SAFE CLEAN WATER PROGRAM

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Initial Watershed Plan

Upper Los Angeles River Watershed Area

Appendix I. Opportunity Analysis

August 2025

SAFE CLEAN WATER PROGRAM

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Upper Los Angeles River Watershed Area

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Appendix I. Opportunity Analysis

This appendix describes the data, methods, and sources used to identify the location of opportunities. Opportunities are areas with the most potential for SCW Projects or Programs to address Watershed Area (WA) Needs and support achievement of SCW Program Goals (Goals). Identified opportunities are not specific actions, but resources designed to assist proponents identify potential Projects and Programs and inform strategic funding decisions by Watershed Area Steering Committees (WASCs), Municipalities, and Los Angeles County Public Works (Public Works). Reference Chapter 6 in the SCW Watershed Planning Tool (Planning Tool) for descriptions on how opportunities are visualized through the interactive Planning Tool's Map and Dashboard and details on how it is used to support strategic decision making.

Opportunity analyses were completed for the SCW Planning Themes listed below and organized according to the following sections:

- Section I.1: Improve Water Quality (Goal A)
- Section I.2: Increase Drought Preparedness (Goal B)
- Section I.3: Improve Public Health (Goal C)
- Section I.4: Deliver Multi-Benefits with Nature-Based Solutions and Diverse Projects (Goals E, F, and G)
- Section I.5: Equitably Distribute Benefits (Goals J and K)
- Section I.6: Development of selected composite opportunities

Analyses were conducted through the integration of targeted geospatial datasets[1] and hydrologic modeling inputs which included, but were not limited to, pollutant loading estimates (e.g., zinc load distributions), locations and service areas of major stormwater capture infrastructure, and delineated hydrologic capture areas. Each opportunity analysis was defined by a unique analytical methodology and selection criteria that incorporated spatial correlations between opportunity metrics and WA Needs.

[1] Data sources for each analysis were developed from the SCW Program Watershed Planning process or from other key planning efforts. See Chapters 1 through 5 in the Initial Watershed Plans for additional discussion.

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I.1 Improve Water Quality Opportunity Analysis

This section identifies areas with the highest potential for SCW Program Projects and Programs to deliver benefits to address WA Needs for Indicators under the Improve Water Quality Planning Theme and supports the achievement of Goal A.

The two opportunity analyses described in this section identified areas within the WA with the highest potential to reduce limiting pollutant loads (i.e., pollutants of concern) through stormwater capture and groundwater recharge. Identifying these favorable locations helps guide prioritization and implementation of Projects and Programs that achieve individual pollutant reductions or composite pollutant load reductions (2+ pollutants) and helps avoid disjointed implementation.

Three Indicators (zinc load reduction, total phosphorus load reduction, and bacteria[2] load reduction) were used to determine the areas and relative magnitudes of potential water quality benefit that may be achieved. These contaminants were identified based on regulatory benchmarks and watershed modeling outputs for the Upper Los Angeles River (ULAR) WA and present significant barriers to achieving compliance with water quality standards in receiving waters (reference Appendix H for additional details).

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[2] In this analysis, bacteria capture opportunity is represented as runoff capture opportunity, as bacteria loads are primarily driven by hydrology and runoff is used as a proxy in the absence of direct estimates.

I.1.1 Pollutant Load Reduction Opportunity

This opportunity analysis highlights subwatersheds within the WA with the highest potential for new Projects and Programs to address zinc, total phosphorus, and bacteria load reduction needs. Because all SCW Program Projects are required to deliver a Water Quality Benefit, this layer may identify eligible Project locations.

Subwatersheds identified in this analysis represent areas where stormwater runoff is not currently managed by a wet-weather SCW Program funded Project[3] *and* where zinc, total phosphorus, and bacteria loads are relatively higher. Relative determination of Pollutant Load Reduction opportunity included simulation of modeled runoff and pollutant load values from the calibrated Watershed Management Modeling System 2.0 (WMMS2).

Table I-1 summarizes data sources, attributes, and processes included in this analysis, while Table I-2 lists the relative Pollutant Load Reduction opportunity classification (high, higher, highest). Outcomes are illustrated in Figure I-1, Figure I-2, and Figure I-3 for bacteria, zinc, and total phosphorus load reduction, respectively. Subwatersheds with the darkest shades of red, blue, or orange in these maps indicate areas with the highest potential for bacteria, zinc, and total phosphorus load reduction, respectively. Project and Program proponents should always perform additional site-scale analyses to determine pollutant loading at the Project scale.

Table I-1. Pollutant Load Reduction opportunity data sources and analysis

Data Source(s)	Key Attributes	Opportunity Analysis & Considerations
WMMS2	Pollutant load and runoff volume (10-year continuous modeled timeseries for water year 2014 through 2023)	• Pollutant load and runoff volume outputs from WMMS2 were area-weighted across each subwatershed by dividing the total load and runoff values by the respective subwatershed area, resulting in pollutant yield and runoff yield expressed per unit area (i.e., lbs/acre). • Next, capture areas of funded wet-weather SCW Program Projects were removed from consideration. This was completed to emphasize subwatersheds with high pollutant loads or runoff that do not have a downstream Project. • Lastly, percentile classifications were calculated based on the remaining subwatersheds (see Table I-2).
SCW Program Project capture areas	Project type: Wet-weather	

[3] Wet-weather Projects are those which are designed to capture and treat both stormwater *and* non-stormwater runoff. These Projects are typically designed to capture 100% of the 85th percentile, 24-hour design storm event and to treat at least 50% of influent pollutant loads.

Table I-2. Classification criteria for Pollutant Load Reduction opportunity

Opportunity	Classification Description
High	75th Percentile to 85th Percentile
Higher	85th Percentile to 95th Percentile
Highest	>95th Percentile

