EL CAMINO REAL ROADWAY RENEWAL

Tree Workshop

February 9, 2023

EL CAMINO REAL ROADWAY RENEWAL

INTRODUCTIONS

Your Caltrans Team

Purpose of the Workshop

- Review work completed
- Update on project status
- Gather input on project design of replacement trees

About This Meeting

6:30 – 7:00	Introductory presentation
7:00 – 8:00	"Project Roadway" design challenge
8:00 – 8:30	Closing remarks
8:30	Doors close

Your Presenters

Rommel Pardo
Senior Project Manager

Kimberly White
Senior Landscape Architect

Frances Schierenbeck
Senior Environmental Planner, Cultural Resources

Beck Lithander
Landscape Associate

Adrienne St. John
Senior Landscape Architect

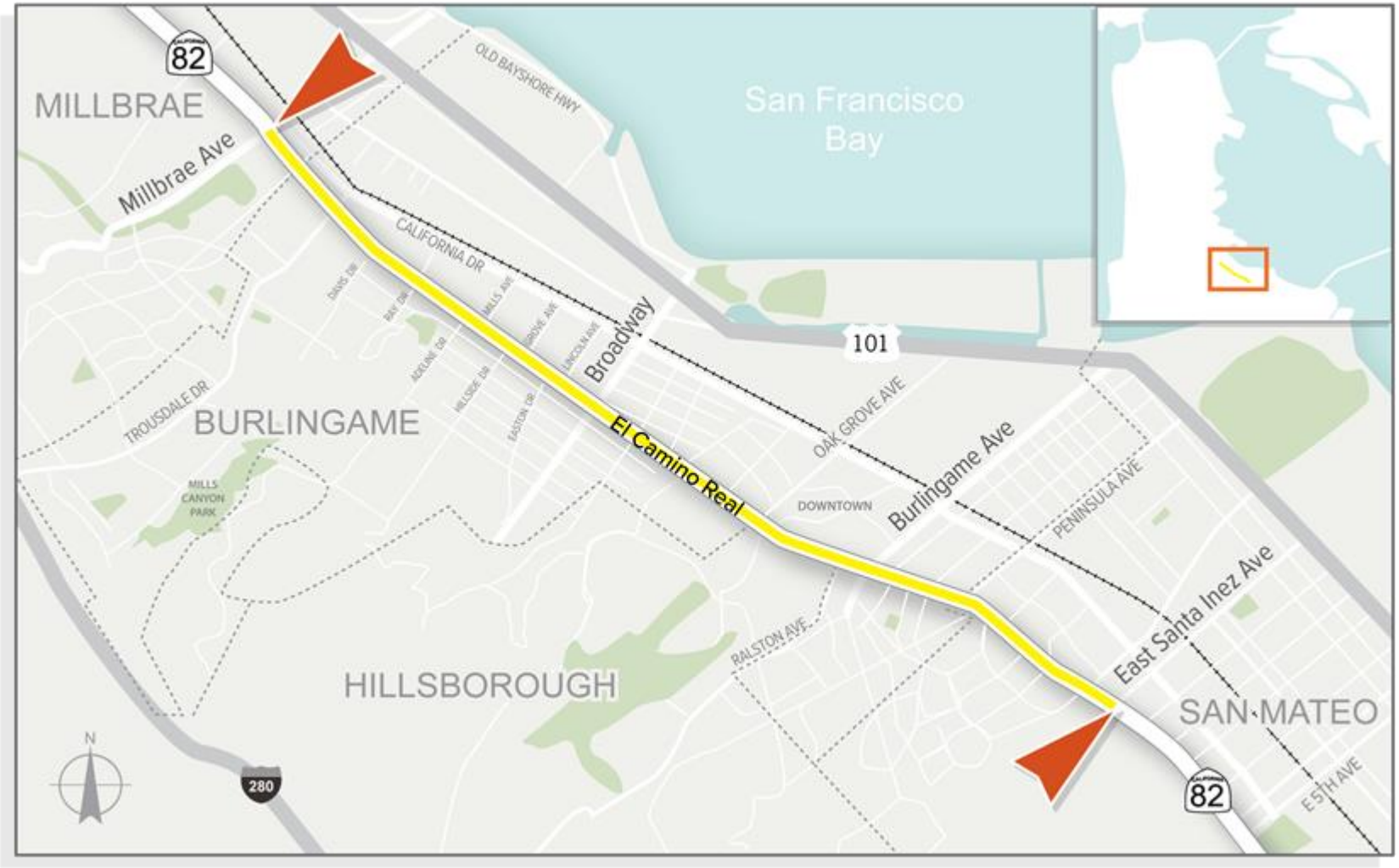
PROJECT OVERVIEW

Purpose & Overarching Goals

Overarching Goals

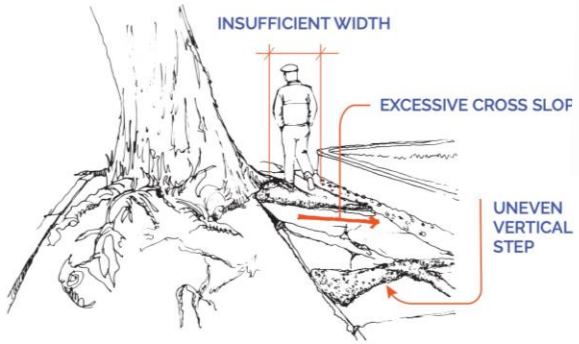
- Retain the character and health of the Grove.
- Improve the safety of the roadway and sidewalks.

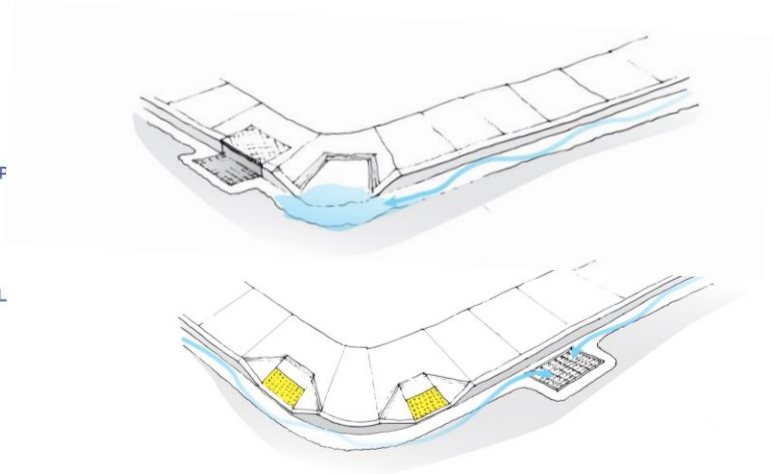
Project Limits



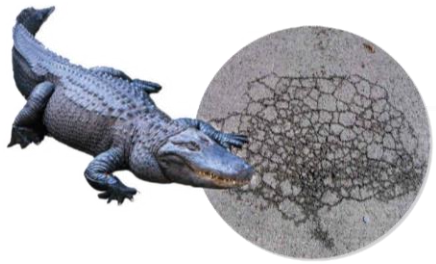
Drainage, Roadway, Sidewalks, ADA

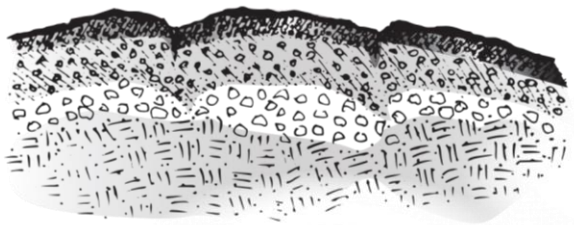
Damaged sidewalks and deficient curb ramps



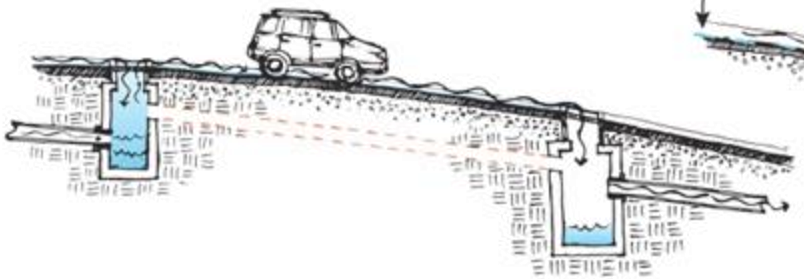


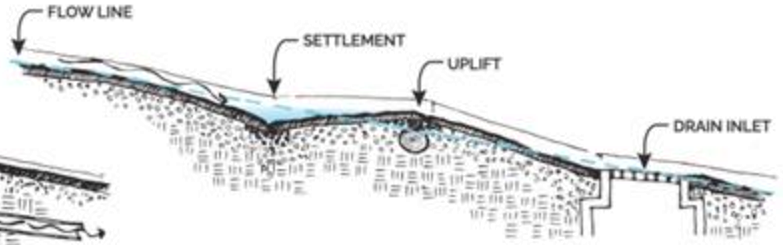
Poor pavement condition with alligator cracking





