04 / LA RIVER MASTER PLAN NEEDS ANALYSIS

LA RIVER MASTER PLAN NEEDS ANALYSIS

As part of the LA River Master Plan, LA County has undertaken a comprehensive existing conditions inventory and analysis for the LA River's 51-mile corridor. Conditions in and along the LA River vary widely, with some areas experiencing unique vulnerabilities and others containing a variety of desirable assets. A GIS-based need analysis was used to evaluate which portions of the LA River are most in need when it comes to fulfilling the nine key goals of the Master Plan:

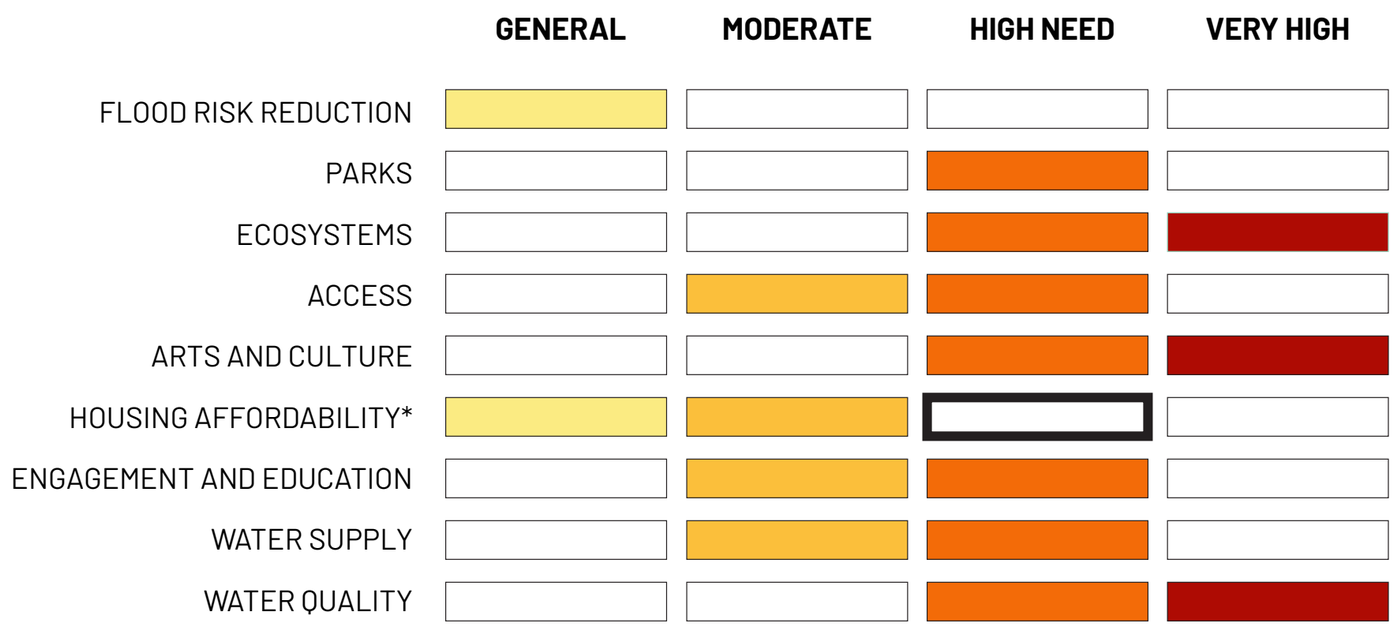
- **Flood risk reduction**
- **Equitable, inclusive, and safe parks, open space, and trails**
- **Healthy, connected ecosystems**
- **Equitable access to the river corridor**
- **Opportunities for arts and culture**
- **Housing affordability**
- **Community engagement, development, and education**
- **Improved local water supply reliability**
- **Healthy, safe, clean water**

The study area in its entirety, as well as any individually identified sites nested within, has a need score for each of these categories. Need scores range from general need to very high need. Each project also has an impact score, which predicts a project's ability to significantly improve the river corridor as a whole. This is based on its size, as well as a relative comparison of need levels for all nine goals within the site bounds to need levels for all nine goals within one mile of the LA River. The analysis was designed to point out areas requiring the most urgency with respect to particular issues, but all scores generally indicate a deficit of resources that should be addressed in future planning efforts.

Source: LA River Master Plan, LA County Public Works, 2020

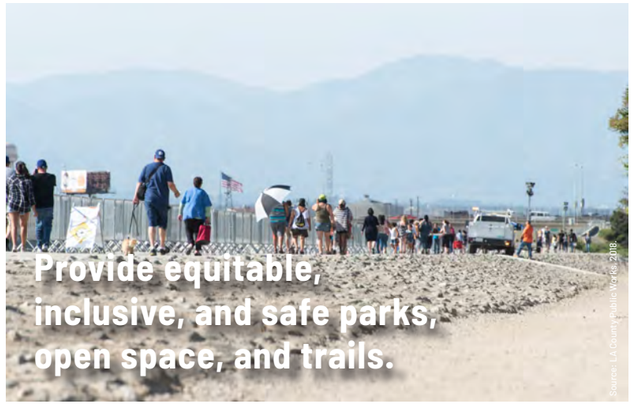
EVALUATION OF RELATIVE NEEDS SURROUNDING THE PROJECT AREA:

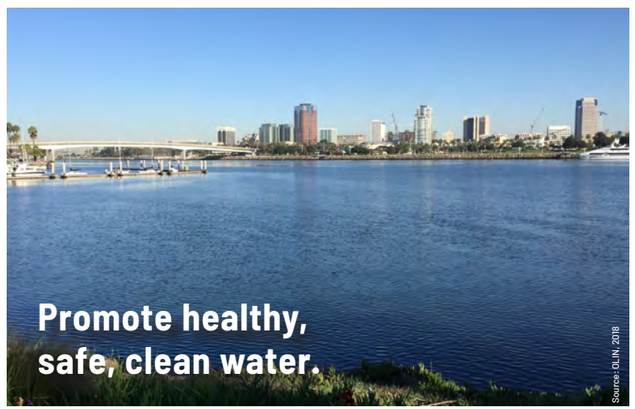
☐ Need category will shift if rents rise faster than the county average



* As improvements are made, displacement risk will increase. Therefore, the need for affordable and permanent supportive housing should be considered as very high need even though the current conditions only indicate moderate risk.