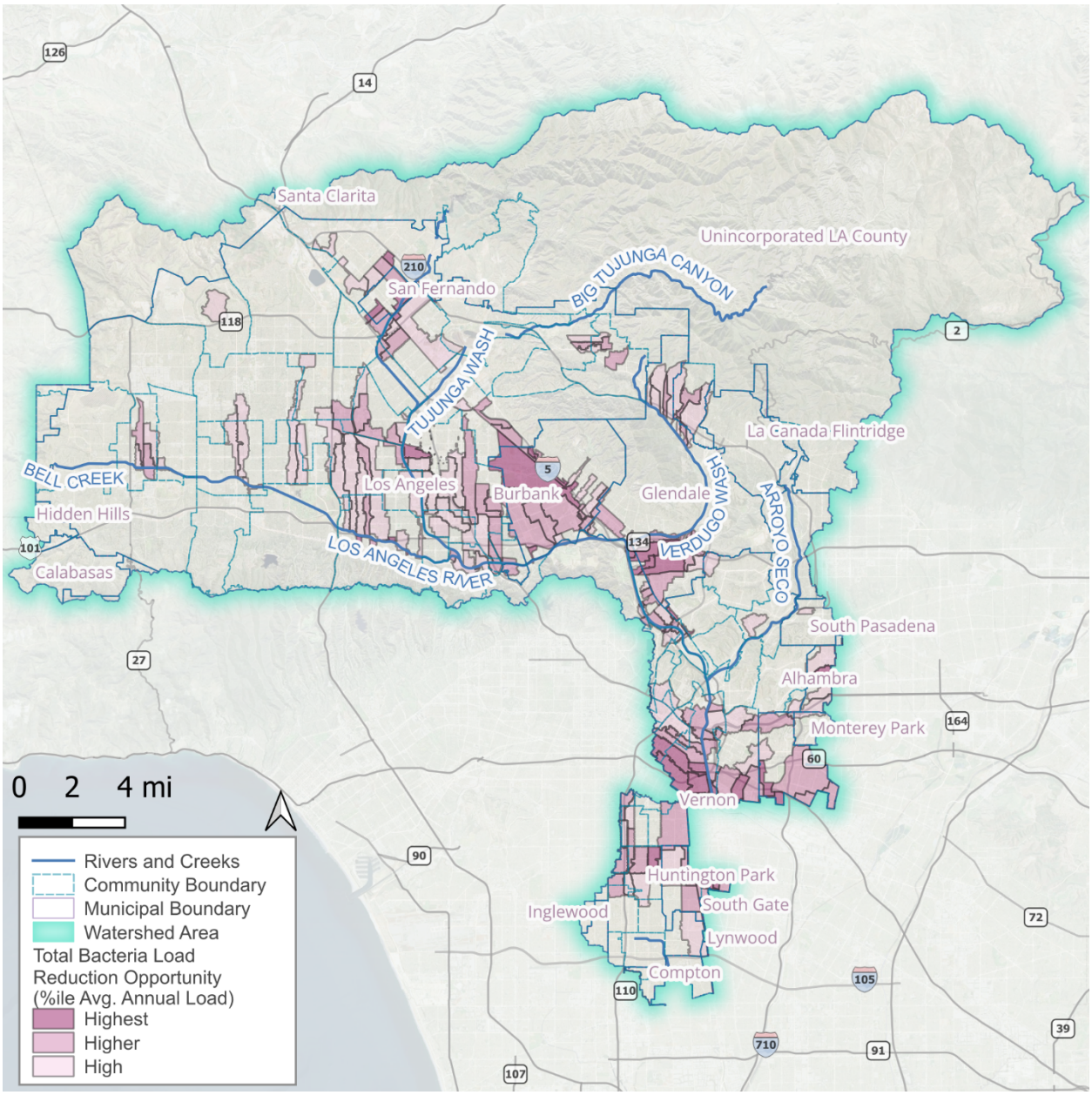

Figure I-1. Pollutant Load Reduction Opportunity for bacteria

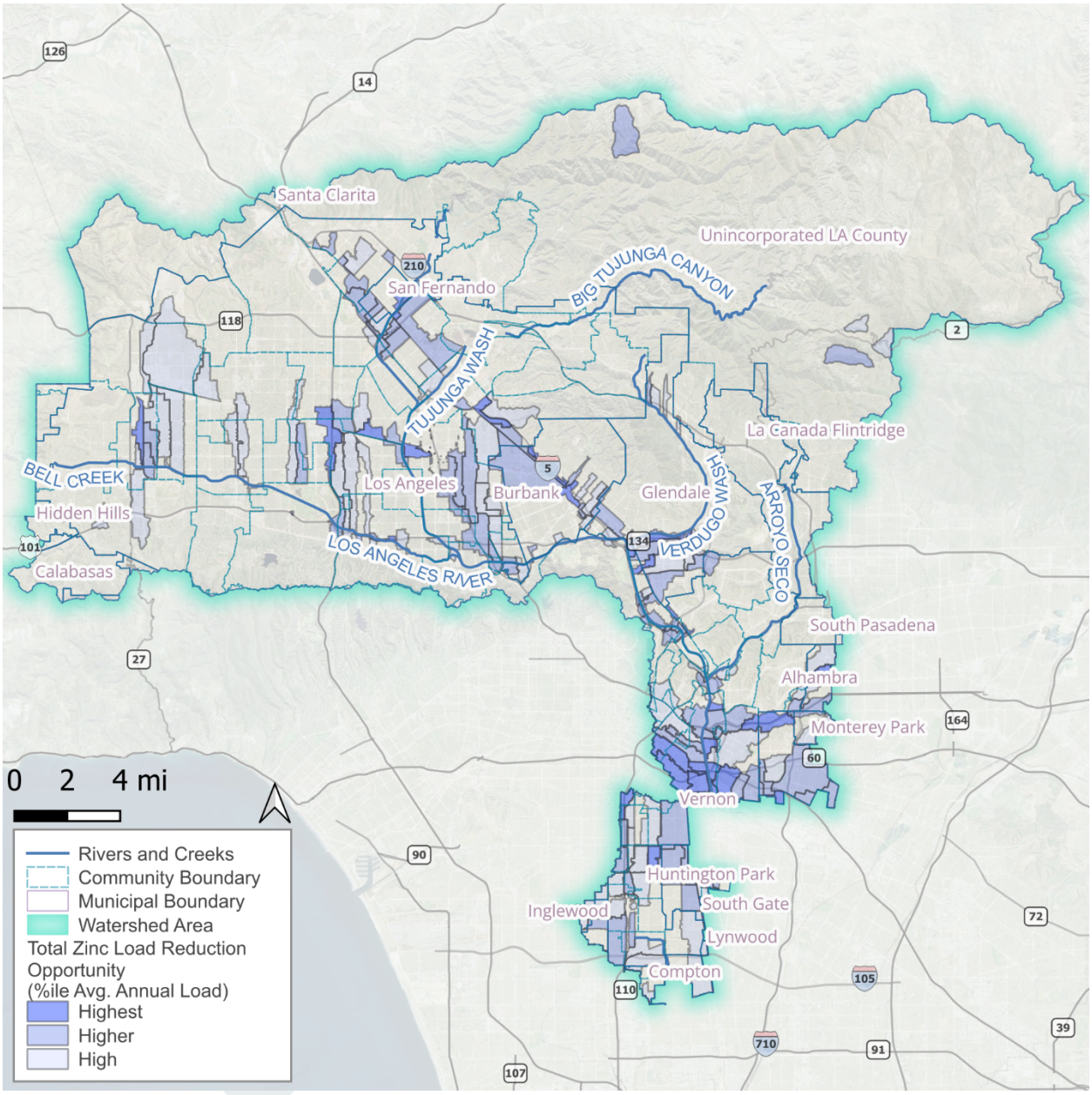

Figure I-2. Pollutant Load Reduction Opportunity for zinc

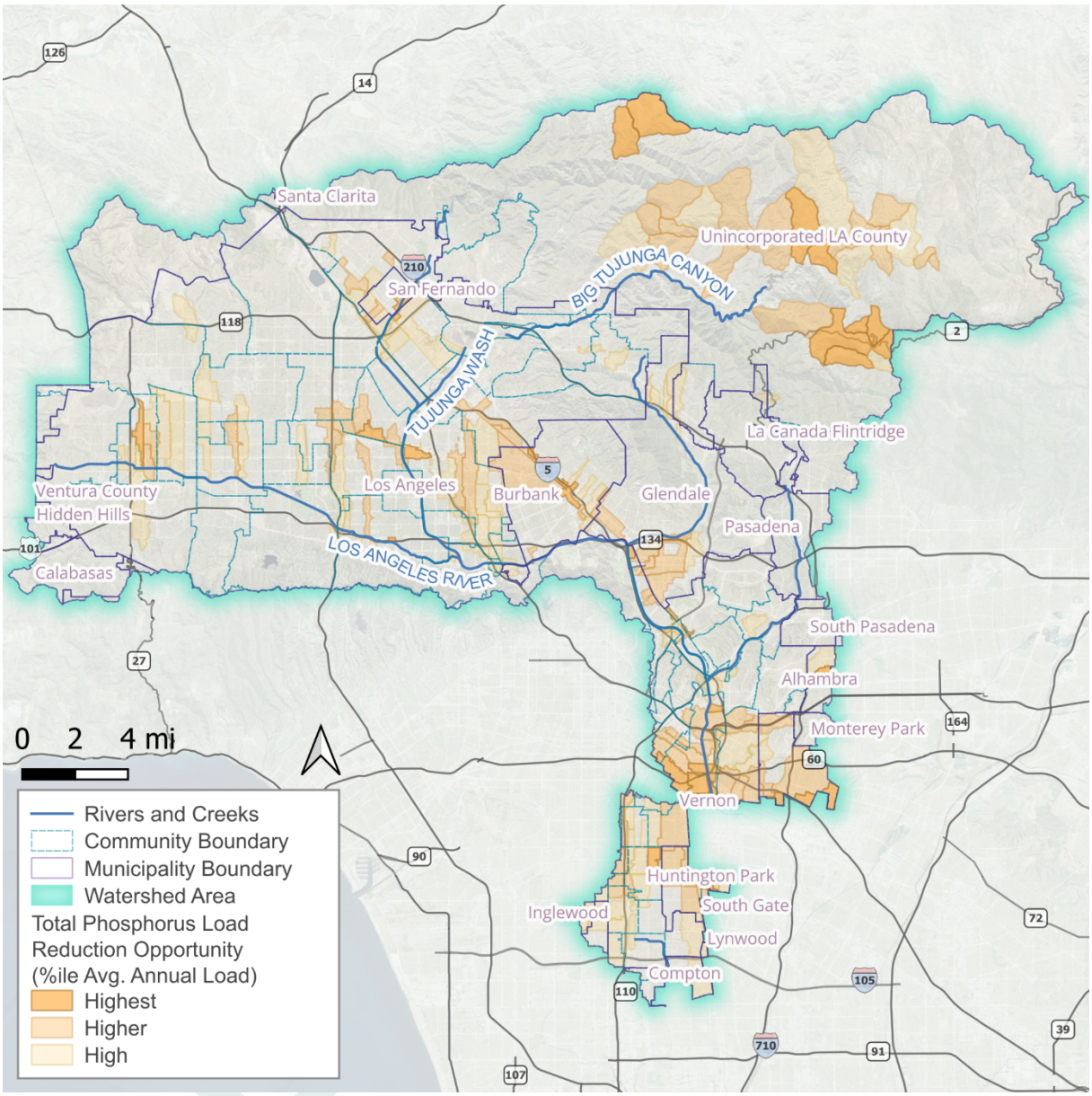

Figure I-3. Pollutant Load Reduction Opportunity for total phosphorus

I.1.2 Opportunity to Improve Water Quality

This opportunity analysis highlights subwatersheds within the WA with the highest potential for water quality improvement for multiple pollutant load reductions (zinc, total phosphorus, and bacteria). Since all SCW Program Projects are required to deliver a Water Quality Benefit, this layer may identify eligible Project locations.

Subwatersheds identified in this analysis represent areas where stormwater runoff is not currently managed by a wet-weather SCW Program funded Project and there is a relative Pollutant Load Reduction opportunity for one or more pollutants. The relative determination of Pollutant Load Reduction opportunity was based on the summation of individual pollutant scores—zinc, total phosphorus, and bacteria—assigned to each subwatershed. Each pollutant was scored from 0-3 based on the following pollutant loading ranges:

- General opportunity: score = 0 (<75th Percentile)
- High opportunity: score = 1 (75th to 85th Percentile)
- Higher opportunity: score = 2 (85th to 95th Percentile)
- Highest opportunity: score = 3 (>95th Percentile)

The maximum unweighted score a subwatershed could achieve was 9 (three pollutants × 3 points each). However, in others WAs where only one or two pollutants of concern are present, the maximum unweighted score is 3 or 6, respectively. To ensure comparability across WAs, the weighting factors listed below were applied as applicable. This standardization enables comparisons across all WAs and supports regional prioritization (e.g., within Supervisorial Districts).

- Subwatersheds with two pollutants of concern: scores multiplied by 1.5
- Subwatersheds with one pollutant of concern: scores multiplied by 3

Table I-3 summarizes the score framework, and weighting methodology used in this analysis with examples for three subwatersheds, while Table I-4 lists the multi-Pollutant Load Reduction opportunity classification (high, higher, highest). Outcomes are illustrated in Figure I-4, which maps composite Pollutant Load Reduction opportunity across the WA.

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Table I-3. Scoring method example for the Improve Water Quality opportunity for three subwatersheds

A	B	C	D=A+B+C	E=C x 1
Zinc	Bacteria	Total Phosphorus	Total Score	Final Score (Indexed to 9)
3 (Highest)	3 (Highest)	0 (Limited)	6	6
1 (High)	2 (Higher)	0 (Limited)	3	3
0 (Limited)	1 (High)	0 (Limited)	1	1

Table I-4. Classification criteria for Improve Water Quality opportunity

Opportunity	Final Score (Indexed to 9)
High	0 to 3
Higher	>3 to 6
Highest	>6 to 9

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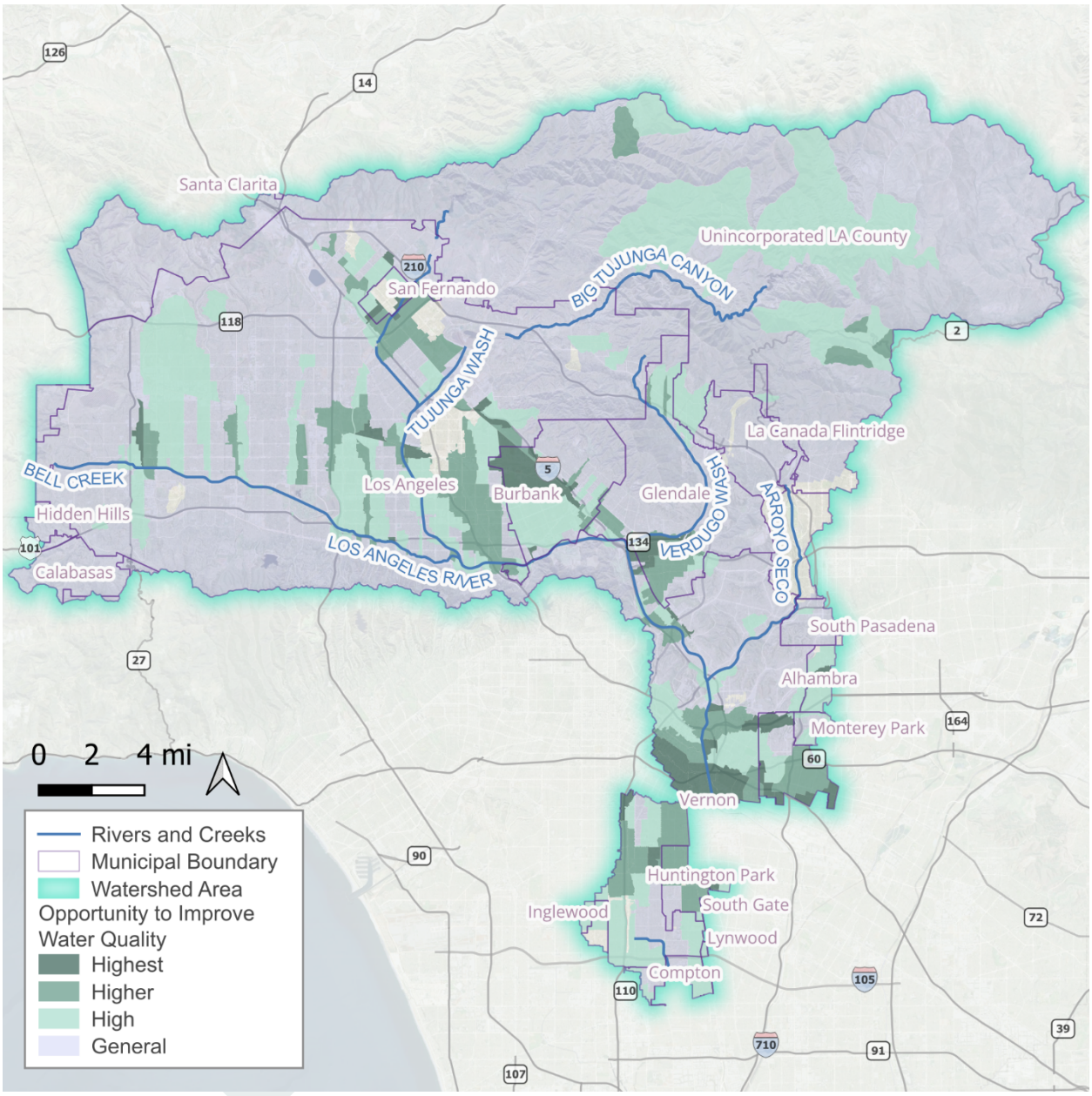

Figure I-4. Opportunity to Improve Water Quality

I.2 Increase Drought Preparedness Opportunity Analysis

This section identifies areas with the highest potential for SCW Program Projects and Programs to deliver benefits to address WA Needs for Indicators under the Increase Drought Preparedness Planning Theme and supports the achievement of Goal B.

The two opportunity analyses described in this section identified areas within the WA with the highest potential to increase local water supply through stormwater capture and via groundwater recharge and storage.

Hydrologic modeling outputs and spatial datasets—including modeled runoff volumes, locations of major capture facilities, and defined capture areas— were used to identify regions where stormwater runoff is currently *not* intercepted by a downstream Project or infrastructure. These regions represent spatial gaps in the capture area of the WA and highlight opportunities for new Project and Program implementation. The resulting opportunities support improved water supply self-reliance and resilience to prolonged dry periods. This allows for sustainable, distributed water resource management into the future.

I.2.1 Opportunity to Increase Water Supply Through Stormwater Capture

This opportunity analysis highlights subwatersheds within the WA where stormwater is not currently captured by an existing SCW Program Project, indicating areas with strong potential for new wet-weather and/or dry-weather capture Projects[4]. This layer can help guide the siting of future Projects that capture stormwater and/or non-stormwater runoff to contribute to new water supply and provide Water Supply Benefits.

To develop this opportunity, areas already captured by major capture facilities—defined as dams, reservoirs, and spreading grounds—were removed if they fell below a 30% Net Countable Supply threshold. Net Countable Supply is the portion of runoff

[4] Dry-weather Projects are those which are designed to capture non-stormwater runoff (i.e., runoff generated during dry weather).

that would not have already been captured downstream of a Project by an existing water recharge/treatment facility. Additionally, areas managed by existing SCW Program wet-weather Projects were similarly excluded[5]. Remaining areas represent locations where Projects could provide the greatest incremental benefit.

To further prioritize subwatersheds, the opportunity to Increase Water Supply through Stormwater Capture was stratified by runoff volume, allowing for a more targeted approach to identifying high-impact locations for future Projects.

Figure I-5 summarizes the data sources, attributes, and processes used in this analysis, while Table I-6 lists the stormwater capture opportunity classification (high, higher, highest). Outcomes from this analysis are mapped in Figure I-5; the mapped opportunity classifications can be interpreted as follows:

- **Wet- or dry-weather Project (blue):** The darkest blue areas represent subwatersheds with the highest opportunity for siting either a wet-weather or dry-weather Project. These areas generate the most stormwater runoff in the WA, lack existing SCW Program Projects of either type, and are not already managed by a major capture facility that captures more than 30% of their capture area.
- **Wet-weather Project only (green):** The darkest green areas represent subwatersheds with the highest opportunity for siting a wet-weather Project. These areas generate the most stormwater runoff in the WA, lack an existing SCW Program wet-weather Project, and are not already managed by a major capture facility that captures more than 30% of their capture area. Unlike the blue areas, these subwatersheds already have dry-weather Projects managing non-stormwater runoff, leaving opportunity to capture stormwater runoff through a wet-weather Project.

