

LOS ANGELES RIVER

MASTER PLAN UPDATE

Steering Committee Meeting #2



27 June 2018



WELCOME

Source: USCAE, Los Angeles District, G-514 - Kelly Pipe Co Mission Road - 9-5-1930, <http://cespl.maps.arcgis.com/apps/MapSeries/index.html?appid=e15694dbf7c54f8c96285a0e74039e69>

The background image is a historical aerial photograph of the Los Angeles River valley, showing a patchwork of agricultural fields and the winding river, with mountains visible in the distance. The entire image is overlaid with a semi-transparent blue filter.

MEETING PURPOSE AND AGENDA

Source: University of Southern California. Libraries & California Historical Society , Farmland and the Los Angeles River looking north from Elysian Park toward Mount Washington, 1895-1915

PURPOSE OF TODAY'S MEETING

1

**INFORM SC TO HELP
SPREAD THE WORD
ON ENGAGEMENT**

2

**GET FEEDBACK ON
DRAFT VISION
AND GOALS**

3

**PROVIDE A BASE
UNDERSTANDING OF
THE RIVER CORRIDOR**

4


**START DISCUSSION ON
IDENTIFYING/FILLING
INFORMATION GAPS**

Discussions will be continued at Subcommittee meetings

MEETING AGENDA

WELCOME	PUBLIC ENGAGEMENT UPDATE	DRAFT VISION AND GOALS	EXISTING CONDITIONS INVENTORY & ANALYSIS	PUBLIC COMMENT	WRAP UP
<ul style="list-style-type: none">• Welcome• Meeting Purpose and Agenda• Roundtable Introductions• Protocols Updates	<ul style="list-style-type: none">• Riverstory• Updates and Upcoming Dates for Activities• Discussion/Q&A	<ul style="list-style-type: none">• Presentation• Discussion/Q&A	<ul style="list-style-type: none">• Presentation• Discussion/Q&A	<ul style="list-style-type: none">• Verbal Comments• Comment Cards• Email Comments Anytime to LARiver@dpw.lacounty.gov	<ul style="list-style-type: none">• Important Upcoming Dates• September Agenda Overview• Community Outreach Activities• Project Outlook

INPUT, QUESTIONS, IDEAS?
Contact Carolina Hernandez at (626) 458-4322
or LARiver@dpw.lacounty.gov

An aerial photograph of Los Angeles, California, from 1927. The image shows a dense urban area with numerous industrial buildings and warehouses. A river, likely the Los Angeles River, flows through the lower right portion of the image. A bridge, possibly the Harbor Freeway Bridge, spans the river. The overall tone of the image is a dark teal or cyan, giving it a historical and somewhat somber appearance.


PUBLIC ENGAGEMENT UPDATE

Source: USCAE, Los Angeles District, E-1517 - NW of 7th St - 9-7-1927, <http://cespl.maps.arcgis.com/apps/MapSeries/index.html?appid=e15694dbf7c54f8c96285a0e74039e69>







The image shows the exterior of Canoga Park High School. A large, leafy tree stands in the foreground, partially obscuring the building. A sign on the building reads "Canoga Park Health Improvement Zone Nutrition and Fitness Initiative Canoga Park High School". A fence runs across the middle ground, and a sign on it says "Canoga High". To the right, there are signs that say "PROHIBIDO EL PASO", "NO TRESPASSING", and "EXCELLENCE". The school's name is painted in large green letters on a white wall in the foreground.

First Public Stakeholder Meeting: Wednesday, July 25th, 6-8 pm Canoga Park High School

Source: Wikimedia Commons, Martin Blythe, Canoga Park High School January 2017,



LA RIVER MASTER PLAN COMMUNITY MEETING

CANOGA PARK



JOIN US FOR A MEETING WHERE YOU'LL:

- Share your thoughts on the future of the LA River
- Hear the vision of the LA River Master Plan
- Receive updates on river-related issues

Date: Wednesday, July 25, 2018
Time: 6 - 8 pm
Location: Canoga Park High School Cafeteria
6850 Topanga Canyon Blvd., Canoga Park, CA 91303

This event is free and open to the public. Food will be provided, and parking is free.

For information, visit LARiverMasterPlan.Org for email updates and event recaps.

LARiverMasterPlan.org/communitymeeting



Join
Assemblymember
Anthony Rendon
for the first

SELA Arts FESTIVAL at the LA RIVER

CREATE. COMMUNITY. CULTURE.



- Featuring:
- SELA Artists and Vendors
 - L.A. River Organizations
 - Molcajete Domingero
 - Food Trucks
 - Family Fun Activities
 - Theatre
 - Dance
 - Music and more!
 - Performances Curated by Culture Clash

#SELARiverFestival
#SELAArts
#LARiver

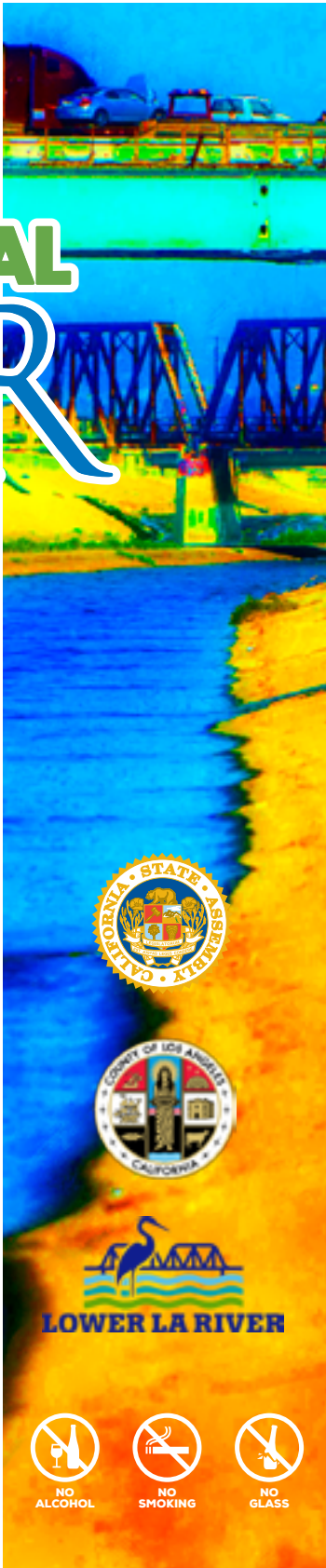
CELEBRATE THE ARTS
AND CULTURE OF THE SOUTHEAST
WITH LOCAL ARTISTS,
L.A. RIVER STAKEHOLDERS,
AND OUR COMMUNITY.

JULY 21, 2018
5:00PM TO 10:00PM

IN THE L.A. RIVER CHANNEL
Bike, walk, or drive to the site.
Parking at Hollydale Regional Park
5400 Monroe Ave, South Gate, CA 90280

For more information call:
(562) 529-3250

R.S.V.P. to caucus.asmdc.org/arts



VISION AND GOALS

Source: USCAE, Los Angeles District, EHyperionAve1928, <http://cespl.maps.arcgis.com/apps/MapSeries/index.html?appid=e15694dbf7c54f8c96285a0e74039e69>

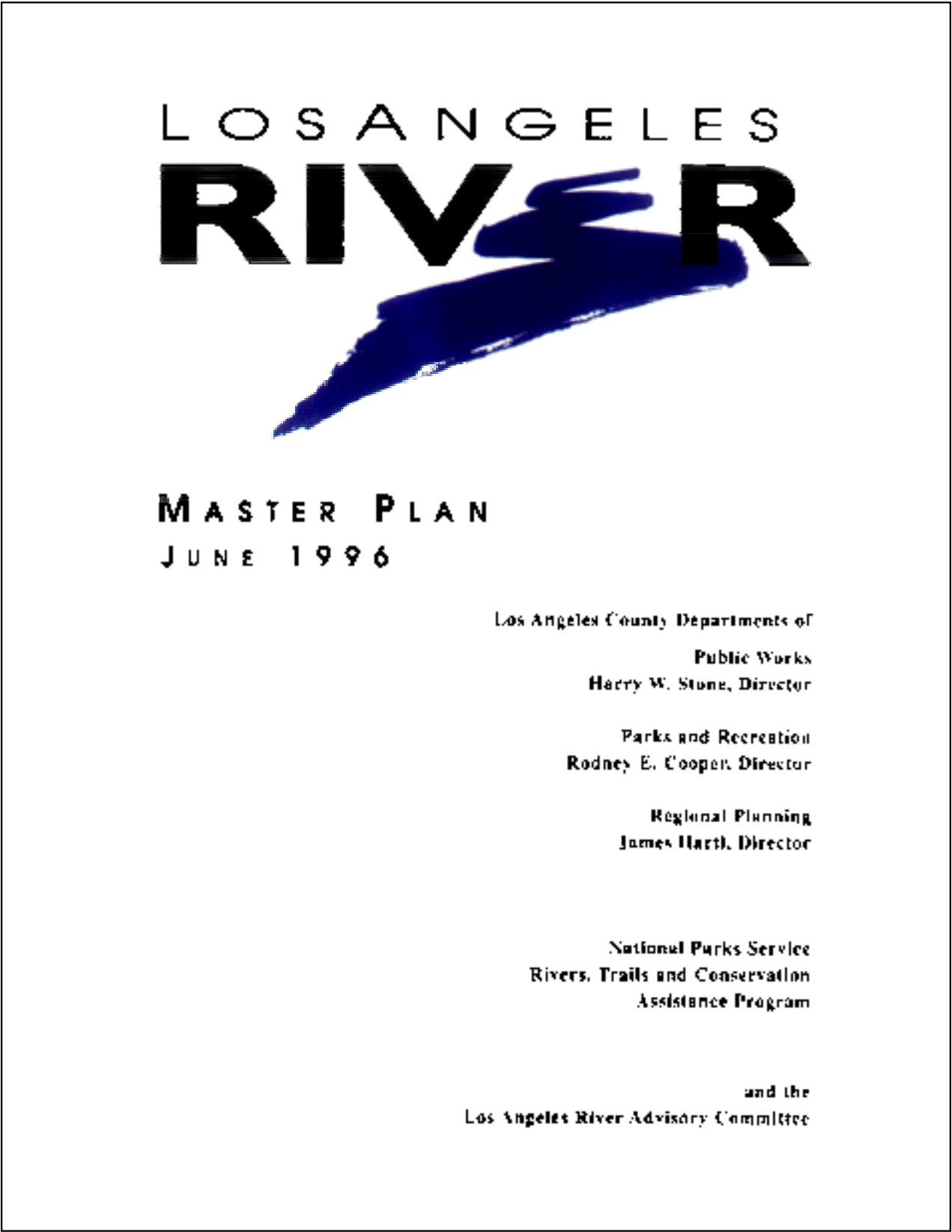
PREVIOUS PLANNING

1996 LOS ANGELES COUNTY LA RIVER MASTER PLAN

“The Los Angeles River Master Plan provides for the optimization and enhancement of aesthetic, recreational, flood control and environmental values by creating a community resource, enriching the quality of life for residents, and recognizing the River’s primary purpose for flood control.”

—Mission Statement from the 1996 Master Plan

Source: <http://ladpw.org/wmd/watershed/la/larmp/>



1996 MASTER PLAN GOALS

- **Ensure flood control and public safety needs are met.**
- **Improve the appearance of the river and the pride of local communities in it.**
- **Promote the river as an economic asset to the surrounding communities.**
- **Preserve, enhance and restore environmental resources in and along the river.**
- **Consider stormwater management alternatives.**
- **Ensure public involvement and coordinate Master Plan development and implementation among jurisdictions.**
- **Provide a safe environment and a variety of recreational opportunities along the river.**
- **Ensure safe access to an compatibility between the river and other activity centers.**



DRAFT VISION

LOS ANGELES RIVER MASTER PLAN UPDATE 2020

**A reimagined River to
connect and serve the
diverse communities
of LA County.**

DRAFT MISSION STATEMENT

LOS ANGELES RIVER MASTER PLAN UPDATE 2020

The Los Angeles River Master Plan Update builds on over two decades of planning efforts to create a 51-mile connective corridor of parks and trails, cultural resources, recreation opportunities, and environmental systems that enrich the quality of life and improve the health of residents, while providing flood risk management.

DRAFT GOALS

1. Reinforce local culture and community.

Source: Clockshop, The Bowtie Project, The LA River Campout, 2017, <https://clockshop.org/wp-content/uploads/2017/12/LAriver-featured.jpg>

DRAFT GOALS

2. Provide a protective and resilient flood management infrastructure.

Source: Flickr user Scott L, 1_E1C7392, 2015, <https://www.flickr.com/photos/41802269@N03/23904606860/>

DRAFT GOALS

3. Identify and address potential adverse impacts to housing affordability.

Source: Flickr user Ken Lund, Los Angeles River, Los Angeles, California, 2015, <https://www.flickr.com/photos/kenlund/21400201059>

DRAFT GOALS

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

Source: The Source, And the existing segment from Griffith Park to DTLA, just shy of its current terminus near the Riverside Drive bridge, http://s3-us-west-2.amazonaws.com/media.thesource.metro.net/wp-content/uploads/2017/11/06135450/34157493341_06f5c36d9d_o-1.jpg

DRAFT GOALS

**5. Support healthy,
connected ecosystems.**

DRAFT GOALS

6. Improve local water supply reliability.

Source: OLIN

Q & A AND DISCUSSION

Source: USCAE, Los Angeles District, EHyperionAve1928, <http://cespl.maps.arcgis.com/apps/MapSeries/index.html?appid=e15694dbf7c54f8c96285a0e74039e69>

INVENTORY AND ANALYSIS

Source: USCAE, Los Angeles District, Los_Angeles_River_at_Griffith_Park,_ca.1898-1910_(CHS-2033), <http://cespl.maps.arcgis.com/apps/MapSeries/index.html?appid=e15694dbf7c54f8c96285a0e74039e69>

KNOWN PROJECTS INVENTORY

More than
1500
PROJECTS MAPPED

400	Stormwater Conveyance	13	Park Expansion/Enhancement
275	Detention Basin	11	Habitat/Ecosystem Restoration
140	High Speed Transit	10	Wetland
127	Stormwater Retrofit	10	Dam
91	Green Street	6	Climate Resiliency Retrofit
67	Park	4	Bioswale
66	Regional Subsurface BMP	4	Median Strip Retrofit
49	Urban Runoff Diversion to Sanitary Sewer	3	Freeway or Road Widening
37	Trails/Active Transport	3	Rubber Dam
36	Water Distribution System	3	Catch Basin Screen
33	Dam/Basin Restoration/Improvement	3	Invasives/Non-Native Vegetation Removal
33	Spreading Ground/Basin	2	Biofilter
26	Stream/Creek Restoration	2	Wellfield Improvement
26	Education/Outreach	2	Urban Agriculture
19	Access Improvement	2	Nature Preservation
19	Bridge/Crossing	1	Water Wheel
16	Water Treatment Facility/Process	1	SWCP

**THERE ARE 17 CITIES,
23 CITY OF LA
NEIGHBORHOODS, AND
6 UNINCORPORATED AREAS
WITHIN ONE MILE OF THE
LA RIVER**

Source: Los Angeles County GIS Data Portal, City Boundaries and Annexations, 2016 & LA City Communities and Planning Areas, 2014

5 mi.

THE LA RIVER IS 51 MILES LONG



















Source: OLIN

THERE ARE 13 DISTINCT DESIGN REACHES

Classification:

- | | |
|--|--|
|  M, Mile 47.4 to 51.0 |  F, Mile 24.5 to 30.3 |
|  L, Mile 45.6 to 47.2 |  E, Mile 19.8 to 23.9 |
|  K, Mile 43.4 to 45.4 |  D, Mile 18.9 to 19.7 |
|  J, Mile 37.8 to 42.7 |  C, Mile 12.8 to 18.8 |
|  I, Mile 33.9 to 37.5 |  B, Mile 3.0 to 11.9 |
|  H, Mile 32.0 to 33.8 |  A, Mile 0.0 to 2.8 |
|  G, Mile 31.1 to 31.8 |  Transition |

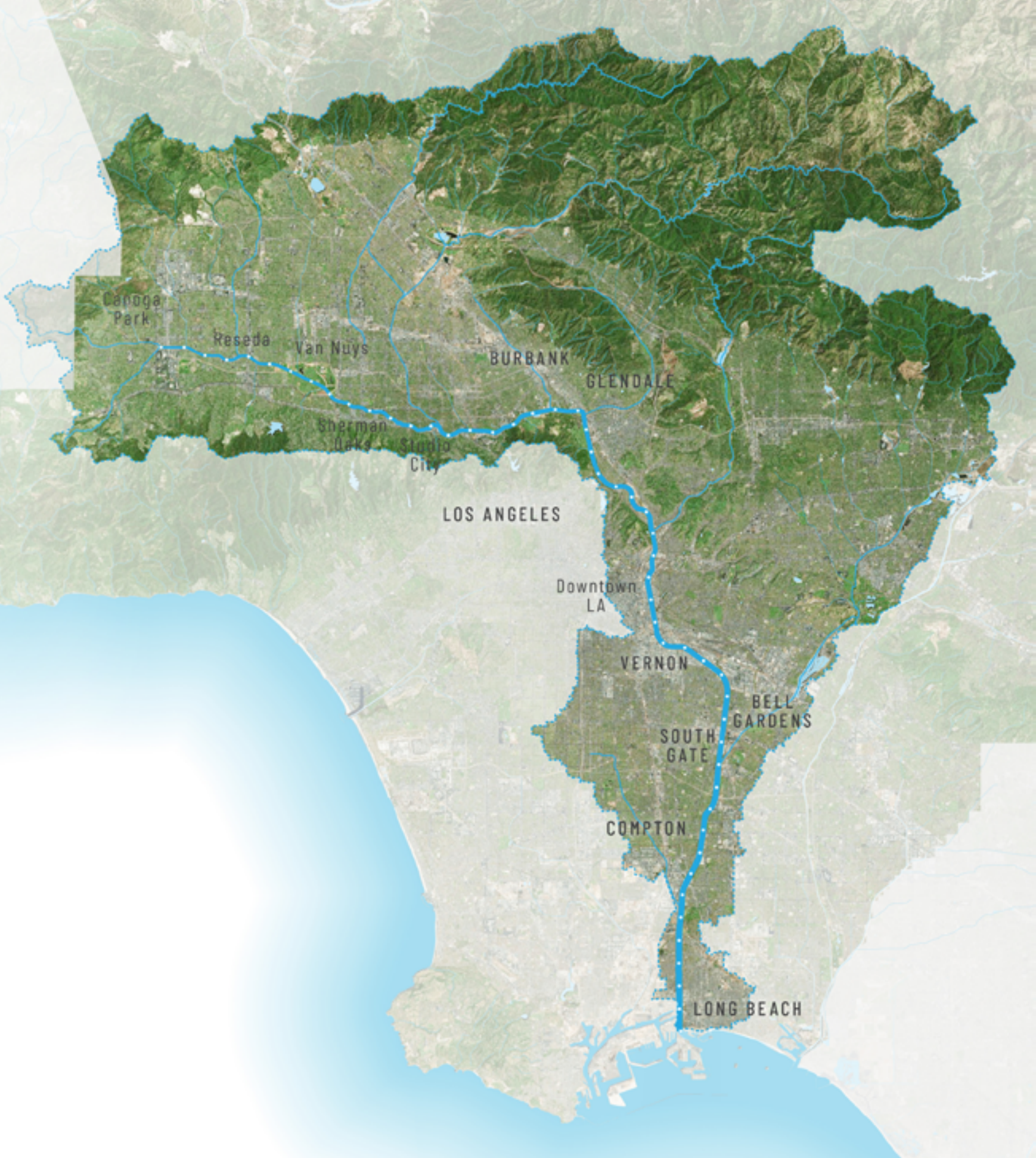


HYDROLOGY

Source: OLIN

HYDROLOGY

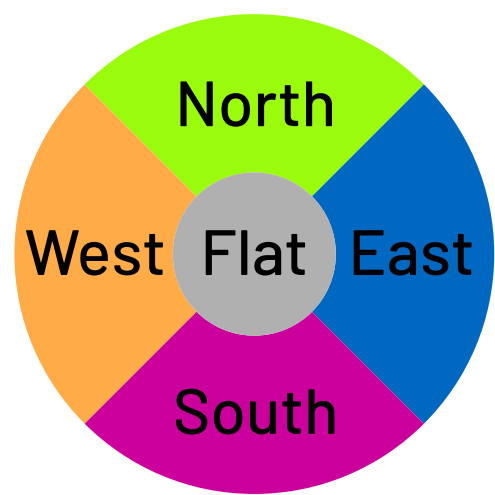
THE LA RIVER DRAINS A
834 SQ. MI. WATERSHED



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

SLOPES IN THE UPPER RIVER TEND TO BE NORTH/SOUTH

Slope Aspect

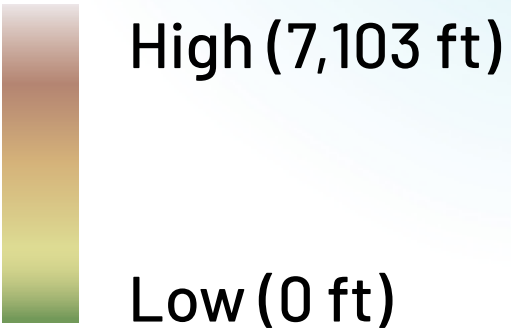


Source: U.S. Geological Survey, 2013, USGS NED 1 arc-second 2013



HYDROLOGY

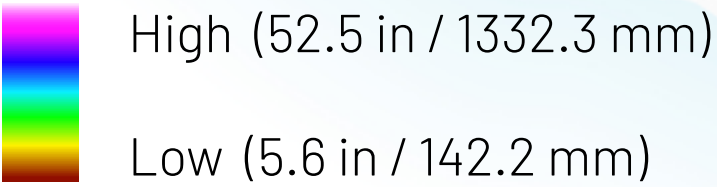
THE LA RIVER
DROPS 780 FEET
IN JUST 51 MILES



Source: U.S. Geological Survey, 2013, USGS NED 1 arc-second 2013



LA COUNTY MEAN ANNUAL PRECIPITATION

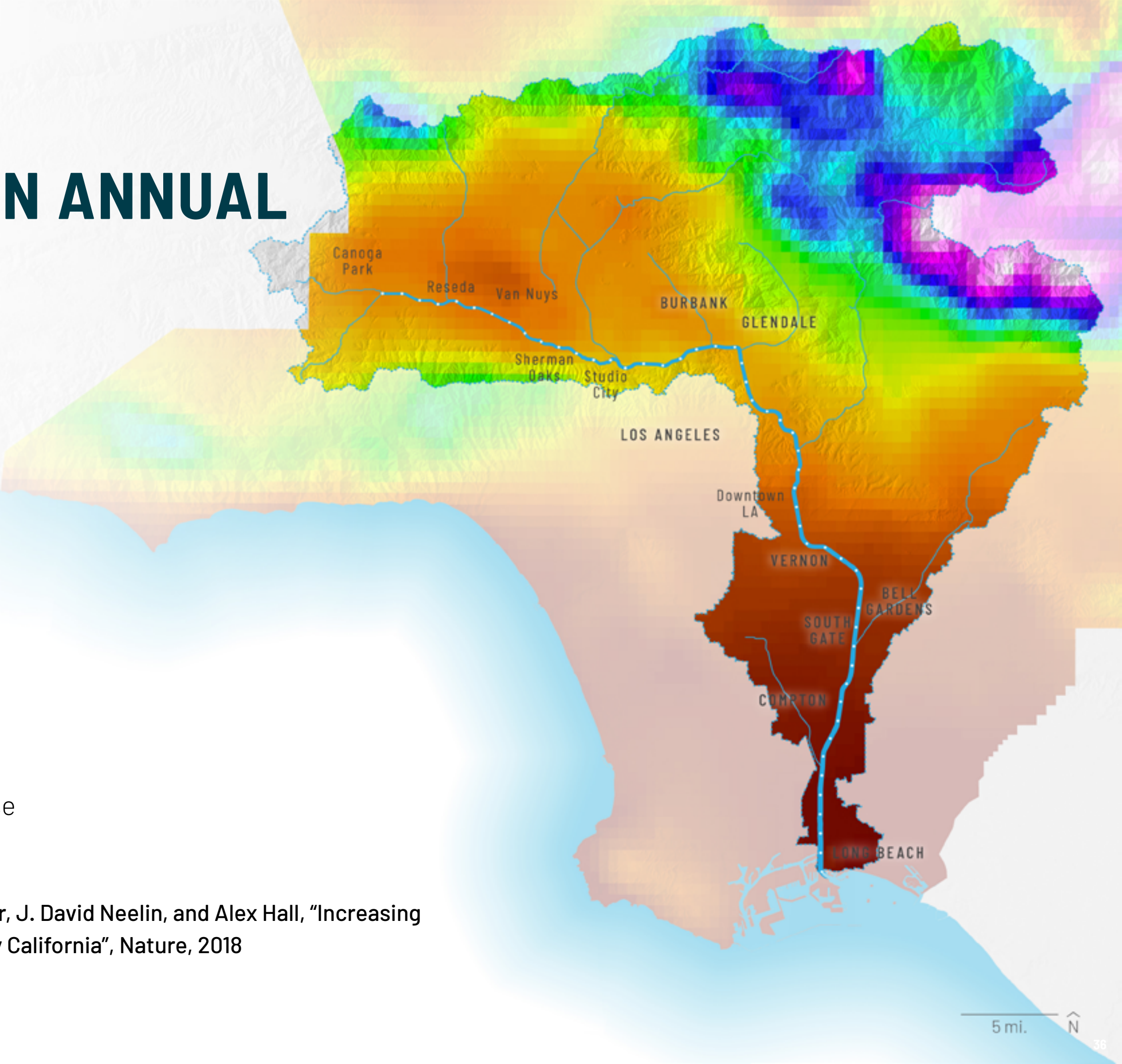


Climate Change Projections:

“Anthropogenic forcing is found to yield large twenty-first-century increases in the frequency of wet extremes, including a more than threefold increase in sub-seasonal events comparable to California’s ‘Great Flood of 1862’.”

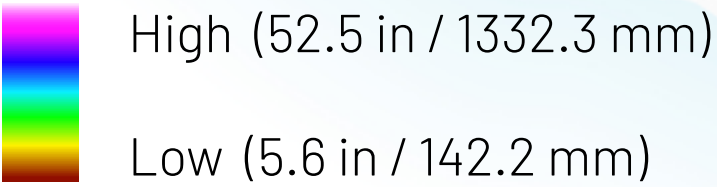
Source: Swain, Daniel L., Baird Langenbrunner, J. David Neelin, and Alex Hall, “Increasing precipitation volatility in twenty-first-century California”, Nature, 2018

Source: PRISM Climate Group, 2015



HYDROLOGY

LA COUNTY MEAN ANNUAL PRECIPITATION



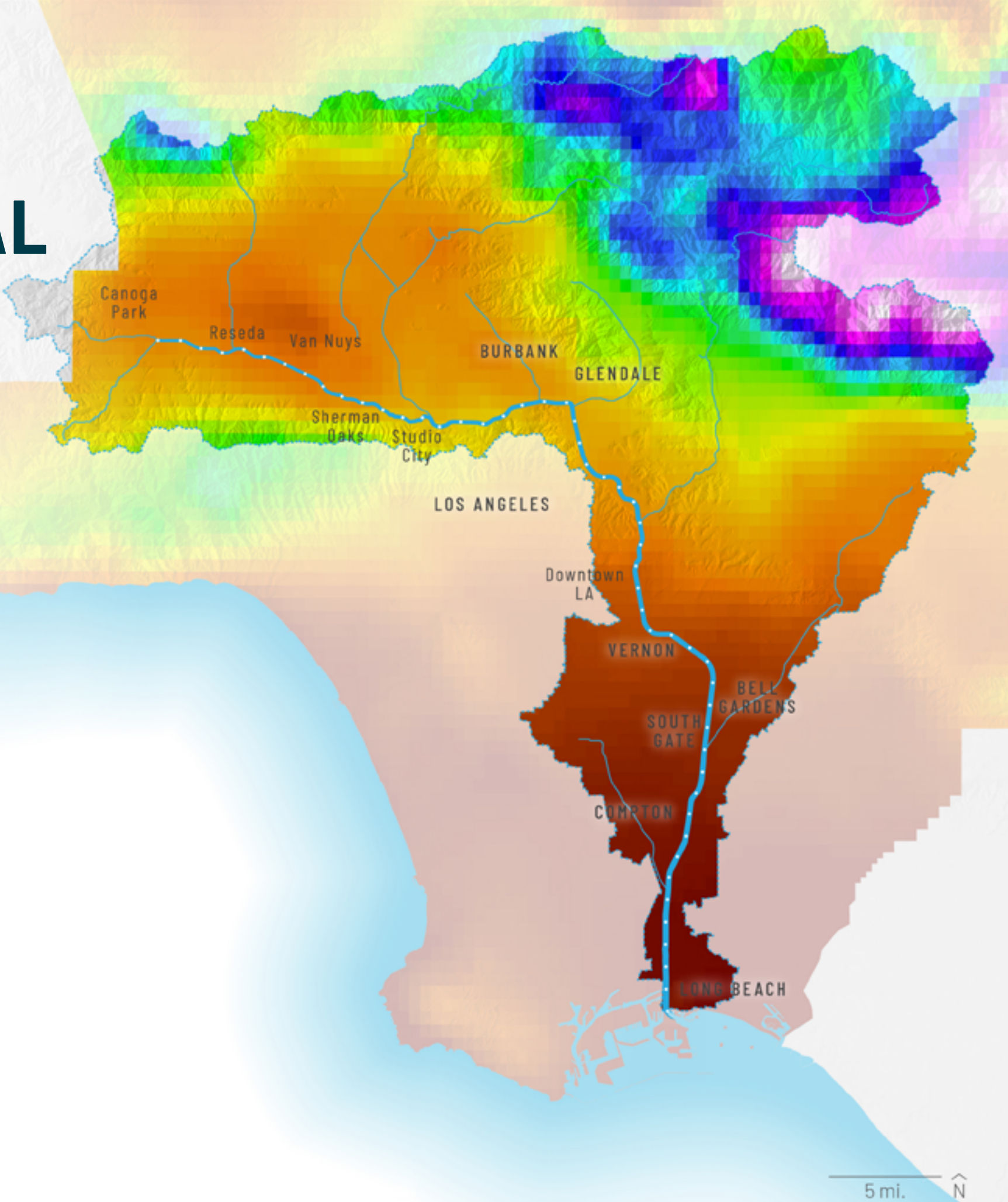
Current Dry Weather Flow of the LA River:
60,000 Acre Feet Per Year

Average Wet Weather Flow of the LA River:
275,000 Acre Feet Per Year

Wettest Year - 2005 (in the past 20 years):
950,000 Acre Feet Per Year

Driest Year - 2007 (in the past 20 years):
50,000 Acre Feet Per Year

Source: PRISM Climate Group, 2015







HYDROLOGY

GROUND WATER BASINS

 **Forebay**

Upper Los Angeles River Area Watermaster:

-  **San Fernando Basin**
-  **Sylmar Basin**
-  **Verdugo Basin**
-  **Eagle Rock Basin**

Water Replenishment District of Southern California:

-  **Central Basin**
-  **West Coast Basin**




Main San Gabriel Basin Watermaster:

-  **Main San Gabriel Basin**

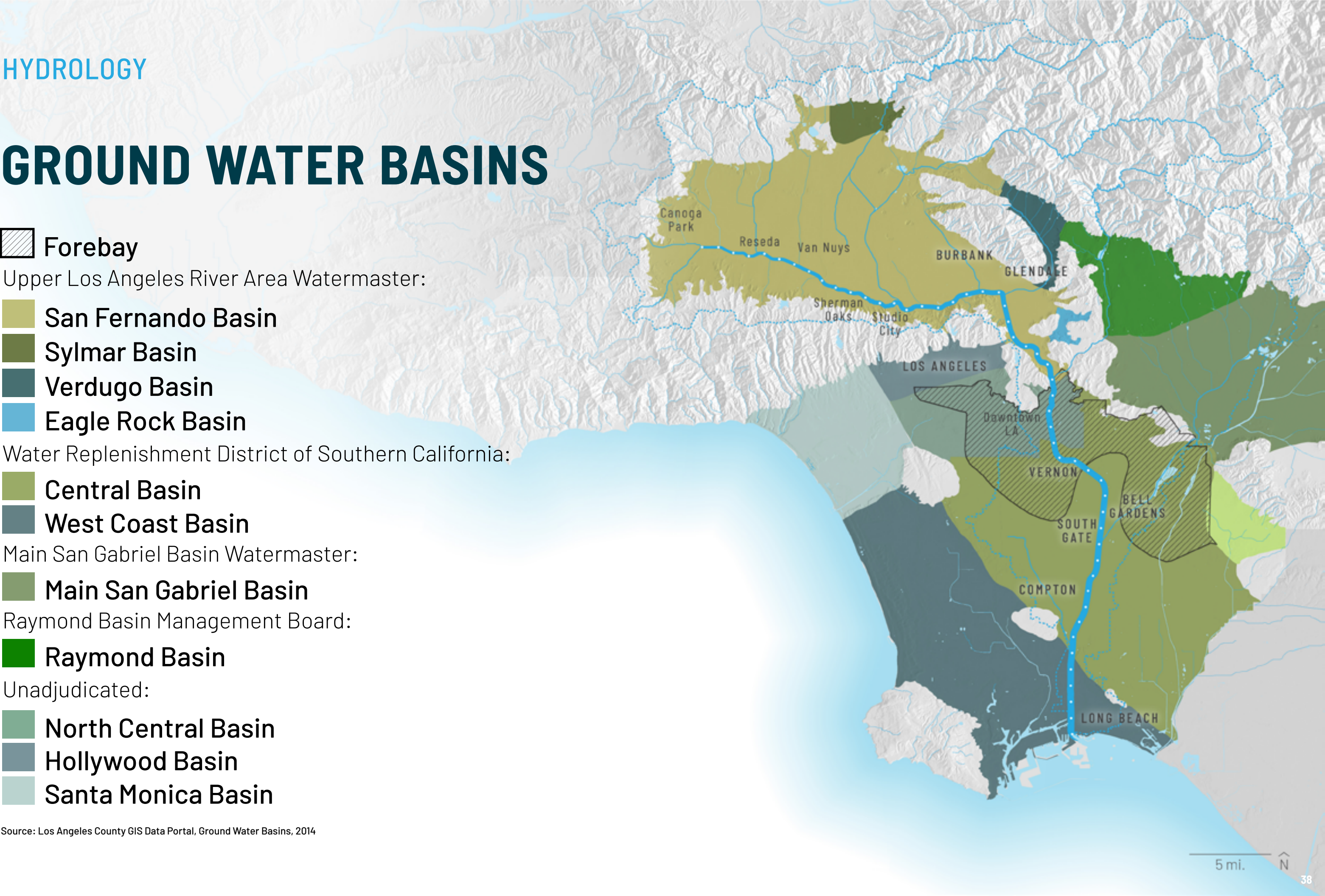
Raymond Basin Management Board:

-  **Raymond Basin**

Unadjudicated:

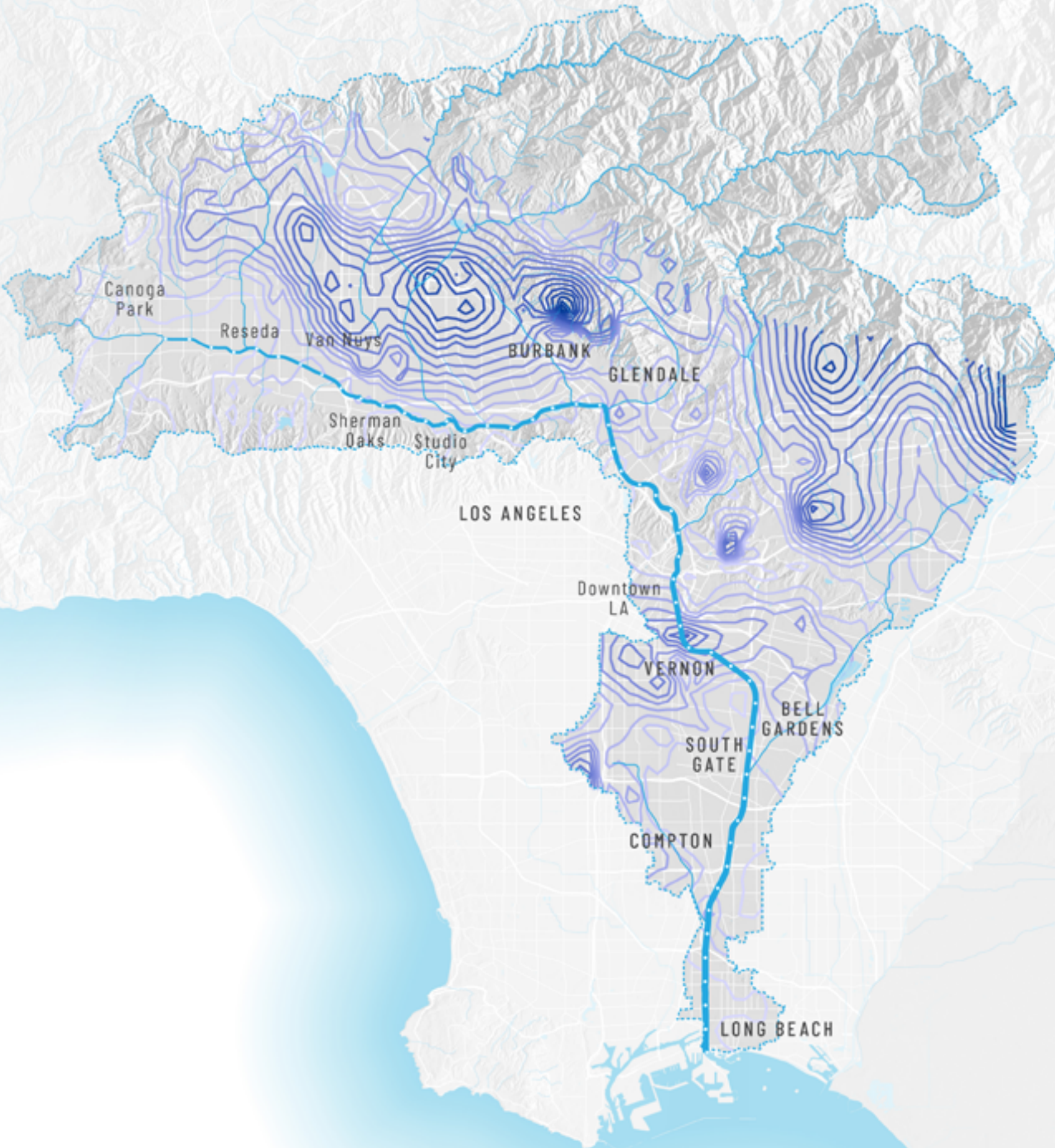
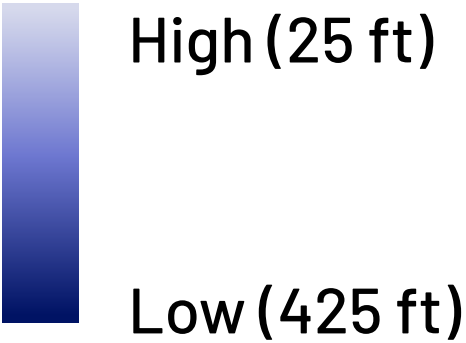
-  **North Central Basin**
-  **Hollywood Basin**
-  **Santa Monica Basin**

Source: Los Angeles County GIS Data Portal, Ground Water Basins, 2014



HYDROLOGY

DEPTH TO GROUND WATER



Source: Adapted from B3 Insight database compilation, <https://www.b3insight.com/>

SOILS BEST SUITED FOR INFILTRATION

Soil Permeability (Ksat Values):

- 0.09-0.3 (Low)
- 0.3-0.54
- 0.54-0.95
- 0.95-1.98
- 1.98-4.35 (High)



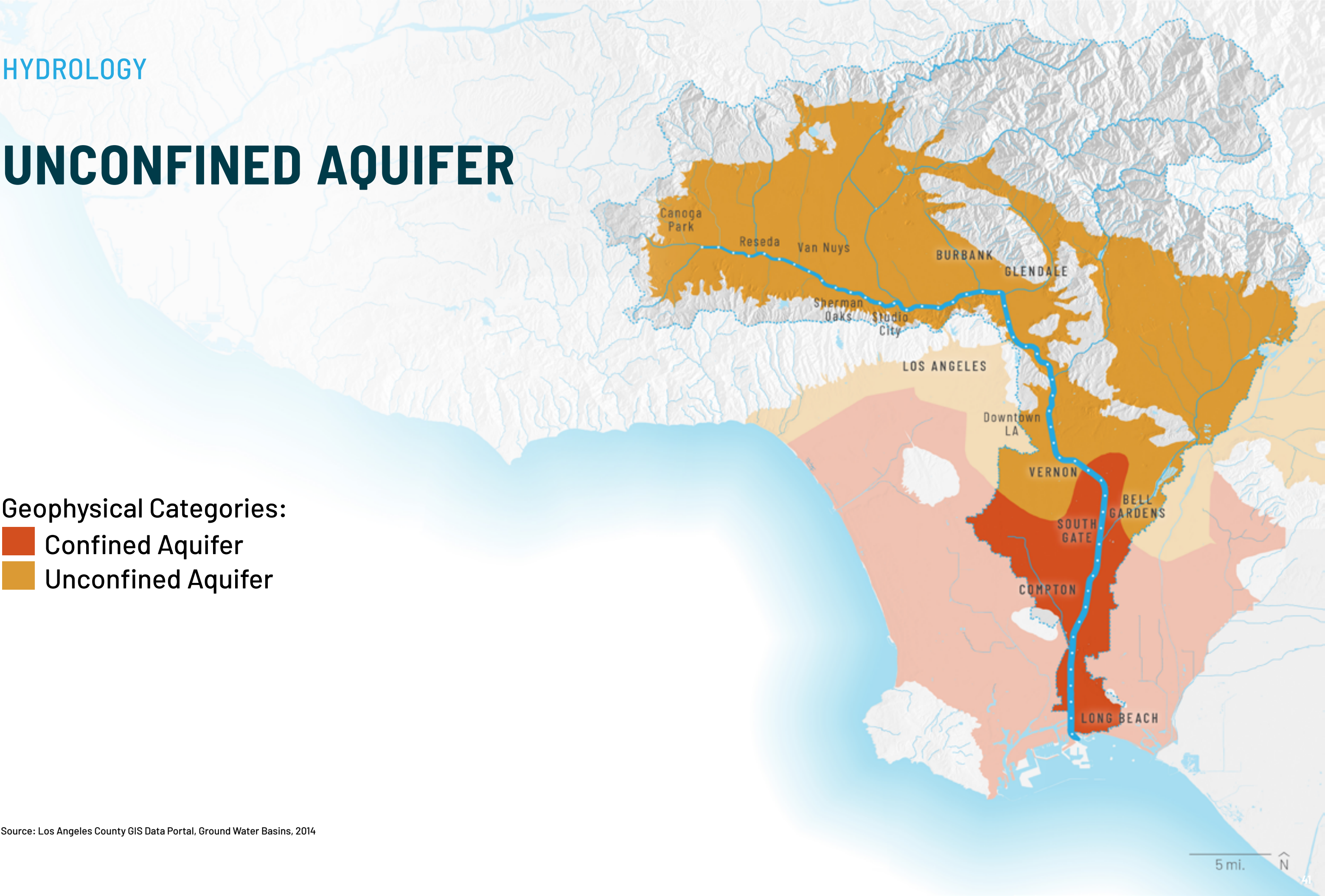
Source: Geosyntec, LSBPAT User Guide Technical Appendices, 2008

HYDROLOGY

UNCONFINED AQUIFER

Geophysical Categories:

- Confined Aquifer
- Unconfined Aquifer

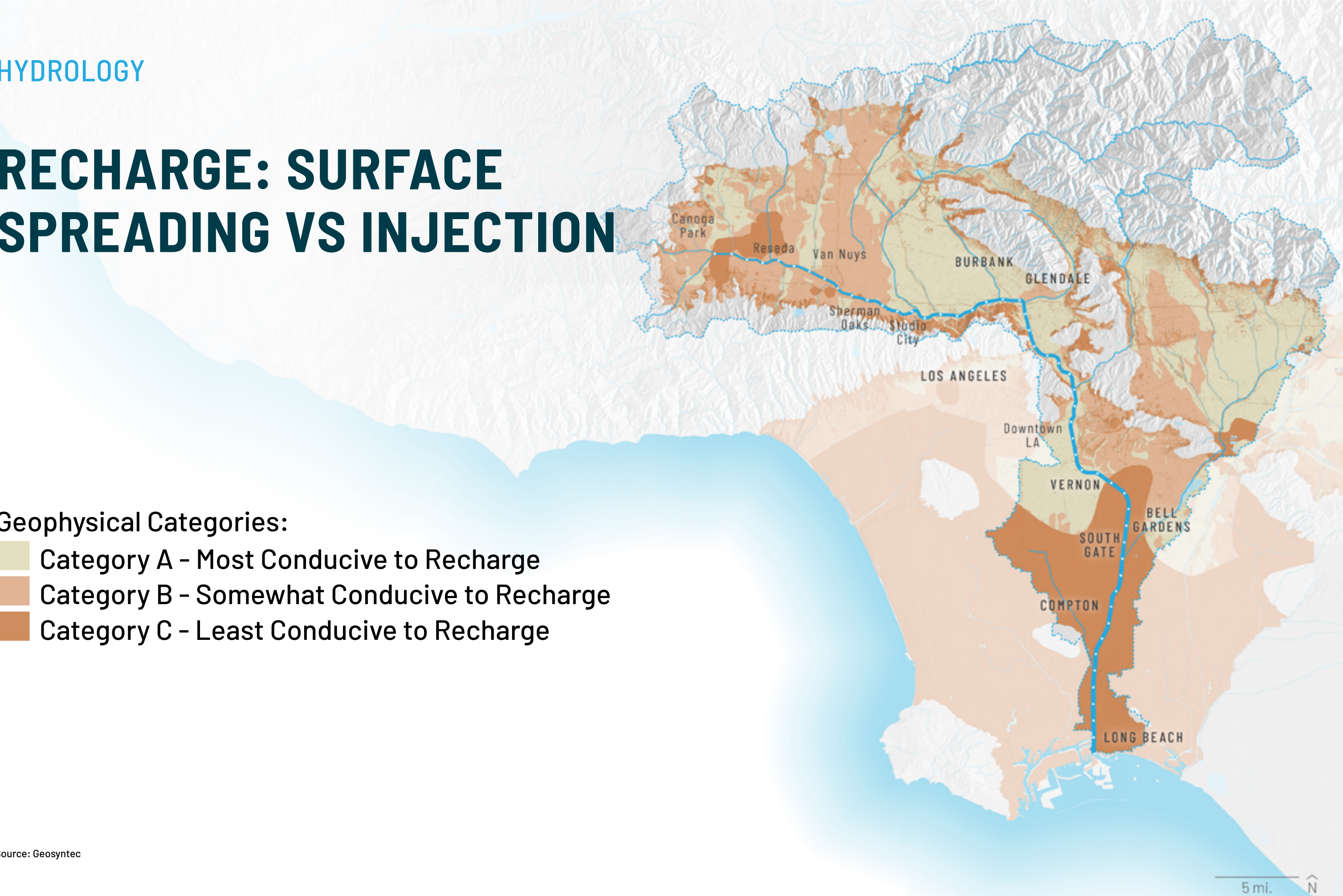


Source: Los Angeles County GIS Data Portal, Ground Water Basins, 2014

RECHARGE: SURFACE SPREADING VS INJECTION

Geophysical Categories:

- Category A - Most Conducive to Recharge
- Category B - Somewhat Conducive to Recharge
- Category C - Least Conducive to Recharge



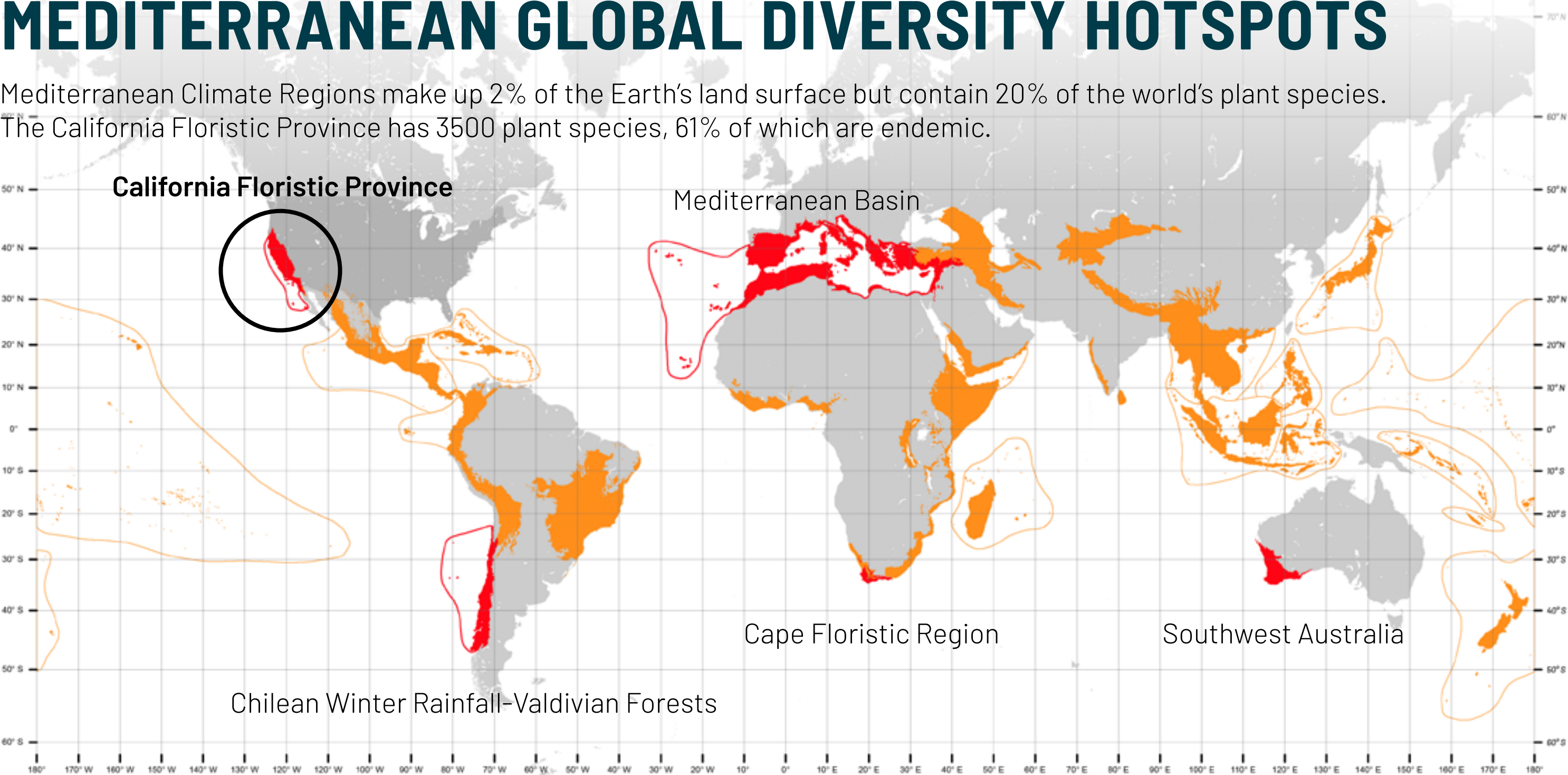


ECOLOGY AND HABITAT

Source: Flickr user Scott Lowe, Ducklings on the LA River, 2012, <https://www.flickr.com/photos/scottlowe/7465161472/>

THE CALIFORNIA FLORISTIC PROVINCE IS 1 OF 5 OF MEDITERRANEAN GLOBAL DIVERSITY HOTSPOTS

Mediterranean Climate Regions make up 2% of the Earth's land surface but contain 20% of the world's plant species. The California Floristic Province has 3500 plant species, 61% of which are endemic.



Source: Conservation International, Biodiversity Hotspots Revisited, 2004

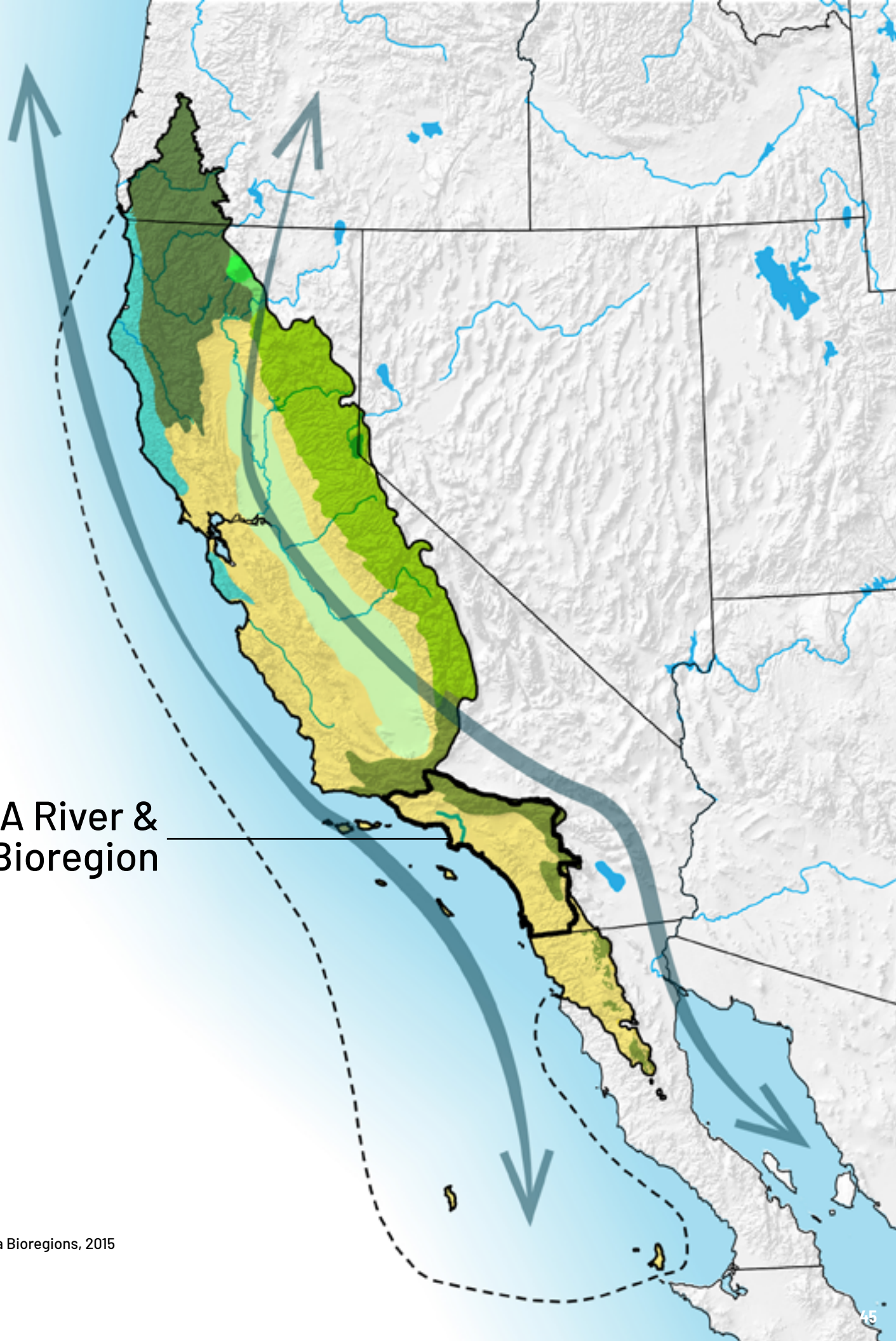
THE LA RIVER WATERSHED IS AT A HINGEPOINT IN THE CALIFORNIA FLORISTIC PROVINCE

Level III Ecoregions of The California Floristic Province:

- Klamath Mountains
- Coastal Range
- Cascades
- Sierra Nevada
- Central California Valley
- Southern California Coast
- Southern California Mountain and Valley
- Pacific Flyway



LA River &
South Coast Bioregion

Source: EPA, Level II and III Ecoregions of the Continental United States, 2013 & Conservation International, Biodiversity Hotspots Revisited, 2004 & INACC, California Bioregions, 2015



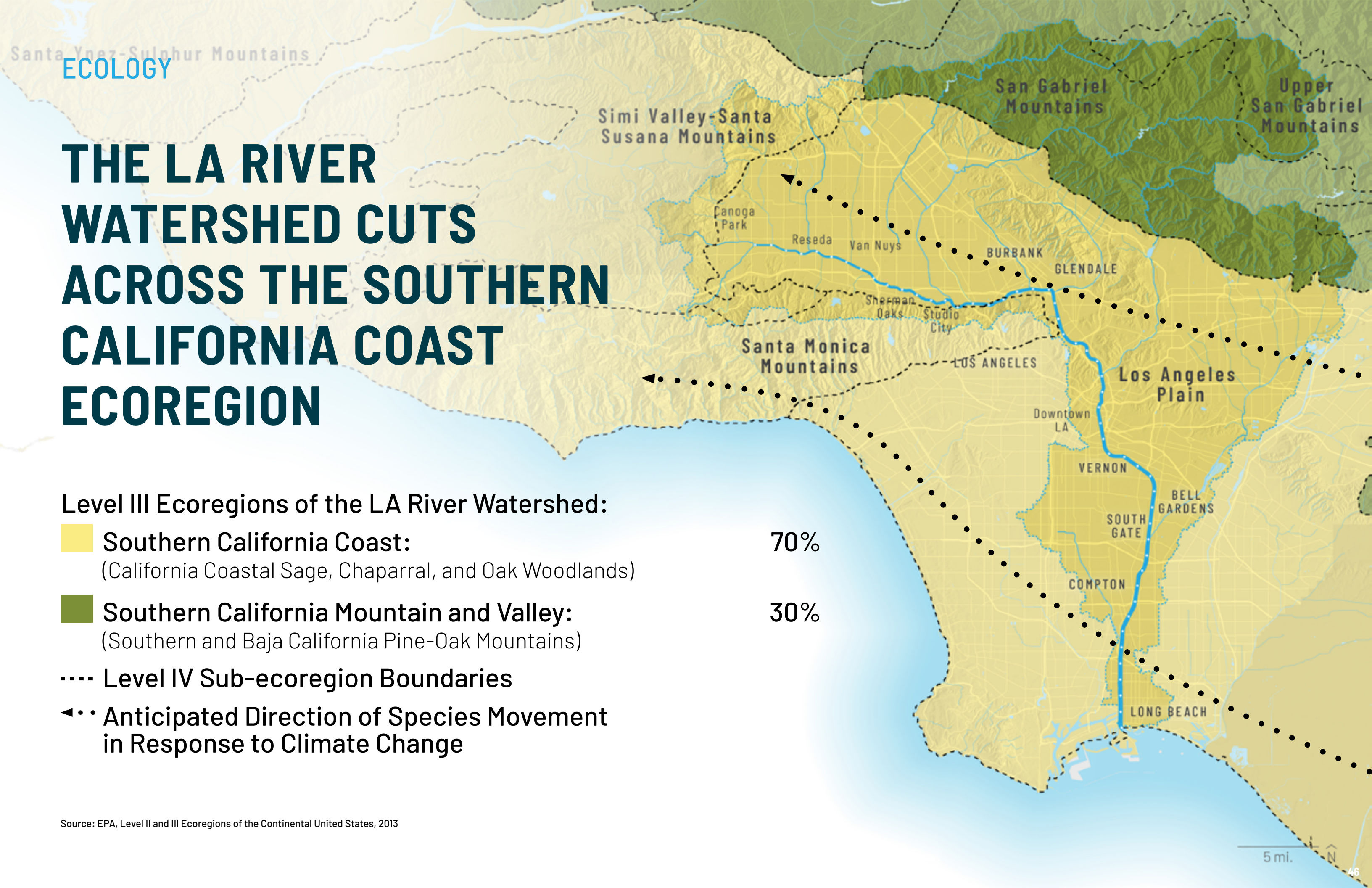
THE LA RIVER WATERSHED CUTS ACROSS THE SOUTHERN CALIFORNIA COAST ECOREGION

Level III Ecoregions of the LA River Watershed:

-  **Southern California Coast:**
(California Coastal Sage, Chaparral, and Oak Woodlands) **70%**
-  **Southern California Mountain and Valley:**
(Southern and Baja California Pine-Oak Mountains) **30%**

- **Level IV Sub-ecoregion Boundaries**
- ◄◄◄ **Anticipated Direction of Species Movement
in Response to Climate Change**

Source: EPA, Level II and III Ecoregions of the Continental United States, 2013



LARGE-SCALE HABITAT CONNECTIVITY OPPORTUNITIES EXIST AT THE EDGES OF THE LA RIVER WATERSHED

Habitat Connectivity








- Essential Connectivity Areas:
- California Missing Linkages
- Existing Wildlife Crossing
- Proposed Wildlife Crossing

Habitat Areas:

- Natural Landscape Blocks
- Small Natural Areas
- Wildland Urban Intermix
- Significant Ecological Area (SEA)

Source: CDFW and CalTrans ,California Essential Habitat Connectivity Project, 2010 & Remote Sensing Lab, Region 5, USDA Forest Service, CA:Wildland Urban Intermix, 2006

