

Neighborhood Planning for Safe Routes to School in Natomas:

A Report on Recommendations from Community Design Workshops in North and South Natomas



February 2006

Prepared for
Natomas Unified School District
City of Sacramento
Partnership for Active Communities

Prepared by
Alta Planning + Design
Local Government Commission
Walkable Communities
WALKSacramento

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Project Supporters

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Disclaimer

Adherence to the principles found in this report can lead to an overall improvement in neighborhood safety and livability. This report does not constitute a standard, specification or regulation, and is not intended to be used as a basis for establishing civil liability. This report is not a substitute for sound engineering judgment. The decision to implement any particular measure should be made on the basis of engineering studies of the location.



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Background

■ Project Description and Goals

In California, approximately 5,000 child pedestrians are injured each year. Pedestrian accidents are the second-leading cause of fatal injuries among 5- to 12-year-olds statewide.

This project, “Neighborhood Planning for Safe Routes to School in Natomas,” seeks to reduce injuries and fatalities by increasing the safety of pedestrians, cyclists and motorists around three schools in the Natomas Unified School District: Natomas Park Elementary, Jefferson Elementary and Bannon Creek Elementary.

An additional complementary goal of the project is to improve accessibility and livability within the neighborhoods around these schools.

The project is funded through an Environmental Justice: Context Sensitive Planning grant from the California Department of Transportation. Lead partners include the Local Government Commission, Walkable Communities, WALKSacramento, Alta Planning + Design, and the Sacramento Area Council of Governments.

■ The Charrette Process

Between October 20-25, 2005, project partners held a series of interactive neighborhood planning exercises at each school involving students, parents, teachers and community leaders. These public events featured “walking



audits,” focus groups, presentations and interactive design tables.

Through public input and analysis of existing conditions and data, the project partners developed a series of traffic-calming measures and other context-sensitive design solutions that address the infrastructure needs of these neighborhoods to help create safer routes to the three schools.

Pedestrian accidents are the second-leading cause of fatal injuries among 5- to 12-year-olds statewide.



■ Benefits of Safer Routes

The recommendations highlighted in this report will have numerous benefits if implemented. Most importantly, these recommendations will reduce vehicle and pedestrian conflicts along routes to school, ensuring safer travel and fewer child pedestrian injuries and deaths.

They will also encourage physical activity and reduce obesity among schoolchildren.

A recent Surgeon General report found that 78% of children fall short of the recommended amount of physical activity, thus contributing to unprecedented levels of childhood obesity. The recommended minimum amount of activity can be met, fully or partially, if children can walk and bicycle to school.

Safer routes to school will result in more students and parents choosing to walk or bicycle, thus reducing congestion and traffic

incidents and improving the transportation network.

In today's automobile-dominated culture, the implications of training a new generation of pedestrians and bicyclists are profound. If children are provided with transportation options now, they will be more inclined to use them in the future.

In the meantime, we all benefit from reduced auto emissions and less road congestion. A recent study from the National Highway Traffic Safety Administration-funded Safe Routes to School National Model Project in Marin County revealed that at least 25% of morning traffic is attributable to parents driving their children to school. It is ironic that parents concerned about their child getting safely to school and who decide to drive them, may contribute significantly to the risk of walking or biking to school.

78% of children fall short of the recommended amount of physical activity. The recommended minimum amount of activity can be met, fully or partially, if children can walk and bicycle to school.



■ Connecting with Existing Safe Routes to School Efforts

Prior to the start of this project, various efforts to promote safer routes to schools existed in Natomas. One of the more prominent projects has been the Partnership for Active Communities, which was established in 2003 with support from a Robert Wood Johnson Foundation “Active Living by Design” grant.

Building on the success of the Sacramento Safe Routes Partnership led by WALKSacramento, this collaborative group is dedicated to promoting physical activity by creating a walkable and bicycle-friendly environment in Natomas and other Sacramento areas. Comprised of more than 30 organizations, the Partnership has been heavily involved in policy changes, physical improvements, publicity and programs that encourage walking and bicycling.

School issues have been a priority for the Partnership, and many of its members have school affiliations. The Natomas Unified School District superintendent, a very strong promoter of a child’s right to get to school safely, serves as the Partnership’s chair.

Parent-run school walking programs have been established by some of the Partnership’s most active members at Natomas Park Elementary (Walk to School) and Bannon Creek Elementary (Traffic Tamers).

The Partnership’s development and project review committee also works with community members and city staff to review development projects with school needs in mind.

The recommendations made in this report support the Partnership’s goal of promoting active living, and the Partnership is well positioned and motivated to promote the implementation of these recommendations.

If implemented, the report’s recommendations will encourage physical activity and help reduce obesity among schoolchildren.

Existing Conditions

The following provides an overview of conditions for walking and bicycling safely in the neighborhood around Natomas Park Elementary School and around Bannon Creek and Jefferson Elementary Schools. [See maps on pages 38-39.]

NATOMAS PARK ELEMENTARY SCHOOL

■ Location and Neighborhood

Natomas Park Elementary School is located at the intersection of Crest Drive and North Bend Drive in the North Natomas neighborhood in Sacramento. Adjacent land uses are single-family residential. North Natomas Community Park is contiguous to the eastern boundary of the school property. The park consists primarily of an open playfield and a small area of playground equipment, with a network of walkways.

Other nearby land uses include major commercial shopping centers along the arterial streets of Del Paso Road and Natomas Boulevard, and Arco Arena located south of Del Paso Road.

The school's enrollment area is quite extensive, as the Natomas neighborhoods are growing and not all the area's planned schools have been constructed yet. In addition to the neighborhood surrounding the school, the enrollment area includes a large student

population from the neighborhood west of Natomas Boulevard. The school also draws students from a large area of multi-family housing south of Arena Boulevard. Currently, most students from these outlying areas are driven to school. Walking to school from there would require crossing the high-speed, multi-lane arterials of Natomas Boulevard and Del Paso Road.

■ Current Mode Split

According to a 2004 Sacramento Safe Routes Partnership survey of parents, 59% of the students at Natomas Park Elementary are driven to school every day, but 26% of students walk at least once a week. For those living within a 1/4-mile of the school, 49% are walking to school every day – one of the highest walking rates in the school district.

The number one concern cited by parents is traffic safety. Having school crossing guards and getting cars to slow down were the most desired improvements identified in the survey.

■ Local Roadway Network

Both Crest Drive and North Bend Drive are residential streets, but experience high traffic volumes because they are the major feeder streets into the neighborhood. North Bend Drive intersects with Natomas Boulevard just east of the school. Natomas Boulevard is the northern extension of Truxel Road, a major north-south, multi-lane arterial in the area. Just south of the school is Del Paso Road, a major east-west multi-lane arterial that provides access to I-5.

Both Natomas Boulevard/Truxel Road and Del Paso Road have heavy traffic volumes and high speeds, and serve a number of major commercial shopping centers. Del Paso Road can also be accessed via Gateway Park Circle, which intersects the southeast corner of the school. Based on observed traffic patterns during the morning commute period, it appears that many neighborhood residents use Crest Drive to North Bend to either Gateway Park Circle or Natomas Boulevard, to access Del Paso Road and get on the freeway.

■ Parking Lot

The school has one parking lot, which is accessed off Crest Drive, between Fenmore Avenue and Ives Avenue. The parking lot has two driveways that currently allow for both entry and exit.

■ Crosswalks

Yellow school crosswalks in the triple-four pattern are currently striped across Crest Drive in front of the school at two uncontrolled locations: Fenmore Avenue (south leg) and Ives Avenue (north leg). Both crosswalks lack curb ramps at the school curb landing. Standard parallel school crosswalks are striped across the stop-controlled, west legs of Fenmore and Ives Avenues. A standard parallel school crosswalk is striped across the stop-controlled, north leg of Crest Drive at North Bend Drive, and a triple-four pattern crosswalk is striped across the uncontrolled, east leg of this intersection.

At the all-way, stop-controlled intersection of North Bend Drive and Gateway Park Circle,

standard crosswalk striping is lacking entirely. A red pavement treatment has been installed through the entire intersection, with the three crossing locations marked with a slightly darker shade of red pavement coloration. As a whole, however, this treatment makes it extremely difficult to distinguish the crossing markings from the rest of the pavement.

■ Bus Facilities

The school has an off-street bus pull-in area located along the southern perimeter of the school. The entrance to the bus pull-in is directly across from North Gateway Circle, and effectively serves as the northern leg of this T-intersection. (This bus zone driveway also serves as the service entrance to access the school's playground areas.) The bus pull-in provides for one-way circulation in the west-bound direction.

■ Bicycle Facilities

Class II bike lanes are striped on Gateway Park Circle between Del Paso Road and North Bend Drive. Just west of the school is the Natomas East Drainage Canal. A Class I bike path runs along the east side of the drainage canal. This path crosses North Bend Drive at grade approximately one block west of Crest Drive.

■ Drop-off/Pick-up Operations

Drop off and pick up at Natomas Park Elementary occurs both in the school parking lot, and at curbside locations along Crest



Drive and North Bend Drive. The main drop-off/pick-up area is in the school parking lot along the curb.

Vehicles enter the school parking lot via the southern driveway, and queue up along the curbside. During the peak period, the queue was observed extending out of the parking lot onto Crest Drive. After dropping off, parents then exit the parking lot via the northern driveway. Currently, exiting vehicles are permitted to turn either left or right. Heavy traffic along Crest Drive sometimes makes left turns difficult, and delays occur at the driveway while vehicles wait to make the left turn movement.

During the afternoon, a similar pick-up procedure is followed. In this case, vehicles queue up in two rows along the curb frontage while waiting for school dismissal.

Parents also used available curb space along both sides of Crest and North Bend along the school frontage for pick-up/drop-off. Although there are no specifically marked

49% of students who live within a 1/4-mile of the school walk to school every day – one of the highest walking rates in the school district.

loading zones along the school curb, on street parking is generally light offering plenty of curb space for pick-up/drop-off. Substantial drop-off/pick-up is concentrated in the area near the intersection of Crest Drive and North Bend Drive.

During the morning, this area is heavily congested with non-school related (commuter) trips, and the drop-off activity adds to the congestion with occasional double parking.

Some parents were observed unloading children on the opposite side of the road and blocking residential driveways. Parents were also observed blocking the exit to the bus pull-out during drop-off/pick up.

Some drop-off/pick-up was observed along the curb of the community park on North Bend Drive, where ample curb space is available. Because the students' morning line up is in the playground, located immediately adjacent to the park, conducting drop-off next to the park does not result in a longer walk for children. Because of limited walkways in the park, children were observed walking through the grass to connect directly to the school's back entrance gate near the playground.

BANNON CREEK AND JEFFERSON ELEMENTARY SCHOOLS

■ Location and Neighborhood

Jefferson Elementary School is located at the intersection of Cloudview Drive and Pebblewood Drive. Adjacent land uses are single-family residential. Jefferson Park Community Park is contiguous to the northern boundary of the school property. It consists primarily of an open playfield and a small area of playground equipment, with a network of walkways. The Bannon Creek Parkway, a north-south greenway, extends along the eastern boundary of Jefferson Park.

Bannon Creek Elementary is located south of Jefferson at the intersection of Bannon Creek Drive and Millcreek Drive. Adjacent land uses are also residential. The Bannon Creek Parkway is contiguous to the western boundary of the school, as it extends north toward Jefferson School.

Other land uses in the vicinity of both schools include major commercial shopping centers along the arterial streets of Truxel Road, east of the school. The South Natomas Community Center and Park are located east of Bannon Creek school, at the intersection of Truxel Road and Bannon Creek Drive.

Both schools share a similar enrollment area. Bannon Creek Elementary has a special GATE (Gifted and Talented Education) program, which is the reason for the overlap. This enrollment area is bounded by I-80 on the north, West El Camino on the South, Northgate

on the east, and I-5 on the west. At both schools, some students do travel from areas south of West El Camino and east of Truxel Road, requiring them to cross these multi-lane high-speed arterials to get to school. Survey data show that most of these students in the outlying areas are driven to school.

■ Current Mode Split

According to the 2004 survey, 65% of students at Bannon Creek are driven every day and 21% walk at least once a week. 62% of students at Jefferson are driven every day and 25% walk at least once a week. The survey identified traffic safety issues, particularly car speeds, as parents' top concern and walk-to-school programs and crossing guards as the most preferred solution to this problem.

■ Local Roadway Network

Given their proximity, Jefferson and Bannon Creek schools are served by the same general roadway network. Azevedo Drive, a north-south residential collector, extends just west of both schools, and provides primary access to both schools for many motorists. Azevedo Drive also provides access between two major east-west arterials San Juan Road to the north, and West El Camino to the south. West El Camino provides direct access onto I-5, located just west of the school area.

Based on observed traffic patterns in the area, many motorists approach both schools using Azevedo Drive. Because it is also used heavily by commuters going to or from I-5, there is heavy congestion during the peak

hours. Long queues were observed on Azevedo Drive, particularly at the intersection with Pebblewood Drive.

Unfortunately, in 2002, Pebblewood Drive was the site of a fatal automobile injury for a 16-year-old girl. Neighbors report that, "street racing and speeding have long been a problem on [the] street. They are always racing around here, especially at night...spinning doughnuts in the intersections."

Pebblewood Drive has seen some traffic calming improvements over the last year, but parents still report traffic concerns around the major intersections cited above as impediments to safe walking or biking to school.

■ Parking Lot

Jefferson Elementary has a single parking lot accessed off Pebblewood Drive, east of Lemitar Way. The parking lot has two driveways that currently allow for both entry and exit. Bannon Creek Elementary has one parking lot accessed off Millcreek Drive. The lot has two driveways that currently allow for both entry and exit.

