



QUICK BUILD ROUNDABOUTS



MICHAEL SACUSKIE, ASSISTANT CITY ENGINEER



“Roundabout”



Sylvan and Millbrook

City Of Modesto Roundabout Inventory

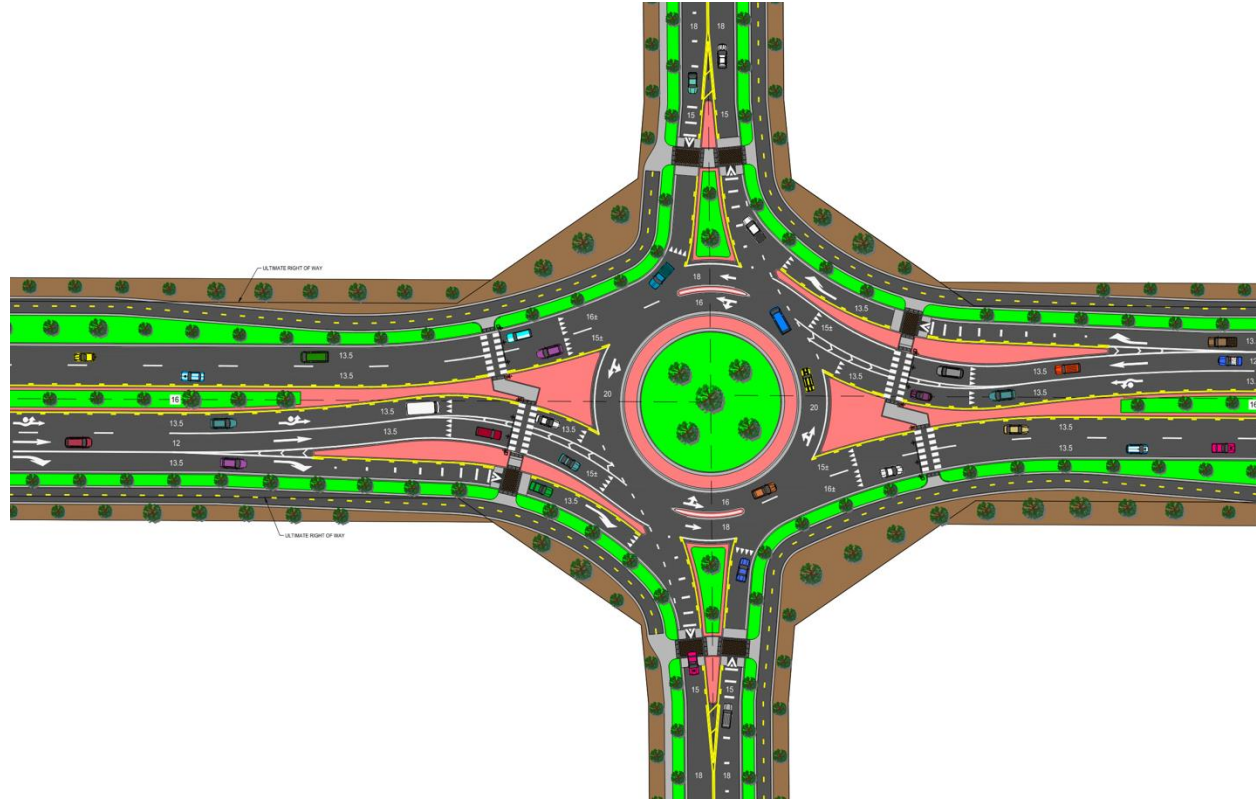
Number	Roundabout Location	Inscribed Circle Diameter	Central Island Diameter	Raised Central Island	Truck Apron Width	# Of Circulating Lanes	Bypass Lanes (Y/N)	Circulating Road Width	Circulating Road Width Max	Entry Width Min.	Entry Width Max	Date Built
1	Vintage/Bluebird	74.5/ 80	37	10.5	13.25	1	N	16.25	18	12	13.7	2019
2	Vintage/Landmark	71	40	24	8	1	N	13.35	13.8	10	11.3	2018
3	Founders/Limelight	116	81	61	10	1	N	17.4	18.2	15.75	19.7	2021
4	Grecian/Lifescapes	90.5	61.5	47	7.25	1	N	13.65	15.25	13.1	14	2000
5	Claratina/Coffee	114	81	65	8	1	Y	16.25	16.5	14	14.8	2020
6	Bowen/Phelps	89	56	41.5	7.25	1	N	15	16.6	12	13.5	2003
7	Bowen/Fremont	72	35	14	10.5	1	N	14.75	15.5	10.5	13.6	2003
8	F/4th (MJC West Campus)	104	71	54	8.5	1	N	16	16.4	12	17	2016
9	student center/6th	133.5	100.5	80	10.25	1	N	16.5	16.75	16.5	16.75	2017
10	B/6th	113	81	64.5	8.25	1	N	15.75	16.5	15.75	16.75	2016
11	La Loma/G	120	96/80	75/60.5	10.5/9.75	1	N	16.75	18.85	13.3	14.25	<1998
12	La Loma/Buena Vista	87	51	36	7.5	1	N	18	18.25	12.35	15.35	2021
13	La Loma/Santa Ana	89	52	36.5	7.75	1	N	17.2	19.3	11.6	15.4	2021
14	Litt Road/Soccer Complex	144/128	94	70	12	1	N	16.4	16.6	16.5	20	2013
15	Sylvan/Roselle	187	129	106	11.5	2	N	31	31.6	24.9	26	2008
16	Sylvan/Millbrook	182	120	106	7	2/1	N	17.5	31.7	14.3	24.3	2008
17	Sylvan/Litt	191	118.5	98	10.25	2/1	N	15.6	33	16.4	33.2	2013
18	Hillglen/Wood Sorrel	91/88	52.5	33.5	9.5	1	N	15.5	16	12.5	18.3	2010
19	La Force/Hillglen	98/90	53	36.5	8.25	1	N	17.4	18	13	14.6	2010
20	Kodiak/Lincoln oak	90	50	36	7	1	N	18.9	19.7	12.7	14.3	2015
21	Kodiak/Roselle	173	106.5	90	8.25	2/1	N	23	31.5	16	26.2	2017
22	Floyd/Roselle	173	110.5	92.5	9	2	N	31.5	31.8	23.2	23.9	2008
23	Encina/Conejo	89	51	35.5	7.75	1	N	16.8	17	15.2	16.2	2004
24	Chandon/Calero	92/96.5	61	47.5	6.75	1	N	13.3	14.25	12.5	13.5	2001
25	Merle/Maid Mariane	92.5	54.5	38	8.25	1	N	17	17.5	14.8	15.2	2008
26	Sharon/Maid Mariane	87	52	35	8.5	1	N	15.3	15.6	13.7	15.5	2008
27	Paradise/Chicago	112' to 120'				1	N					2024
28	Washington/Vine	102'				1	N					2024
29	Paradise/Tuolumne					1	Y					2026
30	Tuolumne/Roselawn					1	N					2026
31	9th/Carver					1	N					2026
32	9th/Tully					1	N					2026
33	9th/Needham					1	N					2026
34	College/Bowen					1	N					2027
35	Kodiak/Orchard	90	55	41	7	1	N	17.3	17.45	11.9	15	2020
36	Kodiak/Temescal	84	53	39	7	1	N	15	15.3	11.4	13	2019