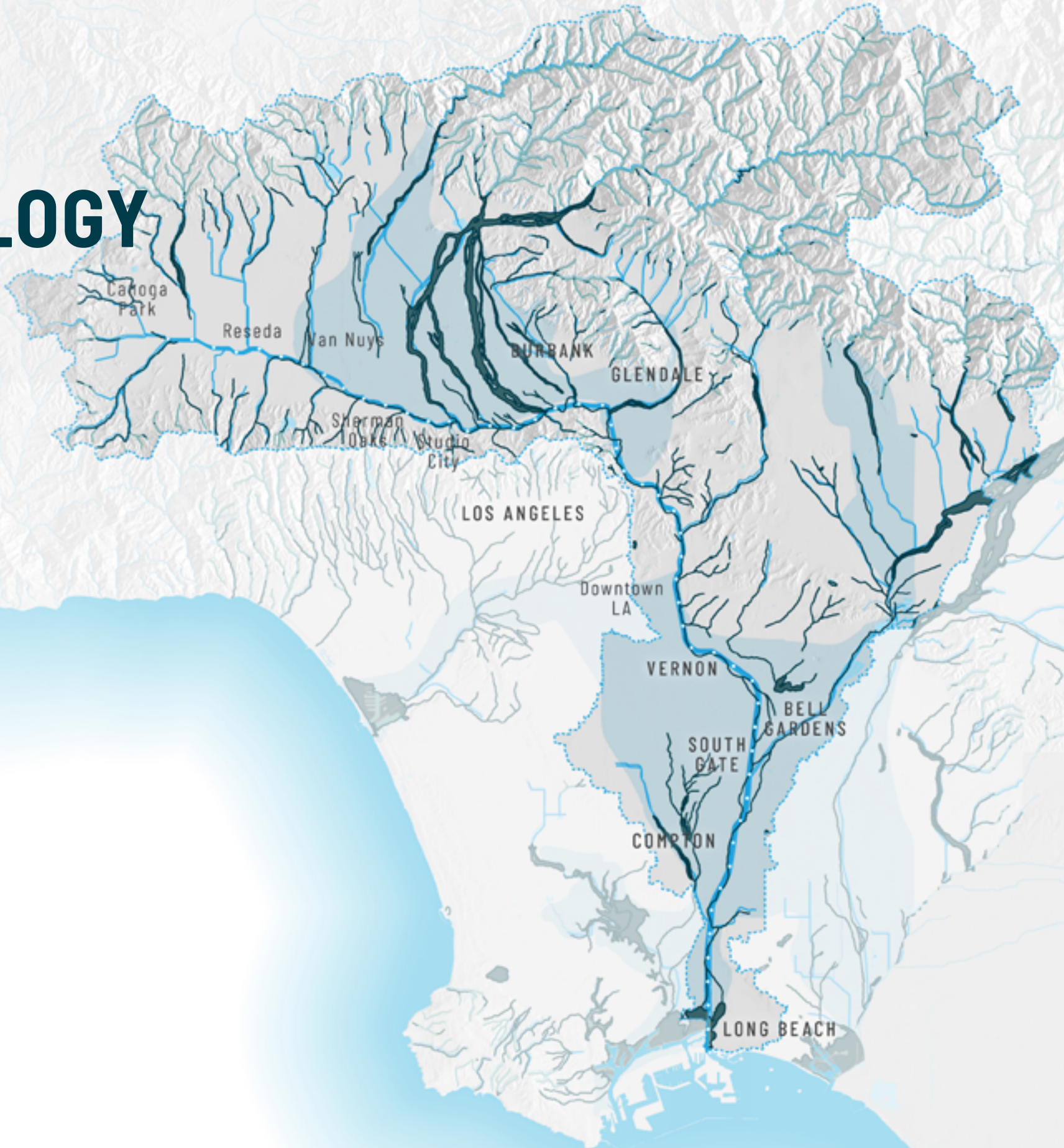
LA RIVER WATERSHED HISTORIC VEGETATION FORMATIONS

	Coastal sagebrush	54%
	Southern oak forest	16%
	Mixed hardwood forest	13%
	Chapparal	11%
	Coultier pine forest	6%
	Southern jeffrey pine forest	0.4%
	Coastal saltmarsh	0.1%

Source: A. W. Kuchler, Natural Vegetation of California, 1977. Downloaded from <https://www.davidrumsey.com/luna/servlet/detail/RUMSEY~8~1~304086~90074713:Natural-Vegetation-of-California-#>

HISTORIC WETLAND ECOLOGY (1870)

- Historic Wetlands
- Current Wetlands
- Historic and Current Wetlands
- Historic Floodplain



Source: Adapted from: Charles Rairdan, 1998. Regional Restoration Goals for Wetland Resources in the Greater Los Angeles Drainage Area: A Landscape-level Comparison of Recent Historic and Current Conditions Using Geographical Information Systems. Dissertation. UCLA

OUT-OF-CHANNEL HABITAT TYPES OF THE LA RIVER CORRIDOR

Out-of-Channel Habitats



Coastal Sage Scrub (Soft Chaparral)

Chaparral at higher elevations transitioning to Coastal Sage Scrub along the river corridor.



Valley Oak and Walnut Woodland

Open Oak or Walnut woodlands common in canyons and on lower southern slopes from the Glendale Narrows to the western end of the San Fernando Valley.



Grassland

Native grasses and wildflowers common to the dense and clayey soils of the Los Angeles Plain.



Riparian Forest

Lowland forest of Willows, Cottonwoods, and Sycamores with a dense understory of shrubs and vines.

Source: Based on: Harold Mooney and erika Zavaleta, "Ecosystems of California: Threats and Responses", University of California Press, 2016 & Kimball L. Garret, "The Biota of the Los Angeles River", 1993 & Paul M. Schiffman "The Los Angeles Prairie, from "Land of Sunshine: An Environmental History of Metropolitan Los Angeles, by William Deverell and Greg Hise, University of Pittsburgh Press, 2014

LA RIVER WATERSHED HAS 15 EXTANT HABITAT TYPES

Herbaceous Dominated Habitats

- Emergent Wetland
- Wet Meadow
- Grassland

Tree Dominated Habitats

- Aspen and Eucalyptus
- Oak Woodland
- Montaine Woodland
- Montaine Riparian
- Coniferous and Evergreen Woodland
- Pinyon Juniper, Joshua Tree, and Palm Oasis
- Valley Foothill Riparian

Shrub Dominated Habitats

- Alpine Dwarf Shrub
- Desert Scrub, Shrub, and Wash
- Chaparral, Sage, and Brush
- Desert Riparian

Other

- Barren



Source: USDA Forest Service, Pacific Southwest Region, 2011

THE LA AREA SAW A 1.2%
DECREASE YEAR-TO-YEAR
IN ITS URBAN SHRUB
AND TREE CANOPY FROM
2000-2009



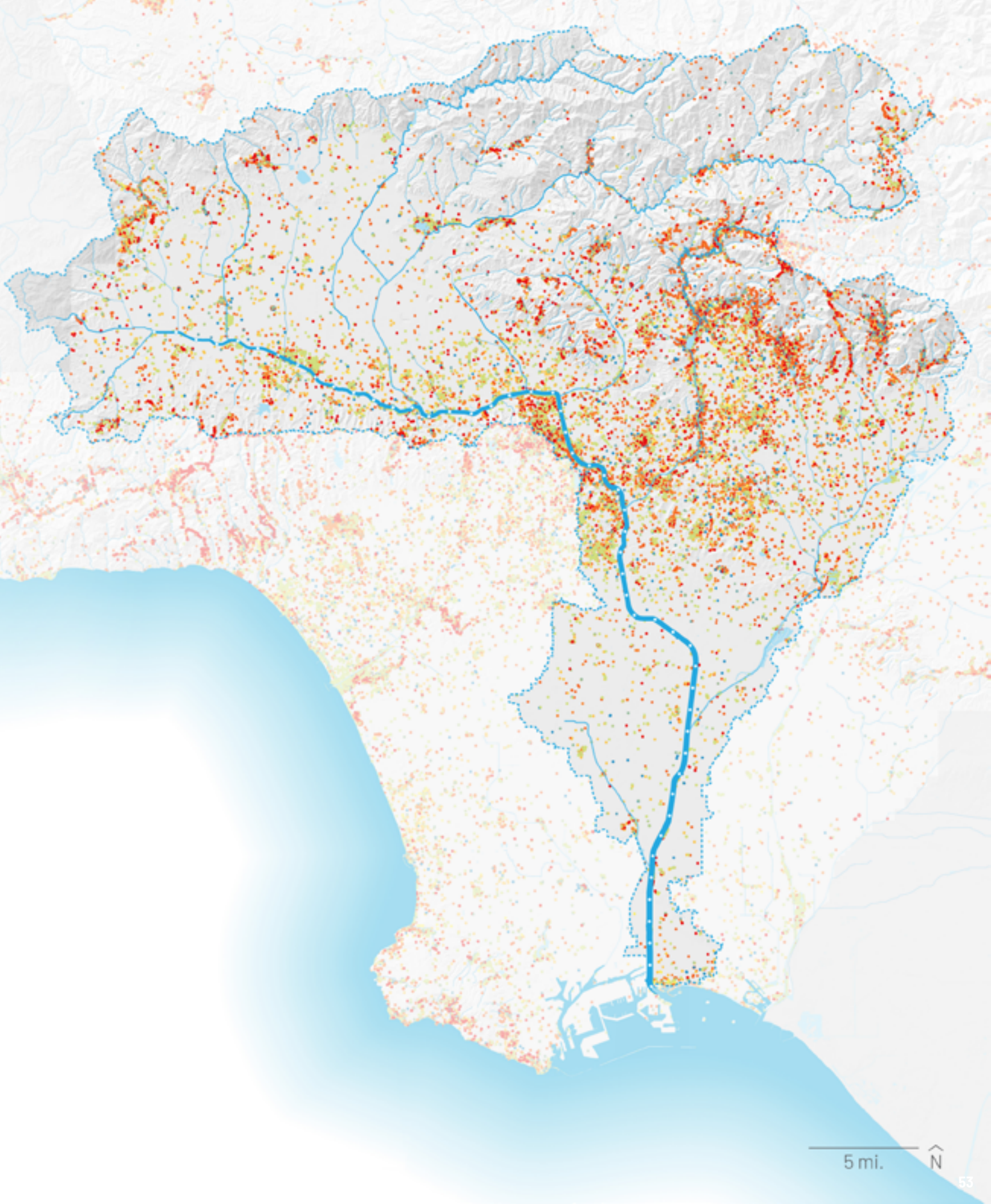
Source: Los Angeles County GIS Data Portal, Tree Canopy 2006 & Su Jin Lee, Travis Longcore, Catherine Rich, and John P. Wilson, "Increased home size and hardscape decreases urban forest cover in Los Angeles County's single-family residential neighborhoods", 2017

ECOLOGY

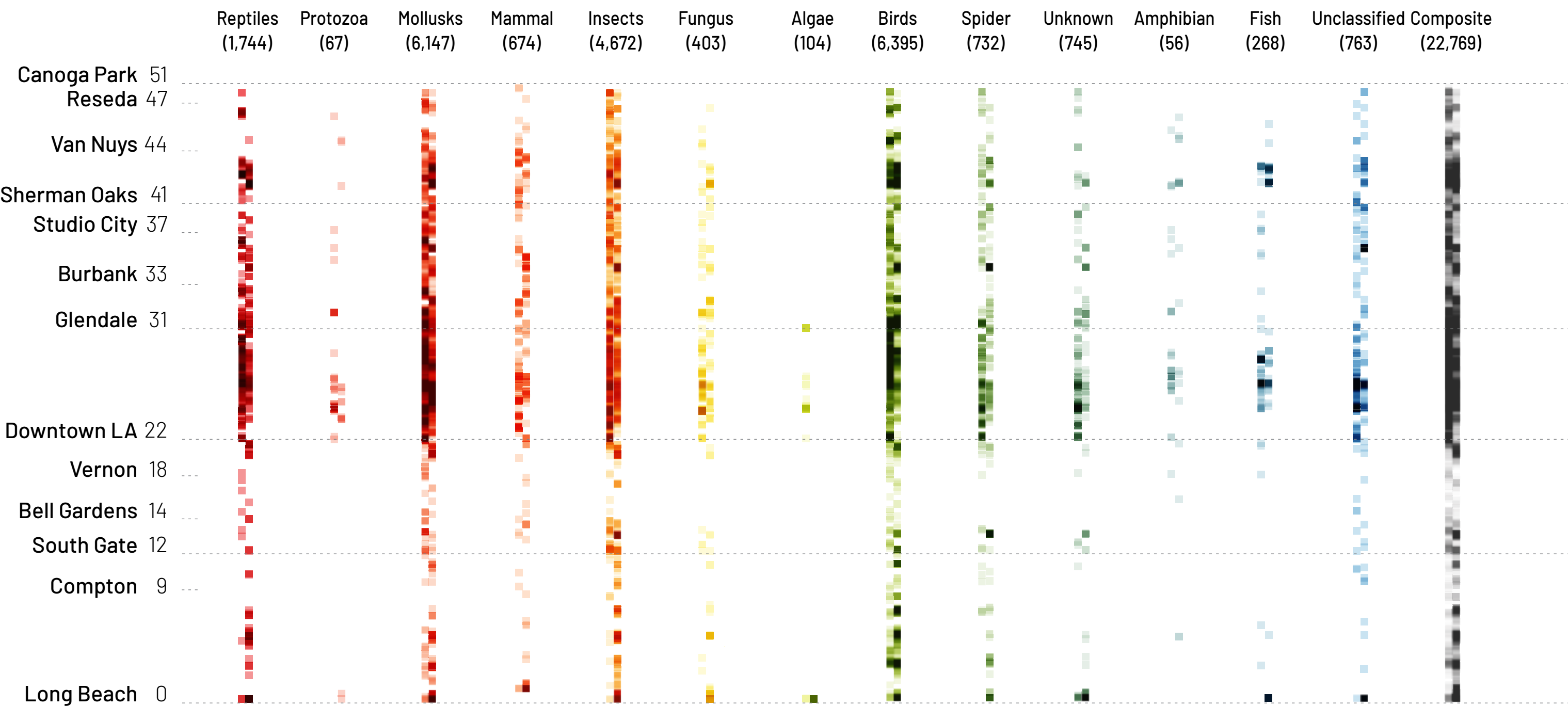
SPECIES OBSERVATION IN THE LA RIVER BASIN

- Unclassified
- Fish
- Amphibian
- Animal (unknown)
- Spider
- Bird
- Algae
- Fungus
- Insect
- Mammal
- Mollusk
- Protozoa
- Reptile

Source: iNaturalist.org, accessed 18 April 2018



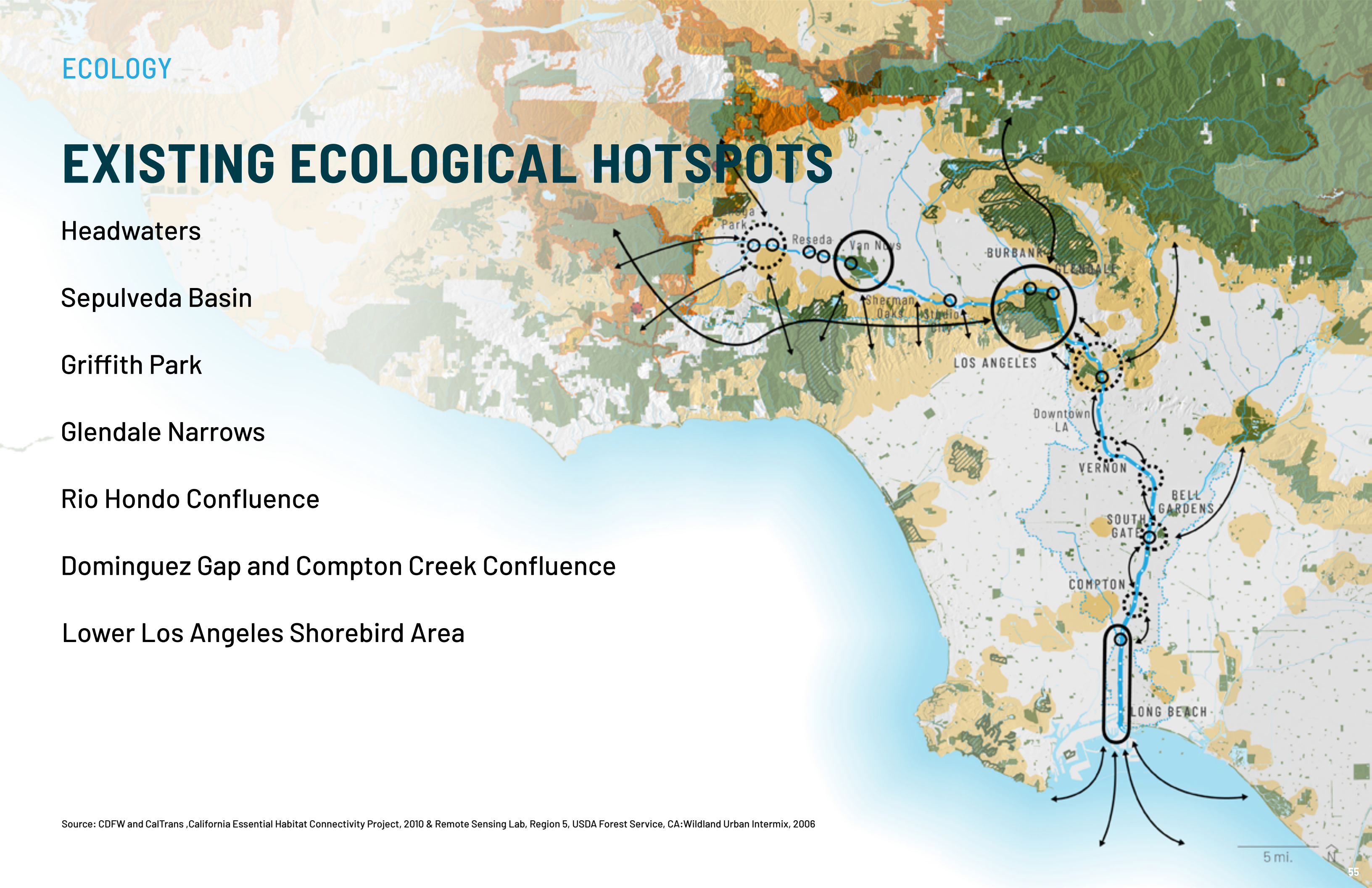
SPECIES OBSERVATIONS: WITHIN 1 MILE OF LA RIVER



Source: iNaturalist.org, accessed 18 April 2018

EXISTING ECOLOGICAL HOTSPOTS

- Headwaters
- Sepulveda Basin
- Griffith Park
- Glendale Narrows
- Rio Hondo Confluence
- Dominguez Gap and Compton Creek Confluence
- Lower Los Angeles Shorebird Area



Source: CDFW and CalTrans ,California Essential Habitat Connectivity Project, 2010 & Remote Sensing Lab, Region 5, USDA Forest Service, CA:Wildland Urban Intermix, 2006

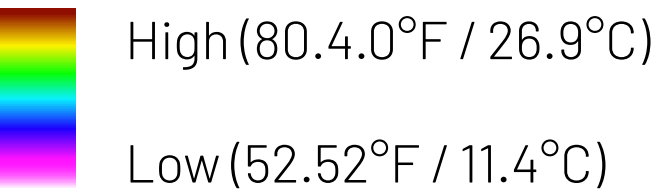


RESILIENCY

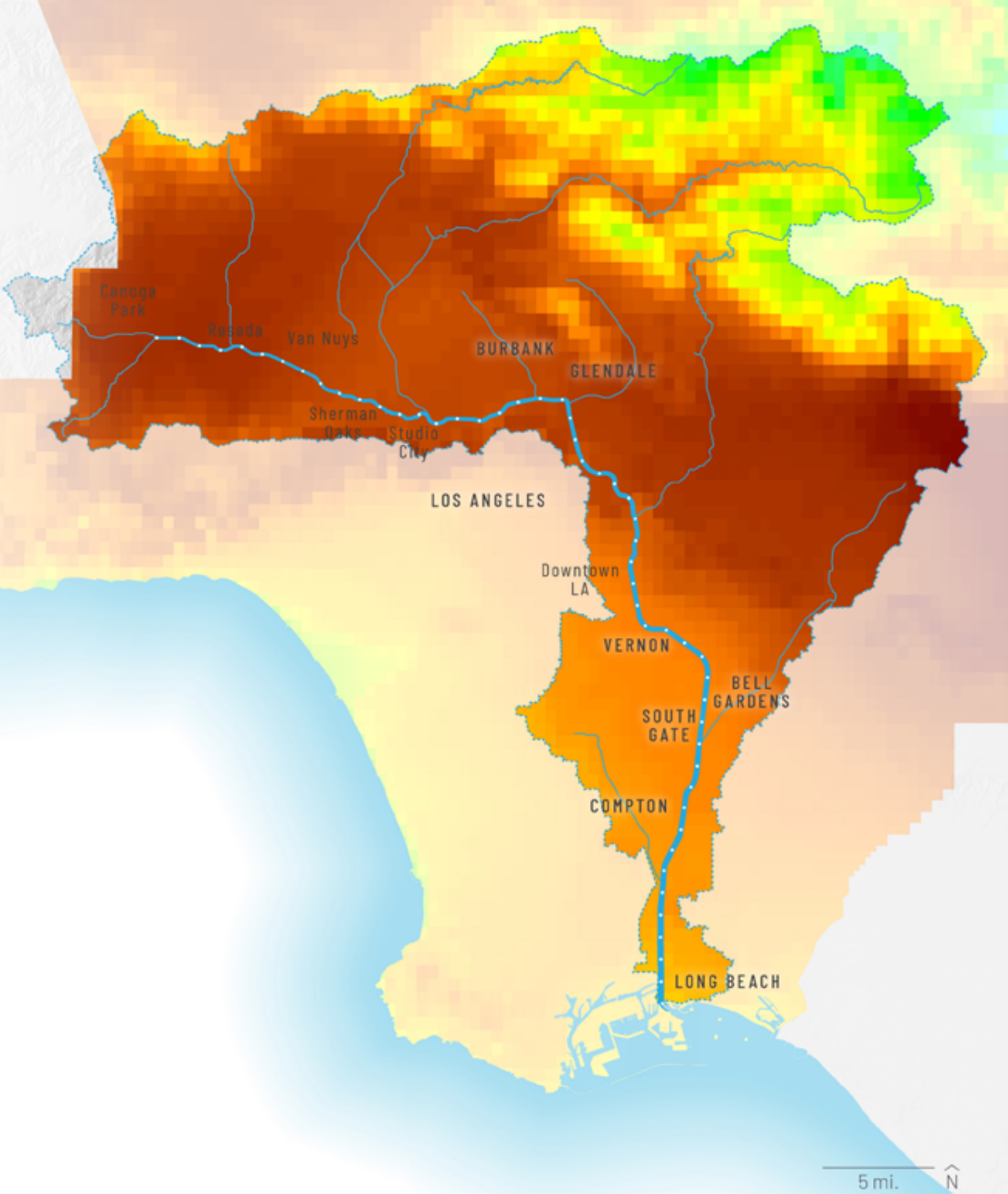
Source: Flickr user Scott L, 1LE1C7494, 2016

LA COUNTY MAXIMUM ANNUAL TEMPERATURE

Climate Change Projections:
Average Temperature Increase by 2100:
Mitigation Scenario: +3°F
Business As Usual: +8°F

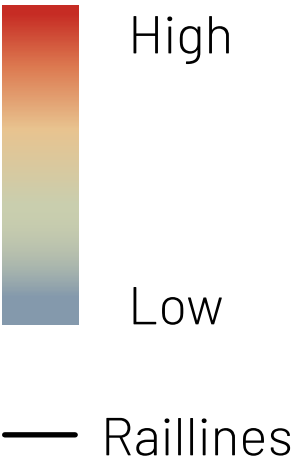


Days > 95°F Business As Usual	Past 1981-2000	Future 2081-2100
San Fernando	54	126
Los Angeles	6	54
Long Beach	3	37



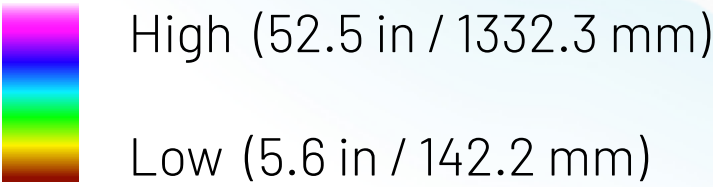
RESILIENCY

URBAN HEAT ISLAND HOTSPOTS



Source: Trust for Public Land, Climate Smart Cities Los Angeles, 2016

LA COUNTY MEAN ANNUAL PRECIPITATION

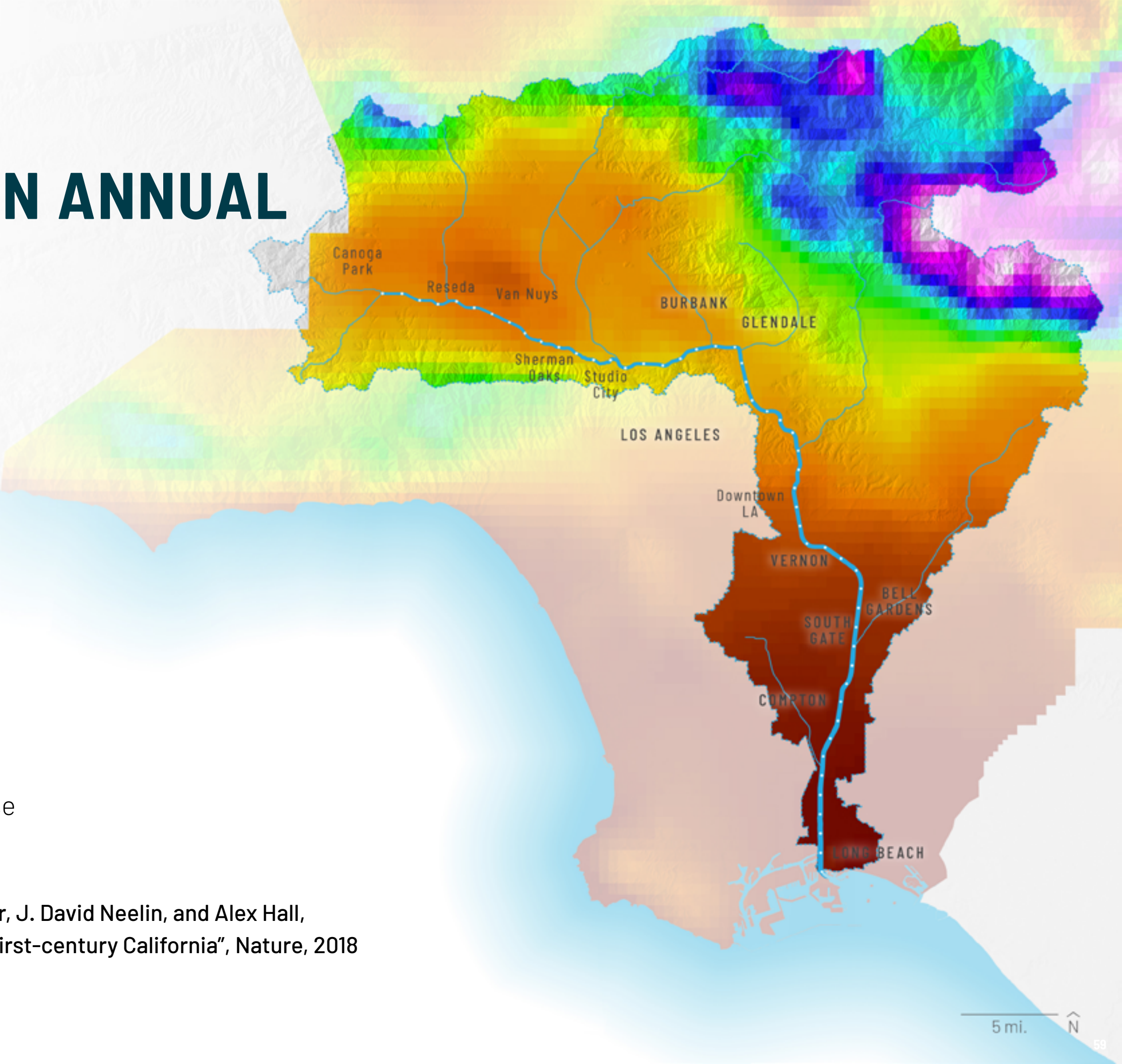


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“Anthropogenic forcing is found to yield large twenty-first-century increases in the frequency of wet extremes, including a more than threefold increase in sub-seasonal events comparable to California’s ‘Great Flood of 1862’.”

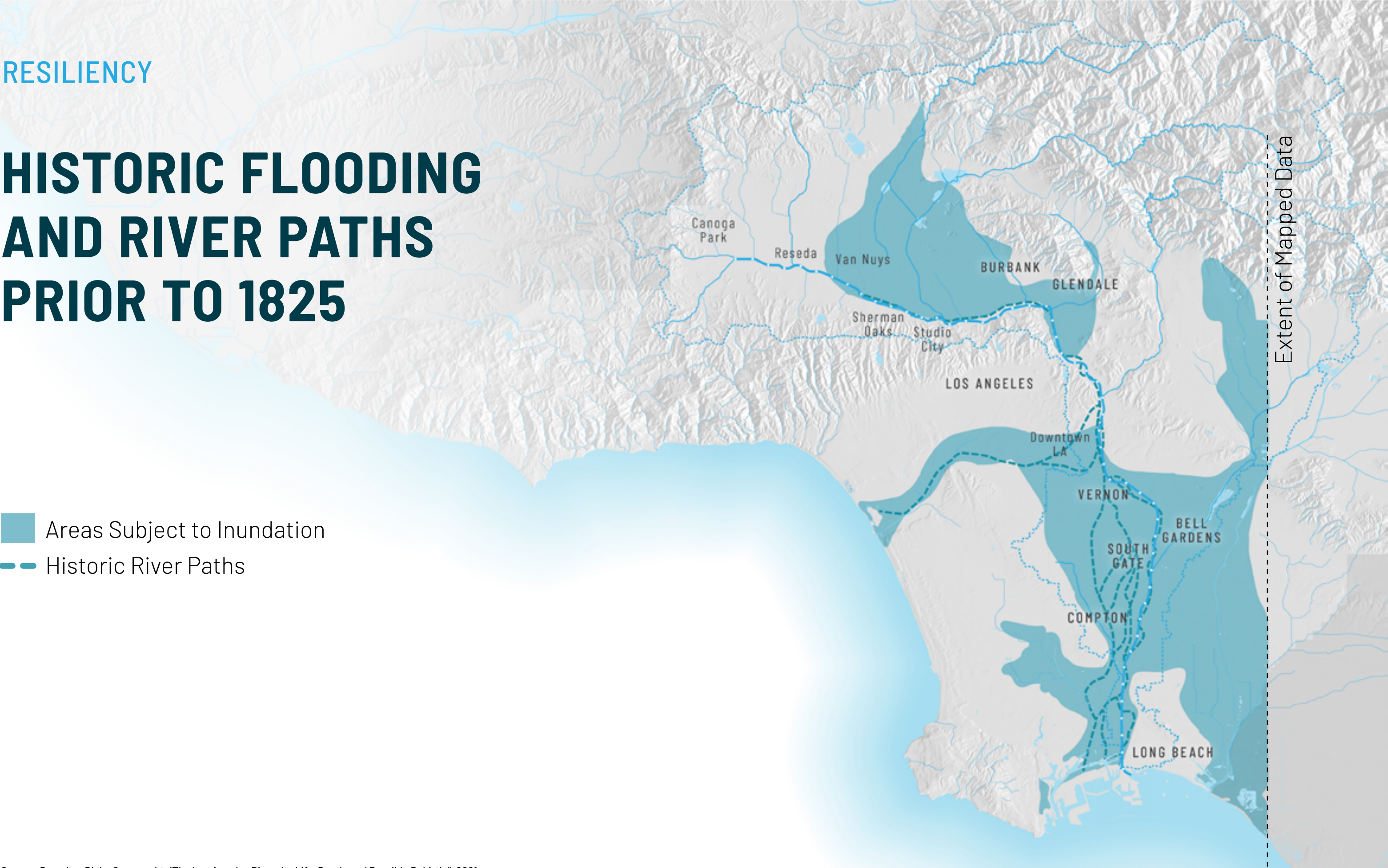
Source: Swain, Daniel L., Baird Langenbrunner, J. David Neelin, and Alex Hall, “Increasing precipitation volatility in twenty-first-century California”, Nature, 2018

Source: PRISM Climate Group, 2015



HISTORIC FLOODING AND RIVER PATHS PRIOR TO 1825

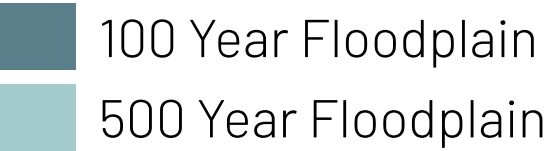
- Areas Subject to Inundation
- Historic River Paths



Source: Based on Blake Gumprecht, "The Los Angeles River: Its Life, Death, and Possible Rebirth.", 2001

FEMA FLOODPLAIN MAPPING

i. Steady-state 1-D modeling of Los Angeles River with specific break out areas analyzed to determine flood plain.



