

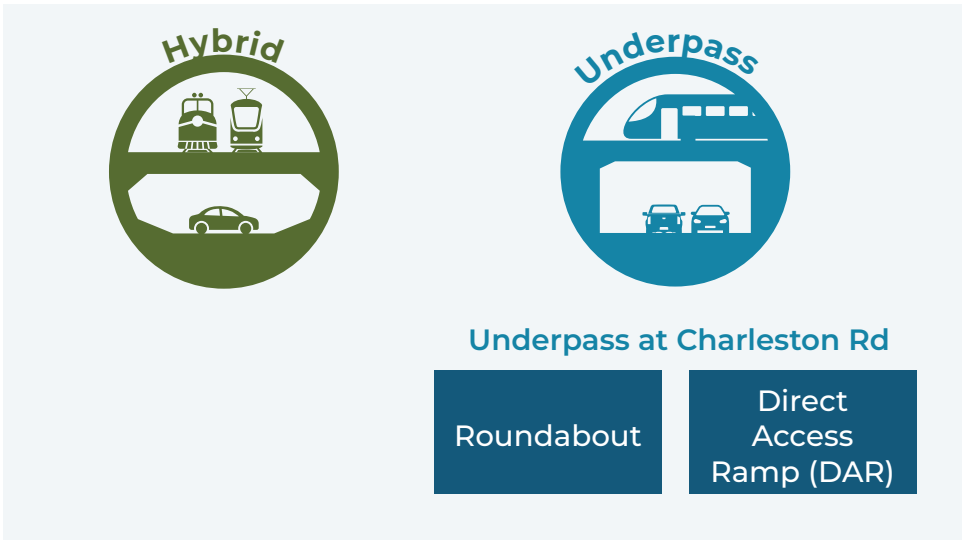
CHARLESTON ROAD

Crossing & Alternatives

Project Location



Alternatives



Evaluating Tradeoffs

The short-term and long-term impacts to property, traffic operations, and construction will vary depending on the alternatives selected. At this stage of the project, a preliminary analysis of tradeoffs between alternatives has been completed. These tradeoffs are expected to evolve as the alternatives move forward through preliminary engineering.

Preliminary Tradeoffs

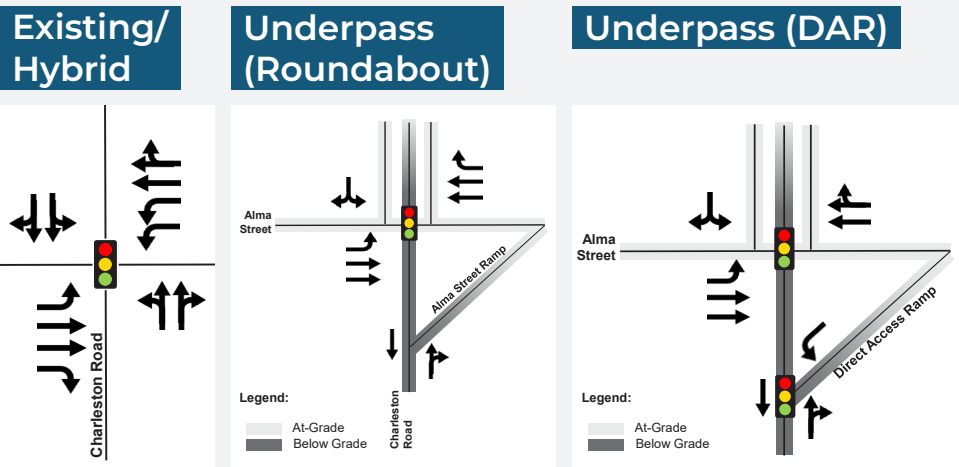
Potential Long-Term Property Impacts

Each alternative will result in different long-term property impacts. The table below outlines the potential property impacts.

	# of Full Parcels	# of Partial Parcels
Hybrid	None Anticipated	None Anticipated
Underpass (Roundabout)	3	23 to 25
Underpass (DAR)	1 to 4	6 to 9

Traffic Operations Impacts

Each alternative will reconfigure roadways differently, leading to varying long-term impacts on traffic operations. The table below presents preliminary findings for traffic operations.