LA RIVER MASTER PLAN GOALS





Source: LA River Master Plan, LA County Public Works, 2020

CRITERIA USED TO ASSESS NEEDS

1. FLOOD RISK REDUCTION
- LA River Channel Capacity
- Floodplains
- Sea Level Rise
- Critical Infrastructure & Facility Density

2. PARKS
- Countywide Parks Needs Assessment
- CalEnviroScreen

3. ECOSYSTEMS
- Habitat Areas
- Habitat Areas Buffer
- Linkages and Confluences
- Unprotected Areas

4. ACCESS
- River Trail Gaps
- River Trail Access Point Gaps
- Adjacent Trail Gaps
- Health Composite
- Proximity to Metro Stops, Parks, & Schools

5. ARTS AND CULTURE
- Arts & Culture Asset Density
- Population Density
- Household Income

6. HOUSING AFFORDABILITY*
- Displacement Index

7. ENGAGEMENT AND EDUCATION
- Engagement & Education Asset Density
- Population Density

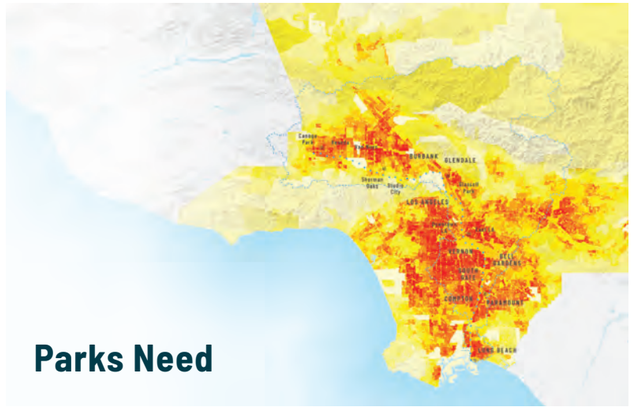
8. WATER SUPPLY*
- Habitat & Recreation Beneficial Uses
- Percent Groundwater Supply
- Groundwater Basins

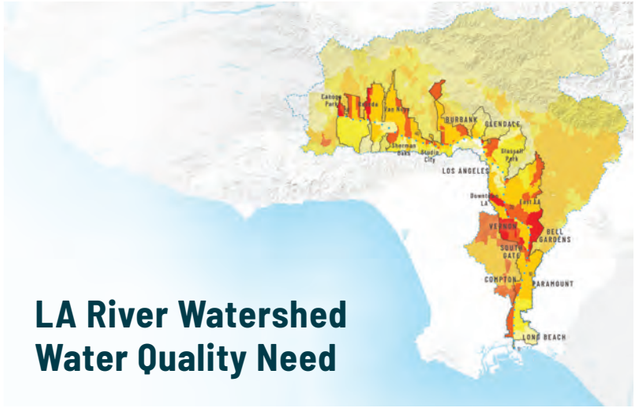
9. WATER QUALITY
- EWMP/WMP Score
- Water Quality Priority

Source: LA River Master Plan, LA County Public Works, 2020.

*Additional assessment required to ensure project suitability.

LA COUNTY NEEDS MAPS





Source: LA River Master Plan, LA County Public Works, 2020

FLOOD RISK REDUCTION

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 years of devastating floods in the latter part of the 20th century it was engineered into a concrete channel with basins, dams, levees, and floodwalls to move stormwater as quickly as possible to the Pacific Ocean and reduce flood risk to these communities. One major component to this system is the USACE owned and operated Whittier Narrows Dam, which is about 8 miles upstream of the Project area.

A major storm event in 1980, which nearly overtopped the banks of the Lower LA River, prompted the eventual raising of levees along the Lower LA River and Rio Hondo in the early 2000s due to inadequacy of levels of flood risk reduction. The levees in the Project reach upstream of Imperial Highway along the LA River and the Rio Hondo can convey up to roughly the 500-year flood, or the storm event with a 0.2% annual chance of occurrence, without overtopping. The levees in the Project reach below Imperial Highway were designed to safely pass the 133-year flood (0.75% annual chance of occurrence) while flows in excess of the 0.75% storm spill out of the LA river1. For these larger flow events, designated overflow weirs in the levee were incorporated (e.g., with lower or no parapet walls) to allow for the overflow from the channel without causing a levee failure that could have catastrophic consequences. These designated overflow sections are located in areas identified as the "least hazardous" (i.e., not directly adjacent to residential properties).

The Federal Emergency Management Agency's (FEMA) floodplain mapping indicates that areas outside of the channel downstream of river mile 16.5 are within the 500-year floodplain, or has a 0.2% chance of flooding in any given year. The two major sources of flooding in this area are from the designated overflow weirs as well as from potential Whittier Narrows Dam spillway flows during extremely large storm events. There are a moderate number of critical infrastructure and facilities within or proximate to the project area. The need for flood risk reduction here is **general to moderate.**

The river's highest flood risk reduction needs are located further north in the Narrows and in the San Fernando Valley. In the project area, channel capacity is relatively high, and the need to maintain the level of flood risk reduction is critical.

Footnotes:
1. USACE 1991. Los Angeles County Drainage Area Final Feasibility Interim Report, Hydrology Appendix, December 1991.