■ Crosswalks

In front of Jefferson School, yellow school crosswalks in the standard parallel pattern are currently striped at Pebblewood/Lemitar at the north and east legs, and at the east leg of Cloudview/Lemitar. At Pebblewood/Azevedo, parallel-striped yellow crosswalks are present on the south and east legs. At the Bannon Creek Parkway trail crossing of Pebblewood, a yellow, high-visibility triple-

four pattern crosswalk has been striped just east of the trail alignment, at the Pebblewood/Rollingbrook intersection. It should be noted that during field observations no trail users were observed using this marked crosswalk; instead they just crossed Pebblewood at the actual trail alignment.

At Bannon Creek Elementary, yellow school crosswalks in the standard parallel pattern are striped at Bannon Creek/Millcreek on the west and south legs, and at Millcreek/River City way on the north and east legs. At Bannon Creek/Azevedo, parallel striped crosswalks are present on the north and east legs. No marked crossing is currently provided at the Bannon Creek trail crossing of Bannon Creek Drive.

South of the school, at the uncontrolled intersection of West El Camino and Millcreek Drive, a triple-four pattern school crosswalk is striped across the west leg, and a standard school crosswalk across the north leg. It should be noted that this intersection has received funding to be upgraded with a traffic signal and this project is currently under final design.

A major barrier to pedestrians and cyclists in the Bannon Creek/Jefferson neighborhood is the uncontrolled intersection of West El Camino and Millcreek Drive one block from Bannon Creek Elementary. Yet, this crossing is the most direct route to the school from several apartment complexes. Many of the children living in apartment complexes to the south of West El Camino must be bused, or are driven, less than a half-mile to school,

due to the safety concerns associated with navigating the intersections of West El Camino and Millcreek Drive or West El Camino and Azevedo Drive. For many parents, this issue is not of proximity or the child's ability to get to school, but rather potentially fatal pedestrian and vehicular conflicts.

■ Bus Facilities

At Jefferson school, bus loading occurs curbside in a designated area along Lemitar Way between Pebblewood and Cloudview. This area is signed as bus loading only.

At Bannon Creek school, bus loading occurs curbside in a designated area along Bannon Creek Drive just west of Millcreek Drive. This area is signed as bus loading only.

■ Bicycle Facilities

The Bannon Creek parkway bike path extends along both schools. This Class I bike path runs north-south along Bannon Creek within a linear greenway. It extends along the west side of Bannon Creek Elementary, and along the east side of Jefferson Elementary.

There are two Parkway crossings that pose significant risks to students. At Pebblewood, the bike path crosses the road on a blind corner. Following a "Walk and Bike to School Day" event in May 2002, the crosswalk was relocated in a effort to improve the situation. However, it still presents an incongruous and confusing crossing even for the savvy pedestrian. Due to the width of Pebblewood, high-speed driving, including street racing, is reportedly not uncommon.

Similar visibility, crosswalk design and speeding issues exist where the bike path crosses Bannon Creek Drive.

■ Drop-off/Pick-up Operations

Drop off and pick up at Jefferson Elementary occurs both in the school parking lot, and at curbside locations along Pebblewood, Lemitar and Cloudview. The main drop-off/pick-up area is in the school parking lot along the open curb. Vehicles enter the parking lot via the eastern driveway, loop around past the head-in parking spaces, and queue up along the curbside. There is very limited curbside space within the parking lot, thus much of the loading/unloading does not occur at the curb itself but behind other parked vehicles.

On-street, a key observed loading/unloading area is the S-curve along Pebblewood Drive. Most vehicles using this area were coming from the east, and would make an immediate U-turn to return in the eastbound direction.

Along the bus zone on Lemitar Way, a number of vehicles were observed loading/unloading within the bus zone.

At Bannon Creek Elementary, drop-off and pick-up also occurs in the parking lot and at curbside locations on Bannon Creek and Millcreek. Within the parking lot the drop-off circulation pattern is to enter via the northern driveway, loop around to the curb, and exit via the southern driveway. On-street, areas along Bannon Creek Drive, including the bus zone, were used for loading/unloading.

Recommended Improvements

DISTRICTWIDE POLICY AND PROGRAM RECOMMENDATIONS

■ Natomas Unified School District Safety Task Force

The Natomas Unified School District (NUSD) has an established Safety Task Force that addresses a broad range of safety topics, including getting children to and from school safely. This task force meets on the first Tuesday of each month at 4:00 p.m. at the NUSD offices. It is recommended that this safety task force be expanded to discuss districtwide Safe Routes to School (SR2S) issues and help to prioritize SR2S improvements.

■ School-based SR2S Task Force

While there are active groups conducting SR2S activities at schools within the district (e.g., Traffic Tamers at Bannon Creek and Walking School Bus at Natomas Park), the schools do not have a formal SR2S task force. Establishing one is an important step to beginning a comprehensive SR2S effort, implementing educational and encouragement efforts, and getting support from neighbors, elected officials, school district and city staff for engineering improvements.

These meetings can help to identify the “champions” at each school who will be

crucial to push forward with improvements. It is recommended that each school form a SR2S task force. Membership may vary by school, but potential members include:

- School administrators and teachers
- Parents
- Neighbors
- Law enforcement officers
- Elected officials
- City transportation department staff

■ Double Fine Zone

The State of California currently has a pilot program in three counties (Ventura, Santa Barbara and Alameda) to establish “Double Fine Zones” around school zones. Additional revenues from the program can be used to fund local traffic-safety programs. The County of Sacramento should pursue participating in this program. It would require the Legislature to add the county to the pilot program (or expand the program statewide). NUSD and the County could assist by sending letters to legislators to recommend the program.

■ Crosswalk Striping

The City of Sacramento currently does not stripe minor side streets with crosswalks except those immediately adjacent to the school property. The City also has a policy to only stripe high-visibility markings (the triple-four pattern) on mid-block locations. It is recommended that the City expand its policy to stripe crosswalks at all intersection crossings within a 1/4-mile of the school



property line, and that all crosswalk markings within the established school zone should be marked with a high-visibility pattern.

■ Crossing Guards

The need for crossing guards was a common theme mentioned by participants at the charrettes at all three schools, and points to the importance of ensuring that roadway crossings are safe for children. Many parents pointed to a lack of crossing guards or other adult supervision as the primary reason they don’t allow their children to walk to school.

In California, the responsibility for managing and funding crossing guards can fall to the City, law enforcement or the school district, provided the crossing guards meet approved guidelines for adult supervision. In many parts of the U.S., crossing guards are managed and funded through the local police department; however, the Sacramento Police Department currently does not have funding to maintain an adult crossing-guard program.

In Sacramento, crossing guards are currently available through the “Kids X-ing” program, managed by the City Department of Parks and Recreation. The program provides trained adult crossing guards who can be requested by school districts.

However, funding to pay the guards must come from the school district, not the city. The annual cost is at least \$8,000 per guard. NUSD stated in meetings that they currently do not have the funding available to pay crossing guards through this program.

It is recommended that NUSD, the City of Sacramento and the Sacramento Police Department explore a joint partnership to fund crossing guards at schools in the Natomas area.

A portion of funding could also be provided through local donations, contributions by local homeowners associations or organizations such as the North Natomas Transportation Management Association.



For example, the City of Santa Cruz funds crossing guard through a four-way partnership, with funding and operational support from the City and the school district, additional funding from private sources, and volunteer assistance from the community.

If funding for paid adult crossing guards cannot be obtained, the use of trained volunteers may be an option. The school should ensure that volunteer crossing guards receive basic safety training from the police department (or go through the “Kids X-ing” training), and that the volunteers are covered by insurance.

■ School Safety Patrols

The School Safety Patrol Program is a community safety program that involves the use of trained student volunteers assisting their peers to cross the street safely when traveling to and from school. Caltrans provides specific guidance on the use of school safety patrols.

In general, a student patrol may be established at locations where an existing traffic control device, police officer or adult crossing guard is present. They may also be used where there are adequate crossing gaps in vehicular flow at an uncontrolled crossing and it is desirable to use student patrols to guide the school pedestrians.

School safety patrollers are different than crossing guards in that they do not stop or direct traffic. The California Education Code, Sections 49300-49307, and the California Code of Regulations, Sections 570-576 and



A lack of crossing guards was the primary reason many parents don't allow their children to walk to school.

632, authorize the development of school safety patrols and outline rules for implementing these programs within the state.

Student safety patrols can be authorized by the local school board, with school authorities responsible for organizing, instructing and supervising patrols with assistance from the local police.

It is recommended that NUSD explore the use of school safety patrols at appropriate locations in the vicinity of the schools. Many school safety patrols are run in partnership with the American Automobile Association (AAA), which started the program in 1920.

ENGINEERING RECOMMENDATIONS

NATOMAS PARK ELEMENTARY

■ Gateway Park Circle

Gateway Park Circle currently has 11-foot travel lanes, and 5-foot bike lanes. Given that this segment of Gateway Park is a residential collector street, 10-foot lanes are more appropriate and will help lower travel speeds approaching the school. Narrowing the lanes to 10 feet would provide additional width to widen the bike lanes to 6 feet in each direction, providing additional buffer for bicyclists.

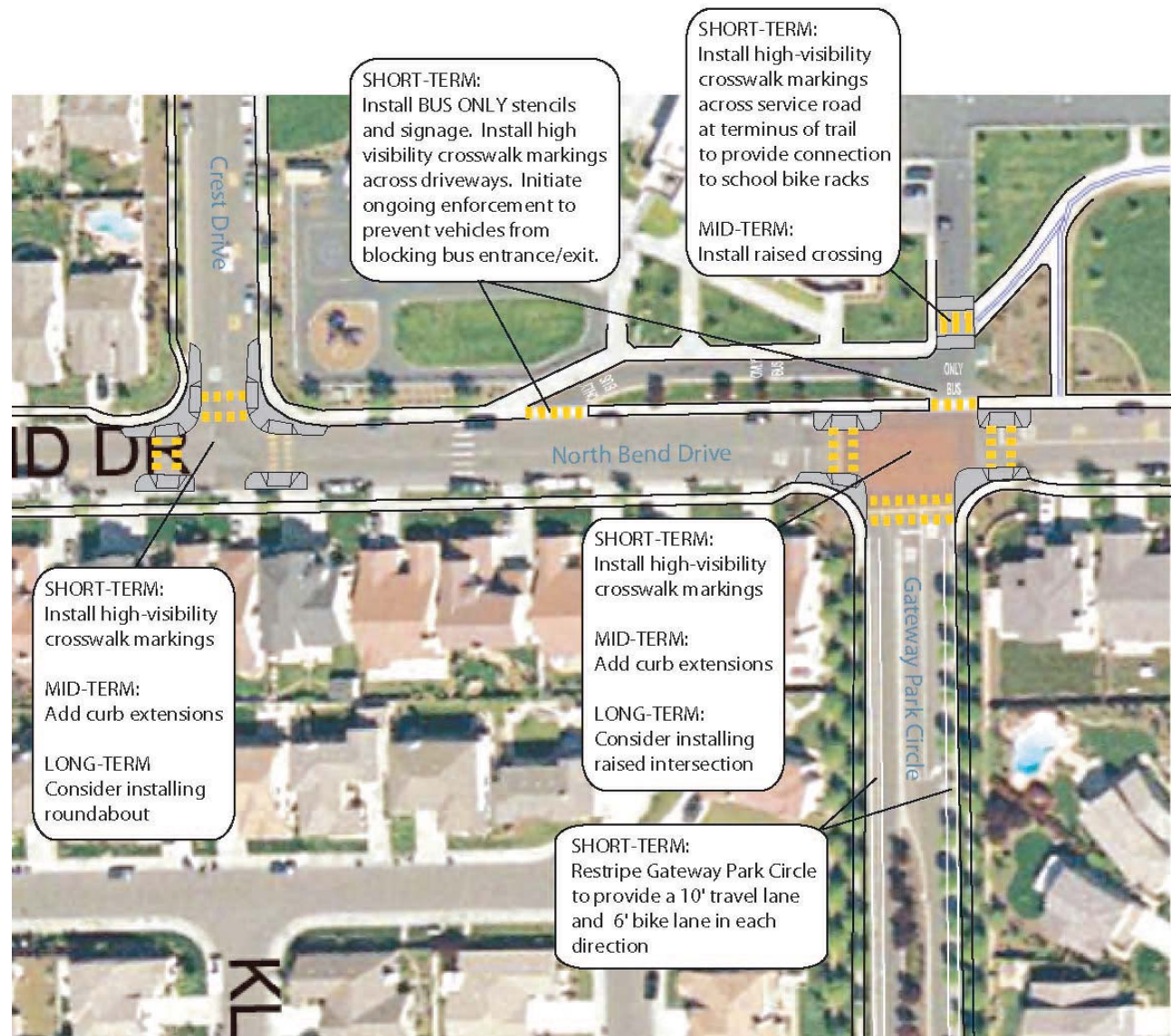
■ North Bend Drive/ Gateway Park Circle

This all-way, stop-controlled T-intersection was developed with a red-colored pavement treatment through the whole intersection. In lieu of crosswalk striping, a slightly darker red coloration was used. The pavement coloration makes it very difficult to distinguish where the crosswalk area is intended to be, and it appears that there is no crosswalk at the intersection.

In the short-term, it is recommended that high-visibility crosswalk markings be installed on all legs of this intersection.

As a mid-term recommendation, the City should install curb extensions at all

Natomas Park Elementary School North Bend Drive/Gateway Park Circle Area



corners to shorten the crossing distance, increase visibility for pedestrians, and reduce turning speeds.

■ Crest Drive/North Bend Drive

This T-intersection is stop controlled only on the Crest Drive (southbound) approach. In the short-term, high-visibility crosswalk striping is recommended across the northern leg to increase visibility. A curb ramp is also needed where the crosswalk lands on the south side of North Bend Drive. As a mid-term recommendation, the City should install curb extensions at all corners.