Poorly functioning drainage

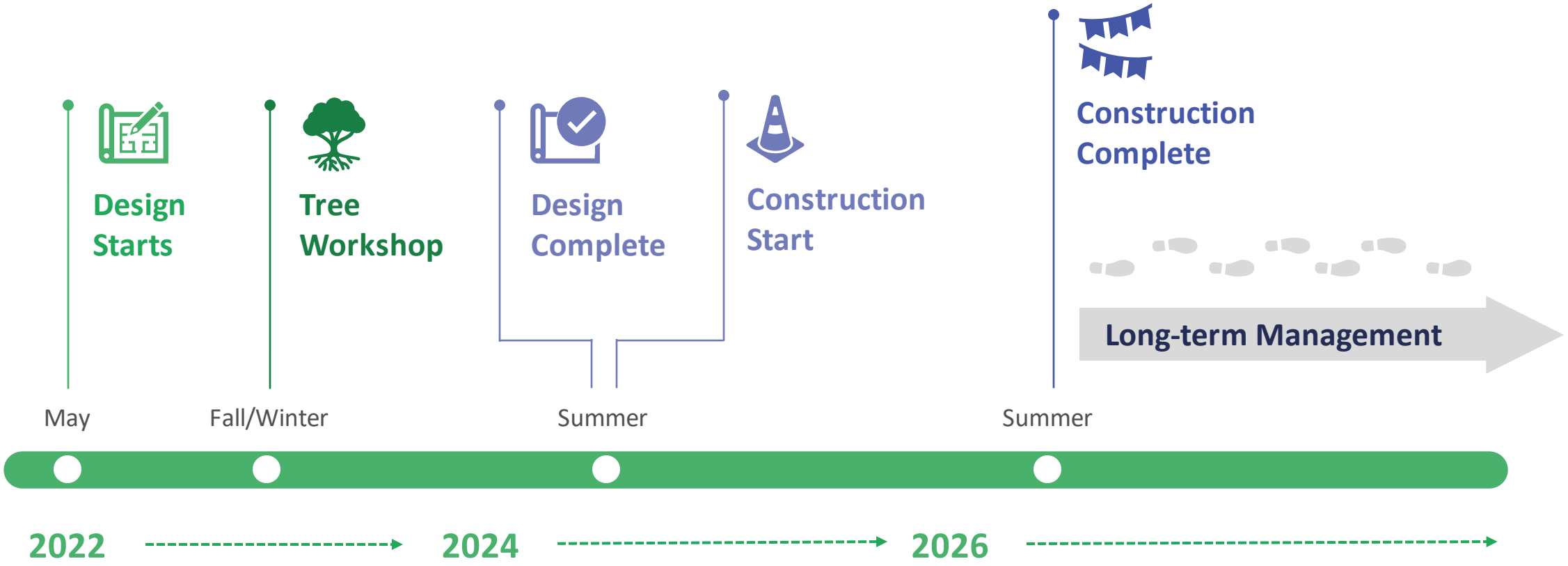




What We've Done

- Community Task Force Study Complete …….…….. *Spring 2017*
- Educational Meeting …….. *January 2020*
- CA Environmental Quality Act (CEQA) Scoping Meeting ……. *May 26-July 6, 2020*
- National Environmental Policy Act (NEPA) Scoping Meeting .. *Nov. 16, 2020-Jan. 8, 2021*
- Draft EIR/EIS with Individual 4(f) evaluation…….. *June 10-August 2, 2021*
- Draft Environmental Document Meeting…….. *July 14 and July 16, 2021*
- Final Environmental Document Release……..……*April 2022*

What's Ahead


Design Starts
Tree Workshop
Design Complete
Construction Start
Construction Complete
Long-term Management
May
Fall/Winter
Summer
Summer
2022
2024
2026

VISION FOR THE FUTURE

Rehabilitation of the Tree Rows

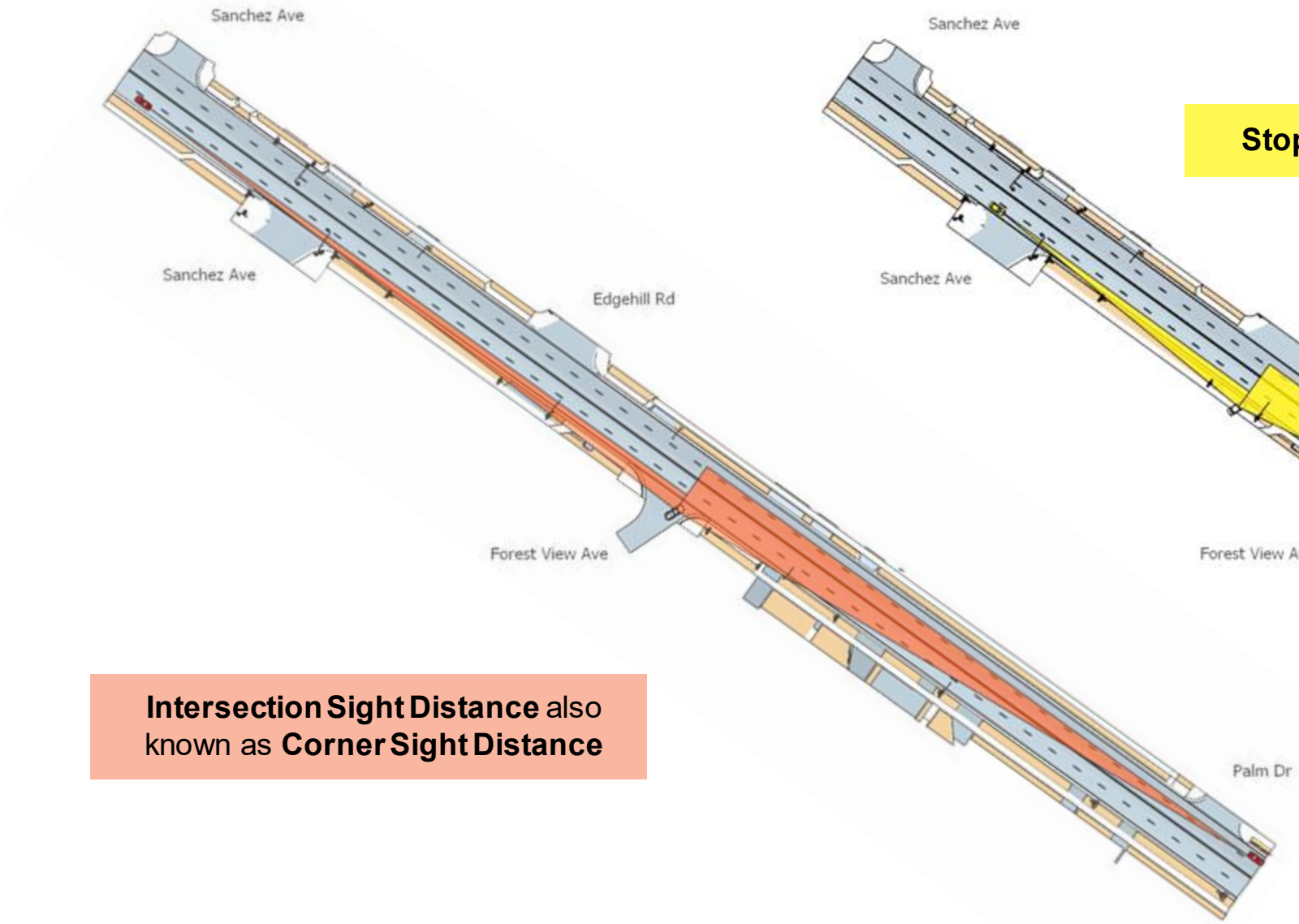
Designing the Tree Planting for ECR

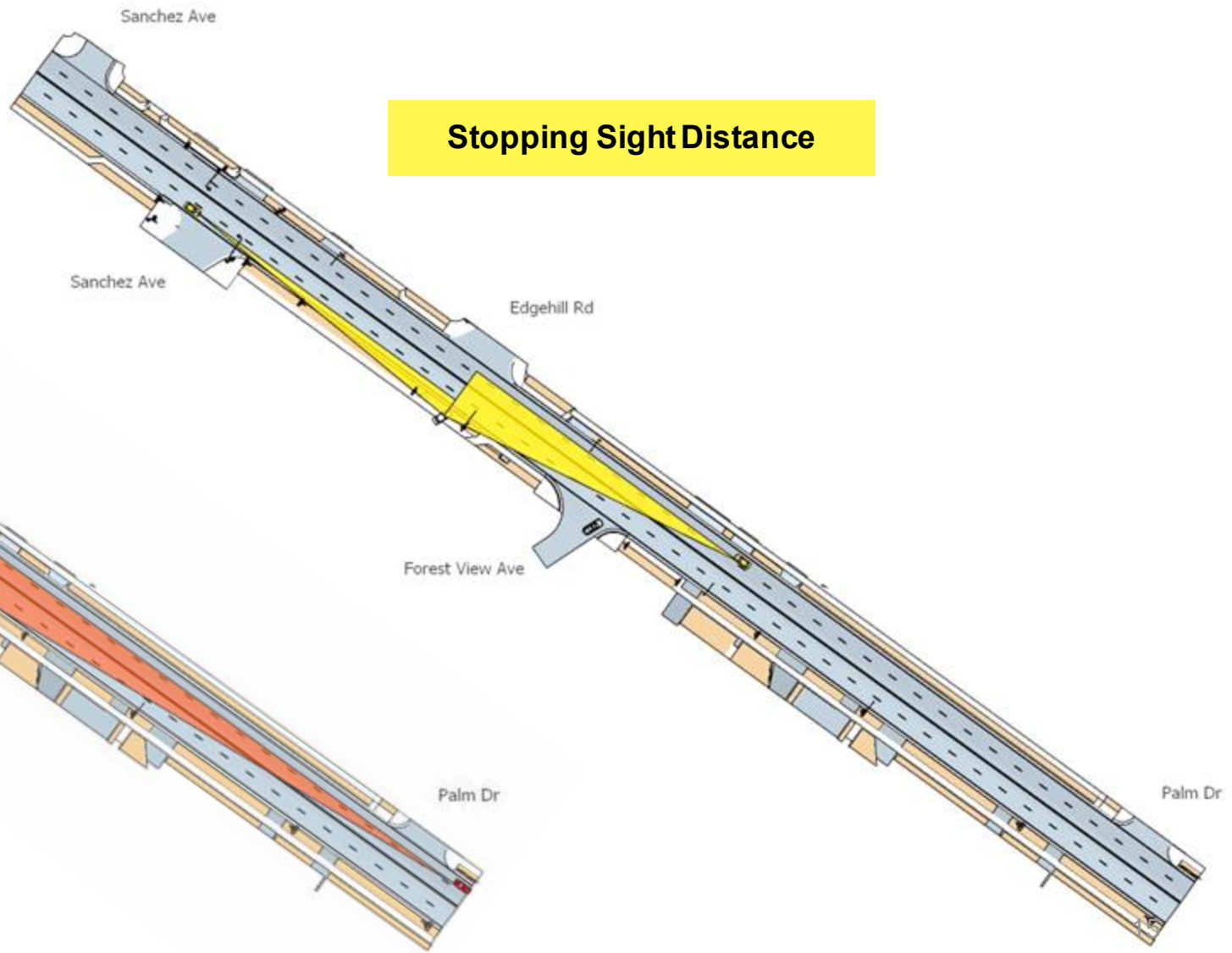
- Historic Preservation of the Howard Ralston Eucalyptus Tree Rows
- Physical Constraints
- Other Considerations
- Design Opportunities

