

# CITIES OF SAN CARLOS & BELMONT

## **FOUR CORNERS TRAFFIC STUDY**



January 28, 2016

# DRAFT REPORT

- Background Discussion
- Transportation Setting
- Existing Traffic Conditions
- Public Outreach
- Issues to Address
- Mini Roundabouts
- Alternatives Descriptions and Analysis
- Evaluation of Preferred Plan
- Corridor Recommendations





AERIAL - Alameda de las Pulgas/San Carlos Avenue

Photo March 11, 2012



# Alternatives

# ALTERNATIVE 1 – TRAFFIC SIGNAL ENTRANCE

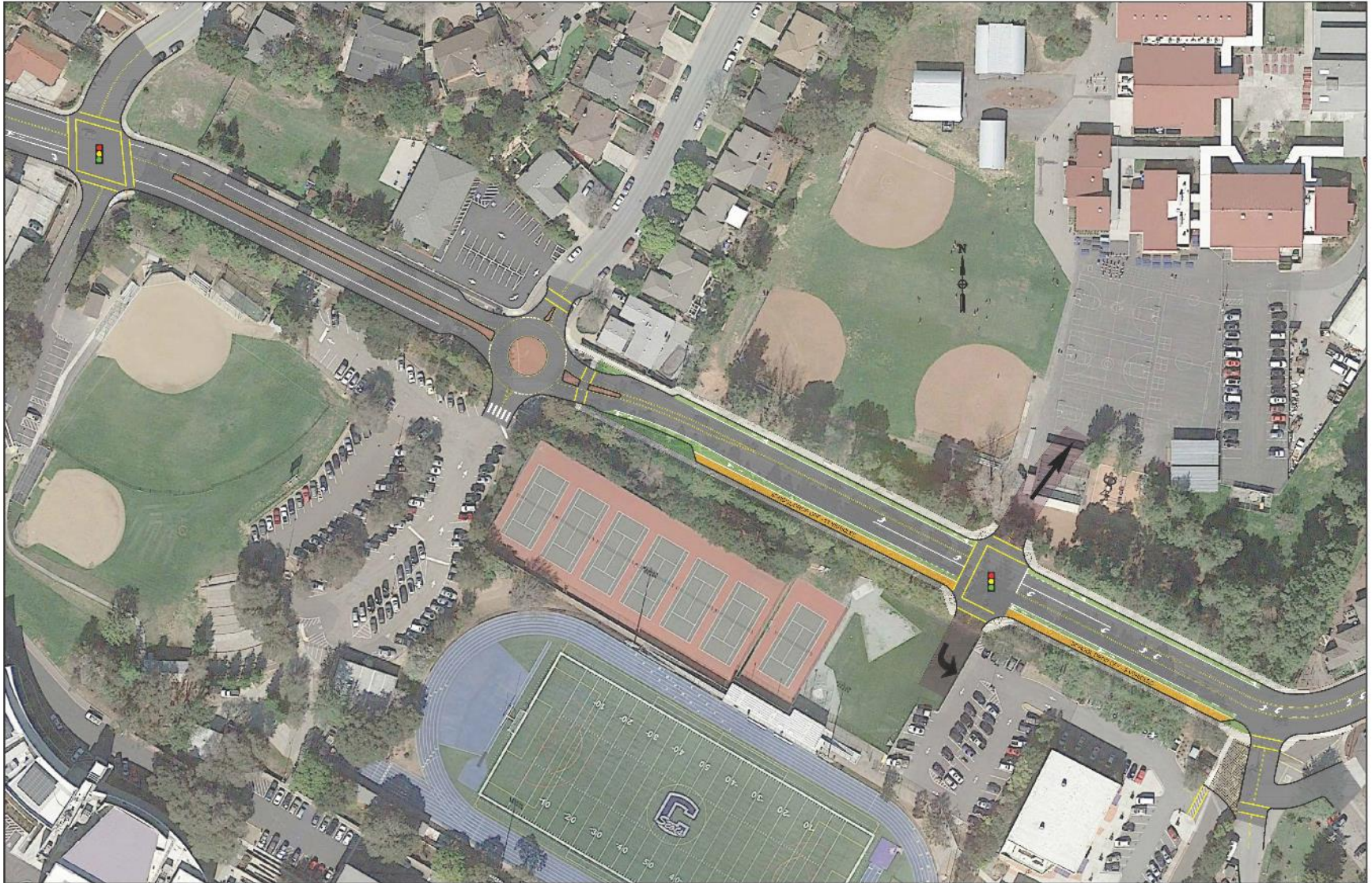


EXHIBIT 1 - Alameda de las Pulgas/San Carlos Avenue Corridor Plan

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# ALTERNATIVE 2 – ROUNDABOUT ENTRANCE

