



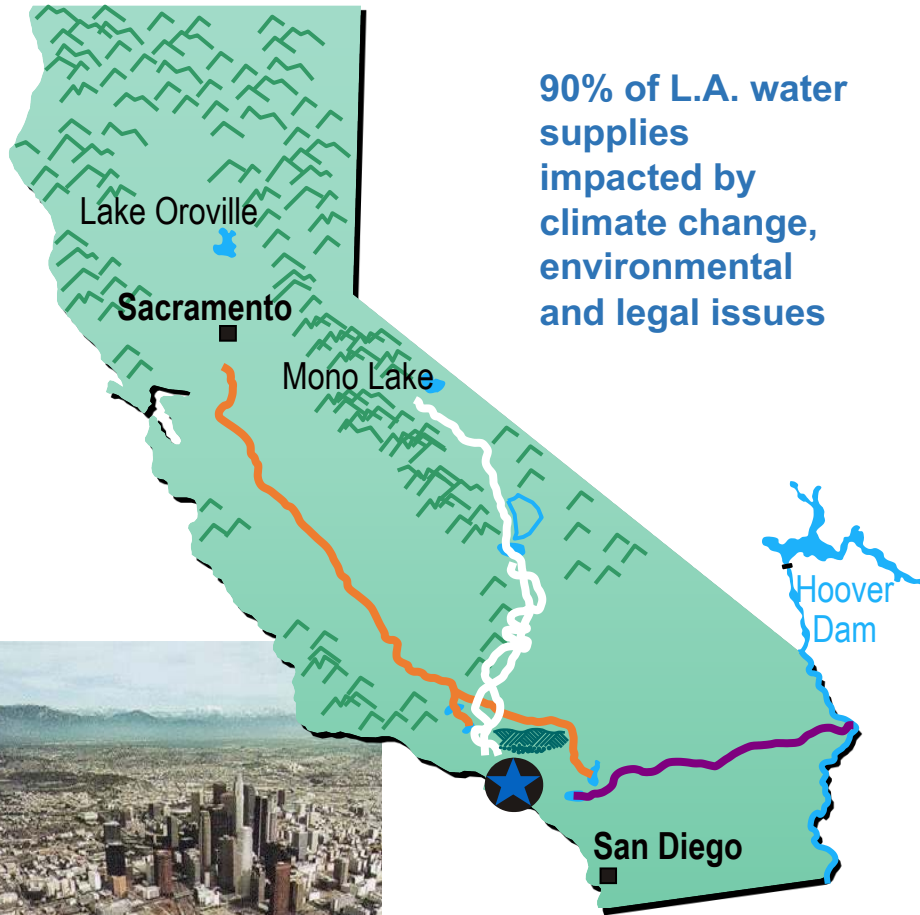
# Meeting LA's Water Challenges & Opportunities

By Connecting the dots, drops and hearts





# LA's WATER CHALLENGES



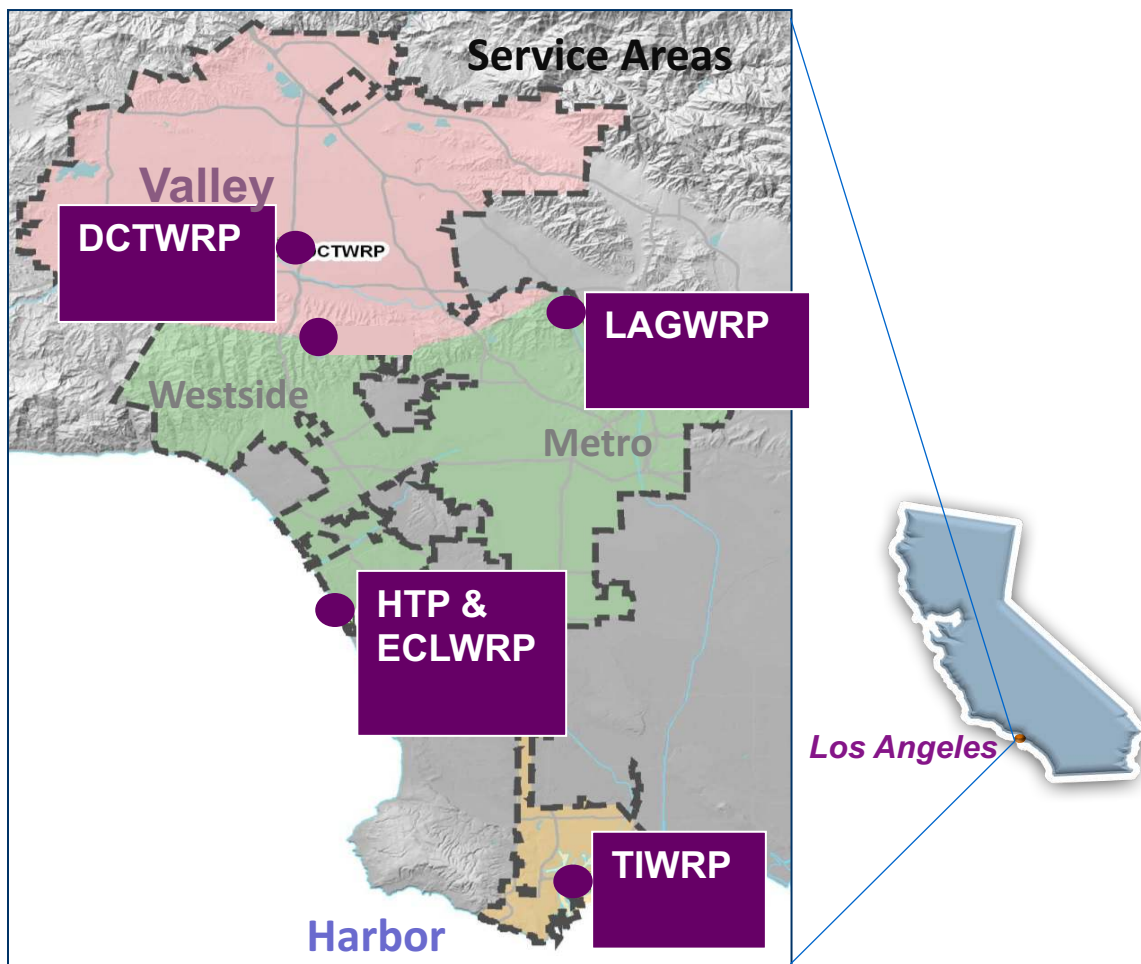
- 💧 Drought
- 💧 Increasing population
- 💧 Aging infrastructure
- 💧 More stringent regulations
- 💧 Limited funding
- 💧 Dependence on imported water
- 💧 Climate Change



# The Challenge: Where Recycled Water is Available

*The City treats over  
350 million gallons  
of wastewater every day*

**MOST OF THIS  
RESOURCE GOES  
TO THE OCEAN**







# The Challenge: Capture More Stormwater

*With every ½" rain, over  
3-4 billion gallons of  
water washes down to  
the ocean*

**MOST OF THIS  
RESOURCE GOES  
TO THE OCEAN**





# Transforming our relationship

## With Water

- For every \$1 Million in Water Quality investments, there is up to \$22 Million in added benefits or avoided costs.