PHYSICAL CONSTRAINTS

Street trees, sight distance, and safety

Sight Distance



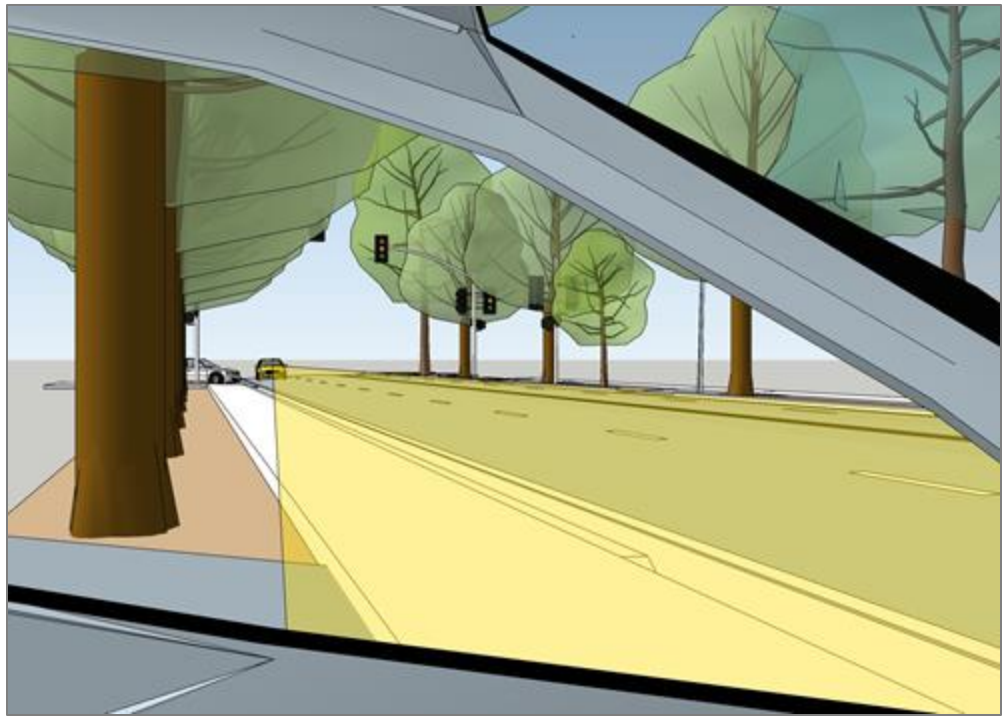


Stopping Sight Distance

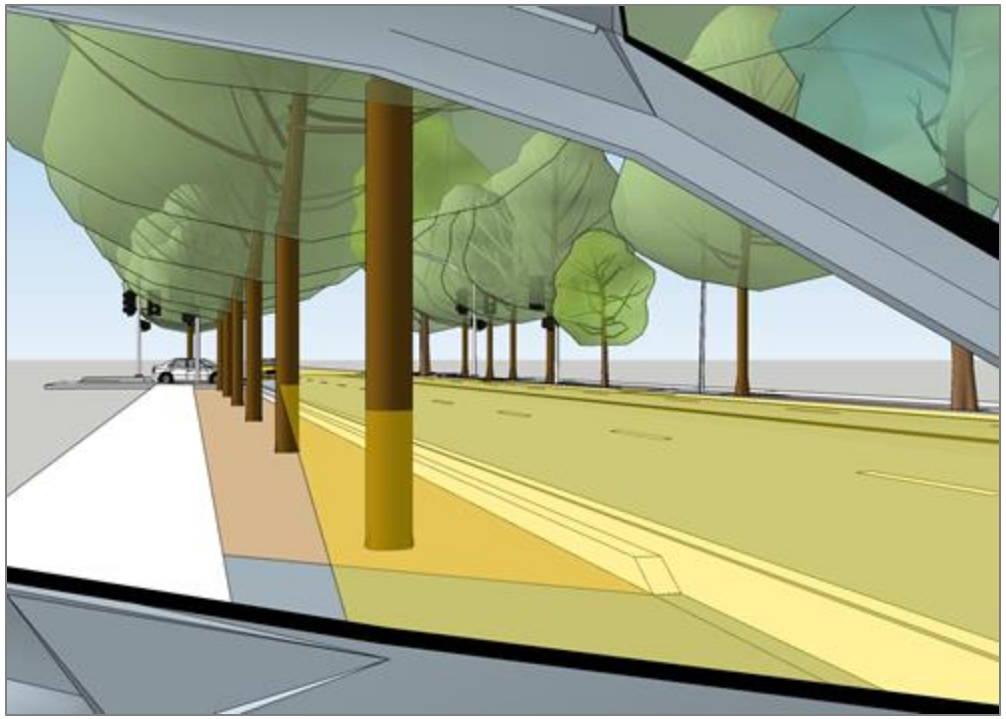
Intersection Sight Distance also known as **Corner Sight Distance**

Tree Location and Spacing

HOW IT EFFECTS SIGHT DISTANCE



Trees located outside of the sight triangle can have larger trunks and be more closely spaced.



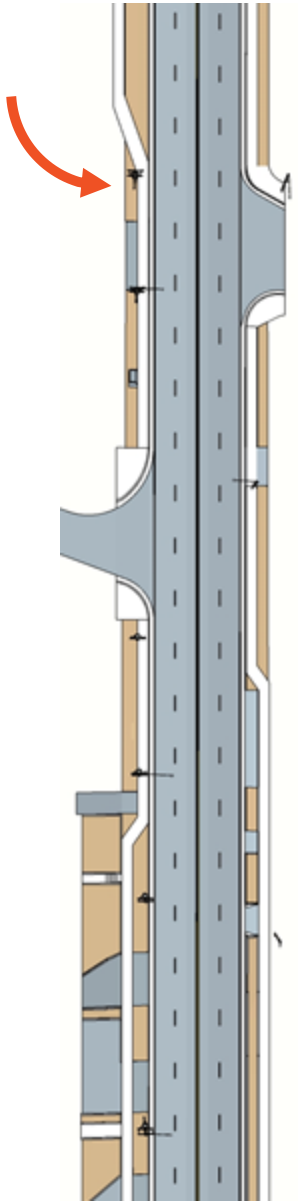
Trees closer to the curb need greater spacing and/or smaller trunks to maintain a clear view.

Tree Location and Spacing

SOLUTIONS

Meandering sidewalk design:

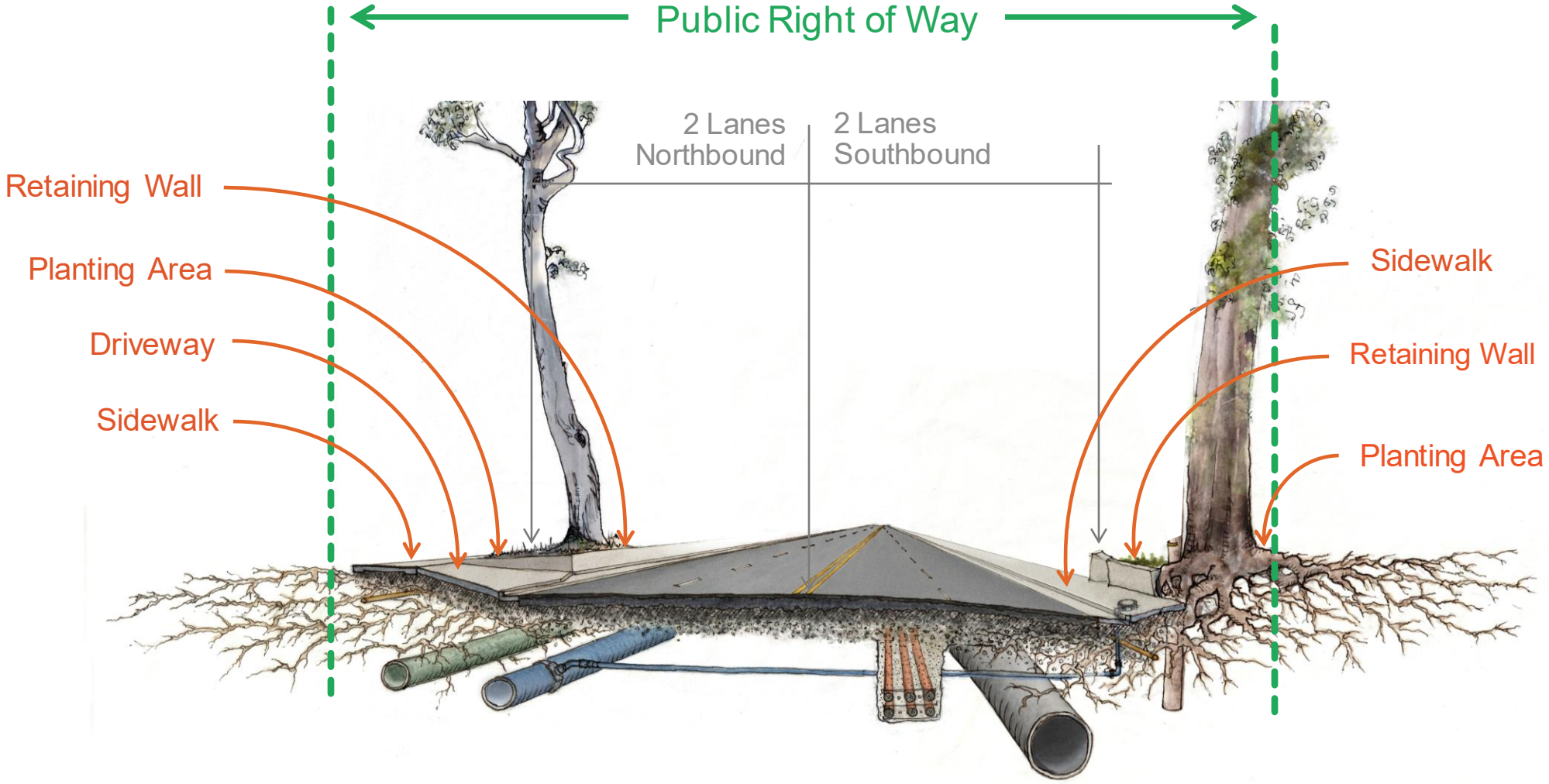
Away from the corner and out of the sight distance triangle, the sidewalk and trees can swap places to provide a buffer for pedestrians.



