Data-Driven Resource Optimization and Planning System (DROPS) for Los Angeles County

Scientific Studies Program Fiscal Year 2025-2026 Los Angeles County-Wide (All WASCs) Foothill Municipal Water District Natalie Ouwersloot and Christopher Tull

Study Overview

Implement the DROPS tool that integrates advanced data analytics with AI to site distributed stormwater capture and filtration projects.

- Nexus to Stormwater and Urban Runoff capture and pollution reduction:
 - DROPS tool will identify critical areas for stormwater intervention
 - Helps in effectively managing stormwater runoff, reducing the risk of flooding
 - DROPS tool will optimize the location and design of green infrastructure
 - Green infrastructures act as natural filters, improving the quality of water that eventually reaches rivers and oceans
- Holistic approach to stormwater management safeguards both public safety and environmental health in Southern California

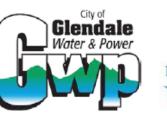




- Study Developer: California Data Collaborative
 - Nonprofit organization and network of water professionals collaborating to support the planning and analysis needed to ensure a reliable and resilient water supply in California
 - Christopher Tull, Chief Data Officer
 - Dr. Brianna Pagán, Deputy Manager NASA Goddard Earth Sciences Center Data and Information Services Center
- Partners:
 - Foothill Municipal Water District
 - Natalie Ouwersloot, District Engineer
 - Crescenta Valley Water District
 - Glendale Water and Power
 - Pasadena Water and Power
- Project stakeholders identified as end-use testers









Stormwater capture is radically common sense!

Yet planning for green infrastructure is cumbersome and expensive

How can we prioritize precious public dollars for maximum impact?

Study Details



Benefits of the DROPS Analytical Tool

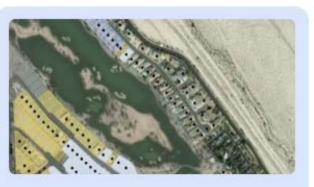
Existing stormwater feasibility studies are expensive and time consuming



Benefits of open, collaborative analytics



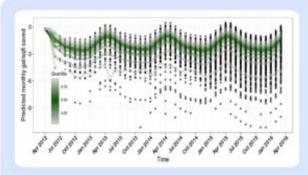
Identify potential sites for green infrastructure



Provide a low cost planning tool for first evaluation



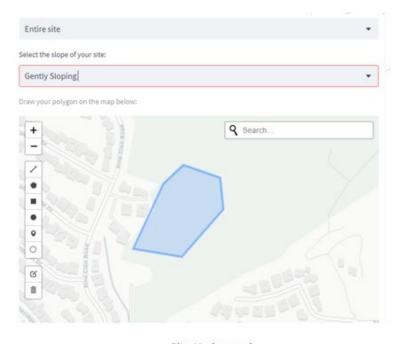
Scaleable region-wide

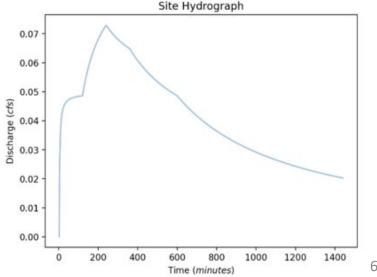


Flexibly add analytics



- Easy to use doesn't require hiring consultant for a feasibility study
- Build on or complement existing tools
- Pre-populated with relevant data
- Open-source so others can contribute and run with the product
- Accelerate identification of high-impact projects





Example: Wavelet Software for Water Efficiency

	REPORTS WATER USE OBJECTIVE SYNC DATA	Data gas identified. Upload Data E		
esidential 🗸	Customers: All Rate codes: Business in Residenc, Church, City Landscape, Commercial, Duplex, Fire, Fourplex, House Meter, Landscape Resident, Land School, Mixto Use, Multi Unit Dwelling, Outside City, Public School, RecLaimed Water, SP Multi Unit Dwell, Single Family, State FREEW,			
ommercial, industrial, 🗸 👻 stitutional		NT, THE LEA		
rigation	5,695 Total All time 20 Rate Codes 25,194 AF 100 %	December 2023 Actual Usage vs Bu	idaet Calculator	ź
	Pleted Customers Date Range Rate codes Total Water Use for Selecced Date Range S Total Water Use for Selecced Date Range	Usage: December 2023	Calculate Budget Scenarios To Simulate Usage IPPE entimation purposes only *Ortaut values populated from customer data Monthly Budget = Indoor Budget Outdoor Budget B15 CCF 2.415 + 6.735 Outdoor Budget = ETAF Irrigable area (sqft) ET sum for mo. 6.735 CCF 0.8 4.397 × 2.42 Indoor Budget = GPCO Household size (ppl.) Days in month 2.415 CCF 47 × 2 × 31	Irigable Area (sqft) Estimator +for estimation purposes unit
() Help	Sis Management	Annual Trends: Budget vs Usage	2021 2021 Years	Per Syner V II CHART E TARK ±



Cost & Schedule

Phase	Description	Cost	Completion Date
1	User research with County-wide water resources professionals	\$31,500	10/31/2025
2	Field Verification of DROPS tool with three select project sites	\$205,000	01/30/2026
3	Develop Version Two Open Source DROPS planning tool (include three iterative agile development sprints)	\$195,000	07/31/2026
4	Write Final Report	\$10,500	10/02/2026
TOTAL		\$442,000	

• Metropolitan Water District of Southern California – Future Supply Action funding of \$109,800 awarded for pilot program

Funding Request

WASC	Year 1	Year 2	Year 3	Year 4	Year 4
CSMB	\$49,111				
LLAR	\$49,111				
LSGR	\$49,111				
NSMB	\$49,111				
RH	\$49,111				
SCR	\$49,111				
SSMB	\$49,111				
ULAR	\$49,111				
USGR	\$49,112				
TOTAL	\$442,000				

Summary of Benefits

- Stormwater Management
 - Identify sites for low impact development (LID) projects
- Water Supply
 - Identify sites for efficient groundwater recharge
- Water Quality and Meeting TMDL Requirements
 - Stormwater captured onsite
- Offset Potable Irrigation Demands
 Personal of personal turf
 - Removal of nonfunctional turf
- DAC Community Benefits
 - Siting projects in DAC areas
 - Improved local water reliability keeps costs of water down
- Increased Collaboration
 - Providing access to a shared pool of data



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Questions?

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