



# City of Highland

Erwin Fogerson, Chair  
Richard Bowman, Vice Chair  
Luis Gardea, Member  
Joey Martin, Member  
Michael McMillan, Member

## **Community Trails Committee Special Meeting Agenda**

November 13, 2025 at 6:00 PM

City Hall Donahue Council Chambers | 27215 Base Line, Highland CA 92346

### **Staff**

Lawrence A. Mainez, Community Development Director  
Kim Stater, Assistant Community Development Director  
Travis Trejo, Assistant Planner  
Camille Duarte, Administrative Assistant III

### **Mission Statement**

*Highland is dedicated to the betterment of the individual, the family, the neighborhood and the community. The City Council and the staff of Highland are dedicated to providing the quality of public facilities and services that its citizens are willing to fund and will do so as efficiently as possible.*

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In compliance with the Brown Act, any writings or documents provided to a majority of the legislative body regarding any item on this agenda, that are not exempt from disclosure under the California Public Records Act, will be made available for public inspection at City Hall, 27215 Base Line Highland, CA 92346, during normal business hours. Such documents will also be made available on the City's website at [www.cityofhighland.org](http://www.cityofhighland.org).

In compliance with the Americans with Disabilities Act (ADA), if you need special assistance, please contact the City Clerk's office at (909) 864-6861, ext. 226, at least 72 hours prior to the meeting for any requests for reasonable accommodations, including interpreters.

Levine Act: Pursuant to Government Code Section 84308, any party to a City proceeding must disclose on the record any campaign contributions made to a member of the City Council (or commission) in excess of \$250 in the past 12 months. This disclosure requirement includes contributions by the party's agent and aggregated contributions from persons or entities related to the party. Please make the disclosure as soon as possible, but no later than the beginning of the proceeding.

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## **Call to Order**

### **Pledge of Allegiance**

### **Public Comment**

To address the Community Trails Committee, please complete a speaker form located at the entrance and give it to the Administrative Assistant prior to the beginning of the meeting. Your name will be called when it is your turn to speak. Individual speakers are limited to 3 minutes each. For those wishing to make public comments by email, please submit your comments by 5:00 p.m. on November 13, 2025, to [publiccomment@cityofhighland.org](mailto:publiccomment@cityofhighland.org). If you are submitting a public comment pertaining to an item on the agenda, please identify the agenda item number.

### **Community Trails Committee Consent Calendar**

1. Community Trails Committee Minutes - September 11, 2025

Recommend that the minutes are approved as submitted.

### **Business Items**

2. Educational & Interpretive signage for the City's Natural Parkland Trail.

Approve the educational/interpretive and directional signage for the City's Natural Parkland Trail project.

### **Announcements**

### **Adjourn**

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### **Certification**

I, Camille Duarte, or my designee, hereby certify that the foregoing agenda was posted on our website at [www.cityofhighland.org](http://www.cityofhighland.org) and in the following designated areas: Highland Branch Library (7863 Central Avenue), Fire Station No. 1 (26974 Base Line), and City Hall (27215 Base Line) at least seventy-two (72) hours prior to the meeting per Government Code Section 54954.2.

# Staff Report

## To the Community Trails Committee

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**Date:** November 13, 2025  
**From:** Lawrence Mainez, Community Development Director  
**Reviewed By:** Camille Duarte, Administrative Assistant III  
**Prepared By:** Camille Goritz, Administrative Assistant III  
**Subject:** Community Trails Committee Minutes - September 11, 2025

**Recommendation:**  
Recommend that the minutes are approved as submitted.

**Fiscal Impact:**  
None.

**Public Notice:**  
The agenda for this item was posted at the three locations per Resolution No. 2011-047 and on the City's website.

**Project Detail:**  
None.

**Attachments:**  
1. CTC 09-11-2025 Minutes

**COMMUNITY TRAILS COMMITTEE  
SPECIAL MEETING MINUTES  
September 11, 2025**

**CALL TO ORDER**

The regular meeting of the Community Trails Committee of the City of Highland was called to order at 6:00 p.m. by Vice Chair Fogerson at the Donahue Council Chambers, 27215 Base Line, Highland, California.

Present:	Chair	Richard Bowman
	Vice Chair	Erwin Fogerson
	Member	Luis Gardea
	Member	Michael McMillan
	Member	Vacant

Absent:	Member	Luis Gardea
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Staff Present:	Lawrence Mainez, Community Development Director
	Travis Trejo, Assistant Planner
	Camille Duarte, Administrative Assistant

Pledge of Allegiance led by all members.

**COMMUNITY INPUT (ITEMS NOT ON THE AGENDA)**

None.

**CONSENT CALENDAR**

1. Minutes from April 10, 2025 Special Meeting  
**A MOTION** was made by Chair Bowman, seconded by Member McMillan, to approve as amended. Motion carried, 3-0 with Member Gardea being absent.

**BUSINESS ITEMS**

2. Overview of the 2025 Community Trails Day

Assistant Planner Trejo presented the staff report.

Vice Chair Fogerson suggested to put a Community Trails Day banner on Greenspot Road corridor because of the new developments and its higher traffic presence.

The members were impressed with the number of views on the City of Highland's Instagram advertising and the turnout at the trails event.

3. An update and request for input by City Staff regarding educational signage for the Natural Parkland Trail.

Assistant Planner Trejo presented the staff report.

Vice Chair Fogerson stated that he did not see any signage that the trail was going to be under construction.

Chair Bowman suggested larger signs on the roadways.

Public Speaker Hitchman suggested steel signs instead of wrought iron signs.

All members gave their suggestions on the National Parkland educational and directional signs that will be displayed throughout the trail.

Community Development Director Mainez thanked them for their ideas and will bring back a draft of the signs to the Committee next month.

## **ANNOUNCEMENTS**

## **ADJOURN**

There being no further business, Member McMillan declared the meeting adjourned at 6: P.M.

Submitted by:

Approved by:

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Camille Duarte,  
Administrative Assistant III

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Richard Bowman,  
Community Trails Committee Chair

# Staff Report

## To the Community Trails Committee

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**Date:** November 13, 2025  
**From:** Lawrence Mainez, Community Development Director  
**Reviewed By:** Lawrence Mainez, Community Development Director  
**Prepared By:** Travis Trejo, Assistant Planner  
**Subject:** Educational & Interpretive signage for the City's Natural Parkland Trail.

**Recommendation:**

Approve the educational/interpretive and directional signage for the City's Natural Parkland Trail project.

**Fiscal Impact:**

This item has no fiscal impact.

**Public Notice:**

The agenda for this item was posted at the three locations per Resolution No. 2011-047 and on the City's website.

**Project Detail:**

Construction began on the City's Natural Parkland Trail in July 2025. The Educational and Directional signage are the only remaining items to be approved, manufactured, and installed before the project is completed in February 2026.

As a cost-saving measure, it was determined the project would involve the installation of new signs made of metal material similar to a typical street sign with anti-graffiti coating. The existing signs that are damaged will be overlaid with the new street sign material containing the same content and artwork (Attachment 1).

There will be a total of nineteen (19) signs within the City's Natural Parkland property. This includes one (1) existing monument sign on Base Line, one (1) existing kiosk sign on Base Line at the pull-out parking facility, ten (10) existing interpretive signs, and seven (7) new interpretive signs. Due to significant fading and vandalism that occurred over the years, all ten (10) existing interpretive signs will be replaced utilizing the same content. Similarly, the kiosk sign face located on Base Line will also be replaced due to significant fading.

At its meeting on September 11, 2025, the Community Trails Committee provided staff with a list of approximately seven (7) topics to include on new signs. Staff has streamlined the topics into the following:

- The Upper Santa Ana Wash Plan
- Norton Air Force Base
- Base Line Name Origin
- Water Retention
- San Andreas Fault
- Local Species
- Wildfire

Staff worked alongside our landscape architect (Scott Rice, Community Works Design Group) to create the attached signage proofs for these topics (Attachment 2).

Additionally, the Yuhaaviatam of San Manuel Nation is very interested in providing context for a new sign panel that focuses on their history/connection to the area. This sign will be reviewed by the Nation's Cultural Advisory Working Group on December 8th. The Community Trails Committee will be updated once Staff has received additional information on the tribe's sign approval.

Finally, simple directional signs will be installed off-site of the Parkland property to help direct users to the park. A sample of the direction sign will be provided at the meeting for the Community Trails Committee members consideration.

**Attachments:**

1. Existing Educational Signage Artwork
2. New Educational Signage Proofs

# WITH NATURE IN MIND

For some residents, wilderness begins at the back door

Living close to nature results in remarkable experiences. Wildlife comes close for viewing and natural landscapes lend a different sense of beauty to a home. At the same time, getting close to nature can be a challenge. Wildlife sometimes arrives without an invitation and wildfire ignores neighborhood boundaries.

Fire is a naturally-occurring event in Southern California. For thousands of years it has played a role determining California's native landscape. Some plant communities have co-evolved with fire, benefitting from its intense heat to open seed coats and release nutrients into the soil.

But fire destroys before it renews. The fire scars you see from the 2003 Old Fire remind us of its fury.



© Rick Halvey, California Chaparral Institute



© Tom Greer

Where neighborhoods meet natural areas is called the wildlands-urban interface. A complicated set of conditions here results in increased risk of wildfire.

Creating defensible space around structures and landscaping with fire in mind can save your home.



© Rick Halvey, California Chaparral Institute

# PROTECTING OPEN SPACE

It takes all of us to care for this land

**H**ighland lies at the foothills of the San Bernardino Mountains and stretches across two watersheds. While its western urban edge borders the City of San Bernardino, its eastern edge features large tracts of open space, including the Natural Parkland and Trail. Even as development plans seek to transform certain areas, the City of Highland continues to champion natural landscapes. In fact, the General Plan requires that at least 20 percent of the City be designated as open space.

It takes vision to establish open space and it takes science and grit to protect it. Rare species and visitor activity alike need to be monitored. Runoff, erosion, and invasive species need to be managed. Habitats need to be restored and trails maintained.

