



# One Water LA 2040 Plan *Overview & Recommendations*

May 3, 2018

All Water is One Water





# LA's Current Water Picture

Approximately **90%** of L.A. water supplies are imported



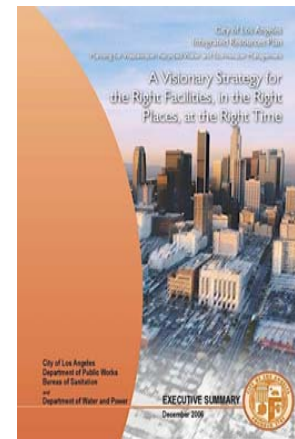
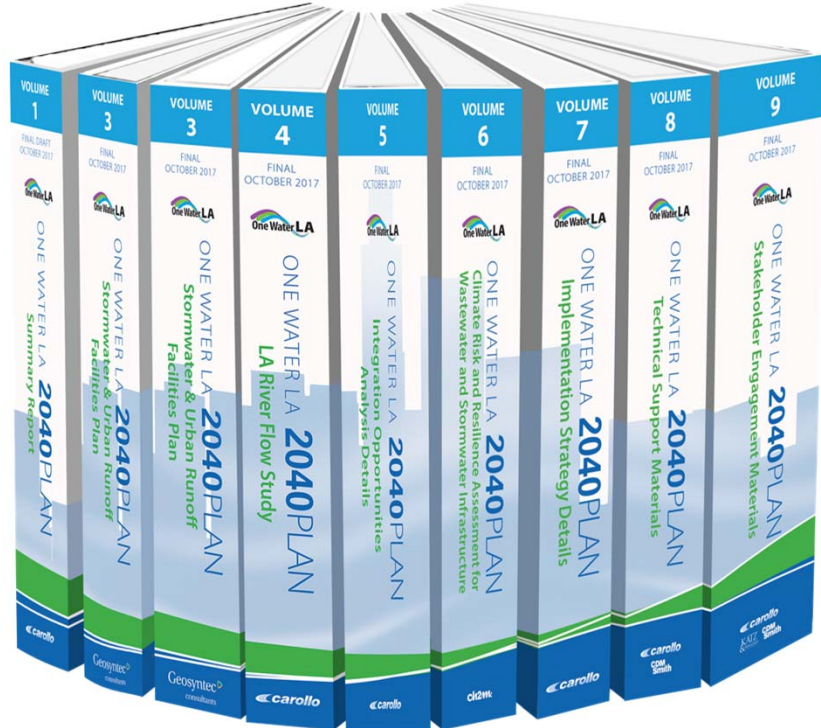
## Challenges

- Recurring Droughts
- Increasing demand
- Aging infrastructure
- More stringent regulations
- Limited funding
- Dependence on imported water
- Climate change



# A collaborative approach to integrated water management

## One Water LA 2040 Plan Planning Horizon: 2040



## Updates the 2006 Water Integrated Resources Plan Planning Horizon: 2020



<b>Stormwater Quality:</b> Improve beach water quality grade-point average (GPA) to:	
 39 (dry) 32 (wet) 2025	 40 (dry) 35 (wet) 2035
 Reduce the purchase of imported water by 50% <b>50%</b> 2025	
 150,000 AFY Capture 150,000 acre-feet per year of stormwater <b>2035</b>	
 <b>50%</b> Source 50% of water locally <b>2035</b>	

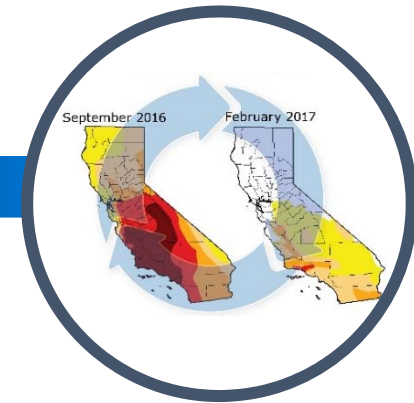
## Supports LA's 2015 Sustainable City pLAN Goals



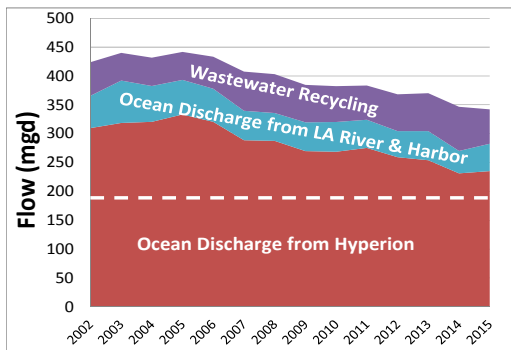
# The Plan incorporates the drastic changes in the water landscape since 2006



**New Plans & Goals**



**Recurring Droughts**



**Declining Wastewater & Reduced Recycled Water Availability**



**Climate Change**



**New Stormwater & Receiving Water Quality Regulations**



# One Water LA Vision

Collaborative approach to develop an integrated framework for managing the City's watersheds, water resources, and water facilities in an **environmentally**, **economically**, and **socially** beneficial manner.