# The Solution

## INNOVATION



## COLLABORATION



## INTEGRATION



INNOVATION | INTEGRATION | INCLUSION

Connecting the dots, drops and hearts







# Integration

## Conserve

Reduce demand  
and make supply  
last longer

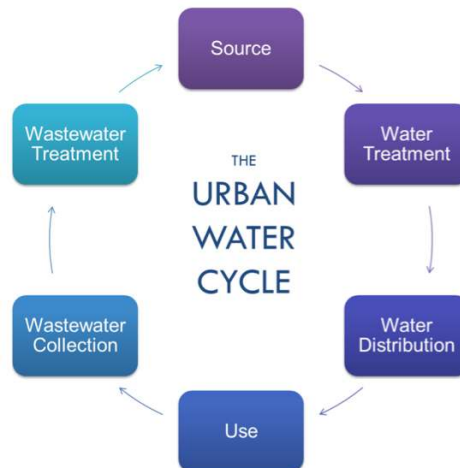


## Reuse

### Non-Potable



### Potable



## Capture

### Centralized



### Distributed



# LONG TERM SOLUTION FOR WATER SUPPLY RELIABILITY



**Recycled Water**



**Stormwater Capture**



**Water Conservation**

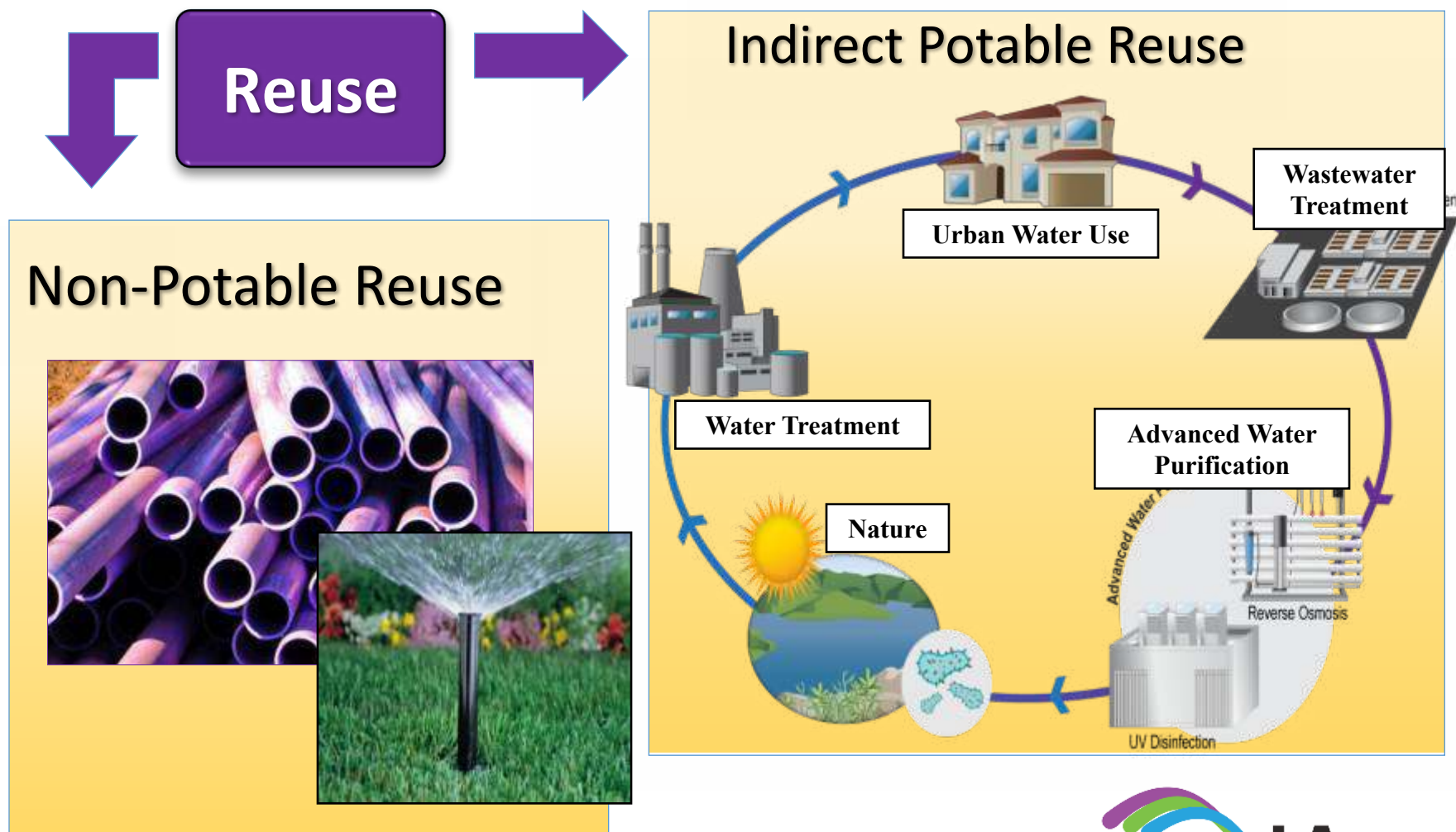


