

One Arroyo Trail

**RiOs
CLEMENTi
HALE
STUDiOs**

Final Report

Januray 31, 2018



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Appendix Exhibits
A. Draft Opportunities Assessment (09.20.17)
B. Preliminary Trail Concept Alternatives (10.26.17)
C. Revised Concept & Cost Report (12.18.17)

1 Introduction

Working in coordination with HR&A Advisors, Inc. and on behalf of the Rose Bowl Operating Company, the City of Pasadena and the Mayor's appointed Arroyo Advisory Group (AAG), Rios Clementi Hale Studios (RCHS) developed a "One Arroyo" Trail Concept.

This visionary trail plan is intended to serve as the signature project for the AAG's **One Arroyo Vision** to enhance, preserve and unify the Arroyo Seco.

Three primary objectives were developed for the One Arroyo Trail Concept:

- 1 Create a unified, connected and consistent trail**
- 2 Provide an enhanced user experience; and**
- 3 Inspire emotional attachment to the Arroyo Seco.**

The following document represents a condensed compilation of the materials presented to the AAG during the course of the process. Appendices are included which contain the entirety of the documentation.

Working Process



Data & Information Gathering

15+ site visits by RCHS team

3000+ images taken

Conducted research on Arroyo history, watershed, ecology

Reports & planning documents reviewed*

Information sharing & coordination with DPW and City staff**

Mapping data collected and analyzed***

Compiled a base map from collected vector files

*** Plans & Reports Reviewed**

- Arroyo Seco Master Plans & Addenda (City of Pasadena, 2003, 2010)
- Arroyo Seco Design Guidelines (City of Pasadena, 2003)
- Arroyo Seco Watershed Restoration Plan (North East Trees, 2006)
- Arroyo Seco Watershed Ecosystem Restoration Feasibility Study, (USACE, 2011)
- ULI Governors Panel Report (2012)

**** City & County Concept Plans & Documents Received**

- One Arroyo Survey Draft (City of Pasadena, 2017)
- Upper Arroyo Seco Trail Hub Concept Plan (DPW, 2011)
- Parker-Mayberry Bridge Enhancement Concept Plan (DPW, 2012)
- Sunset Overlook Enhancement Concept Plan (DPW, 2013)
- Hahamongna East Parking Lot Enhancement Concept Plan (DPW, 2013)
- Windsor & Ventura Crosswalk Improvements Concept Plan (DPW, 2013)
- Central Arroyo Seco Temporary Realignment Concept Draft (DPW, 2015)
- Arroyo Seco Master Sign Plan Presentation Update (DPW, in progress)
- Lower Arroyo Main Entrance Improvements Design Development (DPW, in progress)
- Rose Bowl Area "H" Conceptual Plan (DPW, 2017)
- Desiderio Neighborhood Park Concept Plan (DPW, 2017)
- H2O on the Go West Drive Construction Plan (DPW, 2017)
- Arroyo Seco Load Reduction Strategy Project (LA County DPW, 2017)

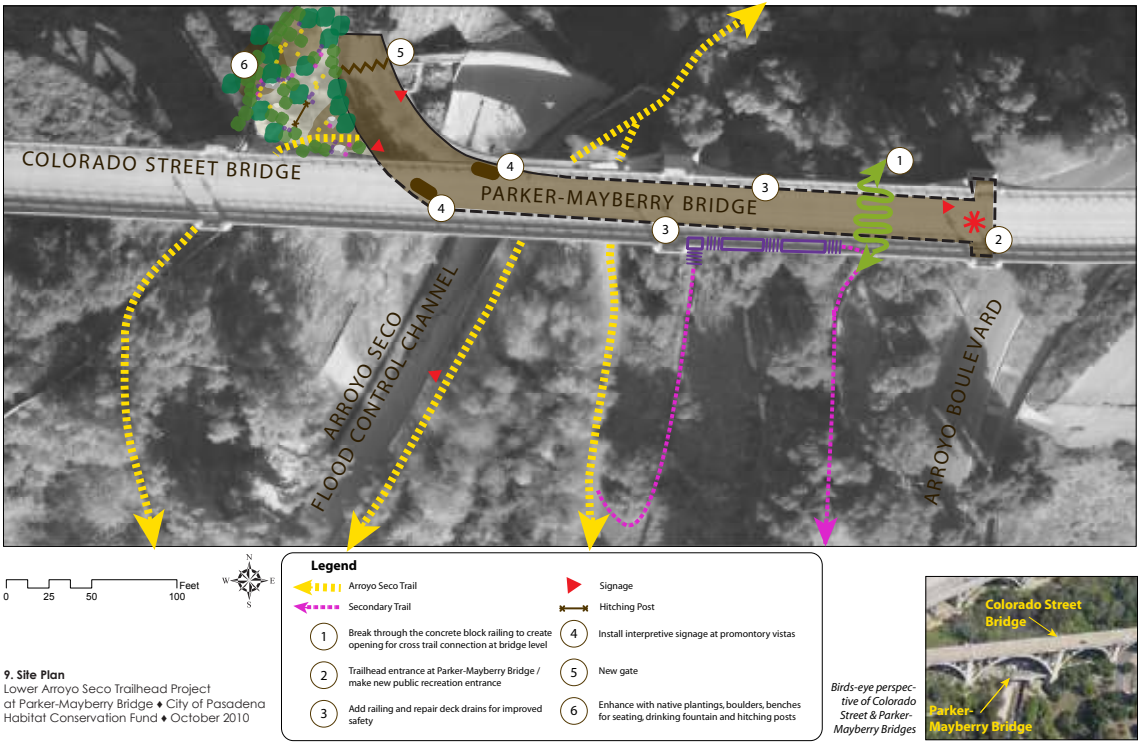
***** Vector Base Map Files Received / Collected**

- Trail Guide live vector files (Pasadena DPW, 2010, revised 2013)
- CAD files for Lower, Central and Hahamongna areas (various)
- GIS files from County and Pasadena GIS databases (various)



Lower Arroyo Master Plan

City of Pasadena
Adopted September 29, 2003
Revised February 2, 2015



Stakeholder Engagement

Site visits with stakeholders including DPW, Rose Bowl, AAG members, Mayor's staff, HR&A

Attended 2 community "Walks with Mayor"

Workshop with DPW staff to review progress and exchange information regarding previous and concurrent efforts

Received and reviewed comments from AAG members, DOT, DPW, Mayor Terry Tornek, Rick Gould



Master Plans & Trail Concept Alignment Assessment

Master Plan & Trail Concept Alignments (General):

Improvement and Enhancement to:

- Trailheads, trail connections, crossings, trail character and local pedestrian pathways and entrances.

Upgrades to:

- ADA Access, safety and sustainability where appropriate throughout the Arroyo Seco.

Development of:

- Special Arroyo Areas and new and improved facilities including rest rooms, potable water and parking.

Master Plan & Trail Concept Alignments (Specific):

South Entrance Improvements

Parker-Mayberry Bridge Pedestrian and Equestrian Access and Safety Improvements and Enhancements

Bird Sanctuary Enhancement

Arroyo Boulevard Rim Trail Repair and Enhancement

Camel's Hump Area Enhancement

"Memorial Grove" Enhancement

Sunset Overlook Improvements

Dam Keeper's Quarters and Public Restroom (At Devil's Gate)

Dam Observation Deck

New Dam parking Area (at Oak Grove Dr. and Linda Vista Dr.)



Civil Engineering Assessment

- Review of previously-prepared documents and source material
- Review of topography and contour maps
- Preparation of terrain model and slope map
- Coordination with City of Pasadena engineering staff
- Workshops and coordination with landscape architect team to prioritize field investigation
- Site walks and photo-documentation exercises to describe the needs related to trail-focused improvements
- Development of preliminary trail-focused improvement approaches to improve safety, usability, and sustainability outcomes



Trail Erosion / Surface Water Run-on



Perpetually Wet Surface Conditions



Trail Erosion & Walkability



Trail Erosion & Walkability

Site Analysis

Inventory documentation of existing conditions

Needs Assessment to uncover locations of critical gaps

Analysis of results from Needs Assessment

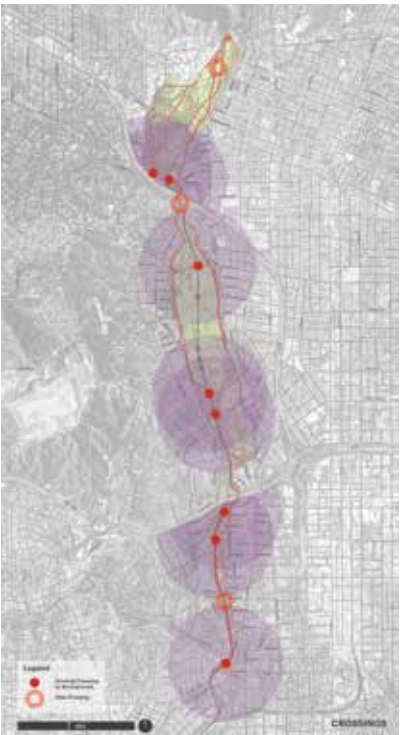
Synthesis of analysis & opportunities assessment

Prioritization of design opportunities

Design concept development per prioritized synthesis

Categories Studied:

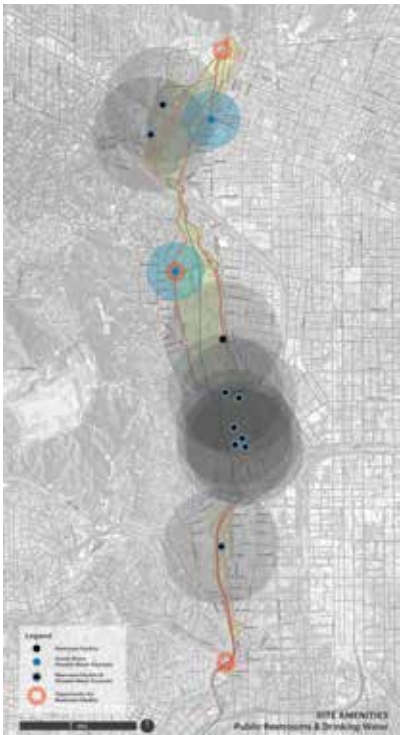
- Trail Connections
- Arroyo Crossings
- Entry Points
- Trail Design
- Furnishing (seating, water, trash)
- Facilities (restrooms & parking)
- Engagement Opportunities
- Special Arroyo Areas



Arroyo Crossings



Trail Connections



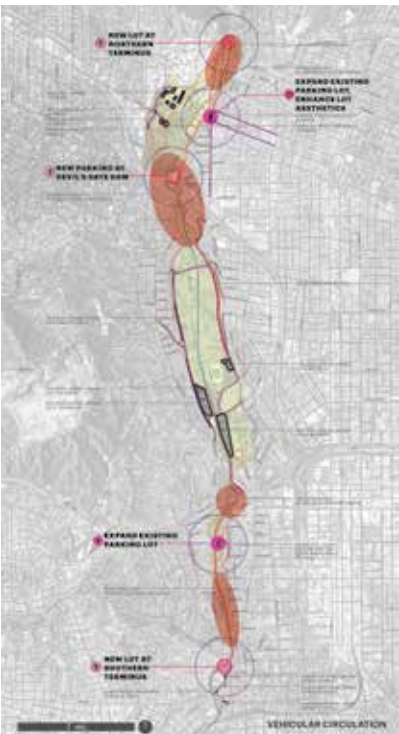
Facilities



Points of Interest



Transit Access



Vehicular Access



Pedestrian Access



Special Arroyo Areas

Cost Estimate Development

Developed costing package including:

- Costing Narrative listing design elements and conceptual assumptions for cost
- Reference images to support Costing Narrative
- Trail typology sections to support Costing Narrative
- Linear take-offs for all trail segments
- Square footage take-offs for all Special Arroyo Areas
- Estimated quantities for proposed elements
- Reference materials from DPW and City

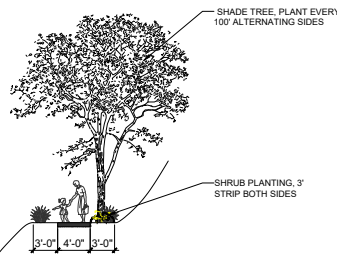
Coordination with Cost Estimators to review costing package, provide additional information and refine assumptions

Coordination with Civil Engineer

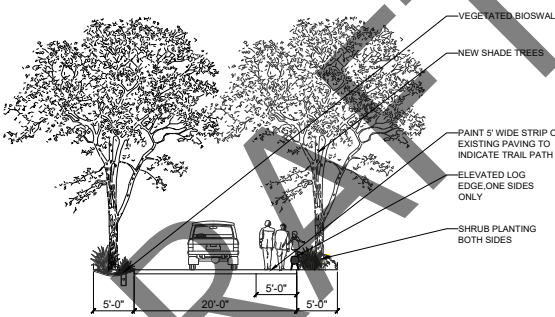
Coordination with City to determine project overlaps

Review and refinement of draft cost estimate

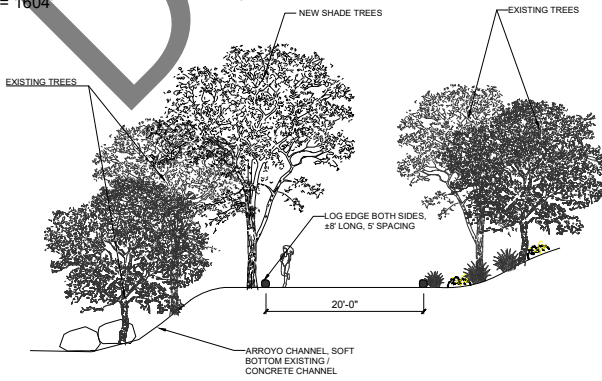
HAHAMONGNA RIM & SECONDARY TRAILS
L = 26400' (5 MILES)



HAHAMONGNA PAVED TRAILS & SHARED ROAD
L = 13728' (2.6 MILES)



CENTRAL WOODLAND WALK @ CHANNEL, EAST
L = 1604'



Example of Trail Typology Sections & Take-Offs for Costing Package

One Arroyo Trail
Pasadena
November 29, 2017



Masterplan Cost Plan

Overall Summary

	Trail length LF	\$/LF	TOTAL \$ x 1,000	%	Tier 1 \$/LF \$ x 1,000	Tier 2 \$/LF \$ x 1,000	Tier 3 \$/LF \$ x 1,000
S1 Trail & Connectivity Improvements	137,280	117.33	16,107	47.2%	23.17	3,180	54.31
S2 Bridge Crossings (Pedestrian/Equestrian)	137,280	9.08	1,246	3.7%	5.83	800	1.36
S3 Gateways And Entrys	137,280	38.95	5,347	15.7%	8.26	1,133	26.91
S4 Parkings	137,280	8.48	1,164	3.4%	5.18	711	1.53
S5 Public Restrooms (Tier 3)	137,280	2.83	389	1.1%	0.00	n/a	0.00
S6 Information Kiosk / Stand (Tier 3)	137,280	2.55	350	1.0%	0.00	n/a	0.00
S7 Special Arroyo Areas / Projects	137,280	55.25	7,585	22.2%	34.07	4,677	9.48
S8 Special Engagement Opportunities	137,280	1.07	147	0.4%	0.45	62	0.14
TOTAL SITEWORK			32,334	94.9%	10,564	12,869	8,901
Z30 Escalation To Start Date January 2019	5.43%		1,755	5.1%	579	699	483
RECOMMENDED CONSTRUCTION BUDGET, Jan 2019			34,089	100.0%			

Others

- Project Soft cost (allowances)
- Site and Property Acquisition Cost
- Geotechnical & Survey
- Design and Engineering Consultant Services
- Project Management Consultant Services
- Taxes and Indirect fees
- Construction Permit and Other Agency Fees
- Construction Contingency/Owner Contingency
- Cost Escalation beyond January 2019

Total for Project Soft Cost

RECOMMENDED PROJECT BUDGET, Jan 2019

Project No:JE000873.110

5

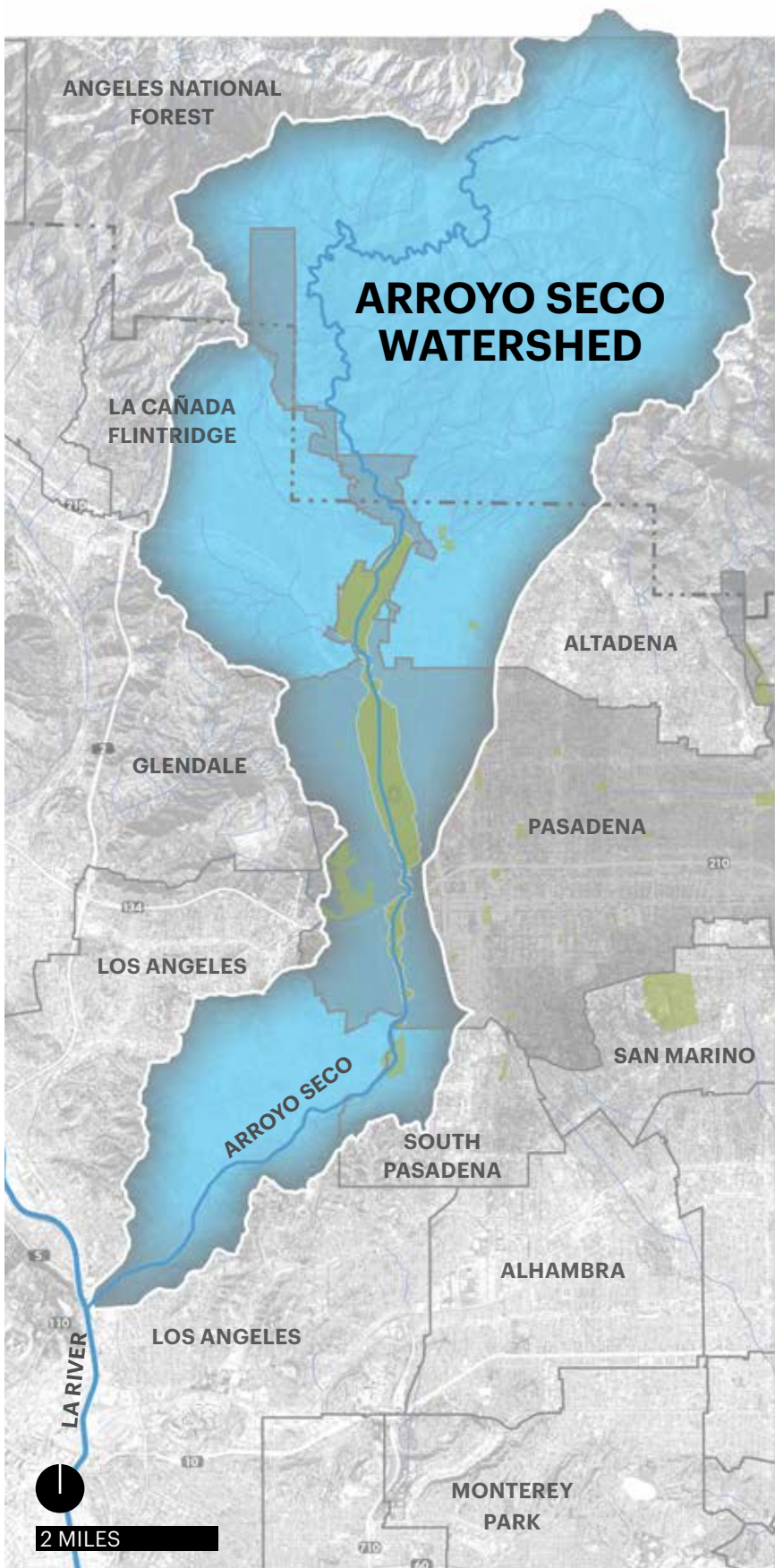
Working draft of Cost Report

*For full cost estimate package, see Appendix C: Revised Concept & Cost Report, Dec. 18, 2017



2 Context

Watershed Context

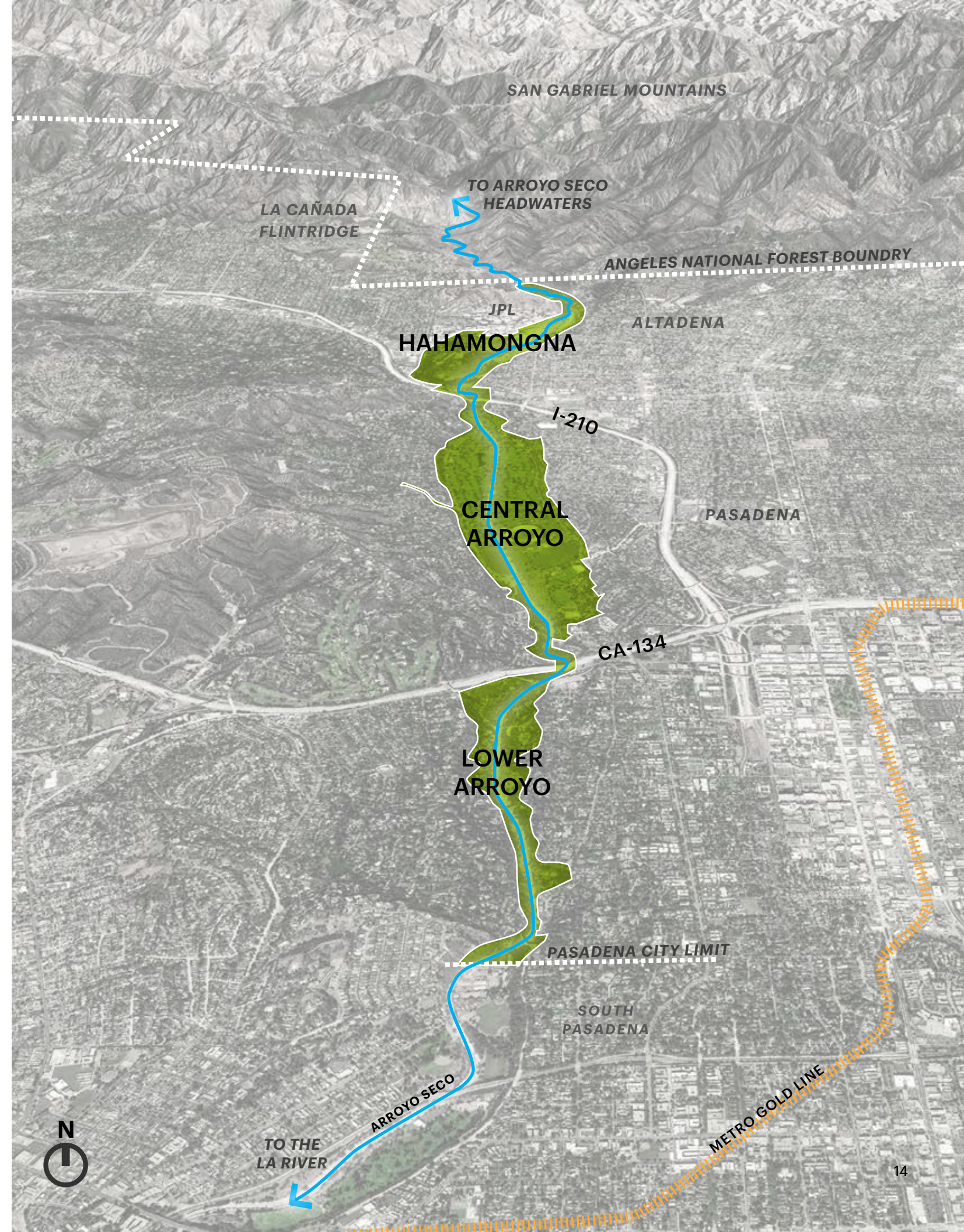


Arroyo Watershed Context
A bigger story for the Arroyo

Regional Considerations

- Connection to Angeles National Forest
- Connection to Arroyo South & LA River
- Connection to Arroyo Seco Bike Path
- Wildlife Corridors
- Adjacent Land Management*

* LA County, US Army Corps of Engineers, Pasadena Water & Power, Rose Bowl Operating Company, JPL, Santa Monica Mountains Conservancy among others.

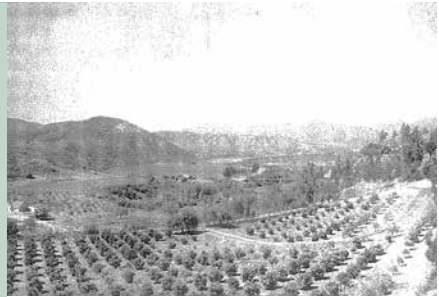


Historical & Cultural Context

Since pre-settlement times, the Arroyo Seco has provided a beloved link between culture and natural systems. The One Arroyo project intends to continue the legacy of activity and movement along the Arroyo, connecting visitors to the watershed and the outdoor life that surrounds it.



Tongva-Gabrelino Settlements



The "Boom Years" Growth & Engineering



Artists & Naturalists- The "Arroyo School"



Sports & Events The Rose Bowl



One Arroyo Program & Other Projects

2,000 BCE- 1700s CE

1700 - 1800

1880s - Mid 1900s

1920s - 1940s

2018 & Beyond

Geologic History



Early Development & Agriculture



Recreation & Attractions



Floods & Infrastructure



Science & Technology CalTech & JPL



"The Arroyo is an environmental, cultural, and recreational oasis for all of Southern California."