# One Water LA

- **Phase 1:** Lay the groundwork *(Completed 2015)*
- **Phase 2:** Develop One Water LA 2040 Plan *(To be completed 2017)*





# Objectives

- Integrate **management of water resources** and policies
- Balance **environmental, economic, and societal** goals
- Improve health of local **watersheds**
- Improve local water **supply reliability**
- Implement, monitor, and maintain a **reliable wastewater** system
- Increase **climate resilience**
- Increase **community awareness** and advocacy for sustainable water



# One Water LA Guiding Principles



## Objectives and Guiding Principles

- 1. Integrate management of water resources and policies** *by increasing coordination and cooperation between City departments, partners and stakeholders.*
  - Recognize that water is integral to the actions of City departments and create a framework for integration and collaboration between departments and City Hall, including regular communication and reporting on policies and project implementation.
  - Enhance the coordination and partnerships with regional water, transportation, education and other public agencies.
  - Enhance coordination with Non-Governmental Organizations, Neighborhood Councils, and other stakeholders to inform integrated planning and broaden community involvement.
  - Understand the water balance that summarizes rainfall/runoff, water demands, wastewater, and ocean discharges to understand the potential for stormwater capture, conservation and reuse.
  - Continue coordination between City Departments during construction of the City's infrastructure.
- 2. Balance environmental, economic, and societal goals** *by implementing affordable and equitable projects and programs that provide multiple benefits to all communities.*
  - Evaluate programs relative to a "no action" alternative, considering imported water costs, regulatory requirements, water supply reliability, infrastructure reliability, climate change, and other associated risks.
  - Identify opportunities for collaboration and cost sharing from departments whose missions will benefit from each project with transparency.
  - Analyze financial merits of programs using standard financial methodologies.
  - Emphasize multi-benefit projects based on measures of social, environmental and economic benefits.
  - Partner with academia to advance measurement of social benefits and evaluate new technologies.
  - Incorporate environmental justice into decision-making on where projects are implemented and focus on increasing benefits in underserved communities.
  - Consider water demands, supply availability, population growth, regulatory requirements, climate vulnerability, and environmental goals to establish triggers, where appropriate, to plan, implement and/or defer projects.
  - Explore private, State and Federal funding opportunities to implement multi-benefit projects
- 3. Improve health of local watersheds** *by reducing impervious cover, restoring ecosystems, decreasing pollutants in our waterways, and mitigating local flood*
  - Emphasize upstream solutions in order to mitigate downstream impacts, challenges and costs.
  - Support strategies included in LASAN's Enhanced Watershed Management Program (EWMP) Plans, in coordination with LADWP's Stormwater Capture Master Plan, Bureau of Engineering's Flood Management Plan, Green Streets Program, and related updates in order to improve water quality, ecosystem restoration and flood mitigation.
  - Align Mayor or City Council supported plans and projects for the Los Angeles River and other significant tributaries within the City with watershed health and other water resources goals.
  - Support multi-purpose strategies for reducing impacts of localized flooding, with an emphasis on natural systems and green infrastructure over traditional grey infrastructure.