LEGEND

- modern roundabout
- Iterim painted, modern roundabout
- Currently in the design or construction phase

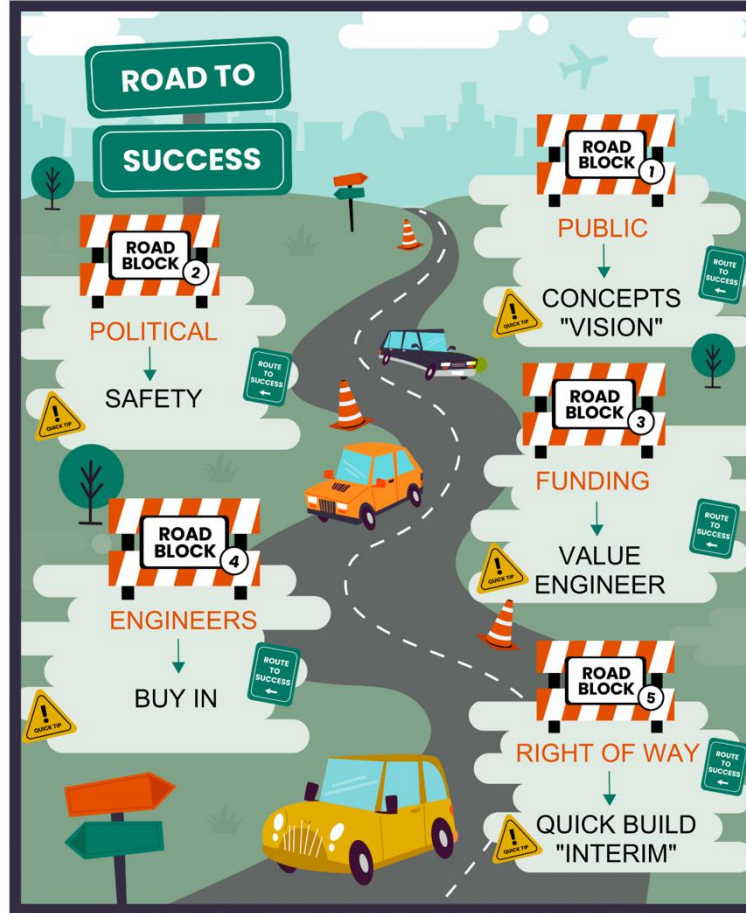


2-Lane Bypass Roundabout Concept





CITY OF
MODESTO
CALIFORNIA





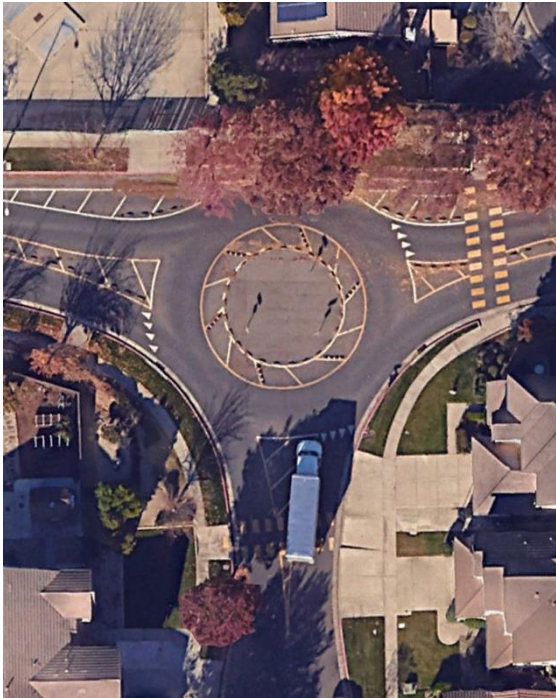
BUILDING ROADS FOR SAFER COMMUNITIES

Smart road design improves traffic flow, enhances safety, and supports long-term urban development.





Kodiak Drive and Temescal Drive (Quick Build Roundabout)



Zebra and Rubber Speed Bump Locations





(14) Rubber Speed Bumps

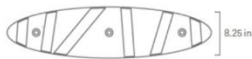
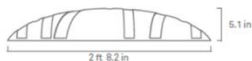
Kodiak Drive and Temescal Drive, Modesto CA



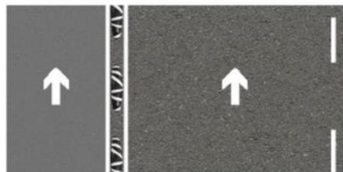
Kodiak Drive and Temescal Drive (Quick Build Roundabout)

<https://www.zicla.com/en/zebra-cycle-lane-separator/>

Zebra 13



Weight	19 lb
Length	2 ft 8.2 in
Height	5.1 in
Width	8.25 in
Color	Black



Parallel



Traffic Safety Store

<https://www.trafficsafetystore.com/>



6' Heavy-Duty Rubber Speed Bump

12" wide and 2.25" tall
Approx. 55 lbs
no channels

\$128.50 \$149.95 each	\$128.50 \$138.25 each	\$128.50 each
Quantity 1-14	Quantity 15-49	Quantity 50+

Mounting Hardware Choices:



Quantity: (14) 6' Long Heavy-Duty Rubber Speed Bump



Kodiak Drive and Temescal Drive (Maintenance Considerations)





Kodiak Drive and Orchard Park Way (Quick Build Roundabouts)





Kodiak Drive and Orchard Park Way (Quick Build Roundabouts)





Coffee Road and Claratina Avenue (Quicker Build Roundabouts)





Coffee Road and Claratina Avenue (Surveyor Provided Striping Layout)



- Test design vehicles
- Make adjustments as needed
- Easier traffic control during paving operation



Coffee Road and Claratina Avenue (Pour On Top Medians)





Coffee Road and Claratina Avenue (Splitter Island and Median Curb)



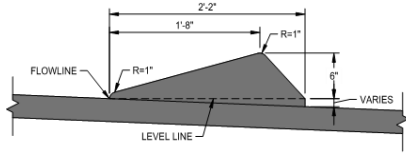


Coffee Road and Claratina Avenue (Splitter Island and Median Curb)

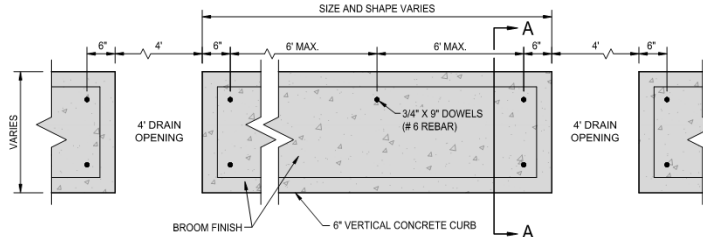




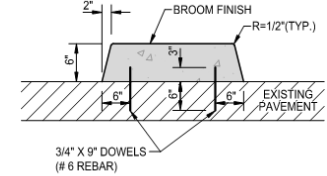
Coffee Road and Claratina Avenue (Quicker Build Roundabout Details)



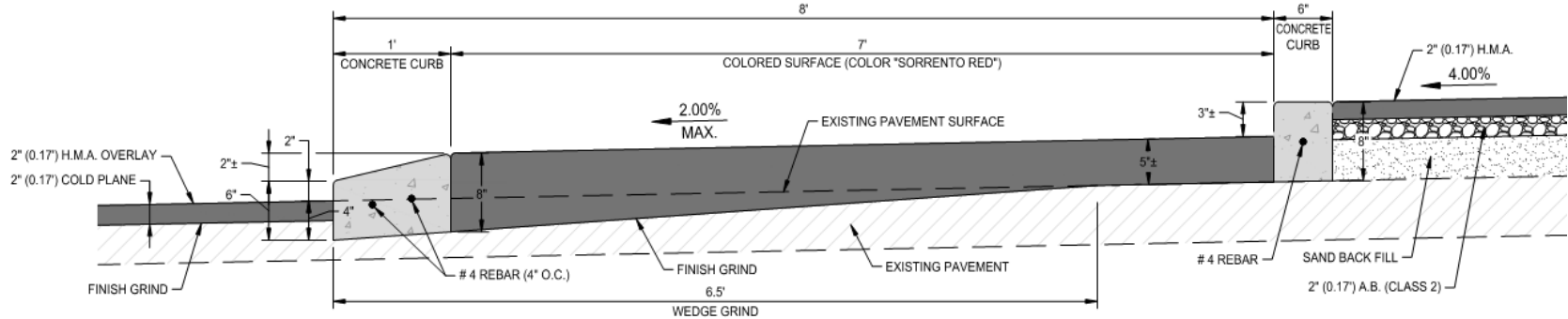
TYPE "D" AC DIKE



PLAN



SECTION A-A



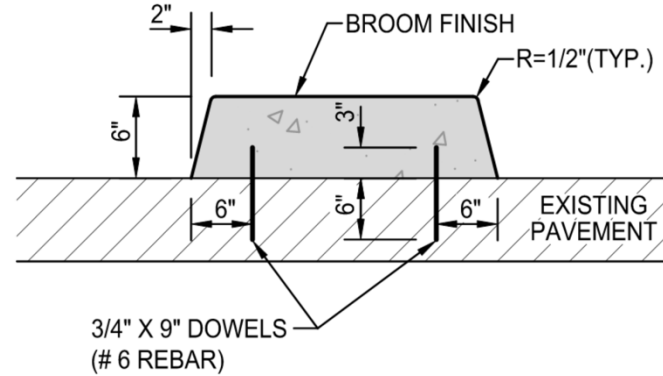
TRUCK APRON DETAIL



Coffee Road and Claratina Avenue (Splitter Island and Median Curb)

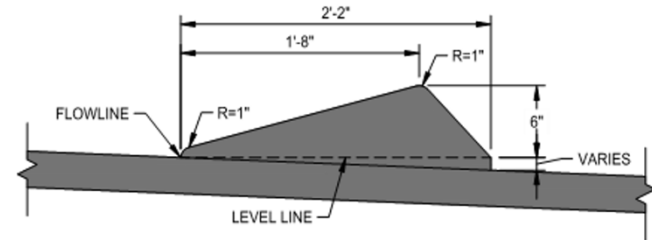
NOTES:

1. DOWELS SHALL BE 3/4" DIA. WITH LENGTH AS SHOWN. IN EXISTING CONCRETE PAVEMENT DRILL HOLES 1-1/2" DIA. AND GROUT DOWELS. IN A.C. PAVEMENT DRIVE DOWELS.
2. CONCRETE FOR THE SEPARATOR SHALL BE MINIMUM 3000 PSI PORTLAND CEMENT CONCRETE (TYPE II), 1" MAX. AGGREGATE WITH 4" MAX. SLUMP.
3. CONTRACTOR SHALL USE POLYPROPYLENE FIBER (FIBERMESH 650) WITH A CONTENT 3LBS PER CUBIC YARD.