Source: LA River Master Plan, LA County Public Works, 2020

FLOOD RISK REDUCTION

GENERAL TO MODERATE NEED ARE FOUND THROUGHOUT THE PROJECT AREA IN AREAS THAT ARE WITHIN THE 500 YEAR FLOODPLAIN

Source: LA River Master Plan, LA County Public Works, 2020

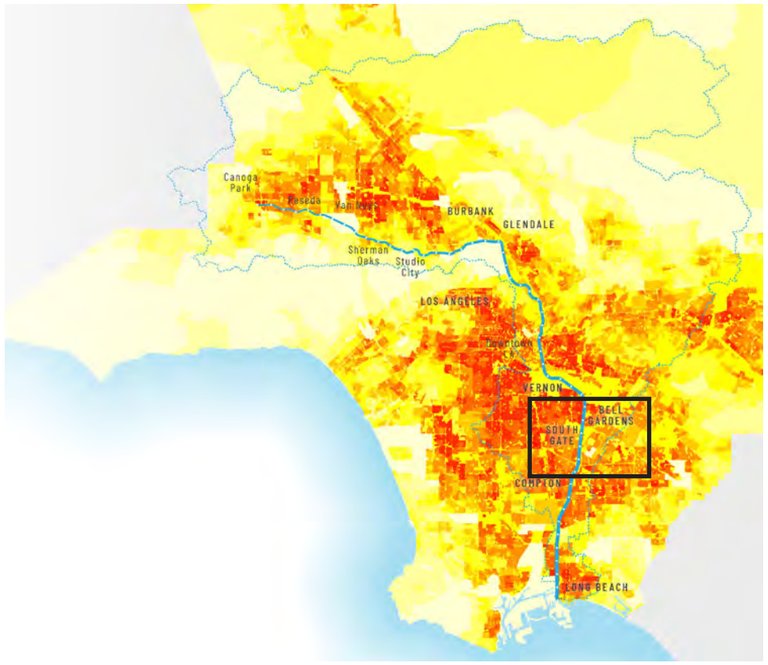
PARKS

The parks need analysis combines factors from the Los Angeles Countywide Comprehensive Parks and Recreation Needs Assessment and CalEnviroScreen and suggests that there is generally a **high** need for parks around the project area. The site is surrounded on multiple sides by areas that are severely lacking access to recreational spaces.

At a neighborhood-by-neighborhood level of analysis, the Los Angeles Countywide Comprehensive Parks and Recreation Needs Assessment has characterized the cities of South Gate, Cudahy, Bell Gardens, and Paramount as having a very high need for parks, while Lynwood and Downy are characterized as having high a need for parks.

Despite the presence of South Gate Park (83 acres) and Hollydale Park (48 acres), both of which are community regional parks, a high population density in the study area (generally between 20 and 45 people per acre) and a lack of park accessibility (distance a person must travel to get to a park) results in a **moderate to high** park need. Many communities throughout the study area are greater than a 1 mile walk from a park.

The CalEnviroScreen analysis, which considers pollutants, population sensitivity, environmental factors, and socioeconomic factors on the scale of the census tract, reinforces the need for parks and open space within the study area. Tracts immediate to the project area rank among the most vulnerable to poor environmental conditions with scores ranging from 80 to 99 percent, meaning communities around the project area have some of the worst environmental conditions found in the state of California.



While the LA River corridor itself does not register as having a high park need due to the fact it is not directly populated, communities immediately adjacent, especially to the west and north edges of the project area have high and very high park need.

Source: LA River Master Plan, LA County Public Works, 2020

PARKS

VERY HIGH PARK NEED IN NEIGHBORHOODS NORTH OF THE PROJECT AREA

VERY HIGH PARK NEED IN NEIGHBORHOODS WEST OF THE PROJECT AREA

VERY HIGH PARK NEED DIRECTLY SOUTHWEST OF THE PROJECT AREA

Source: LA River Master Plan, LA County Public Works, 2020

ECOSYSTEMS

The LA River watershed sits within one of the world's most diverse Mediterranean biodiversity hotspots. Due to urbanization, the region has the largest number of endangered and threatened species and species of special concern in the contiguous 48 states. The river as an ecosystem has been altered from its historic state, first through agriculture and irrigation and later through channelization. Channelization and urbanization in the project area have led to the removal of both riparian habitats and upland grassland ecosystems that would have thrived at the confluence of seasonal flows from the LA River and the Rio Hondo.

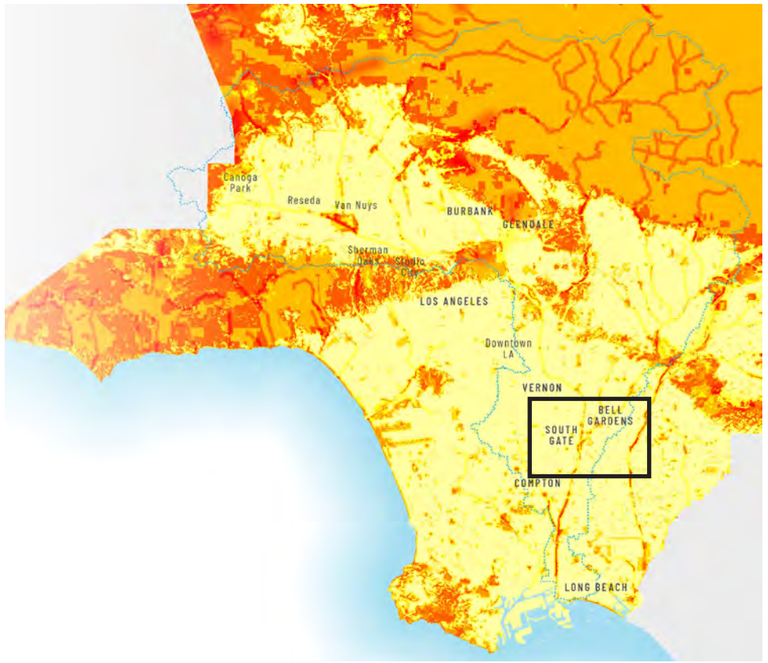
Today, there are few existing areas of intact habitat remaining in the project area and less species observations compared to areas up river in the Narrows or downriver at the Estuary. Communities around the project area are densely developed with large areas of impervious pavement and minimal tree canopy; however, the few remaining undeveloped open spaces where habitat could take hold are in the right-of-way spaces located immediately around the confluence area. The LA River Master Plan ecosystem need analysis prioritized unprotected areas that are undeveloped adjacent to tributaries and confluences leading to a **high to very high** need for ecosystem improvements within the project area.

Within this area of the Los Angeles Basin, the LA River Master Plan Ecological Framework promotes the creation of vegetated habitat areas that can become stopping points for animals, specifically birds and pollinating insects that can travel without the need for continuous vegetated corridors. These habitat areas should incorporate the use of native plant communities that build a "landscape mosaic" and provide a vital patchwork of habitat along the river corridor to attract species from more ecological diverse areas to the north and south of the project area.

Need Analysis:

Very High Need

General Need



There is a high to very high need for ecosystem improvements within the project area. Need tends to increase around confluences and tributaries and is further heightened in areas that are less developed but are unprotected.