		HYBRID			UNDERPASS (ROUNDABOUT)			UNDERPASS (DAR)		
		Existing ¹	Existing ¹ with Hybrid	Future ² with Hybrid	Existing ¹	Existing ¹ with Underpass	Future ² with Underpass	Existing ¹	Existing ¹ with Underpass	Future ² with Underpass
Overall Intersection Delay (LOS)	AM	57.2 (E)	41.8 (D)	50.4 (D)	57.2 (E)	13.5 (B)	16.5 (B)	57.2 (E)	12.3 (B)	14.9 (B)
	PM	106.4 (F)	52.9 (D)	101.3 (F)	106.4 (F)	12.4 (B)	14.6 (B)	106.4 (F)	12.4 (B)	15.2 (B)
NB Left Delay (LOS)	AM	60.2 (E)	45.3 (D)	51.3 (D)	60.2 (E)	-	-	60.2 (E)	-	-
	PM	79.0 (E)	96.9 (F)	166.0 (F)	79.0 (E)	-	-	79.0 (E)	-	-
SB Right Delay (LOS)	AM	11.1 (B)	10.3 (B)	15.7 (B)	11.1 (B)	-	-	11.1 (B)	-	-
	PM	177.1 (F)	35.4 (D)	134.3 (F)	177.1 (F)	-	-	177.1 (F)	-	-

²Existing = 2025

³Future = 2040 using 1% growth for all movements

Delay = seconds per vehicle

LOS = Level of Service (letter grade, ranging from A to F, describing operational conditions of an intersection)

Construction Considerations

Hybrid

- **Shoofly Track Construction:** Temporary “bypass” tracks will be built at least 25 feet from the existing railroad to support new retaining walls. Shoofly operations will continue throughout track construction.
- **Utility Relocations:** Stormwater, electrical, and fiber/communications lines will be relocated.
- **Phased Roadway Work:** Alma Street will be gradually lowered to allow for shorter retaining walls.
- **Traffic Management:** Traffic may be diverted east and west of Alma Street. During construction, Alma Street may be reduced to one lane in each direction.

Underpass

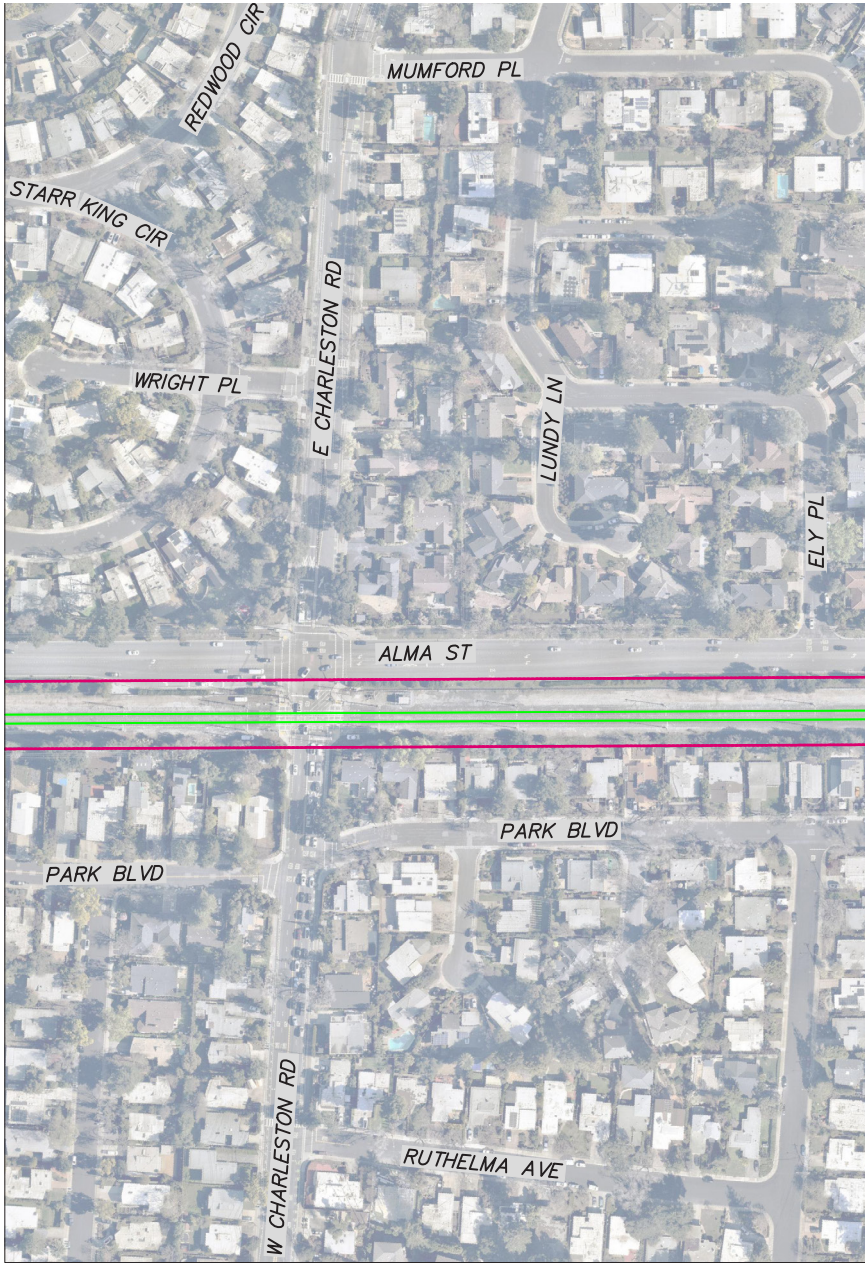
- **Railroad Underpass:** A box jacking method will be used to build an underpass beneath the railroad. No shoofly tracks are anticipated
- **Utility Relocation:** Stormwater, electrical, fiber/communications, and sewer lines will be relocated
- **Phased Roadway Work:** Alma Street improvements—including retaining walls and pedestrian or roadway bridges—will be completed in phases
- **Traffic Management:** Traffic will be diverted east and west of Alma Street. During construction, Alma Street may be reduced to one lane in each direction.

