quality, and others. This will enable more partnerships and bring in additional funding from non-traditional investors.

WHOLE WATER CYCLE COLLABORATION

Agencies establish a fully collaborative structure that enables necessary horizontal coordination across all agencies that have a role in the water cycle. This system would allow agency managers an opportunity to step back from daily management to gain perspective of the entire system's functionality and resilience. This approach does not take away individual agencies' responsibilities or hierarchy, but rather marshals agency resources and power in a holistic manner. TreePeople has been advocating for Los Angeles agencies to employ this approach for many years.


The approach would be aided by a new, separate structure created through a comprehensive, facilitated process among the agencies. Starting with the chiefs of each relevant water agency, this process would also include those responsible for transportation, planning, energy, and others that touch or are impacted by the water cycle in any way. Appointed senior deputies, supported by budget analysts, designers, modelers, and other staff and experts as needed, would engage in highly focused joint collaboration sessions and charrettes.

A Whole Water Cycle Collaboration could include the following:

- Managing resources to support community, ecosystem, and watershed level goals (triple bottom line of economy, quality of life, and environment), rather than regulation.
- Real-time and consistent communications among the agencies impacting the water cycle.
- Interlocking mutual aid (or other) agreements that enable all agencies to work together and to establish needed authorities.
- Forming an independent circle of leaders from across the water infrastructure management spectrum to set and manage regional strategies from inception to completion.
- Requiring co-design and collaboration in planning and implementing new projects. Agencies would all consider the water cycle as a whole and how planning for each element of water services (drinking water, recycled water, waterways, stormwater, and groundwater) can support each other to provide more sustainable economic, social, and environmental outcomes.
- Integrating with other infrastructure systems that interact with and/or use or impact the water system, including roads/transportation, sanitation/greenwaste management, and others. This integration would identify opportunities for other partners to invest or co-invest in solutions for meeting combined infrastructure, resilience, and sustainability goals.



Figure G: How Increased Collaboration Creates Opportunities and Addresses Barriers

	Leadership	Communication	Trust	Capital Project Planning
WHOLE WATER CYCLE COLLABORATION				
Establish a full collaborative structure to provide effective coordination across all agencies that have a role in the water cycle.	Success depends on full commitment from leaders across sectors – all recognition would be strategic and shared.	Communication is prioritized to allow for real-time access and discussion among the agencies. The leadership group will coordinate deliberate communications among agencies and to the public.	Process and structure is designed to air and address many trust issues. However, trust must constantly be earned in any approach.	Infrastructure planning and budgeting occurs jointly and begins with determining shared goals and targets. Decisions are made to support overall health of the watershed and ecosystem while reducing costs to ratepayers.
SYSTEMIC COLLABORATION				
Within current structures, agencies establish shared goals, systems, and agreements to increase efficiency and collaboration.	Leadership recognition must be shared in a successful system. Agency leaders determine level of integration or independence upfront.	Regularly scheduled meetings are prioritized for tri-agency communication. Shared messaging to the public.	Clear working agreements with delineated roles and expectations will help. Trust will have to be built.	Budgeting timeframes are coordinated. Processes in place to facilitate sharing CIPs early and to allow for joint planning and decision-making.
PROJECT-BASED COLLABORATION				
Project-based collaboration increases and becomes more efficient.	Agencies and leaders get credit for work and innovation in their specific areas of focus.	Communication among agencies occurs as needed, or is streamlined for projects. Communication to public is ad hoc and not coordinated.	Current trust issues will remain. With increased collaboration, trust and willingness to partner may increase.	Project prioritization occurs independently & collaboration opportunities arise later in planning cycles.

KEY: The icons show how each level addresses the barrier or takes advantage of the opportunity.





















Process designed specifically to address the barriers or create opportunity



Some elements lie outside of the process



Process does not address barrier

<i>Funding</i>	<i>Value of Water</i>	<i>Community Responsibility</i>	<i>Cost-Benefit</i>	<i>Climate Resilience</i>	<i>Innovation</i>
					
Available money could go farther as “non-traditional” beneficiaries recognize the value of co-investment. Though new funding sources would still need to be identified, some barriers to innovative water financing are removed.	Water is valued based on watershed and ecosystem services, instead of by agency regulations and mandates. Non-traditional benefits are quantified and help leverage costs of projects. Value to other agencies is prioritized in project planning.	Approach drives a cultural change in how residents understand and value water, translating into high levels of behavior change and landscape transformation. Willingness to fund water financing increases.	Agencies co-develop and utilize a cost-benefit model to gain co-investments from other non-traditional stakeholders. This allows funding to increase for projects with broad community and municipal benefits.	Coordinated decision-making & communication at the system level allows for real-time monitoring to prevent, rather than react to, system breakdowns. Leaders maintain objective, high-level view of the resilience and functionality of the entire system.	Allows for increased innovation across traditional silos by creating space and time for considering system-wide intervention. Without changes to regulation, this is still limited.
					