Source: LA River Master Plan, LA County Public Works, 2020

ECOSYSTEMS

NEED IS HIGH IN AREAS THAT ARE LESS DEVELOPED AND ARE UNPROTECTED SUCH AS THE RIGHTS-OF-WAY TO THE EAST OF THE LA RIVER

NEED ARE GREATEST AROUND CONFLUENCES AND TRIBUTARIES

Source: LA River Master Plan, LA County Public Works, 2020

ACCESS

Need Analysis:

Very High Need

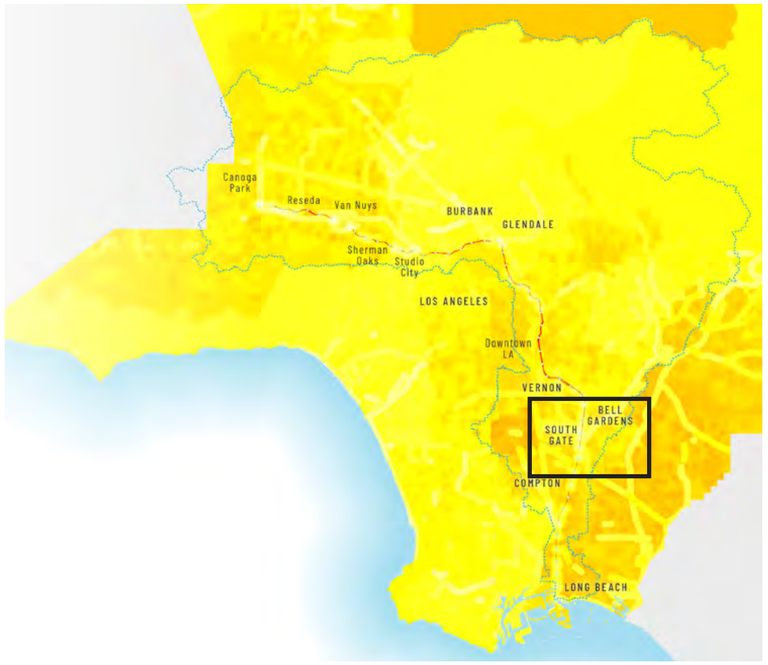
General Need

Today, ease and availability of access to trails along the LA River is highly variable. About 90 access points connect people to the LA River Trail that currently serves 30 of the river's 51 miles. Yet, only one-third of these access points have signs, and only 70% connect to sidewalks.

Within the project area, south of the Imperial Highway, the LA River Trail is a multiuse trail on the east bank and levee of the river and has (3) access points. At the Imperial Highway, just South of the Rio Hondo Confluence, the LA River Trail crosses the river and continues up the west bank and levee as a bike and pedestrian path with (4) additional access points within the study area before the path continues up to Vernon. Only 5 of the 7 access points are currently ADA accessible.

Despite the presence of the LA River Trail, access and connectivity to the river is highly variable depending on which side of the river a community is on. South of the Imperial Highway in Lynwood, access to the river is limited due to a lack of trails, but also separation from the river by the I-710 freeway. A similar condition exists north of the Imperial Highway along the east bank of the LA River as well as the west bank of the Rio Hondo.

Within the project area, there are no pedestrian-only bridge crossings and there is a 4 mile stretch of the LA River with only two pedestrian-accessible bridge crossings (Imperial Highway and Firestone Boulevard), both of which are motorized, their associated access points requiring pedestrians and cyclists to route themselves on sidewalks adjacent to wide, heavily trafficked roads. The lack of connectivity across the river, as well as the lack of trails and bikeways connecting the LA River Trail inland to adjacent communities results in **moderate to high** need for access improvements within the project area. At a regional scale, improvements to the LA River Trail within the project area could significantly improve the utilization of the existing trail, but improving crossings over the LA River and Rio Hondo.



A nearly continuous LA River Trail and a trail up the Rio Hondo are connectivity assets within the project area. However, a gap in the trail at Imperial Highway and a lack of connections into adjacent communities results in a an overall moderate to high need.

Source: LA River Master Plan, LA County Public Works, 2020

ACCESS

AREAS WITHOUT TRAILS ON THE EAST SIDE OF THE RIVER INCREASES NEED FOR ACCESS IMPROVEMENTS

AREAS WITHOUT TRAILS HAVE MODERATE TO HIGH NEED FOR ACCESS IMPROVEMENTS

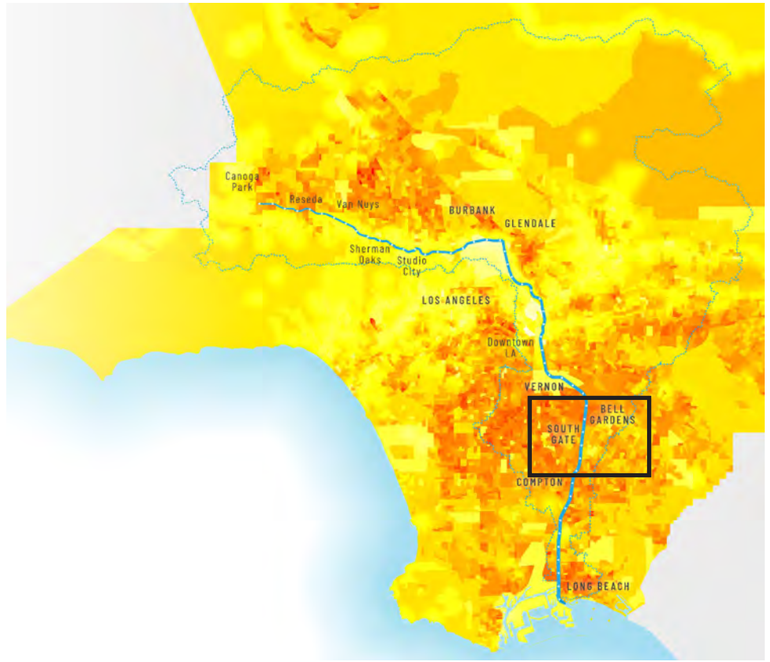
AREAS WITHOUT TRAILS ON THE WEST SIDE OF THE RIVER INCREASES NEED FOR ACCESS IMPROVEMENTS

Source: LA River Master Plan, LA County Public Works, 2020

ARTS AND CULTURE

The LA River has long been at the cultural and historical heart of Los Angeles. From its first local tribes to the many neighborhoods it runs through today, the river has always been a valued community resource. LA County has the opportunity to advance culture, arts, and creativity throughout the county by recognizing, fostering, and preserving the rich tangible and lived cultural heritage along the LA River corridor. New projects should provide unique opportunities to invite the arts—including permanent, temporary, and socially based practices of art and design—to be shared and flourish in more venues, including parks and open spaces. The river itself can serve as a catalyst for artistic and cultural expression.