**SF Groundwater Basin Remediation**

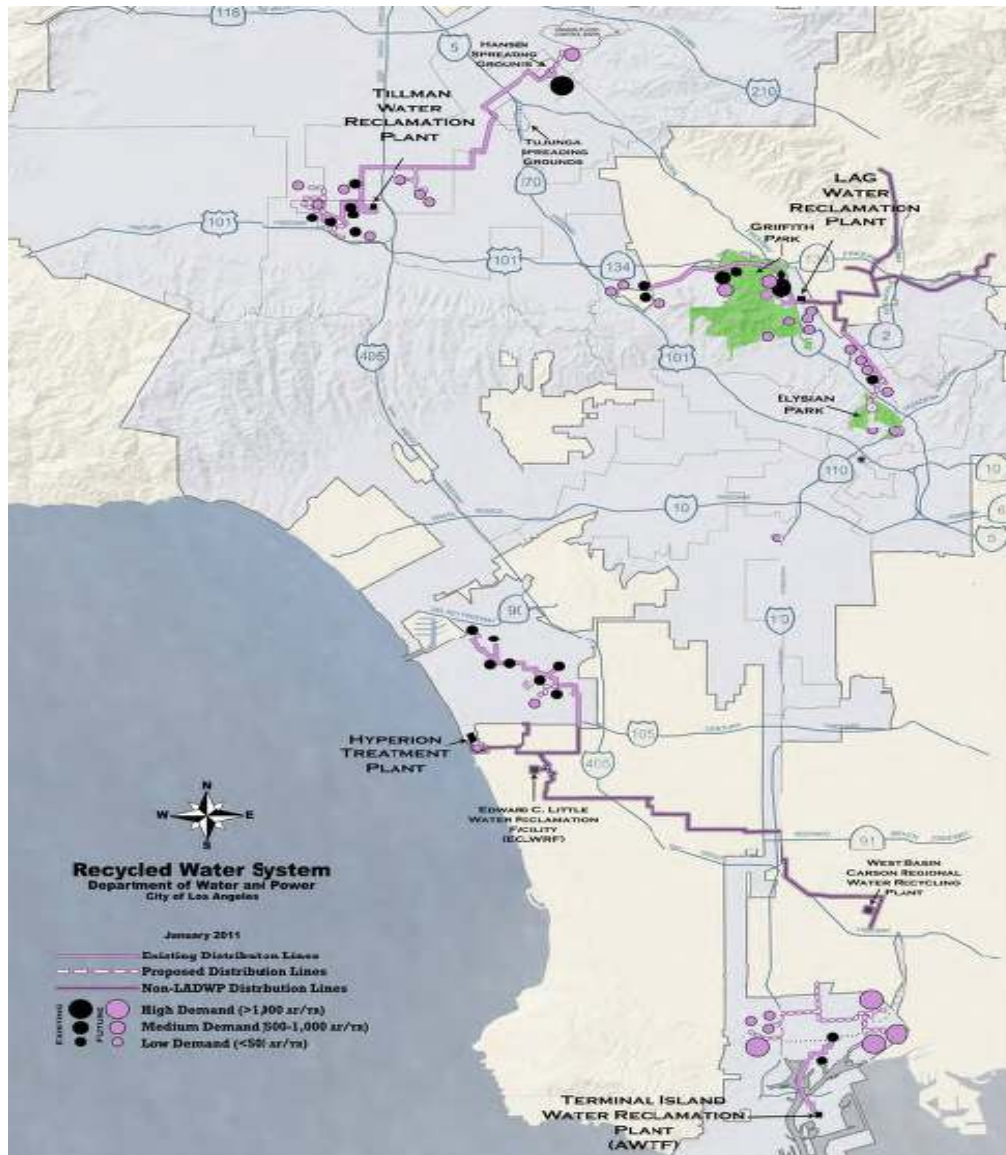
**Local Water Supply Reliability and overall Resiliency**



# LOCAL SUPPLY DEVELOPMENT: RECYCLED WATER

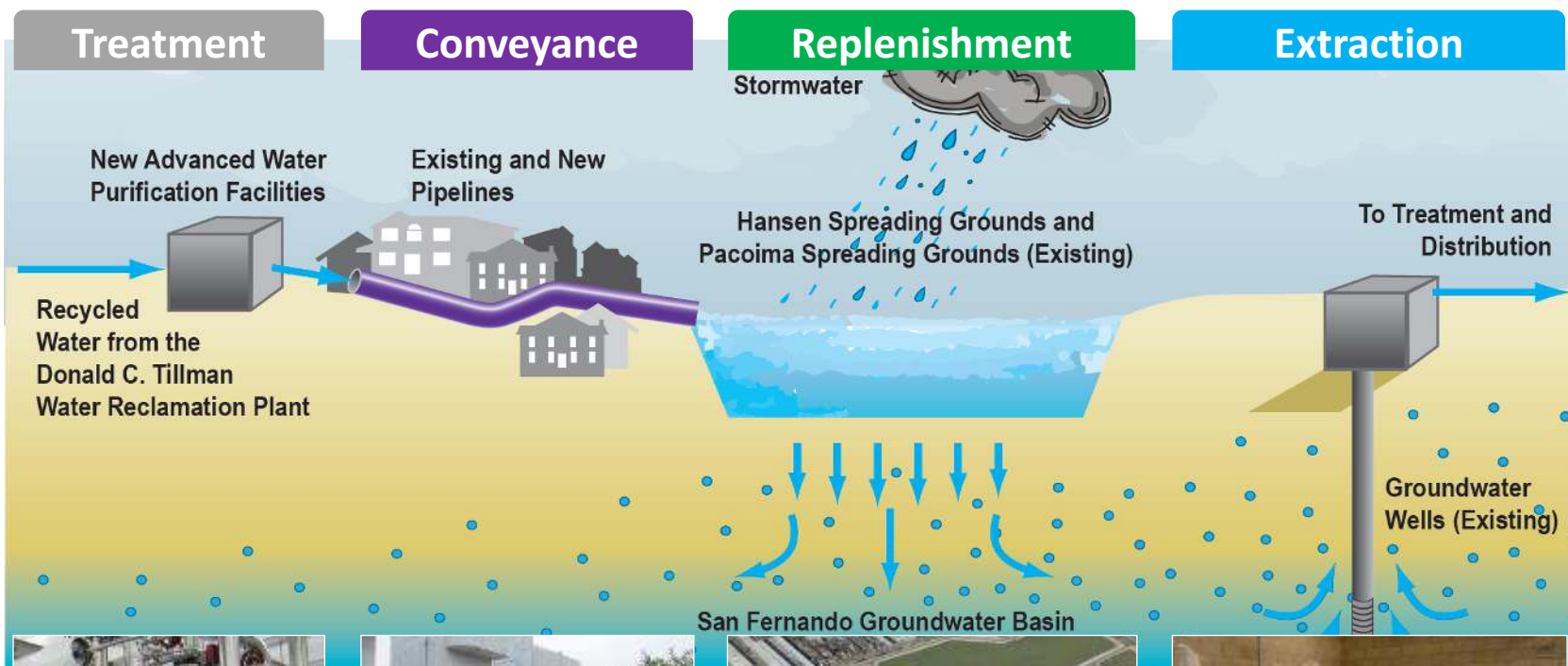


# LOCAL SUPPLY DEVELOPMENT: RECYCLED WATER





# FOCUS ON GROUNDWATER REPLENISHMENT







# INCREASING WATER REUSE

- Doubled production of highly purified advanced treated water to 12 MGD
- Supply Dominguez Gap
- Supply industrial and commercial customers
- Supply Machado lake