[5] While some existing SCW Program dry-weather Projects are designed to capture some stormwater runoff, they typically are unable to capture 100% of the 85th percentile, 24-hour storm event and treat less than 50% of influent pollutants loads. As a result, their capture areas were not excluded when identifying opportunities for new wet-weather Projects to further manage pollutant loads.

Table I-5. Opportunity to Increase Water Supply through Stormwater Capture data sources and analysis

Data Source(s)	Key Attributes	Opportunity Analysis & Considerations
SCW Program funded Project capture areas	Project type: Wet-weather or dry-weather, and Wet-weather only	• As described in Section I.1.1, runoff yield was calculated for each subwatershed, accounting for stormwater capture by major capture facilities. • Then, capture areas upstream of major capture facilities with less than 30% Net Countable Supply were removed. Additionally, areas already managed by SCW Program-funded wet-weather capture Projects were removed. • Remaining areas were then evaluated for wet-weather and dry-weather runoff capture opportunity, with existing SCW Program Projects categorized to distinguish between wet-weather or dry-weather and wet-weather only capture potential. Note: low flow diversion areas were included in the wet-weather only opportunity. • Lastly, percentile classifications were calculated based on the remaining subwatersheds (see Table I-6).
Major capture facilities	Dams, reservoirs, spreading grounds, and low flow diversions	
SCW Program Metrics and Monitoring Study Net Countable Supply	Entries meeting the 30% Net Countable Supply threshold ("NET_COUNT" ≥ 0.3)	
WMMS2	Runoff volume (10-year continuous model timeseries, water year 2014 through 2023)	

Table I-6. Classification criteria for Opportunity to Increase Water Supply through Stormwater Capture

Opportunity	Classification Description
High	75th Percentile to 85th Percentile
Higher	85th Percentile to 95th Percentile
Highest	>95th Percentile

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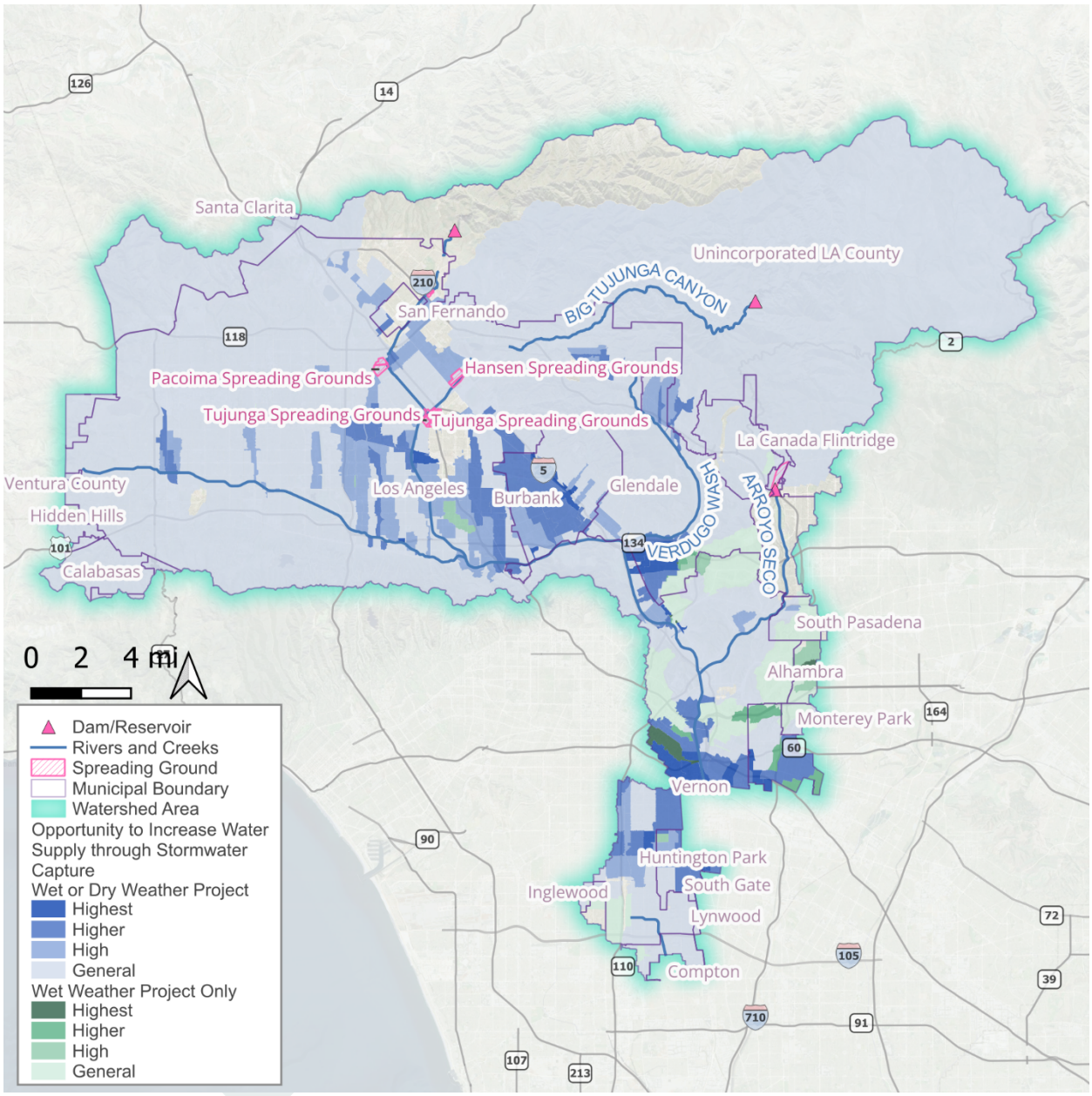

Figure I-5. Opportunity to Increase Water Supply through Stormwater Capture

I.2.2 Opportunity to Increase Water Supply Through Groundwater Recharge and Storage

This opportunity analysis highlights subwatersheds within the WA with the highest potential for the implementation of new Projects that capture and infiltrate urban runoff to increase local supply through groundwater recharge via a managed unconfined aquifer. To ensure that opportunities reflect unmet needs, the analysis excluded subwatersheds where stormwater runoff is already managed by an existing wet-weather SCW Program Project or a major capture facility.

Table I-7 summarizes the data sources, attributes, and processes used in this analysis. Outcomes are illustrated in Figure I-6, which maps the opportunity to site infiltration-based Projects to provide the greatest incremental benefit to Increase Water Supply through groundwater recharge across the WA.

Table I-7. Opportunity to Increase Water Supply Through Groundwater Recharge and Storage data sources and analysis

Data Source(s)	Key Attributes	Opportunity Analysis & Considerations
Groundwater Basins	Entries with "Unconfined" in the Basin Type field name	• First, groundwater basin data was filtered to only include "unconfined" aquifers. • Next, capture areas upstream of major capture facilities and SCW Program funded wet-weather capture Projects were removed as described in the section above. • The resulting layer was exported and is illustrated in Figure I-6.
SCW Program funded Project capture areas	Project type: Wet-weather or dry-weather	
SCW Program Metrics and Monitoring Study Net Countable Supply	Entries meeting the 30% Net Countable Supply threshold ("NET_COUNT" ≥ 0.3)	
Major capture facilities	Capture areas for dams, reservoirs, spreading grounds, low flow diversions	

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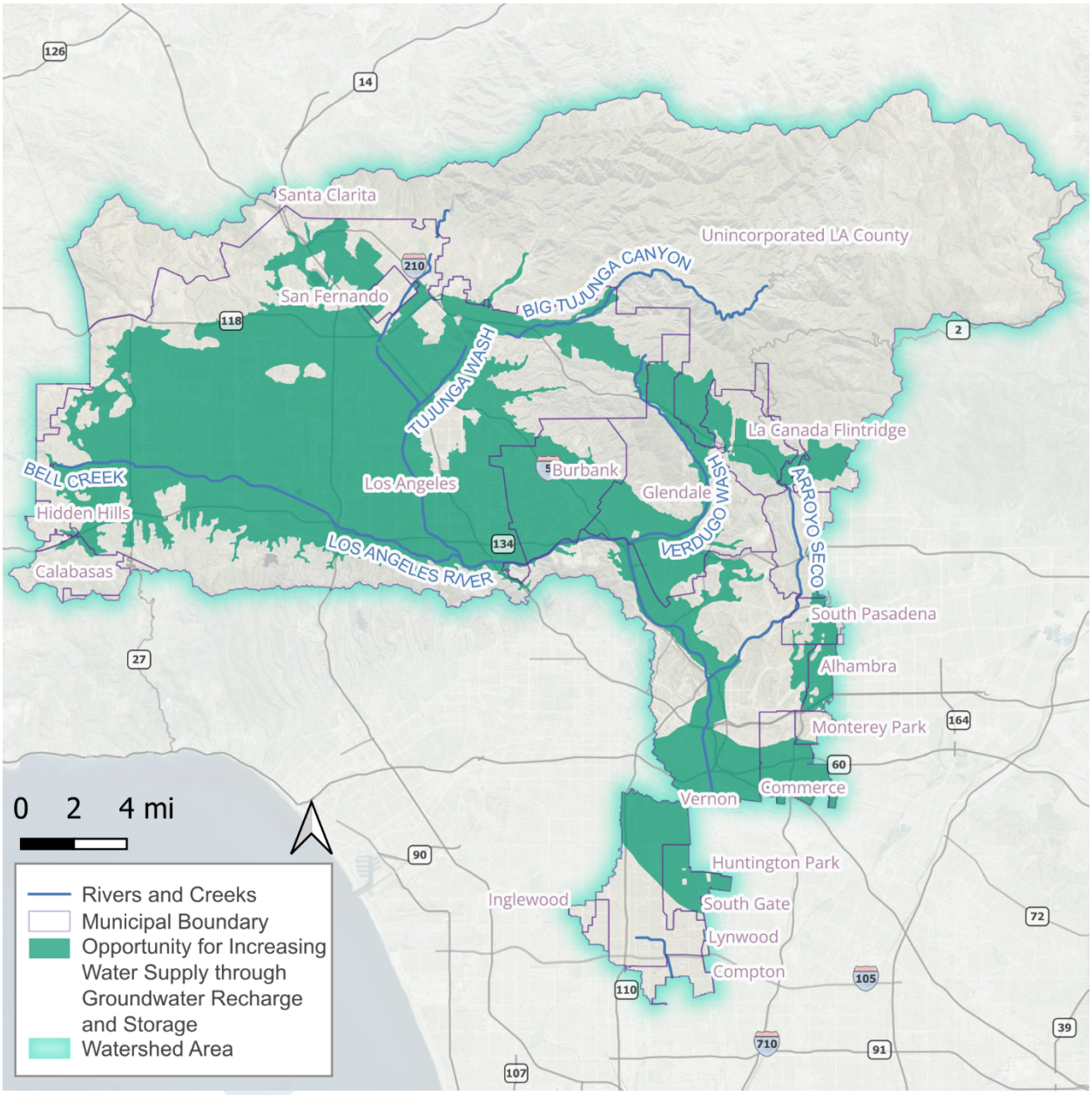

Figure I-6. Opportunity to Increase Water Supply Through Groundwater Recharge and Storage

I.3 Improve Public Health Opportunity Analysis

This section identifies areas with the highest potential for SCW Program Projects and Programs to deliver benefits to address WA Needs for Indicators under the Improve Public Health Planning Theme and supports the achievement of Goal C.

The four opportunity analyses described in this section identified areas within the WA where public health benefits can be improved through integration with Projects and Programs primarily designed to address stormwater and urban runoff pollution. Under the SCW Program, Projects and Programs are required to deliver a Water Quality Benefit. As such, efforts like increasing access to open space, expanding recreational opportunities, and strengthening community resilience to climate change are pursued as co-benefits—rather than as standalone objectives. During planning and design, Project and Program proponents and Municipalities should proactively seek opportunities to incorporate features such as nature-based, multi-benefit green infrastructure. These elements can simultaneously meet SCW Program water quality requirements and address broader community health needs.

I.3.1 Opportunity for Park and Green Space Creation

This opportunity analysis highlights areas within the WA with the highest need for parks and green space to be created.

Areas identified in this analysis represent locations that do not overlap with existing parks or open spaces, where the Parks Needs Assessment classified the need as either “High” or “Very High”, and where park space is limited to less than 3.3 acres per 1,000 residents. These criteria ensure that identified areas reflect communities with limited access to recreational green space.