- Final Arroyo Seco Watershed Assessment, May 20, 2011, Prepared for the Arroyo Seco Foundation

3 Opportunities Assessment

- Trail Connections
- Trail Design
- Entry Experience
- Arroyo Crossings
- Facilities
- Special Arroyo Areas
- Engagement Opportunities
- Furnishing
- Wayfinding

Trail Connections

Improving physical and visual connectivity

Issues

- Awkward and potentially unsafe transitions at major thresholds
- Trail gets interrupted - points of discontinuity cause confusion
- Several trails suffer from drainage and erosion issues
- Road crossings pose safety concerns and create points of disconnection



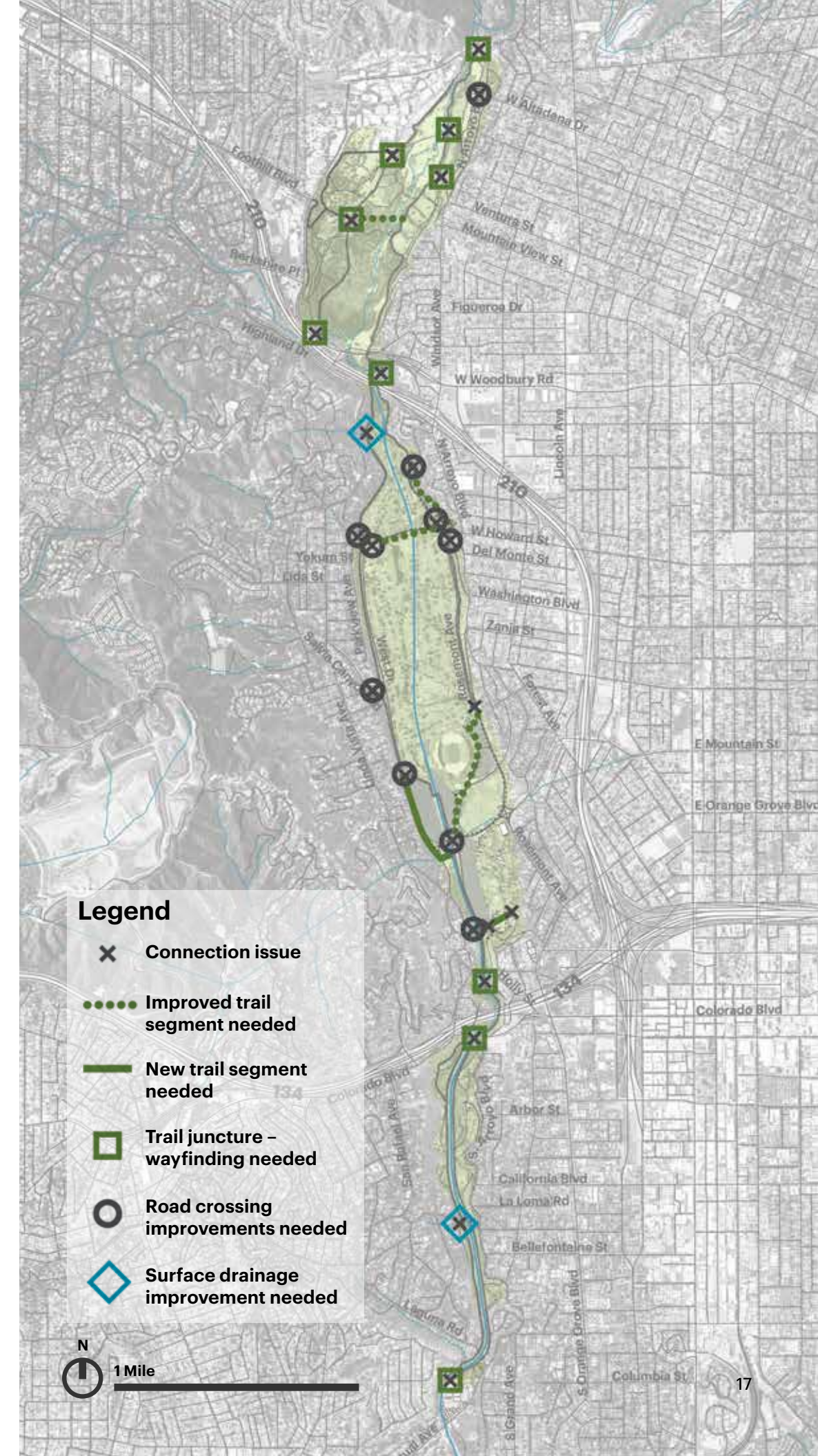
Crosswalk poses safety concerns

Opportunities

- Provide new unpaved trail segments to connect "dead ends"
- Provide wayfinding at critical junctures
- Surface drainage improvements
- Improve safety at road crossings (signage, paving)



Lack of wayfinding at Lower Arroyo threshold



Trail Design

Defining the Arroyo Trails

Issues

- Deferred maintenance issues - trail surface improvements, vegetation maintenance, erosion management needed
- Chainlink fence dominates trail edge
- Shade lacking in several stretches
- Experience is monotonous at many stretches
- Trail edging is inconsistent or lacking

Opportunities

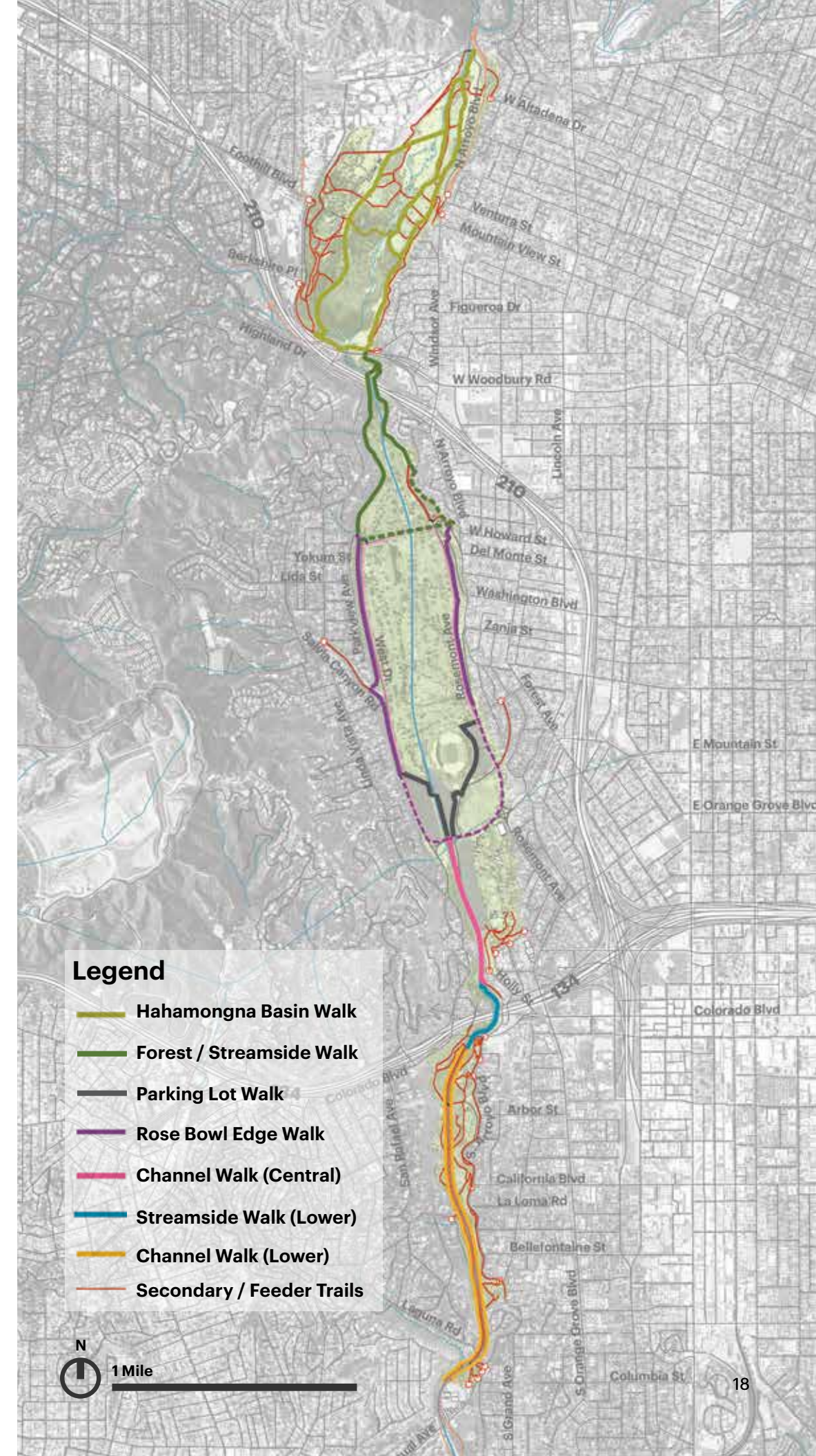
- Develop a distinct and consistent materials palette that unites and defines the trail
- Provide shade trees and a varied planting palette
- Capture and cleanse stormwater
- Enhance secondary trails to provide more trail diversity



Dominance of chainlink fence, lack of shade



Trail monotony, lack of shade



Entry Experience

Defining Trail Thresholds

Issues

- Entry frequency varies, has major gaps and is biased to the east side
- Entries lack definition and sense of arrival, not welcoming
- Main entries lack “gateway moment”
- Vertical circulation (ramps, stairs) steep, eroded and unsafe
- Pedestrian connections to entries are lacking in some areas

Opportunities

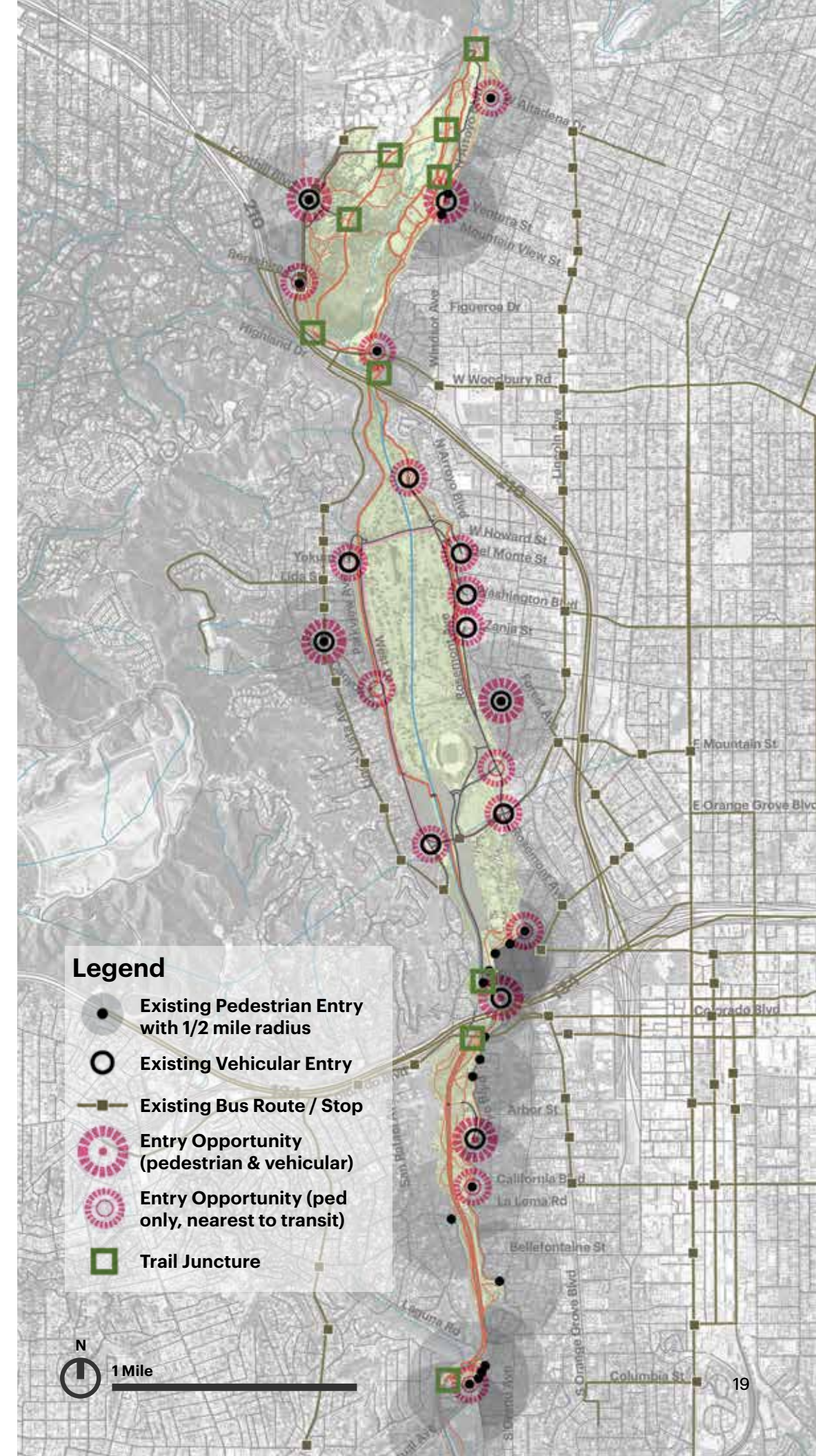
- All entries and gateways should have a consistent design vernacular and materials palette
- Entries and Gateways should have prominence and should welcome the visitor with design elements and wayfinding signage



Pedestrian connectivity lacking



No sense of arrival



Arroyo Crossings

Facilitating movement across the Arroyo

Issues

- Not enough crossings, distance between crossings is greater than 1 mile at several points
- Bridge design in need of improvement
- Hahamongna crossings are hard to identify and lack prominence
- Consideration of periodic flooding

Opportunities

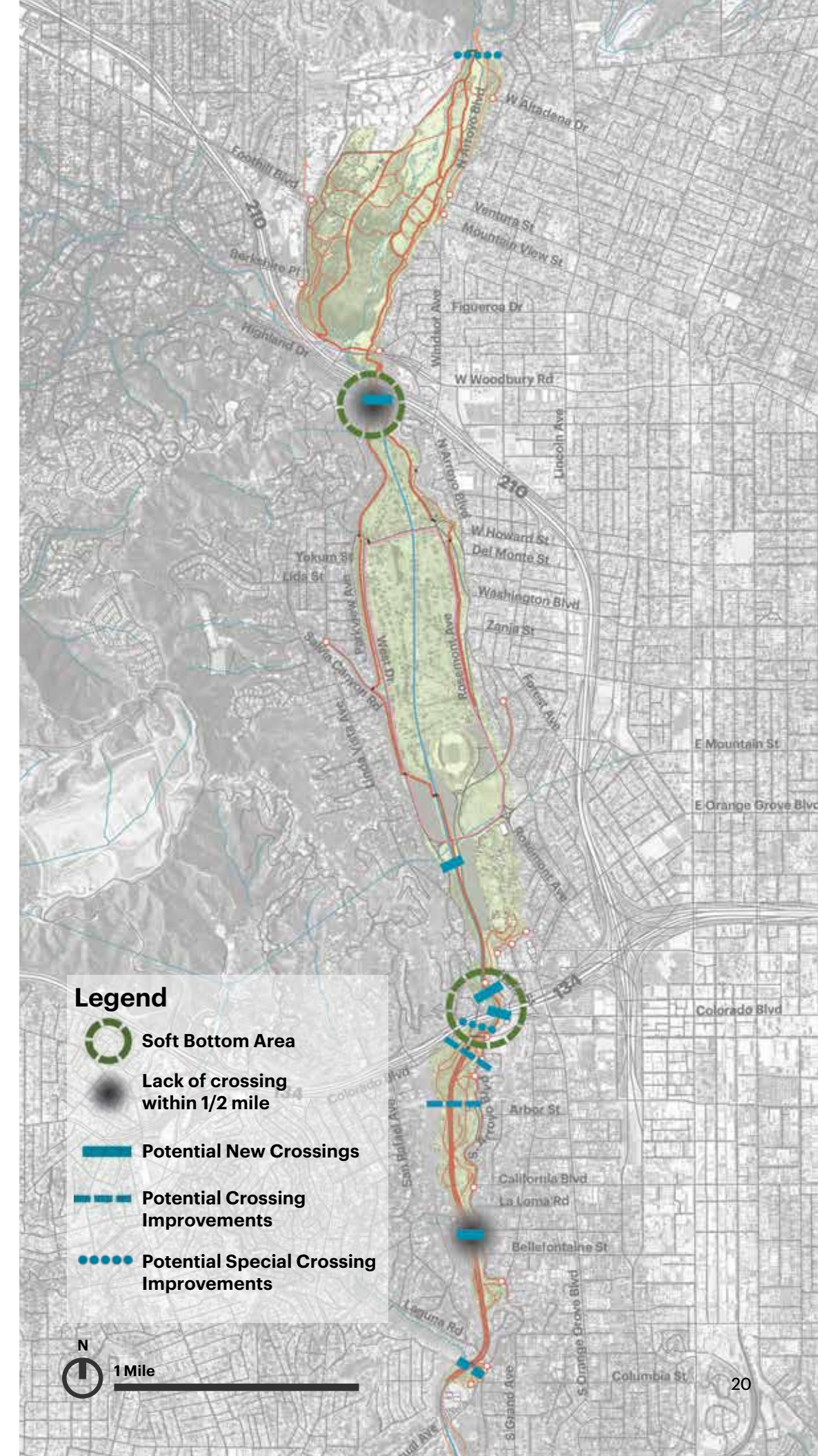
- Provide channel crossings at critical gaps to enable loop walks throughout trail
- Provide footbridges at soft bottom areas to promote exploration of natural areas
- Improve aesthetics of crossings to be consistent with Arroyo trail design
- Parker Mayberry Bridge - reopen bridge, structural improvements, bring railing height to code, improve look and feel of materials, seating overlook
- JPL Bridge - retrofit to allow for public use



Existing Crossing at Archery/Casting Pond



Existing Crossing at Lower Arroyo



Facilities

Meeting needs along the trail

Issues

- Parking is in demand causing impact on adjacent neighborhoods
- Parking design aesthetic varies
- Many areas are underserved by parking and restrooms
- Lack of information kiosks / stands

Opportunities

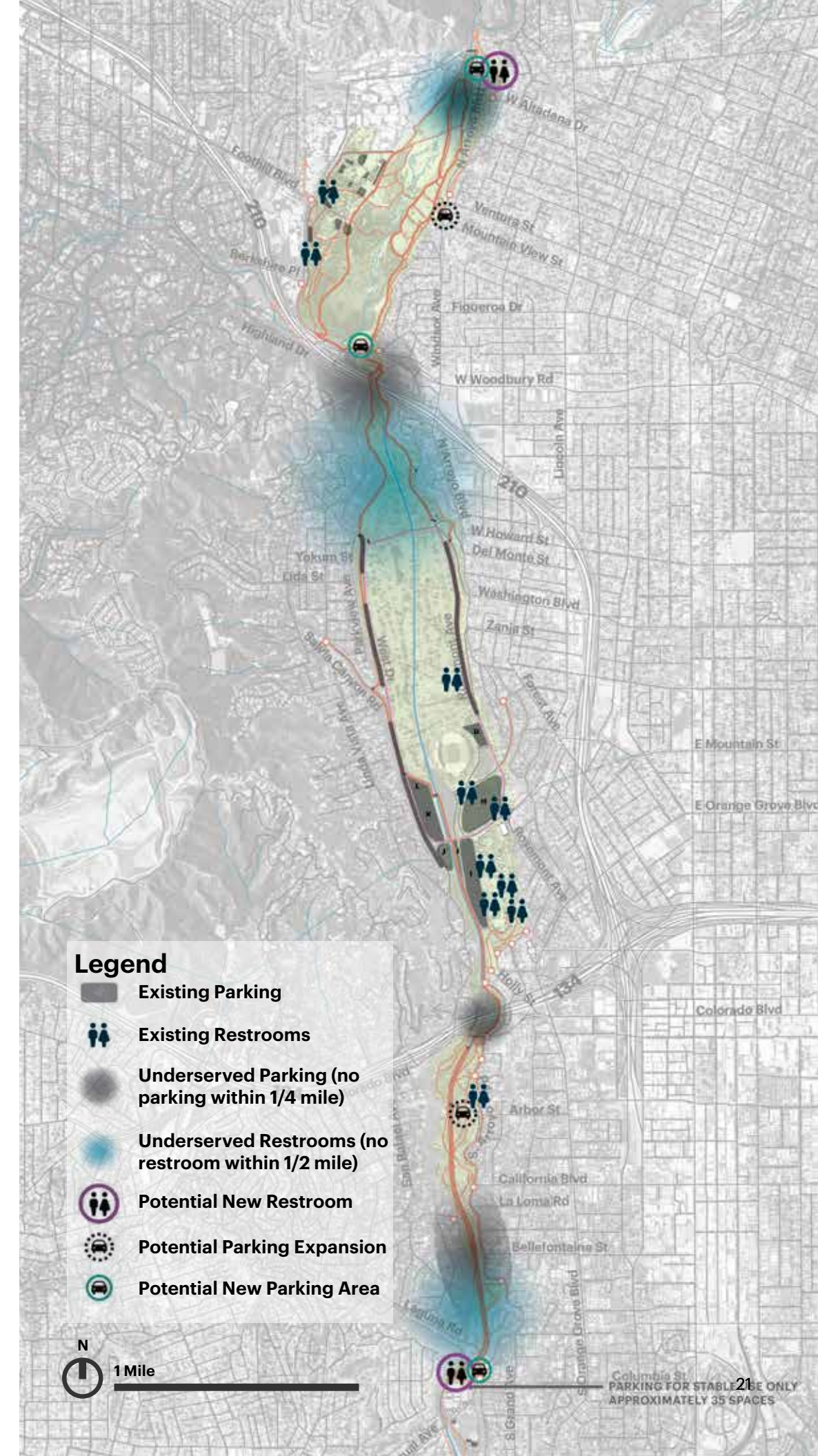
- Provide naturalistic parking lot design standards to reinforce trail identity
- Expand existing parking areas that are experiencing high demand
- Provide new parking facilities in underserved areas
- Provide restrooms at 1 mile intervals
- Provide a naturalistic bathroom design standard to create visual interest and reinforce trail identity



Existing parking at Hahamongna East, asphalt condition



Existing parking at Hahamongna West, naturalized condition



Special Arroyo Areas

Celebrating the unique natural & cultural beauty of the Arroyo

Issues

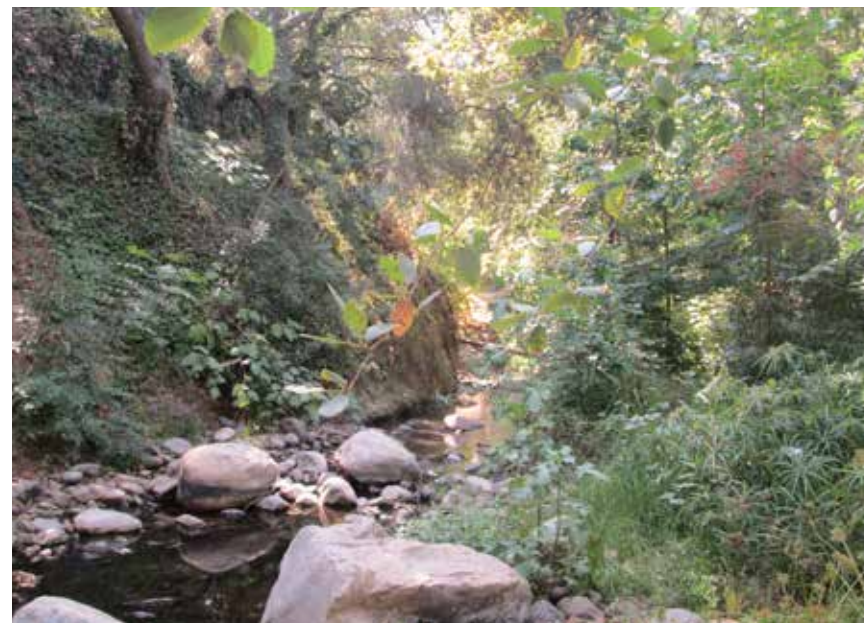
- Many existing programmed areas and overlooks are in need of improvements
- Lack of trail-oriented passive program areas along trail
- Unique soft bottom areas are challenging to access, hidden and not celebrated

Opportunities

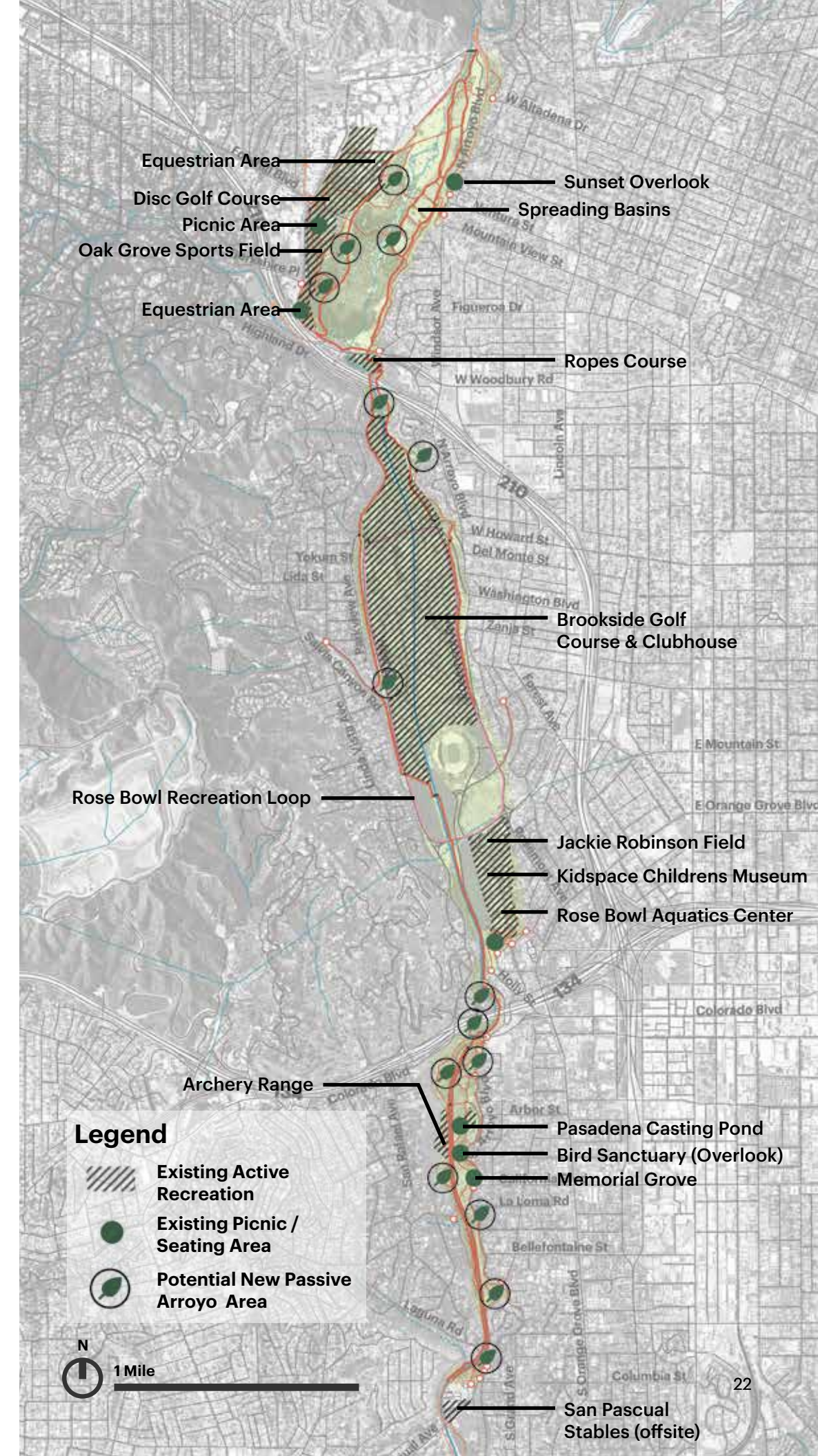
- Improve existing overlooks and provide new overlooks to frame additional birds eye views of the Arroyo
- Small natural "classrooms" at key points of interest along the trail can serve as places for educational gatherings
- Soft bottom areas have incredible potential to become destinations along trail - natural park nodes, connecting the users to the natural history and watershed story of the Arroyo



Existing overlook area at Bird Sanctuary



Banks along the soft bottom area in Lower Arroyo



Furnishing

Seating, water and trash along the trail

Issues

- Site amenities and furnishings are lacking along trail (e.g. seating, trash, water, shade)
- Existing amenities & furnishing are mismatched and in disrepair

Opportunities

- All furnishing elements should have a consistent design palette that reinforces trail identity and creates visual interest.
- Provide seating, drinking fountains, trash receptacles to trail users at more frequent intervals
- Creatively use natural elements, referencing the existing motifs of rocks and logs found along the trail
- Additional amenities to be considered including stretching stations, interactive play elements, dog amenities, shade structures



Existing furnishing - Inconsistent Design Palette

Wayfinding

Orienting the visitor along the trail

Issues

- Wayfinding signage lacking
- Existing wayfinding is mismatched and in disrepair
- Minimal non-signage-based visual cues to help guide users

Opportunities

- Collaborate with Arroyo Seco Sign Master Plan to determine locations and additional signage types
- Wayfinding / trail marker signage needed more frequently along trail to guide user along path (mile markers, color coded markings)
- Wayfinding for trail should be unified in design, old styles to be replaced
- Signage needed at major connections, entries, program areas



Existing wayfinding signage



4 Trail Concept Alternatives

Trail Concept Alternatives

Driven by the trail concept goals, these 3 concept plans build on each other both in terms of implementation complexity and prioritization derived from our analysis:

1 Connect

Minimum improvements that create a unified One Arroyo Trail



+

2 Enhance

Improvements that further enhance the experience along the trails



+

3 Inspire

Additional inspirational designs that foster a deeper connection to the Arroyo and Arroyo watershed



Master Plan Cost Plan Summary

	Combined Total (\$)	%	1 Connect (\$)	2 Enhance Add (\$)	3 Inspire Add (\$)
Trail Connectivity Improvements	15,500K	50	3,000K	7,000K	5,500K
Bridges & Tunnels	2,100K	4	1,600K	200K	300K
Gateways & Entries	2,500K	16	1,100K	900K	500K
Special Arroyo Areas	5,200K	24	2,200K	1,400K	1,700K
Engagement Opportunities	150K	< 1	60K	20K	70K
Parking Improvements	1,200K	4	700K	500K	-
Public Restrooms (2 Enhance)	400K	1	N/A	400K	N/A
Information Stands	350K	1	100K	100K	100K
TOTAL SITEWORK (2017)	27,600K		8,800K	10,700K	8,100K
Escalation to Start Date (5.43%) ²	1,500K		500K	600K	400K
PRELIMINARY CONSTRUCTION BUDGET JANUARY 2019	29,100K		9,300K	11,300K	8,600K
Other Project Soft Costs (25.5%) ²	7,500K		2,400K	2,900K	2,200K
PRELIMINARY PROJECT BUDGET JANUARY 2019	36,700K		11,700K	14,200K	10,800K

Notes:

1. Subtotals may not sum exactly due to independent rounding.

2. Cost estimate is for construction (hard) costs only. Other (soft) costs have been provided as percentage-based allowances which includes geotech report & topographic survey, design and engineering services, project management, taxes, permits, contingencies and cost escalation.

