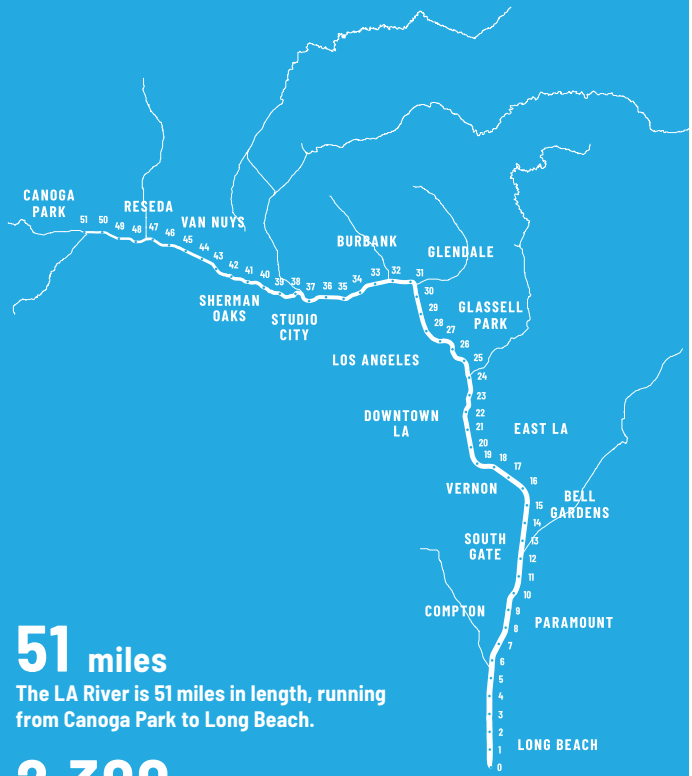
LA RIVER MASTER PLAN

FLOOD, WATER SUPPLY, AND WATER QUALITY

POCKET SUMMARY



51 miles

The LA River is 51 miles in length, running from Canoga Park to Long Beach.

2,300 acres

There are 2,300 acres of primarily publicly-owned land within the right-of-way, including the river channel.

1,000,000 people

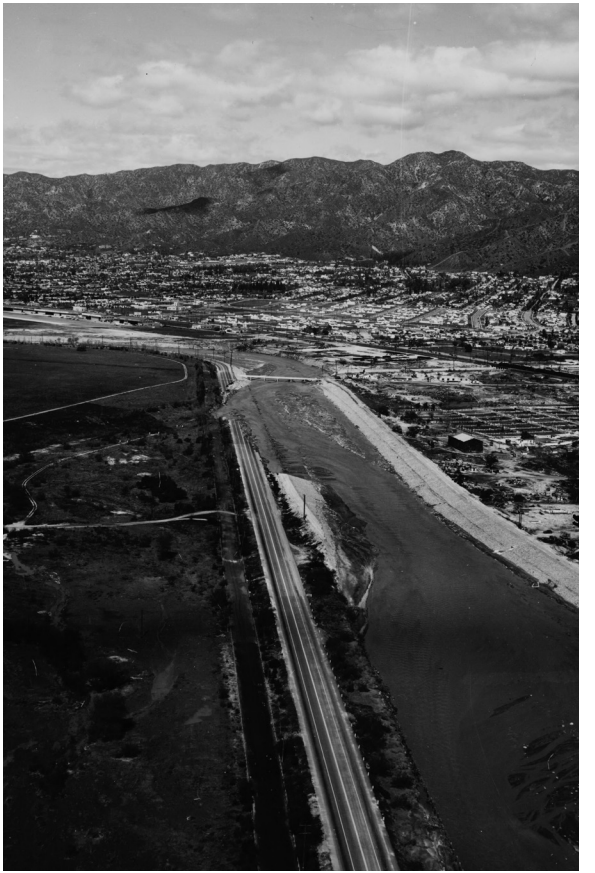
There are nearly one million people who live within one mile of the LA River.

VISION

The Reimagined River

The iconic LA River flows through a 51-mile connected public open space that is seamlessly woven together with neighboring communities. It is an integral part of daily life in LA County—a place to enjoy the outdoors and to get across town, a place to appreciate the serene and to bring all people together, a place to celebrate a thriving urban habitat and understand infrastructure, a place to learn from the past and to shape the future.