TERMINAL ISLAND WATER RECLAMATION PLANT



# INCREASING WATER REUSE

- Expand Recycled Water System
- Build 5 MG storage
- Public fill station



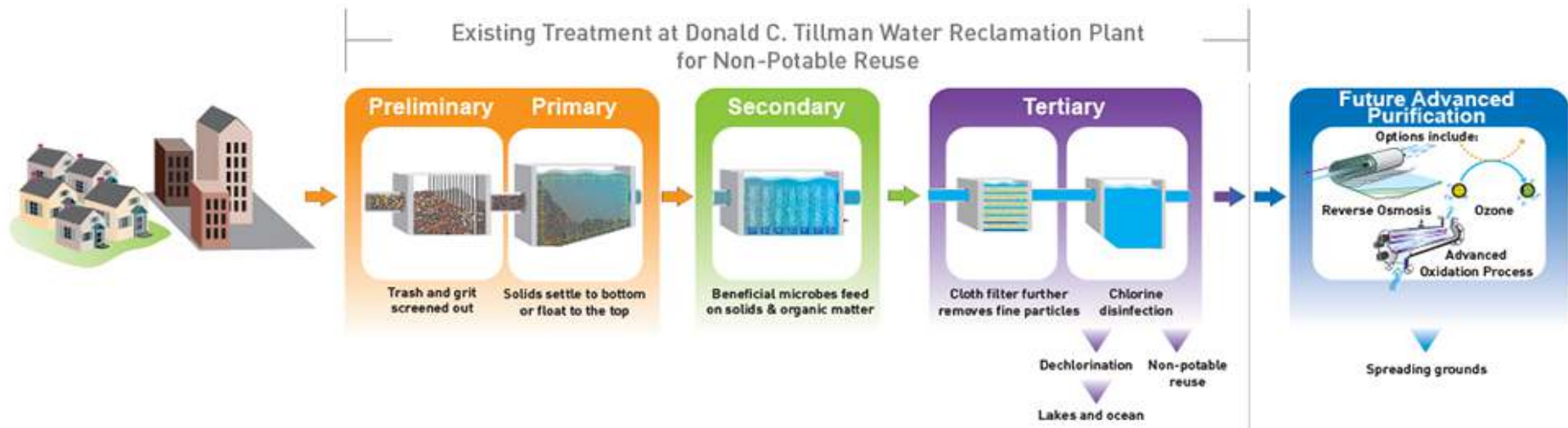
## LA GLENDALE WATER RECLAMATION PLANT





# INCREASING WATER REUSE

- Expand Recycled Water System
- Divert more wastewater flow
- Construct a 30 MGD AWPf for ground water recharge