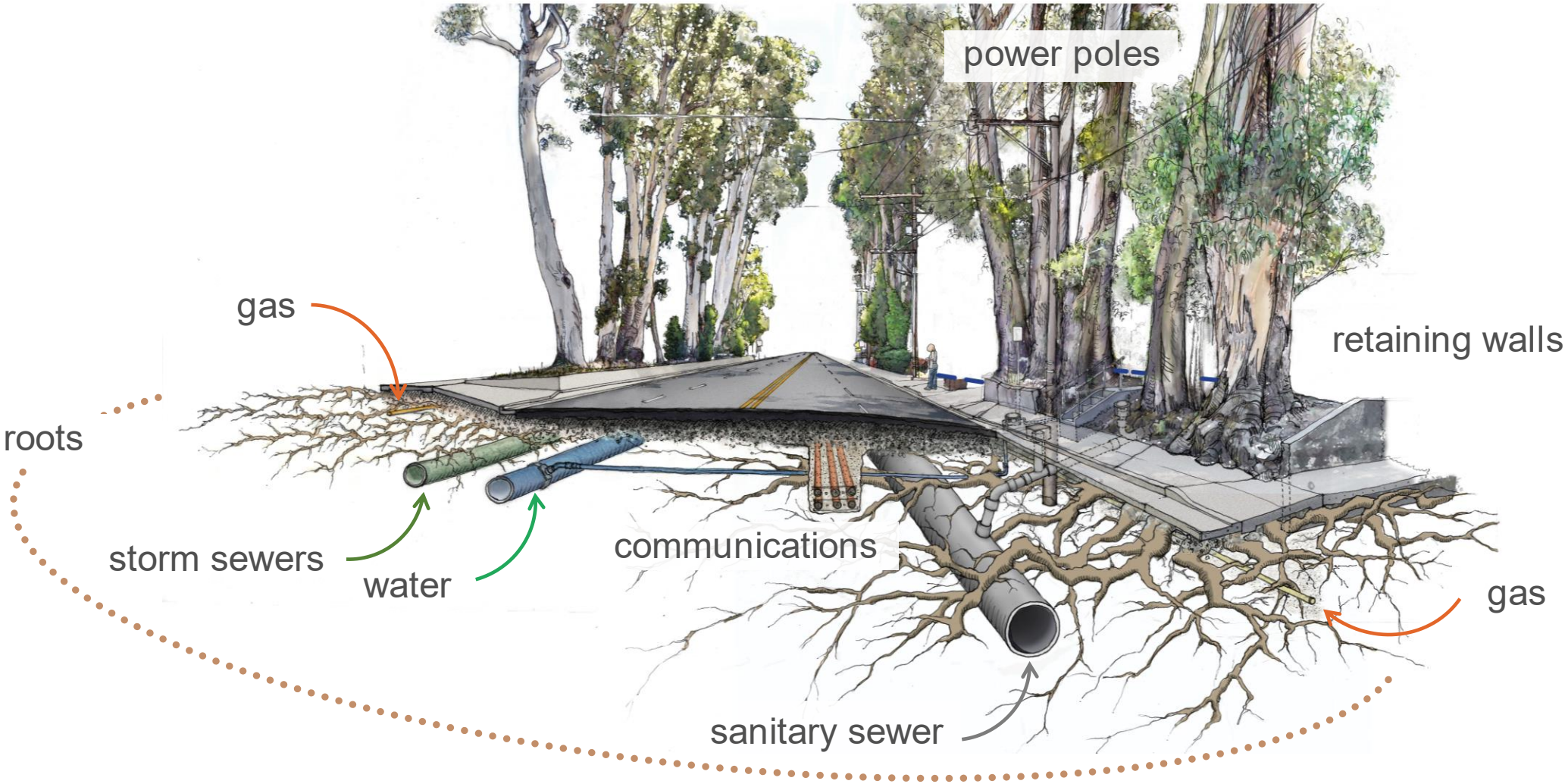
PHYSICAL CONSTRAINTS

Built infrastructure and street trees

Representative Right of Way

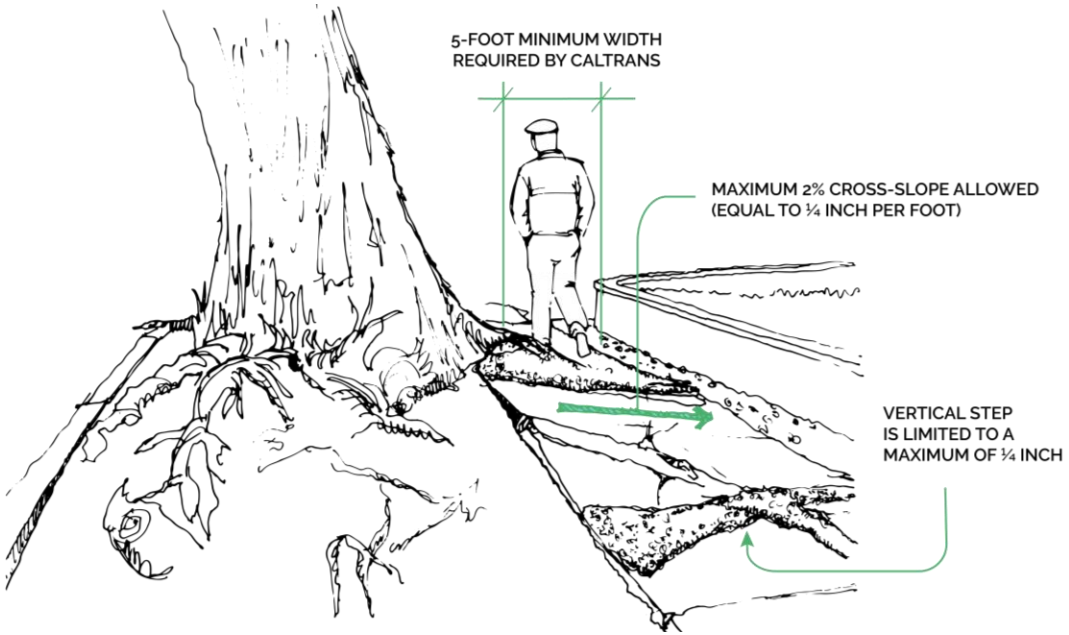


Representative Utility Infrastructure



Tree Roots and Sidewalks

MITIGATING AND AVOIDING CONFLICTS



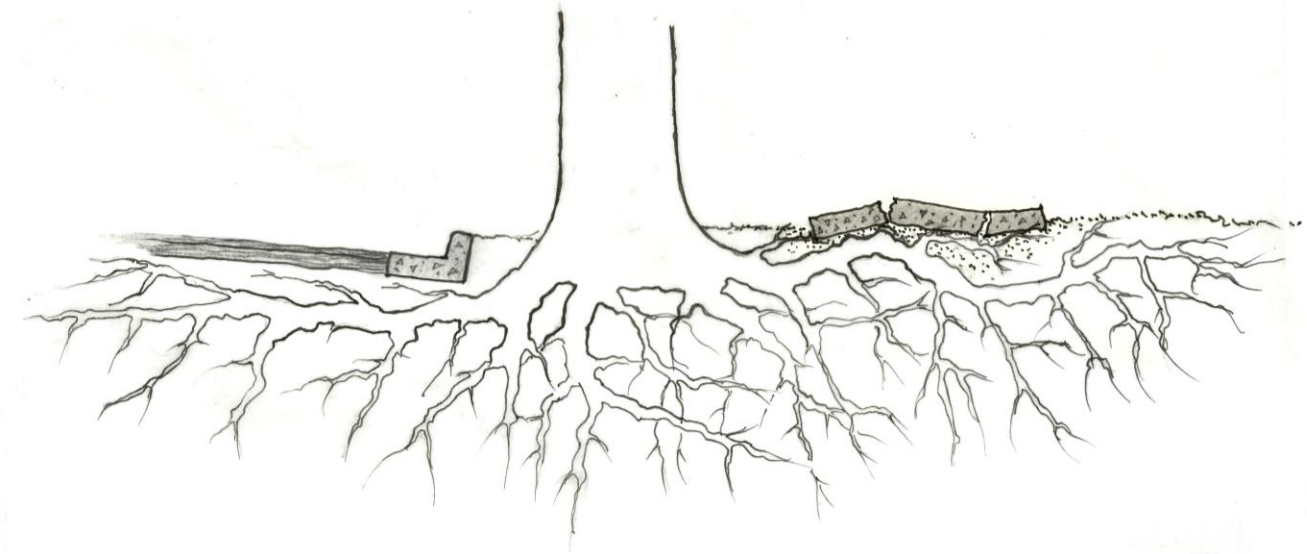
Existing sidewalks need to be replaced, and in some cases, widened to meet ADA standards and Complete Streets goals.

Narrow sidewalks

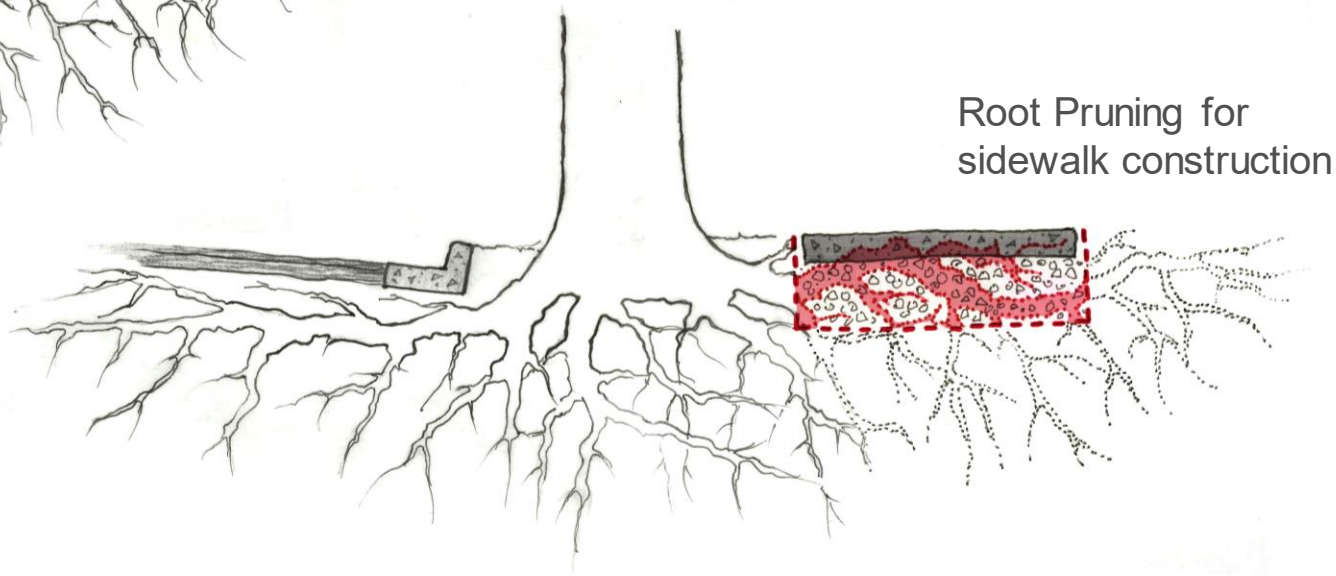
Non-compliant curb ramps

Tree Roots and Sidewalks

MITIGATING AND AVOIDING CONFLICTS



Working around existing tree roots and sidewalk conflicts and avoiding future ones



Root Pruning for sidewalk construction

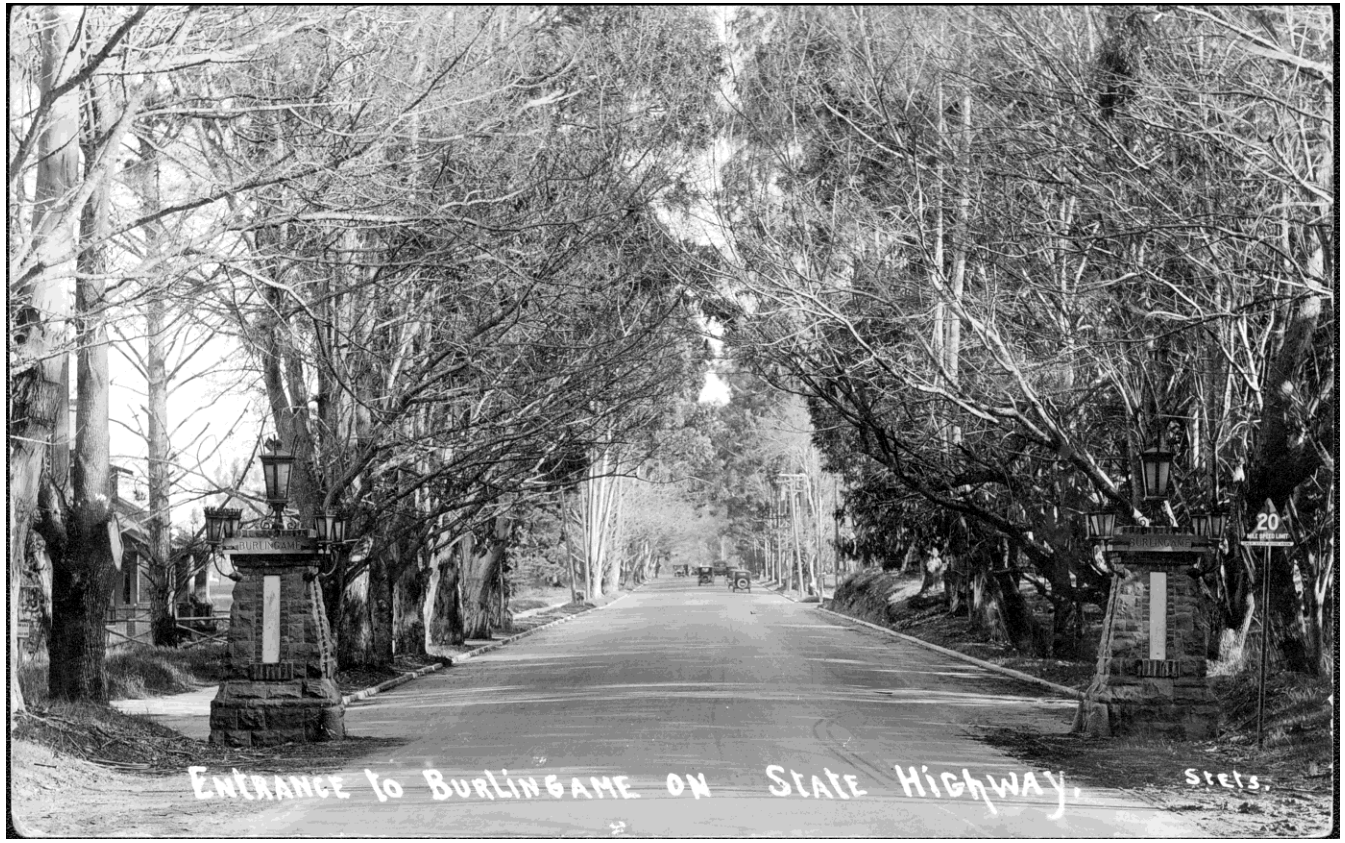
HISTORIC PRESERVATION

Howard-Ralston Eucalyptus Tree Rows

National Register of Historic Places

Listed in 2012

- Influence on the development and character of Burlingame
- Early zoning regulations
- Work of a Master Gardner, John McLaren



El Camino Real, 1915. Image courtesy of Burlingame Historical Society

National Historic Preservation Act

SECTION 106 AND ADVERSE EFFECTS

Mitigation

1

At least 70% of the total trees within the Tree Rows must contribute to the NRHP eligibility of the Tree Rows.

2

Any replacement trees must not detract from the NRHP eligibility.

3

The Tree Rows will be documented before, during, and after construction.

4

Trees will be tagged and GPS locations noted to track the health and number of trees.

5

A long-term management plan for the Tree Rows will be developed.

6

A self-guided history walk with plaques, a time capsule, and custom benches constructed of the wood from removed trees.

7

An El Camino Real Historic Resource Management Plan will be developed to assist the city of Burlingame in management of resources within the corridor.