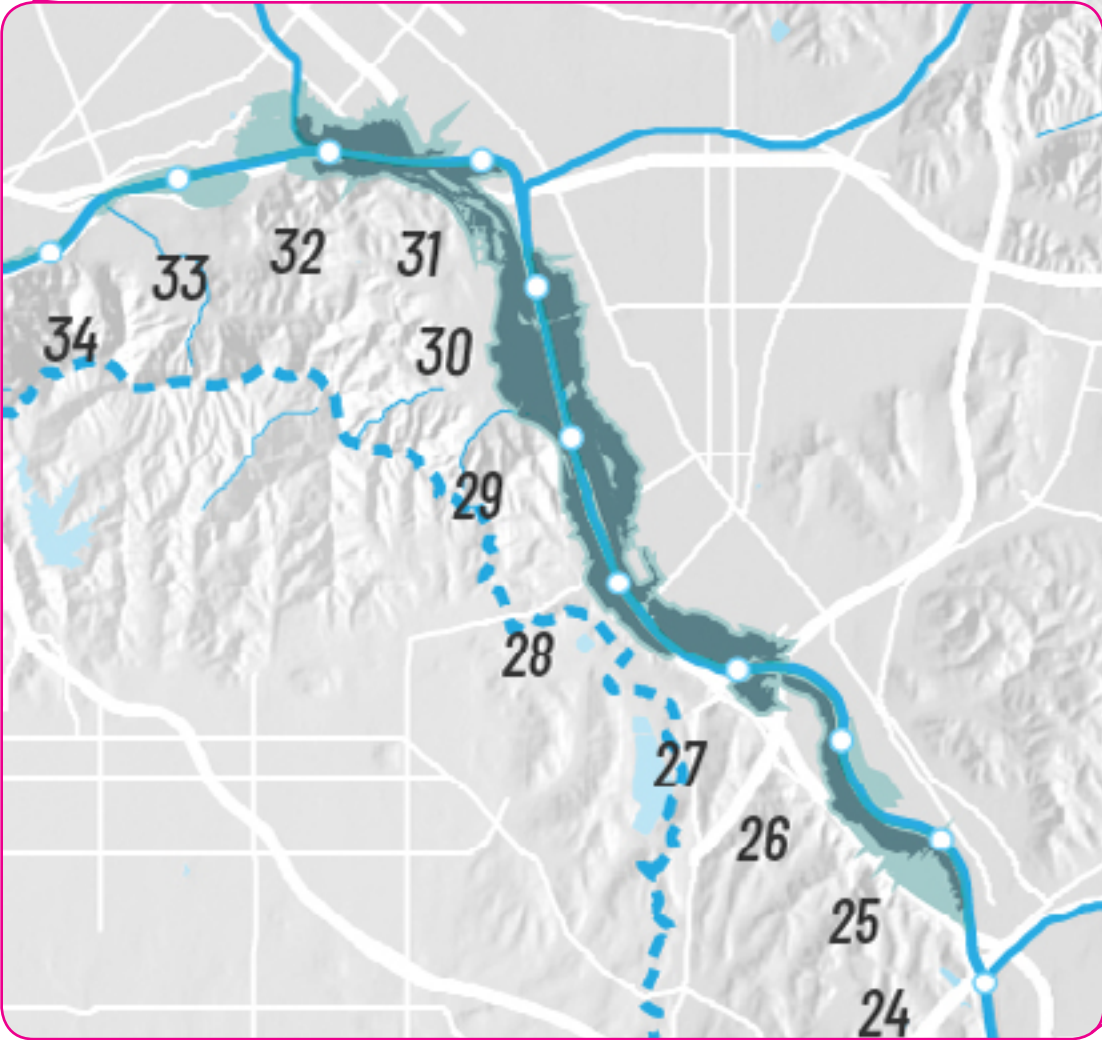
Source: Los Angeles County GIS Data Portal, Flood Zones; The Flood Insurance Study (FIS) for Los Angeles County was issued by FEMA in 2008 and revised in 2016

USACE FLOODPLAIN MAPPING

- i. Unsteady 1-D modeling of Los Angeles River with full 2-D flood plain modeling.
- ii. Analyses limited to 13 miles between Barham Boulevard and First Street.

100 Year Floodplain

500 Year Floodplain

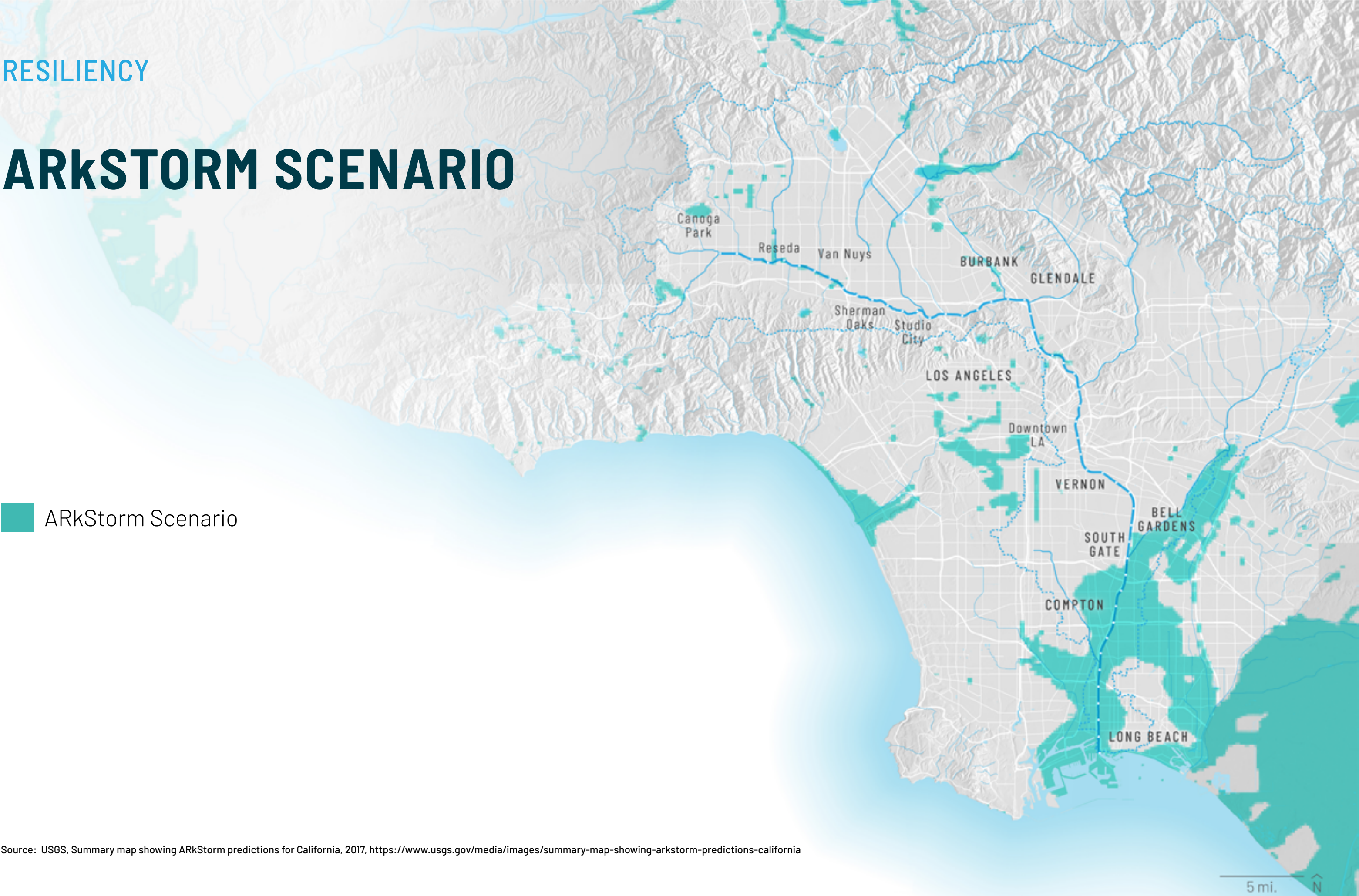


Source: USACE, Floodplain Management Services Special Study Los Angeles River Floodplain Analysis, October 2016; Mapping limited to area from Barham Boulevard to First Street

RESILIENCY

ARkSTORM SCENARIO

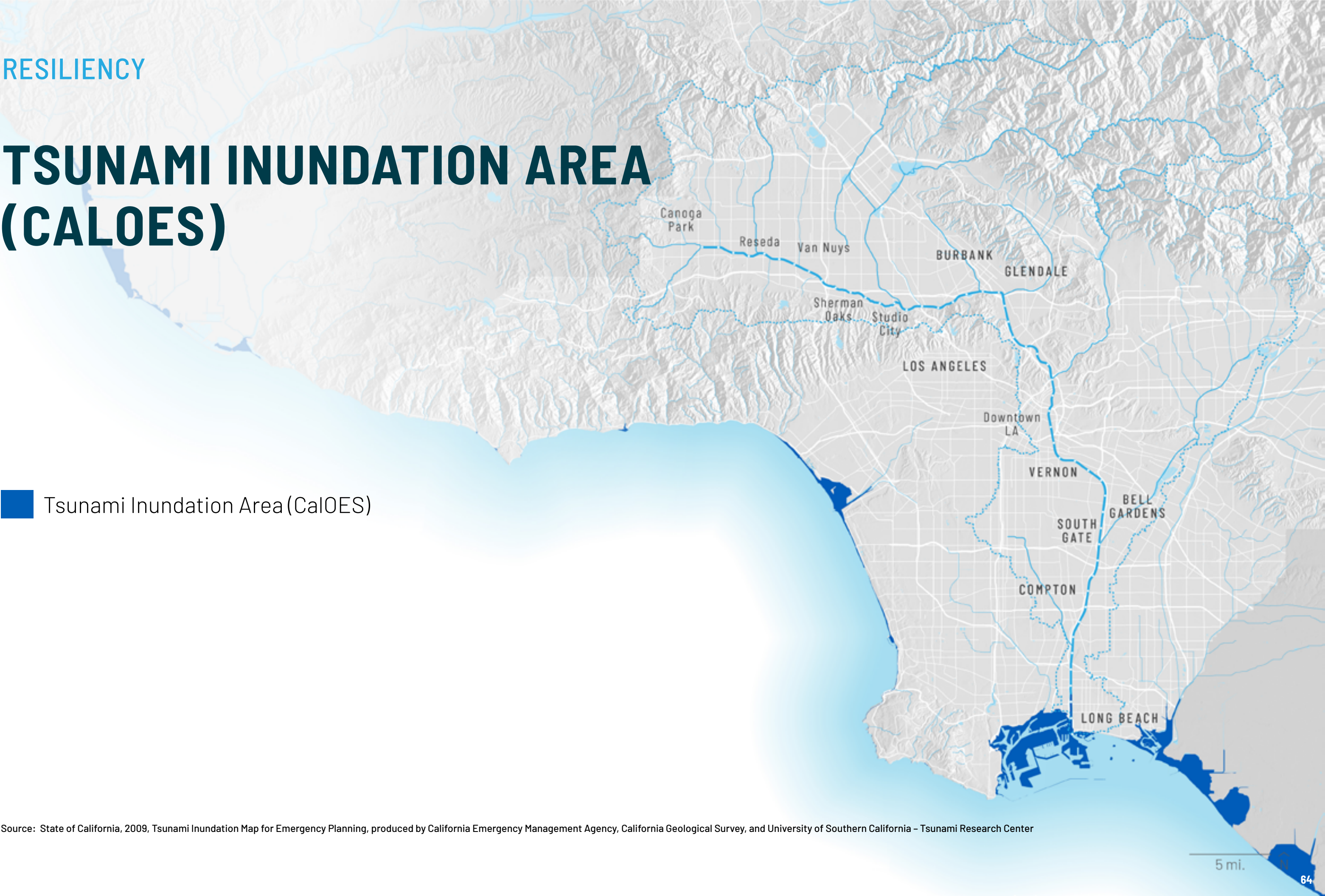
 ARkStorm Scenario



Source: USGS, Summary map showing ARkStorm predictions for California, 2017, <https://www.usgs.gov/media/images/summary-map-showing-arkstorm-predictions-california>

TSUNAMI INUNDATION AREA (CALOES)

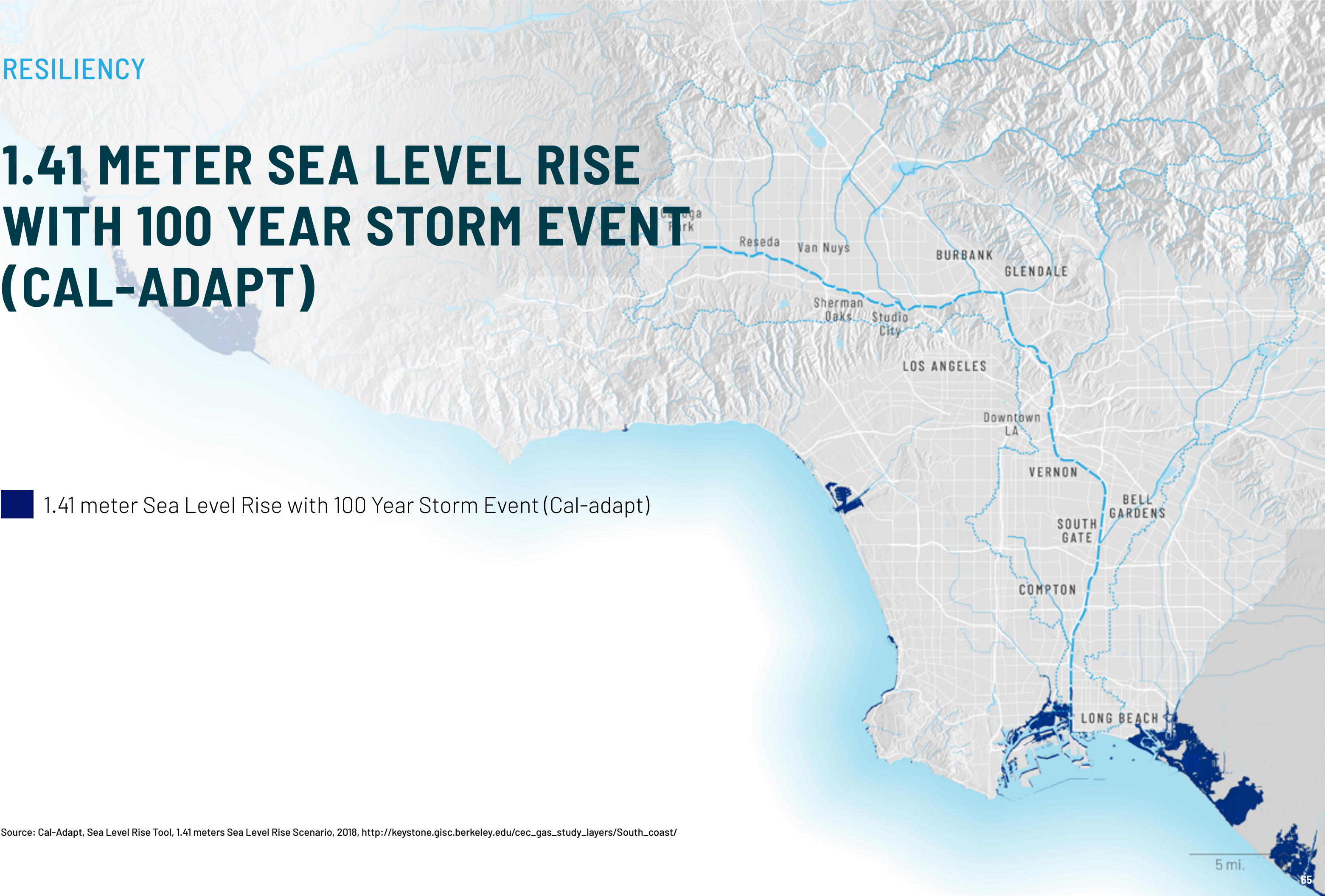
 Tsunami Inundation Area (CalOES)



Source: State of California, 2009, Tsunami Inundation Map for Emergency Planning, produced by California Emergency Management Agency, California Geological Survey, and University of Southern California – Tsunami Research Center

1.41 METER SEA LEVEL RISE WITH 100 YEAR STORM EVENT (CAL-ADAPT)

1.41 meter Sea Level Rise with 100 Year Storm Event (Cal-adapt)



Source: Cal-Adapt, Sea Level Rise Tool, 1.41 meters Sea Level Rise Scenario, 2018, http://keystone.gisc.berkeley.edu/cec_gas_study_layers/South_coast/

FLOOD HAZARDS

- 100 Year Floodplain (FEMA & USACE)
- 500 Year Floodplain (FEMA & USACE)
- Tsunami Inundation Area (CalOES)
- 1.41 meter Sea Level Rise with 100 Year Storm Event (Cal-adapt)

Source: Los Angeles County GIS Data Portal, Flood Zones; The Flood Insurance Study (FIS) for Los Angeles County was issued by FEMA in 2008 and revised in 2016 & USACE, Floodplain Management Services Special Study Los Angeles River Floodplain Analysis, October 2016; Mapping limited to area from Barham Boulevard to First Street), & Tate of California, 2009, Tsunami Inundation Map for Emergency Planning, produced by California Emergency Management Agency, California Geological Survey, and University of Southern California – Tsunami Research Center Cal-Adapt, Sea Level Rise Tool, 1.41 meters Sea Level Rise Scenario, 2018, http://keystone.gisc.berkeley.edu/cec_gas_study_layers/South_coast/

MITIGATION SAVES MONEY

National Benefit-Cost Ratio Per Peril <small>*BCR numbers in this study have been rounded</small>	Federally Funded	Beyond Code Requirements
	Overall Hazard Benefit-Cost Ratio 6:1	4:1
Riverine Flood	7:1	5:1

Source: Multihazard Mitigation Council (2017) Natural Hazard Mitigation Saves 2017 Interim Report: An Independent Study.

RESILIENCY

FLOOD HAZARDS & CRITICAL FACILITIES & INFRASTRUCTURE

- Disaster and Emergency Operations Center
- Police and Fire Stations
- Medical Facilities
- Schools
- Hazardous Facilities
- 100 Year Floodplain (FEMA & USACE)
- 500 Year Floodplain (FEMA & USACE)
- Tsunami Inundation Area (CalOES)
- 1.41 meter Sea Level Rise with 100 Year Storm Event (Cal-adapt)
- Evacuation Routes
- Transition Lines
- Passenger Rail
- Wastewater Treatment Plants
- Power Plants
- Electrical Substations
- Intermodal Transit Facilities
- Public Transit Facilities
- Heliports
- Bridges
- Freeway Exits

Source: Los Angeles County GIS Data Portal, Points of Interest, 2016 & Los Angeles County GIS Data Portal, Disaster Routes, 1998 & California Department of Transportation, California Rail Network, 2013 & EPA, FRS Geospatial Data, 2018 & State of California Energy Commission, California Electric Transmission Line, 2018 & Los Angeles County GIS Data Portal, Flood Zones; The Flood Insurance Study (FIS) for Los Angeles County was issued by FEMA in 2008 and revised in 2016 & USACE, Floodplain Management Services Special Study Los Angeles River Floodplain Analysis, October 2016; Mapping limited to area from Barham Boulevard to First Street, & Tate of California, 2009, Tsunami Inundation Map for Emergency Planning, produced by California Emergency Management Agency, California Geological Survey, and University of Southern California - Tsunami Research Center Cal-Adapt, Seal Level Rise Tool, 1.41 meters Sea Level Rise Scenario, 2018, http://keystone.gisc.berkeley.edu/cec_gas_study_layers/South_coast/

5 mi.

COMMUNITY

Source: Dusadee Corhiran, Twitter User: @DCorhiran, <https://pbs.twimg.com/media/DE0xDU9UMAA3nVX.jpg>, 2017

THERE WERE ONCE AS MANY AS 45 INDIGENOUS VILLAGES ALONG THE LA RIVER

Indigenous Sites






- Historic Kizh (Tongva / Gabrielino) Tribes Area
- Historic Village Sites

Source: Native American Territories in California based on Handbook of North American Indians Vol. 8. Bean, L. J., & Smith, C. R. & Blake Gumprecht, "The Los Angeles River: Its Life, Death, and Possible Rebirth.", Indian Villages Near the Courses of the Los Angeles River, 2001

COMMUNITY

THE UPPER HALF OF THE RIVER OVERLAPS WITH THE JUAN BAUTISTA DE ANZA TRAIL CORRIDOR

Spanish Sites

-  Juan Bautista De Anza Trail Corridor
-  Spanish and Mexican Land Grants
-  Expedition Campsites
-  Spanish Missions
-  Old Spanish Trail

Source: Juan Bautista de Anza National Historic Trail, National Park Service, 2016 & State of California Public Land Survey System , Spanish and Mexican Land Grants in California , <http://www.arcgis.com/home/item.html?id=52751c7f016746c99d55aa4fc3575905>

5 mi.

71

COMMUNITY



Source: Scott Lowe, LA River Ride 2009: <https://www.flickr.com/photos/scottlowe/3631947146/>, 2009

LA RIVER: OBJECT OF ART

Photography

Painting

Source: Chang Kim, L.A. River: Images - Above

Source: James Doolin, Study # 4 for Connections, 1992

LA RIVER: A PLACE FOR COLLABORATIVE ART



Source: Clockshop, The Bowtie Project, evereachmore, <https://clockshop.org/wp-content/uploads/2015/07/Clockshop-evereachmore-0035.jpg>, 2015

THE GREAT WALL OF LOS ANGELES

Initiated: 1974

75

LA RIVER: A PLACE FOR ENVIRONMENTAL ART

GREENMEME: "RIVER LIVER"



Source: Greenmeme, <http://www.greenmeme.com/RIVER-LIVER>, 2005-2018

LEO LIMON: "RIVER CATS"



Source: KCET Departures, Leo Limon 11, 2010

CURRENT: LA WATER



"UnderLA" by Peggy Weil and Refik Anadol

GREENMEME: "RIVERSIDE ROUNDABOUT"



Source: Greenmeme, <http://www.greenmeme.com/RIVERSIDE-ROUNDABOUT>, 2017

LA RIVER PUBLIC ART PROJECT



CLOCKSHOP: THE BOWTIE PROJECT



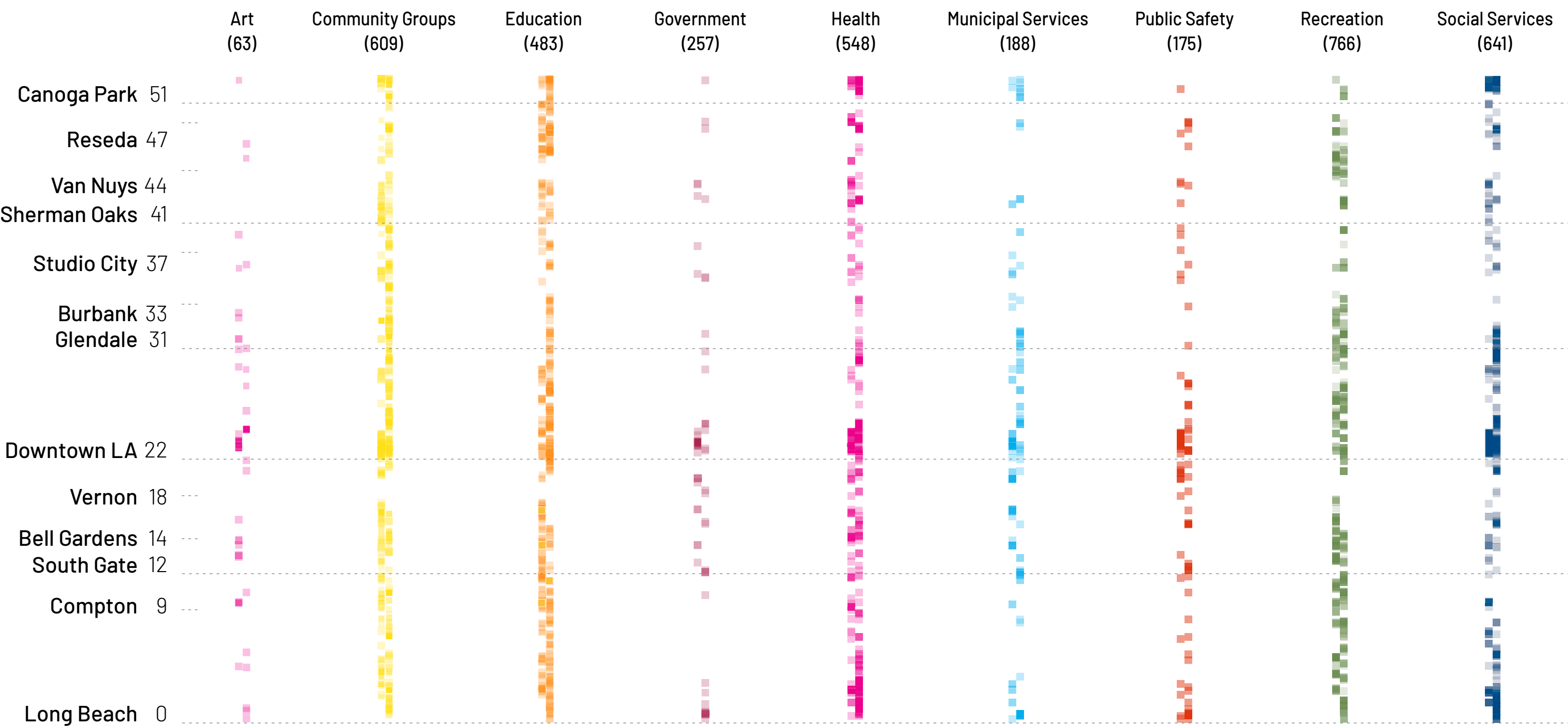
Source: "ACE Spring Design Studio" by Woodbury University, 2016

"building: a simulacrum of power" by Rafa Esparza, 2014

STRONG RIVER ADVOCACY



COMMUNITY PROGRAMMING: WITHIN 1 MILE OF LA RIVER



Source: Los Angeles County GIS Data Portal, Locations/Points of Interest (LMS Data) , 2016

PARKS AND ACCESS

Source: Jeff Houze, Horsebike Riding in the Glendale Narrows, 2014; from Project 51, Play the LA River

PARKS EVALUATION CRITERIA

Quantity

LA COUNTY GOAL = 4 ACRES/1000 PEOPLE

WORLD HEALTH ORGANIZATION MINIMUM = 2.25 ACRES/1000 PEOPLE

Size

VARIETY OF AMENITIES AND SIZE

Access

DISTANCE

OBSTRUCTIONS

PARKS AND ACCESS

EXISTING PARK NEED

PARK LAND

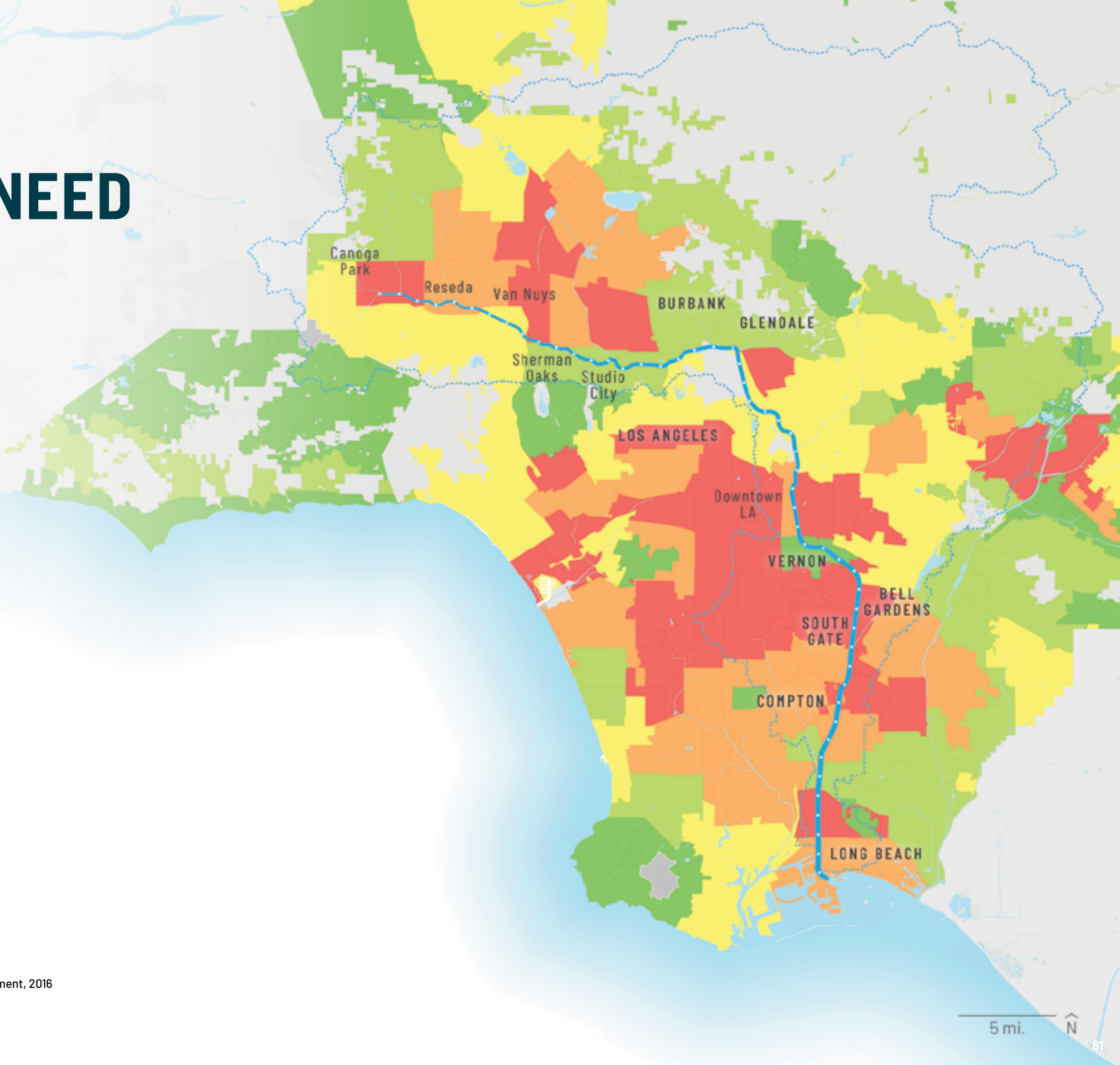
PARK ACCESS

PARK PRESSURE

Park Need

- Very High
- High
- Moderate
- Low
- Very Low

Source: Los Angeles Countywide Comprehensive Parks and Recreation Needs Assessment, 2016