To some degree we all share this responsibility. The steps we take on this land and the hands we lend for its care can all make a difference. What difference will you make today?



# A RESTLESS LANDSCAPE

The San Andreas Fault has carved this land

Long before settlers and farmers began shaping Highland, geologic forces were at work folding and faulting this land. Like many communities in California, Highland sits on the San Andreas fault, the boundary between two gigantic “plates” of Earth’s crust. The Pacific Plate to the west slowly moves northwest past the North American Plate. Most days, we don’t detect the movement. Sometimes it hits us with a jolt.

The view before you is a reminder of Earth’s dynamic nature. The surface of the San Andreas fault may be subtle, but the results of its movement are blatant. Folded and thrust, the land rises sharply from the valley floor and creates the escarpment you see today.

*The San Andreas fault stretches 810 miles through California. Its southern section begins near the Salton Sea, runs along the base of the San Bernardino and San Gabriel Mountains, and veers north past Frazier Park. The central segment begins at Parkfield; the northern section begins at Hollister.*



*From this vantage point you can also see the R on Keller Peak. Created in 1913, the massive letter is a significant symbol for the University of Redlands. Students still visit it today.*

# STORIES ON THE LAND

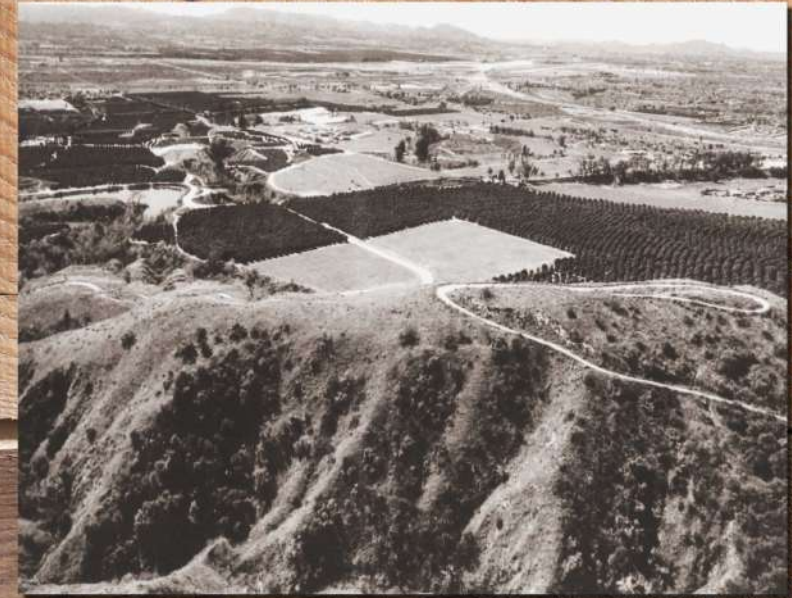
## The valley floor reveals Highland's history

Imagine the valley over 100 years ago. Young citrus trees dotted the valley floor and foothills. Rivers and creeks bisected the land, some as natural courses and others as channels and ditches. While the Santa Ana River remains a principal water course today, the Mill Creek *zanja* and North Fork Ditch were equally important in years past.

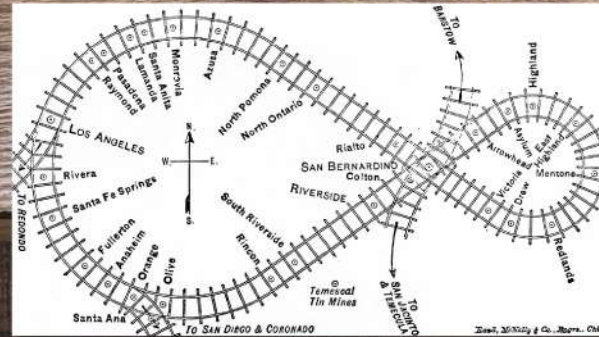
From this vantage point you can see the foothills and mountains that frame the valley below and various features that anchor its history. The valley floor is criss-crossed with more than irrigation ditches. Railroad tracks became a part of the landscape once the Santa Fe Railroad extended its line from San Bernardino east. While the ditches brought water to the fields, the rail line brought people to the inland valley. Called the Kite Shaped Track, the line made a scenic loop, stopping in various towns including Highland and Mentone. By the late 1880s some trains rolled in with tourists and others rolled out with crates loaded with citrus.

The valley landscape has changed dramatically over the years. Housing tracts and industrial parks stand where citrus once did. Still, protecting natural landscapes remains a priority for Highland. More than 20 percent of the City is designated as open space.

*To the west, what was once Norton Air Force Base is now San Bernardino International Airport. The San Gabriel Mountains rise in the distance.*



*To the south the community of East Highland is in the foreground. Box Springs Mountains rise in the distance.*



*To the east Mill Creek flows from the San Bernardino Mountains. What water isn't diverted to the zanja eventually flows into the Santa Ana River and into spreading basins.*



# OF WATER AND WEIR BOXES

Early ranchers channeled water as well as prosperity.

**T**his trail guides you through the remnants of a historic irrigation system. Keep an eye out for concrete-and-river rock flumes and weir boxes along the way. Some date back before the 1930s. The weir boxes directed the flow of creek water into channels that irrigated citrus groves far afield.

Although this area may appear dry, Plunge Creek traverses the Parkland and has carved a substantial canyon in its path. In the mid-1800s, early ranchers and farmers irrigated their thirsty orchards by channeling water from it, as well as the Santa Ana River and City Creek. Flowing into ditches and smaller rock-lined channels, the water cultivated more than crops. It quenched the thirst of the small but swelling community called East Highland.



*The Santa Ana river watershed begins in the San Bernardino Mountains where snowmelt seeps into creeks fed by storm runoff. Streamlets become creeks and creeks become the river which still provides us with water today. It travels westward before being retained by Seven Oaks Dam and, later, Prado Dam until release.*

# TRAILS THROUGH TIME

Welcome to the City of Highland's Natural Parkland and Trail

**W**inding through the foothills of the San Bernardino Mountains, this trail offers a window to the past. For at least 3,000 years Serrano and Cahuilla Indians crossed this land during hunting, gathering, and trading expeditions. The trail's plants and wildlife, and water from Plunge Creek helped sustain them on their journey.

Around 1858 settlers and farmers began setting down agricultural roots in the area. The parkland's trail was once an access road to their citrus groves. Plunge Creek and the Santa Ana River were their sources of irrigation water, channeled through rock-lined weir boxes and ditches that still stand today. As you walk the trail, think back 100 or 1,000 years. Whose footsteps will you be walking in?



*The Natural Parkland and Trail is comprised of 87 acres of protected and natural open space. The trail is an easy 1.5 mile loop that winds through sage scrub and chaparral, offering spectacular views along the way.*



# WELCOME TO THE CITY OF HIGHLAND'S NATURAL PARKLAND AND TRAIL



**T**he Natural Parkland and Trail is comprised of 87 acres of protected and natural open space. An easy 1.5 mile loop trail winds its way through sage scrub and chaparral, offering spectacular views along the way.

This land was donated to the City by the master developer of East Highlands Ranch, S-P East Highland-LLC.



City of Highland  
[www.ci.highland.ca.us](http://www.ci.highland.ca.us)



# SUBTLE BEAUTY

In spring and fall coastal sage scrub surprises us with color

**C**oastal and alluvial fan sage scrub blankets the slopes of the Natural Parkland. Unlike the woody plants of the chaparral, sage scrub plants are soft and aromatic. After winter rains, green seeps into their grey palette. White sage, black sage, elderberry, monkeyflower, and other plants burst into color—purple, lavender, yellow, and red. Keep an eye out for the tall flower stalks of yucca. Its blossoms appear like creamy-white bells. Watch also for the delicate flowers of chia and other plants that grow low to the ground.

During the blistering summer months, color drains from the scrub. Some plants even shed their leaves to conserve water. Come fall, buckwheat and chia blush wine red as their seeds ripen. The palate shifts into autumn tones as plants wait for the winter rains.



© Justin M. Wood

*Alluvial sage scrub is a rare variant of coastal sage scrub. It occurs on the flood plains that lie at the base of our local mountains. Plants that live here, like the slender-horned spineflower and Santa Ana River woolly star, cope well with periodic flooding and erosion.*



© Ken Corey/USFWS



© Jennifer Rigby, The Acorn Group

*Coastal sage scrub is California's most threatened habitat and many species of plants and animals depend upon it. Some, like the coastal California gnatcatcher, rely on it exclusively.*

# THE RISE OF CITRUS

## Highland's orange trees and citrus industry thrived

**N**avel and Valencia citrus once grew behind the old stone wall you see. Their blossoms sweetened the scent of sage scrub and their fruit transformed East Highland Orange Company into a citrus-producing powerhouse. By the early 1900s the citrus industry cultivated a demand for planters, pruners, pickers, and packers. The groves inspired various projects, including a year-round irrigation system and new rail lines. Trains roared into the region to load packing crates. They roared out with fresh citrus for national and even international markets. By the early 1900s boxcars boasted all-new refrigeration. They were insulated, and ice bunkers sandwiched the orange crates at both ends. By the 1950s the East Highland Orange Company was shipping over a million boxes of oranges each year. This truly was the “gold buckle of the citrus belt.”

But the buckle snapped in the 1960s. Leaves began withering and the trees fell victim to infection. Unknowingly, they had been budded on root stock that was susceptible to a viral infection. Old trees were pulled; new trees were planted. Some groves endured; others evolved as new communities sprang up.

Yet the spirit of East Highland Orange Company endures today. You can see it in the heritage groves, the irrigation channels, and even the soil under your feet. They all stand as a testament to Highland's citrus heritage.



*In 1902, a pound of Highland's finest Gold Buckle brand oranges cost about four cents.*



# PROTECTING THE RARE

## Many species call this Natural Parkland home

This is a special place where songbirds gather and small mammals graze. It is home to the loud and gregarious—like quail and coyote—and to the quiet and reclusive—like kangaroo rats. All of them need this land. It offers food and shelter, nesting space and a resting place for many species. Keeping this habitat healthy makes life easier on them, many of which depend on very particular conditions for their survival.