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The resulting areas were further categorized based on their Los Angeles River Master Plan (LARMP) Access Need values (listed below). Although the LARMP study area does not cover all WAs, Access Needs values from the effort were calculated and applied across all WAs in this effort to provide consistency in identifying areas with the highest potential for park and access improvements. An Access Needs score of 2.825 was selected as a threshold as it represented a measure of the approximate central tendency across the dataset as follows:

- "High" opportunity: Access Needs score less than or equal to 2.825
- "Higher" opportunity: Access Needs score greater than 2.825

Table I-8 summarizes the data sources, attributes, and processes included in this analysis, while Table I-9 lists the Park and Green Space Creation opportunity classification (high, higher). Outcomes from this analysis are illustrated Figure I-7, which maps the relative opportunity for Park and Green Space Creation across the WA.

Table I-8. Park and Green Space Creation opportunity data sources and analysis

Data Source(s)	Key Attributes	Opportunity Analysis & Considerations
Parks Needs Assessment	Entries with "High" or "Very High" in the NEED_DESC field name and entries meeting the 3.3 ac threshold ("AC_PER_1K" ≥ 3.3)	• First, entries with High and Very High Park Needs[1] and less than 3.3 acre per 1,000 people were selected. • Resulting areas were clipped to urban areas to focus the analysis on locations with the greatest potential for new park development within more densely populated regions. • Lastly, subwatersheds were categorized into high or higher based on their LARMP Access Need values (see Table I-9).
LARMP Access Need	Entries above and below the 2.825 Access Need threshold	
Urban Areas	Extent of the urban area	

[1] In some WAs there were no high or very high entries. In those instances, this step was skipped.

Table I-9. Classification criteria for Park and Green Space Creation opportunity

Opportunity	Park Needs Assessment Population per Area	Park Needs Assessment Results	LARMP Access Need
High	Less than 3.3 acre per 1,000 people	High, Very High	<2.825
Higher			>2.825

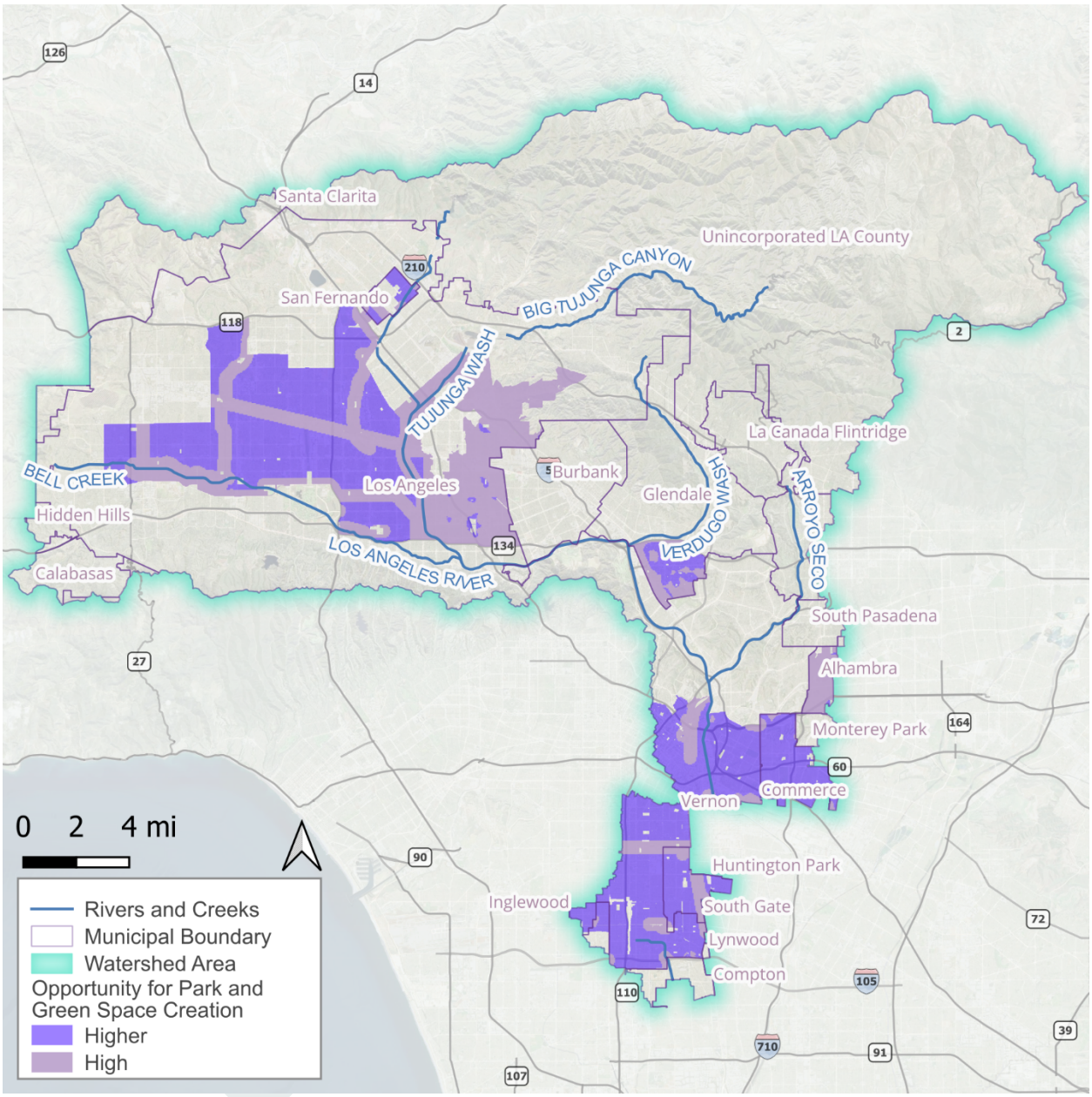

Figure I-7. Opportunity for Park and Green Space Creation

I.3.2 Opportunity for Park Enhancement or Restoration

This opportunity analysis highlights areas within the WA with the highest need for parks to be enhanced or restored, addressing both park need and park condition improvements.

Areas identified in this analysis represent locations that overlap with existing parks or open spaces classified as having “Poor” or “Fair” condition, and where the Parks Needs Assessment indicates a “High” or “Very High” need. These criteria ensure that the opportunities reflect communities with limited access to quality recreational space and where restoration efforts could yield greater benefit. Areas were then categorized based on a combined assessment of park condition and LARMP Access Need (described in Section I.3.1).

Table I-10 summarizes the data sources, attributes, and processes included in this analysis, while Table I-11 lists the Park Enhancement or Restoration opportunity classification (high, higher, highest). Outcomes from this analysis are illustrated Figure I-8, which maps the relative Park Enhancement or Restoration opportunity across the WA.

Table I-10. Park Enhancement or Restoration opportunity data sources and analysis

Data Source(s)	Key Attributes	Opportunity Analysis & Considerations
LA County local parks, regional parks, open space, natural areas	Entries with "Open Access" in the ACCESS_TYP field name	• First, entries with open access were filtered to ensure selected area do not overlap with non-open access parks. • Resulting parks were then filtered to those with a High or Very High need as determined by the Park Needs Assessment [1]. • Resulting areas were clipped to urban areas to focus the analysis on locations with the greatest potential for new park development within more densely populated regions. • Lastly, opportunities were categorized into high, higher, or highest based on their park condition and LARMP Access Need and park condition (see Table I-11).
Parks Needs Assessment	Entries with " High" or “Very High” in the NEED_DESCP field name	
LA County local parks, regional parks, open space, natural areas	Entries with "Poor" or “Fair” in the PRKINF_CND field name	
LARMP Access Need	Access Need	
Urban Areas	Extent of the urban area	

[1] In some WAs there were no high or very high entries. In those instances, this step was skipped.

Table I-11. Classification criteria for Park Enhancement or Restoration opportunity

Opportunity	Park Condition	Park Needs Assessment Results[1]	LARMP Access Need
High	Fair	High, Very High	<2.825
Higher	Fair		>2.825
Highest	Poor		>2.825

[1] In some WAs there were no high or very high entries. In those instances, this step was skipped.

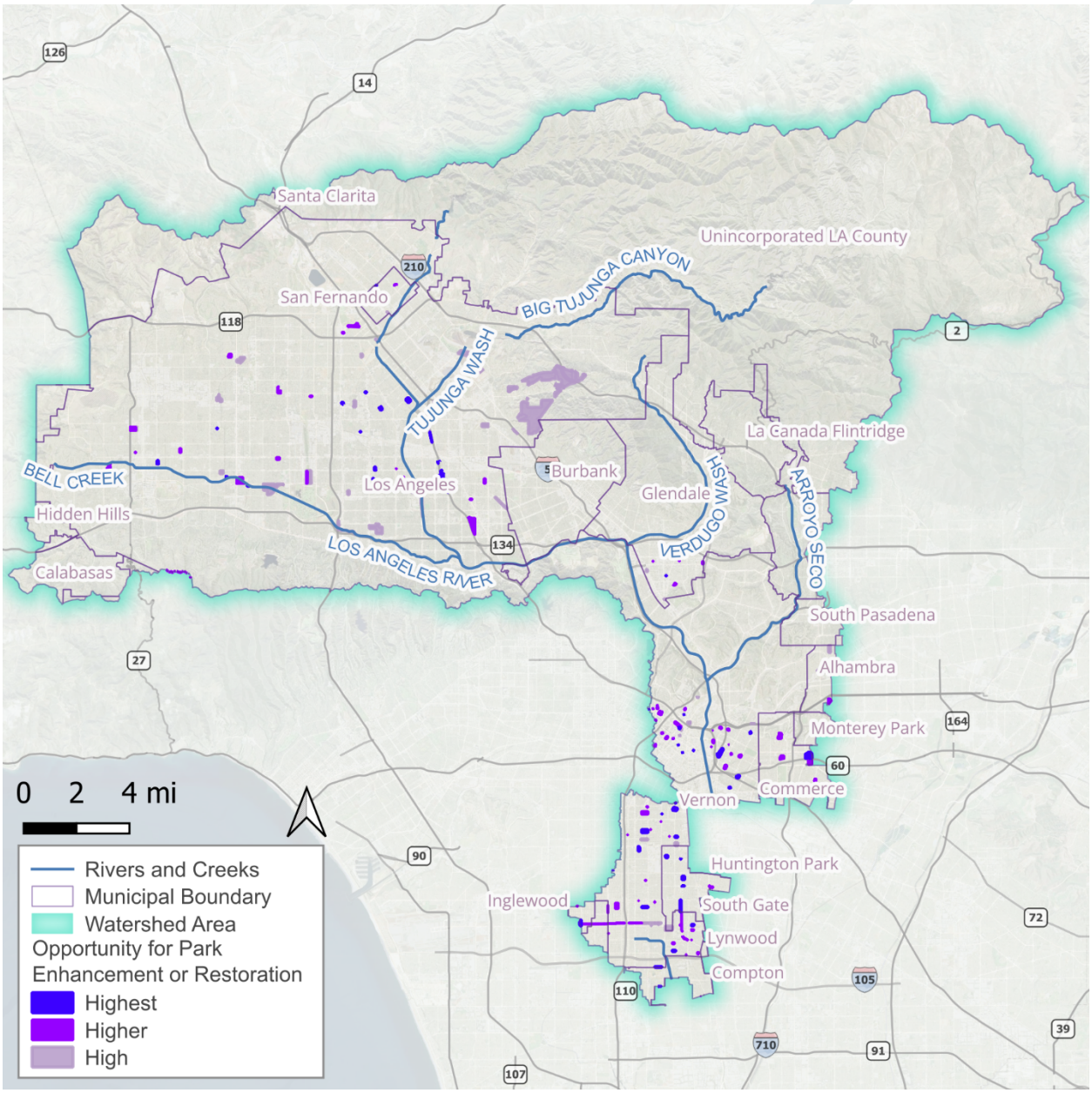

Figure I-8. Opportunity for Park Enhancement or Restoration

I.3.3 Opportunity for Creating Green Space at Schools

This opportunity analysis highlights areas within the WA with the highest potential for Creating Green Space at Schools, supporting SCW Program Goals for enhancing community health and environmental resilience.

School parcels were selected based on criteria outlined in the Los Angeles Unified School District (LAUSD) Green Schoolyards for All Plan, focusing specifically on parcels that serve the K-12 population. Each selected school parcel was then assigned a CalEnviroScreen (CES) score and an Extreme Heat Temperature score, reflecting environmental and climate vulnerability. These two scores were combined using a weighted formula, with CES contributing 75% and Extreme Heat Temperature contributing 25% to the final composite score. This approach ensures that parcels with both high environmental burden and heat exposure are prioritized for green space improvements.

Table I-12 summarizes the data sources, attributes, and processes included in this analysis, while Table I-13 lists the Creating Green Space at Schools' opportunity classification (high, higher, highest). Outcomes from this analysis are illustrated in Figure I-9.