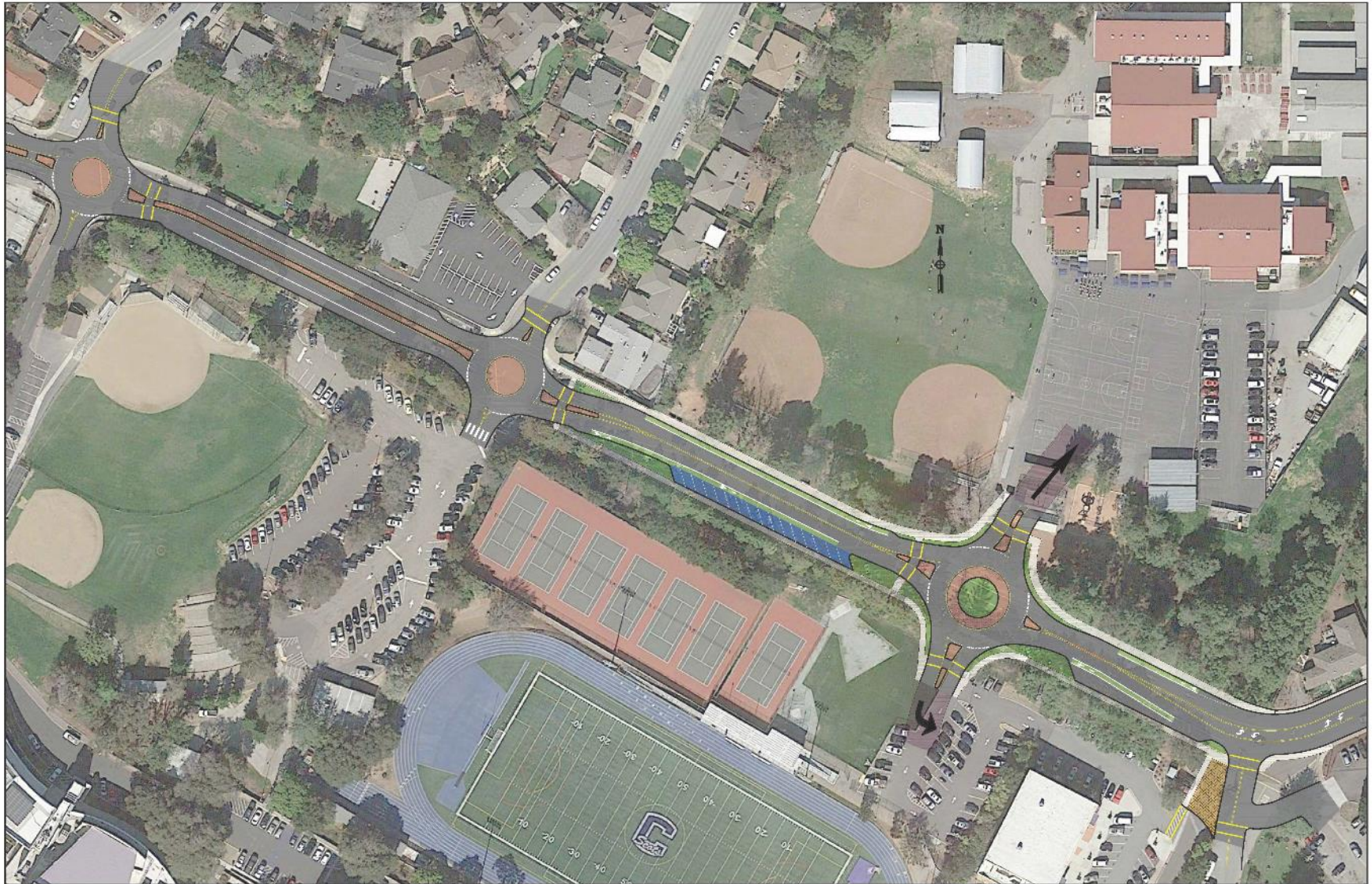


EXHIBIT 2 - Alameda de las Pulgas/San Carlos Avenue Corridor Plan

FIGURE 17.2215

Existing bike lanes



# ALTERNATIVE 3 – MEDIAN ENTRANCE



EXHIBIT 3 - Alameda de las Pulgas/San Carlos Avenue Corridor Plan

Printed: 10/1/10

Maintains bike lanes

# Public Outreach

- **8 Working Group meetings**
- **School Walking Audits**
- **2 Public Workshops**



# FOUR CORNERS TRAFFIC STUDY

## Workshop Public Input

	Alternative 1	Alternative 2	Alternative 3
	3	1	2
	3	2	1
	3	2	1
	1	2	3
	2	1	3
	1	2	3
	2	1	3
	3	1	2
	2	3	1
	3	3	3
	1	2	3
	3	2	1
	1		
	1		
	2	3	1
			1
			1
	1		
	1		
Total	33	25	29
Ave Rank	1.9	1.9	1.9
#1 rankings	7	4	7