OTHER CONSIDERATIONS

Changing Climate and Stormwater Capture

Changing Climate

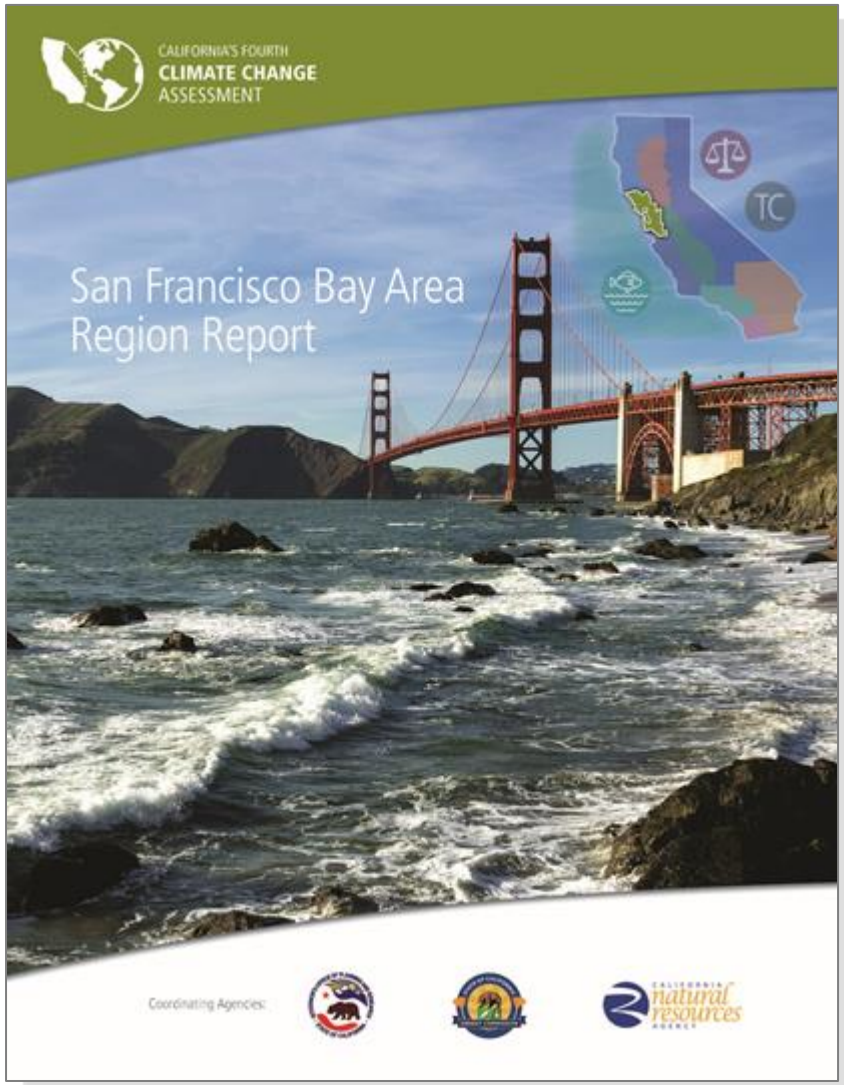
HIGHLIGHTS FROM CALIFORNIA'S FOURTH CLIMATE CHANGE ASSESSMENT

The Bay Area's average annual temperature maximum increased by 1.7°F from 1950-2005 and will likely increase significantly by mid-century.

Precipitation in the Bay Area will continue to exhibit high year-to-year variability—"booms and busts"—with very wet and very dry years.

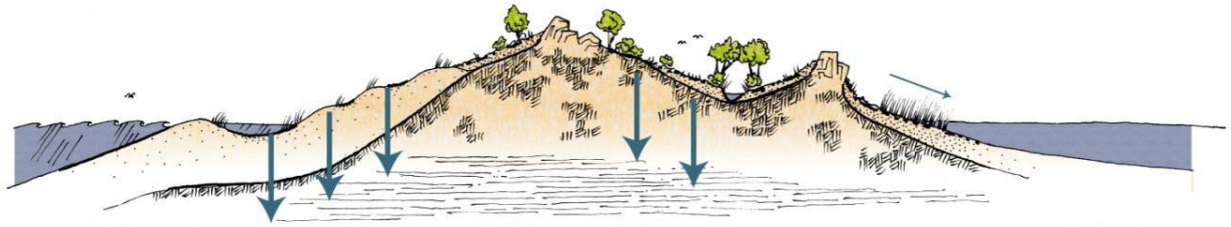
Decline in Sierra Nevada snowpack (water storage) has occurred over the last half-century and is very likely to continue given the physics of climate change.

Future increases in temperature, regardless of whether total precipitation goes up or down, will likely cause longer and deeper California droughts.

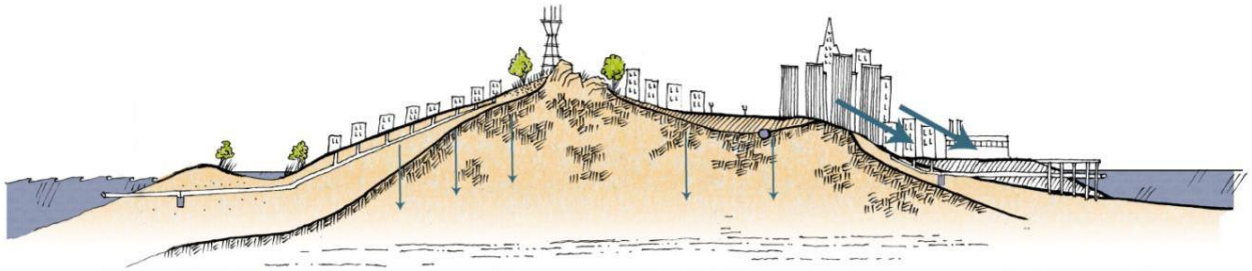


Stormwater Capture and Treatment

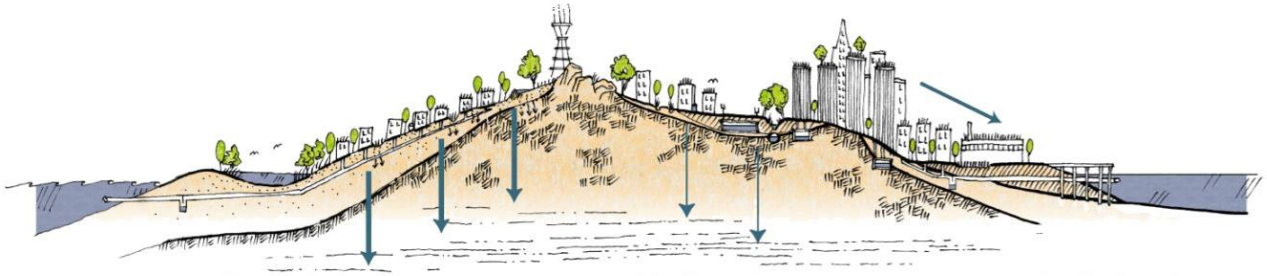
MIMICKING NATURE BY SLOWING AND CLEANING RUNOFF



A natural landscape with high infiltration and low runoff



A developed landscape with low infiltration and high runoff



A developed landscape with stormwater capture and treatment that lessens and cleans runoff

Images from SFPUC

Stormwater Capture and Treatment

SIDEWALK BIORETENTION OPPORTUNITIES

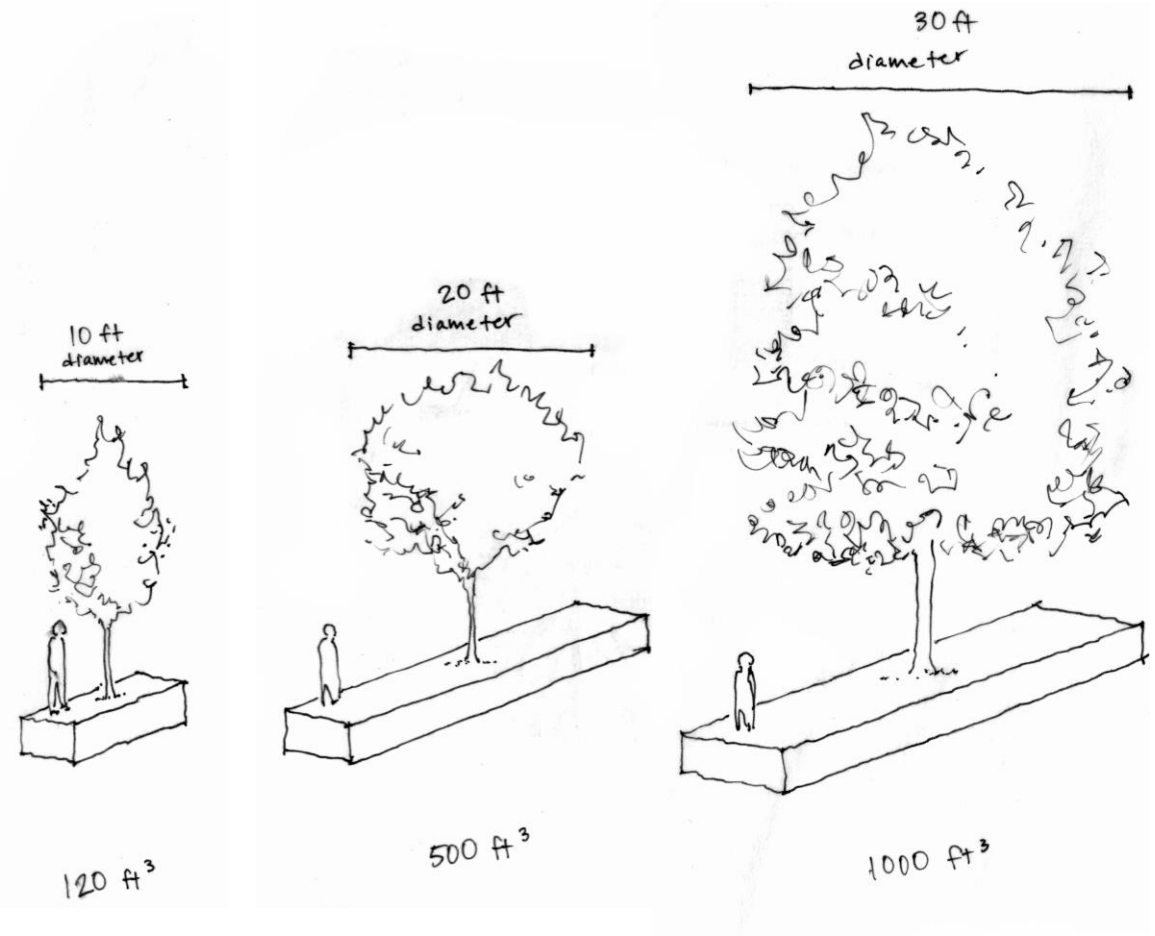
- Sidewalk bioretention planters capture and treat stormwater runoff.
- Stormwater infiltration provides passive irrigation.
- Bioretention planting strips can provide a functional and aesthetic buffer to roadway traffic.

