



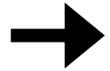
*Discussion on
U.S. 50/Cameron Park Dr
Interchange*

Prepared for the Board of Supervisors

January 25, 2010

Legistar Item #09-1523

Agenda



- Purpose

- History/Background

- Current Situation

- Alternatives

- Recommendation

Purpose for this Presentation:

- DOT is here today to discuss the U.S. 50 / Cameron Park Dr Interchange projects and to request the Board provide DOT with direction on next steps.

Previous Board Direction:

- When the 2009 CIP and the TIM Fee Resolution were adopted by the Board (5/5 and 6/2 respectively), DOT committed to return to the Board to discuss the costs, issues, and alternatives associated with
 - U.S. 50 / HOV Lanes,
 - U.S. 50 / Silva Valley Interchange,
 - U.S. 50 / Cameron Park Dr Interchange.

On 6/2/09, DOT recommended, and the Board approved, no change in the fees.

- Cost of Total Program increased from \$942.9 million to \$982.1 million (+39.2M = 4.2%)
- The U.S. 50/Cameron Park Dr Interchange Projects are one possible alternative to help close the \$39.2M gap.

DOT's Challenge:

- The current CIP projects for the Cameron Park Drive Interchange may impact many existing residences and businesses and total \$68M.
- Other alternatives have been analyzed but have similar impacts and costs.
- Additional alternatives have not been fully analyzed, but they may not meet Level of Service (LOS) requirements or receive Caltrans' approval, but they could impact fewer businesses/residences and cost less.

DOT is here to make some recommendations and to request direction on its next steps regarding the Cameron Park Drive Interchange projects.

As a matter of process, DOT always follows this approach on all large, complex, costly projects:

- Develop a wide range of alternatives;
- Evaluate the costs, benefits, and issues of each;
- Return to the Board at appropriate points to provide information and receive direction as needed.

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Projects planned for Cameron Park Dr Interchange include \$68M for 72361 and 72367:

*PROPOSED COMPLETION YEAR from 2009 CIP

\$58.9M

72361

*2013/2018
US 50/Cameron Park Dr
Interchange Improvements

\$9.1M

72367

*2013/2018
Cameron Park Dr Widening
Durock Rd to Coach Ln

GP144

*Beyond 2018
Cameron Park Widening
Palmer Dr to Meder Rd

GP150

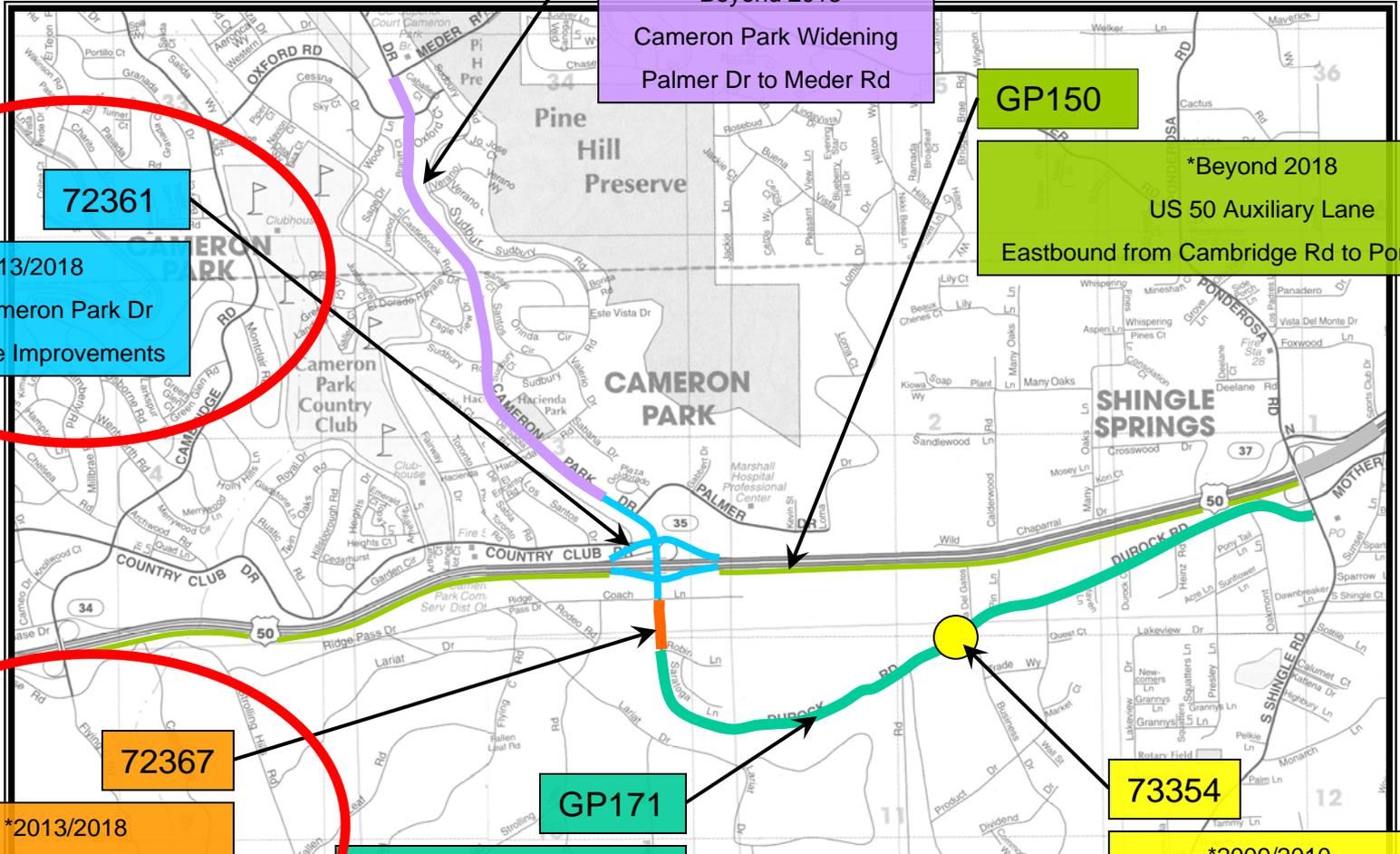
*Beyond 2018
US 50 Auxiliary Lane
Eastbound from Cambridge Rd to Ponderosa Rd

GP171

*2013/2018
Durock Rd Widening
Robin Ln to S. Shingle Rd

73354

*2009/2010
Durock Rd at Business Dr
Intersection Signalization



HISTORY:

- 1960s: Cameron Park Dr Interchange constructed
- DOT has made several improvements in the area:
 - 1991: Signals added to ramps and Coach/Cameron Park Dr and Palmer/Cameron Park Dr intersections, ped crossing under Hwy 50, curb, retaining wall (33116) - \$1.4M
 - 1996/97: Cameron Park Dr widening – Hwy 50 to Robin Ln and Robin Ln to Durock Rd (72125, 72126) - \$0.3M
 - 2007/08: Cameron Park Dr and Coach Ln intersection improvements – ramps at all 4 corners (73321) - \$0.7M
 - 2008/09: Cameron Park Dr and County Club Dr and Cameron Park Dr and Palmer intersection improvements (72364) - \$1.7M

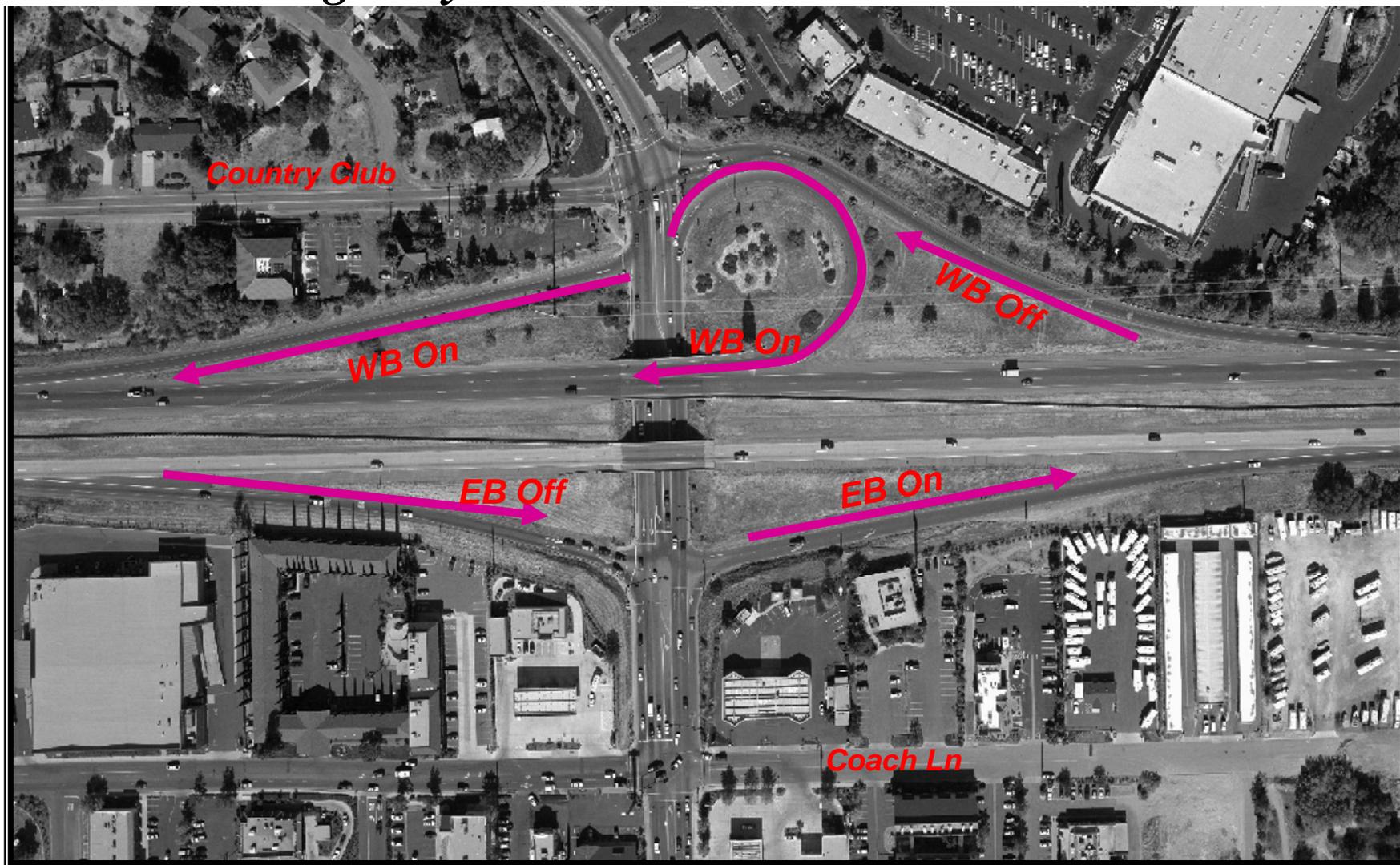
HISTORY (continued):

- March, 2006: 2004 General Plan TIM Fee Program adopted which included a planning level estimate of \$24.8M for Cameron Park Dr Interchange
- 2007 - 2008 Several alternatives were screened; Caltrans approves 3 to be evaluated in the Project Study Report (PSR)
 - All 3 alternatives are \$54M+
- October, 2008: Caltrans approves PSR/PDS (Project Development Support)
- Early 2009: Alternative 1 is incorporated into the 2009 CIP (Board approved 5/5/09) and TIM Fee update (6/2/09)
 - \$68M alternative includes 8 lanes, bridge replacement, and over \$12M in right of way costs

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The Cameron Park Dr Interchange currently has 1 cloverleaf style WB on-ramp and 4 diagonal ramps. Cameron Park Dr is 6 lanes under Highway 50.



There is limited space under Hwy 50 for expansion of Cameron Park Drive.

One additional lane can be added without having to widen the Highway 50 bridges.



The distance between bridge abutments is approx. 107 feet.

The ramps are short in distance (between 400 and 600 feet) with few lanes; thus they have limited capacity. The eastbound on-ramp starts as 2 lanes and merges to 1.



The westbound loop on-ramp is 1 lane.



The westbound slip on-ramp is 1 lane.



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U.S. 50/Cameron Park Dr Interchange
09-1523.A.17

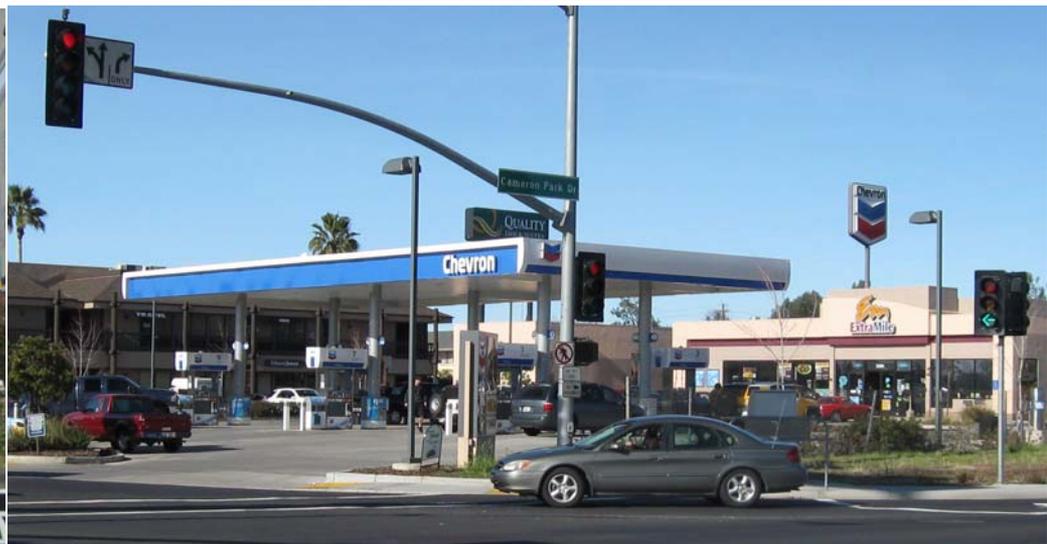
The eastbound off-ramp starts as 1 lane and expands to 2 lanes.



The westbound off-ramp starts as 1 lane and expands to 2.



There are many established businesses and residences on both sides of the freeway.



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U.S. 50/Cameron Park Dr Interchange
09-1523.A.20

*Coach Lane is very close (less than 200 ft) to the ramps.
There are also many commercial destinations in and around
Coach & Cameron Park Dr.*



Short ramps, existing development, close intersections, and limited space under Hwy 50 lead to challenges:



1. Traffic backing up on off-ramps and onto the freeway;

2. Sight distance restrictions prevent right turns on red;



...And 3. Long waits at the Coach and Cameron Park Dr. intersection...