# FOUR CORNERS TRAFFIC STUDY

## Workshop Public Input

Alternative 1 - Traffic Signal at Schools' New Entrances		
	Agree	Disagree
Improved Signal Timing at Dartmouth Avenue	5	0
Improved Intersection Design at Cranfield Avenue	11	1
Traffic Signal at Schools New Entrances	3	6
Mini-Roundabout at Chula Vista Drive	8	3
New Traffic Signal at El Verano Way	4	4
New Traffic Signal at Carlmont Drive	4	4
Maintain Bike Lanes on Alameda de Las Pulgas	7	1
Signalized Crossing at New Traffic Signal for Schools	6	1
No On-Street Parking on Alameda de Las Pulgas between Chula Vista and Cranfield	9	1
School Drop-off on CHS side of Alameda de Las Pulgas	8	5



# FOUR CORNERS TRAFFIC STUDY

## Workshop Public Input

Alternative 2 - Roundabout at Schools' New Entrances		
	Agree	Disagree
Improved Signal Timing at Dartmouth Avenue	4	2
Improved Intersection Design at Cranfield Avenue	4	2
Roundabout at Schools New Entrances	5	4
Mini-Roundabout at Chula Vista Drive	5	3
Mini-Roundabout at El Verano Way	6	3
New Traffic Signal at Carlmont Drive	4	0
Maintain Bike Lanes on Alameda de Las Pulgas	6	3
Pedestrian Crossing at New Roundabout for Schools	3	5
Reduced Diagonal Parking on Alameda de Las Pulgas between Chula Vista and Cranfield	10	1
No School Drop-off on Alameda de Las Pulgas	5	2

# FOUR CORNERS TRAFFIC STUDY

## Workshop Public Input

Alternative 3 - Median Island at Schools' New Entrances		
	Agree	Disagree
Improved Signal Timing at Dartmouth Avenue	9	1
Mini-Roundabout at Cranfield Avenue	8	6
Median at Schools' New Entrances	9	3
Mini-Roundabout at Chula Vista Drive	8	6
Mini-Roundabout at El Verano Way	7	4
New Traffic Signal at Carlmont Drive	1	3
Maintain Bike Lanes on Alameda de Las Pulgas	9	5
Pedestrian Crossing with Median Refuge at New Roundabout for Schools	3	3
Reduced Parallel Parking on Alameda de Las Pulgas between Chula Vista and Cranfield	8	2
School Drop Off on both sides of Alameda de Las Pulgas	6	11



# **Evaluation of Preferred Plan**

**Table 13**  
**Existing with Preferred Plan - Peak Hour Intersection Levels of Service**

Study Intersection <i>Approach</i>	AM Peak		School PM Peak		PM Peak	
	Delay	LOS	Delay	LOS	Delay	LOS
1. Alameda de las Pulgas/Ralston Ave	45.4	D	40.1	D	43.1	D
2. Alameda de las Pulgas/Carlmont Dr	11.7	B	10.0	A	8.2	A
3. Alameda de las Pulgas/El Verano Way	5.6	A	5.1	A	4.9	A
4. Alameda de las Pulgas/Chula Vista Dr	13.1	B	7.2	A	6.0	A
5. ADLP/Cranfield Ave	6.7	A	2.9	A	2.5	A
6. San Carlos Ave/Club Dr-Dartmouth Ave	21.5	C	19.5	C	20.3	C

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service



## Existing plus Project



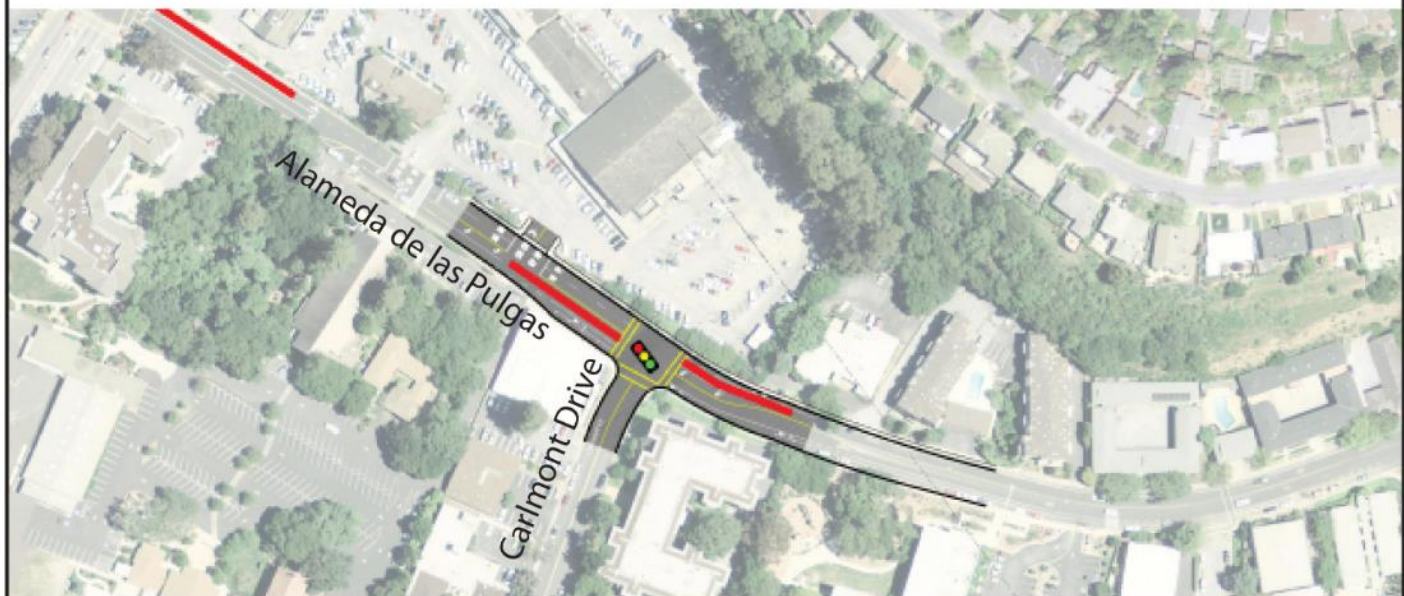
**Table 14**  
**School Expansion with Preferred Plan - Peak Hour Intersection Levels of Service**