Table I-12. Creating Green Spaces at Schools' opportunity data sources and analysis

Data Source(s)	Key Attributes	Opportunity Analysis & Considerations
Los Angeles County Schools (direct from Public Works)	K-12 only	• First, school parcels were filtered to include only those serving K–12. • Resulting parcels were then spatially joined to the CES and Extreme Heat Temperature database to determine a score for each. • Lastly, opportunities were categorized into high, higher, or highest based on percentile of composite score (see Table I-13).
CalEnviroScreen 4	CES 4.0 Score	
CalAdapt Extreme Heat	Mid-century RCP 8.5 Number of Extreme Heat Days per Year	

Table I-13. Classification criteria for Creating Green Space at Schools' opportunity

Opportunity	Classification Description
High	<50th percentile
Higher	50th to 75th percentile
Highest	>75th percentile

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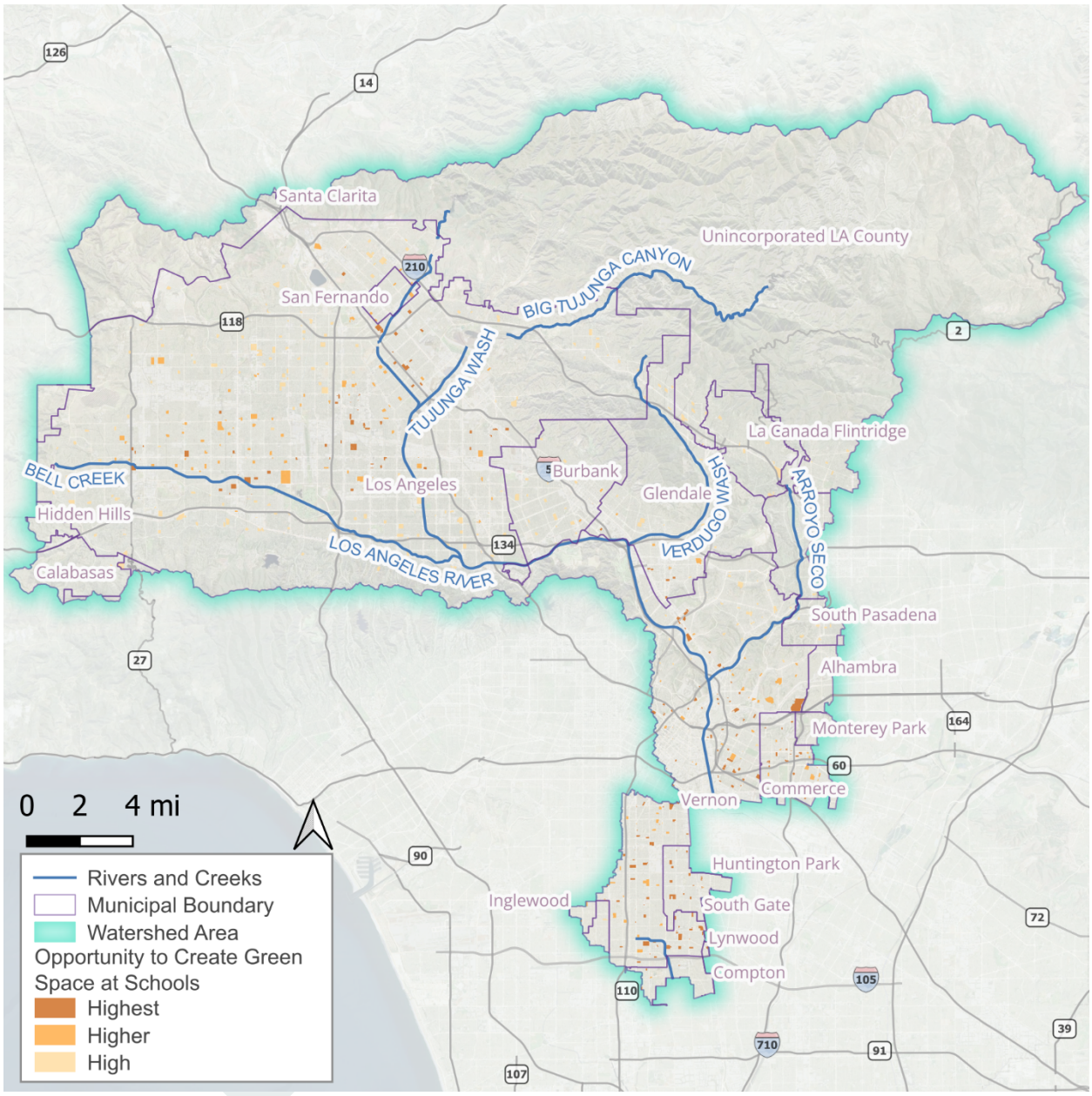

Figure I-9. Opportunity to Create Green Space at Schools

I.3.4 Opportunity for Creating Canopy, Cooling, and Shading Surfaces

This opportunity analysis highlights areas within the WA with the highest need for increased tree canopy, supporting SCW Program Goals for urban cooling, shading, and environmental equity. This analysis builds on the methodology developed in the Community Forest Management Plan (CFMP), which originally focused on unincorporated areas. For this analysis, the same approach was applied across the entire Los Angeles region to identify areas with the greatest potential for tree canopy expansion.

Each Countywide Statistical Area (CSA), defined in the CFMP, was evaluated based on its existing tree canopy coverage and classified into three bins:

- Low: < 10% canopy cover
- Medium: 10% to 15% canopy cover
- High: >15% canopy cover

To incorporate social vulnerability, each CSA was also assigned a Social Sensitivity Index (SSI) value—categorized as Low, Medium, or High—based on the provided mean SSI score for that area.

A composite score was then calculated for each CSA. This was done by combining its canopy cover classification with its SSI category, following the scoring matrix outlined in Table I-14. This scoring approach ensures that areas with both low canopy cover and high social sensitivity are prioritized for urban greening efforts.

Table I-15 summarizes the data sources, scoring methodology, and classification framework used in this analysis. Outcomes are illustrated Figure I-9, which maps relative opportunity to create canopy, cooling, and shading surfaces across the WA.

Table I-14. Classification criteria for Creating Canopy, Cooling, and Shading Surfaces opportunity

Urban Tree Canopy Cover	Low SSI	Medium SSI	High SSI
Low (<10%)	Higher	Higher	Highest
Medium (10% to 15%)	High	Higher	Highest
High (>15%)	High	High	High

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Table I-15. Creating Canopy, Cooling, and Shading Surfaces opportunity data sources and analysis

Data Source(s)	Key Attributes	Opportunity Analysis & Considerations
Countywide Statistical Area (CSA)	Entries with "COMMUNITY"	• First, CSAs were used to define the geographic boundaries for evaluating tree-canopy opportunity. • Remaining area was then clipped to urban areas to focus on locations in more densely populated regions. • Within these areas, the percentage of existing urban canopy cover was calculated for each CSA. Each CSA was then spatially joined with the SSI categories. • Lastly, opportunities were categorized into low, medium, or high based on percentile of composite score using the classification matrix adapted from the CFMP and combining canopy cover and SSI categories (see Table I-14).
Urban Canopy	Urban Canopy Area	
Social Sensitivity Index (SSI)	Entries with "Low", “Med”, or “High” in the SoVI_Third field name	
Urban Areas	Extent of the urban area	

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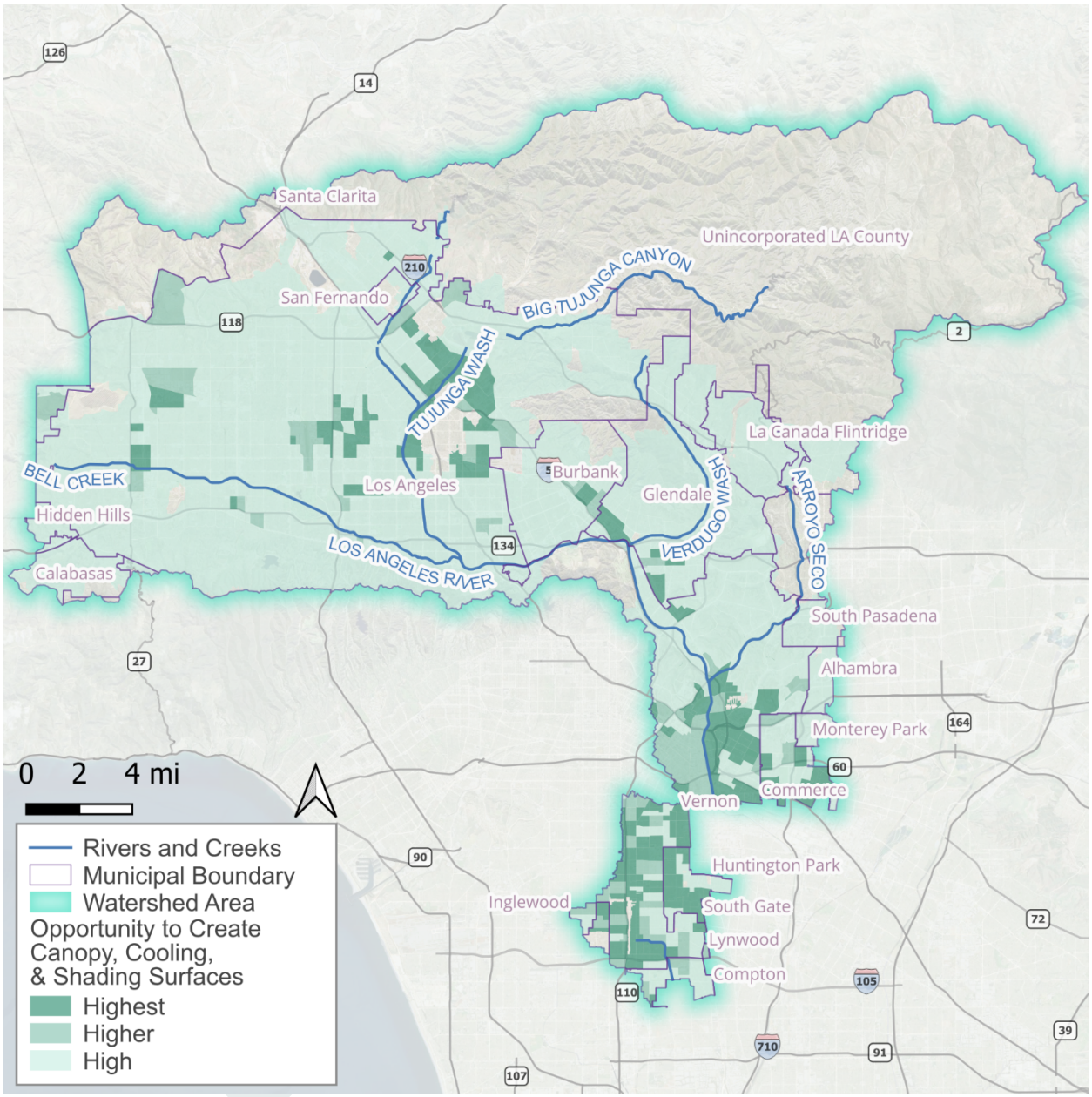

Figure I-10. Opportunity to Create Canopy, Cooling, and Shading Surfaces

I.4 Deliver Multi-Benefits with Nature-Based Solutions and Diverse Projects Opportunity Analysis

This section identifies areas with the highest potential for SCW Program Projects and Programs to deliver benefits to address WA Needs for Indicators under the Deliver Multi-Benefits with Nature-Based Solutions and Diverse Projects Planning Theme and supports the achievement of Goals E, F, and G.

The two opportunity analyses described in this section identified areas within the WA with the highest potential to (1) increase the net area of habitat created, enhanced, or protected and to (2) address a community-identified priority or concern. Spatial datasets (e.g., existing habitat layers, ecological restoration potential, and community engagement inputs such as documented needs, watershed engagement priorities, and equity Indicators) were integrated to identify opportunities.

Nature-based, multi-benefit Projects do more than meet technical and regulatory stormwater performance targets, they also restore ecological functions and build a more inclusive, resilient, and livable watershed for future generations. To incorporate these Projects, watershed planning must account for a WA's unique physical, social, and environmental characteristics such as the degree of urbanization, exposure to urban heat and localized flooding, access to green space, and baseline habitat quality.

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I.4.1 Opportunity for Habitat Creation, Restoration, Enhancement, and Protection

This opportunity analysis highlights areas within the WA with the highest need for habitat to be created or improved. Opportunities were identified using the LARMP Ecosystem Need dataset, which evaluates habitat needs based on criteria for restoration, enhancement, and protection. The LARMP Ecosystem Need dataset was selected as foundational for this analysis for its comprehensive regional scope, science-based prioritization framework, and alignment with multi-benefit planning objectives. These objectives integrate ecological, hydrological, and community needs. Its classification system enables consistent identification of areas where habitat improvements support broader watershed health and climate adaptation goals. Areas were assigned a relative need based on the LARMP Ecosystem Need classification as follows:

- High: score = 2
- Higher: score = 3
- Highest: score = 4 or 5

This classification framework ensures areas with the greatest ecological need are prioritized for habitat-focused Projects and Programs. Such areas represent opportunities to strengthen habitat corridors, improve biodiversity, and enhance natural buffers along the river and surrounding landscapes. Project and Program proponents should conduct meaningful outreach to consider additional local habitat sensitivities.

Table I-16 summarizes the data sources, attributes, and processes included in this analysis. Outcomes are illustrated in Figure I-11, which maps the distribution of Habitat Creation, Restoration, Enhancement, and Protection opportunity across the WA.