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Traffic study results show that improvements are already needed at the Cameron Park Dr/Coach Ln intersection and that they will be needed in general by 2015.

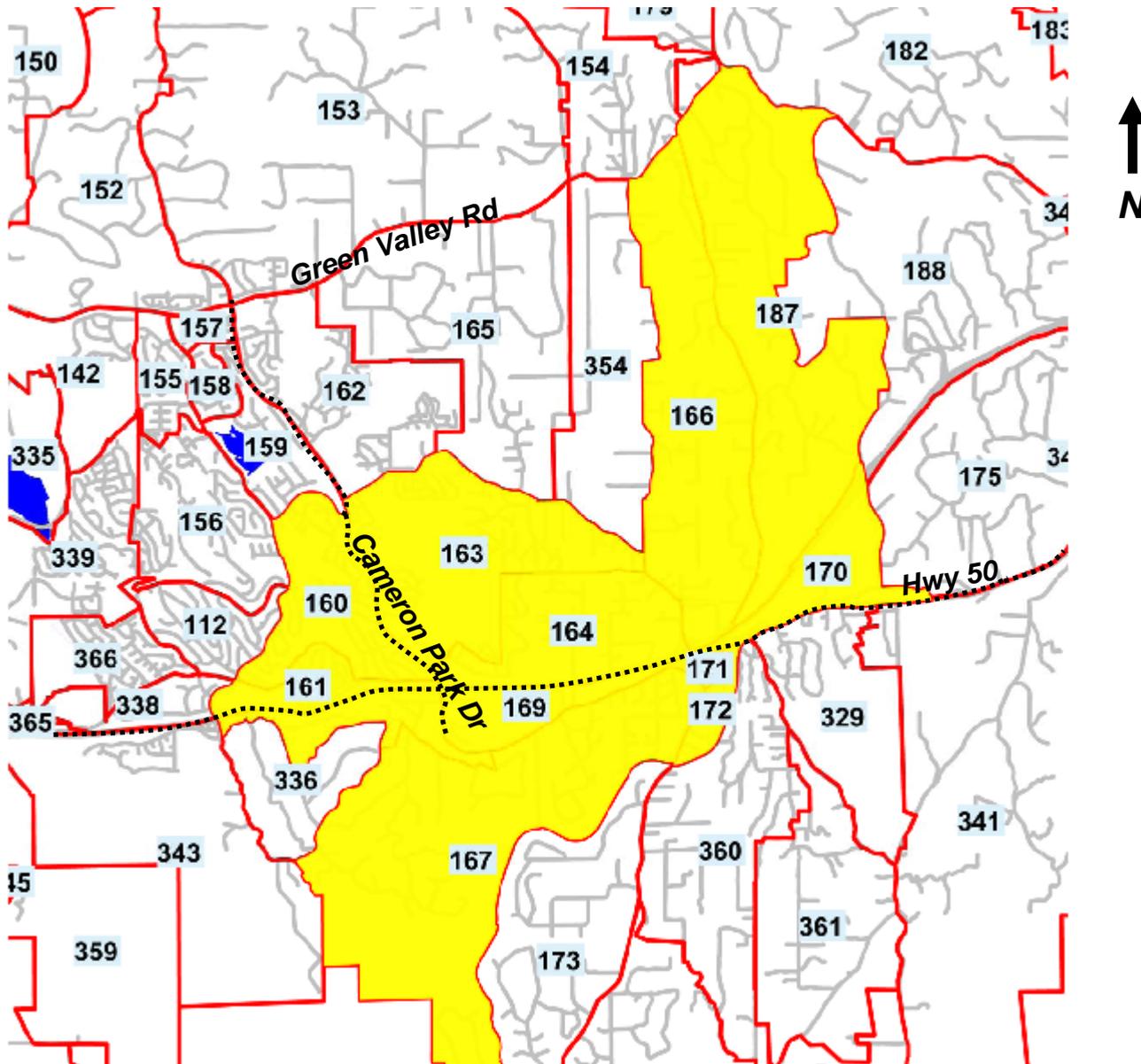
INTERSECTION	EXISTING		2015		2025		2035	
	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
1. Cameron Park Dr./Palmer Dr.	B	D	F	F	F	F	F	F
2. Cameron Park Dr./US 50 WB off-ramp/Country Club Dr.	C	C	D	E	E	F	F	F
3. Cameron Park Dr./US 50 EB ramps	C	C	C	F	E	F	F	F
4. Cameron Park Dr./Coach Ln.	B	F	E	F	F	F	F	F
5. Durock Rd/Robin Ln.	C	C	D	F	F	F	F	F

Source: "Traffic Report for the US 50/Cameron Park Drive Interchange PR" by Fehr & Peers, May 23, 2008

The projects in the current plan are designed for 2035 growth:

- Caltrans requires a 20 year life for a project.
 - Construction is estimated to happen in 2015 at the earliest.
- The May '08 Traffic Study approximated a 2035 forecast using the General Plan Buildout forecast* for non residential land uses in the yellow TAZs (next slide) and the 2025 forecast everywhere else.
 - This approach likely overestimates the traffic demand for the Interchange in 2035.
 - Note: The capacity figures did not include the General Plan amendment increasing the Floor Area Ratio (FAR)

** from the 1999 EPS Report*



In order to address the expected growth in the area, meet LOS standards, and meet Caltrans' requirements, the following improvements are currently planned:

- Widen Cameron Park Dr. to 8 lanes under Highway 50 (north of Palmer to Coach);
- Replace the Highway 50 bridges to lengthen them to accommodate the 8 lanes;
- Expand the ramps including adding an HOV lane and meters for the non-HOV lanes;
- Eliminate left turns from Coach onto Cameron Park Dr. by installing a median from the westbound ramps to Robin;
- Widen Cameron Park Dr to 6 lanes from Coach to Durock Rd.;
- Purchase right of way now to eventually realign and connect Rodeo to Robin.

Estimated total project costs have changed over the past few years.

- The original planning level estimate prepared in 2006 (\$24.8M) included:
 - 7 lane Cameron Park Dr under Hwy 50 only
 - Would not require replacement of the existing bridges
 - Right of way cost estimate was \$500K
 - May, 2008 Traffic Study showed that this alternative will go to LOS F between 2025 and 2035

- 2009 CIP Estimate (\$68.0M) included:
 - 8 lane Cameron Park Dr under Hwy 50
 - Requires replacement of bridges
 - Right of way cost estimate is now \$12.2M
 - LOS E maintained to 2035

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DOT's goals for the Interchange:

- Reduce congestion on Cameron Park Dr near US Hwy 50;
- Improve traffic operations at the US 50/ Cameron Park Dr Interchange
 - Note: Caltrans must approve anything proposed in its R/W;
- Improve access and circulation to local businesses along Cameron Park Dr;
- Reduce conflicts with, and improve access for, pedestrians and bicycles;
- Accommodate the needs of future planned development for the area;
- Maximize value received for investment made;
- Minimize impacts on existing properties: businesses and residences (greatest public good and least private injury).

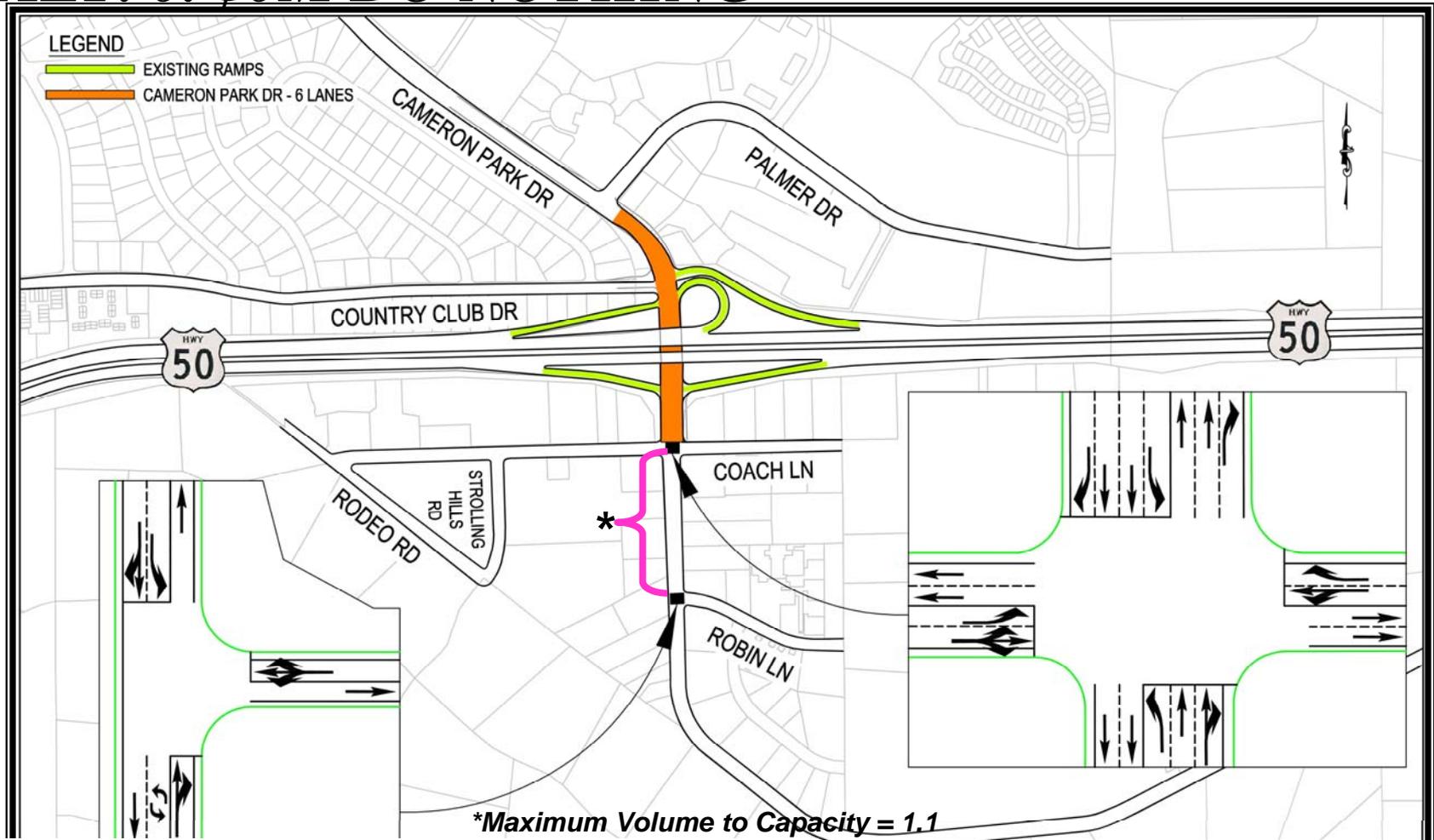
Over the past two years, DOT has researched and screened numerous alternatives.

- 6 alternatives were analyzed in the traffic study for the PSR:
 - Do Nothing
 - 8 Lane Cameron Park Drive - Current CIP (PSR #1)
 - 7 Lane Cameron Park Drive (PSR #2)
 - 7 Lane Cameron Park Drive with additional regional road improvements (e.g., Palmer to Wild Chaparral connection)
 - 7 Lane Cameron Park Drive going to 8 lanes later
 - Single Point Diamond (PSR #3).
- 8 alternatives not analyzed in the traffic study:
 - Some were rejected early on as being unlikely to meet LOS or Caltrans' requirements, or due to large right of way impacts;
 - Additional alternatives have been developed since the traffic study in an attempt to address the impacts on existing businesses and residences
 - These alternatives are mixes of different elements of the other alternatives.

There is the potential for significant impacts to existing businesses and residences associated with all 3 alternatives in the PSR.

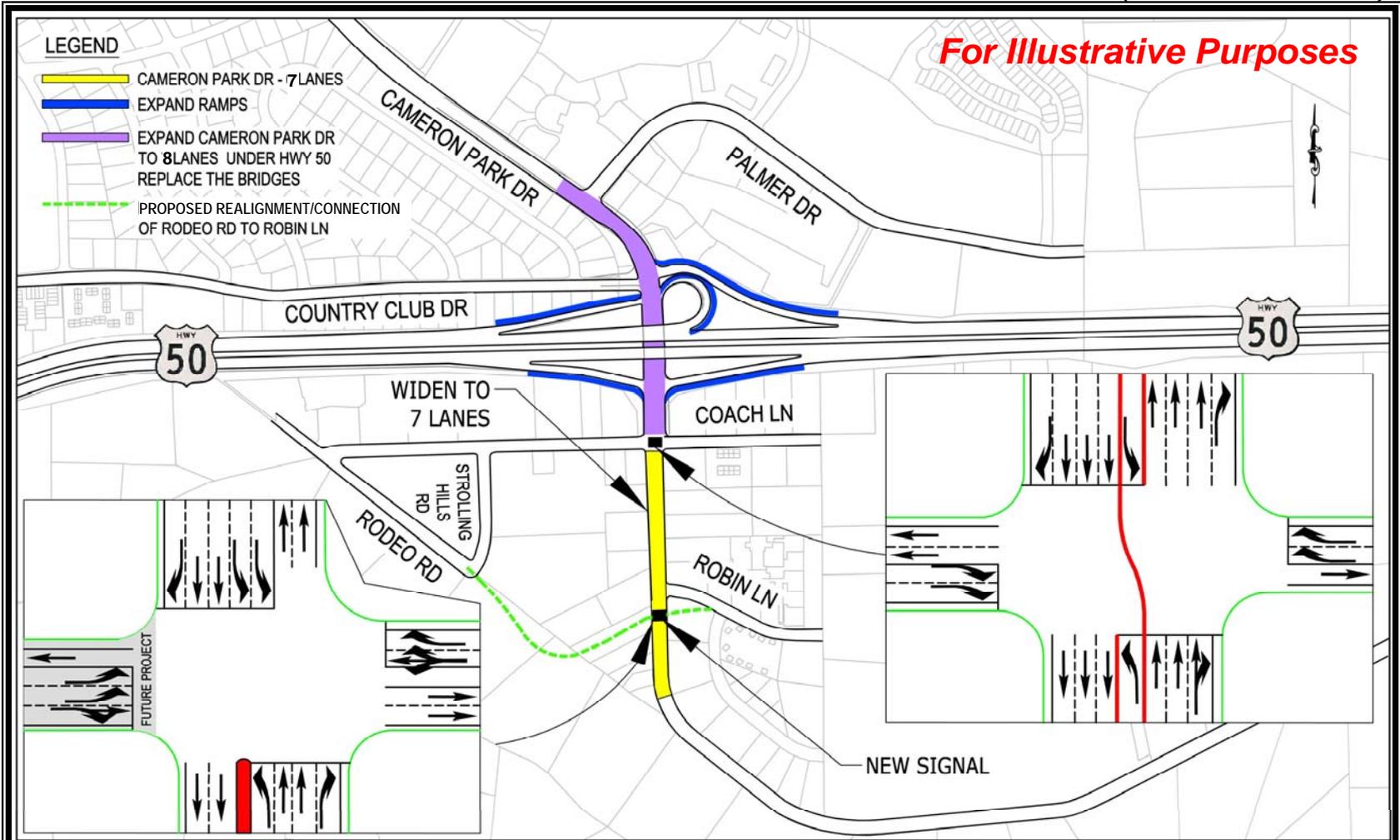
- Approximately 50 parcels might be affected including potential significant impacts to
 - 7 - 9 businesses & 1 vacant commercial lot
 - 3 - 4 residences
 - Existing parking, landscaping, lighting, and signage
- Total area which might be impacted: approximately 240K square feet (~ 5.5 acres)