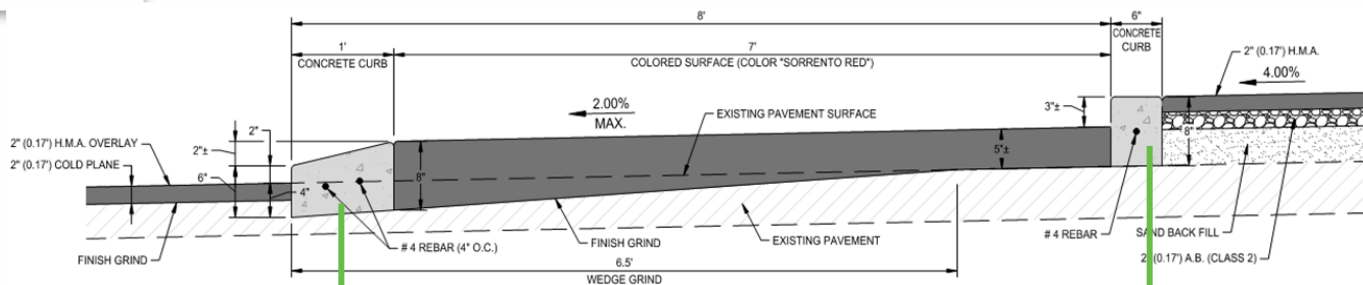
Coffee Road and Claratina Avenue (Outside Roundabout Curb)



TYPE "D" AC DIKE

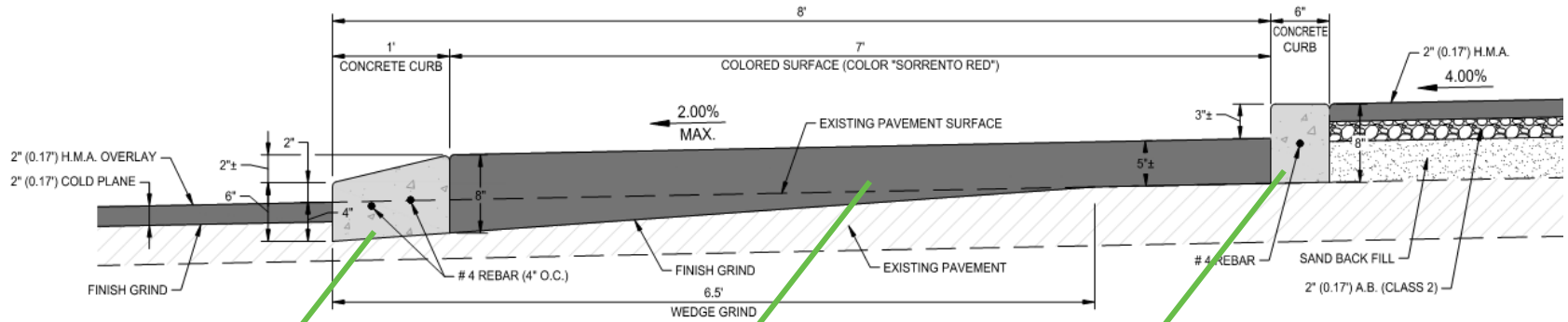


Coffee Road and Claratina Avenue (Central Island and Truck Apron)





Coffee Road and Claratina Avenue (Central Island and Truck Apron)





Coffee and Claratina Roundabout (Quicker Build)

Benefits

- Lower cost
- Traffic calming
- Adjustable design
- Quicker construction
- Improve traffic safety
- Get community buy in!

Item #	Item Description	Units	Quantity	Unit Price	Extension
Bid Alternate 2					
201	Water Pollution Control Plan (WPCP)	LS	1	\$4,500.00	\$4,500.00
202	Traffic Control	LS	1	\$40,000.00	\$40,000.00
203	Monument Preservation	LS	1	\$4,000.00	\$4,000.00
204	ADA Ramp Field Design, Layout and Staking	LS	1	\$3,500.00	\$3,500.00
205	Sawcut PCC and AC	LF	300	\$3.00	\$900.00
206	Remove and Replace Concrete Flatwork (Sidewalk and Curb Ramp)	SF	1100	\$30.00	\$33,000.00
207	Remove and Replace Concrete Curb and Gutter	LF	120	\$45.00	\$5,400.00
208	Cast Iron Detectable Warning Plate	SF	120	\$30.00	\$3,600.00
209	Place Hot Mix Asphalt at Curb Ramps	TON	10	\$250.00	\$2,500.00
210	Remove and Replace Catch Basin with Type 1	EA	1	\$5,000.00	\$5,000.00
211	Remove and Replace Pull Box	EA	2	\$1,200.00	\$2,400.00
212	Cold Plane Asphalt Concrete	SF	202590	\$0.20	\$40,518.00
213	Type A Hot Mix Asphalt 0.17' Thick	TON	2583	\$90.00	\$232,470.00
214	Hot Mix Asphalt Dike (Type D)	LF	500	\$11.00	\$5,500.00
215	Trunk Apron and Roundabout Island Paving	TON	110	\$250.00	\$27,500.00
216	Trunk Apron Curb	LF	460	\$80.00	\$36,800.00
217	Concrete Median Islands	SF	5585	\$18.00	\$100,530.00
218	Adjust Water Valve Box to Finished Grade	EA	41	\$500.00	\$20,500.00
219	Adjust Detector Handhole Box to Finished Grade	EA	4	\$600.00	\$2,400.00
220	Adjust Sewer Manhole to Finished Grade	EA	5	\$800.00	\$4,000.00
221	Adjust Storm Manhole to Finished Grade	EA	1	\$800.00	\$800.00
222	Removal and Installation of Striping, Markings and Signage	LS	1	\$95,000.00	\$95,000.00
				Subtotal	\$670,818.00





KEY TAKEAWAYS

Table 14 presents a list of the pedestrian high-injury corridors throughout Stanislaus. The high-injury corridors in Stanislaus are located in Ceres, Turlock, Modesto, Oakdale, and the unincorporated areas, with the majority occurring in Modesto.

APPLICATION

The pedestrian high-injury network analysis identified corridors within Stanislaus that can be examined for common roadway characteristics and safety improvements. The high-injury corridors will be integrated into the project recommendations and prioritization phase to ensure that the projects recommended in the plan prioritize locations with the highest need for safety improvements.