LA COUNTY ADULT HEALTH SNAPSHOT

36%
Overweight

24%
Obese

24%
High Blood
Pressure

10%
Diabetes

\$25B
Spent on
Chronic Disease

Source: Los Angeles County Department of Public Health Los Angeles County Health Survey, 2007, 2015; Cost of Chronic Disease in California: Estimates at the County Level. Brown, Paul M. et. al. Journal of Public Health Management and Practice21(1):E10-E19, January/February 2015

SINCE 2007, LA COUNTY ADULTS

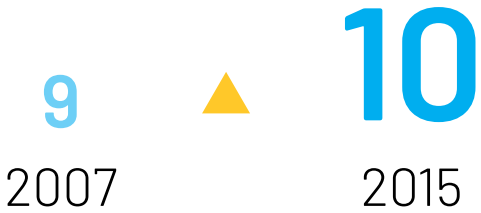
Are More Overweight

Percent Overweight or Obese



Are More Diabetic

Percent with Diabetes



Have Lower Blood Pressure

Percent with Hypertension



Have Lower Cholesterol

Percent with High Cholestrol



Source: Los Angeles County Department of Public Health Los Angeles County Health Survey, 2007, 2015

COMPARED TO CALIFORNIA, LA COUNTY ADULTS

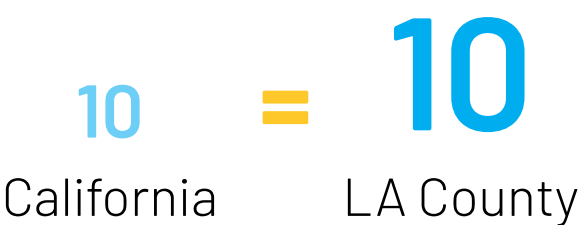
Are Less
Overweight

Percent Overweight or Obese



Are as
Diabetic

Percent with Diabetes



Have Lower
Blood Pressure

Percent with Hypertension



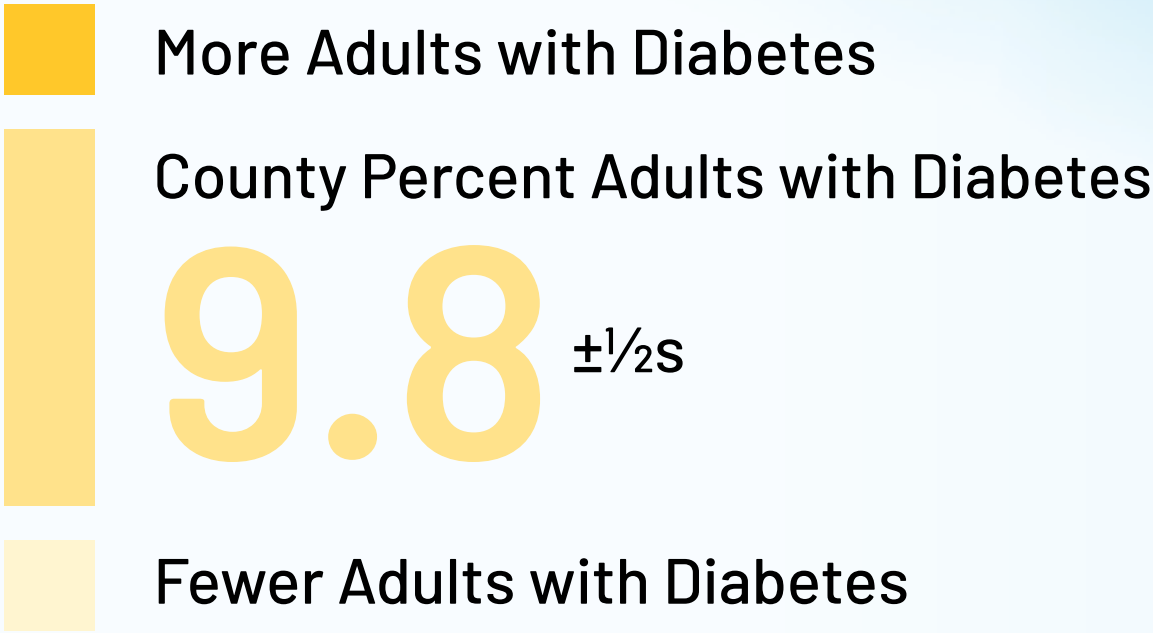
Have Lower
Cholesterol

Percent with High Cholestrol



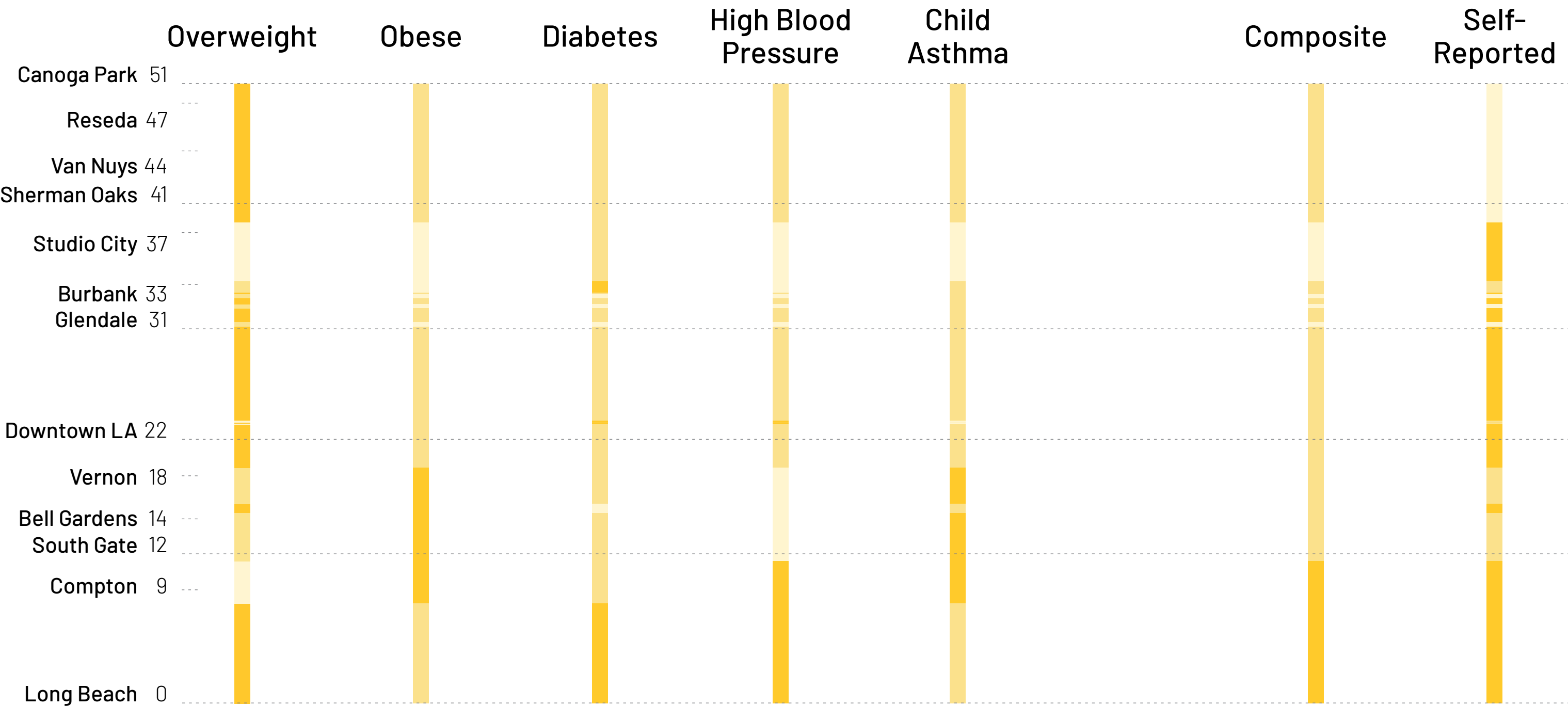
Source: Los Angeles County Department of Public Health Los Angeles County Health Survey, 2015; Centers for Disease Control and Prevention Sortable Risk Factors and Health Indicators Website, updated 10/24/2017

MORE ADULTS WITH DIABETES ALONG THE SOUTHERN HALF OF THE RIVER



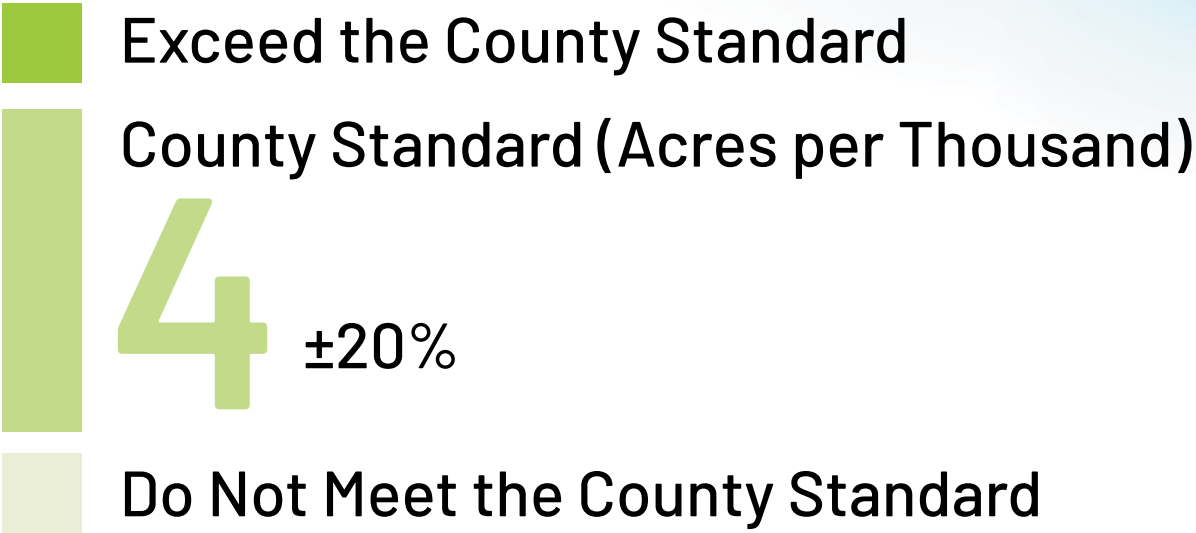
Source: Los Angeles County Department of Public Health Los Angeles County Health Survey, 2015

HEALTH ISSUES MOST ACUTE IN SOUTHERN CITIES



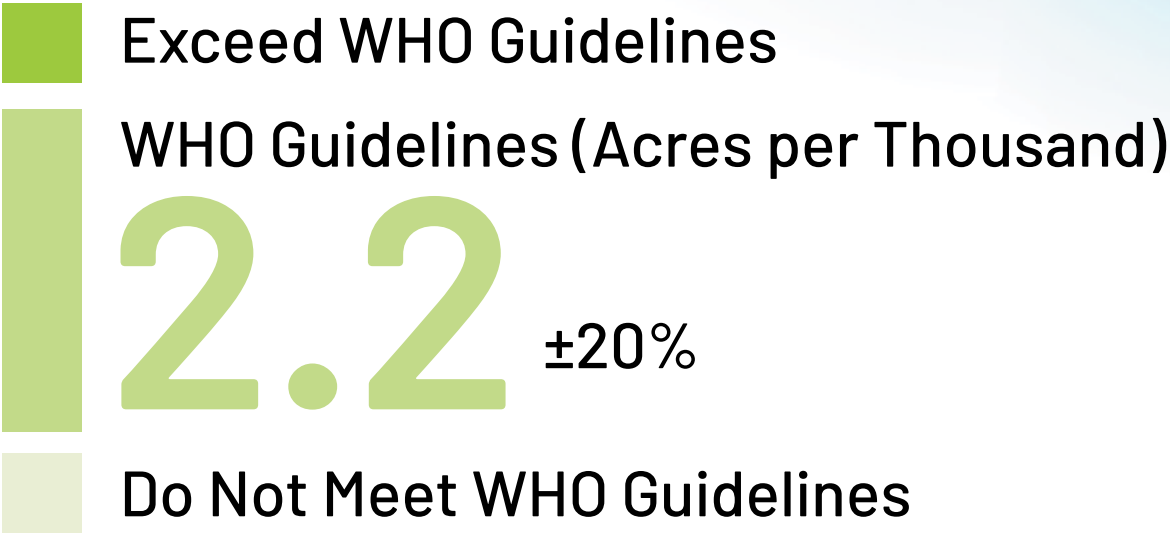
Source: Los Angeles County Department of Public Health Los Angeles County Health Survey, 2015

MOST COMMUNITIES ALONG THE RIVER DO NOT MEET THE COUNTY STANDARD FOR PARK SPACE



Source: Los Angeles Countywide Comprehensive Parks and Recreation Needs Assessment, 2016

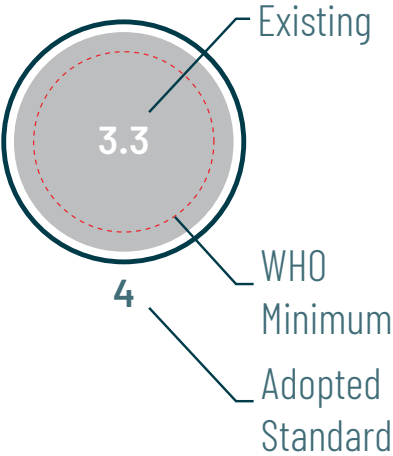
MANY COMMUNITIES ALONG THE RIVER DO NOT MEET WHO MINIMUM PARK SPACE GUIDELINES



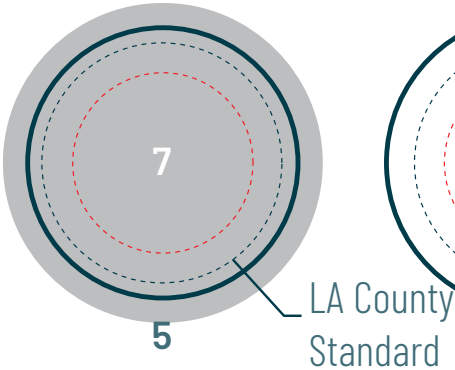
Source: Los Angeles Countywide Comprehensive Parks and Recreation Needs Assessment, 2016

VARYING PARK ACREAGE STANDARDS PER 1,000 RESIDENTS BY LOCALITY

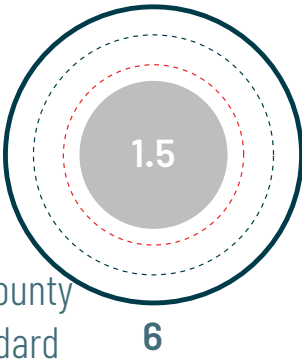
LA COUNTY



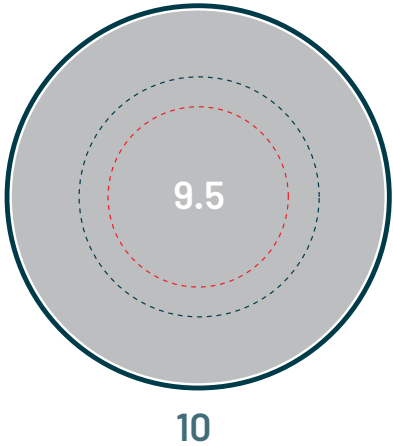
BURBANK



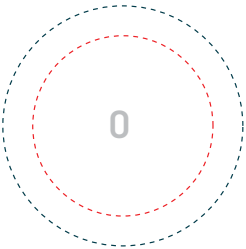
GLENDALE



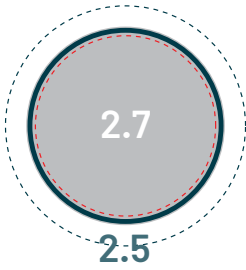
LOS ANGELES



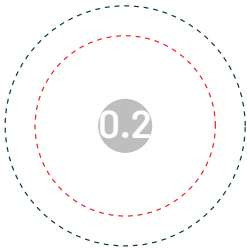
VERNON



COMMERCE



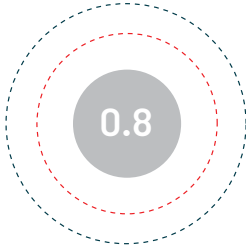
MAYWOOD



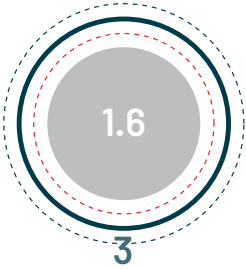
BELL



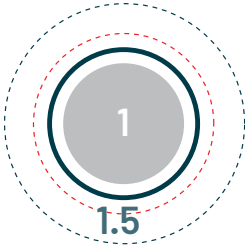
CUDAHY



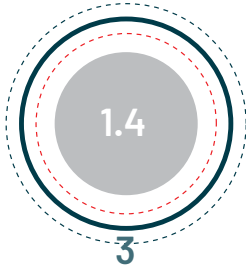
SOUTH GATE



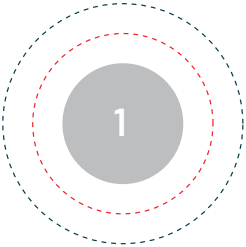
DOWNEY



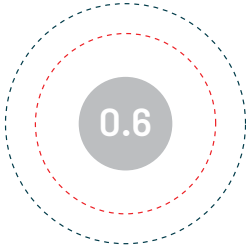
LYNWOOD



PARAMOUNT



COMPTON

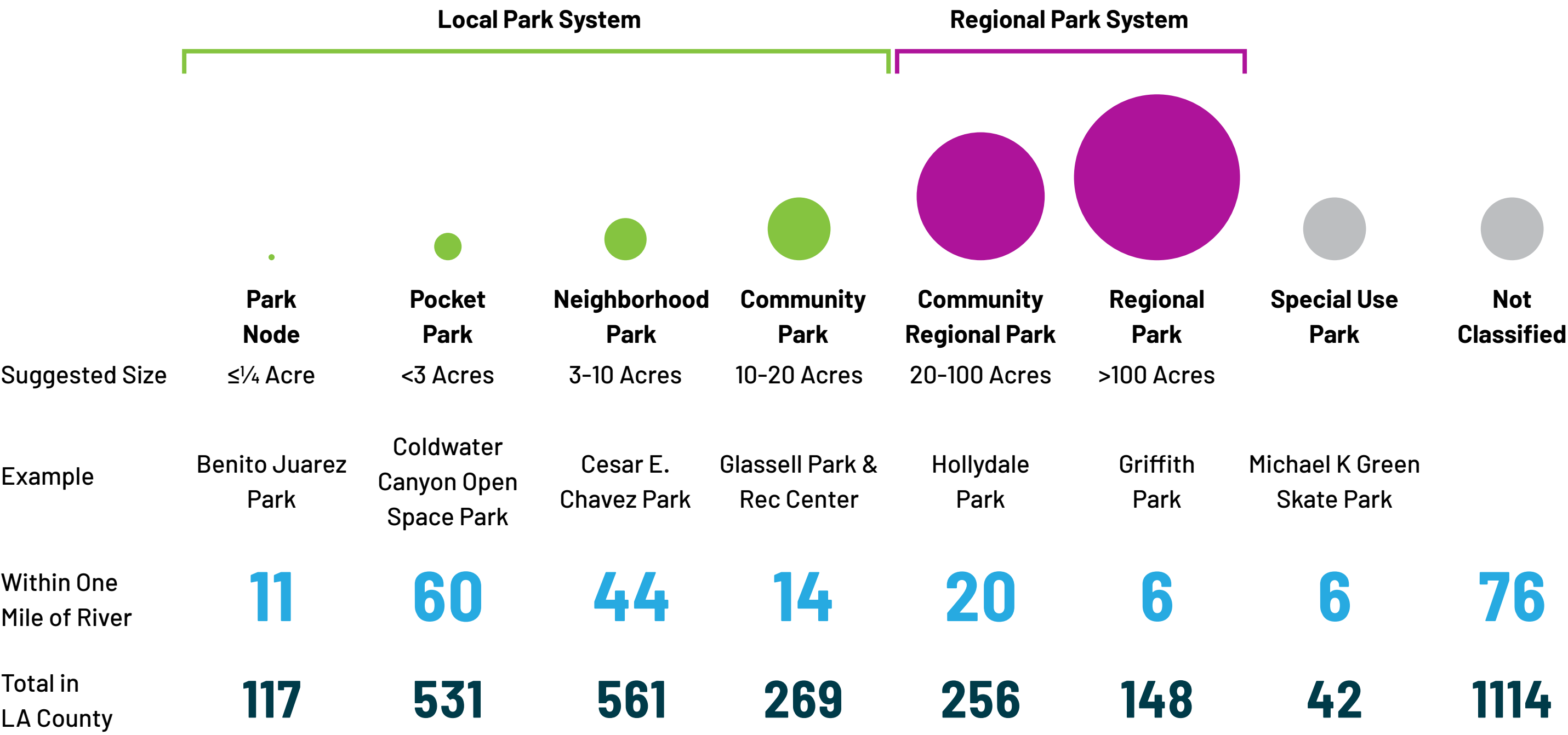


LONG BEACH



Source: Most recent adopted general plans

LA COUNTY PARK CLASSIFICATIONS

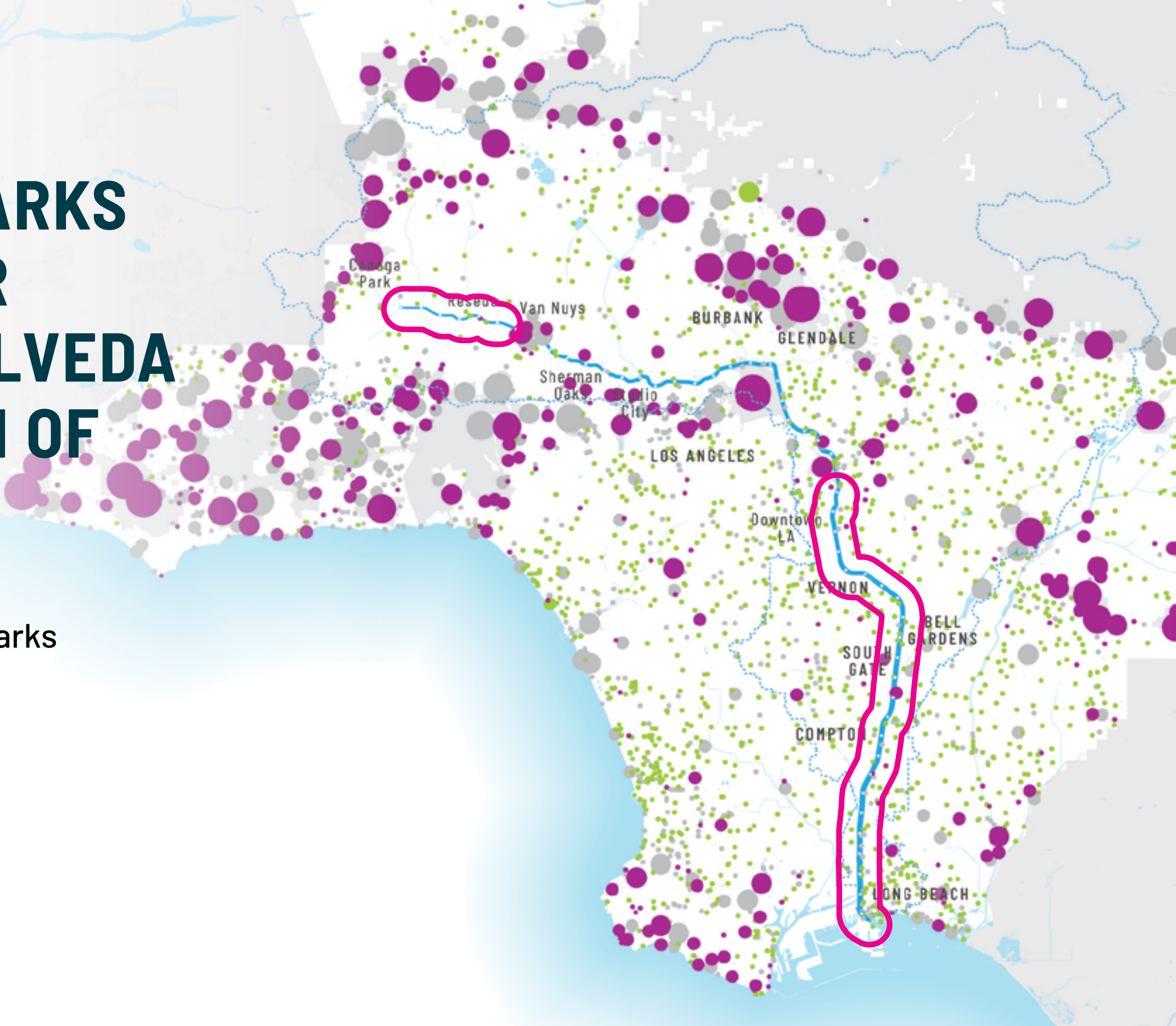


Source: Los Angeles County Department of Parks and Recreation Countywide Parks and Open Space, 2016; Los Angeles County Department of Regional Planning General Plan 2035 Parks and Recreation Element, 2015

PARKS AND ACCESS






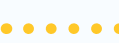

NO REGIONAL PARKS
NEAR THE RIVER
NORTH OF SEPULVEDA
BASIN OR SOUTH OF
DOWNTOWN LA

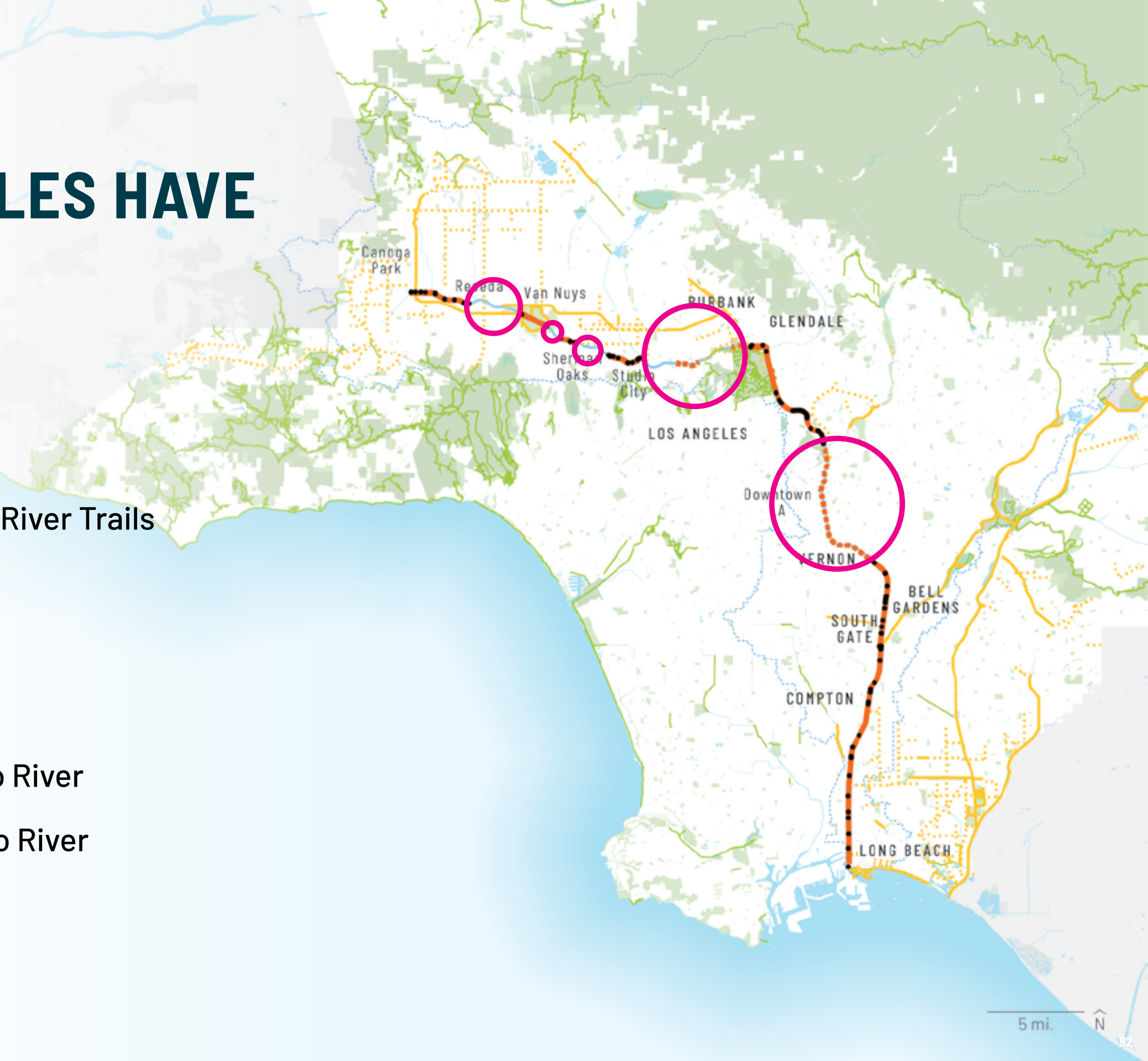
- Areas with Few Regional Parks
- Regional Parks
- Local Parks
- Special Use/Not Classified



Source: Los Angeles County Department of Parks and Recreation Countywide Parks and Open Space, 2016