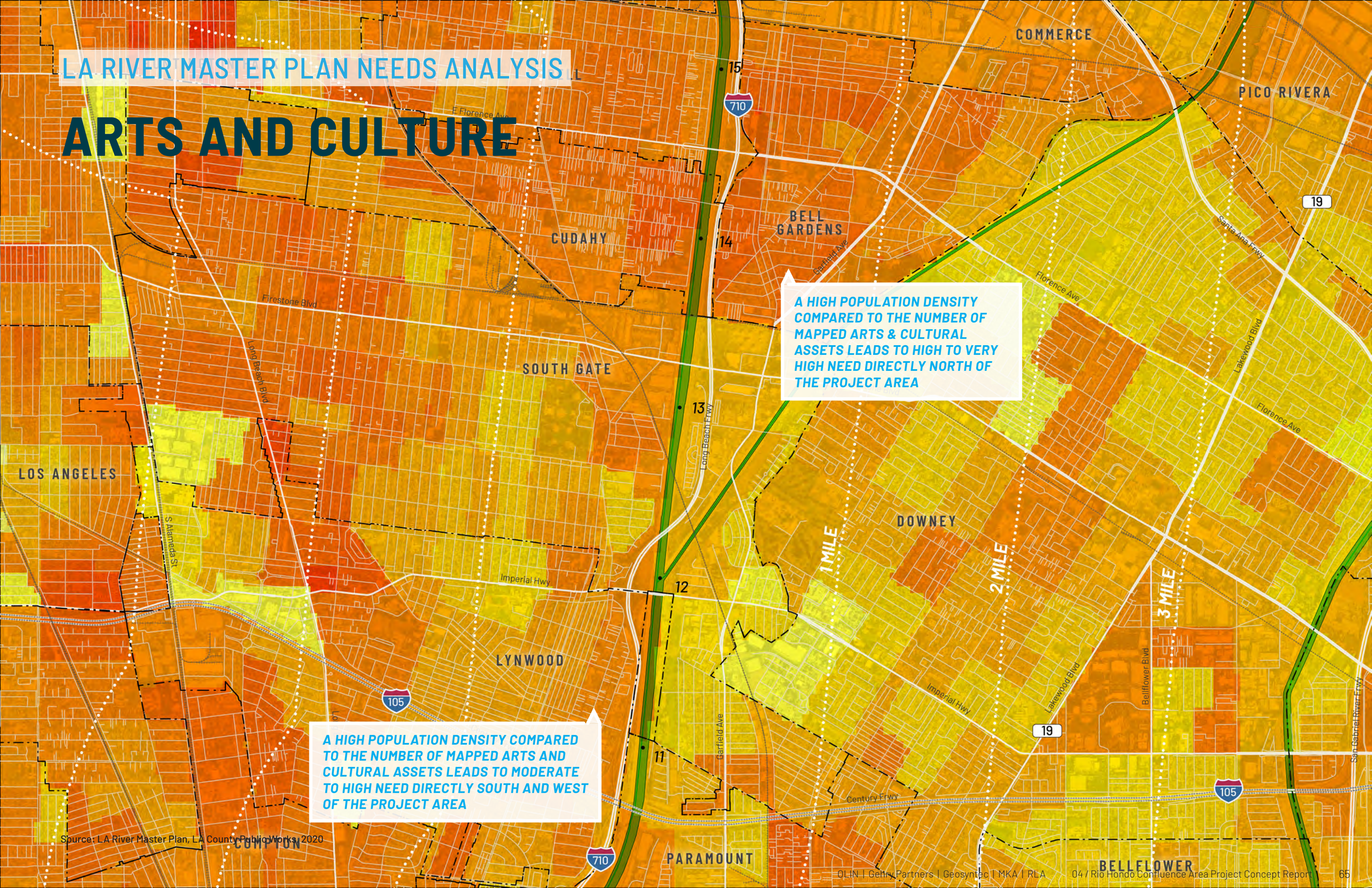
Arts and culture need was evaluated by comparing the number of known arts and culture assets at a given location with population density and household income to assess a community's relative access to arts and cultural facilities. Asset mapping was collected from a variety of data sources and included facilities and sites such as museums, art and cultural centers, churches, historical facilities, and sites for public art and free concerts. Asset mapping in LA County is known to be incomplete based on the limitations of currently available data sources. Given the lack of detail about the size or significance of specific assets, the relative density of assets was used for evaluating need. Given a relatively high population density and low number of mapped arts and cultural assets compared with the upper half of the LA River, this project area has a **high to very high need** for arts and cultural facilities and programming.



A high population density and low number of arts and cultural assets nearby has resulted in a high to very high need score for communities near the project area.

Source: LA River Master Plan, LA County Public Works, 2020

ARTS AND CULTURE



A HIGH POPULATION DENSITY COMPARED TO THE NUMBER OF MAPPED ARTS & CULTURAL ASSETS LEADS TO HIGH TO VERY HIGH NEED DIRECTLY NORTH OF THE PROJECT AREA

A HIGH POPULATION DENSITY COMPARED TO THE NUMBER OF MAPPED ARTS AND CULTURAL ASSETS LEADS TO MODERATE TO HIGH NEED DIRECTLY SOUTH AND WEST OF THE PROJECT AREA

Source: LA River Master Plan, LA County Public Works, 2020

HOUSING AFFORDABILITY

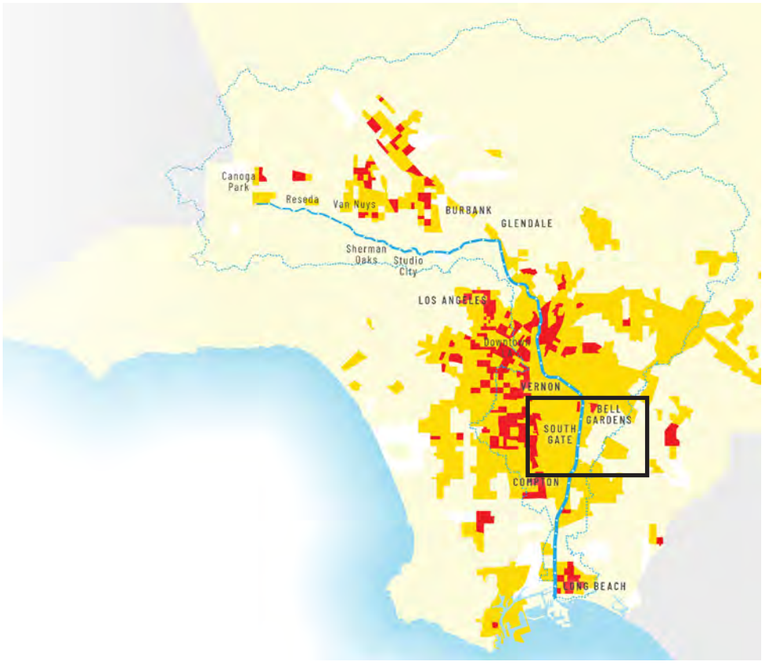
Need Analysis:

Very High Need

General Need

One of the main social equity concerns regarding LA River improvements is gentrification, or specifically displacement. The design team has spent time studying large-scale planning efforts across the nation. It has become clear that one of the main keys for stabilizing neighborhoods from rapid property value increase is a robust affordable housing program and a marked increase in housing stock.