The LA River Watershed is 834 square miles and drains areas of steep terrain over 7,000 feet in elevation, meaning it is prone to quickly rising water levels. Rainfall in Southern California varies annually, often with extreme fluctuation. Climate change research indicates more unpredictable weather patterns, including more intensive storm events and more extreme drought periods.



1938 flooding damage at the bend in the LA River near what is now the Ferraro Fields, river mile 30. Source: University of Southern California. Libraries & California Historical Society , View of the flooded Los Angeles River, showing the Griffith Park airport, 1938

River Channelization at the Rio Hondo Confluence, river mile 12.
Source: Los Angeles County Department of Public Works, LA River and Rio Hondo, 1932, Accessed from https://lacreekfreak.wordpress.com/2012/04/02/la-river-and-rio-hondo-1932

Intensive development encroached on the river's floodplain in the 19th and 20th centuries, making large storms increasingly detrimental to safety and property. The river was channelized following the1938 and 1980 floods to manage flood risk. However, there are still areas along the river with a high risk of flooding, for example in the Glendale Narrows.

The LA River presents an opportunity to develop and diversify local water resources through capture of wet and dry weather flows and recharging local groundwater basins for extraction at a future time.

Large spreading grounds, like this one in Pacoima, significantly contribute to the region's local water supply. Source: LA County Public Works, 2018.

Public Engagement Feedback

48%

OF SURVEY AND COMMUNITY MEETING PARTICIPANTS SAID THAT **SUPPLEMENTING WATER SUPPLY WAS THE SECOND MOST IMPORTANT ISSUE RELATED TO THE LA RIVER.**

COMMUNITY PARTICIPANTS TO THE ENGAGEMENT PROCESS **REPORTED SEEING VARIOUS WATER LEVELS WITHIN THE RIVER CHANNEL.**

6% SEEING IT OVER-TOPPING ITS BANKS/LEVEES

23% SEEING IT UP TO THE TOP OF ITS BANKS/LEVEES

26% MORE THAN HALFWAY FULL

22% LESS THAN HALFWAY

22% ONLY WITHIN THE LOW FLOW CHANNEL

Goals About Water

Reduce flood risk and improve resiliency.

Improve local water supply reliability.

Promote healthy, safe, clean water.

Additional Goals

SEE THE FULL PLAN TO LEARN MORE

Provide equitable, inclusive, and safe parks, open space, and trails.

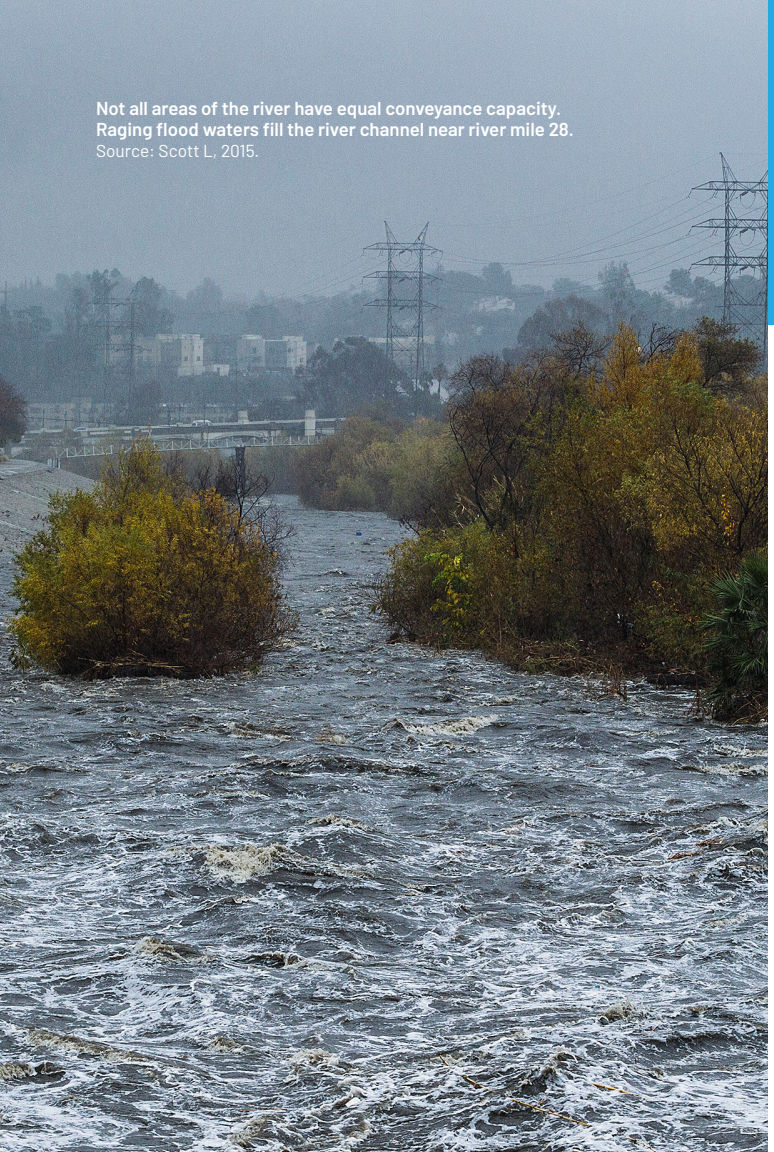
Support healthy, connected ecosystems.