21 OF THE 51 MILES HAVE NO TRAILS

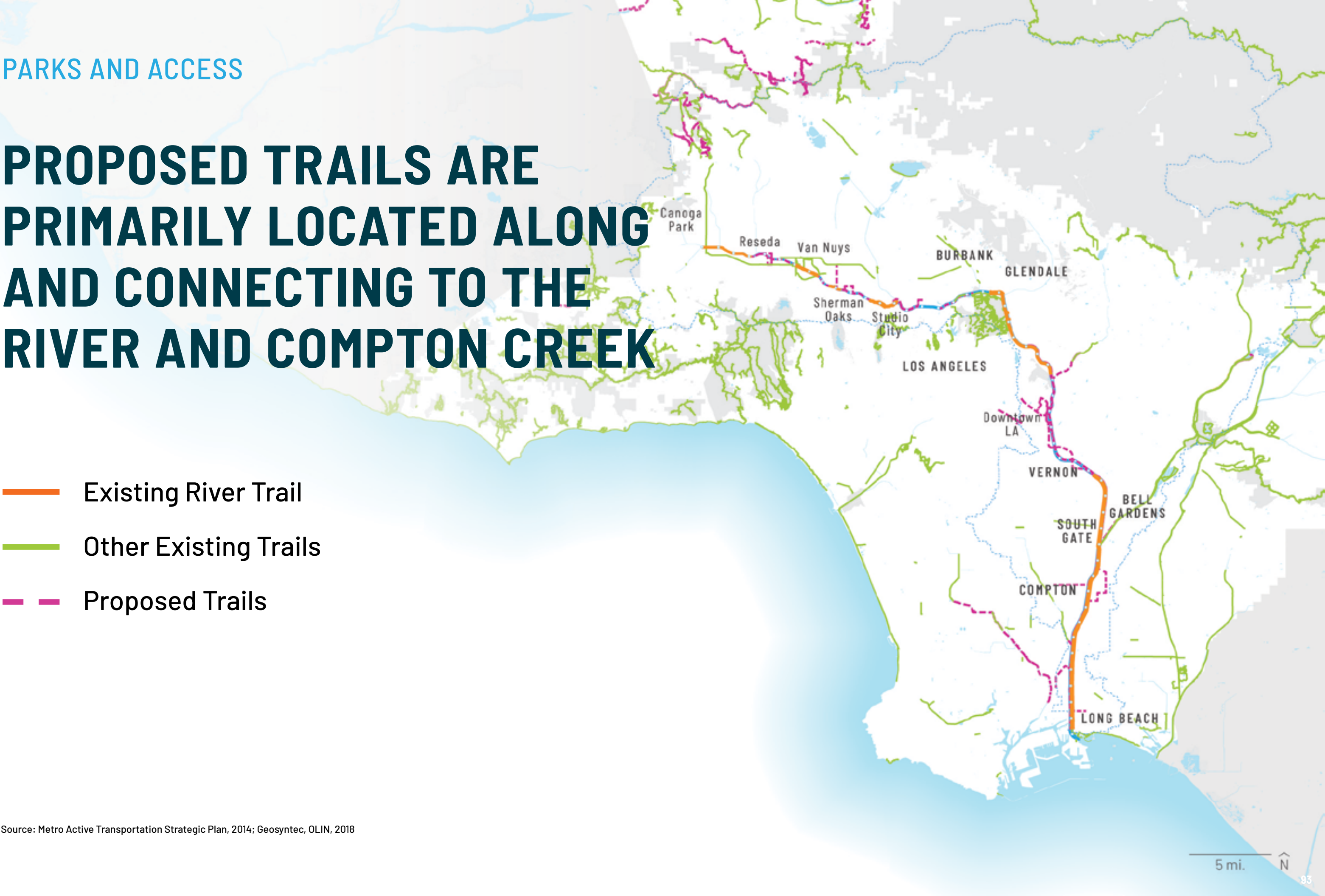
-  Areas with No Existing River Trails
-  Existing River Trail
-  Proposed River Trail
-  Official Access Point
-  Bike Path Connected to River
-  Bike Lane Connected to River
-  Trails



Source: Metro Active Transportation Strategic Plan, 2014




**PROPOSED TRAILS ARE
PRIMARILY LOCATED ALONG
AND CONNECTING TO THE
RIVER AND COMPTON CREEK**

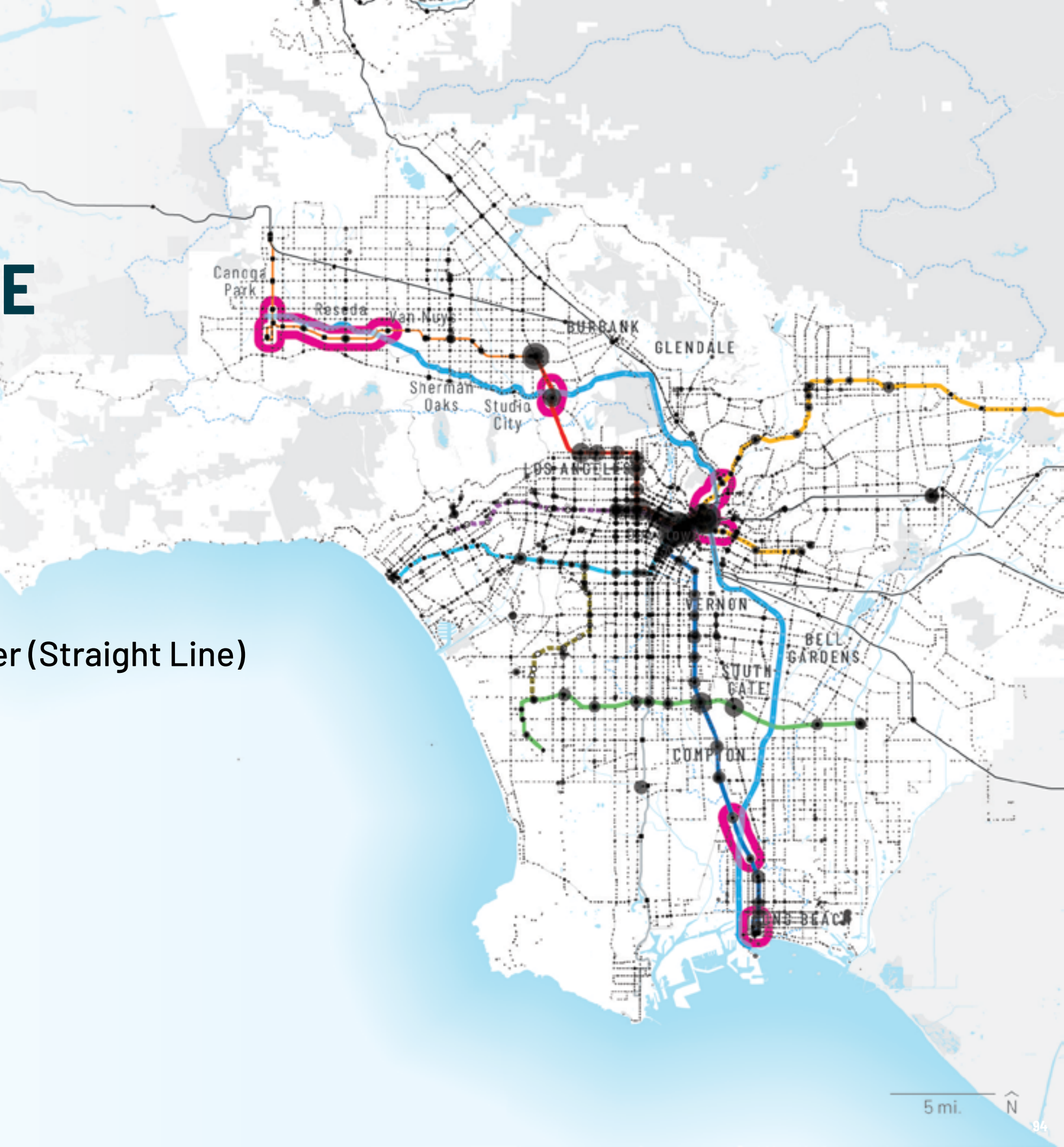
- Existing River Trail
- Other Existing Trails
- Proposed Trails





Source: Metro Active Transportation Strategic Plan, 2014; Geosyntec, OLIN, 2018

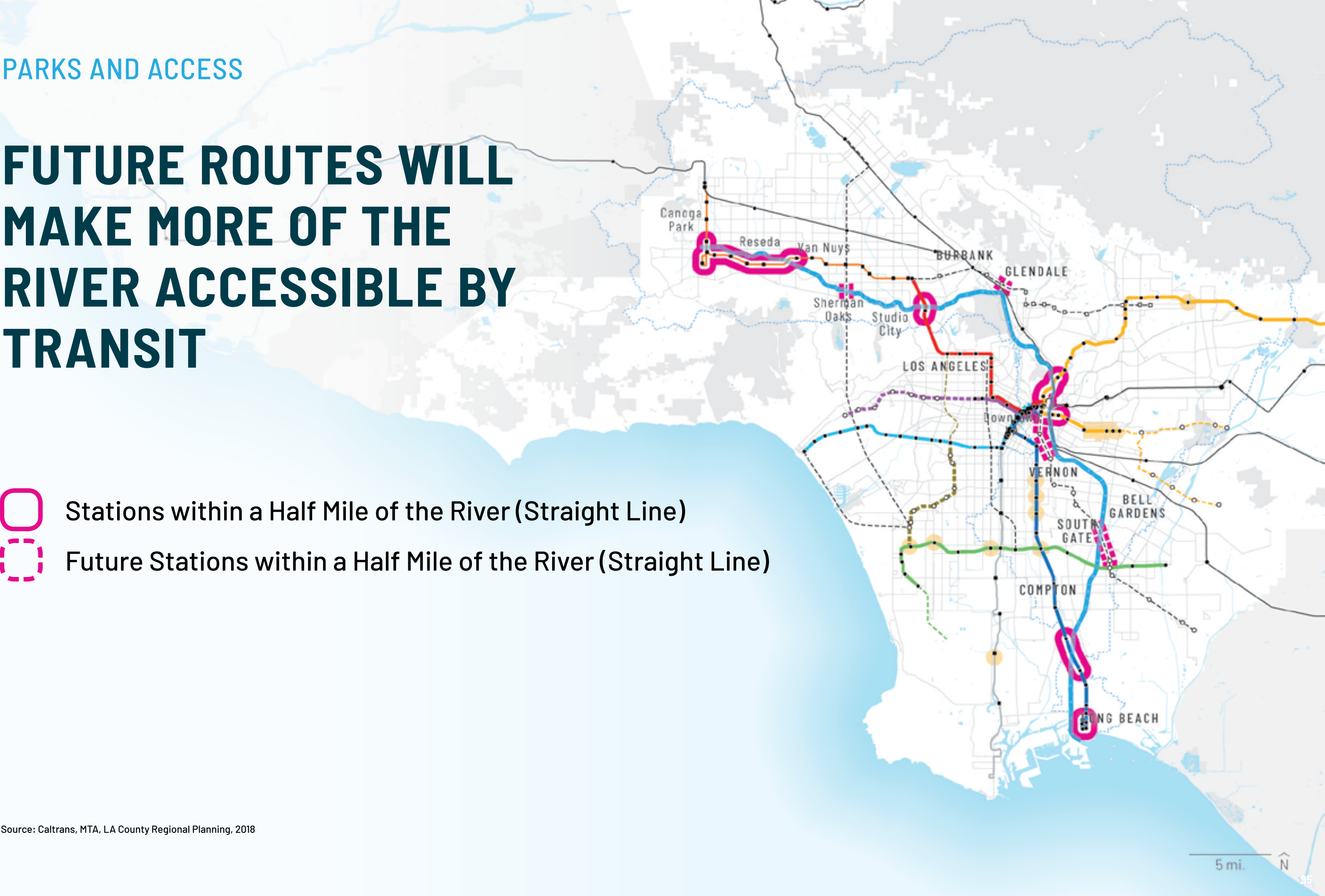
STATIONS NEAR THE RIVER INCLUDE THOSE WITH SOME OF THE HIGHEST RIDERSHIP

-  Stations within a Half Mile of the River (Straight Line)
-  Higher Ridership
-  Lower Ridership



FUTURE ROUTES WILL MAKE MORE OF THE RIVER ACCESSIBLE BY TRANSIT

-  Stations within a Half Mile of the River (Straight Line)
-  Future Stations within a Half Mile of the River (Straight Line)



COUNTYWIDE CORRIDOR AND CONNECTIVITY OPPORTUNITIES

- Transmission Line Rights of Way
- Metro Rights of Way
- Trails



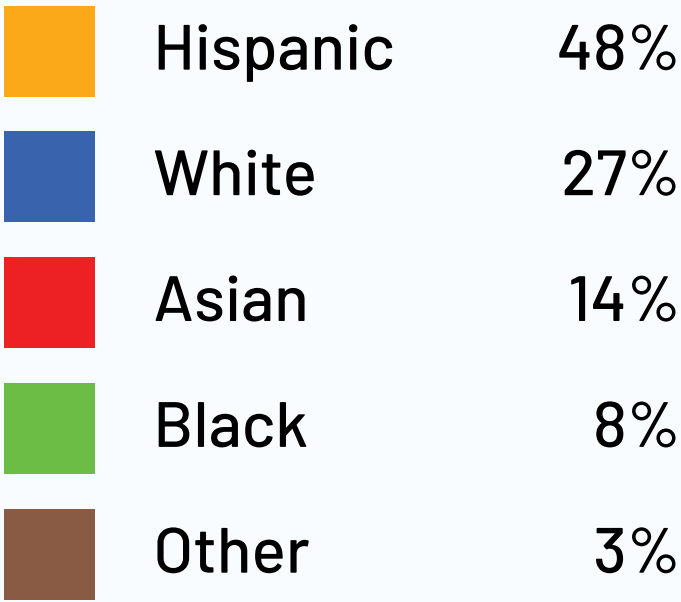
Source: Metro Rights of Way, 2014; Active Transportation Strategic Plan, 2016



SOCIAL EQUITY

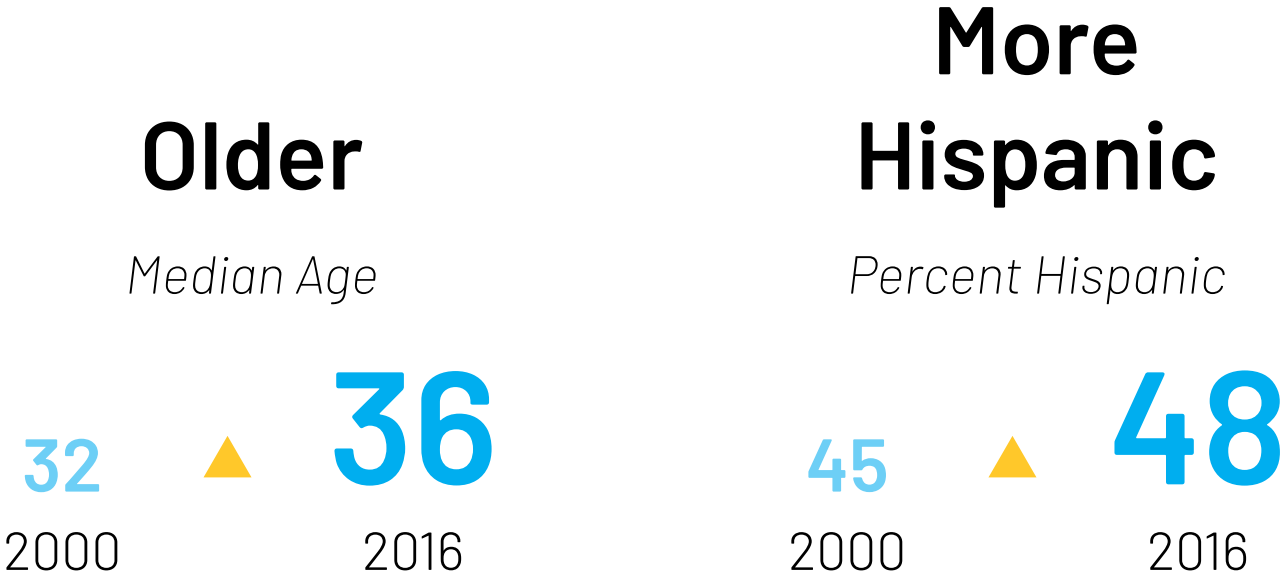
Source: Turnaround Arts, <https://www.facebook.com/TurnaroundArtsCA/photos/a.640810819330506.1073741827.639862272758694/1694110054000572/?type=1&theater>

LA COUNTY IS A PATCHWORK OF DIVERSE COMMUNITIES



Source: US Census Bureau 2016 American Community Survey 5-Year Estimates

SINCE 2000, LA COUNTY RESIDENTS HAVE BECOME

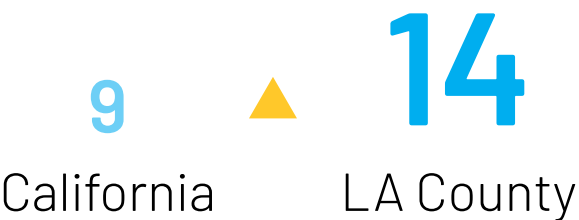


Source: US Census Bureau Census 2000, 2016 American Community Survey 5-Year Estimates

COMPARED TO CALIFORNIA, LA COUNTY RESIDENTS ARE

More Limited in English

Percent Limited English Households



More Hispanic

Percent Hispanic



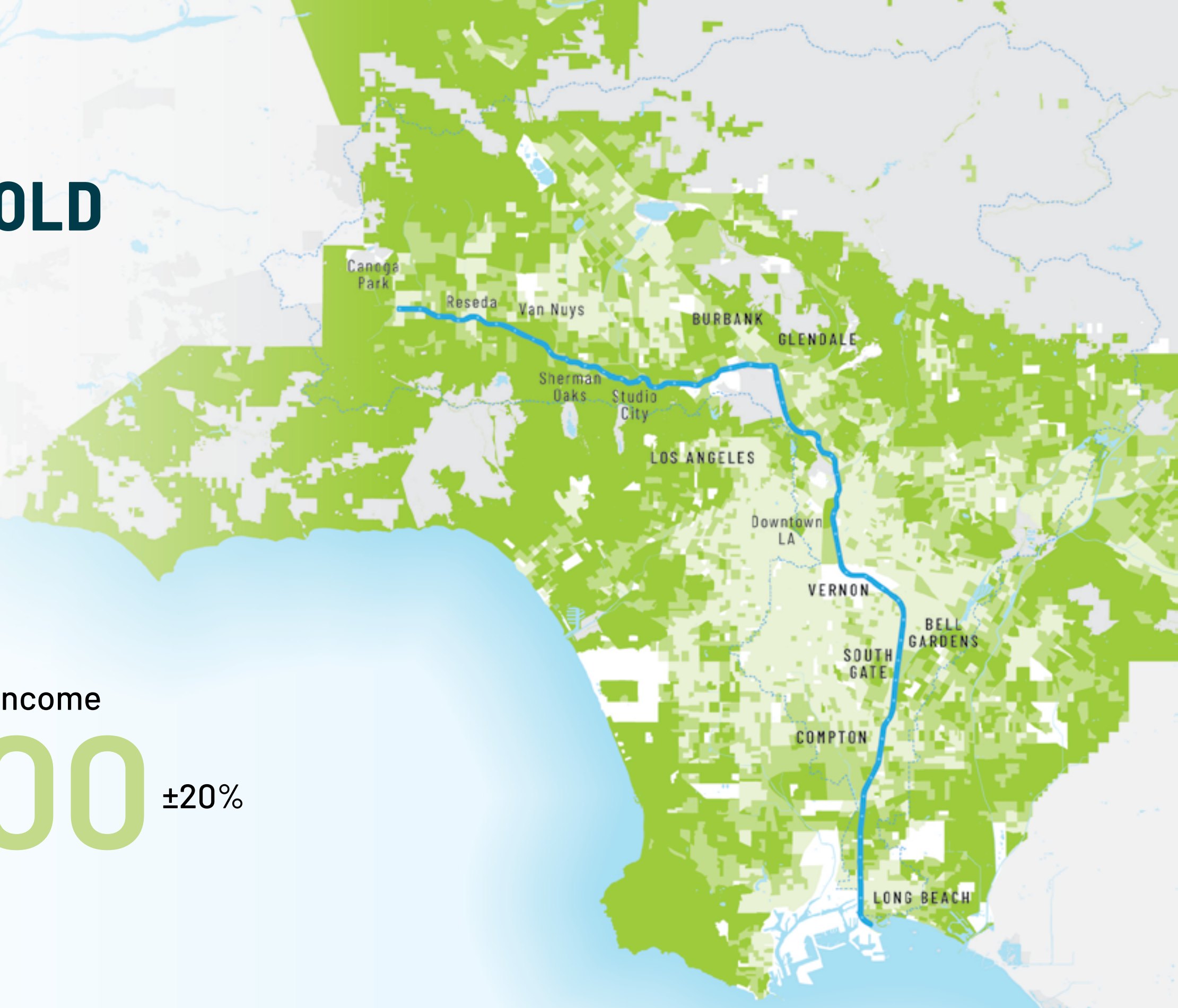
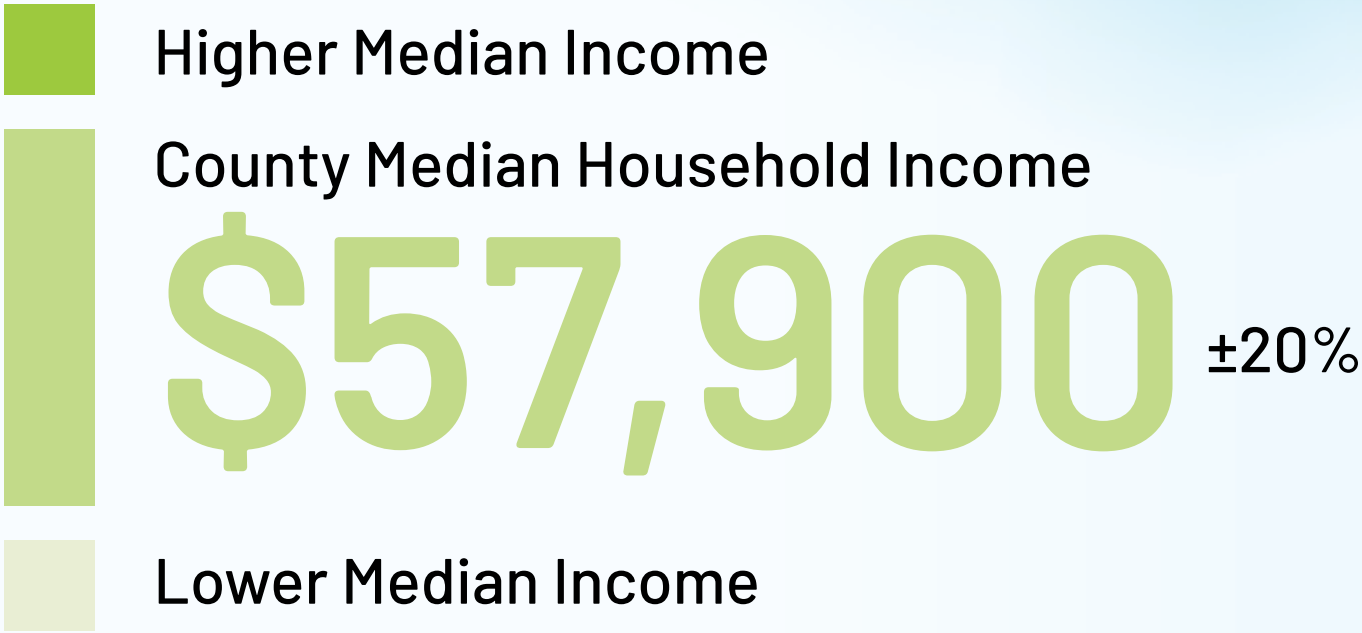
Less Educated

Percent Finishing High School



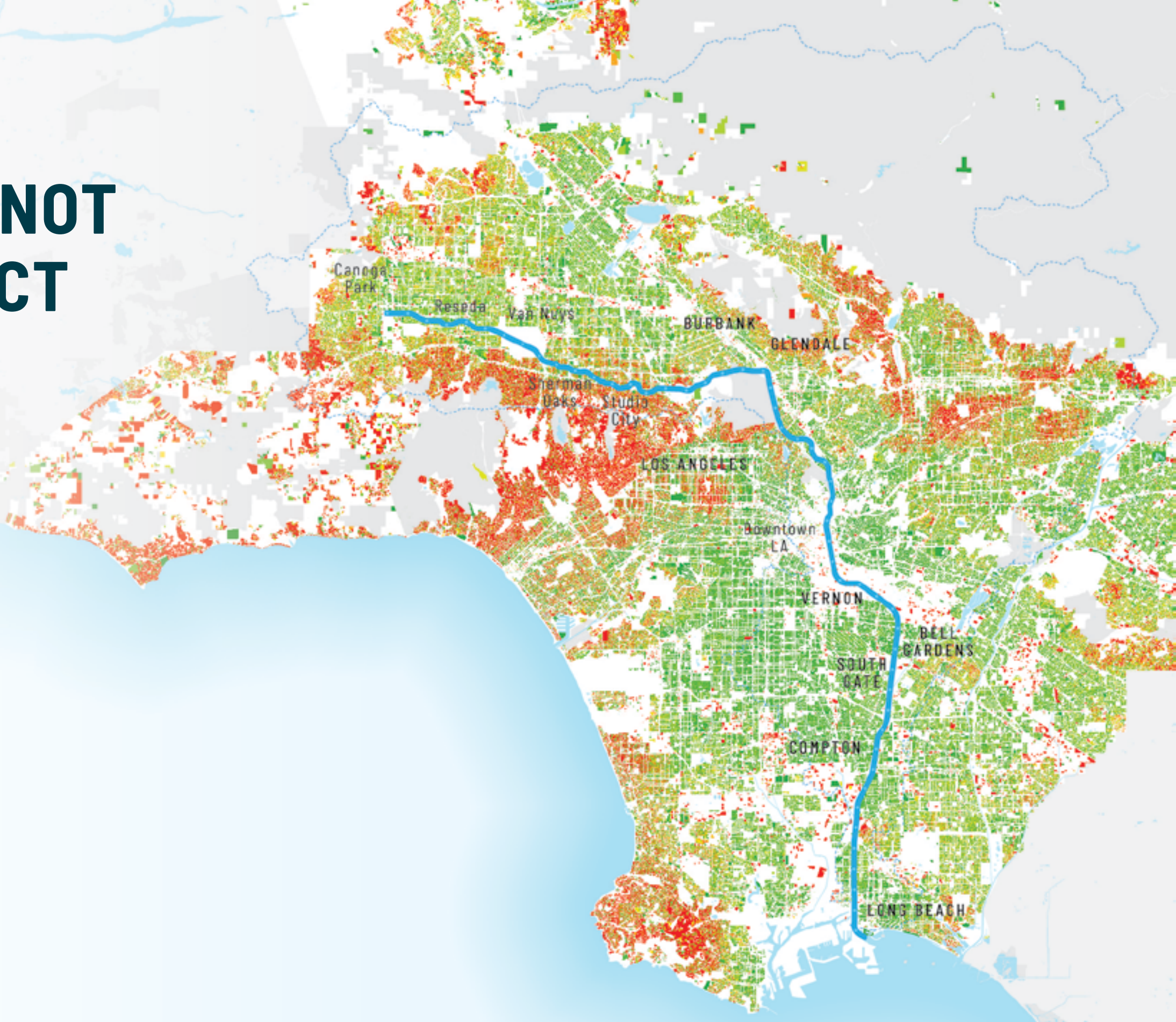
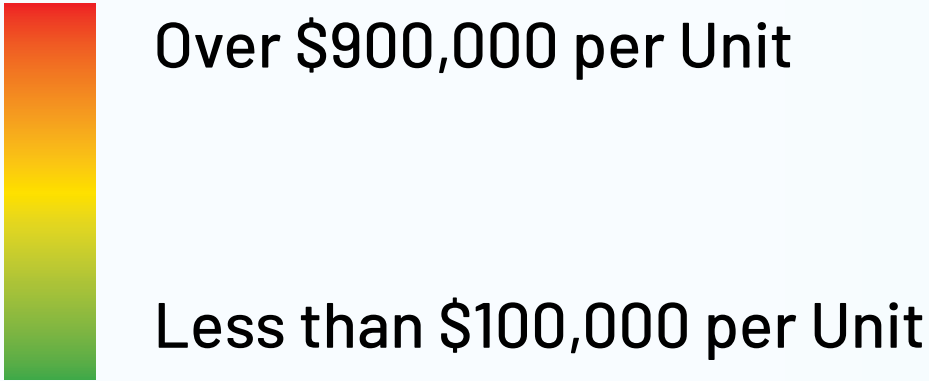
Source: US Census Bureau 2016 American Community Survey 5-Year Estimates

HIGHER HOUSEHOLD INCOMES ALONG UPPER STRETCH OF THE RIVER



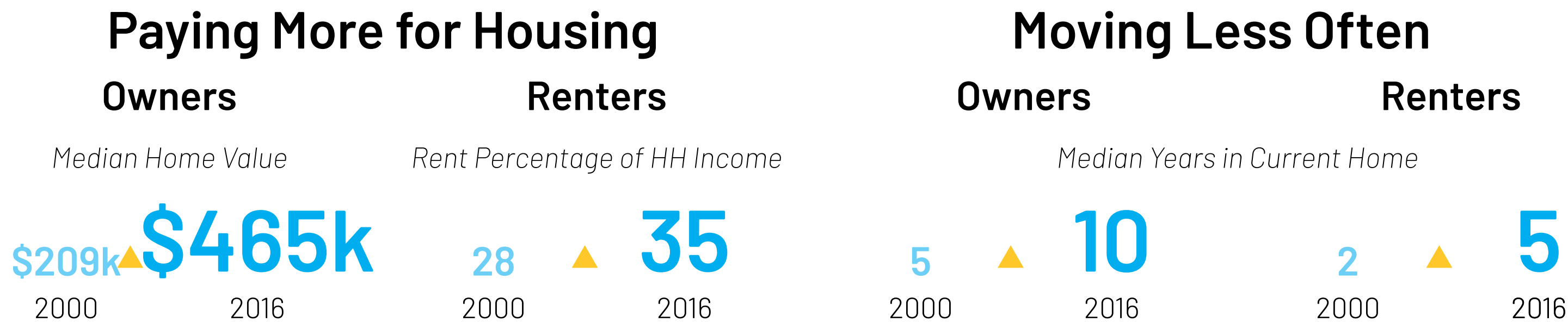
Source: US Census Bureau 2016 American Community Survey 5-Year Estimates