■ School Bus Pull-In

Some parents were observed blocking the exit to the bus pull-in during the pick-up/drop-off. In the short term, it is important to enforce no-stopping regulations at this location so that parents do not block this area and cause delays to buses trying to enter or exit. Enforcement can be done by law enforcement or school staff monitoring the area.

■ Crest Drive

Several short-term improvements are recommended for Crest Drive in front of the school. At the existing crosswalks at Fenmore and Ives, curb ramps are needed at both locations on the school landing. Also at both locations, formal MUTCD-approved In-Street Yield to Pedestrian signs should be installed (MUTCD sign code R1-6).

Curb extensions at some intersections can shorten the crossing distance, increase visibility for pedestrians, and reduce turning speeds.

It is recommended that the signs be installed on a mobile base so that they can be removed during non-school hours; however the signs should be placed in the center of the roadway, not at the side of the road.

As a mid-term recommendation, the City should install curb extensions at all corners at Crest/Fenmore and Crest/Ives.

■ School Parking Lot

Both school parking lot driveways currently allow ingress and egress. It is recommended that these be reconfigured to an IN ONLY driveway in the south, and an OUT ONLY driveway in the north, to facilitate the current pick-up/drop-off south-to-north circulation pattern.

Furthermore, it is recommended that the rows of angled parking be completely reconfigured and shifted to the west, so that all parking stalls are accessed from a single travel lane. This area of long-term parking should be completely separated from the loading area by a raised median.

In this way, a teacher or visitor who wants to park their car would not interfere with the pick-up/drop-off lanes. Implementing this configuration would also provide additional width for the pick-up/drop-off area; it appears possible to get three parallel lanes in the loading area, so that a multi-lane supervised pick-up/drop-off procedure can be implemented, if necessary.

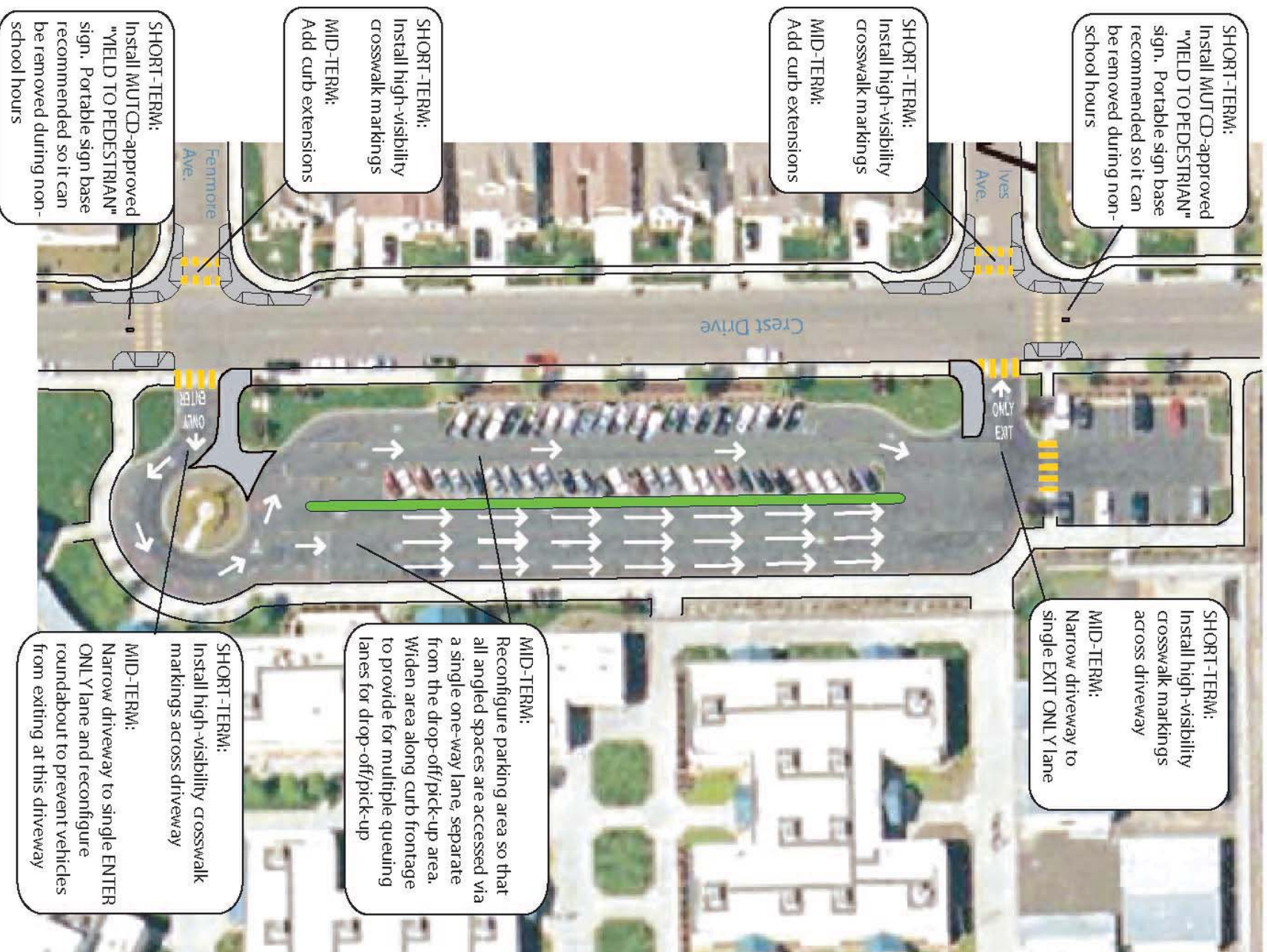
■ North Bend/Bike Path Crossing

Currently, the canal bike path crossing of North Bend Drive presents visibility challenges for motorists. The trail crossing is located on the east side of the roadway bridge over the East Canal. The bridge arches slightly as it spans the canal, and the trail crossing is located below the crest of the bridge.

Eastbound motorists do not have a clearly visible sight line to the trail crossing until they are cresting the canal bridge and nearly upon the crossing location, since there is no vertical element to the trail crossing marking. The poor visibility is compounded by the pavement markings used to delineate the crossing.

The City of Sacramento has developed its own trail crossing striping pattern, which uses two parallel rows of short, diagonal bars instead of the solid parallel stripes of a standard crosswalk. Based on field observations at this location, this trail striping pattern does not appear to be as visible as the standard high-visibility (triple-four) used by the City at non-trail locations.

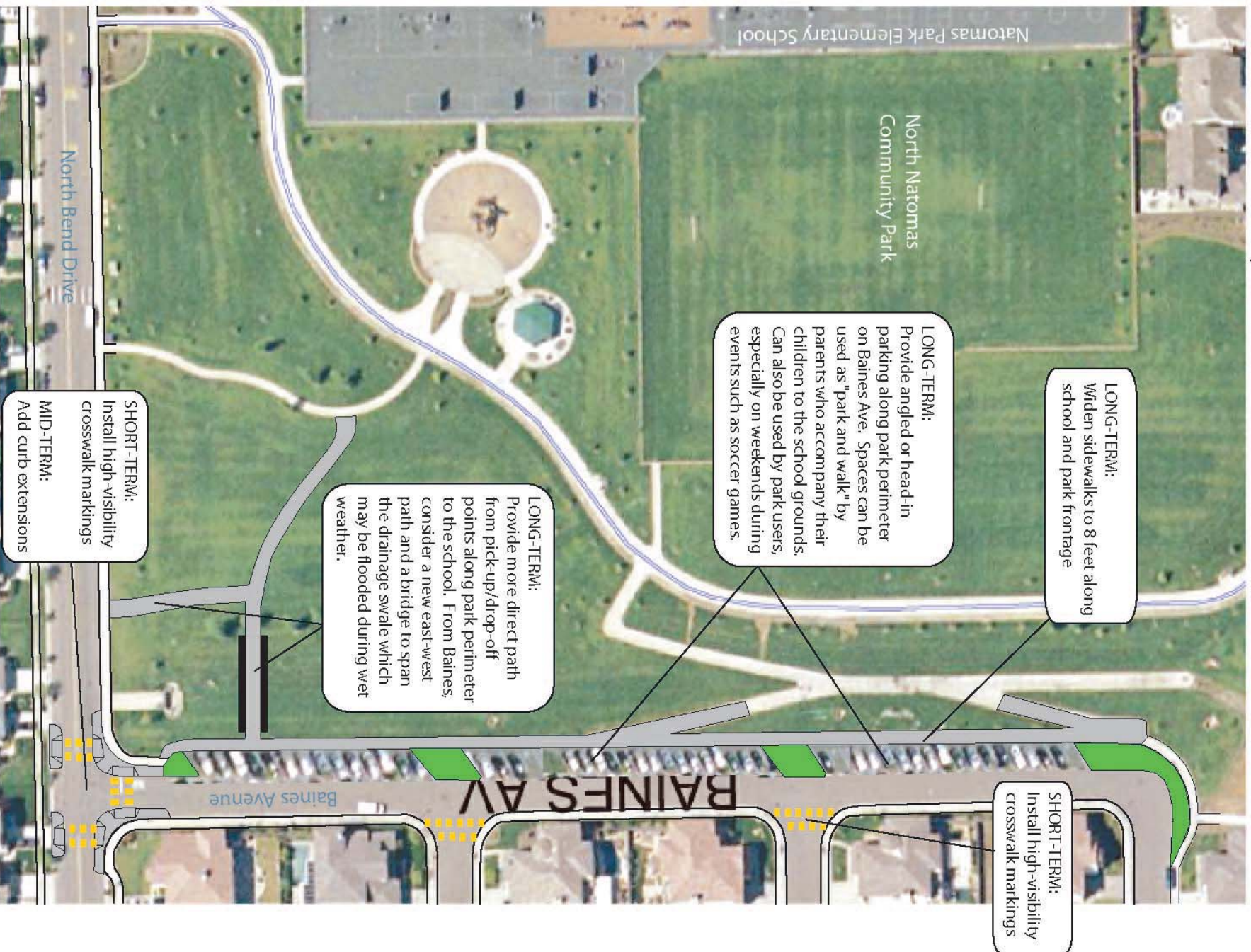
Natomas Park Elementary School Parking Lot and Crest Drive area



Natomas Park Elementary School Drainage Canal Bike Path/North Bend Drive Crossing



Natomas Park Elementary School
 North Natomas Community Park Area



In the short-term, it is recommended that the city replace the trail crossing marking with the standard, triple-four pattern given this trail crossing's proximity to Natomas Park Elementary and the potential use by students going to and from school.

Also in the short-term, it is recommended that an In-Street Yield to Pedestrian sign be installed at this location to add a vertical element to the crossing and help to increase visibility, particularly for eastbound motorists.

In the mid-term, it is recommended that a landscaped median island be constructed in this location to provide even greater visibility of the crossing, narrow vehicle travel lanes and provide a refuge point for trail users. By placing a clearly visible median in this location, along with landscaping such as trees, a vertical element will be introduced to the crossing that will make this location more visible to eastbound traffic along North Bend Drive.

■ North Natomas Community Park

As noted earlier, there is some pick-up and drop-off activity along the park frontage, primarily along North Bend Drive. However, these areas are underused in spite of the fact that the park perimeter provides substantial open curb area that could be used for pick-up

and drop off, and that these areas are not far from the school playground where children line up in the morning.

For the short-term, it is recommended that the school encourage greater use of the curbside areas of North Bend Drive and Baines Avenue along the park frontage for pick-up and drop-off. This could be accomplished with signage designating these areas as official pick-up/drop-off locations.

The school should also consider having a staff monitor at the park, so that parents will be comfortable letting their children walk through the park area to the school playground.

In the long term, the park frontage area along Baines Avenue appears to be a suitable location for installing a row of angled or head-in parking spaces. Given the width of the roadway, installing these spaces could be accomplished with little encroachment into the park area. These spaces could be used as a park-and-walk area during the drop off/pick-up period. During other hours, they could be used by park users.

From both North Bend Drive and Baines Avenue, more direct pathways from the southeast corner of the park are needed.

If these areas are to be encouraged as park-and-walk or alternate drop-off locations, clear direct pathways toward the back entrance gate are needed.

Currently, students being dropped off along North Bend Drive must walk across the grass to have a direct path to the school. During winter months when the grass is wet this is undesirable. Furthermore, in the far southeast corner there is a large drainage swale that becomes inundated during wet weather. In addition to providing new pathways, it may be necessary to construct a bridge to span this swale.

The school should encourage greater use of the curbside areas of North Bend Drive and Baines Avenue along the park frontage for pick-up and drop-off.

BANNON CREEK ELEMENTARY

■ Bannon Creek Drive/Azevedo Drive

The Bannon/Azevedo intersection is an all-way, stop-controlled T-intersection, which currently lacks a crosswalk on the south leg. In the short term, this leg should be striped with a new crosswalk, and high-visibility (triple-four) crosswalk striping should be installed on all legs. Advance stop lines should also be painted to ensure motorists stop back an appropriate distance from the crosswalk.