3. The majority of the proposed projects included here are based on proposals and general recommendations in the 2003 Arroyo Seco Master Plans and several projects directly overlap with the CIP Projects that have been adopted for fiscal year 2018.

For complete costing information for all project elements see Appendix C: Concept Alternative Updates & Costing Analysis (Dec 18, 2017)

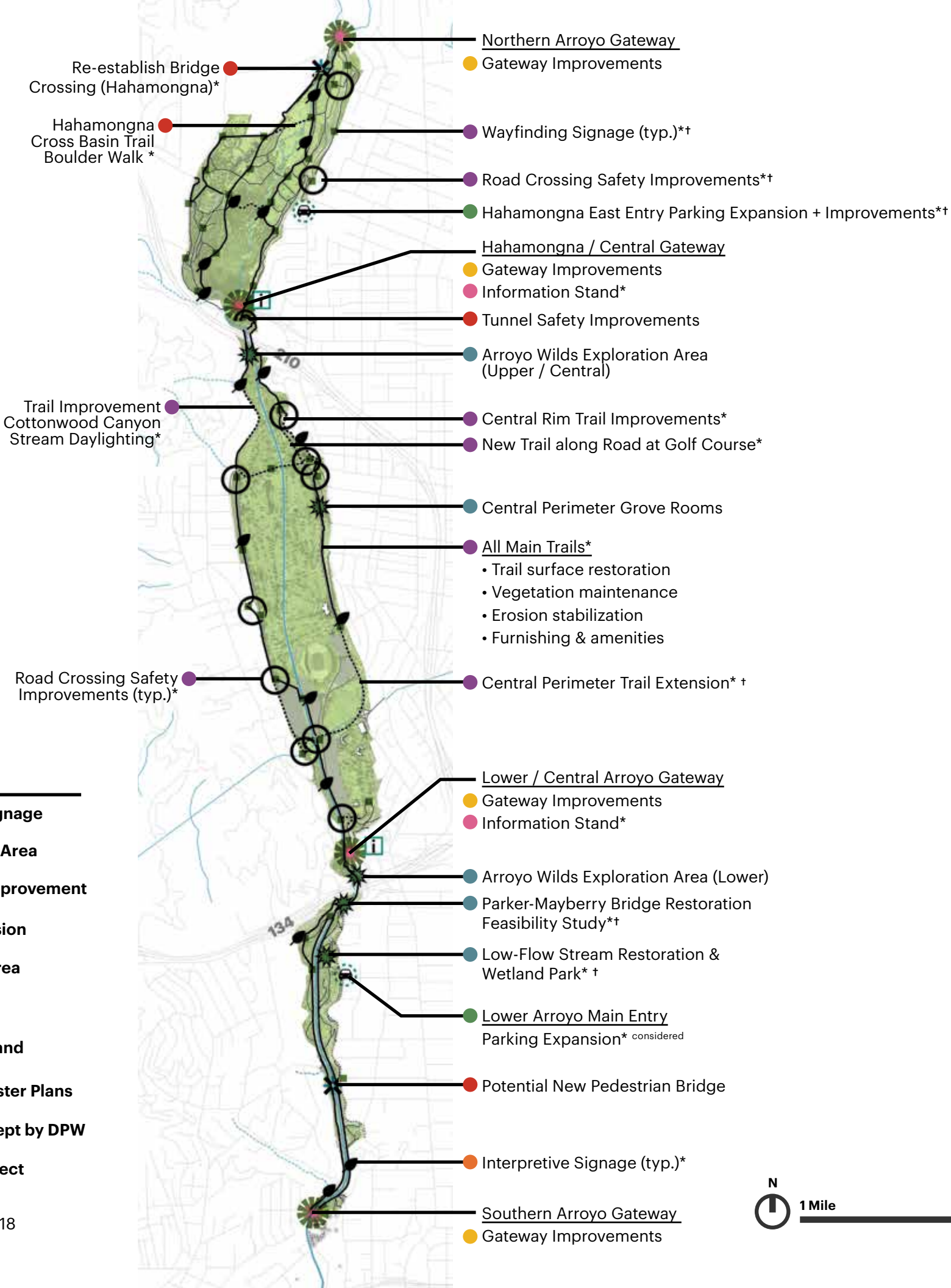
1. Connect









This plan provides the minimum improvements needed to create a unified and connected One Arroyo Trail.

This includes reuniting trail segments; improving safety at road and tunnel crossings; providing wayfinding at trail junctures and entries; adding important new pedestrian bridges; implementing a materials palette that clearly defines the trail and unites the trail segments to each other; and providing interpretive signage at the most significant historical, natural and cultural sites.

Concept Plan Legend

	General Trail Improvements		Interpretive Signage
	New / Improved Segment		Special Arroyo Area
	Trail Wayfinding		Greenstreet Improvement
	Road Crossing Improvement		Parking Expansion
	Tunnel Improvement		New Parking Area
	New Bridge		New Restroom
	Improved Bridge		Information Stand
	Arroyo Gateway		* Aligns with Master Plans
	Main Entry (Special)		† Previous Concept by DPW
	Main Entry (Typical)		° LA County project
	Neighborhood Entry		



Concept Plan Elements
 Trail Connectivity Improvements
 Arroyo Crossings
 Gateways & Entries
 Engagement Opportunities
 Parking
 Restrooms
 Information Stands
 Special Arroyo Areas



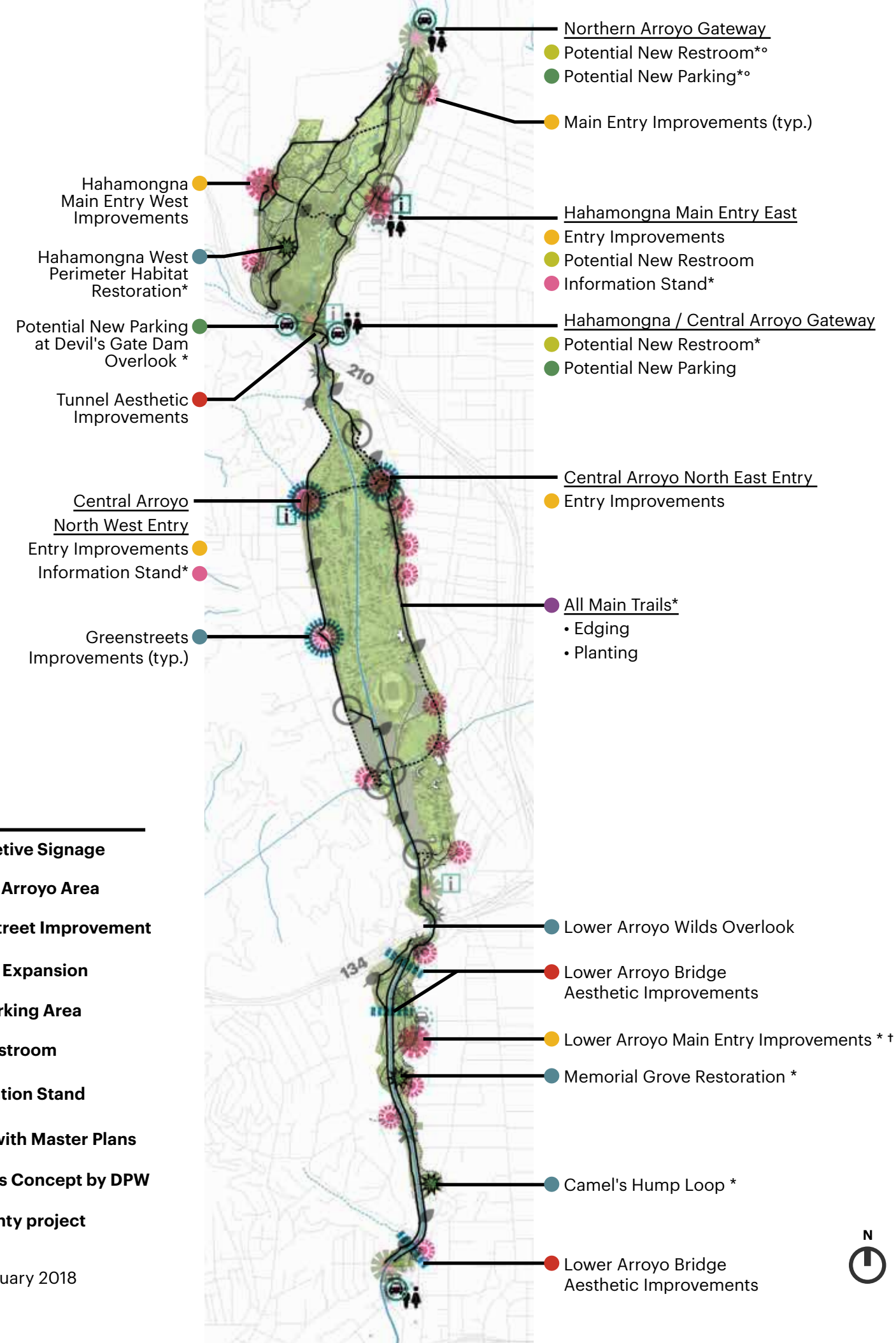
2. Enhance

This plan incorporates improvements that further enhance the user experience along the trails.

This concept posits that a basic unified trail can be further improved with elements that enhance the Arroyo, such as new native trees and vegetation and operational improvements to the trail. This plan not only provides added comfort to trail users, but also provides a dynamic sensorial experience along the trail through diverse and robust textures and colors.

Concept Plan Legend

	General Trail Improvements		Interpretive Signage
	New / Improved Segment		Special Arroyo Area
	Trail Wayfinding		Greenstreet Improvement
	Road Crossing Improvement		Parking Expansion
	Tunnel Improvement		New Parking Area
	New Bridge		New Restroom
	Improved Bridge		Information Stand
	Arroyo Gateway		* Aligns with Master Plans
	Main Entry (Special)		† Previous Concept by DPW
	Main Entry (Typical)		° LA County project
	Neighborhood Entry		



Concept Plan Elements
Trail Connectivity Improvements
Arroyo Crossings
Gateways & Entries
Engagement Opportunities
Parking
Restrooms
Information Stands
Special Arroyo Areas

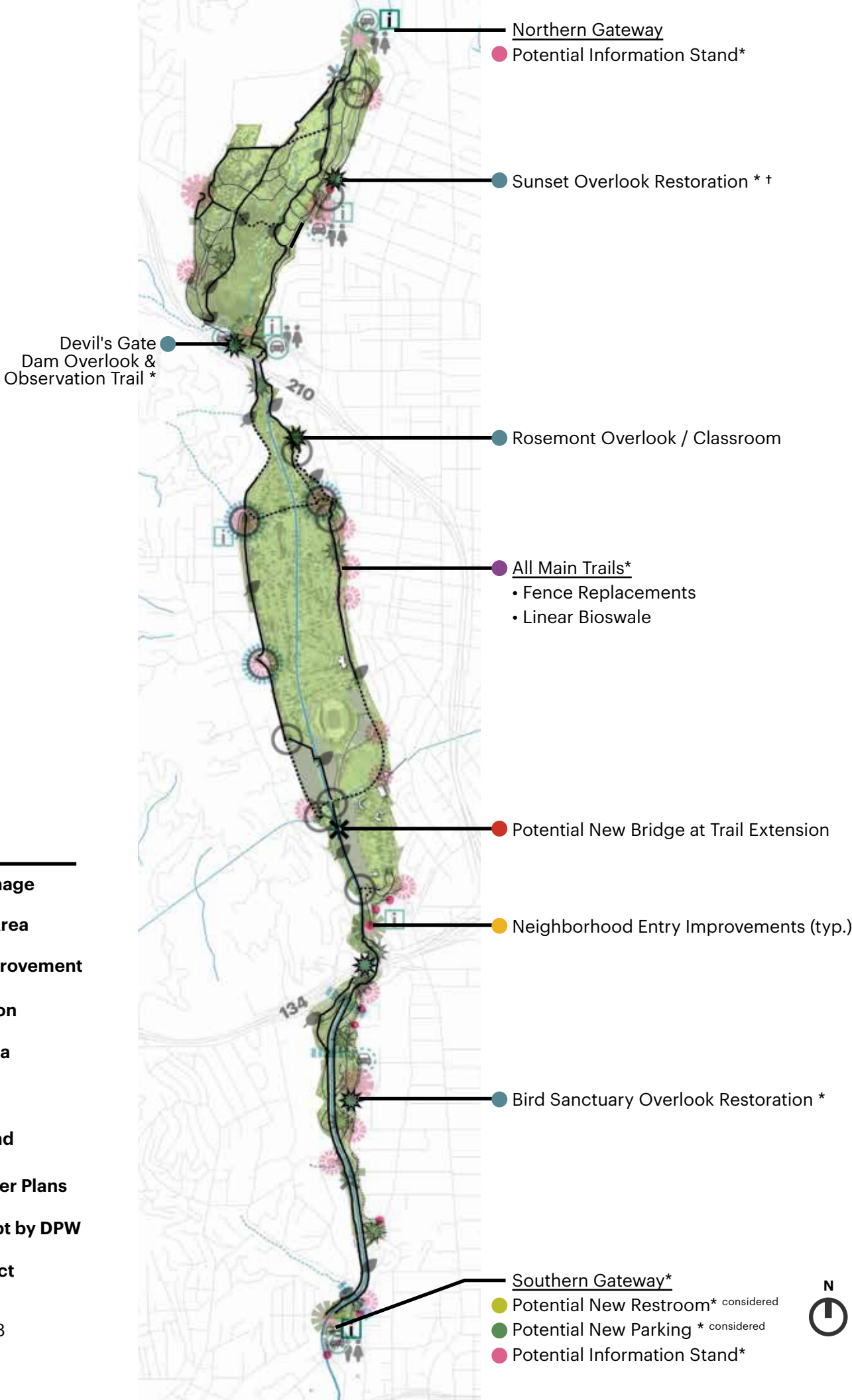
3. Inspire

This plan incorporates additional inspirational design elements that foster a deeper connection to the Arroyo and its larger watershed.

In this third option, a comprehensive "One Arroyo" trail emerges. The trail is not only more easily traversable but more easily understood as a natural and cultural treasure to be explored and to recreate in actively and passively. The design elements proposed here seek to elevate the Arroyo trail into a one-of-a-kind place to experience firsthand the story of the water cycle and the delicate connection between our urban environment and the Arroyo Seco.

Concept Plan Legend

General Trail Improvements	Interpretive Signage
New / Improved Segment	Special Arroyo Area
Trail Wayfinding	Greenstreet Improvement
Road Crossing Improvement	Parking Expansion
Tunnel Improvement	New Parking Area
New Bridge	New Restroom
Improved Bridge	Information Stand
Arroyo Gateway	* Aligns with Master Plans
Main Entry (Special)	† Previous Concept by DPW
Main Entry (Typical)	° LA County project
Neighborhood Entry	



Concept Plan Elements
Trail Connectivity Improvements
Arroyo Crossings
Gateways & Entries
Engagement Opportunities
Parking
Restrooms
Information Stands
Special Arroyo Areas

5

Trail Concept Elements

- Trail Connectivity Improvements
- Arroyo Crossings
- Gateways & Entries
- Special Arroyo Areas
- Engagement
- Parking
- Restrooms
- Information Stands

Trail Connectivity Improvements

Goals →

- Install new trail segments to connect "dead ends"
- Improve existing trails to meet design standards (ex. minimum widths)
- Provide consistent design palette that unites the trails
- Provide shade and comfort amenities
- Improve safety, access, wayfinding
- Increase opportunities for trail loops
- Improve surface drainage and stabilize erosion
- Capture and cleanse stormwater

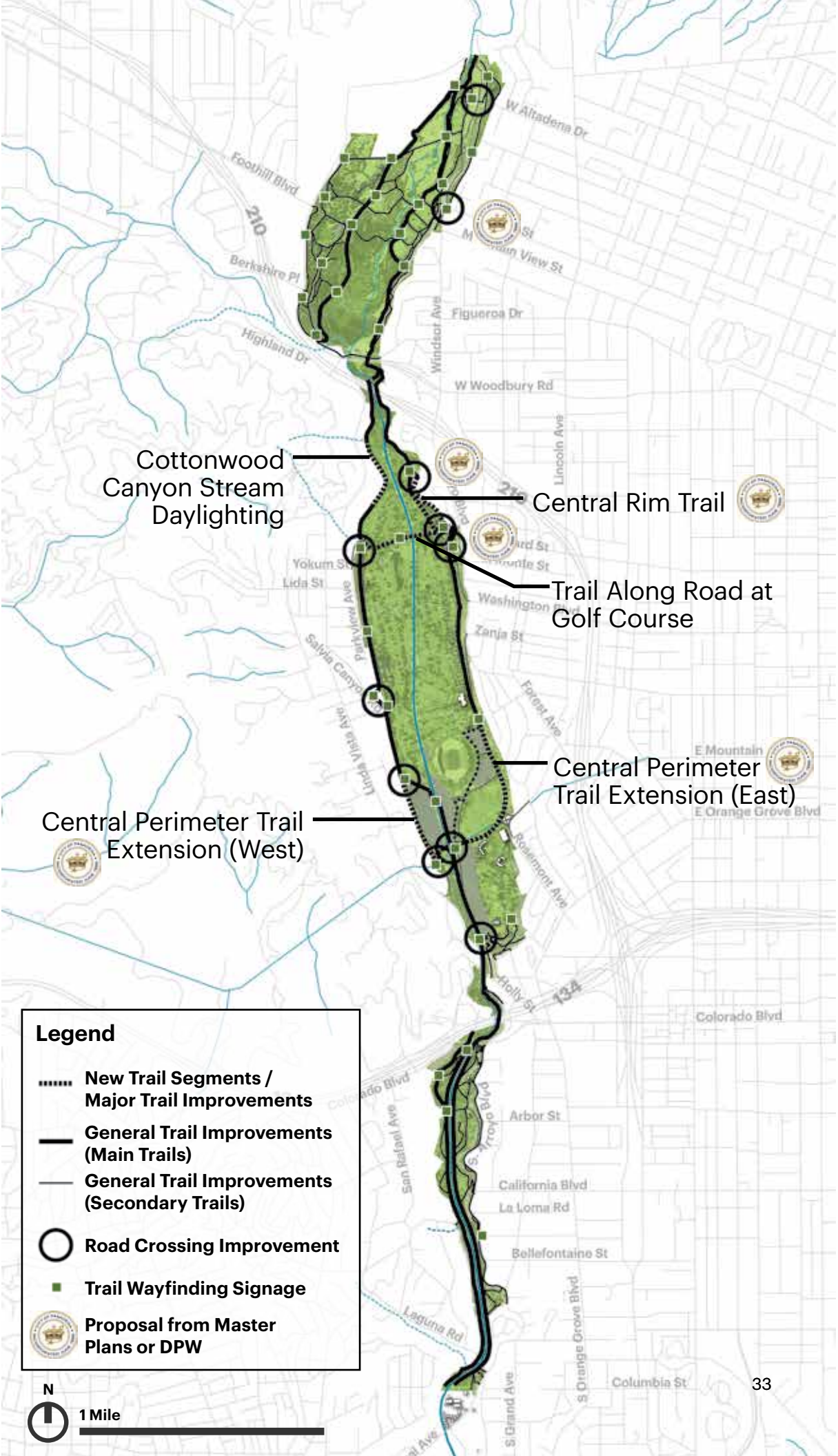
New & Improved Trail Segments

1 Connect:
• Trail Along Road at Golf Course
• Central Perimeter Trail Extension
• Cottonwood Canyon Stream Daylighting
• Central Rim Trail

General Trail Improvements

1 Connect:
• Trail surface restoration
• Road crossings
• Vegetation maintenance
• Erosion stabilization
• Wayfinding signage
• Furnishing & amenities
2 Enhance:
• Edging
• Planting
3 Inspire:
• Fencing replacement
• Linear Stormwater Bioswale

** All of the above trail improvement proposals are in line with the intent of the Master Plans which call for maintaining, restoring or enhancing trail connections throughout the Arroyo both generally and in specific locations. For example of a general improvement, the Lower Arroyo Master Plan states: "Develop standardized trail surfaces and cross-sections" and "Develop signage plus natural trail edge treatments." The specific trail improvements further are in-line with many proposals by the Pasadena DPW.*



Trail Connectivity New Connections

1 Connect



1. Trail along Road at Golf Course

Convert 4' (wide) section of asphalt into new 4' wide unpaved trail

**Traffic engineering analysis required*

***Similar to concept proposed by Pasadena DPW (CIP project 77377)*



1. Trail along Road at Golf Course



Existing condition, Rosemont Ave north of Washington Blvd

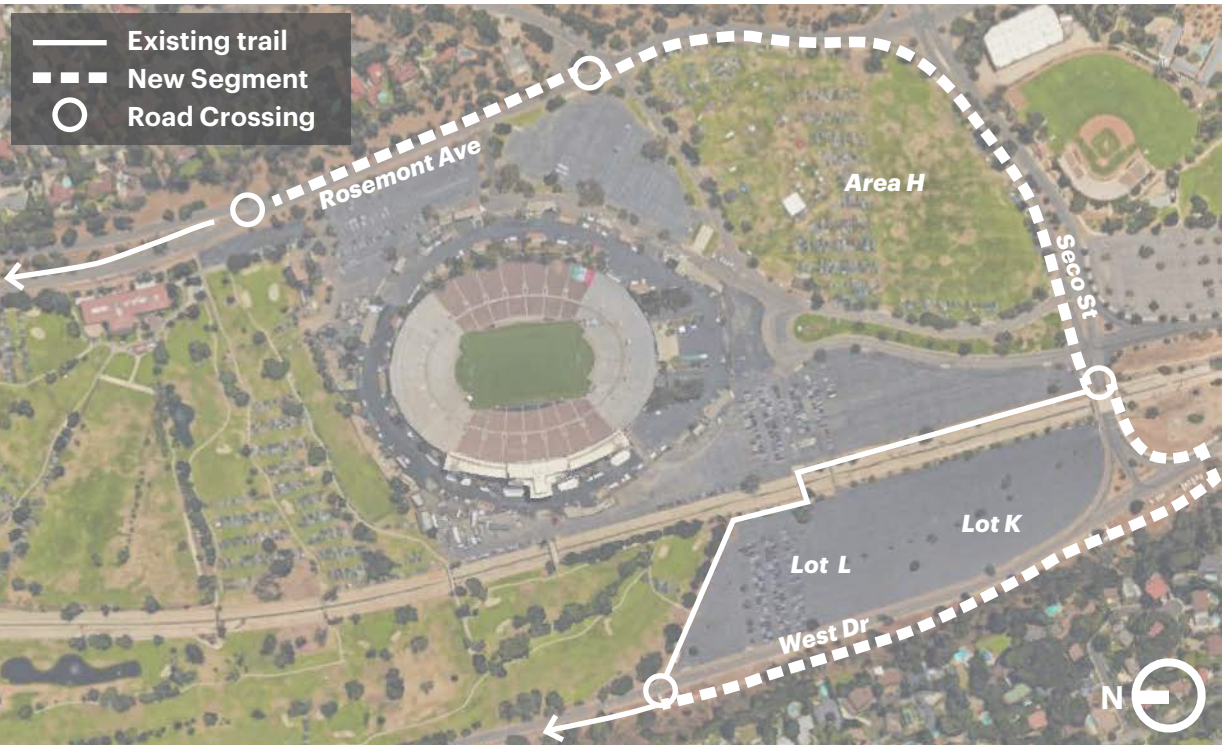


2. Central Perimeter Trail Extension

Convert 4' (wide) section of asphalt and/or turf/dirt into new 4' wide unpaved trail

**Traffic engineering analysis required*

***Similar to concept proposed by Pasadena DPW (CIP project 77380)*



2. Central Perimeter Trail Extension



Existing condition, West Dr near Lot L

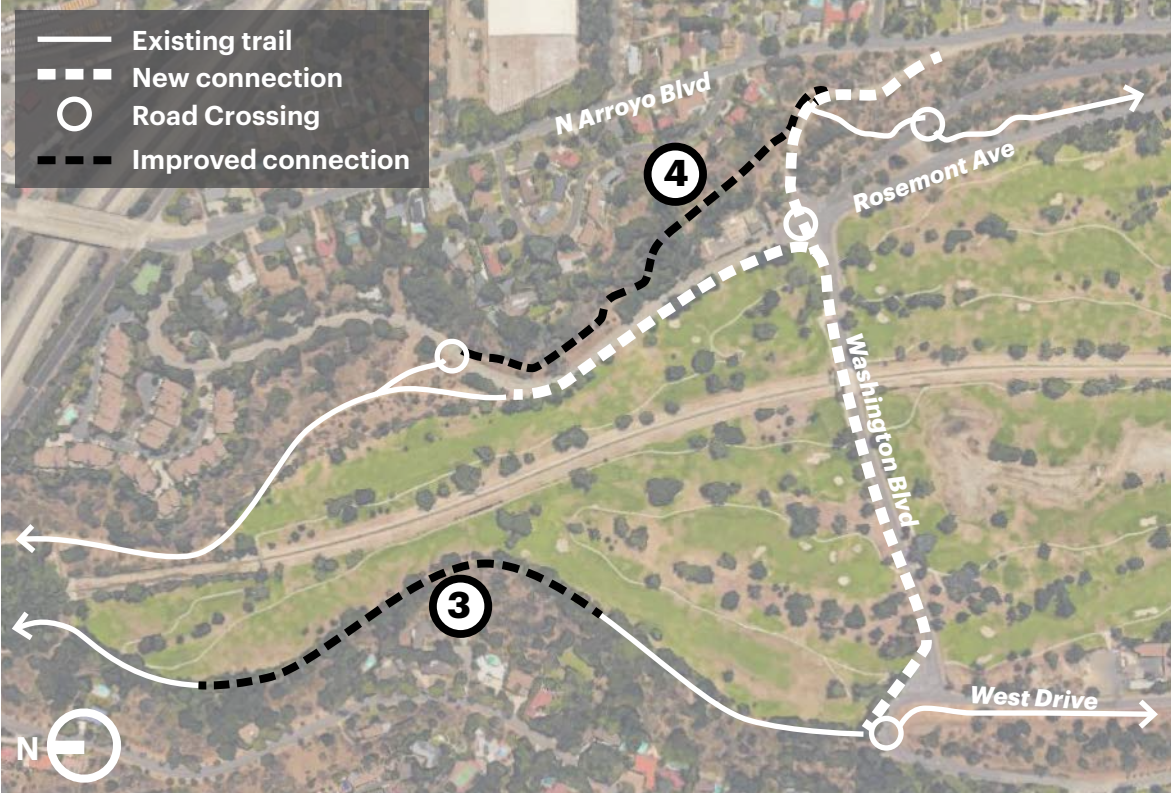
Trail Connectivity Improved Connections

1 Connect

3. Cottonwood Canyon Stream Daylighting

Provide footbridge bridge over stream, shift golf fence 5 feet to east, provide shallow trench along trail

**Civil engineering analysis required*



Plan identifying both trail improvement projects



3. Existing trail inundation at Cottonwood Canyon intersection

4. Central Rim Trail,

Widen trail to 4'-0" min, if feasible, retaining wall and erosion stabilization, wood or cable rail along lower slope

**Geotech report and slope stability analysis required for feasibility*



4. Existing conditions at Central Rim Trail

Trail Connectivity General Trail Improvements

1 Connect



Surface Restoration

Where trail is uneven, eroded or rocky: clear debris, scarify surface, add new aggregate base, add new DG or native material, compact, regrade and pitch at 2% or crown

**Surface improvements per Pasadena DPW specifications*



Existing Trail Surface Conditions

Road Crossings

Where trail crosses a vehicular road, provide:

- Bold color or stripe pattern on asphalt
- Reflectors along crossing
- Signage for trail users and for approaching cars

**Traffic Analysis recommended*



Existing Trail Road Crossing

Trail Connectivity General Trail Improvements

1 Connect

Vegetation Maintenance

Vegetation maintenance & clearing where vegetation is growing over trail or debris is dense.