THE RIVER DOES NOT APPEAR TO IMPACT HOUSING PRICES



Source: Los Angeles County Office of the Assessor Property Database, 2015

SINCE 2000, LA COUNTY RESIDENTS HAVE BEEN

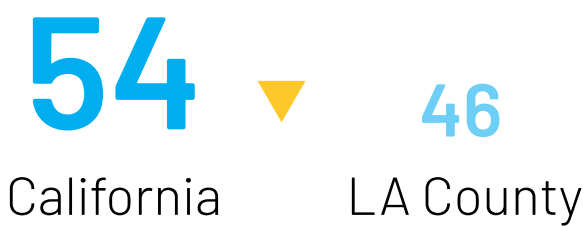


Source: US Census Bureau Census 2000, 2016 American Community Survey 5-Year Estimates

COMPARED TO CALIFORNIA, LA COUNTY RESIDENTS ARE

Less Likely to
Own a Home

Percent Owner Occupied Units



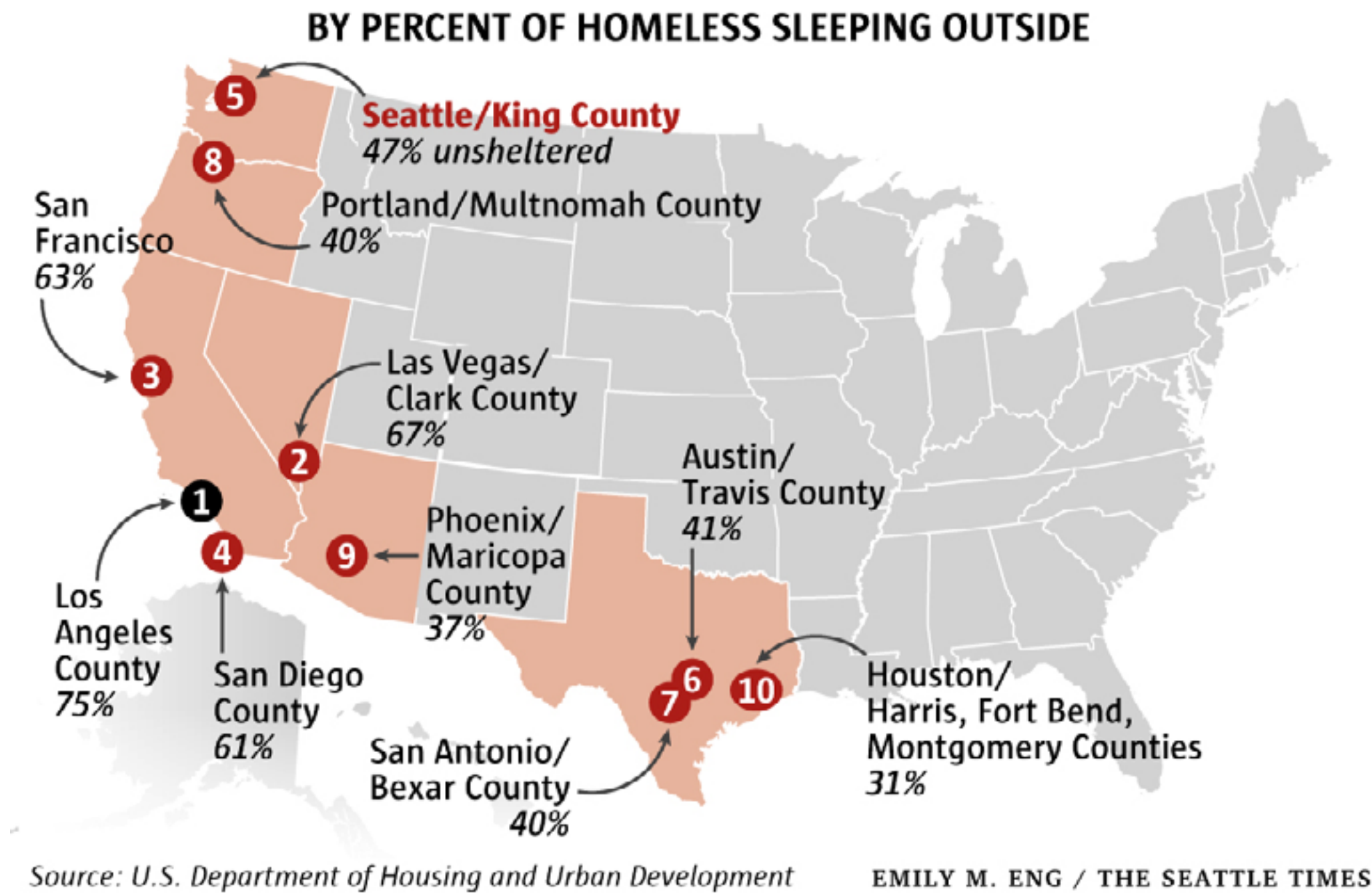
More Likely to Pay
More for a Home

Median Home Value



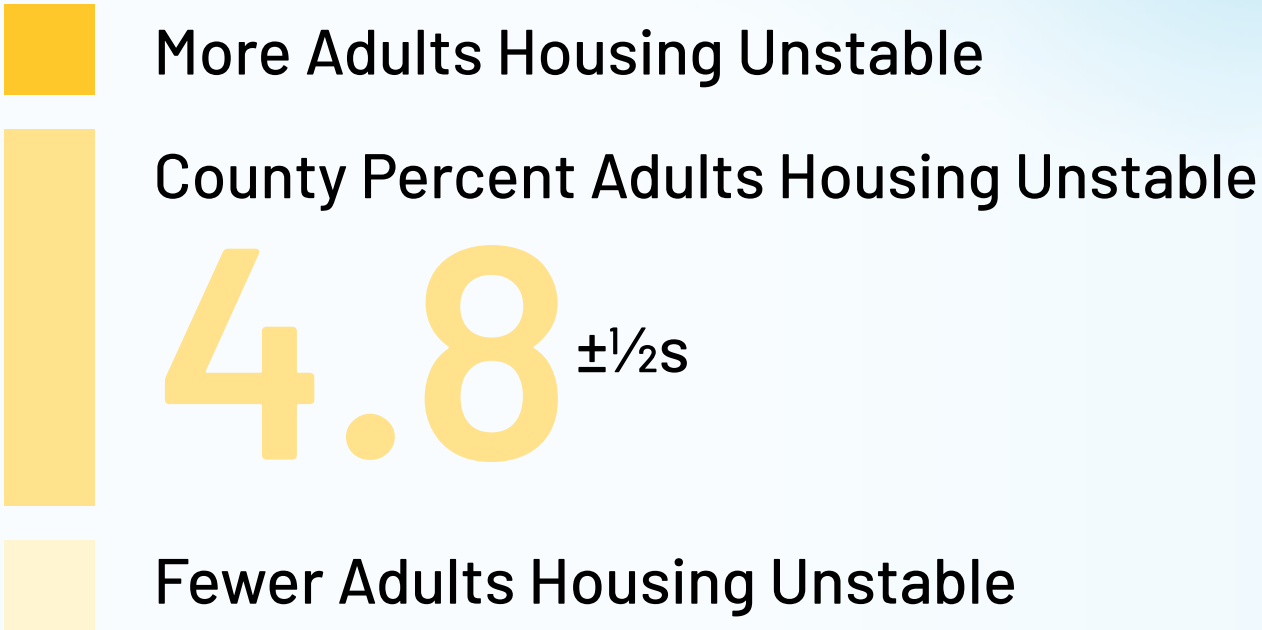
Source: 2016 American Community Survey 5-Year Estimates

WHAT CITY HAS THE WORST HOMELESS CRISIS?

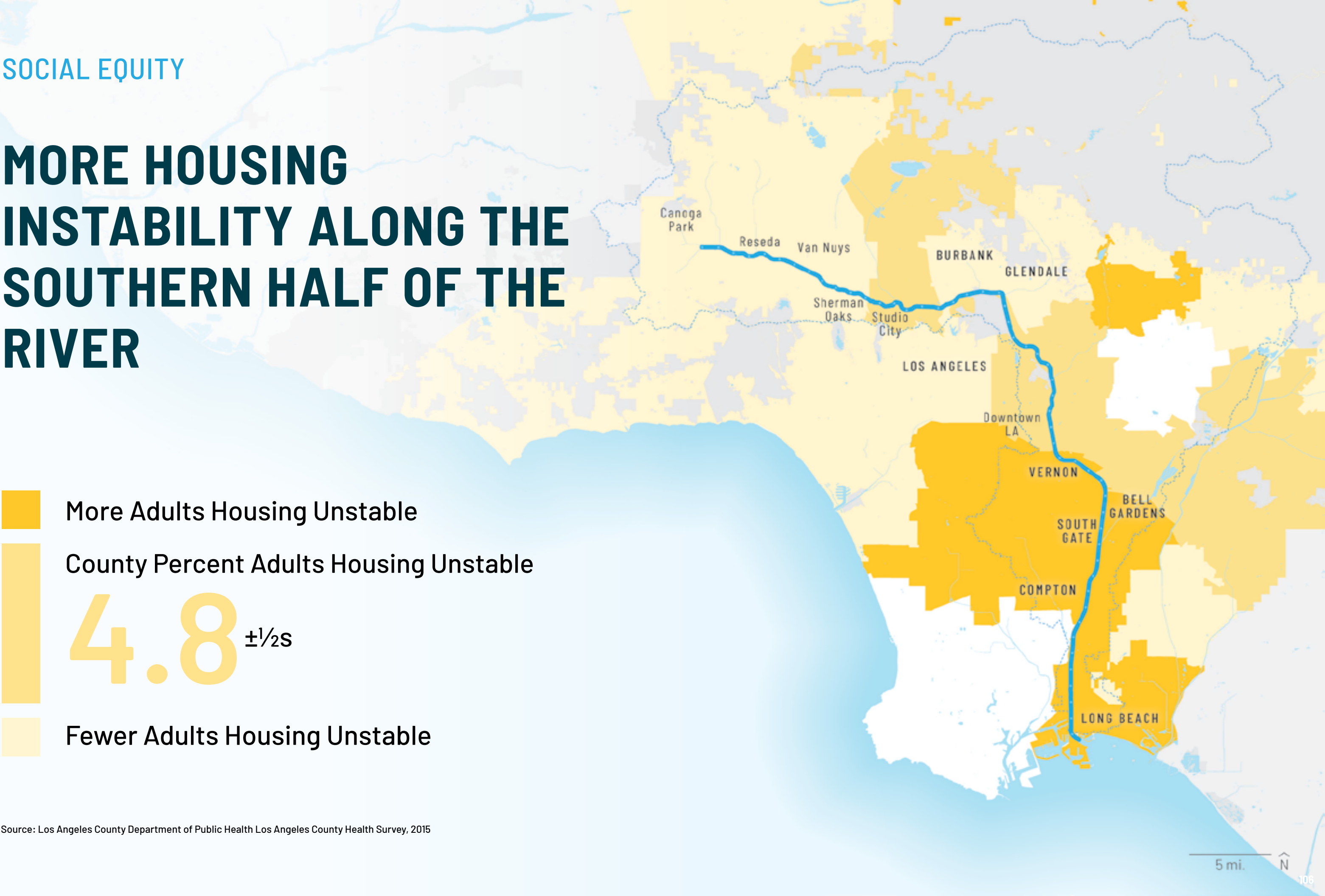


Source: The Seattle Times, 2018

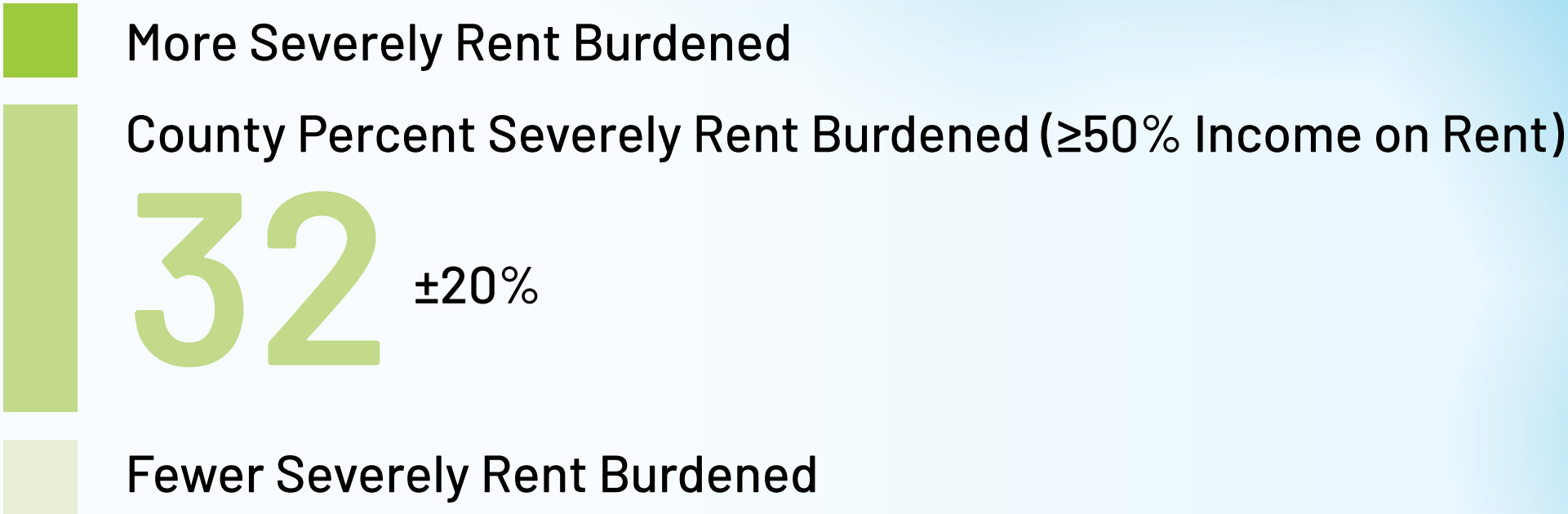
MORE HOUSING INSTABILITY ALONG THE SOUTHERN HALF OF THE RIVER



Source: Los Angeles County Department of Public Health Los Angeles County Health Survey, 2015

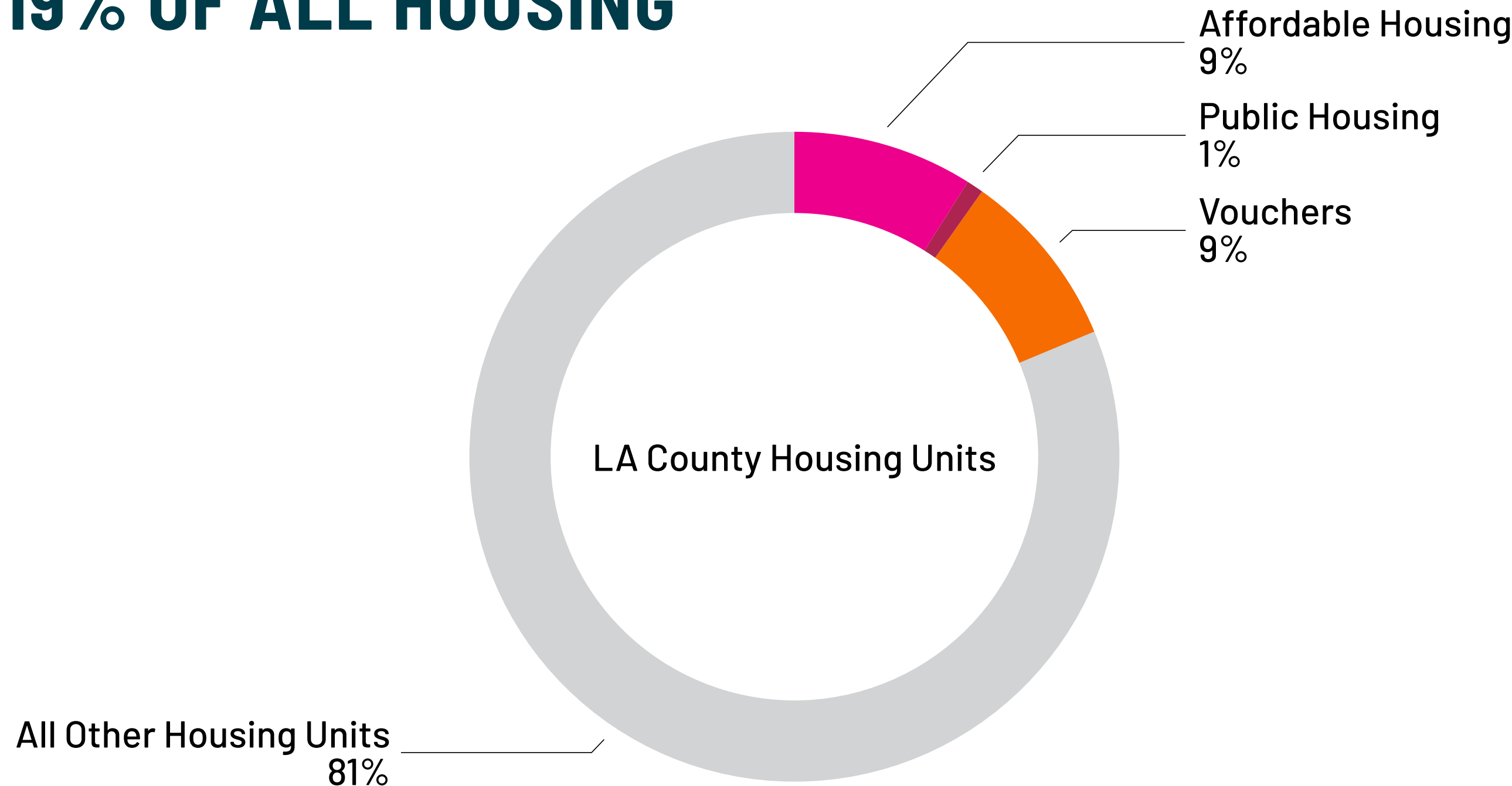


MANY AREAS ARE SEVERELY RENT BURDENED



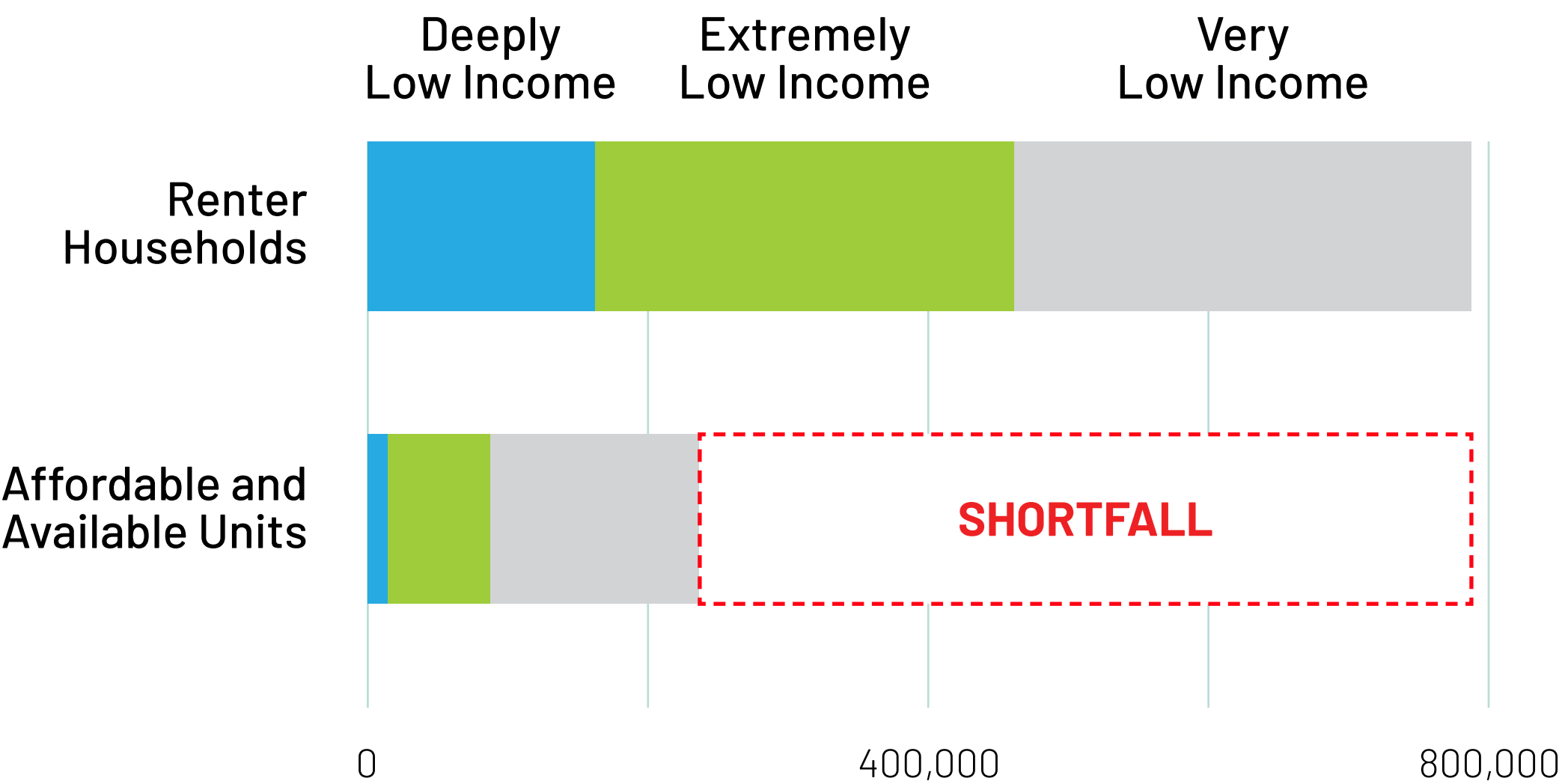
Source: US Census Bureau 2016 American Community Survey 5-Year Estimates

INCOME RESTRICTED AFFORDABLE HOUSING IS 19% OF ALL HOUSING



Source: California Housing Partnership Corp, Los Angeles County Annual Housing Outcomes Report, April 2017

LA COUNTY NEEDS TO ADD MORE THAN 550,000 AFFORDABLE HOMES TO MEET CURRENT DEMAND



Source: California Housing Partnership Corp, Los Angeles County Annual Housing Outcomes Report, April 2017

MEASURING DISPLACEMENT RISK

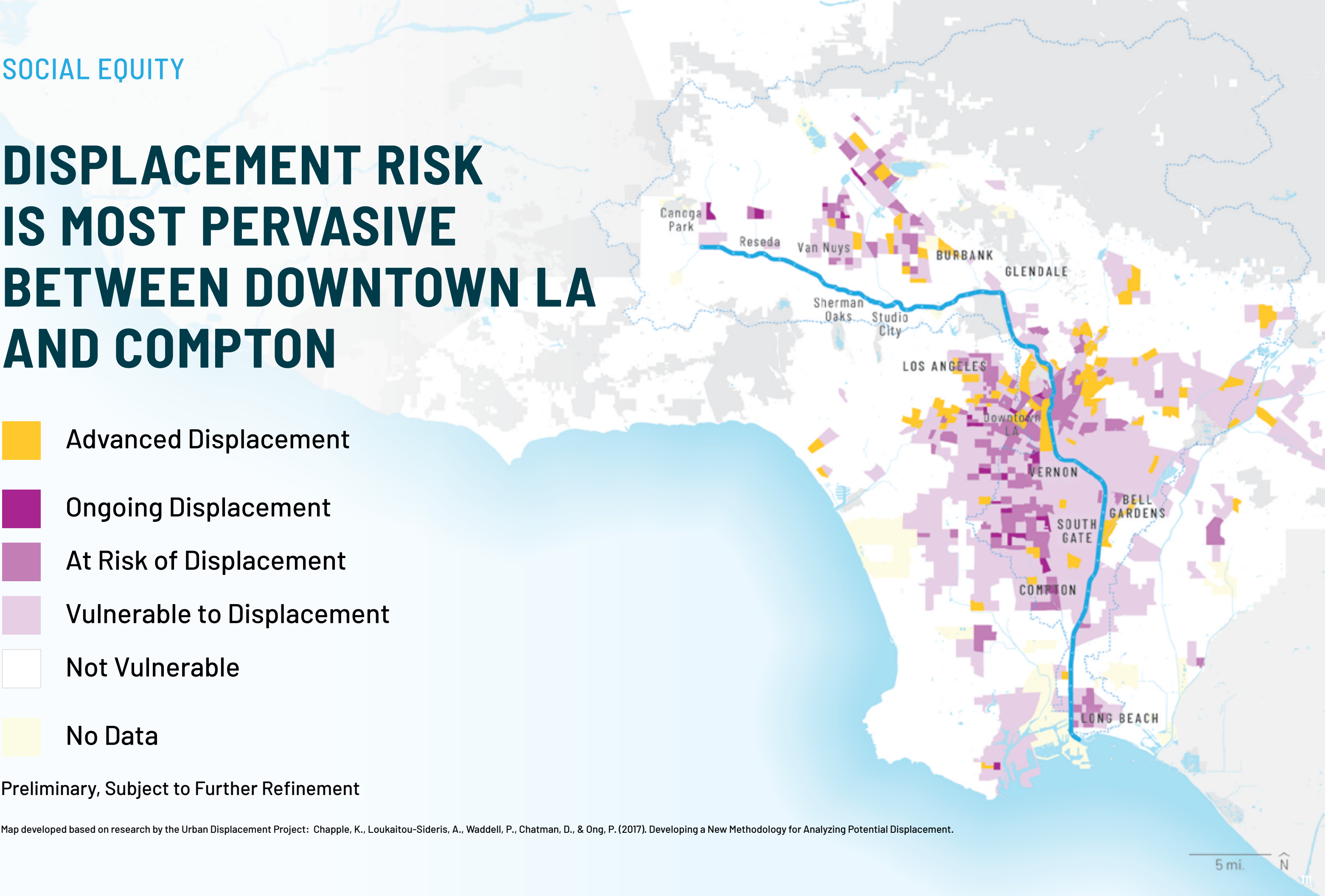
<div><div>VUNLERABLE TO DISPLACEMENT</div><div>Areas with a high share of vulnerable households</div><div><div>High Percentages of 3 of the Following:</div><div><div>• Low-Income Households</div><div>• Non-College-Educated Adults</div><div>• Renters</div><div>• Non-White Households</div></div></div></div>	<div><div>AT RISK OF DISPLACEMENT</div><div>Low income areas with proven risk factors</div><div><div>Vulnerable Plus 2 of the Following:</div><div><div>• Nearby Rail Station</div><div>• High % Pre-1950 Buildings</div><div>• High Employment Density</div><div>• Rents Rising Faster than County Average</div></div></div></div>	<div><div>ONGOING DISPLACEMENT</div><div>Low income areas that are changing quickly</div><div><div><div>• Low Income Area</div><div>• Growing Population</div><div>• Loss of Lower Income Population</div><div>• Rents Rising Faster than County Average</div></div></div></div>	<div><div>ADVANCED DISPLACEMENT</div><div>Not currently low income but getting whiter and more expensive</div><div><div>NOT a Low Income Area Plus Above Average Growth in:</div><div><div>• College-Educated Adults</div><div>• White Population</div><div>• Median Income</div><div>• Rents</div></div></div></div>
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DISPLACEMENT RISK IS MOST PERVASIVE BETWEEN DOWNTOWN LA AND COMPTON

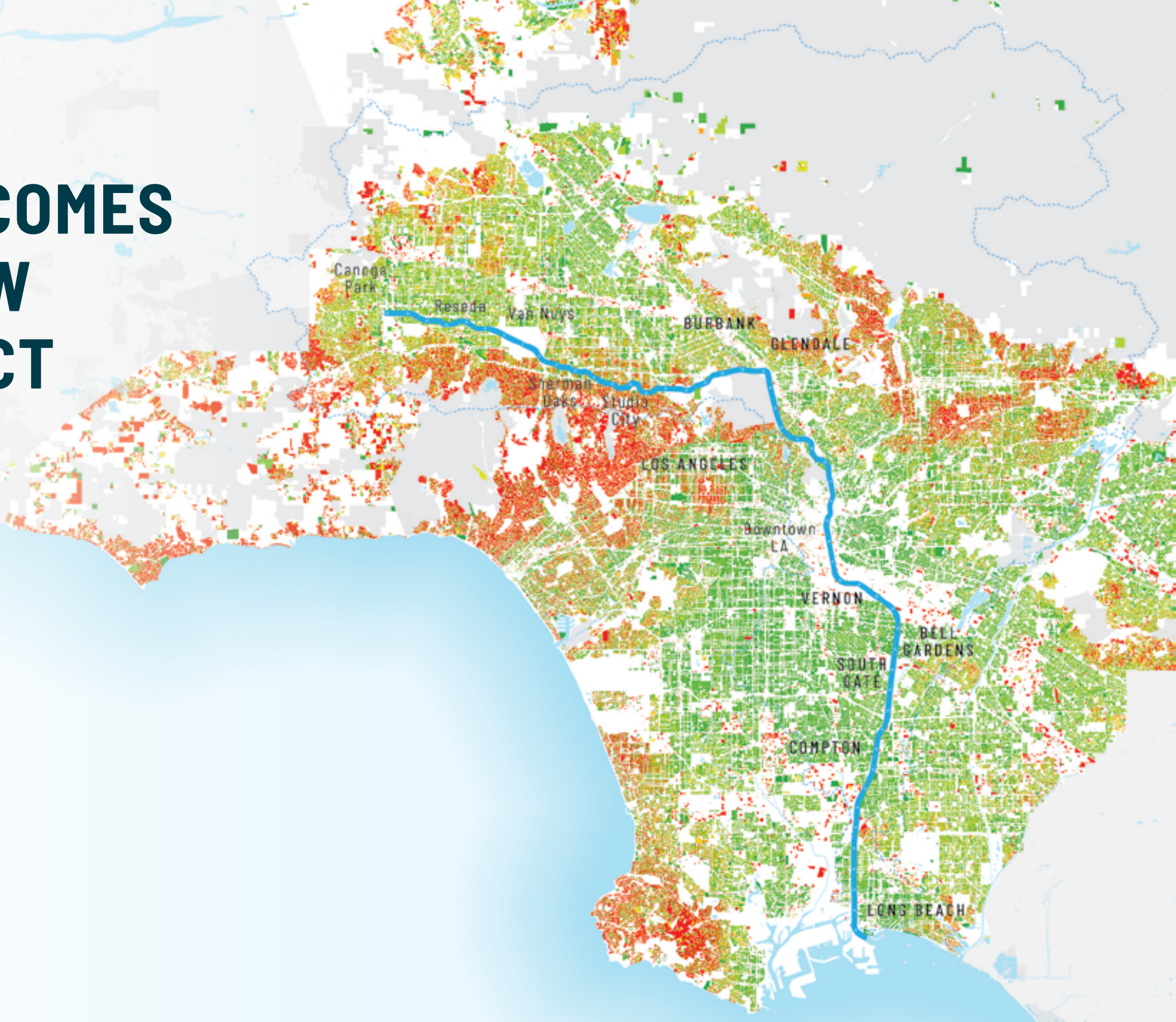
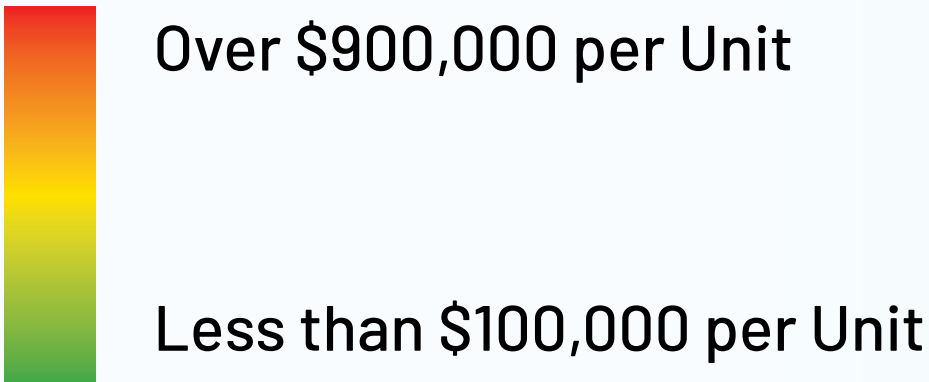
- Advanced Displacement
- Ongoing Displacement
- At Risk of Displacement
- Vulnerable to Displacement
- Not Vulnerable
- No Data

Preliminary, Subject to Further Refinement

Map developed based on research by the Urban Displacement Project: Chapple, K., Loukaitou-Sideris, A., Waddell, P., Chatman, D., & Ong, P. (2017). Developing a New Methodology for Analyzing Potential Displacement.