ALT. 0. \$0M DO NOTHING



- **PROS:**
 - No out of pocket cost
 - No right of way impacts
 - General Plan allows portion to operate at LOS F*
 - Supervisors could vote (4/5th) to allow LOS F
- **CONS:**
 - Existing LOS issues at EB off
 - Doesn't meet LOS requirements based on 2025 or 2035 forecasts
 - Unknown implications of allowing LOS F*

Alt 1. \$68M Current Plan: 8 Lane Cameron Park Dr (PSR Alt #1)



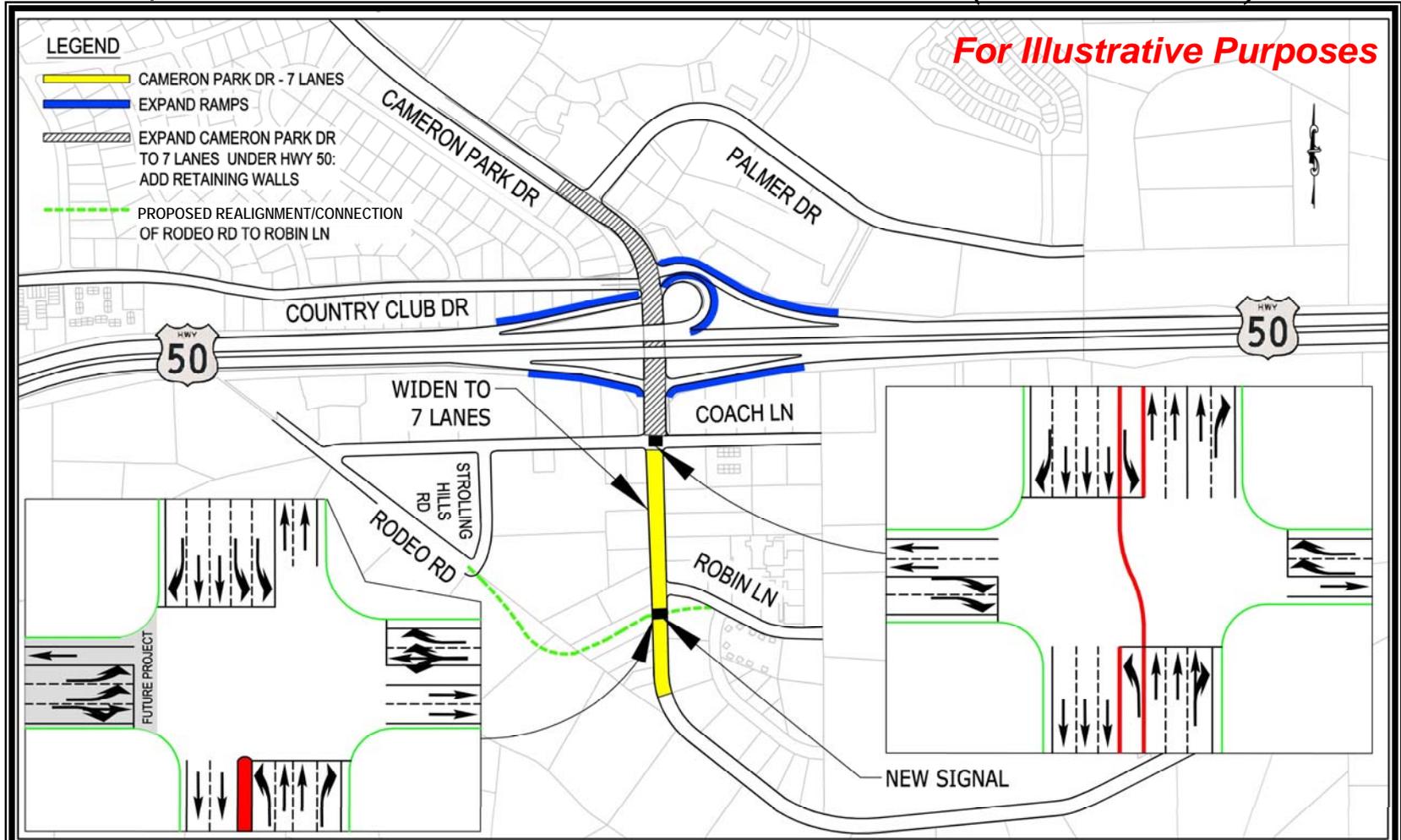
• **PROS:**

- Maintains LOS through General Plan's buildout forecast (2035)
- Improves overall circulation

• **CONS:**

- Expensive
- Likely to impact some existing properties
- Could impact property/sales tax revenues in near-term
- Median installed at Coach Lane

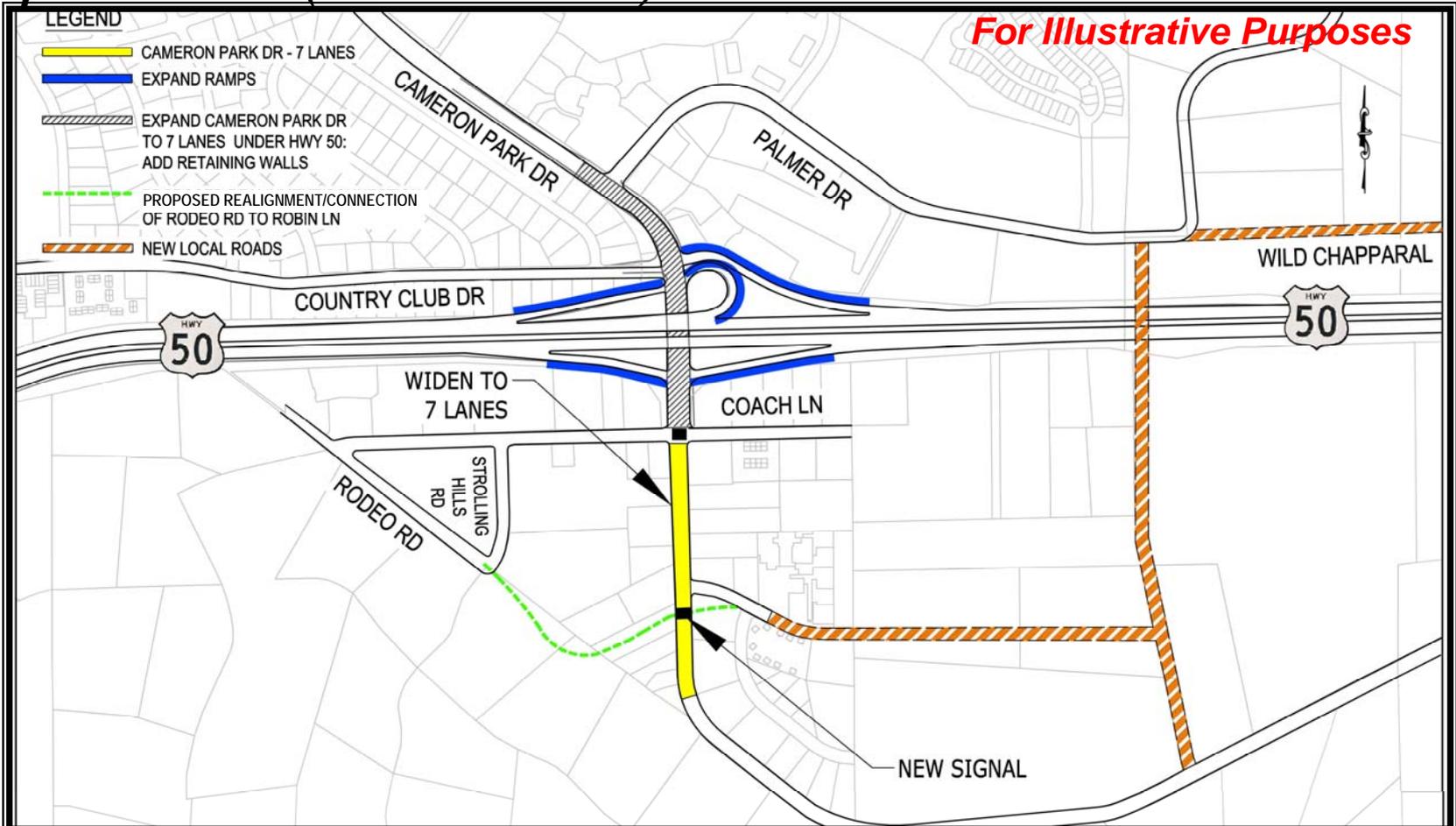
Alt 2a. \$51.4M: 7 Lane Cameron Park Dr (PSR Alt #2)



- **PROS:**
 - *Less expensive initially*
 - *Upgrade when needed*

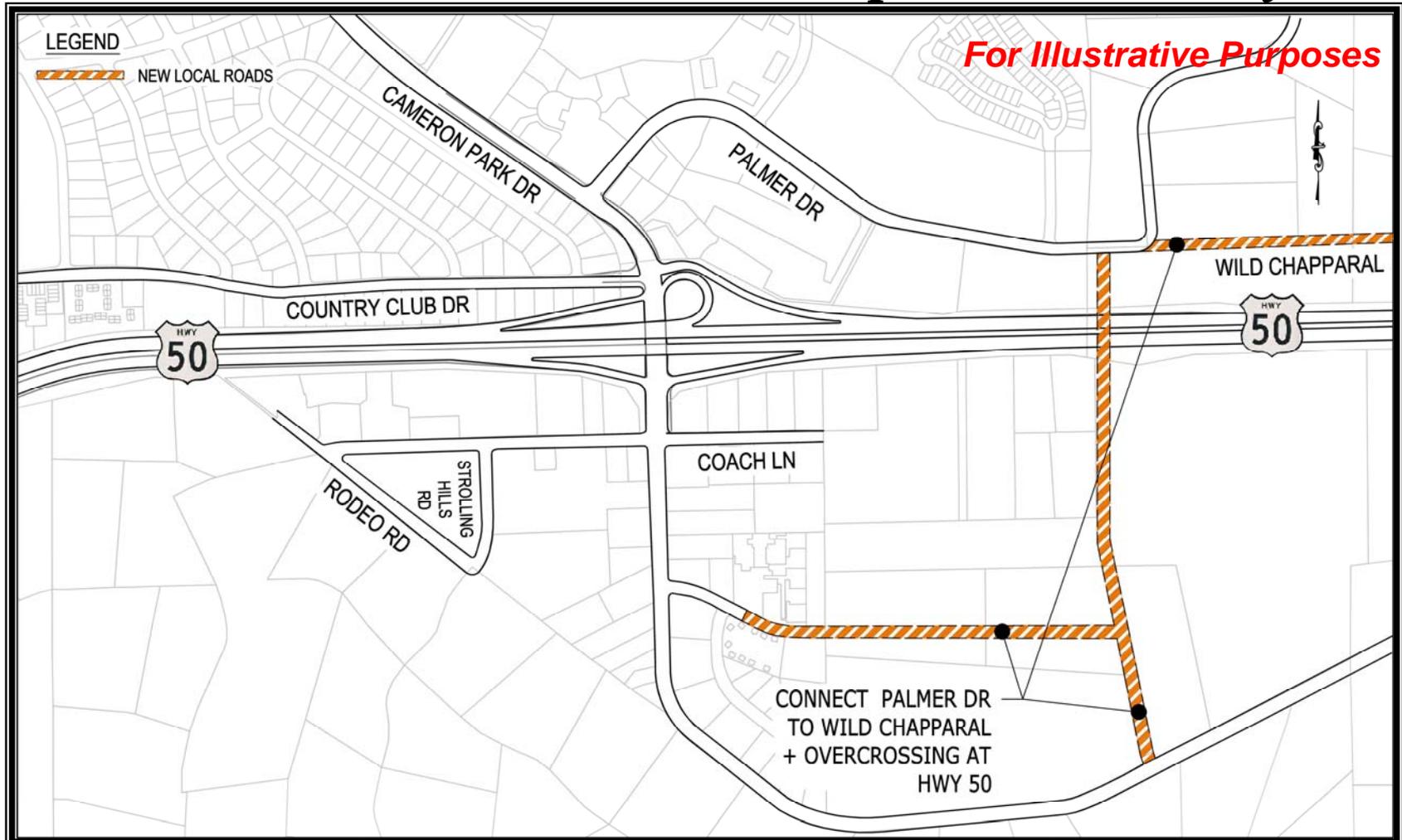
- **CONS:**
 - *Approx. 10 year LOS Life*
 - *Likely to impact some existing properties*
 - *Could impact property/sales tax revenues in near-term*
 - *Median installed at Coach Lane*

Alt 2b. \$??M: 7 Lane Cameron Park Dr + other local road improvements (PSR Alt #2 +)



- | | |
|---|--|
| <ul style="list-style-type: none"> • PROS: <ul style="list-style-type: none"> - May not require median at Coach - Upgrade when needed - Likely to have 20 yr LOS life | <ul style="list-style-type: none"> • CONS: <ul style="list-style-type: none"> - Cost undetermined - May require other local road improvements - Likely to impact some existing properties - Could impact property/sales tax revenues in near-term |
|---|--|