Enhance opportunities for equitable access to the river corridor.

Embrace and enhance opportunities for local arts and culture.

Address potential adverse impacts to housing affordability and people experiencing homelessness.

Foster opportunities for continued community engagement, development, and education.



Not all areas of the river have equal conveyance capacity. Raging flood waters fill the river channel near river mile 28.
Source: Scott L, 2015.

GOAL

Reduce flood risk and improve resiliency

The LA River did not always look like it does today. In the mid 1800s, the LA River was a braided stream that, during wet weather events, spread out over vast amounts of flat land. As agricultural diversions, transportation infrastructure, and cities grew around the river, this vast floodplain was encroached upon by buildings and roads. After increasingly devastating floods, it was engineered into a concrete channel with basins, dams, levees, and floodwalls to move stormwater as quickly as possible to the Pacific Ocean to reduce flood risk to these communities. Not all areas of the river have equal conveyance capacity. **In some areas, low channel capacity makes the probability of flooding of the river adjacent communities in any given year as high as 25%.** With the threat of a changing climate, the importance of reducing flood risk increases as the frequency and intensity of extreme storms change.

LA COUNTY FLOOD RISK REDUCTION NEED

Need Criteria:

LA River Channel Capacity
Floodplains
Sea Level Rise
Critical Infrastructure and Facilities Density

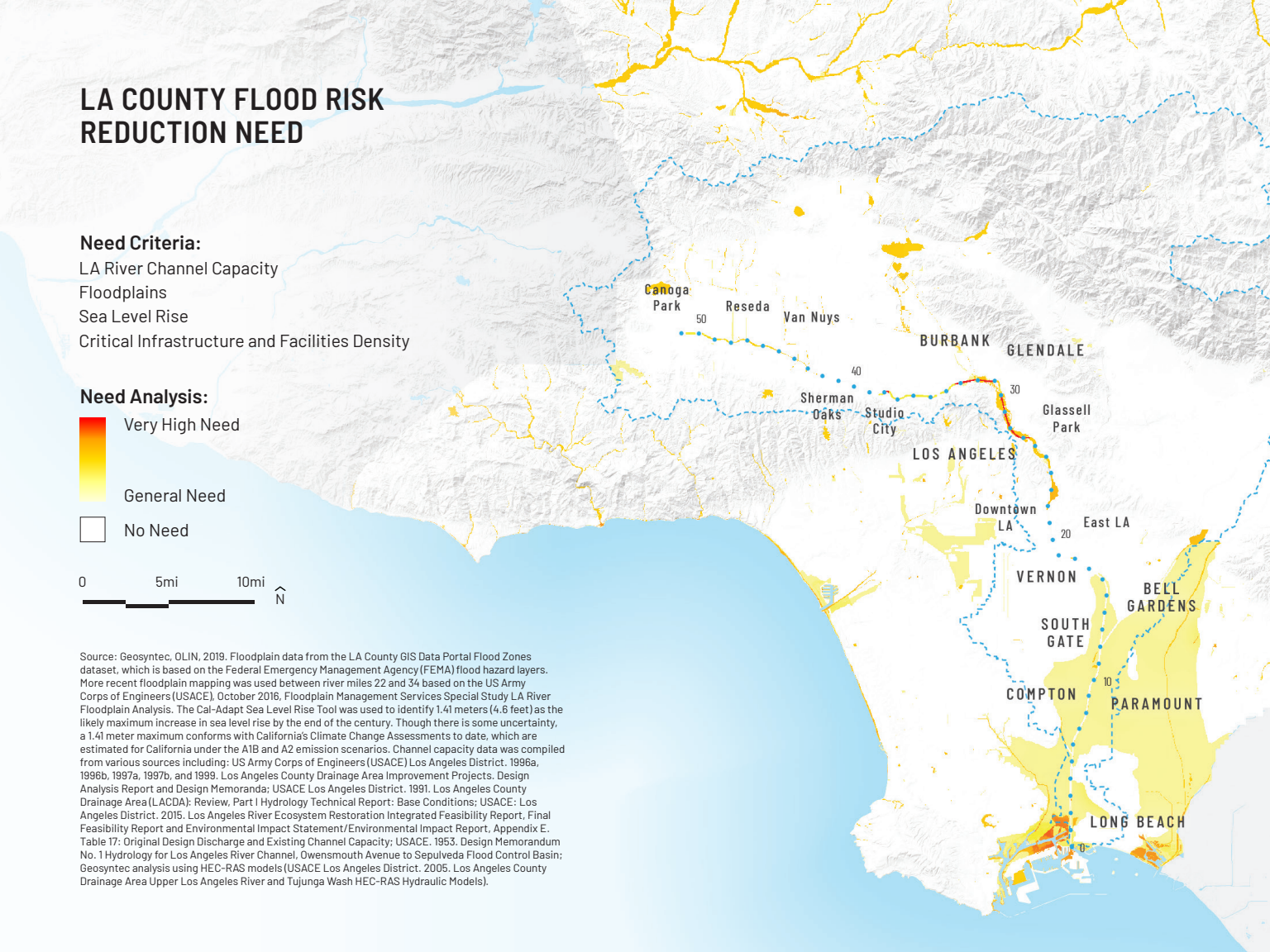
Need Analysis:

Very High Need

General Need

No Need

0 5mi 10mi N



Source: Geosyntec, OLIN, 2019. Floodplain data from the LA County GIS Data Portal Flood Zones dataset, which is based on the Federal Emergency Management Agency (FEMA) flood hazard layers. More recent floodplain mapping was used between river miles 22 and 34 based on the US Army Corps of Engineers (USACE), October 2016, Floodplain Management Services Special Study LA River Floodplain Analysis. The Cal-Adapt Sea Level Rise Tool was used to identify 1.41 meters (4.6 feet) as the likely maximum increase in sea level rise by the end of the century. Though there is some uncertainty, a 1.41 meter maximum conforms with California's Climate Change Assessments to date, which are estimated for California under the A1B and A2 emission scenarios. Channel capacity data was compiled from various sources including: US Army Corps of Engineers (USACE) Los Angeles District. 1996a, 1996b, 1997a, 1997b, and 1999. Los Angeles County Drainage Area Improvement Projects. Design Analysis Report and Design Memoranda; USACE Los Angeles District. 1991. Los Angeles County Drainage Area (LACDA): Review, Part I Hydrology Technical Report: Base Conditions; USACE: Los Angeles District. 2015. Los Angeles River Ecosystem Restoration Integrated Feasibility Report, Final Feasibility Report and Environmental Impact Statement/Environmental Impact Report, Appendix E. Table 17: Original Design Discharge and Existing Channel Capacity; USACE. 1953. Design Memorandum No. 1 Hydrology for Los Angeles River Channel, Owensmouth Avenue to Sepulveda Flood Control Basin; Geosyntec analysis using HEC-RAS models (USACE Los Angeles District. 2005. Los Angeles County Drainage Area Upper Los Angeles River and Tujunga Wash HEC-RAS Hydraulic Models).

Sepulveda Basin is an important asset to reduce peak flows on the LA River. Source: OLIN, 2019.

Flood Risk Reduction Need

Flood risk is related to both the capacity of the LA River channel to convey water in large storms and the area outside of the channel impacted by flooding.