Study Intersection <i>Approach</i>	AM Peak		School PM Peak	
	Delay	LOS	Delay	LOS
1. Alameda de las Pulgas/Ralston Ave	49.4	D	41.2	D
2. Alameda de las Pulgas/Carlmont Dr	12.2	B	10.3	B
3. Alameda de las Pulgas/El Verano Way	5.5	A	5.0	A
4. Alameda de las Pulgas/Chula Vista Dr	17.6	B	7.0	A
5. ADLP/Cranfield Ave	8.5	A	2.9	A
6. San Carlos Ave/Club Dr-Dartmouth Ave	26.2	C	21.0	C

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service



## Existing plus Project with school Expansion



# **Corridor Recommendations**



# CORRIDOR RECOMMENDATIONS

- Intersection Traffic Control
- Pedestrian Facilities
- Bicycle Facilities
- Parking
- Transit
- School Access
- Phasing/Construction Sequencing
- Cost Estimates
- Funding





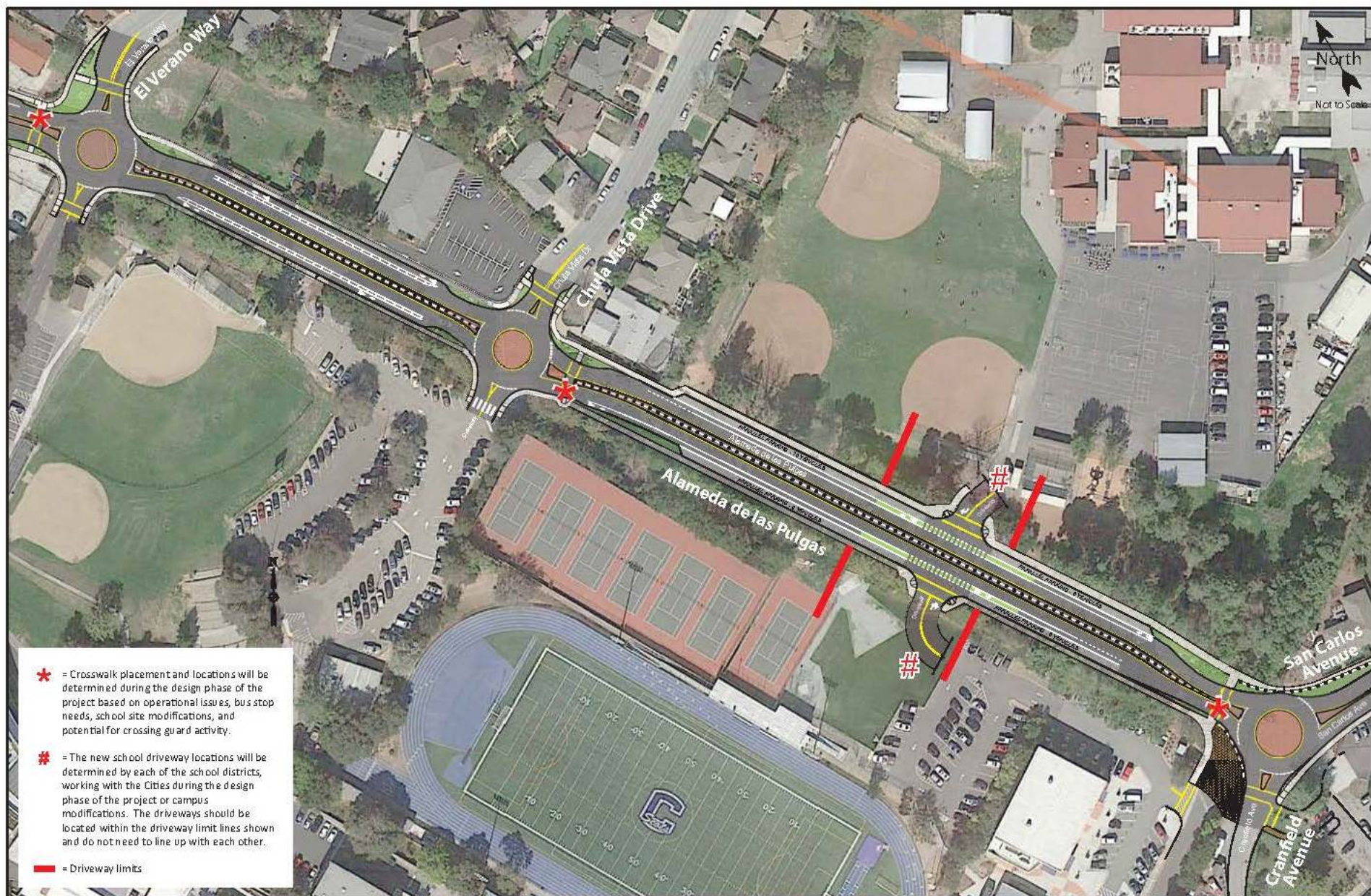


EXHIBIT 3A - Alameda de las Pulgas/San Carlos Avenue Corridor Plan



# INTERSECTION TRAFFIC CONTROL

- **ADLP/Carlmont Drive** – Install a traffic signal and modify lane geometrics as shown on the plan.
- **ADLP/EI Verano Way** – Install a mini-roundabout which will require acquisition of some property on the southeast corner.
- **ADLP/Chula Vista Drive** – Install a mini-roundabout which will require realignment of the high school parking lot access on the west leg of the intersection.
- **ADLP/Cranfield Avenue** – Install a mini-roundabout as shown on the plans with the west leg of the intersection consolidated with the church property driveway.
- **San Carlos Avenue/Dartmouth Avenue** – Modify the traffic signal timing.

# PEDESTRIAN FACILITIES

- **New Sidewalks** - along the east side of ADLP between Chula Vista Drive and the terminus of the existing sidewalk near Cranfield Drive.
- **Reconstructed Sidewalks** - Reconstruct the existing sidewalks along its frontage on ADLP with a minimum of 8-foot width between Carlmont Drive and Ralston Avenue.
- **Crosswalks** - High visibility crosswalks for uncontrolled crosswalks in the corridor.
- **Pedestrian Plaza** – CHS to modify the current driveway approach to the ADLP/Cranfield Drive intersection to a pedestrian only plaza