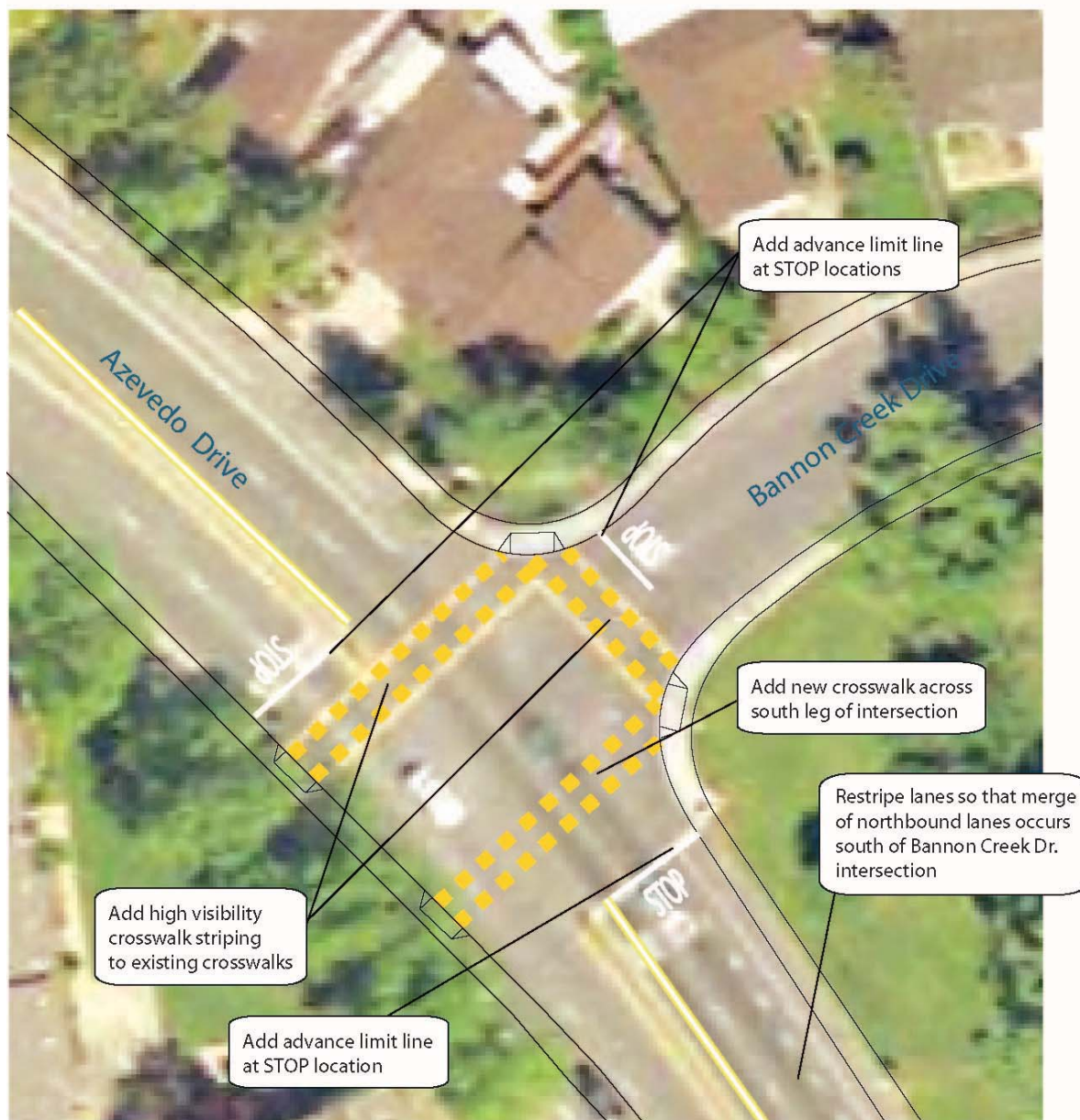
In the mid-term, curb extensions should be installed at this intersection to shorten the crossing distance, improve visibility for pedestrians, and slow turning speeds.

In future planning efforts, the City should consider this location for a formal roundabout (in lieu of signalization). No sidewalk extends from this intersection to West El Camino (although there is a parallel pathway nearby). It is recommended that a formal sidewalk be installed to fill this gap. Providing a sidewalk would help to encourage the use of this location as an alternate pick-up/drop-off site for the school and for users of the greenway.

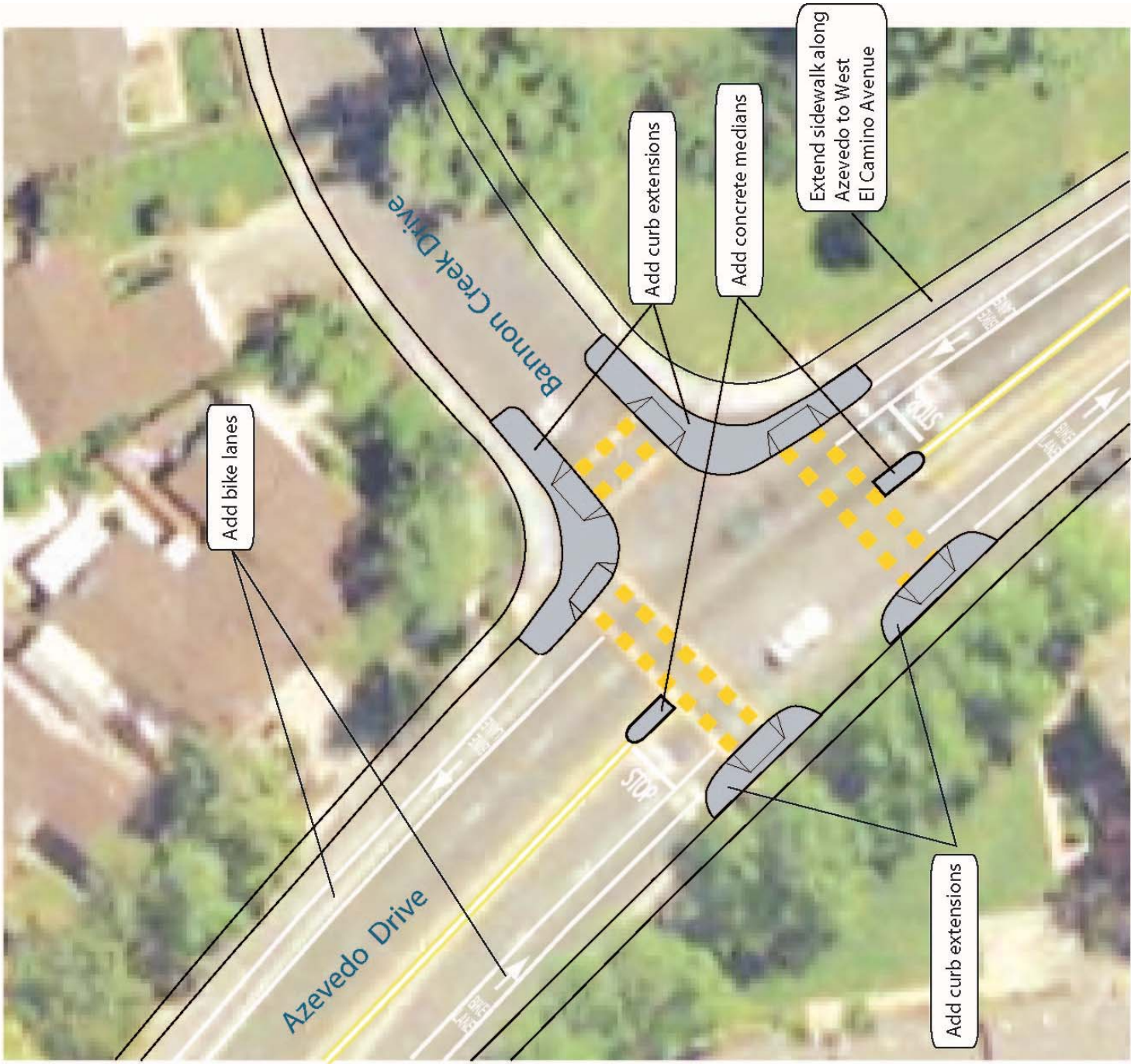
■ Bannon Creek Trail

The Bannon Creek Trail crossing of Bannon Creek Drive currently has no marked crossing. In the short-term, this location should be striped with a high-visibility (triple-four) school crosswalk. Also in the short term, vegetation located east of the trail should be trimmed to ensure good sight distance for both motorists and trail users.

Bannon Creek Elementary Bannon Creek Drive and Azevedo Drive Short-Term Improvements

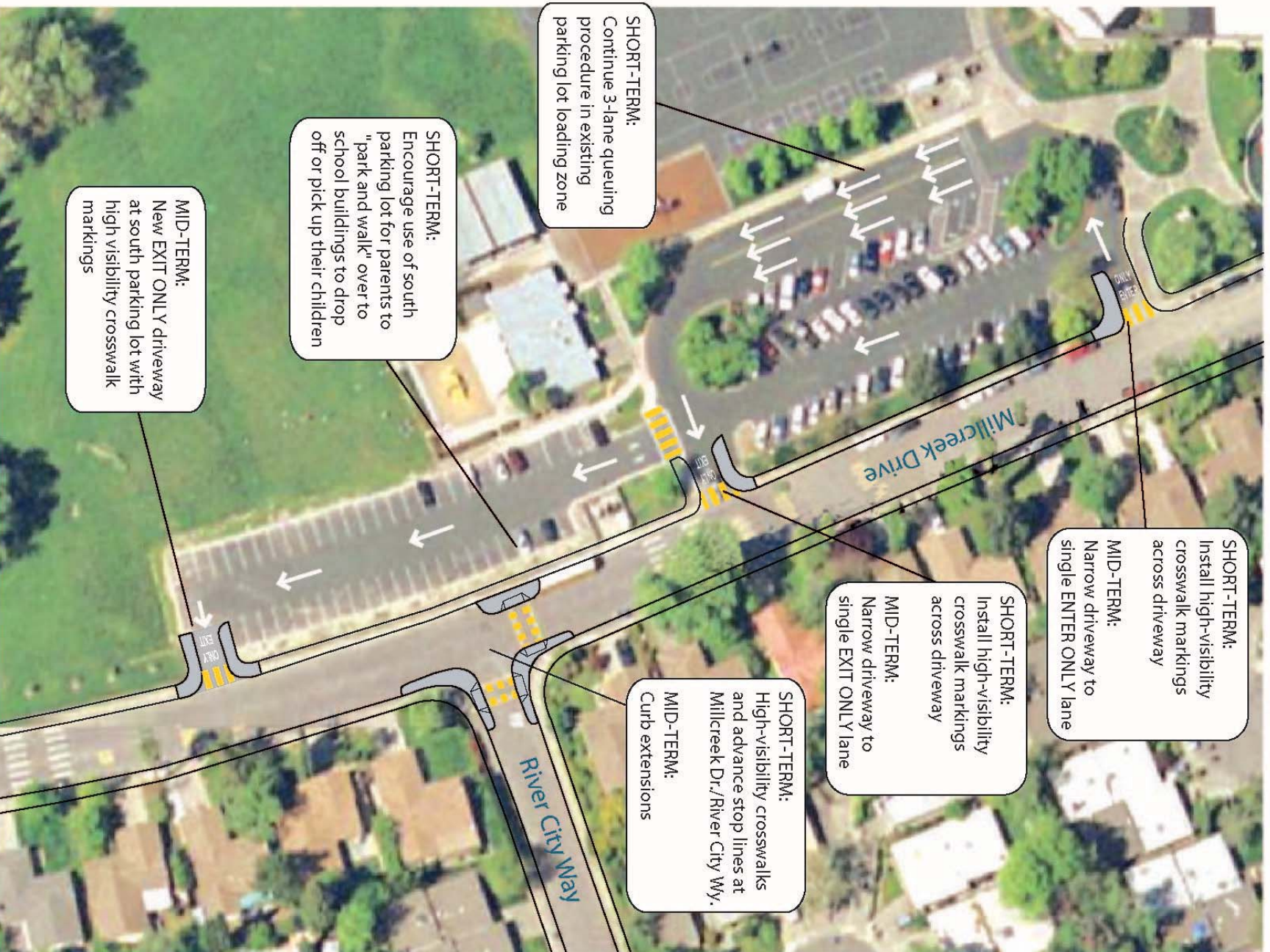


Bannon Creek Elementary
Bannon Creek Drive and Azevedo Drive
Mid-Term and Long-Term Improvements



LONG-TERM:
Construct roundabout at this intersection

Bannon Creek Elementary
 Parking Lot and Millcreek Drive Improvements



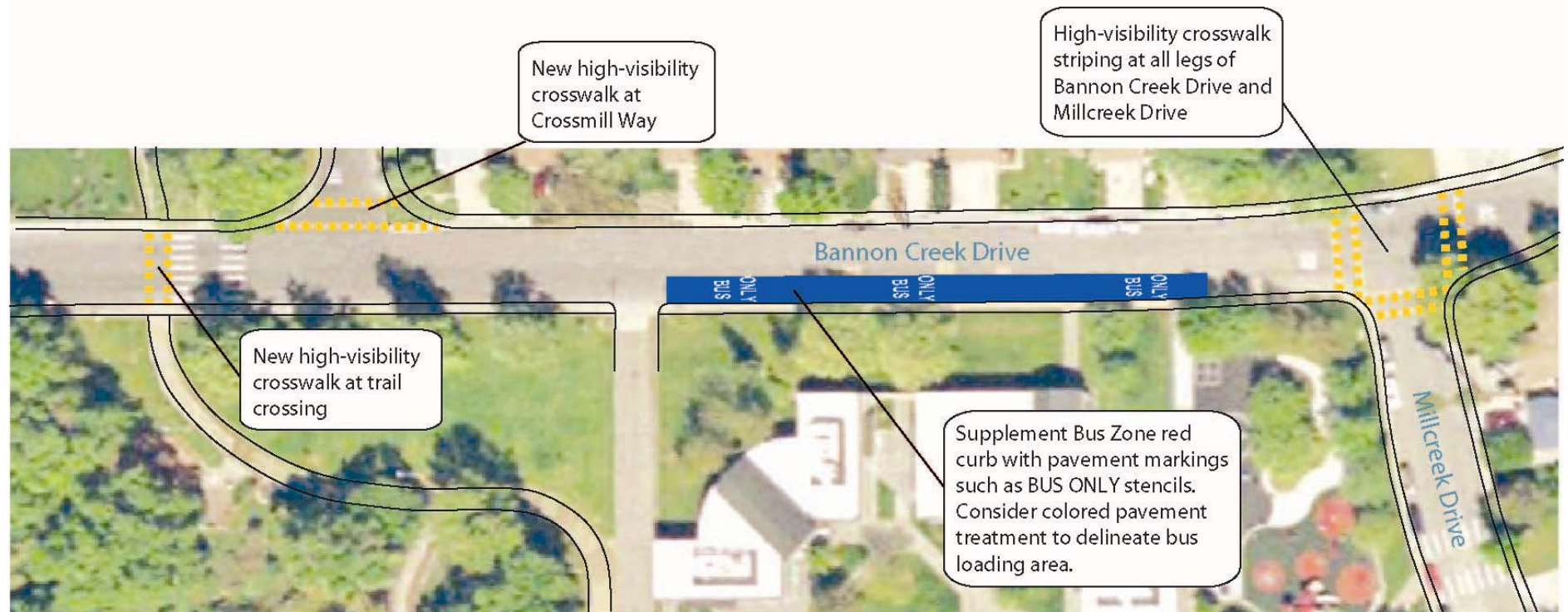
In the mid-term, a raised crosswalk is recommended in this location, so that motorist speeds are slowed even more at the crossing location. The adjacent speed undulation should be removed when a raised crosswalk is installed. Given the heavy use of this trail as a recreational facility and a school bike/pedestrian route, the City should consider widening the trail to 12 feet.