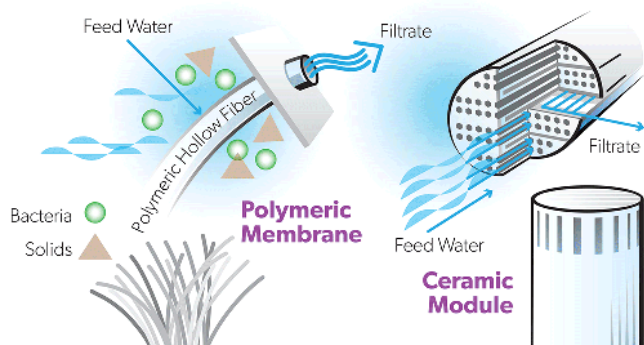
## TILLMAN WATER RECLAMATION PLANT



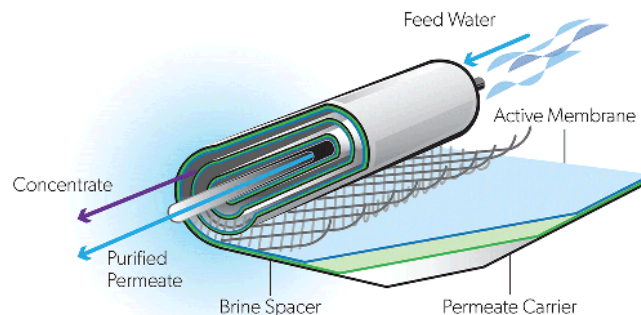


# Treatment Process

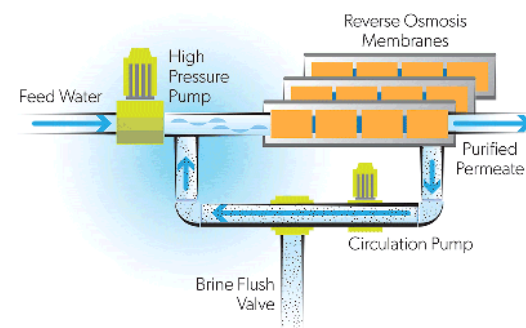
## Microfiltration | Ultrafiltration



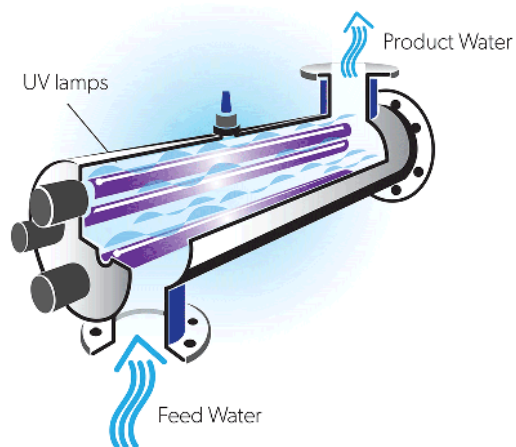
## Reverse Osmosis



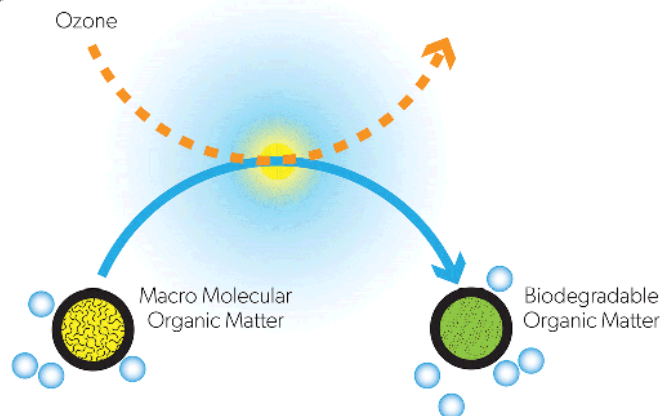
## Closed Circuit Desalination



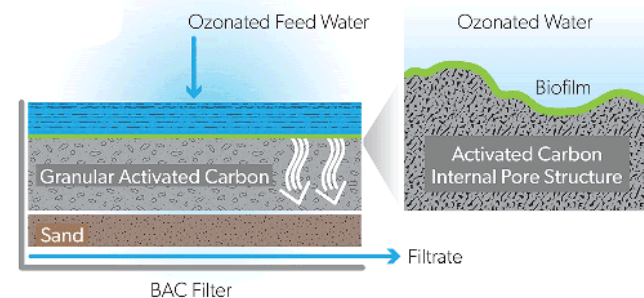
## Advanced Oxidation Process



## Ozone



## Biologically Active Carbon



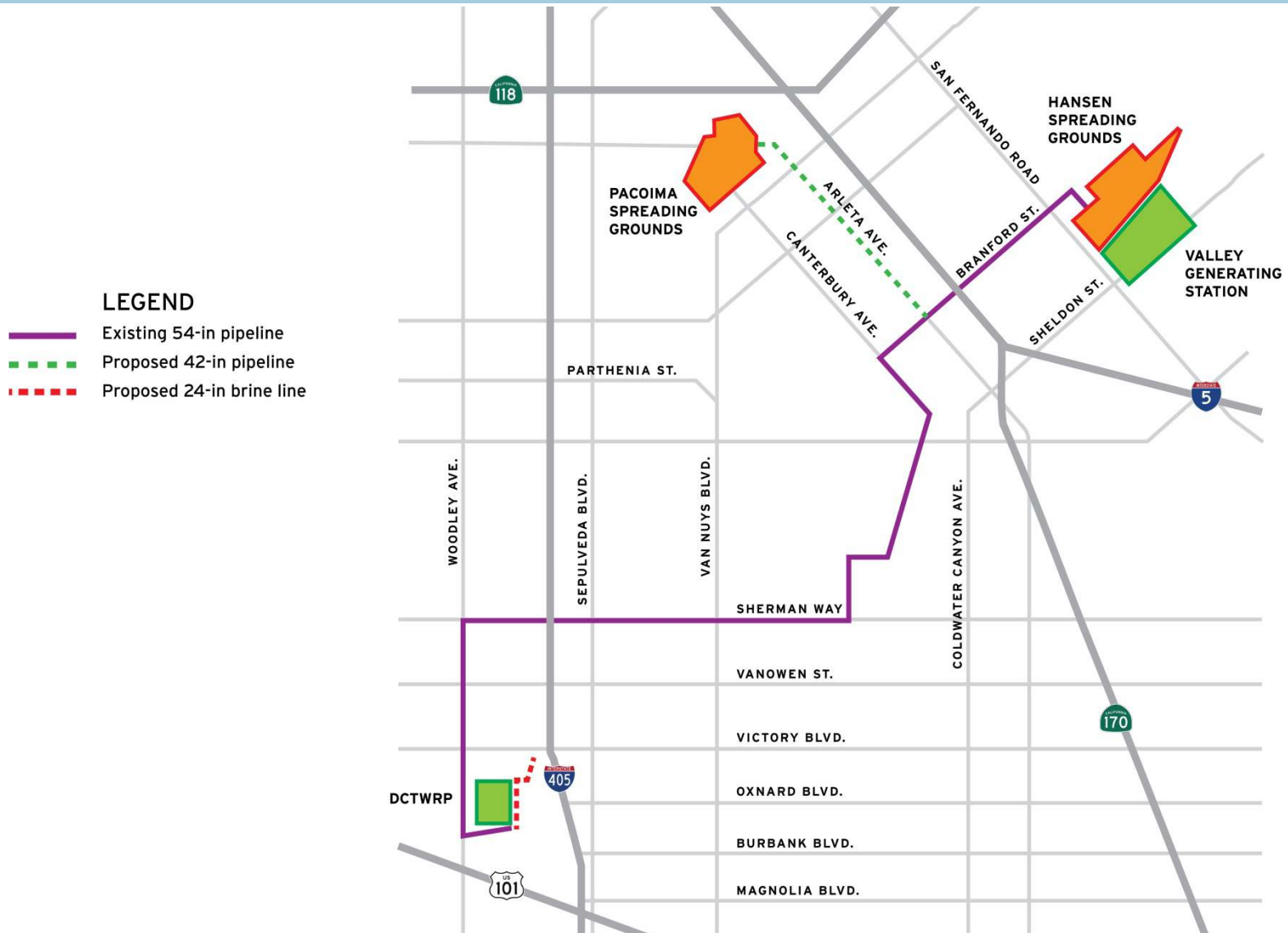


# LA GWR Project Pilot





# New and Existing Pipelines







# Spreading Grounds







# INCREASING WATER REUSE

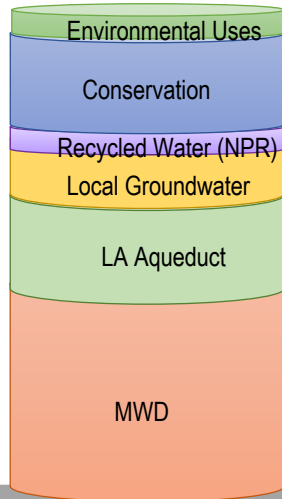
- Partnership with West Basin
- Expand water to West basin by 70 MGD MBR
- Provide water to LAWA
- Divert more flow to Tillman WRP
- Satellite plant at Rancho Park
- Analyze other regional and local opportunities



## HYPERION WATER RECLAMATION PLANT

# 2015

Average Historical Supply  
Mix 2011-2015



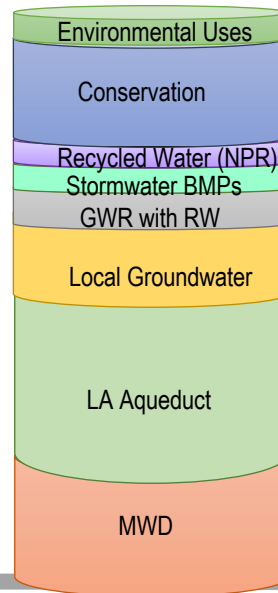
734,000 AFY

### Existing Projects:

- 117,000 AFY Conservation
- 8,500 AFY Recycled Water

# 2025

Executive Directive #5 Goal:  
50% Reduction of MWD Purchases



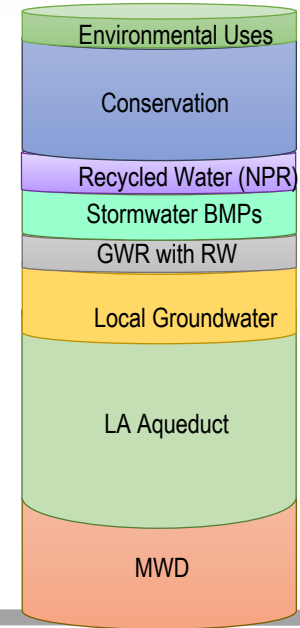
819,000 AFY

### Planned Projects by 2025:

- 30,000 AFY GWR in SF Basin
- 28,000 AFY New Conservation
- 20,000 AFY New Recycled Water
- 25,000 AFY Stormwater BMPs

# 2035

Sustainability pLan Goal:  
Meet 50% Local Water Supply



854,000 AFY

### Planned Projects by 2035:

- 26,000 AFY New Conservation
- 16,000 AFY New Recycled Water
- 43,000 AFY Stormwater BMPs

### Other Potential Projects:

- 70,000 AFY Hyperion Recycling



# Today

Demand  
591,000 afy

Imported Supply  
472,000 afy  
80%

Local Supply  
119,000 afy  
20%

Existing Projects:  
94,000 afy Groundwater  
15,000 afy Conservation  
10,000 afy Recycled Water