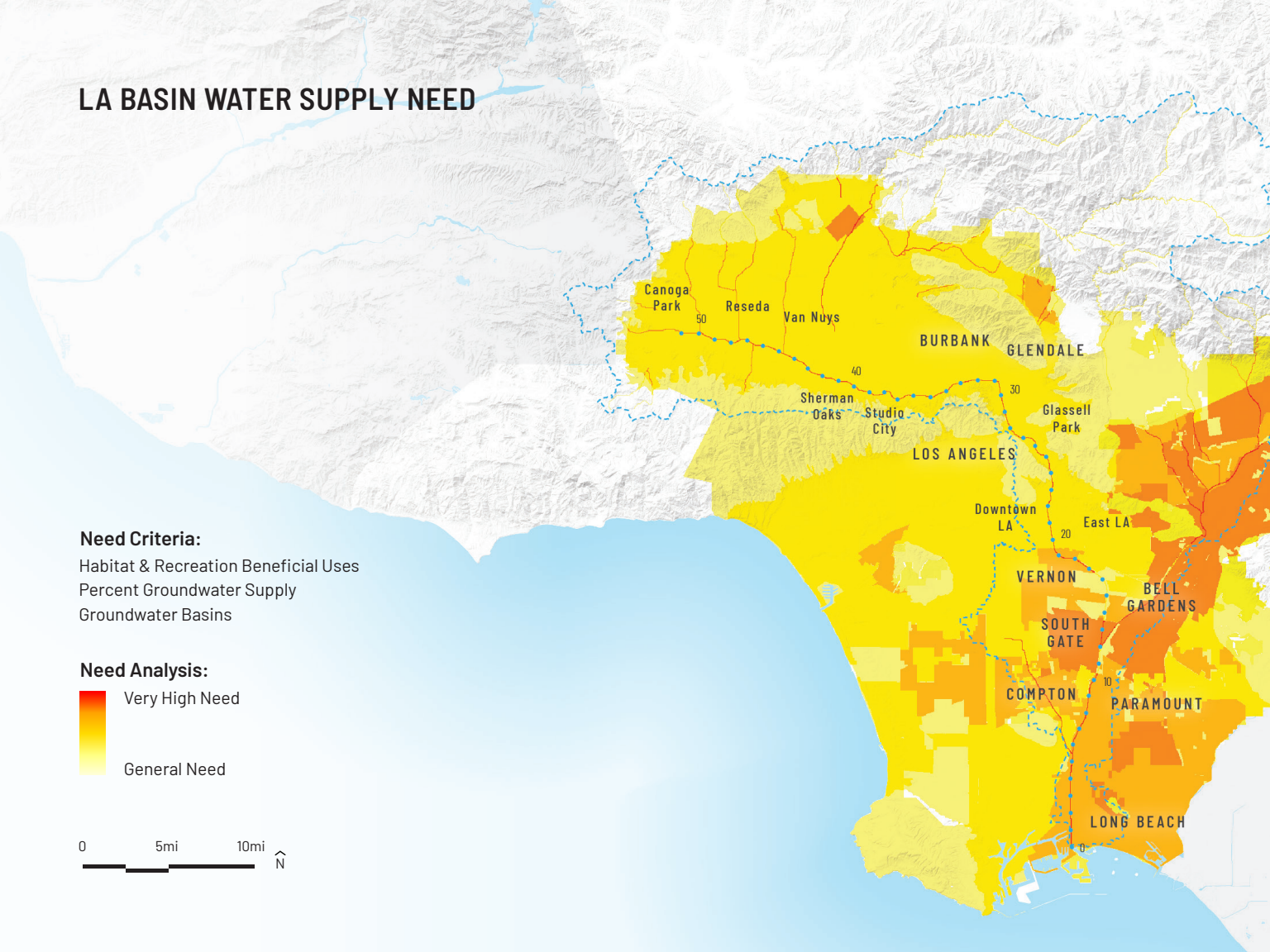
The need for local water supply depends greatly on the end use and access to other sources of water. Shown here is the Sepulveda Dam at river mile 43.1. Source: OLIN, 2018.

GOAL

Improve local water supply reliability.

More than half of the region's water supply is imported from the Colorado River, the Sacramento-San Joaquin River Delta, and the Eastern Sierras. In the Los Angeles Basin, 57% of water is imported, 34% comes from groundwater, and 9% is sourced from recycled water, water conservation measures, and local surface water diversions. **In community meetings and surveys, supplementing water supply was the second most important issue related to the LA River for participants, identified by 48% of participants.** Increasing population, regulatory requirements, natural disasters, and demands on the water system accentuate decreasing reliability in the sources of imported water supplies that is caused by cyclical droughts and climate change. Dry weather and wet weather flows in the LA River present opportunities to develop and diversify local water resources to reduce dependence on imported water and increase the reliability and resiliency of the region's water supply.