Table I-16. Habitat Creation, Restoration, Enhancement, and Protection data sources and analysis

Data Source(s)	Key Attributes	Opportunity Analysis & Considerations
LARMP Ecosystem Need	Ecosystem Need Value	• Opportunities were categorized into high, higher, and highest based on Ecosystem Need classification in LARMP. • Existing protected areas (e.g., ecological preserves) were clipped from consideration as they generally, already benefit from existing management frameworks, ecological stewardship, etc.
California Protected Areas Database	Entries with "State" and “Federal” Ownership	

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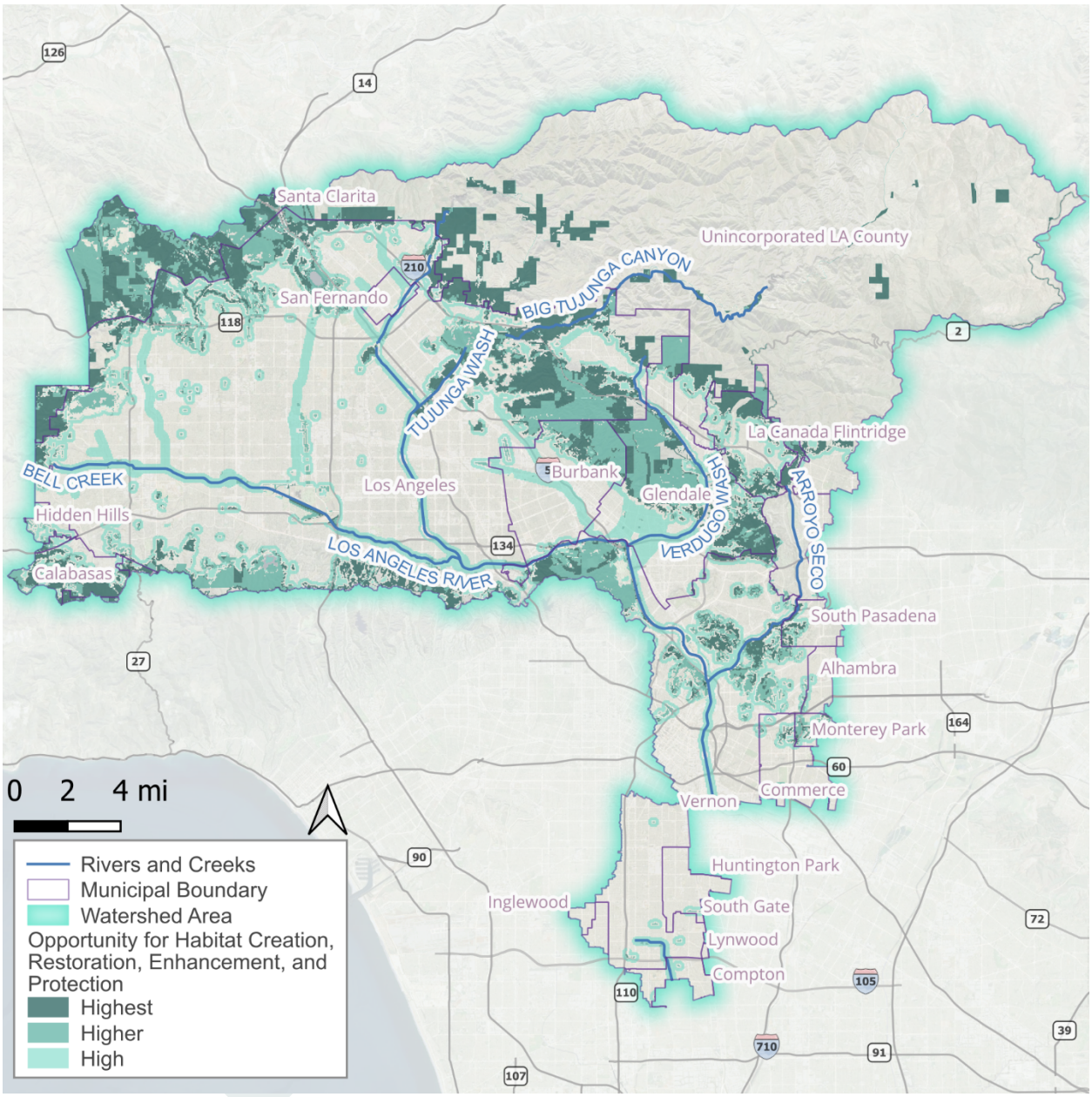

Figure I-11. Opportunity for Habitat Creation, Restoration, Enhancement, and Protection

I.4.2 Opportunities to Address Community-Stated Priorities and Concerns

This opportunity analysis highlights areas within the WA to address community-identified priorities and concerns to help guide the development of Projects and Programs that directly serve local needs. Opportunities were identified using a point layer built from community input, including:

- Responses from the Community Strengths and Needs Assessment (CSNA) Survey. The CSNA Survey is a key public engagement tool developed under the SCW Program to better align watershed planning and Project and Program implementation with community priorities. The CSNA Survey is a dynamic dataset that continues to evolve as new responses are collected. This opportunity layer is best viewed and explored within CSNA Dashboard to guide Project siting and design in real time, as it contains the most current community input. Including CSNA data ensures that Projects and Programs can be aligned with community priorities.
- Drainage issues submitted by Municipalities through the Los Angeles County Drainage Needs Assessment Program (DNAP). DNAP provides a structured means for Municipalities to report localized drainage challenges, such as flooding, erosion, or infrastructure limitations. Including DNAP data ensures that Projects and Programs align with municipal priorities and address stormwater infrastructure needs that may not be captured through community surveys.

Together, these datasets reflect a broad spectrum of community and municipal input; each point represents a potential opportunity to improve environmental conditions, public space, or infrastructure in direct response to community-voiced needs.

Table I-17 summarizes the data sources and attributes included in this analysis. Outcomes are illustrated in Figure I-12, which maps the relative opportunity to Address Community-Stated Priorities and Concerns across the WA.

Table I-17. Address Community-Stated Priorities and Concerns opportunity data sources and analysis

Data Source(s)	Key Attributes
CSNA Dashboard	• Outdoor Areas identified by participants. • CSNA Survey (2024-to early 2025).
Los Angeles County DNAP	• Municipality-submitted drainage issues.

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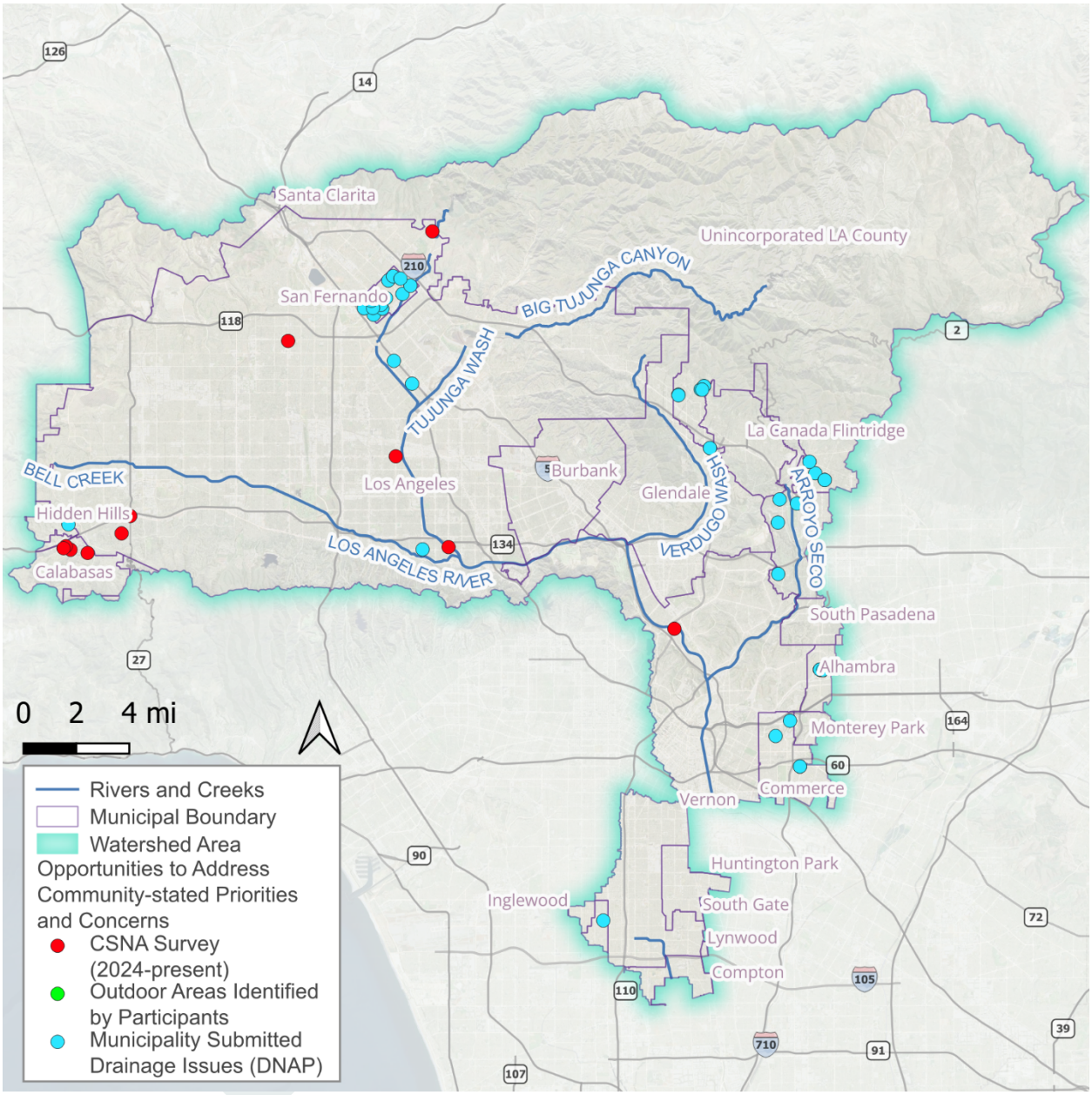

Figure I-12. Opportunity to Address Community-Stated Priorities and Concerns. Note, not all entries in the legend will be present in every WA.

I.5 Equitably Distribute Benefits Opportunity Analysis

This section identifies areas with the highest potential for SCW Program Projects and Programs to deliver benefits to address WA Needs for Indicators under the Equitably Distribute Benefits Planning Theme and supports the achievement of Goals J and K.

The opportunity analysis described in this section identified areas within the WA with the highest potential to provide benefits to disadvantaged communities. Advancing equity requires a deliberate and sustained focus to invest in Projects and Programs that directly benefit historically underserved communities. The Equitably Distribute Benefits opportunity analysis highlighted areas not currently served by a SCW Program Project to guide future implementation toward underserved and climate-vulnerable communities.

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I.5.1 Opportunity to Provide Benefits to Disadvantaged Communities (DACs)

This opportunity analysis highlights DACs within the WA that are not currently served—or could be better served—by an existing SCW Program Project, supporting SCW Program Goals for equity, climate resilience, and targeted investment.

Opportunities were identified using the 2022 SB 535 DAC boundary, which defines communities disproportionately burdened by environmental and socioeconomic stressors. To prioritize opportunities, each DAC was assigned an SSI value from the Los Angeles County Climate Vulnerability Assessment, which reflects a community's relative sensitivity to climate-related impacts based on socioeconomic and demographic indicators as follows:

- High opportunity = DAC and SSI Low
- Higher opportunity = DAC and SSI Medium
- Highest opportunity = DAC and SSI High

To focus on areas with unmet needs, the analysis excluded DAC areas located within a 0.25-mile walkshed[6] of an existing SCW Program Project. This buffer ensures that the opportunity layer highlights locations where new Projects will deliver direct benefits.

Table I-18 summarizes the data sources, attributes, and processes included in this analysis. Outcomes are illustrated in Figure I-13, which maps the distribution of opportunity to provide DAC benefits across the WA.