Table 14. Pedestrian High Injury Corridors

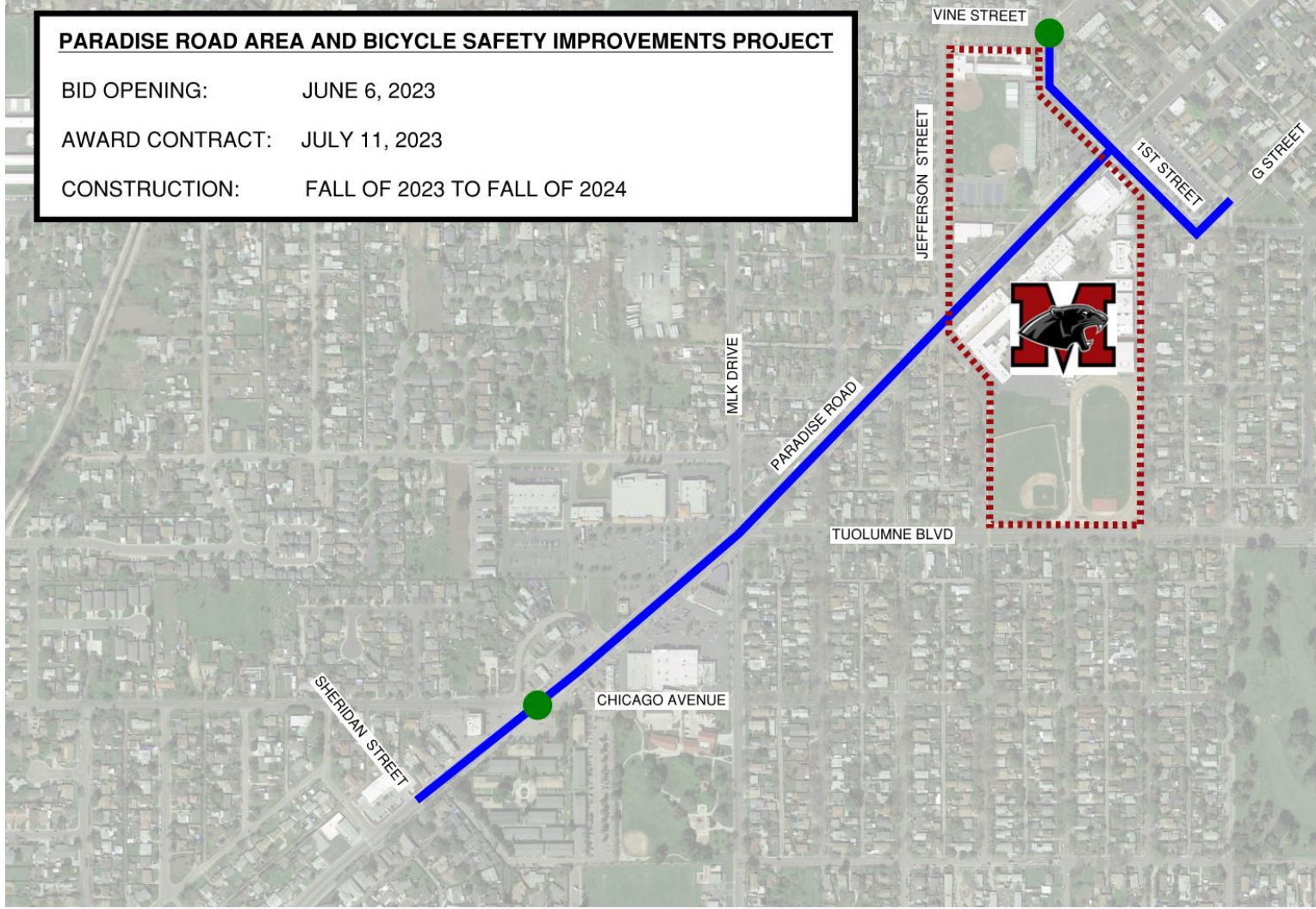
Jurisdiction	Pedestrian High Injury Corridor
Ceres	Mitchell Rd.
Modesto	Oakdale Rd.*
Modesto	Coffee Rd.
Modesto	Yosemite Blvd.
Modesto	9 th St.*
Modesto	H St.
Modesto	I St.
Modesto	West Orangeburg Ave.
Modesto	Paradise Ave.
Modesto	McHenry Ave.*
Modesto	Tully Rd.
Modesto	Standiford Ave.
Modesto	Tuolumne Blvd.
Oakdale	F St.
Turlock	Lander Ave.
Turlock	Bernell Ave.
Turlock	9th
Turlock	West Main St.*
Unincorporated	Crows Landing Rd.
Unincorporated	South Carpenter Rd.
Unincorporated	South 9 th St.*

PARADISE ROAD AREA AND BICYCLE SAFETY IMPROVEMENTS PROJECT

BID OPENING: JUNE 6, 2023

AWARD CONTRACT: JULY 11, 2023

CONSTRUCTION: FALL OF 2023 TO FALL OF 2024



Paradise Road between Florette Avenue and Ellen Avenue

Stripe bicycle lanes on Paradise Road

Close sidewalk gaps on Paradise Road

Consider treatments such as flashing beacons and RRFBs at key unsignalized crosswalks on Paradise Road*



Install directional ADA curb ramps at all crosswalks

Eliminate existing 5-way intersection by making Chicago Avenue intersect Paradise Road at a right-angle