LA BASIN WATER SUPPLY NEED



Need Criteria:

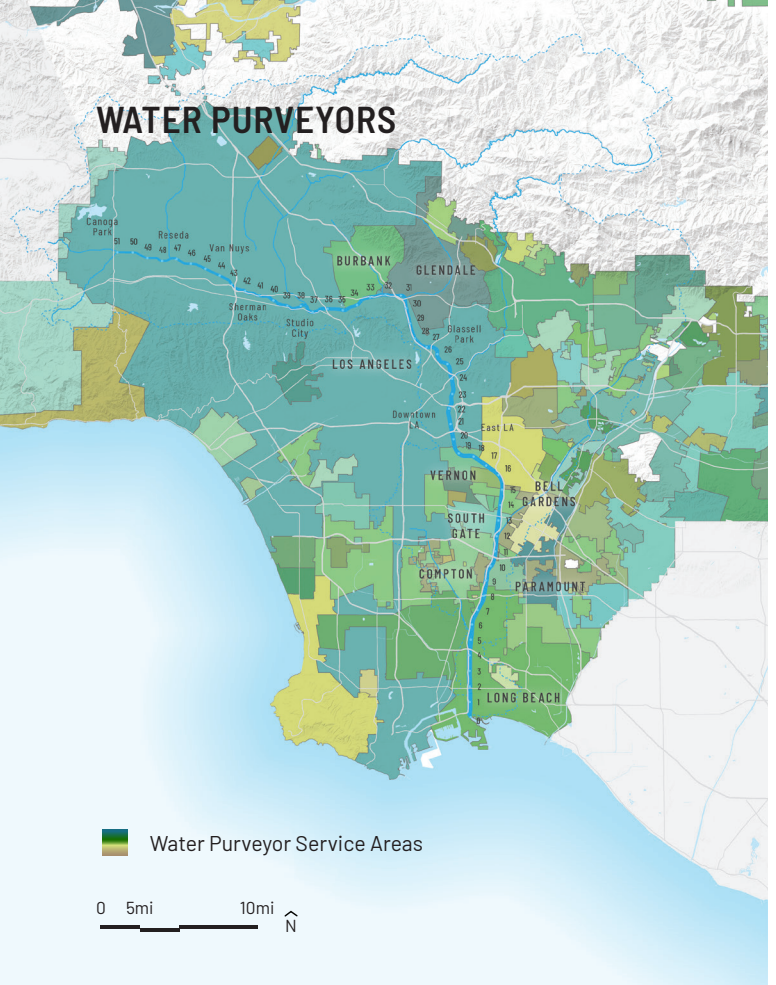
Habitat & Recreation Beneficial Uses
Percent Groundwater Supply
Groundwater Basins

Need Analysis:

Very High Need

General Need

0 5mi 10mi N



Water Purveyors. There are many different water purveyors within the LA Basin. Source: LA County GIS Data Portal, Water Purveyor Service Areas, 2009.

57%

OF THE WATER SUPPLIED IN THE LA BASIN IS IMPORTED FROM NON-LOCAL PLACES

Water Supply Need

Water in the LA River provides important uses for recreation and habitat, but also plays a role in recharging regional groundwater basins and reducing the demand for imported water.