IF THE RIVER BECOMES AN AMENITY, HOW WILL THAT IMPACT DISPLACEMENT?



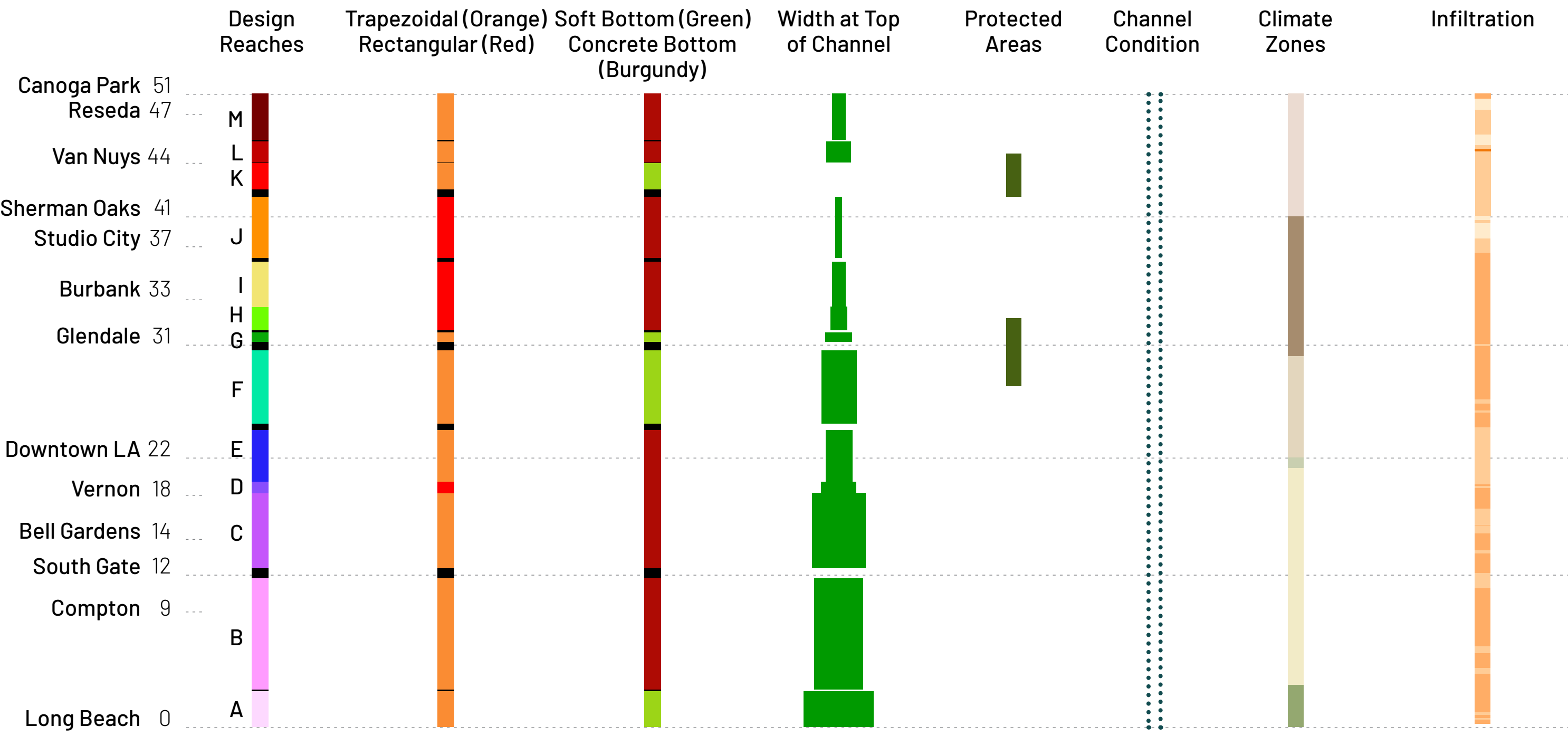
Source: Los Angeles County Office of the Assessor Property Database, 2015



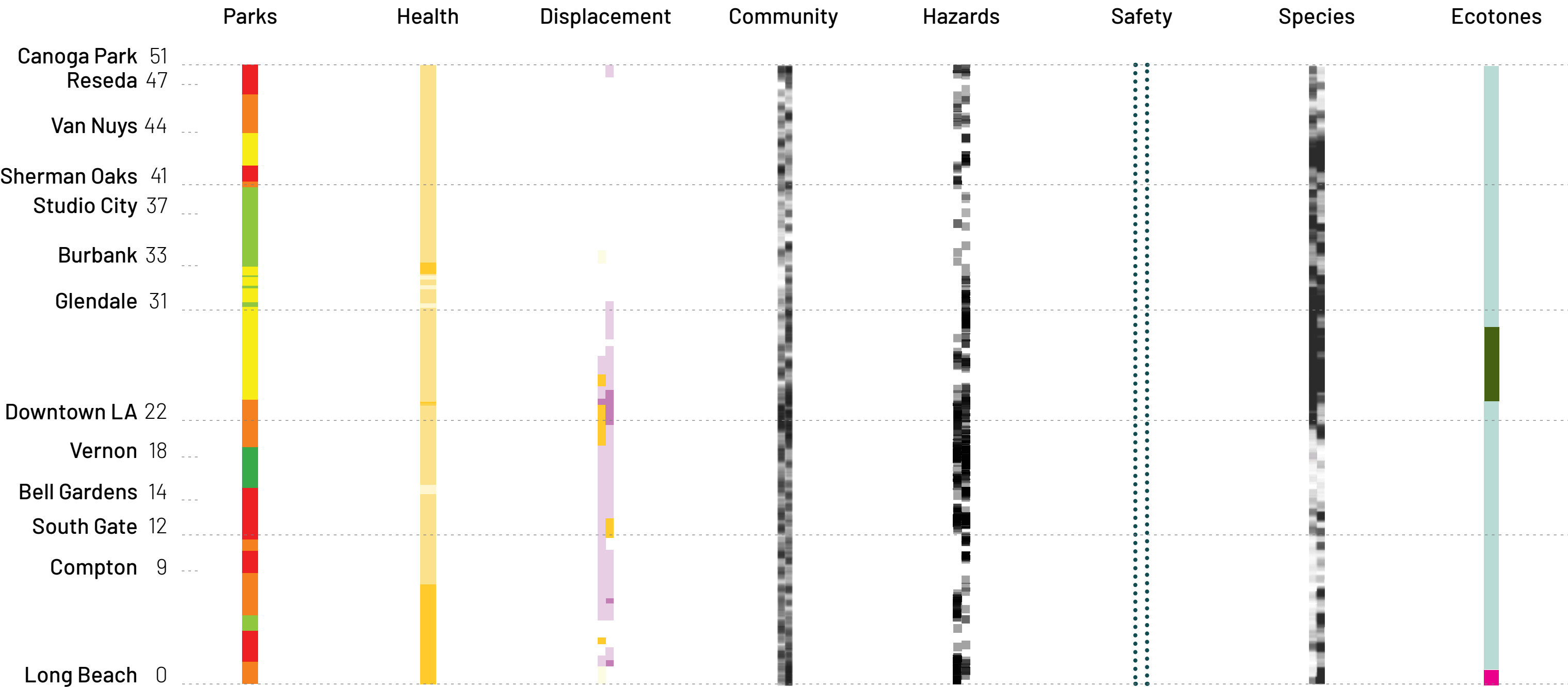
ANALYSIS SUMMARY AND NEXT STEPS

Source: Barron Bixler, View of the 4th Street & 1st Street Bridges, 2014; from Project 51, Play the LA River

PHYSICAL CONDITIONS OF THE RIVER



GEOGRAPHIC GAP ANALYSIS



GAP ANALYSIS

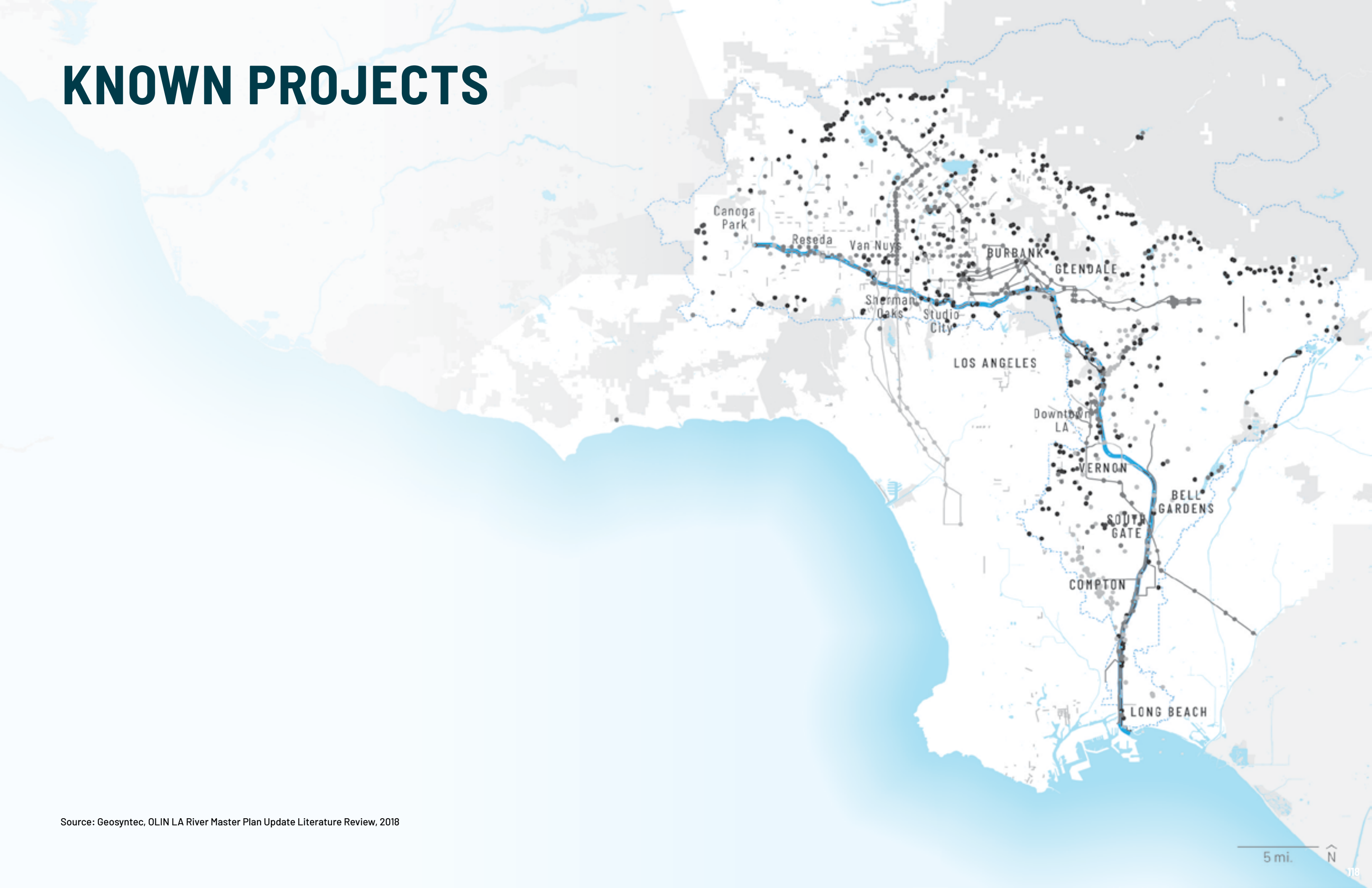


ADDRESSING GAPS

IN CHANNEL

OUT OF CHANNEL

KNOWN PROJECTS



Source: Geosyntec, OLIN LA River Master Plan Update Literature Review, 2018

CORRIDOR PLAN



KIT OF PARTS

IN CHANNEL

OUT OF CHANNEL

Q & A AND DISCUSSION

Source: USCAE, Los Angeles District, Los_Angeles_River_at_Griffith_Park,_ca.1898-1910_(CHS-2033), <http://cespl.maps.arcgis.com/apps/MapSeries/index.html?appid=e15694dbf7c54f8c96285a0e74039e69>

A photograph of a dry riverbed with people and a dog playing in the water, overlaid with a teal tint and the text "PUBLIC COMMENT". The scene shows a wide, shallow riverbed with patches of water. Several people are standing in the water, and a white dog is running. The background features a grassy hillside and some buildings in the distance.

PUBLIC COMMENT

Source: Jeff Houze, *Playing in Sepulveda Basin*, 2014; from Project 51, *Play the LA River*

PUBLIC COMMENT OPTIONS

- **Verbal comments**
 - Speakers to be called in order of speaker cards submitted
 - Up to 15 minutes total for the Public Comment item
 - Total time per person will depend on number of speaker cards received
- **Comment cards**
- **Email comments to LARiver@dpw.lacounty.gov**

WRAP UP

Source: Barron Bixler, View under the Olympic Street Bridge, 2014; from Project 51, Play the LA River

Important Upcoming Dates:

- Subcommittee Meeting #2 – July 11, 2018
- Stakeholder Meeting #1 (Canoga Park) – July 25, 2018
- Steering Committee Meeting #3 – September 26, 2018
- Subcommittee Meetings #3 – October 3, 2018

INPUT, QUESTIONS, IDEAS?

Contact Carolina Hernandez at (626) 458-4322
or LARiver@dpw.lacounty.gov



Geosyntec
consultants

OLIN

Gehry Partners, LLP



K E A R N S ⚡ W E S T

72
and
Sunny



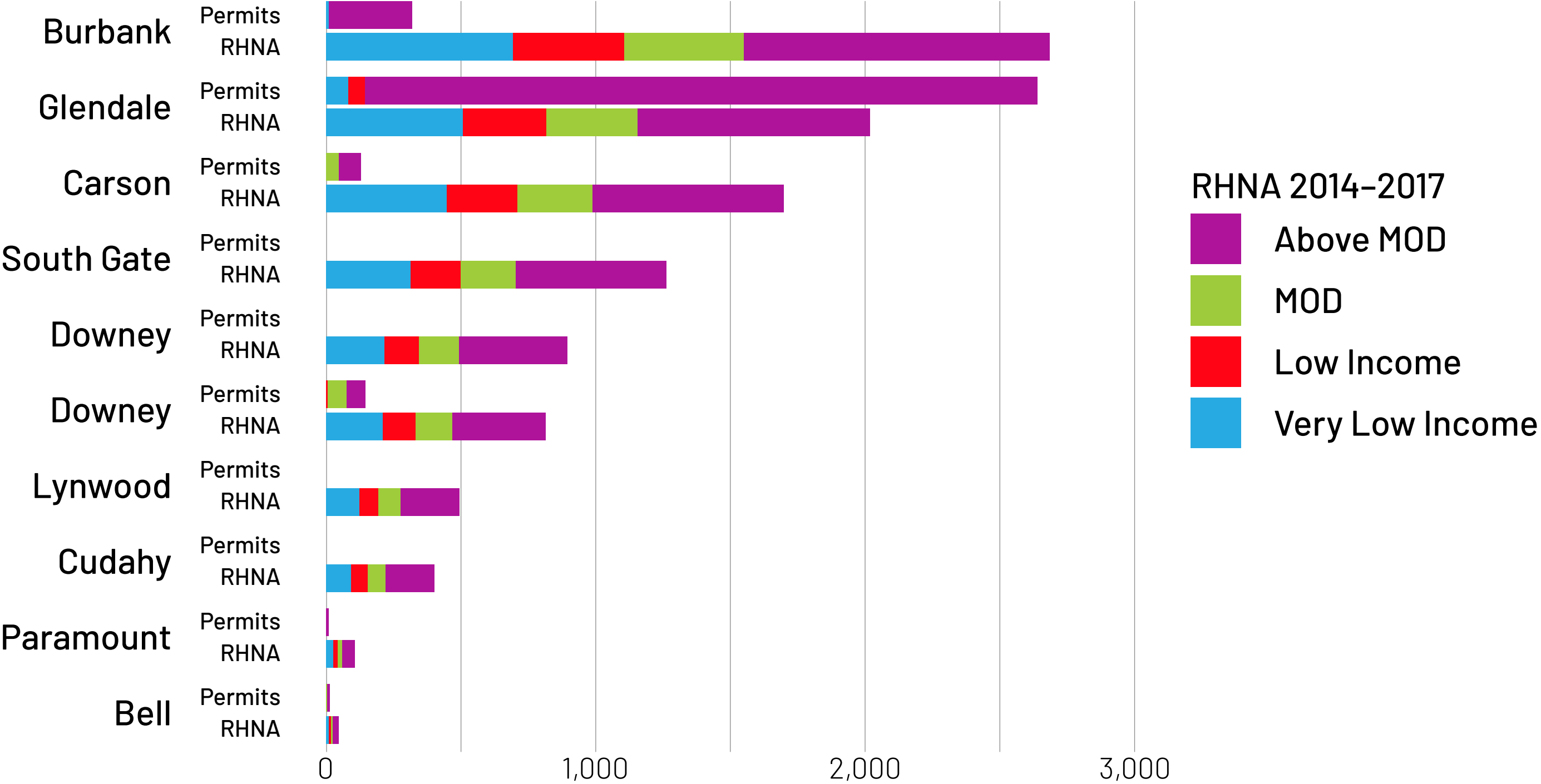
STREET
LEVEL

Mercury.

APPENDIX

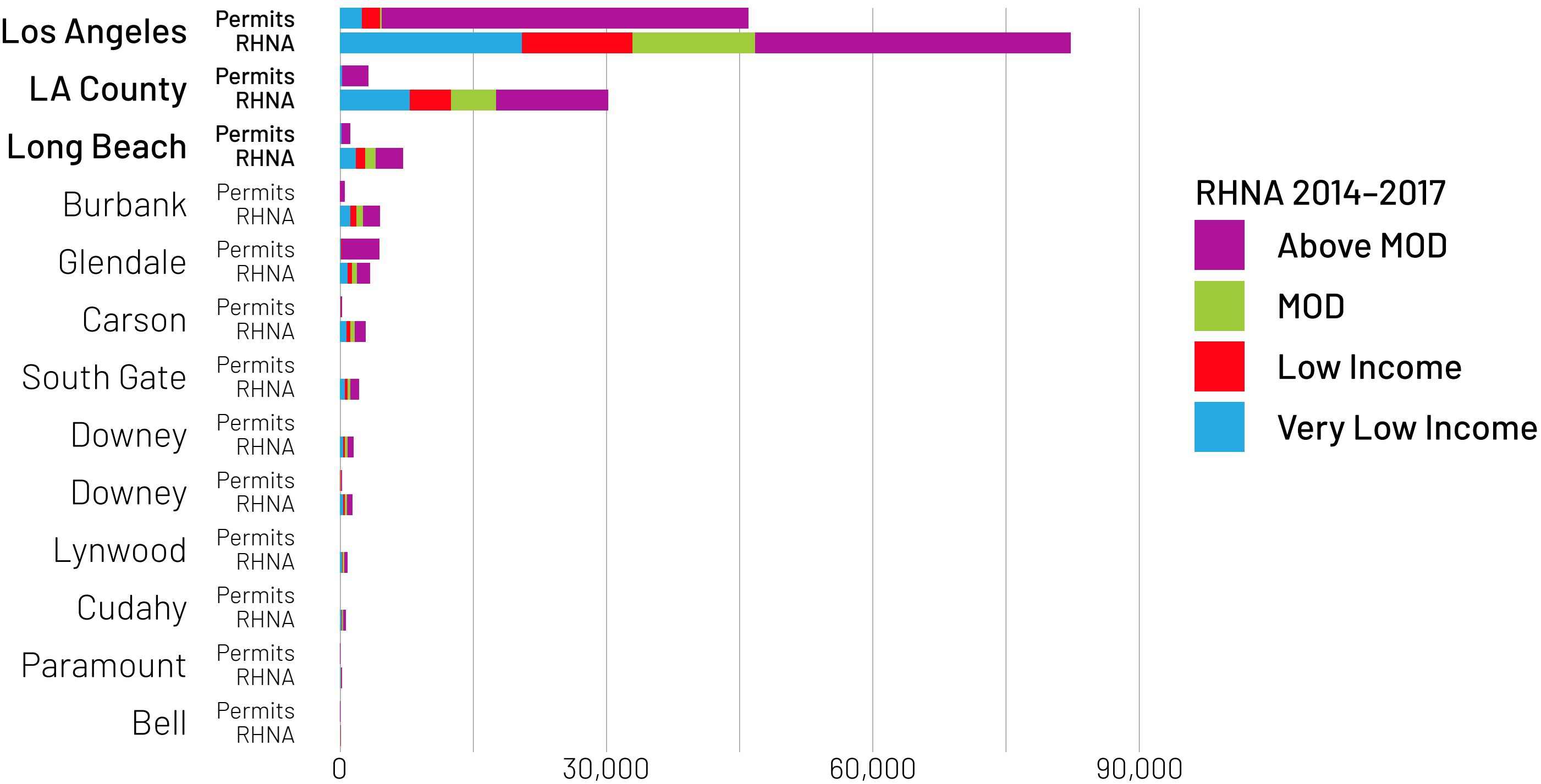


BUILDING IS FALLING FAR SHORT OF NEED



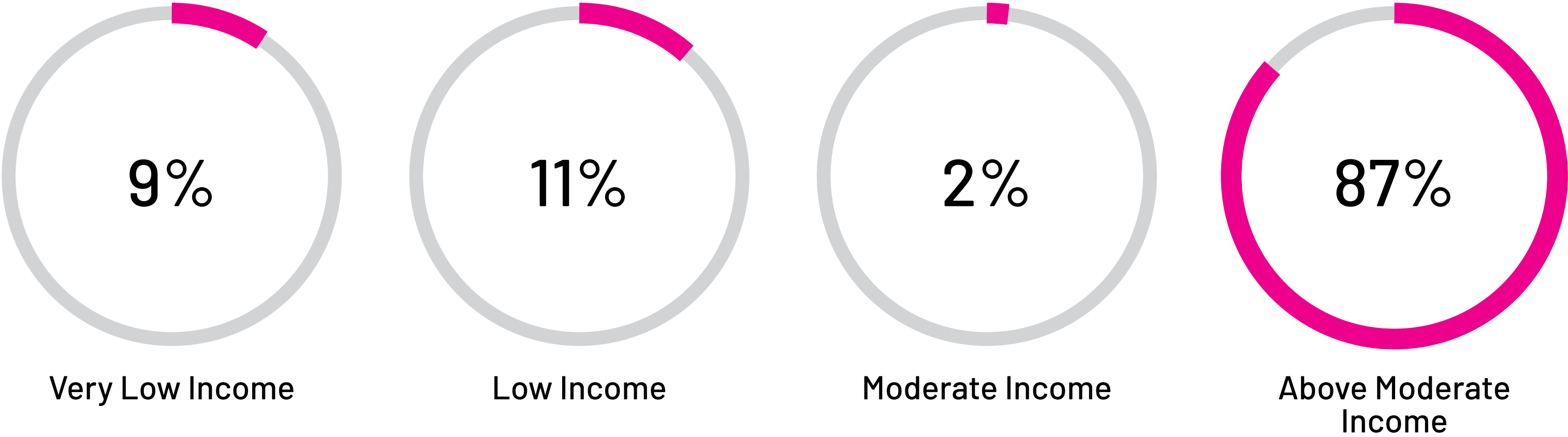
Source: California Department of Housing and Community Development, 5th Annual Progress Report Summary, 2.25.2018

BUILDING IS FALLING FAR SHORT OF NEED



Source: California Department of Housing and Community Development, 5th Annual Progress Report Summary, 2.25.2018

PARTICULARLY FOR LOW AND MODERATE INCOME UNITS



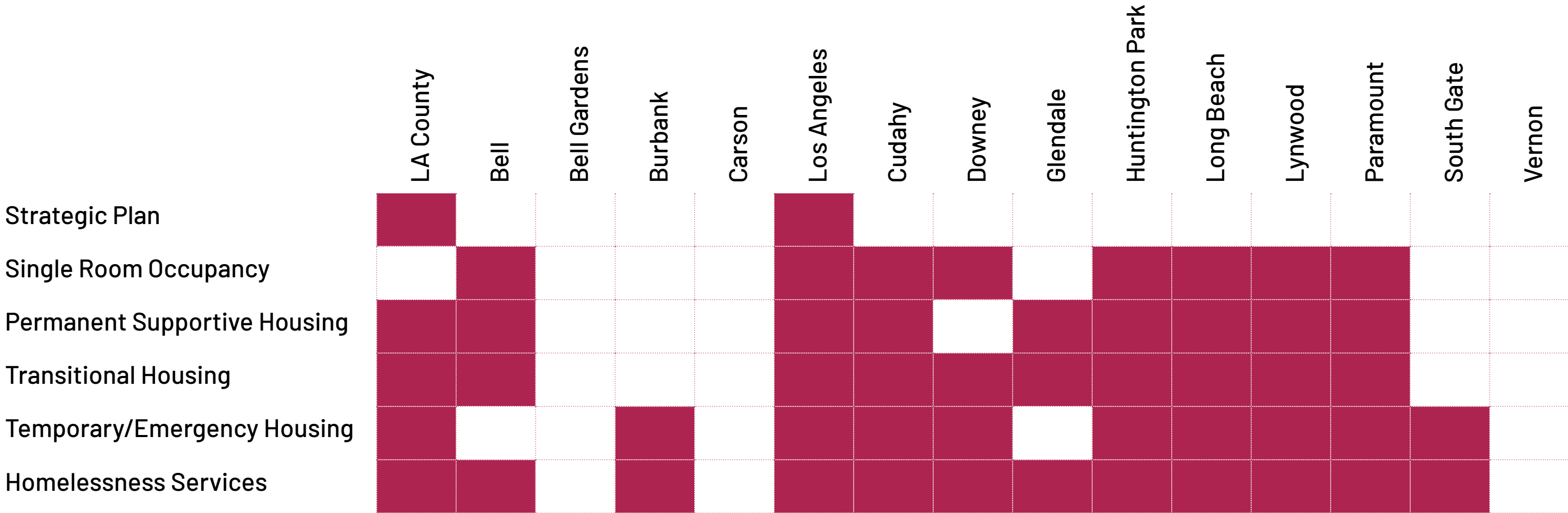
Source: California Department of Housing and Community Development, 5th Annual Progress Report Summary, 2.25.2018

RIVER ADJACENT COMMUNITIES ARE OPERATING MANY AFFORDABLE HOUSING PROGRAMS

	LA County	Bell	Bell Gardens	Burbank	Carson	Los Angeles	Cudahy	Downey	Glendale	Huntington Park	Long Beach	Lynwood	Paramount	South Gate	Vernon
Affordable Housing Incentives															
Acquisition/Rehab															
Home Buying Loans															
Rehabilitation Loans															
Rental Rehabilitation Loans															
Foreclosure Assistance															
Inclusionary Housing															
Density Bonus															
Accessory Dwelling Unit Program															

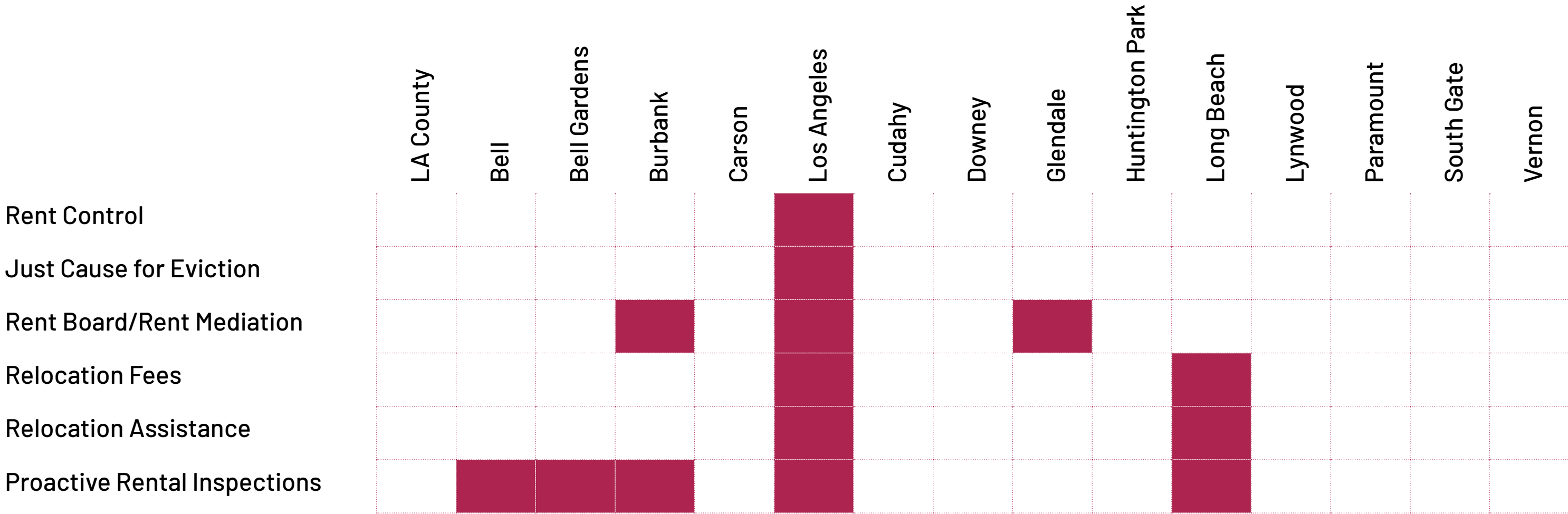
Source: Most recent local housing elements

AND PROVIDE A GROWING RANGE OF PROGRAMS TO ADDRESS THE HOMELESSNESS CRISIS



Source: Most recent local housing elements

FEW RIVER ADJACENT COMMUNITIES HAVE STRONG TENANT PROTECTIONS



Source: Most recent local housing elements