Table I-18. Provide Benefits to DAC opportunity data sources and analysis

Data Source(s)	Key Attributes	Opportunity Analysis & Considerations
SB535 DAC Area 2022	Extent of DAC boundaries	• Extent of SB535 DACs areas were spatially joined with SSI score to be classified into low, med, or high categories. • Areas with 0.25 miles walking distance from an existing SCW Program Project.
Social Sensitivity Index	Entries with "Low", "Med", or "High" in the SoVI_Third field name	
Walksheds Metrics and Monitoring Study (direct from Public Works)	Entries within 0.25 miles of a Project	

[6] A walkshed is the geographic area that can be reached on foot from a specific location within a given threshold

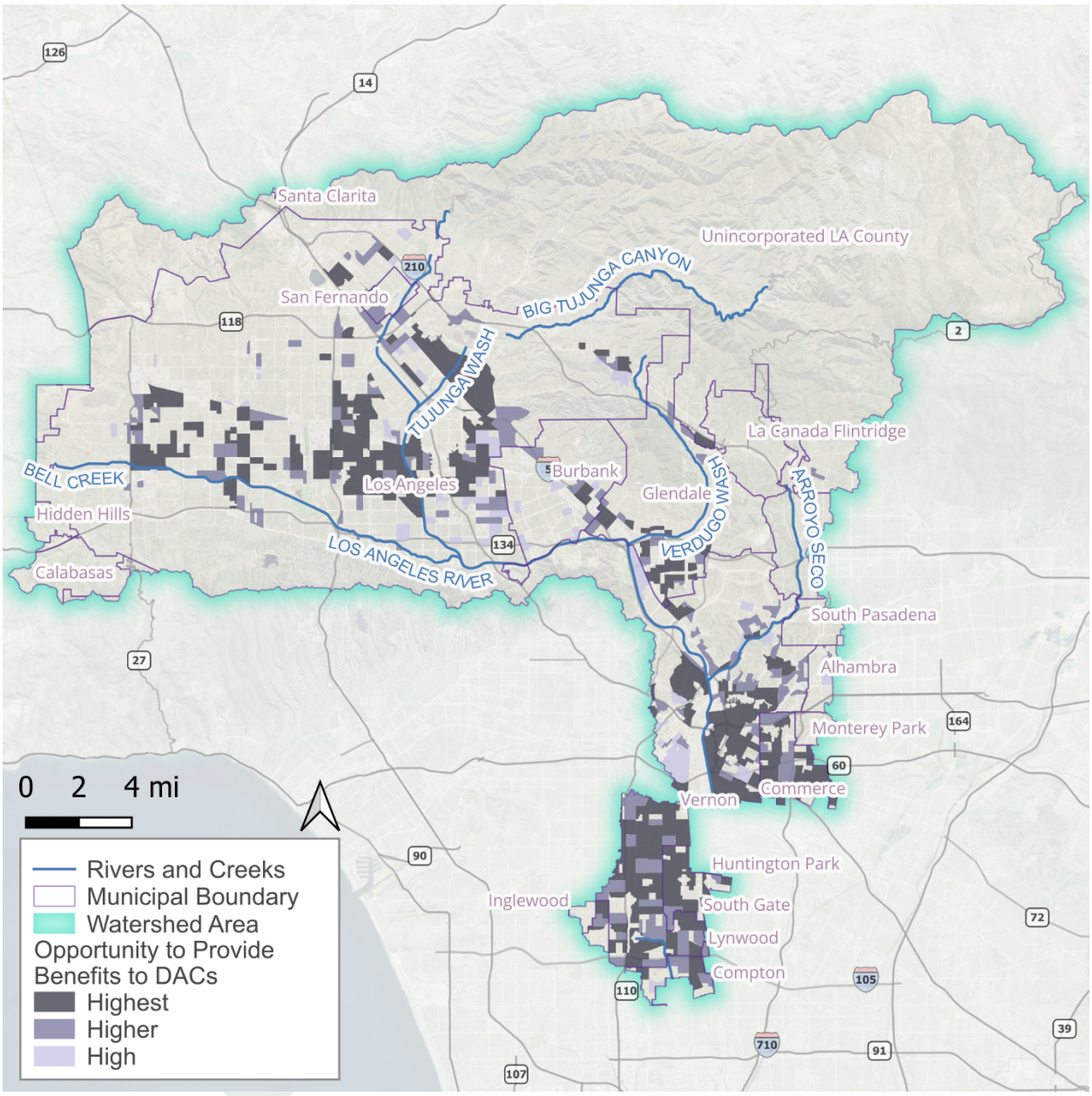

Figure I-13. Opportunity to Provide Benefits to a DAC

I.6 Composite Opportunity Analyses

Projects and Programs that deliver multiple benefits are a cornerstone of the SCW Program. While individual strategies can support specific SCW Program Goals, they are most effective when implemented together to create synergies across Planning Themes.

For example, creating, enhancing, and restoring park and green space in high-need communities (reference Section I.3.1 and I.3.2) through the delivery of nature-based, multi-benefit Projects and Programs (reference Section I.4.1) also helps communities most affected by extreme heat (reference Section I.3.3).

Similarly, strategies that Improve Water Quality and Increase Water Supply are closely interconnected. For example, maximizing stormwater runoff capture and management for water supply (Section I.2) goes together with prioritizing high-performance Projects and Programs in areas with the highest pollutant loads (Section I.1). Projects that augment water supply through infiltration to a managed aquifer, diversion to sanitary sewers, or onsite reuse must also first treat that stormwater runoff by Project best management practices (BMPs) or existing wastewater treatment and water reclamation facilities.

To support the implementation of these synergies across Planning Themes, two composite opportunities were developed:

- Multiple Benefit Opportunity Across Planning Themes
- Opportunity to Improve Water Quality and Increase Water Supply

These composite opportunities are described in the subsections below and provide guidance to the WASC, Municipalities, and Project and Program proponents by highlighting areas within the WA, where strategies can be aligned to deliver multiple benefits and support multiple SCW Program Goals.

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I.6.1 Opportunity to Improve Water Quality and Increase Water Supply

This opportunity analysis highlights areas within the WA with the highest potential to deliver dual benefits—specifically, to Improve Water Quality through pollutant load reduction and Increase Water Supply through Stormwater Capture. This composite opportunity supports SCW Program goals by identifying locations where investments can maximize these multi-benefit outcomes.

To identify these dual-benefit areas, a composite water quality opportunity layer—based on pollutant load reduction potential for zinc, total phosphorus, and bacteria—was overlaid with a stormwater capture opportunity layer that represents water supply potential. The water quality layer was developed by assigning each pollutant a score within each watershed based on the following opportunity classification:

- General opportunity: score = 0 (<75th Percentile)
- High opportunity: score = 1 (75th to 85th Percentile)
- Higher opportunity: score = 2 (85th to 95th Percentile)
- Highest opportunity: score = 3 (>95th Percentile)

Individual pollutant scores were summed to generate a total water quality improvement score for each subwatershed. To enable comparability for these scores across WAs, weighting factors were applied:

- Scores were multiplied by 1.5 for areas with two pollutants of concern
- Scores were multiplied by 3 for areas with one pollutant of concern

All scores are indexed on a 0–9 scale. For ULAR, a multiplier of 1 was used to account for the three pollutants of concern (zinc, total phosphorus, and bacteria). Table I-19 illustrates an example of this scoring approach for three subwatersheds. Figure I-14 illustrates the distribution of dual-benefit opportunities across the WA, while Table I-20 defines the indexed total score scheme in this figure.

Table I-19. Scoring method example for the Improve Water Quality and Increase Water Supply opportunity for three subwatersheds

Zinc	Bacteria	Total Phosphorus	Raw Total Score	Indexed Total Score (Max 9)
0 (Limited)	1 (High)	0 (Limited)	1	1
1 (High)	2 (Higher)	0 (Limited)	3	3
3 (Highest)	3 (Highest)	0 (Limited)	6	6

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Table I-20. Classification criteria for Improve Water Quality and Increase Water Supply opportunity

Opportunity	Total Score (Indexed to 9)
High	1.0 to 3.0
Higher	3.1 to 6.0
Highest	6.1 to 9.0

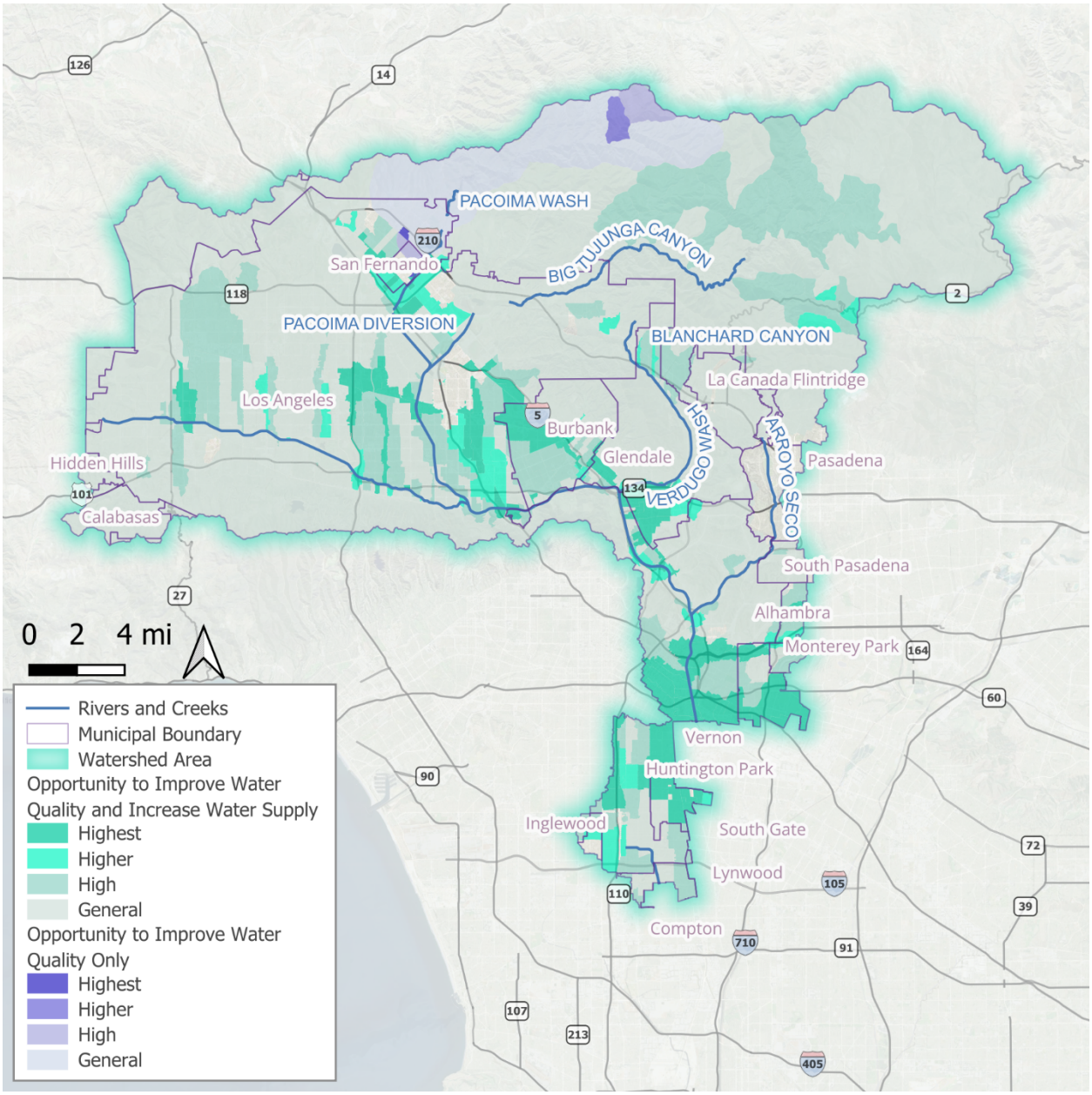

Figure I-14. Opportunity to Improve Water Quality and Increase Water Supply

To highlight areas within the WA with the highest potential to Improve Water Quality and Increase Water Supply, a two-square-mile planning grid was developed. Each grid cell was ranked in accordance with its relative opportunity, and the top 12 highest-scoring cells are highlighted in Figure I-15. See Appendix J for full-page maps of each grid cell.

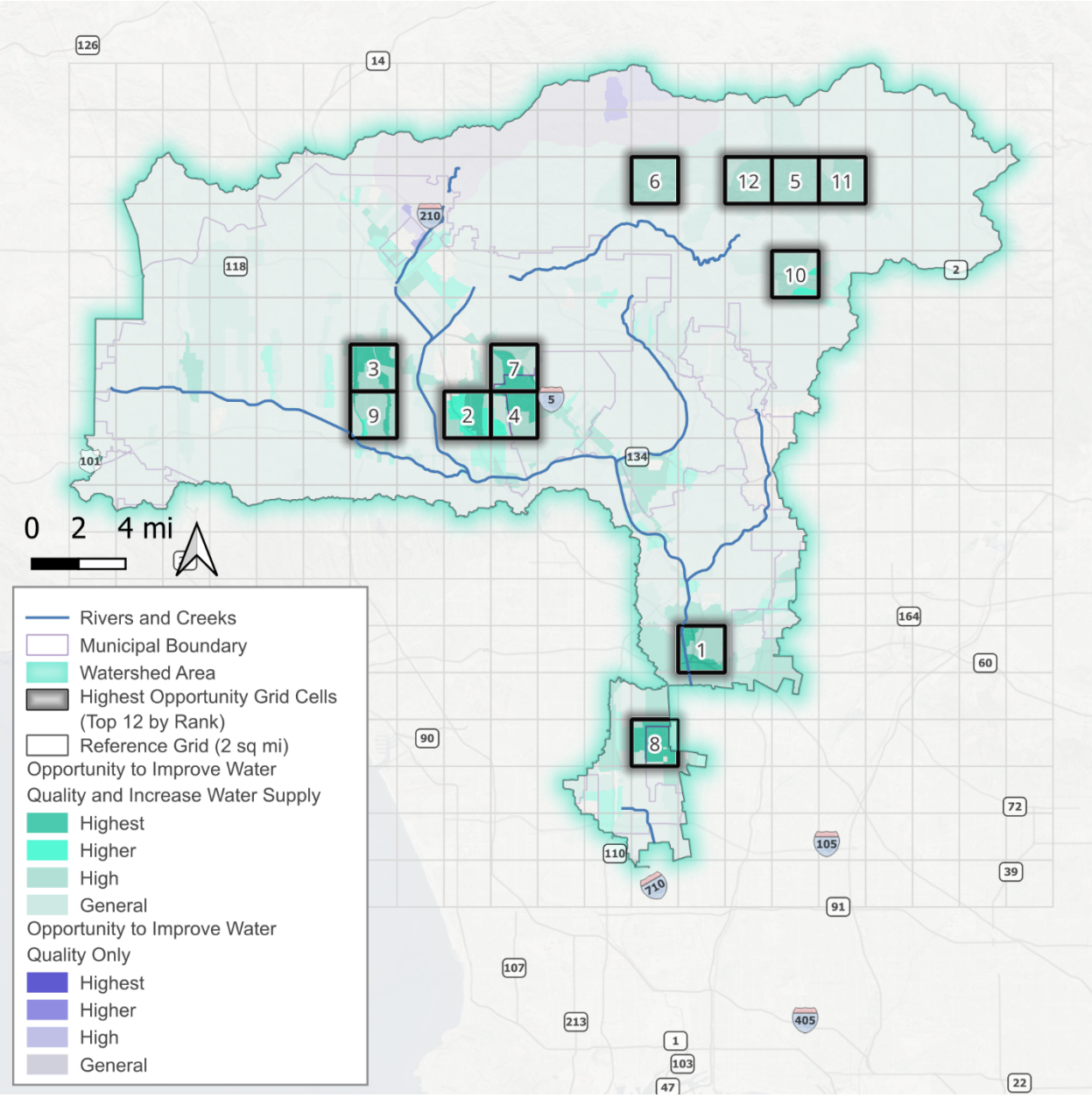

Figure I-15. Grid analysis for Opportunity to Improve Water Quality and Increase Water Supply

To support targeted implementation by Municipalities, the opportunity to Improve Water Quality and Increase Water Supply was exported at the municipal scale to highlight the relative opportunity levels within each municipality. See Appendix J for full-page maps of each.