Existing Conditions



Erosion Stabilization

For adjacent deteriorated slopes, slope repairs include:

- Remove and re-compact surficial slope erosion (assume 10SF of repair/LF of trail repaired)
- Install jute mat stabilization
- Vegetate with native ground cover, hydroseed



Existing Conditions



Trail Connectivity General Trail Improvements

1 Connect

Wayfinding Signage

Along trails provide signage posts that indicate direction of trail and park orientation.

**Concept includes designs proposed by DPW Master Sign Plan. Further design required for exact quantities and locations.*



Major Sign



Secondary Sign



Minor Sign



**Signage examples to the left were developed by Pasadena DPW's Master Sign Plan*

Furnishing & Amenities

Along the trails, provide comfort amenities for all user types. Cost includes:

- Seat elements every 1/2 mile (50)
- Trash receptacles every 1 mile (25)
- Dog waste stations every 1 mile (25)
- Drinking fountains near mainline (12)

**Further design required for exact quantities, specifications and locations.*



Seat Boulder



Trash Receptacle



Drinking Fountain



Dog Waste Station

Trail Connectivity General Trail Improvements

2 Enhance

Edging

- Log edge on both sides of trail, along main trail segments
- Log edge on one side at narrow sections of main trail
- Elevated log at trails adjacent to vehicular roads

**Further design required for exact quantities and locations.*



Log edge, both sides (existing)



Log edge, one side (existing)



Elevated Log edge

Planting

- Shade trees (24" box)
- Shrubs where planting is sparse or lacking (3'-5' tall, 5'-15' on either side of trail)
- Vines, add 2' planted area for vines along golf course fence

**Further design required for exact quantities and locations.*



Shade trees



Ecologically appropriate understory planting - with varied textures, colors, smells, seasonal interest



Trail Connectivity General Trail Improvements

3 Inspire

Fencing Replacement

Replacing existing chainlink fence along channel and golf course with either Omega-type fence or wood "post and rail" type fence

**Further design required for exact quantities and locations.*

***Coordination with LA County Flood Control and/or US Army Corps of Engineers required for fence replacement along channel*



Omega Mesh Fence



"Post and Rail" Fence

Linear Stormwater Bioswale

Install a vegetated bioswale one side of trail along key segments to assist with stormwater management as well as improve aesthetic of the trail.

**Further design required for exact quantities and locations.*

***Potential funding available for Stormwater-related design improvements*



Linear Stormwater Bioswale along trail edge



Trail Connectivity General Trail Improvements: Visualization

Typical Hahamongna Existing Trail Conditions

- Uneven surface
- Eroded slope
- Lack of seating, water, trash
- Lack of wayfinding
- Lack of shade trees and understory planting
- Lack of edging



Photograph of existing conditions

Trail Connectivity General Trail Improvements: Visualization

1 Connect

- Trail surface restoration
- Road crossings
- Vegetation maintenance
- Erosion stabilization
- Furnishing & amenities
- Wayfinding signage



Artist rendered interpretation of improvements included in design cost estimate for 1 Connect

Trail Connectivity General Trail Improvements: Visualization

1 Connect

- Trail surface restoration
- Road crossings
- Vegetation maintenance
- Erosion stabilization
- Furnishing & amenities
- Wayfinding signage

2 Enhance

- Edging
- Planting

3 Inspire

- Fencing replacement
- Stormwater Bioswale

There are no improvements included for 3 Inspire in this location.



Artist rendered interpretation of improvements included in design cost estimate for 2 Enhance

Trail Connectivity General Trail Improvements: Visualization

Typical Lower Arroyo Existing Trail Conditions

- Rocky / uneven surface
- Lack of seating, water, trash
- Lack of wayfinding
- Lack of shade trees
- Lack of edging
- Existing chain-link fencing is unattractive and not consistent with the Natural Preservation Area designation of the Lower Arroyo (from master plan)
- Potential to collect stormwater before releasing back to channel

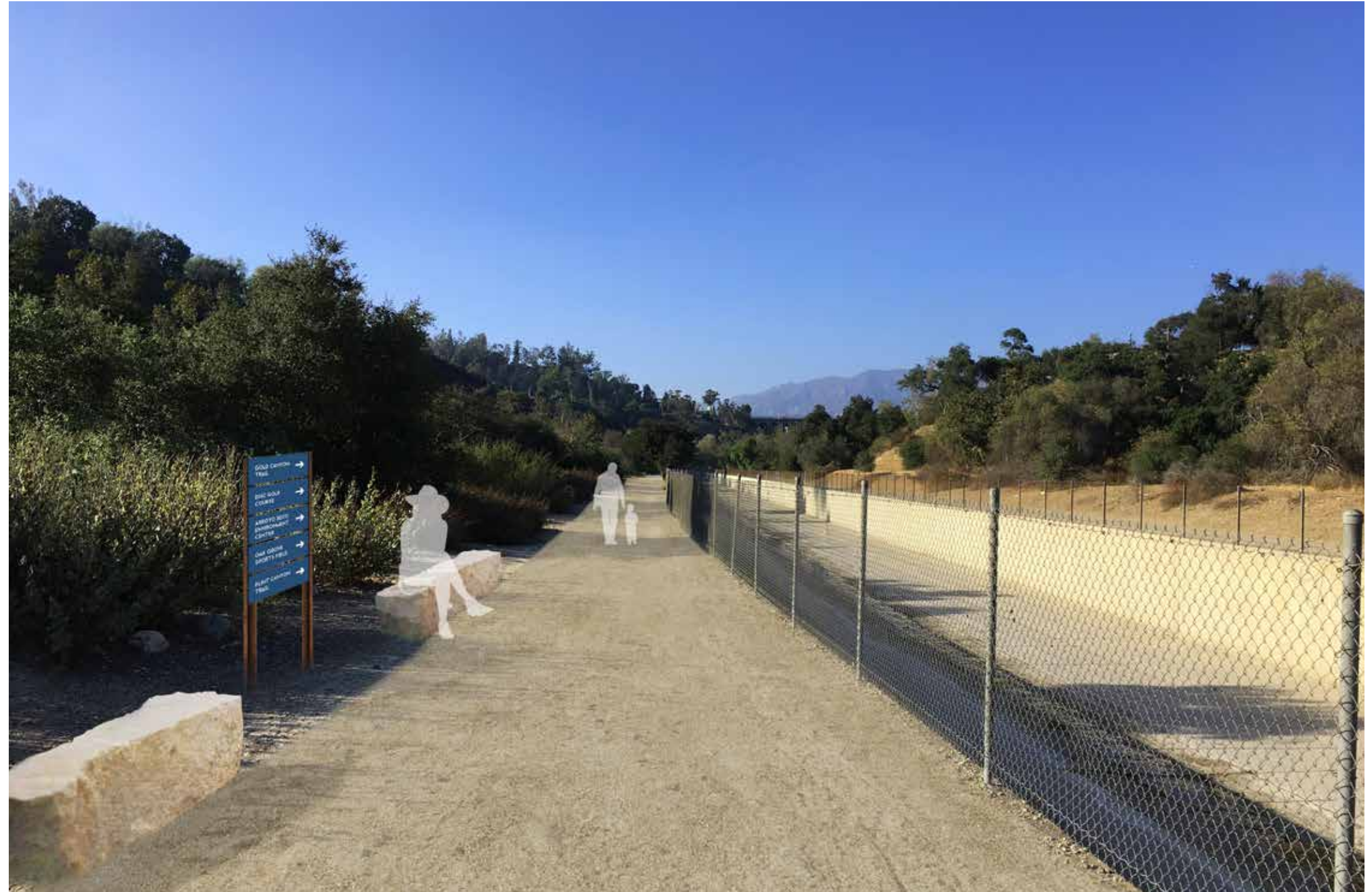


Photograph of existing conditions along the Lower Arroyo Channel

Trail Connectivity General Trail Improvements: Visualization

1 Connect

- Trail surface restoration
- Road crossings
- Vegetation maintenance
- Erosion stabilization
- Furnishing & amenities
- Wayfinding signage



Artist rendered interpretation of improvements included in design cost estimate for 1 Connect

Trail Connectivity General Trail Improvements: Visualization

1 Connect

- Trail surface restoration
- Road crossings
- Vegetation maintenance
- Erosion stabilization
- Furnishing & amenities
- Wayfinding signage

2 Enhance

- Edging
- Planting



Artist rendered interpretation of improvements included in design cost estimate for 2 Enhance

Trail Connectivity General Trail Improvements: Visualization

1 Connect

- Trail surface restoration
- Road crossings
- Vegetation maintenance
- Erosion stabilization
- Furnishing & amenities
- Wayfinding signage

2 Enhance

- Edging
- Planting

3 Inspire

- Fencing replacement
- Stormwater Bioswale



Artist rendered interpretation of improvements included in design cost estimate for 3 Inspire. Notice the stormwater bioswale on the left enhancing the sustainability of the trail, as well as contributing to the Arroyo Seco's Watershed story.

*Coordination with County of Los Angeles required

Arroyo Crossings

Goals → Bridges

- Improve trail connectivity across Arroyo
- Provide crossings at critical gaps to enable more loop walks
- Upgrade existing bridge aesthetics to be consistent with Arroyo Trail design standards
- Re-open Parker-Mayberry Bridge as a crossing and special overlook (see *Special Arroyo Areas*)
- Provide small-scale footbridges at soft bottom areas to promote nature exploration (see *Special Arroyo Areas & Demonstration Projects*)

1 Connect:
• Proposed new bridge Lower Arroyo
• Re-establish bridge in Hahamongna*
2 Enhance:
• Aesthetic Improvements to existing bridges (x3)
3 Inspire:
• Propsoed new bridge Central Arroyo

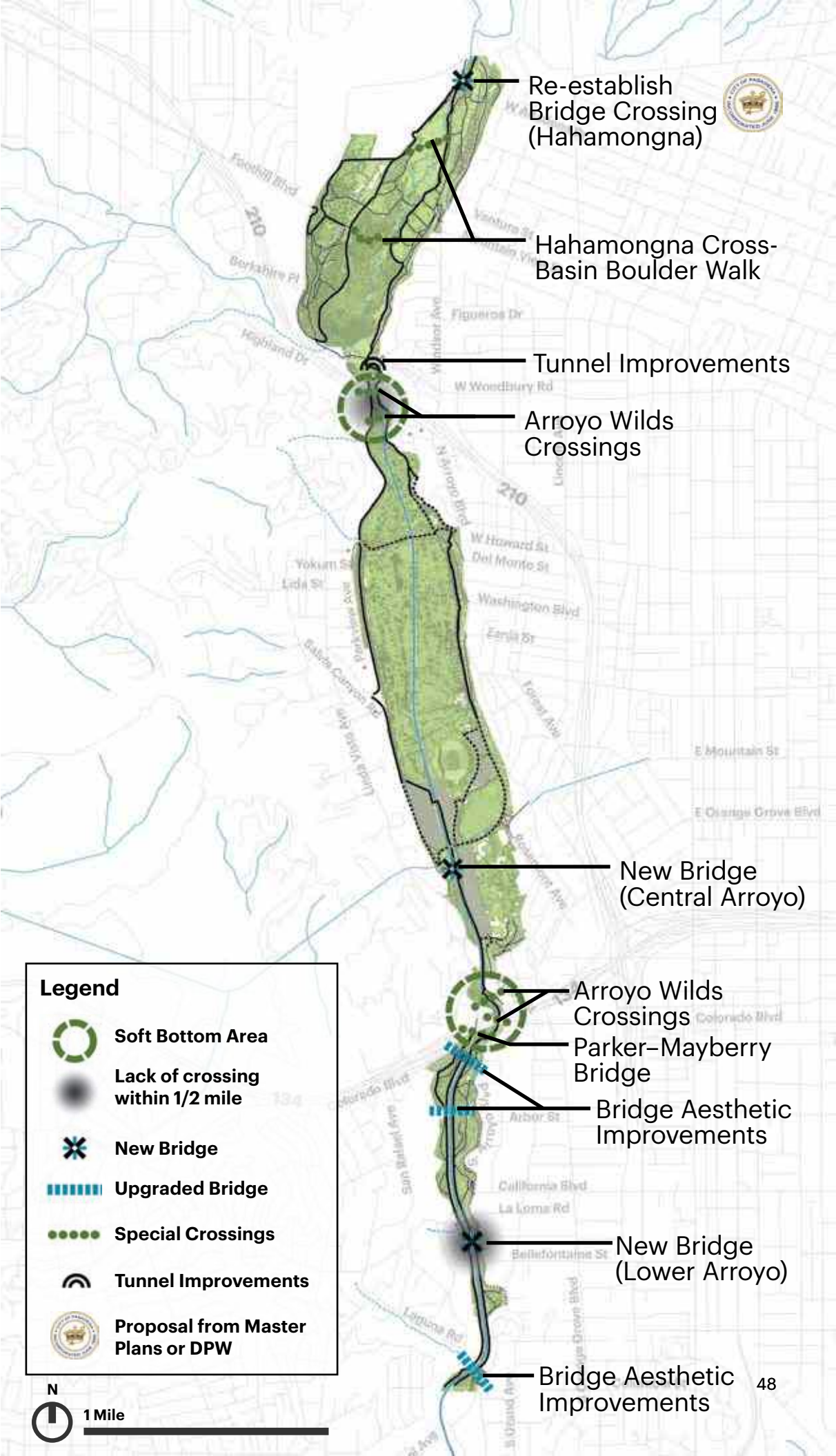
Tunnel

1 Connect:
• Safety Improvements
2 Enhance:
• Aesthetic Improvements
3 Inspire:
• Interpretive Element

Special Crossings

1 Connect:
• Hahamongna Cross-Basin Boulder Walk
• Arroyo Wilds Footbridges
• Parker-Mayberry Bridge*

*Recommendation from 2003 Master Plans
**Item may require amendments to Master Plans and/or municipal Code



Arroyo Crossings - Bridges

New pedestrian bridges should match standard for newer Arroyo bridges



Flint Wash Bridge - style to be matched



Rose Bowl Crossing - style to be matched

Improved bridges: remove chainlink, install new metal guardrail, install wood decking



Lower Arroyo South Crossing



Archery/Casting Pond Crossing



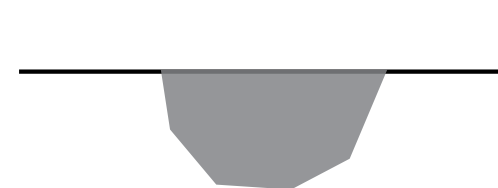
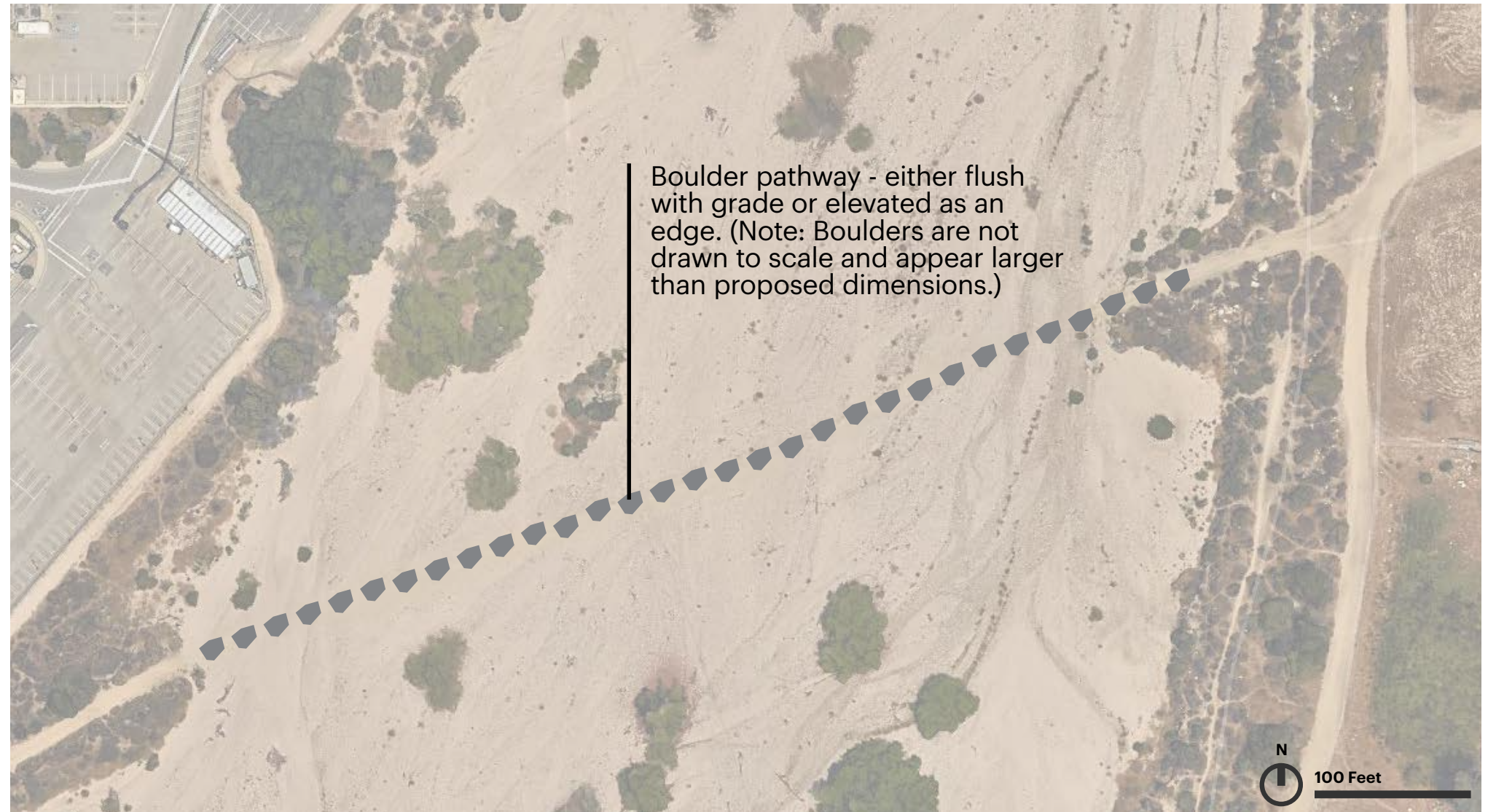
Lower Arroyo North Crossing

Arroyo Crossings - Special Crossings

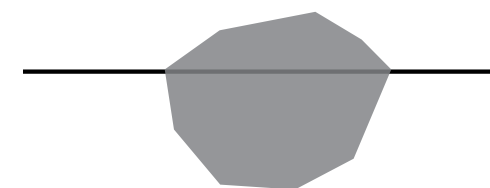
Hahamongna Cross Basin Boulder Walk

- This concept goal is to provide a designated path across the basin that will withstand annual flooding without additional maintenance and without impeding hydrology.
- The concept entails embedding large boulders (approx. 3'x3' nominal surface area) deeply below grade to stabilize them from flooding.
- Boulder top surface can be flush with grade as a walking surface or above grade to serve as an edge delineation.

**Civil engineering and/or hydrological analysis required*



Alt 1: Boulder flush with grade as trail surface



Alt 2: Boulder above grade as trail edge delineation

Arroyo Crossings - Tunnel

Tunnel at Devil's Gate Dam

- 1 Connect:
- Improve safety
- Regrade / repave
 - Upgrade lighting
 - Add safety mirrors
 - Wayfinding

- 2 Enhance:
- Improve aesthetics
- Replace chainlink
 - Paint walls with anti-graffiti paint

- 3 Inspire:
- Interpretive Element
- Artistic ceiling element with special lighting



Tunnel Exterior North



Tunnel Interior facing South



Tunnel Exterior South



Reflective ceiling installation example



Lighting example



Lighting example

Gateways & Entries

Goals → Gateways (4 locations)

- All entries and gateways should have a consistent design vernacular and materials palette
- Entries and Gateways should have prominence and should welcome the visitor with design elements and wayfinding signage

1 Connect:
• Wayfinding & Interpretive Signage
• Entry Grove Seating Area
• Gateway Element / Landmark

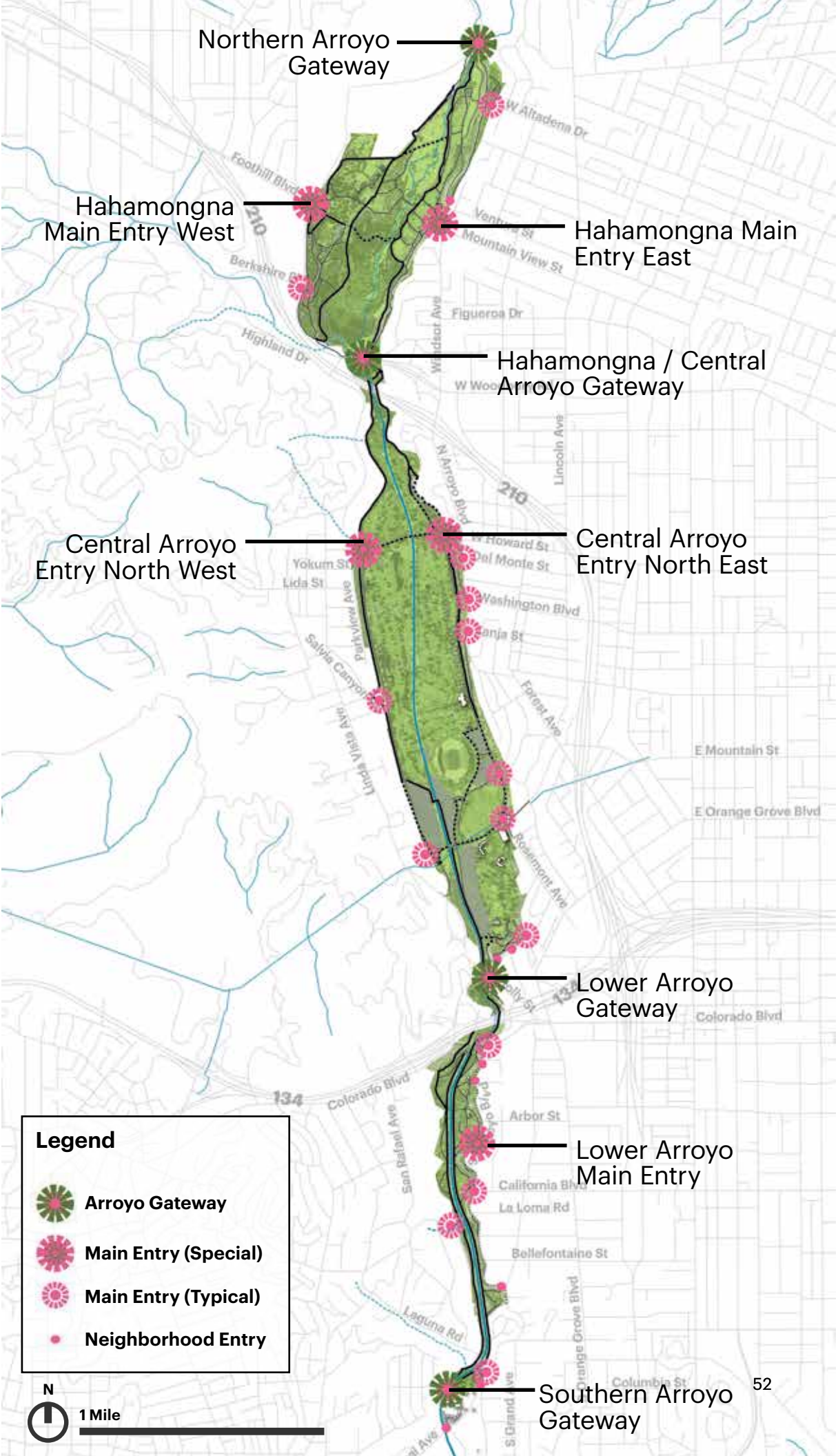
Main Entries (18 locations)