DESIGN OPPORTUNITIES

Ensuring Success of the Tree Rows

Soil Matters

PROVIDING ADEQUATE ROOM



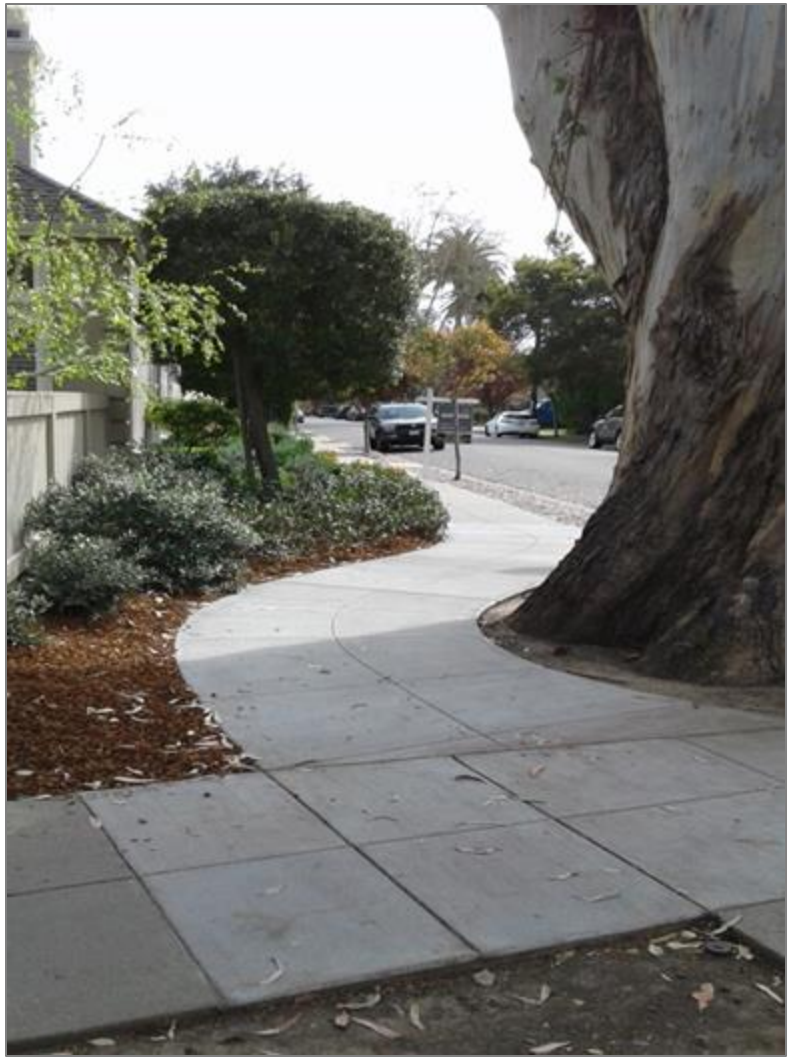


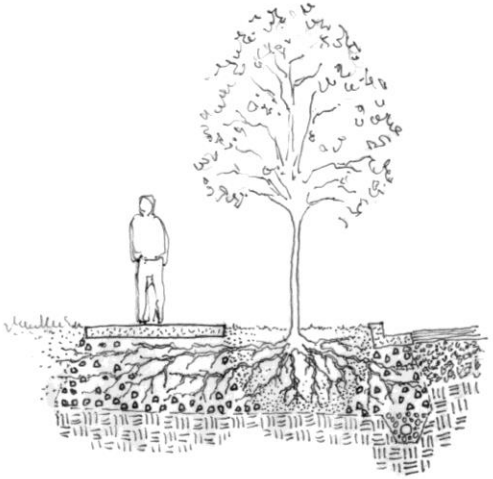
Image of street trees in planting strip

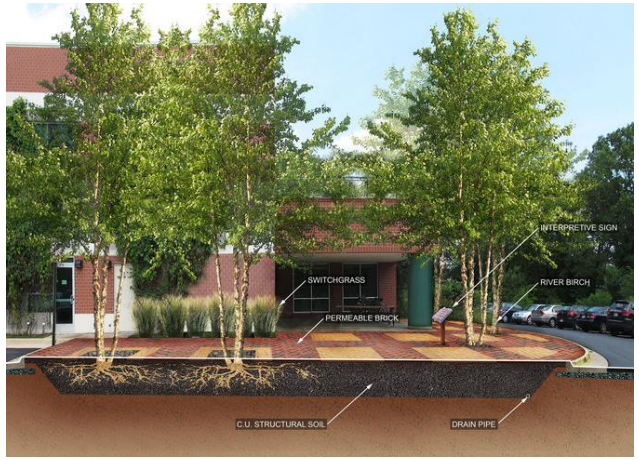
Soil Matters

PROVIDING ADEQUATE ROOM

SUSPENDED PAVEMENT

Pavement is supported by a modular cage-like structure underground. This keeps the pavement from settling but lets roots move through uncompacted soil.





STRUCTURAL SOIL

Coarse structural soils can be compacted to support pavement, while still retaining the oxygen roots need in the pore spaces between the aggregate.

Plant Establishment

PROVIDING IRRIGATION SYSTEMS AND STRUCTURAL PRUNING

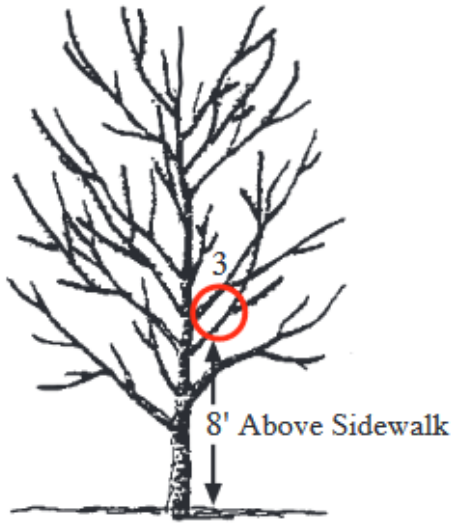


Figure 3: Select the lowest permanent scaffold branches

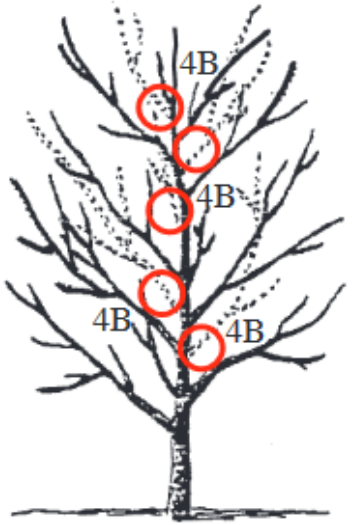
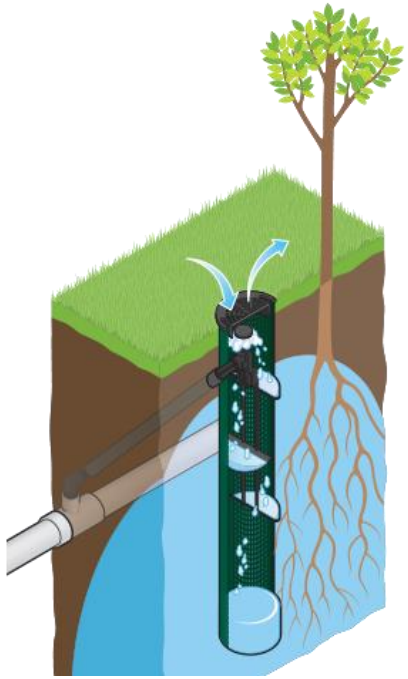


Figure 4: A: Select scaffold branches
B: Cut back or remove completing branches



PRUNING FOR STRUCTURE

Early pruning should include selection of a leader and scaffolding branches. Competing branches should be removed.

IRRIGATION SYSTEMS

A young street tree needs 10-15 gallons of water every week – even more during dry, hot summers. An irrigation system provides consistent water when needed.