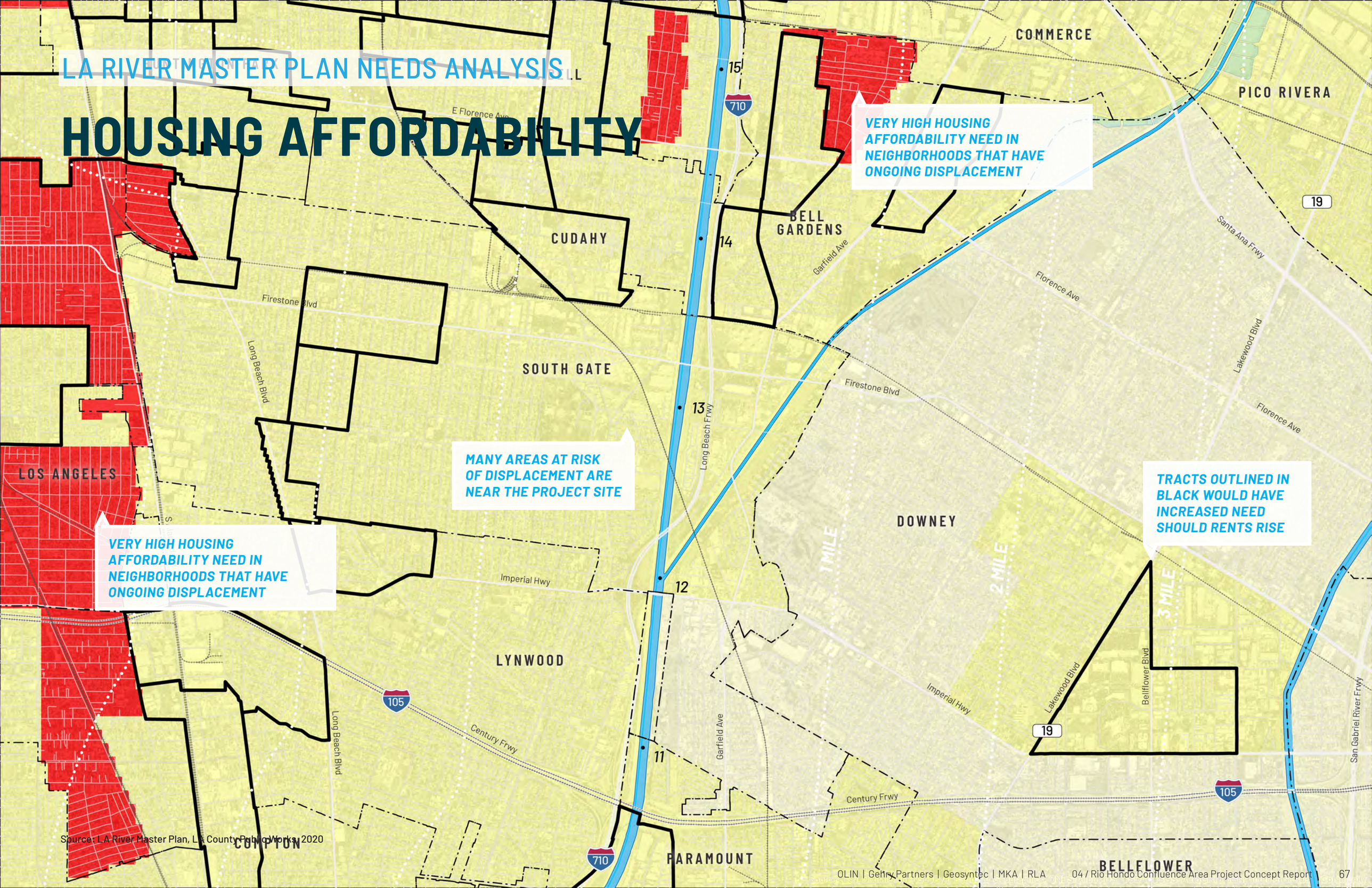
Displacement risk in the study area is highest in neighborhoods with high rent burden and low median household income. There are some census tracts north and west of the project area that have a high number of renters and face escalated displacement risk status in the case of rising rent. Owner occupancy rates in the study area are variable, but are higher directly east and west of the confluence area. Median income also varies with many census tracts under the $50,000 (LA County average is $57,900). Prior to LA River improvements or planned transportation improvements in the project area, the housing affordability need is **general to moderate**. Despite this current mapping, future improvements will increase displacement risk; therefore, affordable and permanent supportive housing are critical for communities around the project area.



Improvements along the LA River and the addition of parks is likely to increase rent and property values thereby increasing risk of displacement. Current mapping shows moderate need; however many areas would move into a higher need category if rents were to rise faster than the LA County average.

Source: LA River Master Plan, LA County Public Works, 2020

HOUSING AFFORDABILITY



Source: LA River Master Plan, LA County Public Works, 2020

ENGAGEMENT AND EDUCATION

Need Analysis:

Very High Need

General Need

The LA River's connection to the region's history, ecology, and culture makes it a prime venue and tool for both community engagement and education. Community members have expressed the importance of learning how the river benefits and supports the environment, habitat, and vegetation, as well as current hydrology and function of the river in its urban context. Though some adjacent communities currently take advantage of the river, a reimagined river with increased activity could serve as an educational platform and front door for all surrounding communities.

Currently there are 22 education institutions within one mile of the project area including both public and private elementary, middle, and high schools, as well as adult education centers. Significant institutions include the Legacy High School Complex and Tweedy Elementary north of the confluence, Lugo Elementary, close to the confluence, and Will Rogers Elementary, Pathway Independent Study Vista High School, Marco Antonio Firebaugh High School, and Hollydale Elementary School south of the confluence.