1 Connect:
• Wayfinding signage top/bottom
• Amenities (seating, trash, bike racks)
2 Enhance:
• Shade trees
• Entry Landscaping
3 Inspire:
• Gateway Element / Landmark

Neighborhood Entries (8 locations)

1 Connect:
• Wayfinding signage top/bottom
2 Enhance:
• Amenities (seating, trash, bike racks)
3 Inspire:
• Landmark

**Recommendation from 2003 Master Plans*
***Item may require amendments to Master Plans and/or municipal Code*



Gateways & Entries

Gateways (4 total)

1 Connect:

- Entry grove with seating, special landscaping, shade trees, trash & bike racks
- Wayfinding & interpretive signage
- Gateway landmark ideally tall enough to be visible from Arroyo Blvd and prominent to serve as a visual and physical draw



Gateway Landmark example



Gateways & Entries

Main Entries (18 total)

1 Connect:

- Wayfinding & interpretive signage at top and bottom of feeder trail
- Small seating area with trash and bike racks

2 Enhance:

- Enhanced entry landscaping including shade trees, understory planting, DG, sculptural boulders (4 locations only)

3 Inspire:

- Entry Element / medium landmark at top and bottom of trail



Entry Element / Medium Landmark example



Gateways & Entries

Neighborhood Entries (8 total)

1 Connect:

- Wayfinding & interpretive signage at top and bottom of feeder trail

2 Enhance:

- Small seating area with trash receptacles and bike racks

3 Inspire:

- Small landmark at top and bottom of trail



Small landmark example - stone with inscription

Engagement

Goals → Special Engagement Projects

Enable the trail to be a living lab allowing for better understanding of natural elements, water infrastructure, roadway infrastructure, cultural and historical elements at points of interest along the trail

1 Connect:
• Simple interpretive signage
2 Enhance:
• Special Interactive Installation
3 Inspire:
• Interactive Digital app



Engagement

1 Connect: Interpretive signage



- Simple interactive signage at key educational points along the trail
- Estimate assumes 15 locations
- See map on previous page for suggested locations and subject matter



*Signage examples above were developed by Pasadena DPW's Master Sign Plan

2 Enhance: Interactive Installation



- Special interactive installation focused on one particular educational issue (eg. flood levels in Hahamongna)
- Cost estimate assumes wood or metal posts with information embedded
- Estimate assumes 10 pieces

3 Inspire: Digital Interaction



- Interactive digital guide app or augmented reality app
- Estimate is based on research related to typical rates by freelancers vs design firms
- Estimate assumes work conducted by an expert freelancer

Parking, Restrooms & Information Stands

Goals →

- Minimize impact on surrounding neighborhoods by expanding existing parking areas currently experiencing high demand
- Protect neighborhoods by providing new parking facilities in under-served areas
- Enhance existing parking areas to meet naturalistic design standards
- Provide more frequent restrooms to trail users
- Provide Information and concessions for trail users

Parking

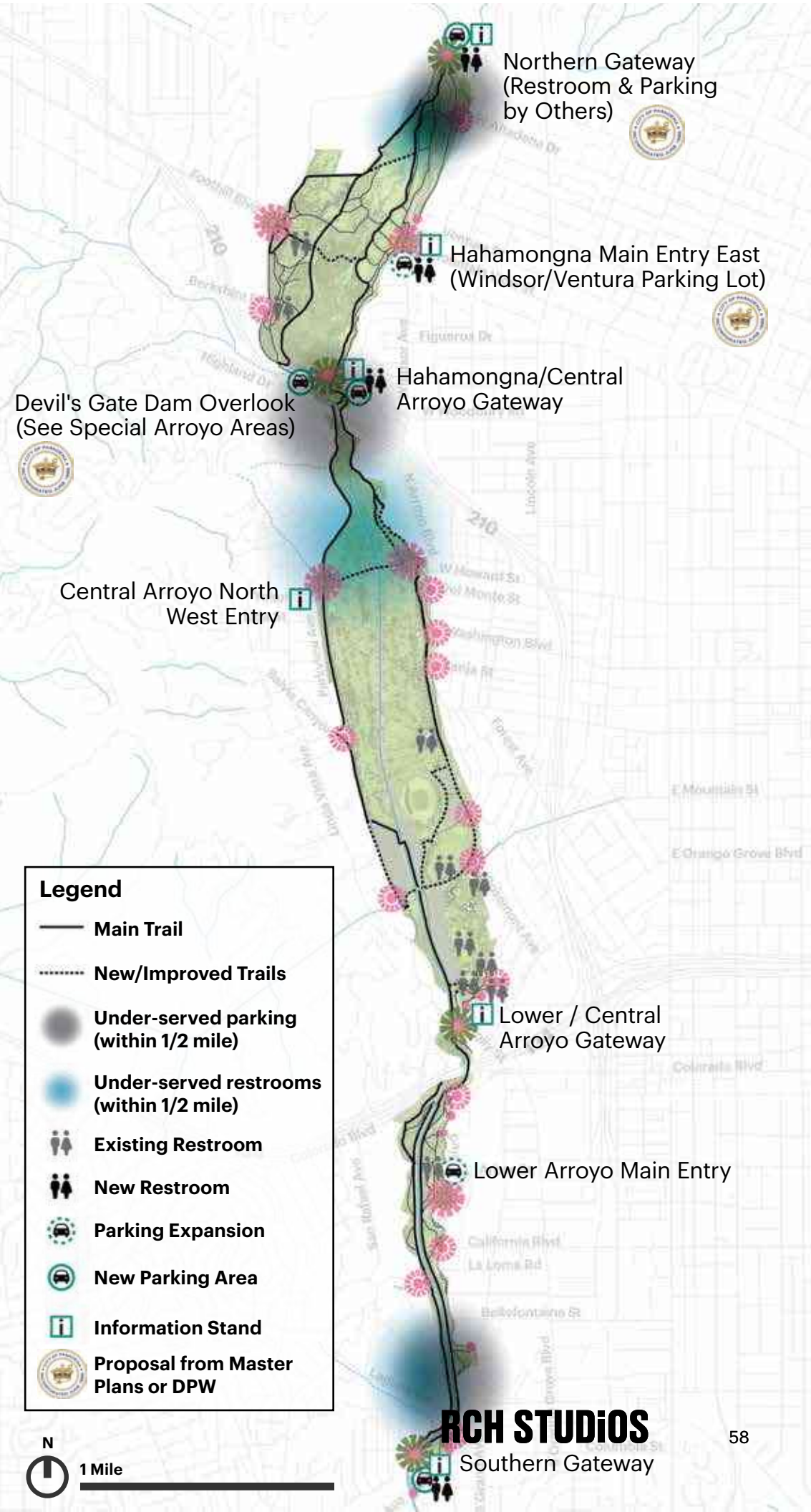
1 Connect:
• Hahamongna East Parking (Windsor) - expansion & improvements
• Lower Arroyo Parking - expansion
2 Enhance:
• Hahamongna / Central Arroyo Entry
• Devil's Gate Dam Observation Area
• Southern Gateway

Restrooms

2 Enhance:
• Southern Gateway
• Hahamongna / Central Arroyo Entry
• Hahamongna East Entry (Windsor)

Information Stands

1 Connect:
• Lower / Central Arroyo Gateway
• Hahamongna / Central Arroyo Gateway
2 Enhance:
• Central Arroyo North West Entry
• Hahamongna East Entry (Windsor)
3 Inspire:
• Northern Gateway
• Southern Gateway



Parking, Restrooms & Information Stands

Parking

1 Connect:

- Hahamongna East Parking Expansion & Improvements (per DPW plans)
- Lower Arroyo Parking - expansion (could be integrated into Wetland Park, see Special Areas)

2 Enhance:

- New parking at Hahamongna / Central Arroyo Entry
- New Parking at Devil's Gate Dam Observation Area (Per Master Plan)
- New Parking at Southern Gateway*

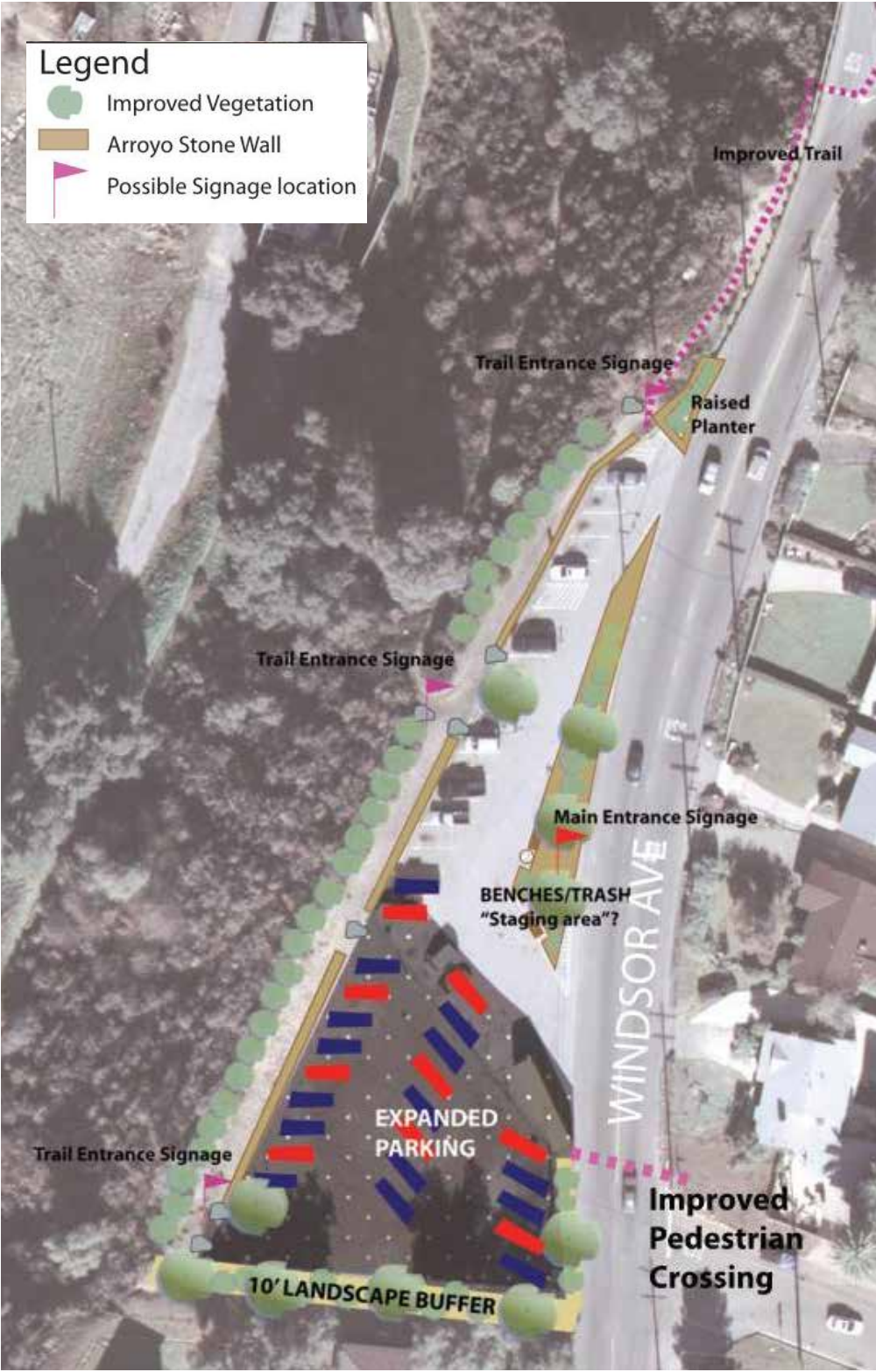
*This element may require amendments to Master Plans and/or municipal code



Lower Arroyo Parking Area (Existing Conditions)



Hahamongna East Parking (Existing Conditions)



Hahamongna East Parking Expansion & Improvements, Concept Plan by Pasadena DPW

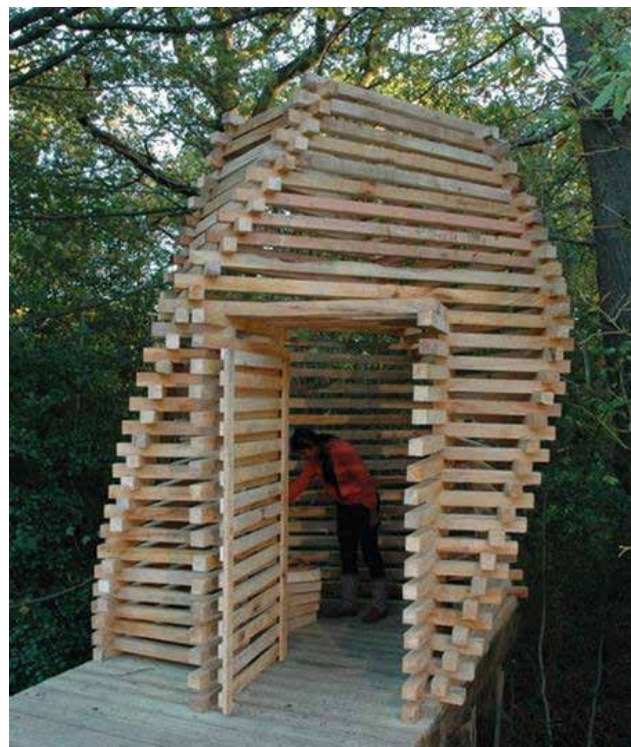


Parking, Restrooms & Information Stands

Restrooms

- Freestanding public restroom with 2 unisex stalls and 1 external sink,
- 3 facilities proposed at gateways/main entries in under-served areas
- Restroom design should be natural, "light on the land," and blend into the environment to the extent possible
- Potential for restroom design to double as a special gateway element / landmark or part of "One Arroyo" brand
- Restrooms can be either permanently fixed or freestanding / movable

**This element may require amendments to Master Plans and/or municipal code*



Example of natural design outdoor restrooms

Parking, Restrooms & Information Stands

Information Stands

- Interpretation of the "Kiosk" idea proposed in the Master plans
- Small temporary / movable shed with lockable doors and information / vending window (assume 200 SF max)
- Potential to provide trail guides, volunteer and Arroyo events information, "One Arroyo" hiking gear (hats, walking sticks, water bottles), trail snacks and beverages, etc.
- This can also serve as a storage area for maintenance crew

**This element may require amendments to Master Plans and/or municipal code*



Trails Cafe at Griffith Park, example for information stand



Free-standing (non-permanent) garden sheds, example for information stand

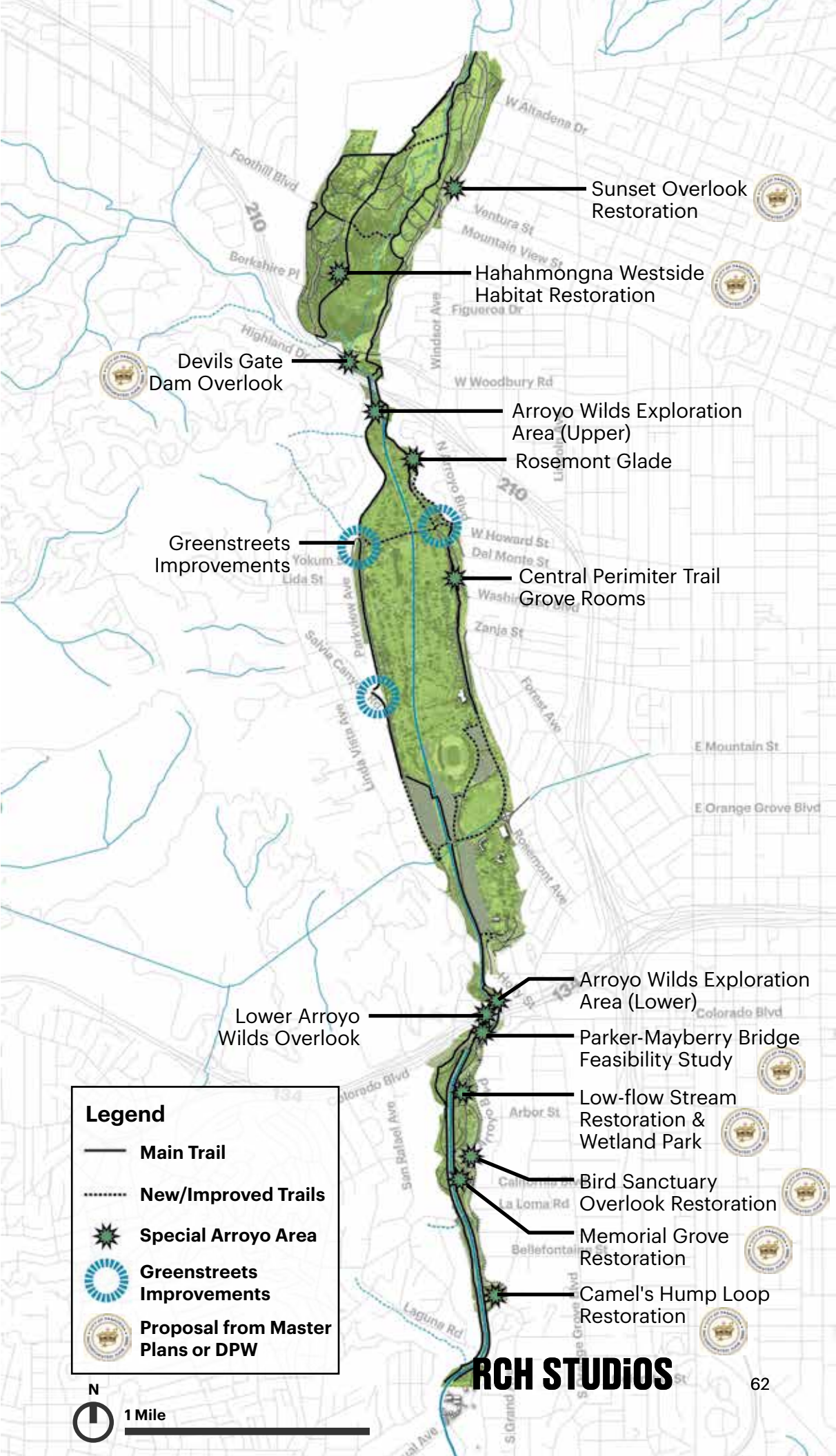
Special Arroyo Areas

Goals → Special Arroyo Area Projects

- Improve existing overlooks and provide new overlooks to frame additional birds eye views of the Arroyo
- Provide small natural "classrooms" at key points of interest along the trail to serve as places for students and community groups for educational gatherings
- Create opportunities for enhanced natural and culturally-based engagement and exploration to foster memories and lasting connections with the Arroyo

1 Connect:
• Parker-Mayberry Bridge Feasibility Study*
• Arroyo Wilds Exploration Areas (x2)
• Low-Flow Stream Restoration & Wetland Park*
• Central Perimeter Grove Rooms**
2 Enhance:
• Memorial Grove Restoration*
• Camel's Hump Loop Trail Restoration*
• Hahamongna Westside Habitat Restoration*
• Greenstreets Improvements
3 Inspire:
• Lower Arroyo Wilds Overlook**
• Rosemont Glade**
• Bird Sanctuary Overlook Restoration*
• Sunset Overlook Restoration*
• Devil's Gate Dam Overlook*

*Recommendation from 2003 Master Plans
**Item may require amendments to Master Plans and/or municipal code



Special Arroyo Areas

Parker-Mayberry Bridge Feasibility Study*

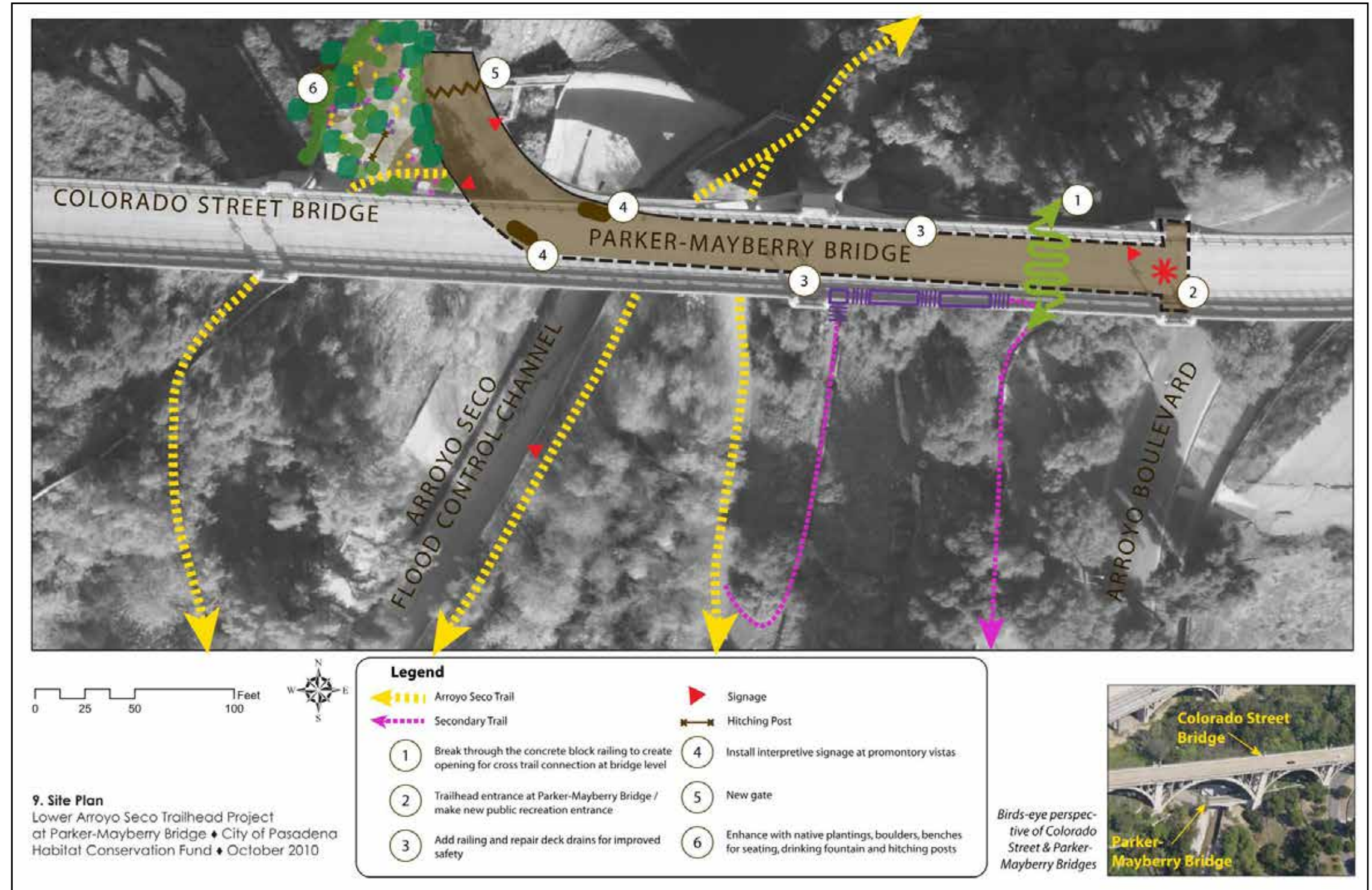


The opening of the Parker Mayberry Bridge would improve trail connectivity and provide a new public recreational area with a scenic overlook and educational interpretation. This project was identified in the Master Plans and was advanced into conceptual design by the Pasadena DPW in 2011.

Major elements:

- Removable bollards to replace gate
- Openings in parapet wall for trail access
- Raise bridge edges to code height
- Interpretive and directional signage
- Amenities (seating, water, trash, bike racks, horse hitching posts and water trough)

***Due to unknown structural issues, this project cannot be cost estimated until a feasibility study is conducted.**



Parker-Mayberry Bridge Conceptual Plan, by Pasadena DPW, 2011

Special Arroyo Areas

Arroyo Wilds Exploration Areas (x2)

The Arroyo Wilds are unique areas for nature exploration within the two soft bottom areas in the Arroyo. Many informal trails exist within these areas, indicating a desire to explore these areas and get close to the water.

In order to promote nature exploration and education, and minimize people from going off trails, this project proposes to formalize the existing informal trails into an Arroyo Wilds Exploration Loop. This entails light brush clearing and minimal surface improvements. The project also proposes installing small, natural material, pedestrian-only footbridges across the stream to get visitors as close to the water as possible.

Major components:

- Light brush clearing and minimal surface improvements
- Seating elements
- Interpretive signs
- Small footbridges

Note: Upper Arroyo Wilds not shown, but similar in scope



Lower Arroyo Wilds Exploration Loop (Upper Arroyo Wilds not shown, but similar in scope)



Small footbridges made of natural materials

Special Arroyo Areas

Low-Flow Stream Restoration / Lower Arroyo Wetland Park



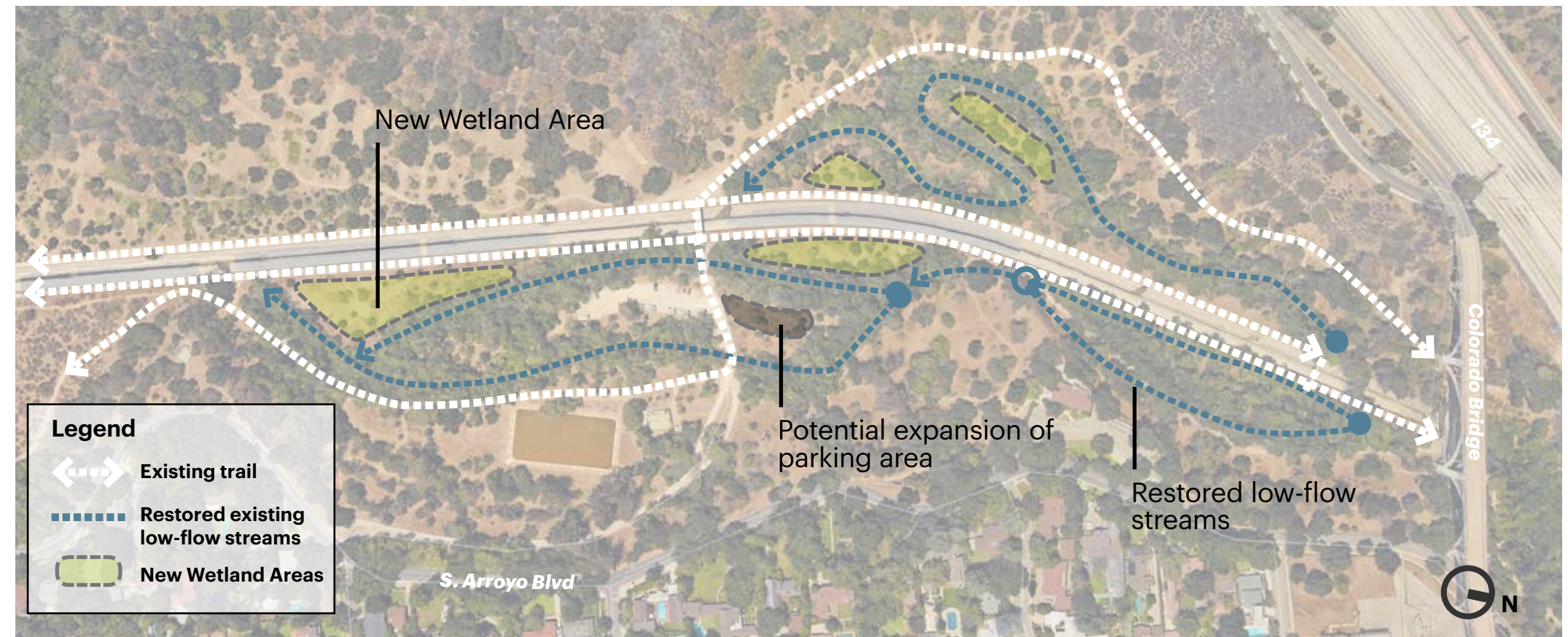
In the 1990s the Low Flow Stream Restoration project diverted water from the channel into constructed "tributaries" to emulate the pre-channelized hydrology and ecology of the Arroyo Seco.