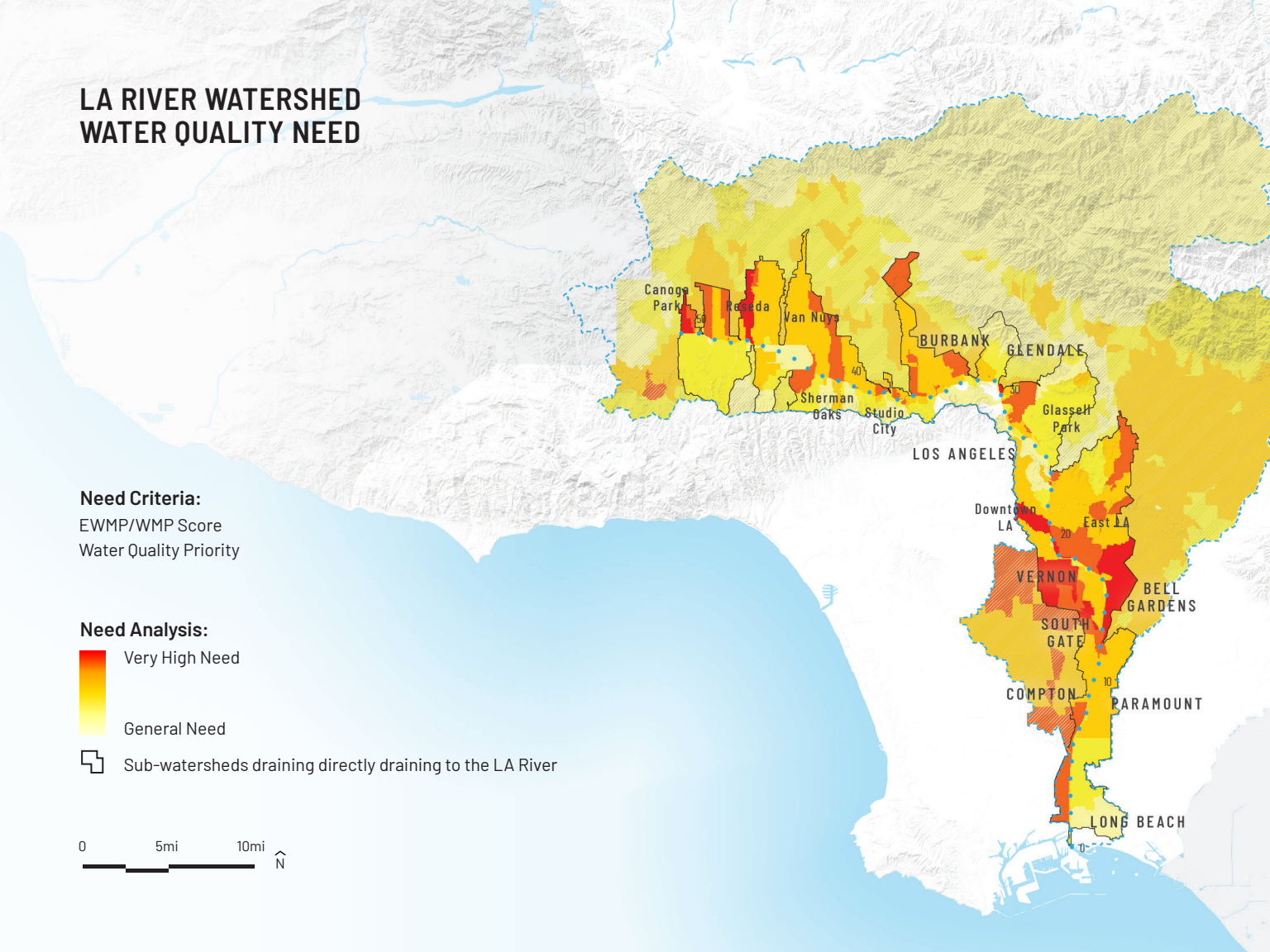
The mouth of the LA River in Long Beach at river mile 0.
Source: OLIN, 2018.

GOAL

Promote healthy, safe, clean water.

The LA River is a water body with multiple beneficial uses, impairments, and regulated pollutants. **While over 800 water quality improvement projects are planned, in development, or have been completed within the river's watershed, additional efforts are needed to meet established water quality targets.** In 2018, the County passed Measure W, the Safe Clean Water Program, to provide a new source of funding to help implement local and regional water quality projects that also help address water supply, community investments, and nature based solutions. Since implementation, over $250 million has been allocated to 30 Regional Program projects throughout the LA River watershed. Of the $250 million, $42 million has gone towards seven Infrastructure Program projects in the Lower Los Angeles River watershed and $214 million has gone towards 23 Infrastructure Program projects in the Upper Los Angeles River watershed.

LA RIVER WATERSHED WATER QUALITY NEED



Need Criteria:

EWMP/WMP Score

Water Quality Priority

Need Analysis:

Very High Need

General Need

Sub-watersheds draining directly draining to the LA River

0 5mi 10mi N

Events, such as this cleanup event at Haskell Creek in Sepulveda Basin, can increase the public's awareness to river health and may aid in improving water quality. Source: OLIN, 2019.

Water Quality Need

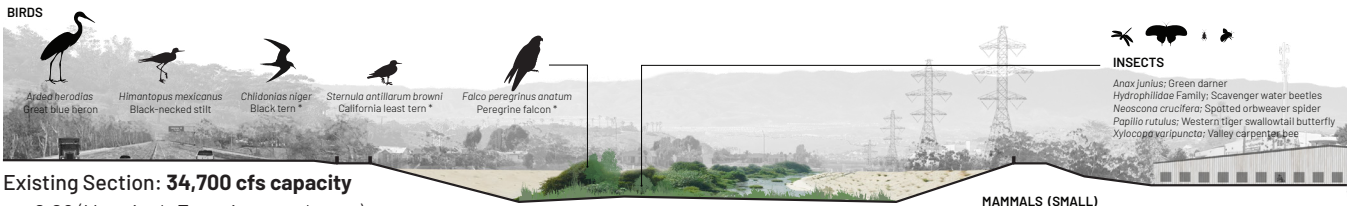
Water picks up pollutants and absorbs heat as it drains more impervious paved areas on its way to the LA River. Pollutants impair water quality, which negatively impacts the water's beneficial uses.