■ **Bannon Creek Parking Lot**

Within the school parking lot, in the short-term, the school should continue to implement the current multi-lane queuing procedure to maximize the available space for vehicles in the parking area. It is important for the school to have continued staff presence during pick-up/drop off to ensure that loading and unloading is done as efficiently as possible. In the mid-term, it is recommended

that both existing school driveways be narrowed to single one-way lanes, with the northern driveway designated as ENTER ONLY and the southern driveway as EXIT ONLY. The use of the existing southern overflow parking lot should also be encouraged as a park-and-walk location, for parents who want to park their vehicle and accompany their child to or from the school. Establishing this as a park-and-walk area frees up curbside space for other parents who just want to quickly load/unload.

Bannon Creek School Bannon Creek Drive Short-Term Improvements



To further facilitate the use of the southern lot as a park-and-walk location, and permit another exit location, it is recommended that a new EXIT ONLY driveway be constructed at the far south end of the parking lot.

■ **Bannon Creek Drive Bus Area**

The existing bus loading zone along Bannon Creek Drive was observed being used by private

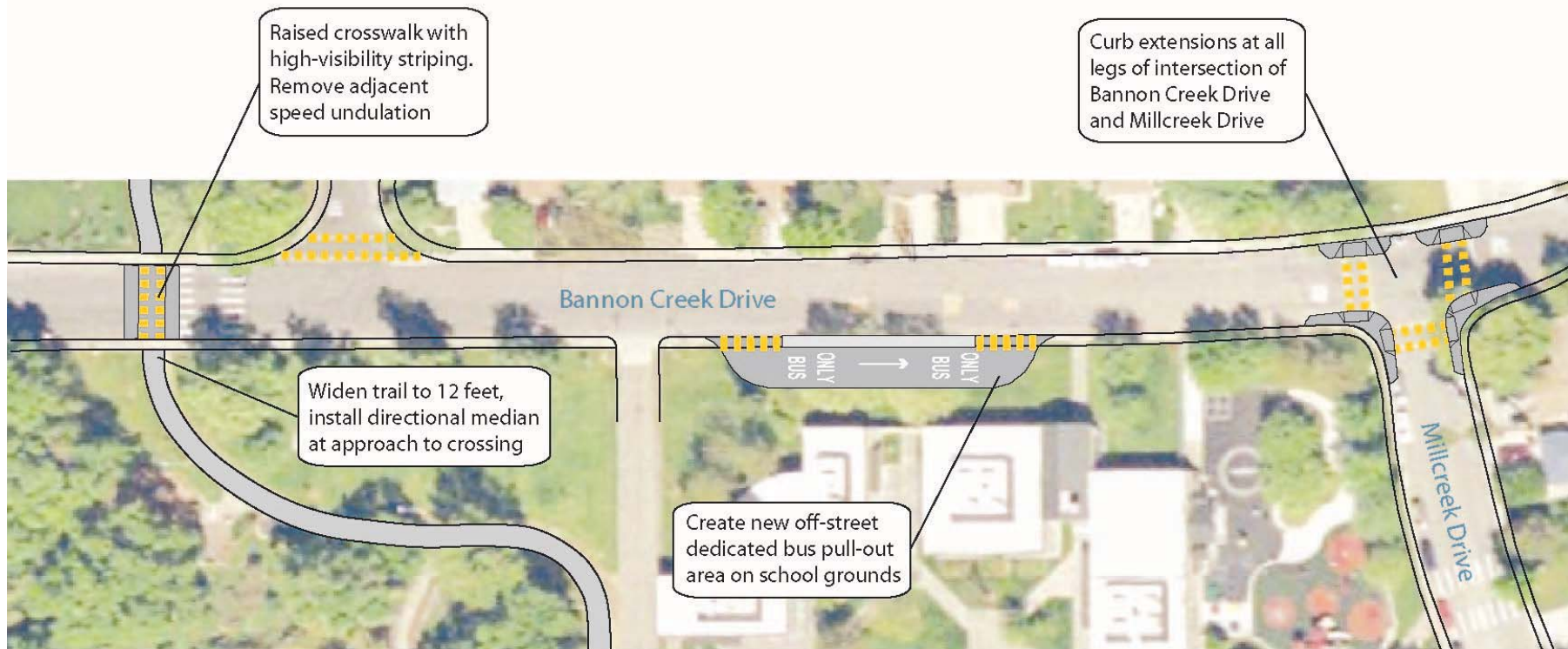
vehicles for loading/unloading. Having private vehicles block the bus zone can cause delays to the buses entering or exiting the zone. To emphasize that this area is only for buses, large BUS ONLY, NO PARKING signs should be erected. The school may also want to work with the City to implement a painted pavement treatment in this area with large, BUS ONLY stencils to emphasize this. In the mid-term, an off-street bus pull-out should be installed so buses can pull completely off the

street for loading/unloading. No private vehicles would be allowed in the bus pull-out.

■ **Bannon Creek Drive/ Millcreek Drive**

At the intersections along Bannon Creek Drive and Millcreek Drive, all intersections should be striped with high visibility triple four crosswalk striping in the short term. In the mid-term, curb extensions should be installed at these locations to reduce the crossing distance, improve visibility for pedestrians, and slow turning speeds.

Bannon Creek Elementary
Bannon Creek Drive
Mid- Term Improvements



JEFFERSON ELEMENTARY

■ Pebblewood Drive /Azevedo Drive

The Pebblewood/Azevedo intersection is an all-way, stop controlled T-intersection which currently lacks a crosswalk on the north leg. In the short-term, it is recommended that this intersection leg be striped with a new crosswalk, as this is the logical crossing location for many children walking from the west side of Azevedo Drive (using the crosswalk on the south leg requires children to then cross to the north side of Pebblewood Drive to get to the school, putting them in potential conflict with the high volumes of left-turning vehicles coming off Azevedo Drive).

It is important to note that there are some potential difficulties with simply repainting a crosswalk across the northern leg at Azevedo/Pebblewood.

The proper crosswalk alignment is directly in line with a residential driveway pad on the west side of Azevedo Drive. It appears that the location of this driveway may have been the reason the northern crosswalk was originally removed from this intersection (the old crosswalk stripes have been ground out but their presence is still visible).

This portion of the driveway does not appear to be part of the original two-car driveway developed when the house was built, but in fact it appears that the concrete pad that was added onto the original driveway.

Because of the rolled curbs along Azevedo Drive, there are no curb cuts to define indi-

vidual driveway limit, and a resident who widens their driveway pad can effectively roll in and out of the driveway at any point along their property.

The legality of this driveway widening is not clear; further investigation is needed to see whether this driveway widening violated the city zoning standards on the amount of paved driveway coverage allowable on a single-family residential lot. Regardless, the driveway widening did occur and with vehicles pulling in and out of the crosswalk area, at some point the crosswalk was removed.

Remedying this situation would require constructing a formal curb cut in the location of the existing driveway prior to restriping the crosswalk to prevent the residents from pulling in and out of the crosswalk area.

Because there would also need to be an ADA accessible curb ramp installed, the entire crosswalk would need to be shifted slightly to the north of its former alignment. Under this scenario, the owners of the residence would have a formal driveway cut along the width of their original two-car driveway pad.

Also in the short-term, the remaining legs of the intersection should be marked with high-visibility (triple-four) crosswalk striping. Advance stop lines should also be painted to ensure motorists stop back an appropriate distance from the crosswalk.

In the mid-term, curb extensions should be installed at this intersection to shorten the crossing distance, improve visibility, and slow turning speeds. As with the crosswalk striping

discussed above, installing a curb extension at the west end of the northern leg would have challenges related to the location of the residential driveway in relation to the crosswalk landing. It appears that by moving the entire crosswalk slightly to the north, and by limiting the residential driveway access only to the width of the original two-car driveway pad, a curb extension with ADA curb ramp could be installed in this location.

In future planning efforts, the City should consider this location for a formal roundabout (in lieu of signalization).

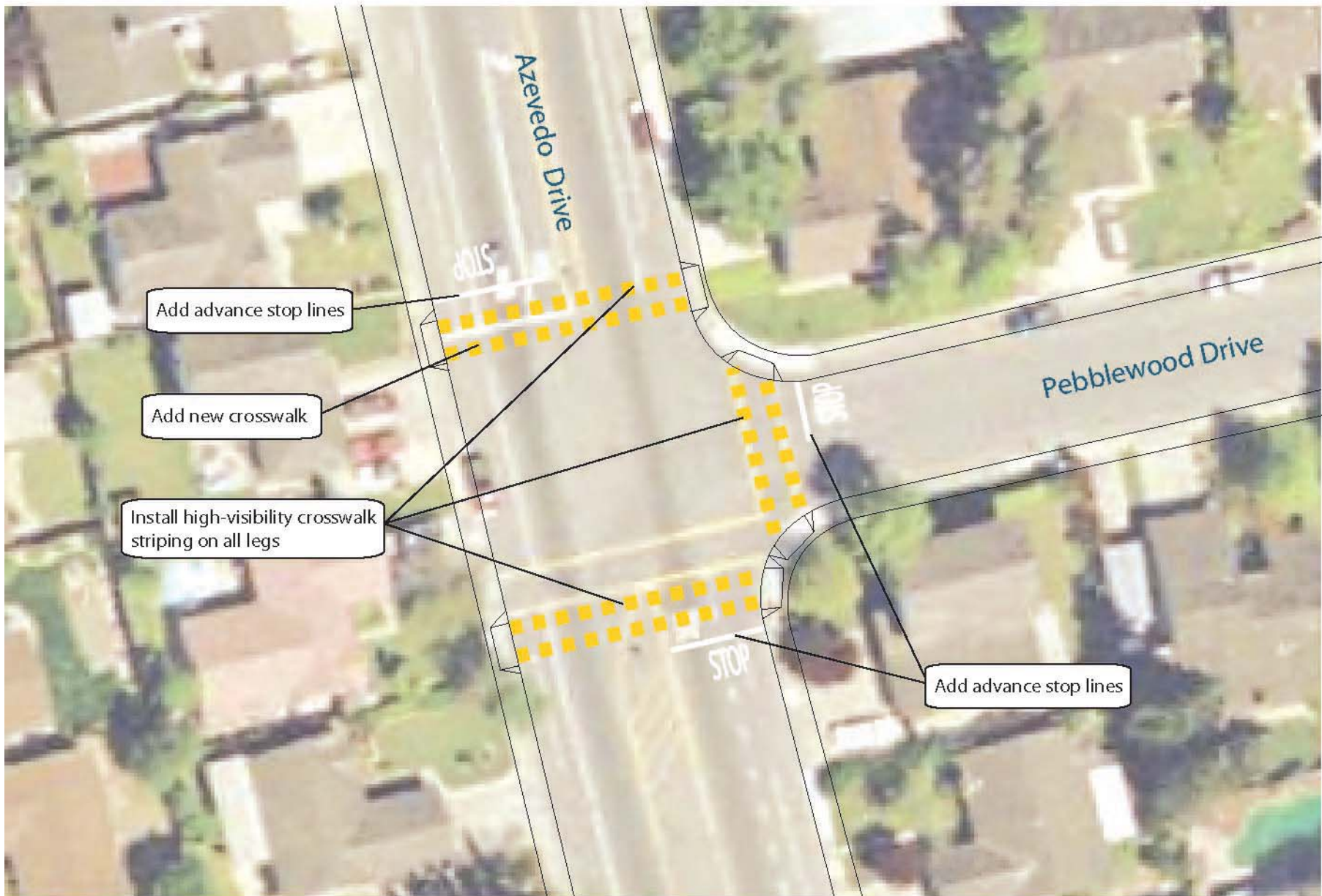
■ Bannon Creek Trail/Pebblewood

Currently, there is no marked crosswalk at the direct crossing of the trail across Pebblewood Drive; instead a crosswalk has been striped at the nearby intersection of Pebblewood/Rollingbrook. However, during field observations, no trail users were seen using the marked crosswalk; they all crossed directly at the trail crossing.