Alt 2c. \$??M: Other local road improvements only



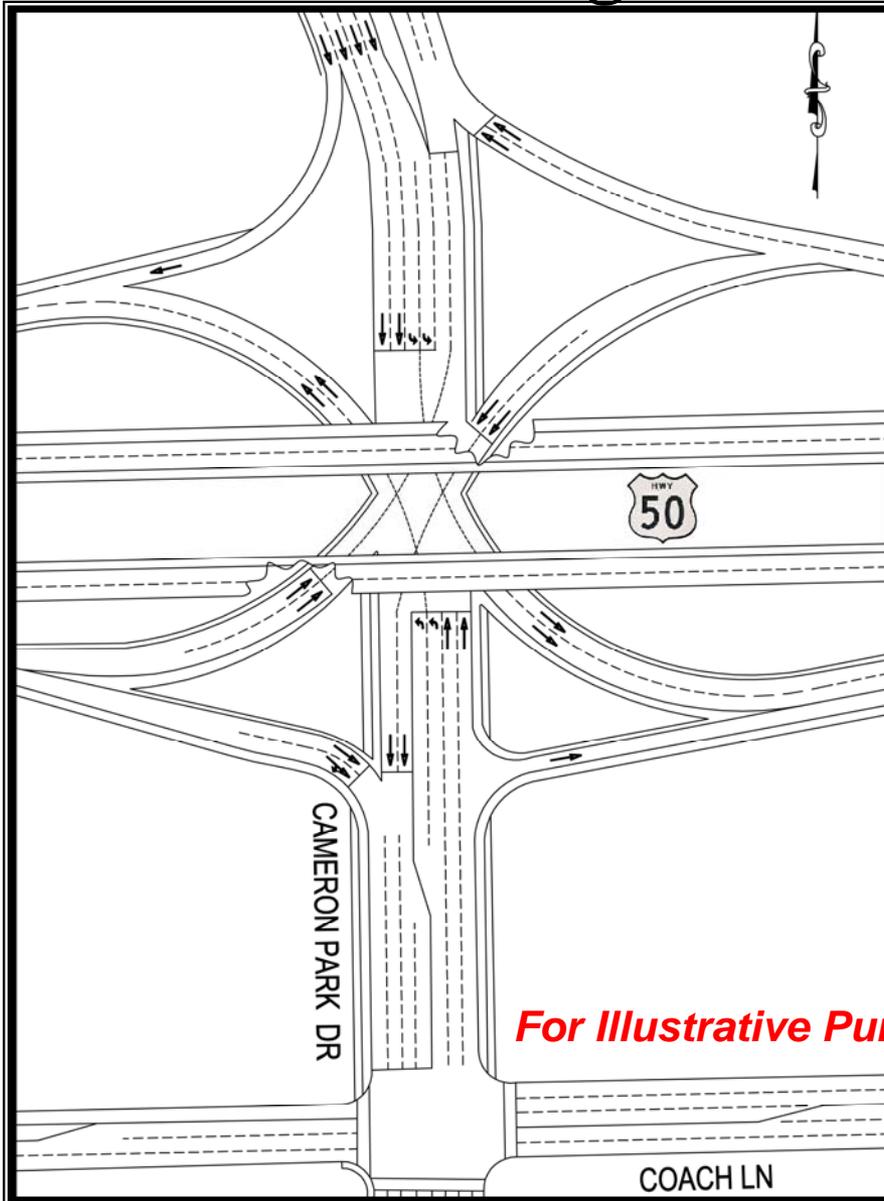
• **PROS:**

- Could be less expensive
- Provides some relief to Cam Park Dr
- Provides Parallel capacity

• **CONS:**

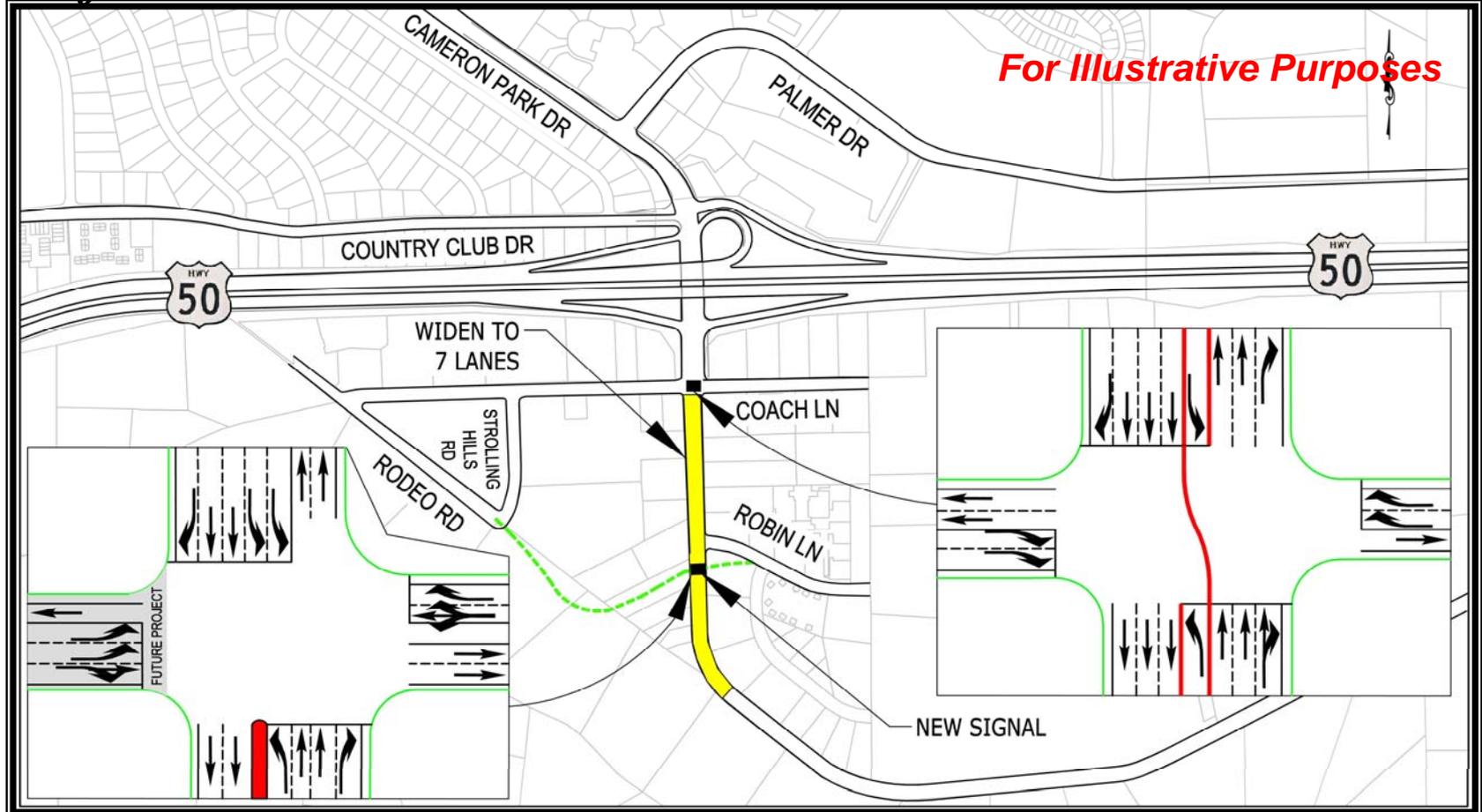
- Unknown cost
- May not deliver enough LOS benefit
- Unknown environmental mitigation

Alt 3. \$96M: Single Point Diamond (PSR #3)



- **PROS:**
 - Eliminates left turns improving traffic flow & LOS
 - Maintains LOS through General Plan's buildout forecast (2035)
- **CONS:**
 - Alt 1 achieves same result with lower cost
 - More impacts to local businesses/residences than Alt 1
 - Lowers Cam Park Dr by 7 ft -- requires pumping station (maintenance)

Alt 4a. \$9.1M: Build 72367 Only – widen Cameron Park Dr from Durock to Coach



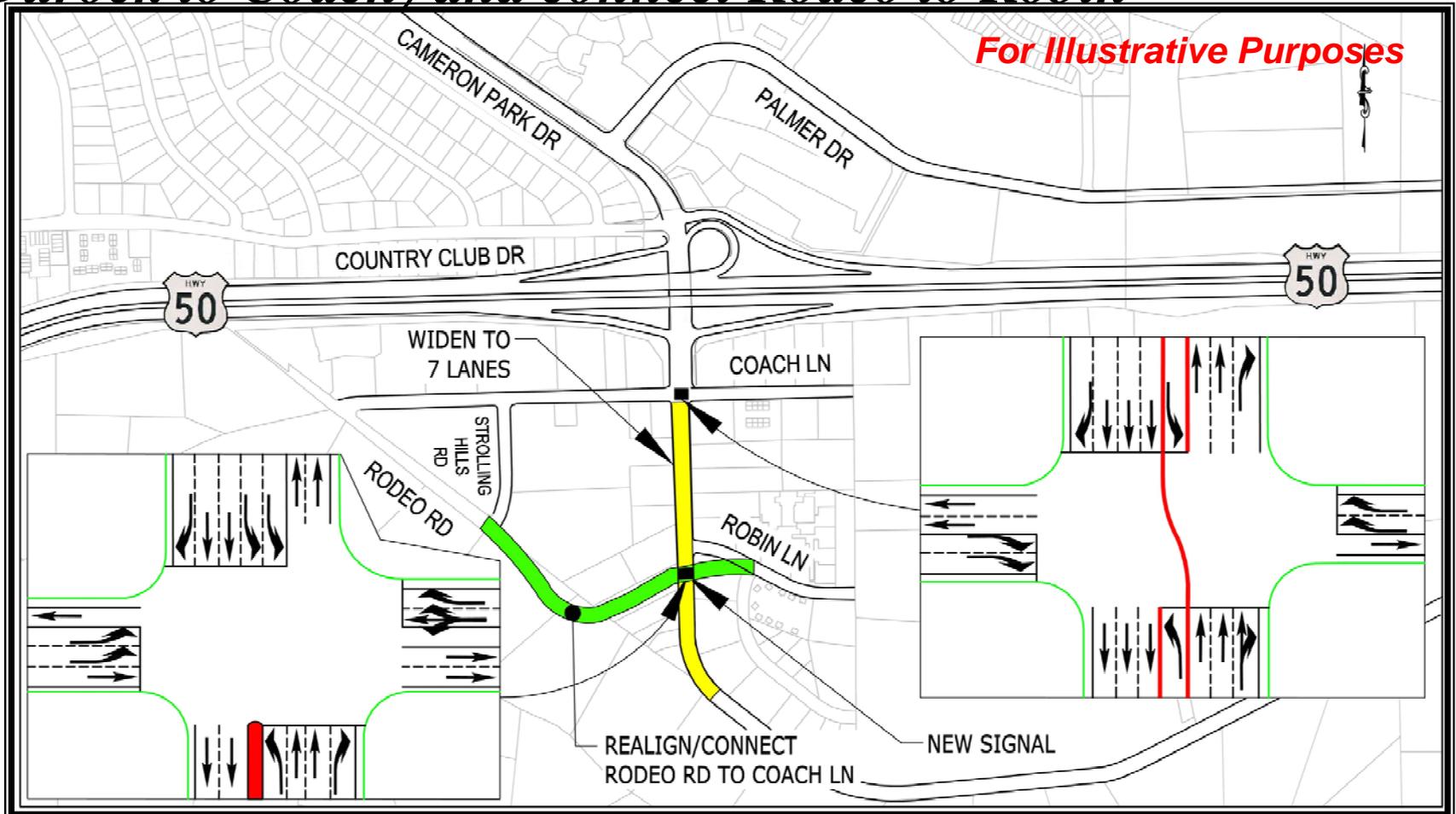
• **PROS:**

- *Improved capacity on this section*

CONS:

- *Unknown LOS benefit*
- *Likely to impact some existing properties*
- *Could impact property/sales tax revenues in near-term*
- *Median installed at Coach Lane*

Alt 4b. \$??M: Build 72367 (widen Cameron Park Dr from Durock to Coach) and connect Rodeo to Robin



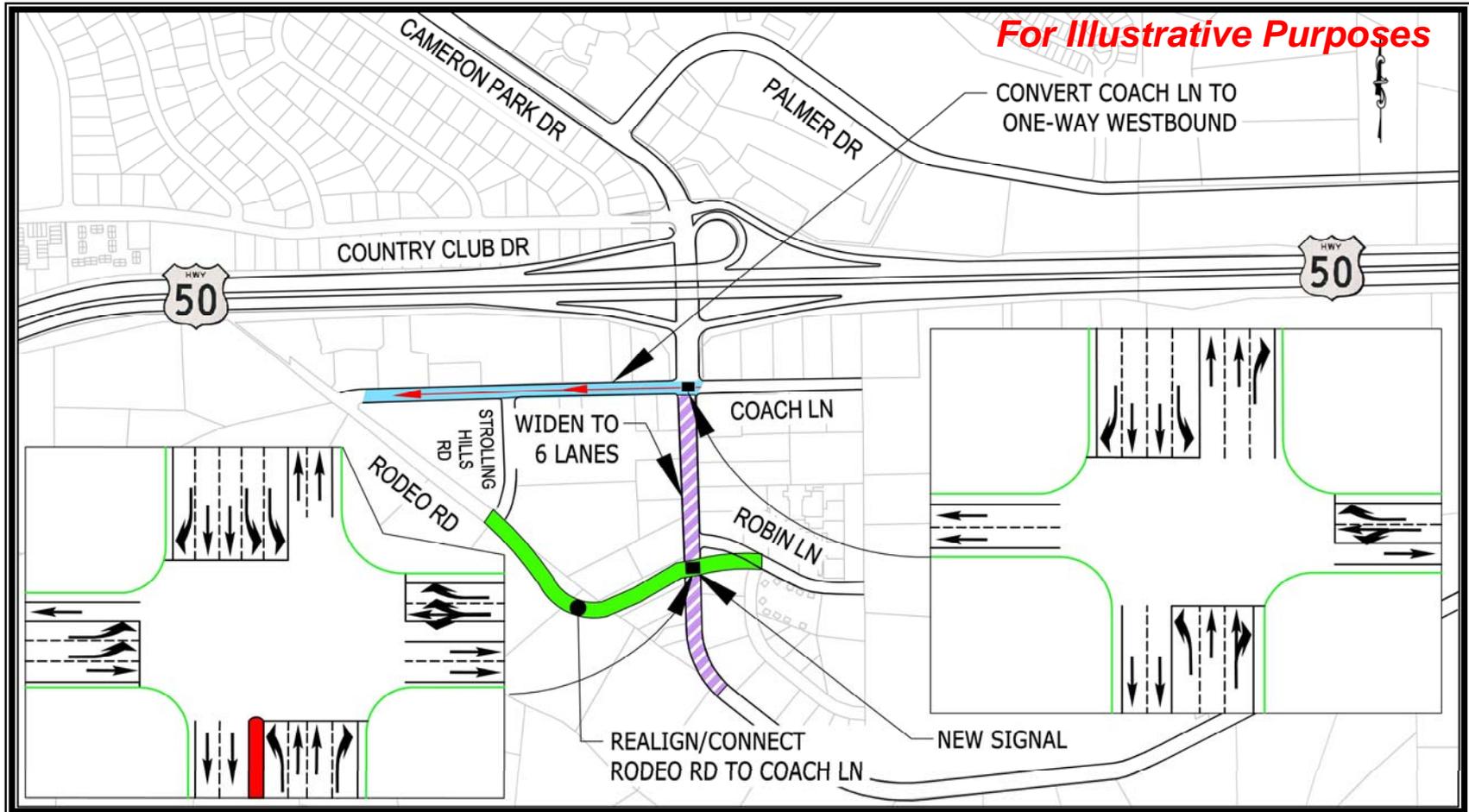
• **PROS:**

- Improved capacity on this section

• **CONS:**

- Unknown LOS benefit
- Likely to impact some existing properties
- Could impact property/sales tax revenues in near-term
- Median installed at Coach Lane