These plants and animals are important members of an intricate ecosystem. They help make the Natural Parkland a special place. As you walk along the trail today, be alert for other things as well. Be careful around stinging nettle whose green serrated leaves grow fuzzy with thousands of tiny glassy barbs. And if you hear a raspy buzzing sound, it could be a Southern Pacific rattlesnake. Give it distance and respect!



Dr. Lloyd Green Ingle © California Academy of Sciences

*With cheek pouches, large hind feet, and a tail that helps it balance, the San Bernardino kangaroo rat is well adapted for foraging for seed in sandy washes. Without the region's alluvial fan sage scrub, we stand to lose this endangered mammal.*



© Benjamin Smith

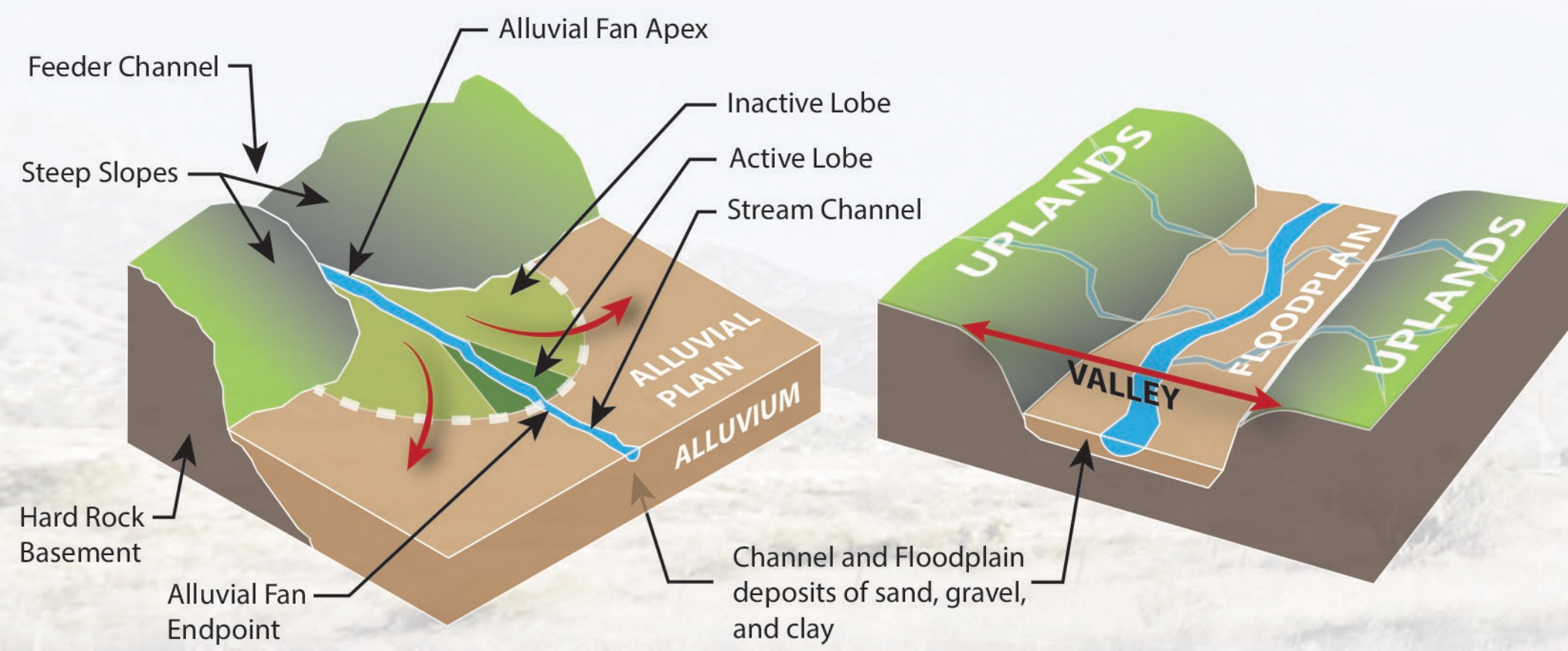
*Without the coastal sage scrub of the Natural Parkland, coastal California gnatcatchers would no longer greet you with their cat-like mews. The gnatcatcher is a specialist, so when sage scrub habitat disappears, so does this rare bird.*

# THE WASH PLAN

## An Integrated, Collaborative Model for the Upper Santa Ana River

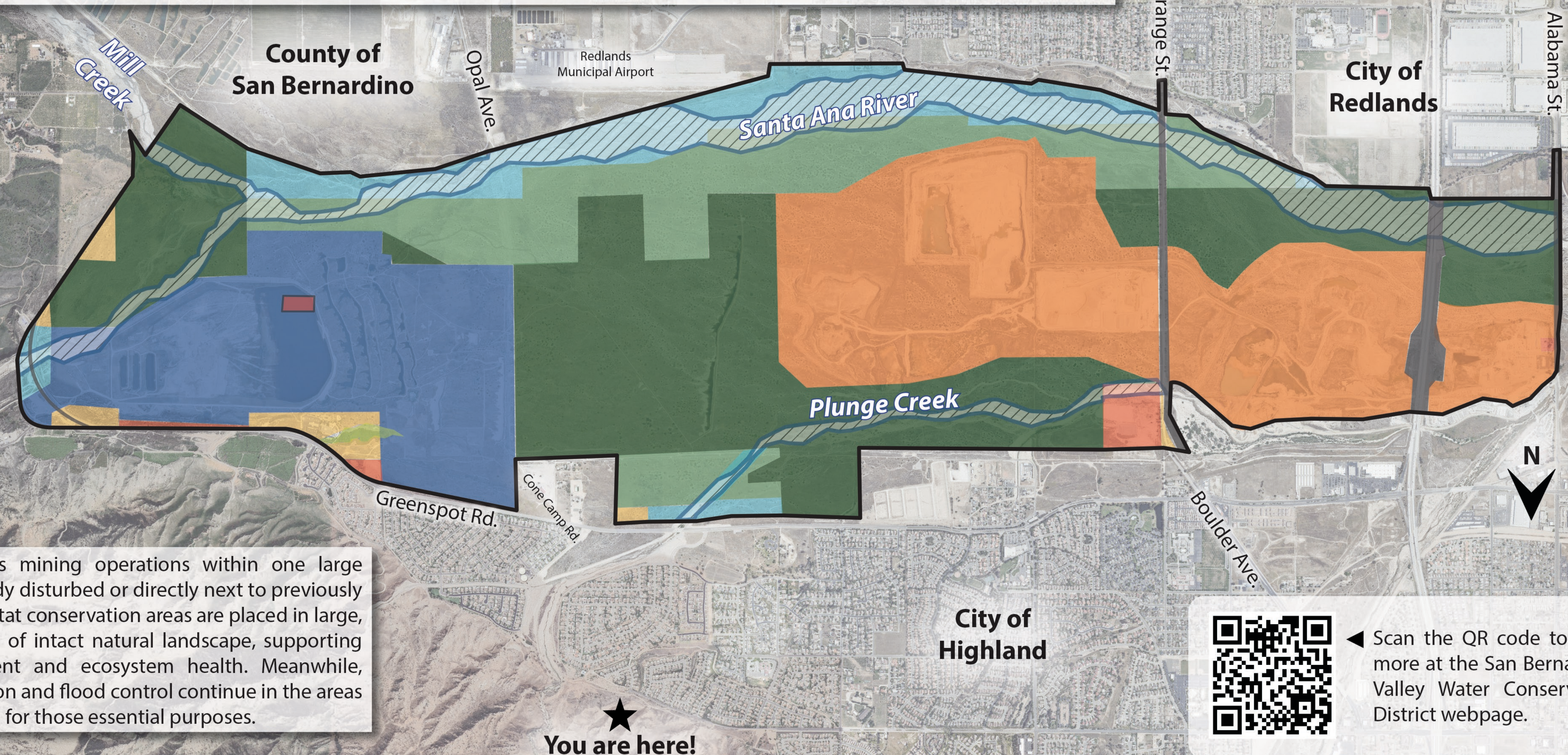
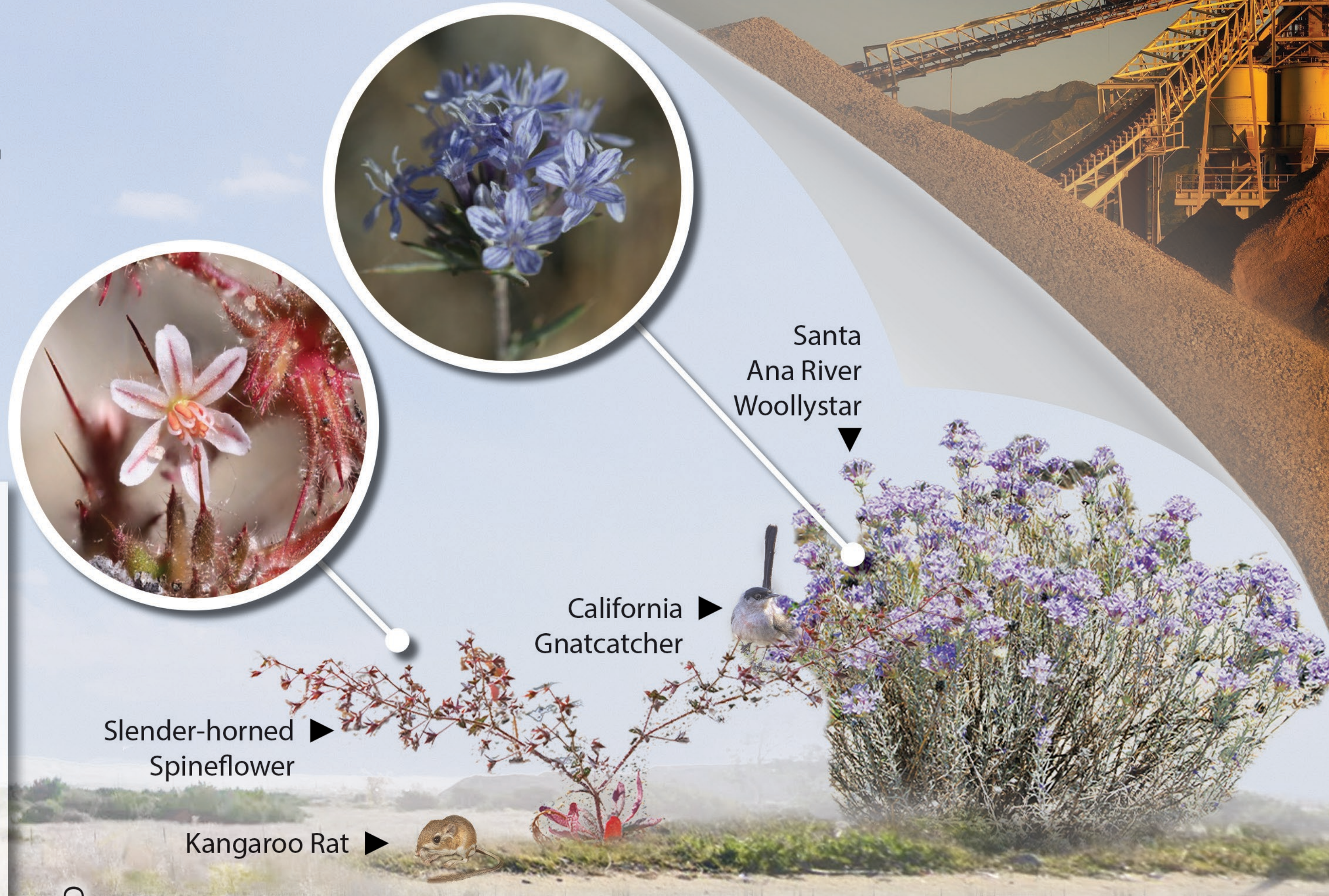
The Upper Santa Ana River Wash Habitat Conservation Plan (Wash Plan) represents over two decades of collaboration among Task Force partners. It provides an integrated approach to manage, permit, and mitigate activities within the Wash—balancing water conservation, wells and infrastructure, aggregate mining, transportation, flood control, agriculture, trails, and habitat restoration to support both community needs and the natural environment.