Install bulbouts at Ellen and Chicago Avenues

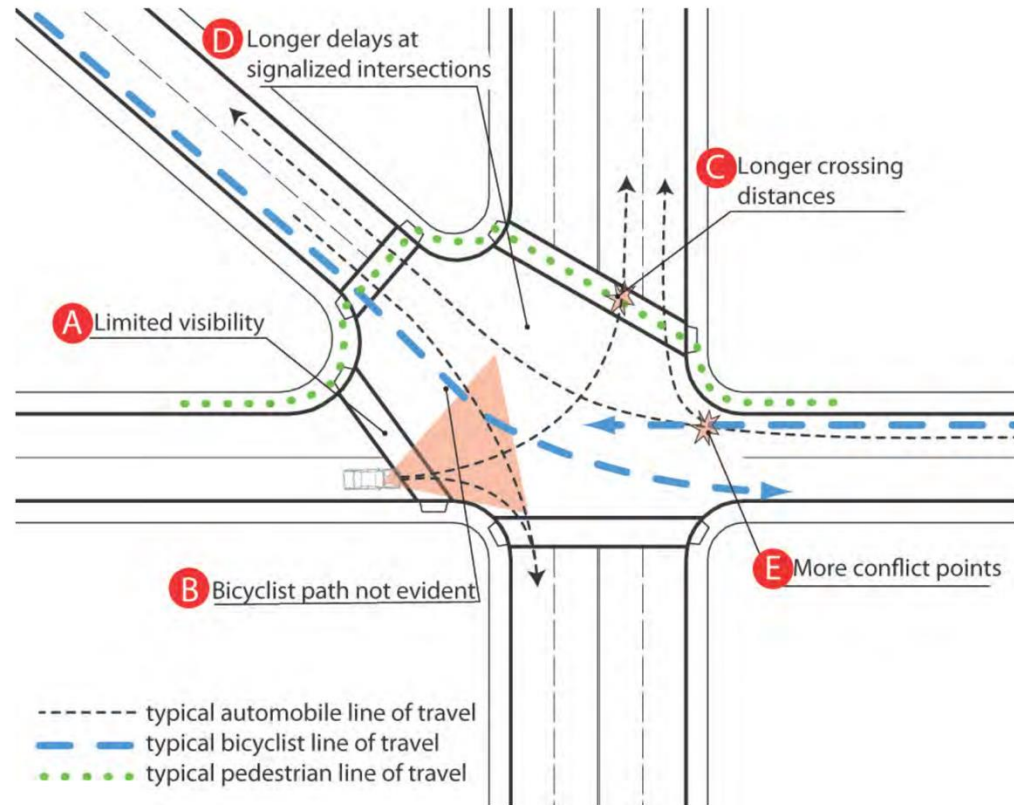
Stripe advanced stop bars on side streets



PARADISE AND CHICAGO EXISTING CONDITIONS



Figure 5.4 Issues Associated with Multi-leg Intersections



Chicago and Paradise Roundabout



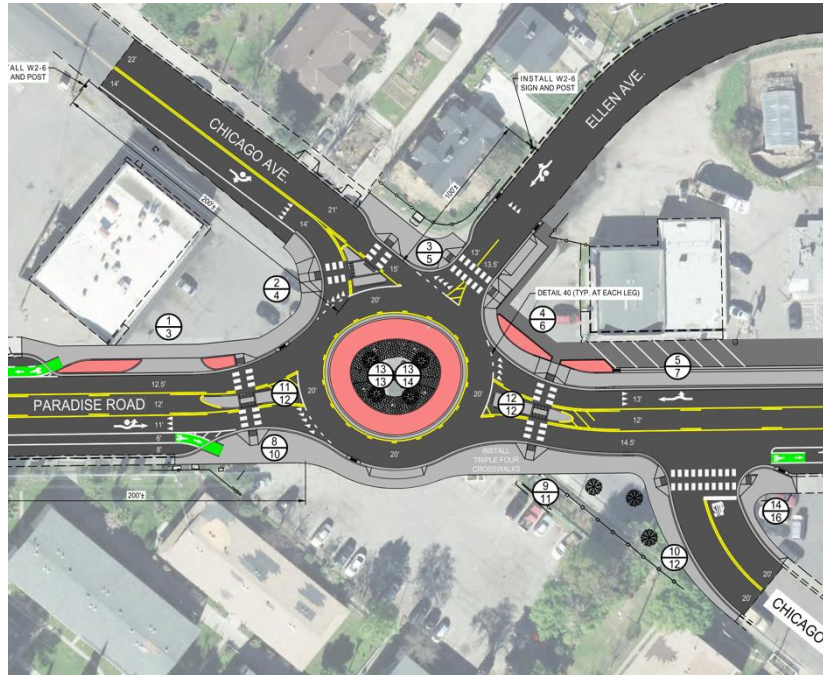
Before



After



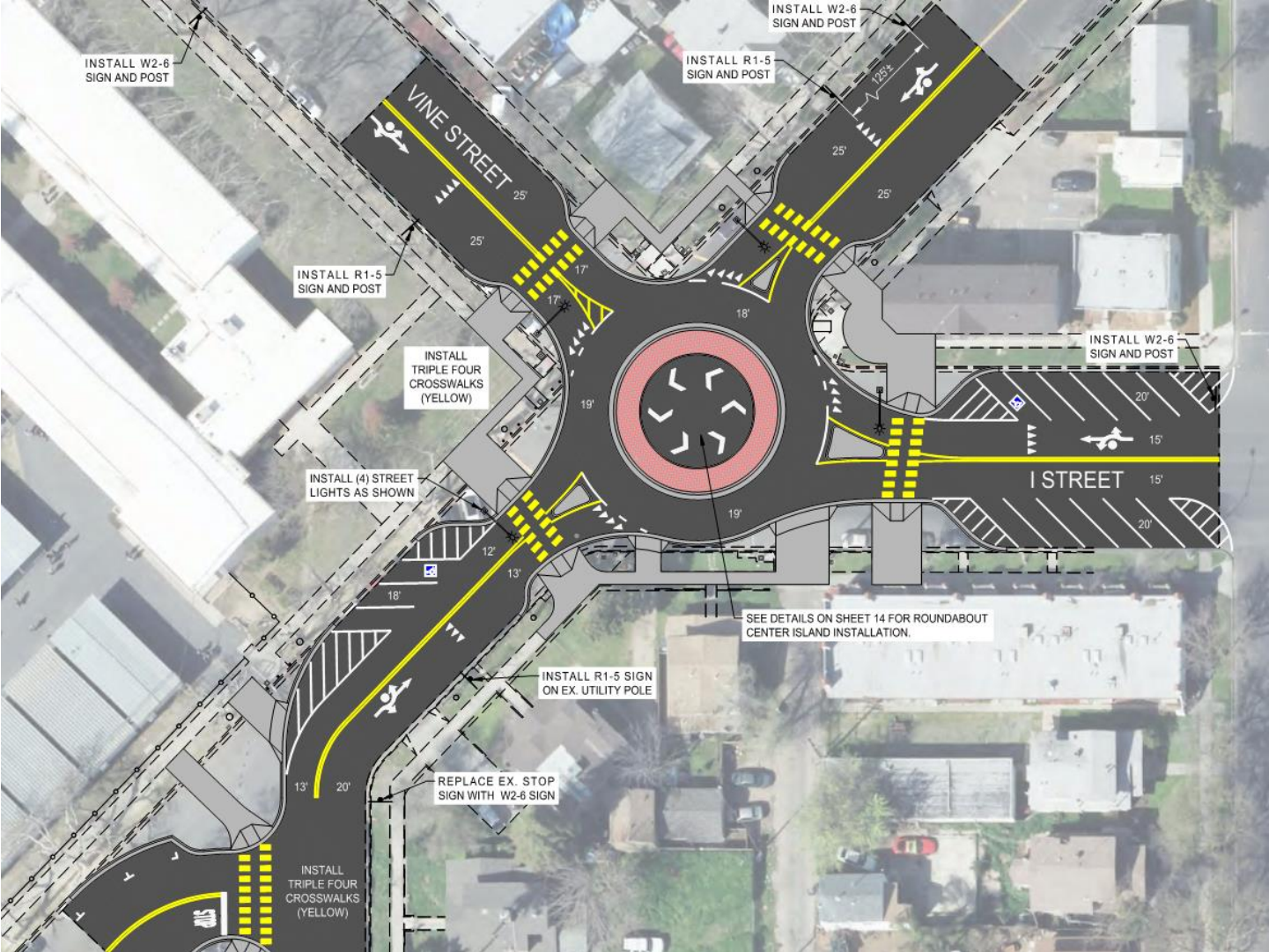
Chicago and Paradise Roundabout (Constructed With Overlay Project)