Alt 4c. \$??M: Make Coach one-way, widen Cameron Park Dr to 6 lanes and connect Rodeo to Robin



• **PROS:**

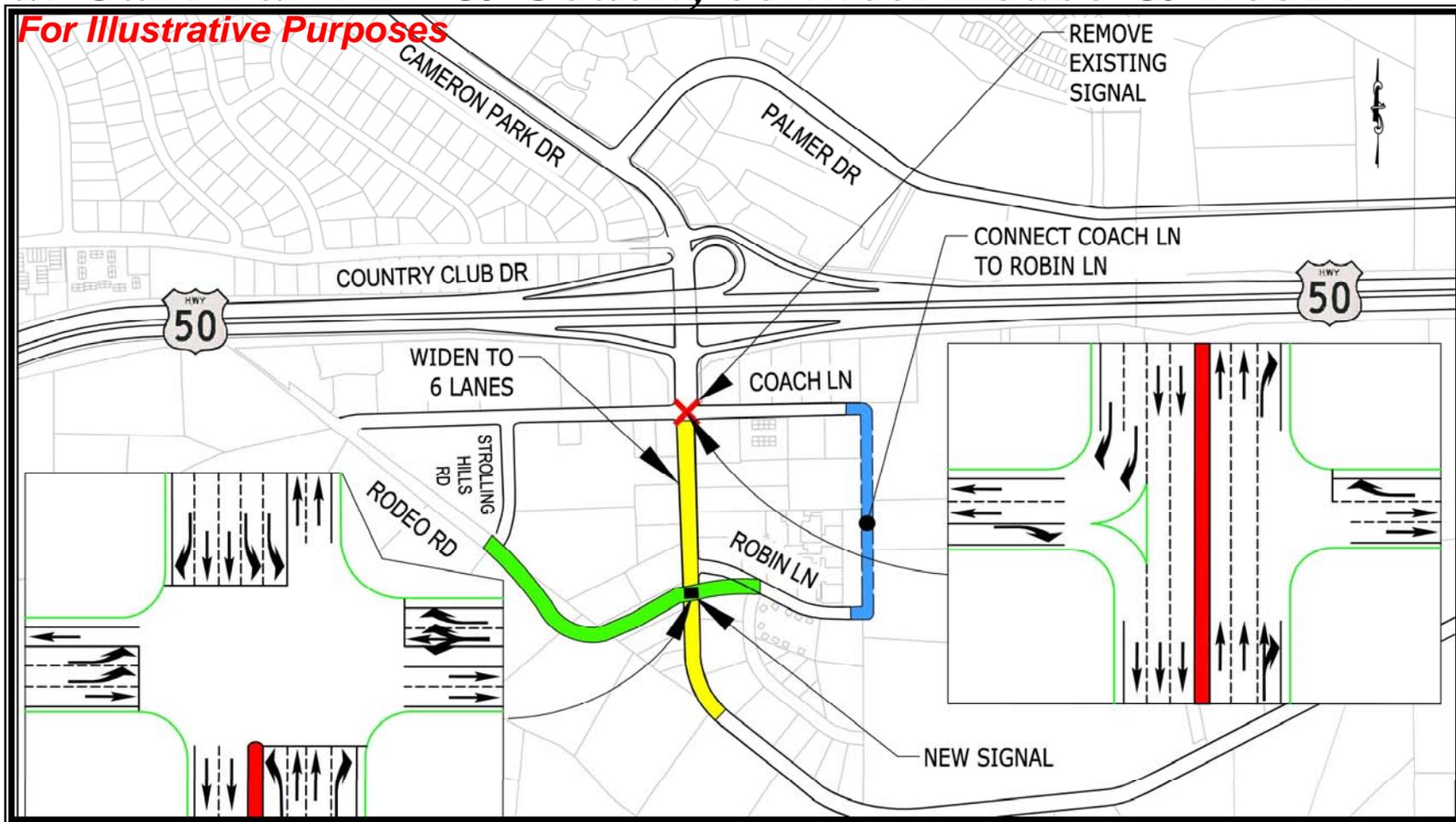
- Improved capacity on this section

• **CONS:**

- May not deliver enough LOS benefit
- Likely to impact some existing properties
- Could impact property/sales tax revenues in near-term

Alt 4d. \$??M: Remove signal at Coach; disallow all lefts at Cam Park Dr & Coach; connect Rodeo & Robin

For Illustrative Purposes



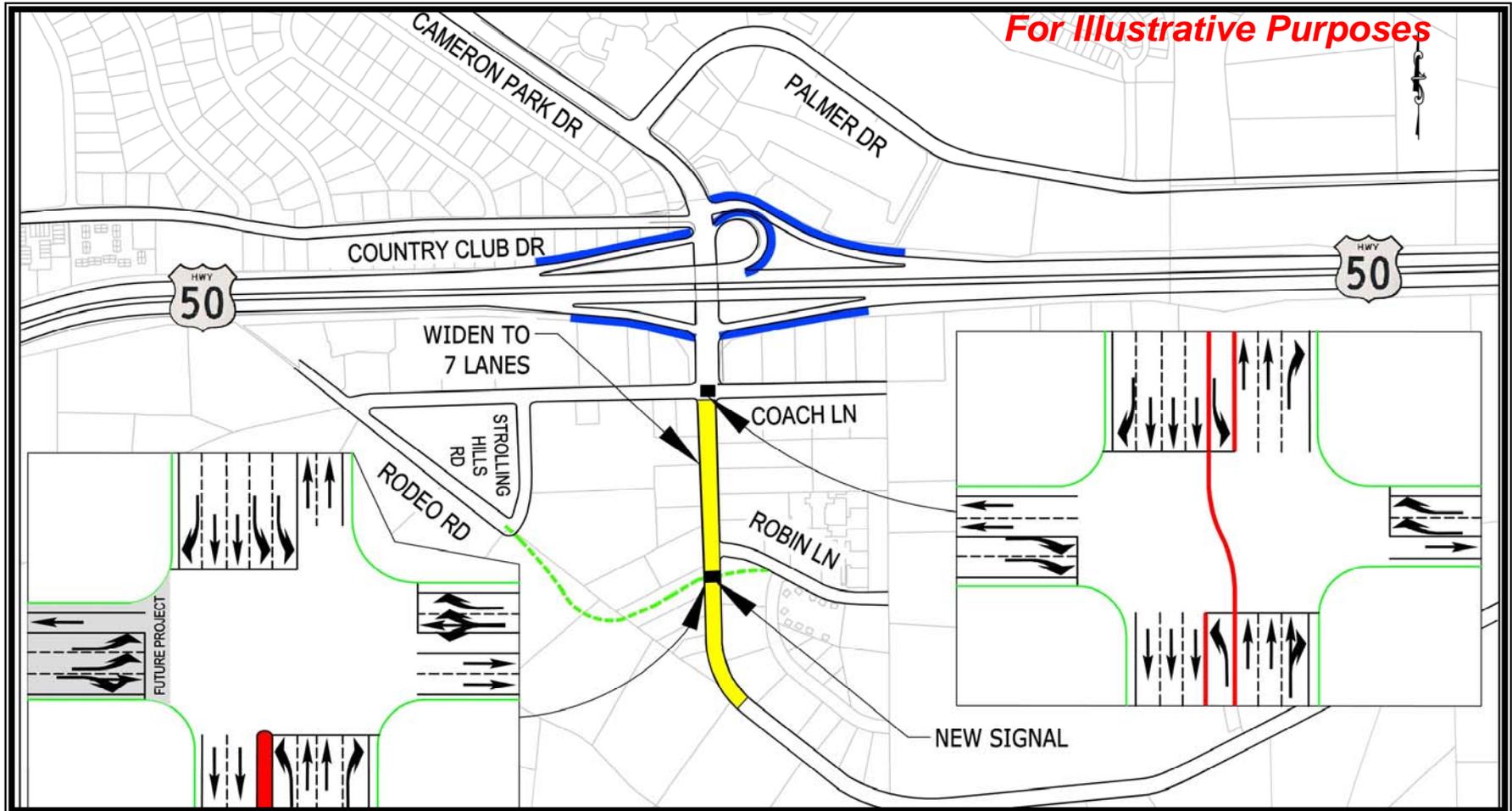
• **PROS:**

- Improved capacity on this section
- Eliminates signal at Coach

• **CONS:**

- Unknown LOS benefit
- Likely to impact some existing properties
- Could impact property/sales tax revenues in near-term

Alt 5. \$??M: Build 72367 and expand ramps



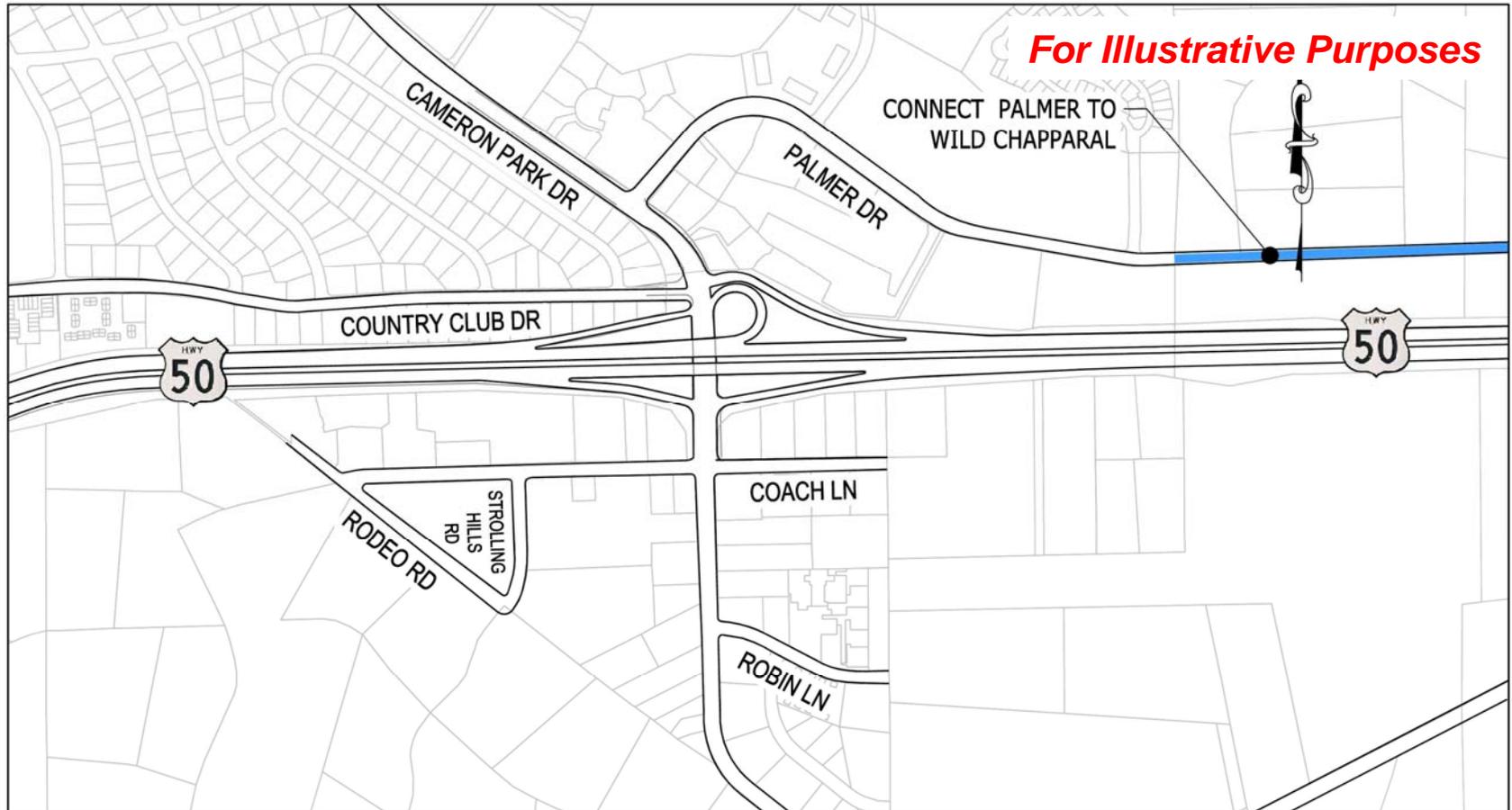
• **PROS:**

- Improved ramp operations
- Improved capacity on this section

CONS:

- Unknown LOS benefit
- Likely to impact some existing properties
- Could impact property/sales tax revenues in near-term
- Median installed at Coach Lane