Increased opportunity to seek joint funding for projects. Traditional funding streams still limited by laws and regulation.	Stormwater is valued and treated as a resource with benefits to various agencies and the community. Value to other agencies is considered in project planning.	Coordinated incentive programs provide support for homeowners and businesses ready to implement stormwater BMPs.	Agencies co-develop and share a cost-benefit model to help guide internal decision-making and gain support from policymakers.	No substantive change.	Increased innovation in projects and policies stems from shared goals and communication. Without changes to regulation, this is still limited.
					
Funding streams are specific and limited by each agency’s regulatory mandates, laws, and mission.	Value is determined in the context of each agency’s priorities and regulatory mandates.	No substantive change.	Investment decisions occur independently and without a cost-benefit analysis considering multiple impacts (health, heat, energy, etc.)	No substantive change.	No substantive change.

RECOMMENDATIONS

The findings tell a powerful story – one in which a variety of current barriers keep agencies siloed while stormwater management costs rise six-fold. The enthusiasm and recognition exists for greater collaboration, but the process and/or structure does not. If, however, collaboration can be achieved, it conveys great promise for increased stormwater capture and multiple other benefits, including more local clean technology and green jobs. Ultimately, the work of each agency is about much more than providing water, wastewater, stormwater, or flood protection services. It is about making the City and County more sustainable and resilient. With the pressing needs arising from managing an aging infrastructure, severe drought and new water quality regulations, in addition to increased costs and a population experiencing tax fatigue – the case for collaborative governance could not be stronger.

For these reasons, TreePeople is moving forward together with the three Multi-Agency Collaborative partners in a second and deeper phase of exploration and development of a framework for increased collaboration across water agencies. Moving toward a new system of shared prioritization, decision-making, and management is the best path forward to a climate resilient and water-secure Southern California. Recognizing that transformations at this scale take time, resources, and commitment, this report outlines levels of collaboration that could have immediate and long-term environmental and financial benefits.

TreePeople advises that the agencies in the Multi-Agency Collaborative take steps to achieve no less than the Systemic Collaboration approach (as described in Figures F and G).

As part of this approach, there are a variety of questions to ask and explore, including:

- What level of cooperation or collaboration is appropriate and manageable?
- What are the specific goals and outcomes of formal collaborations?
- How will the communications be sustained to keep information flowing and to prevent isolated silos from forming?
- Which agencies are best suited to meet different parts of the need, based on workforce, knowledge, history, regulation, or other determining factors?
- How will each agency support the others with shared investment, shared staff and knowledge, or other forms of cooperative management?

A facilitated process will allow agency leaders to start answering some of these questions and obtain greater buy-in due to the collaborative, participatory nature of the process itself.



TreePeople heard unequivocal enthusiasm, support, and desire to see positive change institutionalized across and among the agencies in the more than fifty interviews, presentations, and conversations held during Phase One of this Multi-Agency Collaborative.

This Discovery phase yielded significant benefits for increased integration, including:

- **KEY CONVERSATIONS** – Key conversations among the water agency chiefs, facilitated by TreePeople, increased timely communications regarding policy and programmatic issues. The agency leaders recognize that without these facilitated and expected meetings, these timely interactions do not occur, and important opportunities are missed.
- **INCREASED UNDERSTANDING** – The water agency chiefs have an increased understanding from this process that scaled-up distributed stormwater capture is a key part of building a reliable and resilient water supply for Los Angeles. They also have an increased recognition that multi-purpose projects make green and sustainable approaches more economically viable.
- **NATIONAL ATTENTION** – The White House and federal agencies have recognized this Multi-Agency Collaborative as an example for increased collaboration to advance green infrastructure and community resilience.²²

In each case above, the success occurred because the right people were at the table together to look at data in a different setting and context, discussing shared goals. Ultimately, TreePeople hopes to help build a process that fosters this kind of creative, collaborative thinking among traditional and non-traditional partners, and in a consistent manner, a true “whole water cycle collaboration.”