# One Water LA Guiding Principles

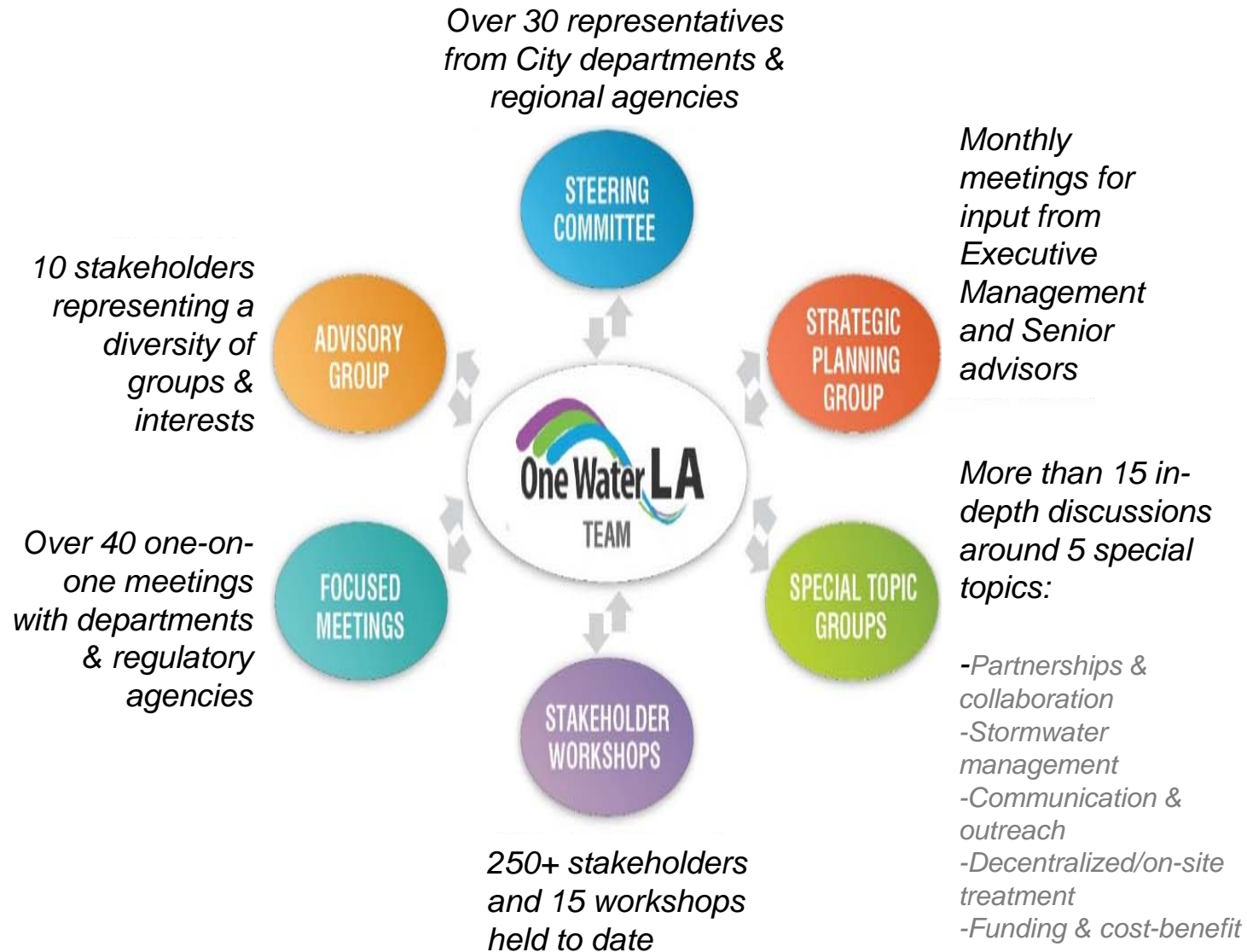


## Objectives and Guiding Principles

4. **Improve local water supply reliability** *by increasing capture of stormwater, conserving potable water, and expanding water reuse.*
  - Support recommendations from LADWP’s Stormwater Capture Master Plan, LASAN’s EWMP Plans, and related updates to increase stormwater capture for water supply.
  - Consider findings from LADWP’s Water Conservation Potential Study and related updates to reduce the City’s demand for potable water.
  - Improve water sustainability, including water efficiency, water reuse, and stormwater capture, at City facilities and buildings.
  - Explore the use of graywater systems and develop appropriate guidelines for implementation.
  - Support recommendations from the City’s Recycled Water Master Planning Documents and related updates to increase non-potable reuse; and indirect potable reuse; and conduct necessary technical, scientific and regulatory evaluations for assessing the potential for direct potable reuse.
  - Recognize the importance of remediating and maintaining the health of the City’s groundwater basins and consider recommendations of LADWP’s groundwater program.
5. **Implement, monitor, and maintain a reliable wastewater system** *that safely conveys, treats and reuses wastewater, while also reducing sewer overflows and odors..*
  - Optimize the use of existing City assets and infrastructure and explore opportunities for distributed solutions in order to safely convey, treat and reuse wastewater.
  - Seek ways to optimize reuse from Hyperion Wastewater Treatment Plant.
  - Optimize recovery and use of nutrients from wastewater and biosolids, and recovery and use of biogases.
  - Seek ways to operate wastewater treatment plants with energy independence.
6. **Increase climate resilience** *by planning for climate change mitigation and adaptation strategies in all City actions.*
  - Identify citywide metrics for greenhouse gas emissions and climate change adaptation and mitigation that are used to assess project viability.
  - Consider water-energy-land use nexus (climate adaptation) in the City’s General Plan and development zones.
  - Raise the priority of water issues in relevant City plans that impact sustainability, climate adaptation/resiliency, and emergency preparedness.
  - Maximize available state funding and explore financial incentives to reduce greenhouse gas emissions and increase resiliency.
  - Coordinate with regional agencies on water-related climate change mitigation and adaptation strategies.
7. **Increase community awareness and advocacy for sustainable water** *by active engagement, public outreach and education.*
  - Explore strategies on how to increase public awareness and education for all water resources issues.
  - Expand on current public education programs for water to include climate change impacts and importance of mitigation, adaptation and resiliency.
  - Communicate the water related roles, responsibilities, functions, and success stories of each City department with the community.



