

# Dewatering Roadmap

## The Sustainable City pLAN water goals

The Sustainable City pLAN is a roadmap for a Los Angeles that is environmentally healthy, economically prosperous, and equitable in opportunity for all – now and over the next 20 years. The goals, as stated in the plan, are to:

**REDUCE PER CAPITA WATER USE BY**

**25% BY 2022**

**REDUCE IMPORTED WATER PURCHASES BY**

**50% BY 2025**

**LOCALLY SOURCE OUR WATER SUPPLY BY**

**50% BY 2035**

**Using all sources of available water, and reusing at every opportunity, will help meet these goals.**

## Groundwater Infiltration

**A KEY OPPORTUNITY IS THE ESTIMATED 5 BILLION GALLONS OF GROUNDWATER THAT IS CURRENTLY BEING DEWATERED.**

Groundwater is a nuisance in areas with high water tables because it can infiltrate and compromise buildings' infrastructure. The conventional remedy is to simply dump it into the storm drain or sewer system. This process is called dewatering.

**This groundwater is routinely pumped, unused, into LA's storm drains and sewers; becoming a lost resource to the City.**

- **FOR NEW CONSTRUCTION:** The City's 2015 building code requires developers to consider beneficial reuse of groundwater as a conservation measure and alternative to the common practice of discharging groundwater.
- **FOR EXISTING SITES:** Beneficial reuse can, not only offset other water use at the site, but can reduce or eliminate costs associated with storm drain and sewer permitting and monitoring.



### CASE STUDY



**CEDARS-SINAI**

- Pumps ground water to a reverse osmosis treatment system
- Utilizes RO water for cooling tower feed
- Saves 28 million gallons of water per year as a result
- Received incentives from LADWP and MWD totaling \$326,000

## Areas with High Water Tables

There are numerous areas with high groundwater tables throughout the City. Major areas include the mid-city areas from the north in West Hollywood down to Fairfax, Beverly Grove, Century City, Westwood and West LA. There are additional smaller areas, as well.



## REBATES & INCENTIVES

Dewatering projects are eligible for incentives from both Los Angeles Department of Water and Power (LADWP) and Metropolitan Water District of Southern California (MWD).



LADWP offers incentives and technical assistance for activities related to dewatering.

**\$1.75 PER 1,000 GALLONS OF WATER SAVED**

The LADWP Technical Assistance Program (TAP) offers \$1.75 per 1,000 gallons of water saved for the first 4 years for a 10-year project life up to \$250,000.

The incentive covers costs for project design, equipment, installation and implementation. Eligibility is evaluated on a case-by-case basis. All projects must be pre-approved before construction begins.

**LEARN MORE AT:**

[www.ladwp.com/TAP](http://www.ladwp.com/TAP)



THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

**\$0.60 PER 1,000 GALLONS OF WATER SAVED**

MWD offers \$0.60 per 1,000 gallons of water saved for up to 10 years or 50% of the project cost, whichever is less.

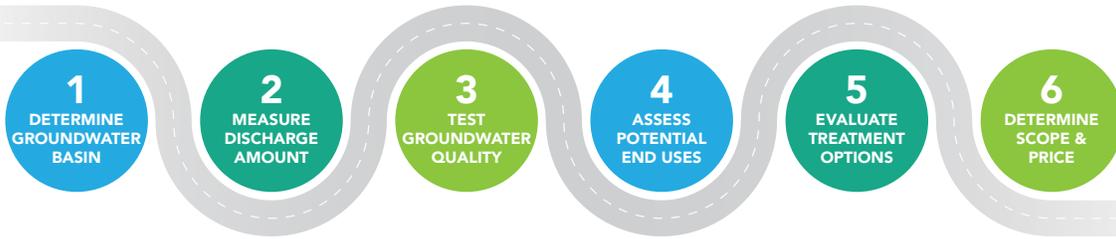
Projects must save (offset) at least 1 Million gallons per year to qualify.

**APPLY FOR INCENTIVES AT:**

[socialwatersmart.com](http://socialwatersmart.com)

**Water Savings Incentive Program**





## The Onsite Groundwater Reclamation Roadmap

The Groundwater Reuse Roadmap lays out a step-by-step methodology to assess groundwater reuse opportunities for Los Angeles properties with active dewatering.

### STEPS TO ASSESSING POTENTIAL FOR ONSITE GROUNDWATER RECLAMATION AT YOUR PROPERTY

#### 1 DETERMINE YOUR GROUNDWATER BASIN

To determine your building's groundwater basin and oversight authority go to:



<https://gis.water.ca.gov/app/bbat>

#### 2 MEASURE DISCHARGE AMOUNT

Evaluate the amount of water being discharged by reviewing your discharge water meter records. If there isn't a meter for discharge water, you should install one. Twelve months of usage data will help to identify any seasonal variations.

**If water discharge at your property averages over 10,000 gallons per day, you may have a groundwater reuse opportunity.**

#### 3 TEST THE WATER QUALITY OF THE GROUNDWATER

You will need to gather the NPDES permit quality reports or conduct a general water analysis to understand the water quality and evaluate your water treatment options. The level of treatment required will vary based on the desired end use – for example, it requires a higher degree of treatment to use groundwater for cooling than for irrigation.

#### 4 ASSESS POTENTIAL END USES

Next you will need to determine the type, and amount, of potential end uses available for offsetting use. Non-potable end uses include:



Irrigation



Car washes



Cooling



Sanitation



Fountains

#### 5 EVALUATE TREATMENT OPTIONS

The type of treatment will be dependent on the chemistry of your groundwater, the end usage, and your water savings goals and ROI thresholds. (see table below for treatment options)

TREATMENT TYPE	ESTIMATED COSTS	PROJECTED ROI	CONSIDERATIONS
<b>Traditional Chemical Water Treatment</b>	\$10,000 - \$20,000	1 – 2 years	GW quality may be hard and require acid in water treatment to run high cycles in the cooling tower.
<b>Water Softening</b>	\$20,000 - \$50,000	1 – 3 years	Requires additional on-site space for softeners and resources to monitor system and add salt. Uses additional water to flush brine.
<b>Nano Filtration or Reverse Osmosis</b>	\$50,000 - \$100,000	2 – 4 years	Pumping pressure needs to be high resulting in higher electricity use. Membranes may scale and will require feeding chemical anti-scalants or soften water before filtration.

#### 6 DETERMINE SCOPE AND PROJECT PRICE

Work with your existing water treatment vendor or water re-use vendor to determine scope and price. Considerations include:

- Sizing, matching to end use volume & purity requirement
- Storage requirements
- Placement, space constraints
- Installation / piping considerations
- Remaining discharge
- Ongoing monitoring & maintenance
- Permitting / code considerations



#### CASE STUDY: Rising Realty – 1200 W 7th Street

- Operates through existing standard water treatment program
- Utilizes for cooling tower feed
- Less than a 3-month payback
- Over 1 Millions gallons saved