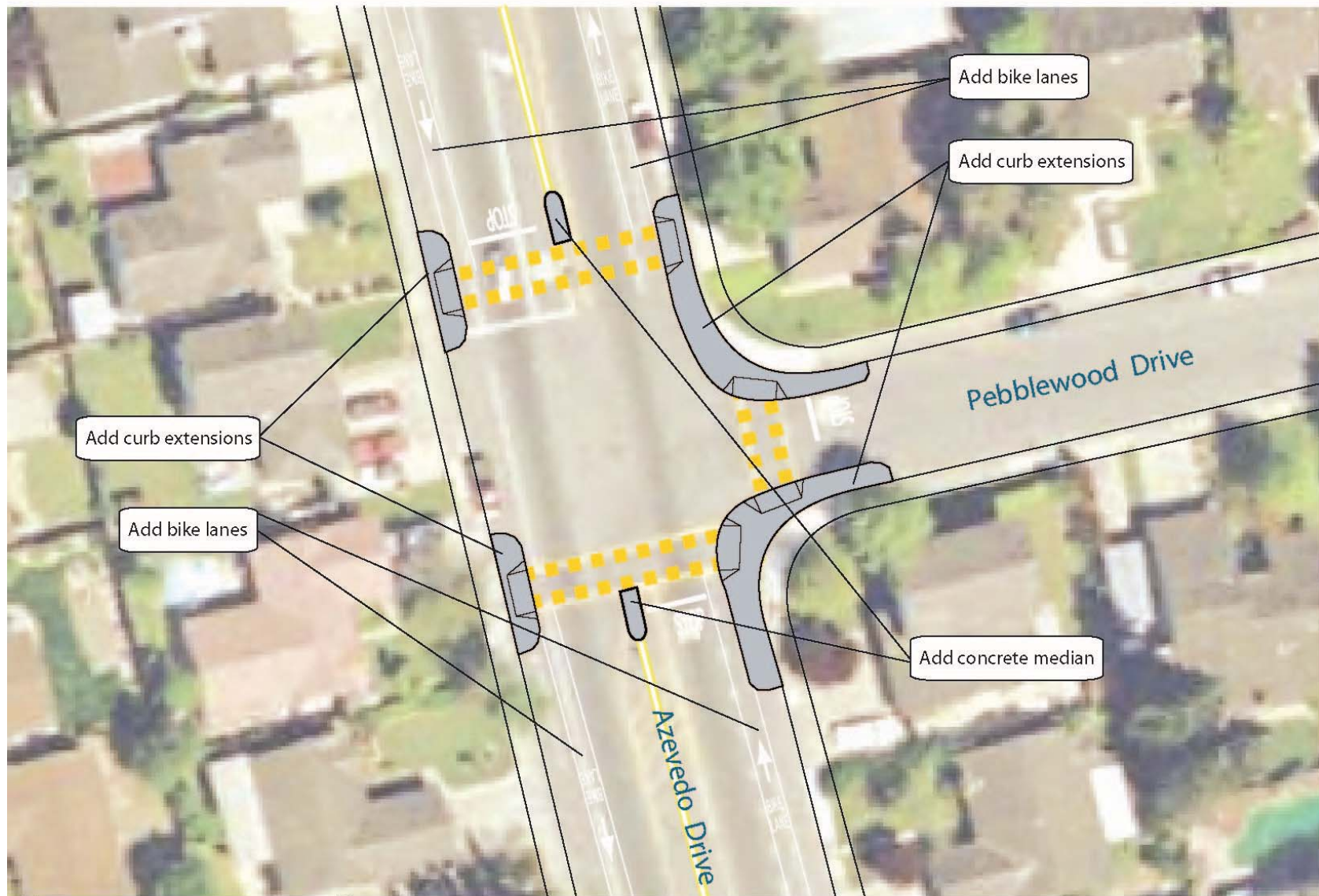
This location also appears to provide the greatest visibility for both motorists and trail users. Given this, in the short-term, it is recommended that the marked crosswalk be moved to the actual trail alignment location. The City should also trim vegetation away from the trail crossing, particularly to the east, to ensure adequate sight visibility for users and motorists.

In the mid-term, it is recommended that a raised crosswalk be installed. This raised crossing would provide the maximum slowing of vehicle speeds at the crossing.

Jefferson Elementary
Pebblewood Drive and Azevedo Drive
Short-Term Improvements



Jefferson Elementary
Pebblewood Drive and Azevedo Drive
Mid-Term and Long-Term Improvements



LONG-TERM:
Construct roundabout at this intersection

■ **Pebblewood Drive S-Curve**

An excess of pavement width at the Pebblewood Drive S-curve facilitates high-speed turning movements. This is a critical area adjacent to the school and a major trail crossing, and efforts should be made to slow travel speeds through these corners.

It is recommended that the curves be reduced in two ways: in the eastbound direction, the excess pavement could be incorporated into the greenway area and landscaped. In the westbound direction, a median could be constructed to provide a separate pick-up/drop-off lane along the school curb frontage.

This area is already used as a drop-off zone; putting in the median would help to formalize this area and keep pick-up/drop-off activities separate from the regular traffic.

A median should also be installed through the northern curve, approaching the trail, to narrow the travel lanes and slow vehicles as they approach the curve.

■ **Jefferson School Parking Lot**

In the short term, the school should continue to use cones to narrow the driveway entrances and force an ENTER ONLY on the east and EXIT ONLY on the west. In the mid-term, the driveway should be physically narrowed to this configuration.

The eastern part of the parking lot is also currently underutilized. This area should be landscaped and trees planted, and staff encouraged to park in these spaces. This

would allow the school to remove the current row of parking spaces along the playground frontage. By removing the spaces along the playground, this area could be converted to a curbside pick-up/drop-off lane, and a multi-lane queuing procedure could be put into effect.

■ **Pebblewood, Lemitar and Cloudview**

At the intersections along Pebblewood, Lemitar and Cloudview, all intersections should be striped with high-visibility, triple four crosswalk in the short term. In the mid-term, curb extensions should be installed at these locations to reduce the crossing distance, improve visibility for pedestrians, and slow turning speeds.

■ **Cloudview Drive Entrance Gate**

The school's back entrance gate on Cloudview Drive is situated next to a large trash dumpster – which does not provide for an aesthetic gateway. The school should relocate the dumpster to another location and improve the aesthetics of this gate to encourage more parents to use it as a drop-off/pick-up area and take pressure off the main parking area.

■ **Cloudview Drive Bus Area**

The existing bus loading zone along Cloudview Drive was observed being used by private vehicles for loading/unloading. Having private vehicles block the bus zone can cause delays to buses entering or exiting the zone. To

Speed around curves can be reduced by turning excess pavement into landscaped greenway or by installing a median to provide a separate lane for picking up and dropping off children.

emphasize that this area is only for buses, large BUS ONLY, NO PARKING signs should be erected.

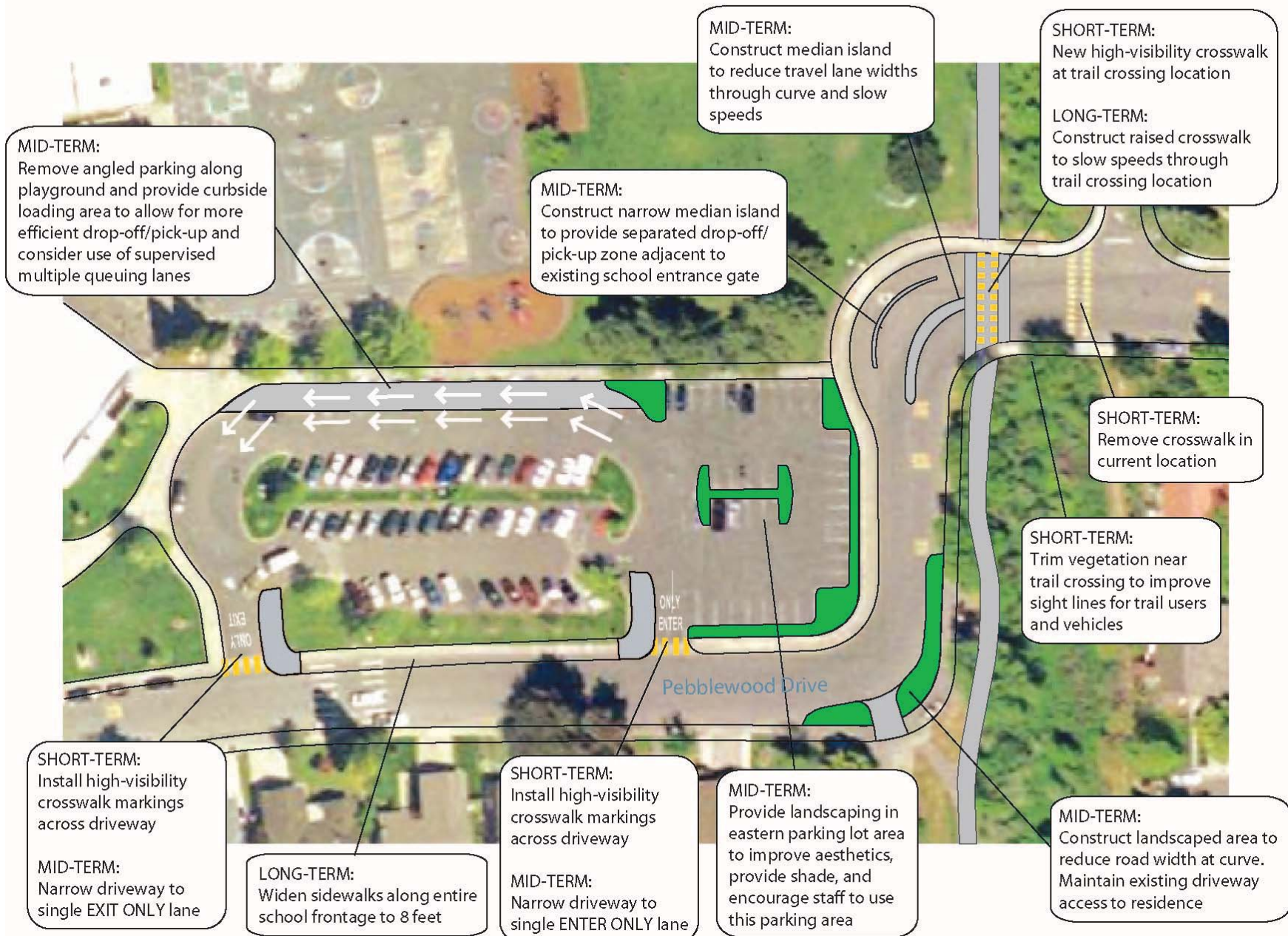
The school may also want to work with the City to implement a painted pavement treatment in this area with large, BUS ONLY stencils to emphasize this.

In the mid-term, an off-street bus pull-out should be installed so that buses can pull completely off the street for loading/unloading. No private vehicles would be allowed in the bus pull-out.

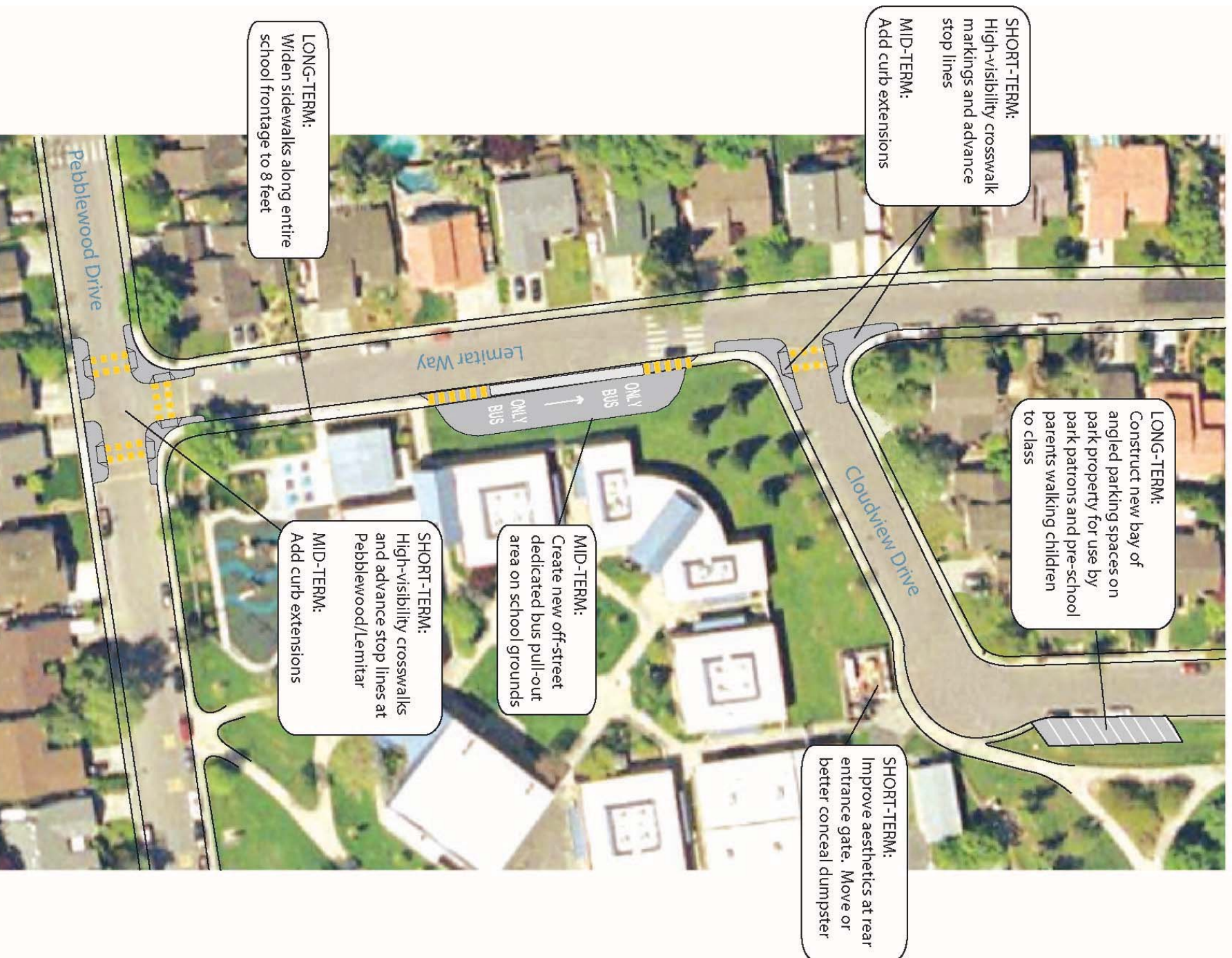
■ **Cloudview at Jefferson Park**

To promote additional pick-up/drop-off at the school's Cloudview gate, it is recommended that a bay of angled parking spaces be constructed along Cloudview Drive on the park property. This would require a minimal encroachment into the park land. These spaces are intended to be used primarily by the pre-school parents in the morning who walk their children to class; during non-school hours, they could also be used by park visitors.