# Developed through extensive collaboration from a variety of groups





# The Steering committee fostered integration

## Steering Committee Members

- 14 City Departments
- 6 Regional Agencies

## Key Accomplishments

- Developed Vision, Objectives, & Guiding Principles
- Identified existing integration opportunities
- Identified policies to streamline integration between departments & agencies
- Created awareness to integrate water elements in projects & programs





# Advisory Group Dedicated Four Years To The Development Of The Plan



**Carolyn Cassavan**  
Sherman Oaks  
Neighborhood Council



**Jack Humphreville**  
Greater Wilshire  
Neighborhood Council



**Ken Murray**  
Wilderness Corps



**David Nahai**  
David Nahai Companies



**Melanie Winter**  
The River Project



**Brad Cox**  
Los Angeles Business  
Council



**Mike O'Gara**  
Sun Valley  
Neighborhood Council



**Veronica Padilla**  
Pacoima Beautiful



**Kelly Sanders**  
University of Southern  
California



**Louise McCarthy**  
Community Clinic Association  
of Los Angeles County

- Represent Diverse Points-of View
- Geographical Diversity
- Organizational Diversity



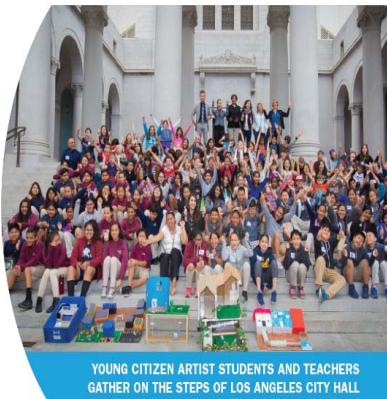
# PRIORITIZING STAKEHOLDER ENGAGEMENT & PUBLIC EDUCATION



STAKEHOLDERS HELP IDENTIFY THE MOST IMPORTANT BENEFITS FOR ONE WATER LA TO ACHIEVE



COMMUNITY MEMBERS LEARN MORE ABOUT ONE WATER LA AT LA SANITATION'S EARTH DAY EVENT



YOUNG CITIZEN ARTIST STUDENTS AND TEACHERS GATHER ON THE STEPS OF LOS ANGELES CITY HALL

## TEAMWORK

The One Water LA team dedicates countless hours to public and community outreach and engagement activities, inviting input and raising awareness about the program's purpose and needs.

### Engagement and Education Goals

- » Increase community involvement, awareness and advocacy for sustainable water
- » Align expertise with subject matter discussions, maximizing stakeholder input
- » Increase number and diversity of stakeholders
- » Provide clear, consistent information to diverse communities

**500+**

STAKEHOLDERS

**30**

MEMBER STEERING COMMITTEE

**300+**

ORGANIZATIONS REPRESENTED

**10**

STAKEHOLDER ADVISORY GROUP MEMBERS

**30+**

STAKEHOLDER AND ADVISORY GROUP MEETINGS

**5**

SPECIAL TOPIC GROUPS:

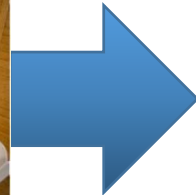
- Decentralized Treatment/Reuse
- Stormwater & Runoff Management
- Partnerships, Collaboration & Innovation
- Funding & Cost-Benefit Analysis
- Outreach & Communication

**65+**

PRESENTATIONS AND DISCUSSIONS AT NEIGHBORHOOD COUNCILS, CONFERENCES/EVENTS AND WITH EDUCATION PARTNERS



# Plan Elements





# Stormwater & Urban Runoff Facilities Plan

## Three-Legged Stool Stormwater Planning Approach

- Integrates water quality, water supply and flood risk mitigation objectives
- Project prioritization based on number of benefits and TMDL compliance deadlines

## Stormwater Project Database

Project Type	Number	Percent
Distributed Green Infrastructure Projects	619	54%
Regional Green Infrastructure Projects	197	17%
Regional Grey Infrastructure Projects	326	29%
Total	1,142	100%





# Wastewater Facilities Plan

## Improvement Categories

- Future Treatment Upgrades for Potable Reuse Concepts:
  - ❖ Hyperion WRP: 95 mgd MBR/Advanced Treatment
  - ❖ Tillman WRP: 15 mgd advanced treatment
  - ❖ LA-Glendale WRP: 5 mgd advanced treatment
- Capital Improvement projects for all plants
- Rehabilitation and Replacement projects for all plants
- Wastewater conveyance projects
- Climate resiliency projects







# Current Integration Opportunities



- 12 steering committee members identified 44 water-related integration opportunities
- The top 5 opportunities were further developed as case study examples for interdepartmental and interagency collaboration
- Assuming 80 percent of the 44 identified opportunities would be implemented by 2040, the **estimated cost is \$1.8 billion**