It is unclear the degree to which education programs in the project area have proactively gone outside and taken advantage of the river as a site for experiential learning. Nevertheless, the river has great potential to inspire investigations into urban ecosystems, hydrology, and engineering, as well as artistic expression. Future projects within the project area should forge partnerships with educational institutions, especially those which share boundaries with the river and its associated tributaries, confluences, and infrastructure, and learn how to best serve the area's large student community. Currently there is a **moderate to high** need for engagement and education in communities surrounding the project area.

A high population density and low number of engagement and education assets near the river has resulted in a moderate to high need score for communities near the project area.

Source: LA River Master Plan, LA County Public Works, 2020

ENGAGEMENT AND EDUCATION

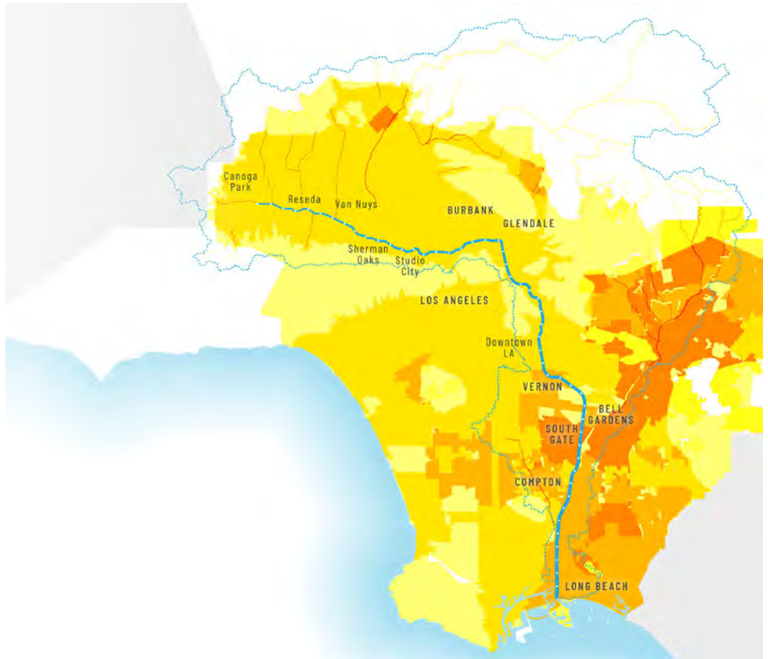
EDUCATION AND ENGAGEMENT NEED IS HIGHER IN AREAS WITH A HIGH POPULATION DENSITY RELATIVE TO EDUCATION FACILITIES

Source: LA River Master Plan, LA County Public Works, 2020

WATER SUPPLY

More than 50% 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. Increasing population, regulatory requirements, natural disasters, and demands on the water system accentuate decreasing reliability in the sources of imported water supplies 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 County analyzed the potential to increase water recharge on a regional basis by capturing more of the stormwater and dry-weather runoff that currently ends up in the ocean. Using existing studies and original work, it is reasonable to increase our region's water supply by 88,000 acre feet through large-scale recharge projects. This quantity of water would be equivalent to 14% of the water imports of the overlying area.

Within this context, there is a **moderate to high** need in the project area due to its location over the Central Basin and the reliance of local water purveyors on groundwater supply. The project area presents an opportunity to create seasonal water storage areas within and along the LA River channel. These seasonal water storage areas can be used for other benefits such as improvements to water quality (see "Water Quality" section), and potentially for non-rainy times recreation, habitat, etc.



The need to continue local water supply initiatives is moderate to high as this area is located above the Central Groundwater Basin and is almost completely supplied by local groundwater.

Source: LA River Master Plan, LA County Public Works, 2020

WATER SUPPLY

NEED IS GREATEST IN AREAS WHERE THE WATER SUPPLY IS MORE DEPENDENT ON GROUNDWATER; NEED IS ALSO GREATEST ALONG STREAMS WITH BENEFICIAL USES RELATED TO RECREATION OR HABITAT

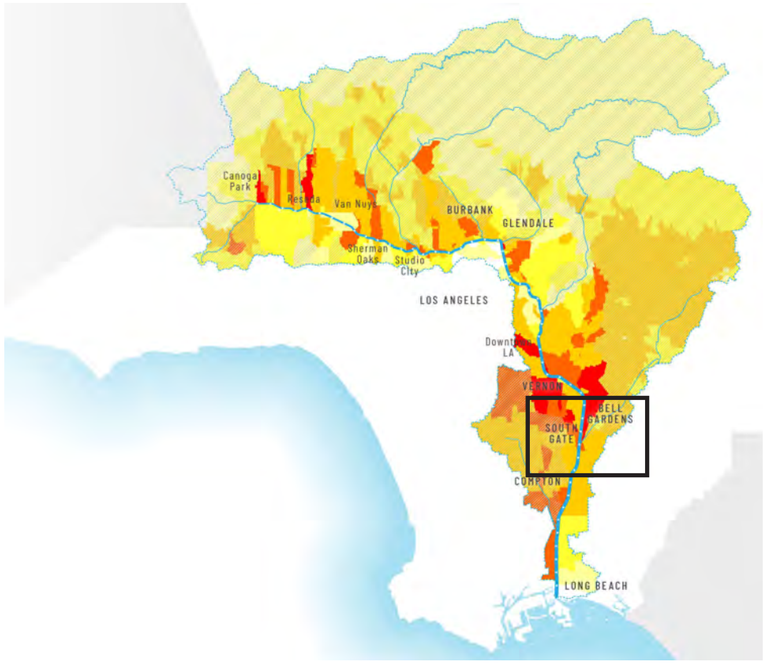
Source: LA River Master Plan, LA County Public Works, 2020

WATER QUALITY

The LA River is a water body with multiple beneficial uses, impairments, and regulated pollutants. While over 800 water quality improvement projects are planned or have been completed within the river's watershed, additional efforts are needed to meet established water quality targets. Although multiple water quality improvement projects are under development or completed, in many locations there are proposed projects to meet the river's water quality requirements that still lack the funding required to complete them.