# 2024

Demand  
675,000 afy

Imported Supply  
395,000 afy  
59%

Local Supply  
280,000 afy  
41%

Planned Projects by 2024:  
28,000 afy Add'l Conservation  
19,000 afy Add'l Recycled Water (NPR)  
30,000 afy GWR in SF Basin  
84,000 afy Stormwater BMPs  
New Projects by 2024:  
TBD

# 2035

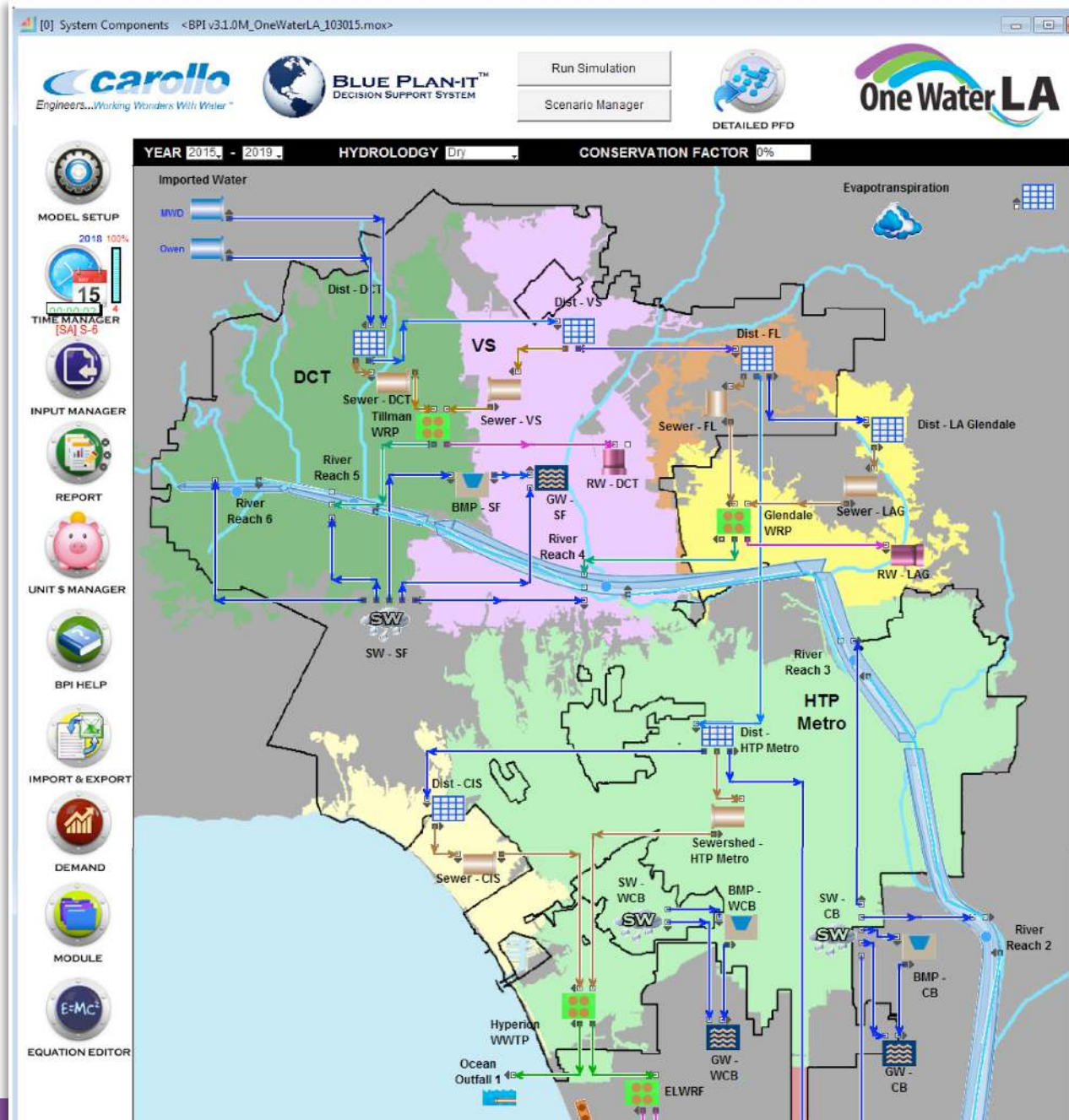
Demand  
711,000 afy

Imported Supply  
284,000 afy  
40%

Local Supply  
427,000 afy  
60%

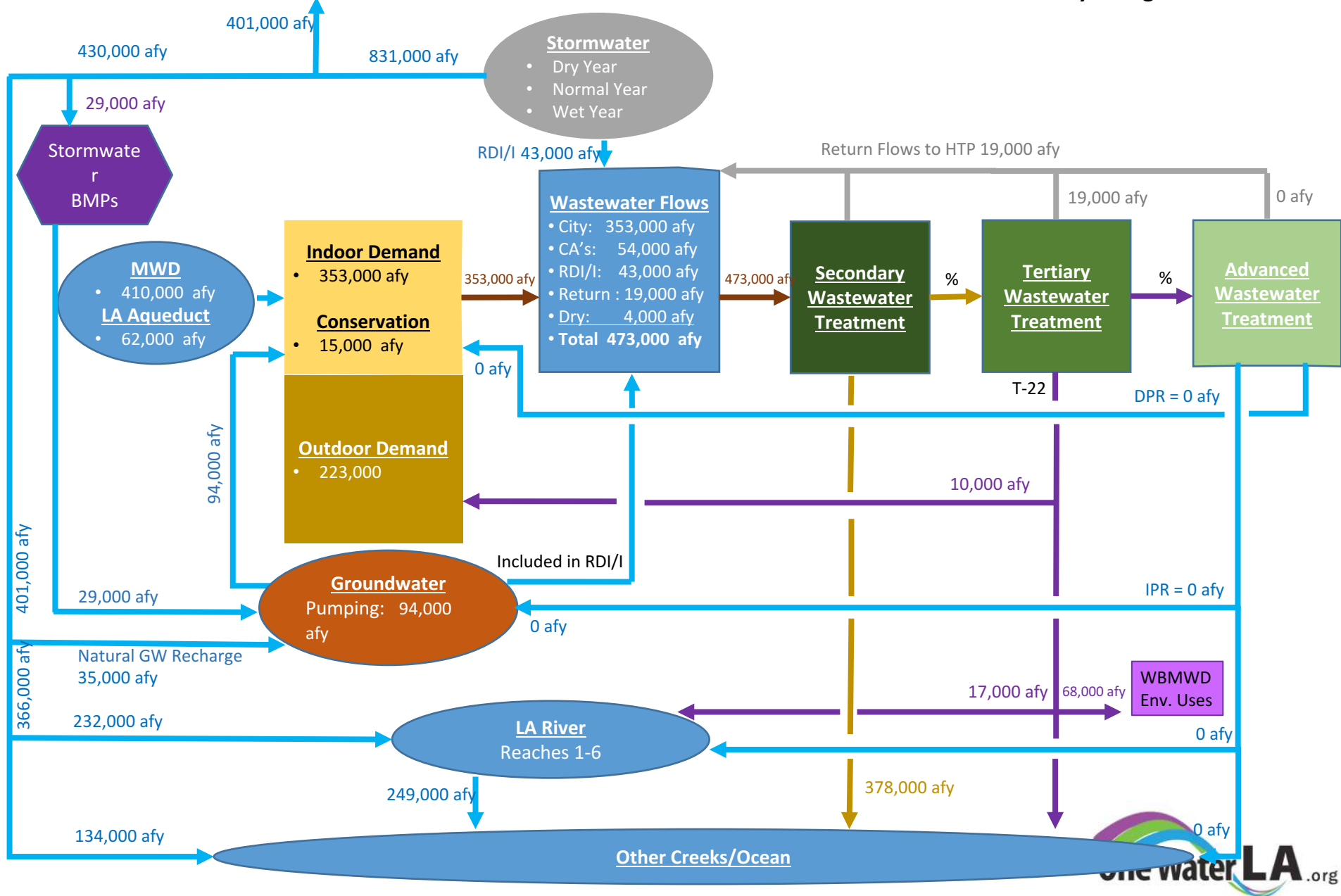
Planned Projects by 2035:  
26,000 afy Add'l Conservation  
13,000 afy Add'l Recycled Water (NPR)  
30,000 afy Add'l Stormwater BMPs  
Potential Projects by 2035:  
~75,000 afy  
Further Expansion of HTP  
Stormwater outside SF Basin  
Stormwater Capture in Upper LA River  
New Water Reclamation Facilities