- **Crossing Guards** – The school districts and the cities should consider jointly funding and implementing crossing guard programs at the new three mini-roundabouts.
- **Median and Fence** – A raised median with a hip height fence should be installed between ADLP/El Verano Way and ADLP/Cranfield Avenue.

# BICYCLE FACILITIES

- **Bike Lanes** – Modify bike lanes on ADLP between Chula Vista Drive and Cranfield Avenue based on the concept plans.
- **Mini-roundabouts** – The bike lanes should be terminated in advance of the mini-roundabouts.
- **School Bike Access and Parking** – Both TLMS and CHS should ensure that both schools provide bike access and bike parking on the school grounds.



# PARKING

- **On-street Parking** – parking alignment should be reconfigured to parallel parking on both sides of ADLP.
- **Off-street Parking** – CHS should work towards increasing parking on the school campus or on adjacent properties. The 300 student increase will generate a need for an additional 90 parking spaces. It would be beneficial if the campus also provided an additional 100 to 150 spaces for a total of 190 to 240 spaces to reduce the impact to adjacent neighborhood streets and slight loss of parking along the ADLP frontage.

- **Transit Stop** – The Cities should work with SamTrans to locate an appropriate bus stop on the section of ADLP between Chula Vista Avenue and Cranfield Avenue.

# SCHOOL ACCESS

- **New Access** – CHS and TLMS should design and install a new school access to ADLP between Chula Vista Avenue and Cranfield Avenue. Allow a minimum of 250 feet of separation between the access points and Cranfield Avenue. The two access points do not need to align with one another.
- **Closed Access** – CHS should close the driveway access adjacent to Cranfield Avenue and replace with a pedestrian plaza.
- **Maintain Existing Access** – TLMS should maintain the existing school access connecting to Dartmouth Avenue in addition to the new access to ADLP as discussed above. The school should allow two way traffic at both access points and modify on-site circulation to accommodate these two points of access.