Subwatersheds that directly drain to the LA River near the project area are densely developed with large areas of impervious surface, which contribute to a **high to very high** need for water quality improvements. Subwatersheds directly north of the project area have the highest need. The project area presents opportunities to further develop water quality improvement projects both in the existing adjacent rights-of-way and potentially within the new park areas. These water quality improvement features, such as detention basins and wetlands, can also support the water supply potential (see "Water Supply" section) and create other benefits such as ecosystem habitat and opportunities to foster learning and education.

The actual amount of benefit towards the water quality requirements in the various E/WMPs* depends on how much area is used for water quality improvements such as wetlands, and will result from community input and technical studies.



Water quality is a major concern in this area with direct draining subwatersheds having a high to very high need for water quality improvements

* Enhanced Watershed Management Plans / Watershed Management Plans

Source: LA River Master Plan, LA County Public Works, 2020

WATER QUALITY

VERY HIGH NEED IN SUBWATERSHEDS NORTHEAST OF THE PROJECT AREA

HIGH NEED IN SUBWATERSHEDS NORTHWEST OF THE PROJECT AREA

HIGH NEED IN SUBWATERSHEDS SURROUND THE CONFLUENCE

COMMERCE
PICO RIVERA
BELL GARDENS
CUDAHY
SOUTH GATE
LOS ANGELES
LYNWOOD
DOWNEY
PARAMOUNT
COMPTON
BELLFLOWER
E Florence Ave
Firestone Blvd
Long Beach Blvd
S Alameda St
Imperial Hwy
Century Frwy
Garfield Ave
Lakewood Blvd
Bellflower Blvd
Santa Ana Frwy
San Gabriel River Frwy
Florence Ave
15
14
13
12
11
710
105
19

Source: LA River Master Plan, LA County Public Works, 2020

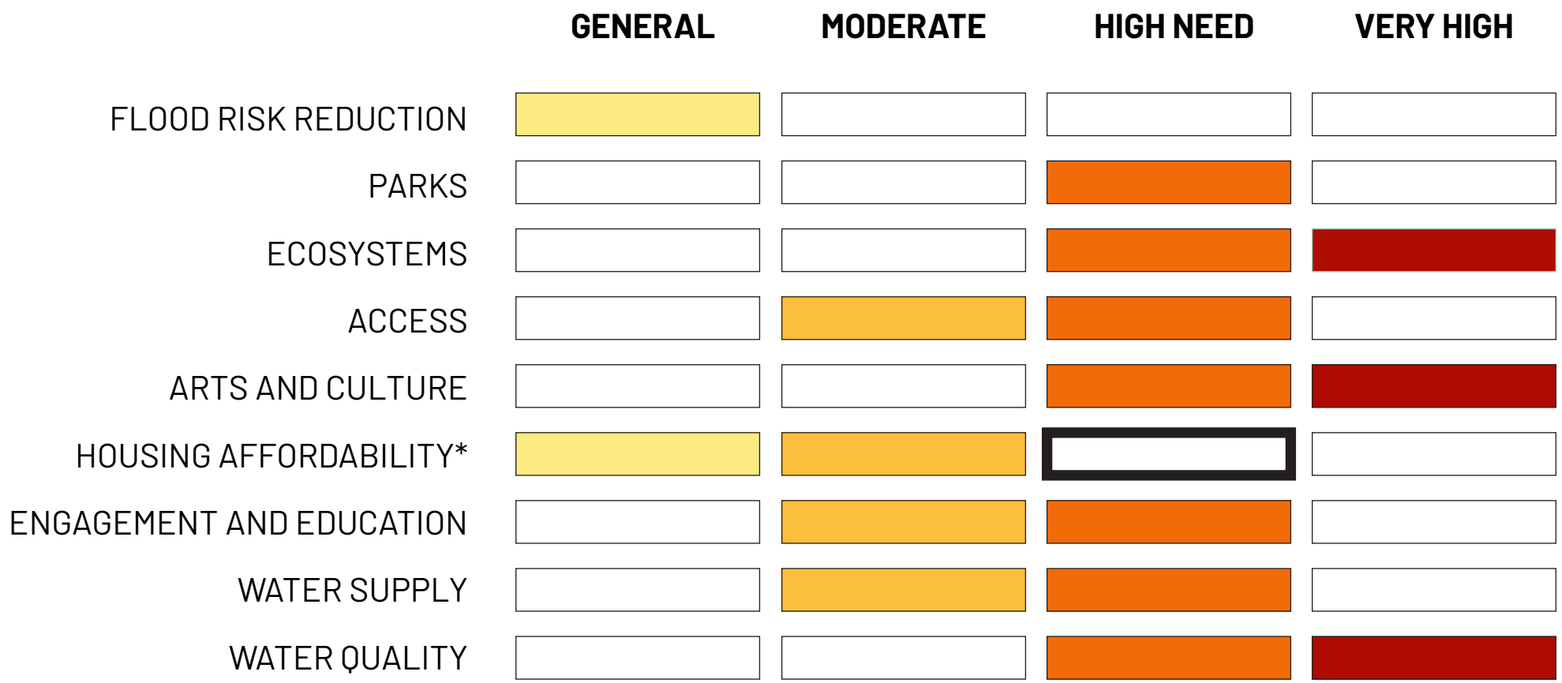
LA RIVER MASTER PLAN NEEDS ANALYSIS SUMMARY

The LA River Master Plan (expected completion 2020) is based on a goal-driven framework, which ensures that the plan's recommendations are closely tied to their potential to achieve the broader Master Plan's nine goals. The needs assessment was achieved through a comprehensive evaluation of criteria identified in the plan's existing conditions inventory and analysis that were most applicable for each goal along the 51 miles of the LA River identifying areas of general, moderate, high need, and in some cases very high need relative to that goal.

Compared to the rest of the LA River, the Rio Hondo Confluence Area has a **very high** ecosystem, arts and culture, and water quality improvement needs. There are also relatively **high** needs for parks, access, engagement and education, and water supply. While flood risk reduction was only a **general** need, it is important that modifications to the river within the project area do not increase flood risk. As the scope of the project progresses, it will be necessary to re-evaluate housing affordability given possible river and transportation improvements.

EVALUATION OF RELATIVE NEEDS SURROUNDING THE PROJECT AREA:

Need category will shift if rents rise faster than the county average



* As improvements are made, displacement risk will increase. Therefore, the need for affordable and permanent supportive housing should be considered as very high need even though the current conditions only indicate moderate risk.

Source: LA River Master Plan, LA County Public Works, 2020