The Wash is used as a mining resource due to its high levels of sediment.



### Alluvial Fan and Flood-Plain

The Santa Ana River once flowed across a vast floodplain (left) and alluvial fan (right), carrying powerful floodwaters that shaped the land and deposited layers of sediment. These natural deposits created ideal conditions for settling basins, where surface water could percolate into the groundwater basin, supplying much of the region's water. The same geologic processes also formed valuable sand and gravel resources, supporting the local building industry and economy.



In recent years, the Santa Ana River Wash has become recognized as a critical habitat for many sensitive, threatened, and endangered species, as this type of environment has grown scarce across Southern California. The Wash also serves vital purposes—water conservation, aggregate mining, flood control, and wildlife habitat—yet these uses often compete for the same land, creating the need for a comprehensive land use plan to balance and protect all its values.

The plan groups mining operations within one large area—land already disturbed or directly next to previously mined sites. Habitat conservation areas are placed in large, connected zones of intact natural landscape, supporting wildlife movement and ecosystem health. Meanwhile, water conservation and flood control continue in the areas traditionally used for those essential purposes.

#### Proposed Land Uses Legend:

- Water Conservation
- Habitat Conservation
- Aggregate Mining
- Agricultural
- Roadways
- Santa Ana River Woollystar Preserve
- Flood Control
- Area Not a Part
- Undesignated/Public Ownership
- Managed Flood Control

Scan the QR code to learn more at the San Bernardino Valley Water Conservation District webpage.

# NORTON AIR FORCE BASE

## An Historic Transition

**N**amed in honor of World War II hero Leland F. Norton, Norton Air Force Base was home to many Air Force families from the late 1940s to the early 1990s. After its decommissioning in 1992, the base transitioned from military service to civilian use. Today, the site continues its legacy as San Bernardino International Airport—marking a new era of growth and innovation for the city.

◀ Capt. Leland F. Norton



Image Credit: Nick Cataldo, The Sun

### Hometown Hero: Capt. Leland F. Norton

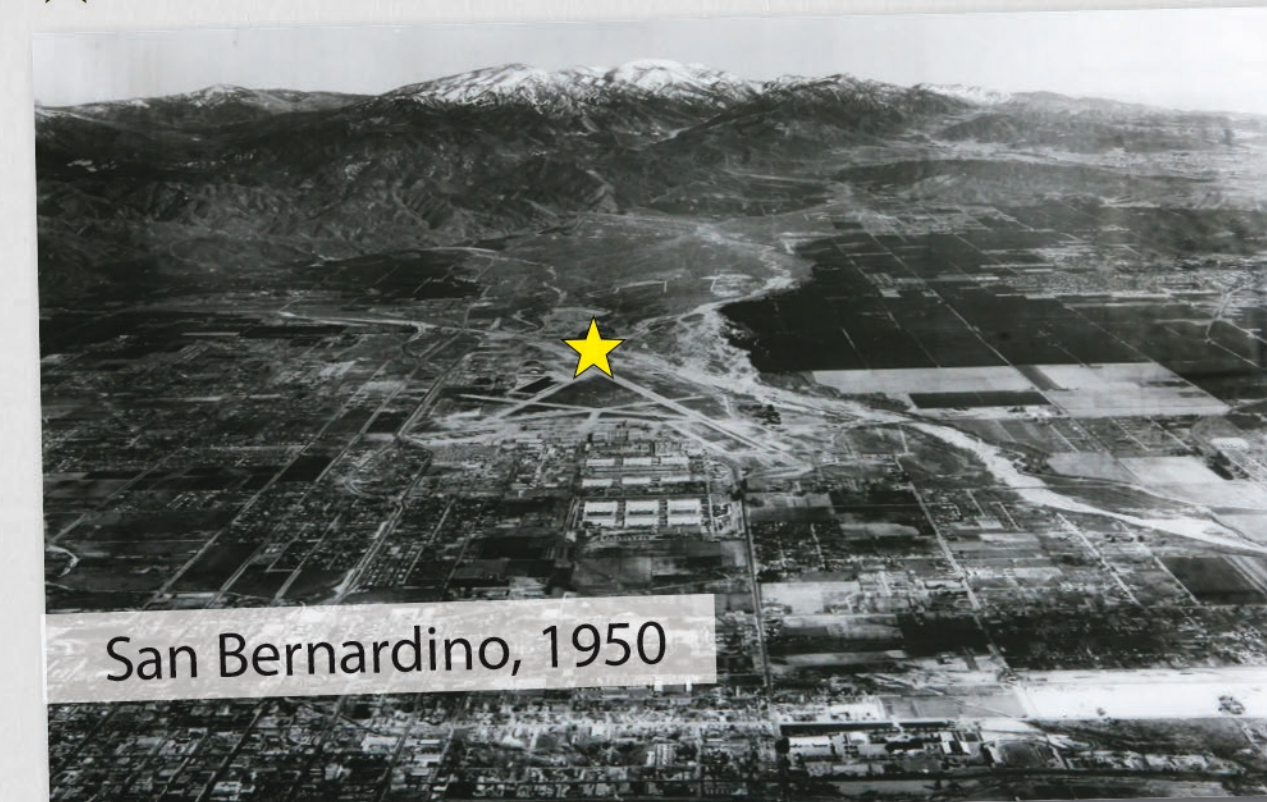
On May 7, 1944, during his 16th combat mission, Lt. Norton's A-20 Havoc was struck by enemy fire. He ordered his crew to bail out but remained at the controls to ensure their safety, losing his life when the plane crashed. Lt. Norton was posthumously awarded the Distinguished Flying Cross and the Purple Heart for his heroism.



◀ Scan the QR code for more information on the Norton Air Force Base Museum.

Aerial views highlight the transformation and similarities of the former Norton Air Force Base into today's San Bernardino International Airport.

★ San Bernardino International Airport Runways



San Bernardino, 1950

Image Credit: Nick Cataldo, The Sun



San Bernardino, 2024

Image Credit: City of San Bernardino California

Image Credit: Michel Nolan, The Sun



The Norton Air Force Base Museum is dedicated to celebrating the lives and history of those who served at the former Norton Air Force Base.

Image Credit: Brian Whitehead, The Sun



The San Bernardino International Airport stands as a new hallmark for growth and connectivity.

◀ From Military to Civilian Flight: Once home to U.S. Air Force Lockheed C-141 Starlifters that supported combat, resupply, and medical transport missions, the airfield now serves commercial and civilian aircraft for everyday travel.

Image Credit: Spectrum News 1



Image Credit: Mark MuckenFus, The Press-Enterprise

- **1921** Leland F. Norton was born on March 12, 1921, in San Bernardino, California.
- **1941** Norton joins the Royal Canadian Air Force and a new Municipal Airport is created two miles east of downtown San Bernardino.
- **1942** Norton transfers to the U.S. Army Air Force serving on rescue missions.
- **1943** Norton applies for combat and begins training in the summer until the end of the year.
- **1944** Norton served as Deputy Commander of the 640th Bombardment Squadron in the UK, where he was killed in combat.
- **1948** The Municipal Airport is transferred to the U.S. Air Force.
- **1950** The San Bernardino Air Force is renamed Norton Air Force Base in Leland F. Norton's honor.
- **1952** Norton, originally buried outside of France in the U.S. Military Cemetery, is brought back home for reburial.
- **1992** Norton Air Force Base is decommissioned and plans begin to convert it to a civilian airport.
- **1994** San Bernardino International Airport Authority is formed to oversee airport development.
- **2011** The airport receives runway and terminal upgrades.
- **2022** The first passenger service takes place with Breeze Airways.