An opportunity exists to expand and improve the function of these low flow streams to include ephemeral wetland areas adjacent to and integrated with the existing low flow streams, possibly integrating the existing casting pond area into such a system. Beyond diverting stream water, this wetland system could accommodate, treat and infiltrate stormwater runoff from the adjacent streets.

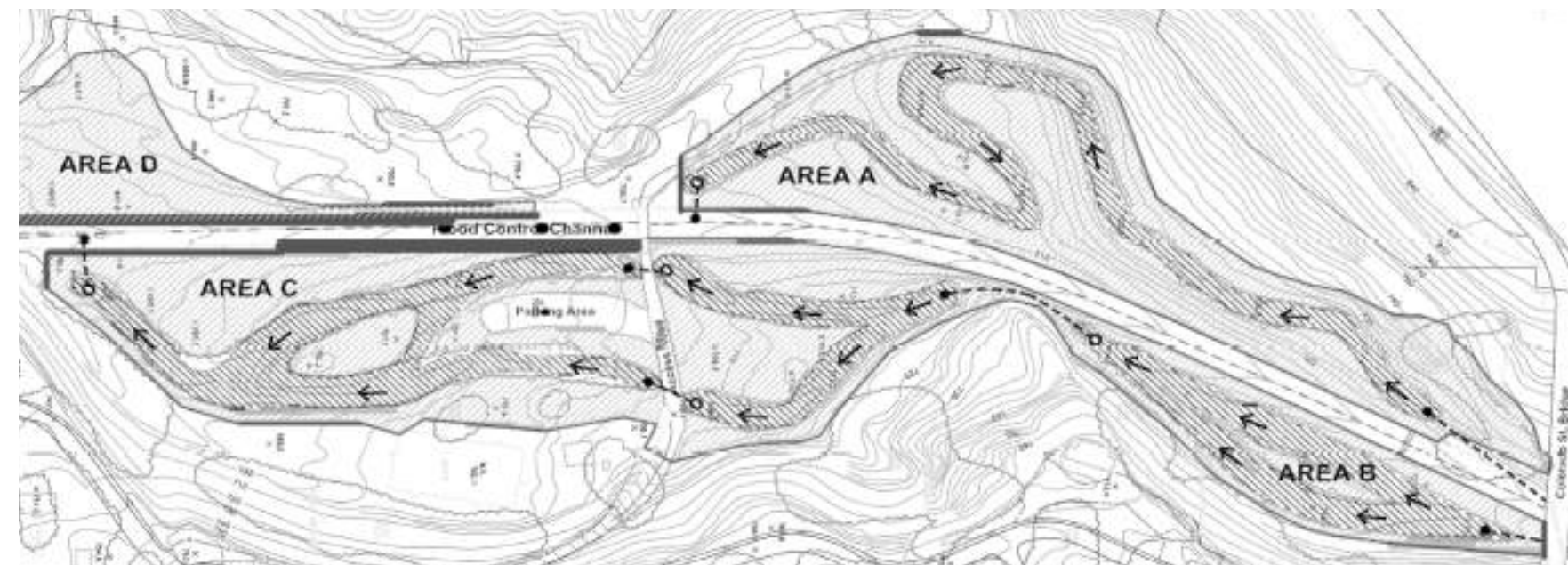
These areas would be multibenefit: habitat creation, urban runoff quality management, recreational and educational.

Major components:

- Forebay/treatment areas
- Multiple hydraulically-connected, wetland cells
- Riparian planting
- Interpretive signage
- Outdoor classroom seating



Low-Flow Stream Restoration / Lower Arroyo Wetland Park

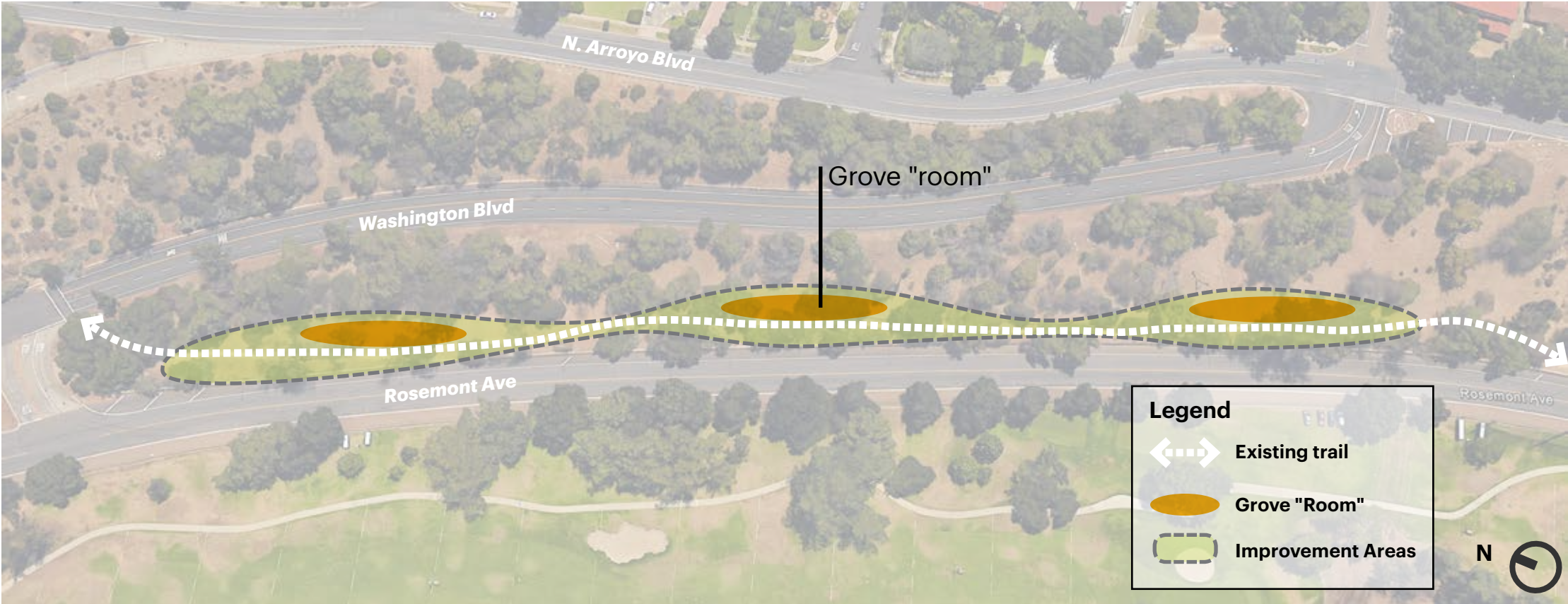


Existing Low-Flow Streams, from Lower Arroyo Master Plan (2003)

Special Arroyo Areas

Central Perimeter Grove Rooms

This segment of trail is adjacent to the Golf Course and is sandwiched between two roads, making it feel somewhat neglected and undesirable. Under the shade of many beautiful mature trees, the topography along the slope widens and narrows around the trail, naturally carving out small "rooms". These rooms have potential to be enhanced with natural elements such as logs and boulders to create quiet resting areas and simple natural play areas under the existing shade trees. These improvements will create interest along the trail and serve as a destination for nature-based play and respite.



Central Arroyo East Perimeter Grove Rooms

- Major components:
- Natural seating elements
 - Interpretive signage
 - Option: Nature play elements ("fallen" logs and large boulders)
 - Option: Hammocks in one of the grove rooms



Existing Condition



Natural elements for rest and play



Special Arroyo Areas

Memorial Grove Restoration



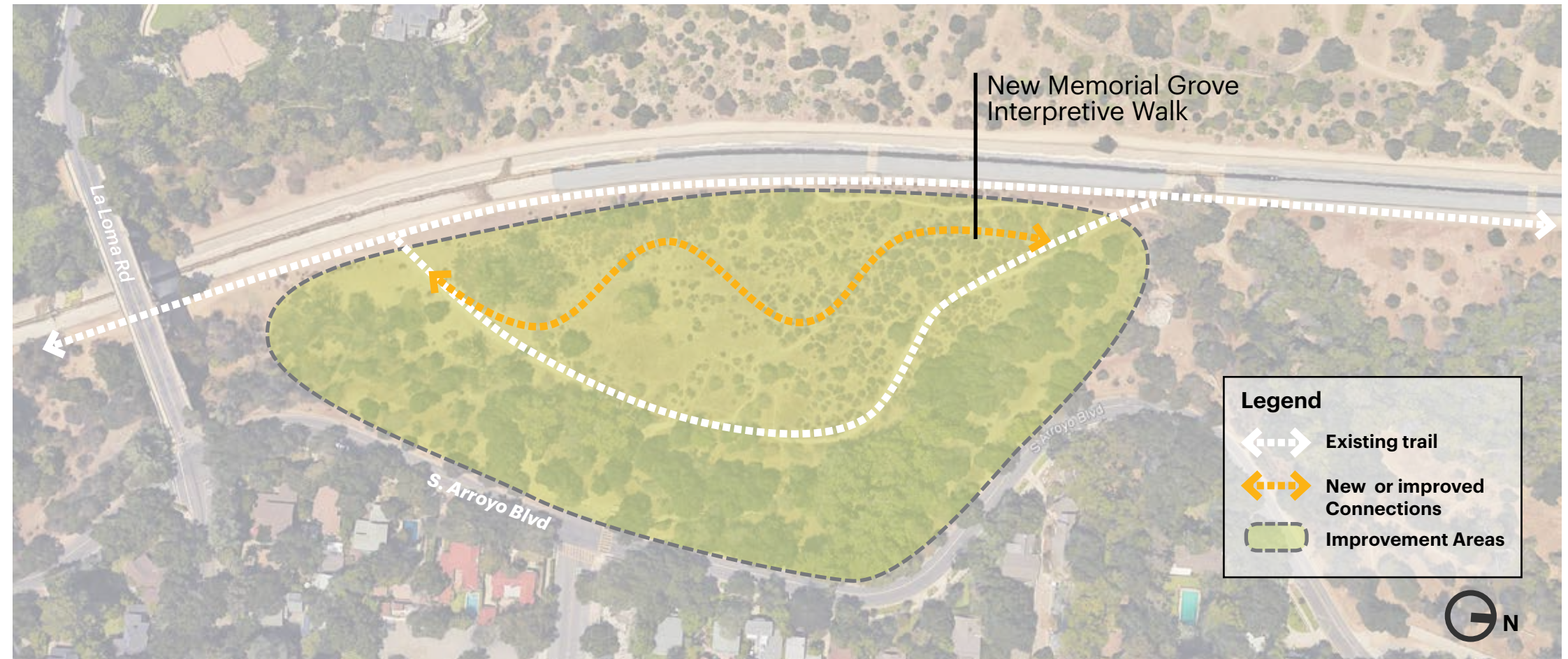
The area has become a location for the community to plant trees in memory of friends and family who have passed away.

The area is largely devoid of shade trees is in need of restoration as called for in the Lower Arroyo Master Plan.

In addition to restoration, an interpretive element is proposed here to help anchor the space and provide a more robust and meaningful context that generates interest for future memorial plantings. This would take place along a new central trail with special planting, seating and a linear nature-based installation that inspires meditation and reflection. This will be a special experience for trail users.

Major components:

- New trail lined with specimen shade trees
- Special Arroyo Benches (with naming opportunities)
- Memorial Grove Interpretive Walk (e.g. Andy Goldsworthy Wood Line)
- Interpretive signage
- Improved habitat



Memorial Grove Inspiration "Wood Line" by Andy Goldsworthy, The Presidio National Park, San Francisco

Special Arroyo Areas

Camel's Hump Loop Trail



The Camel's Hump, a modified topographic feature from the creation of the flood control channel, is a distinctive landmark in the Lower Arroyo. The area provides an opportunity to enhance the remnant coastal scrub habitat and introduce Arroyo riparian woodland habitat.

In alignment with the Lower Arroyo Master Plan, this project will improve and extending access around the Camel's Hump for recreational users and study the stability of the Camel's Hump.

Major components:

- Expand secondary trail system
- Restore habitat
- Interpretive signage
- Shade trees
- Improved habitat
- Optional: Nature play elements (e.g. "fallen" logs and large boulders for climbing)
- Optional: Nature steps / climbing path to top of Camel's Hump



Camel's Hump Loop Trail Area

Special Arroyo Areas

Hahamongna West Perimeter Trail Habitat Restoration



In the Hahamongna Master Plan, while 11 projects were proposed for habitat restoration, this project directly connects to the trail: "6- Restore Habitat along West Perimeter Trail" (See exhibit 3-6 on p3-19 of Hahamongna Master Plan).

This cost estimate assumes 10 acres of restored habitat.



Hahamongna West Perimeter Trail

Greenstreets Improvements at Road Intersections - \$125K

This project proposes converting the existing traffic circles into stormwater capture areas, turning these streets into "Greenstreets". These improvements will enhance the aesthetic experience for the trail where it interfaces with a road intersection.

*Traffic Engineering Analysis Required

** Potential funding associated with these types of improvements.



Salvia Canyon Rd/ West Dr Intersection



Washington Blvd/ West Dr Intersection



Washington Blvd/ Rosemont Ave Intersection

Special Arroyo Areas

Lower Arroyo Wilds Overlook

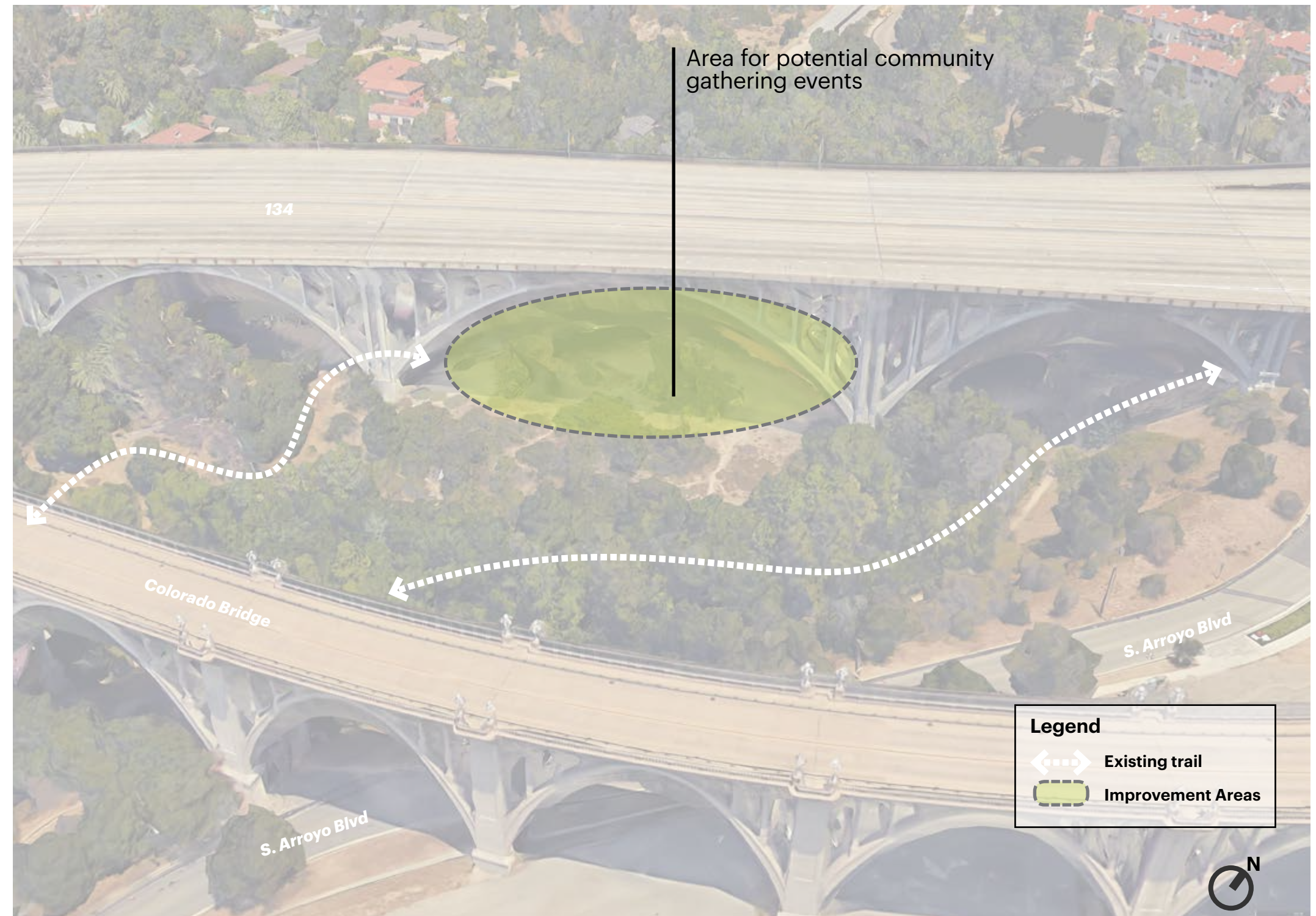
The area directly under the 134 overpass is relatively flat and has an elevated view of the Lower Arroyo soft bottom area. This area is currently being used as a film shoot location, however all utilities need to be brought in by this user group.

This location offers a unique opportunity along the Arroyo Seco Trails to serve as a flexible community event space with the potential for generating revenue through permitting. Minimal effort would be involved in enabling this area to accommodate larger gatherings for educational activities, community events, small-scale performances, non-profit fundraisers, or simple everyday respite in a place of natural and infrastructural beauty.

Major components:

- Stone or log seating
- Regrading and surface improvements
- Lighting under the bridge
- Electrical, power and water hook ups

****Potential utility improvements may be necessary to mitigate odor issues, not included in cost***



Lower Arroyo Wilds Overlook Area

Special Arroyo Areas

Rosemont Overlook / Classroom

This area is a unique location within the Central Arroyo due to its open and relatively flat conditions, as well as its proximity to the road and the soft bottom area just to the north. This location has the potential to serve as an overlook, nature classroom or a meet-up location for trail users. This area has the potential to include a small parking area and has been considered by DPW for use as a small dog run. This area can also serve as a flexible community space where small groups can rent out the space for an event.

Major components:

- Boulders or log seating
- Interpretive signage
- Shade trees
- Potential for small parking area ~ 20-30 spaces, natural surface
- Potential for a permitted event space - regraded surface and utility hook-ups needed
- Potential for small dog run (considered by Pasadena DPW)



Rosemont Overlook Area

Special Arroyo Areas

Bird Sanctuary Overlook Restoration

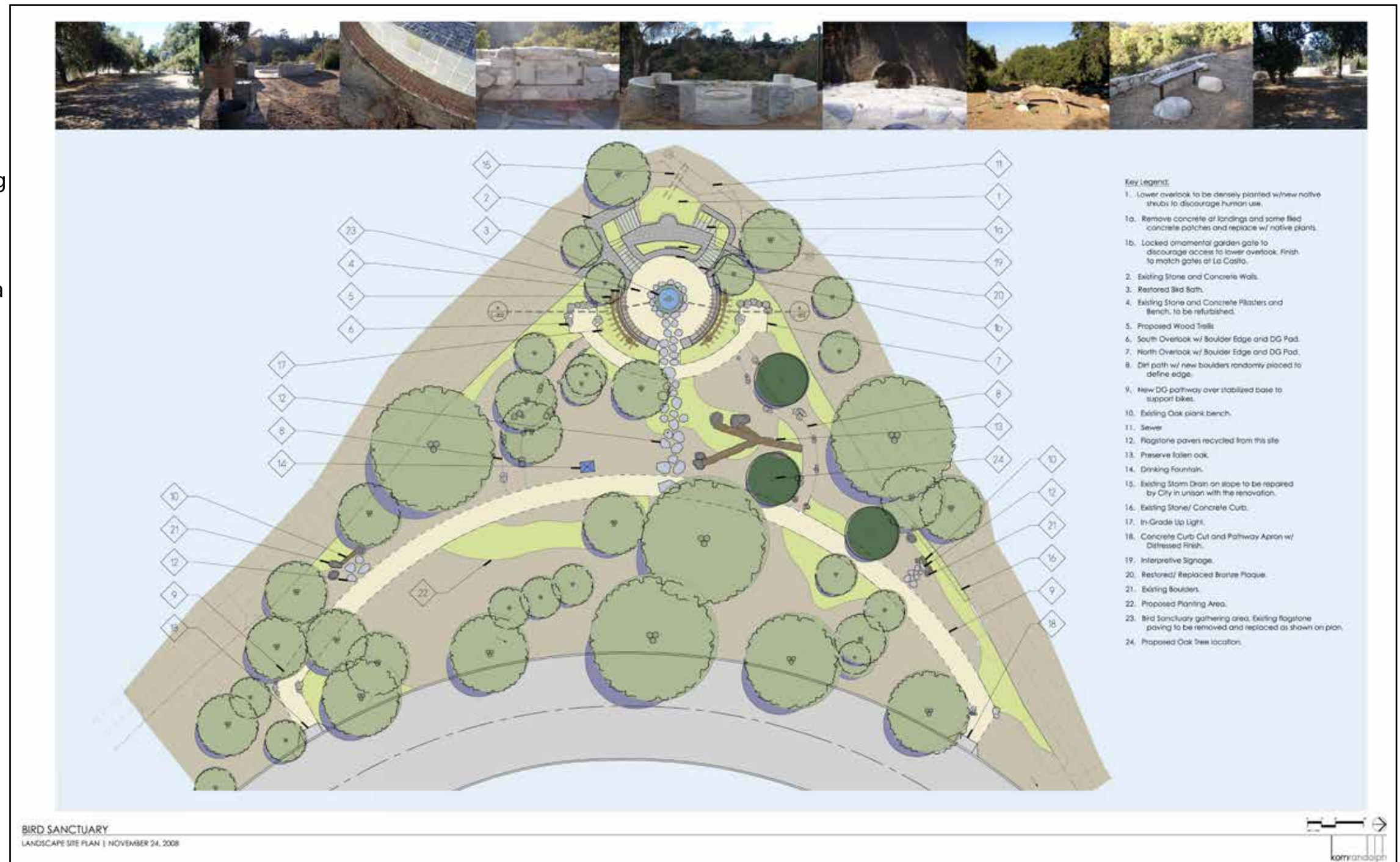


This project was identified in the Lower Arroyo Master Plan and taken further into conceptual design by Pasadena DPW. The site includes a circular seating area, a water feature, a drinking fountain and signage - all of which are in disrepair or are non-functional. The Arroyo stone garden walls are also in a state of disrepair.

This area offers a unique vantage point of the Lower Arroyo and is accessible for those who would have limited mobility along the trails below.

Major components:

- Restore stonework and water feature
- Provide lighting for increased security
- New shade trees
- Interpretive signage and improved wayfinding signage
- New seating elements
- New amenities (trash, drinking fountain, etc.)
- Enhanced landscaping
- Improved utilities
- Erosion control



Bird Sanctuary Restoration Concept Plan, by Pasadena DPW, 2008

Special Arroyo Areas

Sunset Overlook Restoration



The Sunset Overlook is a prime location that offers a grand vista over the Hahamongna Basin. As it is relatively flat and open, it has potential to be improved for use as a multi-functional passive recreation space for picnics, educational activities as well as community events and gatherings.

This project was proposed in the Master Plans and concept was advanced by Pasadena DPW.

