LADWP’s Stormwater Capture Program
SCWC Stormwater Workshop

October 11, 2017

Watershed Management
Los Angeles, CA

Putting Customers First
Water Sources and Reliability Challenges

- Los Angeles Aqueduct
- Colorado River Aqueduct
- State Water Project
- Sierra Mountains
- Delta
- Local Groundwater, Conservation, Recycled Water, Stormwater Capture

Los Angeles Aqueduct

Colorado River Aqueduct
State and Local Drought Response

• **Mayor’s Executive Directive Order #5**
  – Reduce GPCD 20% by 2017

• **Governor’s Executive Order**
  – 25% Conservation Statewide

• **LA’s Sustainable City pLAn**
  – Reduce GPCD 20% (2017), 22.5% (2025), 25% (2035)
  – 50% Reduction of imported-purchased water by 2025
  – 50% of water locally sourced by 2035

• **State Emergency Conservation Regulations**
  – 3 Year Stress Test
Centralized vs. Distributed Capture

Centralized
- Dam Improvements
- Spreading Basins

Distributed
- Dry Wells
- Cisterns
- Green Streets
- Sub-regional
Stormwater Capture Master Plan

- Quantifying stormwater capture potential
- Identifying new project/programs/policies
- Prioritizing based on water supply criteria
- Developing costs/benefits for proposed projects/programs/policies
- Defining timing and key milestones
- Developing 5, 10, 15, and 20 year goals
- Defining partnerships
Geophysical Categorization of the SCMP Study Area

CATEGORY A
• Least hydrogeologically constrained
• Highest priority aquifers
• Conducive to infiltration BMPs

CATEGORY B
• Somewhat hydrogeologically constrained
• Mid level priority aquifers
• Conducive to infiltration BMPs

CATEGORY C
• Most hydrogeologically constrained
• Lower priority aquifers
• More advantageous for direct use BMPs
Stormwater Capture Potential

Distributed and Centralized Capture - 2035

Baseline/Existing
Baseline
Conservative
Aggressive
Future Distributed Capture
Future Centralized Capture
Existing Passive / Distributed Capture
Existing Centralized Capture

Average Annual Capture Volume (1,000 AF)

Baseline:
- Future Distributed Capture: 29
- Future Centralized Capture: 29
- Existing Passive / Distributed Capture: 35
- Existing Centralized Capture: 35
Total: 64

Conservative:
- Future Distributed Capture: 68
- Future Centralized Capture: 35
- Existing Passive / Distributed Capture: 35
- Existing Centralized Capture: 29
Total: 114

Aggressive:
- Future Distributed Capture: 51
- Future Centralized Capture: 51
- Existing Passive / Distributed Capture: 35
- Existing Centralized Capture: 29
Total: 63

Overall:
- Baseline: 64
- Conservative: 114
- Aggressive: 63
Stormwater Project Evaluation Process

**Priority Areas**
- Water Rights
- Existing Infrastructure
- Soil Characteristics
- Land Use

**Quantify Stormwater Capture Potential**
- Determine Flow Path
- Hydrologic Analysis

**Prioritize based on Water Supply Criteria**
- Cost per acre-foot (AF)
- Year of First Payback
- Internal Rate of Return

**Higher Cost Projects Solutions**
- Costs reduced through partnerships
- Costs reduced through grants

**Cost Comparison**
- Cost per AF compared to MWD rate
- Consideration of MWD rate increases
Cost per Acre-Foot

Centralized Projects: $1,100/AF

Distributed Infiltration:
- Green Street Programs
- On-site Infiltration
- Total Lifecycle Cost per Capture ($/AF)

Distributed Direct Use: $1,550/AF
Ancillary Benefits of Stormwater Capture

- Improve Water Quality (TMDLs)
- Enhance Habitat
- Increase Reclaimed Water Usage
- Improve Groundwater Quality
- Sustain Communities
- Enhance Open Space Recreation
- Reduce Greenhouse Gases
**RAP Tujunga Wash Central Branch Program**

**Summary**

- **Total Tributary Area:** 5120 Acres
- **Total Approx. Annual Yield:** 3790 AFY
- **Total 85th Percentile Volume:** 270 AF
- **Estimated Program Cost:** $221M
In subregional infiltration, stormwater runoff is collected from multiple parcels, city blocks, or entire neighborhoods into an infiltration facility within the public right-of-way or adjacent public/private lands. Surface channels and/or storm drains are used to convey flows to the desired location where BMPs such as underground infiltration galleries or bio-infiltration basins will be used to artificially recharge local aquifers.

Example of subregional infiltration at Sun Valley Park

Park improvements above the infiltration galleries
Industrial General Permit (IGP)

State Water Resources Control Board: Region 4
Figure 1
Active IGP Sites by Geophysical Category
Project Objective and Scope of Work

**Project Objective:** To identify an effective strategy and determine feasibility of incentivizing widespread infiltration and capture/use of industrial stormwater as a water supply resource, based on new compliance options offered under the State Water Resource Control Board’s pending Industrial General Permit (IGP) Amendment.

**TASKS:**

- Monitor/Assess New IGP Compliance Options
- Technical Analysis
- Stakeholder and Regulatory Outreach

**Desired Outcome:**
Significantly increase industrial stormwater infiltration and capture/reuse

**Next Step:**
Implementation of Strategic Program
www.ladwp.com/stormwater
www.ladwp.com/scmp

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