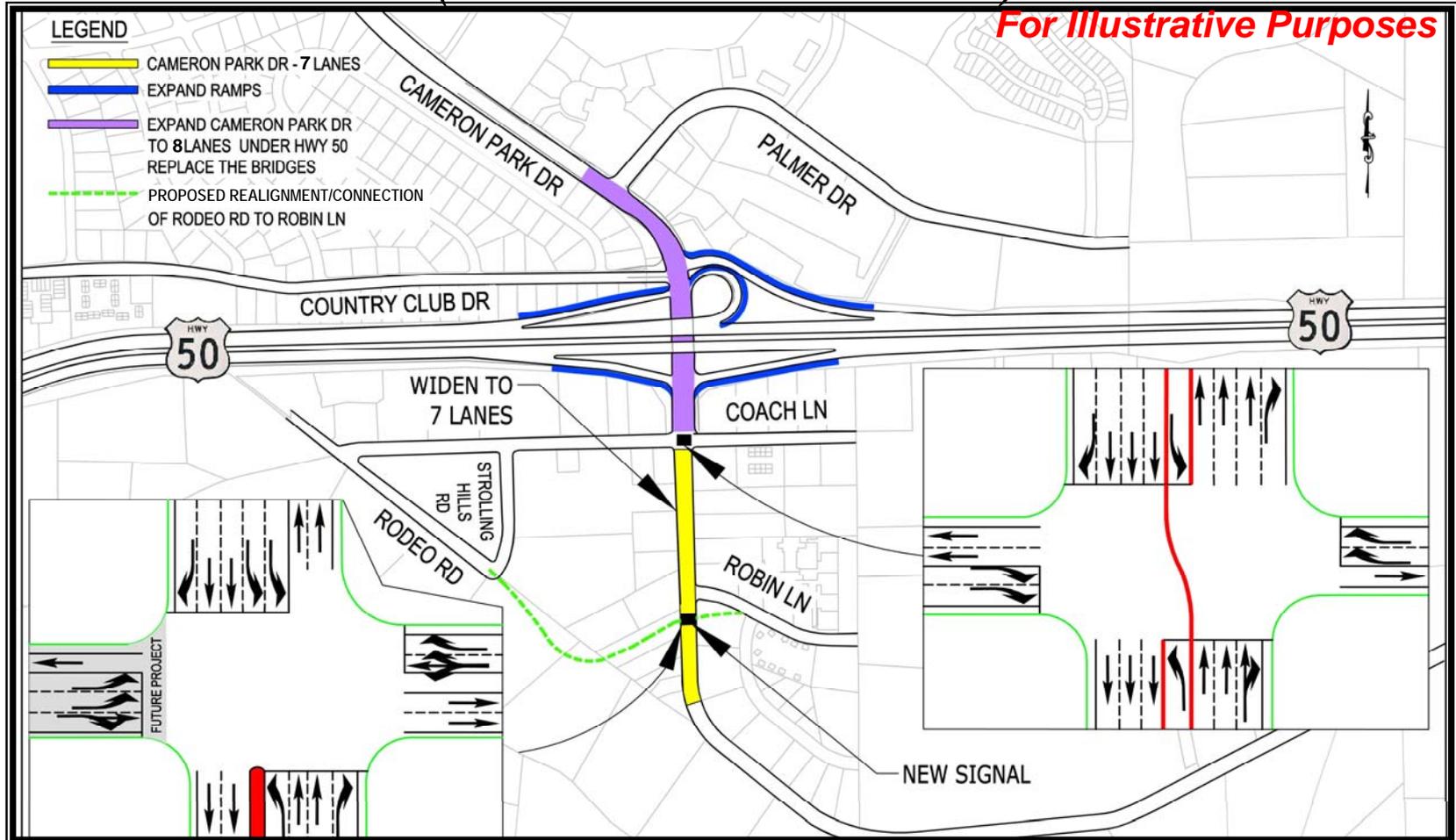
Alt 6. \$9.6M+R/W+ mitigation cost: Connect Palmer to Wild Chaparral



- **PROS:**
 - Provides additional circulation alternative
 - Parallel Highway 50 capacity
 - Minimal impact to existing businesses & residences

- **CONS:**
 - Didn't show much LOS benefit at the Interchange in Traffic Study
 - Unknown environmental mitigation

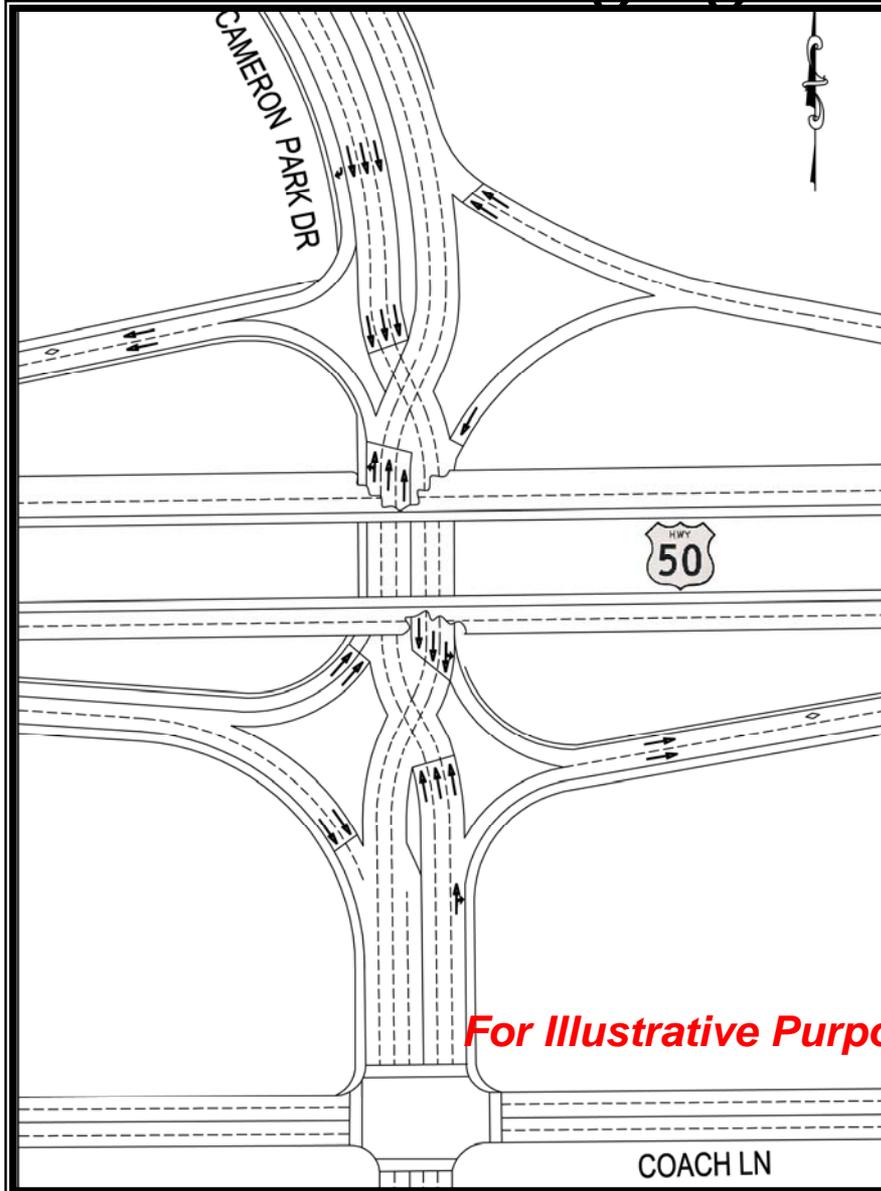
Alt 7. \$??M: 7 Lanes on Cameron Park Dr now expanding to 8 lanes when needed (Starts out as PSR Alt. 2)



- **PROS:**
 - Less expensive to start (\$51.4M)
 - Upgrade when needed
 - Would address LOS needs for 2025 and 2035 with expansion

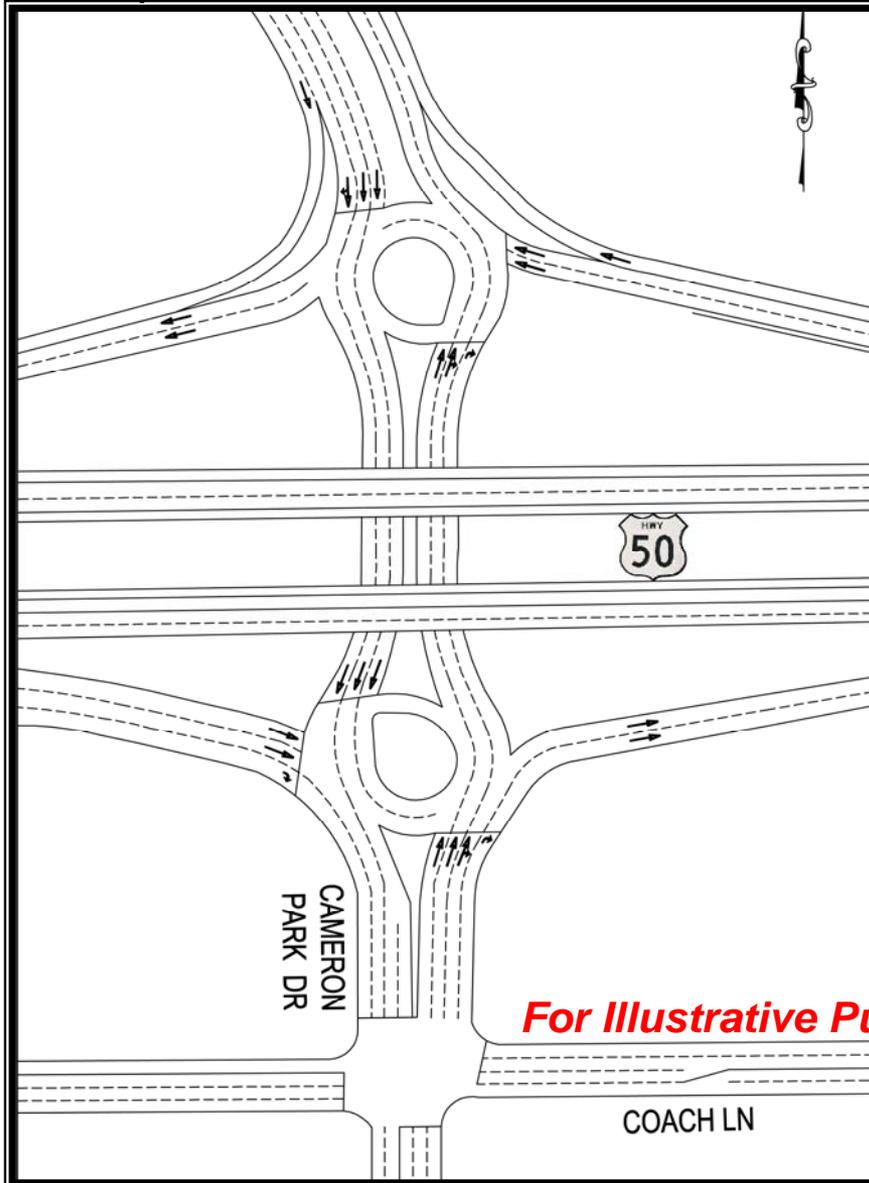
- **CONS:**
 - Throw-away costs (retaining walls, staging costs, moving signals, intersections)
 - Median installed at Coach Lane

Alt 8. \$??M: Diverging Diamond



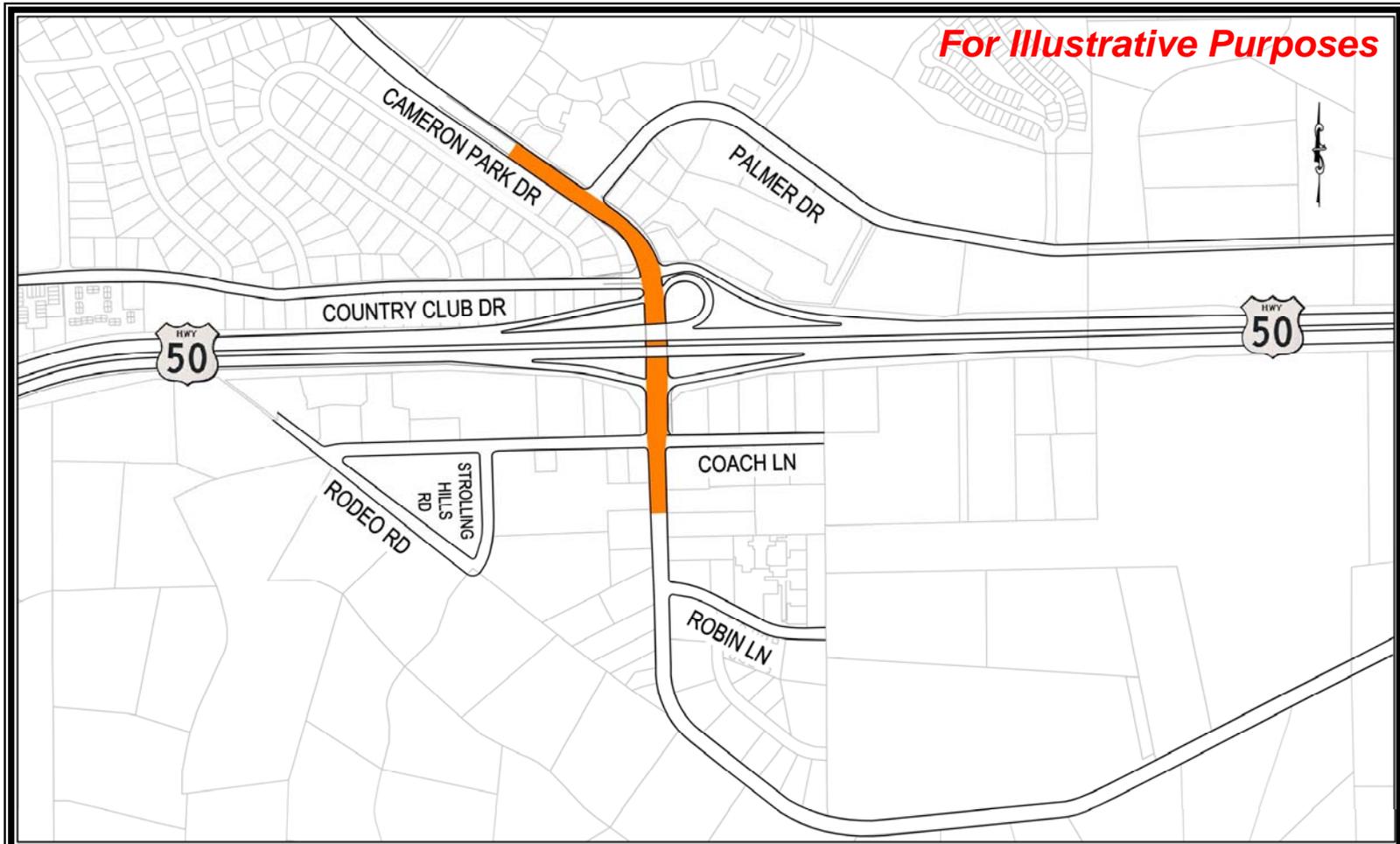
- **PROS:**
 - Improves operations because no conflicting left turns
 - May be relatively inexpensive
 - Proven in Missouri
 - May be eligible for Federal demonstration grant
 - May allow left turns from Coach
- **CONS:**
 - Eliminated by Caltrans 8/07 for being non-standard
 - May require a larger footprint than Alt 1. and therefore more right of way
 - Unknown LOS benefit
 - Not enough analysis has been done to identify all the potential impacts

Alt 9. \$??M: Roundabout



- **PROS:**
 - Improves operations because no need for left turns
 - May be eligible for Federal demonstration grant
- **CONS:**
 - Will require a significantly larger footprint and therefore more right of way
 - Unknown LOS benefit
 - Unknown impacts to existing businesses
 - Non-standard for Caltrans