# Top 10 Current Opportunities



LA River Bike Path



Caballero Creek Park

Water Management Strategies for the LA Zoo Master Plan



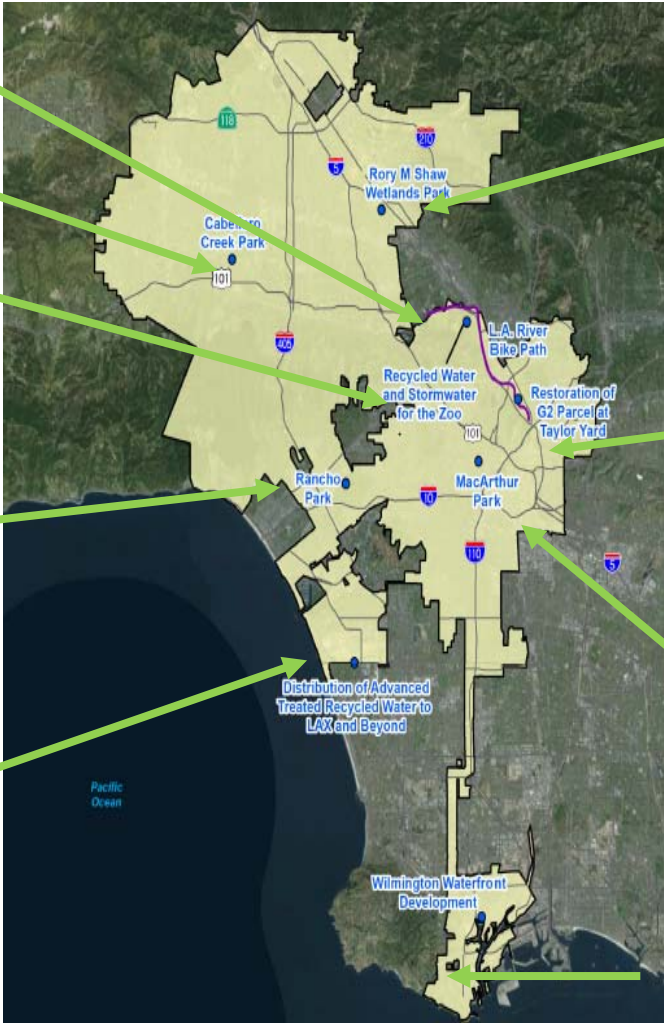
Rancho Park Water Reclamation Facility



Advanced Treated Recycled Water Delivery to LAX and Scattergood



Capture of Off-Site Stormwater at LAUSD Schools (location TBD)



Rory M. Shaw Wetlands Park



Restoration of G2 Parcel at Taylor Yard



MacArthur Park



Wilmington Waterfront Development

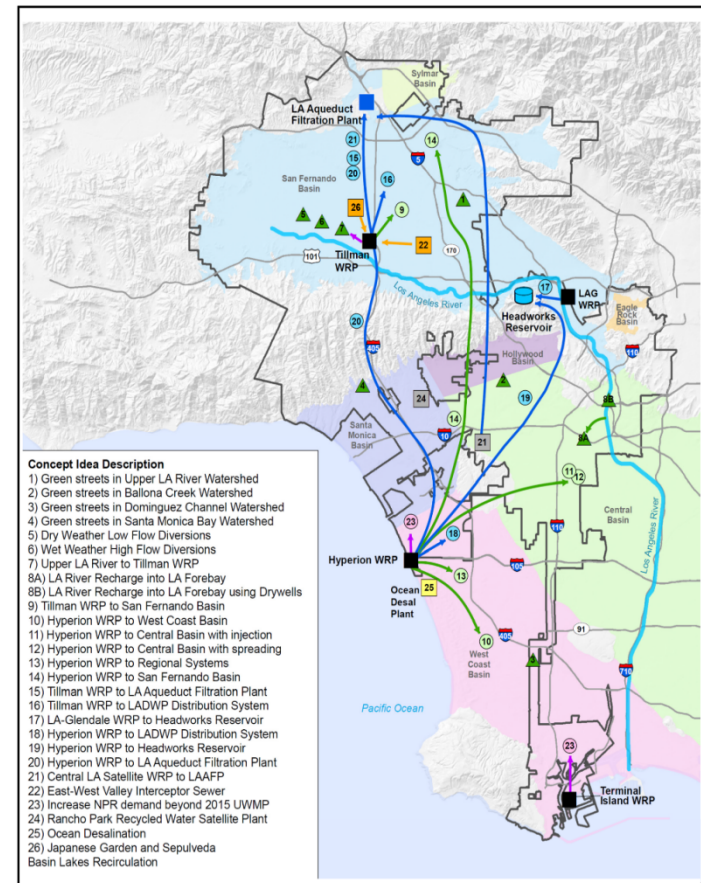




# Future Integration Opportunities

**8** Recommended Strategies

**27** Concept Options





# Comprehensive Evaluation Criteria & Metrics Were Used To Compare The Project Concepts

## Economic Criteria

- Unit cost
- Financial benefits
- Funding mechanism
- Likelihood to obtain outside funding

## Resiliency Criteria

- Drought resiliency
- Earthquake resiliency
- Flood risk mitigation
- Local supply benefit
- Energy Impact/Green-House Gas Emissions