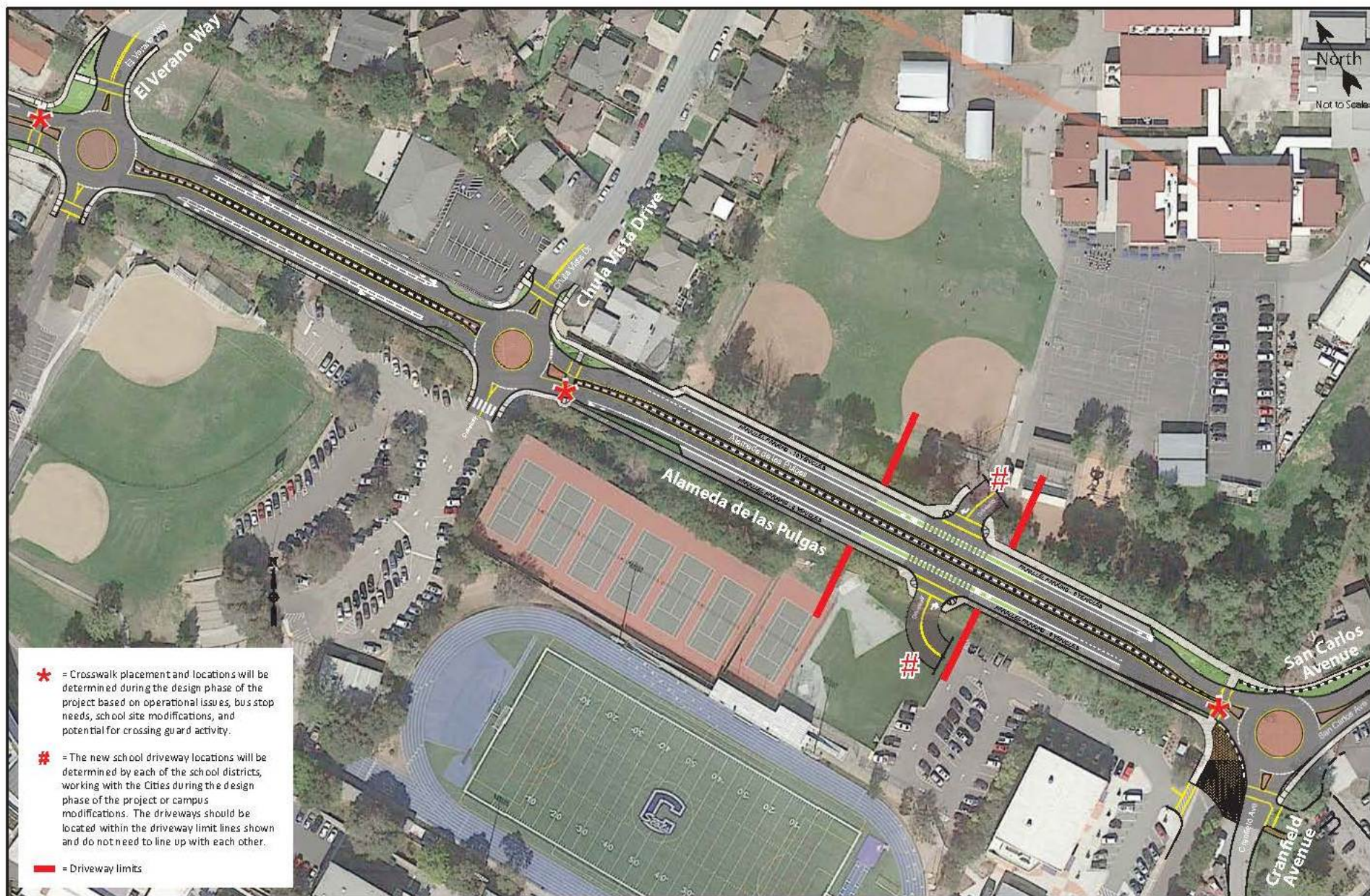


EXHIBIT 3A - Alameda de las Pulgas/San Carlos Avenue Corridor Plan

# FOUR CORNERS TRAFFIC STUDY

## Cost Estimates

1. San Carlos Avenue-ADLP (Dartmouth to New School Access)						\$ 718,000
2. ADLP (New School Access Points)						\$ 185,000
3. ADLP (School Access Points to Chula Vista Drive)						\$ 517,000
4. ADLP/Chula Vista Drive Roundabout						\$ 159,000
5. ADLP (Chula Vista Drive to El Verano Way)						\$ 146,000
6. ADLP/El Verano Way Roundabout						\$ 223,000
7. ADLP/Carlmont Drive						<u>\$ 599,000</u>
<b>Total</b>						<b>\$ 2,547,000</b>



# PHASING RECOMMENDATIONS

- Phase I: Cranfield to El Verano medians with mini roundabouts at Chula Vista and El Verano.
- Phase 2A: Cranfield mini roundabout with CHS access
- Phase 2B: East side sidewalks with TLMS access
- Post Project: San Carlos Avenue/Dartmouth Avenue Signal Timing
- Latter Phase: ADLP/Carlmont Drive