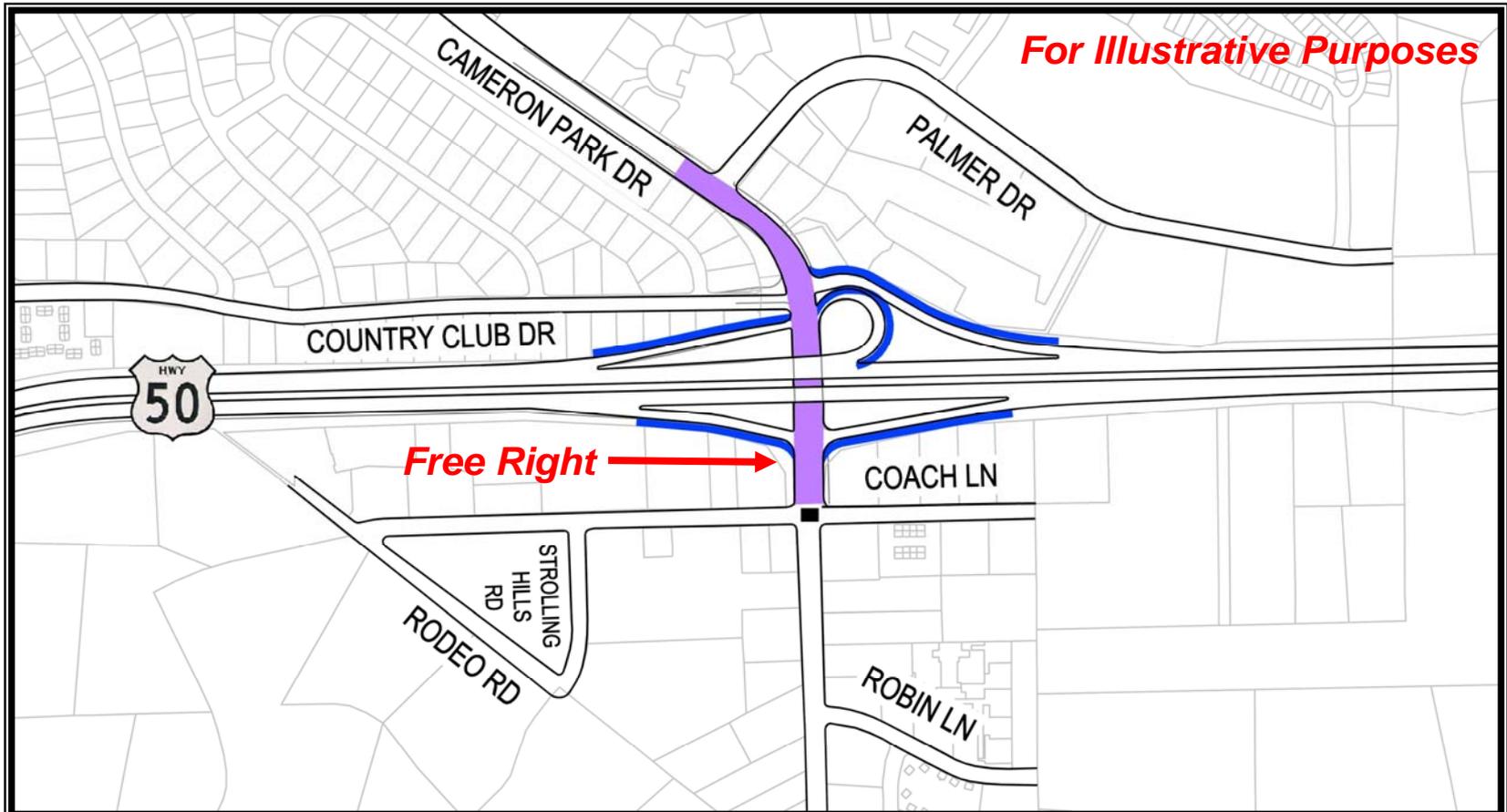
Alt 10. \$??M: Widen Cameron Park Dr to 7 lanes



For Illustrative Purposes

- **PROS:**
 - *Improves capacity on this section*
- **CONS:**
 - *Unknown LOS benefit*
 - *Not costed as stand-alone*
 - *Eliminated by DOT 5/06 as incomplete solution*

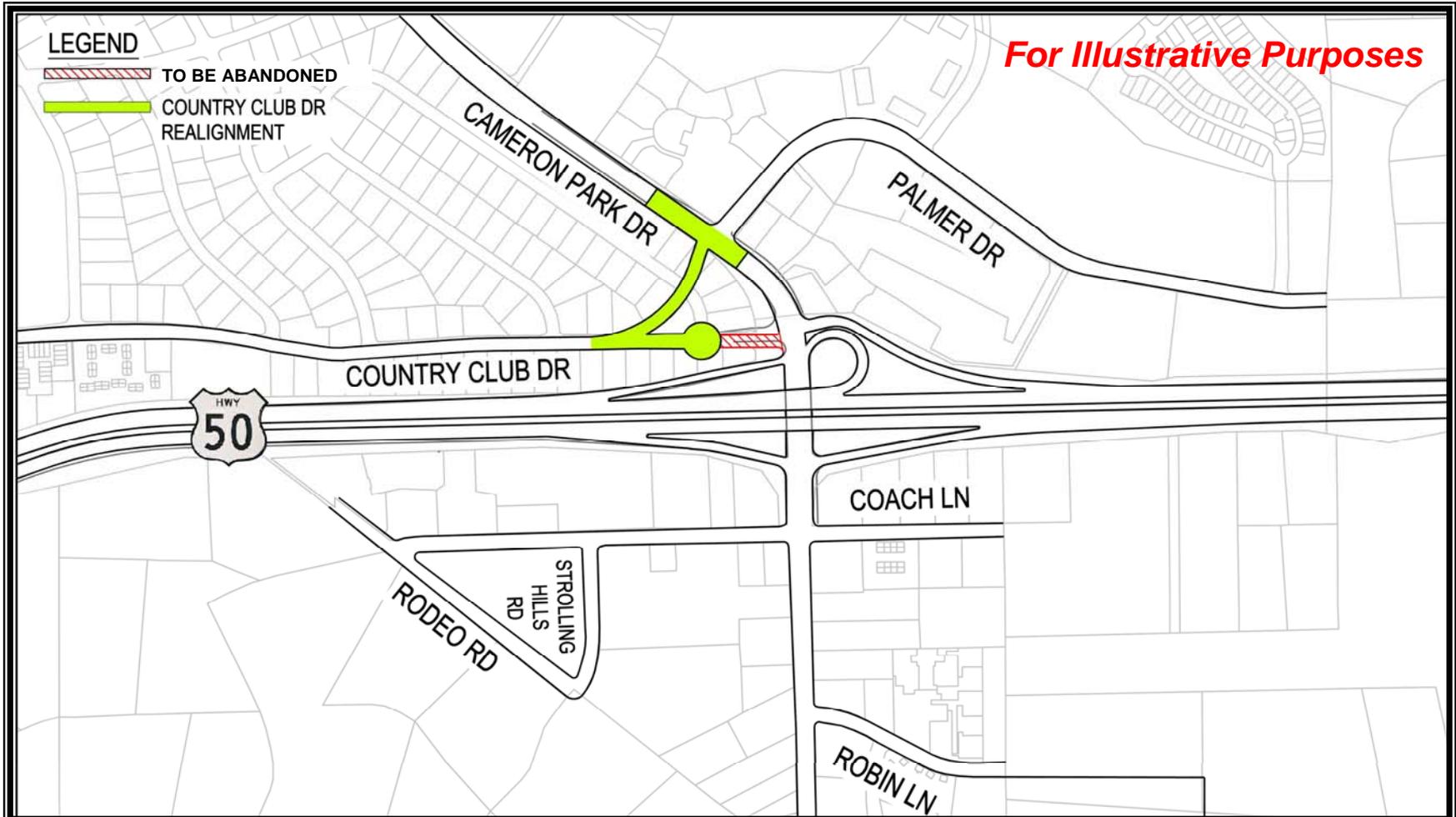
Alt 11. \$??M: Expand ramps; move retaining walls back under Hwy 50 to allow free right from EB off-ramp.



- **PROS:**
 - Improves ramp operations

- **CONS:**
 - Unknown LOS benefit

Alt 12. \$??M – Realign Country Club Dr.



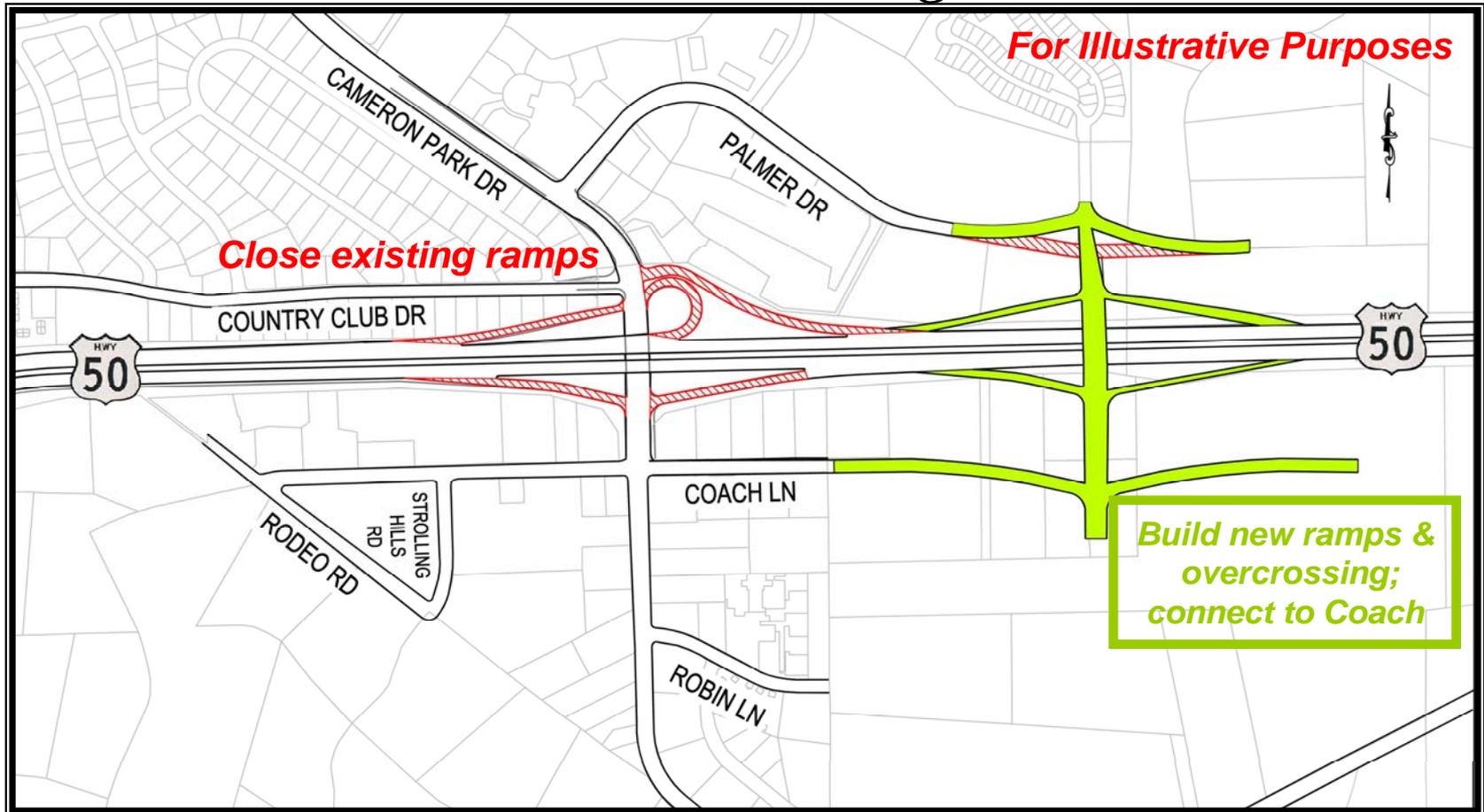
- **PROS:**

- Relieves some congestion at westbound ramps and new Country Club

- **CONS:**

- Unknown LOS benefit
- Eliminated by DOT 5/06 due to large R/W impacts

Alt 13. \$??M: Move the Interchange East



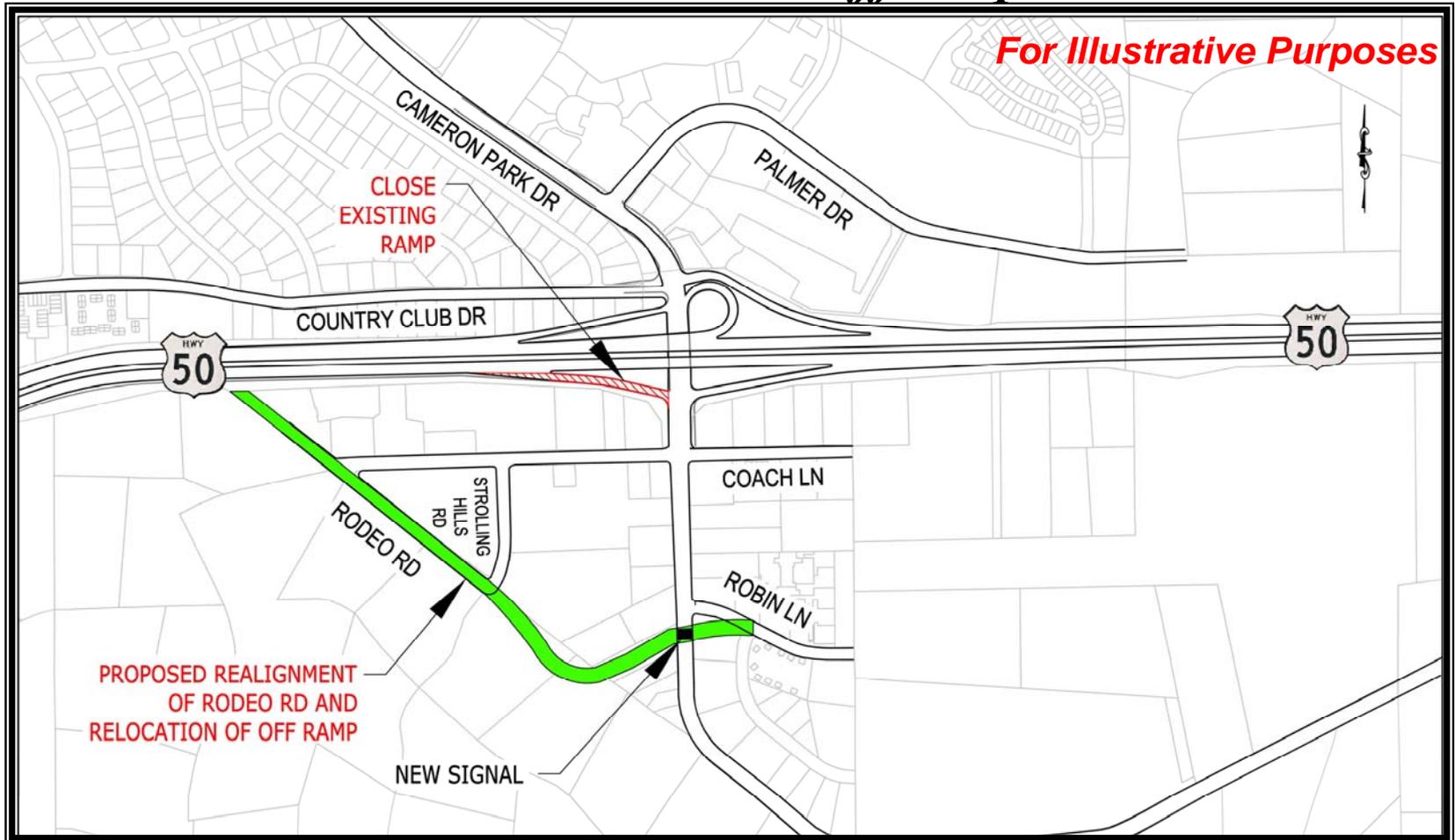
• PROS:

- Relieves Cameron Park Dr
- Avoids physical impacts to existing businesses
- No need to lengthen existing bridges
- Improves access to currently undeveloped non residential land

• CONS:

- Unknown LOS benefit
- Uses up developable land
- Impacts freeway access of existing businesses
- May require additional road connections
- Will require widening/realignment of Palmer
- Unknown environmental mitigation

Alt. 14: \$??M: "Hook" eastbound offramp to Coach/Robin:



- **PROS:**

- Simple
- Would reduce congestion at the interchange & Coach

- **CONS:**

- Caltrans already rejected this alternative
- May require widening of Coach leading to R/W impacts
- R/W impacts near Robin Ln
- Unknown LOS benefit

Alt. 14: Site of “Hook” eastbound offramp from Hwy 50:

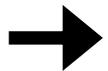


Summary of Alternatives

ALTER-NATIVE #	NAME	COST	Cameron Park Dr and Coach Ln			POTENTIAL RIGHT OF WAY COSTS/ IMPACTS	OTHER IMPACTS
			LOS PM Peak Hour in 2015	LOS PM Peak Hour in 2025	LOS PM Peak Hour in 2035		
0	DO NOTHING	\$0	F	F	F	NO	
1	CURRENT PLAN - 8 LANE CAMERON PARK DR UNDER HWY 50 (PSR #1)	\$68M	D	N/A	E	\$12M	
2a	7 LANE CAMERON PARK DR (PSR #2) UNDER HWY 50	\$51.4M	E	E	F	\$12M	
2b	7 LANE CAMERON PARK DR w/Other Local Road Improvements (PSR #2 +)	> \$61M	E	E	E	\$12M+	
2c	OTHER LOCAL ROAD IMPROVEMENTS ONLY	Not Costed	Preliminary study shows benefits but unknown to what level			LIKELY + PLANT PRESERVE	
3	SINGLE POINT DIAMOND (PSR #3)	\$96.3M	C	N/A	E	\$20M	Lower Cam Park Dr 7 ft; add Pump Stn.
4a, b, c, d	WIDEN CAMERON PARK DR FROM DUROCK TO COACH +	\$9.1M and up	Not Studied			\$6.2M	
5	4a PLUS EXPAND HWY 50 RAMPS	Not Costed	Not Studied			AT LEAST \$6.2M	
6	CONNECT PALMER TO W. CHAPPARAL	\$9.6M + R/W cost	Preliminary study showed little benefit to making this connection alone			PLANT PRESERVE	
7	7 Lanes on Cam Park Dr now expanding to 8 lanes when needed	> \$51.4M	D	N/A	E	\$12M	Throw-away costs (e.g., retain. walls)
8	DIVERGING DIAMOND	Not Costed	Not Studied			UNKNOWN	Non Std. for Caltrans
9	ROUNDAABOUT	Not Costed	Not Studied			YES	Non Std. for Caltrans
10	WIDEN CAMERON PARK DR. to 7 Lns.	Not Costed	Not Studied			YES	
11	EXPAND HWY 50 RAMPS; ALLOW FREE RIGHT FROM EB OFF-RAMP	Not Costed	Not Studied			YES	
12	REALIGN COUNTRY CLUB	Not Costed	Not Studied			YES	
13	MOVE THE INTERCHANGE EAST	Not Costed	Not Studied			?, PLANT PRESERVE	
14	"HOOK" EASTBOUND OFFRAMP TO COACH, ROBIN	Not Costed	Not Studied			UNKNOWN	Non Std. for Caltrans

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Conclusions:

- To fully address the projected growth and LOS implications in and around this interchange will likely require at least \$68M.
 - There are some alternatives which may be less expensive but will likely not meet the full growth in the area and LOS requirements.
 - These alternatives have not been fully explored.
- The right-of-way impacts may be large for all 3 alternatives evaluated in the PSR.

DOT recommends that the Board direct DOT to investigate other alternatives for the Cameron Park Dr Interchange.

- DOT would evaluate alternatives that
 - Just address local road improvements
 - Impact fewer existing businesses/residences, and
 - Potentially cost less.
- DOT proposes to report back to the Board at appropriate points to provide updates, recommendations and to receive direction as needed.

Back-Up

Preliminary estimate for connecting Palmer Dr to Wild Chaparral (does not include R/W)

Project Name	Palmer Dr/Wild Chapparal Connection						
Limits	From Palmer Drive to Wild Chapparal						
Description Of Project	Construct two lanes with shoulders, no sidewalks from Palmer Drive to Wild Chapparal						
	Length (mi)	# Lanes/Sides	Grade	Width (ft)	% Cost	Rate	Cost
Roadway	0.9	2	1			\$ 800,000	\$ 1,440,000
Shoulders	0.9	2	1	8		\$ 800,000	\$ 960,000
PCC Curb & Gutter	0.9	2	1			\$ 10	\$ 95,000
PCC Sidewalk	0	0		0		\$ 7	\$ -
Earthwork	0.9		4		75%		\$ 1,800,000
Miscellaneous Items			1		20%		\$ 859,000
Traffic Control			1				\$ 20,000
						Sub-Total	\$ 5,174,000
						Mobilization	10% \$ 517,400
						Contingency	35% \$ 1,810,900
						Total	\$ 7,502,300
Project Delivery					28%		\$ 2,100,644
Right of Way					0	\$ 15	\$ -
						Total	9,602,944

Intersection LOS Definitions:

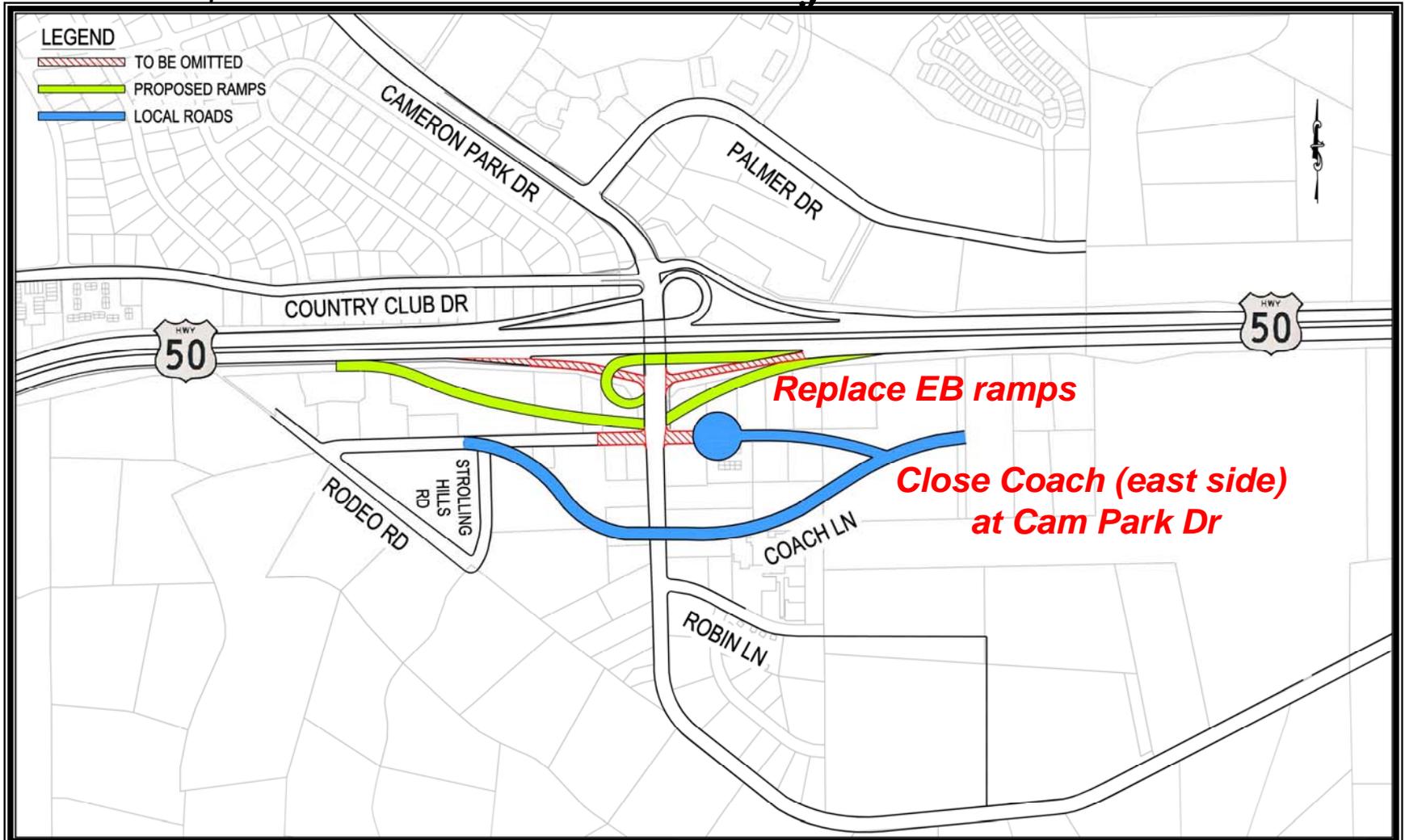
LOS	Average Control Delay (seconds per vehicle)	
	Signalized Intersections	Unsignalized Intersections
A	≤ 10	≤ 10
B	> 10 to 20	> 10 and ≤ 15
C	> 20 to 35	> 15 and ≤ 25
D	> 35 to 55	> 25 and ≤ 35
E	> 55 to 80	> 35 and ≤ 50
F	> 80	> 50

Notes: The average delay reported for signalized intersections is for all vehicles passing through the intersection, whereas the average delay reported for unsignalized intersections is for the minor street movement with the greatest delay.

Source: Highway Capacity Manual (Transportation Research Board, 2000)

Source: "Traffic Report for the US 50/Cameron Park Drive Interchange PR" by Fehr & Peers, May 23, 2008

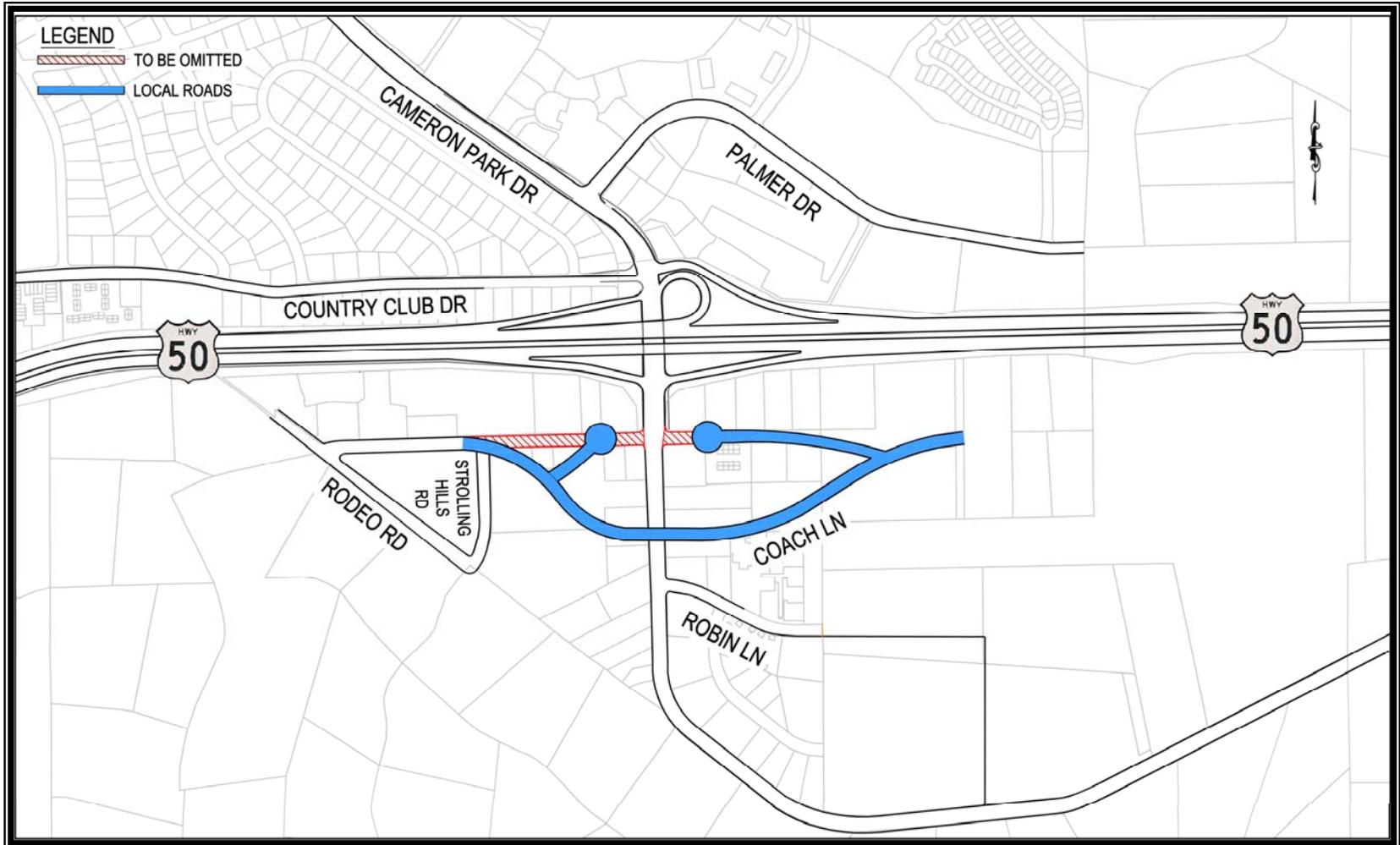
Alt 11b. \$\$\$M: Partial Cloverleaf



- **PROS:**
 - Improves ramp operations

- **CONS:**
 - Unknown LOS benefit
 - Eliminated by DOT 5/06 due to large R/W impacts

Alt 12b. \$??M – Realign Coach



- **PROS:**

- Relieves some congestion at westbound ramps and Coach intersection

- **CONS:**

- Unknown LOS benefit
- Eliminated by DOT 5/06 due to large R/W impacts