## Implementation Criteria

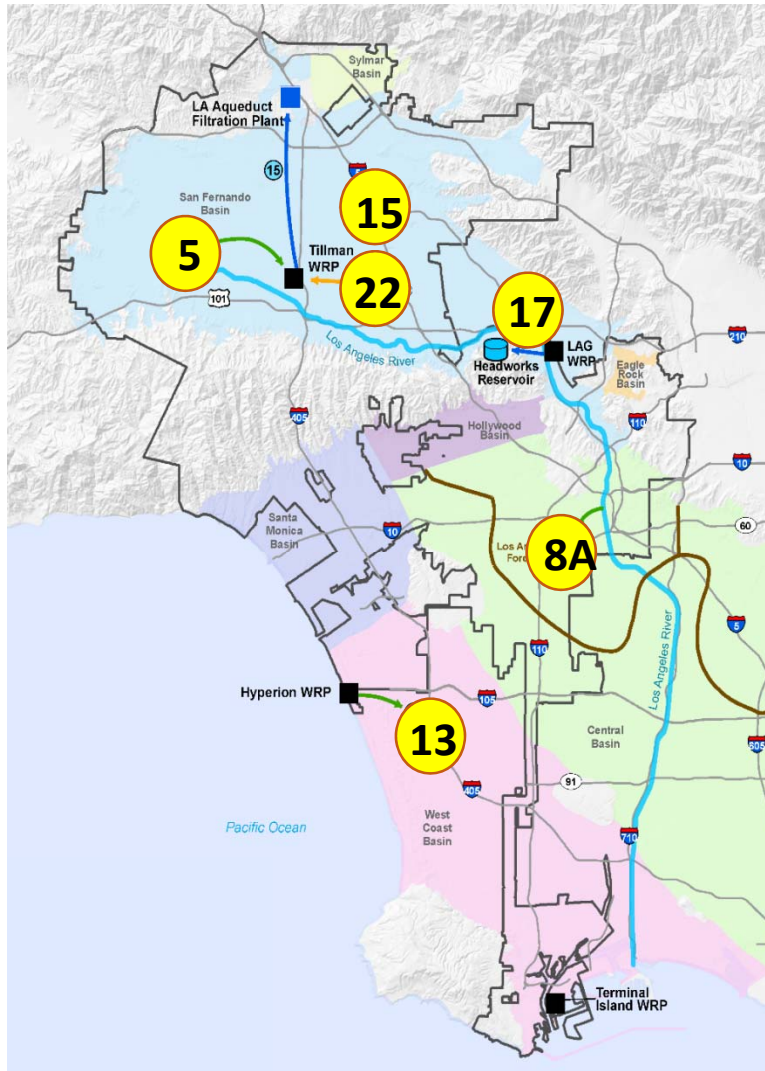
- Constructability
- Institutional collaboration
- Regulatory approval
- Public engagement
- Public and political support

## Environmental Criteria

- Environmental justice
- Open/natural space and recreational benefit
- Stormwater quality
- Ecological benefit



# 6 Preferred Concept Options



Concept No.	Recommended Strategy	Concept Option Name	Estimated Yield (afy)
5	Low Flow Diversions	Dry Weather Low Flow Diversions	6,200
8A	LA River Storage and Use	LA River Recharge into LA Forebay using Injection Wells	25,000
13	Potable Reuse with Groundwater Augmentation	Hyperion WRP to Regional System	95,000
15	Potable Reuse with Raw Water Augmentation	Tillman WRP to LA Aqueduct Filtration Plant	15,000
22	Flow Management	East-West Valley Interceptor Sewer	n/a
17	Potable Reuse with Treated Water Augmentation	LA-Glendale WRP to Headworks Reservoir	6,000



# Policy and Program Recommendations

## 39 Policy & Program Recommendations

### Categories:

- Integrated Planning and Design
- Stormwater and Urban Runoff Management
- Training and Education
- Streamlining Collaboration and Implementation
- Funding and Partnerships
- Sustainability and Climate Change
- Water Conservation
- Recycled Water

## Top Departmental Integration Policies

Policy Lead	Policy Concept Language
All City Depts.	Maximize use of City owned property for Stormwater capture retrofits.
LASAN, LADWP, BOE	Create a city-wide database to identify collaborative opportunities for water-related multi-benefit projects.
LASAN	Maximize opportunities to incorporate integrated water management strategies, including Green Infrastructure, into on-going and emerging opportunities.