I.6.2 Multiple Benefit Opportunity Across Planning Themes

This opportunity analysis highlights areas within the WA with the highest potential to deliver multiple benefits across four key SCW Program Planning Themes (Improve Public Health, Increase Drought Preparedness through Groundwater Recharge, Restore Habitat, and Equitably Distribute Benefits to DACs). To assess this multi-benefit potential, seven opportunity metrics were evaluated and given a maximum score of three each (unless otherwise noted):

- New parks created
- Parks enhanced or restored
- School greening
- Tree canopy cover
- Habitat creation or restoration
- Benefits to a Disadvantaged Community (DAC)
- Groundwater recharge opportunity (maximum score of two to avoid over-weighting this metric)

Individual scores from the metrics above were summed to generate a “Multi-benefit Score”, representing cumulative opportunity across all. See Table I-21 for an example of this for a subwatershed. To capture thematic breadth, a “Theme Score” was calculated by counting how many of the four Planning Themes an area contributed to. For example, an area received a point under the Public Health Theme if it had a nonzero score in any of the following: new parks, restored parks, school greening, or tree canopy. See Table I-22 for an example of this for a subwatershed.

The final composite score was calculated by equally weighting the Multi-benefit Score and Theme Score, summing them, then reindexing from 0–1 to create a consistent, comparable scoring system across all WAs. This approach ensures that areas with both high cumulative benefit potential and broad thematic coverage are prioritized for SCW Program investment. See Table I-23 for an example of this for a subwatershed.

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Outcomes from this analysis are illustrated Figure I-7, which maps the distribution of multi-benefit opportunity across the WA.

Table I-21. Example illustrating the multi-benefit scoring method for a subwatershed

Individual Opportunity Scores				Multi-benefit Score[1]
New Parks Created	Benefits to DAC	School Greening	Habitat Creation	
1	2	-	2	0.47
Tree Canopy Cover	Parks Enhanced or Restored	Groundwater Recharge		
-	-	2		

[1] The sum of the individual opportunity scores (7 in the example above), divided by the max observed score across all WAs (15).

Table I-22. Example illustrating the theme scoring method for a subwatershed

Individual Planning Theme Scores				Theme Score[1]
Public Health	Groundwater	Multi-Benefit	Equitably Distribute Benefits	
1	1	1	1	1

[1] The sum of the individual Planning Theme scores (4 in the example above), divided by the max observed score across all WAs (4).

Table I-23. Example illustrating the total score using the Theme Score and Multi-benefit Score above

Multi-benefit Score	Theme Score	Total Score[1]
0.47	1	0.735

[1] The average of the Multi-benefit score and the Theme Score. This effectively reindexes the total score from 0 to 1.

Table I-25. Classification criteria for Multiple Benefit Opportunity Across Planning Themes

Opportunity	Total Score
High	0 to 0.25
Higher	0.25 to 0.5
Highest	0.5 to 1.0

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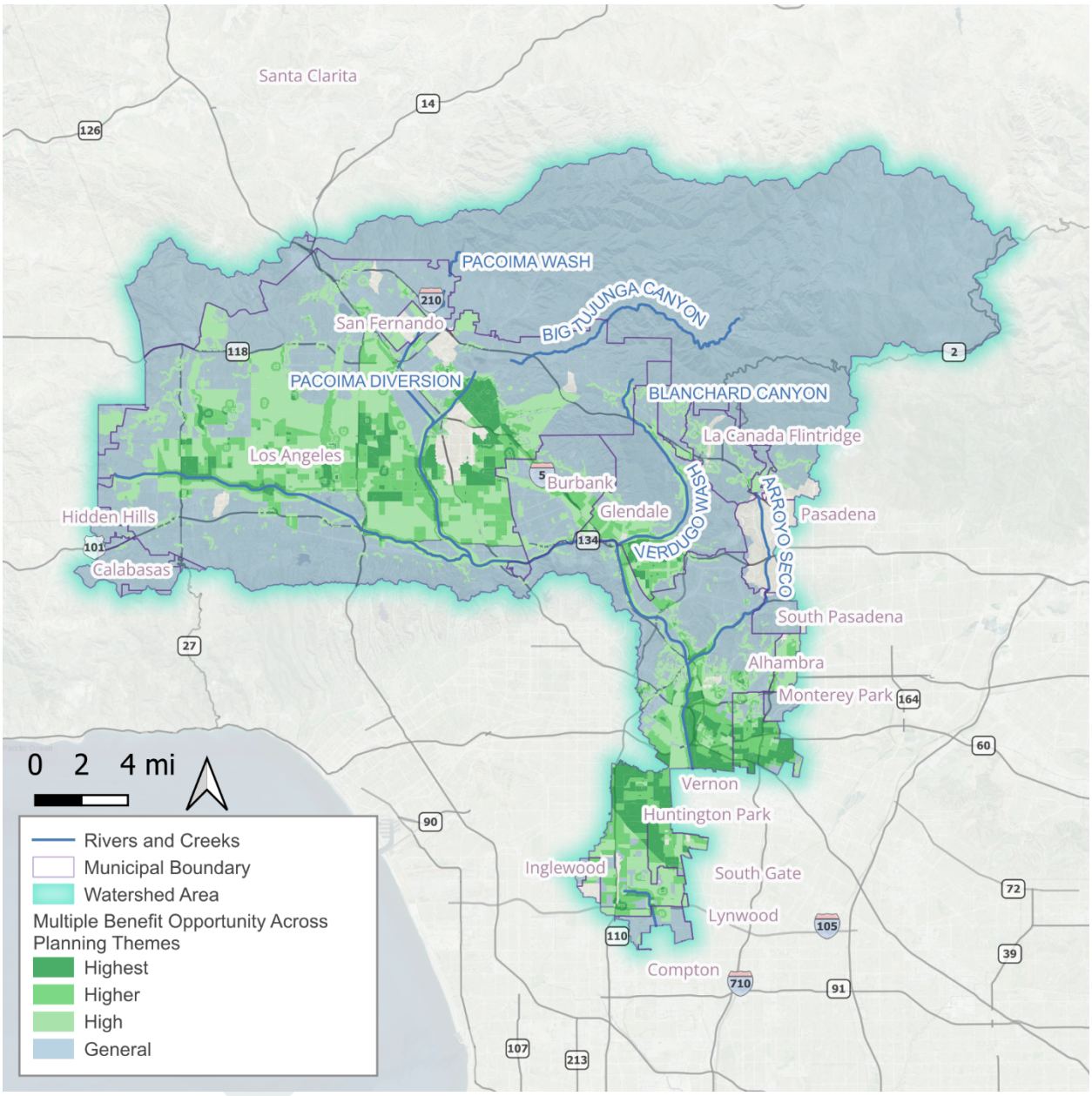

Figure I-16. Multiple Benefit Opportunity Across Planning Themes (serving 2 or more themes)

To highlight the areas within the WA with the greatest potential for implementing cross-thematic Projects and Programs, a 2 square mile grid was created. Each cell was ranked by the opportunity within to serve two or more themes. The top 12 grid cells serving two or more planning themes are highlighted in the map below. See Appendix J for full-page maps of each.

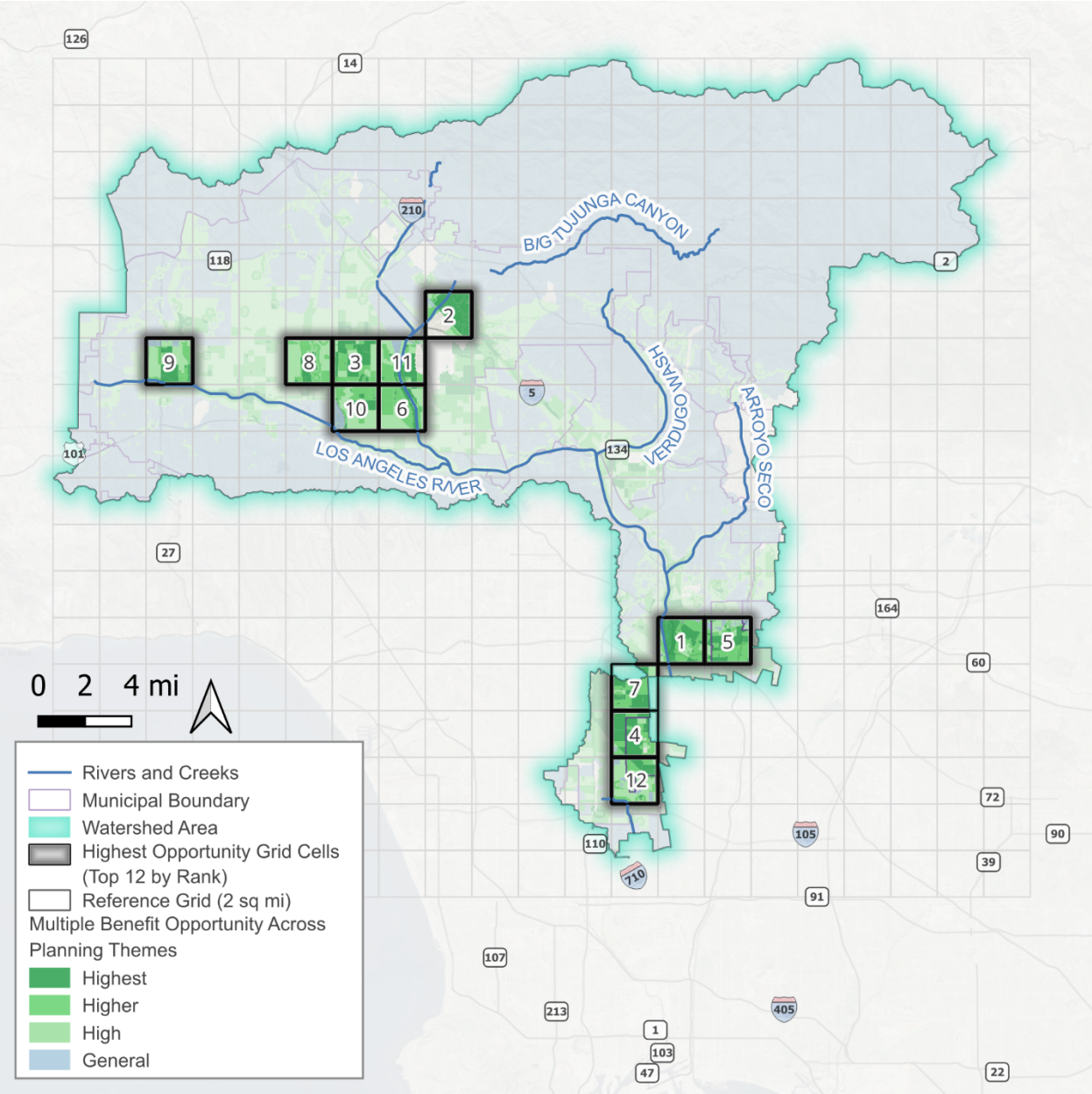

Figure I-17.Grid analysis for Multiple Benefit Opportunity Across Planning Themes (serving 2 or more themes

To support targeted implementation by Municipalities and Supervisor Districts, the Multiple Benefit Opportunity Across Planning Themes was also exported at the municipal and Supervisor District scale to highlight the relative opportunity levels—high, higher, and highest—within each. See Appendix J for full-page maps of each.