Jefferson Elementary School
Parking Lot and Pebblewood Drive area



Jefferson Elementary School
Lemitar Way and Cloudview Drive



BANNON CREEK PARKWAY TRAIL

■ Parkway Maintenance

During the charrette process, a number of users of the Bannon Creek parkway trail noted that the entire parkway lacked maintenance. The need for trash clearing and brush removal were two common complaints.

Particularly near the roadway crossings, ensuring vegetation trimming and brush removal is important to ensure clear sight lines and visibility. It is recommended that the City Parks and Recreation Department undertake a more regular maintenance program along the parkway.

■ Parkway Trail Width

Given the heavy use of this trail as a recreational facility and a school bike/pedestrian route, the City should consider widening it to 12 feet.

■ Signage

Another common comment noted during the charrette was the lack of any signage along the parkway, and the potential confusion due to multiple trail junctions. In some cases, the trail splits without any clear signage indicating which direction is the through-

route; in other areas, trail users were not sure where they were in relation to the local roadway network because local street junctions were not signed.

It is recommended that the City implement a signage program indicating the direction of the continuous through-route at trail spurs, and also indicate street names where the trail connects out to the street network.

■ Cedro Circle and Delgado Way

The Bannon Creek Trail currently diverts to a short segment of on-street Class III bike route at Cedro Circle/Delgado Way. At this location, trail users suddenly go from a two-way, off-street facility, to a shared roadway situation. In this situation, southbound users who remain along the east side of the road are riding against traffic.

It is recommended that the City convert a portion of the roadway right-of-way to a two-way Class I trail configuration to provide continuity to the bike path facility.

As a mid-term recommendation, concrete dividers could be placed along the eastern side of the road to create a separated 10-foot wide, two-way bike path. In the long-term, this could be developed as a formal Class I path segment with a minimum 5-foot separation from the roadway lane.

Particularly near street crossings, ensuring vegetation trimming and brush removal is important to ensure clear sight lines and visibility.

Implementation

An important step in the successful implementation of these recommendations is to have each stakeholder group – City, school district, school, parents, students, neighbors – prioritize the improvements to address their specific concerns. Considering that the priorities of one group may not match those of another, it is important for the different stakeholders to meet and discuss the issues in order to reach effective and lasting solutions.

It is particularly important for the City and the Natomas Unified School District to work together as the two groups that have the greatest fiscal ability to make improvements. Working together, the stakeholders may be able to solve problems that could not be resolved separately.

Improvements can be considered short-term, medium-term and long-term. Short-term improvements are usually problems that can be handled at a relatively low cost or time commitment. Long-time improvements may be considered overly ambitious, but they are very important to prioritize and keep in mind, as opportunities to construct such projects do arise.

A group may also decide that an improvement listed in this report as long-term may be so critical to safety that it must be completed sooner.



With the costs of the recommended improvements as a whole likely to exceed available funds, it is important that the parties pursue diverse sources of money. Appendix B provides a list of potential opportunities, including federal grants, state programs, school bonds and other resources.

The priorities of one group may not match those of another, so it's important for the different stakeholders to meet and discuss the issues.

Appendix A. Recommendation Matrix

Natomas Area Safe Routes to School Charrette October 20-25, 2005

■ Summary of Recommendations

POLICY AND PROGRAM RECOMMENDATIONS

These recommendations are overall policy or program recommendations that apply to all school areas.

Policy/Program	Recommendation	Responsibility
School District Safety Task Force	Continue existing District-level safety task force to discuss issues of Districtwide concern.	School District
School-Based Safety Task Force	Recommend forming a school-based Safety Task Force at each school to discuss issues of school area concern. It is recommended that each Task Force involve as many community stakeholders as possible. These may include: <ul style="list-style-type: none"> • School Administration/Teachers • Parents • Neighbors • Law Enforcement • Elected official representative (e.g., councilmembers’ staff) • City transportation department representative 	School
Double Fine Zone	In California, three counties (Alameda, Santa Barbara and Ventura) are currently within a Double Fine Zone trial program established by AB 1886. Recommend Sacramento County join Double Fine Zone program. Additional fine revenues put toward funding traffic safety, bicycle and pedestrian education programs at schools. Expanding the program to Sacramento County would require legislative action.	State Legislature; (County and City of Sacramento and School District could send letters to state legislators to recommend program)
Crosswalk Striping in School Zone	Establish City transportation department policy that all intersection crossings (including minor side streets) within the established school zone should be marked with a school crosswalk.	City
High-Visibility Crosswalks within School Zone	Establish City transportation department policy that all crosswalk markings within the school zone should be a high-visibility striping pattern.	City

POLICY AND PROGRAM RECOMMENDATIONS

Policy/Program	Recommendation	Responsibility
Alternate School Access Locations for Pedestrians and Bicyclists	Permit pedestrian and bicycle ingress/egress from back gates during morning and afternoon hours. Continue to lock gates during school hours for security. At school district level, ensure that plans for future new school construction provide for alternative exit entry points and connections into the surrounding neighborhood to encourage walking/bicycling and take pressure off main drop-off/pick-up area at front of school.	School District, School
School Area Law Enforcement	Increased visible enforcement of traffic violations during school drop-off and pick-up periods, and periodic events such as Pedestrian Stings.	Police Department
On-Site Staffing Visibility	Ensure that school staff (or parent volunteers) assigned to monitor drop-off/pick-up period are visible to parents and others. Provide staff with yellow vests, caps or other visible clothing to indicate that they are official pick-up/drop-off monitors.	School
Crossing Guards – Responsibility	In California, cities and counties may designate local law enforcement agencies, the governing board of any school district or a county superintendent of schools to recruit and assign adult crossing guards to intersections that meet approved guidelines for adult supervision.	City, School District, or Police Department
Crossing Guard Program – Management and Funding	An adult crossing guard program can be managed and funded in several ways. These include: <ul style="list-style-type: none"> • City’s Police Department • City’s Transportation Department • School District For comparison, most school crossing guard programs in other areas of the U.S. are managed and funded through the local police department.	City, Police Department, School District
Crossing Guards – Existing Program	Crossing guards available through existing “Kids X-ing” program within City Department of Parks and Recreation. The program provides trained adult crossing guards. Funding must be provided by the School District. The cost for a crossing guard is approximately \$8,000-12,000 per year.	School District
Crossing Guards – Use of Vehicle Fines for Funding	One method of funding school crossing guards is through the use of fines and forfeitures received under the Penal Code, defined in CVC Sections 42200 and 42201. Fines and forfeitures received by cities and deposited into a "Traffic Safety Fund" may be used to pay the compensation of school crossing guards who are not regular full-time members of the city’s police department.	Police Department
Crossing Guards – Alternate Funding through Partnership	Consider funding crossing guards through a partnership of Police, City and School District. A portion of funding could also be provided through local donations. The City of Santa Cruz funds crossing guards through a four-way partnership, with funding and operational support from both the City and School District, additional funding from private sources and volunteer assistance from the community.	School District, City, Police Department
Crossing Guards – Volunteers	If funding for paid adult crossing guards cannot be obtained, use of volunteers may be an option. The school district should ensure that volunteer crossing guards are covered by insurance and receive basic traffic-safety training from the police department.	School District, Police Department

POLICY AND PROGRAM RECOMMENDATIONS

Policy/Program	Recommendation	Responsibility
School Safety Patrols	Student Safety Patrols can be authorized by the local school board. School authorities shall be responsible for organizing, instructing and supervising patrols with the assistance of the local police. The California Education Code, Sections 49300 to 49307, and the California Code of Regulations, Sections 570 to 576 and 632, authorize the development of School Safety Patrols and outline rules for implementing these programs within the state. The MUTCD contains specific guidance on the use of School Safety Patrols. In general, a student patrol may be established at locations where an existing traffic control device, police officer or adult crossing guard is in operation. They may also be used where there are adequate crossing gaps in vehicular flow at an uncontrolled crossing and it is desirable to use student patrols to guide the school pedestrians.	School District
Traffic Tamers	Continue existing and successful Traffic Tamers program at Bannon Creek Elementary School. Continue expanding this student-based program to other schools in this Natomas area.	School, School District
Walking School Bus	Continue existing and successful Natomas Park Walking School Bus program. Encourage school and school district support of this program through official announcements, backpack mail and assistance with matching potential student walkers with parent “bus driver” leaders.	School, School District
Educational and Encouragement Programs	A variety of educational/encouragement programs exist that could be implemented by individual schools or at the School District level. These include basic pedestrian and bicyclist safety education, as well as incentive programs to reward students who walk or bicycle to school, contests to see which classroom can have the highest walking/biking participation, etc. Refer to existing guidebooks such as the National Highway Traffic Safety Administration (NHTSA) Safe Routes to School Toolkit, or the State of Maryland’s Safe Routes to School Guidebook for details and additional resources.	School, School District

ENGINEERING RECOMMENDATIONS

The following lists site-specific engineering recommendations, listed by school. For each school, recommendations are further broken into Short-, Mid- and Long-Term, based on factors such as relative cost, need to conduct future traffic and engineering studies, and political feasibility.

NATOMAS PARK ELEMENTARY SCHOOL

Location	Recommendation	Responsibility
■ Short-Term		
Gateway Park between Del Paso and North Bend	Restripe roadway to provide a 6-foot bike lane and 10-foot travel lane in both directions.	City
North Bend/Gateway Park	High-visibility crosswalk striping on all legs.	City
North Bend at Canal Trail Crossing	Replace existing "Trail Crossing" striping pattern with standard High Visibility Yellow School Crossing marking; install In-Street Yield to Pedestrian sign (MUTCD R1-6).	City
Crest/Fenmore	In-Street Yield to Pedestrian sign at existing uncontrolled crosswalk (MUTCD R1-6). Curb ramp needed on school side of crosswalk.	City
Crest/Ives	In-Street Yield to Pedestrian paddle at existing uncontrolled crosswalk. Curb ramp needed on school side of crosswalk.	City
Crest/North Bend	High-visibility crosswalk striping across north leg of intersection Curb ramp needed on west leg (south end).	City
School Bus Loading area/ service driveway	Crosswalk/curb ramps across service driveway to provide a clearly marked route from City terminus of the park pathway across to the bike rack location.	School
North Bend/Baines	Signs to designate the curb areas along park as official pick-up/drop off sites. Consider having school staff at these locations to further encourage parents to use these locations and to ensure that their children will be monitored as they walk through the park to the school playground.	City/School
School Parking Lot	Use cones/paint to conduct a double row drop-off/pick-up procedure. Provide adequate supervision by school staff to ensure safe and efficient unloading/loading of children. Older-grade children could participate, helping to open car doors to load/unload children.	School
School Parking Lot	Use cones to narrow driveway entrances during pick-up/drop off to provide for IN ONLY on south driveway and OUT ONLY on north driveway.	School

ENGINEERING RECOMMENDATIONS – NATOMAS PARK ELEMENTARY SCHOOL

Location	Recommendation	Responsibility
■ Mid-Term		
North Bend/Gateway Park	Reduce school driveway width so that crosswalk does not align with driveway. Curb extensions.	School
School Parking Lot	Reconfigure to IN ONLY on south driveway and OUT ONLY on north driveway; consider making exit driveway a right turn only.	School
Crest/North Bend	Curb extensions.	City
Crest/Ives	Curb extensions.	City
Crest/Fenmore	Curb extensions.	City
■ Long-Term		
Baines along Park Boundary	Provide angled or head-in parking spaces along the park boundary. This would be intended to serve as a park-and-walk area during the drop-off and pick-up period. During other hours, these spaces could be used by park users.	City
North Natomas Community Park	Provide more direct paved path access from logical drop-off/pick-up points along park perimeter into school. Along North Bend Drive, a more direct diagonal path is from the northwest direction connecting from the curb area to the school's rear playground gate. From Baines, study a more direct east-west path, as well as a potential bridge structure to span the drainage swale along the park's east side. These would help facilitate the use of the Baines curb area as a park-and-walk location.	City
North Natomas Community Park Future Parcels	Future park development along this linear park corridor should include paved pathways that provide a direct, non-meandering route through the park and toward the school for use by bicyclists and pedestrians.	City
North Bend at Canal Trail Crossing	Construct landscaped median refuge island at crossing to increase visibility and provide refuge point at this uncontrolled mid-block location.	City
School Frontage	Widen sidewalks to 8 feet along entire school frontage.	City/School

ENGINEERING RECOMMENDATIONS – BANNON CREEK ELEMENTARY SCHOOL

Location	Recommendation	Responsibility
■ Short-Term		
School Parking Lot	Continue multi-lane queuing procedure already in place. Ensuring school-staff presence before and after school will make drop-off and pick-up period more efficient.	School
Bannon/Azevedo	New crosswalk on south leg. High-visibility crosswalk striping on all legs. Advance limit lines on all legs.	City
Bannon Creek at Trail	New high-visibility school crosswalk at trail crossing. Install In-Pavement Yield to Pedestrian sign (MUTCD R1-6).	City
Bannon Creek at Trail	Trim vegetation away from crossing location to ensure clear sight distance, particularly on south side of Bannon Creek immediately west of the trail crossing.	City
Bannon Creek/Millcreek	High-visibility crosswalk striping at all legs.	City
Bannon Creek in front of bus zone	Pavement coloring to emphasize BUS ZONE NO PARKING.	City
Millcreek/River City	High-visibility crosswalks at all legs.	City
■ Mid-Term		
Bannon Creek/Azevedo	Curb extensions, median refuge islands.	City
Bannon Creek/Azevedo	Extend sidewalk along Azevedo Drive from Bannon Drive to West El Camino.	City
Bannon Creek/Azevedo	In future planning efforts (such as updates to the Azevedo Master Plan), or citywide signalization priority lists, consider intersection of Pebblewood/Azevedo for a roundabout instead of traffic signal.	City
Bannon Creek at Trail Crossing	Replace speed undulation with raised crosswalk. Remove speed undulation.	City
Bannon Creek Trail	Widen trail to 12 feet.	City
Bannon Creek/Millcreek	Curb extensions at all legs.	City
Millcreek/River City	Curb extensions at all legs.	City
Bannon Creek Parking Lot	Install new EXIT ONLY driveway at south end of overflow parking lot.	School
Bannon Creek Parking Lot	Narrow parking lot driveways; make north driveway ENTER ONLY and south driveway EXIT ONLY.	School
Bannon Creek at bus zone	Construct off-street bus pullout on school property.	School
■ Long-Term		
Bannon/Azevedo	Construct roundabout.	City
School Frontage	Widen sidewalks to 8 feet along entire school frontage.	City/School