# POINT OF BEGINNING

## The Origin of the Road Named “Base Line”

The name “Base line” comes from the east-west line used in the Public Land Survey System (PLSS). The survey reference line is crucial for mapping public lands into townships and sections.

The San Bernardino Base Line was established in 1852 and run along the foothills of the San Bernardino Mountains. The baseline intersects with the San Bernardino Meridian. This intersection is the starting point for land surveys in Southern California. Many streets named “Base Line Road” in California align with the original survey line.

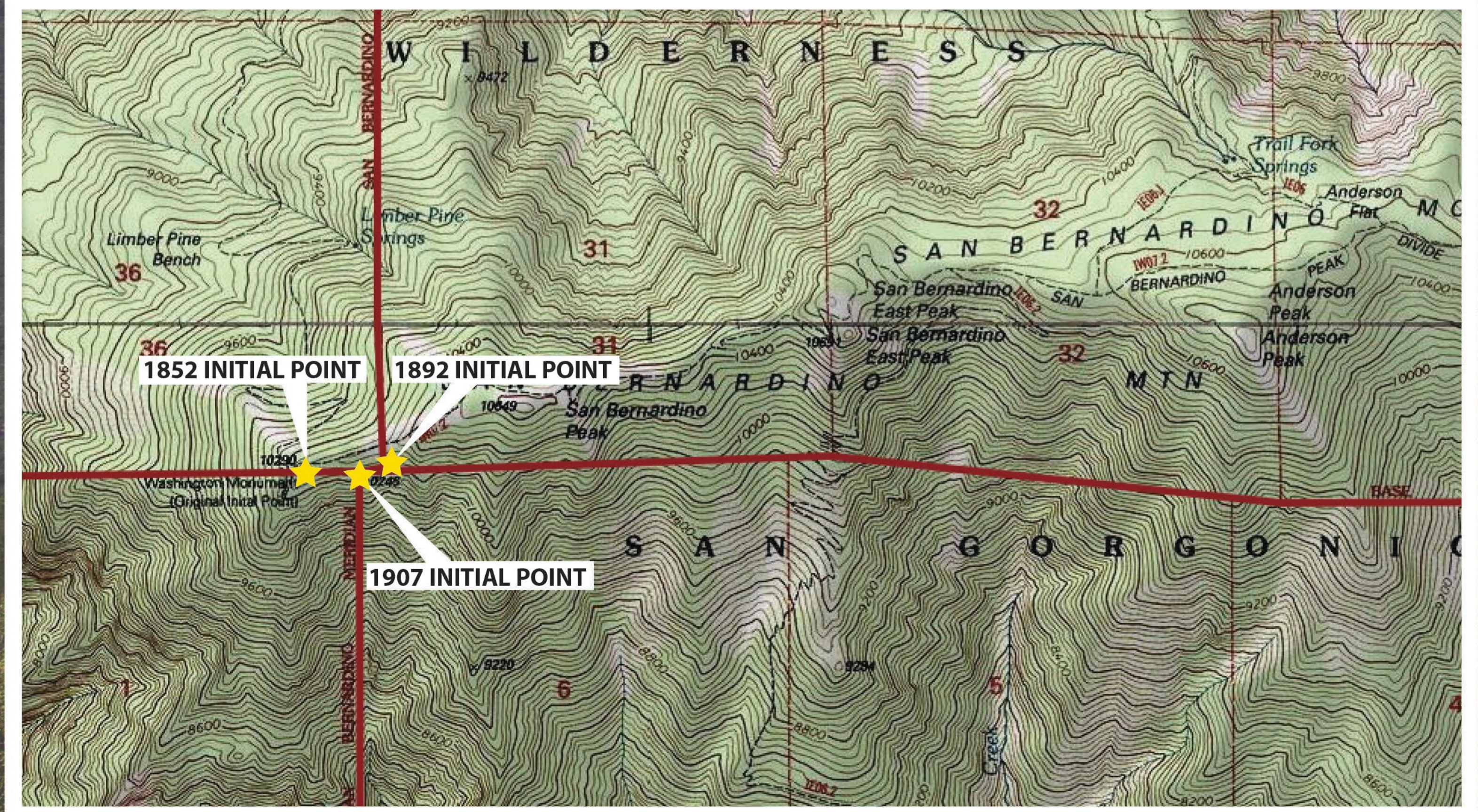
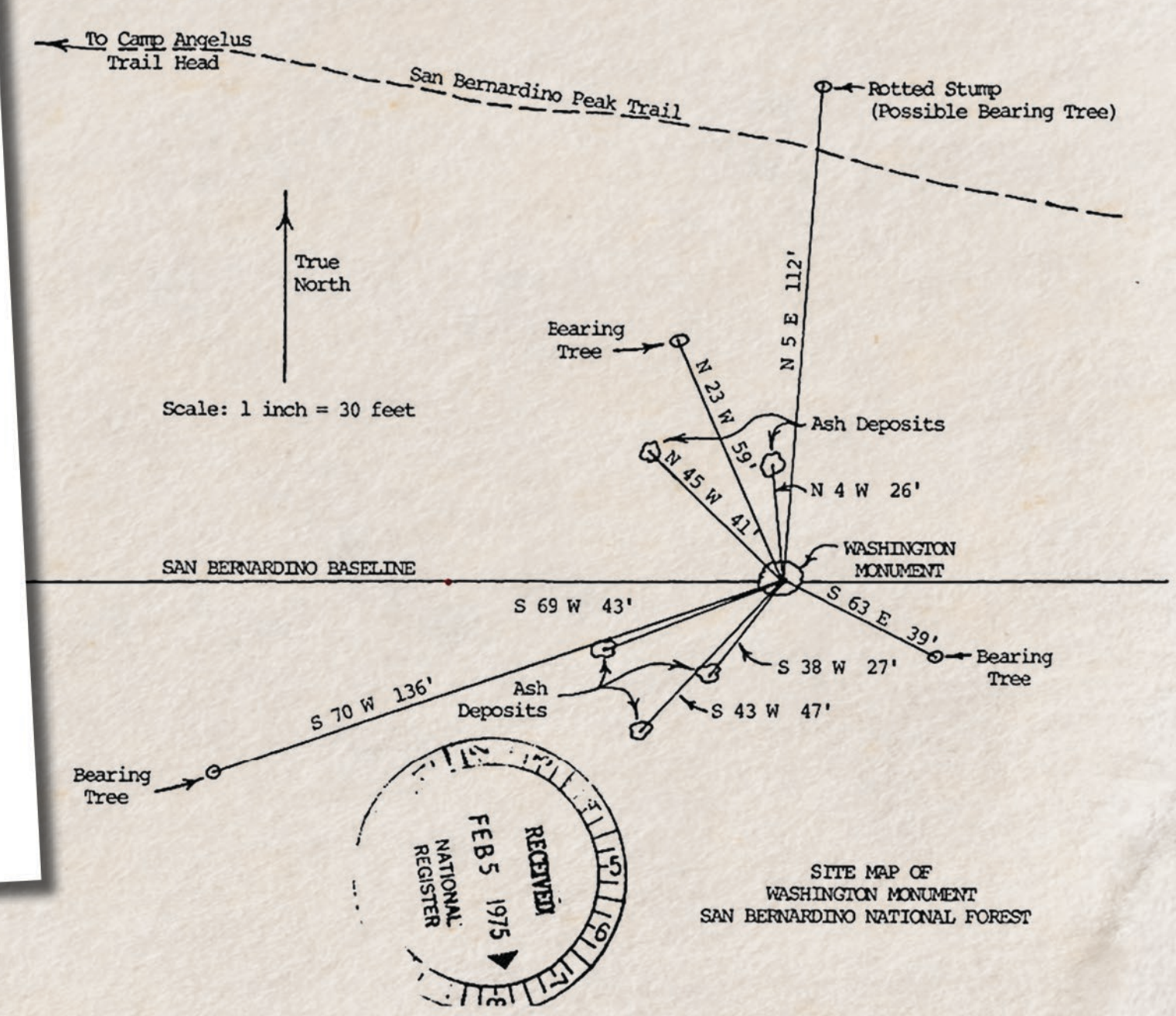
The base of the San Bernardino Mountains helped define the initial survey point because of their stability and visibility. It was an ideal natural reference point for early surveyors.

The San Bernardino Base Line and Meridian were essential for expanding settlement, managing land ownership, and developing infrastructure in California during the 19th and 20th centuries.