Example Site-Based Project

Ferraro Fields Side Channel

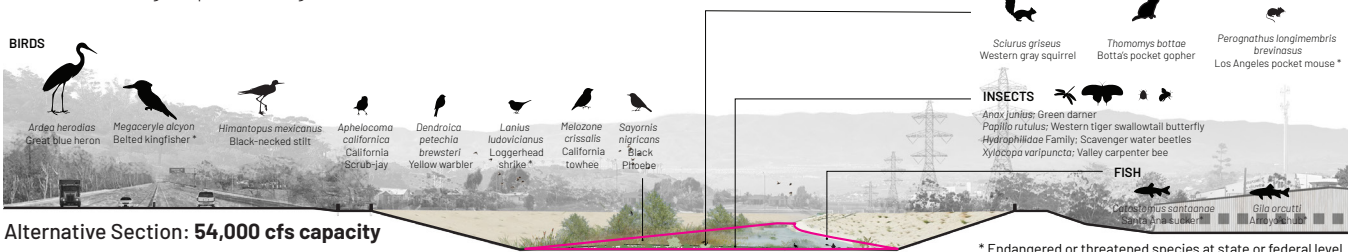
The Master Plan includes site-based projects, like the side channel at Ferraro Fields, which features components from the Master Plan kit of parts that reduce flood risk and increase biodiversity through native planting.

Example System Based Project:
Glendale Narrows Channel Rehabilitation



Existing Section: **34,700 cfs capacity**

n = 0.06 (Manning's Equation roughness)



Alternative Section: **54,000 cfs capacity**

n = 0.045 (Manning's Equation roughness)

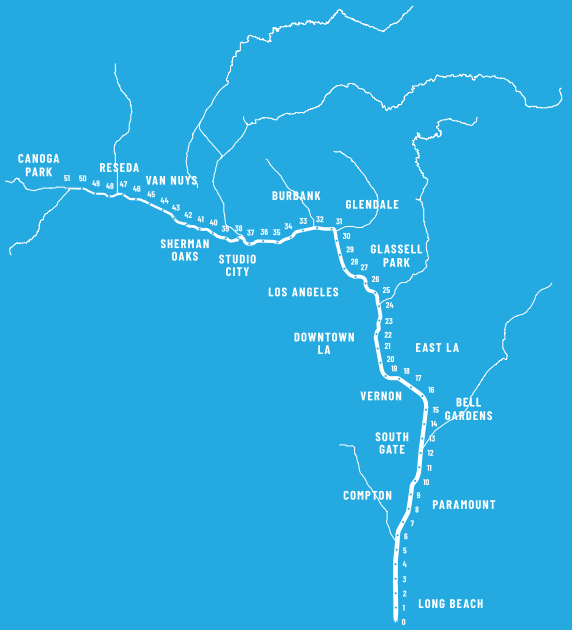
* Endangered or threatened species at state or federal level

Plant Communities

- Alluvial Fan Sage Scrub
- Southern Cottonwood-Willow Riparian Forest
- Perennial Freshwater Emergent Wetland

A channel rehabilitation program could reduce flood risk in several stretches along the Glendale Narrows. The ideal resulting river cross section would include native grasses, species such as willows that "lay down" during flood events, and native riparian trees along with a reduction of sediment mounding on the channel bottom.

Considering that smaller and larger storm events will continue, the implementation of a long-term adaptive management approach is important. Future storm events will continue to shape and contour the channel. Maintenance will help support a healthy viable ecosystem that can co-exist with decreased flood risk to the community.


CANOGA PARK
RESEDA
VAN NUYS
BURBANK
GLENDALE
SHERMAN OAKS
STUDIO CITY
GLASSELL PARK
LOS ANGELES
DOWNTOWN LA
EAST LA
VERNON
BELL GARDENS
SOUTH GATE
COMPTON
PARAMOUNT
LONG BEACH

For more info, visit
www.LARiverMasterPlan.org

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