# PHASING RECOMMENDATIONS

Phase 1 - Cranfield to El Verano						\$ 879,833
Phase 2A - Cranfield mini roundabout/CHS Access						\$ 451,500
Phase 2B - East side Sidewalks/TLMS Access						\$ 616,667
Latter Phase - ADLP/Carlmont Drive						<u>\$ 599,000</u>
<b>Total</b>						<b>\$ 2,547,000</b>

# FUNDING SOURCES

- Cities
- Schools
- Grant Funding



# FOUR CORNERS TRAFFIC STUDY

## Next Steps

- Adoption of the Plan by both Cities
- Endorsement of the Plan by both School Boards
- School site planning
- Funding and Grant applications
- Design
- Construction during summer months
- 3-5 years





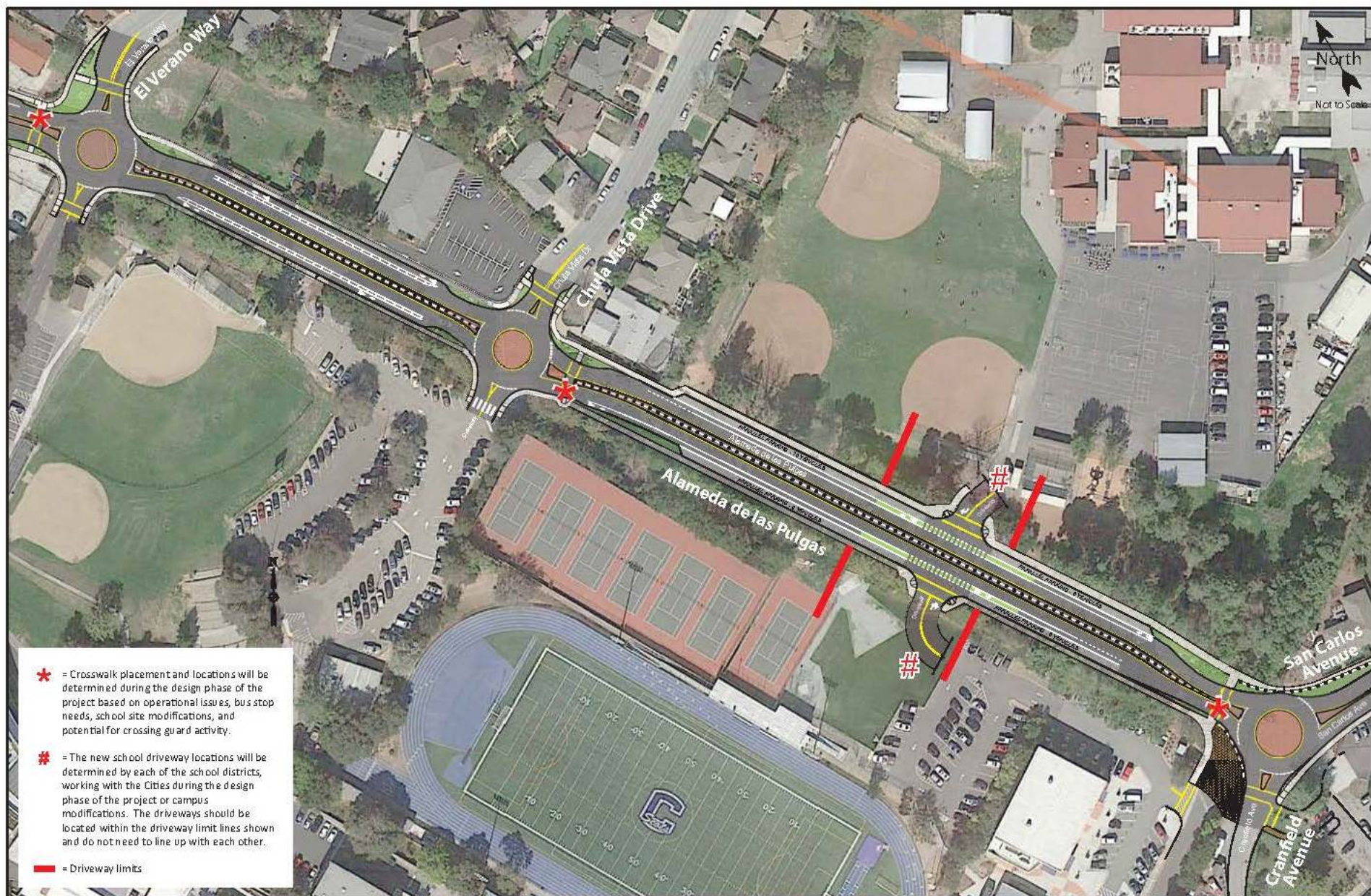


EXHIBIT 3A - Alameda de las Pulgas/San Carlos Avenue Corridor Plan





AERIAL - Alameda de las Pulgas/San Carlos Avenue

Printed March 11, 2012



- The slides which follow cover information on the ATP grant program.