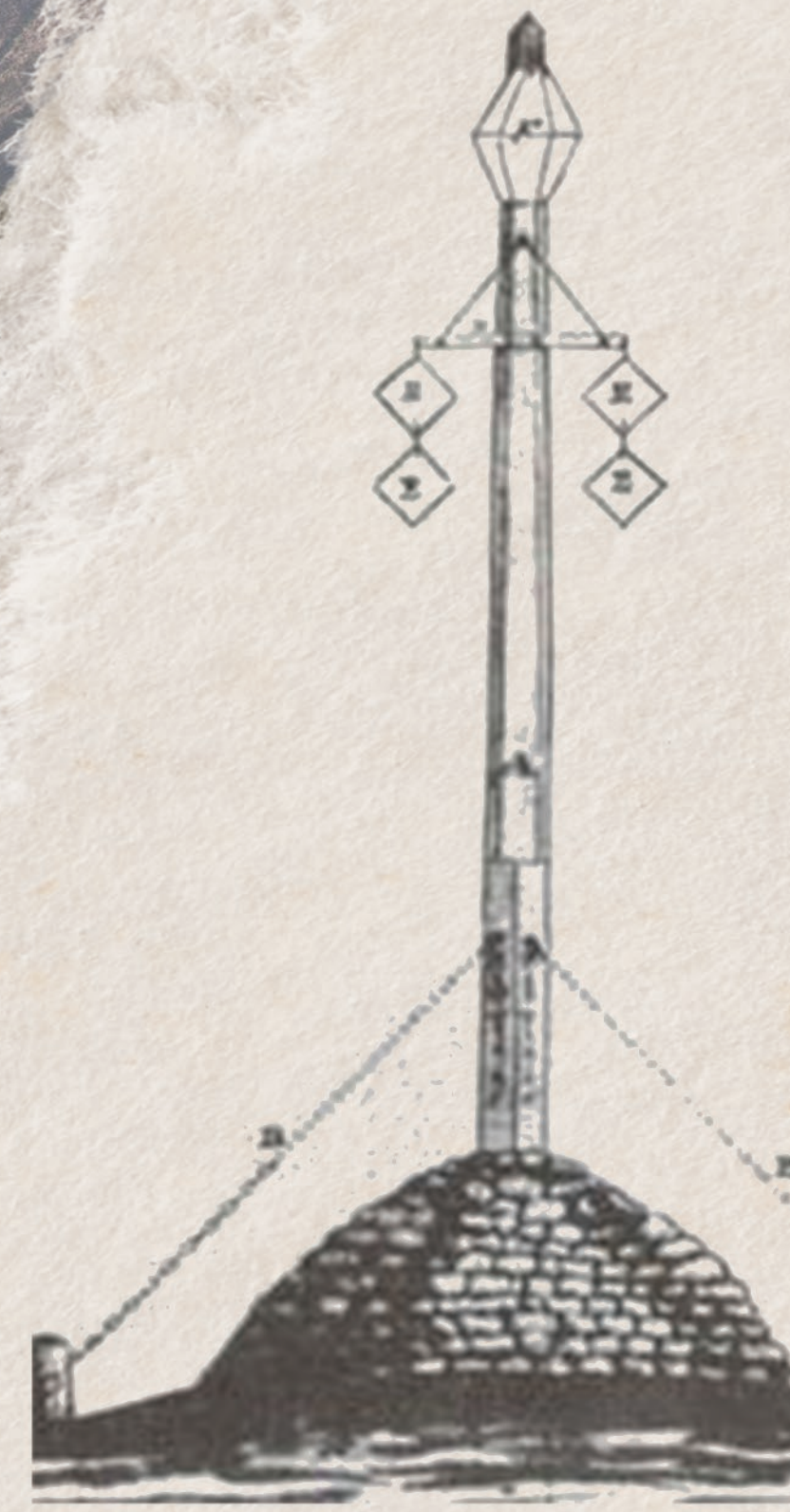


WASHINGTON'S MONUMENT

A half-size replica of Washington's monument was built in a regional park in Yucaipa. The view from the bench lines up the interpretive plaque, the pole, and San Bernardino Peak in the background.



Due to later surveys in 1892 and 1907, Washington's original 1852 Initial Point was shifted twice along the base line—creating a 277-foot “jog” in the San Bernardino Meridian and resulting in three different Initial Points. The base line continues to be uneven to the east.



The Washington Initial Point was built as a 25-foot pole rising from a pile of rocks, with dangling tin reflectors, for higher visibility from below. The original marker built by the surveyor Henry Washington is still there as a jumbled pile of rocks anchoring the remains of the pole.

# WATER RETENTION

## The Importance of Local Water Stewardship

A severe drought from 1898–1903 highlighted the need for reliable water in San Bernardino, Riverside, and Orange counties. In 1909, the Water Conservation Association, led by Francis Cuttle of the Riverside Water Company, began storing surface water underground using percolation ponds. The Cuttle Weir, completed in 1914, became a key recharge facility. The District has long operated recharge sites along the Santa Ana River and Mill Creek, replenishing groundwater with local runoff and imported water.

In 2009, nearly a century after its founding, the district reaffirmed its mission to serve the valley. Working with Valley District, it continues improving water collection and spreading ground. Instead of letting valuable surface water flow downstream, and out of the area the district has improved storm-water capture and boosted groundwater recharge by up to 200 acre-feet per day. This method mimics nature and keeps our water supply sustainable.

Today, the San Bernardino Valley Water Conservation District maintains an extensive system of basins, canals, weirs, and gates—over 70 recharge basins across 43 acres—to sustain the region’s vital groundwater supply. This is an achievement derived from collaboration with local cities, water agencies, and public partners, which has built resilience in the face of changing water demands and climate conditions.



Cuttle Weir Diversion structure Dedication in the 1910s.



Francis Cuttle



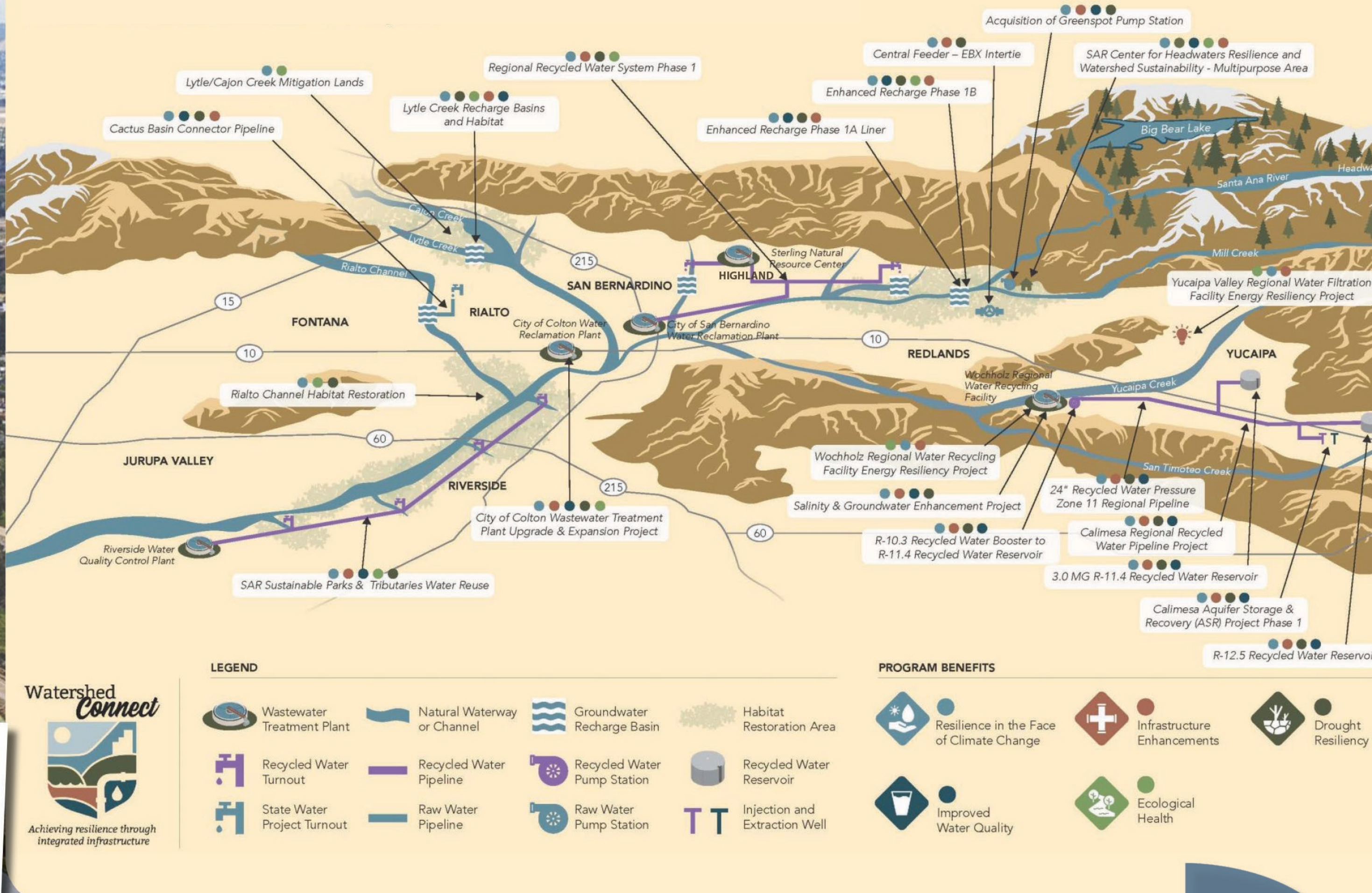
Water Department Crew laying out a pipe on 6th Street in the 1930s.



These percolation basins capture water from the Santa Ana River and Mill Creek, letting it soak naturally into the ground to refill local aquifers. This process helps store water for our communities, wildlife, and future generations in the San Bernardino Valley.

### Watershed Connect Phase 1 Projects

17 projects being implemented by Yucaipa Valley Water District and 11 projects being implemented by San Bernardino Valley Municipal Water District as part of the Watershed Connect WIFIA program.



### Groundwater Use in Southern California

- Groundwater is the safety net — when imported water (from the State Water Project or Colorado River) is cut back, cities pump more from local aquifers.
- Overdraft risk: Many Southern California basins (San Bernardino, Chino, Central Basin, San Gabriel) are in long-term decline — leading to land subsidence and higher pumping costs.
- Supports planning: Water agencies use these visuals to justify recharge projects, recycled water programs, and public conservation campaigns.



# SAN ANDREAS FAULT

## Shaping our Southern California Landscapes

Highland sits at the southernly edge of the San Bernardino Mountains. The mountain range was formed through the process of tectonic uplift along the San Andreas Fault Zone. Various geological events have shaped the mountainous landscape, including volcanic activity, faulting, and erosion, leading to numerous peaks and valleys.

You may have noticed visible signs of the Fault in Highland including Fault Scarps, Sag Ponds, and Shutter Ridges.

