

CATALYZING CONNECTIVITY: REDISCOVERING CREEKS IN THE EAST SAN GABRIEL VALLEY

REPORT SUMMARY

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COLLEGE OF ENVIRONMENTAL DESIGN
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"...OPEN SPACES ARE GOOD FOR MAINTAINING GOOD HEALTH."

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INTRODUCTION

Catalyzing Connectivity: Rediscovering Creeks in the East San Gabriel Valley is a conceptual vision plan that proposes improvements for mobility and access to open space. Seventy-four miles of green network are outlined with 22 miles of overlap with existing and planned infrastructure for a combined total of 158 total miles of green network. Regional links and design interventions are the result of analysis of existing plans, inventories, and stakeholder feedback.

Managing automotive circulation is a major challenge in the Los Angeles Region and the East San Gabriel Valley. Seventy-four percent of all travel in the county is done in single-occupancy vehicles, and the infrastructure designed to serve them is the county's largest consumer of land with the greatest combined environmental impact (Southern California Association of Governments 2012). According to the Los Angeles County Department of Regional Planning, automotive circulation and traffic congestion are the biggest economic issues in the East San Gabriel Valley (2012). Every 10% decrease in traffic congestion has resulted in the creation of up to 135,000 jobs (Southern California Association of Governments 2012).

People in auto-oriented communities drive more, walk less, and are more obese than people living in walkable communities (Safe Routes to School National Partnership 2011). Health issues such as cardiovascular disease, diabetes, and depression are worsened by long commutes and poor access to community services, parks, and open space (Jackson 2003, Giles-Corti 2006). In addition, these communities tend to exclude access to employment, services, and education for those with low-incomes and disabilities, as well as children and seniors (Dodson, Gleeson, and Sipe 2004). This has been evident in Los Angeles County and parts of the study area (Garcia, Strongin, and Brakke 2011). Solutions require strategic, long-term investments in infrastructure to increase access to existing non-automotive transit options, while augmenting existing networks with new corridors.

The East San Gabriel Valley is located on the eastern edge of Los Angeles County in Southern California between the San Gabriel Mountains and the Puente Hills. Los Angeles has defined and developing north-south trail corridors from the mountains to the ocean but lacks east-west connections across the county. Experts and stakeholders identified potential along the Walnut and San Jose Creeks to improve open space, and to help form these regional links. The project area is 196 square miles and is defined by the subwatersheds of these tributaries of the San Gabriel River. In addition to regional and county plans, many incorporated cities have jurisdictions in the area, and those directly adjacent to the creek corridor are specifically explored and included in the project boundaries. These ten cities are: Baldwin Park, La Puente, Walnut, Industry, West Covina, Covina, San Dimas, La Verne, Claremont, and Pomona.

Plans

Interconnecting the East San Gabriel and Pomona Valleys with the San Gabriel River has potential to fulfill many directives identified as significant by key planning documents. Many of the regional, county, and city plans that guide Los Angeles County and the East San Gabriel Valley share commonalities in their goals which include: improving transportation efficiency, water quality and quantity, air quality, fragmented habitats, and recreational spaces. Though similar issues are addressed, cohesion and integrated approaches are not considered. Limited space, capital, and supporting resources emphasize the imperative to maximize impact with a combined vision and resource sharing.

Methods

The CCRC project process synthesized elements of the John Lyle method of design described in *Design for Human Ecosystems* (1985), along with the Carl Steinitz method of geodesign described in *A Framework for Geodesign: Changing Geography By Geodesign* (2012).

The Carl Steinitz method of organization parallels the systems thinking of the Lyle method, with greater emphasis on focused data collection, analysis, and production through a decision-driven and method-oriented process. Six primary questions were asked and answered in iterative cycles. The inventory, analysis, synthesis, and designs in this project present answers to these questions.

GOALS + OBJECTIVES

Issues and Opportunities

The East San Gabriel Valley is rich in natural and civic resources, but access to them is limited. In addition to improving access, the CCRC group determined that opportunities to support land management and human wellbeing are also fundamentally significant for maximizing the use of limited space. Air is polluted, water resources are limited and polluted, and habitats are fragmented. Environment related health issues are also prevalent in local populations. Park and open space access is associated with addressing these issues (Garcia et al. 2011). Regional and local plans address portions of these issues as well as for governments and communities to develop solutions. However, no document unifies the pieces into a single, regional vision with strategic interventions.

Goals and Objectives

The CCRC green network takes a holistic approach that examines the existing constraints and identifies realistic solutions to complex problems. Through the integration of existing and proposed plans within the East San Gabriel Valley, the *Catalyzing Connectivity* vision plan creates a green network that (1) maximizes access to preferred destinations, (2) improves transportation efficiency, and (3) integrates government and agency plans into a cohesive green network plan. Where feasible, appropriate vegetation, bioretention areas, infiltration trenches, and other water runoff management programming are proposed by the CCRC vision plan. These strategies decrease air pollution, mitigate pollutants entering into the storm drain system, and decrease further contamination of the creeks and rivers in the region. Improving distribution of open spaces and carefully selecting native vegetation aids in the support and connection of wildlife communities, and maximizes biotic integrity and function of the open spaces within the urban core. The addition of open spaces in the East San Gabriel Valley not only benefits the flora and fauna of the region, but it also benefits communities identified as "park poor" through increased access to outdoor recreational opportunities, and improved access to services including healthy food options.

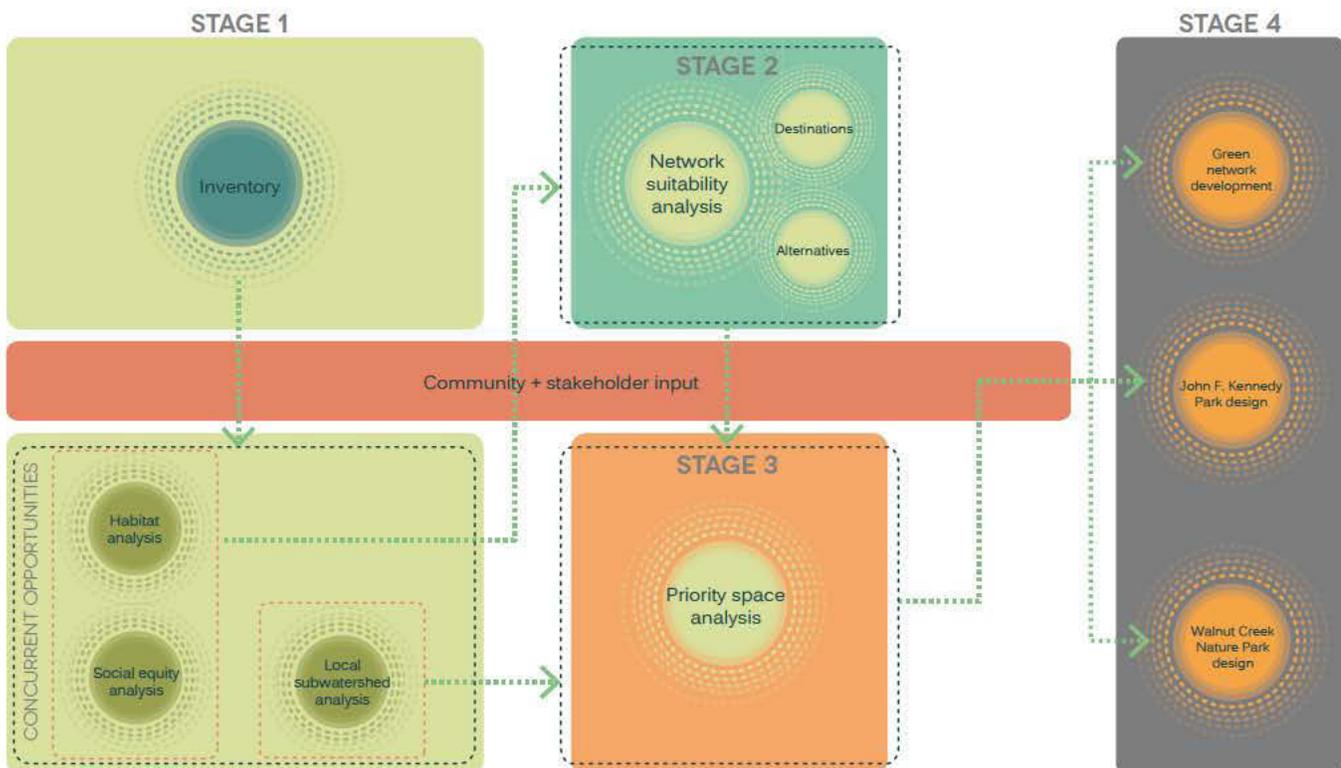


Figure 1: Analysis process

The above diagram is a simplified description of the overall analysis process.

PROGRAM

Stakeholder and community involvement is an important component of the *Catalyzing Connectivity Rediscovering Creeks* (CCRC) project. Stakeholder and community input was incorporated throughout each stage of project development. Data-based research and physical observations from on-location field study were collected and organized. Data collection entailed research and procurement of information in the form of maps, imagery, statistics, studies, and reports.