Washington and Vine Signal





INSTALL W2-6
SIGN AND POST

INSTALL R1-5
SIGN AND POST

INSTALL W2-6
SIGN AND POST

INSTALL R1-5
SIGN AND POST

INSTALL
TRIPLE FOUR
CROSSWALKS
(YELLOW)

INSTALL W2-6
SIGN AND POST

INSTALL (4) STREET
LIGHTS AS SHOWN

I STREET

SEE DETAILS ON SHEET 14 FOR ROUNDABOUT
CENTER ISLAND INSTALLATION.

INSTALL R1-5 SIGN
ON EX. UTILITY POLE

REPLACE EX. STOP
SIGN WITH W2-6 SIGN

INSTALL
TRIPLE FOUR
CROSSWALKS
(YELLOW)

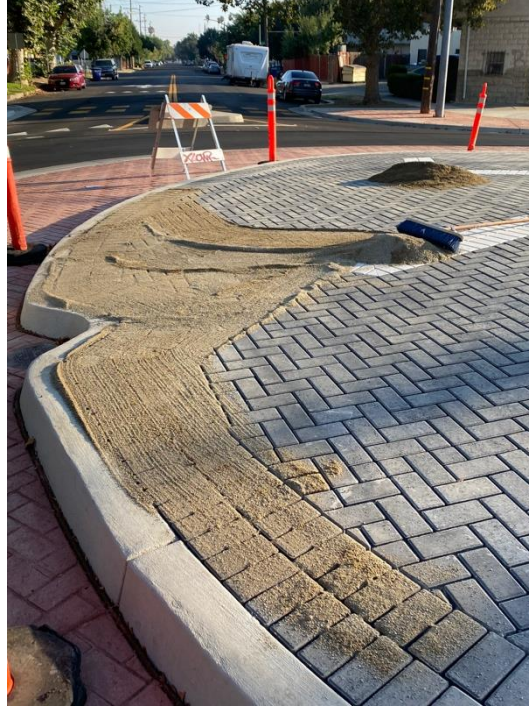


Washington and Vine Roundabout





Washington and Vine Roundabout (Brick Paver Central Island)





SYSTEMIC SAFETY ANALYSIS REPORT

prepared by FEHR PEERS

PROJECT 15 ADDRESSES SYSTEMIC PROFILES 1 2 3 4 5 6 7 8 9 10 11 12 13

INTERSECTION IMPROVEMENTS AT PARADISE ROAD, SUTTER AVENUE, MLK DRIVE, AND TUOLUMNE BOULEVARD

INTERSECTION OF PARADISE ROAD, SUTTER AVENUE, MLK DRIVE, AND TUOLUMNE BOULEVARD

Existing Conditions

This five-leg intersection has multiple conflict points and long crossing distances for pedestrians and bicyclists. This project is focused on simplifying the number of conflict points and enhancing the pedestrian environment. The City is currently pursuing a road diet of Paradise Road, and Project 16 would road diet Tuolumne Boulevard; these two projects would present an opportunity to consider a single lane roundabout at this location. The project assumes a single lane roundabout would be feasible at this location. If it is determined that a roundabout would not be feasible, alternative safety countermeasures should be considered to achieve the goals of this project, such as curb extensions, protected left turns, high visibility striping, etc.