Since the beginning of the 20th century, the tectonic plates along the San Andreas Fault have been recorded to shift approximately 1.5 to 2.5 inches per year. Some parts of the fault line have moved as much as 21 feet during significant earthquakes. The San Andreas Fault has displaced approximately 200 miles horizontally since it began moving 28-30 million years ago. (Britannica)



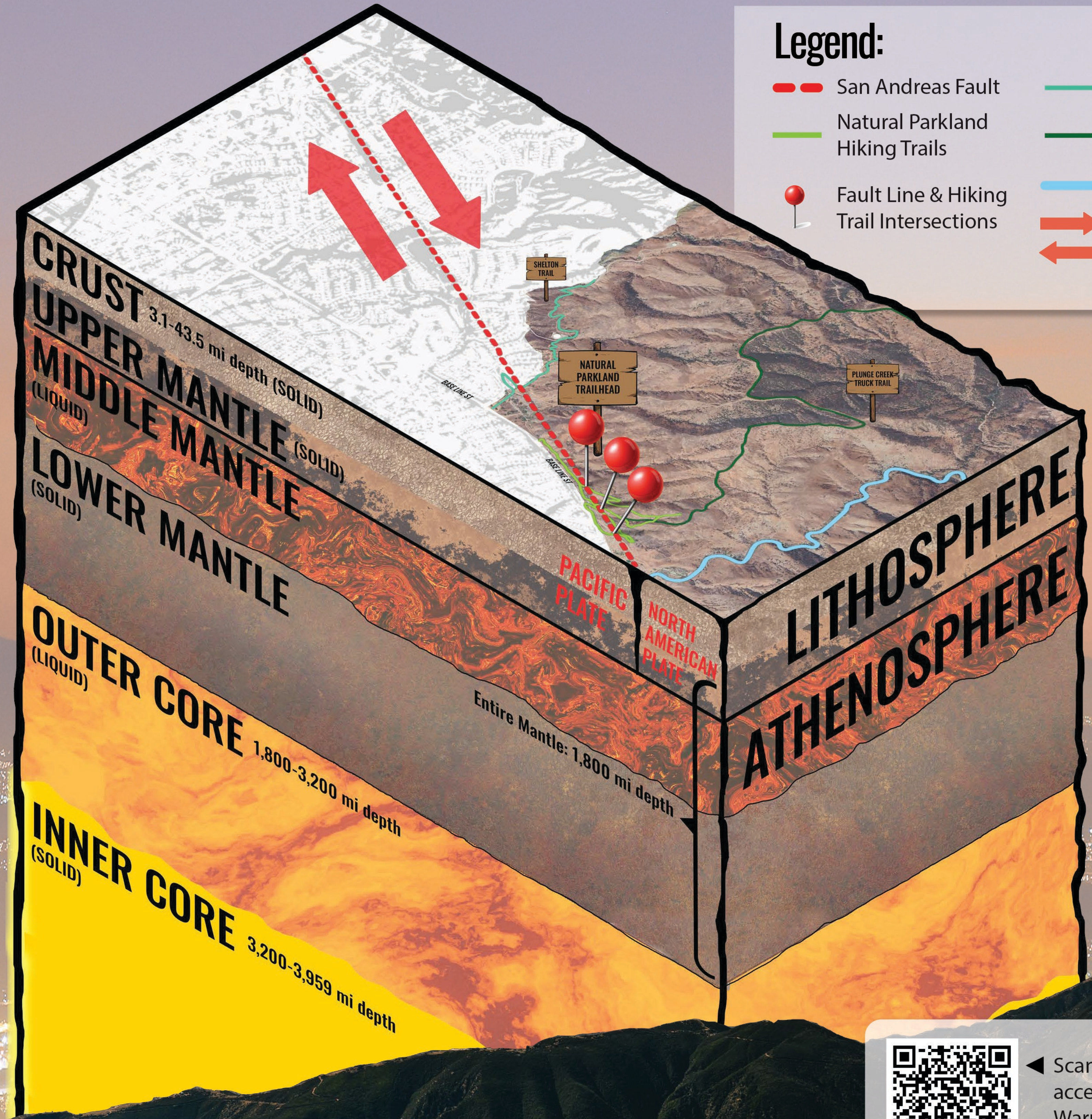
1906 SAN FRANCISCO EARTHQUAKE

Known as the 1906 San Francisco earthquake, the tectonic movement along the San Andreas Fault near the Northern California Coastline resulted in a 7.9 magnitude earthquake. This led to the eruption of fires in San Francisco and caused 3,000 deaths and the destruction of 80% of the city. (USGS)



1989 LOMA PRIETA EARTHQUAKE

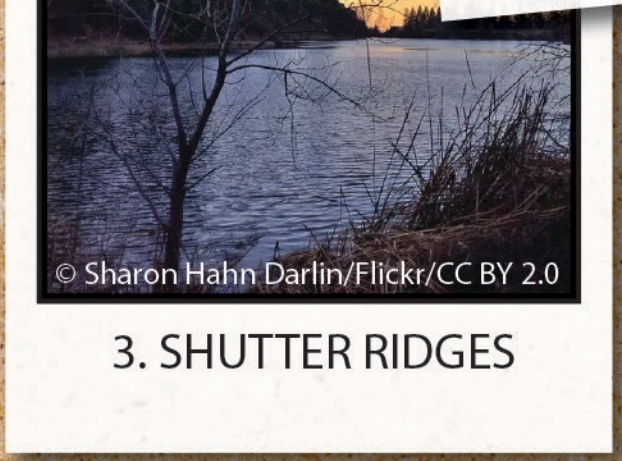
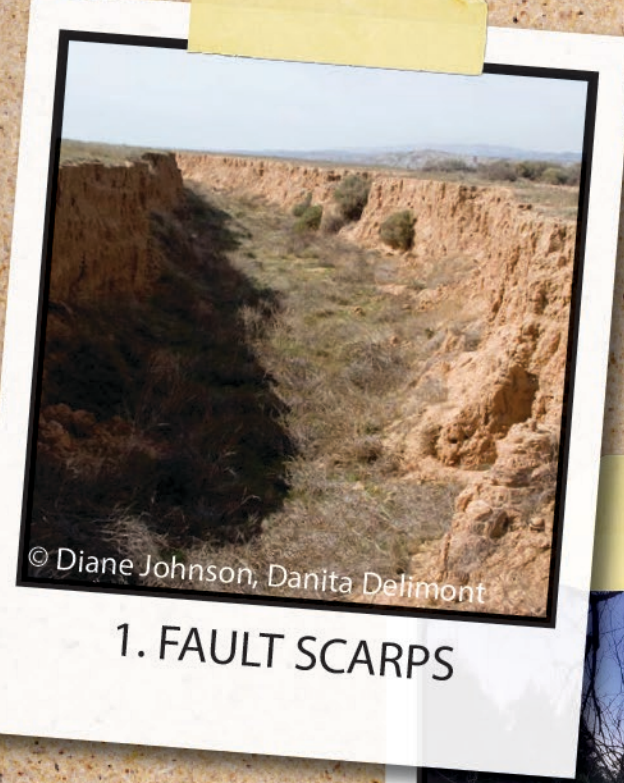
This earthquake measured 6.9 magnitude and was centered 10 miles northeast of Santa Cruz. It resulted in the collapse of a portion of the Nimitz Freeway (Interstate 880) in Oakland, CA. The collapse caused 42 deaths and the earthquake caused 63 deaths overall. (USGS)



### Legend:

- San Andreas Fault
- Shelton Trail
- Natural Parkland Hiking Trails
- Plunge Creek Truck Trail
- Fault Line & Hiking Trail Intersections
- Santa Ana River
- ➔ Transform Boundary
- ➔ Boundary

### SIGNS OF TECHTONIC MOVEMENT:



Earthquakes are constantly molding and reshaping the California Landscape. This movement often results in geological features that you can identify on your hike! Look out for...

- Cliff-like formations where a large area of land has risen higher than the surrounding areas [see 1. Fault Scarp]
- Depressions in the earth that sometimes fill with water when below the water table [see 2. Sag Basins/Ponds]
- Rock ridges that have collided with other landscape features and possibly redirected bodies of water, like at Lake Temescal [see 3. Shutter Ridges]

(Thoughtco)



Scan the QR code to access the Earthquake Warning California Toolkit and Resources.

# SHARING A SPACE WITH WILDLIFE

## Trail Wildlife and Safety Tips

**K**ee your eyes peeled for furry and feathered animals that may be sharing the trail. The front country of the San Bernardino Mountains is home of varied species including the Gray Fox, Wood Rat, Coyote, Bobcat, Mountain Lion, Red-Tailed Hawk, and North American Black and Brown Bear. Always be on guard and watchful of your surroundings. Keep dogs on a leash and do not feed the wildlife!



◀ Scan the QR code for more information from the USFS San Bernardino Mountain Front Country webpage.



Mojave Rattlesnake



Western Rattlesnake



King Snake



Gopher Snake

### Watch Your Step!

Walking trails are home to venomous and nonvenomous snakes. No matter the distinction, it is best to avoid them altogether. Stay on well used trails. Avoid tall grass, weeds, and brush. Check rocks, stumps, or logs before sitting down. Do not let dogs off leash. Dogs are at increased risk when sniffing the ground near brushy areas. Do not try to touch or handle a snake, dead or alive. Dead rattlers may still inject venom shortly after death.

### In the Event of a Snake Bite:

- Stay calm, but act quickly.
- Remove any items that may restrict swelling, such as rings or watches.
- Call 911 and seek medical attention immediately for both people and pets.
- Do not apply a tourniquet, cut the wound, or attempt to suck out the venom.
- Transport the victim to the nearest medical facility as soon as possible.



Red-Tailed Hawk ▶



◀ North American Black Bear

Mountain Lion ▶



Bobcat ▶



### How do you size up?



Golden Mantled Ground Squirrel ▶

Northern Raccoon ▶



Gray Fox ▶


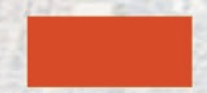

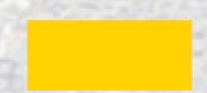


# FIRE ON THE MOUNTAIN

## Living with Wildfire in Highland

**W**ildfire has long shaped Highland's chaparral-covered hillsides. In the past, small, low-intensity fires helped clear old vegetation and renew the land. Today, decades of fire suppression and a warming climate have made these slopes dense and dry—ready to burn. Be prepared. Create and maintain defensible space around your home, and use fire-resistant materials to reduce the risk from flying embers, flames, and heat. Preparation today protects your family, your home, and your community tomorrow.