Outreach efforts were focused on the incorporated communities adjacent to the Walnut, San Jose, and Thompson Creek corridors. These cities are: Claremont, La Verne, Pomona, San Dimas, Walnut, Diamond Bar, Covina, West Covina, La Puente, Industry, and Baldwin Park. Identified key stakeholders include the Rivers and Mountains Conservancy, Watershed Conservation Authority, San Gabriel Valley Council of Governments, Council for Watershed Health, San Gabriel Mountains Regional Conservancy, Los Angeles County Department of Public Works Flood Control District, and Bike San Gabriel Valley.

Community outreach began with a survey conducted with Ganesha High School students in Pomona. Additionally, the survey was digitally distributed

through an online service. In all, the program effort included a total of 21 scheduled meetings and interviews with the identified stakeholders and experts, two surveys, an upper watershed tour, and site visits to locations throughout the study area.

Outdoor space and food options were found to be the most desired destinations for non-automotive travel, followed by other services. Recreational use emerged as the most anticipated function for non-automotive travel. Safety issues were the most consistent concerns as well as security in unlit and low-visibility areas. These findings are consistent with current research. Most people prefer or are willing to go out of their way for more accessible, safer routes, which have less traffic and lower speeds (City of Portland Bureau of Transportation 2009, Alta Planning and Design 2011a, Alta Planning and Design 2011b, American Association of State Highway and Transportation Officials 2012). The inaccessibility of existing corridors was also a recurrent issue, and there was clear support for improved access to existing infrastructure, expansion of trails, and non-automotive facilities. Institutional concerns also included implementation and maintenance, reinforcing the value of rights-of-way already in the public domain, and lower impact options that fit within existing plan requirements.

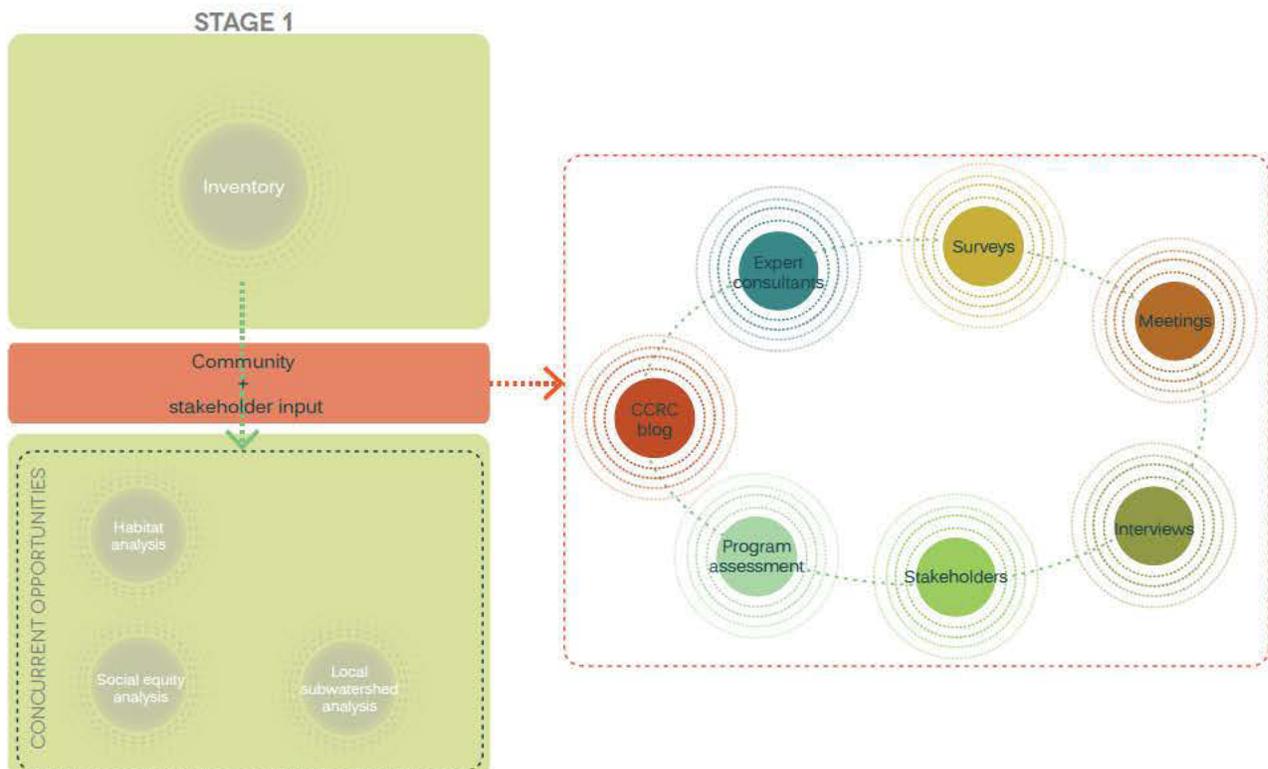


Figure 2: Program process
The above diagram is a description of the program process.

INVENTORY

Understanding of the project area has been developed through extensive site visits as well as review of the biophysical and sociocultural contexts. The East San Gabriel Valley landscape is dynamic, and its social issues are complex. Both biophysical and sociocultural data were collected and represented. These included: climate, geomorphology, hydrology, natural disasters, and ecology, as well as human history, land use, transportation, demographics, culture, and open space access.

The shape of the study area constricts air flow and captures significantly more water than surrounding areas. A large population with many activities and inputs complicates these vulnerabilities to contamination. Desirability of the land has led to significant population growth, but to make more land available, controls have been employed to manage the natural environment. The interface between development and unmanaged park and open space is limited to prevent fire, and water flows have been channelized to mitigate floods and erosion. Extensive infrastructure from the large and spread out population threatens rich natural habitats, and limits land for natural systems and open space important

for human and environmental wellbeing. Access and human movement between important resources and services are interconnected issues in the region. About 47 percent of residents in the region do not have park access within one-quarter mile of their home. This signifies the importance of creating open spaces and recreational areas along east-west connections through the network. Regional health issues are also documented. The cities of Baldwin Park, La Puente and Pomona rank as some of the most obese cities in Los Angeles County, averaging at 27.3 percent. More than a quarter of the adult residents in these three cities are considered to be obese, and not surprisingly, 28.7 percent of the children are also considered to be obese. Diabetes mortality rates predictably correspond to the obesity rates, with Baldwin Park, La Puente, Pomona and Covina showing the highest rates within the project boundary (LA County Department of Public Health 2012).

Data-based research and physical observations from on-location field study were collected and organized. Data collection entailed research and procurement of information in the form of maps, imagery, statistics, studies, and reports.