Cost Considerations

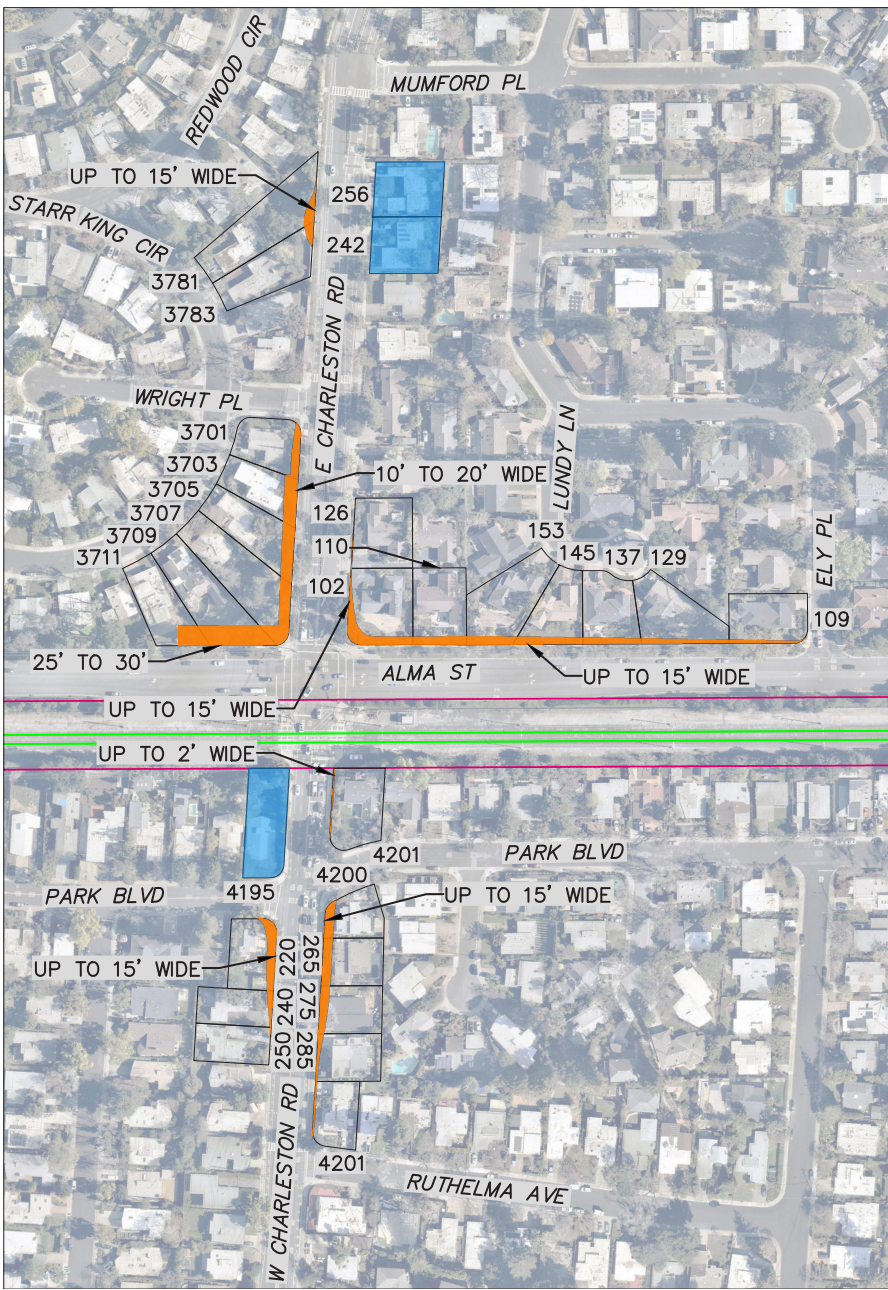
- Previous **City efforts** explored an Underpass option or Hybrid option for both Meadow Drive and Charleston Road
 - Meadow and Charleston Underpasses: \$690M - \$850M
 - Meadow and Charleston Hybrids: \$390M to \$480M
- **The Meadow Drive and Charleston Road crossings have since been evaluated with a potential underpass/hybrid combination to allow for options that improve circulation and safety, while reducing the potential impact of property acquisitions.**