### Fire Hazard Severity Zones (FHSZ) Legend:

-  City of Highland
-  Very High
-  High
-  Moderate



Scan the QR code for more information on the City of Highland's updated Fire Hazard Severity Zone Map.

### The Start of a Wildfire

Most wildfires are started by people—from unattended campfires and equipment sparks to cigarettes and power lines. Lightning can also ignite fires during dry, windy weather. Each fall, the Santa Ana winds bring the most dangerous fire conditions to the San Bernardino region. In Highland, areas north of Greenspot Road and east of Weaver Street are especially at risk. Steep hillsides and dense brush can cause flames to spread fast—stay alert and practice fire safety at all times.



Wind and thermals can carry sparks and firebrands downwind of fires, greatly increasing spread rates.



The type of vegetation growing along with the fuel moisture content, physical properties, and chemical properties play a role in fire behavior and how fast fires spread.



Slope steepness affects fire behavior in a similar way as wind by changing the flame angle. Elevation and aspect are also important in determining how fires spread.



Wind speed has a huge affect on fire intensity and how fast fires travel. Wind pushes the flame forward and closer to the fire. Temperature, humidity, and precipitation are also important in determining how fires spread.



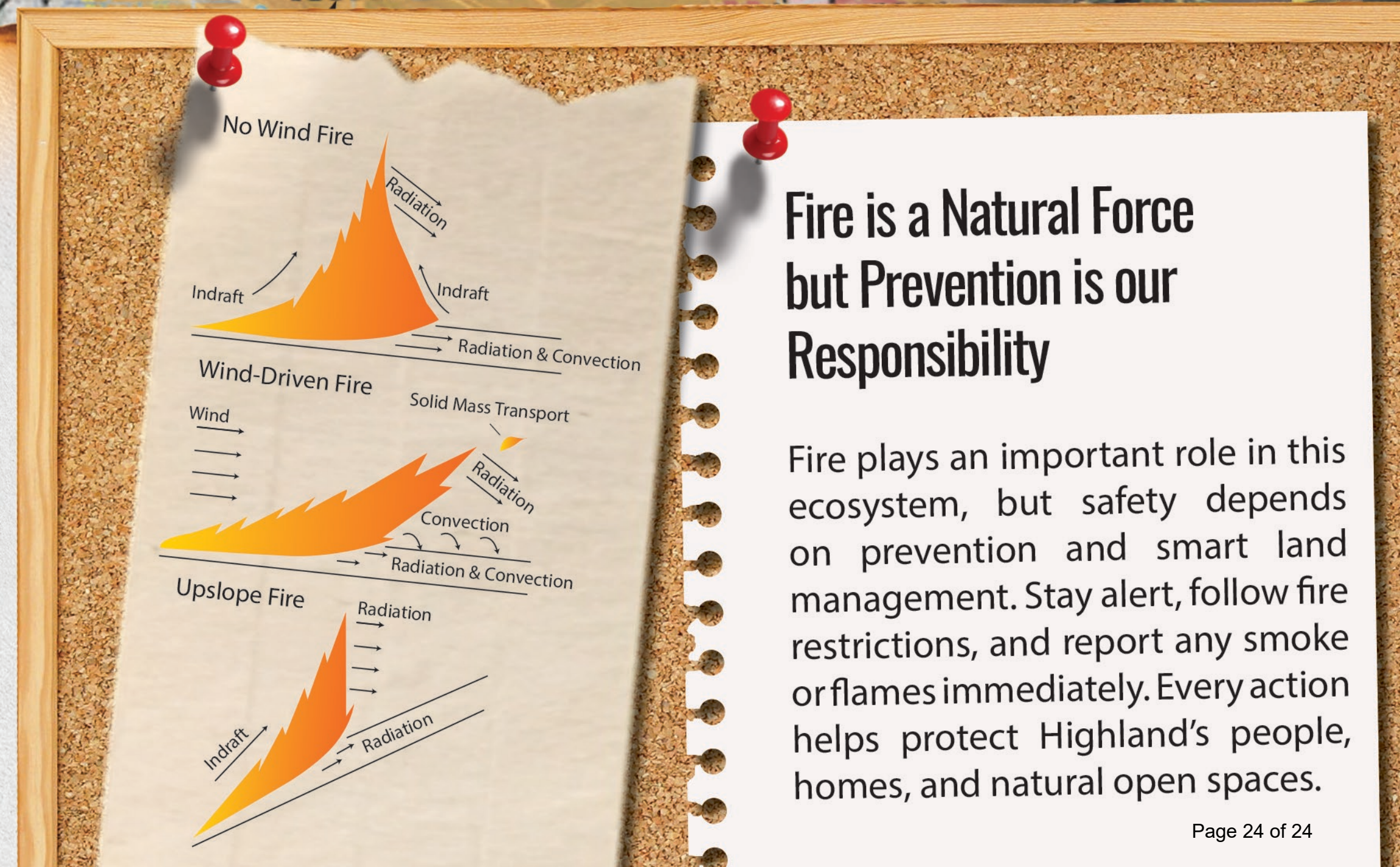
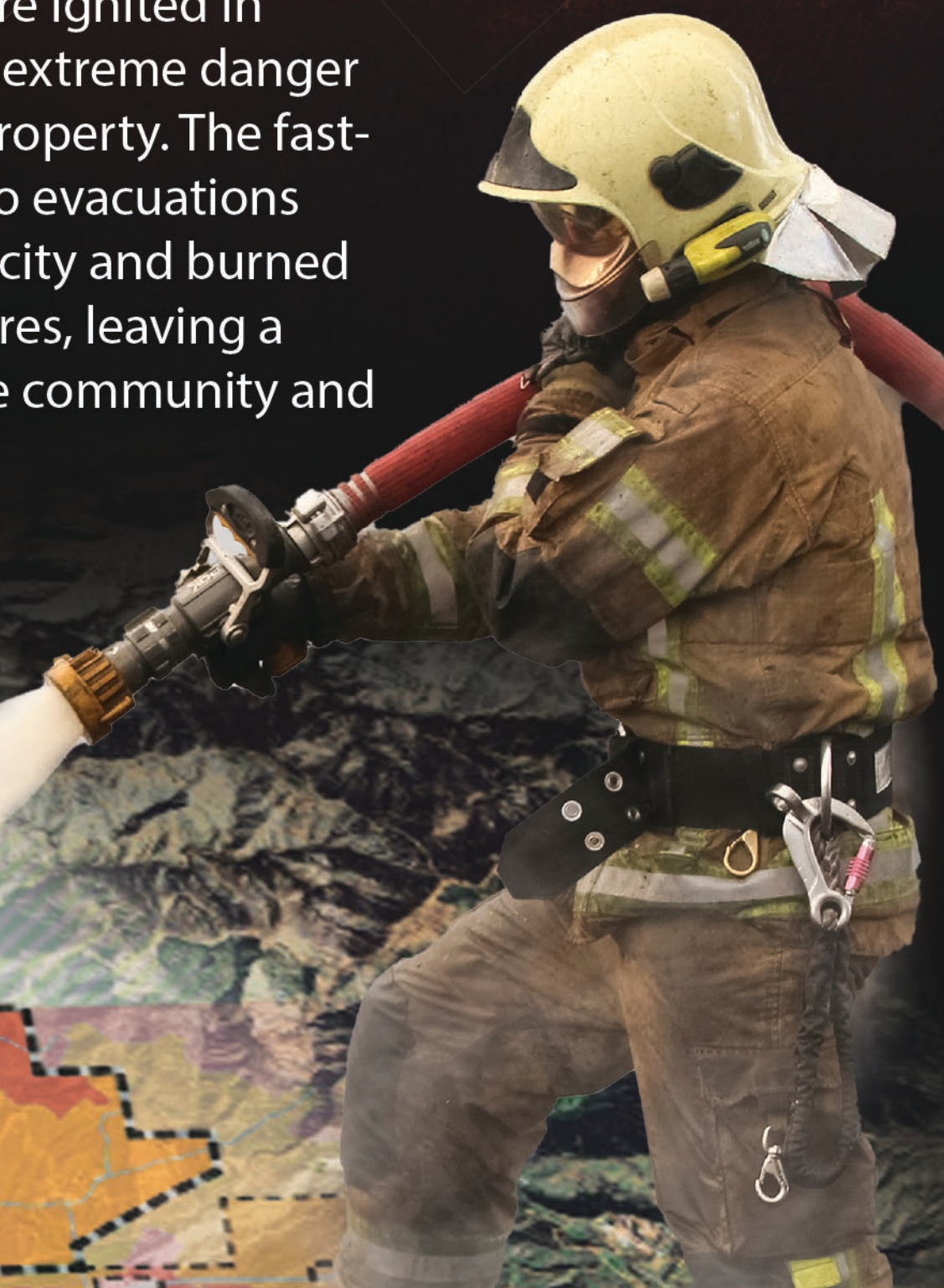
◀ Burning 91,000 acres, in 2003 the Old Fire destroyed 993 homes, claimed six lives, and caused over \$1.2 billion in damage. It stands as one of the most devastating wildfires in San Bernardino County's history.



◀ In 2024, the Line Fire ignited in Highland, creating extreme danger for residents and property. The fast-moving blaze led to evacuations across parts of the city and burned a total of 43,978 acres, leaving a lasting mark on the community and landscape.

### The Role of Fire in Nature

Natural wildfires help keep ecosystems healthy. Fire clears away dead plants, returns nutrients to the soil, and opens space for new growth. Some plants, like certain pine trees, even depend on fire to release their seeds. By preventing overgrowth and disease, wildfires help maintain balance in the natural landscape.



### Fire is a Natural Force but Prevention is our Responsibility

Fire plays an important role in this ecosystem, but safety depends on prevention and smart land management. Stay alert, follow fire restrictions, and report any smoke or flames immediately. Every action helps protect Highland's people, homes, and natural open spaces.