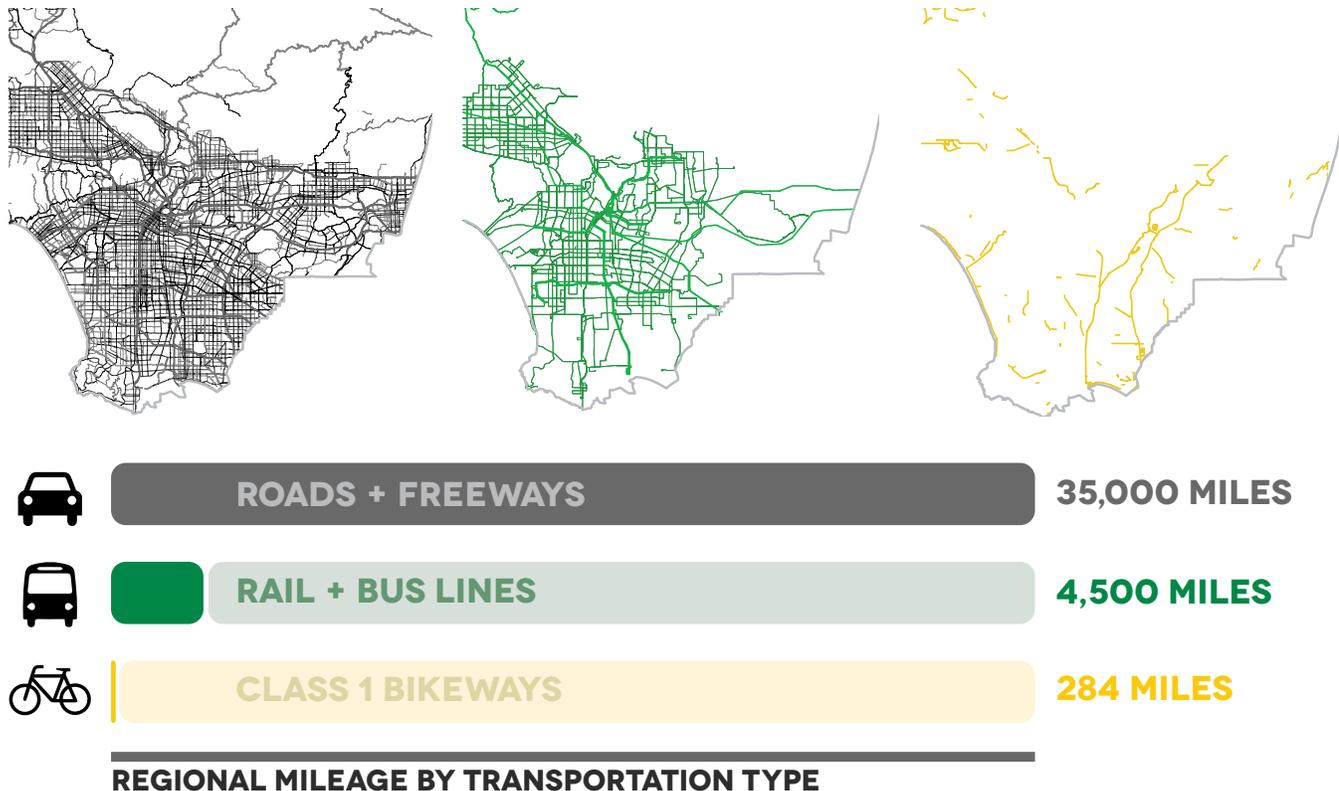


Figure 3: Regional mileage

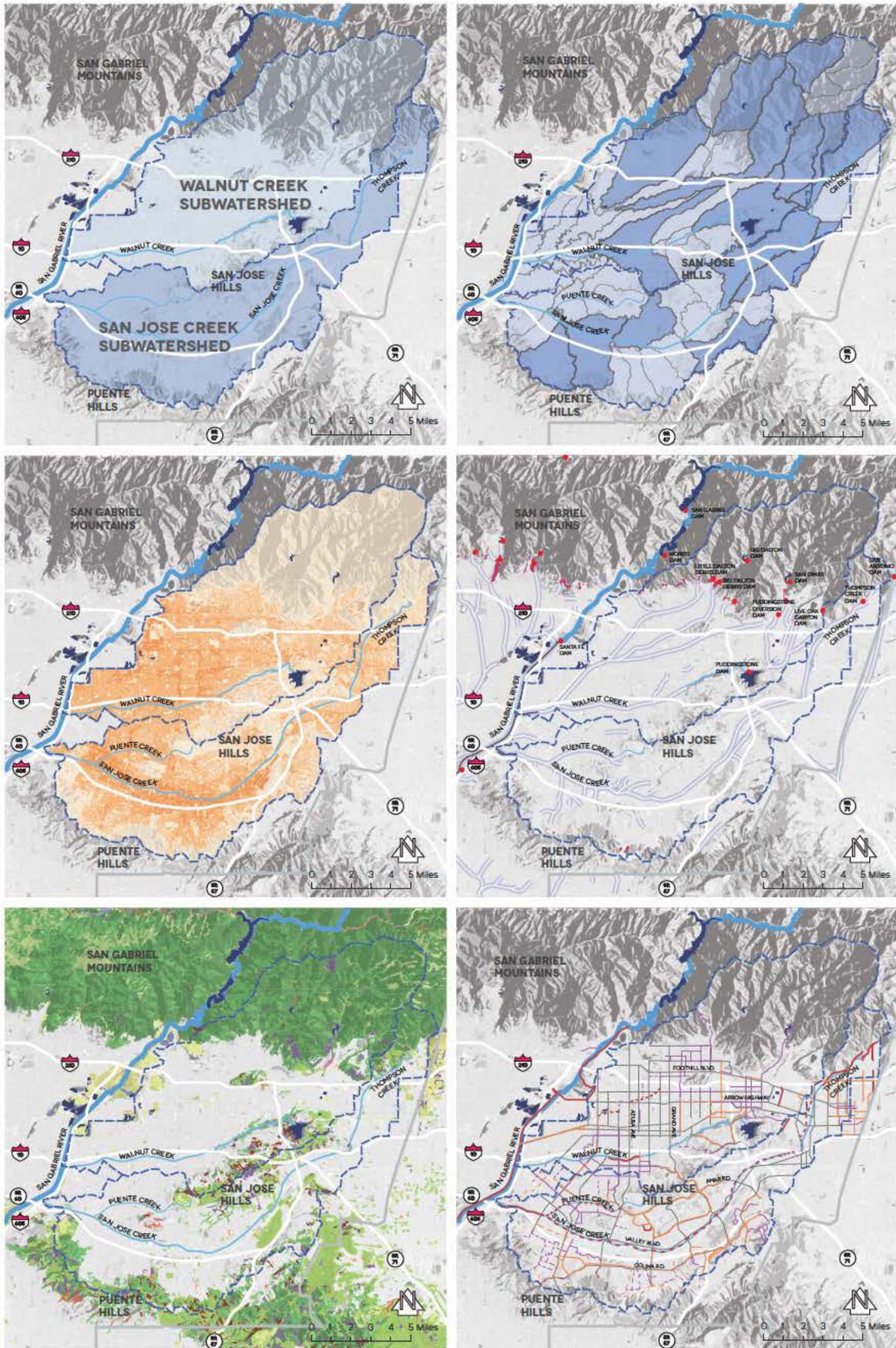


Figure 4:
 Left half of page (top to bottom): Subwatersheds context, surface permeability, Dominant vegetation types
 Right half of page (top to bottom): 50-year storm runoff, flood control and hydrology, bike transportation
 The above maps represents six of the key inventories that were considered for this project

ANALYSIS

The analysis was conducted in three stages. The stage 1 process was the culmination of inventory and concurrent opportunities analyses. The concurrent opportunities analyses concerned hydrology, habitat, and social equity. These results were then applied in stages 2 and 3 (Figure 1).

Demographics were layered to identify social equity issues and priority communities. Baldwin Park, La Puente, and Pomona ranked as primary cities because of their disease rates and disease-related mortality rates, income disparity, low open space distribution (an average of less than two acres per 1000 persons), and lack of access to healthy food options. The cities of Industry, West Covina, and Covina were designated as secondary cities for similarly recurrent issues with less severity.

Areas of primary and secondary focus were identified and used to prioritize major issues through the network, and opportunity space analyses address overall guidelines and design interventions. These were also used to identify other major areas of concern.

Priority local subwatersheds were identified through modeling in ArcGIS. The results were then compared against the 303(d) lists and the identified primary cities. Areas with significant runoff, infiltration opportunities, and contamination issues were prioritized.

Existing habitat in the region was found to be diverse and host to rich populations and favorable conditions for significant species. This habitat has been degraded and threatened by fragmentation and disconnection. The needs and range of species identified were found to be in excess of what the study area could provide. However, favorable space and suitable vegetation within reasonable distance of existing habitats could play a significant role in expanding available resources and supporting connections.

Analysis: network + priority space

The network suitability analysis was conducted through the use of GIS in order to identify priority routes. Priority corridors were defined as (1) having connection or close proximity to a high number of destinations, and (2) avoiding constraints. Destinations and constraints were identified and prioritized based on inventory, stakeholder and community feedback, designer assessments, and concurrent opportunities analyses. The outputs from this process form the foundation of the green network and the project interventions.

The network suitability analysis was based on an ArcGIS tool created to identify priority routes with greatest connection to points of origin. The tool was developed by Dr. Weimin Li, Assistant Professor in the Department of Landscape Architecture at California State Polytechnic University, Pomona. This project represents the first planning application.

The 19 desired destination types, comprising nearly 3,000 local destinations, were selected based on the criteria identified above. Potential network paths were taken from Los Angeles County transit and the ten cities adjacent to the San Jose and Walnut Creeks. Streets were combined with existing and planned class 1 and class 2 bikeways and creek corridors (Figure 6). This incorporated established plans and represents the existing as well as future planned landscape with a wide range of possible corridors for the primary green network.

The network suitability analysis followed these steps:

- 1) Points were ranked from primary to quinary according to project goals and objectives
- 2) Network streets were given priority based on desired destinations located within one-quarter mile
- 3) Freeways and streets with high speed limits were removed for safety
- 4) Corridors were plotted considering the shortest and highest-valued streets by the GIS model
- 5) Seven sets of alternatives emerged based on the results of the concurrent opportunities analyses
- 6) Results were analyzed in order to identify the most feasible streets for the final network
- 7) Follow-up site visits to confirm feasibility of network based on physical conditions
- 8) Consultation with experts to further refine the network

An priority space analysis was conducted with the network suitability analysis. Parcel data was inventoried and compared against aerial maps to identify potential space for interventions. This space was then layered with the concurrent opportunity analyses results. Opportunities and constraints identified in this process informed design interventions.