Choosing Trees

PRESERVATION OF HISTORIC CHARACTER

Tall, upright majestic evergreen trees *(predominantly eucalyptus)* with deciduous trees *(predominantly elm)*

Narrow roadway lined with tunnel-forming trees

Choosing Trees

STREETSCAPE COMPATABILTY AND HORTICULTURAL CONSIDERATIONS

TREE COMPARISON CHART

Key Considerations:

- Size
- Aesthetics
- Climate adapted
- Water needs
- Growth rate
- Habitat value
- Salt tolerance
- Fire resistance
- Invasive?
- Recommended by Arborists?

Common Name	Height		Spread		Seasonal Interest		Climate Adaptability	Water Usage	Growth Rate (inches/year)	Branch Strength	CA Native	Habitat Value	Invasive	Salt Tolerance	Fire Resistance	Root Damage Potential
	Min	Max	Min	Max	Deciduous/ Evergreen	Fall Color	Bay Area Now & Future Zones (Sunset Zones 15, 17, 20-23)	WUCOLS Region 1 North Central Coast	S(1"-12") S-M(12"-24") M(24") M-F(24"-36") F(36") (source: UFEI)	Weak Med-Weak Medium Med-Strong Strong (source: UFEI)		Low Medium High	Cal-IPC Invasive List	Salinity Tolerance (source: UFEI)	(sources: UFEI, UC Forest Products Lab, firefree.org)	Low Medium High (source: UFEI)
Trident Maple	20	25	20	25			Likely	M	M-F	M		L	NotListed	No Data		L
Sensation Box Elder	40	50	35	40			Yes	M	F	W		H	NotListed	No Data	Favorable	M
Armstrong Red Maple	50	60	15	25			Unlikely	M	F	MW		M	NotListed	Moderate	Favorable	M
Sydney Red Gum	50	65	30	50			Likely	L	M	M		M	NotListed	No Data		M
European Hornbeam	40	50	40	40			Unlikely	M	M	S		M	NotListed	Moderate		L
American Hornbeam	35	40	20	30			Unlikely	M	S	S		M	NotListed	No Data		L
Ghost Gum	30	50	20	35			Yes	N/A	F	M		L	NotListed	No Data		M
Lemon-scented Gum	80	160	50	100			Yes	L	F	M		M	NotListed	No Data	Favorable	M
Spotted Gum	60	100	30	40			Yes	L	F	MS		M	NotListed	No Data		M
Southern Mahogany	80	120	30	75			Yes	Unknown	F	S		M	NotListed	Good		M
Coolabah	35	50	25	25			Yes	L	F	M		L	NotListed	Good		M
Mountain Gum	50	100	25	50			Yes	L	F	M		M	NotListed	No Data		M
Karri	80	200	20	50			Yes	L	F	M		M	NotListed	Moderate		M
Flooded Gum	30	60	25	40			Yes	L	F	M		M	NotListed	Good	Unfavorable	M
Sydney Blue Gum	70	150	20	50			Yes	L	F	M		M	NotListed	No Data		M
Swamp Mallet	20	40	20	20			Yes	L	M-F	M		M	NotListed	Good		L
Manna Gum	30	150	25	50			Yes	L	F	M		M	NotListed	No Data	Unfavorable	M
White Ash, American Ash	60	80	40	50			Unlikely	M	F	MS		M	NotListed	No Data	Favorable	M
Foothill Ash	20	25	15	20			Yes	L	M	MS		H	NotListed	No Data	Favorable	L
Kentucky Coffee Tree	60	100	40	50			Likely	L	M-F	S		M	NotListed	No Data	Favorable	M
Sweet Bay	30	45	15	30			Yes	L	S-M	M		M	NotListed	Moderate	Favorable	M
Catalina Ironwood	20	40	15	25			Yes	L	M	S		H	NotListed	Moderate		M
Sour Gum, Tupelo	30	50	20	30			Likely	M	S-M	S		M	NotListed	Moderate		L
Chinese Pistache	30	60	25	45			Yes	L	M	S		M	NotListed	No Data	Conflicting	L

Planting Configurations

DECIDING WHAT GOES WHERE

UNIFORM PLANTING

Single species is planted along length of avenue. Typically, formal avenues are symmetric, informal avenues are asymmetric

PATTERNED PLANTING

Two or more species are planted in a repeating pattern or group.

FOCAL / LANDMARK AREAS

Contrasting species of tree is used to highlight the presence of an entry, change in land use, community focal point, etc.

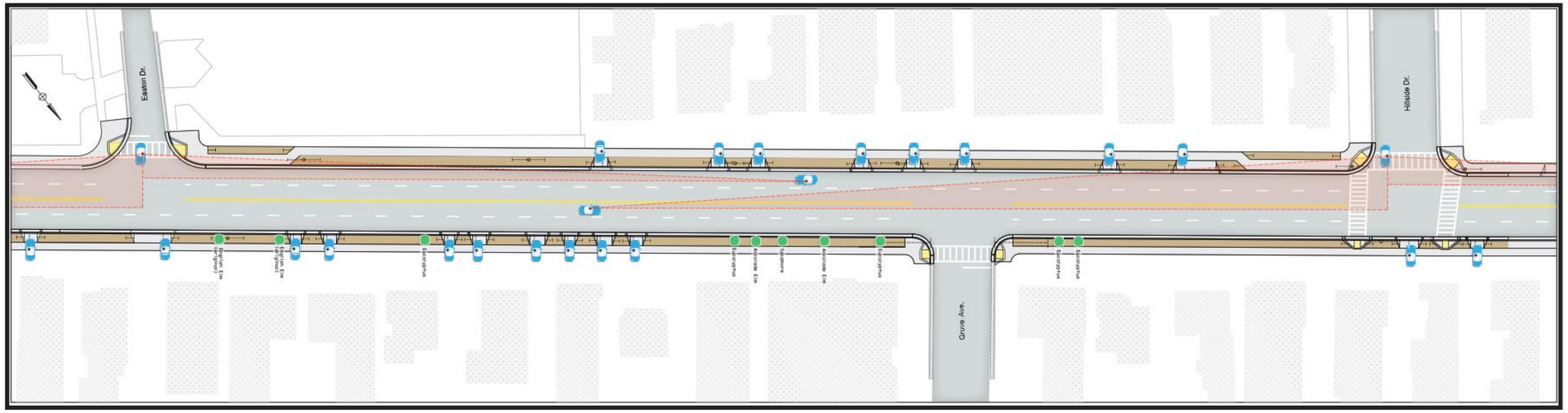
Questions?

EL CAMINO REAL ROADWAY RENEWAL

Design Challenge

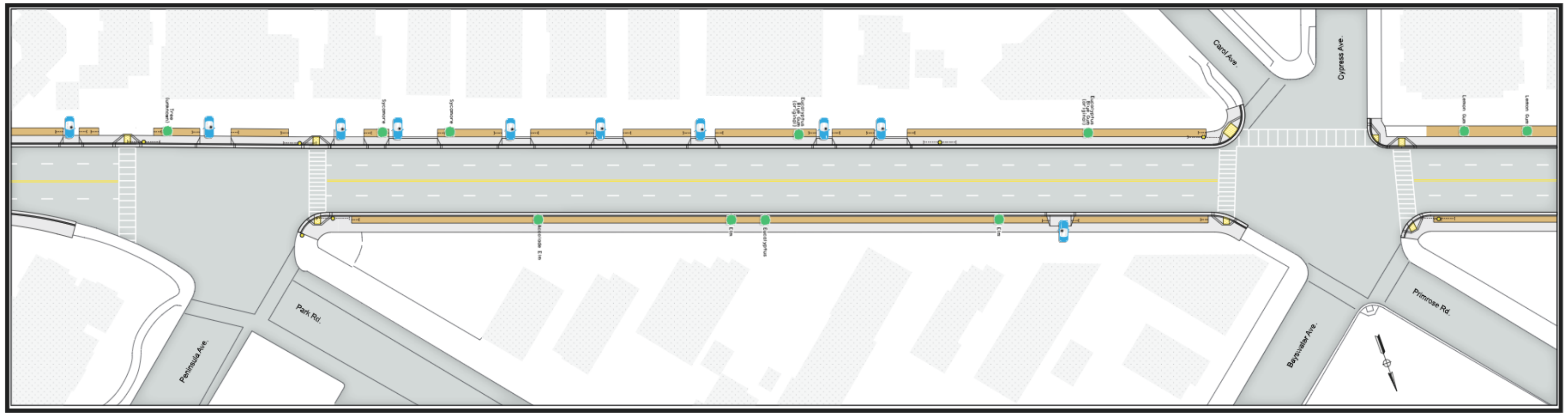
Objective of The Game

Place desired trees along sample roadway section of El Camino Real, while following design, sight distance, and safety guidelines.



HILLSIDE DRIVE

BAYSWATER

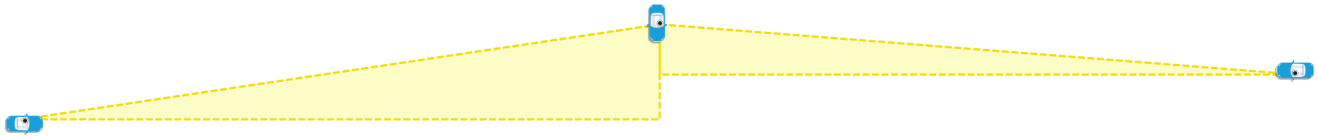


Supplies

MODEL TREES

GAME BOARD & RULE SHEET

TREE SPACING RULER



YELLOW SIGHT TRIANGLE

Thank you