ENGINEERING RECOMMENDATIONS – JEFFERSON ELEMENTARY SCHOOL

Location	Recommendation	Responsibility
■ Short-Term		
Pebblewood/Trail Crossing	Remove crosswalk in current location; construct high-visibility crosswalk at actual trail crossing location. Install In-Pavement Yield to Pedestrian sign (MUTCD R1-6).	City
Pebblewood/Trail Crossing	Trim vegetation away from trail crossing, particularly to the east of the crossing on both sides of Pebblewood.	City
Pebblewood/Lemitar	High-visibility crosswalks all legs.	City
Lemitar/Cloudview	High-visibility crosswalk.	City
School Parking Lot	Use cones/paint to conduct a double row drop-off/pick-up procedure. Provide adequate supervision by school staff to ensure safe and efficient unloading/loading of children. Older-grade children could participate, helping to open car doors to load/unload children.	School
School Parking Lot	Use cones to narrow driveway entrances during pick-up/drop off to provide for IN ONLY on south driveway and OUT ONLY on north driveway.	School
Pebblewood/Azevedo	Re-paint crosswalk on north leg of intersection; high-visibility crosswalks for all legs; advance limit lines on all legs.	City
■ Mid-Term		
Jefferson Parking lot	Remove angled parking along playground frontage to provide curb area for drop-off/pick-up.	School
Jefferson Parking Lot	Install landscaping islands and plant trees in east (overflow) parking area to improve aesthetics, provide shade, and encourage use of these spaces by school staff.	School
Jefferson Parking Lot	Reduce east driveway width, designate as ENTER ONLY.	School
Jefferson Parking Lot	Reduce west driveway width, designate as EXIT ONLY.	School
Pebblewood at S-curve	Reduce width/radius of southern curve by extending curb area and landscaping. Continue to maintain driveway access to residence located along corner.	City
Pebblewood at S-curve	Construct raised island to provide separate drop-off/pick-up area along northern curve. Sign "NO PARKING DURING, LOADING ONLY" to ensure that no long-term or unattended parking occurs along this curb area.	City
Pebblewood at Trail Crossing	Raised crosswalk.	City
Pebblewood/Lemitar	Curb extensions.	City
Cloudview/Lemitar	Curb extensions.	City
School Back Entrance Gate	Improve aesthetics near dumpster and loading areas to encourage use of this as an official school entrance/exit during the drop-off/pick-up periods.	School
Cloudview Bus Area	Construct off-street bus pullout area.	School

ENGINEERING RECOMMENDATIONS – JEFFERSON ELEMENTARY SCHOOL

Location	Recommendation	Responsibility
■ Mid-Term [cont'd.]		
Pebblewood/Azevedo	Curb extensions, median islands.	City
Pebblewood/Azevedo	In future planning efforts (such as updates to the Azevedo Master Plan), or citywide signalization priority lists, consider intersection of Pebblewood/Azevedo for a roundabout instead of traffic signal.	City
■ Long-Term		
Cloudview near park	Provide new angled parking spaces for use by pre-school and for park use.	City
School Frontage	Widen sidewalks to 8 feet along entire school frontage.	City/School
Pebblewood/Azevedo	Construct roundabout.	City

ENGINEERING RECOMMENDATIONS – BANNON CREEK PARKWAY TRAIL

Location	Recommendation	Responsibility
■ Short-Term		
Entire Parkway	Improved maintenance, brush clearing, particularly near roadway crossings.	City
Entire Parkway	Signage program – signage indicating direction of continuous through-route at trail spurs or locations where trail diverts briefly on-street; also signage indicating street names where trail connects out to neighborhood street network.	City
■ Mid-Term		
Cedro Circle, Delgado Way	At the location where trail diverts on-street to Cedro Circle and Delgado Way – consider converting a portion of the roadway right-of-way to a two-way Class I trail configuration to provide continuity to the bike path facility. As a mid-term recommendation, concrete dividers could be placed along the eastern side of the road to create a separated 10-foot wide, two-way bike path.	City
Picnic Area	Ensure safe and direct pathway connections from Azevedo Drive through picnic toward school back entrance gates. This will provide an alternate drop-off location along Azevedo Drive.	City
■ Long-Term		
Entire Parkway	Widen trail to 12 feet.	City
Cedro Circle, Delgado Way	At location where trail diverts on-street to Cedro Circle and Delgado Way – consider converting a portion of the roadway right-of-way to a two-way Class I trail configuration to provide continuity to the bike path facility. As a long-term recommendation, construct separated Class I path with minimum 5-foot, landscaped separation from roadway lanes.	City

Appendix B. Funding Opportunities

There are a number of funding sources to explore for school improvements, community facilities, and other infrastructure needs in Natomas. This list is not meant to be all-inclusive but rather a selection of funding sources that show the variety of opportunities in Sacramento.

SCHOOL FUNDING

■ School Bonds

In addition to providing money to build new schools, school district bond funds may also be used to build new infrastructure at existing schools. Including the latter can be a way to enhance a bond so that voters in established school areas are more like to support it. In California, voters approved an initiative to allow a 55%-majority vote for approval of local school bonds.

■ Parcel Taxes

Local parcel taxes provide a way to provide secure, enhanced funding for soft costs, including materials and supplies, school programs, and crossing guard salaries. A parcel tax is a qualified special tax that in California requires a 55%-majority vote for adoption.

CITY FUNDING

■ Sacramento's Neighborhood Traffic Management Plan

This program provides education, engineering and enforcement to improve neighborhood livability in Sacramento. The process provides neighborhoods with resources to manage traffic concerns on residential streets. The goal is to calm traffic, allowing children and families to feel more secure in their own neighborhood.

STATE FUNDING

■ California Safe Routes to School

Established in 1999, the Safe Routes to School program makes grants available through the California Department of Transportation to local government agencies based upon the results of a statewide competition. The program's goal is to reduce injuries and fatalities to school children and encourage increased walking and bicycling among students. It does this primarily by constructing facilities that enhance safety for pedestrians and bicyclists. The program is scheduled to sunset on January 1, 2008. The California program was the basis for the recently enacted federal Safe Routes to Schools program.

FEDERAL FUNDING

■ SAFETEA-LU

The Safe, Accountable, Flexible, Efficient Transportation Equity Act – A Legacy for Users (SAFETEA-LU) was passed in 2005. SAFETEA-LU authorizes \$286.5 billion over the next five years (2005-09) for bike and pedestrian safety programs and provides funding for a National Safe Routes to Schools program.

At the time of this writing, the California Department of Transportation is determining guidelines for the program. The approximate funding amounts available to California are:

- \$11 million for 2005-06
- \$15 million for 2006-07
- \$19 million for 2007-08
- \$23 million for 2008-09

The money can be used for infrastructure, including planning, design and construction of projects related to improving the ability of students to walk and bike to school. This includes sidewalk improvements, traffic calming and speed-reduction improvements, pedestrian and bicycle crossing improvements, on-street bicycle facilities, off-street bicycle and pedestrian facilities, secure bike parking and traffic diversion improvements within approximately two miles of schools.

Not less than 10% and not more than 30% of the funds will be used on programs or activities that encourage walking and bicycling to school. These could include public awareness campaigns and outreach to press and community leaders, traffic education and enforcement in the vicinity of schools, student sessions on bicycle and pedestrian safety, health and environment, and training, volunteers and managers of safe routes to school programs.

OTHER FUNDING OPPORTUNITIES

The National Highway Traffic Safety Administration web site (www.nhtsa.gov) has a very informative list of safe routes to schools related funding resources, including:

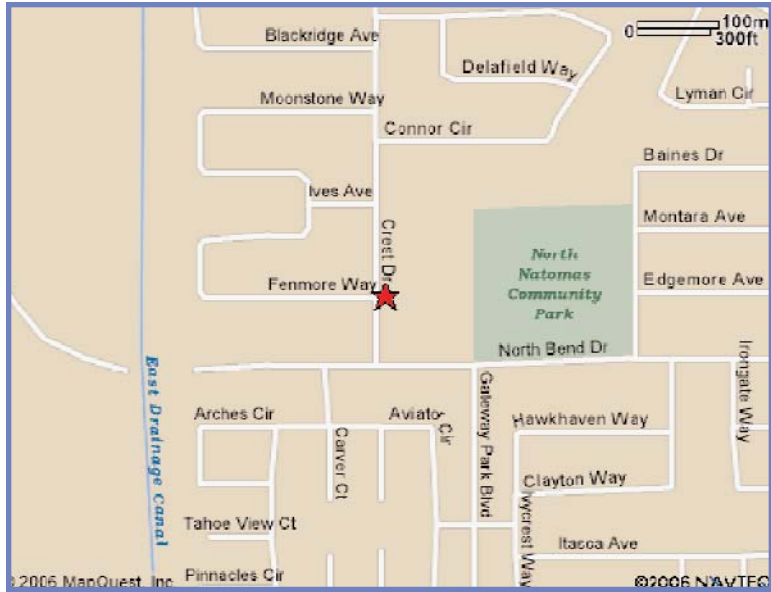
- Capital funding
- Transportation enhancements
- Metropolitan Planning Organizations (MPOs)
- Local county and city funding
- Sales tax funding
- Program funding
- Corporations and businesses
- Foundations
- Individuals
- Events
- Parent Teacher Associations (PTAs) and school districts
- City and county funds
- State Highway Safety Funds, "402 Funds"



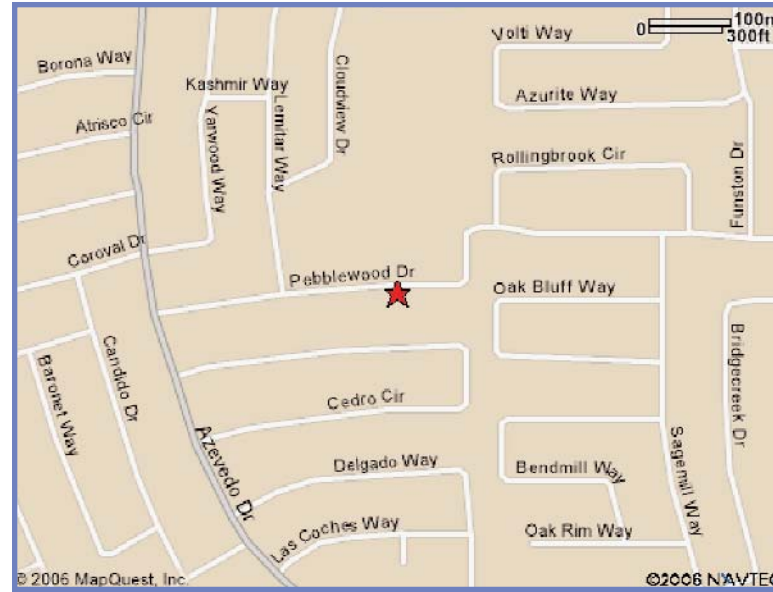
Appendix C. Natomas Area and School Maps

The project aims to address pedestrian and bicycle safety issues in Natomas, a rapidly growing community within the city of Sacramento. This report focuses on the neighborhoods around three schools in the

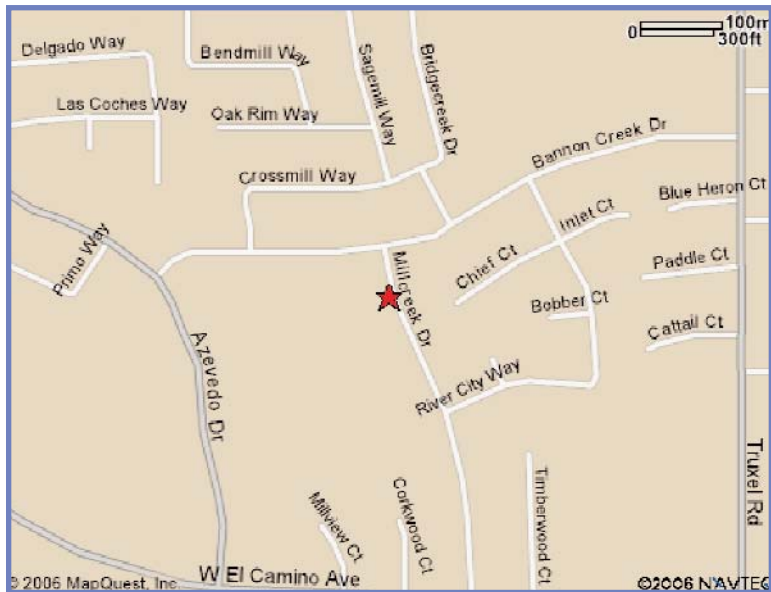
Natomas Unified School District – Natomas Park Elementary in North Natomas, and Jefferson Elementary and Bannon Creek Elementary Schools in South Natomas.



Natomas Park Elementary School



Jefferson Elementary School



Bannon Creek Elementary School