POTENTIAL PROPERTY IMPACTS

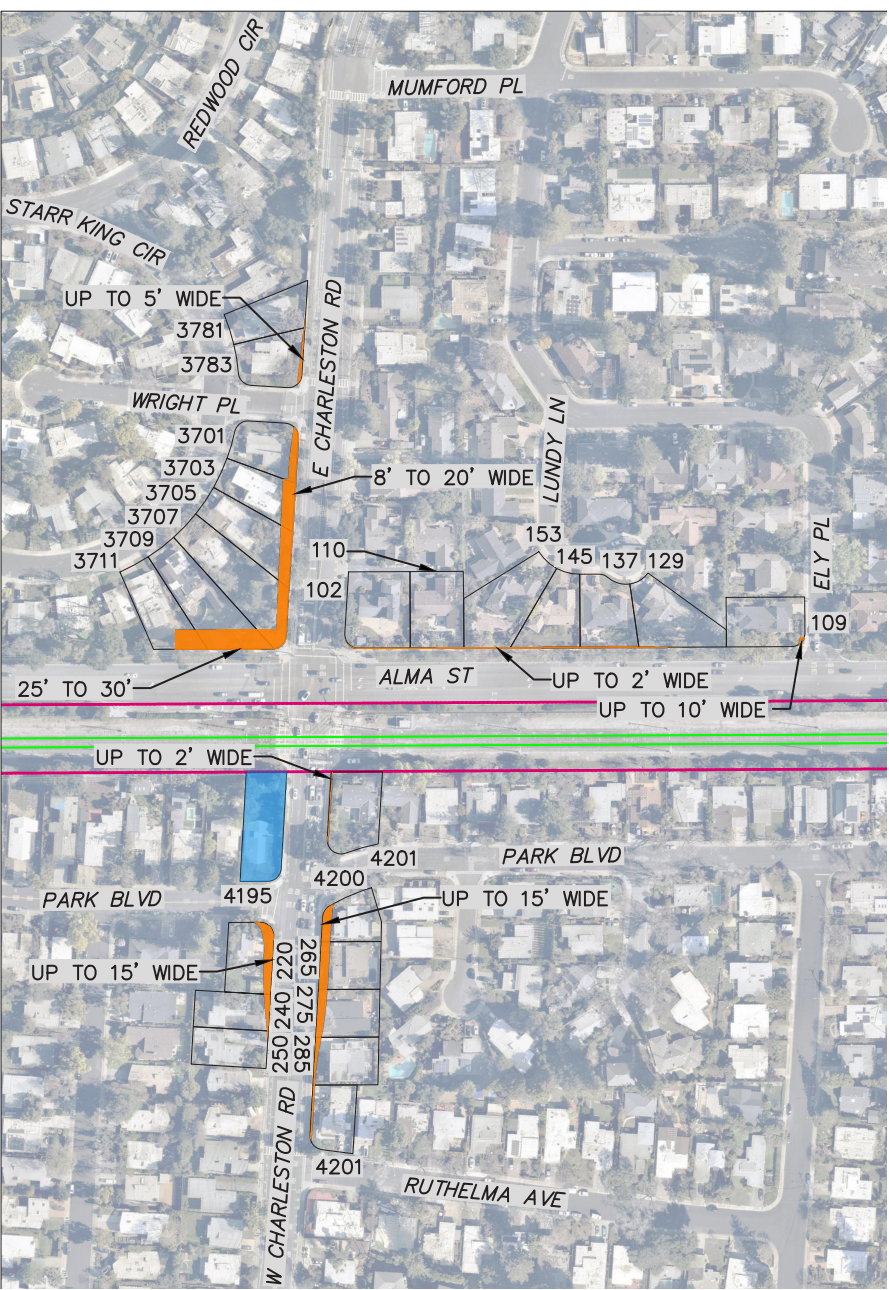
Hybrid



Underpass (Roundabout)



Underpass (DAR)



LEGEND:

- TRACK
- CALTRAIN RIGHT-OF-WAY
- FULL PROPERTY ACQUISITION
- PARTIAL PROPERTY ACQUISITION
- PARCEL OUTLINE