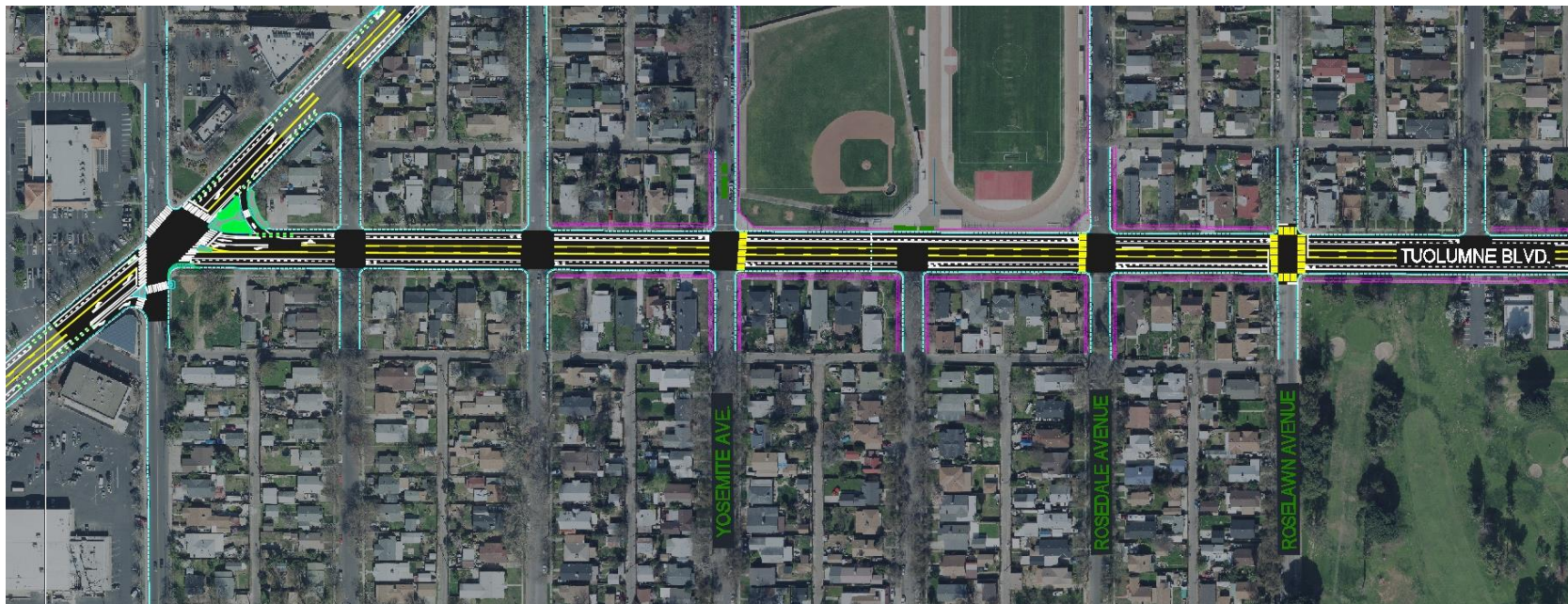
Project Recommendations

- Redesign intersection to enhance multi-modal safety.
- Consider single lane roundabout alternative.

15



TUOLUMNE PROJECT LIMITS



EXISTING 5-LEG INTERSECTION

MLK DRIVE

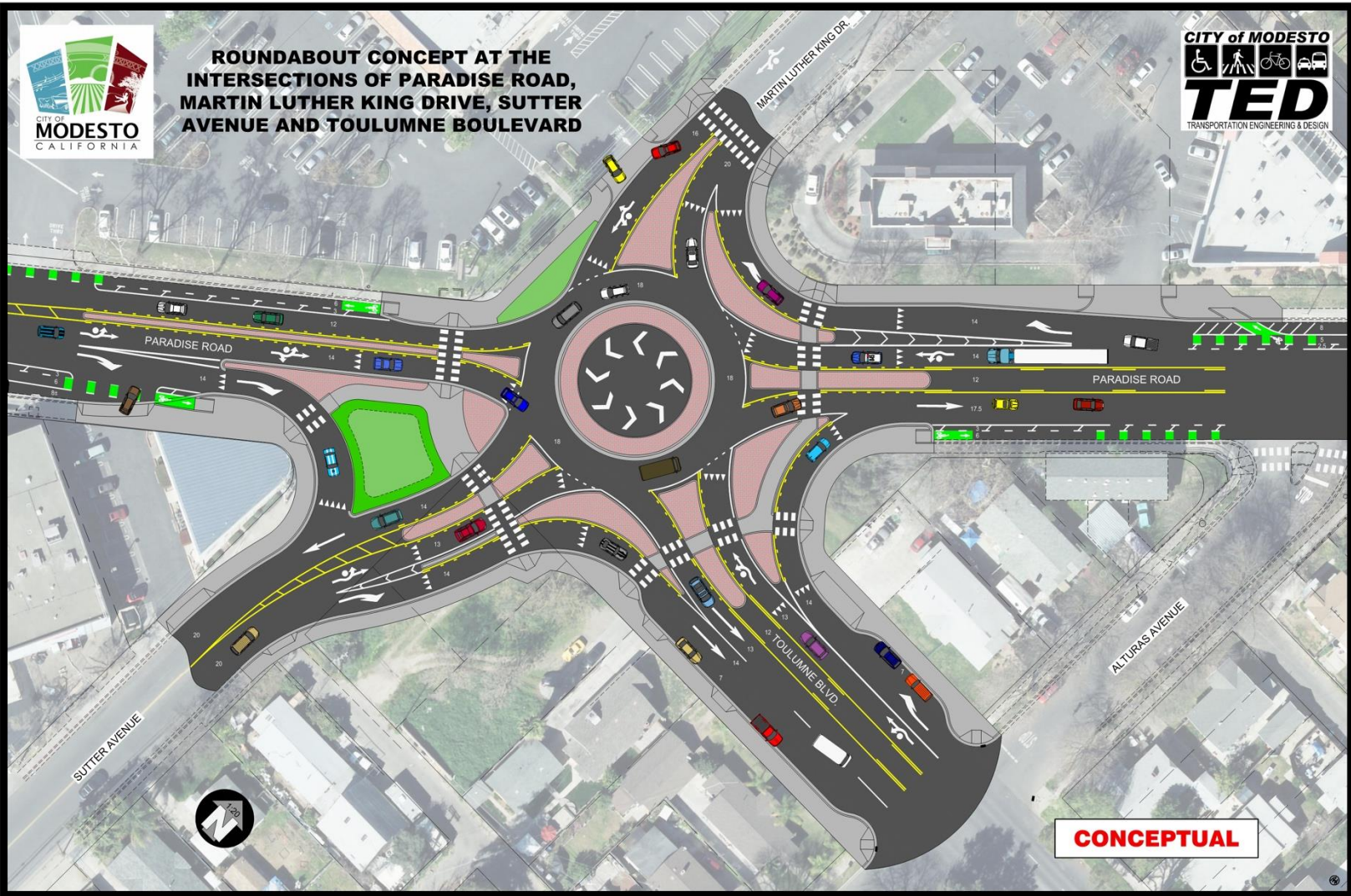
TUOLUMNE BOULEVARD

PARADISE ROAD





**ROUNDBOUT CONCEPT AT THE
INTERSECTIONS OF PARADISE ROAD,
MARTIN LUTHER KING DRIVE, SUTTER
AVENUE AND TOULUMNE BOULEVARD**



CONCEPTUAL



La Loma and Buena Vista Flagpole Roundabout (Constructed With Overlay Project)





Sylvan and Millbrook Roundabout (Pedestrian Overcrossing)





CITY OF
MODESTO
CALIFORNIA