Figure 5: CCRC project analysis sequence

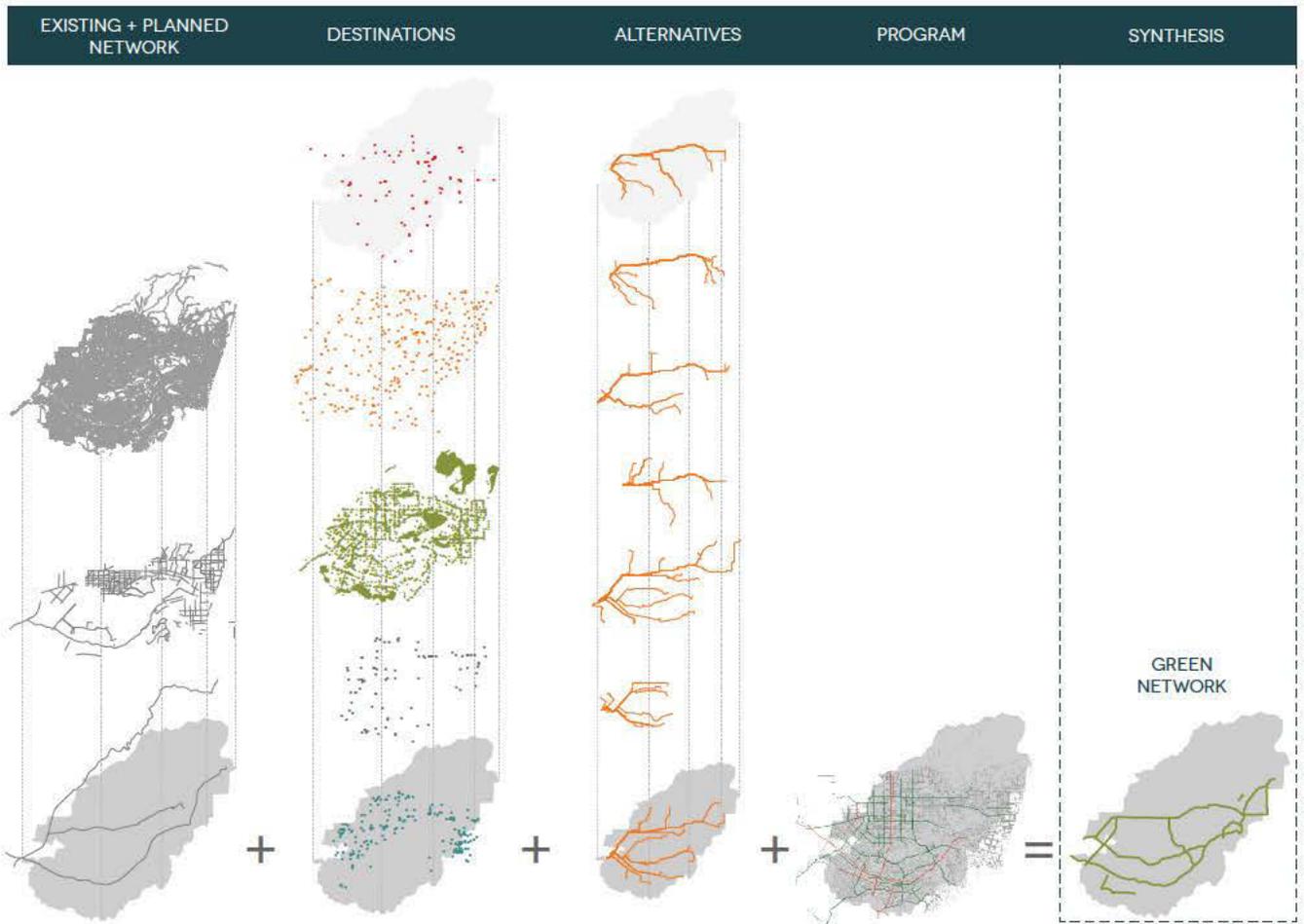
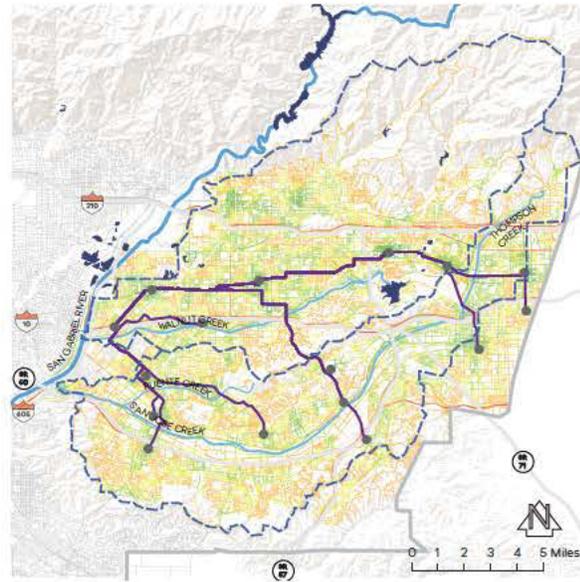


Figure 6: CCRC project synthesis

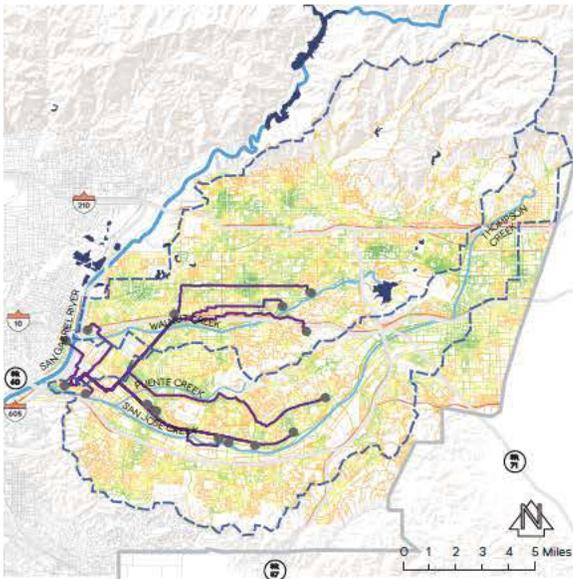
ANALYSIS: NETWORK ALTERNATIVES

Alternative routes provide different, optimized connections depending on priorities. The seven alternatives are the results of running the network suitability model with different connection points. These new points were grouped to reinforce the significance of specific interests, such as food access or high-traffic destinations. The alternative routes were compared to identify areas of overlap reflecting these various specific user interests. Routes which served multiple specific interests received higher scores. Higher score routes had greater priority in the program synthesis and in the determination of the final network.



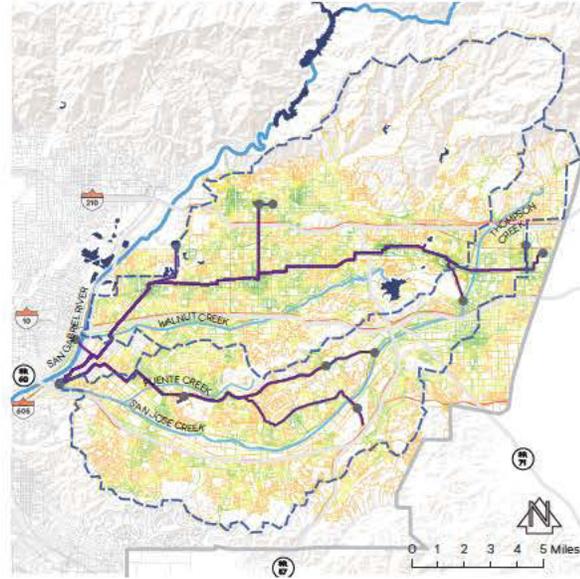
Food availability

The purpose of this scenario was to create a network driven by access to food options. This was specified as a destination priority in the program. The points were determined through points of concentration identified in the food availability analysis.



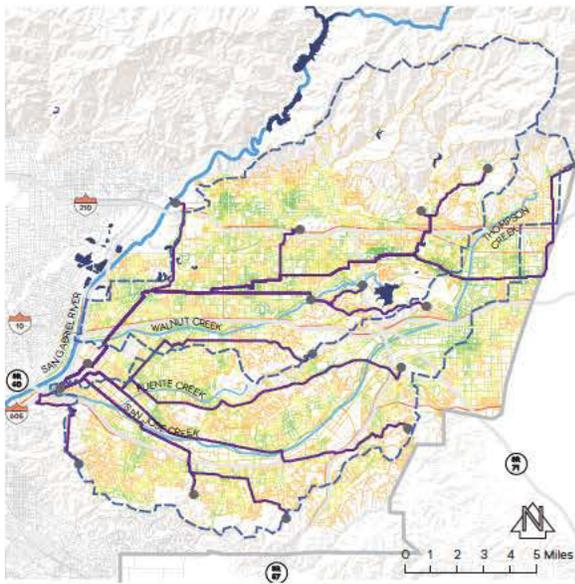
Creek access

This scenario was created to prioritize main creek channels for movement. San Jose Creek and Walnut Creek can create valuable east-west connections separated from automotive traffic. These connections were not well used in direct destination-driven modeling. These points formed more direct links along creeks to better explore this alternative for the proposed network.



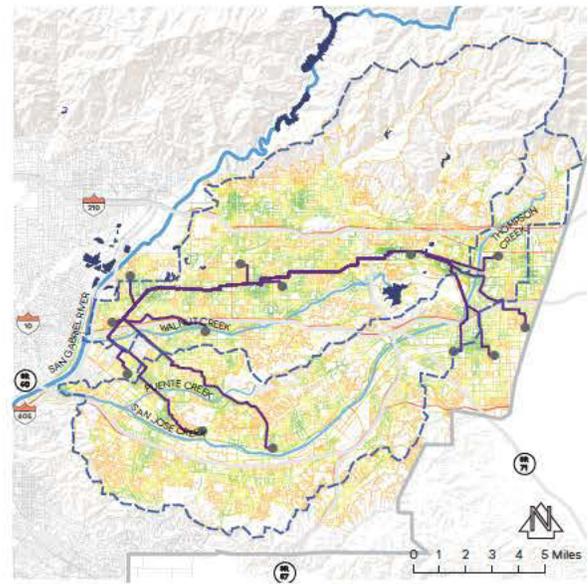
Major destinations

Major destinations included destinations that may generate heavy traffic. Points included the Los Angeles County Fairgrounds (Fairplex), the proposed Los Angeles Stadium, Cal Poly Pomona, Mt. San Antonio College, Citrus and Claremont Colleges, Azusa Pacific University, Rancho Santa Ana Botanical Garden, Santa Fe Dam Recreation Center, and confluences of the creeks and San Gabriel River.