Although these are not simple changes, the time to act is now. The drought has created an unprecedented opportunity that could propel Los Angeles to lead the nation in its water infrastructure and planning. As this report highlights, the economic case for this shift is clear. The public is demanding change from its public agencies and the way they manage taxpayer and ratepayer dollars. Numerous water-related planning efforts are underway and have the potential to be directed to address Los Angeles’ new water future. Policymakers and elected officials at all levels of government are increasingly supportive of efforts to look at all options to move LA towards local water supplies.

We will only be able to meet these historic challenges if we rise together joined in a process of collaboration and holistic thinking. This thinking is crucial to secure a reliable local water supply and a viable economy for our region. The narrative described in this report will need to be held, advocated, and told by individuals, business leaders, NGOs, agency staff, and policymakers. Today, we have a unique opportunity – even an obligation – to guide the Los Angeles region toward a water and climate-resilient future by harnessing our collective wisdom.

²² TreePeople is part of the Administration’s Green Infrastructure Collaborative in which the Multi-Agency Collaborative is highlighted. http://www.whitehouse.gov/administration/eop/ceq/Press_Releases/October_8_2014.

APPX A: FINANCIAL DATA

Annual Water Quality and Stormwater Capture and Conveyance Costs (Millions)

Entity	FY13	Projected
LA Bureau of Sanitation (Water Quality)	36 ¹	540 ²
LA Department of Water and Power (Water Supply)	14.5 ³	Not available ⁴
All of LA County Unincorporated Areas (Water Quality)	71 ⁵	1,510 ⁶
Flood Control District (Capture & Conveyance)	191 ⁷	20 ⁸
Flood Control District (Water Quality)	39 ⁵	Not Available ⁹
	\$352	\$2,070

¹ Figure based on annual operating budget including additional \$2M for capital improvements.

² Annualized value based on the estimated 20-year cost of \$8 billion. Figures from “Report on the Financial Needs of the City of Los Angeles Stormwater Program” – Sept 2013.

³ Figure based on data from DWP on May 14, 2014, stating that LADWP’s current annual stormwater management budget is \$11M for capital and \$3.5M for O&M.

⁴ Long-term investment in stormwater capture will be based on the results of the Stormwater Capture Master Plan.

⁵ Figures based on FY 2012 County of Los Angeles Individual Annual Report for the Municipal Stormwater Permit (Order No. 01-182 and R4-2012-0175).

⁶ Preliminary and provisional estimates based on Tetra Tech’s “Evaluation of Water Quality Design Storms” Report, assuming full compliance with TMDLs and that facilities would be centralized and not distributed. Annualized over 20 years based on original calculation of \$22.5 billion for full compliance for the unincorporated areas of LA County. Figures were determined by prorating the “All LA County Cities” cost based on land area of the Unincorporated County Areas which is 18.75%. Note: the design of the calculations in this report does not lend itself to being prorated by land area and may have resulted in inflated costs for the County Unincorporated areas.

⁷ Figure based on FY 2012-13 Flood Fund Budget.

⁸ Annualized value based on the County’s estimate that \$295 Million will be spent over the next 20 years on planned dam upgrades and sediment removal. Improvements to the conveyance system over the next 20 years are not included in the \$295M and have not been determined at this time.

⁹ According to LA County, the extent of Flood Control District’s financial involvement with WMPs & EWMPs has not yet been determined.

APPX B: POTABLE DEMAND AND CAPTURE POTENTIAL

Annual Water Demand and Stormwater Capture Potential (Thousands)

	Potable Water demand	Average Runoff	Current Capture	Capture Potential
City of Los Angeles	574 ¹	365 ²	97 ³	193 ⁴
Los Angeles County	1,150 ⁵	540 ⁶	unknown	unknown

¹ Potable water demand: LA City Average from 2008-2012 (DWP).

² LA City annual runoff estimate based on Stormwater Capture Plan (SCMP) surface discharge estimate. This number includes runoff that is generated within the City plus flows that enter the City from upper watersheds and flows through City limits.

³ Current stormwater capture estimates based on data from SCMP.

⁴ Additional stormwater capture potential for Los Angeles in the best case scenario, according to estimates in SCMP.

⁵ Figures based on the Greater Los Angeles County Integrated Regional Water Management Plan, 2013 Update.

⁶ Reflects water leaving the county, either to the ocean, to Orange County, or Ventura County. 11-year average. Includes very wet years such as 2004-2005 (1.8 million acre-feet lost that year) and very dry years such as the past couple (almost no loss). Much of the 540k is not capturable (according to LACDPW); either the facilities do not exist or the geology is not suited for infiltration. Includes the major waterways such as LA River, San Gabriel River, Ballona Creek, Dominguez Channel, Malibu Creek, etc.

NOTES