## Active Transportation Program (ATP)

*The ATP consolidates existing federal and state transportation programs, including the Transportation Alternatives Program (TAP), Bicycle Transportation Account (BTA), and State Safe Routes to School (SR2S), into a single program with a focus to make California a national leader in active transportation.*

- ❑ Increase the proportion of trips accomplished by biking and walking,
- ❑ Increase safety and mobility for non-motorized users,
- ❑ Advance the active transportation efforts of regional agencies to achieve greenhouse gas reduction goals,
- ❑ Enhance public health,
- ❑ Ensure that disadvantaged communities fully share in the benefits of the program, and
- ❑ Provide a broad spectrum of projects to benefit many types of active transportation users.



## Active Transportation Program (ATP)

- The local match requirement for non-SRTS projects is 11.47 percent. There is no local match requirement for projects benefiting a disadvantage community, stand-alone non-infrastructure projects and SRTS projects.
- Annual funds will be approximately \$130 million for fiscal year 2015-2016. In the initial program, a minimum of \$24 million per year is available for SRTS projects, with at least \$7.2 million for non-infrastructure grants.
- The Cycle 2 statewide call for projects was due in June 1, 2015. The CTC received 617 applications requesting a total of more than \$1 billion.
- **Cycle 3 should become active in the Spring/Summer of 2016.**

## Active Transportation Program (ATP)

### Cycle I Projects Funded

- **City of San Mateo – Safe Routes to School Program (\$2,515M)**
- **Pedestrian Crossings**
- **SRTS Projects**
- **Trail Gap Closures**
- **Bike and Pedestrian Projects**
- **Intersection Improvements to SRTS**

## Active Transportation Program (ATP)

### Cycle 2 Submittals

- City of Belmont - Ralston Avenue Corridor Complete Streets Improvement Project
- City of Brisbane - Safe Pedestrian Routes to Schools Project
- City of San Carlos - SRTS Improvements at Arroyo Ave. and Orange Ave.
- City of San Mateo - Hillsdale/US- 101 Ped/Bike Overcrossing
- City of South San Francisco - Linden/Spruce Avenues Traffic Calming Improvements
- City of South San Francisco - Sunshine Gardens Traffic Calming Improvements
- City of Daly City - Central Corridor Bike/Ped Safety Improvements
- City of East Palo Alto - University Avenue Complete Streets Pilot Project
- City of Pacifica - Palmetto Avenue Streetscape Project
- City of San Carlos - Highway 101 Pedestrian/Bicycle Overcrossing
- Redwood City 2020 Sustainable Transportation Encouragement Project
- Town of Woodside - Elementary School Student Pathway Project



## ATP Purpose and Goals

As defined by the State Legislature and SB99

2380. There is hereby established the Active Transportation Program in the department for the purpose of encouraging increased use of active modes of transportation, such as biking and walking.

It is the intent of the Legislature that the program achieve all of the following goals: (a) - (f)

**(f) Provide a broad spectrum of projects to benefit many types of active transportation users.**

### Infrastructure Projects

SRTS; that improve safety of children

Safe Routes to Transit

Bikeways & Walkways:  
- New  
- Improved  
- Hazard elimination  
- Maintenance

Traffic Control devices:  
- New Ped Signals, RRFBS, Protected LT movements, Road Diets, etc.

Secure Bike Parking

Bike Carrying: In connection with Transit

Rec Trails/Trailheads, Park linkages to corridors, & rail-to-trails

### Non-Infrastructure Projects

Educational Programs & other NI that demonstrate effectiveness in increasing active transportation

SRTS Projects: in accordance with Section 1404 of Public Law 109-59.

### Plans \*

ATP

Bike

Ped

SRTS

**increased use of active modes of transportation**

**(a) Increase the proportion of trips accomplished by biking and walking.**

**(b) Increase safety and mobility for nonmotorized users.**

**(c) Advance the active transportation efforts of regional agencies to achieve greenhouse gas reduction goals as established pursuant to Senate Bill 375 (Chapter 728, Statutes of 2008) and Senate Bill 391 (Chapter 585, Statutes of 2009).**

**(d) Enhance public health, including reduction of childhood obesity through the use of programs including, but not limited to, projects eligible for Safe Routes to School Program funding.**

**(e) Ensure that disadvantaged communities fully share in the benefits of the program.**

\* "Plans" are not specifically listed as one of the project types.

# PART B: NARRATIVE QUESTIONS

<u>Points</u>	<u>Scoring break out:</u>
0 to 30	Q1: Potential for increasing walking or biking (AKA Mode Shift)
0 to 25	Q2: Potential for reducing collisions (AKA safety)
0 to 15	Q3: Public Participation & Planning
0 to 10	Q4: Improved Public Health
0 to 10	Q5: Disadvantaged Communities (DAC)
0 to 5	Q6: Cost Effectiveness
0 to 5	Q7: Leveraging of Non-ATP funds
0 or -5	Q8: Use of CCC or Qualified CCC
0 or -10	Q9: Past Performance on Grants & Projects