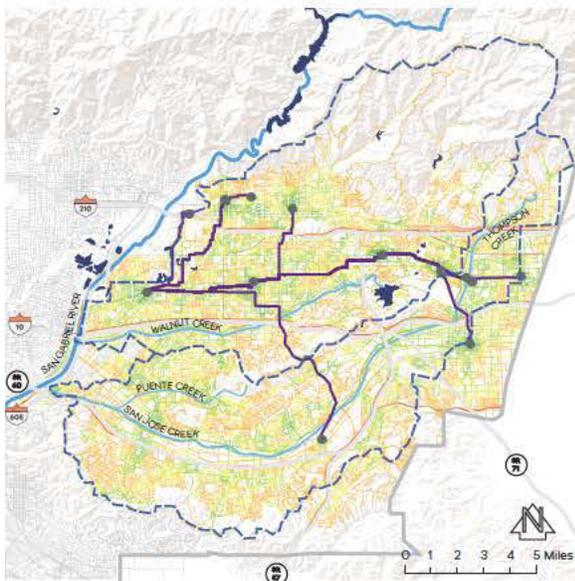
Habitat access

These connection points were determined through the habitat analysis and an inventory of trailheads to make habitat connections throughout the region.



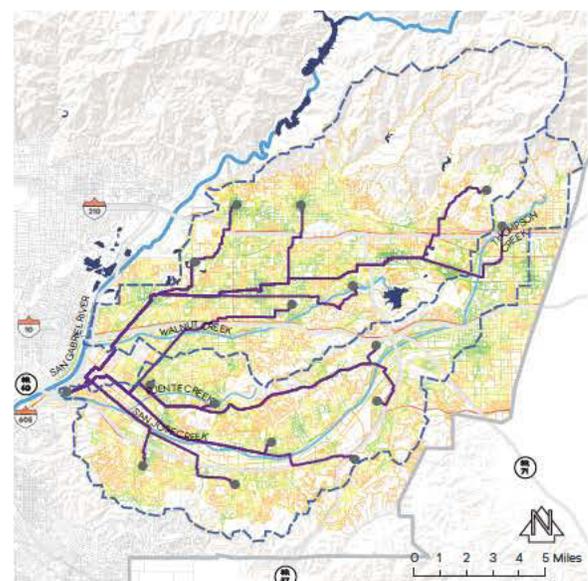
Social equity

Connection points for this scenario were the result of the social equity analysis. Creek cities' civic centers and high Latino population density areas were the primary factors considered.



Major transit hubs

Metrolink Stations and planned Gold Line Extension stations were set as internal connection points for routes through this scenario. Major transit centers were important for providing improved access to non-automotive travel.



Community equity

Access points in this scenario targeted unincorporated communities, which were not considered in the sociocultural analysis. Connections through these areas better connect underserved communities with the green network.

DESIGN: GREEN NETWORK

The final CCRC green network and recommended interventions surmount barriers and promote connections throughout the East San Gabriel Valley. The green network establishes complete regional links with maximized potential for local connections. Priority spaces are designed to serve communities with concurrent opportunities that capitalize on connections to improve environmental integrity and community wellbeing.

The green network is the result of comprehensive analytical modeling and comparison with program findings. Priority spaces for interventions are also explored.

John F. Kennedy Park is directly adjacent to Ganesha High School and Marshall Middle School, with Arroyo Elementary School a block away. The neighboring schools provide an opportunity to educate the community on natural processes, native flora and fauna, and the cultural heritage of the region. The survey of 11th and 12th graders from Ganesha High School informed the park design, along with feedback from the Gabrieleño/Kizh Tribe. The conceptual design incorporates expanded sports programming, a Gabrieleño-themed adventure playground, a Gabrieleño herbal, medicinal, and edible garden, and interpretive watershed garden.

Walnut Creek Nature Park is located just east of the confluence of the San Gabriel River and Walnut Creek. The park benefits from well-crafted existing park infrastructure, as well as wide space along the channel and a direct connection to functioning habitat in the San Gabriel River. Opening the park and improving lighting for visibility, natural surveillance, and increased activity improve safety and community use. Direct access to the network from the park is essential. Educational opportunities and improved access to nature are promoted along with plantings interpreting diverse habitats in the region. Connections with the water and habitat of Walnut Creek are envisioned as significant components of this space, and opportunities for improvements to facilitate future interaction are also proposed.

The CCRC program is outlined in Figure #. These are the results of the stakeholder meetings, community feedback, inventory, site explorations, as well as analysis layering and models. Priority actions, design, and recommendations are based on identified elements.



Figure 7: Proposed network overlap with existing and planned facilities

PEDESTRIAN FACILITIES



These include signs, trail markings, seating, shade, drinking water, trash receptacles, and careful considerations for comfortable surfaces and pleasant views.

EQUESTRIAN FACILITIES



Equestrian trails provide signs, sufficient head clearance, considerations for comfortable surfaces, hitching posts, and water troughs for horses.

BIKE AND MOUNTAIN BIKE FACILITIES



Bike facilities provide sufficient space and marking for higher bike speeds. In addition, signs, bike stations, and bike racks are recommended. Mountain bike facilities refer to areas where there are steeper trails and bikeways, or steep trail access points and a less maintained surface.



WATER RUNOFF MANAGEMENT



Accessible small sedimentation basins may catch trash and debris for periodic removal, and vegetated swales and infiltration basins may help to capture pollutants and water runoff while providing positive aesthetics along network corridors.

HABITAT SUPPORT



The greatest opportunities for the network support of habitat will be the careful implementation of soil management and appropriate planting where feasible.

WELLNESS AND INTERPRETATION



This is the broadest category for interventions. These include interpretive signs, park and playground facilities, educational equipment, sports courts and fields, and other amenities that promote use, understanding, and appreciation of the environment.

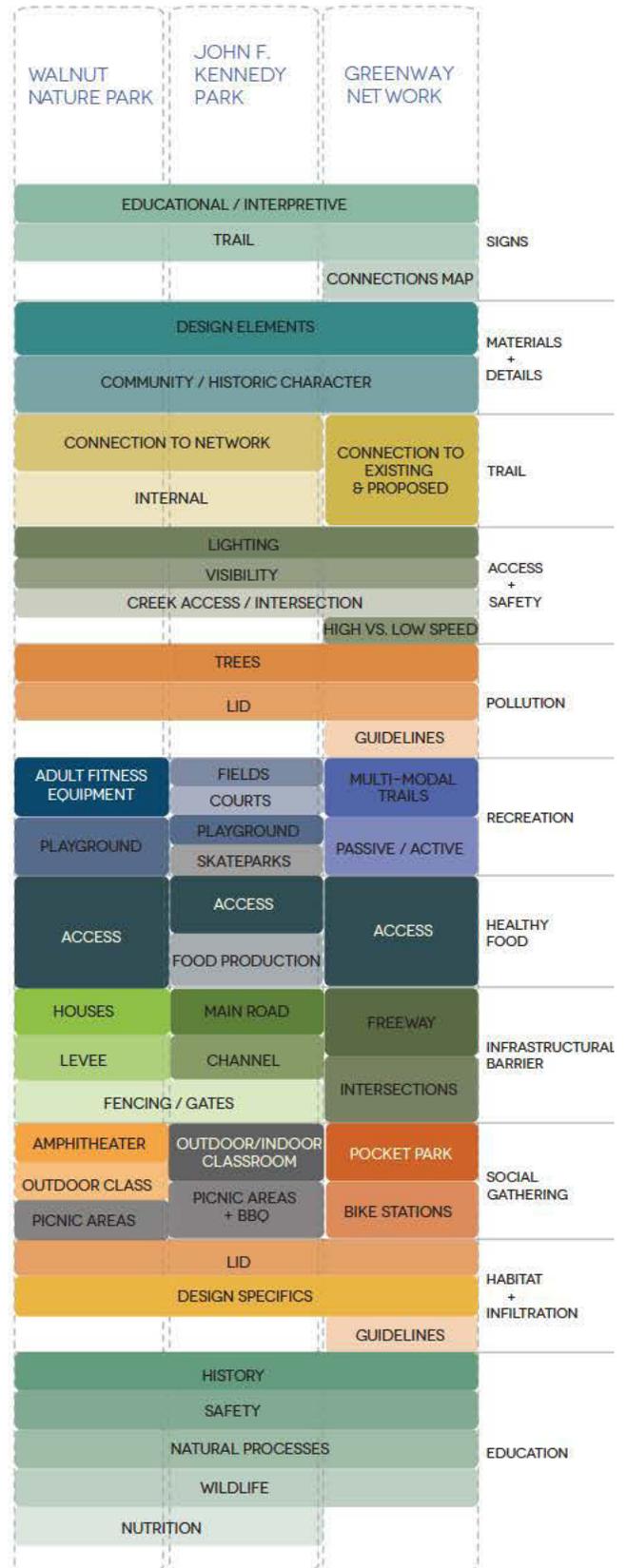


Figure 8: Program icons and definitions

Figure 9: Green network design program

DESIGN: GREEN NETWORK

The green network and interventions are the product of the team's analysis, program, and understanding of the study area. Routes recommended by the project team serve as the primary arteries for local and regional connections that both maximize access to desired destinations, and offer corridors with fewer automotive conflicts and more space for improved multimodal facilities.