# WATER BALANCE TOOL ACROSS ENTIRE CITY





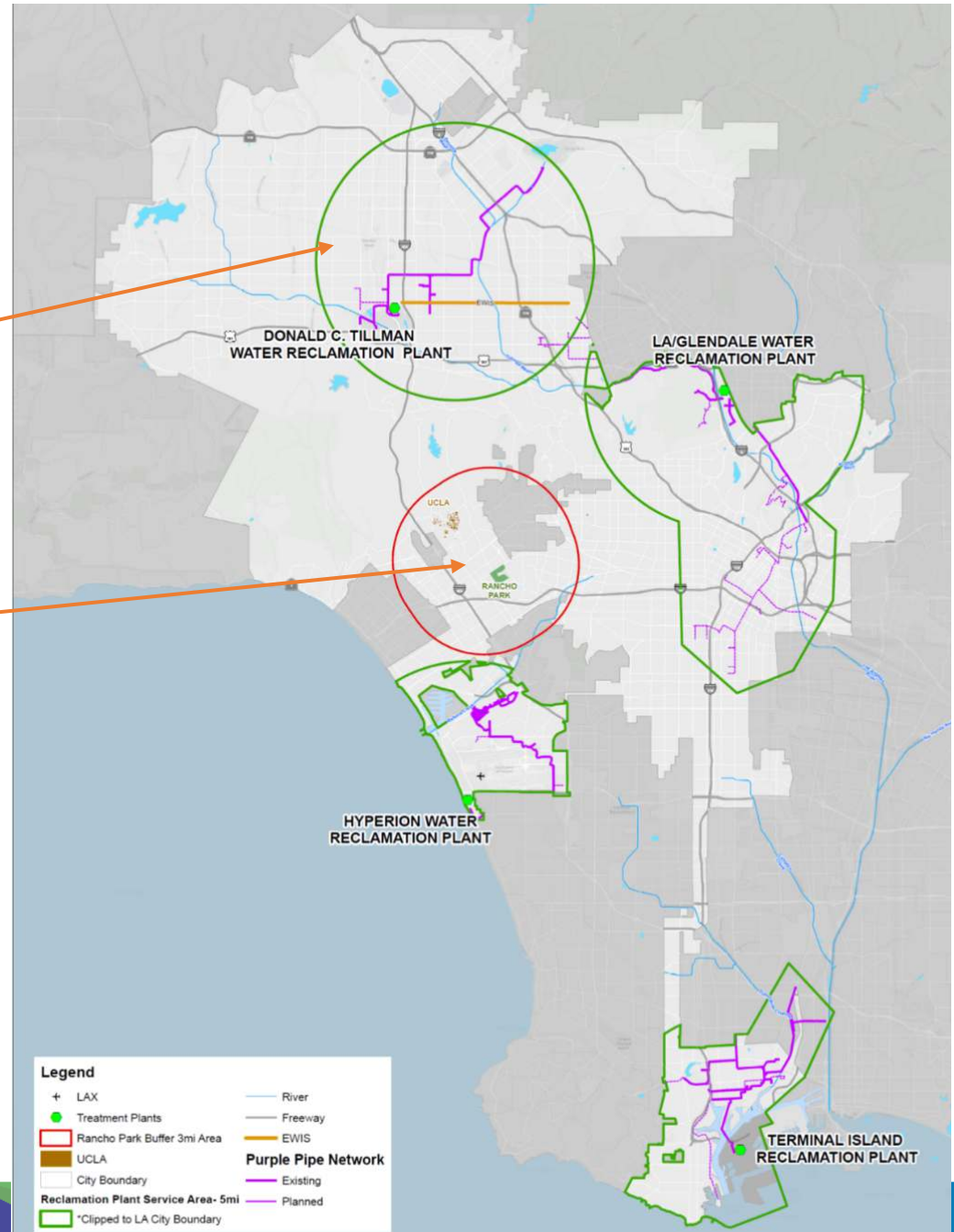
# Existing Flow Balance with Normal Hydrologic Conditions