# Potential Fiscal Impacts Of ONE WATER LA Plan Recommendations

Stormwater & Urban Runoff Facilities Plan Projects

Wastewater Facilities Plan Projects

Current Integration Opportunities

Future Integration Opportunities

Policies & Programs

Stormwater Improvement Projects

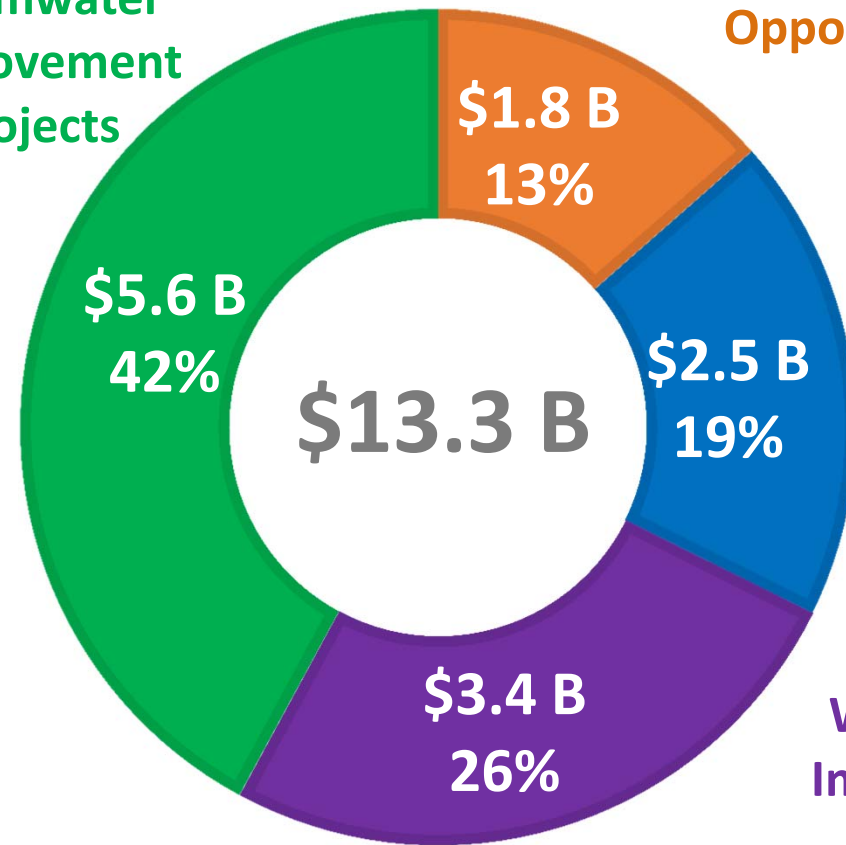
Current Integration Opportunities

Future Integration Opportunities

Wastewater Improvement Projects

## Cost Impacts TBD

The feasibility and financial impacts of the proposed Policy and Program ideas will be further analyzed as part of the next steps.

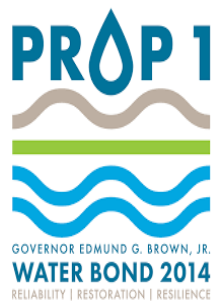




# Funding Ideas And Recommendations Gathered From City Staff And Stakeholders

## Develop a One Water LA Funding Plan

- Explore stormwater tax or fee options
- Review and streamline grant management process
- Understand how multiple agencies could identify benefit-based costs for water-related projects
- Increase use of State Revolving Funds for multi-benefit projects
- Develop partnerships to reduce costs and maximize upstream solutions



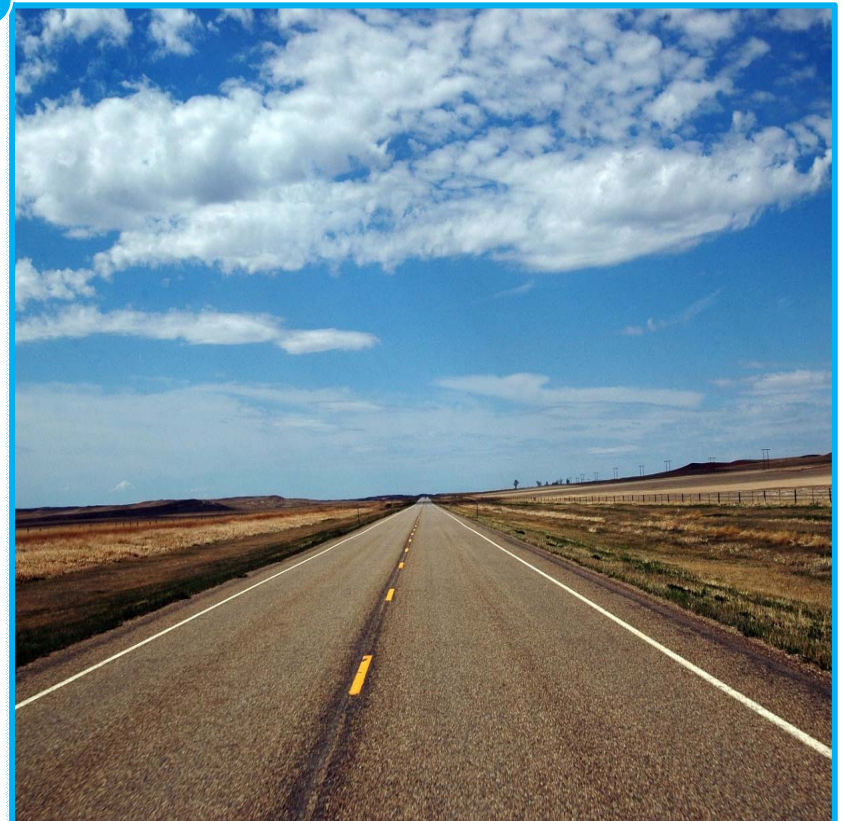




# Plan implementation Focus Areas

## Future City Activities for Plan Implementation:

- Prepare Programmatic EIR
- Conduct Continued Technical Analysis
- Create Supporting Databases
- Work with other Departments & Agencies on Current and Future Integration Opportunities
- Conduct Policy & Program Feasibility Analysis
- Pursue Funding Opportunities
- Develop Interagency Agreements





# Next Steps





Thank you!