Proposed interventions focus on opportunities to promote or facilitate the network. Network facilitation has been explored through proposed strategies to circumvent bottlenecks, surmount barriers, and improve safety and wayfinding in high traffic areas. The network may be further promoted through spaces such as John F. Kennedy Park and Walnut Creek Nature Park. Key strategies for available space along network routes include non-automotive access improvements, runoff management, and plant material appropriate for supporting nearby habitats.

The green network is a series of corridors. These connections will serve as regional links that connect communities throughout the study area. Outlined corridors are not a comprehensive map of all routes within communities. These are priority corridors that are the most significant for development, and for cross-jurisdictional collaboration.

A complete network links the Emerald Necklace of connected open space along the San Gabriel River with the communities of the East San Gabriel and Pomona Valleys, the San Gabriel Mountains, the San Jose Hills, and the Puente Hills east to San Bernardino County. The result can be biked, walked, and ridden from the ocean to inland valleys and mountains. These corridors maximize access to preferred destinations including open space and civic services, and provide viable alternatives to driving. The Walnut and Hill Corridors maximize connections to preferred destinations, and complete connections between communities with available space along existing roads. The San Jose Corridor is focused on creek connections and rights-of-way to facilitate separated traffic.

Network classes

Network classes are terms in bike planning that refer to the degree of separation from automotive traffic. Class 1, class 2, and class 3 are used in this context for the same purpose. Due to an identified lack of space for the proper separated facilities, all county trails/bikeways are designated for bikes, pedestrians, and equestrians (Los Angeles County Department of Public Works 2004). Though many of the recommended corridors are unlikely to become formal county trails, the corridors recommended

in this project will facilitate connections and serve the needs of the greatest number of users possible. These corridors are planned with support facilities where possible, such as signs and bike parking.

- Class 1 trails are separated from traffic. The exceptions are locations where crossing roads is unavoidable. Road crossing strategies are explored in the document
- Class 2 lanes are combined with automotive traffic in existing street infrastructure. However, space is allocated for lanes specific to bikes, as well as other support facilities such as turn lanes and bike parking.
- Class 3 routes are shared with existing street traffic, where bike riders share road lanes with cars.

The combined proposed class 1 trails and 2 lanes of the northern Walnut, central Hill, and southern San Jose corridors cover 74 miles. The implementation of each class is a matter of space and resources. Class 1 is always preferred but also the most costly and land intensive. In contrast, Class 3 routes require minimal accommodations and are feasible where there is little or no potential for consistently dedicated space. All corridors outlined in the arterial network are proposed as class 1 trails or class 2 lanes. Class 3 routes are expected to connect with these primary corridors, and may also be a first phase for network implementation of trails later intended to be upgraded to class 1 or 2.