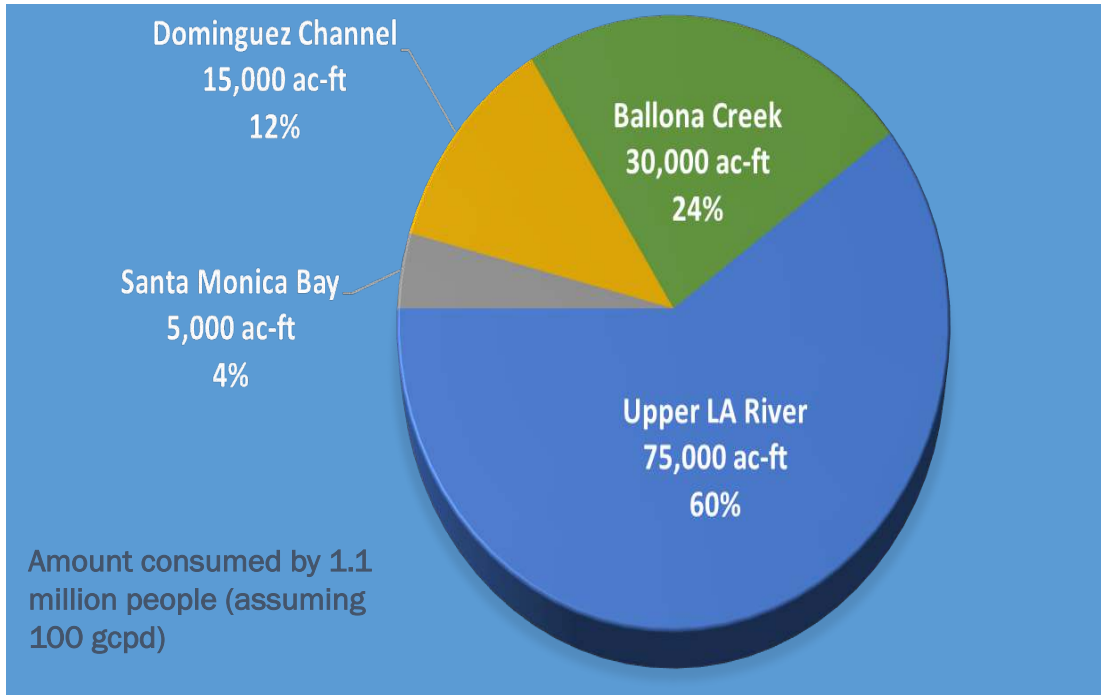
# CREATIVE WATER MANAGEMENT

- Augment sewer flows with runoff to increase water recycling.
- New strategically located water reclamation plants
- Policy for privately-owned onsite water recycling





# Stormwater Capture







# Low Impact Development



***Cisterns -  
Lowe's***



***Porous Pavement -  
Rio del Los Angeles  
State Park  
(aka: Taylor Yard)***



***Planter Boxes - Versailles  
Luxury Apartments  
Oxford St, Los Angeles***



***Infiltration - Costco***



***Bioretention - Sam's Club  
Parking Lot***

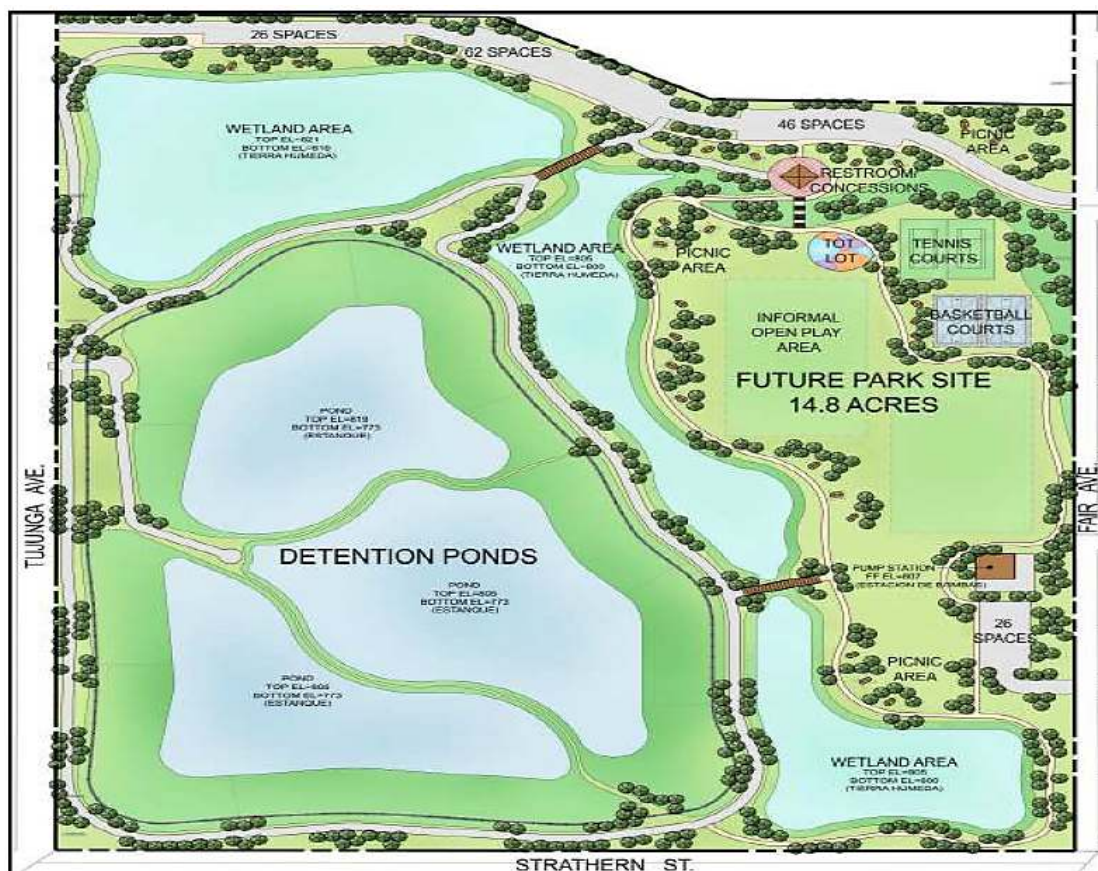


***Parkway Swale  
11<sup>th</sup> St & Hope St***





## Rory Shaw Wetlands Park – A collaborative project led by LA County in collaboration with City of LA and other partners

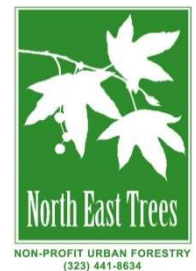


- Project area:  
46 acres
- Upstream  
drainage area:  
929 acres
- Expected water  
capture and use:  
900 ac-ft





# Garvanza Park Rainwater Capture & Use Project





# South Los Angeles Wetlands Park



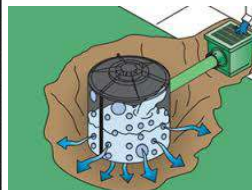




# Avalon Green Alley Project



# Broadway Neighborhood Greenway



# Elmer Paseo Alley Greenway



*Before*



*After*



# Collaboration



*Transforming Youth. Enhancing Communities.*

## Stakeholder Meetings



## Outreach Events



## Schools and Academia



*Solving Problems where  
People and Nature Intersect*



# LASAN EARTH DAY LA 2017

Saturday, April 22nd  
Exposition Park



Not covered entry point. This is a free event and is not affiliated with the City of Los Angeles. All information is for informational purposes only. All events are subject to change without notice. All events are subject to change without notice. All events are subject to change without notice.



**Additional Information:**

**[www.lacity.org](http://www.lacity.org)**

**[www.lacitysan.org](http://www.lacitysan.org)**

**[www.onewaterla.org](http://www.onewaterla.org)**

