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

90% of L.A. water supplies impacted by climate change, environmental and legal issues.
The City treats over **350 million gallons** of wastewater every day

MOST OF THIS RESOURCE GOES TO THE OCEAN
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
**Conserve**
Reduce demand and make supply last longer

**Reuse**
Non-Potable

**Capture**
Centralized

Potable

THE URBAN WATER CYCLE

- Source
- Water Treatment
- Wastewater Collection
- Wastewater Treatment
- Water Distribution
- Use

**From: SAVE THE DROP, SAVE THE DROPLA.ORG**

**From: California Friendly Landscaping in Los Angeles**
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

Reuse

Non-Potable Reuse

Indirect Potable Reuse:
- Wastewater Treatment
- Urban Water Use
- Water Treatment
- Advanced Water Purification
- Nature

Reuse
Local Supply Development: Recycled Water
FOCUS ON GROUNDWATER REPLENISHMENT

Treatment
- New Advanced Water Purification Facilities
- Recycled Water from the Donald C. Tillman Water Reclamation Plant

Conveyance
- Existing and New Pipelines

Replenishment
- Stormwater
- Hansen Spreading Grounds and Pacoima Spreading Grounds (Existing)

Extraction
- To Treatment and Distribution
- Groundwater Wells (Existing)

San Fernando Groundwater Basin

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

Polymeric Membrane

Ceramic Module

Feed Water

Filtrate

Bacteria

Solids

Polymeric Hollow Fiber

Feed Water

Filtrate

Active Membrane

Concentrate

Permeate Carrier

Purified Permeate

Brine Spacer

High Pressure Pump

Reverse Osmosis Membranes

Brine Flush Valve

Circulation Pump

Feed Water

Product Water

Feed Water

Macro Molecular Organic Matter

Biodegradable Organic Matter

Ozonated Feed Water

Ozonated Water

Activated Carbon Internal Pore Structure

Sand

BAC Filter

Filtrate
New and Existing Pipelines

LEGEND

- Existing 54-in pipeline
- Proposed 42-in pipeline
- Proposed 24-in brine line
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**
**Existing Projects:**
- 117,000 AFY Conservation
- 8,500 AFY Recycled Water

**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

**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
**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

- Dominguez Channel: 15,000 ac-ft (12%)
- Ballona Creek: 30,000 ac-ft (24%)
- Santa Monica Bay: 5,000 ac-ft (4%)
- Upper LA River: 75,000 ac-ft (60%)

Amount consumed by 1.1 million people (assuming 100 gcpd)
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 11th 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

Stakeholder Meetings

TreePeople
Special Topic Groups

Outreach Events

Schools and Academia

THE TRUST FOR PUBLIC LAND

URBAN SEMILLAS

CREATING COMMUNITIES, BUILDING CAPACITY

Lab
Los Angeles Beautification Team

Council for Watershed Health

North East Trees

Los Angeles Trade-Tech

A Community College

Los Angeles Conservation Corps

Transforming Youth. Enhancing Communities.

WATER FUNDATION

Solving Problems where People and Nature Intersect
Additional Information:
www.lacity.org
www.lacitiesan.org
www.onewaterla.org