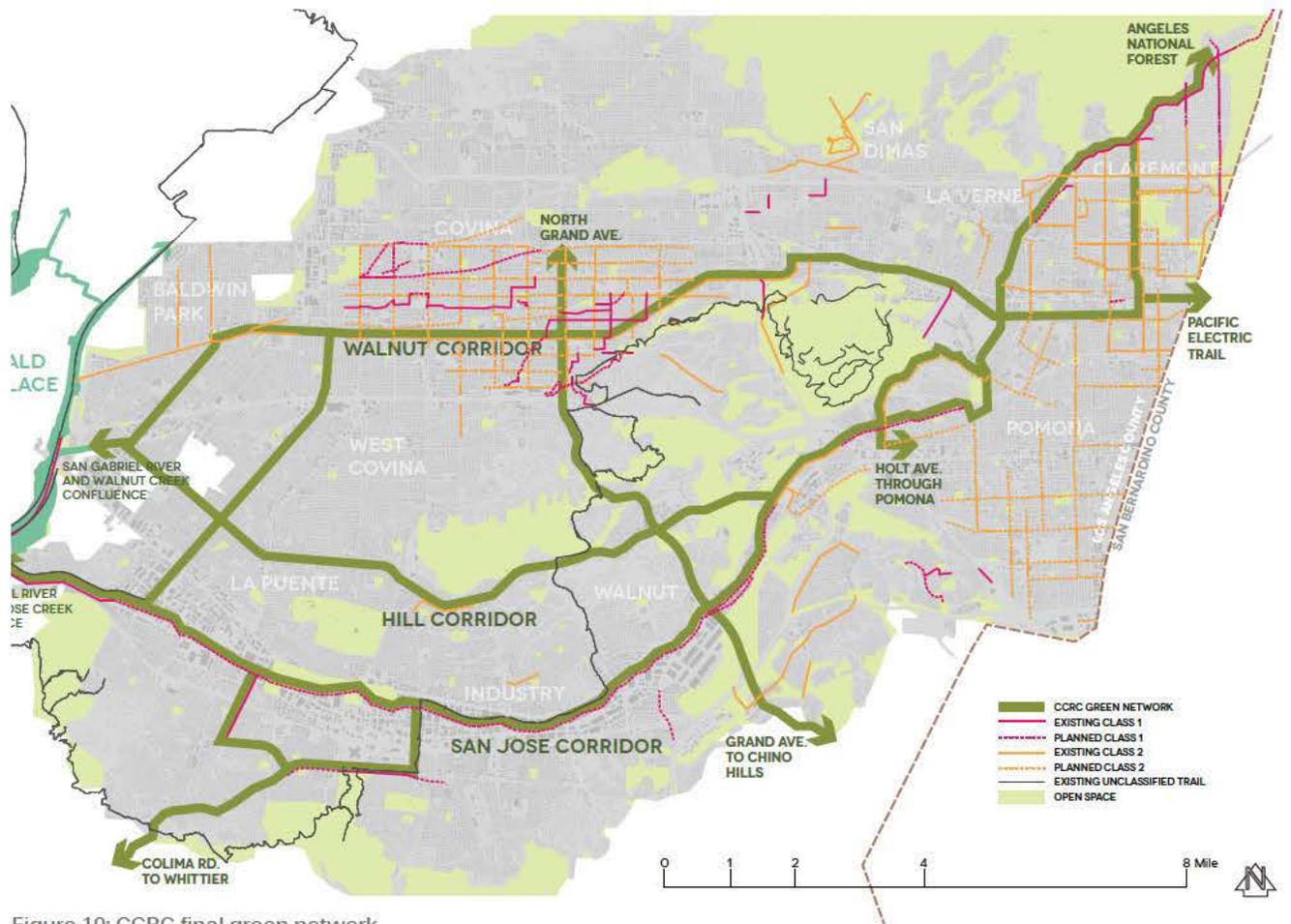


Figure 10: CCRC final green network

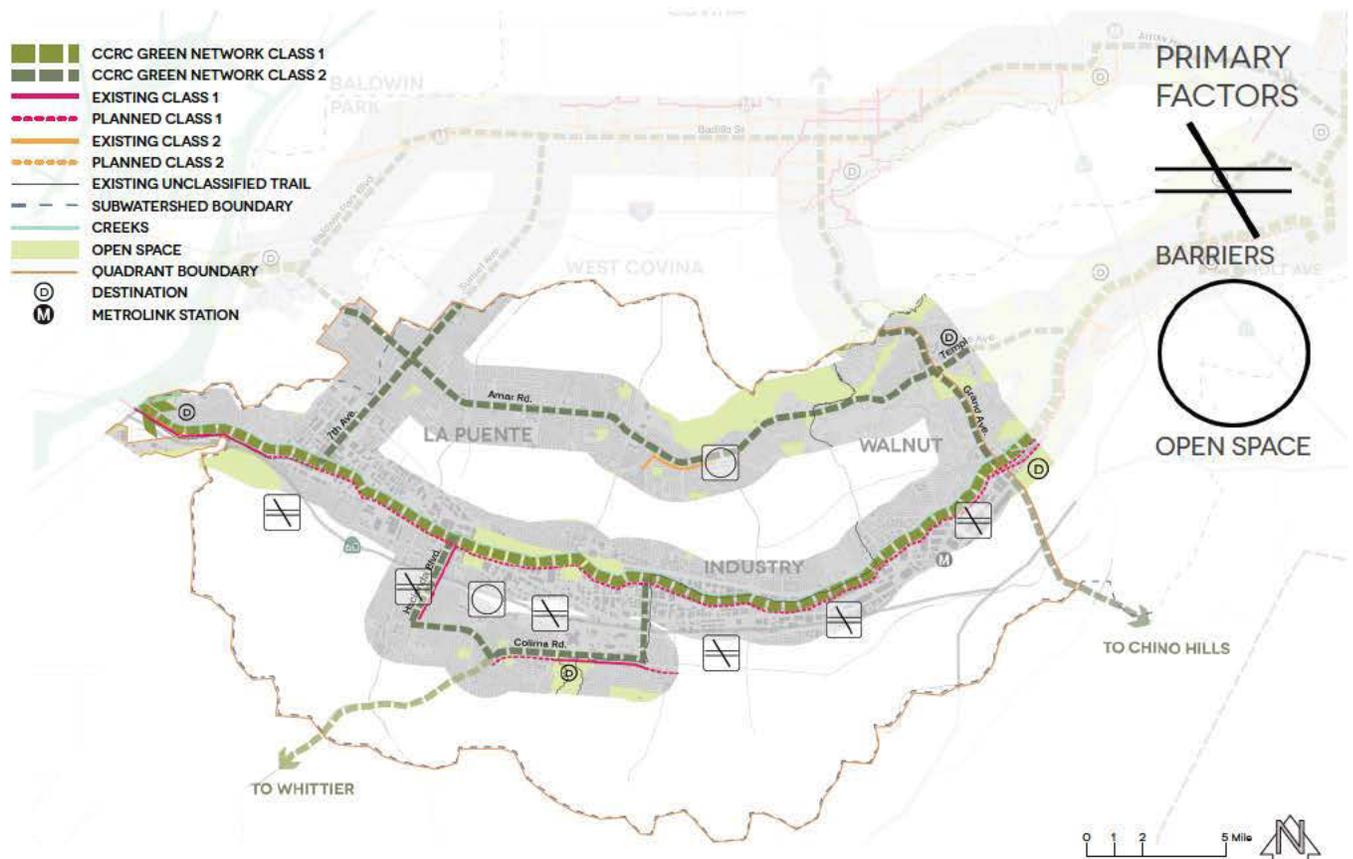


Figure 11: Green network design of western portion of San Jose Creek

DESIGN: PLANT PALETTE

Providing support for habitat is a CCRC project goal. While habitat as a concurrent opportunity within the green network is limited, some opportunities are available where space widens to accommodate appropriate landscape cover. These guidelines and limited plant palette focus on preferred material determined to be most generally beneficial for wildlife inventoried in the study area, and also resilient in cultivation. For complete standard lists refer to the *Los Angeles River Master Plan Landscaping Guidelines and Plant Palettes* (Los Angeles Department of Public Works 2004).

Where feasible, plantings are (1) supportive of nearby habitat, (2) appropriate for the space, and (3) require minimal maintenance. Compatible culturally relevant material is also a factor for consideration. Expert consultation and thorough local inventories should inform all decisions. Significant species for the study area were determined through the inventory and analysis assessments of current and historic landscape composition. Major factors for selection of design-appropriate species include: proximity to existing habitat, water availability, solar exposure, habitat integrity, and safety.

Proximity to existing stands or significant species habitat: give preference to vegetation compatible with flora cover and fauna found generally within one-half mile to two miles.

Water availability and potential exposure: where conditions permit, address opportunities for water management and hydric to semi-hydric cover. Alternately, avoid material that will require significant additional water inputs.

Solar exposure: along trails improve shade wherever feasible. Plant according to species needs.

Habitat integrity: minimize disturbance, a limiting factor of flora and fauna health. Provide appropriate space or low fencing, particularly for sensitive areas or material.

Safety and visibility: open access views are not to be obstructed—maintain vegetation appropriately and keep paths clear of growth.

Dry woodland or adjacent to swales that do not receive irrigation

- (1) *Garrya veatchii*, canyon silktassel
- (2) *Juglans californica*, California black walnut
- (3) *Prunus ilicifolia*, hollyleaf cherry
- (4) *Quercus agrifolia*, California coast live oak
- (5) *Rhamnus californica*, coffeeberry
- (6) *Ribes viburnifolium*, Catalina perfume

Riparian, in moist conditions such as creek beds, irrigated space, lawn edges, or in bioretention/ bioretention adjacent space

- (7) *Anemopsis californica*, lizard flower
- (8) *Baccharis salicifolia*, mulefat
- (9) *Juglans californica*, California black walnut
- (10) *Platanus racemosa*, western sycamore
- (11) *Salix gooddingii*, black willow
- (12) *Sambucus mexicana*, blue elderberry

Sagebrush scrub in dry upland areas

- (12) *Artemisia californica*, California sagebrush
- (13) *Cylindropuntia californica*, cholla*
- (14) *Encelia californica*, coast sunflower
- (15) *Eriogonum fasciculatum*, California buckwheat
- (16) *Malosma laurina*, laurel sumac
- (17) *Opuntia littoralis*, prickly pear*

Culturally-significant

- (18) *Calochortus* spp., mariposa lily
Castilleja spp., Indian paintbrush
- (19) *Dichelostemma capitatum*, bluedicks
Claytonia perfoliata, miners lettuce
Salix gooddingii, black willow
- (20) *Salvia apiana*, white sage

*This material is significant for wildlife and part of the regionally uncommon and locally distinctive native landscape cover. However, for safety concerns this material is not suitable for spaces adjacent to active use.



Figure 12: Plant palette

DESIGN: JOHN F. KENNEDY PARK

John F. Kennedy Park is directly adjacent to Ganesha High School and Marshall Middle School, with Arroyo Elementary School a block away. These neighboring schools provide a perfect opportunity to educate the community on the watershed and natural processes, native flora/fauna, and the region's cultural heritage. The survey given by the CCRC group to 11th and 12th graders from Ganesha High School informed the park design, along with feedback from the Gabrieleño/Kizh Tribe. The conceptual design incorporates an expanded network of sports programming, a Gabrieleño-themed adventure playground, a Gabrieleño herb, medicine, and edible garden, and an interpretive watershed garden. The garden incorporates and re-envisioned an existing storm drain outfall from Marshall Middle School into an interpretive example of a watershed and its natural systems functions.

The John F. Kennedy Park conceptual design has many layers. The expanded tree canopy and Southern California native planting plan reflect the history of Southern California, consisting of Gabrieleño medicinal and herbal plants. The proximity of neighboring schools provide an opportunity to educate students on the watershed and natural processes, native flora/fauna, and the cultural heritage of the region. The conceptual design incorporates expanded sports programming, which includes the addition of a basketball court, larger multi-use field, skate park, and trail connections to the green network along San Jose Creek.

An educational T-zone was conceived to support the park's interactive educational component. It is anchored by the Gabrieleño-themed adventure playground, which incorporates interactive play structures with educational components and imagery. The interpretive watershed garden is located at the eastern edge of the San Jose Creek, the supporting trails and pathways allow visitors to easily access all areas of the park

The garden incorporates and re-envisioned an existing storm drain outfall from Marshall Middle School into an interpretive example of the watershed in order to demonstrate natural systems function and biotic environments. This area also functions as supplemental habitat for native fauna along the network.

Planting buffers are placed along the length of the northern property line and eastern creek corridor in order to provide more shade and additional wildlife habitat. Murals created by local school children and artists are envisioned for the park's eastern wall, and along the south side of the creek channel wall.

The main focus of proposed programming for John F. Kennedy Park is education. The park's proximity to three schools lends itself to programming which incorporates interactive educational opportunities and an expanded outdoor recreational program. The addition of the Gabrieleño-inspired educational T-zone and interpretive watershed garden allows the surrounding schools to incorporate the park into the curriculum. A regional plant palette inspired by the Gabrieleño was chosen to reflect the varied terrain of the region, and to educate the community on the cultural uses of native flora.