Questions?

[www.onewaterla.com](http://www.onewaterla.com)

[onewaterla@lacity.org](mailto:onewaterla@lacity.org)

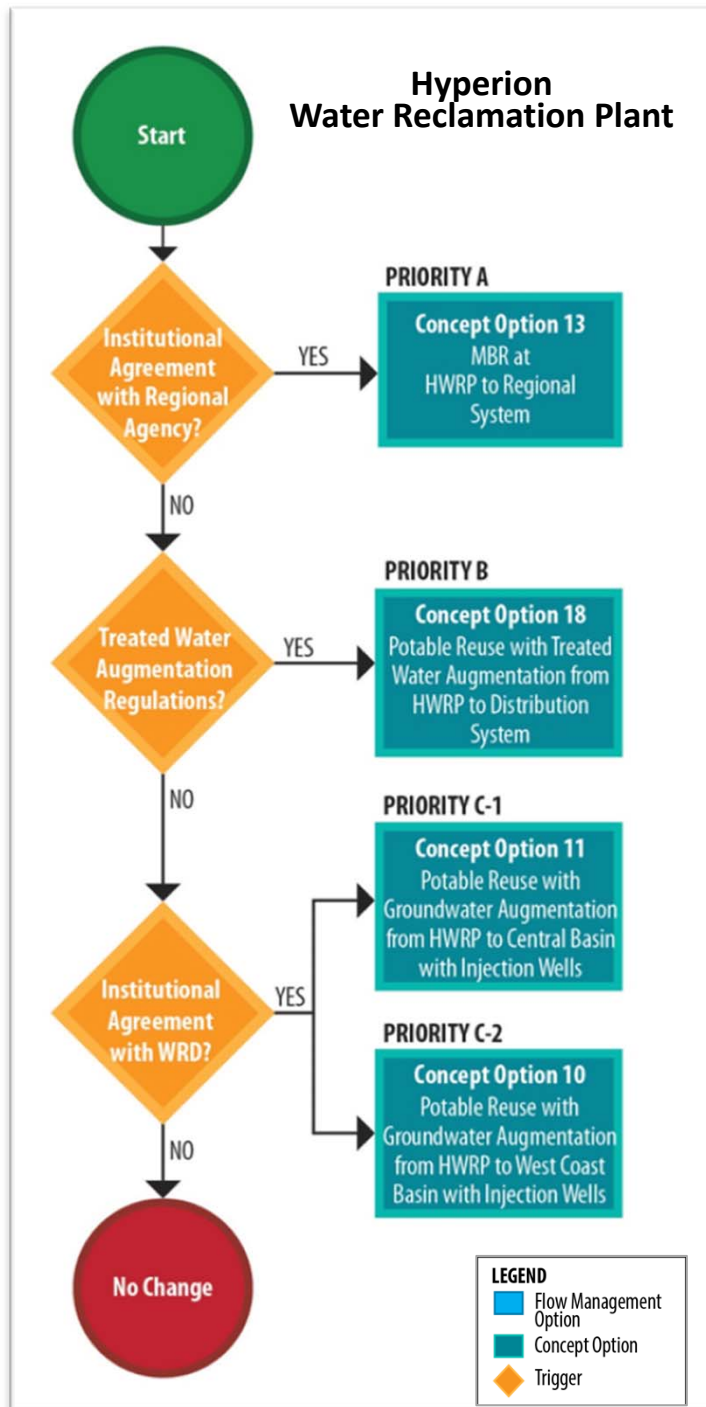
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May 3, 2018

# Recommended Project Concepts for Hyperion WRP



## Priority A = Concept Option #13 Potable Reuse from HWRP to Regional System

Annual Yield :	95,000 afy
Capital Cost :	\$900 M
Unit Cost :	\$1,500/acre-ft

## Priority B = Concept Option #18 Treated Water Augmentation to LADWP Distribution System

Annual Yield :	95,000 afy
Capital Cost :	\$2,800 M
Unit Cost :	\$2,100/acre-ft

## Priority C = Concept Options #11 & 10 Groundwater Augmentation to West Coast & Central Basin

	<u>Concept #11</u>	<u>Concept #10</u>
Annual Yield :	75,000 afy	20,000 afy
Capital Cost :	\$3,300 M	\$900 M
Unit Cost :	\$2,700/acre-ft	\$3,200/acre-ft