Major components:

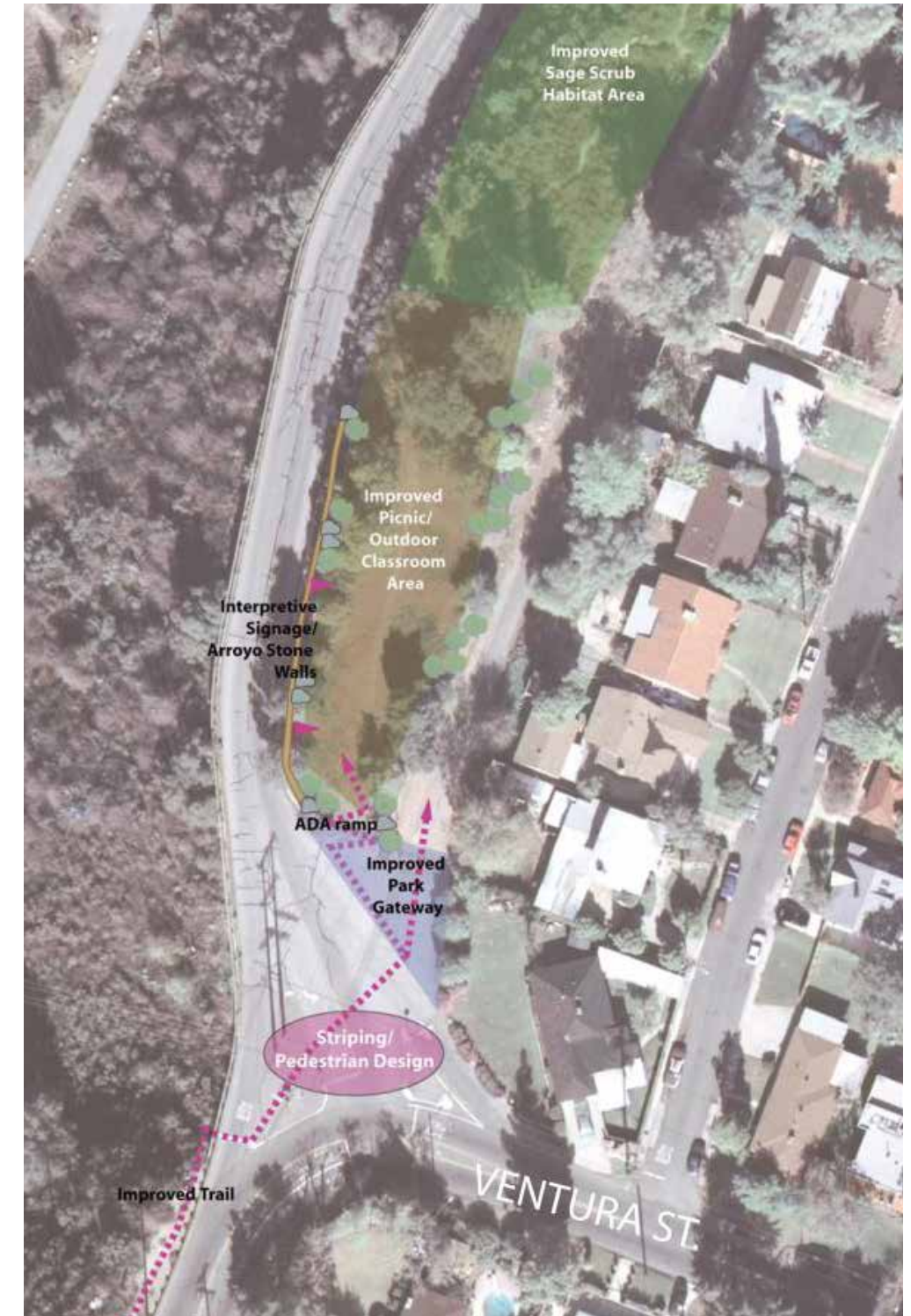
- Improved entry ramp
- Improved surfacing
- New seat elements and picnic tables
- New interpretive signage
- Option for permitted event space



Existing Conditions



Existing Conditions



Sunset Overlook Concept Plan by Pasadena DPW

Special Arroyo Areas

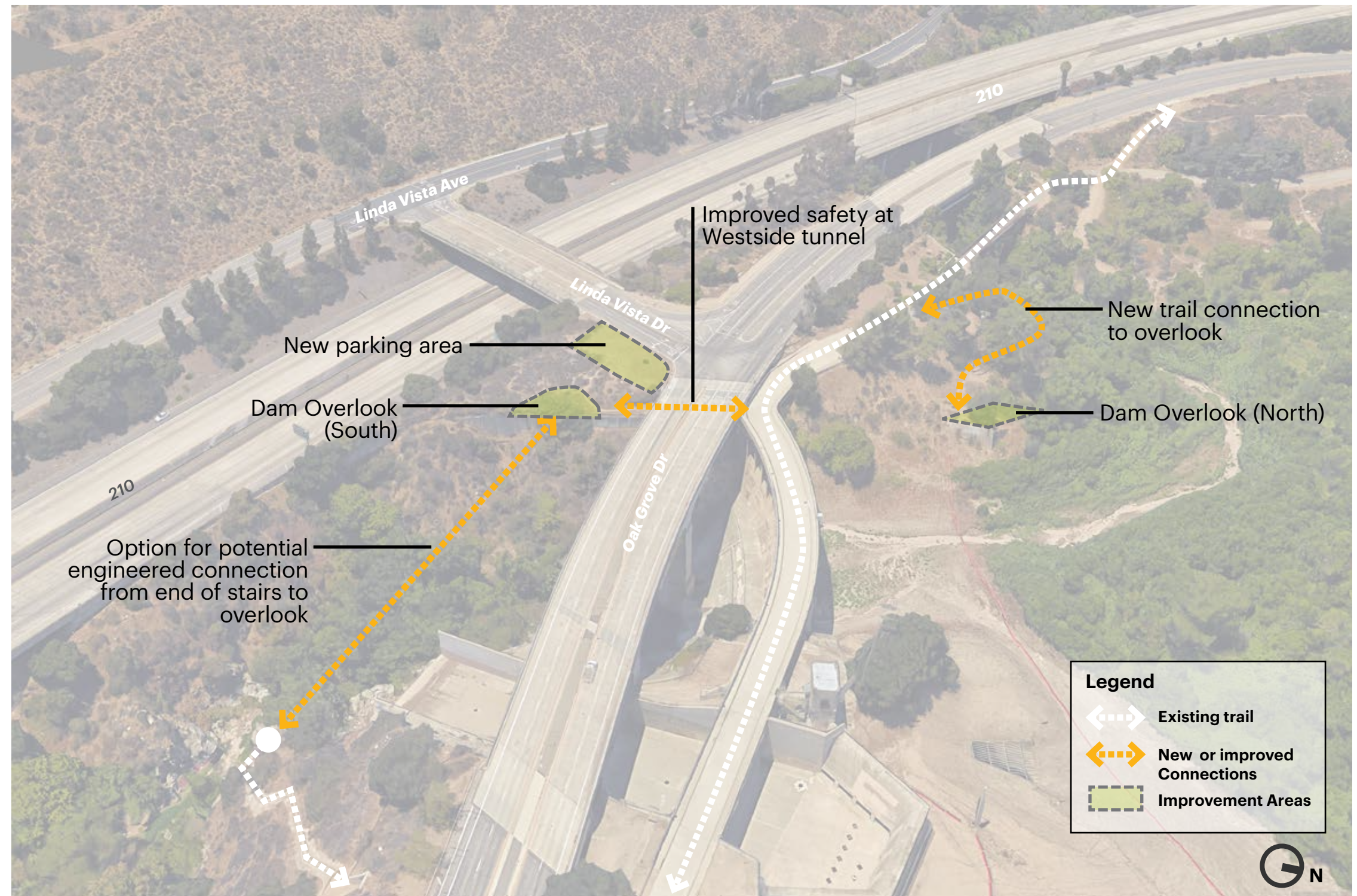
Devil's Gate Dam Observation Trail & Overlook



Per the Hahamongna Master Plan, a trail connection is proposed on the north side of the dam to an observation point where park users will have a clear view of the dam's interior face. On the southern side of the dam, a small landscaped parking area is proposed at Oak Grove Drive and Linda Vista Drive with an overlook area and an ADA access ramp to the westside pedestrian tunnel.

Major components:

- Trail creation to lower overlook with shrub clearing and earthwork
- Surface leveling and improvements at overlooks
- Shaded seating at overlooks
- Improve safety through west side tunnel (lighting, mirrors, signage)
- Optional: Engineered crossing (ex. rope suspension bridge) from overlook to bottom of stairs to connect west and east sides (not included in cost)



Devil's Gate Dam Observation Area & Observation Trail (Ideas from Hahamongna Master Plan, 2003)

6

Demonstration Projects

It was determined at the final AAG workshop that the following two Demonstration projects should be developed to launch the One Arroyo Trail project implementation, with the goal of catalyzing fundraising and community support.

Demonstration project evaluation criteria:

- all levels of implementation (Connect, Enhance & Inspire)
- highly visible & easily accessible location
- relatively low cost (~\$5M)
- readily implementable & maintainable

Demonstration Projects

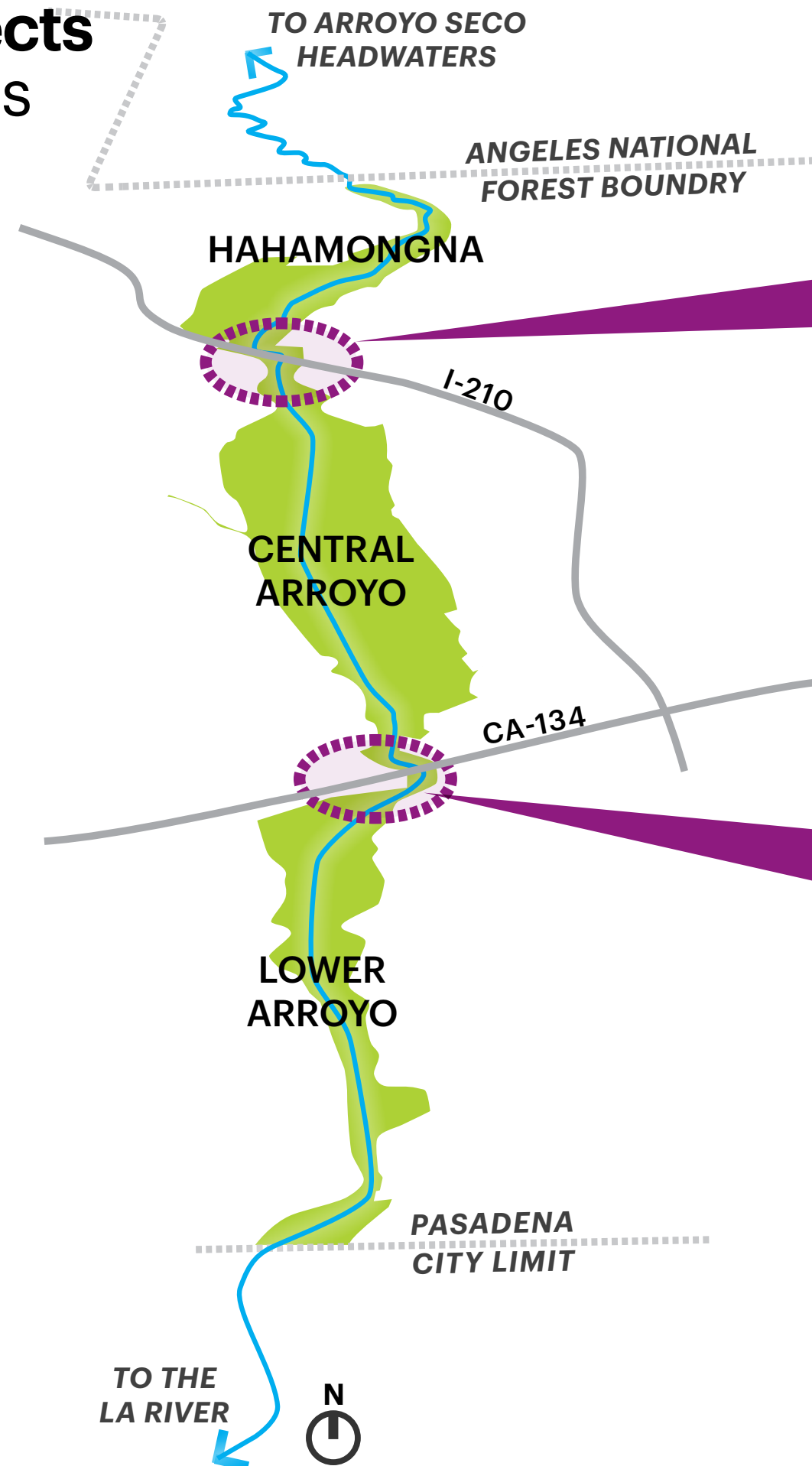
The Arroyo Thresholds

To showcase the One Arroyo Vision, the AAG has recommended two Demonstration project concepts that focus on special habitat restoration areas at key connection points.

The consultant team developed Demonstration project proposals located at the **Arroyo Thresholds** which are the pinch-points that separate the major sections of the Arroyo. These two challenging yet unique transitional spaces are each replete with ecological, infrastructural and cultural significance.

Goals:

- Provide critical connectivity improvements at major points of disconnection
- Draw visitors to the unique soft-bottom areas ("Arroyo Wilds")
- Inspire curiosity, excitement and attachment to the Arroyo Seco's history, ecology and culture



A. "Woodlands Loop"



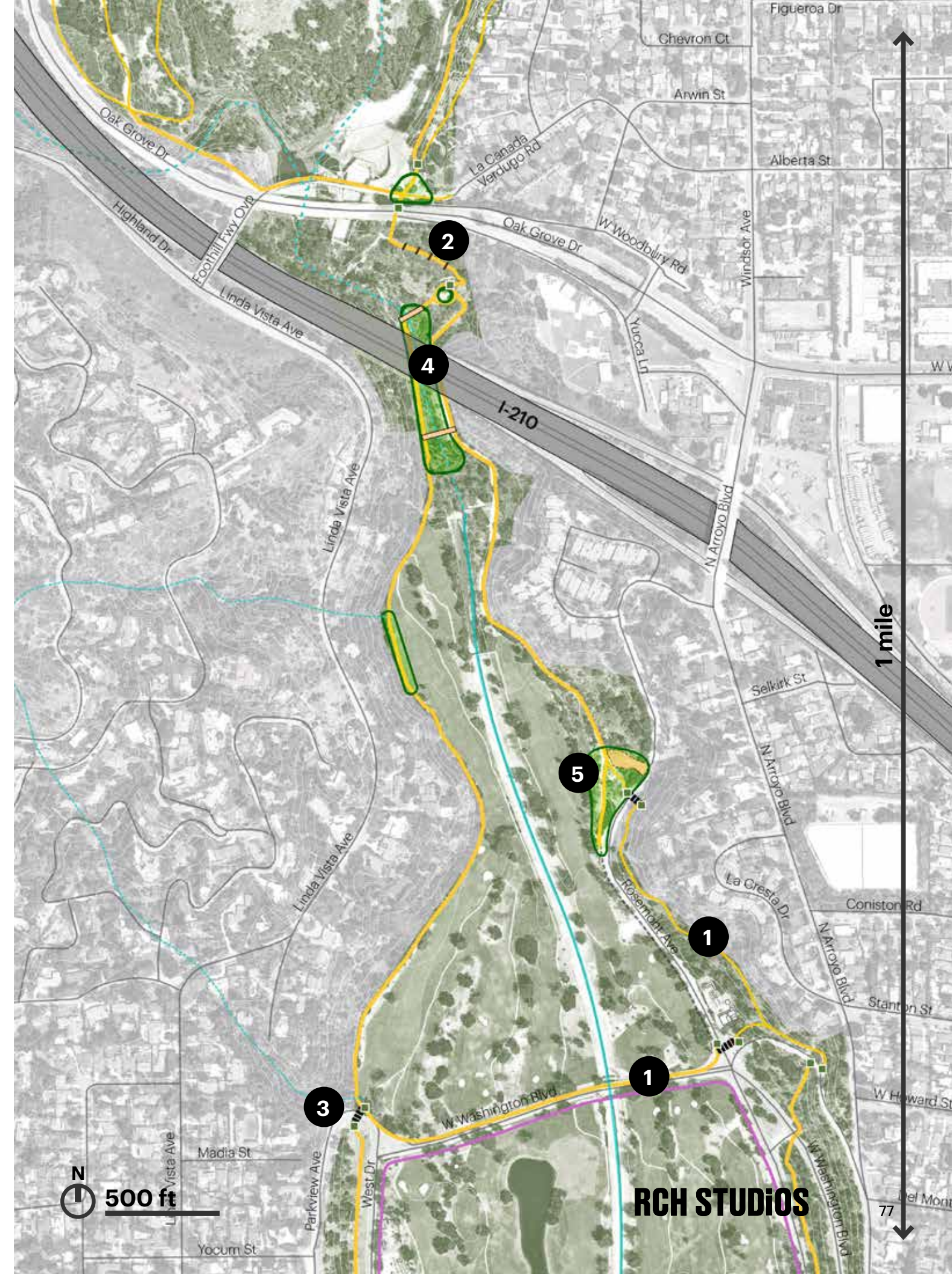
B. "Streamside Walk"

A. Woodlands Loop Overview

This project creates a two mile loop that draws visitors through a forest stretch of trail towards the soft-bottom “Arroyo Wilds” nature area, showcasing the ecological, cultural and infrastructural diversity of the Arroyo Seco just below Devil’s Gate Dam.

Key Elements:

1. Major trail improvements to disconnected segments
2. Improved connectivity across Devil’s Gate Dam
3. Improved safety and wayfinding at junctures
4. Arroyo Wilds Interpretive Circuit & Nature Classroom
5. New naturalized parking & overlook area



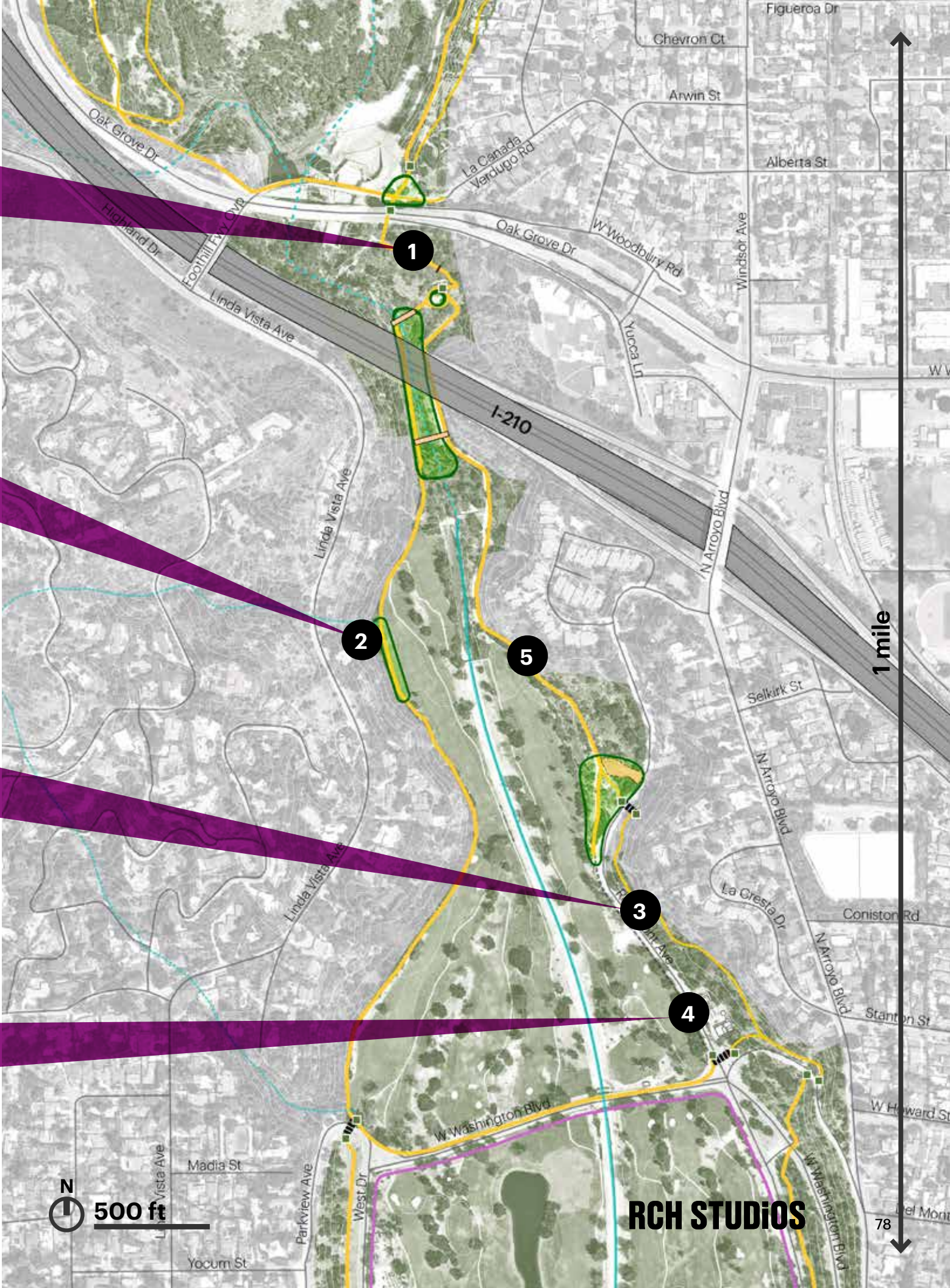
A. Woodlands Loop Proposed Elements

Trail Connectivity:

- 1. Slope stabilization at switchback trail
- 2. Cottonwood Canyon Stream Daylighting
- 3. Central Arroyo Rim Trail Improvements
- 4. New Trail along Golf Course Edge
- 5. General trail improvements (approx. 2 miles)



Existing conditions



A. Woodlands Loop Proposed Elements

6. Gateway Area:

- Gateway landmark
- Wayfinding & interpretive signage
- Seating area with special landscaping



Gateway Landmark Examples

7. Tunnel Upgrades:

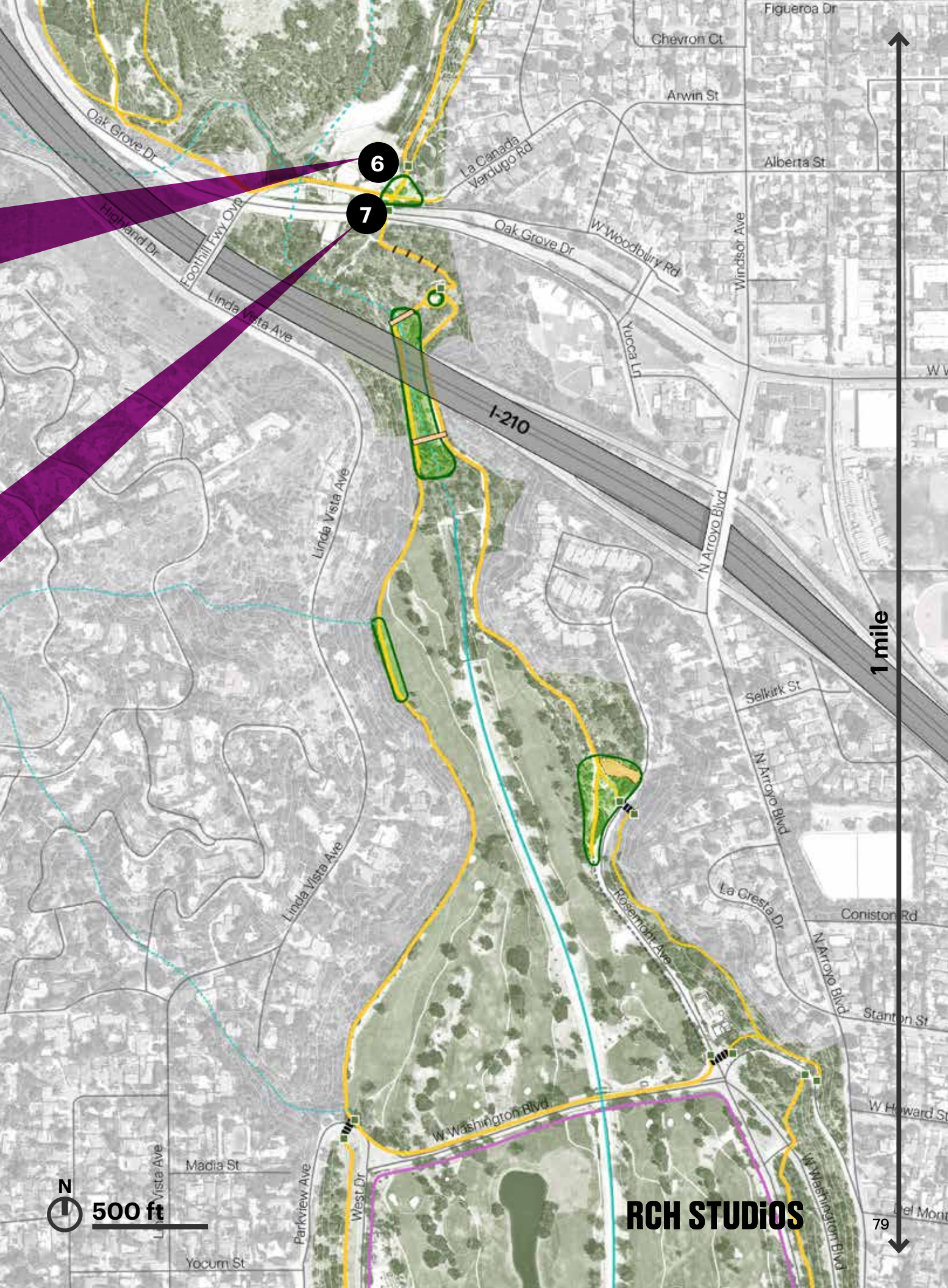
- Safety & aesthetic improvements
- Inspirational tunnel installation



Existing tunnel Interior facing South



Lighting Example



A. Woodlands Loop Proposed Elements

8. Arroyo Wilds Nature Classroom:

- Natural seating
- Special planting/brush clearing
- Interpretive signage



Nature Classroom Example

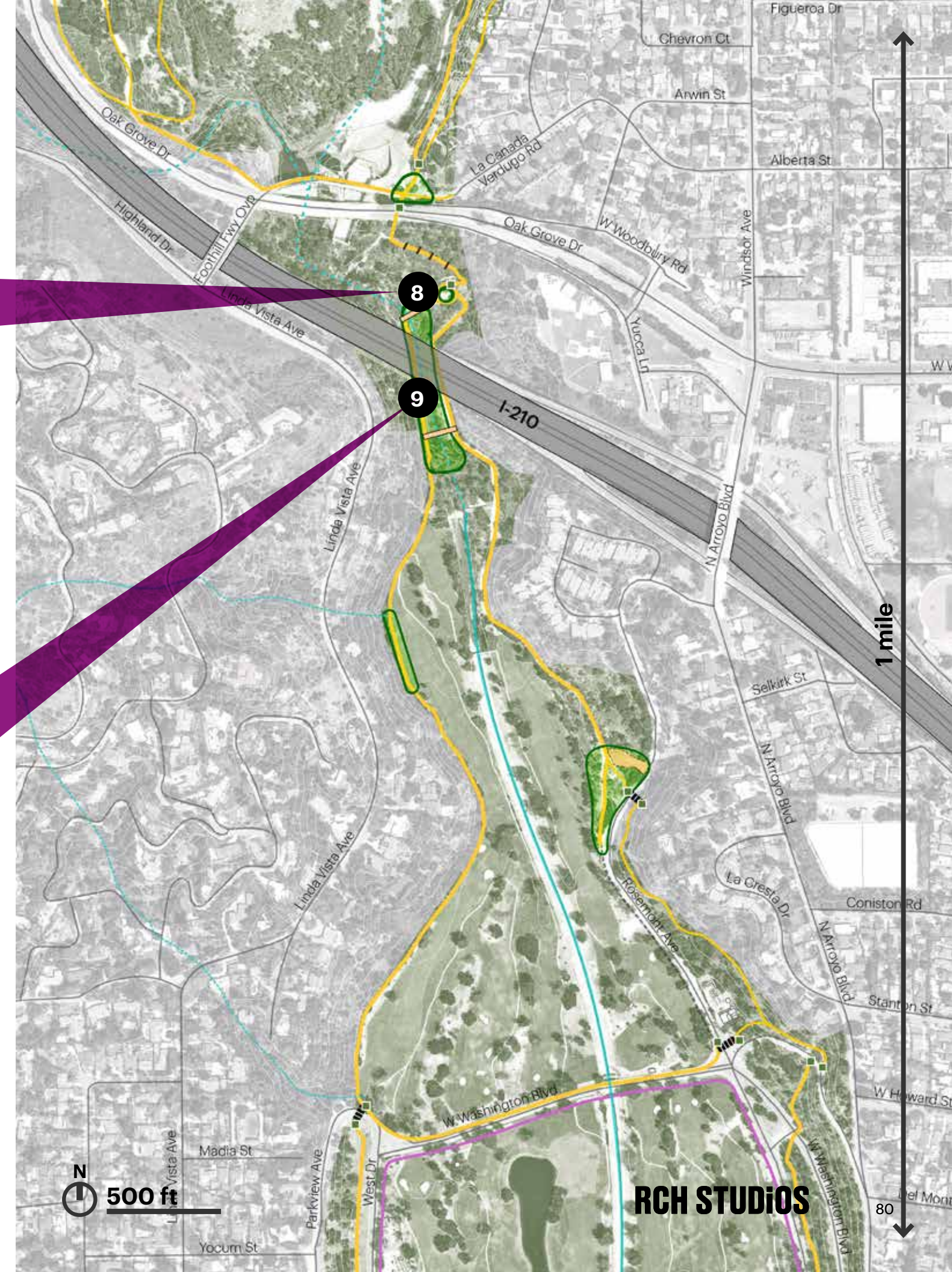
9. Arroyo Wilds Interpretive Walk:

- Footbridges (x2)*
- Seating at banks
- Wilds loop path clearing
- Interpretive sign collection

**Hydrological & engineering feasibility study required*



Footbridge Example



A. Woodlands Loop Proposed Elements

10. Rosemont Overlook:

- Natural seating
- Special planting/brush clearing
- Interpretive signage
- Small natural parking area*

**Traffic engineering study required*



Natural Parking Reference

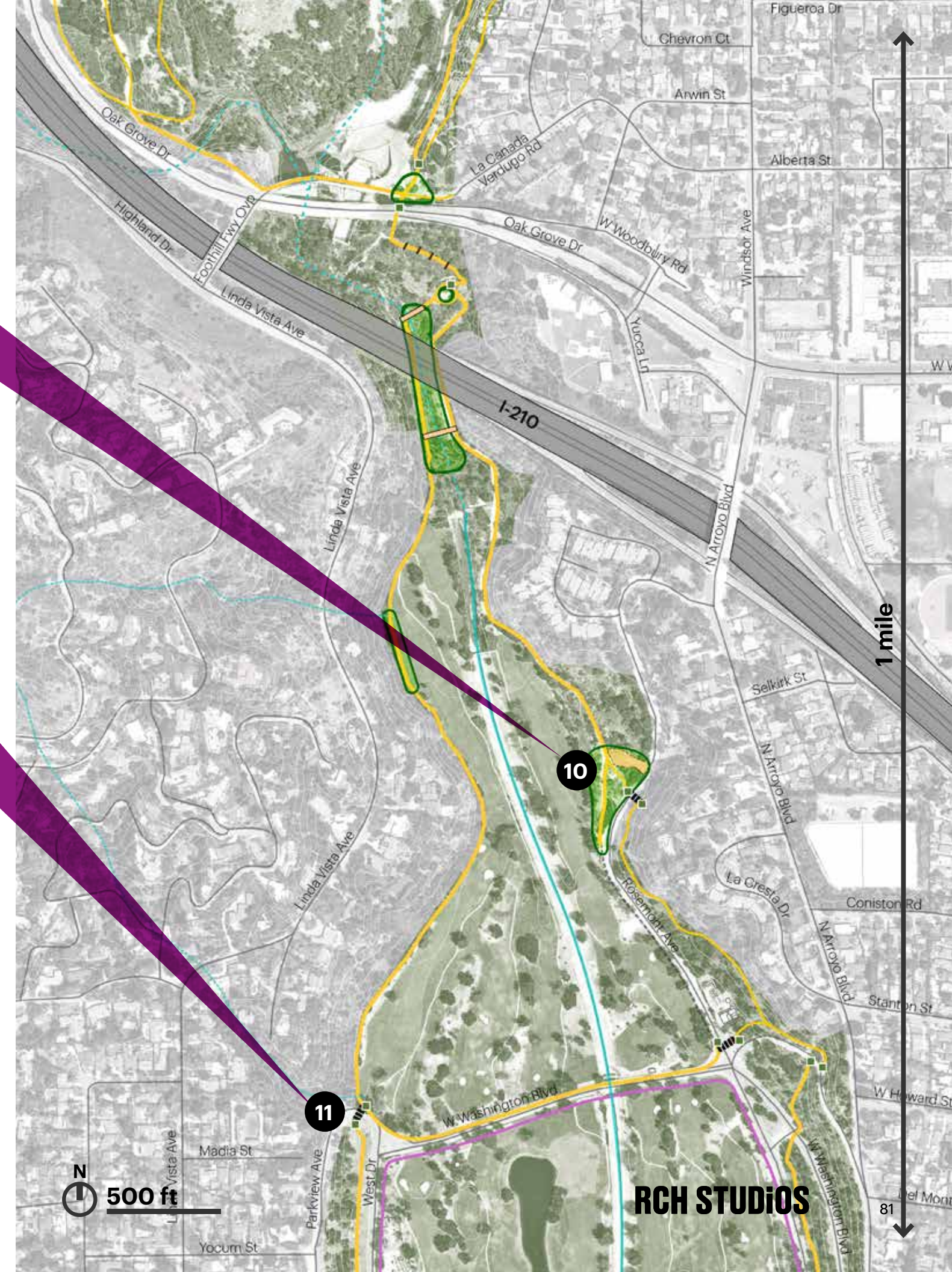
11. Road Crossing Improvements (x4):

- Bold color or stripe pattern on asphalt
- Reflectors along crossing
- Signage for trail users and for approaching cars

**Traffic engineering study recommended*



Existing Road Crossing



A. Woodlands Loop | Existing Condition



Photograph of existing conditions

- 1 Uneven surface
- 2 Eroded slope and trail surface
- 3 Lack of wayfinding
- 4 Lack of seating
- 5 Lack of railing system at steep slope
- 6 Lack of trail edging
- 7 Need for vegetation maintenance
- 8 Opportunity for Arroyo area

A. Woodlands Loop | Proposed Vision



Artist rendered interpretation of improvements

- 1 Trail surface restoration
- 2 Erosion stabilization
- 3 Wayfinding signage

- 4 Seating
- 5 Simple handrail
- 6 Trail edging

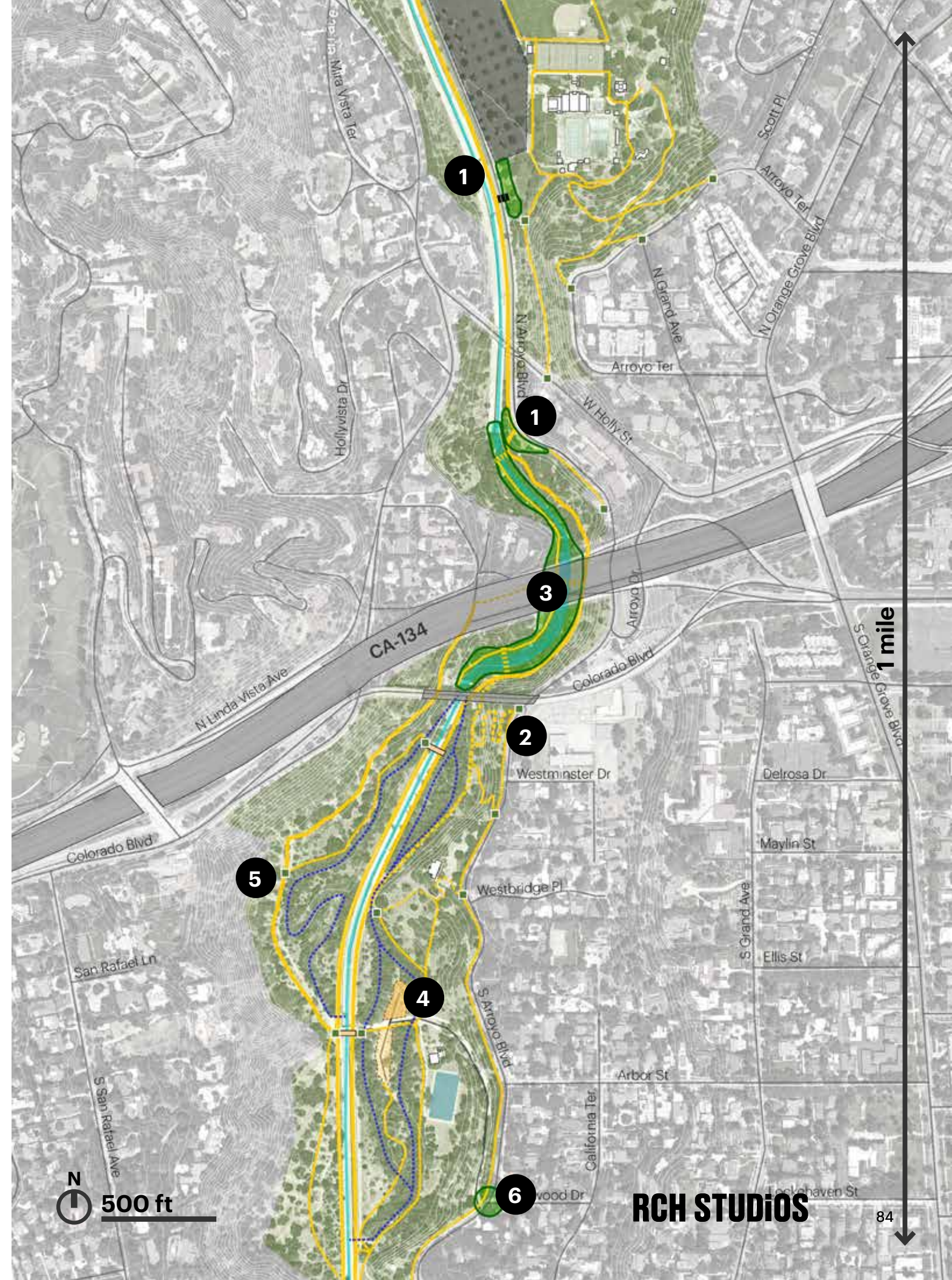
- 7 Vegetation maintenance
- 8 Arroyo Wilds nature classroom
- 9 Habitat Restoration

B. Streamside Walk Overview

This project improves connectivity at the Northern entry into the Lower Arroyo and draws visitors to the soft bottom “Arroyo wilds” and low-flow stream restoration area, creating improved access to, across and through the naturalized stream areas.

Key Elements:

1. New gateway and improved connectivity from RBAC to Lower Arroyo
2. Improved access to Arroyo from feeder trails
3. Arroyo Wilds Interpretive Circuit & Nature Classroom
4. Expanded parking
5. Improved wayfinding at critical junctures
6. Lower Arroyo Main Entry Improvements (by DPW)



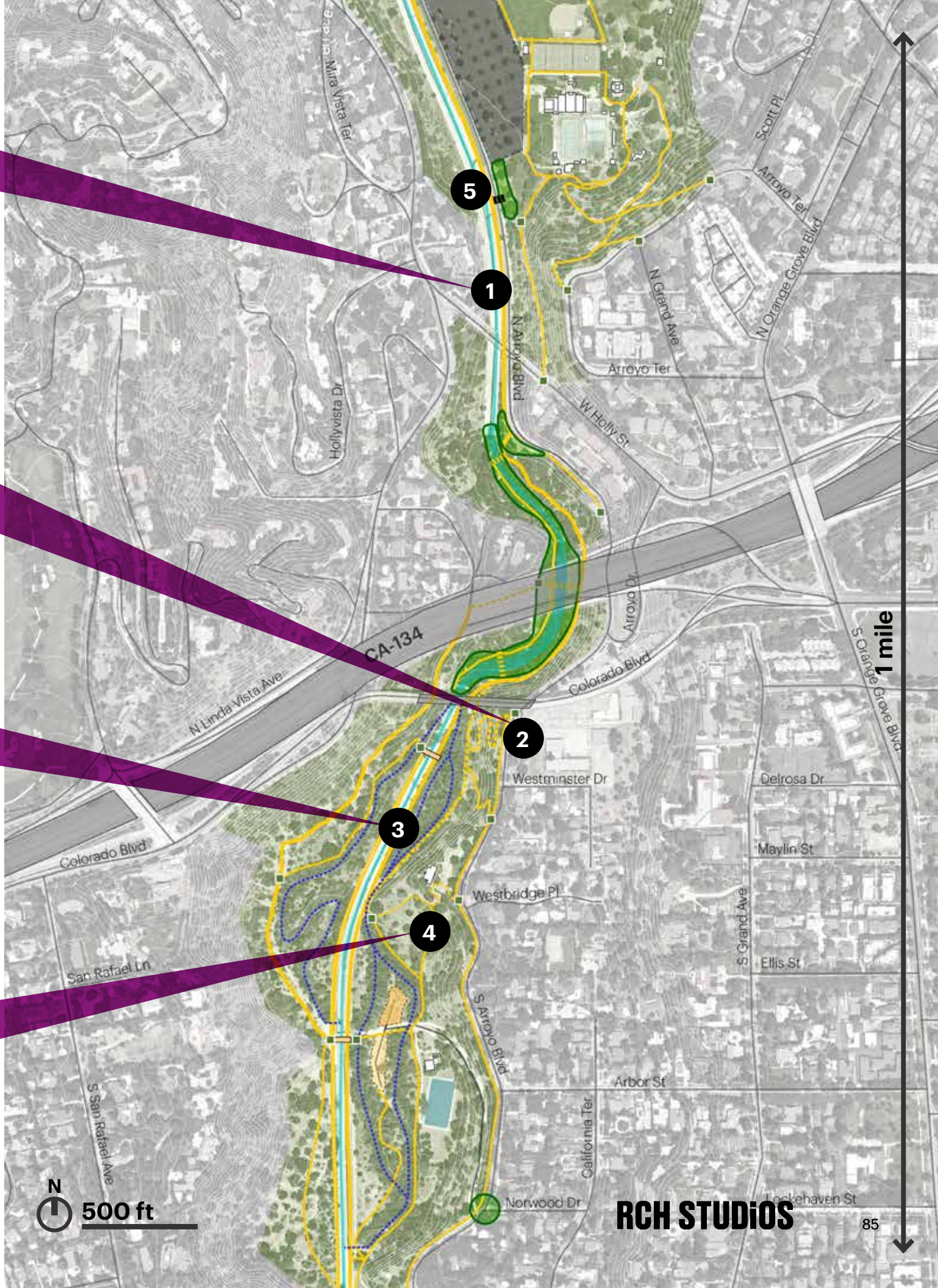
B. Streamside Walk Proposed Elements

Trail Improvements (approx 1.5mi):

- 1. Trail at Arroyo Blvd.
- 2. Feeder Trails (x8)
- 3. Trail at Lower Arroyo
- 4. Secondary Trails
- 5. New Road Crossing south of Rose Bowl Aquatic Center



Existing conditions



B. Streamside Walk Proposed Elements

6. Information Stand:

- Shed with lockable doors and windows
- Trail guides, Arroyo events, gear, snacks and beverages, etc.

**May require amendments to Master Plans and/or municipal code*



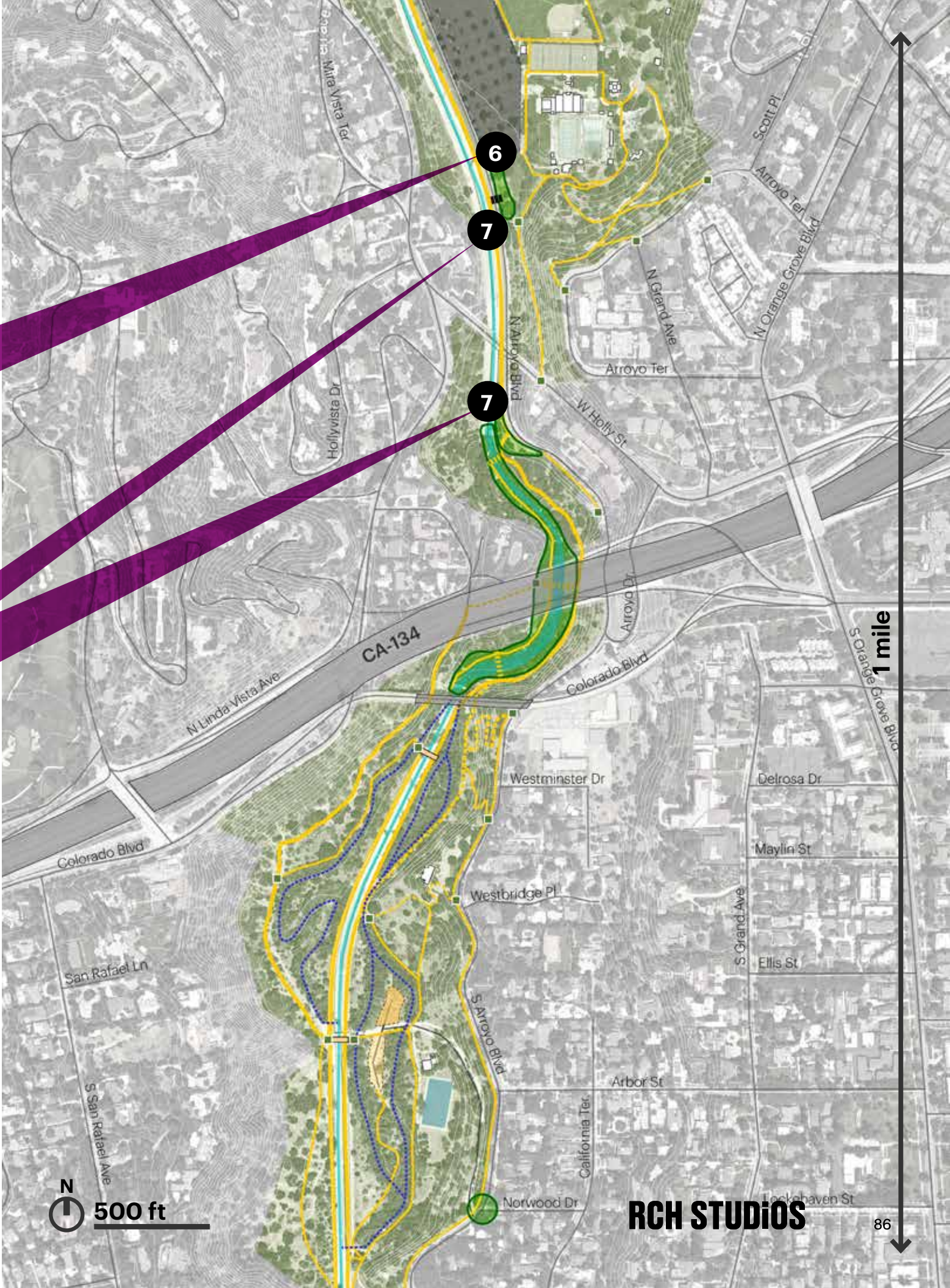
Information Stand Examples

7. Gateway Areas:

- Gateway landmarks
- Wayfinding & interpretive signage
- Seating area with special landscaping



Gateway Landmark Examples



B. Streamside Walk Proposed Elements

8. Arroyo Wilds Nature Classroom:

- Natural seating
- Special planting/brush clearing
- Interpretive signage



Nature Classroom Example

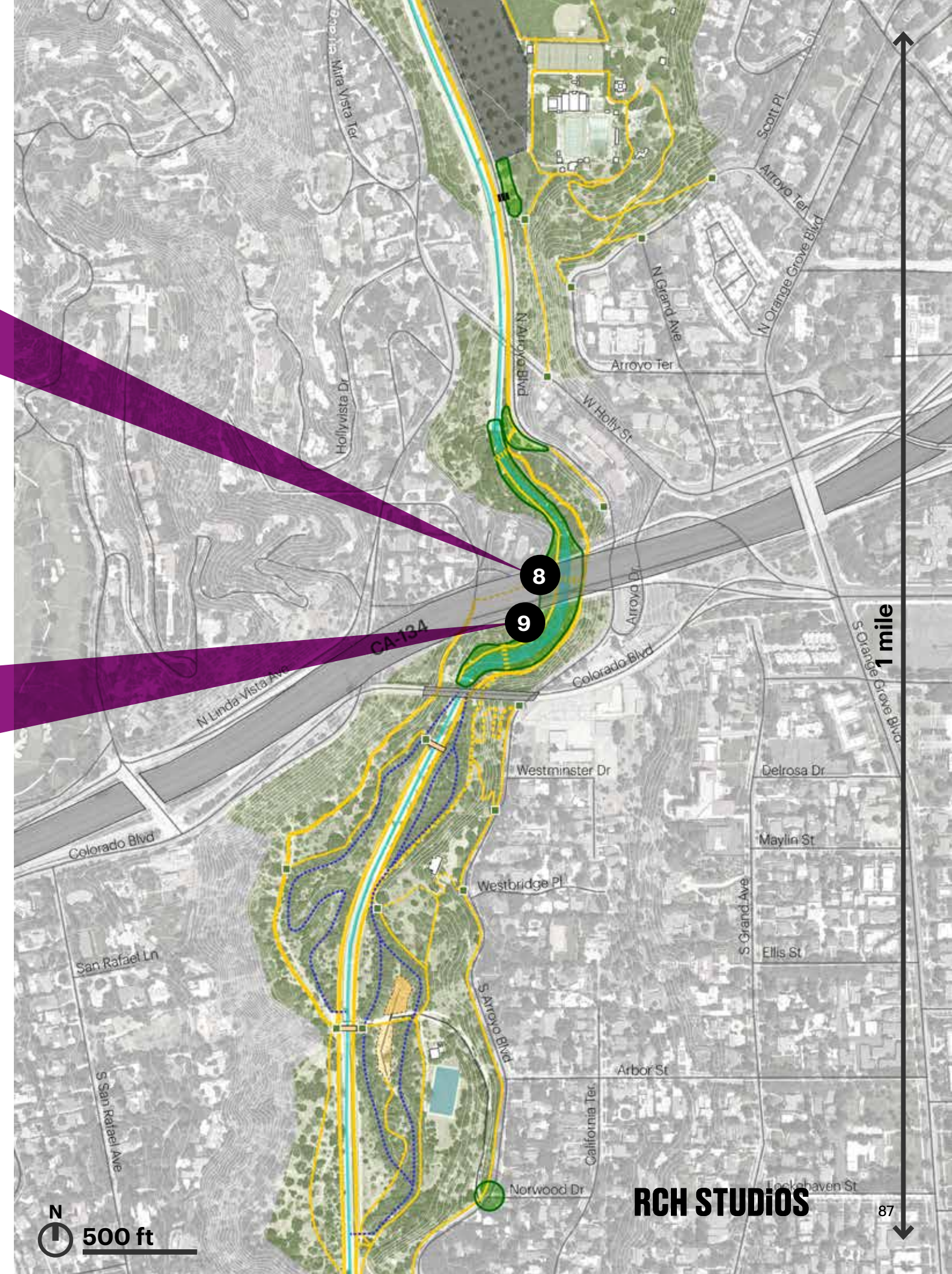
9. Arroyo Wilds Interpretive Walk:

- Footbridges (x3)*
- Seating at banks
- Wilds loop path clearing
- Interpretive signage

**Hydrological & engineering feasibility study required*



Footbridge Example



B. Streamside Walk Proposed Elements

10. Low-Flow Stream Habitat Interpretive Walk:

- Brush clearing
- Interpretive signage



11. Natural Parking Expansion:

- Expand Lower Arroyo parking area and match natural design standards

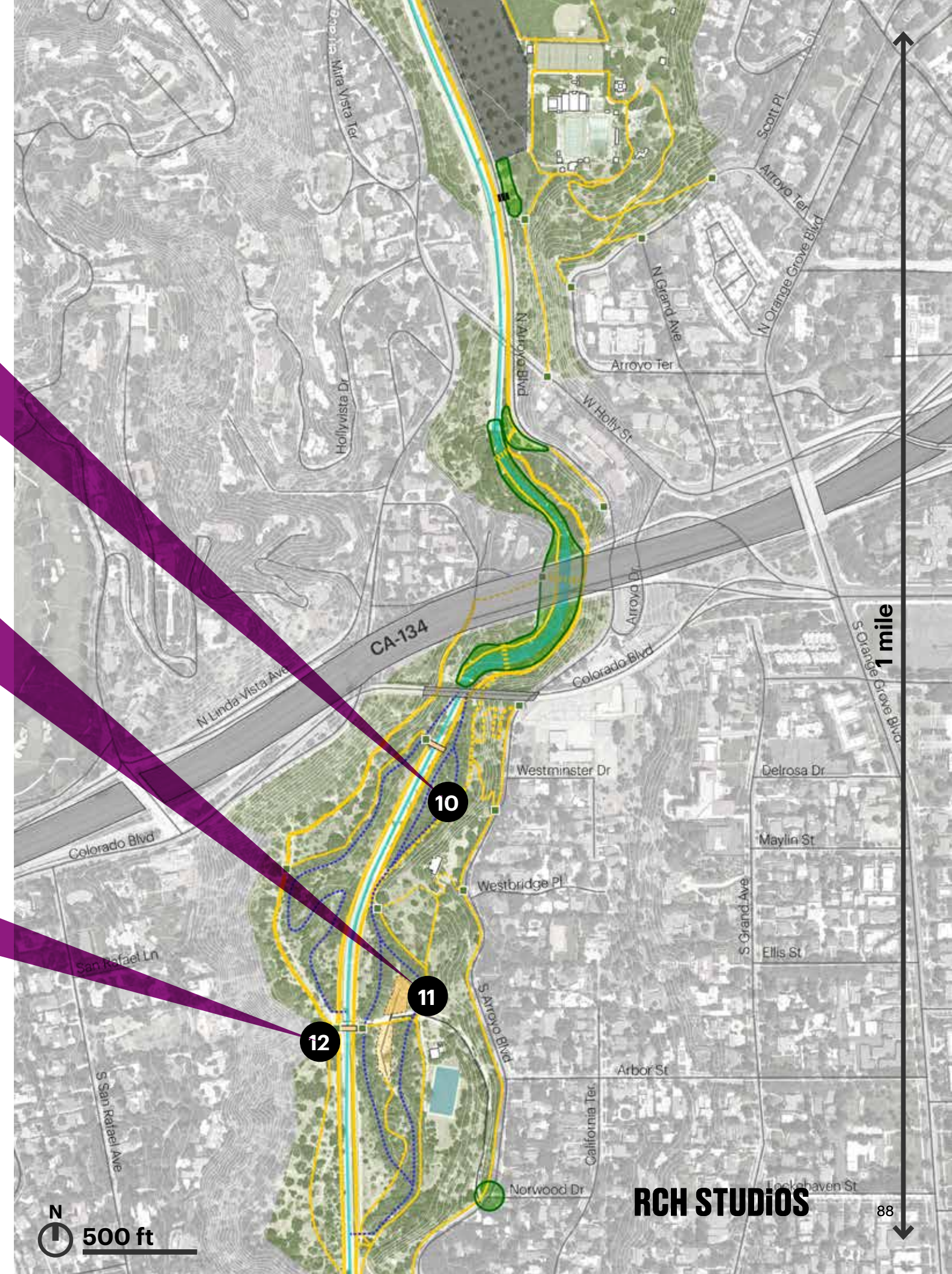


12. Bridge Aesthetic Improvements (x2):

- Remove chainlink
- Install new guardrail
- Install wood decking



Existing conditions



B. Streamside Walk | Existing Condition



Photograph of existing conditions

- 1

Uneven surface
- 2

Eroded slope
- 3

Lack of wayfinding signage
- 4

Lack of trail edging
- 5

Lack of seating
- 6

Need for vegetation maintenance
- 7

Lack of interpretive signage
- 8

Opportunity for Arroyo area
- 9

Opportunity to cross the stream

B. Streamside Walk | Proposed Vision



Artist rendered interpretation of improvements

- 1 Trail surface restoration
- 2 Erosion stabilization
- 3 Wayfinding signage
- 4 Trail edging
- 5 Seating
- 6 Vegetation maintenance
- 7 Arroyo Wilds interpretive signage
- 8 Arroyo Wilds nature classroom
- 9 Arroyo Wilds footbridge
- 10 Habitat Restoration

Appendix

- A Draft Opportunities Assessment (09.20.17)
- B Preliminary Trail Concept Alternatives (10.26.17)
- C Concept Alternatives Updates & Costing Analysis (12.18.17)