Figure 13: John F. Kennedy Park adventure playground



Figure 14: Section through John F. Kennedy Park



Figure 15: Figure 8.2-25 San Jose Creek corridor



Figure 16: John F. Kennedy Park conceptual plan

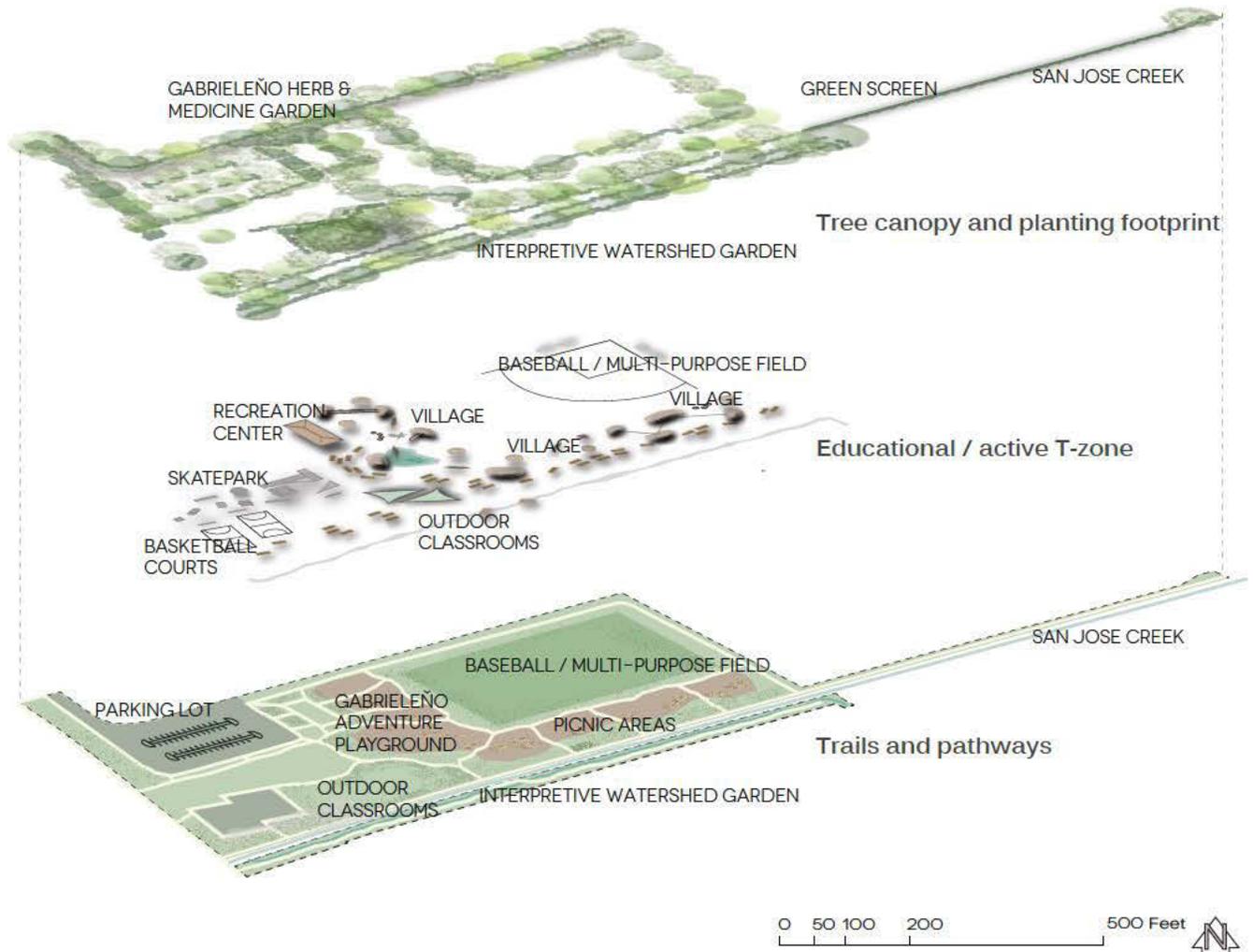


Figure 17: John F. Kennedy park plan layers

DESIGN: WALNUT CREEK NATURE PARK

Walnut Creek Nature Park is located just east of the confluence of the San Gabriel River and Walnut Creek. The park benefits from well-crafted existing park infrastructure, as well as wide space along the channel and a direct connection to functioning habitat in the San Gabriel River. Opening the park and improving lighting for visibility, natural surveillance, and increased activity improve safety and community use. Direct access to the network from the park is essential. Educational opportunities and improved access to nature are promoted with plantings interpreting diverse habitats in the region. Connection with the water and habitat of Walnut Creek is a significant component of this space, and opportunities for improvements to facilitate future interaction were also proposed.

The Walnut Creek Nature Park redesign assesses the park as it currently exists and creates an accessible and well-used green space in the City of Baldwin Park. Based on the group's analysis and understanding of the East San Gabriel Valley, the Walnut Creek Nature Park rests in a prime location for addressing many key issues that form the core of this project's goals. Opportunities for addressing sociocultural concerns such as health and park access make this a priority location for site design, as does the site's proximity to Walnut Creek. The redesign unifies the interests of the stakeholders while enhancing the area's natural functions.

While there is currently only one entrance into the park, the redesign seeks to improve the park's integration with the surrounding neighborhoods by opening its western and southern boundaries to visitors. These new entrances create critical connections to the surrounding neighborhood and to the greater region through its connection to the green network. Safe, functional, and educational spaces are created as a result of the redesign. Visitors may relax under one of the park's many trees, engage in learning about California's biomes, exercise at the park, and take their children to play. Furthermore, these spaces enhance the health of park users in the surrounding area, while improving the health of the natural environment.

Specific features that address the natural function of the site include the centralized ephemeral water feature and bioretention areas. These collect stormwater from the park and surrounding single-family residential streets. Additionally, plant selections within the park provide habitat for native California wildlife, and a connection to the Gabrieleño/Kizh cultures. The vernal pool education center provides a unique opportunity to view the structure of one of California's most critically-threatened ecosystems.

The natural habitat and its historic and cultural connections are threads that connect the past to the present, while providing opportunities to inform visitors of the importance of natural resources.



Figure 18: Walnut Creek Nature Park creek interface



Figure 19: Walnut Creek Nature Park entrance redesign



Figure 20: Walnut Creek Nature Park southern entrance



Figure 21: Walnut Creek Nature Park redesign



Figure 21: Walnut Creek Nature Park biome education

SIGNIFICANCE

CCRC's vision creates a foundational arterial green network in the East San Gabriel Valley. The plan proposes priority green corridors that link combined interests and maximize a functional regional system. Additionally, the plan proposes support for environmental and human wellbeing through habitat and water treatment and infiltration, while also improving air quality. The analysis methods could be further used to improve future planning efficiency.

Through the integration of existing and proposed plans within the East San Gabriel Valley, the design team outlined routes for access to preferred destinations throughout the study area. These regional links serve user needs and provide transportation alternatives. This is a catalyst for connecting existing and proposed trails from the eastern edge of Los Angeles County to the coastline.

Interconnecting the East San Gabriel and Pomona Valleys with the San Gabriel River fulfills many directives identified as significant by regional and local city plans. This plan expands the reach of the Emerald Necklace located between the San Gabriel and Rio Hondo River greenway corridors. This unified vision not only combines and conserves civic resources, but also alleviates disconnected networks, addresses overlaps between plans, eases traffic, addresses barriers, and improves connectivity within the East San Gabriel Valley. Improving open space access further supports diverse communities that would profoundly benefit from these resources.

Conclusion

This is a holistic vision plan that addresses multiple issues. The vision plan not only mitigates disconnections, but also creates opportunities for inter-city stewardship, bolsters quality of life through expanded open space network, increases access to services including healthy food options, and creates outdoor recreational opportunities. The cohesive nature of the CCRC vision plan makes it an ideal blueprint for not only the East San Gabriel Valley, but for communities struggling with similar issues of disconnection, social equity, and declining natural environments.

This plan identifies three core elements of focus for the project: connectivity, natural environment, and human wellbeing. Through the integration of existing and proposed plans within the East San Gabriel Valley, the CCRC vision plan creates a green network that maximizes access through the communities within the project boundaries to preferred destinations, increases transportation efficiency, and facilitates future sustainable development. The addition of vegetation, a green network, bioretention areas, and other Low Impact Development (LID) programming improve air quality, mitigate nonpoint source pollution thereby decreasing further contamination of the region's waterways.

Biofiltration zones within the green network improve and increase the quality and quantity of groundwater. Increased distribution of open spaces facilitates connections between disconnected communities of wildlife and helps to maximize biotic integrity and function of open spaces within the urban core. Additional open spaces in the East San Gabriel Valley not only benefit the flora and fauna of the region, but also benefit communities identified as "park poor" through increased access to outdoor recreational opportunities. The vision plan presents a holistic approach that examines the existing constraints and identifies realistic solutions to complex problems. Communities that have been historically underserved have a road map that catalyzes change and looks to the immediate future.



“SHARE MORE OPEN SPACES. MAKE THEM FREE AND ACCESSIBLE TO THE PUBLIC. MORE BICYCLING INFRASTRUCTURE AND CONNECTING TO MAJOR TRANSIT CENTERS WOULD BE HELPFUL.”

—SURVEY RESPONDENT—

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Catalyzing Connectivity: Rediscovering Creeks (CCRC) in the East San Gabriel Valley is a conceptual vision plan that proposes improvements for mobility and access to open space. Seventy-four miles of green network are outlined in addition to facility recommendations. Regional links and design interventions are the result of analysis of existing plans, inventories, and stakeholder feedback.

The East San Gabriel Valley is rich in natural and civic resources, but both the quality of and access to these resources is limited. Air and water are polluted, water resources are limited, and habitats are fragmented. Environmentally-related health issues are also prevalent in the local populations. Solutions require strategic, long-term investments in infrastructure to increase access to existing non-automotive transit options, while augmenting existing networks with new corridors. In addition to improving regional mobility through the green network, opportunities to address environmental and social issues are identified.

This vision plan takes a holistic approach that examines regional constraints and identifies solutions to complex problems. Through the integration of existing and proposed plans within the East San Gabriel Valley, the CCRC vision forms a prioritized green network that also respects current initiatives. Multimodal facilities, appropriate vegetation, stormwater management, and social programming are proposed by the CCRC plan. These strategies are critical for natural and civic systems, both of which are instrumental in improving wellbeing and the integrity of the East San Gabriel Valley for generations to come.

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